YOLLA 4

T/L1 OFFSHORE BASS BASIN

WELL COMPLETION REPORT
BASIC DATA

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(B) Amdel reports

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(B) Subsurface Data – Halliburton Report

GENERAL DATA

Surface Location:	Latitude:	39°50'40.592"S
(GDA 94)	Longitude:	145°49'06.0569"E
(AMG Zone 55)	Easting:	398 905.07m
	Northing:	5 588 821.47m
Elevation:	WD:	80.8 m
	RT:	43 m
Date spudded:	18/06/2004	21:45 hours
Date TD reached:	11/07/2004	22:00 hours
Date Rig release:	08/08/2004	12:30 hours

Status:	Cased Gas Producer	
Total Depth:	Driller:	3235mMD
	Logger:	3235.5mMD
Plugs:	None	
Casing:	Size:	Shoe:
(a) Surface	20"	220 mRT
(b) Intermediate	13.375"	885 mRT
	9.625"	2586 mRT
(c) Production	6.625"	3233 mRT

WIRELINE LOGS

Log	Run	Interval (from / to) m	BHT / Time
PEX-HRLA-CMR-SP-GR-LEHQT	1	2776 - 2542	111°C/after 12 hrs 50 mins
PEX-HRLA-CMR-SP-GR-LEHQT	2	3235.5 m – surface	126°C/after 10 hrs 30 mins
FMI-DSI-HNGS-ECS-LEHQT	3	3220 – 2590 m (HNGS-DSI to 120)	133°C/after 18 hrs 55 mins
VSI-GR-LEHQT	4	765 – 3225	136°C/after 31 hrs 45 mins
MDT-GR-CMR-LEHQT	5	3206 – 2594 m	146°C/after 41 hrs 15 mins
MSCT-GR-LEHQT	6	3159 – 2604 m	146°C/after 82 hrs 0 mins
USIT-CBL-VDL-GR-CCL	7	3185 – 2546 m	

PRODUCTION TESTS

Reservoir Sand	Gas Flow Rate (mmscf/d)	Oil/ Condensate Flow Rate (bbls/day)	FWHP (psia)	Choke Size (in)	WHSP (psia)	Gauge Depth (mTVDSS)	Mid perf. Depth (mTVDSS)	Bottom Hole Flowing pressure @ gauge depth (psia)	Bottom Hole Shut-in pressure @ gauge depth (psia)
2458	3.4	4000	1500	40/64		2814.7	2464	2900	3912
2755	32.3	561	2789	52/64	3243	2814.7	2738	3741	4233
2809	32.2	800	2850	52/64	3226	2814.7	2815	3830	4220
2973	27.2	297	2810	44/64	3406	2823.2	2973	3679	4312

FULL HOLE CORES

No.	Interval (mRT)	Formation	Cut (m)	Rec.(m)
1	2892.02 – 2919.60	EVCM "2755 sand"	27	27.55
2	2958.07 – 2985.37	EVCM "2809 sand"	27	27.30

PERFORATIONS

Interval (mRT)	Formation	SPF
2973 – 2962.5	EVCM 2809 sand	12
2914 – 2902.5	EVCM 2755 sand	12
2610 - 2604	EVCM 2458 sand	12

Interval (mRT)	Formation	SPF
3148 - 3155	EVCM 2973 sand	6
3151.5 – 3157.5	EVCM 2973 sand	6

SIDEWALL CORES

Depth (m)	Lithology
3159	mud
3158	mud
3157	mud
3159	Sandstone
3158	Siltstone
3157	mud
3156	mud
2604	Sandstone
2605.5	Sandstone
2606.5	Sandstone

Depth (m)	Lithology
2608.2	Silty Sandstone
2609.5	Sandstone
2612	Sandstone
2614.5	mud
2868.5	mud
2871	empty
3006	empty
3007.5	empty
3149.5	mud
3151	mud

1. WELL SUMMARY SHEET

Well Name:	Yolla 4	
Permit:	T/L1 Offshore Bass Basin	
Well Path:	Deviated	
Top Hole Location:	Latitude:	039° 50' 40.592" South
	Longitude:	145° 49' 06.0569" East
	Easting:	398 905.07 metres
	Northing:	5 588 821.47 metres
	(GDA 94; AMG Zone 55, Central Meridian 147° East)	
Seismic Locn. (Platform):	Yolla 3D Seismic Survey**,** Inline 480, Xline 1000.	
Seismic Locn. (2755 Sst):	Yolla 3D Seismic Survey**,** Inline 475, Xline 951.	
Elevation:	43m (RT-sealevel)	
Water Depth:	80.8m LAT	
Total Depth Driller:	3235m MDRT	
(TVD) Driller:	3097.245m MDRT	
Rig on tow:	17:30hrs	06/06/2004
Rig on Location:	20:00hrs	06/06/2004
Spud:	21:45hrs	18/06/2004
Reached TD:	22:00hrs	11/07/2004
Rig Released:	12:30hrs	08/08/2004
Re-enter:	Between 10:00hrs 30/09/2004 to 10:00hrs 02/10/2004	
Total Rig Days:	58.06 days	
Well Status:	Cased Gas Producer	
Permit Interests:	Origin Energy Resources Ltd*	32.5%
	(*OPERATOR)	
	Origin Energy Northwest Pty Ltd	5%
	AWE Petroleum Pty Ltd	30%
	CalEnergy Gas (Australia) Ltd	20%
	Wandoo Petroleum Pty Ltd	12.5%
Rig Name:	ENSCO 102 (Jack-up Rig)	
Drilling Contractor:	ENSCO Australia Pty Ltd	
Approx. Well Cost:	A$24,603,034.	

2. FINAL DRILLING REPORT

By Bill Curry, Australian Drilling Associates Pty Ltd (ADA)

2.1 DRILLING SUMMARY BY INTERVAL

2.1.1 Rig Mobilisation

The ENSCO 102 jack up rig was mobilised from Malaysia to Australia on the dry tow vessel American Cormorant. The rig was late in leaving Malaysia due to delays with the previous operator's well operations, longer than anticipated leg extraction operations (due to plugged jets on the spud cans), a failed engine on a tow boat and the eventual dry docking of the rig in Singapore to remove the large quantities of sea bed materials adhering to the spud cans on the rig. While in dry dock, the points on the spud cans were also removed to facilitate loading of the rig onto the dry tow vessel. The rig eventually arrived in Western Port Bay, Victoria mid day on the 28th April, 2004 and was floated off the dry tow vessel by approximately 0700hrs on the 30th April, 2004. The rig was towed to the Gippsland Basin and drilled a well for ESSO before beginning its tow to Yolla at approximately 1530hrs 5 June, 2004. The rig was towed with Tidewater's Ray J. Hope AHTS vessel (170 tonne Bollard Pull) and arrived 1 nautical mile from the Yolla platform at 1730hrs 6 June, 2004.

The rig "soft pinned" to the sea bed a few hundred meters east of the Yolla platform, at which time all four of the rig's anchors were run and set by Tidewater's Invincible Tide. The Invincible Tide (100 tonne Bollard pull) and MV Keera ocean going tug (62 tonne Bollard pull) then assisted in positioning the rig adjacent to the Yolla platform, while the Ray J. Hope remained on the tow bridle to pull the rig away from the platform in the event of a mishap. The rig was in position and began jacking its legs into the sea bed at approximately 0745hrs 7 June, 2004.

Subsequent preloading operations were not completed until 1500hr 11 June, 2004 due to the necessity to conduct numerous preload cycles with the rig hull in the water. The soils were discovered to be much weaker than earlier core and penetrometer tests predicted and several leg runs were experienced on each leg. Final leg penetrations into the sea bed varied from 23.47 to 23.77m. An ROV was used to inspect the rig legs and platform foundation but could see no problems. The ROV did reveal that the holes created by the spud cans had very nearly completely filled with the fine grained sediments of the sea floor, leaving a depression estimated as being no more than 1 or 2 meters below normal sea bed elevation.

The rig floor was jacked up to an elevation 21.13m above to top deck on the platform which equated to an elevation 43.88m above MSL as defined by the platform design drawings (top deck on the platform was designed to be 22.75m above MSL). The rig hull is 21.9m below the rotary table, therefore the air gap below the hull to sea level would be 21.98m or 72.1 feet. The rig package was skidded into position over the Yolla 4 well slot by 0130hrs 12 June, and preparations to begin operations on Yolla 4 were completed by 1200hrs 12 June, 2004.

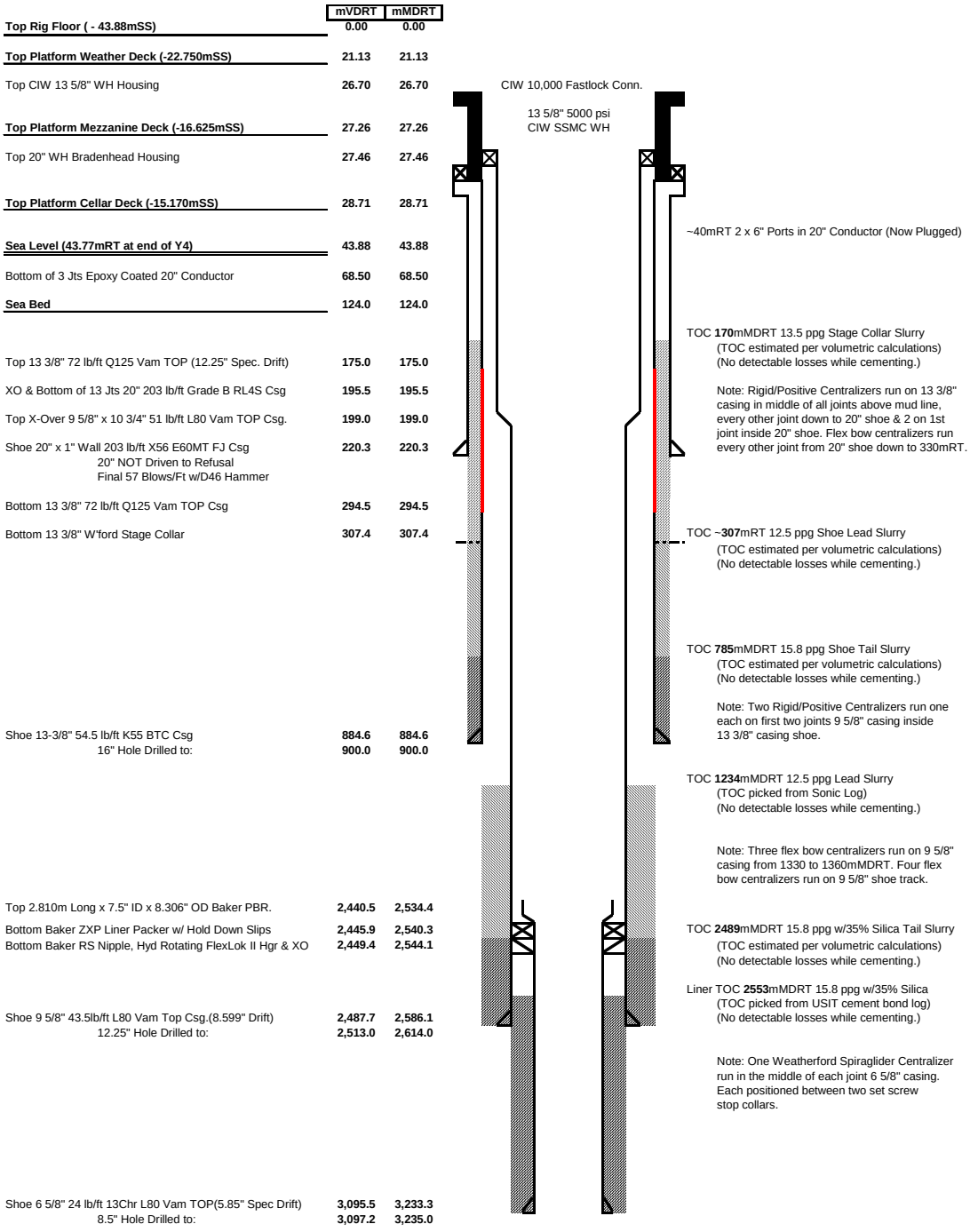


Figure 1: Yolla 4 Casing and Cement Schematic

2.1.2 Driving 20" Conductor

Yolla 4 well operations began at 1200hrs 12 June, 2004 when preparations were made to run 20" conductor casing. The 20" x 1" wall casing free fell to 26m of penetration into the sea bed where only 2 blows of the hammer resulted in the casing free falling another 14m to 40m of penetration. The casing was driven to a final depth 220.27m below the rotary table or 96m total penetration into the sea bed (Figure 1 and Appendix 14). This depth did NOT represent refusal but was the depth deemed sufficient to ensure integrity of the sea bed while drilling the subsequent 16" hole section. Soils experts had previously indicated that refusal may not be reached for perhaps hundreds of meters of penetration, therefore the

conductor was only driven to a predetermined depth. The final blow count was only 57 blows/foot with a D46 hammer set at 83% energy level or 120,603Nm per blow. Although initially planned to have been driven approximately 60m below the mud line, due to the weaker than anticipated soils discovered during the jacking operation and the additional penetration of the spud cans into the sea bed, the decision was made at the time to drive the conductors 3 joints deeper to 96m total penetration.

The conductor was driven rather than drilled and grouted due to the requirement of the platform foundation designers to not disturb the sea bed for the first 50m below the mud line, thus protecting the integrity of the non-piled mat base of the platform.

The 20" casing strings for Yolla 3 and 4 were batch set, therefore there was an interruption in well operations on Yolla 4 between 0700hr 16 June and 0600hr 17 June while the rig skidded and drove 20" conductor in the Yolla 3 well slot. Driving operations were also interrupted with the unscheduled rig up of other rig equipment while the rig waited for the delivery of a modified drive sub, something the rig crews deemed to be necessary for severe driving operations. No time was identified as being actually lost while waiting for the new sub, but driving operations were later shut down approximately 44 hours due to high winds which prevented use of the cranes for supplying 20" joints to the rig floor.

The top three joints of 20" conductor were previously coated with an approximately 3mm thick coating of epoxy for corrosion protection. Two 6 inch diameter holes with ACME threads were also previously installed near the bottom end of the top joint of 20" casing. These holes were used to take mud returns near sea level, thus eliminating the approximately 40m of extra head which would have been required if returns were to have been taken through the normal return line below the rig floor. Threaded flat plugs were thread-locked in these holes (and those in the Yolla 3 well conductor) by abseiling personnel on 11 September, 2004. Once driven, the 20" casing was cut in the cellar deck area and a Cameron "A" section wellhead welded on top.

2.1.3 Drilling 16" Hole & Cementing 13 3/8" Casing

A 24" OD riser was rigged up onto the 20" wellhead followed by the rig's 24" overshot/diverter assembly. The rig up of the riser was stopped for 7 hours due to severe wind, which also slowed normal rig up operations.

Due to the possibility of the 20" casing free falling further into the sea bed once drilling began below the shoe, two slings were attached between the top of the conductor (previously fitted with pad eyes) and corresponding pad eyes welded to the underside of the weather deck on the platform. The slings, turnbuckles (used to pre-tension the slings), shackles and pad eyes were all individually rated to 25 tonnes so they could theoretically support the entire weight of the conductor sting. Unfortunately the platform construction contractor failed to install one of the pad eyes on the platform for the Yolla 4 well slot, so that pad eye had to be installed and certified by the rig using welders and an inspector hired for the conductor welding operations.

A 16" bit was run inside the conductor and began washing fill from inside the conductor at 2145hr 18 June, 2004, which is deemed to be the spud time of the Yolla 4 well.

The 16" hole was control drilled vertically to 900mVDRT/900mMDRT (Figures 2 and 3) using sea water and periodic high viscosity gelled pills (30 barrels per joint and 50 barrels per connection). Good returns were seen from the 6" conductor ports all during the drilling operation.

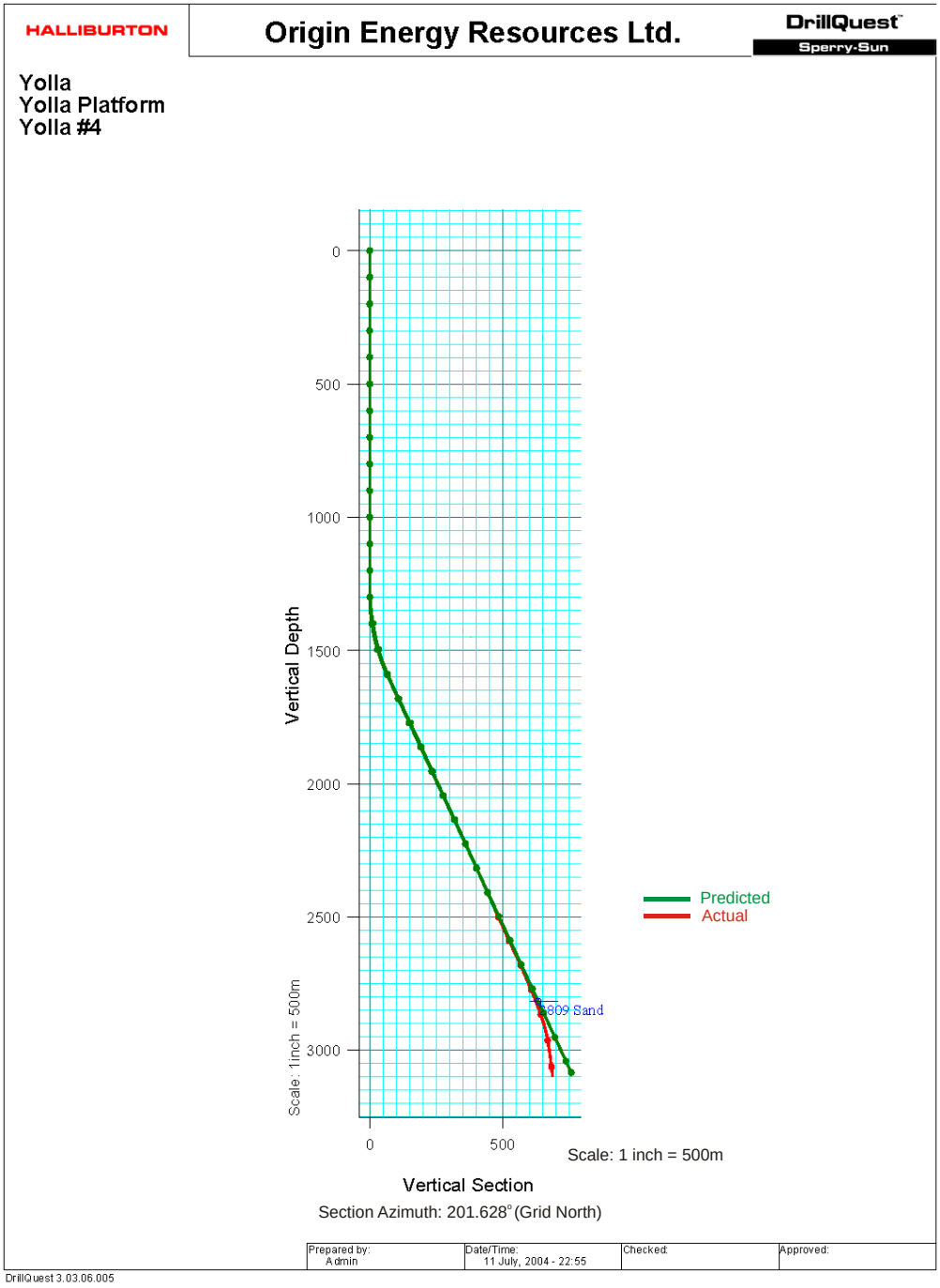


Figure 2: Yolla 4 Well Path – Side View

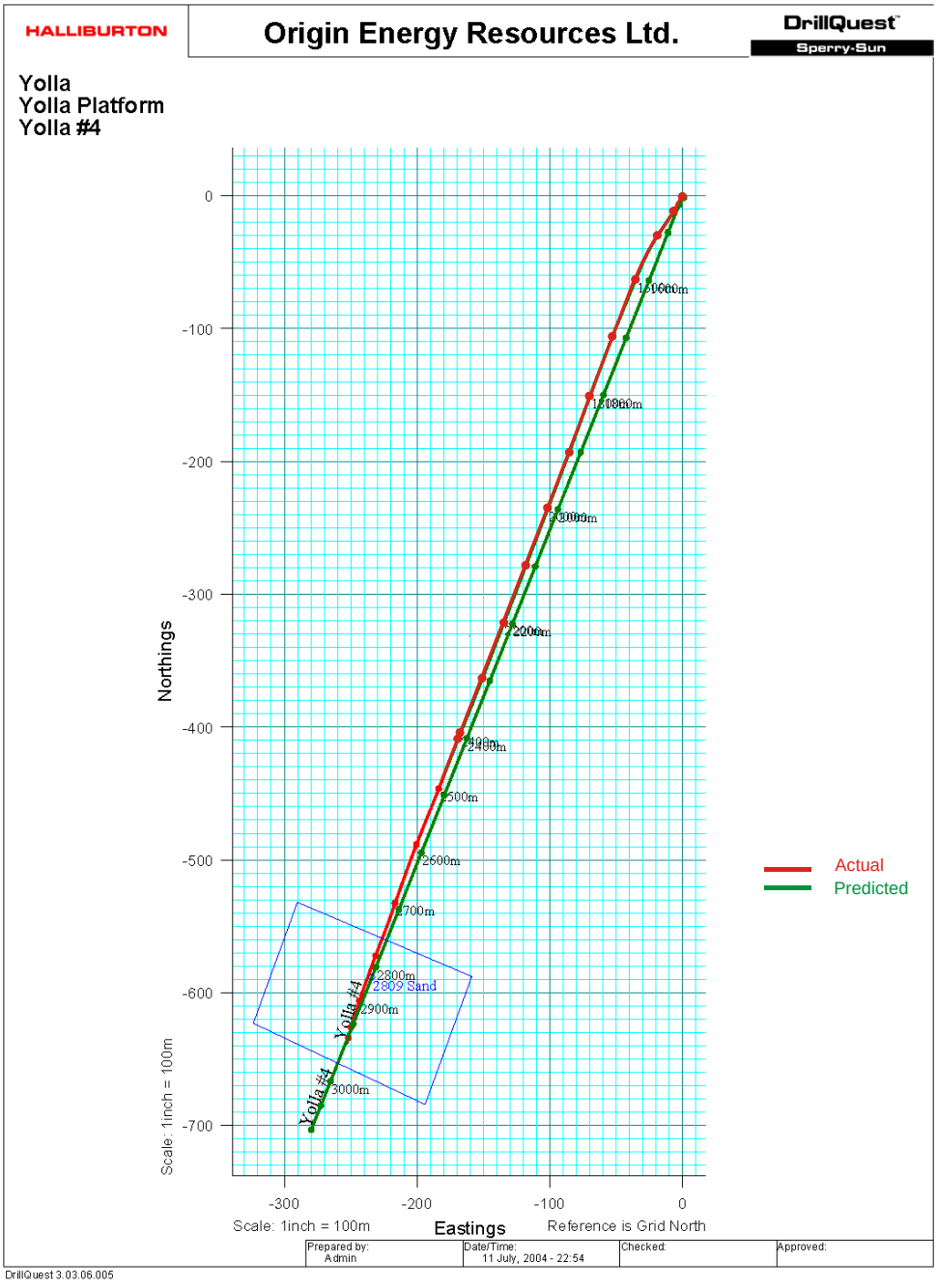


Figure 3: Yolla 4 Well Path – Plan View

Although drilled without incident, this hole section was drilled such that the need for casing would coincide with weather conditions that would allow offloading the 13 3/8" casing from the boat. The 13 3/8" casing was eventually run as it was simultaneously being offloaded from a boat, which slowed operations but otherwise caused no problems.

The 13 3/8" casing was also cemented and pressure tested without incident and with no detectible lost circulation seen in the returns observed from the 6"

conductor ports (Appendix 14). Since no logs were run in the 16" hole, the required cement volume was calculated based on the degree of hole washout seen in the Yolla 1 well logs. Cement volumes were selected assuming hole washout factors of 100% volumetric excess above 700m and 200% volumetric excess below 700m. These volumes proved to be very accurate.

The 13 3/8" casing was cemented in two stages to ensure good cement coverage inside and just below the 20" casing shoe (Figure 1). Good cement is needed at this depth because the 13 3/8" casing will in all likelihood be required to support the 20" conductor casing, a reversal of their typical roles. Soils experts predict that flowing and shut-in cycles in the wells will in turn cause sufficient temperature expansion/contraction in the 13 3/8" casing to break the cement bonding between the cement and the formation for a depth of approximately 70m below the 20" casing shoe. For this reason the stage collar was positioned approximately 90m below the 20" shoe and a reasonable strength (13.5ppg density) cement slurry circulated above that point. The cement density was selected to ensure sufficient strength for bonding to the casing and hole, but to also be below that density which might risk lost circulation and the absence of a full cement column. Fortunately the 13.5ppg slurry appeared to cause no lost circulation, yet creates considerably more strength than the formation itself.

A Cameron "SSMC" unitised wellhead housing was run as an integral part of the casing string through the 24" riser and diverter assembly. The wing valve outlets were temporarily plugged with flush OD plugs for cementing the casing.

2.1.4 Drilling 12 ¼" Hole & Cementing 9 5/8" / 10 ¾" Casing

Once the 13 3/8" casing had been cemented, the 24" riser was removed, the riser tensioning slings were removed (having never shown any sign of taking on additional weight from the conductor), the flush OD plugs were removed from the wellhead housing, the wing valves were bolted to the wellhead outlets and a 13 5/8" 5000psi rented spacer spool was installed onto the well followed by the rig's 18 ¾" 15,000 psi BOP stack. During pressure testing the annular element leaked and had to be changed out and retested, which required approximately 15.5 hours of rig time.

Although the wiper plugs for the 13 3/8" casing cement job were PDC drillable, the decision was made at the time to drill out the stage collar plugs and shoe track using a tri-cone bit, thus ensuring against the problems sometimes encountered while drilling such items with PDC bits. The well was displaced to a Drispac/Soltex mud during the final stages of drilling out the shoe, after which 5m of new formation was drilled and a formation integrity test (FIT) performed to 10.5ppg equivalent mud density (see Appendix 15). The clean out assembly was then pulled and replaced with a directional drilling assembly which included a Gamma Ray and Resistivity Logging While Drilling (LWD) tool in addition to an adjustable gauge stabilizer, directional MWD tool, bent housing mud motor and PDC bit.

The 12.25" PDC bit and BHA successfully drilled to section TD at 2614mMDRT (2513mVDRT) in one run. The hole remained stable with only minor ledges and tight spots seen during the subsequent wiper trip.

The mud used to drill this hole section seemed to perform very well, although considerable losses were observed over the shakers due to the very high polymer related viscosity of the mud. Only modestly fine screens could be used on the shakers, which in turn allowed fine drill solids to build up in the mud during the final stages of drilling to section TD.

The hole section was intended to stop at approximately 2540mMDRT, but due to severe weather at the time and the fact that the 9 5/8" casing was still on a boat, the decision was made to drill deeper. However, an unexpected strong hydrocarbon show was encountered below 2602mMDRT which stopped further drilling and

resulted in the 9 5/8" casing shoe eventually being set above the potential pay sand. The sand was later named the 2458 Sand based on the depth that it was encountered in the Yolla 1 well, which was the basis well for naming all the other pay sands in the Yolla field.

No open hole logs were run. Due to an ENSCO requirement, the pipe rams in the top ram body were changed out to 9 5/8" rams and pressure tested, which took approximately 4 hours of rig time.

The 9 5/8" / 10 ¾" combination casing string (the 10 ¾" casing at surface was needed to accommodate the large OD 7" SSSV valve) was run, cemented and pressure tested without incident with the 9 5/8" shoe set at 2586mMDRT (Figure 1 and Appendix 14). Losses of 10 bbl were observed during the job but a sonic log run in the subsequent 8.5" hole later indicated top of cement at 1234mMDRT.

2.1.5 Drilling 8 ½" Hole & Cementing 6 5/8" Casing

After testing the BOP's, the shoe track was drilled out, but no new formation was drilled for the planned FIT due to the potential pay sand already exposed in the 12 ¼" hole. The FIT test was conducted with the objective of reaching 10.4ppg EMW (1.25SG), but the pressure started to move off the straight line at about 320psi, which was equivalent to 10.0ppg EMW (1.2SG) (see Appendix 15).

Drilling continued to the first core point (2755 Sand) at 2892mMDRT. A 27m core was cut down to 2919mMDRT and 100% recovered. Drilling continued to 2958m where a second 27m core was cut to 2985mMDRT and 100% recovered.
While logging the cored hole section with LWD tools on the next trip in the hole, 160 barrels of mud were quickly lost, presumably in either the 2809 Sand or near the shoe. Mud density was reduced from 9.5 to 9.4ppg with no further losses observed at the time.

Drilling continued with no apparent losses to well total depth of 3235mMDRT (3097mVDRT).

Although only minor over-pull was seen on the wiper trip to the 9 5/8" shoe, the first logging tool (which included a CMR on bottom) could not be worked past 2776mMDRT. After making a wiper trip with a much stiffer bottom hole assembly, no further hole problems were seen during the subsequent 5 logging runs.

The last logging run was with a mechanical side wall coring tool which failed to cut and recover most attempted cores. The tool functioned properly, but penetration into the formation would stop before the bit had penetrated deep enough to recover a core plug. The electric line company has never been able to explain the cause of the problem.

Another wiper trip was made with a stiff BHA and the hole started to get tighter during each successive trip to bottom, which was deemed to be due to an increasing build up of low gravity solids in the mud and an increasing filter cake. Mud in the pits also started to decompose and produce increasing quantities of H_2S during this period, which is further evidence of possible mud degradation and solids build-up down hole. In spite of the tight hole seen on the last wiper trip, the 6 5/8" liner was run without losses or incident (Figure 1). The liner was also cemented without losses or incident and was rotated throughout cement displacement.

2.1.6 Running Cement Bond Log & Perforating

The liner and intermediate production casing were flushed numerous times with sea water and chemical washes during a scraper run to TD. The liner was then displaced with a super saturated sodium chloride brine with sized salt particles held

in suspension with gelling agents. Casing above the liner was displaced with a light sodium chloride brine to balance the highest formation pressure of the zones to be perforated.

A new generation cement bond log (Schlumberger USIT tool) was run inside the liner and revealed good bonding between zones but erratic bonding directly opposite the pay zones, believed to be the result of gas migration into the well bore. A "gas block" additive had been used in the cement, so although the bonding wasn't ideal opposite the pay zones, migration of the gas up the hole did not appear, which indicated good success for the product. A clear top of cement was found at ~2555m, or ~31m inside the 6 5/8" x 9 5/8" liner lap.

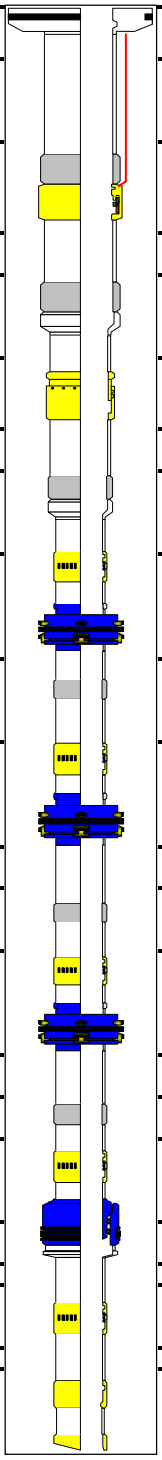
The top three zones in the well were perforated (~100 psi overbalanced) with casing guns run on electric line (included the use of a shooting nipple per ENSCO requirements). The bottom most zone was intentionally left unperforated in order to streamline completion operations.

After perforating, the bit and scraper assembly (including tandem scrapers inside the liner) was again run to scrape off any perforating burrs from the wall of the casing so they would not damage the sealing elements on the production packers next to be run. The well was not circulated during this last scraper run. The scrapers came out in good condition, with minor perforating debris caught in the scraper teeth.

2.1.7 Running Completion Tubing

A 5 ¾" OD junk basket & gauge ring was run on electric line without encountering any resistance. A permanent packer assembly was then run on electric line and set below the lowest set of existing perforations and above the proposed perforations for the bottom zone (not yet perforated). A tapered string of 4 ½", 5" and 7" production tubing was then run and landed in the wellhead (Figure 4). The production string included three 6 5/8" hydraulic set straight pull release production packers (one just above each set of existing perforations), sliding sleeves (one just below each set of existing perforations), blast joints (opposite each set of perforations), and a sub surface safety valve approximately 50m below the mud line. A Polished Bore Receptacle was also included in the string just above the top packer so the top portion of the tubing string could be retrieved in the future without having to pull the packers. The annulus was filled with inhibited low density brine. The tubing was displaced with diesel to create an under-balance pressure condition to assist in getting the well to flow.

A retrievable plug was set in the tubing near surface (in one of several joints of heavier walled 29 lb/ft tubing), the BOP's removed and a 6 3/8" ID permanent production tree installed, after which the plug was retrieved.

Max OD* (in)	Min ID* (in)	Length (m)	Schematic	Depth (m MDRT)		Description	Material	Conn. up	Conn. down
13.268	5.963	0.25		27.07	SA13B	Cameron Tbg Hgr w/Hallib 5.96" RPT Inconel Profile, from load shoulder	2 1/4Cr-1Mo 625 clad	8.75"-4Acme LH	Fox B
7.676	6.276	1.63		27.32		7" 26# Pup Joint	13 Cr 80	Fox P	Fox P
7.676	6.184	12.79		28.95		7" **29**# Tubing 1 full joint	13 Cr 80	Fox B	Fox P
7.676	6.184	6.37		41.74		7" Pup Jts 1 x 2.5 m **29**# and 1 x 4m 26#	13 Cr 80	Fox B	Fox P
7.676	6.184	117.67		48.11		7" Tubing 11 joints 26# + 1 joint 29#	13 Cr 80	Fox B	Fox P
7.676	6.276	1.89		165.78		7" 26# Pup Joint	13 Cr 80	Fox B	Fox P
7.676	6.246	1.42		167.67	SA12	Flow Coupling (13Chr L80)	13 Cr 80	Fox B	Fox P
9.350	5.875	3.35		169.09		Halliburton 7" SP-2 SSSV w/ 5.875" RPT Profile	13 Cr 80	Fox B	Fox P
7.656	6.276	1.88		172.44		7" Pup Joint	13 Cr 80	Fox B	Fox P
7.656	6.276	2337.52		174.32		7" Tubing - 245 joints	13 Cr 80	Fox B	Fox P
7.656	6.276	3.87		2511.84		7" Pup Joint	13 Cr 80	Fox B	Fox P
7.676	6.246	1.42		2515.71	SA11A	7" Flow Coupling (13Chr L80)	13 Cr 80	Fox B	Fox P
7.676	4.408	0.49		2517.13		Crossover, 7" x 5" (2425mVDRT, ~23.9deg Dev)	13 Cr 80	Fox B	Fox P
5.563	4.408	1.88		2517.62		5" Pup Joint	13 Cr 80	Fox B	Fox P
5.563	4.408	1.89		2519.50		5" Pup Joint	13 Cr 80	Fox B	Fox P
8.300	4.408	5.38		2521.39	SA14B	5-1/2" Halliburton PBR c/w x-overs to 5" : 0.71 open	13 Cr 80	Fox B	Fox P
5.563	4.408	1.88		2526.77		5" Pup Joint	13 Cr 80	Fox B	Fox P
5.563	4.408	57.61		2528.65		5" Tubing - 6 Joints	13 Cr 80	Fox B	Fox P
5.563	4.408	1.89		2586.26		5" Pup Joint	13 Cr 80	Fox B	Fox P
5.583	4.388	1.43		2588.15	SA8B	5" Flow Coupling (13Chr L80)	13 Cr 80	Fox B	Fox P
5.583	4.000	0.39		2589.58		Crossover, 5" x 4-1/2" (~24.5deg Dev)	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2589.97		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2591.86		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.600	3.813	1.35		2593.75	SA6B	4-1/2" Halliburton SSD x 3.813" XD(2495mVDRT)	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2595.10		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.720	3.920	1.74		2596.99		6-5/8" x 4-1/2" Halliburton AHR Packer: 120kips shear	13 Cr 80	Fox B	Fox P
5.000	4.000	1.79		2598.73		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2600.52		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.050	3.939	9.03		2602.41		4-1/2" Blast Joint (13Chr L80)	13 Cr 80	Fox B	Fox P
5.000	4.000	219.27		2611.44		4-1/2" Tubing - 23 Joints	13 Cr 80	Fox B	Fox P
5.000	4.000	1.78		2830.71		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.600	3.813	1.35		2832.49	SA6B	4-1/2" Halliburton SSD x 3.813" XD	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2833.84		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.720	3.920	1.74		2835.73		6-5/8" x 4-1/2" Halliburton AHR Packer: 120kips shear	13 Cr 80	Fox B	Fox P
5.000	4.000	1.78		2837.47		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.000	4.000	57.59		2839.25		4-1/2" Tubing - 6 Joints	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2896.84		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.050	3.939	18.06		2898.73		4-1/2" Blast Joints (13Chr L80) x 2	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2916.79		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2918.68		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.570	3.688	1.34		2920.57	SA5B	4-1/2" Halliburton SSD x 3.688" RD	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2921.91		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.720	3.920	1.74		2923.80		6-5/8" x 4-1/2" Halliburton AHR Packer: 120kips shear	13 Cr 80	Fox B	Fox P
5.000	4.000	0.89		2925.54		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.000	4.000	31.58		2926.43		4-1/2" Tubing - 3 Joints, 1 x 1m & 1 x 2m Pup Jts	13 Cr 80	Fox B	Fox P
5.050	3.939	18.07		2958.01		4-1/2" Blast Joints (13Chr L80) x 2	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2976.08		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2977.97		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.570	3.688	1.34		2979.86	SA4B	4-1/2" Halliburton SSD x 3.688" RD	13 Cr 80	Fox B	Fox P
5.000	4.000	1.90		2981.20		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
4.880	3.787	0.00		2983.10		4-1/2" x 4" Halliburton seal assembly: buried in packer	13 Cr 80	Fox B	Fox P
5.687	3.965	1.69		2983.10	SA3	6-5/8" x 4-1/2" Halliburton MWR Packer	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2984.79		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2986.68		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2988.57		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.600	3.688	1.34		2990.46	SA2B	4-1/2" Halliburton SSD x 3.688" RD	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2991.80		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.000	4.000	1.89		2993.70		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.570	3.688	1.79		2995.59		4-1/2" Pup Joint	13 Cr 80	Fox B	Fox P
5.000	4.000	0.44		2997.38	SA1B	4-1/2" Halliburton 3.688" RN Nipple(2864mVDRT)	13 Cr 80	Fox B	Fox P
4.882	3.456	1.89		2997.82		4-1/2" Pup Joint (w/W'ford Spring Bow Centr)	13 Cr 80	Fox B	Fox P
5.000	4.000	0.24		2999.71		Wireline Entry Guide	13 Cr 80	Fox B	1/2 Mule
				2999.95		**Tubing End (2866mVDRT, ~19.5 deg Dev)**			Shoe

Sea Level at 43.88mMDRT	**Tbg: 7" 26 & 29#/ft 13Chr L80 Fox**	Well Vertical to 1270mMD/VDRT
Mud Line at 124.88mMDRT	**Tbg: 5" 15#/ft 13Chr L80 Fox**	2.9deg/30m max build rate.
8.5" Hole 3235mMDRT, 3097mVDRT	**Tbg: 4.5" 11.6#/ft 13Chr L80 Fox**	End Build 1647mMDRT,1634mVDRT
Csg: 9 5/8" 43.5#/ft L80 Vam TOP	**Liner: 6 5/8" 24#/ft 13Chr L80 Fox, 5.85" Spec Drift ID**	Max Dev 25.7deg@2756mMDRT

* Collar ODs & nom. IDs used for tubing and pup joints

General Notes:	
9 5/8" Shoe 2586mMD	RTE (ENSCO 102) = 43.88m LAT
6 5/8"Shoe 3233mMD	7" Tbg 26# except as shown.
	8.9ppg NaCl Inhib Pkr Fluid

(1) 10 3/4" casing x/o @ 200.27 m MDRT(Btm)
(2) 9 5/8" shoe @ 2586.14m MDRT
(3) 6-5/8"TOL 2534m,PBTD 3194m,LC3207mMDRT.

Perforation Summary

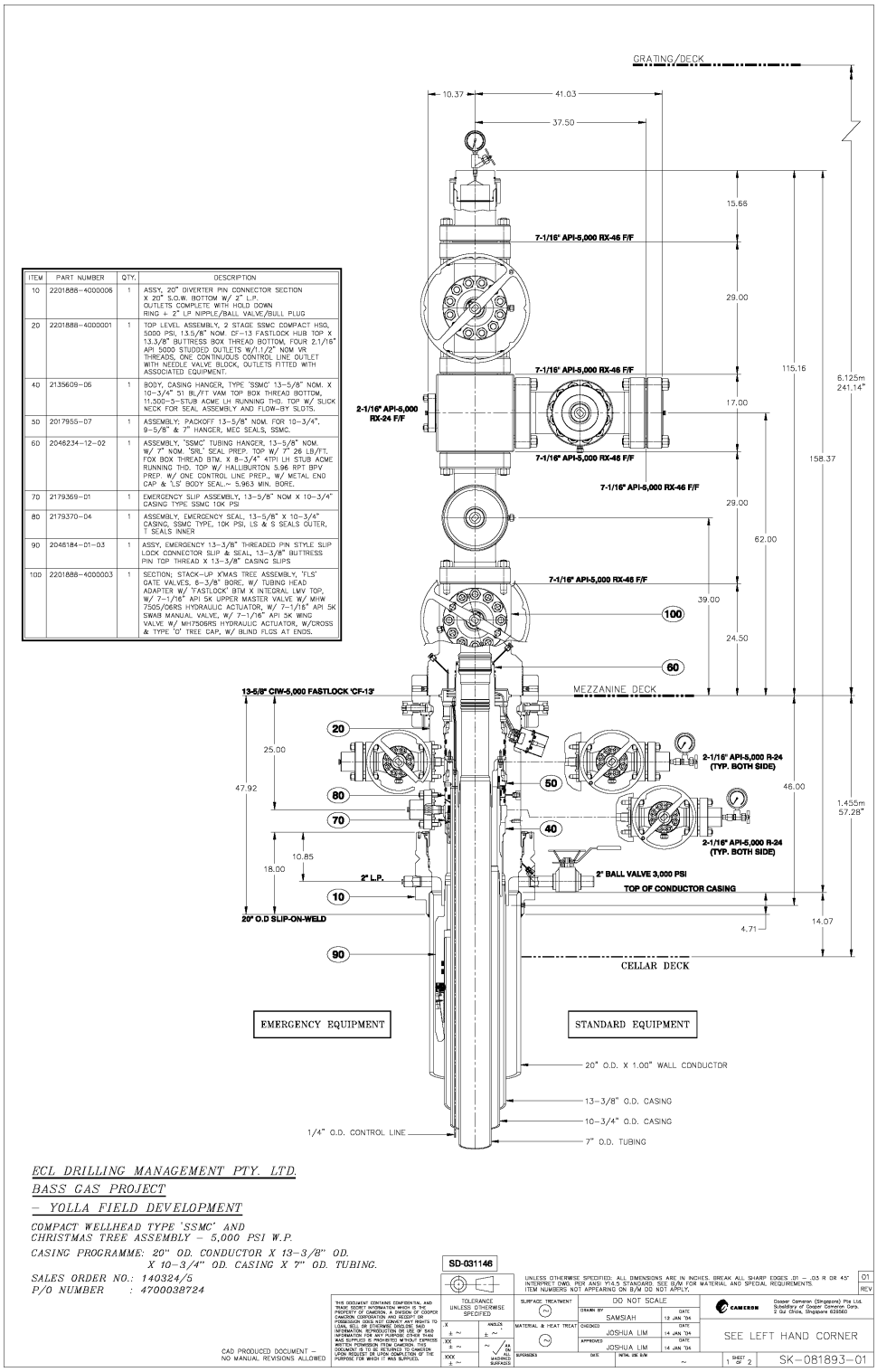
Sand	Interval and Gun / Charge Description
2458	2604 - 2610 : 4-1/2" 12 spf 45/135° UJ34JL HMX
2755	2902.5 - 2914 : 4-1/2" 12 spf 45/135° UJ34JL HMX
2809	2962.5 - 2973 : 4-1/2" 12 spf 45/135° UJ34JL HMX
2973	3149 - 3155 : 2-1/8" 6 spf 45° EnerjetPJ HMX
2973	3151.5 - 3157.5 : 2-1/8" 6 spf 45° EnerjetPJ HMX

Origin energy

Version: 2 / 05.09.04

Figure 4: Yolla 4 Downhole Tubing Completion Schematic

Due to the highly corrosive nature of the gas in the well (~19% carbon dioxide), the production tubing and down hole completion equipment items were all made from 13 Chrome material, with key components (such as sealing surfaces in landing nipple, tubing hanger and sliding sleeve profiles) made from Inconel material. Elastomers were also specified according to the CO2 environment and the reasonably high well bore temperatures. The wellhead and production tree were also made from corrosion resistant materials, with Inconel also being used for critical areas such as in all wetted ring grooves and valve seats (Figures 5 and 6).



ITEM	PART NUMBER	QTY.	DESCRIPTION
10	2201888-4000006	1	ASSY, 20" DIVERTER PIN CONNECTOR SECTION X 20" S.O.W. BOTTOM W/ 2" L.P. OUTLETS COMPLETE WITH HOLD DOWN RING + 2" LP NIPPLE/BALL VALVE/BULL PLUG
20	2201888-4000001	1	TOP LEVEL ASSEMBLY, 2 STAGE SSMC COMPACT HSG, 5000 PSI, 13.5/8" NOM. CF-13 FASTLOCK HUB TOP X 13.3/8" BUTTRESS BOX THREAD BOTTOM, FOUR 2.1/16" API 5000 STUDDED OUTLETS W/1.1/2" NOM VR THREADS, ONE CONTINUOUS CONTROL LINE OUTLET WITH NEEDLE VALVE BLOCK, OUTLETS FITTED WITH ASSOCIATED EQUIPMENT.
40	2135609-06	1	BODY, CASING HANGER, TYPE 'SSMC' 13-5/8" NOM. X 10-3/4" 51 #/FT VAM TOP BOX THREAD BOTTOM, 11.500-5-STUB ACME LH RUNNING THD. TOP W/ SLICK NECK FOR SEAL ASSEMBLY AND FLOW-BY SLOTS.
50	2017955-07	1	ASSEMBLY; PACKOFF 13-5/8" NOM. FOR 10-3/4". 9-5/8" & 7" HANGER, MEC SEALS, SSMC.
60	2046234-12-02	1	ASSEMBLY, "SSMC" TUBING HANGER, 13-5/8" NOM. W/ 7" NOM. "SRL" SEAL PREP. TOP W/ 7" 26 LB/FT, FOX BOX THREAD BTM. X 8-3/4" 4TPI LH STUB ACME RUNNING THD. TOP W/ HALLIBURTON 5.96 RPT BPV PREP. W/ ONE CONTROL LINE PREP., W/ METAL END CAP & 'LS' BODY SEAL– 5.963 MIN. BORE.
70	2179369-01	1	EMERGENCY SLIP ASSEMBLY, 13-5/8" NOM X 10-3/4" CASING TYPE SSMC 10K PSI
80	2179370-04	1	ASSEMBLY, EMERGENCY SEAL, 13-5/8" X 10-3/4" CASING, SSMC TYPE, 10K PSI, LS & S SEALS OUTER, T SEALS INNER
90	2046184-01-03	1	ASSY, EMERGENCY 13-3/8" THREADED PIN STYLE SLIP LOCK CONNECTOR SLIP & SEAL, 13-3/8" BUTTRESS PIN TOP THREAD X 13-3/8" CASING SLIPS
100	2201888-4000003	1	SECTION; STACK-UP X'MAS TREE ASSEMBLY, 'TLS' GATE VALVES, 6-3/8" BORE, W/ TUBING HEAD ADAPTER W/ 'FASTLOCK' BTM X INTEGRAL LMV TOP, W/ 7-1/16" API 5K UPPER MASTER VALVE W/ MHW 7505/06RS HYDRAULIC ACTUATOR, W/ 7-1/16" API 5K SWAB MANUAL VALVE, W/ 7-1/16" API 5K WING VALVE W/ MH7506RS HYDRAULIC ACTUATOR, W/CROSS & TYPE 'D' TREE CAP, W/ BLIND FLGS AT ENDS.

Figure 5: Yolla 4 Wellhead and Christmas Tree Schematic

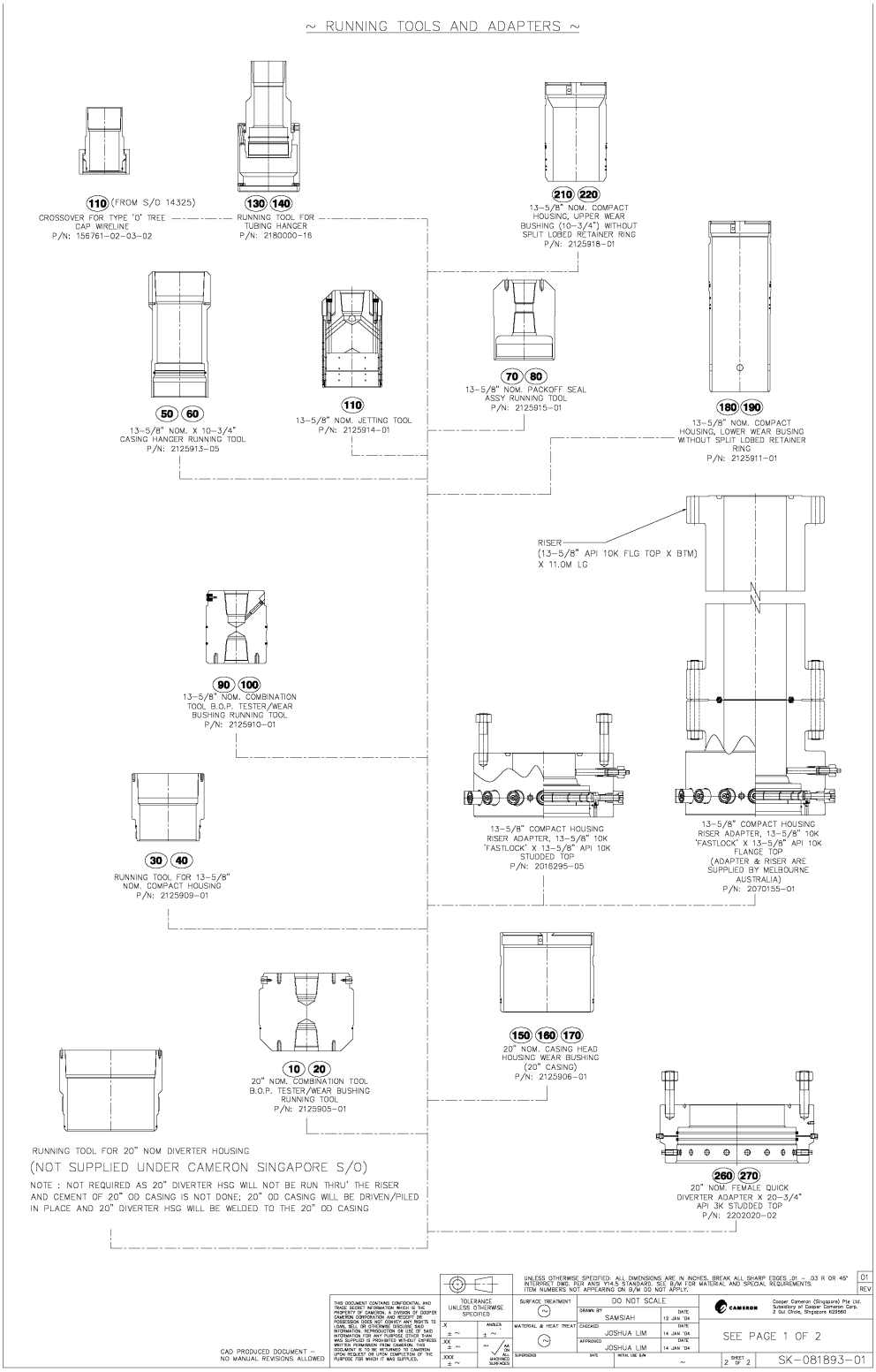


Figure 6: Yolla 4 Running Tools and Adaptors Schematic

2.1.8 Production Testing the Well

Rental production testing equipment was loaded onto the rig as soon as the rig decks were clear of the production tubing equipment, thus ensuring against delays in offloading the boats during inclement weather. Aside from two king posts and most of a deluge system, the rig was not equipped with any existing testing equipment or piping, so all such equipment had to be transported to the rig and rigged up. Two flare booms were installed and hooked up with temporary piping. Reservoir engineers deemed the well to be close to being in a hydrate forming range of temperatures and pressures, therefore a steam generator and heat exchanger were also rigged up.

The initial plan to simultaneously flow all existing perforations during a single clean up flow period failed when the zones did not immediately demonstrate flow. The perforations were deemed to be plugged with salt, so the bottom zone in the well was perforated under-balanced and flowed to further reduce the hydrostatic head inside the tubing string. The other zones were then individually commingled with flow from the bottom zone in an attempt to get the other zones to flow and to remove any debris/salt that may have initially prevented flow. The clean up flow periods were very short (~2 hours) and since the bottom zone flowed at high pressures and rates, these flow periods may have been only marginally successful. However, once the bottom zone was isolated by a wire line plug, the other three zones individually showed no hesitation in flowing.

Each zone was production tested with bottom hole pressure and temperature gauges in the well. The maximum static bottom hole temperature recorded was 148.5deg C with the gauges hanging in the "RN" nipple at approximately 2997mMDRT (2864mVDRT or 2821mVDSS). Extrapolated, this projects a static temperature of approximately 157.1deg C at the Gas Water Contact (GWC) in the bottom zone at 2977mVDSS.

2.1.9 Retesting of Well

Although the well pre-drill plan assumed the 13 3/8" casing stings would be batch set before drilling to TD in Yolla 4, the late arrival of the rig and platform caused the Joint Venture owners to elect to drill and complete the Yolla 4 well and put the well on production as soon as possible. As such, the Yolla 4 well had to be plugged down hole in case drilling in the near by Yolla 3 well intersected the Yolla 4 well below the SSSV. The down hole isolation encountered problems when a leak of unknown location allowed formation pressure to enter the tubing string. Rather than spend rig time in trying to locate and isolate the leak, the decision was made to set a second blanking plug in the tubing string above the top packer. This activity also encountered problems, but was eventually successful in isolating the well.

Once the Yolla 3 well had been drilled, completed and production tested, the rig was skidded back to Yolla 4 (on 30 September, 2004) to pull the top isolation plug, run a production log (to locate the source of the leak), repair the leak and run a second production test on the 2809 sand to collect more representative produced samples.

The leak was located in the blanking plug set in the RN nipple (internal cut o-ring). The production test was successfully performed and the rig was released from the well at 1000Hrs 2 October, 2004.

2.1.10 Rig Demobilisation

Rig demobilisation began with the rig down of all the production testing equipment on the rig, including the two flare booms since ENSCO would not allow the rig to move with them in place. All drill pipe and drill collars in the derrick also had to be laid down.

Although weather conditions were good at the time, by the time the boats returned to the rig and the rig was ready to jack down, weather conditions deteriorated and prevented the beginning of any such jacking for approximately 3.5 days. Once started, jacking operations also encountered problems in that the suction seal below the spud cans was extremely difficult to break. Pump rates above and below the cans were intentionally kept below a predetermined minimum due to fears at the time that excessive rates might fracture the formation around the cans and possibly disturb the sea bed seal of the platform's non-piled foundation. The washing and jacking operations took nearly 3 days, but no damage or disturbance was observed around the foundation of the platform. The weather caused a second approximately 3.5 day interruption near the end of jacking operations, but the marginal sea conditions at the end of the severe weather also seemed to help free the legs. The rig eventually came afloat and was under tight tow 1 nautical mile from the Yolla platform at 2200Hrs 16 October, 2004 en-route to the Trefoil 1 well location.

2.2 TIME ANALYSIS

The jack up rig ENSCO 102 came on hire at 1730Hrs 6 June, 2004 (when the rig reached a point 1 nautical mile from the Yolla platform) and departed the Yolla platform 3172.50 hours (132.19 days) later at 2200Hrs 16 October, 2004 (again once the rig reached a point 1 nautical mile from the platform). During the ensuing time, 138.5 hours (5.77 days) were spent positioning and preparing the rig to drill, 1393.5 hours (58.06 days) were spent drilling and completing the Yolla 4 well, 1292.5 hours (53.85 days) were spent drilling and completing the Yolla 3 well and 348 hours (14.5 days) were spent rigging down and demobilising the rig from the platform. No time is included in the above figures for mobilising the rig to Australia or to the Yolla field.

Of the 5.77 days spent mobilising the rig, 3.74 days were spent on planned activities (very close to the 3.5 days estimated). The additional time was spent conducting repeated preloading operations on the legs due to the weaker than predicted sea bed soils and half a day was spent waiting on weather.

Of the 14.5 days spent demobilising the rig, 2.66 days were spent conducting planned operations, which is substantially more than the 1 day predicted. The difference is largely due to activities being logged as productive when a different interpretation could log them as waiting on weather. Considerable time was also spent rigging down the large quantities of DST equipment (which was in use until the very last well activity) and the associated time require to wait on the return of boats and the subsequent tie-down of late arriving material. A further 2.24 days of trouble time were spent conducting repeated leg pulling operations and another 6.85 days were clearly spent waiting on weather. A total of 2.74 days were also coded as unplanned time, most of which was spent laying down all the many drill string components in the derrick on the critical path, offloading equipment from a work boat and changing out the rig's large drill line spool.

Of the 58.06 days spent on the Yolla 4 well, 37.48 days were spent on planned activities, which is very close to the 38.55 days predicted. However, since the 38.55 day figure includes an assumed 15% Non Productive Time (NPT) component, the actual (productive only) time ran over the predicted minimum time by approximately 3.96 days. This difference is largely due to the rig picking up, running and laying down tubular items much slower (approximately half the rate) than rigs without automatic pipe racking systems. The ENSCO 102 does not have a monkey board close to stand elevation in the derrick and is therefore unable to stand back or run stands in a conventional manner, short of having the derrick man abseiling on lines in the derrick. In particular, the making up and laying down of short or unconventional items was extremely slow. Although slow, the rig was also operated in a safe and methodical manner which prevented the occurrence of any injuries. Several planned bit trips were not required, but these time savings were offset by more and longer wiper trips and circulating times. Drilling rates of penetration were overall close to those predicted.

Well operations also encountered 1.80 days waiting on weather and 10.75 days of trouble time during planned operations. The trouble time included 2.3 days of hole and tool problems while logging, 1.3 days of recovery operations when the well initially failed to flow, 4.2 days of slick line fishing operations when a sliding side door (SSD) shifting tool got blown up the hole from a sleeve that was only partially open, 0.9 days of failed attempts to set a slick line blanking plug, 1.3 days of rig repairs (including ~0.5 days to change a failed annular BOP seal element) and approximately 0.4 days for miscellaneous small problems throughout the well.

Well operations also encountered 1.61 days of trouble time during unplanned operations, which included 0.7 days of difficulty trying to set a second blanking plug in the well and 0.9 days locating and resolving a leak in the tubing string (leak was inside the first blanking plug in the well).

Well operations also included 4.15 days of unplanned operations, which included half a day to drill out the stage collar and shoe track with a tri cone bit (to avoid possible problems drilling these items with a PDC bit), 0.5 days to retest the 2809 sand, 0.8 days to set and retrieve a second blanking plug in the tubing (due to JV decision to not batch set 13 3/8" casing), 0.6 days to set and retrieve a surface HE3 isolation plug (due to a late change in well completion procedures), 0.4 days of unexpected procedures required by ENSCO policy and 0.5 days of miscellaneous smaller activities spread throughout the well.

A detailed breakdown of the above activities can be found in Table 1 and a histogram of the time breakdown for each activity is displayed in Figure 7.

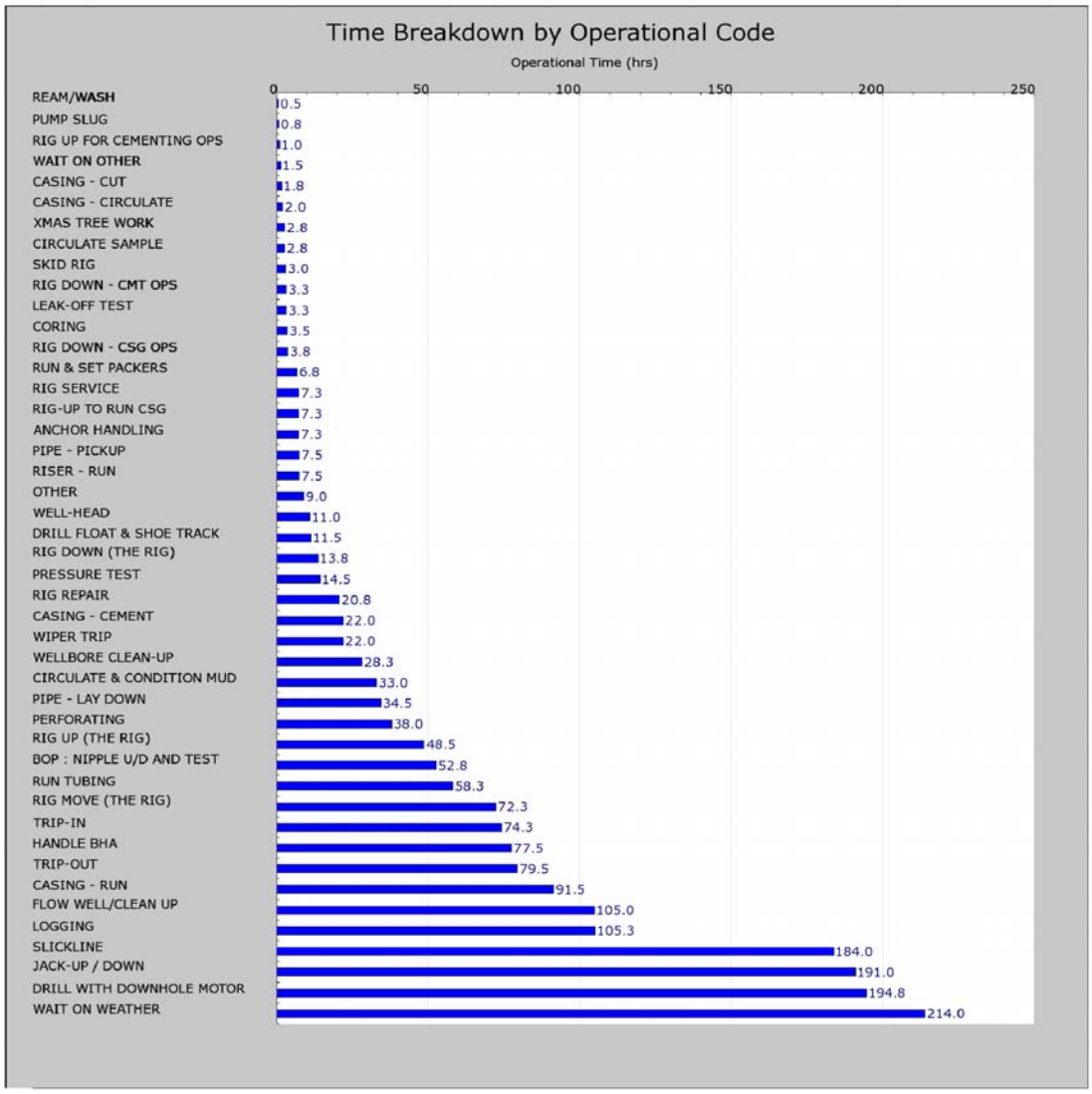


Figure 7: Yolla 4 Time Breakdown by Operation

WELL PHASE	ACTUAL TOTAL HOURS	ACTUAL PHASE HOURS	ACTUAL TOTAL DAYS	ACTUAL PHASE DAYS	DAYS ALLOWED IN AFE	DAYS OVER AFE	PHASE CODE	COMMENTS
RIG MOBILISATION: From rig arrival 1 nautical mile from Yolla Platform.	138.50	89.75	5.77	3.74	5.50	0.27	P	The 3.85 actual days is reasonably close to AFE 3.5days estimated for productive operations.
		37.00		1.54			TP (No WOW)	Conducted 5 preload cycles per leg (vs 1 cycle planned) and penetrated sea bed ~10m deeper than anticpitated due to soils being much weaker than predicted by soil cores & penetrometer tests.
		11.75		0.49			TP (WOW)	5.5 AFE days included 2.0 days WOW. Spent 8.5hr WOW while jacking and 3.5hr WOW during prespud activities.
		0.00		0.00			TU	No comment.
		0.00		0.00			U	No comment.
RIG DEMOBILISATION: From end of Y4 well until rig 1 nautical mile from Yolla Platform.	348.00	63.75	14.50	2.66	3.00	11.50	P	AFE estimated 1.0 day wo/WOW. 1.7 day overrun largely due to operations being coded as productive when in fact rig could not jack due to severe weather and the loading, offloading and waiting for supply boat. AFE assumed rig could be moved with most DST equipment and flare booms installed, but ENSCO policies prohibited same which forced extra boat trip. AFE may have also underestimated time required for ENSCO 102 to be secured for rig move, but difficult to establish extent of difference.
		53.75		2.24			TP (No WOW)	Conducted numerous jetting cycles to free legs. Jetting rates intentionally held low due to weaker than predicted soils which in turn increased depth/burial of spud cans and concern of washing out seal around platform's foundation.
		164.50		6.85			TP (WOW)	AFE included/assumed 2.0 days WOW. Actually spent 6.85 days WOW with possibly more depending on a stricter interpretation of activies/codes (see above).
		0.00		0.00			TU	No comment.
		65.75		2.74			U	Most unplanned time (~34 hrs) spent laying down drill pipe and BHA componenets on critical path (vs planned use of fox hole) and (~15hr) offloading boat. Remainder spent waiting on boat and unanticipated changing of ENSCO drill line spool.
YOLLA 4 WELL: Includes all drilling and completion operations, including return to well for tubing leak and repeated production test.	1,393.50	899.50	58.06	37.48	38.55	19.51	P	38.55d includes 33.52d productive + 15% (5.03d) NPT but 37.48d includes 0 NPT. Extra 3.96d primarily due to rig taking much longer to run/pull pipe and longer rig up times. Picking up pipe/casing took ~2x as long as rigs without automatic pipe racking systems. Operations often slower due to sever weather. Drilling ROP's close to predicted, but budgeted bit trips not needed. Wiper trips took longer due to tight hole problems. Although slower, rig was operated in a very safe manner in winter conditions with no LTI's recorded.
		312.50		13.02			TP (No WOW)	Includes 0.5d repeat log run due to bridge in hole, 1d wiper tip due to logging bridge, 0.8d logging tool failures, 0.3d extra hole cleaning after logging, 1.3d extra operations due to well not flowing, 4.2d retrieve stuck SSD opening tool, 0.9d trouble setting isolation plug above bottom zone, 1.3d rig repairs (includes 11hr to change annular BOP, 4.5h elevator repair & 15.75h for 12 small repair incidents) & 0.4d misc small delays spead throughout well.
		43.25		1.80			TP (WOW)	In addition to time shown, weather also slowed opeerations coded as productive. Well AFE did not assume well would be drilled in mid winter.
		38.75		1.61			TU	Includes 0.7d trouble setting WL plug to isolate well (due to JV decision not to batch set 13 3/8" csg) & 0.9d locating leak & replacing leaking plug (plug not anticipated).
		99.50		4.15			U	Includes 0.5d special trip to drill stage collar & shoe track, 0.2d ENSCO requirement to change to 9 5/8" casing BOP rams, 0.2d extra wiper trip, 0.2d to add & MU new tools to liner clean out assembly, 0.2d MU & use shooting nipple, 0.2d gauge run, 0.3d run & pull HE3 plug, 0.3d extra perf run, 0.2d longer flow period, 0.3d isolate + .5d de-isolate well (due to non-batch setting of 13 3/8" csg), 0.5d return & retest 2809 sand and ~0.5d misc small activites spread throughout well.

Table 1: Yolla 4 Well Time Breakdown Analysis (including Rig Mob and Demob)

2.3 CONCLUSIONS & RECOMMENDATIONS

2.3.1 Rig Mobilisation

Soil conditions at the platform were found to be considerably weaker than core samples indicated. The weaker soils resulted in the rig spud cans penetrating the soils approximately twice as deep as predicted and in the spud cans "punching through" two thin higher strength sandy layers. Soil experts are still investigating the reason why actual soil strengths proved to be much weaker than penetrometer testing predicted, but future jacking operations at the site should be informed of the punch through conditions and deeper then anticipated spud can penetrations. Although unsubstantiated, the removal of the points from the spud cans (removed by ENSCO for loading the rig on the dry tow vessel) has been raised as a possible explanation as to why the spud cans punched through the two sandy layers in such a sudden manner.

2.3.2 Weather Down Time

Future operations should recognize and appreciate the occasional adverse weather conditions of the area, particularly during the early stages of a well when large

quantities of equipment and materials are frequently needing to be handled offshore. Sea states inside the Bass Strait never reach the enormous sea states seen just outside the Bass Strait, but are never the less severe enough to prevent safe rig jacking and boat loading/offloading operations. Wind velocity also shut down crane operations and/or slowed normal equipment handling operations on the rig. The severe weather systems proved to last approximately 1 to 3 days and generally returned on a more or less weekly cycle. This was also borne out by a wave riding buoy which had been anchored at the platform location for a number of months prior to platform installation.

2.3.3 Conductor Driving & Support

The soft soil conditions at the platform made driving conditions very easy, but highlighted the fact that the conductors need to be supported in some other manner. Cementing the 13 3/8" casing inside and below the conductor shoe should again be considered for future wells since the procedure and cementing did not cause or encounter any problems. The use of ports in the conductor may have contributed to the success of placing a full column of cement across the 20" shoe, in addition to perhaps avoiding unstable hole conditions during the drilling of the 16" hole. Driving the conductors to refusal does not appear to be a workable solution because refusal point would be difficult to pick and could be at a very deep depth. Due to the nature of the soils to lose their strength during cyclic loading, refusal may also not guarantee that the conductors might subside at a later date, even if initially driven to refusal.

2.3.4 Mud Selection

Aside from the apparent gradual bio-degeneration of the mud at total depth (which should be preventable with the addition of biocides) and which probably contributed to a build up of low gravity solids, the Drispac/Soltex mud system performed very well. More details can be found in AppendiX 18 which contains the mud engineer's reports.

The viscosity of the mud was extremely high during the initial stages of drilling the 12.25" hole section, but this viscosity never created any real problems aside from the loss of mud over the shale shakers. Some build up of fines may have occurred during this time because coarse screens were used on the shakers to minimize mud losses, but this would have also been counteracted by the need to build new solids free mud. The large concentration of Drispac regular in the mud may have also stabilized the reactive clays of the Angahook in Yolla 4, since that formation proved to be far more sticky any problematic in the subsequent Yolla 3 well which had considerably less Drispac R & also less overall polymer (Drispac SL).

The bio-degeneration of the mud may also explain the observance of up to 40PPM H2S from the reservoir during production testing of the well, since the mud created considerable H2S smell in the mud pit room on the rig. The mud was eventually dumped and new mud built for Yolla 3 because of this problem.

2.3.5 Completion Fluid

Major changes in procedure were initiated when the well failed to demonstrate substantial flow with an approximately 650 psi under-balanced condition with diesel in the tubing above the top packer. Although the well was left open to flow for only 2 hours at the time, the failure of a stronger flow was deemed to be the result of salt particles plugging the perforation tunnels. Only approximately 1 barrel or less of completion fluid was lost to the formation when the top three zones were perforated overbalanced, so the super-saturated sized salt perforating fluid performed as intended to prevent flow into the formation. However, additional salt may have been packed into the perforation tunnels a day or so after perforating

because that was when the gelling polymers in the fluid would have started to break down due to the high bottom hole temperatures in the well. This agrees with the observed loss of completion fluid to the formation (3 to 4 barrels per hour) several days after perforating, with the losses gradually decreasing during the following day.

2.3.6 Bit Selection

Previous wells had used PDC bits, but none were able to drill an entire hole section. Improvements in bit design since that time allowed the well to be drilled with only one bit in each hole section (Table 2), although the 8.5" hole section had several cores which in turn allowed the changing of bits. One of those bits failed prematurely, but that was due to poor manufacturing and not due to wear on the bit.

Date In Year: 2004 DD/MM	Date Out Year: 2004 DD/MM	IADC	Bit #	Size (in)	Serial #	Manufacturer	Type	Jets	TFA	Depth In (m)	Depth Out (m)	Progress (m)	Hrs IADC	ROP (ft/hr)	SPP (psi)	Flow (gpm)	WOB (klb)	RPM	MW (sg)	I	O1	D	L	B	G	O2	R
18/06	20/06	115	1	16.00	6023745	Hughes	MX1	3x24	1.325	124	900	776	30.8	25.19	2300	936	20	80	1.05	2	2	BU	A	E	I	NO	TD
24/06	25/06	216	2	12.25	6010776	Hughes	ATJ-G8	3x24	1.325	900	905	5	0.3	16.67	1500	795	25	60	1.06	1	1	WT	H1	E	I	NO	TD
25/06	02/07		3	12.25	7003138	Hughes	HCM506	6x18	1.491	905	2614	1709	113.5	15.06	4002	850	18	75	1.09	1	1	NO	A	X	I	NO	TD
05/07	07/07		4	8.50	7104781	Hughes	HCM505	2x16 3x18	1.138	2614	2892	278	20.3	13.69	3088	550	13	70	1.10	1	1	WT	N	X	I	RO	CP
07/07	08/07		5	8.50	7000743	Security-DBS	CD93		0	2892	2919	27	2.0	13.5	560	250	30	120	1.10	1	1	WT	A	X	I	NO	TD
09/07	10/07		5RR1	8.50	7000743	Security-DBS	CD93		0	2958	2985	27	1.0	27	580	230	6	90	1.10	1	1	WT	A	X	I	NO	TD
08/07	09/07		6	8.50	609940	BBL	BB650XA	2x16 4x18	1.38	2919	2958	39	4.5	8.67	3300	550	8	70	1.10	1	1	LT	S	X	I	NO	CP
10/07	12/07		7	8.50	206589	Reed	DSX173DG	3x16 3x18	1.335	2985	3235	250	19.3	12.95	3380	552	12	90	1.10	1	1	CT	G	X	I	NO	TD
12/07	13/07	517	8	8.50	6024400	Hughes	MX 20	3x24	1.325	3235	3235	0	0		0	0			1.10	1	1	NO	A	E	I	NO	TD
17/07	18/07	517	8RR1	8.50	6024400	Hughes	MX 20	3x24	1.325	3235	3235	0	0		0	0			1.11	1	1	NO	A	E	I	NO	TD
20/07	22/07		9	5.75	W19JM	Hughes	STR 1		0	3235	3235	0	0		0	0			1.02	1	1	WT	A	E	I	NO	TD
23/07	24/07		9RR1	5.75	W19JM	Hughes	STR 1		0	3235	3235	0	0		0	0			1.03	1	1	WT	A	E	I	NO	TD

Table 2: Yolla 4 Bit Record

2.3.7 Directional Drilling

No problems were encountered directionally drilling the well, but the limber rotational/directional bottom hole assembly did prove to be too limber to wipe out all ledges. This was discovered when the first logging run in the 8.5" hole section failed to reach TD. After wiping the hole with a stiff bottom hole assembly, no further ledges or hold up of logging tools was observed.

2.3.8 Coring

Two 27m long cores were cut with 100% recovery, which indicates that consideration can potentially be given to cutting longer cores in the same formations if additional core is ever required.

2.3.9 Rig Operations

The rig operated under a strict safety case regime which no doubt contributed to the well being drilled without any lost time injuries. However, this in turn appears to delay operations and should be considered when preparing future cost and time estimates. The rig was also observed to be slow in making up unusual tubular assemblies and in the picking up and running of casing and tubing, but this was in turn deemed to be due to the rig having a highly automated pipe racking system (which ran casing and tubing at approximately half the rate observed by manual rigs).

2.3.10 Slick Line Procedures

Approximately 80 hours of rig time were spent fishing for a sleeve shifting tool which got blown up the hole while opening the sliding sleeve for the 2809 sand. The sleeve had been opened a few hours earlier and the 2809 sand had been flowed to displace the waxy crude still in the tubing from the production test on the 2458 sand. However, once the waxy crude had been flowed from the well, the production rate from the 2809 sand appeared to be very low. Due to this modest production rate a second slick line run was made to verify that the sleeve for the 2809 sand was in the fully open position. Due to the belief that the sleeve was at least partially open and therefore equalized, jarring on the sleeve began without normal precautions being taken to avoid being blown up the hole. Once jarring began the surface pressure in the well suddenly rose by approximately 460 psi which in turn blew the shifting tool up the hole where it got stuck in the sliding sleeve for the 2458 sand. The shifting tool and wire were all recovered, but the actual cause of the pressure build up across the sleeve has never been firmly established. The sleeve had certainly been open enough to lift the waxy crude from the well, but it is unknown whether the sleeve was still in the equalizing position or partially plugged with debris or salt. Formal procedures were subsequently put in place to follow strict sleeve opening procedures in the future, even when sleeves are thought to be open and pressure equalized. The procedure also calls for periods of waiting between each blow on the shifting tool.

Problems were also experienced in getting a blanking plug to reach and set in the bottom most plug profile in the well (RN nipple). The plug was eventually set, but not until the seal stack packing on the plug had been sanded down slightly (also removing sharp edges on the seals) so it would pass more easily through the many plug profiles above the RN nipple. Although approximately half of the sleeve profiles were ordered and manufactured with a slightly larger ID to minimize this potential problem, the seal stacks still had to pass through a number of the smaller seal profiles which in turn may have caused slight damage or swelling of the seals so they would not properly enter the final seal bore. Some swelling of the seals may have also occurred due to the high temperature carbon dioxide laden environment

near the bottom of the well, but the seals were also designed for such an environment.

The same plug that was difficult to set in the RN nipple also started to leak at the end of well operations. The plug was later recovered and proved to be leaking due to the unexplained failure of an internal o-ring seal. The previously "sanded down" external seals proved to be intact and did not leak, so the practice of sanding down the external seals on deep set plugs may continue to be considered in future.

Additional slick line operations were also required to isolate all production from the well due to a change in drilling plans for the adjacent Yolla 3 well. Initial planning for the field assume that 13 3/8" casing would be batch set in both wells at the start of the drilling campaign, but due to the urgency to get one well in production mode as soon as possible, the Joint Venture partners elected to forego batch drilling. This then meant that to safely drill the top hole section in Yolla 3, down hole barriers had to be set in Yolla 4 in case the bit penetrated the Yolla 4 well bore. Future operations should again consider the merits of batch drilling.

2.3.11 Waxy Crude

The discovery of producible hydrocarbons in the 2458 sand was not anticipated, so the zone was perforated and isolated with its own packer and sliding sleeve as part of the permanent completion of the well. However, production testing showed that the zone produces a crude oil which has a very high pour point. Future production of the zone will therefore require careful planning and preparations, and may not be possible with only the existing processing equipment.

2.4 DAILY DRILLING OPERATIONS SUMMARY

#	Date	Depth	24 Hour Summary
1	06 Jun 2004	0m	Moved ENSCO 102 jack up rig to Yolla location using Ray J. Hope as only tow vessel (Invicible Tide following). Rig arrived 1 nautical mile from Yolla platform at 1730HRS 06June, 2004. Soft pinned rig on sea bed approximately 100m east of platform and commenced running anchors.
2	07 Jun 2004	0m	Completed anchor running. Commenced preloading rig.
3	08 Jun 2004	0m	Continued preloading operations.
4	09 Jun 2004	0m	Completed preload on port leg. Commenced preload on starboard leg.
5	10 Jun 2004	0m	Completed starboard leg preloading. Inspected all legs with ROV. Recovered all anchors and commenced preloading with 0.3 m (1 ft) draft.
6	11 Jun 2004	0m	Completed preloading. Jacked up to working height. Skidded rig over platform.
7	12 Jun 2004	0m	Skigged rig, installed access stairway to platform. Started well operations at 1200hrs. Ran 20"conductor to seabed.
8	13 Jun 2004	151.0m	Continued to rig up for drilling operations and continued to pick up drill pipe. Waited on weather, then picked up new drive sub mandrel and drove conductor to 151 m.
9	14 Jun 2004	169.0m	Drove conductor from 151 m to 169 m, waited on weather to continue programme (high winds preventing crane operations).
10	15 Jun 2004	218.0m	Drove 20" conductor from 169 m to 179 m, waited on weather (high winds), continued to drive conductor to 218 m.
11	16 Jun 2004	220.0m	Drove conductor to 220.27 m. Skid to Yolla 3 at 0700hrs.
12	17 Jun 2004	220.0m	Skidded rig from Yolla 3, commenced installing low pressure riser system. Waited on weather (high winds preventing crane operations).
13	18 Jun 2004	220.0m	Nippled up low pressure riser system. Picked up 16" BHA, spudded well, cleaned out conductor to 183 mAH / 183 m TVDRT.
14	19 Jun 2004	802.0m	Cleaned out conductor to 220 mRT / 220 mTVD. Drilled ahead 16" hole with controlled ROP to 802 mRT / 802 mTVD.
15	20 Jun 2004	900.0m	Drilled ahead 16" hole to section TD at 900 m MDRT / 900 m TVDRT. Displaced hole to high viscosity mud, performed check trip and POOH. Prepared to run 13 3/8" casing.
16	21 Jun 2004	900.0m	Ran 13 3/8" casing to 884.57mMDRT & VDRT, performed 1st stage cement job.
17	22 Jun 2004	900.0m	Displaced 1st stage cement job, performed 2nd stage cement job. Removed low pressure riser system. Commenced installation of high pressure riser and BOP system.
18	23 Jun 2004	900.0m	Installed BOP stack on high pressure riser. Changed out annular preventer element. Installed choke and kill lines to BOP.
19	24 Jun 2004	900.0m	Completed installation of BOP. RIH with 12 1/4" cleanout BHA. Drilled out stage collar plugs.
20	25 Jun 2004	905.0m	Drilled out 13.375 in shoetrack, conducted FIT and POOH. Made up new BHA and RIH.
21	26 Jun 2004	1285.0m	RIH directional 12.25 in BHA and drilled to 1285 mMD.
22	27 Jun 2004	1537.0m	Drilled directional 12.25 in hole from 1285 mMD to 1537 mMD.
23	28 Jun 2004	1870.0m	Drilled 12.25in hole from 1537 mMD to 1870 mMD.
24	29 Jun 2004	2363.0m	Drilled 12.25 in hole from 1870 mMD to 2363 mMD.
25	30 Jun 2004	2610.0m	Drilled 12.25 in hole from 2363 mMD to 2610 mMD.
26	01 Jul 2004	2614.0m	Drilled 12.25 in section to TD at 2614 mMDRT (2513 mTVDRT). POOH to shoe and conducted wiper trip back to TD. Commenced POOH from TD.
27	02 Jul 2004	2614.0m	POOH 12.25 in BHA. Jetted wellhead and BOP and tested BOP ram body. Rigged up to run 9.625/10.75 in casing and ran casing to 432 mMD.
28	03 Jul 2004	2614.0m	Ran 9.625/10.75 in casing to 2586.14 mMDRT. 2487.7mVDRT. Commenced cementing operations.
29	04 Jul 2004	2614.0m	Cemented 9.625/10.75 in casing string. Picked up 8.5 in BHA and commenced pressure testing BOP.
30	05 Jul 2004	2670.0m	Installed wearbushing and RIH 8.5in BHA. Conducted FIT and drilled ahead to 2670 mMD.
31	06 Jul 2004	2892.0m	Drilled 8.5 in hole to core point #1 at 2892 mMD. Commenced POOH.
32	07 Jul 2004	2892.0m	Replaced damaged section of drag chain. POOH 8.5 in BHA and RIH coring BHA to 2720 mMD.
33	08 Jul 2004	2919.0m	Cut core #1 from 2892 mMD to 2919 mMD. POOH, cut core into 1 m lengths and sent same to town. Made

			up 8.5 in BHA and RIH.
34	09 Jul 2004	2958.0m	Drilled 8.5 in hole to core point #2 at 2958 mMDRT (2828 mTVDRT). POOH BHA and RIH with coring BHA.
35	10 Jul 2004	2985.0m	Cut core #2 from 2958 mMD to 2985 mMD. POOH and cut core into 1 m sections. Loaded same onto Invincible Tide and sent to town. Made up 8.5 in BHA and RIH same.
36	11 Jul 2004	3235.0m	Drilled 8.5 in hole to TD at 3235 mMDRT (3097.2 mVDRT). POOH BHA to 3185 mMD.
37	12 Jul 2004	3235.0m	Performed wiper trip with 8 1/2" directional BHA. POOH. Commenced wire line logging programme. Unable to pass 2776 mMDRT / 2660 mTVDRT with toolstring #1. POOH and commenced wiper trip with 8 1/2" BHA.
38	13 Jul 2004	3235.0m	Performed 8 1/2" wiper trip, slipped and cut drill line.
39	14 Jul 2004	3235.0m	Perfomed wire line logging run #1 (PEX-HRLA-CMR-SP). Performed wire line logging run # 2 (FMI-DSI-ECS-HNGS). Commenced wire line logging run #3 (VSI).
40	15 Jul 2004	3235.0m	Performed wire line logging run #3 (VSI-GR), performed wire line logging run #4 (MDT-GR).
41	16 Jul 2004	3235.0m	Completed wire line logging run #4 (MDT-GR), commenced wire line logging run #5 (MSCT-GR).
42	17 Jul 2004	3235.0m	Completed wire line logging programme. RIH with 8 1/2" wiper trip BHA.
43	18 Jul 2004	3235.0m	Performed wiper trip (tight), commenced running 6 5/8" liner.
44	19 Jul 2004	3235.0m	Ran 6 5/'8" liner to 3233.34mMDRT (3098mVDRT).
45	20 Jul 2004	3235.0m	Cemented 6 5/8" liner. Pressure tested BOP.
46	21 Jul 2004	3235.0m	Pick up and run 3.5" DP and clean out BHA. Hit no resistance with bit reaching 3187mMDRT, polish mill tagged liner hanger PBR at 2534mMDRT. Circulate hole with wash pills and filtered sea water.
47	22 Jul 2004	3235.0m	Spotted NaCl supersturated sized salt pill frm 3185 to 2424mMDRT and 8.9ppg NaCl brine from 2424m to surface. POOH and ran CBL/USIT Combination Cement Bond Log. Rig up shooting nipple and first cased hole perforating gun assembly.
48	23 Jul 2004	3235.0m	Perforated 2809Sd from 2973 to 2962.5mEL, 2755Sd from 2914 to 2902.5mEL and 2458Sd from 2610 to 2604mEL depths using 4.5" 12SPF 45/135 34JLHMX charges. RIH with perforation burr clean up BHA with tandem Razorback Casing Scrapers.
49	24 Jul 2004	3235.0m	Completed scraper run across the perforations, performed 5 3/4" gauge ring electric line run across the perforations. Set permanent packer on electric line. Commenced running tubing completion string.
50	25 Jul 2004	3235.0m	Ran completion
51	26 Jul 2004	3235.0m	Ran tubing completion, set packers, spaced out, circulated annulus to inhibited packer fluid and tubing to diesel.
52	27 Jul 2004	3235.0m	Landed tubing, pressure test tubing and annulus, install HE3 surface plug, nipple down BOP, nipple up Xmas tree and start to rig up 7" riser.
53	28 Jul 2004	3235.0m	Rigged up welltest surface equipment and prepared to flow well. Opened up well, near zero flow after 2.75hr. Shut in well at surface and closed all down hole sleeves. Ran drift to RN nipple.
54	29 Jul 2004	3235.0m	Made up pressure gauges and took pressure readings at predetermined points. Perforated 6 m of 2973 sand 3149 to 3155mEL using 2 7/8" Enerjet thru tubing guns. Make up and run second gun assembly. Open well on 20/64" choke.
55	30 Jul 2004	3235.0m	Perforated another 6m in 2973Sd using thru tubing 2 7/8" 6SPF Enerjet guns from 3151.5 mEL to 3157.5 mEL. Install pressure gauges in RN nipple and production test 2973 sand for 8 hours. Opened sleeve for 2809 sand to clean up zone. Flowed well 0.75hr but flare not staying lit so shut in well and pumped diesel to surge tank.
56	31 Jul 2004	3235.0m	Closed sleeve for 2809Sd, opened sleeve for 2755Sd, flowed 2755 sand for 2 hours, closed sleeve for 2755SD, opened sleeve for 2458Sd, flowed 1hr 20min & closed sleeve for 2458Sd. Attempted to set isolation plug in RN nipple but plug sheared off running tool with plug opposite sliding sleeve immediately above RN nipple. Fishing for same.
57	01 Aug 2004	3235.0m	Recovered plug, redress, set and test isolation plug in RN profile. Opened sleeve for 2755Sd, flow well for a short period, ran gauges and start production testing 2755Sd.
58	02 Aug 2004	3235.0m	Finished 6hr flow test of 2755Sd. Closed 2755Sd and opened sleeve for 2458Sd. Flow tested 2458Sd for 4.25h but shut in due to very waxy crude production. Pumped diesel through surface piping and opened sleeve for 2809Sd. Flowed 1hr from both zones then closed 2458Sd. Flowed 2809Sd by itself for 2.25h but due to declining flow ran shifting tool to verify sleeve fully open. Shifting tool got blown up hole & stuck. Drop go devil but line not free. Wait on additional wire cutting tools.
59	03 Aug 2004	3235.0m	Received additional slick line equipment. Dropped second wire cutting Go Devil, but wire still not cut. Attempted to work stuck assembly with the well in static and flowing mode - unsuccessful. Slacked off & cut wire at surface. Made up blind box assembly.
60	04 Aug 2004	3235.0m	Tagged top of go-devil with blind box and jarred down on same to initiate wire cut. Whilst conducting wire fishing operations the slick line BOP started leaking - repaired same.
61	05 Aug 2004	3235.0m	Repaired BOP. Fished and recovered wire. RIH LIB (lead impression block) and tagged clean top of Go Devil

			fish.
62	06 Aug 2004	3235.0m	Recovered both Go Devis on individual runs. Top Go Devil had 5ft long piece of wire inside. Ran LIB and saw clean top to fish. Run fishing tool & recovered stuck shifting tool. Made wire clean out run and recoverd one piece of wire 20m long (1 x 5ft piece still unaccounted for). Made LIB run and saw clean top of pressure gauges. Ran shifting tool and confirmed 2809 sand SSD open. Commenced flowing well.
63	07 Aug 2004	3235.0m	Completed 7.75hr flow test of 2809 sand. Recovered gauges and shut SSD at 2980m (for 2809Sd). Flow still coming into tubing, so attempted to set plug in sleeve above top packer. Plug leaking. Recovered plug and ran wire brushes to clean tubing bore.
64	08 Aug 2004	3235.0m	Set suspension plug at 2594 m. Confirmed plug holding & bled well down to 0 psi. Closed SSSV and secured well. Rigged down test equipment. Rig started skidding to Yolla 3 well at 1230HRS 08August, 2004.
65	30 Sep 2004	3235.0m	Completed Yolla 3 well and started skidding to Yolla 4 well at 1000HRS 30September, 2004. Pulled plug and logged tubing with PLT assembly in an attempt to locate leak in tubing string.
66	01 Oct 2004	3235.0m	PLT indicated leak in tail pipe. Ran SSD closing tool to also ensure sleeves all closed. Pulled plug from RN nipple and found internal leak (cut o-ring) in plug. Replace plug. Open SSD at 2809 sd. Flowed well.
67	02 Oct 2004	3235.0m	Completed 6.5hr flow test & sample collecting program for 2809Sd. Shut in well. Rig down lubricator & riser. Well operations ceased at 1015HRS 02October, 2004. Commenced rig down for rig move. Laying down tubulars from derrick.
68	03 Oct 2004	3235.0m	Laid down tubulars from derrick while simultaneously rigging down and backloading production testing equipment.
69	04 Oct 2004	3235.0m	Traversed the rig to the centre line. Stowed the PCU. Prepared the rig to skid in the cantilever. Skidded the cantilever in 30 ft and stopped to prepare for change out of drill line spool. Prepared the rig for jacking down / rig move.
70	05 Oct 2004	3235.0m	Prepared rig and secured cargo for rig move. Changed out drill line spool during daylight hours. Loading Trefoil pre-spud gear onto rig. Spooling old drill line off draw works.
71	06 Oct 2004	3235.0m	Completed securing cargo etc. for rig move. Wait on weather window to move rig.
72	07 Oct 2004	3235.0m	Wait on weather window to jack down and move the rig.
73	08 Oct 2004	3235.0m	Wait on weather window to jack down and move rig.
74	09 Oct 2004	3235.0m	Prepared to jack down. Jacked down to 3ft air gap. Attached RJ Hope tow vessel and W.O.W.
75	10 Oct 2004	3235.0m	Jack down to 11 ft draft. Checked hull integrity. Jet / Pulled Bow leg free. Commenced pulling / jetting Port leg.
76	11 Oct 2004	3235.0m	Jet and pulled Port leg free to 64 ft penetration (13 ft). Begin jetting and pulling Stbd leg.
77	12 Oct 2004	3235.0m	Attempted to jet Stbd leg free. Stopped jetting. Jacked back up. Wait on weather.
78	13 Oct 2004	3235.0m	Wait on Weather to recommence jacking down and move.
79	14 Oct 2004	3235.0m	W.O.W. to jack down and move rig.
80	15 Oct 2004	3235.0m	Wait on weather to recommence jacking down and moving rig.
81	16 Oct 2004	3235.0m	WOW to jack down. Jacked down & pulled legs clear of sea bed. Moved off location at 22:00 hrs 16th Oct 2004

3. FORMATION SAMPLING & ANALYSIS

3.1 CUTTINGS

Cuttings were collected over the interval 900 – 3235mRT. The sampling intervals were as follows:

900 – 1300 mRT: 10 metre intervals
1300 – 1610 mRT: 5 metre intervals
1610 – 1720 mRT: 10 metre intervals
1720 – 2367 mRT: 6 to 9 metre intervals (sample variability due to variable ROP)
2367 – 3235 mRT: 3 to 9 metre intervals (sample variability due to variable ROP)

Cuttings were very poor during coring intervals and descriptions through these zones are generated from core chip descriptions and core logs (Appendix 3).

A detailed collection and distribution list for all ditch cutting samples collected from Yolla 4 is included in the Geoservices End of Well Report (Appendix 6).

Cuttings lithological descriptions are presented in Appendix 1. A complete set of Daily Geological Reports (which include cuttings descriptions summary) are included in Appendix 15.

3.2 SIDEWALL CORES

One run of rotary sidewall cores (MSCT) were cut in Yolla 4. Of the 20 cores attempted, only 8 were accepted. Cores cut are summarised in the Table 3 and detailed descriptions and photographs are supplied in Appendix 2.

Depth (mRT)	Core Acceptance	Reason Rejected
3159	rejected	mud
3158	rejected	mud
3157	rejected	mud
3159	accepted	
3158	accepted	
3157	rejected	mud
3156	rejected	mud
2604	accepted	
2605.5	accepted	
2606.5	accepted	
2608.2	accepted	
2609.5	accepted	
2612	accepted	
2614.5	rejected	mud
2868.5	rejected	mud
2871	rejected	empty
3006	rejected	empty
3007.5	rejected	empty
3149.5	rejected	mud
3151	rejected	mud

Table 3: Summary of Rotary Sidewall Cores cut in Yolla 4.

3.3 CONVENTIONAL CORES

Two cores were cut in Yolla 4. A summary of the cored intervals are included in Table 4 below. Detailed core lithology descriptions are in Appendix 3. Routine core analysis and core photographs are supplied in Appendix 4.

Core #	Interval (mMDRT)	Cut (m)	Rec (m)
1	2892.05 – 2919.60	27	27.55 (100%)
2	2958.07 – 2985.37	27	27.3 (100%)

Table 4: Summary of Conventional Cores cut in Yolla 4.

3.4 PALYNOLOGY

Fifteen cuttings samples were selected for palynological studies. These studies were undertaken by Morgan Palaeo Associates and the palynological basic data report and range charts are presented in Appendix 13. The sample depths selected for analysis are shown in Table 5.

Depth (mRT)	Palynology	Vitrinite Reflectance
920	NO	YES
1340	YES	YES
1405	YES	NO
1530	YES	YES
1746	YES	YES
1884	YES	NO
1902	YES	YES
2313	YES	YES
2331	YES	NO
2370	YES	NO
2574	YES	YES
2586	YES	NO
2625	YES	NO
2859	YES	YES
2925	YES	YES
3168	YES	YES

Table 5: Cuttings Sample depths at which Palynology and Vitrinite reflectance was undertaken.

3.5 GEOCHEMISTRY

Ten cuttings samples were selected for vitrinite reflectance (Vr) determination. Keiraville Konsultants undertook this analysis. The depths at which the Vr was determined are shown in Table 5. The results of this work are included in the interpretive volume of the Yolla 4 Well Completion report in Appendix 5.

One core sample, one oil sample and one gas sample were selected for geochemical analysis. The core sample was taken from core #1 at 2894mMD. The oil and gas samples were sourced from the MDT samples. The oil sample is from 2609.5mMD and the gas sample was taken from 3005.7mMD. All geochemical analysis is presented in the interpretive volume of the Yolla 4 Well Completion report in Appendix 6.

3.6 PETROLOGY

Four core plug off-cuts and 4 MSCT's were sent to Reservoir Solutions Pty Ltd for petrology, X-ray diffraction analysis (XRD) and scanning electron microscopy (SEM). The petrology undertaken includes modal analysis, grain size analysis and photomicroscopy. The samples analysed are shown below in Table 6. The Petrology results can be found in the interpretive volume of the Yolla 4 Well Completion report in Appendix 7.

Depth (mRT)	Sample Type	Sample #
2606.5	MSCT	MSCT 10
2608.2	MSCT	MSCT 11
2899.2	Core Plug	21
2904.22	Core Plug	40
2963.65	Core Plug	84
2981.4	Core Plug	143
3158	MSCT	MSCT 5
3159	MSCT	MSCT 4

Table 6: Sample depths at which Petrology, XRD and SEM was undertaken.

3.7 CORE ANALYSIS

Routine Core Analysis (RCA) and Special Core Analysis (SCAL) was performed by ACS Laboratories Pty Ltd. The RCA report is presented in Appendix 4. Special Core Analysis (SCAL) report is included in the interpretive volume of the Yolla 4 Well Completion report in Appendix 9.

4. FORMATION EVALUATION

4.1 MUDLOGGING

Mudlogging was provided by Geoservices Overseas SA over the interval 124 – 3235mRT. The Mudlogger's End of Well Report can be found in Appendix 6.

4.2 LOGGING WHILE DRILLING

Logging while drilling (LWD) services were provided by Sperry-Sun Drilling Services. The LWD comprised dual gamma ray (DGR) and four phase electromagnetic resistivity (EWR-P4) data. Sperry-Sun also provided a measurement while drilling (MWD) tool throughout the drilling of the well to collect directional data. A summary of each MWD run is shown in Table 7. Sperry-Sun provided an end-of well report detailing the LWD and MWD operations, which is presented in Appendix 7.

Hole Size (inches)	Interval (mMDRT)	MWD services	LWD services
16	220 - 900	DWD	none
12.25	905 – 2614	P4M-DIR-FE	DGR-EWR
8.5	2614 – 2892	P4M-DIR-FE	DGR-EWR
8.5	2892 – 2958	P4M-DIR-FE	DGR-EWR
8.5	2958 - 3235	P4M-DIR-FE	DGR-EWR

Table 7: Summary of LWD & MWD runs in Yolla 4.

4.3 WIRELINE LOGGING

The following wireline logs, shown in Table 8, were run at Yolla 4 by Schlumberger Oilfield Australia Pty Ltd. The Wireline Service Quality Report by Schlumberger is presented in Appendix 8.

Suite #	Run #	Log	Interval (mMDRT)
1	1	PEX-HRLA-CMR-SP-GR-LEHQT	2776 - 2542
1	2	PEX-HRLA-CMR-SP-GR-LEHQT	3235.5 - 2590
1	3	FMI-DSI-ECS-HNGS-LEHQT	3220 – 2590 (HNGS-DSI to 120)
1	4	VSI-GR-LEHQT	765 – 3225
1	5	MDT-CMR-GR-LEHQT	3206 – 2594
1	6	MSCT-GR-LEHQT	3159 - 2604
1	7	USIT-CBL-VDL-GR-CCL	3185 - 2546

Table 8: Wireline logs run in Yolla 4.

Suite	Run	Bit Size	Fluid Type	Density (lbm/gal)	Viscosity (s)	Fluid Loss (cm^3)	pH	RM @ measured Temp (ohm.m@^oC)	RMF @ measured Temp (ohm.m@^oC)	RMC @ measured Temp (ohm.m@^oC)
1	1-6	8 ½"	Sea Water Drispac Soltex	9.35	70	3.8	8.9	0.197 @22^oC	0.181 @21^oC	0.215 @19^oC

Table 9: Logging Parameters in Yolla 4.

Suite #	Run #	Maximum Recorded Temperature (^oC)	Bottom Hole Depth (mRT)	Time Circulation Stopped	Time Logger on bottom
1	1	111	2776	12/07/04 05:00	12/07/04 17:30
1	2	126	3235.5	13/07/04 18:00	14/07/04 04:30
1	3	133	3220	13/07/04 18:00	14/07/04 12:55
1	4	136	3225	13/07/04 18:00	15/07/04 01:45
1	5	146	3206	13/07/04 18:00	15/07/04 11:15
1	6	146	3159	13/07/04 18:00	17/07/04 04:00

Table 10: Temperature data recorded during wireline logging in Yolla 4.

4.4 HYDROCARBON INDICATIONS

Gas shows from cuttings are presented in Appendix 5 and fluorescence shows in cuttings, MSCT and core are detailed in Appendices 1, 2 and 3 respectively.

4.5 VELOCITY SURVEY

An offset VSI (Versatile Seismic Imager) was recorded by Schlumberger over the interval 765-3225mRT. 176 shots were recorded. Checkshot data and VSP charts are enclosed in Appendix 9.

5. FORMATION TESTING

5.1 MDT FORMATION PRESSURE TESTING & FLUID SAMPLING

The Yolla 4 MDT programme was conducted over the interval 2604.5 – 3174.7 mRT. A total of 6 samples were attempted, with all 6 samples successfully recovered. These samples were taken as follows: three oil samples from the 2458 sand, one gas from 2844 sand, one water sample for the 2458 sand and a water sample from the 2718 sand. In total 53 pre-tests performed. 35 pre-tests were valid, 4 were supercharged, 12 were tight tests and 2 lost seal to formation. A summary of the MDT data is included in Appendix 11.

5.2 PRODUCTION TESTING

The intervals perforated in Yolla-4 and their respective production test results are presented in Table 11.

Zone	Interval (mMD)	Flow Test Results
2458-EVCM Oil Zone	2604.0 – 2610.0	Oil to surface in 66 minutes. Approximate flow (estimated from choke pressure): 4,000 barrels per day of 32 degree API oil at 1500 psi on a 40/64" choke, accompanied by 3.4 million cubic feet per day (MMscfd) of solution gas.
2755 EVCM Gas Zone	2902.5 – 2914.0	32.3 MMscfd of gas + 561 barrels of condensate per day (bcpd) at 2789 psi on a 52/64" choke.
2809 EVCM Gas Zone	2962.5 – 2973.0	32.2 MMscfd of gas + 800 barrels of condensate per day (bcpd) at 2850 psi on a 52/64" choke.
2973 EVCM Gas Zone	3149.0 – 3157.5	27.2 MMscfd of gas + 297 bcpd at 2810 psi on a 44/64" choke.

Notes:

1. *Gas flow rates were controlled to remain within the constraints of the rig's test equipment and to provide suitable conditions for sampling, and do not reflect maximum zone deliverability.*
2. *Condensate rates reported above are from the separator which is operating at elevated temperature and pressure. Actual condensate content of the gas, and condensate yields during production, will be higher than these levels.*

Table 11: Production Test Intervals and Results in Yolla 4.

The following production test reports are included in Appendix 20:

A. Surface data – Schlumberger Report
B. Subsurface data – Halliburton Report

Fluid samples including pressurised gas and condensate, stock tank condensate and water samples were taken during production tests. These samples have been analysed by Petrolab and Amdel. The results are presented in Appendix 19 which includes the following data:

A. Petrolab report
B. Amdel reports

APPENDIX 1: CUTTINGS DESCRIPTIONS

Depth mRT	% of Rock	Main Lithology	Modifier >20%	Lithological Descriptions
905	100	CLYST		Claystone, olive grey - green grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 80% clay, trace silt, ACCESSORIES: calcareous 10%, foraminifera trace, shell fragments trace, CALCIMETERY: 11% calcite
910	100	CLYST		Claystone, olive grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: pyrite trace, foraminifera trace, calcareous 10%
920	100	CLYST		Claystone, olive grey - light grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: pyrite trace, foraminifera trace, calcareous 10%
930	100	CLYST		Claystone, light olive grey - light grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: foraminifera trace, calcareous 10%
940	100	CLYST		Claystone, light olive grey - light grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: foraminifera trace, calcareous 10%
950	100	CLYST		Claystone, very light grey - light grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%, CALCIMETERY: 11% calcite
960	100	CLYST		Claystone, very light grey - light grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%
970	100	CLYST		Claystone, light-medium grey, light olive grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%
980	100	CLYST		Claystone, light-medium grey, light olive grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%, CALCIMETERY: 11% calcite
990	100	CLYST		Claystone, light-medium grey, light olive grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%, CALCIMETERY: 16% calcite
1000	100	CLYST		Claystone, light-medium grey, light olive grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%, CALCIMETERY: 16% calcite
1010	100	CLYST		Claystone, light olive grey coloured, very soft,

				sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%, CALCIMETERY: 8% calcite, 2% dolomite
1020	100	CLYST		Claystone, light olive grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%, CALCIMETERY: 8% calcite, 2% dolomite
1030	100	CLYST		Claystone, light olive grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%
1040	100	CLYST		Claystone, light olive grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%
1050	100	CLYST		Claystone, light olive grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay, trace sand, CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%
1060	100	CLYST		Claystone, light olive grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%, CALCIMETERY: 11% calcite
1070	100	CLYST		Claystone, light olive grey-light grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 5%, CALCIMETERY: 6% calcite
1080	100	CLYST		Claystone, light olive grey-light grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay, trace sand, CLASTIC GRAINS: 90% clay, ACCESSORIES: carbonaceous trace, calcareous 5%, CALCIMETERY: 6% calcite
1090	100	CLYST		Claystone, light-medium grey, off white coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: carbonaceous trace, calcareous 10%, CALCIMETERY: 7% calcite
1100	100	CLYST		Claystone, light-medium grey, trace off white coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: carbonaceous trace, calcareous 10%, CALCIMETERY: 7% calcite
1110	100	CLYST		Claystone, light olive grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: carbonaceous trace, calcareous 10%, CALCIMETERY: 7.5% calcite
1120	100	CLYST		Claystone, light grey, trace off white coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, trace silt, ACCESSORIES: carbonaceous trace, siderite trace, calcareous 10%, CALCIMETERY: 7.5% calcite
1130	100	CLYST		Claystone, light grey-olive green coloured, very

				soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, trace fine sand, ACCESSORIES: carbonaceous trace, siderite trace, lithics trace, CALCIMETERY: 7.5% calcite
1140	100	CLYST		Claystone, light grey-olive green coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, trace fine sand, ACCESSORIES: carbonaceous trace, siderite trace, lithics trace, CALCIMETERY: 7% calcite
1150	100	CLYST		Claystone, light olive grey-off white coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, trace silt, ACCESSORIES: carbonaceous trace, glauconite trace, pyrite trace, CALCIMETERY: 7% calcite
1160	100	CLYST		Claystone, light olive grey-off white coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, trace silt, ACCESSORIES: carbonaceous trace, siderite trace, lithics trace, CALCIMETERY: 7% calcite
1170	100	CLYST		Claystone, light olive grey coloured, loose-soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: carbonaceous trace, calcareous 10%, lithics trace, CALCIMETERY: 8% calcite
1180	100	CLYST		Claystone, light olive grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: carbonaceous trace, foraminifera trace, lithics trace, CALCIMETERY: 8% calcite
1190	100	CLYST		Claystone, light-medium grey, off white coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 90% clay, trace silt, trace very fine sand, ACCESSORIES: calcareous trace, carbonaceous trace, CALCIMETERY: 7% calcite
1200	100	CLYST		Claystone, light-medium grey, off white coloured, very soft, dispersive fracture CLASTIC GRAINS: 90% clay, trace silt, ACCESSORIES: calcareous trace, carbonaceous trace, CALCIMETERY: 7% calcite
1210	80	CLYST		Claystone, light grey-olive green coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 90% clay, trace fine sand, ACCESSORIES: argillaceous trace, carbonaceous trace, calcareous trace, CALCIMETERY: 7% calcite
	20	SLTST		Siltstone, medium-light grey coloured, loose-soft, sub-blocky fracture, trace silt CLASTIC GRAINS: 80% clay, 20% silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: siderite trace, carbonaceous trace
1220	70	CLYST		Claystone, light grey-olive green coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 100% clay, trace silt, ACCESSORIES: argillaceous trace, carbonaceous trace, calcareous trace, CALCIMETERY: 8% calcite

	30	SLTST		Siltstone, medium-light grey coloured, loose-soft, sub-blocky fracture, trace silt CLASTIC GRAINS: 70% clay, 30% silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: siderite trace, carbonaceous trace
1230	90	CLYST		Claystone, light grey-olive green coloured, very soft, dispersive fracture CLASTIC GRAINS: 100% clay, trace silt, ACCESSORIES: calcareous trace, carbonaceous trace, CALCIMETERY: 8% calcite
	10	SLTST		Siltstone, medium-light grey coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 100% clay, trace very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: pyrite trace, carbonaceous trace, siderite trace,
1240	90	CLYST		Claystone, light grey-olive green coloured, very soft, dispersive fracture CLASTIC GRAINS: 100% clay, trace silt, ACCESSORIES: calcareous trace, carbonaceous trace, CALCIMETERY: 7% calcite
	10	SLTST		Siltstone, medium-light grey coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 100% clay, trace very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: pyrite trace, carbonaceous trace, lithics trace
1250	100	CLYST		Claystone (1), light-medium grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 95% clay, trace silt, trace very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: carbonaceous trace, calcareous trace, CLYST (2) of white-red brown, very soft-dispersive, slight tuffaceous texture, claystone probably has a volcanic source rock in part.
	tr	CLYST		Claystone, off white - red brown coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 95% clay, ACCESSORIES: pyrite trace
1260	100	CLYST		Claystone, light-medium grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 95% clay, trace silt, trace very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: carbonaceous trace, calcareous trace, CALCIMETERY: 7% calcite
1270	100	CLYST		Claystone, light-medium grey, rarely off white coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 95% clay, trace silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: carbonaceous trace, calcareous trace, CALCIMETERY: 14% calcite, 3% dolomite
1280	100	CLYST		Claystone, light-medium grey, occasionally off white coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 95% clay, trace silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: carbonaceous trace, calcareous trace, off white claystone

				may have a volcanic source rock.
	tr	CLYST		Claystone, off white coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 95% clay
1285	50	CLYST		Claystone, light-medium grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 95% clay, trace silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: carbonaceous trace, calcareous trace
	50	VOLTUF		Volcanic Tuff, blue grey coloured, soft - amorphous, sub-blocky fracture, rare very fine sandstone tuffaceous texture with a ground mass of glass, quartz and altered feldspar, all mafic minerals are weathered out. CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, ACCESSORIES: quartz 25%, feldspar 20%
1290	30	CLYST		Claystone, light-medium grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 95% clay, trace silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: carbonaceous trace, calcareous trace
	70	VOLTUF		Volcanic Tuff, blue grey coloured, soft - amorphous, sub-blocky fracture, rare very fine sandstone tuffaceous texture with a ground mass of glass, quartz and altered feldspar, all mafic minerals are weathered out, commonly the volcanic tuff is weathered to CLAYSTONE, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, ACCESSORIES: quartz 25%, feldspar 20%
1300	100	VOLTUF		Volcanic Tuff, blue grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 30% clay, ACCESSORIES: quartz 25%, feldspar 3%, CALCIMETERY: 12% calcite, 5% dolomite
1305	90	VOLTUF		Volcanic Tuff, blue grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 30% clay, ACCESSORIES: quartz 25%, feldspar 3%
	10	CLYST		Claystone, light brown grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: pyrite trace
1310	40	VOLTUF		Volcanic Tuff, blue grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 30% clay, ACCESSORIES: quartz 25%, feldspar 3%, CALCIMETERY: 7% calcite, 2% dolomite
	60	CLYST		Claystone, light brown grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: pyrite trace
1315	10	VOLTUF		Volcanic Tuff, blue grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 30% clay, ACCESSORIES: quartz 25%, feldspar 3%, CALCIMETERY: 7%

				calcite, 2% dolomite
	80	CLYST		Claystone, light brown grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: pyrite trace
	10	SST		Sandstone, clear translucent coloured, loose CLASTIC GRAINS: 50% very fine sand, 50% fine sand, trace medium sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: silica/weak, ACCESSORIES: tuff 3% POROSITY: intergranular, 20%
1320	10	VOLTUF		Volcanic Tuff, blue grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 30% clay, ACCESSORIES: quartz 25%, feldspar 3%, CALCIMETERY: 7% calcite, 2% dolomite
	50	CLYST		Claystone, light brown grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: pyrite trace
	40	SST		Sandstone, clear translucent coloured, loose CLASTIC GRAINS: 40% very fine sand, 50% fine sand, 10% medium sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: silica/weak, ACCESSORIES: tuff 3% POROSITY: intergranular, 20%
1325	10	VOLTUF		Volcanic Tuff, blue grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 30% clay, ACCESSORIES: quartz 25%, feldspar 3%, CALCIMETERY: 11% calcite, 2% dolomite
	70	CLYST		Claystone, light brown grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: pyrite trace
	20	SST		Sandstone, clear translucent coloured, loose CLASTIC GRAINS: 40% very fine sand, 50% fine sand, 10% medium sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: silica/weak, ACCESSORIES: tuff 3% POROSITY: intergranular, 20%
1330	10	VOLTUF		Volcanic Tuff, blue grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 30% clay, ACCESSORIES: quartz 25%, feldspar 3%
	80	CLYST		Claystone, medium grey - brown grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay
	10	SST		Sandstone, clear translucent coloured, loose CLASTIC GRAINS: 40% very fine sand, 50% fine sand, 10% medium sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: silica/weak, ACCESSORIES: tuff 3% POROSITY: intergranular, 20%
1335	90	CLYST		Claystone, light grey - medium grey coloured,

				very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, trace silt, trace very fine sand, trace fine sand, ACCESSORIES: tuff trace, CALCIMETERY: 14% calcite, 1% dolomite
	10	SST		Sandstone, clear translucent coloured, loose CLASTIC GRAINS: 40% very fine sand, 50% fine sand, 10% medium sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: silica/weak, ACCESSORIES: tuff 3% POROSITY: intergranular, 10%
	tr	VOLTUF		Volcanic Tuff, off white - white coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 5% silt, ACCESSORIES: argillaceous 50%
1340	100	CLYST		Claystone, light grey - medium grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, trace silt, trace very fine sand, trace fine sand, ACCESSORIES: tuff trace, CALCIMETERY: 14% calcite, 1% dolomite
	tr	VOLTUF		Volcanic Tuff, off white - white coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 5% silt, ACCESSORIES: argillaceous 50%
1345	100	CLYST		Claystone, light grey - medium grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, trace silt, trace very fine sand, trace fine sand, ACCESSORIES: tuff trace, CALCIMETERY: 14% calcite, 1% dolomite
	tr	VOLTUF		Volcanic Tuff, off white - white coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 5% silt, ACCESSORIES: argillaceous 50%
1350	100	CLYST		Claystone, light grey - medium grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, trace silt, trace very fine sand, trace fine sand, ACCESSORIES: tuff trace, CALCIMETERY: 11% calcite, 1% dolomite
	tr	VOLTUF		Volcanic Tuff, off white - white coloured, soft, sub-blocky fracture CLASTIC GRAINS: 50% clay, 5% silt, ACCESSORIES: argillaceous 50%
1355	100	CLYST		Claystone, light-medium grey coloured, very soft, amorphous fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, 5% silt, 5% very fine sand, ACCESSORIES: tuff 5%, quartz 5%, CALCIMETERY: 11% calcite, 1% dolomite
	tr	VOLTUF		Volcanic Tuff, off white - white coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 60% clay, 5% silt, 15% very fine sand, 10% fine sand, ACCESSORIES: argillaceous 50%
1360	100	CLYST		Claystone, light-medium grey coloured, very soft, amorphous fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 80% clay, 5% silt, 5% very fine sand, ACCESSORIES: tuff 5%, quartz

				5%, CALCIMETERY: 11% calcite, 1% dolomite
	tr	VOLTUF		Volcanic Tuff, off white - white coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 60% clay, 5% silt, 15% very fine sand, 10% fine sand, ACCESSORIES: argillaceous 50%
1365	90	CLYST		Claystone, light-medium grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 60% clay, 15% silt, 5% very fine sand, ACCESSORIES: tuff 5%, quartz 5%, CALCIMETERY: 20% calcite, 2% dolomite
	10	VOLTUF		Volcanic Tuff, off white - white coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 60% clay, 5% silt, 15% very fine sand, 10% fine sand, ACCESSORIES: argillaceous 50%
1370	90	CLYST		Claystone, light-medium grey coloured, very soft, amorphous fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 60% clay, 15% silt, 5% very fine sand, ACCESSORIES: tuff 5%, quartz 5%, CALCIMETERY: 20% calcite, 2% dolomite
	10	VOLTUF		Volcanic Tuff, off white - white coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 60% clay, 5% silt, 15% very fine sand, 10% fine sand, ACCESSORIES: argillaceous 50%
1375	90	CLYST		Claystone, light-medium grey coloured, very soft, amorphous fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 40% silt, 10% very fine sand, ACCESSORIES: tuff 5%, quartz 5%, calcareous 15%, CALCIMETERY: 20% calcite, 2% dolomite
	10	VOLTUF		Volcanic Tuff, off white - white coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 60% clay, 5% silt, 15% very fine sand, 10% fine sand, ACCESSORIES: argillaceous 50%
1380	20	SLTST		Siltstone, light-medium grey coloured, very soft, amorphous fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 30% clay, 60% silt, trace very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: tuff 5%, quartz 5%, CALCIMETERY: 28% calcite, 1% dolomite
	20	VOLTUF		Volcanic Tuff, off white - white coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 30% clay, 40% silt, 20% very fine sand, trace fine sand, ACCESSORIES: argillaceous 50%
	60	CLYST		Claystone, light-medium grey coloured, very soft, amorphous fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 40% clay, 40% silt, 10% very fine sand, ACCESSORIES: tuff 5%, quartz 5%
1385	40	SLTST		Siltstone, light-medium grey coloured, very soft, amorphous fracture, CALCAREOUS GRAINS: 10% clay, 5% silt CLASTIC GRAINS: 30% clay, 60% silt, trace very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: tuff 5%, quartz 5%,

				CALCIMETERY: 28% calcite, 1% dolomite
	20	VOLTUF		Volcanic Tuff, off white - white coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 30% clay, 40% silt, 20% very fine sand, trace fine sand, ACCESSORIES: argillaceous 50%
	40	CLYST		Claystone, light-medium grey coloured, very soft, amorphous fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 40% clay, 40% silt, 10% very fine sand, ACCESSORIES: tuff 5%, quartz 5%
1390	30	SLTST		Siltstone, light-medium grey coloured, very soft, amorphous fracture, CALCAREOUS GRAINS: 10% clay, 5% silt CLASTIC GRAINS: 40% clay, 50% silt, trace very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: tuff 5%, quartz 5%, CALCIMETERY: 28% calcite, 1% dolomite
	30	VOLTUF		Volcanic Tuff, off white - light grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 30% silt, 20% very fine sand, trace fine sand, ACCESSORIES: argillaceous 60 %
	40	CLYST		Claystone, light-medium grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 40% clay, 40% silt, 10% very fine sand, ACCESSORIES: tuff 5%, quartz 5%
1395	40	CLYST		Claystone, light grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 60% clay, 10% silt, 10% very fine sand, ACCESSORIES: calcareous 3%, carbonaceous trace, CALCIMETERY: 29% calcite, 1% dolomite
	30	SLTST		Siltstone, medium - slightly light grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay, 5% silt CLASTIC GRAINS: 5% clay, 70% silt, 10% very fine sand, trace fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous trace, glauconite trace
	30	VOLTUF		Volcanic Tuff, off white - light grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, trace fine sand, ACCESSORIES: quartz 5%, tuff 5%
1400	30	CLYST		Claystone, light grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 50% clay, 20% silt, 10% very fine sand, ACCESSORIES: calcareous 3%, carbonaceous trace, CALCIMETERY: 29% calcite, 1% dolomite
	40	SLTST		Siltstone, medium - slightly light grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay, 5% silt CLASTIC GRAINS: 5% clay, 70% silt, 10% very fine sand, trace fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous 3%, glauconite trace, lithics 5%

	30	VOLTUF		Volcanic Tuff, off white - light grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 30% silt, 20% very fine sand, trace fine sand, ACCESSORIES: quartz 5%, tuff 5%
1405	50	SLTST		Siltstone, dark medium - light grey coloured, very soft, amorphous fracture, CALCAREOUS GRAINS: 10% clay, 5% silt CLASTIC GRAINS: 5% clay, 70% silt, 10% very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: glauconite 3%, lithics trace, calcareous 15%, CALCIMETERY: 29% calcite, 1% dolomite
	30	CLYST		Claystone, light-medium grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 40% clay, 30% silt, 10% very fine sand, ACCESSORIES: calcareous 5%, carbonaceous trace
	20	VOLTUF		Volcanic Tuff, white - light blue/grey, pink coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 30% silt, 20% very fine sand, trace fine sand, ACCESSORIES: quartz 5%, tuff 5%
1410	50	SLTST		Siltstone, dark medium - light grey coloured, very soft, amorphous fracture, CALCAREOUS GRAINS: 10% clay, 5% silt CLASTIC GRAINS: 5% clay, 70% silt, 10% very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: glauconite trace, calcareous trace, CALCIMETERY: 29% calcite, 1% dolomite
	30	CLYST		Claystone, light-medium grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 50% clay, 20% silt, 10% very fine sand, ACCESSORIES: calcareous 5%, carbonaceous trace
	20	VOLTUF		Volcanic Tuff, white - light blue/grey, pink coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 30% silt, 20% very fine sand, trace fine sand, ACCESSORIES: quartz trace, tuff 5%
1415	40	CLYST		Claystone, off white - light grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 60% clay, 10% silt, 10% very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous 10%, CALCIMETERY: 29% calcite, 1% dolomite
	50	SLTST		Siltstone, medium - light grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 10% clay, 50% silt, 20% very fine sand, 10% fine sand, ACCESSORIES: calcareous trace, glauconite 3%, siderite trace
	10	VOLTUF		Volcanic Tuff, light grey/brown - off white coloured, soft, sub-blocky fracture CLASTIC GRAINS: 50% clay, 30% silt, 20% very fine sand, trace fine sand, ACCESSORIES: quartz 3%
1420	40	CLYST	calc	Claystone, calcareous, off white - light grey coloured, very soft, dispersive fracture,

				CALCAREOUS GRAINS: 30% clay CLASTIC GRAINS: 50% clay, 10% silt, 10% very fine sand, CALCIMETERY: 39% calcite, 1% dolomite
	50	SLTST		Siltstone, medium - light grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 10% clay, 50% silt, 20% very fine sand, 10% fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous trace, glauconite 4%, siderite trace,
	10	VOLTUF		Volcanic Tuff, light grey/brown - off white coloured, soft, sub-blocky fracture CLASTIC GRAINS: 60% clay, 30% silt, 20% very fine sand, 5% fine sand, ACCESSORIES: quartz 4%
1425	20	SST	lith	Sandstone, lithic, multicoloured, grey, white coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 5% clay, 20% silt, 40% very fine sand, 20% fine sand, 10% medium sand, poorly sorted, angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: glauconite 3%, lithics 5%, pyrite trace, CALCIMETERY: 36% calcite, 1% dolomite, POROSITY: intergranular, 5%
	60	SLTST		Siltstone, medium - light grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 10% clay, 50% silt, 20% very fine sand, 10% fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous trace, glauconite 3%, siderite trace
	20	CLYST	calc	Claystone, calcareous, off white - light grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 30% clay CLASTIC GRAINS: 50% clay, 10% silt, 10% very fine sand
1430	30	SST	lith	Sandstone, lithic, multicoloured, grey, white coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 5% clay, 20% silt, 40% very fine sand, 20% fine sand, 10% medium sand, poorly sorted, angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: glauconite 3%, lithics 5%, pyrite trace, CALCIMETERY: 36% calcite, 1% dolomite, POROSITY: intergranular, 5%
	50	SLTST		Siltstone, medium - light grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 10% clay, 50% silt, 20% very fine sand, 10% fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous trace, glauconite trace, siderite trace
	20	CLYST	calc	Claystone, calcareous, off white - light grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 30% clay CLASTIC GRAINS: 50% clay, 10% silt, 10% very fine sand
1435	50	SLTST		Siltstone, medium - light grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 10% clay, 50% silt, 20%

				very fine sand, 10% fine sand, poorly sorted, angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: glauconite 3%, lithics 5%, pyrite trace, CALCIMETERY: 35% calcite, 1% dolomite
	30	SST	lith	Sandstone, lithic, multicoloured, grey, white coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 5% clay, 20% silt, 40% very fine sand, 20% fine sand, 10% medium sand, poorly sorted, angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous 3% POROSITY: intergranular, 5%
	20	CLYST		Claystone, off white - light grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 70% clay, 10% silt, ACCESSORIES: carbonaceous trace
1440	20	CLYST	calc	Claystone, calcareous, off white - light grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 30% clay CLASTIC GRAINS: 60% clay, 10% silt, ACCESSORIES: carbonaceous trace, CALCIMETERY: 35% calcite, 1% dolomite
	50	SLTST		Siltstone, medium - light grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 10% clay, 50% silt, 20% very fine sand, 10% fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: glauconite 3%, lithics 5%, pyrite trace
	30	SST	lith	Sandstone, lithic, multicoloured, grey, white coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 5% clay, 20% silt, 40% very fine sand, 20% fine sand, 10% medium sand, poorly sorted, angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous 3% POROSITY: intergranular, 5%
1445	30	CLYST	calc	Claystone, calcareous, light-medium grey, brown coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 40% clay CLASTIC GRAINS: 50% clay, 10% silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: carbonaceous trace, glauconite trace, CALCIMETERY: 42% calcite, 1% dolomite
	40	SLTST		Siltstone, light-medium grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay, 15% silt CLASTIC GRAINS: 20% clay, 60% silt, 10% very fine sand, ACCESSORIES: quartz 10%
	30	SST		Sandstone, off white, grey, brown coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 5% clay, 30% silt, 40% very fine sand, 15% fine sand, 5% medium sand, poorly sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: calcareous/weak, POROSITY: intergranular, 5%
1450	30	CLYST	calc	Claystone, calcareous, light-medium grey, brown coloured, very soft, dispersive fracture,

				CALCAREOUS GRAINS: 40% clay CLASTIC GRAINS: 50% clay, 10% silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: carbonaceous trace, glauconite trace, CALCIMETERY: 42% calcite, 1% dolomite
	40	SLTST		Siltstone, light-medium grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay, 15% silt CLASTIC GRAINS: 20% clay, 60% silt, 10% very fine sand, ACCESSORIES: quartz 10%
	30	SST		Sandstone, off white, grey, brown coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 5% clay, 30% silt, 40% very fine sand, 15% fine sand, 5% medium sand, poorly sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: calcareous/weak, POROSITY: intergranular, 5%
1455	40	CLYST	calc	Claystone, calcareous, light-medium grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 40% clay CLASTIC GRAINS: 50% clay, 10% silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: pyrite trace, glauconite trace, siderite 3%, CALCIMETERY: 39% calcite, 1% dolomite
	30	SLTST		Siltstone, light-medium grey, brown coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay, 15% silt CLASTIC GRAINS: 20% clay, 60% silt, 10% very fine sand, ACCESSORIES: quartz 10%
	30	SST		Sandstone, off white, light grey, brown coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 5% clay, 30% silt, 40% very fine sand, 15% fine sand, 5% medium sand, poorly sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: calcareous/weak, POROSITY: intergranular, 5%
1460	50	CLYST	calc	Claystone, calcareous, light-medium grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 40% clay CLASTIC GRAINS: 50% clay, 10% silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: carbonaceous trace, glauconite trace, CALCIMETERY: 39% calcite, 1% dolomite
	30	SLTST		Siltstone, light-medium grey, brown coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay, 15% silt CLASTIC GRAINS: 20% clay, 60% silt, 10% very fine sand, ACCESSORIES: quartz 10%
	20	SST		Sandstone, off white, light grey, brown coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 5% clay, 30% silt, 40% very fine sand, 15% fine sand, 5% medium sand, poorly sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: calcareous/weak, POROSITY: intergranular, 5%
1470	60	CLYST		Claystone, light grey-olive green coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 60% clay, 15% silt, 5%

				very fine sand, ACCESSORIES: argillaceous 5%, silty 10%, glauconite trace, CALCIMETERY: 24% calcite
	40	SLTST		Siltstone, light-medium grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: trace clay, 5% silt CLASTIC GRAINS: 10% clay, 50% silt, 20% very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: lithics 3%
1475	70	CLYST		Claystone, light grey-olive green coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 20% clay, 5% silt CLASTIC GRAINS: 50% clay, 20% silt, 5% very fine sand, trace fine sand, ACCESSORIES: argillaceous 5%, silty 10%, glauconite trace, CALCIMETERY: 24% calcite
	30	SLTST		Siltstone, light-medium grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: trace clay, 5% silt CLASTIC GRAINS: 10% clay, 60% silt, 15% very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: lithics 3%
1480	90	CLYST		Claystone, light grey-olive green coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 50% clay, 20% silt, 10% very fine sand, trace fine sand, ACCESSORIES: argillaceous 5%, silty 10%, glauconite trace, CALCIMETERY: 20% calcite, 1% dolomite
	10	SLTST		Siltstone, light-medium grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 15% clay, 5% silt CLASTIC GRAINS: 10% clay, 50% silt, 20% very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: lithics 3%, siderite trace
1485	70	CLYST		Claystone, light grey-olive green coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 15% clay CLASTIC GRAINS: 50% clay, 30% silt, 5% very fine sand, ACCESSORIES: argillaceous 5%, silty 10%, glauconite trace, CALCIMETERY: 14% calcite, 1% dolomite
	30	SLTST		Siltstone, light-medium grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay, 5% silt CLASTIC GRAINS: 15% clay, 50% silt, 20% very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: lithics 3%
1490	70	CLYST		Claystone, light grey-light brown, off white coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 15% clay CLASTIC GRAINS: 40% clay, 40% silt, 5% very fine sand, ACCESSORIES: argillaceous 3%, CALCIMETERY: 14% calcite, 1% dolomite
	30	SLTST		Siltstone, light-medium grey, brown coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay, 5% silt CLASTIC GRAINS: 15% clay, 50% silt, 20% very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: arenaceous trace, sandy 3%
1495	70	CLYST		Claystone, light grey-light brown, off white coloured, very soft, dispersive fracture,

				CALCAREOUS GRAINS: 15% clay CLASTIC GRAINS: 50% clay, 30% silt, 5% very fine sand, ACCESSORIES: argillaceous 5%, pyrite trace, CALCIMETERY: 11% calcite, 1% dolomite
	30	SLTST		Siltstone, light-medium grey, brown coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 15% clay CLASTIC GRAINS: 40% clay, 40% silt, 5% very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: arenaceous trace, sandy 3%
1500	60	CLYST		Claystone, light grey-light brown, off white coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 15% clay CLASTIC GRAINS: 40% clay, 50% silt, 5% very fine sand, ACCESSORIES: argillaceous 3%, CALCIMETERY: 11% calcite, 1% dolomite
	40	SLTST		Siltstone, light-medium grey, brown coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 15% clay CLASTIC GRAINS: 40% clay, 40% silt, 5% very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: arenaceous trace, sandy 3%
1505	70	SLTST		Siltstone, medium - light grey/brown coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 15% clay CLASTIC GRAINS: 50% clay, 30% silt, 5% very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: arenaceous trace, sandy 3%, CALCIMETERY: 9% calcite, 2% dolomite
	30	CLYST		Claystone, light grey - olive grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 15% clay CLASTIC GRAINS: 40% clay, 40% silt, 5% very fine sand, ACCESSORIES: arenaceous 3%, silty 3%
1510	70	SLTST		Siltstone, medium - light grey/brown coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 30% silt, 30% very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: arenaceous trace, sandy 25%, CALCIMETERY: 9% calcite, 2% dolomite
	30	CLYST		Claystone, light grey - olive grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 15% clay CLASTIC GRAINS: 40% clay, 40% silt, 5% very fine sand, ACCESSORIES: arenaceous 3%, silty 25%
1515	95	SLTST		Siltstone, dark grey / brown coloured, very soft, amorphous fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 40% silt, 10% very fine sand, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: arenaceous 3%, sandy 10%, CALCIMETERY: 8% calcite, 3% dolomite
	5	SST		Sandstone, off white / light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 30% silt, 10% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak,

				ACCESSORIES: silty 25%, sandy 10% POROSITY: intergranular, 3%
1520	100	SLTST		Siltstone, brownish grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous 10%, CALCIMETERY: 8% calcite, 3% dolomite
1525	30	CLYST		Claystone, light grey - olive grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 15% clay CLASTIC GRAINS: 40% clay, 40% silt, 5% very fine sand, ACCESSORIES: arenaceous 3%, silty 25%, CALCIMETERY: 5% calcite, 4% dolomite
	70	SLTST		Siltstone, brownish grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous 10%
1530	70	SLTST		Siltstone, brownish grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous 10%, CALCIMETERY: 5% calcite, 4% dolomite
	30	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: silty 10%, kaolinite 25%, POROSITY: intergranular, 3%
1535	70	SLTST		Siltstone, brownish grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous 10%, CALCIMETERY: 5% calcite, 4% dolomite
	30	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, POROSITY: intergranular, 3%
1540	60	SLTST		Siltstone, brownish grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 50% clay, 45% silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous 10%, CALCIMETERY: 7% calcite, 4% dolomite
	40	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 45% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: silty 10%, kaolinite 25%,

				POROSITY: intergranular, 3%
1545	70	SLTST		Siltstone, brownish grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 50% clay, 45% silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous 5%, CALCIMETERY: 7% calcite, 4% dolomite
	30	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 45% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: silty 10%, kaolinite 25%, POROSITY: intergranular, 3%
1550	70	SLTST		Siltstone, brownish grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous 5%, CALCIMETERY: 16% calcite, 7% dolomite
	30	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: calcareous 5%, silty 10%, kaolinite 25%, POROSITY: intergranular, 3%
1555	60	SLTST		Siltstone, brownish grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, ACCESSORIES: calcareous 5%, CALCIMETERY: 9% calcite, 4% dolomite
	40	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: calcareous 5%, silty 10%, kaolinite 25%, POROSITY: intergranular, 3%
1560	70	SLTST		Siltstone, brownish grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, ACCESSORIES: calcareous 5%, CALCIMETERY: 9% calcite, 4% dolomite
	30	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: calcareous 5%, silty 10%, kaolinite 25%, POROSITY: intergranular, 3%
	tr	DOL		Dolomite, light brown coloured, firm-moderately hard, blocky fracture, CALCAREOUS GRAINS: 80% clay CLASTIC GRAINS: 20% clay
1565	90	SLTST		Siltstone, brownish grey coloured, very soft,

				dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, ACCESSORIES: calcareous 5%, foraminifera trace, CALCIMETERY: 8% calcite, 4% dolomite
	10	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: calcareous 5%, silty 10%, kaolinite 25%, POROSITY: intergranular, 3%
1570	90	SLTST		Siltstone, brownish grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, ACCESSORIES: calcareous 5%
	10	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: calcareous 5%, silty 10%, kaolinite 25%, POROSITY: intergranular, 3%
1575	80	SLTST		Siltstone, brown grey, green grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, ACCESSORIES: calcareous 5%, CALCIMETERY: 8% calcite, 4% dolomite
	20	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: calcareous 5%, silty 10% POROSITY: intergranular, 3%
1580	80	SLTST		Siltstone, brown grey, green grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, ACCESSORIES: calcareous 5%, CALCIMETERY: 8% calcite, 4% dolomite
	20	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: calcareous 5%, silty 10% POROSITY: intergranular, 3%
1585	80	SLTST		Siltstone, brown grey, green grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, ACCESSORIES: calcareous 5%, CALCIMETERY: 5% calcite, 2% dolomite
	20	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 10% silt, 40% very fine sand, well sorted, sub-

				angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: calcareous 5%, silty 10% POROSITY: intergranular, 3%
1590	90	SLTST		Siltstone, brown grey, green grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, ACCESSORIES: calcareous 5%, CALCIMETERY: 5% calcite, 2% dolomite
	10	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: calcareous 5%, silty 10% POROSITY: intergranular, 3%
1595	90	SLTST		Siltstone, brown grey, green grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, ACCESSORIES: calcareous 5%, CALCIMETERY: 5% calcite, 2% dolomite
	10	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: calcareous 5%, silty 10% POROSITY: intergranular, 3%
1600	90	SLTST		Siltstone, brown grey, green grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, ACCESSORIES: calcareous 5%, CALCIMETERY: 5% calcite, 2% dolomite
	10	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: calcareous 5%, silty 10% POROSITY: intergranular, 3%
1605	80	SLTST		Siltstone, brown grey, green grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay, 40% silt, ACCESSORIES: calcareous 5%, CALCIMETERY: 5% calcite, 2% dolomite
	20	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: calcareous 5%, silty 10% POROSITY: intergranular, 3%
1610	80	SLTST		Siltstone, brown grey, green grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 50% clay,

				40% silt, ACCESSORIES: calcareous 5%, CALCIMETERY: 5% calcite, 2% dolomite
	20	SST		Sandstone, off white - light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 40% clay, 10% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: calcareous 5%, silty 10% POROSITY: intergranular, 3%
1620	80	SLTST		Siltstone, medium - light grey, green grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 40% clay, ACCESSORIES: calcareous 3%, CALCIMETERY: 5% calcite, 2% dolomite
	20	SST		Sandstone, light brown - off white coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 30% clay, 20% silt, 40% very fine sand, moderately sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: calcareous 3%, argillaceous 10% POROSITY: intergranular, 3%
1630	70	SLTST		Siltstone, medium - light grey, green grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 40% clay, ACCESSORIES: calcareous 3%, CALCIMETERY: 5% calcite, 2% dolomite
	30	SST		Sandstone, light brown - off white coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 30% clay, 20% silt, 40% very fine sand, moderately sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, argillaceous/weak, ACCESSORIES: calcareous 3%, argillaceous 10% POROSITY: intergranular, 3%
1640	90	SLTST		Siltstone, medium - light grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 30% clay, 50% silt, 15% very fine sand, ACCESSORIES: argillaceous 10%, calcareous trace, pyrite trace, CALCIMETERY: 3% calcite, 2% dolomite
	10	SST		Sandstone, grey, brown - off white coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 30% clay, 15% silt, 50% very fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, calcareous/trace, ACCESSORIES: silty 10%, calcareous trace, fossils trace, POROSITY: intergranular, 3%
1650	80	SLTST		Siltstone, medium - light grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 30% clay, 50% silt, 15% very fine sand, ACCESSORIES: argillaceous 10%, calcareous trace, pyrite trace, CALCIMETERY: 3% calcite, 2% dolomite
	20	SST		Sandstone, grey, brown - off white coloured,

				loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 30% clay, 15% silt, 50% very fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, calcareous/trace, ACCESSORIES: silty 10%, calcareous trace, fossils trace, POROSITY: intergranular, 3%
1660	80	SLTST		Siltstone, medium grey - light brown coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 30% clay, 15% silt, 50% very fine sand, ACCESSORIES: argillaceous 10%, calcareous trace, CALCIMETERY: 5% calcite, 2% dolomite
	20	SST		Sandstone, light brown - off white coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 40% clay, 15% silt, 40% very fine sand, trace medium sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, calcareous/trace, ACCESSORIES: glauconite trace, calcareous trace POROSITY: intergranular, 3%
1670	80	SLTST		Siltstone, medium grey - light brown coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 30% clay, 15% silt, 50% very fine sand, ACCESSORIES: argillaceous 10%, calcareous trace, CALCIMETERY: 5% calcite, 2% dolomite
	20	SST		Sandstone, light brown - off white coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 30% clay, 15% silt, 50% very fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, calcareous/trace, ACCESSORIES: glauconite trace, calcareous trace, foraminifera trace, POROSITY: intergranular, 3%
1680	70	SLTST		Siltstone, medium - light grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 40% clay, 50% silt, 10% very fine sand, ACCESSORIES: argillaceous 15%, calcareous trace, CALCIMETERY: 6% calcite, 3% dolomite
	30	SST		Sandstone, light grey, off white - brown coloured, loose-soft, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 30% clay, 20% silt, 40% very fine sand, 10% fine sand, moderately sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 15%, calcareous trace POROSITY: intergranular, 3%
1690	90	SLTST		Siltstone, medium - light grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 40% clay, 50% silt, 10% very fine sand, ACCESSORIES: argillaceous 15%, calcareous trace, CALCIMETERY: 4% calcite, 3% dolomite
	10	SST		Sandstone, light grey, off white - brown

				coloured, loose-soft, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 30% clay, 20% silt, 40% very fine sand, 10% fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 15%, calcareous trace, pyrite trace, POROSITY: intergranular, 3%
1700	80	SLTST		Siltstone, medium - light grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, ACCESSORIES: argillaceous 15%, calcareous trace, pyrite trace, CALCIMETERY: 3% calcite, 2% dolomite
	20	SST		Sandstone, off white, light brown, light grey coloured, loose-soft, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 30% clay, 20% silt, 40% very fine sand, 10% fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 15%, calcareous trace POROSITY: intergranular, 3%
1710	80	SLTST		Siltstone, medium - light grey coloured, very soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, ACCESSORIES: argillaceous 15%, calcareous trace, glauconite trace, CALCIMETERY: 4% calcite, 3% dolomite
	20	SST		Sandstone, off white, light brown, light grey coloured, loose-soft, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 30% clay, 20% silt, 40% very fine sand, 10% fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 15%, calcareous trace POROSITY: intergranular, 3%
1720	90	SLTST		Siltstone, medium - light grey coloured, very soft, dispersive fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 40% clay, 40% silt, 10% very fine sand, ACCESSORIES: argillaceous 15 %, calcareous trace, CALCIMETERY: 4% calcite, 3% dolomite
	10	SST		Sandstone, off white, light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 30% clay, 20% silt, 40% very fine sand, 5% fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 15%, calcareous trace POROSITY: intergranular, 3%
1725	80	SLTST		Siltstone, medium - light grey coloured, very soft, dispersive fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 40% clay, 40% silt, 10% very fine sand, ACCESSORIES: argillaceous 15%, calcareous trace
	20	SST		Sandstone, off white, light brown coloured, loose-soft, sub-blocky fracture, CALCAREOUS

				GRAINS: 5% clay CLASTIC GRAINS: 30% clay, 20% silt, 40% very fine sand, 5% fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 15%, calcareous trace POROSITY: intergranular, 3
1730	50	SLTST		Siltstone, off white, brown, light grey coloured, soft, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 30% clay, 60% silt, 10% very fine sand, ACCESSORIES: glauconite trace, calcareous trace, argillaceous trace, CALCIMETERY: 9% calcite, 3% dolomite
	50	SST		Sandstone, medium - light brown, dark grey coloured, firm, sub-blocky fracture CLASTIC GRAINS: 5% clay, 15% silt, 50% very fine sand, 30% fine sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: silica/moderate, ACCESSORIES: calcareous 5% POROSITY: intergranular, 5%
1734	50	SLTST		Siltstone, predominantly medium grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 20% clay, 60% silt, 15% very fine sand, ACCESSORIES: calcareous 5%, CALCIMETERY: 12% calcite, 6% dolomite
	30	SST		Sandstone, medium - light brown, dark grey coloured, firm, sub-blocky fracture CLASTIC GRAINS: 5% clay, 15% silt, 50% very fine sand, 30% fine sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: silica/moderate, ACCESSORIES: calcareous 5% POROSITY: intergranular, 5%
	15	CLYST	slty	Claystone, silty, light grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 60% clay, 30% silt, 5% very fine sand, ACCESSORIES: argillaceous 5%
	5	DOL		Dolomite, medium brown coloured, firm-moderately hard, splintery fracture
1740	60	SLTST		Siltstone, predominantly medium grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 20% clay, 60% silt, 15% very fine sand, ACCESSORIES: calcareous 5%
	20	SST		Sandstone, medium - light brown, dark grey coloured, firm, sub-blocky fracture CLASTIC GRAINS: 5% clay, 15% silt, 50% very fine sand, 30% fine sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: silica/moderate, ACCESSORIES: calcareous 5% POROSITY: intergranular, 5%
	20	CLYST		Claystone, light grey coloured, very soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 60% clay, 30% silt, 5% very fine sand, ACCESSORIES: argillaceous 5%
1746	10	SST		Sandstone, medium - light brown, dark grey coloured, firm, sub-blocky fracture CLASTIC GRAINS: 5% clay, 15% silt, 50% very fine sand, 30% fine sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS:

				silica/moderate, calcareous/weak, ACCESSORIES: calcareous 5% POROSITY: intergranular, 5%
	30	SLTST		Siltstone, predominantly medium grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 20% clay, 60% silt, 15% very fine sand, ACCESSORIES: calcareous 3%
	60	CLYST		Claystone, dark grey - brown coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 60% clay, 30% silt, 5% very fine sand
1752	80	SLTST		Siltstone, dark grey - brown coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay, 30% silt CLASTIC GRAINS: 50% clay, 10% silt, 5% very fine sand, ACCESSORIES: calcareous 5%
	10	SST		Sandstone, medium - light brown, dark grey coloured, firm, sub-blocky fracture CLASTIC GRAINS: 5% clay, 15% silt, 50% very fine sand, 30% fine sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: silica/moderate, ACCESSORIES: calcareous 3% POROSITY: intergranular, 5%
	10	SLTST		Siltstone, light grey coloured, firm, blocky fracture, CALCAREOUS GRAINS: 5% clay, 30% silt CLASTIC GRAINS: 50% clay, 10% silt, 5% very fine sand, ACCESSORIES: calcareous 3%
1758	90	SLTST		Siltstone, light - dark grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay, 30% silt CLASTIC GRAINS: 50% clay, 10% silt, 5% very fine sand, ACCESSORIES: calcareous 3%, glauconite trace, CALCIMETERY: 4% calcite, 3% dolomite
	10	SST		Sandstone, medium to light grey - brown coloured, firm, sub-blocky fracture CLASTIC GRAINS: 15% silt, 70% very fine sand, 15% fine sand, moderately sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/moderate, ACCESSORIES: glauconite trace POROSITY: intergranular, 3%
1764	90	SLTST		Siltstone, light - dark grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay, 30% silt CLASTIC GRAINS: 50% clay, 10% silt, 5% very fine sand, ACCESSORIES: calcareous 3%, glauconite trace
	10	SST		Sandstone, medium to light grey - brown coloured, firm, sub-blocky fracture CLASTIC GRAINS: 15% silt, 70% very fine sand, 15% fine sand, moderately sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/moderate, ACCESSORIES: glauconite trace POROSITY: intergranular, 3%
1770	90	SLTST		Siltstone, light - dark grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay, 30% silt CLASTIC GRAINS: 50% clay, 10% silt, 5% very fine sand, ACCESSORIES: calcareous 3%, glauconite trace
	10	SST		Sandstone, medium to light grey - brown

				coloured, firm, sub-blocky fracture CLASTIC GRAINS: 15% silt, 70% very fine sand, 15% fine sand, moderately sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/moderate, ACCESSORIES: glauconite trace POROSITY: intergranular, 3%
1776	100	SLTST		Siltstone, light brown - green grey, grey coloured, soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, ACCESSORIES: calcareous trace, pyrite trace
1782	80	SLTST		Siltstone, light brown - green grey, grey coloured, soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, ACCESSORIES: calcareous trace, pyrite trace, CALCIMETERY: 2% calcite, 2% dolomite
	20	SST		Sandstone, light brown - light green coloured, firm, sub-blocky fracture CLASTIC GRAINS: 10% clay, 10% silt, 70% very fine sand, 10% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: silica/weak, argillaceous/trace, POROSITY: intergranular, 3%
1788	70	SLTST		Siltstone, light brown - green grey, grey coloured, soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, ACCESSORIES: calcareous trace, pyrite trace
	30	SST		Sandstone, light brown - light green coloured, firm, sub-blocky fracture CLASTIC GRAINS: 10% clay, 10% silt, 70% very fine sand, 10% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: silica/weak, argillaceous/trace, POROSITY: intergranular, 3%
1794	60	SLTST		Siltstone, light brown - green grey, grey coloured, soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, ACCESSORIES: calcareous trace, CALCIMETERY: 2% calcite, 1% dolomite
	40	CLYST		Claystone, dark grey coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 50% clay, 40% silt, 10% very fine sand, ACCESSORIES: carbonaceous trace
1806	60	SLTST		Siltstone, light brown - green grey, grey coloured, soft, dispersive fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, ACCESSORIES: carbonaceous trace
	30	CLYST		Claystone, dark grey coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 50% clay, 40% silt, 10% very fine sand, ACCESSORIES: carbonaceous trace
	10	SST		Sandstone, off white - light brown coloured, soft, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 10% clay, 30% silt, 50% very fine sand, 10% fine sand, moderately

				sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: calcareous/weak, ACCESSORIES: calcareous 3% POROSITY: intergranular, 3%
1812	100	SLTST		Siltstone, dark - medium brown, grey coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 60% silt, 10% very fine sand, ACCESSORIES: argillaceous 10%
1818	100	SLTST		Siltstone, dark grey - brown, rarely light grey coloured, soft, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 40% clay, 50% silt, 5% very fine sand, 5% fine sand, ACCESSORIES: argillaceous 10%, calcareous trace
1827	70	SLTST		Siltstone, dark grey - brown, rarely light grey coloured, soft, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 40% clay, 50% silt, 5% very fine sand, 5% fine sand, ACCESSORIES: argillaceous 10%, calcareous trace
	30	CLYST		Claystone, medium brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 60% clay, 30% silt, 10% very fine sand, ACCESSORIES: silty 20%
1836	100	SLTST		Siltstone, dark grey /brown coloured, soft-friable, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 40% clay, 50% silt, 5% very fine sand, ACCESSORIES: argillaceous 10%, calcareous trace, carbonaceous trace
1842	100	SLTST		Siltstone, dark grey /brown coloured, soft-friable, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 40% clay, 50% silt, 5% very fine sand, ACCESSORIES: argillaceous 10%, mica trace, carbonaceous trace
	tr	SST		Sandstone, brown / grey coloured, soft, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 30% clay, 40% silt, 30% very fine sand, well sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: calcareous/weak, silica/weak, POROSITY: intergranular, trace
1848	100	SLTST		Siltstone, dark grey /brown coloured, soft-friable, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 30% clay, 50% silt, 5% very fine sand, 10% fine sand, ACCESSORIES: sandy 5%, mica trace, carbonaceous trace
1854	100	SLTST		Siltstone, dark grey /brown coloured, soft-friable, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 30% clay, 50% silt, 5% very fine sand, 10% fine sand, ACCESSORIES: sandy 5%, mica trace, carbonaceous trace
1860	100	SLTST		Siltstone, dark grey /brown coloured, soft-friable, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 30% clay, 50% silt, 5% very fine sand, 10% fine sand,

				ACCESSORIES: sandy 5%, mica trace, carbonaceous trace
	tr	SST		Sandstone, brown / grey coloured, soft, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 30% clay, 40% silt, 30% very fine sand, well sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: calcareous/weak, silica/weak, POROSITY: intergranular, trace
1866	100	SLTST		Siltstone, dark grey /brown coloured, soft-friable, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 30% clay, 50% silt, 5% very fine sand, 10% fine sand, ACCESSORIES: sandy 5%, mica trace, carbonaceous trace
1872	100	SLTST		Siltstone, dark grey /brown coloured, soft-friable, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 30% clay, 50% silt, 5% very fine sand, 10% fine sand, ACCESSORIES: sandy 5%, mica trace, carbonaceous trace
1878	100	SLTST		Siltstone, dark grey /brown, medium brown coloured, soft-friable, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 30% clay, 50% silt, 20% very fine sand, ACCESSORIES: arenaceous 5%, mica trace, carbonaceous trace
1884	100	SLTST		Siltstone, brownish/grey, medium brown coloured, soft-friable, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 20% clay, 50% silt, 30% very fine sand, ACCESSORIES: arenaceous 5%, mica trace, carbonaceous trace
1890	20	SST		Sandstone, brownish grey coloured, very soft, amorphous fracture CLASTIC GRAINS: 40% clay, 60% very fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: carbonaceous trace POROSITY: intergranular, trace
	80	SLTST		Siltstone, brownish/grey, medium brown coloured, soft-friable, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 20% clay, 50% silt, 30% very fine sand, ACCESSORIES: arenaceous 5%, mica trace, carbonaceous trace
1896	20	SST		Sandstone, brownish grey coloured, very soft, amorphous fracture CLASTIC GRAINS: 40% clay, 60% very fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: carbonaceous trace POROSITY: intergranular, trace
	80	SLTST		Siltstone, brownish/grey, black/grey coloured, very soft, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 20% clay, 70% silt, 10% very fine sand, ACCESSORIES: arenaceous 10%, pyrite trace, carbonaceous trace
1908	20	SST		Sandstone, medium brown coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 30% clay,

				30% silt, 40% very fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: carbonaceous trace POROSITY: intergranular, trace
	80	SLTST		Siltstone, brownish/grey, black/grey coloured, very soft, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 20% clay, 40% silt, 30% very fine sand, ACCESSORIES: arenaceous 10%, pyrite trace, carbonaceous trace
1914	60	SST		Sandstone, off white light green coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 70% very fine sand, well sorted, sub-rounded, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, silica/weak, ACCESSORIES: glauconite 3% POROSITY: intergranular, trace FLUORESCENCE: Trace, very dull pinpoint, dark yellow, no direct cut, no crush cut and no residue ring.
	40	SLTST		Siltstone, brownish/grey, black/grey coloured, very soft, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 20% clay, 40% silt, 30% very fine sand, ACCESSORIES: arenaceous 10%, pyrite trace, carbonaceous trace
1920	60	SST		Sandstone, off white light green coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 70% very fine sand, well sorted, sub-rounded, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, silica/weak, ACCESSORIES: glauconite 3% POROSITY: intergranular, trace
	40	SLTST		Siltstone, medium - dark brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 20% clay, 70% silt, 10% very fine sand, ACCESSORIES: mica trace, sandy 10%, carbonaceous trace
1932	70	SST		Sandstone, off white light green coloured, very soft, dispersive fracture CLASTIC GRAINS: 40% clay, 60% very fine sand, well sorted, sub-rounded, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, silica/weak, ACCESSORIES: glauconite 3% POROSITY: intergranular, trace
	30	SLTST		Siltstone, medium - dark brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 20% clay, 70% silt, 10% very fine sand, ACCESSORIES: mica trace, sandy 10%, carbonaceous trace
1938	60	SST		Sandstone, off white light green coloured, very soft, dispersive fracture CLASTIC GRAINS: 40% clay, 60% very fine sand, well sorted, sub-rounded, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, silica/weak, ACCESSORIES: glauconite 3% POROSITY: intergranular, trace
	40	SLTST		Siltstone, medium - dark brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 20% clay, 70% silt, 10% very fine sand, ACCESSORIES: mica trace, sandy 10%, carbonaceous trace
1944	80	SST		Sandstone, off white light brown grey/brown

				coloured, soft-friable, sub-blocky fracture CLASTIC GRAINS: 30% clay, 40% fine sand, 30% medium sand, moderately sorted, sub-rounded, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, silica/weak, pyrite/strong, ACCESSORIES: pyrite trace POROSITY: intergranular, 3%
	20	SLTST		Siltstone, medium - dark brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 20% clay, 70% silt, 10% very fine sand, ACCESSORIES: mica trace, sandy 10%, carbonaceous trace
1950	80	SST		Sandstone, off white light brown grey/brown coloured, soft-friable, sub-blocky fracture CLASTIC GRAINS: 30% clay, 40% fine sand, 30% medium sand, moderately sorted, sub-rounded, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, silica/weak, pyrite/strong, ACCESSORIES: pyrite trace POROSITY: intergranular, 3%
	20	SLTST		Siltstone, brown grey coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 10% clay, 70% silt, trace very fine sand, ACCESSORIES: mica trace, carbonaceous trace
1959	80	SST		Sandstone, off white light brown grey/brown coloured, soft-friable, sub-blocky fracture CLASTIC GRAINS: 30% clay, 30% fine sand, 40% medium sand, moderately sorted, sub-rounded, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, silica/weak, pyrite/strong, ACCESSORIES: pyrite trace POROSITY: intergranular, 3%
	20	SLTST		Siltstone, brown grey coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 10% clay, 70% silt, trace very fine sand, ACCESSORIES: mica trace, carbonaceous trace
1968	60	SST		Sandstone, off white light brown grey/brown coloured, soft-friable, sub-blocky fracture CLASTIC GRAINS: 30% clay, 30% fine sand, 40% medium sand, moderately sorted, sub-rounded, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, silica/weak, pyrite/strong, ACCESSORIES: pyrite trace POROSITY: intergranular, 3%
	40	SLTST		Siltstone, brown grey coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 10% clay, 70% silt, trace very fine sand, ACCESSORIES: mica trace, carbonaceous trace
1977	80	SST		Sandstone, clear translucent coloured, loose, sub-blocky fracture CLASTIC GRAINS: 30% fine sand, 50% medium sand, 20% coarse sand, poorly sorted, sub-rounded, sub-elongate, silica/weak, POROSITY: intergranular, 15%
	20	SLTST		Siltstone, brown grey coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 10% clay, 70% silt, trace very fine sand, ACCESSORIES: mica trace, carbonaceous trace
1986	90	SST		Sandstone, clear translucent coloured, loose, sub-blocky fracture CLASTIC GRAINS: 30% fine

				sand, 40% medium sand, 20% coarse sand, 10% very coarse sand, poorly sorted, sub-rounded, sub-elongate, silica/weak, ACCESSORIES: argillaceous 10% POROSITY: intergranular, 20%
	10	SLTST		Siltstone, brown grey coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 10% clay, 70% silt, trace very fine sand, ACCESSORIES: mica trace, carbonaceous trace
1992	90	SST		Sandstone, clear translucent coloured, loose, sub-blocky fracture CLASTIC GRAINS: 30% fine sand, 40% medium sand, 20% coarse sand, 10% very coarse sand, poorly sorted, sub-rounded, sub-elongate, silica/weak, ACCESSORIES: argillaceous 10% POROSITY: intergranular, 20%
	10	COAL		Coal, black coloured, firm, blocky fracture
2001	80	SST		Sandstone, clear translucent coloured, loose, sub-blocky fracture CLASTIC GRAINS: 30% fine sand, 40% medium sand, 20% coarse sand, 10% very coarse sand, poorly sorted, sub-rounded, sub-elongate, silica/weak, ACCESSORIES: argillaceous 10% POROSITY: intergranular, 20%
	10	SLTST		Siltstone, brown grey coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 10% clay, 70% silt, trace very fine sand, ACCESSORIES: mica trace, carbonaceous trace
	10	COAL		Coal, black coloured, firm, blocky fracture
2019	90	SST		Sandstone, clear translucent coloured, loose, sub-blocky fracture CLASTIC GRAINS: 30% fine sand, 40% medium sand, 20% coarse sand, 10% very coarse sand, poorly sorted, sub-rounded, sub-elongate, silica/weak, ACCESSORIES: argillaceous 10% POROSITY: intergranular, 20%
	10	SLTST		Siltstone, brown grey coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 10% clay, 70% silt, trace very fine sand, ACCESSORIES: mica trace, carbonaceous trace
2028	60	SST		Sandstone, clear translucent coloured, loose, sub-blocky fracture CLASTIC GRAINS: 30% fine sand, 40% medium sand, 20% coarse sand, 10% very coarse sand, poorly sorted, sub-rounded, sub-elongate, silica/weak, ACCESSORIES: argillaceous 10% POROSITY: intergranular, 20%
	30	SLTST		Siltstone, medium brown, black/brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 70% silt, 30% very fine sand, ACCESSORIES: mica trace, carbonaceous trace
	10	COAL		Coal, black coloured, firm, blocky fracture
2037	60	SST		Sandstone, off white, clear translucent coloured, loose-soft, sub-blocky fracture CLASTIC GRAINS: 15% clay, 15% medium sand, 50% coarse sand, 20% very coarse sand, poorly sorted, sub-angular, sub-spherical, silica/weak, ACCESSORIES: argillaceous 15% POROSITY: intergranular, 20%
	30	SLTST		Siltstone, medium brown, black/brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 70% silt, 30% very fine sand, ACCESSORIES: mica trace,

				carbonaceous trace
	10	COAL		Coal, black coloured, firm, blocky fracture ACCESSORIES: mica trace, carbonaceous 3%
2046	80	SST		Sandstone, off white, clear translucent coloured, loose-soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 10% medium sand, 40% coarse sand, 20% very coarse sand, poorly sorted, sub-angular, sub-spherical, silica/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 20%
	20	SLTST		Siltstone, medium brown, black/brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 70% silt, 30% very fine sand, ACCESSORIES: mica trace, carbonaceous trace
2052	60	SST		Sandstone, off white, clear translucent coloured, loose-soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 10% medium sand, 40% coarse sand, 20% very coarse sand, poorly sorted, sub-angular, sub-spherical, silica/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 20%
	20	SST		Sandstone, white, off white coloured, soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 70% fine sand, well sorted, rounded, sub-spherical, argillaceous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 5%
	20	SLTST		Siltstone, medium brown, black/brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 70% silt, 30% very fine sand, ACCESSORIES: mica trace, carbonaceous trace
5058	60	SST		Sandstone, off white, clear translucent coloured, loose-soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 10% medium sand, 40% coarse sand, 20% very coarse sand, poorly sorted, sub-angular, sub-spherical, silica/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 20%
	20	SST		Sandstone, white, off white coloured, soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 70% fine sand, well sorted, rounded, sub-spherical, argillaceous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 5%
	20	SLTST		Siltstone, medium brown, black/brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 70% silt, 30% very fine sand, ACCESSORIES: mica trace, carbonaceous trace
2064	60	SST		Sandstone, off white, clear translucent coloured, loose-soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 10% medium sand, 40% coarse sand, 20% very coarse sand, poorly sorted, sub-angular, sub-spherical, silica/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 20%
	20	SST		Sandstone, white, off white coloured, soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 70% fine sand, well sorted, rounded, sub-

				spherical, argillaceous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 5
	20	SLTST		Siltstone, medium brown, black/brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 70% silt, 30% very fine sand, ACCESSORIES: mica trace, carbonaceous trace
2073	30	SST		Sandstone, off white, clear translucent coloured, loose-soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 10% medium sand, 40% coarse sand, 20% very coarse sand, poorly sorted, sub-angular, sub-spherical, silica/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 20%
	70	SST		Sandstone, white, off white coloured, soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 70% fine sand, well sorted, rounded, sub-spherical, argillaceous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 5%
	20	SLTST		Siltstone, medium brown, black/brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 70% silt, 30% very fine sand, ACCESSORIES: mica trace, carbonaceous trace
2079	10	SST		Sandstone, off white, clear translucent coloured, loose-soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 10% medium sand, 40% coarse sand, 20% very coarse sand, poorly sorted, sub-angular, sub-spherical, silica/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 20%
	50	SST		Sandstone, white, off white coloured, soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 70% fine sand, well sorted, rounded, sub-spherical, argillaceous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 5%
	20	SLTST		Siltstone, medium brown, black/brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 70% silt, 30% very fine sand, ACCESSORIES: mica trace, carbonaceous trace
	20	COAL		Coal, black coloured, firm, blocky fracture
2085	60	SST		Sandstone, white, off white coloured, soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 70% fine sand, well sorted, rounded, sub-spherical, argillaceous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 5%
	40	SLTST		Siltstone, medium brown, black/brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 70% silt, 30% very fine sand, ACCESSORIES: mica trace, carbonaceous trace
2091	70	SST		Sandstone, clear - off white coloured, loose-soft, sub-blocky fracture CLASTIC GRAINS: 20% clay, 40% very fine sand, 30% fine sand, 10% coarse sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, silica/trace, ACCESSORIES: kaolinite 15%, carbonaceous trace POROSITY:

				intergranular, 10%
	30	SLTST		Siltstone, white - brown coloured, very soft, dispersive fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 50% clay, 40% silt, 10% very fine sand, ACCESSORIES: calcareous trace, kaolinite 25%, quartz 10%
2100	60	SST		Sandstone, clear - off white coloured, loose-soft, sub-blocky fracture CLASTIC GRAINS: 20% clay, 40% very fine sand, 30% fine sand, 10% coarse sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, silica/trace, ACCESSORIES: kaolinite 15%, carbonaceous trace POROSITY: intergranular, 10%
	30	SLTST		Siltstone, white - brown coloured, very soft, dispersive fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 50% clay, 40% silt, 10% very fine sand, ACCESSORIES: calcareous trace, kaolinite 25%, quartz 10%
	10	SH		Shale, dark grey - black coloured, firm, fissile fracture ACCESSORIES: carbonaceous 20%
2106	40	SST		Sandstone, clear - off white coloured, loose-soft, sub-blocky fracture CLASTIC GRAINS: 20% clay, 40% very fine sand, 30% fine sand, 10% coarse sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, silica/trace, ACCESSORIES: kaolinite 15%, carbonaceous trace POROSITY: intergranular, 10%
	30	SLTST		Siltstone, white - brown coloured, very soft, dispersive fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 50% clay, 40% silt, 10% very fine sand, ACCESSORIES: calcareous trace, kaolinite 25%, quartz 10%
	30	COAL		Coal, black coloured, friable - firm, blocky fracture, ACCESSORIES: argillaceous trace
2115	80	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 10% very fine sand, 20% fine sand, 50% medium sand, 20% coarse sand, poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/trace, ACCESSORIES: carbonaceous 10% POROSITY: intergranular, 25%
	20	SLTST		Siltstone, off white - light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 40% clay, 50% silt, 10% very fine sand, ACCESSORIES: kaolinite 25%, calcareous trace
2124	80	COAL		Coal, black coloured, friable - firm, blocky fracture, ACCESSORIES: argillaceous trace
	10	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 10% very fine sand, 40% fine sand, 40% medium sand, 10% coarse sand, poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/trace, ACCESSORIES: carbonaceous 10% POROSITY: intergranular, 25%
	10	SLTST		Siltstone, off white - light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 40% clay, 50% silt, 10% very fine sand, ACCESSORIES:

				kaolinite 25%, calcareous trace
2130	80	SLTST		Siltstone, light brown - off white, grey coloured, very soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% silt, 10% very fine sand, 10% fine sand, ACCESSORIES: kaolinite 25%, calcareous trace
	20	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 20% very fine sand, 40% fine sand, 40% medium sand, trace coarse sand, poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/trace, ACCESSORIES: carbonaceous 10% POROSITY: intergranular, 25%
2136	80	SLTST		Siltstone, light brown - off white, grey coloured, very soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% silt, 10% very fine sand, 10% fine sand, ACCESSORIES: kaolinite 25%
	10	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 10% very fine sand, 40% fine sand, 40% medium sand, 10% coarse sand, poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/trace, ACCESSORIES: carbonaceous 10% POROSITY: intergranular, 25%
	10	CLYST		Claystone, light grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 30% clay, 10% silt CLASTIC GRAINS: 40% clay, 20% silt, ACCESSORIES: calcareous 25%, argillaceous trace
2145	80	SLTST		Siltstone, light brown - off white, grey coloured, very soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% silt, 10% very fine sand, 10% fine sand, ACCESSORIES: kaolinite 25%
	10	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 10% very fine sand, 40% fine sand, 40% medium sand, 10% coarse sand, poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/trace, ACCESSORIES: carbonaceous 10% POROSITY: intergranular, 25%
	10	CLYST		Claystone, light grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 30% clay, 10% silt CLASTIC GRAINS: 40% clay, 20% silt, ACCESSORIES: calcareous 25%, argillaceous trace
2154	90	SLTST		Siltstone, off white - brown coloured, very soft, dispersive fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 40% clay, 50% silt, 10% very fine sand, trace coarse sand, ACCESSORIES: pyrite trace, calcareous trace
	10	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 10% very fine sand, 40% fine sand, 40% medium sand, 10% coarse sand, poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/trace, ACCESSORIES: carbonaceous trace POROSITY: intergranular, 25%
2160	80	SLTST		Siltstone, light brown - off white, grey coloured, very soft, dispersive fracture CLASTIC

				GRAINS: 40% clay, 40% silt, 10% very fine sand, 10% fine sand, ACCESSORIES: kaolinite 25%
	10	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 10% very fine sand, 40% fine sand, 40% medium sand, 10% coarse sand, poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/trace, ACCESSORIES: carbonaceous 10% POROSITY: intergranular, 25%
	10	CLYST		Claystone, light grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 30% clay, 10% silt CLASTIC GRAINS: 40% clay, 20% silt, ACCESSORIES: calcareous 25%, argillaceous trace
2166	90	SLTST		Siltstone, off white - brown, light grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 30% clay, 40% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: calcareous 3%, kaolinite 25%, carbonaceous 3%
	10	COAL		Coal, black coloured, firm, blocky fracture CLASTIC GRAINS: 10% clay, ACCESSORIES: argillaceous 5%
2172	80	SLTST		Siltstone, off white - brown, light grey coloured, soft, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 30% clay, 40% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: calcareous 3%, kaolinite 25%, carbonaceous 3%
	10	COAL		Coal, black coloured, firm, blocky fracture CLASTIC GRAINS: 10% clay, ACCESSORIES: argillaceous 5%
	10	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 10% very fine sand, 40% fine sand, 40% medium sand, 10% coarse sand, poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/trace, ACCESSORIES: carbonaceous 10% POROSITY: intergranular, 10%
2178	70	SLTST		Siltstone, off white - light brown coloured, firm, dispersive fracture CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: sandy 20%, carbonaceous 5%
	10	SLTST		Siltstone, medium brown - dark grey coloured, firm, sub-fissile fracture CLASTIC GRAINS: 40% clay, 50% silt, 10% very fine sand, ACCESSORIES: carbonaceous 20%, coal 15%, argillaceous 5%
	10	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 10% silt, 40% very fine sand, 10% fine sand, moderately sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/trace, ACCESSORIES: carbonaceous 10%, kaolinite 10% POROSITY: intergranular, 25%
	10	CLYST		Claystone, light grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 30% clay, 10% silt CLASTIC GRAINS: 40% clay, 20% silt, ACCESSORIES: calcareous 25%, argillaceous trace

2187	95	SLTST		Siltstone, off white - light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, 5% fine sand, trace coarse sand, ACCESSORIES: sandy 20%, carbonaceous 5%
	5	CLYST		Claystone, light grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 30% clay, 10% silt CLASTIC GRAINS: 40% clay, 20% silt, ACCESSORIES: calcareous 25%, argillaceous trace
2196	55	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 5% silt, 15% very fine sand, 30% fine sand, 20% medium sand, 20% coarse sand, 5% very coarse sand, very poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/trace, ACCESSORIES: fossils trace, carbonaceous trace POROSITY: intergranular, 20%
	40	SLTST		Siltstone, off white - light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: sandy 20%, carbonaceous 5%
	5	CLYST		Claystone, light grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 30% clay, 10% silt CLASTIC GRAINS: 40% clay, 20% silt, ACCESSORIES: calcareous 25%, argillaceous trace
2205	90	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 5% silt, 15% very fine sand, 30% fine sand, 20% medium sand, 20% coarse sand, 5% very coarse sand, very poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/trace, ACCESSORIES: fossils trace, carbonaceous trace POROSITY: intergranular, 20%
	10	SLTST		Siltstone, off white - light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: sandy 20%, carbonaceous 5%
2214	80	SST		Sandstone, clear translucent coloured, loose, massive CLASTIC GRAINS: 5% silt, 15% very fine sand, 30% fine sand, 20% medium sand, 20% coarse sand, 5% very coarse sand, very poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/trace, ACCESSORIES: fossils trace, carbonaceous trace POROSITY: intergranular, 20%
	10	SLTST		Siltstone, off white - light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: sandy 20%, carbonaceous 5%
	10	COAL		Coal, black coloured, firm, sub-fissile fracture CLASTIC GRAINS: 10% clay, ACCESSORIES: argillaceous 5%
2223	20	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 40% very fine sand, 50% fine sand, 20% medium sand, trace coarse sand, poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/trace,

				ACCESSORIES: kaolinite 5%, carbonaceous trace POROSITY: intergranular, 20%
	80	SLTST		Siltstone, off white - light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: kaolinite 20%, carbonaceous 5%, calcareous trace
2232	40	SLTST		Siltstone, off white - light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: kaolinite 15%, carbonaceous 5%, calcareous trace
	30	SST	slty	Sandstone, silty, dark brown - grey coloured, moderately hard, blocky fracture CLASTIC GRAINS: 20% clay, 40% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/moderate, ACCESSORIES: argillaceous 10% POROSITY: intergranular, 3%
	30	SST	quartz	Sandstone, quartz, clear - translucent coloured, loose, massive CLASTIC GRAINS: 15% fine sand, 40% medium sand, 30% coarse sand, 15% very coarse sand, poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: silica/trace
2241	20	COAL		Coal, black coloured, firm, sub-fissile fracture CLASTIC GRAINS: 10% clay, ACCESSORIES: argillaceous 5%
	30	SLTST		Siltstone, off white - light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: kaolinite 20%, carbonaceous 5%, pyrite trace
	50	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 10% very fine sand, 15% fine sand, 40% medium sand, 30% coarse sand, 5% very coarse sand, poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: silica/trace, POROSITY: intergranular, 15%
2250	20	COAL		Coal, black coloured, firm, sub-fissile fracture CLASTIC GRAINS: 10% clay, ACCESSORIES: argillaceous 5%
	70	SLTST		Siltstone, off white - light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: kaolinite 20%, carbonaceous 5%, pyrite trace
	10	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 10% very fine sand, 15% fine sand, 40% medium sand, 30% coarse sand, 5% very coarse sand, poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: silica/trace, POROSITY: intergranular, 15%
2259	50	CLYST		Claystone, white, off white, very light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 60% clay, 10% silt, 20% very fine sand, 10% fine sand, ACCESSORIES: kaolinite 25%, sandy 25%
	40	SLTST		Siltstone, medium - dark grey, brown coloured,

				firm-moderately hard, sub-blocky fracture CLASTIC GRAINS: 15% clay, 70% silt, 15% very fine sand, ACCESSORIES: argillaceous 15%, carbonaceous trace
	10	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 40% very fine sand, 20% fine sand, 40% medium sand, moderately sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/trace, POROSITY: intergranular, 15%
2268	40	CLYST		Claystone, white, off white, very light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 60% clay, 10% silt, 20% very fine sand, 10% fine sand, ACCESSORIES: kaolinite 25%, sandy 25%
	30	SLTST		Siltstone, medium - dark grey, brown coloured, firm-moderately hard, sub-blocky fracture CLASTIC GRAINS: 15% clay, 70% silt, 15% very fine sand, ACCESSORIES: argillaceous 15%, carbonaceous trace
	10	SST		Sandstone, clear - translucent coloured, loose, massive CLASTIC GRAINS: 40% very fine sand, 20% fine sand, 40% medium sand, moderately sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/trace, POROSITY: intergranular, 15%
	20	COAL		Coal, black coloured, firm, sub-fissile fracture CLASTIC GRAINS: 10% clay, ACCESSORIES: argillaceous 5%
2277	30	COAL		Coal, vitreous black coloured, firm, blocky fracture, ACCESSORIES: argillaceous trace
	60	SST	quartz	Sandstone, quartz, clear coloured, loose, massive CLASTIC GRAINS: 20% very fine sand, 30% fine sand, 30% medium sand, 20% coarse sand, moderately sorted, angular, sub-spherical, CEMENTS/STRENGTHS: silica/trace, ACCESSORIES: kaolinite trace POROSITY: intergranular, 20%
	10	SLTST	sandy	Siltstone, sandy, light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 30% clay, 50% silt, 15% very fine sand, 5% fine sand,
2286	60	SST		Sandstone, clear coloured, loose, massive CLASTIC GRAINS: 20% very fine sand, 30% fine sand, 30% medium sand, 20% coarse sand, moderately sorted, angular, sub-spherical, CEMENTS/STRENGTHS: silica/trace, ACCESSORIES: kaolinite trace POROSITY: intergranular, 20%
	20	SLTST		Siltstone, light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 30% clay, 50% silt, 20% very fine sand, 10% fine sand
	20	CLYST		Claystone, white, off white, very light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 60% clay, 10% silt, 20% very fine sand, 10% fine sand, ACCESSORIES: kaolinite 25%, sandy 25%
2295	40	SST		Sandstone, clear coloured, loose, massive CLASTIC GRAINS: 20% very fine sand, 30% fine sand, 30% medium sand, 20% coarse sand,

				moderately sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: silica/trace, ACCESSORIES: kaolinite trace POROSITY: intergranular, 20%
	30	SLTST		Siltstone, light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 20% clay, 60% silt, 15% very fine sand, 5% fine sand
	30	CLYST		Claystone, white, off white, very light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 60% clay, 10% silt, 10% very fine sand, 20% fine sand, ACCESSORIES: kaolinite 25%, sandy 25%, quartz 5%
2304	40	COAL		Coal, vitreous black coloured, firm, blocky fracture, ACCESSORIES: argillaceous trace
	20	SLTST		Siltstone, light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 30% clay, 60% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: argillaceous 5%
	20	CLYST		Claystone, white, off white, very light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 60% clay, 10% silt, 20% very fine sand, 10% fine sand, ACCESSORIES: kaolinite 25%, sandy 25%, quartz 5%
	20	SST		Sandstone, clear coloured, loose, massive CLASTIC GRAINS: 20% very fine sand, 30% fine sand, 30% medium sand, 20% coarse sand, moderately sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: silica/trace, ACCESSORIES: kaolinite trace POROSITY: intergranular, 20%
2313	50	COAL		Coal, vitreous black coloured, firm, blocky fracture, ACCESSORIES: argillaceous trace
	30	SLTST		Siltstone, light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 30% clay, 60% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: argillaceous 5%
	20	SST		Sandstone, clear coloured, loose, massive CLASTIC GRAINS: 20% very fine sand, 40% fine sand, 30% medium sand, 10% coarse sand, moderately sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: silica/trace, ACCESSORIES: kaolinite trace POROSITY: intergranular, 20%
2322	50	COAL		Coal, vitreous black coloured, firm, blocky fracture, ACCESSORIES: argillaceous trace
	30	SLTST		Siltstone, light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 30% clay, 60% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: argillaceous 5%
	20	SST		Sandstone, clear coloured, loose, massive CLASTIC GRAINS: 20% very fine sand, 40% fine sand, 30% medium sand, 10% coarse sand, moderately sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: silica/trace, ACCESSORIES: kaolinite trace POROSITY: intergranular, 20%
2331	30	COAL		Coal, black coloured, firm, blocky fracture, ACCESSORIES: argillaceous trace
	30	SLTST		Siltstone, off white - light brown coloured,

				firm, sub-blocky fracture CLASTIC GRAINS: 10% clay, 60% silt, 30% very fine sand, 10% fine sand, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: carbonaceous 5%
	40	SST		Sandstone, off white - clear, translucent coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 40% clay, 30% very fine sand, 20% fine sand, 10% medium sand, moderately sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 10%
2340	20	COAL		Coal, black coloured, firm, blocky fracture, ACCESSORIES: argillaceous trace
	20	SLTST		Siltstone, off white - light brown coloured, firm, sub-blocky fracture CLASTIC GRAINS: 10% clay, 60% silt, 30% very fine sand, 10% fine sand, ACCESSORIES: carbonaceous 10%
	60	SST		Sandstone, off white - clear, translucent coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 40% clay, 30% very fine sand, 20% fine sand, 10% medium sand, moderately sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 10%
2349	20	COAL		Coal, black coloured, firm, blocky fracture, ACCESSORIES: argillaceous trace, silty trace
	10	SLTST		Siltstone, light brown/speckled black coloured, firm, sub-blocky fracture CLASTIC GRAINS: 90% silt, 10% very fine sand, ACCESSORIES: argillaceous trace, carbonaceous 15%
	70	SST		Sandstone, off white - clear, translucent coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 40% clay, 30% very fine sand, 20% fine sand, 10% medium sand, moderately sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%
2355	tr	COAL		Coal, black coloured, firm, blocky fracture, ACCESSORIES: argillaceous trace, silty trace
	30	SLTST		Siltstone, light brown/speckled black coloured, firm, sub-blocky fracture CLASTIC GRAINS: 90% silt, 10% very fine sand, ACCESSORIES: argillaceous trace, carbonaceous 15%
	70	SST		Sandstone, off white - light brown coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 50% clay, 30% very fine sand, 20% fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%
2361	50	SLTST		Siltstone, light brown/speckled black coloured, firm, sub-blocky fracture CLASTIC GRAINS: 90% silt, 10% very fine sand, ACCESSORIES: argillaceous trace, carbonaceous 15%
	50	SST		Sandstone, off white - light brown coloured,

				loose-soft, dispersive fracture CLASTIC GRAINS: 50% clay, 30% very fine sand, 20% fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%
2367	60	SLTST		Siltstone, light brown/speckled black coloured, firm, sub-blocky fracture CLASTIC GRAINS: 80% silt, 10% very fine sand, 10% fine sand, ACCESSORIES: argillaceous trace, carbonaceous 15%
	40	SST		Sandstone, off white - light brown coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 50% clay, 30% very fine sand, 20% fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%
2370	70	SLTST		Siltstone, light brown/speckled black coloured, firm, sub-blocky fracture CLASTIC GRAINS: 80% silt, 10% very fine sand, 10% fine sand, ACCESSORIES: argillaceous trace, carbonaceous 15%
	30	SST		Sandstone, off white - light brown coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% very fine sand, 10% fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%
2373	10	SLTST		Siltstone, light brown/speckled black coloured, firm, sub-blocky fracture CLASTIC GRAINS: 80% silt, 10% very fine sand, 10% fine sand, ACCESSORIES: argillaceous trace, carbonaceous 15%
	10	SST		Sandstone, off white - light brown coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% very fine sand, 10% fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%
	80	COAL		Coal, black coloured, firm, blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: trace silt, ACCESSORIES: argillaceous trace, silty trace
2379	10	SLTST		Siltstone, light brown/speckled black coloured, firm, sub-blocky fracture CLASTIC GRAINS: 80% silt, 10% very fine sand, 10% fine sand, ACCESSORIES: argillaceous trace, carbonaceous 15%
	10	SST		Sandstone, off white - light brown coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% very fine sand, 10% fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%
	80	COAL		Coal, black coloured, firm, blocky fracture

				CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: trace silt, ACCESSORIES: argillaceous trace, silty trace
2382	50	SLTST		Siltstone, medium brown, dark brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: argillaceous trace, carbonaceous 15%, mica trace
	50	SST		Sandstone, off white - light brown coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% very fine sand, 10% fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%
2385	80	SLTST		Siltstone, medium brown, dark brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: argillaceous trace, carbonaceous 15%, mica trace
	20	SST		Sandstone, off white - light brown coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% very fine sand, 10% fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%
	tr	CLYST		Claystone, greenish grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 80% clay, ACCESSORIES: calcareous 20%
2388	70	SLTST		Siltstone, medium brown, dark brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: argillaceous trace, carbonaceous 15%, mica trace
	25	SST		Sandstone, off white - light brown coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% very fine sand, 10% fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%
	5	CLYST		Claystone, greenish grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 80% clay, ACCESSORIES: calcareous 20%
2391	70	SLTST		Siltstone, medium brown, dark brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: argillaceous trace, carbonaceous 15%, mica trace
	30	SST		Sandstone, off white - light brown coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% very fine sand, 10% fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%

	tr	CLYST		Claystone, greenish grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 80% clay, ACCESSORIES: calcareous 20%
2394	70	SLTST		Siltstone, medium brown, dark brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: argillaceous trace, carbonaceous 15%, mica trace
	30	SST		Sandstone, off white - light brown coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 40% clay, 40% very fine sand, 10% fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%
2397	70	SLTST		Siltstone, medium brown, dark brown coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: argillaceous trace, carbonaceous 15%, mica trace
	30	SST		Sandstone, off white - light brown coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 40% clay, 50% very fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%
2400	80	SLTST		Siltstone, medium brownish / black coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 80% silt, 20% very fine sand, ACCESSORIES: sandy 20%, carbonaceous 15%, mica trace
	15	SST		Sandstone, off white - light brown coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 40% clay, 50% very fine sand, trace fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%
	5	CLYST		Claystone, greenish grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 80% clay, ACCESSORIES: calcareous 20%
2406	40	SLTST		Siltstone, medium brownish / black coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 80% silt, 20% very fine sand, ACCESSORIES: sandy 20%, carbonaceous 15%, mica trace
	15	SST		Sandstone, off white - light brown coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 40% clay, 50% very fine sand, trace fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%
	5	CLYST		Claystone, olive grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 80% clay, ACCESSORIES: calcareous 20%

	40	COAL		Coal, black coloured, firm, blocky fracture CLASTIC GRAINS: trace clay, trace silt
2409	60	SLTST		Siltstone, medium brownish / black coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 80% silt, 20% very fine sand, ACCESSORIES: sandy 20%, carbonaceous 15%, mica trace
	20	SST		Sandstone, off white - light brown coloured, soft, sub-blocky fracture CLASTIC GRAINS: 40% clay, 50% very fine sand, trace fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20%, carbonaceous trace POROSITY: intergranular, 3%
	tr	CLYST		Claystone, olive grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 80% clay, ACCESSORIES: calcareous 20%
	20	COAL		Coal, black coloured, firm, blocky fracture CLASTIC GRAINS: trace clay, trace silt
2415	90	SLTST		Siltstone, medium brownish / black coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 80% silt, 20% very fine sand, ACCESSORIES: sandy 20%, carbonaceous 15%, mica trace
	10	SST		Sandstone, off white - light brown coloured, soft, sub-blocky fracture CLASTIC GRAINS: 40% clay, 50% very fine sand, trace fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20%, carbonaceous trace POROSITY: intergranular, 3%
2418	5	SLTST		Siltstone, medium brownish / black coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 80% silt, 20% very fine sand, ACCESSORIES: sandy 20%, carbonaceous 15%, mica trace
	5	SST		Sandstone, off white - light brown coloured, soft, sub-blocky fracture CLASTIC GRAINS: 40% clay, 50% very fine sand, trace fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20%, carbonaceous trace POROSITY: intergranular, 3%
	90	COAL		Coal, black coloured, firm, blocky fracture CLASTIC GRAINS: trace clay, trace silt
2424	5	SLTST		Siltstone, medium brownish / black coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 80% silt, 20% very fine sand, ACCESSORIES: sandy 20%, carbonaceous 15%, mica trace
	5	CLYST		Claystone, olive grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 20% clay CLASTIC GRAINS: 80% clay, ACCESSORIES: calcareous 20%
	90	COAL		Coal, black coloured, firm, blocky fracture CLASTIC GRAINS: trace clay, trace silt
2427	80	SLTST		Siltstone, medium brownish / black coloured, soft-friable, sub-fissile fracture CLASTIC

				GRAINS: trace clay, 80% silt, 20% very fine sand, ACCESSORIES: sandy 20%, carbonaceous 15%, mica trace
	20	SST		Sandstone, off white - light brown coloured, soft, sub-blocky fracture CLASTIC GRAINS: 40% clay, 50% very fine sand, trace fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20%, carbonaceous trace POROSITY: intergranular, 3%
2430	70	SLTST		Siltstone, medium brownish / black coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 80% silt, 20% very fine sand, ACCESSORIES: sandy 20%, carbonaceous 15%, mica trace
	20	SST		Sandstone, off white - light brown coloured, soft, sub-blocky fracture CLASTIC GRAINS: 40% clay, 50% very fine sand, trace fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20%, carbonaceous trace POROSITY: intergranular, 3%
	10	CLYST		Claystone, olive grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%
2433	80	SLTST		Siltstone, medium brownish / black coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 80% silt, 20% very fine sand, ACCESSORIES: sandy 20%, carbonaceous 15%, mica trace
	10	SST		Sandstone, off white - light brown coloured, soft, sub-blocky fracture CLASTIC GRAINS: 40% clay, 50% very fine sand, trace fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20%, carbonaceous trace POROSITY: intergranular, 3%
	10	CLYST		Claystone, olive grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%
2436	90	SLTST		Siltstone, medium brownish / black coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 80% silt, 20% very fine sand, ACCESSORIES: sandy 20%, carbonaceous 15%, mica trace
	10	SST		Sandstone, off white - light brown coloured, soft, sub-blocky fracture CLASTIC GRAINS: 40% clay, 50% very fine sand, trace fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20%, carbonaceous trace POROSITY: intergranular, 3%
	tr	CLYST		Claystone, olive grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%
2439	80	SLTST		Siltstone, medium brownish / black coloured,

				soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 80% silt, 20% very fine sand, ACCESSORIES: sandy 20%, carbonaceous 15%, mica trace
	20	SST		Sandstone, off white - light brown coloured, soft, sub-blocky fracture CLASTIC GRAINS: 40% clay, 50% very fine sand, trace fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20%, carbonaceous trace POROSITY: intergranular, 3%
	tr	CLYST		Claystone, olive grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%
2445	90	SLTST		Siltstone, medium brownish / black coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 80% silt, 20% very fine sand, ACCESSORIES: sandy 20%, carbonaceous 15%, mica trace
	10	SST		Sandstone, off white - light brown coloured, soft, sub-blocky fracture CLASTIC GRAINS: 40% clay, 50% very fine sand, trace fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20%, carbonaceous trace POROSITY: intergranular, 3%
	tr	CLYST		Claystone, olive grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%
2451	10	SLTST		Siltstone, medium brownish / black coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 80% silt, 20% very fine sand, CEMENTS/STRENGTHS: dol/tr, ACCESSORIES: sandy 20%, carbonaceous 15%, mica trace, CALCIMETERY: 1% dolomite
	20	SST		Sandstone, off white - light brown coloured, soft, sub-blocky fracture CLASTIC GRAINS: 40% clay, 50% very fine sand, trace fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20%, carbonaceous trace POROSITY: intergranular, 3%
	70	COAL		Coal, black coloured, firm, blocky fracture CLASTIC GRAINS: trace clay, trace silt
2454	50	SLTST		Siltstone, medium brownish / black coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: trace clay, 80% silt, 20% very fine sand, ACCESSORIES: sandy 20%, carbonaceous 15%, mica trace, CALCIMETERY: 1% dolomite
	40	SST	arg	Sandstone, off white - light brown coloured, soft, sub-blocky fracture CLASTIC GRAINS: 40% clay, 50% very fine sand, trace fine sand, well sorted, rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20%, carbonaceous trace POROSITY: intergranular, 3%
	10	CLYST		Claystone, olive grey, olive grey, yellow brown

				coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 90% clay, ACCESSORIES: calcareous 10%
2457	50	SLTST		Siltstone, medium brown - dark grey coloured, firm, blocky fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: carbonaceous trace, argillaceous 3%
	40	SST	arg	Sandstone, argillaceous, light brown - off white coloured, soft, dispersive fracture CLASTIC GRAINS: 30% clay, 10% silt, 40% very fine sand, 20% fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 25% POROSITY: intergranular, trace
	10	CLYST		Claystone, light grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 70% clay, 20% silt, ACCESSORIES: argillaceous 10%, calcareous trace
2460	30	CLYST		Claystone, light grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 70% clay, 20% silt, ACCESSORIES: argillaceous 10%, calcareous trace
	40	SLTST		Siltstone, argillaceous, medium brown - dark grey coloured, firm, blocky fracture CLASTIC GRAINS: 10% clay, 70% silt, 10% very fine sand, ACCESSORIES: carbonaceous trace, argillaceous 3%
	30	SST	arg	Sandstone, argillaceous, light brown - off white coloured, soft, dispersive fracture CLASTIC GRAINS: 30% clay, 10% silt, 40% very fine sand, 20% fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 25% POROSITY: intergranular, trace
2463	30	CLYST		Claystone, light grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 70% clay, 20% silt, ACCESSORIES: argillaceous 10%, calcareous trace
	40	SLTST		Siltstone, medium brown - dark grey coloured, firm, blocky fracture CLASTIC GRAINS: 10% clay, 70% silt, 10% very fine sand, ACCESSORIES: calcareous 5%, argillaceous 3%
	25	SST		Sandstone, medium brown - dark grey coloured, soft, sub-blocky fracture CLASTIC GRAINS: 10% clay, 10% silt, 30% very fine sand, 30% fine sand, 15% medium sand, 5% coarse sand, poorly sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 10%, carbonaceous trace POROSITY: intergranular, 3%
	5	COAL		Coal, black coloured, friable - firm, blocky fracture, ACCESSORIES: argillaceous trace
2466	70	SST		Sandstone, clear - translucent, off white coloured, loose, massive CLASTIC GRAINS: 10% silt, 20% very fine sand, 40% fine sand, 30% medium sand, well sorted, sub-rounded, sub-

				spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 5% POROSITY: intergranular, 15%
	20	CLYST		Claystone, light grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 70% clay, 20% silt, ACCESSORIES: calcareous 5%, argillaceous 3%
	10	SLTST		Siltstone, medium brown - dark grey coloured, firm, blocky fracture CLASTIC GRAINS: 10% clay, 70% silt, 10% very fine sand, ACCESSORIES: argillaceous 10%, carbonaceous trace
2469	30	SST		Sandstone, clear - translucent, off white coloured, loose, massive CLASTIC GRAINS: 10% silt, 20% very fine sand, 40% fine sand, 30% medium sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 5% POROSITY: intergranular, 15%
	60	CLYST		Claystone, light grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 70% clay, 20% silt, ACCESSORIES: calcareous 5%, argillaceous 3%
	10	SLTST		Siltstone, medium brown - dark grey coloured, firm, blocky fracture CLASTIC GRAINS: 10% clay, 70% silt, 10% very fine sand, ACCESSORIES: argillaceous 10%, carbonaceous trace
2472	60	SST		Sandstone, clear - translucent, off white coloured, loose, massive CLASTIC GRAINS: 10% silt, 20% very fine sand, 30% fine sand, 30% medium sand, 5% coarse sand, 5% very coarse sand, moderately sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 5% POROSITY: intergranular, 15%
	40	CLYST		Claystone, light grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 70% clay, 20% silt, ACCESSORIES: calcareous 5%, argillaceous 3%
2475	50	SST		Sandstone, clear - translucent, off white coloured, loose, dispersive fracture, CLASTIC GRAINS: 20% silt, 30% very fine sand, 30% fine sand, 20% medium sand, moderately sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: coal trace POROSITY: intergranular, 5%
	20	SST		Sandstone, light brown - off white coloured, firm, sub-blocky fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: argillaceous 5%
	30	CLYST		Claystone, light grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 70% clay, 20% silt, ACCESSORIES: argillaceous trace
2478	70	SST		Sandstone, clear - translucent, off white coloured, loose, dispersive fracture, CLASTIC GRAINS: 20% silt, 30% very fine sand, 30% fine sand, 20% medium sand, moderately sorted, sub-rounded, sub-spherical,

				CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: coal trace POROSITY: intergranular, 5%
	20	COAL		Coal, black coloured, friable - firm, sub-blocky fracture, ACCESSORIES: argillaceous 3%
	10	CLYST		Claystone, light grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 70% clay, 20% silt, ACCESSORIES: calcareous 5%, argillaceous 3%
2484	50	COAL		Coal, black coloured, friable - firm, blocky fracture CLASTIC GRAINS: 10% clay, ACCESSORIES: argillaceous 10%
	20	SLTST		Siltstone, medium - dark brown coloured, moderately hard-hard, blocky fracture CLASTIC GRAINS: 5% clay, 50% silt, 40% very fine sand, 5% fine sand, ACCESSORIES: argillaceous 5%, carbonaceous 10%
	20	SST		Sandstone, off white - light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 30% clay, 20% silt, 40% very fine sand, 10% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 10%
	10	CLYST		Claystone, light grey - blue grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 70% clay, 20% silt, ACCESSORIES: argillaceous trace
2490	40	COAL		Coal, black coloured, friable - firm, blocky fracture CLASTIC GRAINS: 10% clay, ACCESSORIES: argillaceous 10%
	40	SLTST		Siltstone, medium - dark brown/grey coloured, moderately hard-hard, blocky fracture CLASTIC GRAINS: 5% clay, 50% silt, 40% very fine sand, 5% fine sand, ACCESSORIES: argillaceous 5%, carbonaceous 10%
	10	SST		Sandstone, off white - light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 30% clay, 20% silt, 40% very fine sand, 10% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 10%
	10	CLYST		Claystone, light grey - blue grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 70% clay, 20% silt, ACCESSORIES: argillaceous trace
2496	10	COAL		Coal, black - dark brown coloured, moderately hard, sub-fissile fracture CLASTIC GRAINS: 10% clay, ACCESSORIES: argillaceous 10%
	60	SLTST		Siltstone, medium - dark brown/grey coloured, moderately hard-hard, blocky fracture CLASTIC GRAINS: 5% clay, 50% silt, 40% very fine sand, 5% fine sand, ACCESSORIES: argillaceous 5%, carbonaceous 10%
	20	SST		Sandstone, off white - light brown coloured, very soft, dispersive fracture CLASTIC GRAINS: 30% clay, 10% silt, 40% very fine sand, 10% fine sand, 10% medium sand, moderately sorted,

				sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 5%
	10	CLYST		Claystone, light grey - blue grey coloured, moderately hard, blocky fracture, CALCAREOUS GRAINS: 10% clay CLASTIC GRAINS: 70% clay, 20% silt, ACCESSORIES: argillaceous trace
2502	70	SLTST		Siltstone, dark brown - grey coloured, moderately hard, blocky fracture CLASTIC GRAINS: 5% clay, 55% silt, 40% very fine sand, ACCESSORIES: argillaceous 5%, carbonaceous 20%
	30	SST		Sandstone, off white coloured, very soft, massive CLASTIC GRAINS: 30% clay, 5% silt, 60% very fine sand, 5% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 25% POROSITY: intergranular, 3%
2511	80	SLTST		Siltstone, very dark grey - dark brown coloured, firm-moderately hard, blocky fracture CLASTIC GRAINS: 15% clay, 70% silt, 15% very fine sand, ACCESSORIES: argillaceous 10%, calcareous trace, carbonaceous 5%
	20	SST		Sandstone, off white - light brown coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 10% silt, 60% very fine sand, trace fine sand, very well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 20% POROSITY: intergranular, 3%
2517	20	COAL		Coal, black - dark brown coloured, friable - firm, blocky fracture, ACCESSORIES: argillaceous 10%
	50	SLTST		Siltstone, dark brown - grey coloured, firm-moderately hard, blocky fracture CLASTIC GRAINS: 15% clay, 70% silt, 15% very fine sand, ACCESSORIES: argillaceous 10%, calcareous trace, carbonaceous 5%
	20	SST		Sandstone, off white - light brown coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 10% silt, 60% very fine sand, trace fine sand, very well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 20% POROSITY: intergranular, 3%
	10	CLYST		Claystone, moderately hard, blocky fracture, CALCAREOUS GRAINS: 15% clay CLASTIC GRAINS: 60% clay, 15% silt, 10% very fine sand, ACCESSORIES: arenaceous 10%
2526	80	COAL		Coal, black - dark brown coloured, friable - firm, blocky fracture, ACCESSORIES: argillaceous trace
	10	SST		Sandstone, off white - light brown coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 10% silt, 60% very fine sand, trace fine sand, very well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous

				20% POROSITY: intergranular, 3%
	10	CLYST		Claystone, moderately hard, blocky fracture, CALCAREOUS GRAINS: 15% clay CLASTIC GRAINS: 60% clay, 15% silt, 10% very fine sand, ACCESSORIES: arenaceous 10%
2535	60	COAL		Coal, black - dark brown coloured, friable - firm, blocky fracture, ACCESSORIES: argillaceous trace
	30	SLTST		Siltstone, dark brown - grey coloured, firm-moderately hard, blocky fracture CLASTIC GRAINS: 15% clay, 70% silt, 15% very fine sand, ACCESSORIES: argillaceous 10%, calcareous trace, carbonaceous 5%
	10	SST		Sandstone, off white - light brown coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 30% clay, 10% silt, 60% very fine sand, trace fine sand, very well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: argillaceous 20% POROSITY: intergranular, 3%
2544	15	COAL		Coal, black coloured, friable - firm, blocky fracture, ACCESSORIES: argillaceous trace
	80	SLTST		Siltstone, medium brown - dark brown/grey coloured, firm, sub-blocky fracture CLASTIC GRAINS: 15% clay, 70% silt, 15% very fine sand, ACCESSORIES: argillaceous 5%, carbonaceous 3%
	5	CLYST		Claystone, light grey - olive grey coloured, firm, sub-blocky fracture, CALCAREOUS GRAINS: 5% clay CLASTIC GRAINS: 70% clay, 20% silt, 5% very fine sand, ACCESSORIES: calcareous trace
2553	5	COAL		Coal, black coloured, friable - firm, blocky fracture, ACCESSORIES: argillaceous trace
	70	SLTST		Siltstone, medium brown - dark brown/grey coloured, firm, sub-blocky fracture CLASTIC GRAINS: 15% clay, 70% silt, 15% very fine sand, ACCESSORIES: argillaceous 5%, carbonaceous 3%
	15	CLYST		Claystone, light grey - olive grey coloured, firm, sub-blocky fracture CALCAREOUS GRAINS: trace clay CLASTIC GRAINS: 80% clay, 15% silt, 5% very fine sand, ACCESSORIES: sandy trace
	10	SST		Sandstone, off white - cream coloured, very soft, dispersive fracture CLASTIC GRAINS: 30% clay, 5% silt, 50% very fine sand, 15% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 3%
2562	40	SLTST		Siltstone, medium - dark brown, occasionally grey coloured, moderately hard, blocky fracture CLASTIC GRAINS: 10% clay, 80% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: carbonaceous 5%, calcareous trace
	50	SST		Sandstone, off white - light brown coloured, soft, dispersive fracture CLASTIC GRAINS: 30% clay, 30% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 25% POROSITY:

				intergranular, 3%
	10	COAL		Coal, black coloured, firm, blocky fracture CLASTIC GRAINS: trace clay, 5% silt, ACCESSORIES: sandy trace
2571	10	COAL		Coal, black coloured, firm, blocky fracture CLASTIC GRAINS: trace clay, 5% silt, ACCESSORIES: sandy trace
	40	SLTST		Siltstone, medium - dark brown, occasionally grey coloured, moderately hard, blocky fracture CLASTIC GRAINS: 10% clay, 80% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: carbonaceous 5%, calcareous trace
	50	SST		Sandstone, off white - light brown coloured, soft, dispersive fracture CLASTIC GRAINS: 30% clay, 30% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 3%
2574	70	SLTST		Siltstone, medium - dark brownish / grey coloured, firm, blocky fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: carbonaceous 5%, calcareous trace
	30	SST		Sandstone, off white - light brown coloured, soft, dispersive fracture CLASTIC GRAINS: 30% clay, 30% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 3%
	tr	COAL		Coal, black coloured, firm, blocky fracture CLASTIC GRAINS: trace clay, 5% silt, ACCESSORIES: sandy trace
2580	50	SLTST		Siltstone, medium - dark brownish / grey coloured, firm, blocky fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: carbonaceous 5%, calcareous trace
	50	SST		Sandstone, off white - light brown coloured, soft-friable, dispersive fracture CLASTIC GRAINS: 30% clay, 30% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, calcareous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 3%
2592	80	SLTST		Siltstone, medium - dark brownish / grey coloured, firm, blocky fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: carbonaceous 5%, calcareous trace
	10	SST		Sandstone, off white - light brown coloured, soft-friable, dispersive fracture CLASTIC GRAINS: 30% clay, 30% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, calcareous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 3%
	10	COAL		Coal, black coloured, firm, blocky fracture

				CALCAREOUS GRAINS: trace clay, trace silt, ACCESSORIES: sandy trace
2598	40	SLTST		Siltstone, medium - dark brownish / grey coloured, firm, blocky fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: carbonaceous 5%, calcareous trace
	10	SST		Sandstone, off white - light brown coloured, soft-friable, dispersive fracture CLASTIC GRAINS: 30% clay, 30% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, calcareous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 3%
	50	COAL		Coal, black coloured, firm, blocky fracture CALCAREOUS GRAINS: trace clay, trace silt, ACCESSORIES: sandy trace
2604	70	SLTST		Siltstone, medium - dark brownish / grey coloured, firm, blocky fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: carbonaceous 5%, calcareous trace
	30	SST		Sandstone, off white - light brown coloured, soft-friable, dispersive fracture CLASTIC GRAINS: 30% clay, 30% silt, 40% very fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, calcareous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 3%, FLUORESCENCE: 20% bright even light green, no direct cut, very slow bright light cream bleeding crush cut, bright light cream patchy residual ring.
2607	70	SLTST		Siltstone, medium - dark brownish / grey coloured, firm, blocky fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: carbonaceous 5%, calcareous trace
	30	SST		Sandstone, off white - light brown, clear coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 20% clay, 20% fine sand, 60% medium sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, calcareous/weak, ACCESSORIES: kaolinite 10% POROSITY: intergranular, 15% FLUORESCENCE: 80% bright even light green, no direct cut, very slow bright light cream bleeding crush cut, bright light cream patchy residual ring.
2614	70	SLTST		Siltstone, medium - dark brownish / grey coloured, firm, blocky fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: carbonaceous 5%, calcareous trace
	30	SST		Sandstone, off white - light brown, clear coloured, loose-soft, dispersive fracture CLASTIC GRAINS: 20% clay, 20% fine sand, 60% medium sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, calcareous/weak,

				ACCESSORIES: kaolinite 10% POROSITY: intergranular, 15% FLUORESCENCE: 80% bright even light green, no direct cut, very slow bright light cream bleeding crush cut, bright light cream patchy residual ring.
2616	10	CLYST		Claystone, light grey - blue grey coloured, firm, blocky fracture, CALCAREOUS GRAINS: 15% clay CLASTIC GRAINS: 70% clay, 15% silt, ACCESSORIES: argillaceous trace, calcareous 15%
	50	SLTST		Siltstone, medium brown - dark grey coloured, soft, sub-blocky fracture CLASTIC GRAINS: 15% clay, 70% silt, 15% very fine sand, ACCESSORIES: carbonaceous 5%
	5	COAL		Coal, black coloured, firm-moderately hard, blocky fracture
	30	SST	arg	Sandstone, kaolinitic, off white - cream coloured, very soft, dispersive fracture CLASTIC GRAINS: 50% clay, 5% silt, 40% very fine sand, 5% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, trace, FLUORESCENCE: 50% bright yellow, moderately fast, even crush cut, bright green bleeding direct cut, thin pale green residual ring.
	5	SST		Sandstone, translucent - off white coloured, moderately hard, blocky fracture CLASTIC GRAINS: 15% very fine sand, 80% fine sand, 5% medium sand, very well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: silica/moderate, argillaceous/trace, ACCESSORIES: kaolinite trace, fossils trace POROSITY: intergranular, 15%
2619	5	CLYST		Claystone, light grey - blue grey coloured, firm, blocky fracture, CALCAREOUS GRAINS: 15% clay CLASTIC GRAINS: 70% clay, 15% silt, ACCESSORIES: argillaceous trace, calcareous 15%
	75	SLTST		Siltstone, medium brown - dark grey coloured, soft, sub-blocky fracture CLASTIC GRAINS: 15% clay, 70% silt, 15% very fine sand, ACCESSORIES: carbonaceous 5%, coal 5%
	20	SST	arg	Sandstone, kaolinitic, off white - cream coloured, very soft, dispersive fracture CLASTIC GRAINS: 50% clay, 5% silt, 40% very fine sand, 5% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 25%
2622	70	SLTST		Siltstone, medium brown - dark grey coloured, soft, sub-blocky fracture CLASTIC GRAINS: 15% clay, 70% silt, 15% very fine sand, ACCESSORIES: carbonaceous 5%
	25	SST	arg	Sandstone, kaolinitic, off white - cream coloured, very soft, dispersive fracture CLASTIC GRAINS: 50% clay, 5% silt, 40% very fine sand, 5% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 25%

				POROSITY: intergranular, trace, FLUORESCENCE: 50% bright yellow, moderately fast, even crush cut, bright green bleeding direct cut, thin pale green residual ring.
	5	SST		Sandstone, translucent - off white coloured, moderately hard, blocky fracture CLASTIC GRAINS: 15% very fine sand, 80% fine sand, 5% medium sand, very well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: silica/moderate, argillaceous/trace, ACCESSORIES: kaolinite trace, fossils trace POROSITY: intergranular, 15%
2625	80	SLTST		Siltstone, medium brown - dark grey coloured, soft, sub-blocky fracture CLASTIC GRAINS: 15% clay, 70% silt, 15% very fine sand, ACCESSORIES: carbonaceous 5%
	10	SST	kaol	Sandstone, kaolinitic, off white - cream coloured, very soft, dispersive fracture CLASTIC GRAINS: 50% clay, 5% silt, 40% very fine sand, 5% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 25% POROSITY: intergranular, trace
	10	SST		Sandstone, translucent - off white coloured, moderately hard, blocky fracture CLASTIC GRAINS: 15% very fine sand, 80% fine sand, 5% medium sand, very well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: silica/moderate, argillaceous/trace, ACCESSORIES: kaolinite trace, fossils trace POROSITY: intergranular, 15%, FLUORESCENCE: trace bright yellow, moderately fast, even crush cut, bright green bleeding direct cut, thin pale green residual ring.
2628	80	SLTST		Siltstone, medium brown - dark grey coloured, soft, sub-blocky fracture CLASTIC GRAINS: 15% clay, 70% silt, 15% very fine sand, ACCESSORIES: carbonaceous 5%
	20	SST		Sandstone, translucent - off white coloured, moderately hard, blocky fracture CLASTIC GRAINS: 15% very fine sand, 80% fine sand, 5% medium sand, very well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: silica/moderate, POROSITY: intergranular, 10%, FLUORESCENCE: 50% bright yellow, moderately fast, even crush cut, bright green bleeding direct cut, thin pale green residual ring.
2634	85	SLTST		Siltstone, medium - dark grey coloured, moderately hard, blocky fracture CLASTIC GRAINS: trace clay, 100% silt, ACCESSORIES: argillaceous trace, pyrite trace
	15	CLYST	aren	Claystone, arenaceous, medium - light grey coloured, soft, sub-blocky fracture CLASTIC GRAINS: 60% clay, 15% silt, 10% very fine sand, 10% fine sand, 5% medium sand
2640	80	SLTST		Siltstone, medium - dark grey coloured, moderately hard, blocky fracture CLASTIC GRAINS: trace clay, 100% silt, trace very fine sand, ACCESSORIES: argillaceous trace, pyrite

				trace
	10	CLYST	aren	Claystone, arenaceous, medium - light grey coloured, soft, sub-blocky fracture CLASTIC GRAINS: 60% clay, 15% silt, 10% very fine sand, 10% fine sand, 5% medium sand
	10	SST		Sandstone, translucent - off white coloured, moderately hard, blocky fracture CLASTIC GRAINS: 15% very fine sand, 80% fine sand, 5% medium sand, very well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: silica/moderate, POROSITY: intergranular, 10%
2646	100	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-blocky fracture CLASTIC GRAINS: trace clay, 100% silt, trace very fine sand, ACCESSORIES: argillaceous trace, mica trace
2652	100	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-blocky fracture CLASTIC GRAINS: trace clay, 100% silt, trace very fine sand, ACCESSORIES: argillaceous trace, mica trace
2658	55	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-blocky fracture CLASTIC GRAINS: trace clay, 100% silt, trace very fine sand, ACCESSORIES: argillaceous trace, mica trace
	20	SST		Sandstone, off white, white/light brown coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 80% very fine sand, 20% fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: silica/weak, argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%, FLUORESCENCE: trace dull yellow, no direct cut no crush cut, trace broken pale cream residual ring.
	25	COAL		Coal, black coloured, firm, blocky fracture CALCAREOUS GRAINS: trace clay, trace very fine sand
2664	80	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-blocky fracture CLASTIC GRAINS: trace clay, 100% silt, trace very fine sand, ACCESSORIES: argillaceous trace, mica trace
	10	SST		Sandstone, off white, white/light brown coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 80% very fine sand, 20% fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: silica/weak, argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, 3%
	10	COAL		Coal, black coloured, firm, blocky fracture CALCAREOUS GRAINS: trace clay, trace very fine sand
2670	80	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-blocky fracture CLASTIC GRAINS: trace clay, 100% silt, trace very fine sand, ACCESSORIES: argillaceous trace, mica trace
	20	SST		Sandstone, off white, white/light brown coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 20% silt, 60% very fine sand, 20% fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: silica/weak, argillaceous/weak, ACCESSORIES: kaolinite 20%

				POROSITY: intergranular, trace
2676	100	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-fissile fracture CLASTIC GRAINS: trace clay, 95% silt, 5% very fine sand, ACCESSORIES: argillaceous trace, mica trace
2682	100	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-fissile fracture CLASTIC GRAINS: trace clay, 95% silt, 5% very fine sand, ACCESSORIES: argillaceous trace, mica trace
2688	100	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-fissile fracture CLASTIC GRAINS: trace clay, 95% silt, 5% very fine sand, ACCESSORIES: argillaceous trace, mica trace
2694	100	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-fissile fracture CLASTIC GRAINS: trace clay, 95% silt, 5% very fine sand, ACCESSORIES: argillaceous trace, mica trace
2697	100	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-fissile fracture CLASTIC GRAINS: trace clay, 95% silt, 5% very fine sand, ACCESSORIES: argillaceous trace, mica trace
	tr	SST		Sandstone, off white, white/light brown coloured, very soft, sub-blocky fracture CLASTIC GRAINS: 20% silt, 60% very fine sand, 20% fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: silica/weak, argillaceous/weak, ACCESSORIES: kaolinite 20% POROSITY: intergranular, trace
	tr	DOL		Dolomite, light brown / tan coloured, firm-moderately hard, blocky fracture CLASTIC GRAINS: 10% clay, ACCESSORIES: argillaceous 10%
2703	100	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-fissile fracture CLASTIC GRAINS: trace clay, 95% silt, 5% very fine sand, ACCESSORIES: argillaceous trace, mica trace
2706	95	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-fissile fracture CLASTIC GRAINS: trace clay, 95% silt, 5% very fine sand, ACCESSORIES: argillaceous trace, mica trace
	5	COAL		Coal, black coloured, friable, blocky fracture CLASTIC GRAINS: trace silt
2709	70	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-fissile fracture CLASTIC GRAINS: trace clay, 95% silt, 5% very fine sand, ACCESSORIES: argillaceous trace, mica trace
	30	COAL		Coal, black coloured, friable, blocky fracture CLASTIC GRAINS: trace silt
2712	90	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-fissile fracture CLASTIC GRAINS: trace clay, 95% silt, 5% very fine sand, ACCESSORIES: argillaceous trace, mica trace
	10	COAL		Coal, black coloured, friable, blocky fracture CLASTIC GRAINS: trace silt
2718	40	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-fissile fracture CLASTIC GRAINS: trace clay, 95% silt, 5% very fine sand, ACCESSORIES: argillaceous trace, mica trace
	40	SLTST		Siltstone, grey/black subvitreous coloured,

				firm-moderately hard, blocky fracture CLASTIC GRAINS: 100% silt, CEMENTS/STRENGTHS: pyrite/strong, ACCESSORIES: carbonaceous 20%, pyrite trace
	10	IGN		Igneous, off white / light grey coloured, soft, sub-blocky fracture CLASTIC GRAINS: 90% clay
2724	10	SLTST		Siltstone, dark grey greyish/black coloured, firm, sub-fissile fracture CLASTIC GRAINS: trace clay, 95% silt, 5% very fine sand, ACCESSORIES: argillaceous trace, mica trace
	90	IGN		Igneous Intrusive, (granodiorite) mottled white green, speckled black, soft to firm occasionally hard, medium to coarse crystal size, common quartz, biotite, plagioclase, black to green pyroxene, calcareous, commonly altered to clay with a chloritic ground mass.
2730	100	IGN		Igneous Intrusive, (granodiorite) mottled white green, speckled black, soft to firm occasionally hard, medium to coarse crystal size, common quartz, biotite, plagioclase, black to green pyroxene, calcareous, commonly altered to clay with a chloritic ground mass.
2736	100	IGN		Igneous Intrusive, (granodiorite) mottled white green, speckled black, soft to firm occasionally hard, medium to coarse crystal size, common quartz, biotite, plagioclase, black to green pyroxene, calcareous, commonly altered to clay with a chloritic ground mass.
2742	100	IGN		Igneous Intrusive, (granodiorite) mottled white green, speckled black, soft to firm occasionally hard, medium to coarse crystal size, common quartz, biotite, plagioclase, black to green pyroxene, calcareous, commonly altered to clay with a chloritic ground mass.
2748	100	IGN		Igneous Intrusive, (granodiorite) mottled white green, speckled black, soft to firm occasionally hard, medium to coarse crystal size, common quartz, biotite, plagioclase, black to green pyroxene, calcareous, commonly altered to clay with a chloritic ground mass.
2751	100	IGN		Igneous Intrusive, (granodiorite) mottled white green, speckled black, soft to firm occasionally hard, medium to coarse crystal size, common quartz, biotite, plagioclase, black to green pyroxene, calcareous, commonly altered to clay with a chloritic ground mass.
2759	100	IGN		Igneous Intrusive, (granodiorite) mottled white green, speckled black, soft to firm occasionally hard, medium to coarse crystal size, common quartz, biotite, plagioclase, black to green pyroxene, calcareous, commonly altered to clay with a chloritic ground mass.
2763	100	IGN		Igneous Intrusive, (granodiorite) mottled white green, speckled black, soft to firm occasionally hard, medium to coarse crystal size, common quartz, biotite, plagioclase, black to green pyroxene, calcareous, commonly altered to clay with a chloritic ground mass.
2766	90	IGN		Igneous, mottled white/green/black coloured,

				soft-friable, sub-blocky fracture CLASTIC GRAINS: 50% clay
	10	SST		Sandstone, white, off white, light grey coloured, loose-soft, sub-blocky fracture CLASTIC GRAINS: 20% very fine sand, 80% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: silica/weak, ACCESSORIES: argillaceous 15% POROSITY: intergranular, 5%
2772	10	IGN		Igneous, mottled white/green/black coloured, soft-friable, sub-blocky fracture CLASTIC GRAINS: 50% clay
	10	SST		Sandstone, white, off white, light grey coloured, loose-soft, sub-blocky fracture CLASTIC GRAINS: 20% very fine sand, 80% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: silica/weak, ACCESSORIES: argillaceous 15% POROSITY: intergranular, 5%
	80	SLTST		Siltstone, medium - dark grey coloured, friable, sub-fissile fracture CLASTIC GRAINS: 5% clay, 95% silt, ACCESSORIES: argillaceous 5%, mica trace
2778	100	SLTST		Siltstone, medium - dark grey coloured, friable, sub-fissile fracture CLASTIC GRAINS: 5% clay, 95% silt, ACCESSORIES: argillaceous 5%, mica trace
2781	100	SLTST		Siltstone, medium - dark grey coloured, friable, sub-fissile fracture CLASTIC GRAINS: 5% clay, 95% silt, ACCESSORIES: argillaceous 5%, mica trace
2787	100	SLTST		Siltstone, medium - dark grey coloured, friable, sub-fissile fracture CLASTIC GRAINS: 5% clay, 95% silt, ACCESSORIES: argillaceous 25%, mica trace
2793	100	SLTST		Siltstone, medium - dark grey brownish grey coloured, friable, sub-fissile fracture CLASTIC GRAINS: 30% clay, 70% silt, ACCESSORIES: argillaceous 25%, mica trace
2799	100	SLTST		Siltstone, medium - dark grey brownish grey coloured, friable, sub-fissile fracture CLASTIC GRAINS: 30% clay, 70% silt, ACCESSORIES: argillaceous 25%, mica trace
2805	100	SLTST		Siltstone, medium - dark grey brownish grey coloured, friable, sub-fissile fracture CLASTIC GRAINS: 30% clay, 70% silt, ACCESSORIES: argillaceous 25%, mica trace
2811	100	SLTST		Siltstone, medium - dark grey brownish grey coloured, friable, sub-fissile fracture CLASTIC GRAINS: 25% clay, 70% silt, 5% very fine sand, ACCESSORIES: dolomite trace, mica trace, pyrite trace
2817	100	SLTST		Siltstone, medium - dark grey brownish grey coloured, friable, sub-fissile fracture CLASTIC GRAINS: 25% clay, 70% silt, 5% very fine sand, ACCESSORIES: dolomite trace, mica trace, pyrite trace
2823	100	SLTST		Siltstone, medium - dark grey brownish grey coloured, friable, sub-fissile fracture CLASTIC

				GRAINS: 25% clay, 70% silt, 5% very fine sand, ACCESSORIES: dolomite trace, mica trace, pyrite trace
2829	100	SLTST		Siltstone, medium - dark grey brownish grey coloured, friable, sub-fissile fracture CLASTIC GRAINS: 25% clay, 70% silt, 5% very fine sand, ACCESSORIES: dolomite trace, mica trace, pyrite trace
	tr	DOL		Dolomite, light brown / tan coloured, firm-moderately hard, blocky fracture CLASTIC GRAINS: 5% clay
2835	100	SLTST		Siltstone, medium - dark grey brownish grey coloured, friable, sub-fissile fracture CLASTIC GRAINS: 25% clay, 70% silt, 5% very fine sand, ACCESSORIES: dolomite trace, mica trace, pyrite trace
2841	100	SLTST		Siltstone, medium - dark grey brownish grey coloured, friable - firm, sub-fissile fracture CLASTIC GRAINS: 25% clay, 70% silt, 5% very fine sand, ACCESSORIES: dolomite trace, mica trace, pyrite trace
2847	100	SLTST		Siltstone, medium - dark grey brownish grey coloured, friable - firm, sub-fissile fracture CLASTIC GRAINS: 25% clay, 70% silt, 5% very fine sand, ACCESSORIES: dolomite trace, mica trace, pyrite trace
2853	100	SLTST		Siltstone, medium - dark grey brownish grey coloured, friable - firm, sub-fissile fracture CLASTIC GRAINS: 20% clay, 75% silt, 5% very fine sand, ACCESSORIES: mica trace, pyrite trace
2859	100	SLTST		Siltstone, medium - dark grey brownish grey coloured, friable - firm, sub-fissile fracture CLASTIC GRAINS: 20% clay, 75% silt, 5% very fine sand, ACCESSORIES: mica trace, pyrite trace
2865	30	SST		Sandstone, light greyish yellow coloured, soft-friable, sub-blocky fracture CLASTIC GRAINS: 10% clay, 10% silt, 50% very fine sand, 30% fine sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: silica/weak, argillaceous/weak, ACCESSORIES: argillaceous 10% POROSITY: intergranular, 3%, FLUORESCENCE: trace dim yellow, trace to very slow direct and crush cut, dim cream broken film residual ring.
	70	SLTST		Siltstone, medium - dark grey brownish grey coloured, friable - firm, sub-fissile fracture CLASTIC GRAINS: 20% clay, 75% silt, 5% very fine sand, ACCESSORIES: mica trace, pyrite trace
2871	30	SST		Sandstone, light greyish yellow coloured, soft-friable, sub-blocky fracture CLASTIC GRAINS: 10% clay, 10% silt, 40% very fine sand, 40% fine sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: silica/weak, argillaceous/weak, ACCESSORIES: argillaceous 10% POROSITY: intergranular, 3%, FLUORESCENCE: trace dim yellow, trace to very

				slow direct and crush cut, dim cream broken film residual ring.
	70	SLTST		Siltstone, medium - dark grey brownish grey coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 20% clay, 75% silt, 5% very fine sand, ACCESSORIES: mica trace, pyrite trace
2874	10	SST		Sandstone, light greyish yellow coloured, soft-friable, sub-blocky fracture CLASTIC GRAINS: 10% clay, 10% silt, 40% very fine sand, 40% fine sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: silica/weak, argillaceous/weak, ACCESSORIES: argillaceous 10% POROSITY: intergranular, 3%, FLUORESCENCE: trace dim yellow, trace to very slow direct and crush cut, dim cream broken film residual ring.
	90	SLTST		Siltstone, medium - dark grey, brown/grey coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 30% clay, 65% silt, 5% very fine sand, ACCESSORIES: mica trace
2880	10	SST		Sandstone, light greyish yellow coloured, soft-friable, sub-blocky fracture CLASTIC GRAINS: 10% clay, 10% silt, 50% very fine sand, 30% fine sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: silica/weak, argillaceous/weak, ACCESSORIES: argillaceous 10% POROSITY: intergranular, 3%, FLUORESCENCE: trace dim yellow, trace to very slow direct and crush cut, dim cream broken film residual ring.
	90	SLTST		Siltstone, medium - dark grey, brown/grey coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 30% clay, 65% silt, 5% very fine sand, ACCESSORIES: mica trace
2883	60	SST		Sandstone, clear - translucent, light brown stain coloured, loose CLASTIC GRAINS: 20% medium sand, 40% coarse sand, 40% very coarse sand, poorly sorted, very angular, very elongate, CEMENTS/STRENGTHS: silica/strong, POROSITY: intergranular, 20%
	50	SLTST		Siltstone, medium - dark grey, brown/grey coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 30% clay, 65% silt, 5% very fine sand, ACCESSORIES: mica trace
2886	40	SST		Sandstone, clear - translucent, light brown stain coloured, loose CLASTIC GRAINS: 20% medium sand, 40% coarse sand, 40% very coarse sand, poorly sorted, very angular, very elongate, CEMENTS/STRENGTHS: silica/strong, POROSITY: intergranular, 20%
	60	SLTST		Siltstone, medium - dark grey, brown/grey coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 30% clay, 65% silt, 5% very fine sand, ACCESSORIES: mica trace
2887	40	SST		Sandstone, clear - translucent, light brown stain coloured, loose CLASTIC GRAINS: 20% medium sand, 40% coarse sand, 40% very coarse sand, poorly sorted, very angular, very

				elongate, CEMENTS/STRENGTHS: silica/strong, POROSITY: intergranular, 20%
	60	SLTST		Siltstone, medium - dark grey, brown/grey coloured, soft-friable, sub-fissile fracture CLASTIC GRAINS: 30% clay, 65% silt, 5% very fine sand, ACCESSORIES: mica trace
NOTE				2892m - 2919m see Core (1) sample descriptions
2922	60	SST		Sandstone, cream, off white, light brown coloured, firm, sub-blocky fracture CLASTIC GRAINS: 10% silt, 50% very fine sand, 10% fine sand, 20% medium sand, 10% coarse sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: argillaceous/moderate, POROSITY: intergranular, 10%
	40	SLTST		Siltstone, medium brown grey - dark grey coloured, moderately hard, blocky fracture CLASTIC GRAINS: 10% clay, 70% silt, 20% very fine sand, ACCESSORIES: mica trace
2925	60	SLTST		Siltstone, medium brown grey - dark grey coloured, moderately hard, blocky fracture CLASTIC GRAINS: 10% clay, 70% silt, 10% very fine sand, 10% fine sand, ACCESSORIES: mica trace
	30	SST		Sandstone, light-medium brown coloured, moderately hard, blocky fracture CLASTIC GRAINS: 10% silt, 60% very fine sand, 30% fine sand, trace medium sand, trace coarse sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/moderate, POROSITY: intergranular, 10%
	10	CLYST		Claystone, light brown - grey coloured, soft, dispersive fracture CLASTIC GRAINS: 70% clay, 20% silt, 10% very fine sand, ACCESSORIES: calcareous trace
2929	10	SST		Sandstone, light-medium brown coloured, moderately hard, blocky fracture CLASTIC GRAINS: 10% silt, 60% very fine sand, 30% fine sand, trace medium sand, trace coarse sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/moderate, POROSITY: intergranular, 10%
	60	SLTST		Siltstone, medium brown grey - dark grey coloured, moderately hard, blocky fracture CLASTIC GRAINS: 30% clay, 60% silt, 10% very fine sand
	30	CLYST		Claystone, light-medium grey coloured, soft, dispersive fracture CLASTIC GRAINS: 70% clay, 20% silt, 10% very fine sand, ACCESSORIES: calcareous trace
2934	60	SLTST		Siltstone, medium brown grey - dark grey coloured, moderately hard, blocky fracture CLASTIC GRAINS: 30% clay, 60% silt, 10% very fine sand, ACCESSORIES: pyrite trace, carbonaceous trace
	40	CLYST		Claystone, light-medium grey coloured, soft, dispersive fracture CLASTIC GRAINS: 70% clay, 20% silt, 10% very fine sand, ACCESSORIES: calcareous trace

2940	60	SLTST		Siltstone, medium grey - grey brown coloured, firm-moderately hard, blocky fracture CLASTIC GRAINS: 20% clay, 60% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: carbonaceous trace, pyrite trace, mica trace
	40	CLYST		Claystone, light grey coloured, soft, dispersive fracture CLASTIC GRAINS: 70% clay, 10% silt, 10% very fine sand, 10% fine sand, ACCESSORIES: calcareous trace
2946	5	COAL		Coal, dull black coloured, firm, blocky fracture CLASTIC GRAINS: trace clay, 20% silt
	25	SST		Sandstone, light brown, clear - translucent coloured, loose, sub-blocky fracture CLASTIC GRAINS: 10% clay, 50% silt, 10% very fine sand, trace fine sand, 20% medium sand, 10% coarse sand, poorly sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: argillaceous/moderate, POROSITY: intergranular, 10%
	40	CLYST		Claystone, light grey coloured, soft, dispersive fracture CLASTIC GRAINS: 70% clay, 10% silt, 10% very fine sand, 10% fine sand, ACCESSORIES: calcareous trace
	30	SLTST		Siltstone, medium grey - grey brown coloured, firm-moderately hard, blocky fracture CLASTIC GRAINS: 20% clay, 60% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: carbonaceous trace, pyrite trace
2949	30	SLTST		Siltstone, medium grey - grey brown coloured, firm-moderately hard, blocky fracture CLASTIC GRAINS: 20% clay, 60% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: carbonaceous trace, pyrite trace
	50	CLYST		Claystone, light grey coloured, soft, dispersive fracture CLASTIC GRAINS: 70% clay, 10% silt, 10% very fine sand, 10% fine sand, ACCESSORIES: calcareous trace
	20	SST		Sandstone, light brown, clear - translucent coloured, loose, sub-blocky fracture CLASTIC GRAINS: 10% clay, 50% silt, 10% very fine sand, trace fine sand, 20% medium sand, 10% coarse sand, poorly sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: argillaceous/moderate, POROSITY: intergranular, 10%
2955	30	CLYST		Claystone, light-medium grey coloured, soft, dispersive fracture CLASTIC GRAINS: 70% clay, 15% silt, 5% very fine sand, ACCESSORIES: trace calcareous
	60	SLTST		Siltstone, medium grey - dark brown coloured, moderately hard, sub-blocky fracture, % silt CLASTIC GRAINS: 30% clay, 50% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: trace carbonaceous
	10	SST		Sandstone, light brown, clear - translucent coloured, loose, sub-blocky fracture CLASTIC GRAINS: 20% clay, 30% silt, 10% very fine sand, 20% medium sand, 20% coarse sand, poorly sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: argillaceous/moderate, POROSITY: intergranular, 5%

2958	5	COAL		Coal, black, vitreous coloured, firm, blocky fracture CLASTIC GRAINS: trace clay
	50	SLTST		Siltstone, medium grey - dark brown coloured, moderately hard, sub-blocky fracture CLASTIC GRAINS: 30% clay, 50% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: trace carbonaceous
	15	SST		Sandstone, light brown, clear - translucent coloured, loose, sub-blocky fracture CLASTIC GRAINS: 20% clay, 30% silt, 10% very fine sand, 20% medium sand, 20% coarse sand, poorly sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: argillaceous/moderate, POROSITY: intergranular, 5%
	30	CLYST		Claystone, light-medium grey coloured, soft, dispersive fracture CLASTIC GRAINS: 60% clay, 30% silt, 10% very fine sand, ACCESSORIES: trace calcareous
NOTE				2958m - 2985m see Core (2) sample descriptions
2991	60	SLTST		Siltstone, medium grey - dark brown coloured, moderately hard, sub-blocky fracture CLASTIC GRAINS: 30% clay, 65% silt, 5% very fine sand, ACCESSORIES: carbonaceous trace
	40	SST		Sandstone, off white, clear translucent coloured, loose-soft CLASTIC GRAINS: 30% clay, 40% very fine sand, 30% fine sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, POROSITY: intergranular, 3%
2994	100	SLTST		Siltstone, medium brown / grey coloured, soft-friable, sub-blocky fracture CLASTIC GRAINS: 20% clay, 75% silt, 5% very fine sand, ACCESSORIES: carbonaceous trace
2997	90	SLTST		Siltstone, medium brown / grey coloured, soft-friable, sub-blocky fracture CLASTIC GRAINS: 20% clay, 75% silt, 5% very fine sand, ACCESSORIES: carbonaceous trace
	10	SST		Sandstone, clear - translucent coloured, loose-soft, sub-blocky fracture CLASTIC GRAINS: 10% clay, 40% fine sand, 50% medium sand, trace coarse sand, poorly sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, POROSITY: intergranular, 10%
3000	60	SLTST		Siltstone, medium brown / grey coloured, soft-friable, sub-blocky fracture CLASTIC GRAINS: 20% clay, 75% silt, 5% very fine sand, ACCESSORIES: carbonaceous trace
	40	SST		Sandstone, white - light grey/brown coloured, soft-friable, sub-blocky fracture CLASTIC GRAINS: 20% clay, 60% fine sand, 20% medium sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: carbonaceous trace, POROSITY: intergranular, 5%
3003	10	SLTST		Siltstone, medium brown / grey coloured, soft-friable, sub-blocky fracture CLASTIC GRAINS: 20% clay, 75% silt, 5% very fine sand, ACCESSORIES: carbonaceous trace

	90	SST		Sandstone, white, clear - translucent coloured, loose-soft CLASTIC GRAINS: 20% fine sand, 40% medium sand, 30% coarse sand, 10% very coarse sand, poorly sorted, angular, elongate, CEMENTS/STRENGTHS: silica/weak, POROSITY: intergranular, 20%
3009	100	SST		Sandstone, of white, clear coloured, soft, dispersive fracture CLASTIC GRAINS: 30% clay, 20% very fine sand, 40% fine sand, 10% medium sand, moderately sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, POROSITY: intergranular, 5%
3015	20	SLTST		Siltstone, medium - dark grey coloured, soft-friable, sub-blocky fracture CLASTIC GRAINS: 20% clay, 75% silt, 5% very fine sand, ACCESSORIES: carbonaceous trace, mica trace
	80	SST		Sandstone, white, clear - translucent coloured, loose-soft CLASTIC GRAINS: 30% clay, 20% silt, 20% very fine sand, 30% fine sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, POROSITY: intergranular, 3%
3021	60	SLTST		Siltstone, medium - dark grey coloured, firm, sub-fissile fracture CLASTIC GRAINS: 20% clay, 70% silt, 10% very fine sand, ACCESSORIES: carbonaceous trace, mica trace
	40	SST		Sandstone, white, clear - translucent coloured, loose-soft CLASTIC GRAINS: 30% clay, 20% silt, 20% very fine sand, 30% fine sand, moderately sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, POROSITY: intergranular, 3%
3024	100	SLTST		Siltstone, medium - dark grey coloured, firm, sub-fissile fracture CLASTIC GRAINS: 30% clay, 60% silt, 10% very fine sand, ACCESSORIES: carbonaceous trace, mica trace
3033	100	SLTST		Siltstone, medium - dark grey coloured, firm, sub-fissile fracture CLASTIC GRAINS: 40% clay, 50% silt, 10% very fine sand, ACCESSORIES: carbonaceous trace, mica trace
3039	90	SLTST		Siltstone, medium - dark grey coloured, firm, sub-fissile fracture CLASTIC GRAINS: 40% clay, 50% silt, 10% very fine sand, ACCESSORIES: carbonaceous trace, mica trace
	10	SST		Sandstone, off white, light brown coloured,soft - friable CLASTIC GRAINS: 30% clay, 30% silt, 30% very fine sand, 10% fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: carbonaceous trace POROSITY: intergranular, trace
3045	60	SLTST		Siltstone, medium grey, grey brown coloured, firm, sub-fissile fracture CLASTIC GRAINS: 20% clay, 70% silt, 10% very fine sand, ACCESSORIES: carbonaceous trace, mica trace
	40	SST		Sandstone, off white, light brown coloured,soft - friable CLASTIC GRAINS: 30% clay, 30% silt, 30% very fine sand, 10% fine sand, well sorted, sub-rounded, sub-spherical,

				CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: carbonaceous trace POROSITY: intergranular, trace
3051	80	SLTST		Siltstone, medium grey, grey brown coloured, firm, sub-fissile fracture CLASTIC GRAINS: 20% clay, 70% silt, 10% very fine sand, ACCESSORIES: carbonaceous trace, mica trace
	20	SST		Sandstone, off white, light brown coloured,soft - friable CLASTIC GRAINS: 20% clay, 40% silt, 40% very fine sand, well sorted, sub-rounded, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: carbonaceous trace POROSITY: intergranular, trace
3054	100	SLTST		Siltstone, medium grey, grey brown coloured, firm, sub-fissile fracture CLASTIC GRAINS: 20% clay, 70% silt, 10% very fine sand, ACCESSORIES: carbonaceous trace, mica trace
3060	100	SLTST		Siltstone, medium grey, grey brown coloured, firm, sub-fissile fracture CLASTIC GRAINS: 30% clay, 60% silt, 10% very fine sand, ACCESSORIES: carbonaceous trace, mica trace
3063	100	SLTST		Siltstone, medium - dark grey brown coloured, firm, sub-fissile fracture CLASTIC GRAINS: 20% clay, 70% silt, 10% very fine sand, ACCESSORIES: carbonaceous trace, pyrite trace, argillaceous trace
3066	100	SLTST		Siltstone, medium - dark grey brown coloured, firm, sub-fissile fracture CLASTIC GRAINS: 20% clay, 70% silt, 10% very fine sand, trace fine sand, ACCESSORIES: carbonaceous trace, mica trace
3072	90	SLTST		Siltstone, medium - dark grey brown coloured, firm, sub-fissile fracture CLASTIC GRAINS: 40% clay, 50% silt, 10% very fine sand, trace fine sand, ACCESSORIES: carbonaceous trace, mica trace
	10	CLYST		Claystone, light grey coloured, soft, dispersive fracture CLASTIC GRAINS: 50% clay, 30% silt, 20% very fine sand
3078	90	SLTST		Siltstone, medium - dark grey brown coloured, firm, sub-fissile fracture CLASTIC GRAINS: 30% clay, 60% silt, 10% very fine sand, trace fine sand, ACCESSORIES: carbonaceous trace, mica trace, mica trace
	10	CLYST		Claystone, light grey coloured, soft, dispersive fracture CLASTIC GRAINS: 50% clay, 30% silt, 20% very fine sand
3084	100	SLTST		Siltstone, dark grey - grey brown coloured, firm, sub-fissile fracture CLASTIC GRAINS: 20% clay, 70% silt, 10% very fine sand, ACCESSORIES: carbonaceous trace, pyrite trace, mica trace
3090	100	SLTST		Siltstone, dark grey - grey brown coloured, firm, sub-fissile fracture CLASTIC GRAINS: 30% clay, 60% silt, 10% very fine sand, trace fine sand, ACCESSORIES: carbonaceous trace, mica trace
3099	100	SLTST		Siltstone, medium - dark grey coloured, firm-moderately hard, sub-fissile fracture CLASTIC GRAINS: 30% clay, 60% silt, 10% very fine sand,

				trace fine sand, ACCESSORIES: carbonaceous trace, mica trace
3108	100	SLTST		Siltstone, medium - dark grey coloured, firm-moderately hard, sub-fissile fracture CLASTIC GRAINS: 20% clay, 70% silt, 10% very fine sand, trace fine sand, ACCESSORIES: carbonaceous trace, mica trace
3117	90	SLTST		Siltstone, medium - dark grey coloured, firm-moderately hard, sub-fissile fracture CLASTIC GRAINS: 20% clay, 70% silt, 10% very fine sand, trace fine sand, ACCESSORIES: carbonaceous trace, mica trace
	10	SST		Sandstone, light brown - translucent coloured, loose-soft, sub-blocky fracture CLASTIC GRAINS: trace clay, 30% very fine sand, 40% fine sand, 30% medium sand, moderately sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, POROSITY: intergranular, 10%
3126	50	SST		Sandstone, off white - light brown coloured, moderately hard, sub-blocky fracture CLASTIC GRAINS: 15% clay, 5% silt, 40% very fine sand, 40% fine sand, trace medium sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/moderate, ACCESSORIES: argillaceous 15%, carbonaceous trace POROSITY: intergranular, 5%
	50	SLTST		Siltstone, light-medium brown & grey coloured, firm-moderately hard, sub-fissile fracture CLASTIC GRAINS: 10% clay, 70% silt, 20% very fine sand, trace fine sand, ACCESSORIES: carbonaceous trace, mica trace
3132	30	SLTST		Siltstone, medium - dark grey coloured, moderately hard, sub-blocky fracture CLASTIC GRAINS: 10% clay, 70% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: carbonaceous trace
	70	SST		Sandstone, light grey - off white/brown coloured, firm-moderately hard, sub-blocky fracture CLASTIC GRAINS: 20% clay, 10% silt, 40% very fine sand, 30% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/moderate, silica/weak, ACCESSORIES: argillaceous 20% POROSITY: intergranular, 5%
3138	80	SLTST		Siltstone, medium - dark grey coloured, moderately hard, sub-blocky fracture CLASTIC GRAINS: 10% clay, 70% silt, 15% very fine sand, 5% fine sand, ACCESSORIES: carbonaceous 3%
	20	SST		Sandstone, light grey - off white/brown coloured, firm-moderately hard, sub-blocky fracture CLASTIC GRAINS: 20% clay, 20% silt, 30% very fine sand, 30% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/moderate, silica/weak, ACCESSORIES: argillaceous 20% POROSITY: intergranular, 5%
3146	90	SLTST		Siltstone, dark brown - dark grey coloured, moderately hard, sub-blocky fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand,

				ACCESSORIES: carbonaceous trace
	10	SST		Sandstone, light grey - off white/brown coloured, firm-moderately hard, sub-blocky fracture CLASTIC GRAINS: 20% clay, 20% silt, 30% very fine sand, 30% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/moderate, silica/weak, ACCESSORIES: argillaceous 20% POROSITY: intergranular, 5%
3150	30	SLTST		Siltstone, dark brown - dark grey coloured, moderately hard, sub-blocky fracture CLASTIC GRAINS: 10% clay, 80% silt, 10% very fine sand, ACCESSORIES: carbonaceous trace
	70	SST		Sandstone, off white, clear, translucent, soft, dispersive, CLASTIC GRAINS: 10% clay, 5% silt, 15% very fine sand, 30% fine sand, 40% medium sand, well sorted, sub-angular, sub-elongate, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 10% POROSITY: intergranular, 10%
3156	30	SLTST		Siltstone, light grey, medium - dark brown coloured, moderately hard, sub-blocky fracture CLASTIC GRAINS: 10% clay, 50% silt, 40% very fine sand, ACCESSORIES: carbonaceous trace
	70	SST		Sandstone, off white - light brown coloured, soft, sub-blocky fracture CLASTIC GRAINS: 10% clay, 20% very fine sand, 30% fine sand, 40% medium sand, moderately sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 15% POROSITY: intergranular, 10%
3162	60	SST		Sandstone, off white - light brown coloured, soft, sub-blocky fracture CLASTIC GRAINS: 10% clay, 20% very fine sand, 30% fine sand, 40% medium sand, moderately sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, ACCESSORIES: kaolinite 15% POROSITY: intergranular, 10%
	40	SLTST		Siltstone, light-medium grey coloured, moderately hard, sub-blocky fracture CLASTIC GRAINS: 20% clay, 50% silt, 30% very fine sand, ACCESSORIES: carbonaceous trace
3168	40	SST		Sandstone, off white - light brown coloured, firm, sub-blocky fracture CLASTIC GRAINS: 30% clay, 60% very fine sand, 10% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/moderate, ACCESSORIES: kaolinite 25% POROSITY: intergranular, 5%
	60	SLTST		Siltstone, light-medium grey coloured, moderately hard, sub-blocky fracture CLASTIC GRAINS: 20% clay, 50% silt, 30% very fine sand, ACCESSORIES: carbonaceous trace
3177	50	SST		Sandstone, light brown - light grey coloured, firm, sub-blocky fracture CLASTIC GRAINS: 30% clay, 60% very fine sand, 10% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/moderate, ACCESSORIES: kaolinite 25% POROSITY:

				intergranular, 5%
	50	SLTST		Siltstone, medium - dark grey coloured, moderately hard, sub-fissile fracture CLASTIC GRAINS: 30% clay, 40% silt, 30% very fine sand, trace fine sand, ACCESSORIES: carbonaceous trace
3186	40	SLTST		Siltstone, medium - dark grey coloured, firm - moderately hard, sub-fissile fracture CLASTIC GRAINS: 20% clay, 60% silt, 20% very fine sand, ACCESSORIES: carbonaceous trace, coal 10%
	50	SST		Sandstone, light brown - cream coloured, soft, sub-blocky fracture CLASTIC GRAINS: 20% clay, 30% silt, 40% very fine sand, 10% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, POROSITY: intergranular, 5%
	10	VOLALT		Volcanic (Weathered), off white – very light brown mottled, occasionally pale yellowish brown, firm, blocky, very fine groundmass, rare weathered feldspar and pyroxene, trace indistinct flow structure, commonly weathered to CLAY, trace black translucent OBSIDIAN.
3195	5	SLTST		Siltstone, medium - dark grey coloured, firm-moderately hard, sub-fissile fracture CLASTIC GRAINS: 20% clay, 60% silt, 20% very fine sand, ACCESSORIES: carbonaceous trace, coal 10%
	5	SST		Sandstone, light brown - cream coloured, soft, sub-blocky fracture CLASTIC GRAINS: 20% clay, 30% silt, 40% very fine sand, 10% fine sand, well sorted, sub-angular, sub-spherical, CEMENTS/STRENGTHS: argillaceous/weak, POROSITY: intergranular, 5%
	40	VOLALT		Volcanic (Weathered), mottled brown/yellow/white mottled, hard, blocky, commonly weathered to CLAY, trace black translucent OBSIDIAN.
	50	VOL		Volcanic, (ultramafic) dark greenish / black, reddish brown / purplish grey, very common olivine to 70% occasionally weathering to serpentinite, minor pyroxene, occasional red / brown Fe oxide ground mass, common free calcite, rare indistinct flow structure.(20%)
3204	40	VOLALT		Volcanic (Weathered), mottled brown/yellow/white mottled, hard, blocky, commonly weathered to CLAY, trace black translucent OBSIDIAN.
	60	VOL		Volcanic, (ultramafic) dark greenish / black, reddish brown / purplish grey, very common olivine to 70% occasionally weathering to serpentinite, minor pyroxene, occasional red / brown Fe oxide ground mass, common free calcite, rare indistinct flow structure.(20%)
3213	100	VOL		Volcanic, (ultramafic) dark greenish / black, reddish brown / purplish grey, very common olivine to 70% occasionally weathering to serpentinite, minor pyroxene, occasional red / brown Fe oxide ground mass, common free calcite, rare indistinct flow structure.(20%)
3219	100	VOL		Volcanic, (ultramafic) dark greenish / black,

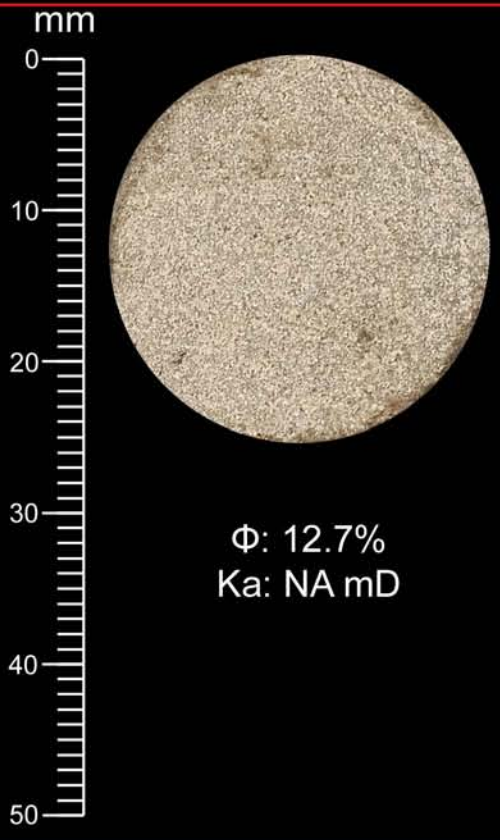
				reddish brown / purplish grey, very common olivine to 70% occasionally weathering to serpentinite, minor pyroxene, occasional red / brown Fe oxide ground mass, common free calcite, rare indistinct flow structure.(20%)
3225	100	VOL		Volcanic, (ultramafic) dark greenish / black, reddish brown / purplish grey, very common olivine to 70% occasionally weathering to serpentinite, minor pyroxene, occasional red / brown Fe oxide ground mass, common free calcite, rare indistinct flow structure.
3231	100	VOL		Volcanic, (ultramafic) dark greenish / black, reddish brown / purplish grey, very common olivine to 70% occasionally weathering to serpentinite, minor pyroxene, occasional red / brown Fe oxide ground mass, common free calcite, rare indistinct flow structure.
3235	100	VOL		Volcanic, (ultramafic) dark greenish / black, reddish brown / purplish grey, occasional turquoise and cryptocrystalline, very common olivine to 70% occasionally weathering to serpentinite, minor pyroxene, occasional red / brown Fe oxide ground mass, common free calcite, rare indistinct flow structure.

APPENDIX 2: MSCT DESCRIPTIONS

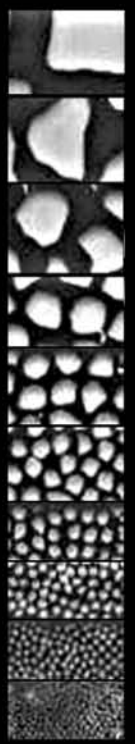
Core #	Depth mMD	MSCT Description
1	3159	Mud - rejected
2	3158	Mud - rejected
3	3157	Mud - rejected
4	3159	SANDSTONE: 100% light brown, translucent grains, moderately hard, sub-blocky, silt to medium grain size, mainly fine, moderately sorted, sub-angular, sub-spherical, moderate strength argillaceous matrix, trace lithic grains, 10% visual intergranular porosity. NO SHOW
5	3158	SILTSTONE: 100% medium to dark brown, hard, sub-blocky, clay to fine sand, predominantly silt size grains.
6	3157	Mud - rejected
7	3156	Mud - rejected
8	2604	SANDSTONE: 100% light brown, moderately hard, sub-blocky, silt to very fine grain size, mainly very fine, well sorted, sub-angular, sub-spherical, moderate strength argillaceous matrix, 5% visual intergranular porosity. 20% medium bright yellow direct fluorescence.
9	2605.5	SANDSTONE: 100% light to medium brown, moderately hard, sub-blocky, silt to very fine grain size, dominantly very fine, well sorted, sub-angular, sub-spherical, moderate strength argillaceous matrix, trace carbonaceous grains, 5% visual intergranular porosity. Trace dull yellow direct fluorescence.
10	2606.5	SANDSTONE: 100% light to medium brown, moderately hard, sub-blocky, silt to very fine grain size, dominantly very fine, well sorted, sub-angular, sub-spherical, moderate strength argillaceous matrix, trace carbonaceous grains, 5% visual intergranular porosity. 15% moderately bright yellow direct fluorescence.
11	2608.2	SILTY SANDSTONE: 100% light brown to light grey, moderately hard, sub-blocky, clay to very fine grain size, mainly very fine, well sorted, sub-angular, sub-spherical, moderate strength argillaceous matrix, 5% visual intergranular porosity. 25% bright yellow direct fluorescence.
12	2609.5	SANDSTONE: 100% light brown, firm to moderately hard, sub-blocky, silt to medium grain size, mainly very fine, moderately sorted, sub-angular, sub-spherical, weak strength argillaceous matrix, trace glauconite grains, 5% visual intergranular porosity. 20% bright yellow direct fluorescence.
13	2612	SANDSTONE: 100% light brown, firm to moderately hard, sub-blocky, silt to medium grain size, mainly very fine, moderately sorted, sub-angular, sub-spherical, weak strength argillaceous matrix, trace carbonaceous grains, 5% visual intergranular porosity. 20% moderately bright yellow direct fluorescence.
14	2614.5	Mud - rejected
15	2868.5	Mud – rejected
16	2871	Empty – rejected
17	3006	Empty – rejected
18	3007.5	Empty – rejected
19	3149.5	Mud – rejected
20	3151	Mud – rejected

SWC Photography
YOLLA - 4

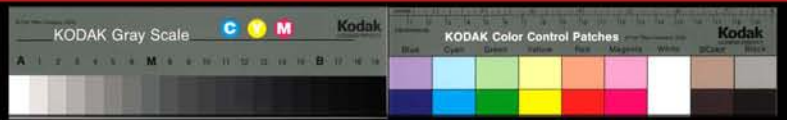
SWC 3 3159.00m



Φ: 12.7%
Ka: NA mD

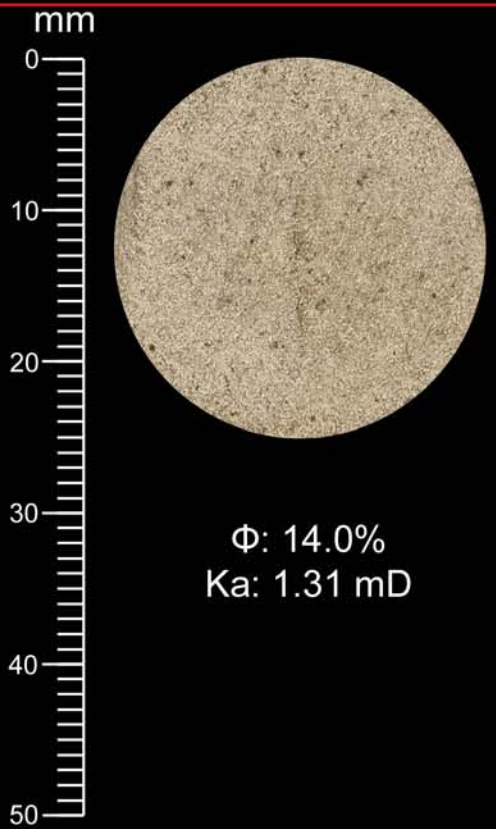


SANDSTONE: 100% light brown, translucent grains, moderately hard, sub-blocky, silt to medium grain size, mainly fine, moderately sorted, subangular, subspherical, moderate strength argillaceous matrix, trace lithic grains, 10% visual intergranular porosity. NO SHOW

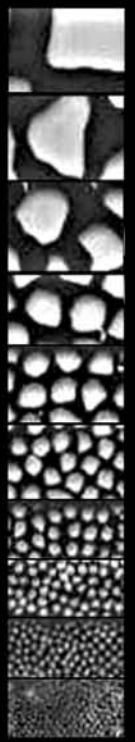


SWC Photography
YOLLA - 4

SWC 9 3159.00m



Φ: 14.0%
Ka: 1.31 mD

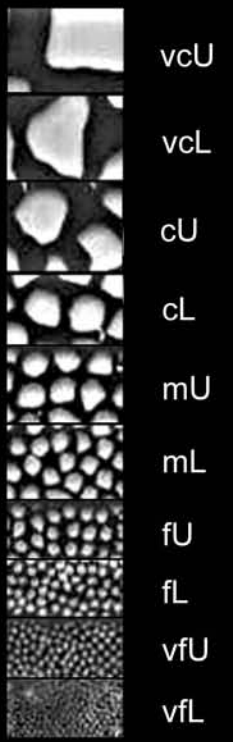


SANDSTONE: 100% light brown, translucent grains, moderately hard, sub-blocky, silt to medium grain size, mainly fine, moderately sorted, subangular, subspherical, moderate strength argillaceous matrix, trace lithic grains, 10% visual intergranular porosity. NO SHOW

SWC Photography
YOLLA - 4

SWC 10 3158.00m

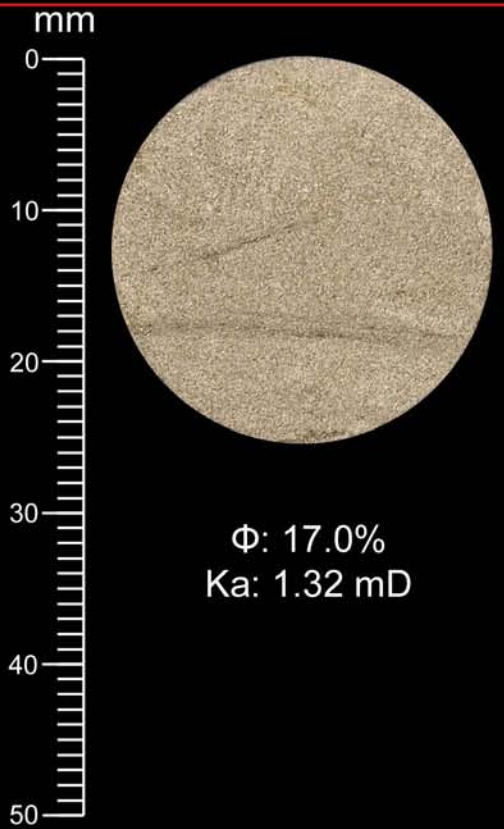
Φ: 5.1%
Ka: 0.02 mD



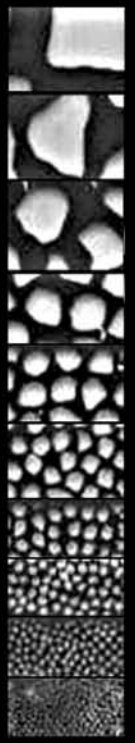
SILTSTONE: 100% medium to dark brown, hard, sub-blocky, clay to fine sand, predominantly silt size grains.

SWC Photography
YOLLA - 4

SWC 14 2604.00m



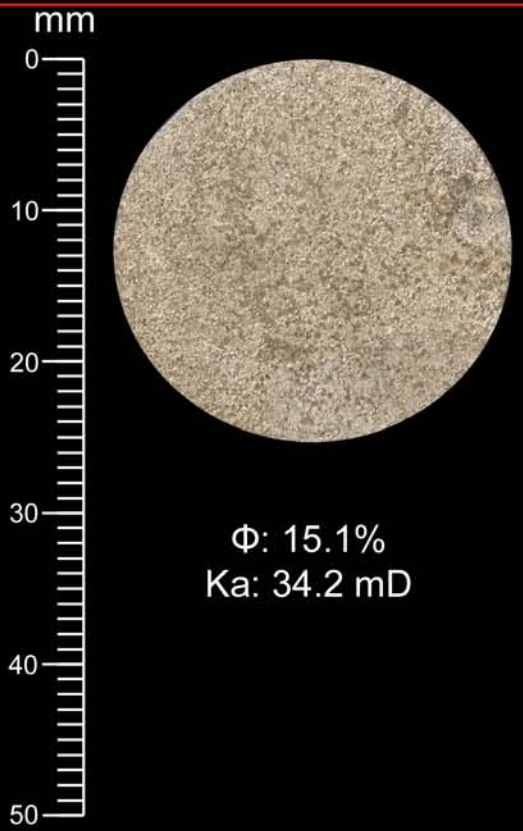
Φ: 17.0%
Ka: 1.32 mD



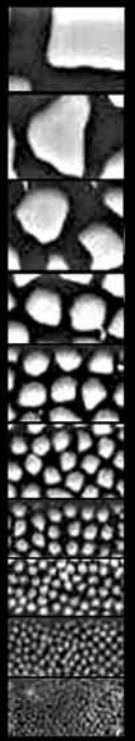
SANDSTONE: 100% light brown, moderately hard, sub-blocky, silt to very fine grain size, mainly very fine, well sorted, subangular, subspherical, moderate strength argillaceous matrix, 5% visual intergranular porosity. 20% medium bright yellow direct fluorescence.

SWC Photography
YOLLA - 4

SWC 15 2605.50m



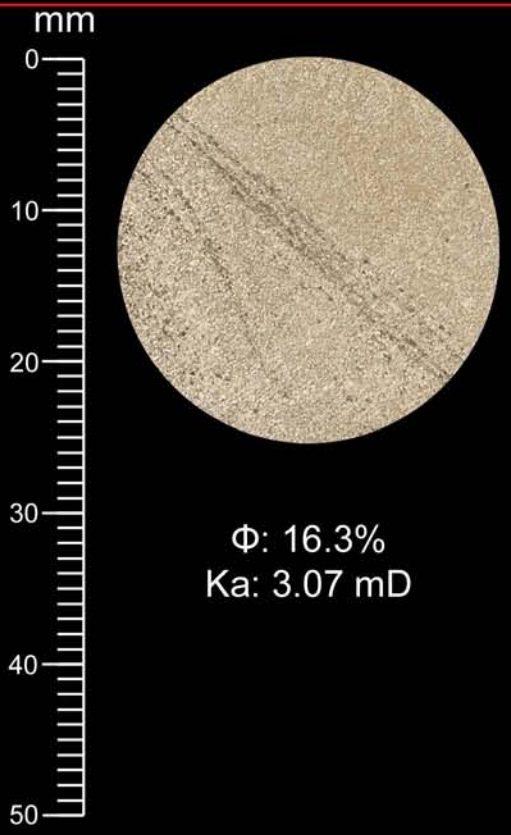
Φ: 15.1%
Ka: 34.2 mD



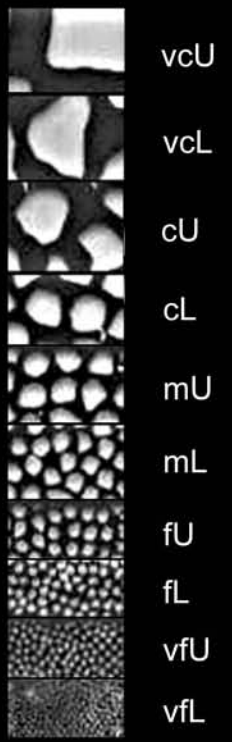
SANDSTONE: 100% light to medium brown, moderately hard, sub-blocky, silt to very fine grain size, dominantly very fine, well sorted, subangular, subspherical, moderate strength argillaceous matrix, trace carbonaceous grains, 5% visual intergranular porosity. Trace dull yellow direct fluorescence.

SWC Photography
YOLLA - 4

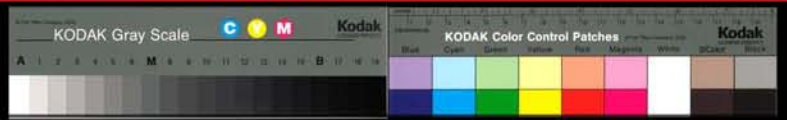
SWC 16 2606.50m



Φ: 16.3%
Ka: 3.07 mD

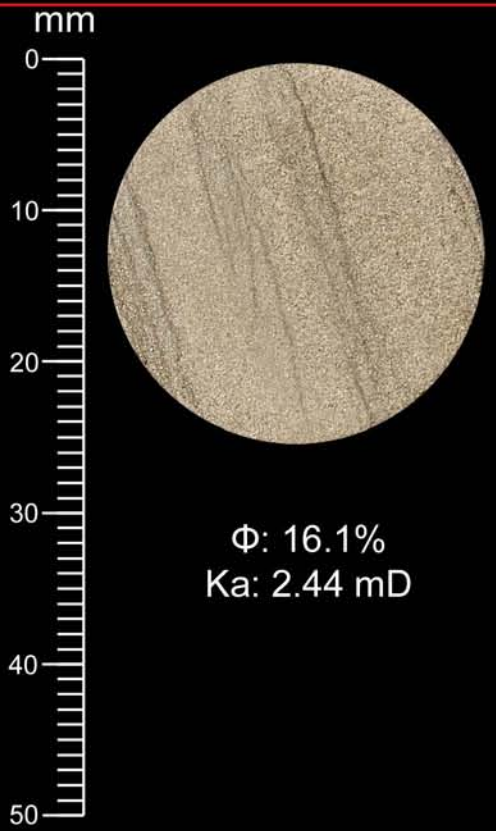


SANDSTONE: 100% light to medium brown, moderately hard, sub-blocky, silt to very fine grain size, dominantly very fine, well sorted, subangular, subspherical, moderate strength argillaceous matrix, trace carbonaceous grains, 5% visual intergranular porosity. 15% moderately bright yellow direct fluorescence.

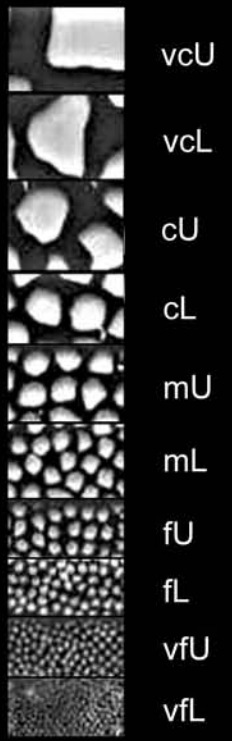


SWC Photography
YOLLA - 4

SWC 17 2608.20m



Φ: 16.1%
Ka: 2.44 mD

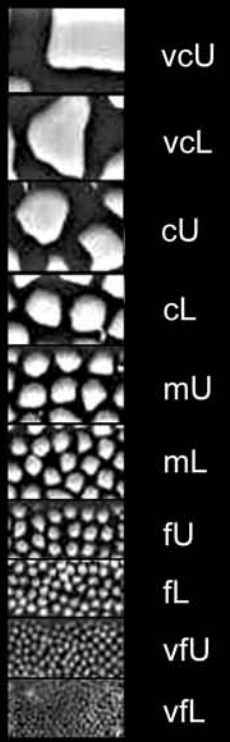


SILTY SANDSTONE: 100% light brown to light grey, moderately hard, sub-blocky, clay to very fine grain size, mainly very fine, well sorted, subangular, subspherical, moderate strength argillaceous matrix, 5% visual intergranular porosity. 25% bright yellow direct fluorescence.

SWC Photography
YOLLA - 4

SWC 18 2609.50m

Φ: 17.9% / 7.6%
Ka: NA mD

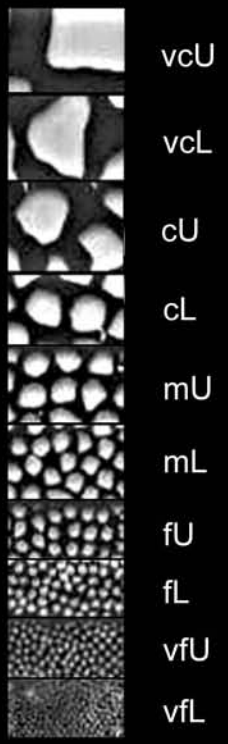


SANDSTONE: 100% light brown, firm to moderately hard, sub-blocky, silt to medium grain size, mainly very fine, moderately sorted, subangular, subspherical, weak strength argillaceous matrix, trace glauconite grains, 5% visual intergranular porosity. 20% bright yellow direct fluorescence.

SWC Photography
YOLLA - 4

SWC 19 2612.00m

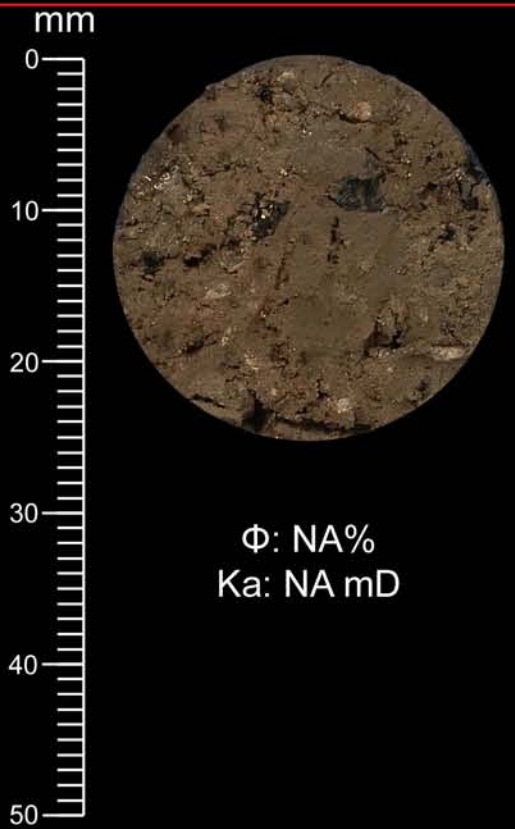
Φ: 20.2%
Ka: 54.4 mD



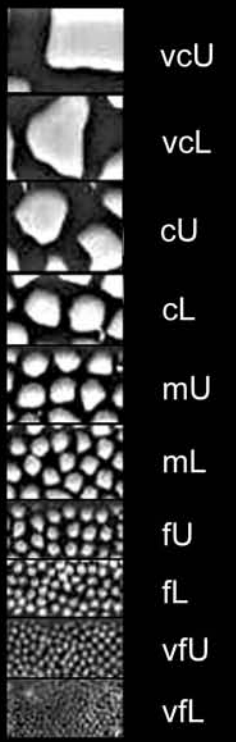
SANDSTONE: 100% light brown, firm to moderately hard, sub-blocky, silt to medium grain size, mainly very fine, moderately sorted, subangular, subspherical, weak strength argillaceous matrix, trace carbonaceous grains, 5% visual intergranular porosity. 20% moderately bright yellow direct fluorescence.

SWC Photography
YOLLA - 4

SWC 20 2614.50m



Φ: NA%
Ka: NA mD



LCM (drilling mud ??) 100% dark olive grey, soft, muddy fibrous material, trace coal fragments. NO SHOW

APPENDIX 3: CONVENTIONAL CORE CHIP DESCRIPTIONS

Core #1: EVCM 2755 Sand
Depth Interval Cored: 2892m – 2919m MDRT
Cut 27m recovered 27m (100%)

Depth mMDRT	Lithology Description
2892	SILTSTONE: dark brown – black / grey, moderately hard - hard, blocky, clastic grains: 20% clay, 70% silt, 10% very fine sand, accessories: mica trace.
2893	SANDSTONE: light brown – grey, moderately hard, sub-blocky fracture, clastic grains: 30% silt, 40% very fine sand, 30% fine sand, mod sorted, sub angular, sub spherical, cements/strengths: argillaceous / moderately strong, accessories: argillaceous 15% porosity: inter granular 5%. No fluorescence.
2894	COAL: black, vitreous, firm to moderately hard, blocky, hackly occasional sub conchoidal fracture, clastic grains: 30% clay, 10% silt.
2895	SILTSTONE: dark to medium brown, hard, blocky, clastic grains: 10% clay, 50% silt, 40% very fine sand, accessories: argillaceous 15%, carbonaceous tr%. Hydrocarbon Fluorescence: 5% dull green, no direct cut, no crush cut.
2896	SANDSTONE: pale - light brown, moderately hard, sub-blocky fracture, clastic grains: 20% silt, 40% very fine sand, 40% fine sand, mod sorted, sub angular, sub spherical, cements/strengths: argillaceous / moderately strong, accessories: silty 15%, porosity: inter granular 5%: Hydrocarbon Fluorescence: 40% moderately bright green, no direct cut, no crush cut, bright cream broken film residue.
2897	SANDSTONE: pale - light brown, moderately hard, sub-blocky fracture, clastic grains: 20% silt, 40% very fine sand, 40% fine sand, mod sorted, sub angular, sub spherical, cements/strengths: argillaceous / moderately strong, accessories: silty 15%, porosity: inter granular 5%: Hydrocarbon Fluorescence: 30% moderately bright green, no direct cut, no crush cut, bright cream broken film residue.
2898	SANDSTONE: cream - light brown, firm to moderately hard, sub-blocky fracture, clastic grains: 10% silt, 50% very fine sand, 40% fine sand, well sorted, sub angular, sub spherical, cements/strengths: argillaceous / moderately strong, porosity: inter granular 10%: No Fluorescence.
2899	SANDSTONE: cream - light brown, firm to moderately hard, sub-blocky fracture, clastic grains: 10% silt, 50% very fine sand, 40% fine sand, well sorted, sub angular, sub spherical, cements/strengths: argillaceous / moderately strong, porosity: inter granular 10%: No Fluorescence.
2900	SANDSTONE: cream - light brown, firm to moderately hard, sub-blocky fracture, clastic grains: 20% silt, 50% very fine sand, 30% fine sand, well sorted, sub angular, sub spherical, cements/strengths: argillaceous / moderately strong, porosity: inter granular 15%: No Fluorescence.
2900.8	SANDSTONE: light brown, moderately hard, sub-blocky, clastic grains: 30% silt, 50% very fine sand, 20% fine sand, well sorted, sub angular, sub spherical, cements/strengths: argillaceous / moderately strong, porosity: inter granular 10%. Hydrocarbon Fluorescence: 50% pale yellow, no direct cut, no crush cut, dull cream broken film residue ring.
2901.8	SANDSTONE: clear, translucent light brown, firm - friable, sub-blocky, clastic grains: 30% fine sand, 40% medium sand, 30% coarse sand, poorly sorted, sub angular, sub spherical, cements/strengths: argillaceous / trace, porosity: inter granular 20%. Hydrocarbon Fluorescence: 10% dull green, no direct cut, no crush cut, dull to bright cream broken film residue ring.
2902.8	SANDSTONE: clear, translucent light brown, firm - friable, sub-blocky, clastic grains: 30% fine sand, 40% medium sand, 30% coarse sand, poorly sorted, sub angular, sub spherical, cements/strengths: argillaceous / trace, porosity: inter granular 20%. Hydrocarbon Fluorescence: 20% dull green, no direct cut, no crush cut, dull cream broken film residue ring.

2903.8	SANDSTONE: clear, translucent light brown, firm - friable, sub-blocky, clastic grains: 30% fine sand, 40% medium sand, 30% coarse sand, poorly sorted, sub angular, sub spherical, cements/strengths: argillaceous / trace, porosity: inter granular 20%. Hydrocarbon Fluorescence: 40% moderately bright green, very slow direct cut, very slow crush cut, bright cream broken film residue ring.
2904.8	SANDSTONE: clear, translucent light brown, firm, sub-blocky, clastic grains: 30% fine sand, 40% medium sand, 30% coarse sand, poorly sorted, sub angular, sub spherical, cements/strengths: argillaceous / trace, porosity: inter granular 20%. Hydrocarbon Fluorescence: 50% moderately bright green, very slow direct cut, very slow crush cut, bright cream broken film residue ring. Interbedded with SILTSTONE: medium brown coloured, moderately hard, sub-blocky to blocky, Clastic grains: 70% silt, 20% very fine sand, 10% fine sand.
2905.8	SANDSTONE: clear, translucent, light brown, firm – moderately hard, sub-blocky, clastic grains: 20% silt, 40% fine sand, 30% medium sand, 10% coarse sand, moderately sorted, sub rounded, sub spherical, cements/strengths: argillaceous / trace, porosity: inter granular 20%: Hydrocarbon Fluorescence: 50% moderately bright green, very slow direct cut, very slow crush cut, bright cream broken film residue ring.
2906.8	SANDSTONE: light brown, firm – moderately hard, sub-blocky, clastic grains: 30% silt, 40% very fine sand, 30% fine sand, trace medium sand, moderately sorted, sub angular, sub spherical, cements/strengths: argillaceous / weak, porosity: inter granular 15%: Hydrocarbon Fluorescence: 90% bright green, very slow direct cut, very slow crush cut, bright cream broken film residue ring.
2907.8	SANDSTONE: light brown, firm – moderately hard, sub-blocky, clastic grains: 20% silt, 30% fine sand, 50% medium sand, trace coarse sand, moderately sorted, sub angular, sub spherical, cement/strengths: argillaceous / weak, porosity: inter granular 15%. Hydrocarbon Fluorescence: 90% bright green, very slow direct cut, very slow crush cut, bright cream broken film residue ring.
2908.8	SANDSTONE: light brown, firm – moderately hard, sub-blocky, clastic grains: 50% silt, 40% very fine sand, 10% fine sand, moderately sorted, sub angular, sub spherical, cement/strengths: argillaceous / weak, porosity: inter granular 10%. Hydrocarbon Fluorescence: trace dull green.
2910	SANDSTONE: medium - light brown, firm – moderately hard, sub-blocky, clastic grains: 30% silt, 70% very fine sand, trace fine sand, well sorted, sub angular, sub spherical, cement/strengths: argillaceous / moderately hard, porosity: inter granular 10%. No fluorescence.
2911	SANDSTONE: medium - light brown, firm – moderately hard, sub-blocky, clastic grains: 30% silt, 70% very fine sand, trace fine sand, well sorted, sub angular, sub spherical, cement/strengths: argillaceous / moderately hard, porosity: inter granular 10%. No fluorescence.
2912	SILTSTONE: medium dark grey to dark grey, firm – moderately hard, blocky, clastic grains: 10% clay, 80% silt, 10% very fine sand, trace fine sand.
2913	SILTSTONE: medium dark grey to dark grey, firm – moderately hard, blocky, clastic grains: 10% clay, 80% silt, 10% very fine sand, trace fine sand.
2914	SILTSTONE: dark grey, firm – moderately hard, sub fissile, clastic grains: 10% clay, 90% silt, accessories: mica trace.
2915	SILTSTONE: dark grey to grey black, firm – moderately hard, sub fissile, clastic grains: 10% clay, 90% silt, accessories: mica trace, carbonaceous trace.
2916	SILTSTONE: grey black to black, firm – moderately hard, sub fissile, clastic grains: 10% clay, 90% silt, accessories: mica trace, carbonaceous 5% and gradational to CARBONACEOUS SILTSTONE.
2917	SILTSTONE: medium to dark grey, firm – moderately hard, sub fissile, clastic grains: 10% clay, 90% silt, accessories: mica trace, carbonaceous 5% and gradational to CARBONACEOUS SILTSTONE.

2918	SILTSTONE: dark grey to grey black, firm – moderately hard, sub fissile, clastic grains: 10% clay, 90% silt, accessories: mica trace, carbonaceous 10% and gradational to CARBONACEOUS SILTSTONE.							
2919.5	SILTSTONE: dark grey to grey black, firm – moderately hard, sub fissile, clastic grains: 10% clay, 90% silt, accessories: mica trace, carbonaceous 10% and gradational to CARBONACEOUS SILTSTONE.							
Gas	**2892 – 2909**	390 units	**Composition (ppm)**	74579 C1	6491 C2	2767 C3	1121 C4	392 C5
Gas	**2909 – 2919**	60 units	**Composition (ppm)**	9294 C1	947 C2	490 C3	214 C4	87 C5

Core #2: EVCM 2809 sand
Depth Interval Cored: 2958m – 2985m MDRT
Cut 27m Recovered 27.4m (100%)

Interval (m)	Lithology Description
2959	SANDSTONE: light to medium brown, firm to moderately hard, Clastic grains: silt 20%, very fine sand 40%, fine sand 40%, medium sand trace, poorly sorted, sub angular, sub spherical, moderate to strong argillaceous cement, porosity inter granular 10%. No fluorescence.
2960	SANDSTONE: light to medium brown, firm to moderately hard, Clastic grains: silt 20%, very fine sand 5%, fine sand 40%, medium sand 30%, coarse sand 5%, poorly sorted, sub angular, sub spherical, moderate to strong argillaceous cement, porosity inter granular 15%. Fluorescence trace, dull green, patchy, no direct cut, very slow to trace crush cut, dull white cream residue ring.
2961	SANDSTONE: light to medium brown, firm to moderately hard, Clastic grains: silt 20%, very fine sand 30%, fine sand 40%, medium sand 20%, coarse sand trace, poorly sorted, sub angular, sub spherical, moderate to strong argillaceous cement, porosity inter granular 15%. No fluorescence.
2962	SANDSTONE: light to medium brown, firm to moderately hard, Clastic grains: silt 10%, very fine sand 30%, fine sand 40%, medium sand 20%, coarse sand trace, poorly sorted, sub angular, sub spherical, moderate to strong argillaceous cement, porosity inter granular 10%. No fluorescence.
2963	SANDSTONE: light brown, firm to moderately hard, Clastic grains: silt 20%, very fine sand 40%, fine sand 30%, medium sand 10%, moderately sorted, sub angular, sub spherical, moderate to strong argillaceous cement, porosity inter granular 10%. Fluorescence trace, dull green, patchy, no direct cut, very slow to trace crush cut, dull white cream residue ring.
2964	SANDSTONE: light to medium and dark brown, moderately hard, Clastic grains: silt 5%, very fine sand 5%, fine sand 10%, medium sand 30%, coarse sand 30%, very coarse sand 20%, very poorly sorted, sub angular, sub elongate, moderately strong siliceous cement, moderate to strong argillaceous cement, porosity inter granular 20%. Fluorescence trace, dull green, patchy, no direct cut, very slow to trace crush cut, dull white cream residue ring.
2965	SANDSTONE: light to medium brown and dark brown, moderately hard, Clastic grains: silt trace, very fine sand 5%, fine sand 20%, medium sand 35%, coarse sand 30%, very coarse sand 20%, very poorly sorted, sub angular, sub elongate, moderately strong siliceous cement, moderate to strong argillaceous cement, porosity inter granular 20%. Fluorescence trace, dull green, patchy, no direct cut, very slow to trace crush cut, dull white cream residue ring.
2966	SANDSTONE: dark brown, grey, black and white, moderately hard, Clastic grains: very fine sand trace, fine sand 10%, medium sand 20%, coarse sand 30%, very coarse sand 20%, granular sand 10%, very poorly sorted, sub angular, sub elongate, moderately strong siliceous cement, moderately strong argillaceous cement, porosity inter granular 15%. No fluorescence.

2966.45	SANDSTONE: medium brown, firm to moderately hard, Clastic grains: fine sand 20%, medium sand 75%, coarse sand 5%, moderately sorted, sub rounded, sub spherical, moderately strong argillaceous cement, porosity inter granular 15%. No fluorescence.
2967.45	SANDSTONE: light greyish brown, firm to moderately hard, Clastic grains: silt 10%, very fine sand trace, fine sand 30%, medium sand 50%, coarse sand 10%, very coarse sand trace, moderately sorted, sub rounded, sub elongate, moderately strong siliceous cement, moderately strong argillaceous cement, porosity inter granular 10%. Fluorescence trace, dull green, patchy, no direct cut, very slow to trace crush cut, dull white cream residue ring.
2968.48	SANDSTONE: light greyish brown, firm to moderately hard, clastic grains; clay matrix 5%, silt 5%, very fine sand 40%, fine sand 50%, well sorted, sub rounded, sub spherical, moderately strong argillaceous cement, moderately strong siliceous cement, trace carbonaceous grains, porosity inter granular 10%. No fluorescence.
2969.48	SANDSTONE: light greyish brown, firm to moderately hard, clastic grains; clay matrix 5%, silt 5%, very fine sand 60%, fine sand 30%, well sorted, sub rounded, sub spherical, moderately strong argillaceous cement, moderately strong siliceous cement, trace carbonaceous grains, porosity inter granular 10%. Fluorescence trace, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.
2970.45	SANDSTONE: light brown, firm, clastic grains; clay matrix 5%, very fine sand 40%, fine sand 55%, coarse sand trace, very well sorted, sub rounded, sub spherical, moderately strong argillaceous cement, porosity inter granular 10%. Fluorescence trace, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.
2971.45	SANDSTONE: light brown to grey, firm, clastic grains; clay matrix 10%, very fine sand 10%, fine sand 60%, medium sand 20%, coarse sand trace, moderately sorted, sub angular, sub elongate, moderately strong argillaceous cement, moderately strong siliceous cement, trace carbonaceous grains, porosity inter granular 10%. Fluorescence trace, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.
2972.45	SANDSTONE: light brown to grey, firm, clastic grains; clay matrix 10%, very fine sand 10%, fine sand 70%, medium sand 10%, coarse sand trace, moderately sorted, sub angular, sub elongate, moderately strong argillaceous cement, moderately strong siliceous cement, trace carbonaceous grains, porosity inter granular 10%. Fluorescence trace, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.
2973.45	SANDSTONE: light brown to grey, firm, clastic grains; clay matrix 10%, fine sand 80%, medium sand 10%, coarse sand trace, moderately sorted, sub angular, sub elongate, moderately strong argillaceous cement, moderately strong siliceous cement, trace carbonaceous grains, porosity inter granular 10%. Fluorescence trace, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.
2974.45	SANDSTONE: medium brown, friable to firm, clastic grains; clay matrix 5%, fine sand 30%, medium sand 70%, moderately sorted, sub angular, sub elongate, weak argillaceous cement, moderately strong siliceous cement, trace carbonaceous grains, porosity inter granular 15%. Fluorescence trace, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.
2975.6	SANDSTONE: light to medium grey, firm to moderately hard, clastic grains; clay matrix 20%, silt 10%, very fine sand 60%, fine sand 10%, well sorted, rounded, sub spherical, weak argillaceous cement, moderately strong siliceous cement, 3% carbonaceous grains, porosity inter granular 3%. Fluorescence trace, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.
2976.75	SANDSTONE: medium brown to grey, firm, clastic grains; clay matrix 20%, silt 10%, fine sand 30%, medium sand 40%, moderately sorted, rounded, sub spherical, weak argillaceous cement, moderately strong siliceous cement, trace carbonaceous grains, porosity inter granular 10%. Fluorescence trace, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.
2977.75	SANDSTONE: medium brown, firm, clastic grains; clay matrix 5%, fine sand 30%, medium sand 65%, moderately sorted, rounded, sub spherical, weak argillaceous cement, moderately strong siliceous cement, porosity inter granular 10%. Fluorescence trace, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.

2978.75	SANDSTONE: light brown, firm, clastic grains; clay matrix 10%, very fine sand 60%, fine sand 20%, moderately sorted, rounded, sub spherical, weak argillaceous cement, moderately strong siliceous cement, trace carbonaceous grains, Porosity intergranular 10%, Fluorescence trace, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.							
2979.75	SANDSTONE: light brownish grey, firm, clastic grains; clay matrix 20%, very fine sand 30%, fine sand 50%, well sorted, rounded, sub spherical, moderate strong argillaceous cement, moderately strong siliceous cement, Porosity intergranular 5%, Fluorescence trace, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.							
2980.75	SANDSTONE: light brownish grey, firm, clastic grains; clay matrix 20%, silt 10%, very fine sand 30%, fine sand 40%, well sorted, rounded, sub spherical, moderate strong argillaceous cement, moderately strong siliceous cement, Porosity intergranular 3%, Fluorescence trace, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.							
2981.75	SANDSTONE: light olive grey, firm, clastic grains; clay matrix 20%, silt 20%, very fine sand 40%, fine sand 20%, well sorted, rounded, sub spherical, moderate strong argillaceous cement, Porosity intergranular 3%, Fluorescence trace, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.							
2982.75	SANDSTONE: light grey brown, firm, clastic grains; clay matrix 20%, silt 30%, very fine sand 20%, fine sand 30%, well sorted, rounded, sub spherical, moderate strong argillaceous cement, Porosity intergranular 3%, No fluorescence.							
2983.75	SANDSTONE: light to medium grey, firm, clastic grains; clay matrix 20%, silt 30%, very fine sand 40%, fine sand 10%, well sorted, rounded, sub spherical, moderate strong argillaceous cement, Porosity intergranular 3%, No fluorescence.							
2984.75	SANDSTONE: light grey/brown, firm, clastic grains; clay matrix 20%, silt 30%, very fine sand 30%, fine sand 20%, well sorted, rounded, sub spherical, moderate strong argillaceous cement, Porosity intergranular 3%, No fluorescence.							
2985.4	SANDSTONE: light grey/brown, firm, clastic grains; clay matrix 20%, silt 30%, very fine sand 50%, well sorted, rounded, sub spherical, moderate strong argillaceous cement, Porosity intergranular 3%, No fluorescence.							
Gas average	2958m – 2985m	446 units	**Composition (ppm)**	76806 C1	7681 C2	3451 C3	1377 C4	456 C5

APPENDIX 4: ROUTINE CORE ANALYSIS & PHOTOS

ROUTINE CORE ANALYSIS FINAL REPORT

of

YOLLA-4

for

ORIGIN ENERGY RESOURCES LIMITED

by

ACS LABORATORIES PTY LTD

21 October, 2004

Origin Energy Resources Limited
John Oxley Centre
339 Coronation Drive
MILTON QLD 4064

Attention: Mr Andy Hall

FINAL REPORT: 0359-02
YOLLA-4

CLIENT REFERENCE: Purchase Order O4641

MATERIAL: 4" Diameter Whole Core

LOCALITY: Yolla-4

WORK REQUIRED: Routine Core Analysis

Please direct technical inquiries regarding this work to the signatory below under whose supervision the work was conducted.

KEVIN H FLYNN
General Manager

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VI. **RESULTS SUMMARY**
VII. **CORE PLOT**
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CHAPTER 1

INTRODUCTION

1. INTRODUCTION

This final report presents the results from a routine core analysis study performed on two cores from the Yolla-4 well. The study was undertaken as per instructions received from Origin Energy Resources Limited.

The following report includes tabular data of ambient and overburden permeability to air, helium injection porosity and grain density. Data presented graphically includes a core log plot of the above porosity, permeability, core gamma and probe permeability

CHAPTER 2

STUDY AIMS

2. STUDY AIMS

The analyses were performed with the following aims:

1. To provide depth correlation through the provision of a continuous core gamma log over the cored interval.

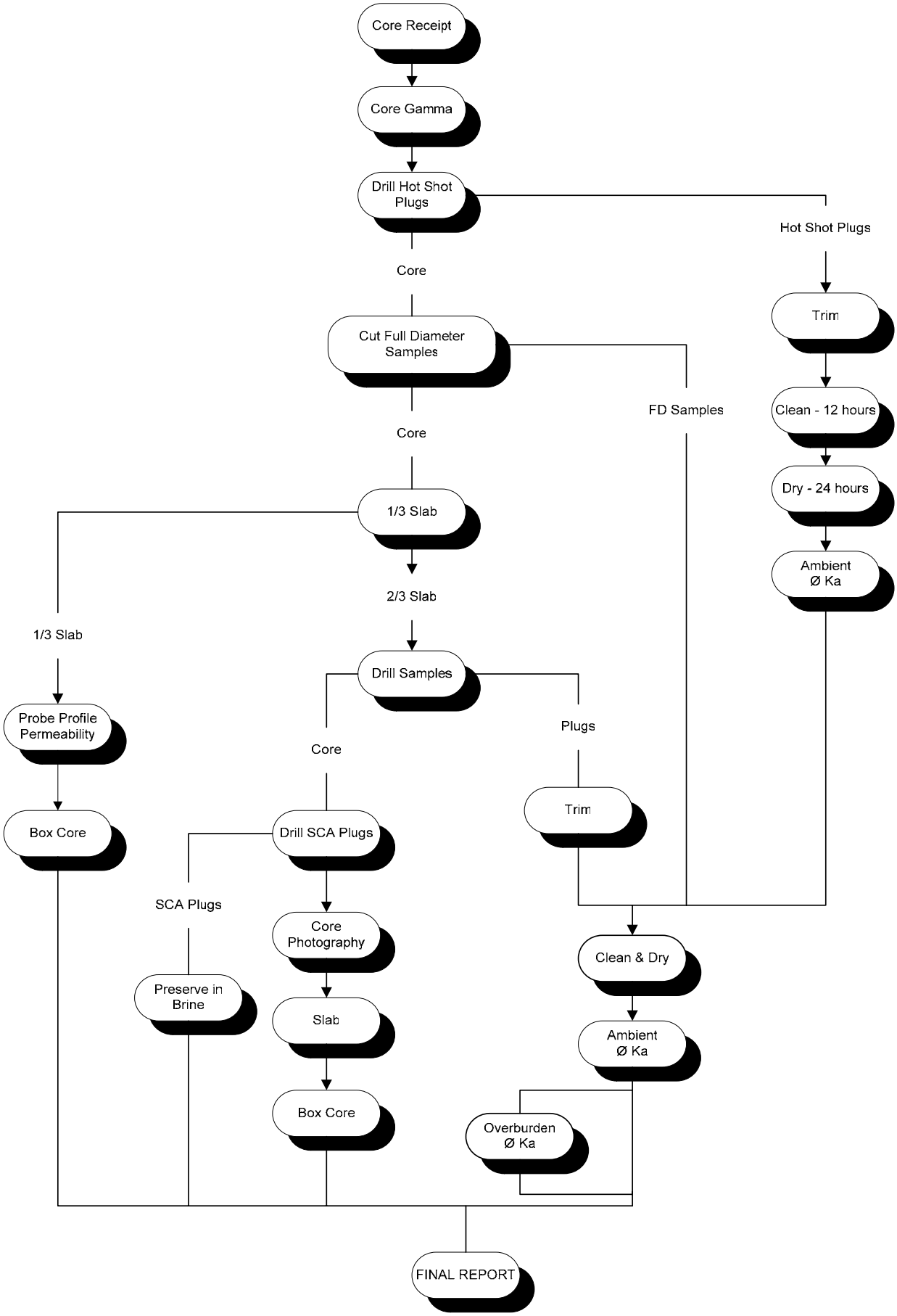
2. To provide air permeability, helium injection porosity and density data at ambient conditions.

3. To investigate the effect on porosity and permeability due to overburden stress.

4. To provide a detailed permeability profile across the core interval.

5. To provide a permanent record of the core through core photography.

YOLLA-4 - STUDY OUTLINE



CHAPTER 3

SAMPLING

3. SAMPLING

3.1 Routine Core Analysis Samples

One hundred and fifty-six 1½″ diameter horizontal core plug samples were cut at approximately 30 cm intervals throughout the core using brine as the bit lubricant. Forty-seven vertical plugs were cut at approximately 1m intervals. All plugs were trimmed to right cylinders and off-cuts were bagged and labelled for possible future analysis.

3.2 Full Diameter Samples

Nine full diameter samples were selected by Origin for omni-directional permeability determinations. They were trimmed to right cylinders using brine as the blade lubricant.

3.3 Special Core Analysis Samples

Seventeen special core analysis 1½" diameter plug samples were cut throughout the core. Samples are stored in vials under brine.

3.4 Core Slabbing

Upon completion of Hot Shot plug drilling the core was slabbed longitudinally into two sections (1/3 : 2/3) using brine as the blade cooling and lubricating medium. On completion of core photography the 2/3 section of core was slabbed into two 1/3 sections.

CHAPTER 4

SAMPLE PREPARATION

4. SAMPLE PREPARATION

4.1 Soxhlet Cleaning

Cleaning was performed in a modified soxhlet system using a 3:1 Chloroform:Methanol azeotrope. Cleaning continued until tests for oil (fluorescence under UV light) and salt (silver nitrate precipitation) showed negative.

4.2 Sample Drying

The clean samples were dried to constant weight in a humidity oven at 60°C and 40% relative humidity. Once dried, the samples were cooled to room temperature in individual airtight containers.

CHAPTER 5

TEST PROCEDURES

5. TEST PROCEDURES

5.1 Continuous Core Gamma

The core was laid out according to depth markings, and a continuous core gamma trace produced by passing the core beneath a gamma radiation detector. The detector is protected from extraneous radiation by a lead tunnel. The detector signal is amplified and digitised to produce a gamma trace for comparison with the down hole log.

5.2 Porosity

The clean and dry plugs were sealed in a matrix cup and a known volume of helium at 100 psi reference pressure was introduced to the cup. From the resultant pressure the unknown volume, i.e. the grain volume, was calculated using Boyles Law.

The bulk volume of each plug was determined by mercury immersion. The difference between the grain volume and the bulk volume is the pore volume. The porosity is calculated as the volume percentage of pore space with respect to the bulk volume.

$$P_1 V_1 = P_2 V_2$$

$$\Rightarrow \quad P_1 Vr = P_2 (Vr + Vc - Vg)$$

$$Vp = Vb - Vg$$

$$\text{Ambient Porosity \%} = \frac{Vp}{Vb} \times 100\%$$

The porosity (and permeability) at simulated overburden stress was measured on every 3rd sample by mounting each sample individually into a thick walled rubber sleeve and then loading the assembly into a hydrostatic cell. With an 'ambient' confining stress of 400 psi applied to the sample, helium held at 100 psi reference pressure was released into the samples pore space. The new pressure is then recorded. The confining stress is then increased to the required pressure of 5000 psi, as supplied by Origin, and the pore pressure noted at equilibrium. The changes in pore pressure, together with the previously determined parameters in the ambient analyses, allow the calculation of porosity at overburden conditions, as follows.

$$\text{Overburden Porosity \%} = \frac{Vp - \Delta Vp}{Vb - \Delta Vp} \times 100\%$$

where P_1 = *initial pressure (psig)*
P_2 = *final pressure (psig)*
Vr = *reference cell volume (cm^3)*
Vc = *matrix cup volume (cm^3)*
Vg = *grain volume (cm^3)*
Vp = *pore volume (cm^3)*
Vb = *bulk volume (cm^3)*

5.3 Permeability to Air

The plugs were placed into a Hassler cell (Appendix IX) with an ambient confining pressure of 400 psi applied. The confining pressure was used to prevent bypassing of air around the sample when the measurement was made. In order to determine permeability a known air pressure was applied to the upstream face of each sample, creating a flow of air through the core plug. Air permeability for each core sample was calculated using Darcy's Law through knowledge of the upstream pressure, flow rate, viscosity of air and sample dimensions.

$$Ka = \frac{2000.BP.\mu.q.L}{(P_1^2 - P_2^2).A}$$

where *Ka* = *air permeability (milliDarcy's)*
BP = *barometric pressure (atmospheres)*
μ = *gas viscosity (cP)*
q = *flow rate (cm^3/s) at barometric pressure*
L = *sample length (cm)*
P_1 = *upstream pressure (atmospheres)*
P_2 = *downstream pressure (atmospheres)*
A = *sample cross sectional area (cm^2)*

Every 3rd sample was mounted in to a hydrostatic cell with a confining pressure of 5000 psi applied and the above procedure repeated to give permeability at overburden conditions.

5.4 Apparent Grain Density

The apparent grain density is calculated by dividing the weight of the plug by the grain volume determined from the helium injection porosity measurement.

$$\rho = \frac{Wt}{Vg}$$

where ρ = *grain density (g/cm^3)*
Wt = *weight of sample (g)*
Vg = *grain volume (cm^3)*

5.5 Probe Permeability

A permeability profile was obtained across the sand sections of the core using a steady state probe permeameter. Probe permeability measurements were taken at 10 cm intervals along the slabbed core face.

A probe is pneumatically applied to the surface of the core at 100 psig. An 'O' ring on the tip of the probe is used to achieve a seal against the rock. Air is then forced to flow at a constant pressure through the probe tip into the core and back into the atmosphere. The flow rate is measured by a series of precision flow meters which are selected to cover a wide range of flow rates. The measured flow rate (at a fixed injection pressure) is converted to permeability by comparison against measurements on core plugs with known permeabilities.

5.6 Core Photography

The core photography was carried out on the 2/3 slab of core.

Photographs were taken with a digital camera in 5 metre format under white light. On completion, photographs were edited and reported on conventional photographic paper and electronically.

5.7 Full Diameter Analysis

Permeability was determined on the extracted and dried full diameter sections in three directions; K_{max} the direction of maximum permeability; K_{90} at 90° to the maximum direction and $K_{vertical}$ measured parallel to the length of the core. Measurements were carried out as previously described using a large diameter core holder.

CHAPTER 6

SAMPLE DISTRIBUTION AND STORAGE

6. SAMPLE DISTRIBUTION AND STORAGE

6.1 Sample Distribution and Storage

The centre 1/3 slab of core is currently stored at ACS Laboratories, Brisbane facility.

One 1/3 slab of core was sent to Mineral Resources Tasmania, 30 Gordons Hill Road, Rosny Park, Tasmania 7018 on 3 November 2004.

One 1/3 slab of core was sent to Geosciences Australia, AGSO Petroleum Data Repository, Cnr Jerrabomberra Ave & Hindmarsh Dr, Symonstan, ACT 2609 on 3 November 2004.

All RCA samples and off-cuts are currently being stored at ACS Laboratories Pty Ltd, Brisbane.

6.2 SCA Sample Depth Listing

The following samples were drilled and stored under brine for possible special core analysis studies.

S1	**2898.38**	**S10**	**2963.79**
S2	**2901.27**	**S11**	**2964.68**
S3	**2902.59**	**S12**	**2965.51**
S4	**2903.36**	**S13**	**2967.97**
S5	**2903.87**	**S14**	**2971.05**
S6	**2905.25**	**S15**	**2972.91**
S7	**2959.64**	**S16**	**2974.16**
S8	**2960.89**	**S17**	**2978.46**
S9	**2961.93**		

APPENDIX I

AMBIENT TEST RESULTS
HORIZONTAL PLUGS

CORE ANALYSIS FINAL REPORT

Client	: Origin Energy Resources Limited	**Date**	: 10/08/2004
Well	: Yolla-4	**File**	: 0359-02
Field	: Yolla	**Location**	: BNE
Core Int	: 2892.05 - 2919.60m	**Analysts**	: ijm, cw, kw, me, khf
Core Int	: 2958.07 - 2985.37m		

Sample Number	Depth *(m)*	Dir	Porosity Helium *(percent)*	Grain Density *(g/cm^3)*	Permeability to Air *(mD)*	Remarks
1	2892.15	H	1.3	2.54		Frac
2	2892.66	H	3.3	2.64	0.04	Irreg
3	2892.90	H	4.6	2.91	0.02	
4	2893.28	H	8.6	2.68	0.06	
5	2893.64	H	1.4	2.62	14.4	Frac
6	2894.22	H	18.1	2.61	34.7	Carb
7	2894.85	H	2.4	2.62	0.03	Carb
8	2895.14	H	2.6	2.64	0.06	
9	2895.46	H	5.7	2.66	0.06	
10	2895.74	H	8.6	2.71	0.05	
11	2896.04	H	2.0	2.65	1.48	Frac
12	2896.34	H	9.0	2.67	0.12	
13	2896.61	H	6.1	2.66	0.86	Frac
14	2896.94	H	7.9	2.88	1.90	
15	2897.24	H	18.4	2.69	6.1	
16	2897.53	H	16.6	2.66	7.7	
17	2897.81	H	18.2	2.67	12.4	Irreg
18	2898.15	H	18.1	2.67	12.2	
19	2898.45	H	16.0	2.67	11.7	
20	2898.72	H	15.7	2.70	5.4	
21	2899.25	H	17.9	2.75	13.6	
22	2899.48	H	17.2	2.72	9.2	
23	2899.90	H	17.8	2.70	11.5	
24	2900.07	H	18.0	2.66	35.5	
25	2900.30	H	15.0	2.69	2.37	
26	2900.58	H	11.2	2.69	2.37	
27	2900.73	H	9.4	2.71	1.12	Lam
28	2900.99	H	15.3	2.68	20.3	Frac
29	2901.28	H	17.7	2.66	35.9	
30	2901.60	H	6.0	2.83		Frac
31	2901.88	H	20.4	2.68	3564	

Sample Number	Depth (m)	Dir	Porosity Helium (percent)	Grain Density (g/cm^3)	Permeability to Air (mD)	Remarks
32	2902.10	H	19.5	2.72	2153	
33	2902.28	H	22.9	2.66	190	
34	2902.49	H	20.9	2.73	1105	
35	2902.76	H	21.7	2.71	1156	
36	2903.10	H	22.8	2.65	1482	
37	2903.41	H	22.4	2.69	2723	
38	2903.65	H	17.2	2.69	254	
39	2903.93	H	21.0	2.70	1676	
40	2904.22	H	17.5	2.67	1004	S.P.
41	2904.37	H	14.2	2.67	510	Irreg
42	2904.67	H	19.0	2.65	1506	
43	2904.98	H	23.0	2.65	3110	
44	2905.15	H	17.0	2.69	123	
45	2905.50	H	23.1	2.67	1940	
46	2905.81	H	20.3	2.65	1824	
47	2906.08	H	22.6	2.66	4616	
48	2906.43	H	11.6	2.68	0.41	
49	2907.07	H	17.3	2.66	715	
50	2907.23	H	13.1	2.69	1.13	
51	2907.40	H	2.0	2.69		Irreg
52	2907.72	H	19.7	2.65	2350	
53	2907.93	H	17.2	2.64	1060	
54	2909.00	H	5.6	2.69	8.7	Frac
55	2909.28	H	7.3	2.75	0.69	Lam, Frac
56	2909.93	H	2.7	2.77	0.01	
57	2910.20	H	10.5	2.70	0.69	
58	2910.48	H	9.8	2.78	0.12	
59	2910.73	H	2.9	2.69		Irreg
60	2911.67	H	5.8	2.69	0.06	
61	2911.96	H	2.7	2.73	0.11	Lam, Frac
62	2917.96	H	5.8	2.67	1.12	Lam, Frac
63	2918.20	H	11.1	2.72	0.08	
64	2918.94	H	10.1	2.76	0.05	Lam
65	2919.33	H	8.5	2.73	0.04	
66	2958.27	H	11.9	2.65	26.8	
67	2958.59	H	19.0	2.65	129	
68	2958.90	H	16.1	2.66	35.6	
69	2959.20	H	19.7	2.73	576	
70	2959.50	H	21.6	2.64	1169	
71	2959.81	H	21.0	2.65	790	
72	2960.10	H	19.6	2.64	528	
73	2960.40	H	19.1	2.64	573	
74	2960.70	H	19.4	2.64	699	
75	2960.95	H	19.2	2.65	440	

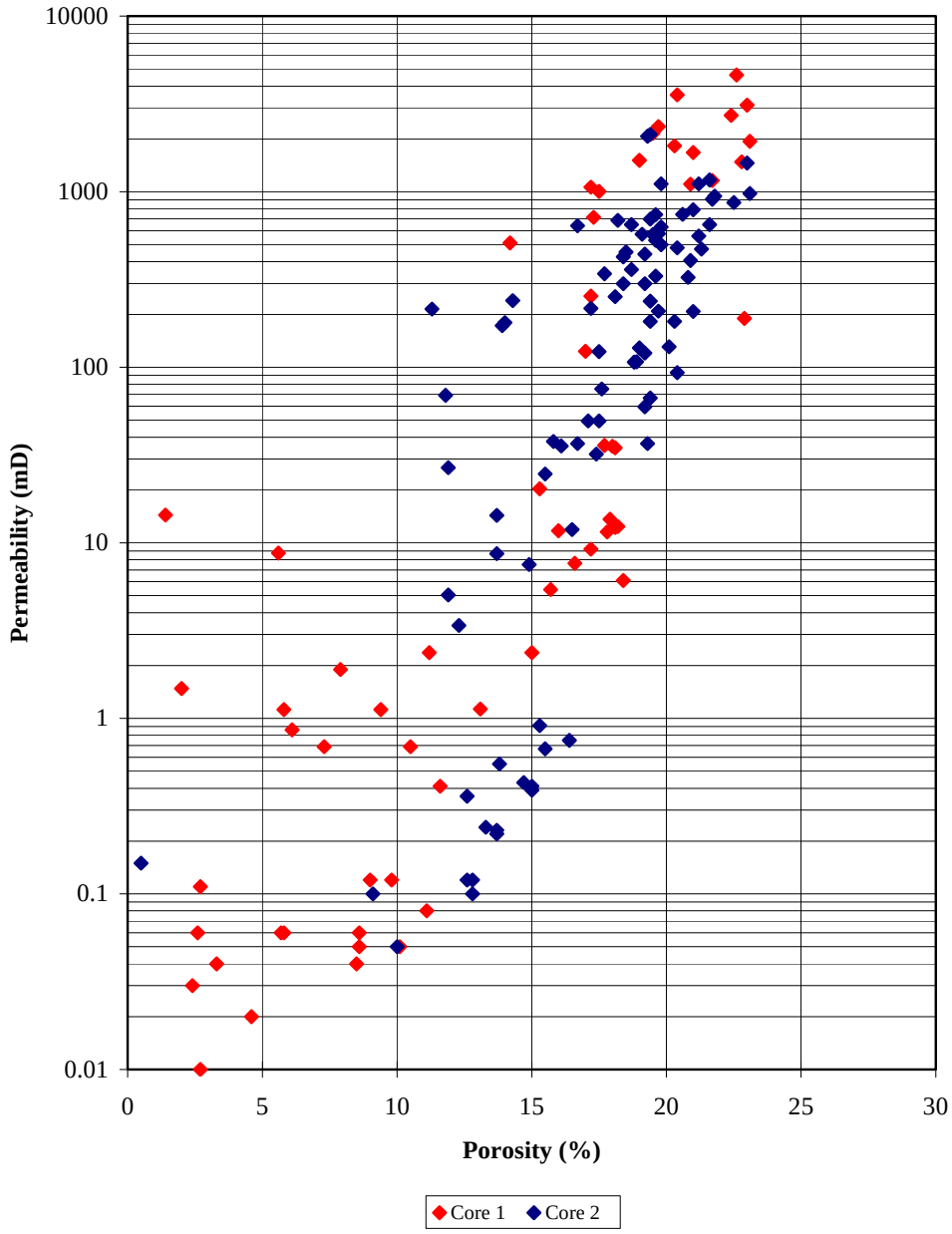
Sample Number	Depth (m)	Dir	Porosity Helium (percent)	Grain Density (g/cm^3)	Permeability to Air (mD)	Remarks
76	2961.25	H	19.8	2.64	630	
77	2961.57	H	21.2	2.64	1110	
78	2961.87	H	20.6	2.64	743	
79	2962.15	H	15.8	2.64	37.8	
80	2962.45	H	11.9	2.65	5.0	
81	2962.75	H	16.7	2.64	36.8	
82	2963.06	H	15.5	2.66	24.7	
83	2963.35	H	17.7	2.63	340	
84	2963.65	H	19.8	2.63	1109	
85	2963.93	H	19.8	2.63	499	
86	2964.25	H	18.2	2.64	686	
87	2964.55	H	19.4	2.64	2121	
88	2964.85	H	14.3	2.63	240	
89	2965.15	H	19.3	2.64	2072	
90	2965.45	H	14.0	2.63	180	
91	2965.75	H	11.3	2.64	215	
92	2966.04	H	16.7	2.65	640	
93	2966.28	H	11.8	2.64	69.3	
94	2966.53	H	17.2	2.65	216	
95	2966.85	H	19.6	2.64	741	
96	2967.25	H	18.9	2.64	107	
97	2967.55	H	13.7	2.64	14.3	
98	2967.87	H	19.4	2.65	183	
99	2968.15	H	13.9	2.64	173	
100	2968.38	H	19.2	2.66	59.5	
101	2968.70	H	14.9	2.67	7.5	
102	2969.03	H	19.4	2.66	66.9	
103	2969.30	H	17.4	2.66	32.0	
104	2969.65	H	13.7	2.65	8.7	
105	2969.80	H	19.6	2.65	330	
106	2969.94	H	18.8	2.66	107	
107	2970.25	H	17.5	2.66	49.4	
108	2970.53	H	20.4	2.66	479	
109	2970.85	H	18.4	2.65	300	
110	2971.18	H	19.5	2.65	570	
111	2971.53	H	18.1	2.66	253	
112	2971.82	H	18.5	2.65	454	
113	2972.10	H	18.4	2.65	426	
114	2972.37	H	17.5	2.66	123	
115	2972.75	H	18.7	2.65	649	
116	2973.03	H	21.2	2.65	558	
117	2973.35	H	19.2	2.65	299	
118	2973.65	H	23.0	2.64	1457	
119	2973.95	H	21.8	2.65	944	

Sample Number	Depth (m)	Dir	Porosity Helium (percent)	Grain Density (g/cm^3)	Permeability to Air (mD)	Remarks
120	2974.25	H	21.7	2.64	904	
121	2974.57	H	19.7	2.65	209	
122	2974.85	H	21.0	2.65	208	
123	2975.20	H	19.2	2.65	120	
124	2975.55	H	12.3	2.65	3.38	
125	2975.67	H	0.5	2.66	0.15	Frac
126	2976.45	H	19.4	2.63	237	
127	2976.65	H	21.6	2.65	649	
128	2976.95	H	21.3	2.65	471	
129	2977.25	H	22.5	2.66	866	
130	2977.58	H	23.1	2.66	976	
131	2977.95	H	20.9	2.65	406	
132	2978.26	H	17.1	2.66	49.5	
133	2978.57	H	20.8	2.66	325	
134	2978.85	H	18.7	2.65	360	
135	2979.15	H	17.6	2.64	75.3	
136	2979.45	H	20.3	2.65	183	
137	2979.70	H	20.1	2.65	131	
138	2980.02	H	20.4	2.66	93.1	
139	2980.28	H	16.5	2.69	11.9	
140	2980.60	H	19.3	2.67	36.8	
141	2980.81	H	9.1	2.71	0.10	
142	2981.12	H	12.6	2.72	0.36	
143	2981.40	H	13.8	2.73	0.55	
144	2981.70	H	15.5	2.80	0.67	
145	2982.03	H	15.3	2.71	0.91	
146	2982.30	H	13.3	2.74	0.24	
147	2982.60	H	14.7	2.72	0.43	
148	2982.90	H	15.0	2.72	0.39	
149	2983.20	H	16.4	2.71	0.75	
150	2983.52	H	15.0	2.71	0.41	
151	2983.82	H	13.7	2.72	0.23	
152	2984.10	H	13.7	2.72	0.22	
153	2984.40	H	12.6	2.73	0.12	
154	2984.64	H	12.8	2.70	0.12	
155	2984.87	H	10.0	2.65	0.05	
156	2985.25	H	12.8	2.71	0.10	

POROSITY vs PERMEABILITY
Ambient

Client: Origin Energy Resources Limited

Well: Yolla-4



APPENDIX II

AMBIENT TEST RESULTS
VERTICAL PLUGS

CORE ANALYSIS FINAL REPORT

Client	: Origin Energy Resources Limited	**Date**	: 10/08/2004
Well	: Yolla-4	**File**	: 0359-02
Field	: Yolla	**Location**	: BNE
Core Int	: 2892.05 - 2919.60m	**Analysts**	: me, kw, cw, ijm, khf
Core Int	: 2985.07 - 2985.37m		

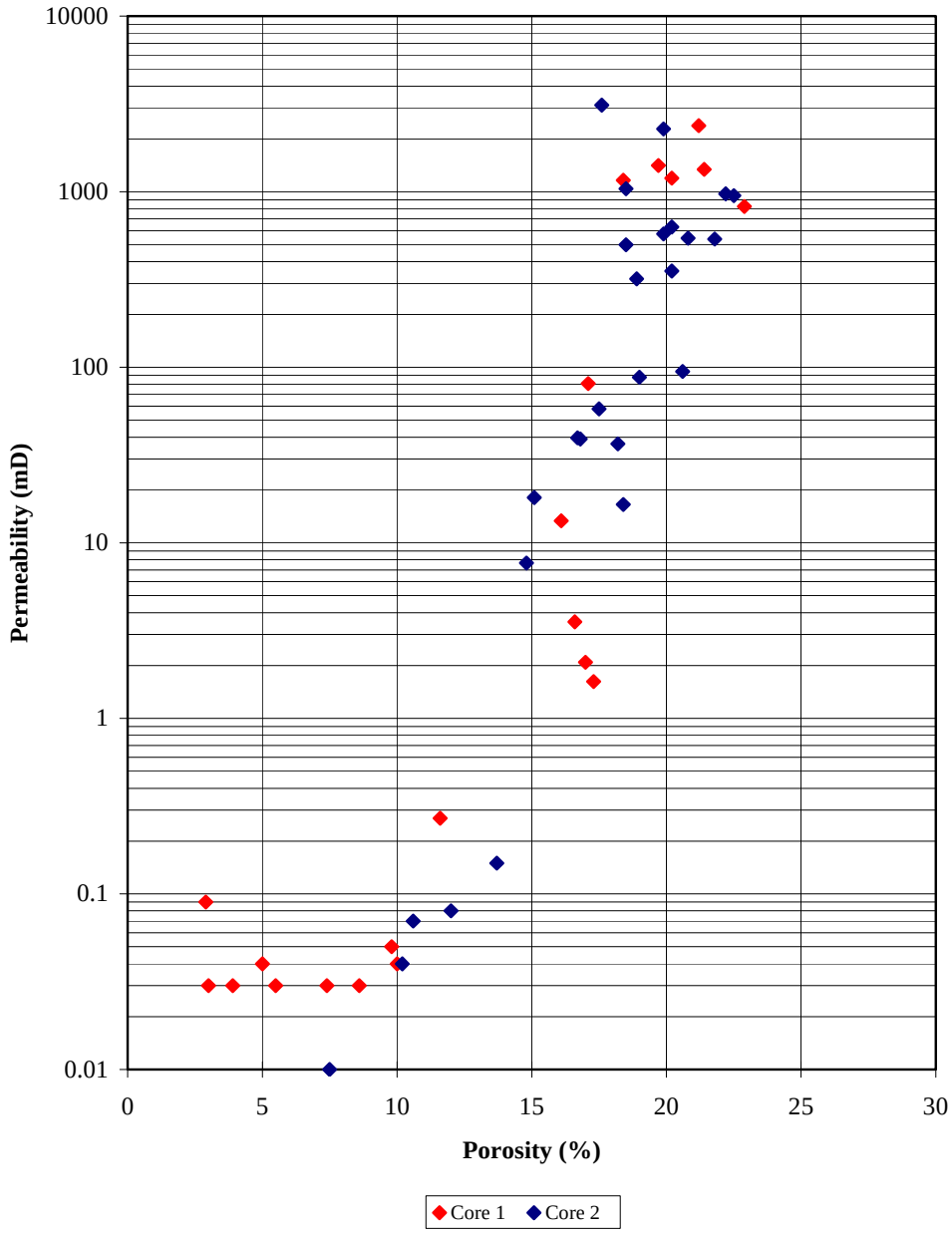
Sample Number	Depth *(m)*	Dir	Porosity Helium *(percent)*	Grain Density *(g/cm^3)*	Permeability to Air *(mD)*	Remarks
1V	2893.02	V	5.5	2.70	0.03	
2V	2894.35	V	16.1	2.61	13.4	
3V	2895.02	V	3.9	2.64	0.03	
4V	2896.10	V	8.6	2.71	0.03	S.P.
5V	2897.02	V	10.0	2.95	0.04	
6V	2898.02	V	17.3	2.69	1.62	
7V	2899.17	V	16.6	2.78	3.55	
8V	2900.17	V	11.6	2.69	0.27	S.P., Frac
9V	2901.08	V	17.0	2.72	2.09	
10V	2901.96	V	21.4	2.72	1340	
11V	2902.86	V	18.4	2.65	1162	
12V	2904.05	V	22.9	2.72	825	
13V	2904.87	V	20.2	2.65	1193	
14V	2905.89	V	21.2	2.67	2374	
15V	2906.94	V	19.7	2.68	1409	
16V	2907.98	V	17.1	2.70	80.6	
17V	2908.93	V	5.0	2.72	0.04	
18V	2910.55	V	7.4	2.78	0.03	
19V	2911.52	V	2.9	2.71	0.09	Frac
20V	2912.02	V	3.0	2.71	0.03	
21V	2919.28	V	9.8	2.70	0.05	
22V	2958.38	V	17.5	2.65	57.9	
23V	2959.12	V	18.9	2.71	319	
24V	2960.03	V	20.2	2.65	631	
25V	2961.03	V	19.9	2.64	574	
26V	2962.08	V	15.1	2.65	18.1	
27V	2963.12	V	14.8	2.65	7.7	
28V	2964.03	V	18.5	2.65	1042	
29V	2965.03	V	19.9	2.64	2276	
30V	2966.17	V	17.6	2.64	3115	
31V	2967.47	V	16.8	2.65	39.1	

Sample Number	Depth (m)	Dir	Porosity Helium (percent)	Grain Density (g/cm^3)	Permeability to Air (mD)	Remarks
32V	2968.47	V	18.4	2.67	16.6	
33V	2969.47	V	18.2	2.67	36.6	
34V	2970.60	V	20.2	2.65	354	
35V	2971.60	V	18.5	2.65	499	
36V	2972.47	V	16.7	2.65	39.6	
37V	2973.47	V	21.8	2.65	537	
38V	2974.47	V	19.0	2.65	87.8	
39V	2976.77	V	22.2	2.65	973	
40V	2977.77	V	20.8	2.66	543	
41V	2978.77	V	22.5	2.65	950	
42V	2979.92	V	20.6	2.66	94.6	
43V	2980.87	V	10.6	2.71	0.07	
44V	2981.77	V	12.0	2.80	0.08	
45V	2982.77	V	10.2	2.73	0.04	
46V	2983.90	V	13.7	2.73	0.15	
47V	2984.80	V	7.5	2.64	0.01	

POROSITY vs PERMEABILITY
Vertical Plugs

Client: Origin Energy Resources Limited

Well: Yolla-4



APPENDIX III

AMBIENT TEST RESULTS
FULL DIAMETER SAMPLES

FULL DIAMETER CORE ANALYSIS FINAL REPORT

Client : Origin Energy Resources Limited
Well : Yolla-4
Field : Yolla
Core Int : 2892.05 - 2919.60m
Core Int : 2958.07 - 2985.37m

Date : 10/08/2004
File : 0359-02
Location : BNE
Analysts : cw, kw

Sample Number	Depth (m)	Dir	Porosity Helium (percent)	Grain Density (g/cm^3)	Vertical Permeability to Air K_v (mD)	Horizontal Permeability to Air K_{max} (mD)	Horizontal Permeability to Air K_{90} (mD)	Remarks
FD1	2906.67 - 2906.80	FD	8.7	2.76	0.04	0.31	0.19	
FD2	2907.48 - 2907.59	FD	4.9	2.65	0.02			Fractured
FD3	2908.03 - 2908.17	FD	16.1	2.71	17.0	79.5	60.3	
FD4	2908.38 - 2908.54	FD	9.7	2.70	0.02	2.61	2.47	
FD5	2909.48 - 2909.63	FD	8.5	2.72	0.04	0.66	0.61	
FD6	2911.25 - 2911.45	FD	4.5	2.72	0.04	11.6	2.71	Frac
FD7	2912.39 - 2912.53	FD	3.4	2.70	0.01	32.8	11.4	Frac
FD8	2918.55 - 2918.75	FD	9.8	2.68	0.05	1.78	0.81	
FD9	2919.13 - 2919.23	FD	4.0	2.64	0.01	1.43	0.07	

APPENDIX IV

AMBIENT TEST RESULTS
MSCT SAMPLES

MSCT CORE ANALYSIS FINAL REPORT

Client	: Origin Energy Resources Limited	**Date**	: 19/08/2004
Well	: Yolla-4	**File**	: 0359-02
Field	: Yolla	**Location**	: Perth
Core Int	: 2892.05 - 2919.60m	**Analysts**	: cw pnc
Core Int	: 2958.07 - 2985.37m		

Sample Number	Depth *(m)*	Dir	Porosity Helium *(percent)*	Grain Density *(g/cm^3)*	Permeability to Air *(mD)*	Remarks
3	3159.0		12.7	2.67	-	short
9	3159.0		14.0	2.76	1.31	
10	3158.0		5.1	3.08	0.02	
14	2604.0		17.0	2.68	1.32	
15	2605.5		15.1	2.75	34.2	
16	2606.5		16.3	2.99	3.07	
17	2608.2		16.1	2.68	2.44	
18a	2609.5		17.9	2.67	-	frac / dual lith
18b	2609.5		7.6	2.96	-	frac / dual lith
19	2612.0		20.2	2.67	54.4	
20	2614.5		-	-	-	LCM

APPENDIX V

OVERBURDEN TEST RESULTS

OVERBURDEN CORE ANALYSIS FINAL REPORT

Client	: Origin Energy Resources Limited	**Date**	: 10/08/2004
Well	: Yolla-4	**File**	: 0359-02
Field	: Yolla	**Location**	: BNE
Core Int.	: 2892.05 - 2919.60m	**Analysts**	: ijm, kw, me, khf
Core Int.	: 2958.07 - 2985.37m		

Overburden Pressure 1: 5000 psi

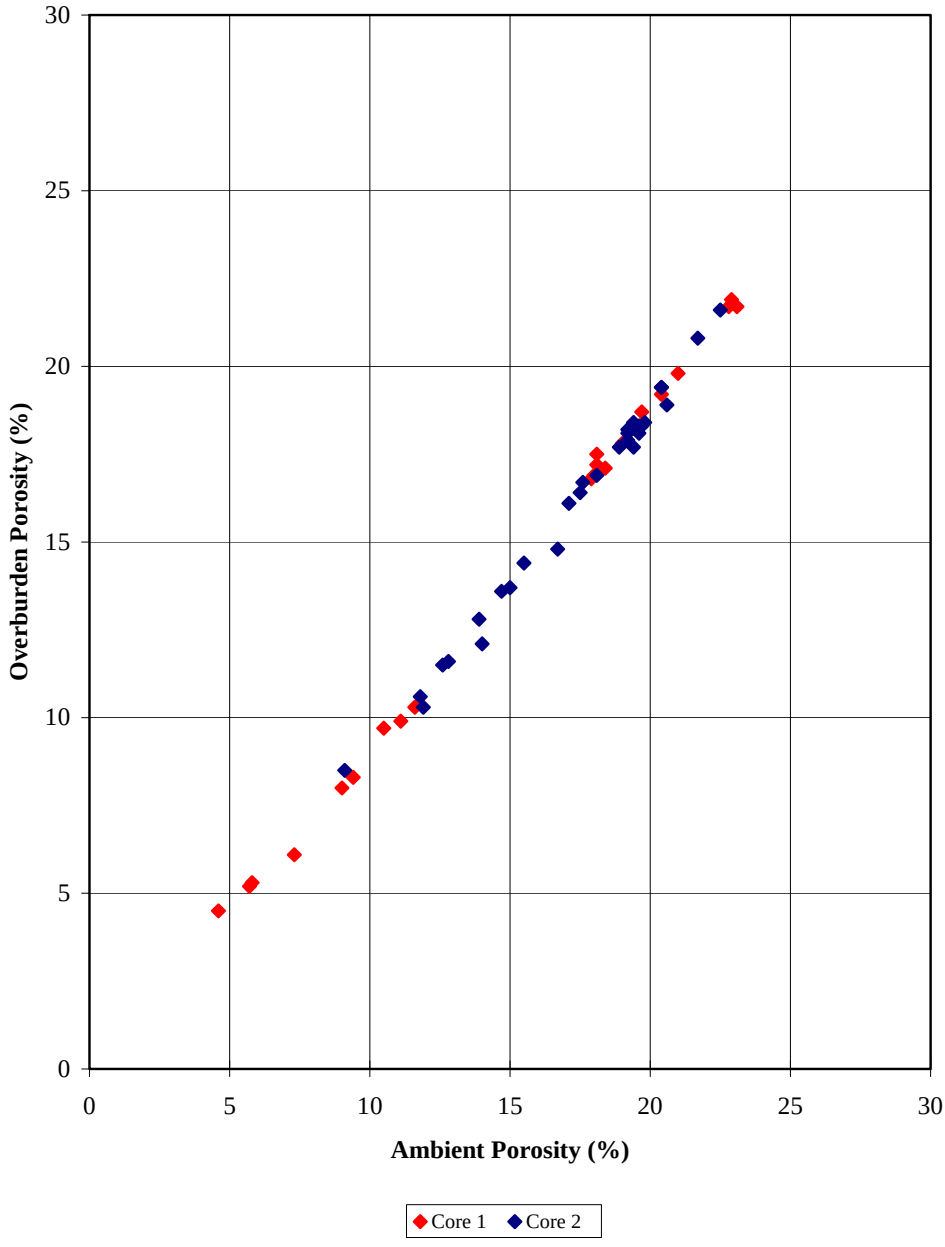
Sample Number	Depth *(m)*	Dir	Ambient Porosity *(percent)*	OB1 Porosity *(percent)*	Ambient Permeability *(mD)*	OB1 Permeability *(mD)*
3	2892.90	H	4.6	4.5	0.02	< 0.01
6	2894.22	H	18.1	17.5	34.7	31.9
9	2895.46	H	5.7	5.2	0.06	0.01
12	2896.34	H	9.0	8.0	0.12	0.02
15	2897.24	H	18.4	17.1	6.1	4.94
18	2898.15	H	18.1	17.2	12.2	10.1
21	2899.25	H	17.9	16.8	13.6	11.6
24	2900.07	H	18.0	16.9	35.5	31.7
27	2900.73	H	9.4	8.3	1.12	0.09
31	2901.88	H	20.4	19.2	3564	3038
33	2902.28	H	22.9	21.9	190	169
36	2903.10	H	22.8	21.7	1482	1230
39	2903.93	H	21.0	19.8	1676	1325
42	2904.67	H	19.0	17.8	1506	1212
45	2905.50	H	23.1	21.7	1940	1500
48	2906.43	H	11.6	10.3	0.41	0.18
52	2907.72	H	19.7	18.7	2350	2034
55	2909.28	H	7.3	6.1	0.69	0.02
57	2910.20	H	10.5	9.7	0.69	0.32
60	2911.67	H	5.8	5.3	0.06	< 0.01
63	2918.20	H	11.1	9.9	0.08	0.02
66	2958.27	H	11.9	10.3	26.8	16.3
69	2959.20	H	19.7	18.3	576	409
72	2960.10	H	19.6	18.3	528	423
75	2960.95	H	19.2	17.9	440	350
78	2961.87	H	20.6	18.9	743	593
81	2962.75	H	16.7	14.8	36.8	30.4
84	2963.65	H	19.8	18.4	1109	878
87	2964.55	H	19.4	17.7	2121	1369
90	2965.45	H	14.0	12.1	180	136

Sample Number	Depth *(m)*	Dir	Ambient Porosity *(percent)*	OB1 Porosity *(percent)*	Ambient Permeability *(mD)*	OB1 Permeability *(mD)*
93	2966.28	H	11.8	10.6	69.3	46.9
96	2967.25	H	18.9	17.7	107	89.3
99	2968.15	H	13.9	12.8	173	137
102	2969.03	H	19.4	18.3	66.9	57.6
105	2969.80	H	19.6	18.1	330	293
108	2970.53	H	20.4	19.4	479	418
111	2971.53	H	18.1	16.9	253	215
114	2972.37	H	17.5	16.4	123	105
117	2973.35	H	19.2	18.1	299	258
120	2974.25	H	21.7	20.8	904	763
123	2975.20	H	19.2	18.2	120	103
126	2976.45	H	19.4	18.4	237	205
129	2977.25	H	22.5	21.6	866	749
132	2978.26	H	17.1	16.1	49.5	41.8
135	2979.15	H	17.6	16.7	75.3	65.9
138	2980.02	H	20.4	19.4	93.1	78.7
141	2980.81	H	9.1	8.5	0.10	0.05
144	2981.70	H	15.5	14.4	0.67	0.43
147	2982.60	H	14.7	13.6	0.43	0.36
150	2983.52	H	15.0	13.7	0.41	0.18
153	2984.40	H	12.6	11.5	0.12	0.04
156	2985.25	H	12.8	11.6	0.10	0.02

POROSITY COMPARISON

Client: Origin Energy Resources Limited

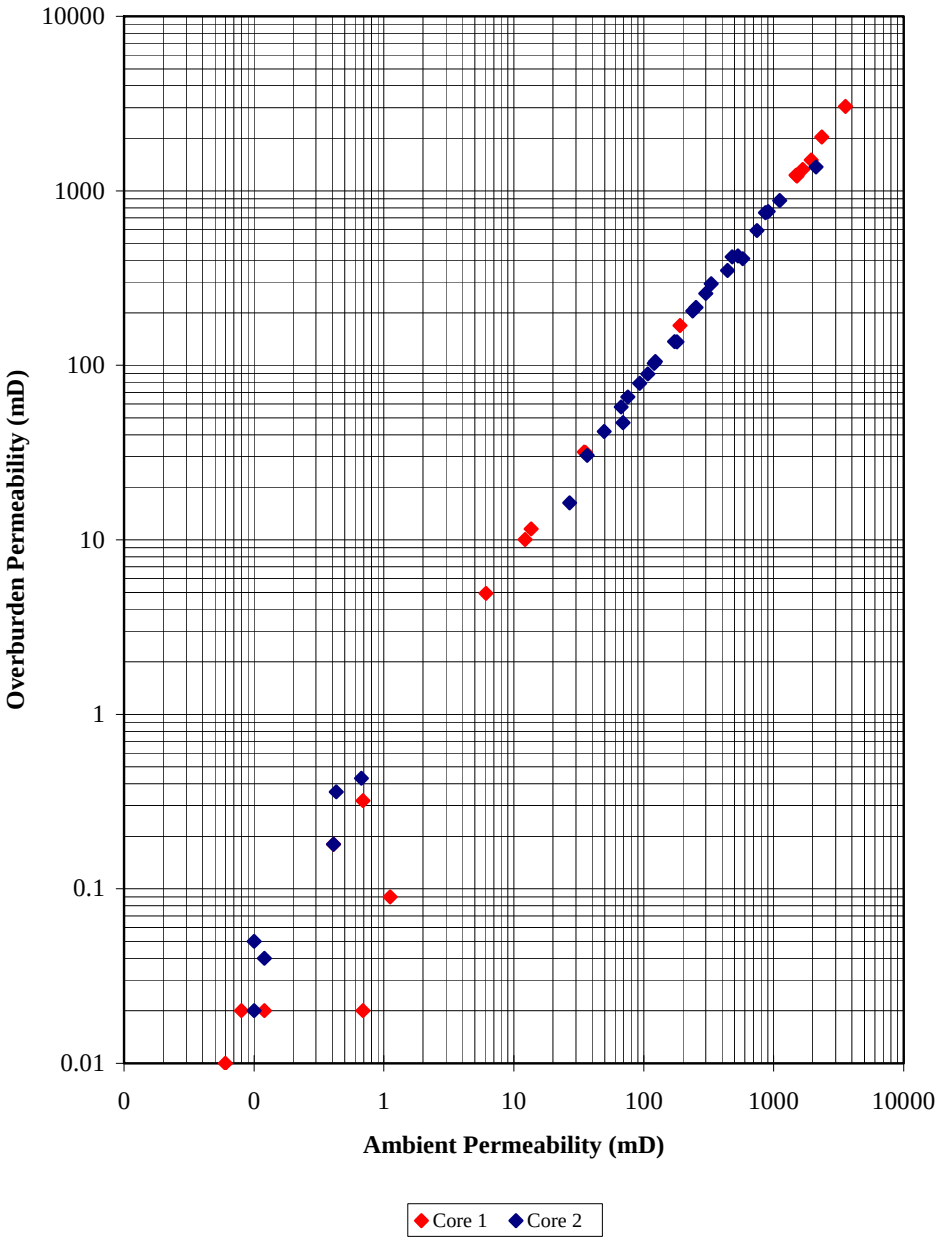
Well: Yolla-4



PERMEABILITY COMPARISON

Client: Origin Energy Resources Limited

Well: Yolla-4



APPENDIX VI

RESULTS SUMMARY

CORE ANALYSIS SUMMARY REPORT

Client : Origin Energy Resources Limited
Well : Yolla-4
Field : Yolla
Core Int : 2892.05 - 2919.60m
Core Int : 2958.07 - 2985.37m

Date : 10/08/2004
File : 0359-02
Location : BNE
Analysts : ijm, cw, kw, me, khf

Sample Number	Depth (m)	Dir	Porosity Helium (percent)	Grain Density (g/cm^3)	Permeability to Air (mD)	Vertical Permeability to Air K_v (mD)	Horizontal Permeability to Air K_{max} (mD)	Horizontal Permeability to Air K_{90} (mD)	Remarks
1	2892.15	H	1.3	2.54					Frac
2	2892.66	H	3.3	2.64	0.04				Irreg
3	2892.90	H	4.6	2.91	0.02				
1V	2893.02	V	5.5	2.70	0.03				
4	2893.28	H	8.6	2.68	0.06				
5	2893.64	H	1.4	2.62	14.4				Frac
6	2894.22	H	18.1	2.61	34.7				Carb
2V	2894.35	V	16.1	2.61	13.4				
7	2894.85	H	2.4	2.62	0.03				Carb
3V	2895.02	V	3.9	2.64	0.03				
8	2895.14	H	2.6	2.64	0.06				

Sample Number	Depth (m)	Dir	Porosity Helium (percent)	Grain Density (g/cm^3)	Permeability to Air (mD)	Vertical Permeability to Air K_v (mD)	Horizontal Permeability to Air K_{max} (mD)	Horizontal Permeability to Air K_{90} (mD)	Remarks
9	2895.46	H	5.7	2.66	0.06				
10	2895.74	H	8.6	2.71	0.05				
11	2896.04	H	2.0	2.65	1.48				Frac
4V	2896.10	V	8.6	2.71	0.03				S.P.
12	2896.34	H	9.0	2.67	0.12				
13	2896.61	H	6.1	2.66	0.86				Frac
14	2896.94	H	7.9	2.88	1.90				
5V	2897.02	V	10.0	2.95	0.04				
15	2897.24	H	18.4	2.69	6.1				
16	2897.53	H	16.6	2.66	7.7				
17	2897.81	H	18.2	2.67	12.4				Irreg
6V	2898.02	V	17.3	2.69	1.62				
18	2898.15	H	18.1	2.67	12.2				
19	2898.45	H	16.0	2.67	11.7				
20	2898.72	H	15.7	2.70	5.4				
7V	2899.17	V	16.6	2.78	3.55				
21	2899.25	H	17.9	2.75	13.6				
22	2899.48	H	17.2	2.72	9.2				
23	2899.90	H	17.8	2.70	11.5				
24	2900.07	H	18.0	2.66	35.5				
8V	2900.17	V	11.6	2.69	0.27				S.P., Frac
25	2900.30	H	15.0	2.69	2.37				
26	2900.58	H	11.2	2.69	2.37				

Sample Number	Depth (m)	Dir	Porosity Helium (percent)	Grain Density (g/cm^3)	Permeability to Air (mD)	Vertical Permeability to Air K_v (mD)	Horizontal Permeability to Air K_{max} (mD)	Horizontal Permeability to Air K_{90} (mD)	Remarks
27	2900.73	H	9.4	2.71	1.12				Lam
28	2900.99	H	15.3	2.68	20.3				Frac
9V	2901.08	V	17.0	2.72	2.09				
29	2901.28	H	17.7	2.66	35.9				
30	2901.60	H	6.0	2.83					Frac
31	2901.88	H	20.4	2.68	3564				
10V	2901.96	V	21.4	2.72	1340				
32	2902.10	H	19.5	2.72	2153				
33	2902.28	H	22.9	2.66	190				
34	2902.49	H	20.9	2.73	1105				
35	2902.76	H	21.7	2.71	1156				
11V	2902.86	V	18.4	2.65	1162				
36	2903.10	H	22.8	2.65	1482				
37	2903.41	H	22.4	2.69	2723				
38	2903.65	H	17.2	2.69	254				
39	2903.93	H	21.0	2.70	1676				
12V	2904.05	V	22.9	2.72	825				
40	2904.22	H	17.5	2.67	1004				S.P.
41	2904.37	H	14.2	2.67	510				Irreg
42	2904.67	H	19.0	2.65	1506				
13V	2904.87	V	20.2	2.65	1193				
43	2904.98	H	23.0	2.65	3110				
44	2905.15	H	17.0	2.69	123				

Sample Number	Depth (m)	Dir	Porosity Helium (percent)	Grain Density (g/cm^3)	Permeability to Air (mD)	Vertical Permeability to Air K_v (mD)	Horizontal Permeability to Air K_{max} (mD)	Horizontal Permeability to Air K_{90} (mD)	Remarks
45	2905.50	H	23.1	2.67	1940				
46	2905.81	H	20.3	2.65	1824				
14V	2905.89	V	21.2	2.67	2374				
47	2906.08	H	22.6	2.66	4616				
48	2906.43	H	11.6	2.68	0.41				Lam
FD1	2906.67 - 2906.80	FD	8.7	2.76		0.04	0.31	0.19	
15V	2906.94	V	19.7	2.68	1409				
49	2907.07	H	17.3	2.66	715				
50	2907.23	H	13.1	2.69	1.13				
51	2907.40	H	2.0	2.69					Irreg
FD2	2907.48 - 2907.59	FD	4.9	2.65		0.02			Fractured
52	2907.72	H	19.7	2.65	2350				
53	2907.93	H	17.2	2.64	1060				
16V	2907.98	V	17.1	2.70	80.6				
FD3	2908.03 - 2908.17	FD	16.1	2.71		17.0	79.5	60.3	
FD4	2908.38 - 2908.54	FD	9.7	2.70		0.02	2.61	2.47	
17V	2908.93	V	5.0	2.72	0.04				
54	2909.00	H	5.6	2.69	8.7				Frac
55	2909.28	H	7.3	2.75	0.69				Lam, Frac
FD5	2909.48 - 2909.63	FD	8.5	2.72		0.04	0.66	0.61	
56	2909.93	H	2.7	2.77	0.01				
57	2910.20	H	10.5	2.70	0.69				
58	2910.48	H	9.8	2.78	0.12				

Sample Number	Depth (m)	Dir	Porosity Helium (percent)	Grain Density (g/cm^3)	Permeability to Air (mD)	Vertical Permeability to Air K_v (mD)	Horizontal Permeability to Air K_{max} (mD)	Horizontal Permeability to Air K_{90} (mD)	Remarks
18V	2910.55	V	7.4	2.78	0.03				
59	2910.73	H	2.9	2.69					Irreg
FD6	2911.25 - 2911.45	FD	4.5	2.72		0.04	11.6	2.71	Frac
19V	2911.52	V	2.9	2.71	0.09				Frac
60	2911.67	H	5.8	2.69	0.06				
61	2911.96	H	2.7	2.73	0.11				Lam, Frac
20V	2912.02	V	3.0	2.71	0.03				
FD7	2912.39 - 2912.53	FD	3.4	2.70		0.01	32.8	11.4	Frac
62	2917.96	H	5.8	2.67	1.12				Lam, Frac
63	2918.20	H	11.1	2.72	0.08				
FD8	2918.55 - 2918.75	FD	9.8	2.68		0.05	1.78	0.81	
64	2918.94	H	10.1	2.76	0.05				Lam
FD9	2919.13 - 2919.23	FD	4.0	2.64		0.01	1.43	0.07	
21V	2919.28	V	9.8	2.70	0.05				
65	2919.33	H	8.5	2.73	0.04				
66	2958.27	H	11.9	2.65	26.8				
22V	2958.38	V	17.5	2.65	57.9				
67	2958.59	H	19.0	2.65	129				
68	2958.90	H	16.1	2.66	35.6				
23V	2959.12	V	18.9	2.71	319				
69	2959.20	H	19.7	2.73	576				
70	2959.50	H	21.6	2.64	1169				
71	2959.81	H	21.0	2.65	790				

Sample Number	Depth (m)	Dir	Porosity Helium (percent)	Grain Density (g/cm^3)	Permeability to Air (mD)	Vertical Permeability to Air K_v (mD)	Horizontal Permeability to Air K_{max} (mD)	Horizontal Permeability to Air K_{90} (mD)	Remarks
24V	2960.03	V	20.2	2.65	631				
72	2960.10	H	19.6	2.64	528				
73	2960.40	H	19.1	2.64	573				
74	2960.70	H	19.4	2.64	699				
75	2960.95	H	19.2	2.65	440				
25V	2961.03	V	19.9	2.64	574				
76	2961.25	H	19.8	2.64	630				
77	2961.57	H	21.2	2.64	1110				
78	2961.87	H	20.6	2.64	743				
26V	2962.08	V	15.1	2.65	18.1				
79	2962.15	H	15.8	2.64	37.8				
80	2962.45	H	11.9	2.65	5.0				
81	2962.75	H	16.7	2.64	36.8				
82	2963.06	H	15.5	2.66	24.7				
27V	2963.12	V	14.8	2.65	7.7				
83	2963.35	H	17.7	2.63	340				
84	2963.65	H	19.8	2.63	1109				
85	2963.93	H	19.8	2.63	499				
28V	2964.03	V	18.5	2.65	1042				
86	2964.25	H	18.2	2.64	686				
87	2964.55	H	19.4	2.64	2121				
88	2964.85	H	14.3	2.63	240				
29V	2965.03	V	19.9	2.64	2276				

Sample Number	Depth (m)	Dir	Porosity Helium (percent)	Grain Density (g/cm^3)	Permeability to Air (mD)	Vertical Permeability to Air K_v (mD)	Horizontal Permeability to Air K_{max} (mD)	Horizontal Permeability to Air K_{90} (mD)	Remarks
89	2965.15	H	19.3	2.64	2072				
90	2965.45	H	14.0	2.63	180				
91	2965.75	H	11.3	2.64	215				
92	2966.04	H	16.7	2.65	640				
30V	2966.17	V	17.6	2.64	3115				
93	2966.28	H	11.8	2.64	69.3				
94	2966.53	H	17.2	2.65	216				
95	2966.85	H	19.6	2.64	741				
96	2967.25	H	18.9	2.64	107				
31V	2967.47	V	16.8	2.65	39.1				
97	2967.55	H	13.7	2.64	14.3				
98	2967.87	H	19.4	2.65	183				
99	2968.15	H	13.9	2.64	173				
100	2968.38	H	19.2	2.66	59.5				
32V	2968.47	V	18.4	2.67	16.6				
101	2968.70	H	14.9	2.67	7.5				
102	2969.03	H	19.4	2.66	66.9				
103	2969.30	H	17.4	2.66	32.0				
33V	2969.47	V	18.2	2.67	36.6				
104	2969.65	H	13.7	2.65	8.7				
105	2969.80	H	19.6	2.65	330				
106	2969.94	H	18.8	2.66	107				
107	2970.25	H	17.5	2.66	49.4				

Sample Number	Depth (m)	Dir	Porosity Helium (percent)	Grain Density (g/cm^3)	Permeability to Air (mD)	Vertical Permeability to Air K_v (mD)	Horizontal Permeability to Air K_{max} (mD)	Horizontal Permeability to Air K_{90} (mD)	Remarks
108	2970.53	H	20.4	2.66	479				
34V	2970.60	V	20.2	2.65	354				
109	2970.85	H	18.4	2.65	300				
110	2971.18	H	19.5	2.65	570				
111	2971.53	H	18.1	2.66	253				
35V	2971.60	V	18.5	2.65	499				
112	2971.82	H	18.5	2.65	454				
113	2972.10	H	18.4	2.65	426				
114	2972.37	H	17.5	2.66	123				
36V	2972.47	V	16.7	2.65	39.6				
115	2972.75	H	18.7	2.65	649				
116	2973.03	H	21.2	2.65	558				
117	2973.35	H	19.2	2.65	299				
37V	2973.47	V	21.8	2.65	537				
118	2973.65	H	23.0	2.64	1457				
119	2973.95	H	21.8	2.65	944				
120	2974.25	H	21.7	2.64	904				
38V	2974.47	V	19.0	2.65	87.8				
121	2974.57	H	19.7	2.65	209				
122	2974.85	H	21.0	2.65	208				
123	2975.20	H	19.2	2.65	120				
124	2975.55	H	12.3	2.65	3.38				
125	2975.67	H	0.5	2.66	0.15				Frac

Sample Number	Depth (m)	Dir	Porosity Helium (percent)	Grain Density (g/cm^3)	Permeability to Air (mD)	Vertical Permeability to Air K_v (mD)	Horizontal Permeability to Air K_{max} (mD)	Horizontal Permeability to Air K_{90} (mD)	Remarks
126	2976.45	H	19.4	2.63	237				
127	2976.65	H	21.6	2.65	649				
39V	2976.77	V	22.2	2.65	973				
128	2976.95	H	21.3	2.65	471				
129	2977.25	H	22.5	2.66	866				
130	2977.58	H	23.1	2.66	976				
40V	2977.77	V	20.8	2.66	543				
131	2977.95	H	20.9	2.65	406				
132	2978.26	H	17.1	2.66	49.5				
133	2978.57	H	20.8	2.66	325				
41V	2978.77	V	22.5	2.65	950				
134	2978.85	H	18.7	2.65	360				
135	2979.15	H	17.6	2.64	75.3				
136	2979.45	H	20.3	2.65	183				
137	2979.70	H	20.1	2.65	131				
42V	2979.92	V	20.6	2.66	94.6				
138	2980.02	H	20.4	2.66	93.1				
139	2980.28	H	16.5	2.69	11.9				
140	2980.60	H	19.3	2.67	36.8				
141	2980.81	H	9.1	2.71	0.10				
43V	2980.87	V	10.6	2.71	0.07				
142	2981.12	H	12.6	2.72	0.36				
143	2981.40	H	13.8	2.73	0.55				

Sample Number	Depth (m)	Dir	Porosity Helium (percent)	Grain Density (g/cm^3)	Permeability to Air (mD)	Vertical Permeability to Air K_v (mD)	Horizontal Permeability to Air K_{max} (mD)	Horizontal Permeability to Air K_{90} (mD)	Remarks
144	2981.70	H	15.5	2.80	0.67				
44V	2981.77	V	12.0	2.80	0.08				
145	2982.03	H	15.3	2.71	0.91				
146	2982.30	H	13.3	2.74	0.24				
147	2982.60	H	14.7	2.72	0.43				
45V	2982.77	V	10.2	2.73	0.04				
148	2982.90	H	15.0	2.72	0.39				
149	2983.20	H	16.4	2.71	0.75				
150	2983.52	H	15.0	2.71	0.41				
151	2983.82	H	13.7	2.72	0.23				
46V	2983.90	V	13.7	2.73	0.15				
152	2984.10	H	13.7	2.72	0.22				
153	2984.40	H	12.6	2.73	0.12				
154	2984.64	H	12.8	2.70	0.12				
47V	2984.80	V	7.5	2.64	0.01				
155	2984.87	H	10.0	2.65	0.05				
156	2985.25	H	12.8	2.71	0.10				

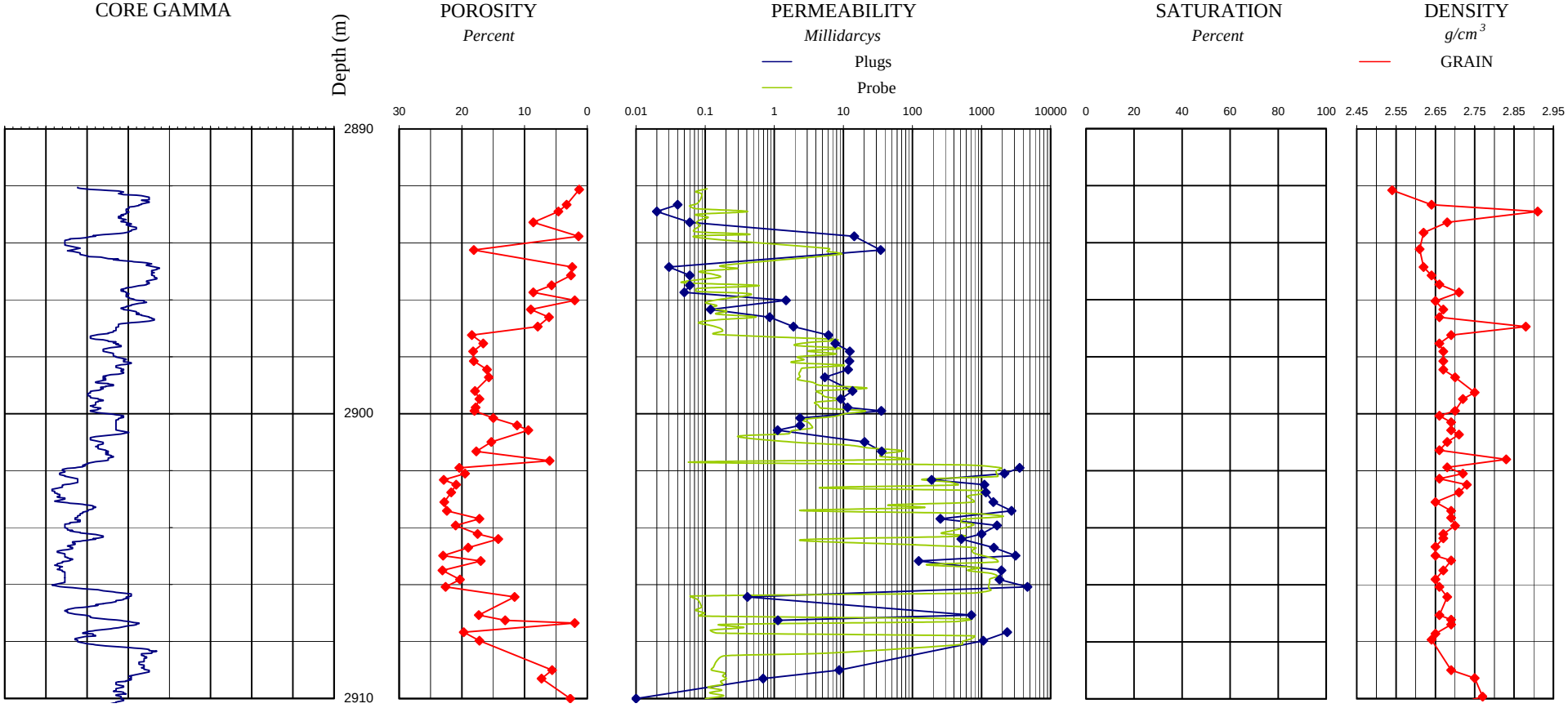
APPENDIX VII

CORE PLOT

CORE PLOT

Scale 1:200

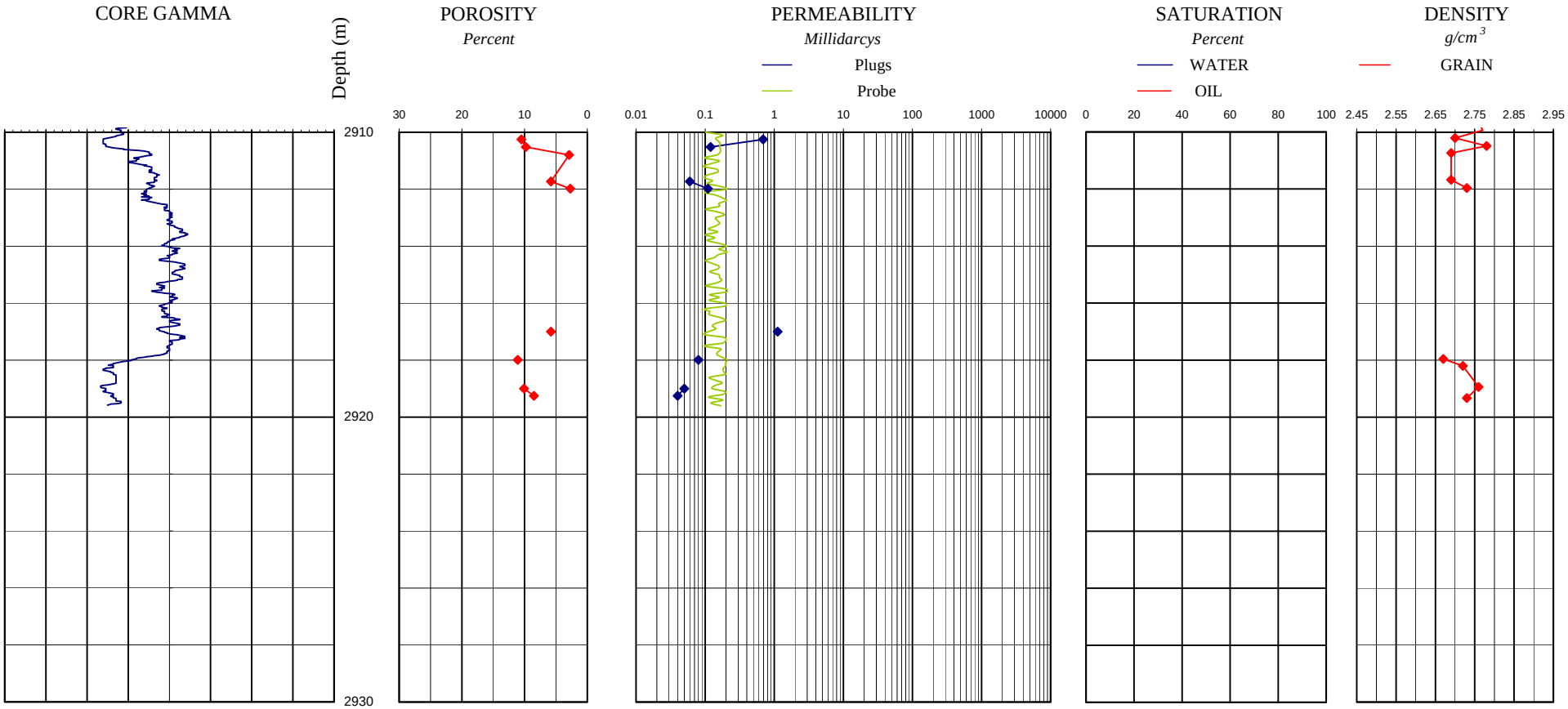
Client	Origin Energy Resources Limited	Core 1:	2892.05 - 2919.60m
Well:	Yolla-4	Core 2:	2958.07 - 2985.37m
File No.:	0359-02		



CORE PLOT

Scale 1:200

Client	Origin Energy Resources Limited	Core 1:	2892.05 - 2919.60m
Well:	Yolla-4	Core 2:	2958.07 - 2985.37m
File No.:	0359-02		



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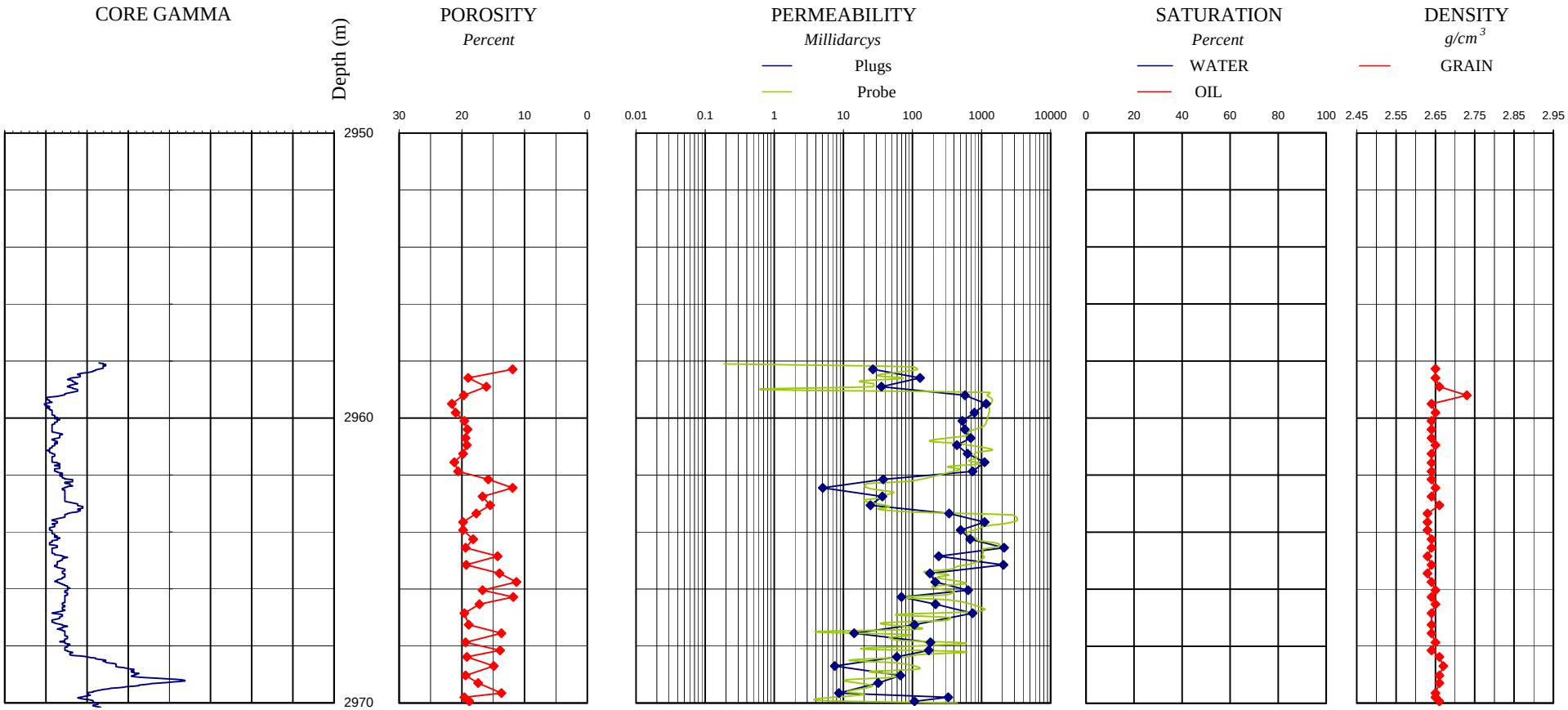
CORE PLOT

Scale 1:200

Client	Origin Energy Resources Limited	Core 1:	2892.05 - 2919.60m
Well:	Yolla-4	Core 2:	2958.07 - 2985.37m
File No.:	0359-02		

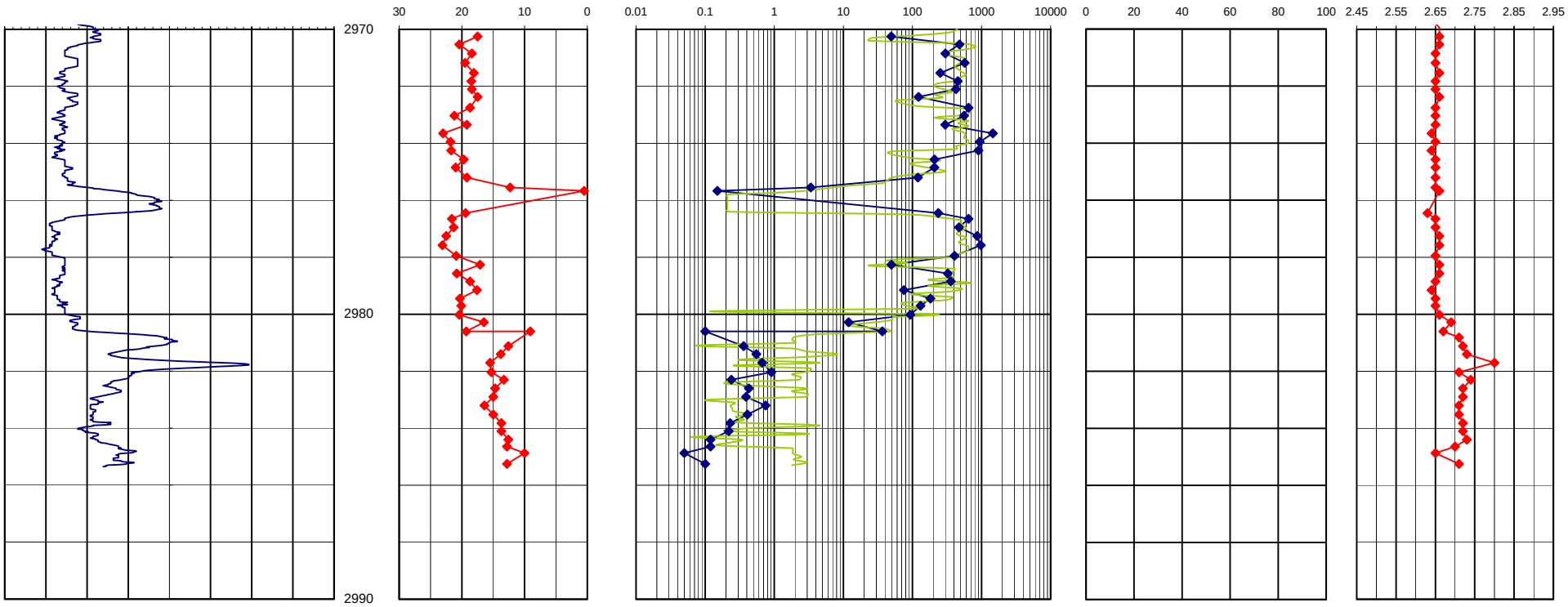


ACS Laboratories Pty Ltd
ABN: 81 008 273 005

CORE PLOT

Scale 1:200

Client	Origin Energy Resources Limited	Core 1:	2892.05 - 2919.60m
Well:	Yolla-4	Core 2:	2958.07 - 2985.37m
File No.:	0359-02		



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APPENDIX VIII

PROBE PERMEABILITY DATA

PROBE PERMEABILITY DATA

Client: Origin Energy Resources Limited
Well: Yolla-4

Depth	Kprobe	Depth	Kprobe	Depth	Kprobe	Depth	Kprobe
m	*mD*	*m*	*mD*	*m*	*mD*	*m*	*mD*
2892.10	0.11	2897.00	0.17	2901.00	1.97	2905.30	159
2892.20	0.07	2897.10	0.18	2901.10	11.6	2905.40	903
2892.30	0.09	2897.20	0.13	2901.20	23.7	2905.50	629
2892.60	0.08	2897.30	0.87	2901.30	72.6	2905.60	1351
2892.70	0.06	2897.40	8.2	2901.40	37.5	2905.70	1705
2892.80	0.07	2897.50	3.09	2901.50	34.5	2905.80	1328
2892.90	0.41	2897.60	2.01	2901.60	83.0	2905.90	1315
2893.00	0.07	2897.70	9.1	2901.70	0.06	2906.10	1265
2893.10	0.11	2897.80	3.06	2901.80	598	2906.20	1355
2893.20	0.08	2897.90	7.9	2901.90	1898	2906.30	697
2893.30	0.07	2898.00	2.20	2902.00	1647	2906.40	0.06
2893.40	0.08	2898.10	2.71	2902.10	1647	2906.50	0.08
2893.60	0.07	2898.20	1.82	2902.20	1705	2906.60	0.08
2893.70	0.45	2898.30	10.3	2902.30	142	2906.70	0.09
2893.80	0.07	2898.40	2.56	2902.40	347	2906.80	0.09
2894.20	6.3	2898.50	2.40	2902.50	450	2906.90	0.07
2894.30	5.8	2898.60	2.28	2902.60	4.52	2907.00	0.10
2894.40	9.1	2898.70	2.37	2902.70	1214	2907.10	0.08
2894.80	0.17	2898.80	2.18	2902.80	1100	2907.20	678
2894.90	0.29	2898.90	3.64	2902.90	621	2907.30	395
2895.00	0.08	2899.00	4.59	2903.10	761	2907.40	0.17
2895.10	0.13	2899.10	22.0	2903.20	45.3	2907.50	0.36
2895.20	0.16	2899.20	4.14	2903.30	140	2907.60	0.12
2895.30	0.08	2899.30	4.83	2903.40	2.37	2907.70	0.15
2895.40	0.05	2899.40	5.4	2903.50	694	2907.80	793
2895.50	0.61	2899.50	9.2	2903.60	2074	2907.90	711
2895.60	0.08	2899.60	3.90	2903.70	553	2908.00	525
2895.70	0.07	2899.70	4.35	2903.80	502	2908.10	519
2895.80	0.46	2899.80	4.78	2903.90	772	2908.40	6.3
2896.00	0.15	2899.90	20.5	2904.10	385	2908.50	0.19
2896.10	0.10	2900.00	10.7	2904.20	263	2908.70	0.15
2896.20	0.15	2900.10	7.0	2904.30	544	2908.80	0.14
2896.30	0.11	2900.20	2.54	2904.43	2.37	2908.90	0.13
2896.40	0.20	2900.30	3.09	2904.60	109	2909.00	0.12
2896.50	0.15	2900.40	3.40	2904.70	818	2909.10	0.19
2896.60	0.55	2900.50	3.52	2904.80	727	2909.20	0.18
2896.70	0.15	2900.60	1.78	2904.90	788	2909.30	0.20
2896.80	0.08	2900.70	1.61	2905.10	1590	2909.40	0.17
2896.90	0.12	2900.80	0.29	2905.20	1711	2909.50	0.18

PROBE PERMEABILITY DATA

Client: Origin Energy Resources Limited
Well: Yolla-4

Depth	Kprobe	Depth	Kprobe	Depth	Kprobe	Depth	Kprobe
m	*mD*	*m*	*mD*	*m*	*mD*	*m*	*mD*
2909.60	0.11	2913.50	0.15	2917.40	0.18	2959.60	1282
2909.70	0.17	2913.60	0.10	2917.50	0.10	2959.70	1305
2909.80	0.12	2913.70	0.14	2917.60	0.17	2959.90	1260
2909.90	0.19	2913.80	0.11	2917.70	0.15	2960.20	1146
2910.00	0.10	2913.90	0.16	2917.80	0.15	2960.30	1047
2910.10	0.18	2914.00	0.20	2917.90	0.18	2960.40	792
2910.20	0.14	2914.10	0.16	2918.00	0.21	2960.50	621
2910.30	0.15	2914.20	0.21	2918.10	0.20	2960.60	673
2910.40	0.17	2914.30	0.16	2918.20	0.20	2960.80	177
2910.50	0.16	2914.40	0.14	2918.30	0.18	2960.90	467
2910.60	0.17	2914.50	0.10	2918.40	0.19	2961.10	1419
2910.70	0.16	2914.60	0.13	2918.50	0.20	2961.20	860
2910.80	0.15	2914.70	0.16	2918.60	0.12	2961.30	781
2910.90	0.10	2914.80	0.15	2918.70	0.14	2961.40	860
2911.00	0.16	2914.90	0.12	2918.80	0.18	2961.50	655
2911.10	0.12	2915.00	0.16	2918.90	0.14	2961.60	979
2911.20	0.09	2915.10	0.16	2919.00	0.13	2961.70	329
2911.30	0.15	2915.20	0.17	2919.10	0.20	2961.80	495
2911.40	0.15	2915.30	0.14	2919.20	0.18	2961.90	350
2911.50	0.11	2915.40	0.10	2919.30	0.11	2962.20	97.8
2911.60	0.10	2915.50	0.20	2919.40	0.18	2962.30	22.4
2911.70	0.13	2915.60	0.21	2919.50	0.12	2962.40	20.3
2911.80	0.11	2915.70	0.12	2919.60	0.17	2962.50	27.3
2911.90	0.16	2915.80	0.16			2962.60	53.1
2912.00	0.20	2915.90	0.11			2962.70	41.0
2912.10	0.10	2916.00	0.19	2958.00		2962.80	36.2
2912.20	0.14	2916.10	0.20	2958.10	0.19	2962.90	19.7
2912.30	0.18	2916.20	0.10	2958.20	101	2963.10	46.1
2912.40	0.20	2916.30	0.12	2958.30	118	2963.20	32.4
2912.50	0.16	2916.40	0.11	2958.50	31.0	2963.30	106
2912.60	0.16	2916.50	0.16	2958.60	73.9	2963.40	2729
2912.70	0.10	2916.60	0.20	2958.70	17.6	2963.50	3255
2912.80	0.15	2916.70	0.15	2958.80	27.5	2963.60	3225
2912.90	0.19	2916.80	0.13	2958.90	26.7	2963.70	2184
2913.00	0.14	2916.90	0.14	2959.00	0.67	2963.80	1093
2913.10	0.15	2917.00	0.11	2959.10	1305	2963.90	896
2913.20	0.16	2917.10	0.10	2959.20	1203	2964.00	631
2913.30	0.14	2917.20	0.19	2959.30	1378	2964.10	631
2913.40	0.11	2917.30	0.20	2959.40	1431	2964.20	822

PROBE PERMEABILITY DATA

Client: Origin Energy Resources Limited
Well: Yolla-4

Depth	Kprobe	Depth	Kprobe	Depth	Kprobe	Depth	Kprobe
m	*mD*	*m*	*mD*	*m*	*mD*	*m*	*mD*
2964.30	906	2968.80	126	2973.10	210	2977.20	444
2964.40	1716	2968.90	23.7	2973.20	636	2977.30	599
2964.50	1836	2969.00	71.2	2973.30	457	2977.40	513
2964.60	1046	2969.10	49.2	2973.40	648	2977.50	477
2964.70	1060	2969.20	10.4	2973.50	379	2977.60	632
2964.80	1030	2969.40	26.4	2973.60	534	2977.70	649
2964.90	1083	2969.60	11.4	2973.70	587	2977.80	605
2965.10	753	2969.70	19.6	2973.80	559	2977.90	449
2965.20	453	2969.90	4.11	2973.90	642	2978.00	377
2965.30	368	2970.00	446	2974.00	634	2978.10	43.5
2965.40	146	2970.10	362	2974.10	421	2978.20	84.3
2965.50	331	2970.20	129	2974.20	437	2978.30	23.8
2965.60	234	2970.30	26.2	2974.30	46.6	2978.40	408
2965.80	594	2970.40	23.2	2974.50	88.0	2978.50	384
2965.90	198	2970.50	559	2974.60	255	2978.60	288
2966.00	251	2970.60	822	2974.70	93.7	2978.70	393
2966.10	408	2970.70	591	2974.80	123	2978.80	171
2966.20	309	2970.80	320	2974.90	221	2978.90	701
2966.30	64.7	2970.90	324	2975.00	286	2979.00	170
2966.40	388	2971.00	555	2975.10	91.7	2979.10	518
2966.70	1123	2971.10	545	2975.20	50.4	2979.20	340
2966.80	755	2971.30	414	2975.30	43.8	2979.30	95.0
2966.90	57.4	2971.40	459	2975.40	36.2	2979.40	379
2967.00	352	2971.50	518	2975.50	10.7	2979.50	303
2967.10	308	2971.60	591	2975.70	1.90	2979.60	70.0
2967.20	34.7	2971.70	474	2975.80	0.21	2979.70	82.6
2967.40	134	2971.80	460	2975.90	0.21	2979.80	118
2967.50	3.92	2971.90	232	2976.00	0.21	2979.90	0.12
2967.60	88.7	2972.00	207	2976.10	0.21	2980.00	210
2967.70	45.9	2972.10	283	2976.20	0.21	2980.10	52.9
2967.80	62.8	2972.20	375	2976.30	0.21	2980.20	50.4
2967.90	598	2972.30	212	2976.40	0.21	2980.30	24.7
2968.00	113	2972.40	269	2976.50	93.8	2980.40	11.3
2968.10	18.4	2972.50	58.4	2976.60	251	2980.50	38.6
2968.20	592	2972.60	73.0	2976.70	505	2980.60	47.8
2968.30	127	2972.70	129	2976.80	502	2980.70	4.01
2968.40	70.6	2972.80	701	2976.90	557	2980.80	1.95
2968.50	12.1	2972.90	676	2977.00	591	2980.90	1.81
2968.60	63.0	2973.00	611	2977.10	465	2981.00	2.02

PROBE PERMEABILITY DATA

Client: Origin Energy Resources Limited
Well: Yolla-4

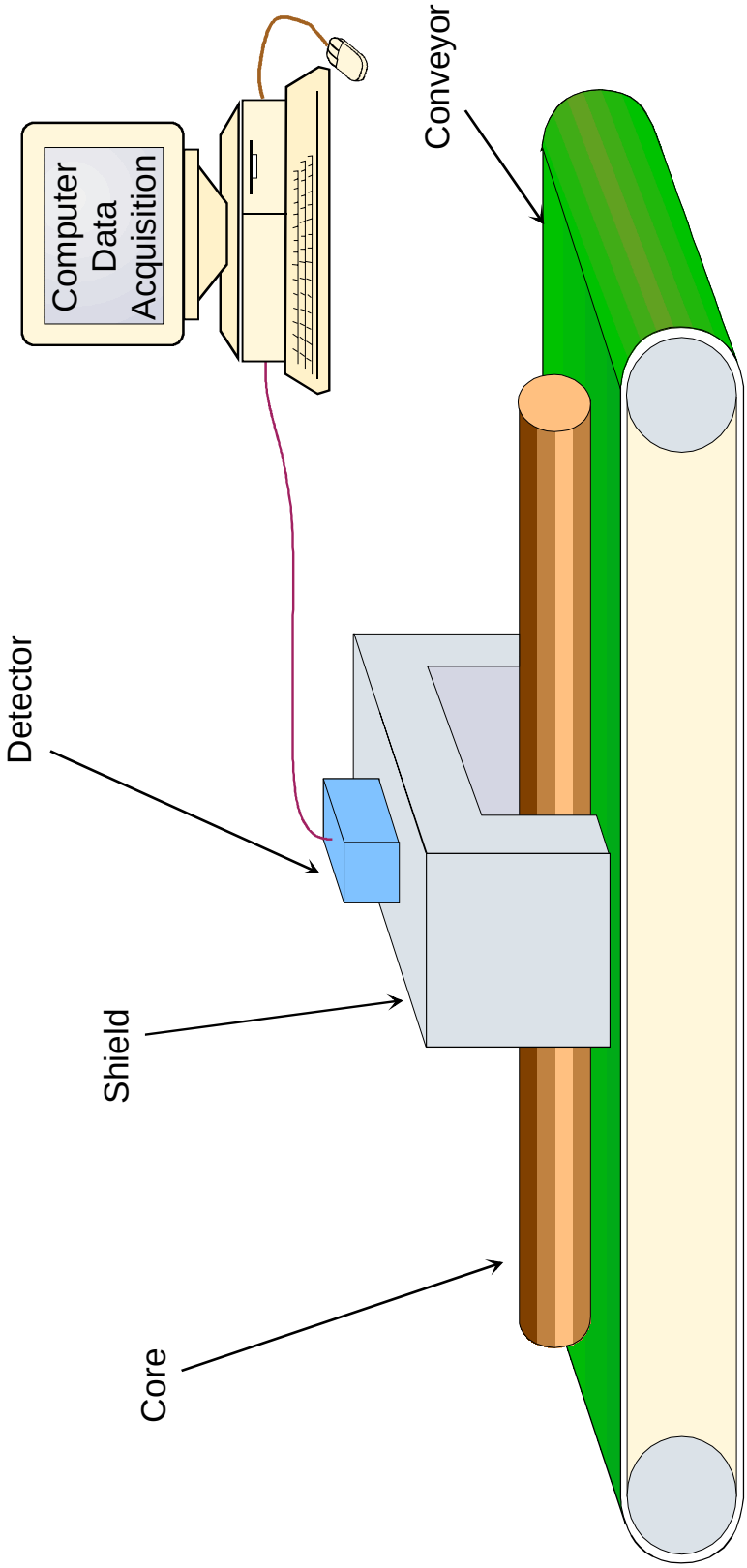
Depth *m*	Kprobe *mD*
2981.10	0.07
2981.20	1.85
2981.30	2.86
2981.40	8.2
2981.50	2.76
2981.60	0.30
2981.70	4.56
2981.80	0.26
2981.90	3.36
2982.00	3.22
2982.10	1.81
2982.20	2.43
2982.30	2.28
2982.40	0.20
2982.50	0.43
2982.60	2.90
2982.70	1.79
2982.80	3.09
2982.90	2.78
2983.00	0.11
2983.10	0.27
2983.20	0.23
2983.30	0.25
2983.40	0.25
2983.50	0.42
2983.60	0.28
2983.70	0.37
2983.80	0.28
2983.90	4.55
2984.00	0.44
2984.10	0.20
2984.20	3.14
2984.30	0.07
2984.40	0.34
2984.50	0.23
2984.60	0.15
2984.70	1.81
2984.80	1.85
2984.90	1.89

Depth *m*	Kprobe *mD*
2985.00	2.47
2985.10	1.90
2985.20	2.95
2985.30	1.81

APPENDIX IX

EQUIPMENT SCHEMATICS

CONTINUOUS CORE GAMMA SCHEMATIC



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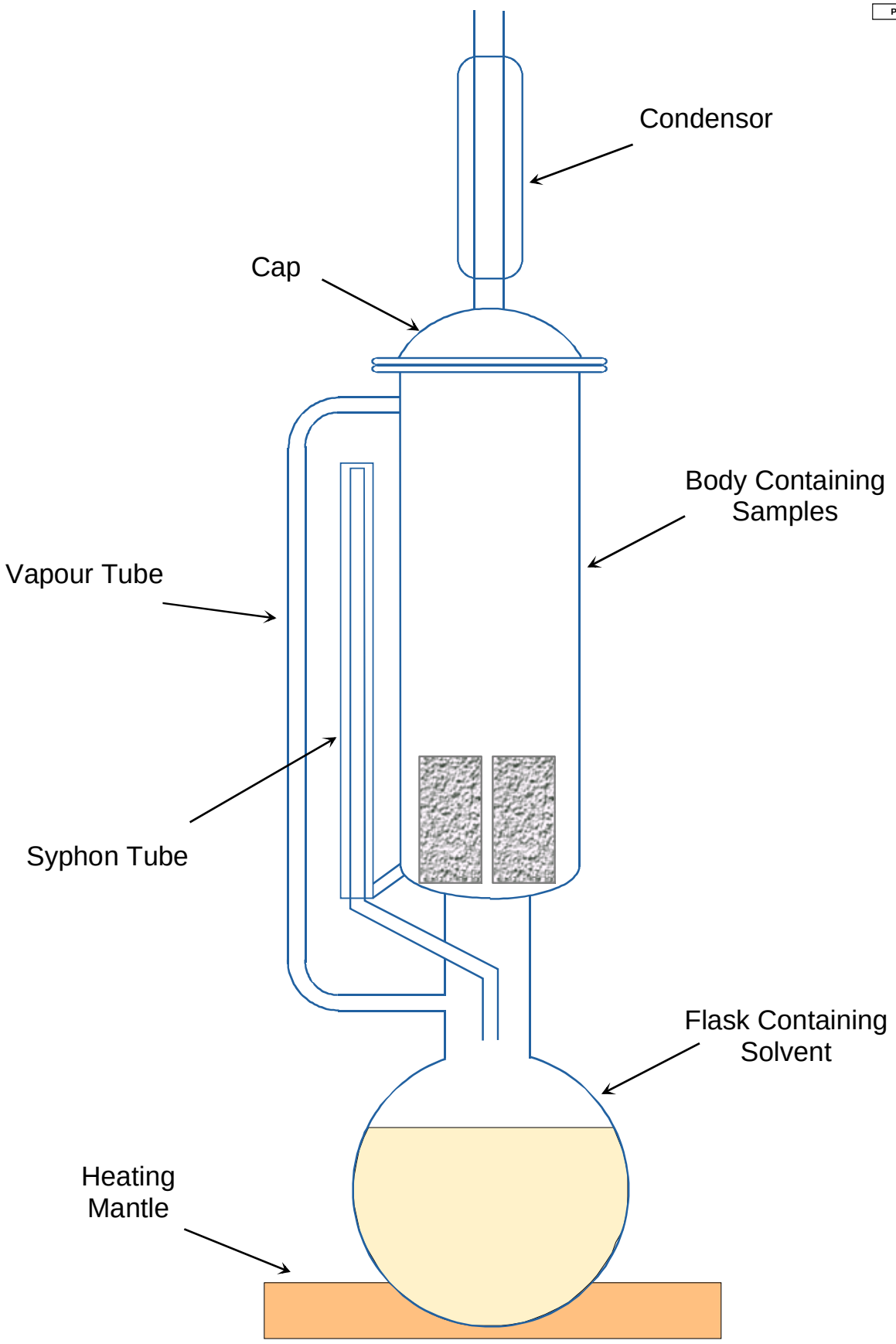
SOXHLET CLEANING APPARATUS



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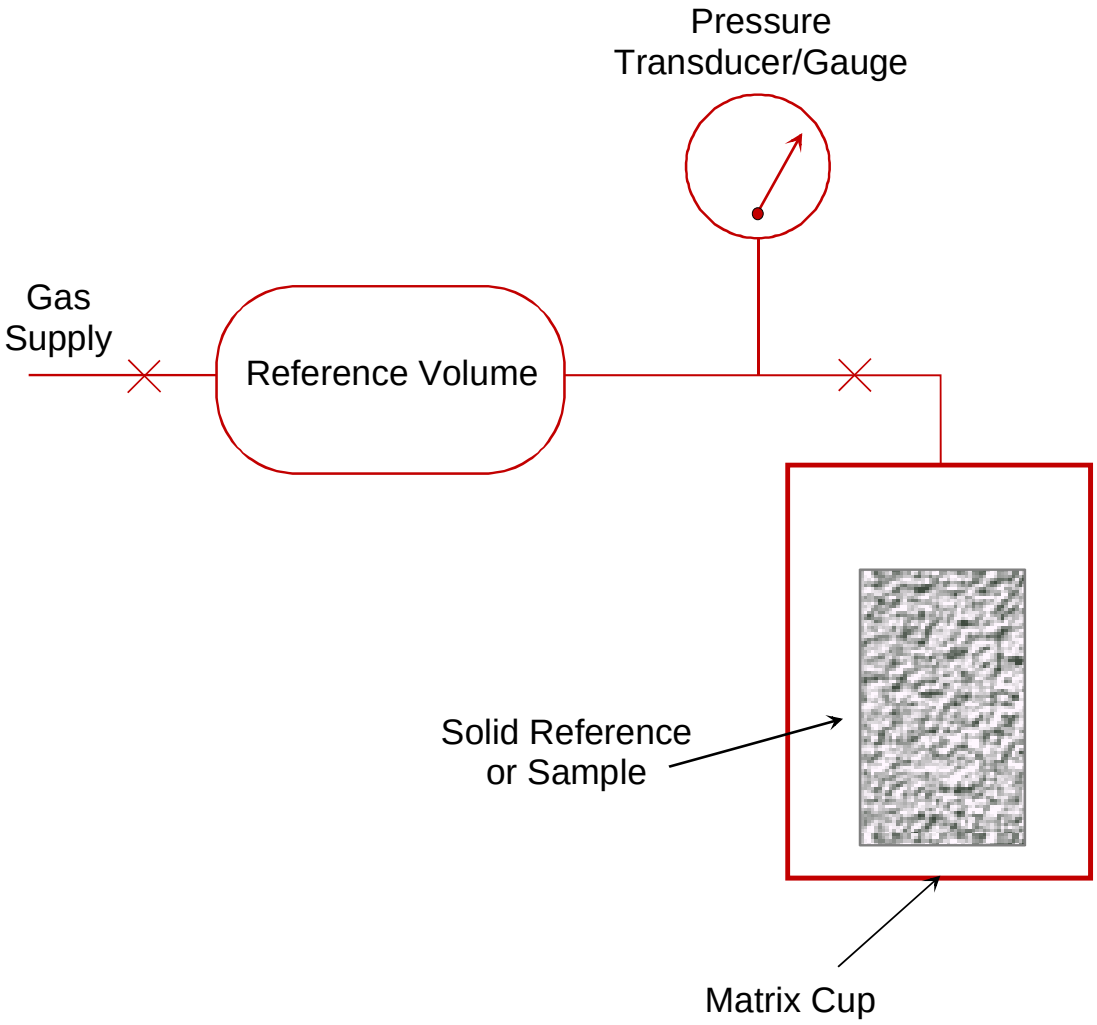
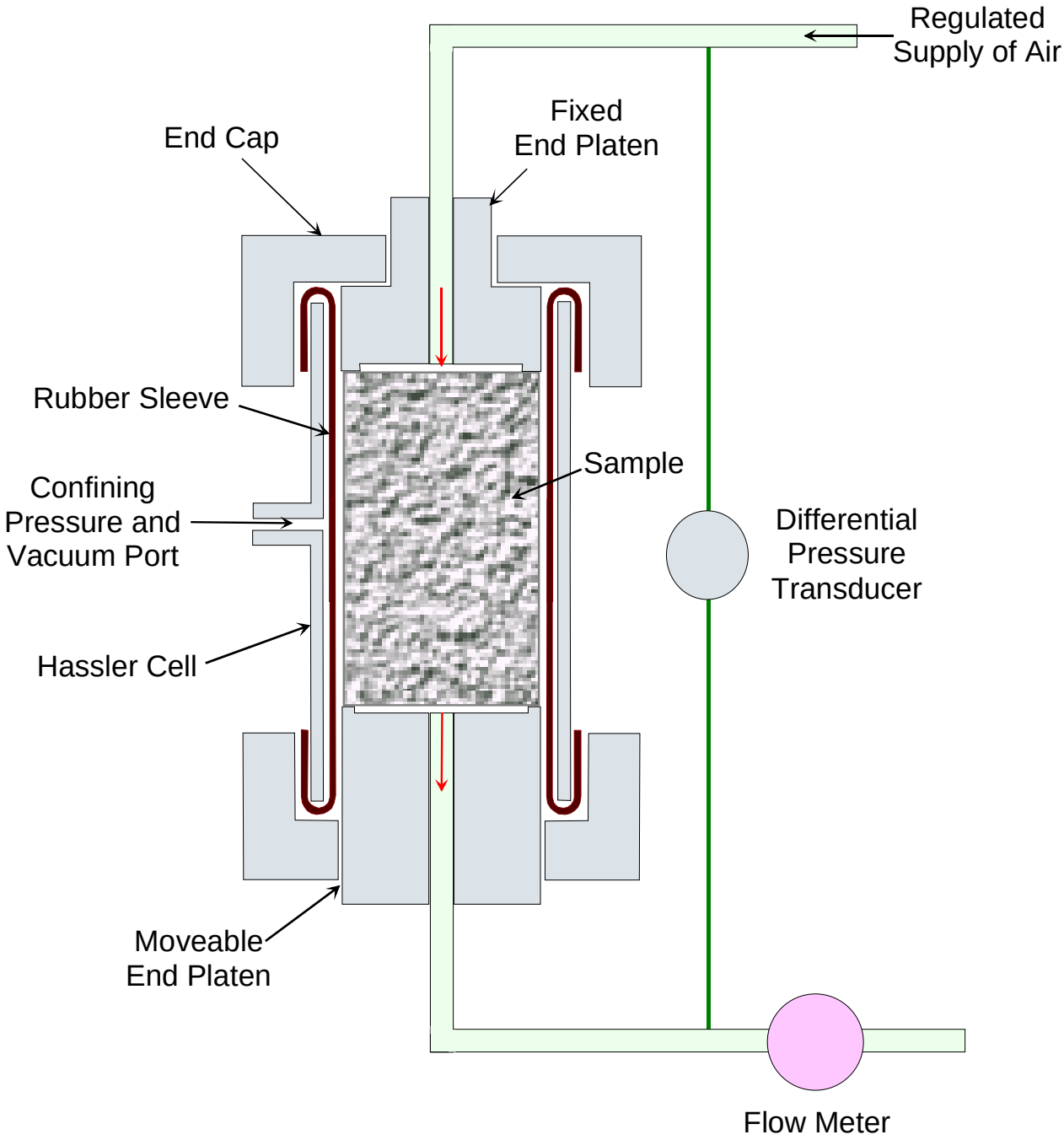
POROSIMETER SCHEMATIC



P1.V1 (reference) = P2.V2 (sample)

GAS PERMEAMETER SCHEMATIC (Hassler)



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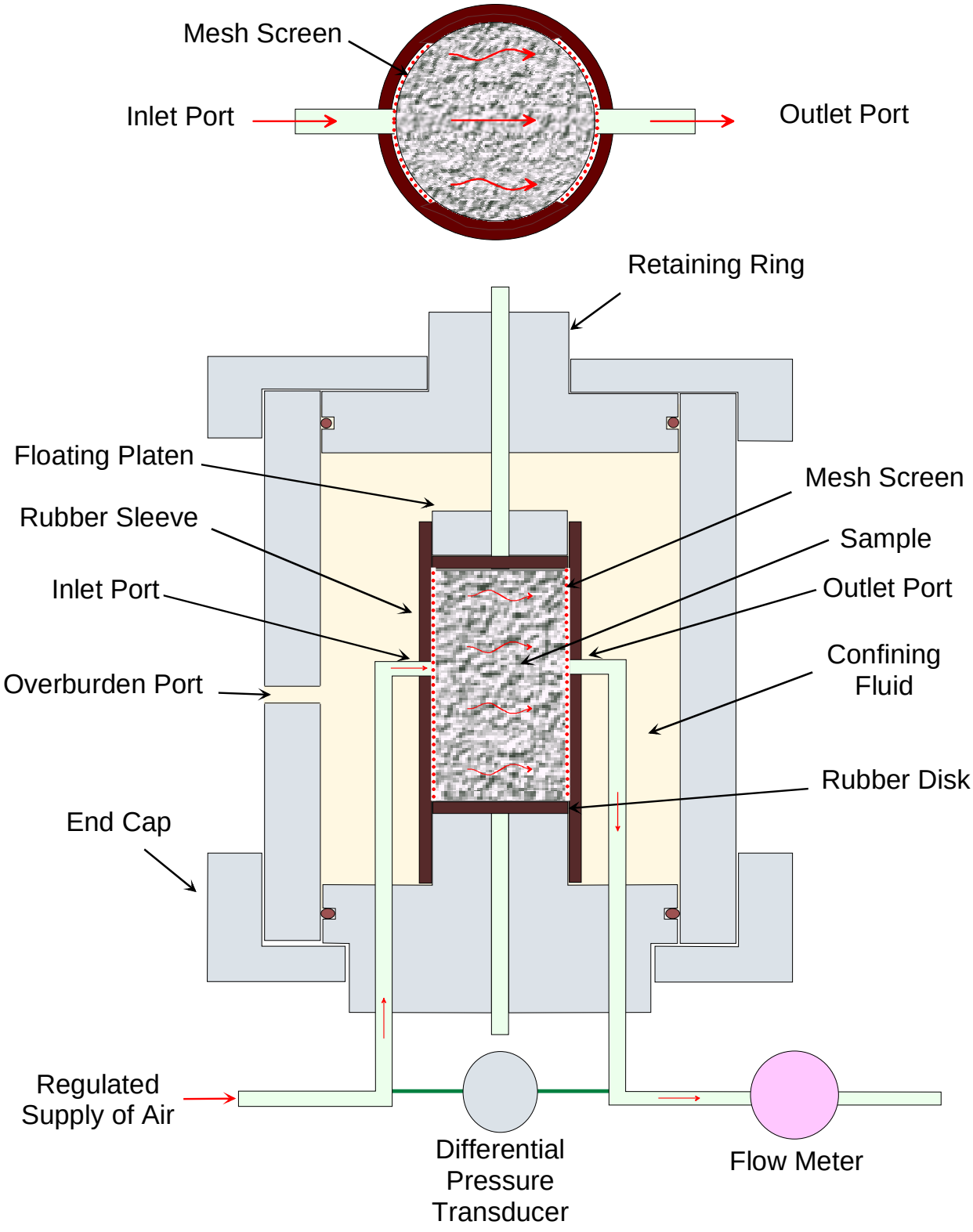
ABN: 81 008 273 005

GAS PERMEAMETER SCHEMATIC (Horizontal)



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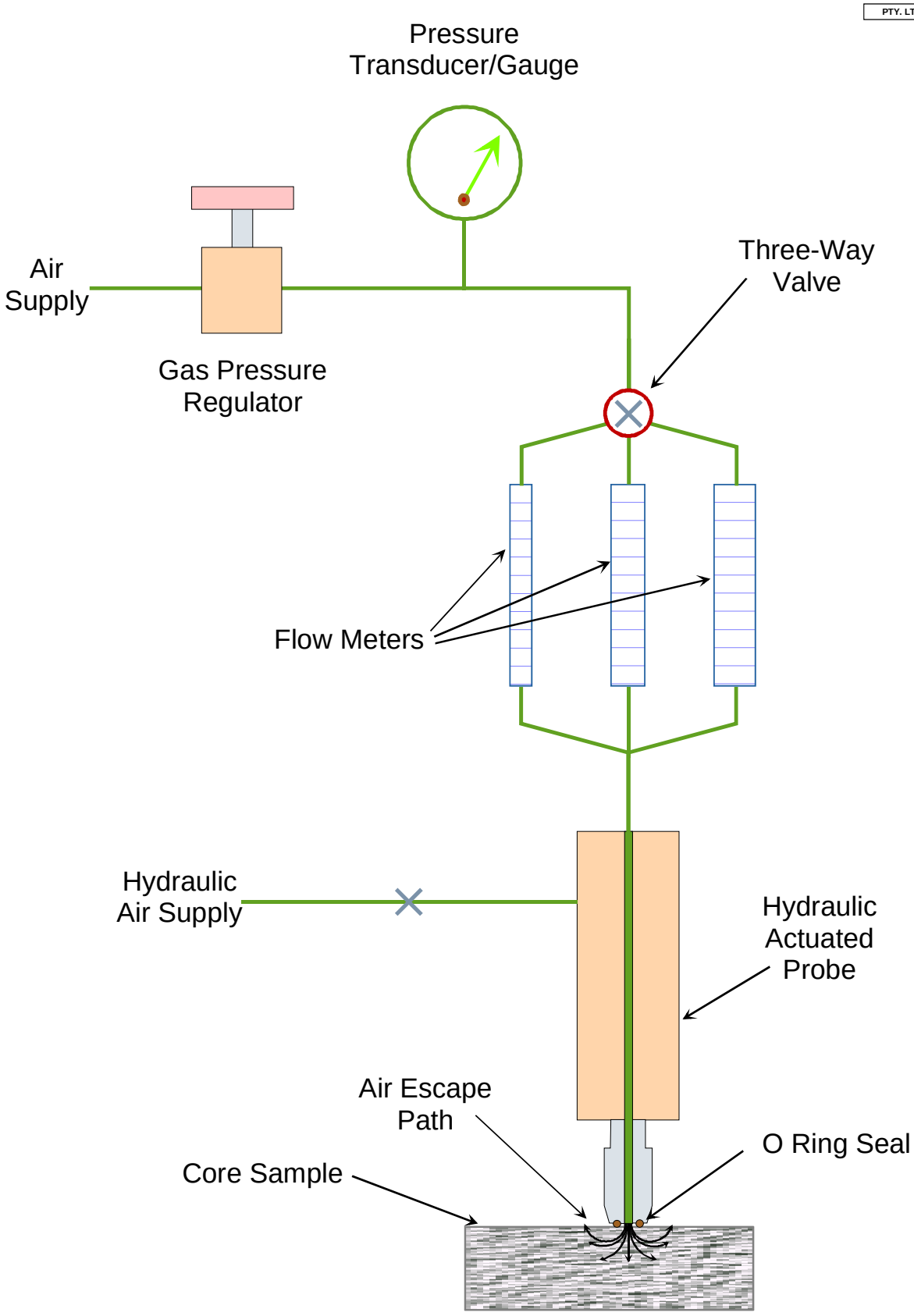
ABN: 81 008 273 005

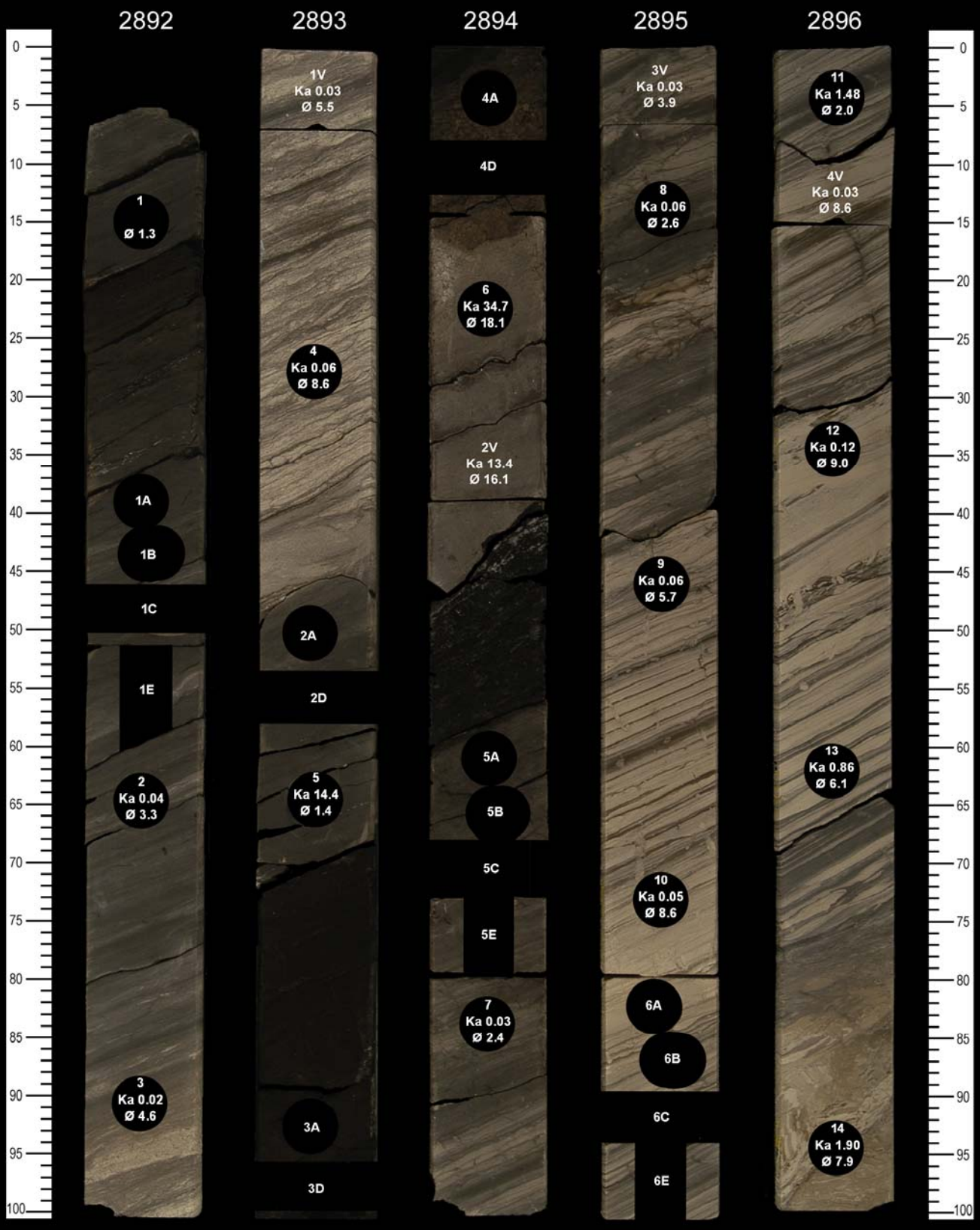
PROBE PERMEAMETER SCHEMATIC



Origin energy

YOLLA-4
CORE No. 1

ACS LABORATORIES PTY LTD



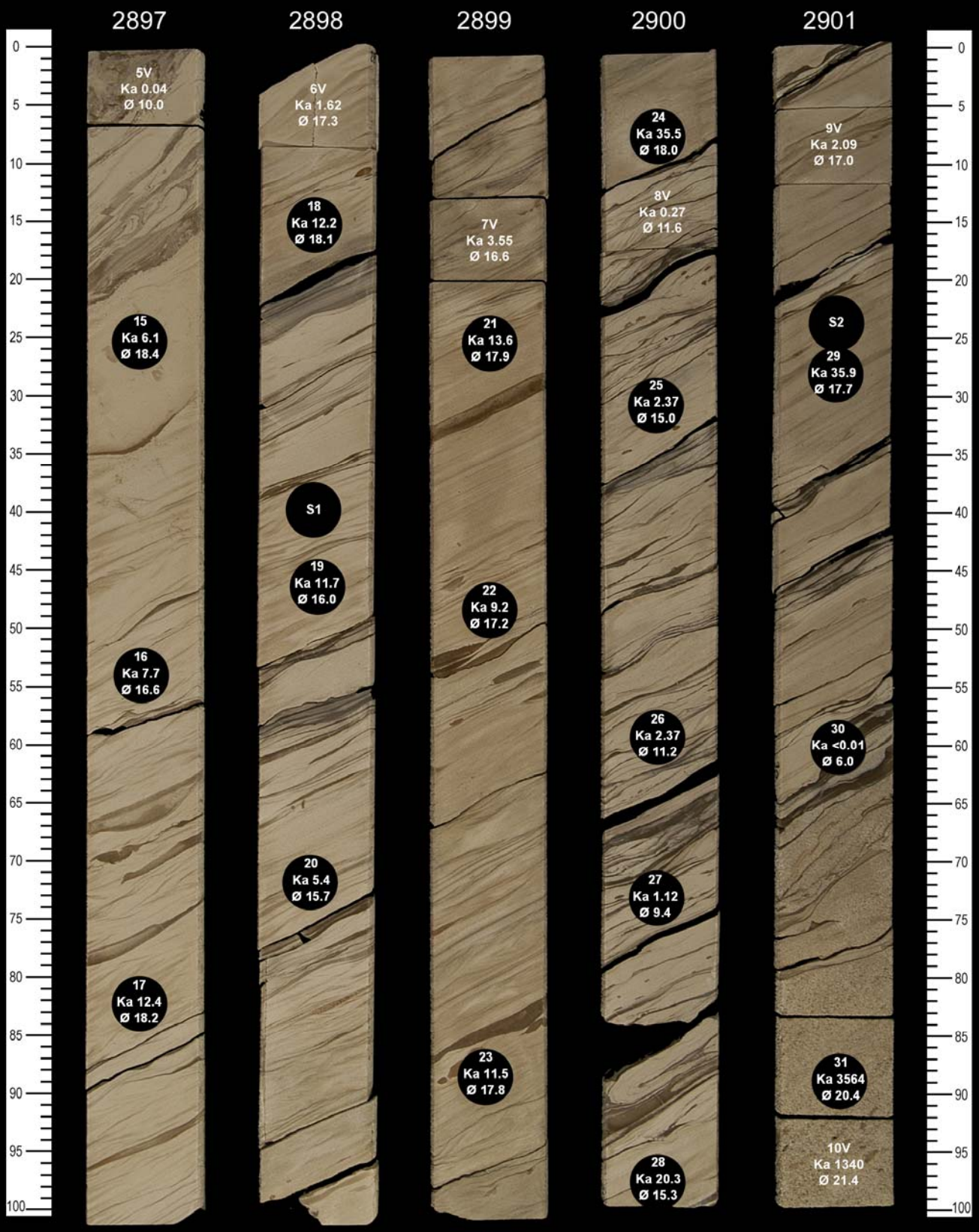
GREY SCALE

COLOUR REFERENCE

Origin energy

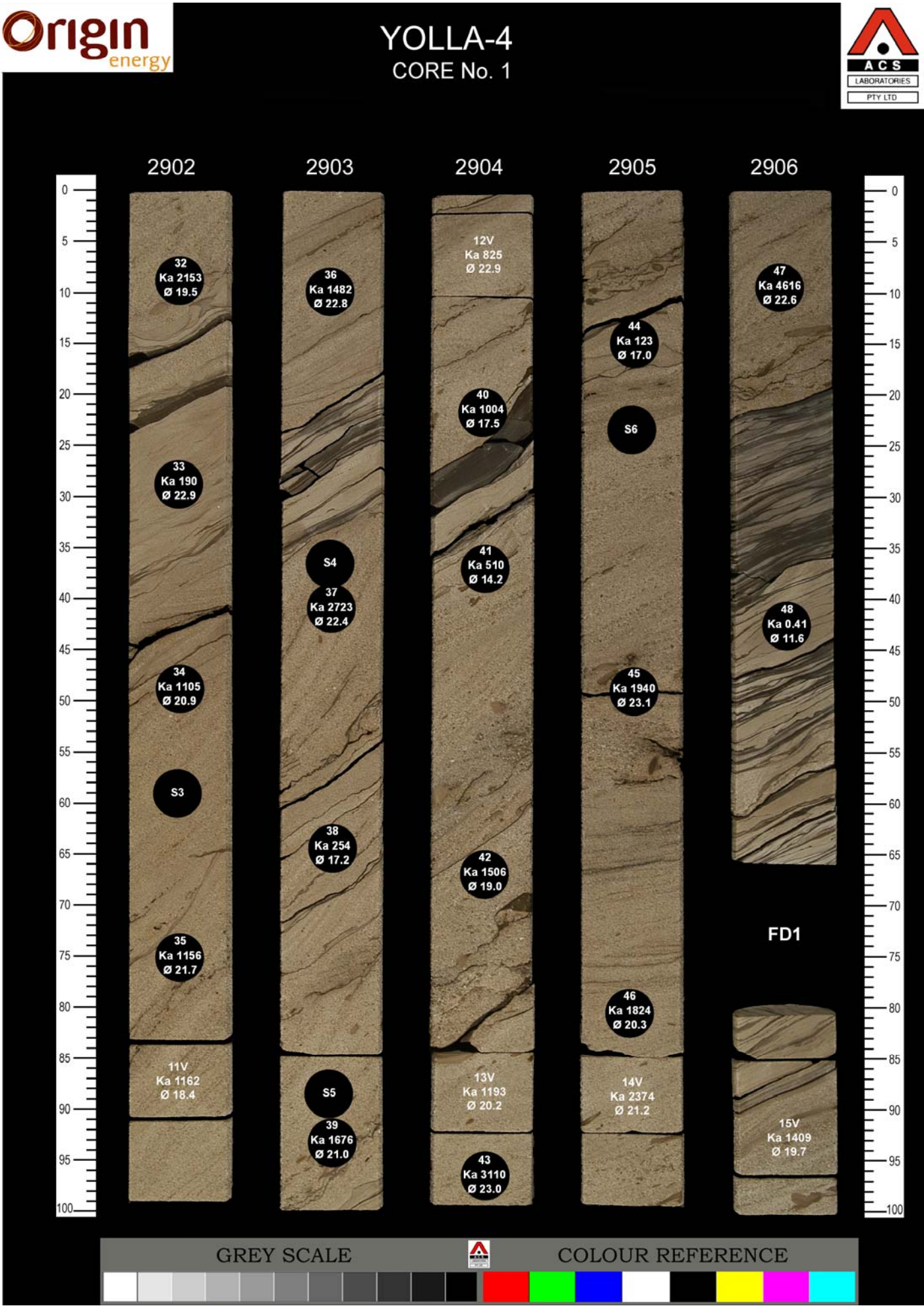
YOLLA-4
CORE No. 1

ACS LABORATORIES PTY LTD

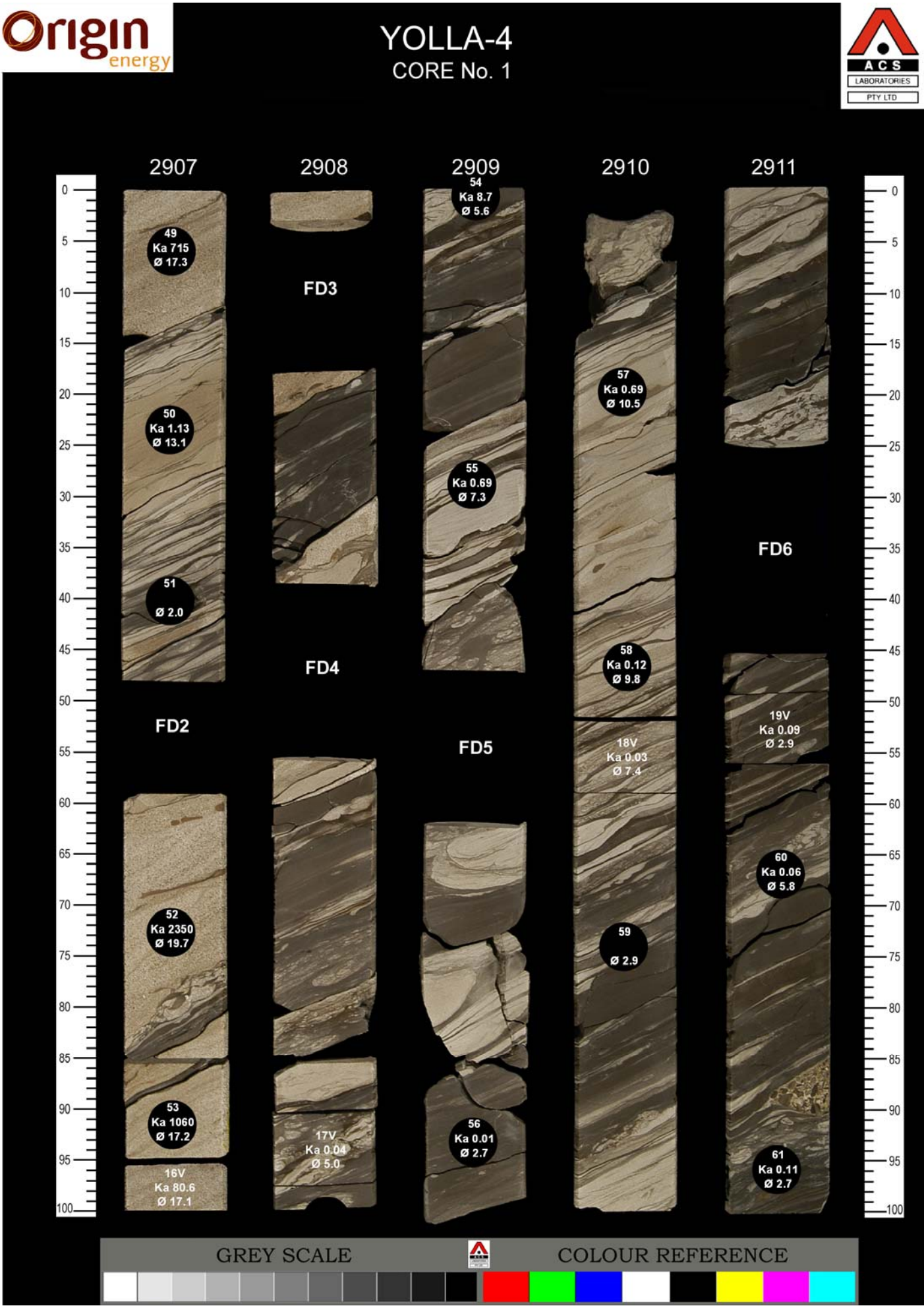


GREY SCALE COLOUR REFERENCE

YOLLA-4
CORE No. 1

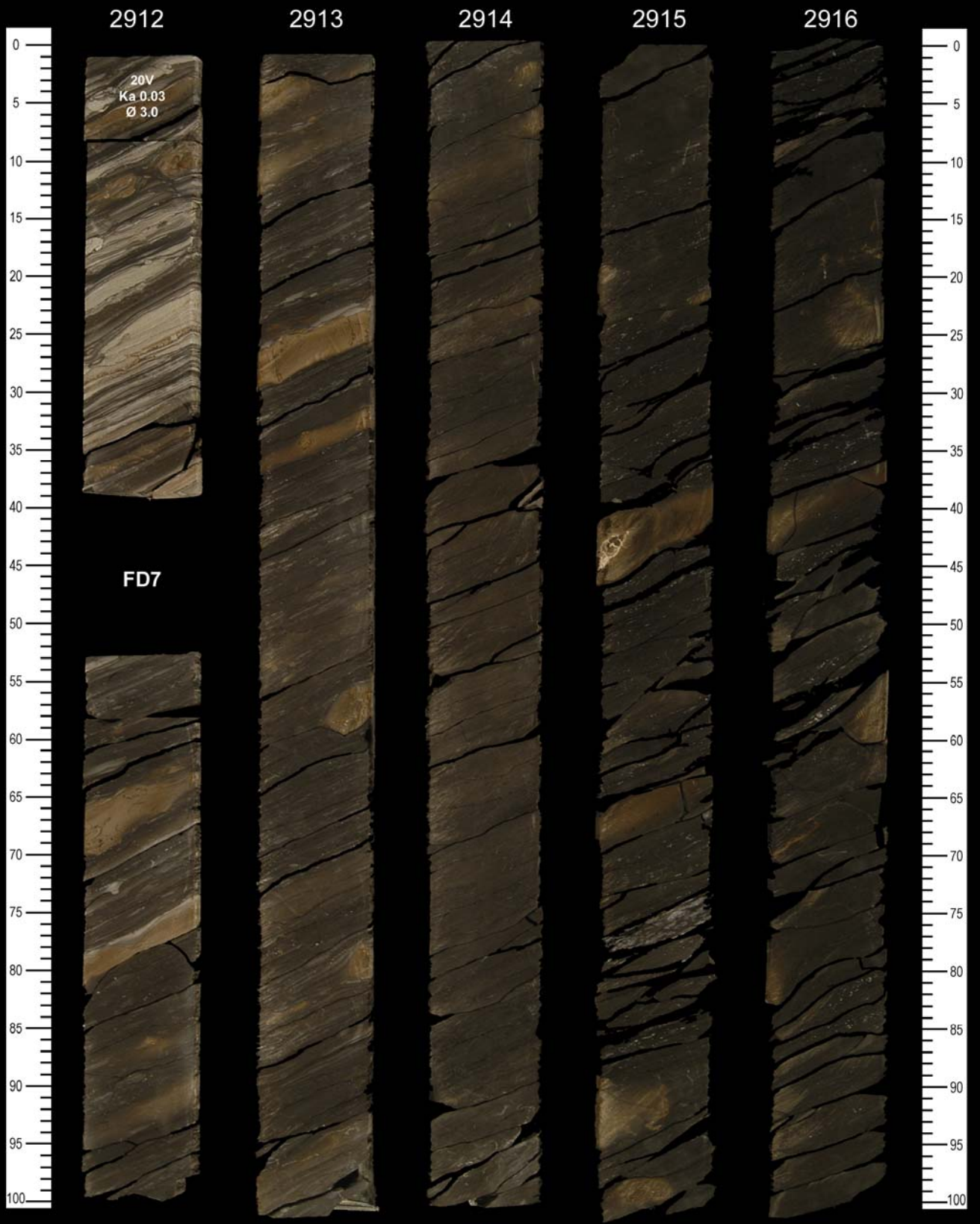


YOLLA-4
CORE No. 1

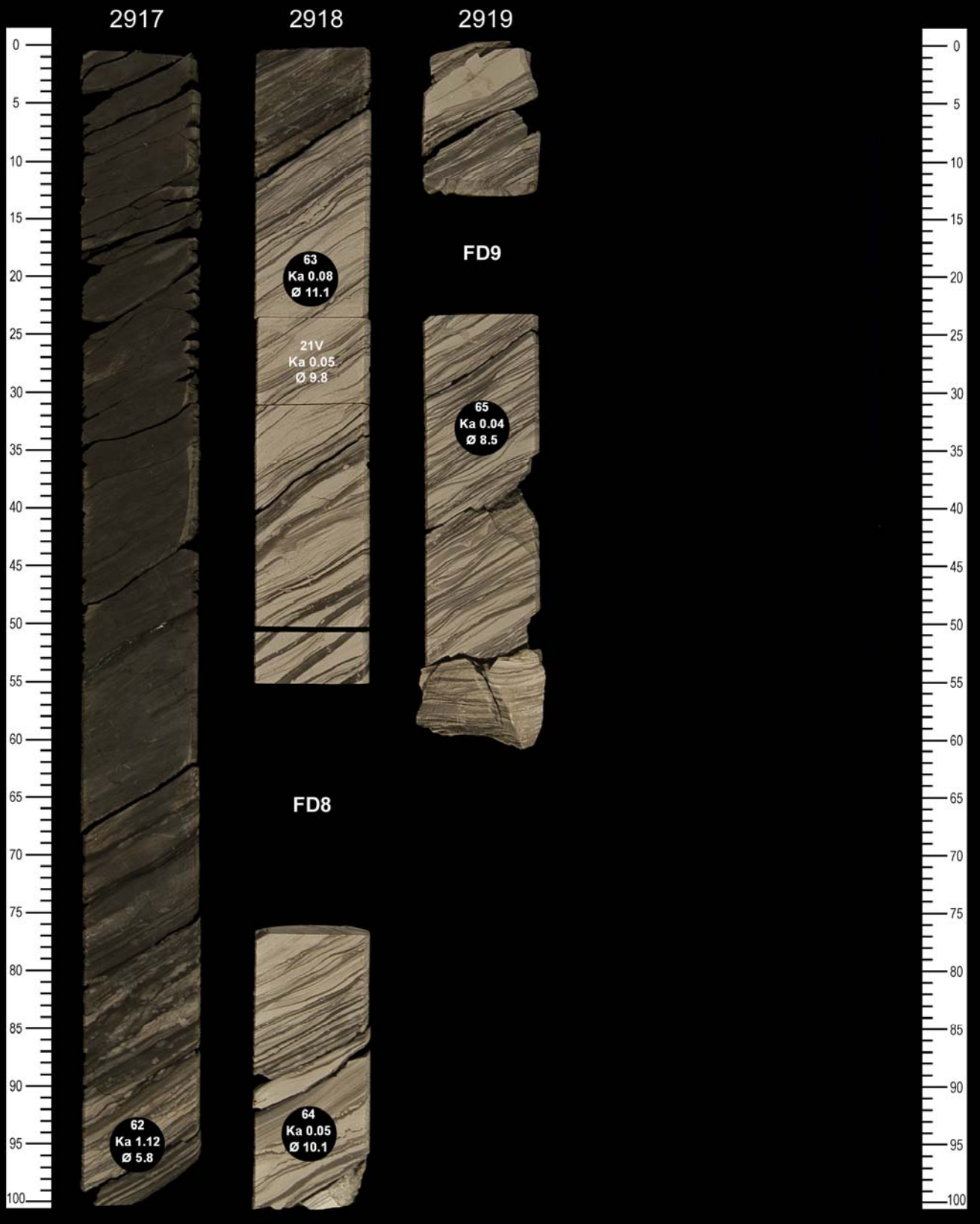


YOLLA-4

CORE No. 1



YOLLA-4
CORE No. 1

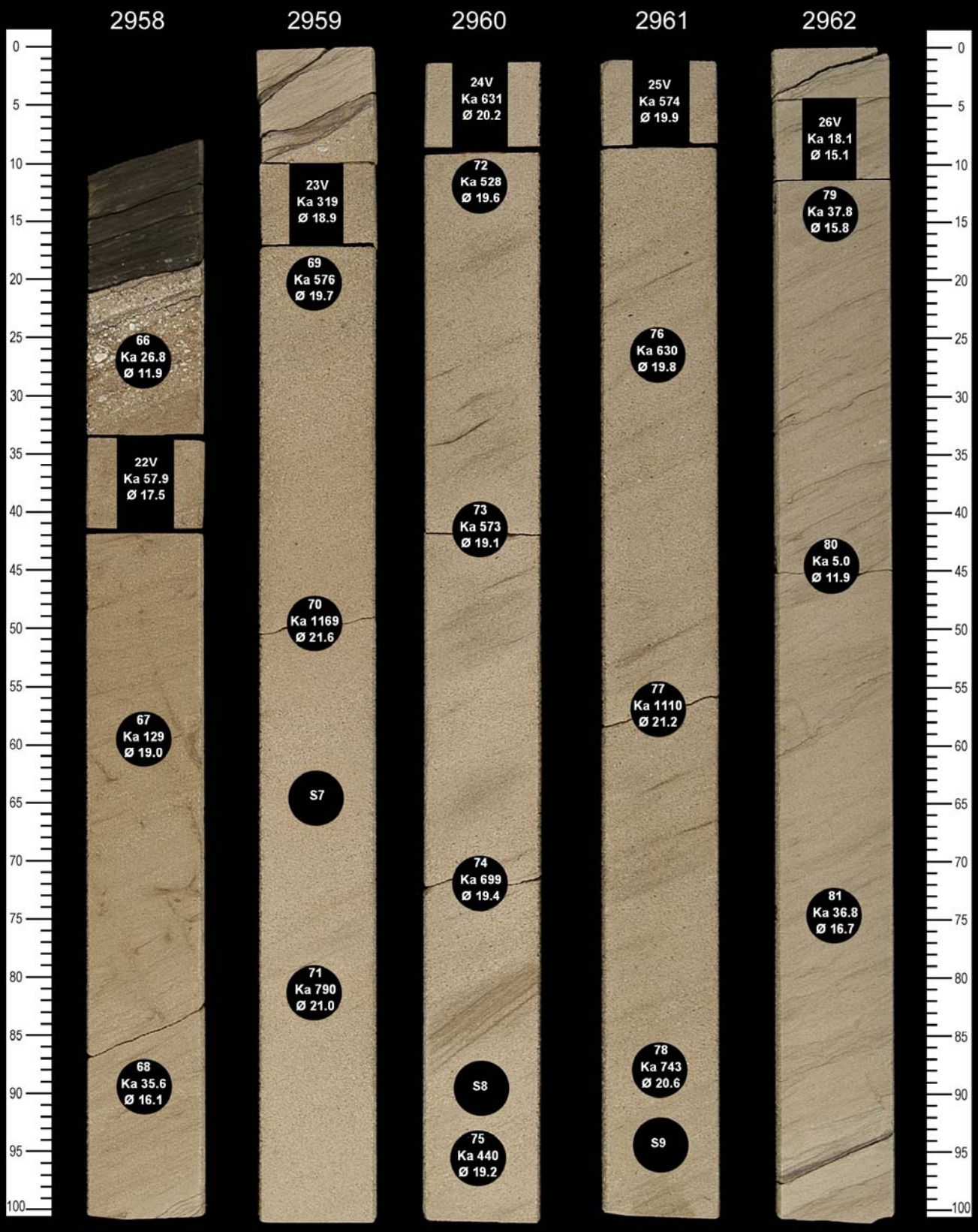


GREY SCALE COLOUR REFERENCE

Origin energy

YOLLA-4
CORE No. 2

ACS LABORATORIES PTY LTD



Origin energy

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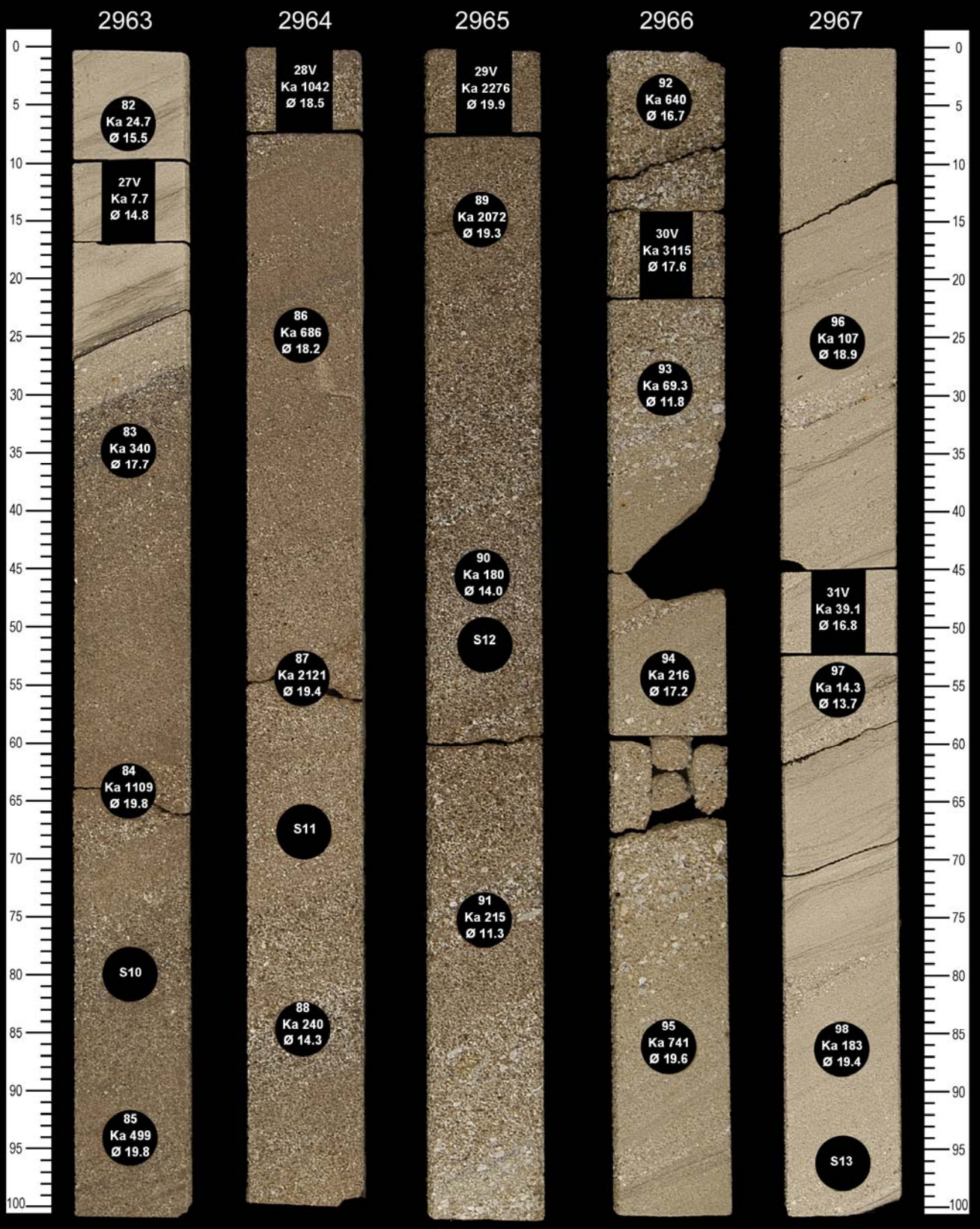
ACS LABORATORIES PTY LTD



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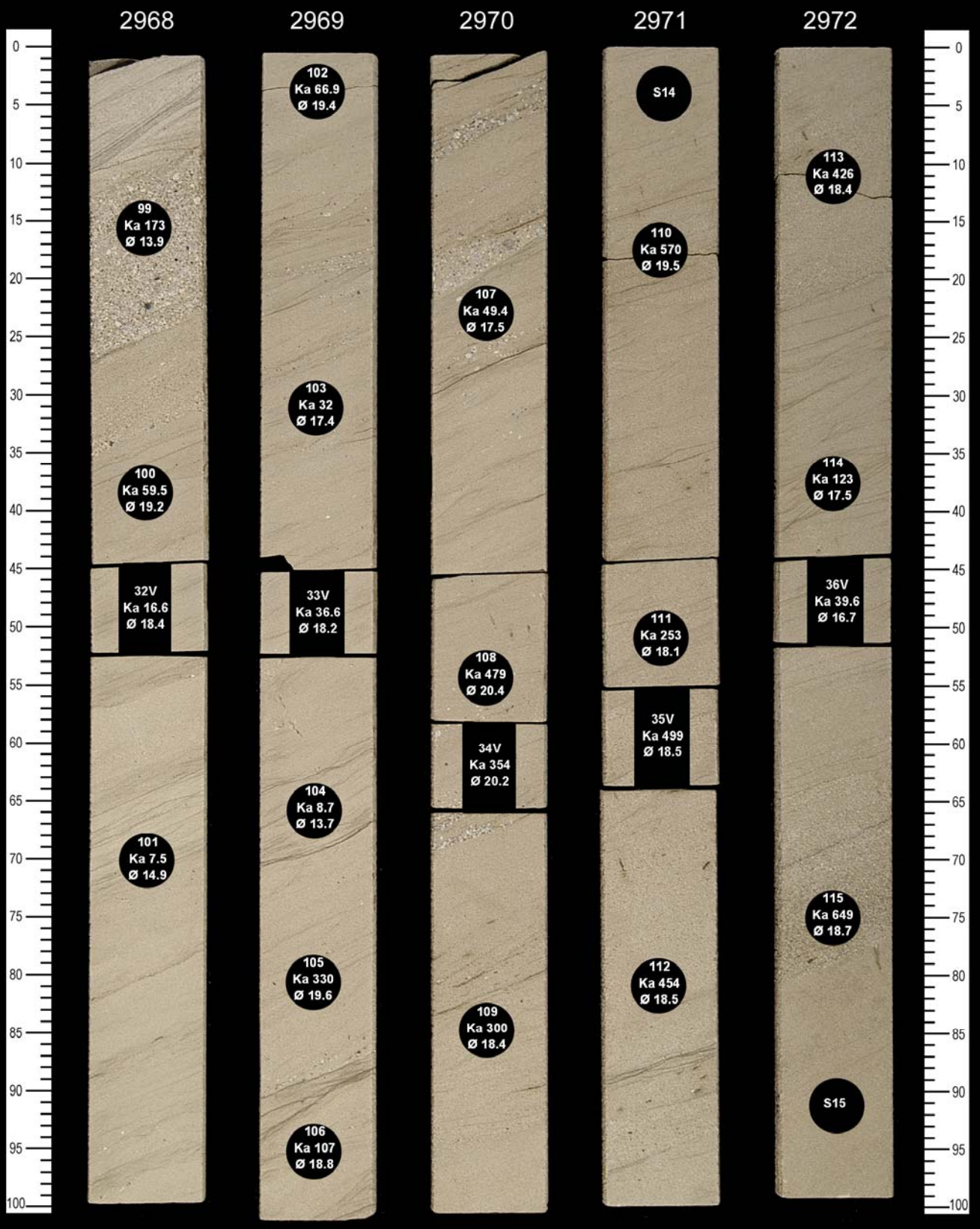

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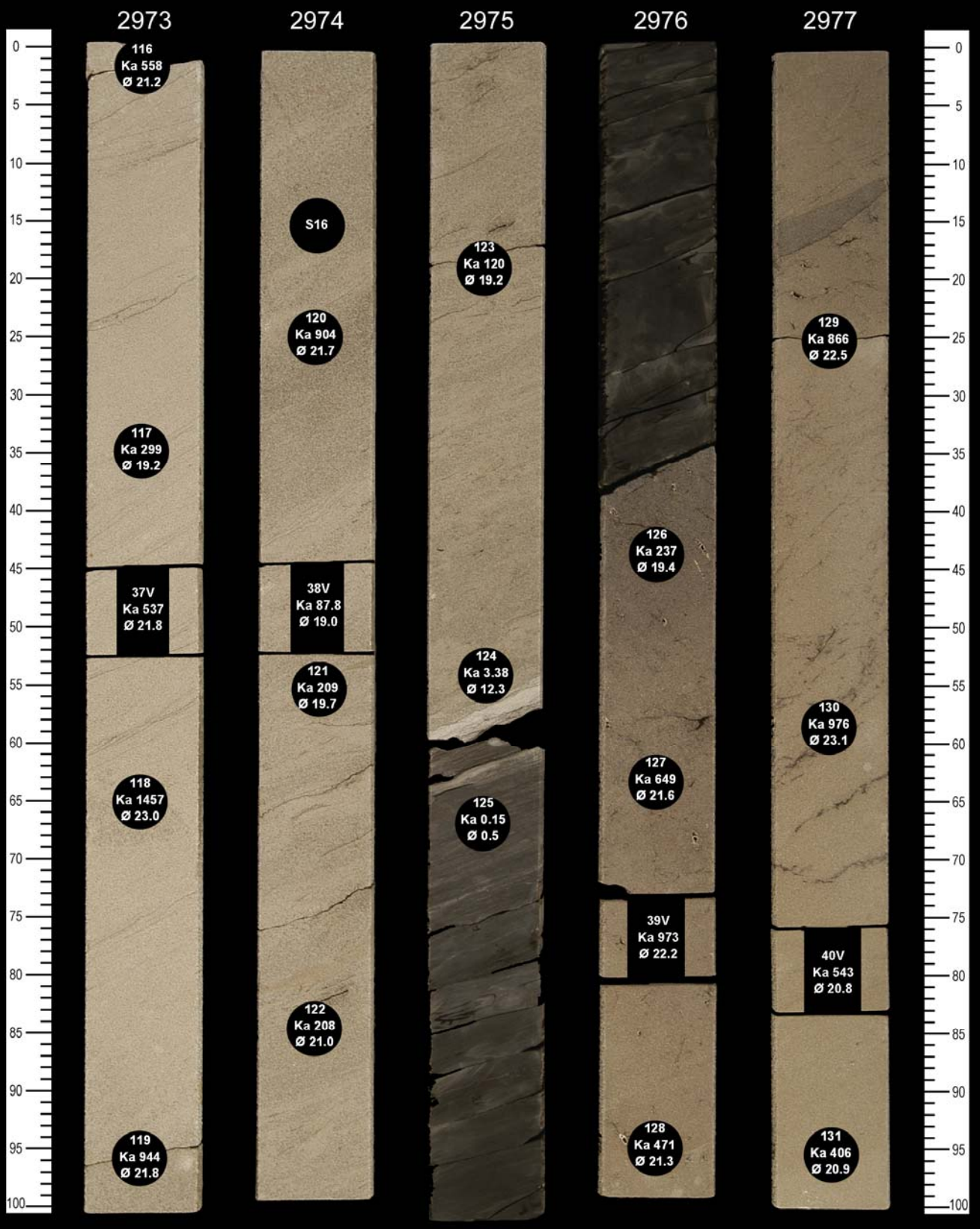

GREY SCALE COLOUR REFERENCE

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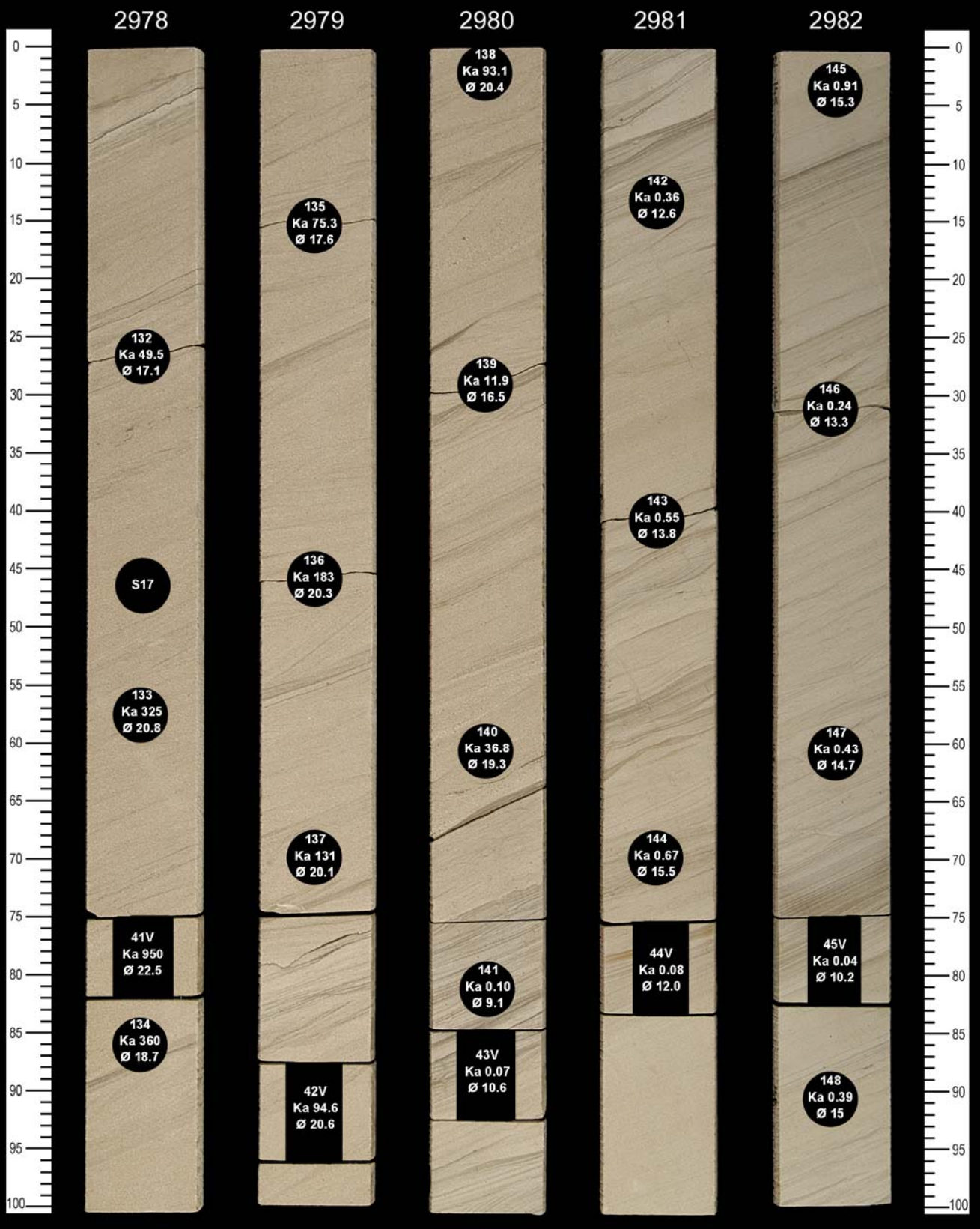
CORE No. 2



Origin energy

YOLLA-4
CORE No. 2

ACS LABORATORIES PTY LTD

GREY SCALE COLOUR REFERENCE

APPENDIX 5: CUTTINGS GAS SUMMARY

Sourced from Daily Geological Reports

Depth Interval (mMDRT)	Total Gas (units)	C1 (ppm)	C2 (ppm)	C3 (ppm)	C4 (ppm)	C5 (ppm)
900 – 905	0.5	127	4	1	-	-
905 – 1049	4	736	23	3	Tr	-
1049 – 1100	6	1376	0	7	3	Tr
1123 – 1242	10	1850	100	31	14	4
1242 – 1280	17	2800	236	102	44	15
1280 – 1285	15	2018	165	73	35	15
1285 – 1315	13	2096	147	54	27	12
1315 – 1335	12	2220	156	76	35	19
1317	221	19513	3819	3061	1900	907
1335 – 1370	21	2188	229	147	98	69
1370 – 1415	20	2173	260	155	67	26
1396	49	6109	733	416	171	54
1415 – 1455	20	2502	292	146	60	23
1455 – 1525	24	3082	361	181	67	22
1501	57	7483	924	493	204	66
1525 – 1537	40	4066	484	253	101	36
1526	48	5985	763	439	193	67
1537 - 1723	18.4	2168	268	158	73	30
1723 - 1752	46	5420	736	364	161	75
1752 - 1870	53	7396	998	341	88	24
1870 - 1880	60	8711	1175	421	42	69
1880 - 1914	173	18387	3318	2237	423	656
1914 - 1938	79	6629	1292	1086	231	389
1938 - 1968	40	2332	474	477	129	233
1968 - 2022	19.4	873	145	153	52	96
2022 - 2069	5.7	257	30	24	9	14
2069 - 2136	14	994	141	139	35	42
2136 - 2322	32	3733	346	141	63	14
2318	158	27266	1904	522	153	22
2322 - 2363	22	2279	212	116	60	21
2363 - 2385	40.1	6584	475	150	44	10
2375	125	22018	1420	359	117	20
2385 - 2451	32.1	6111	388	144	48	11
2406	109	22464	1181	317	104	16
2451 - 2497	42.9	8271	445	176	51	12
2481	184	38360	1882	637	223	35
2497 - 2602	32	5522	471	282	127	36
2595	354	71453	4799	1420	356	70
2602 - 2614	364	48779	6734	4982	2446	927
2614 - 2630	60	8639	869	798	402	176
2630 - 2657	61	8681	875	803	420	185
2657 - 2670	50	8667	664	442	127	53
2657	121	21951	1459	917	350	133
2663	139	27851	1564	746	221	79
2670 - 2712	33	4726	472	313	83	43
2712 - 2719	5	486	52	22	7	4
2719 - 2767	11	1131	182	128	9	5
2767 - 2860	5	480	58	56	28	14
2860 - 2866	9	891	100	79	66	17
2866 - 2883	11.5	1544	151	101	51	27
2883 - 2892	15	1787	181	97	39	19

Depth Interval (mMDRT)	Total Gas (units)	C1 (ppm)	C2 (ppm)	C3 (ppm)	C4 (ppm)	C5 (ppm)
2888	359	45084	4011	1658	553	146
2892 - 2909	390	74579	6491	2767	1121	392
2909 - 2919	60	9294	947	490	214	87
2919 - 2940	4	491	54	31	10	45
2940 - 2958	12	1860	180	99	41	18
2946	30	5197	501	273	104	43
2958 - 2985	446	76806	7681	3451	1377	456
2985 - 3000	15	1872	188	110	64	39
3000 - 3021	22	3399	263	118	51	27
3003	94	16643	1421	660	270	98
3021 - 3114	8	776	85	68	32	18
3114 - 3137	30	4007	534	403	172	69
3117	207	30703	3466	2559	1122	421
3137 - 3180	77	14253	878	327	141	50
3149	258	50257	3117	1108	486	184
3162	222	36866	2684	2036	1233	513
3180 - 3192	6	880	46	23	13	7
3192 - 3235	5	592	33	20	14	11

APPENDIX 6: MUDLOGGERS REPORT

Yolla - 4

FINAL WELL REPORT

Prepared by

Overseas Oilfield Services S.A.

Engineers: P. Rady, P.Mc Gilveray, G. Doczy

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DRILLING LOG -- 1:1000 scale from 124 to 3235 metres

GAS RATIO LOG – RESERVAL 1:500 scale from 860 to 3235 metres

BORE HOLE STABILITY LOG -- 1:1000 scale from 124 to 3235 metres

Section 1
General Well Summary

WELL DATA

Operator	: Origin Energy Resources Ltd
Well name	: Yolla - 4
Permit	: T / L1
Surface location (Slot E)	: Latitude: 39° 50' 40.5920" S Longitude: 145° 49' 06.0569" E : UTM North: 5 588 821.47m : UTM East : 398 905.07m
Bottom Hole Location	: 638.1m South of Surface Location : 253.1m West of Surface Location
Total depth	: 3235m MDRT, 3097.2m VDRT
Rotary Table Elevation.	: 43.88m above MSL at start of well, 43.77m at end of well due to gradual rig settlement during well execution. RT Elevation Referenced to Mean Sea Level as Defined in the Platform Design Drawings.
Sea-water depth	: 81m
Rig Arrived Near Platform	: 1730hr 6 June, 2004
Preloading Completed	: 1500hr 11 June, 2004
Start Driving 20"Conductor	: 1200hr 12 June, 2004
Drive 20" Conductor in Y3	: Between 0700hr 16 June to 0600 17 June, 2004.
Spud Y4 Well	: 2145hr 18 June, 2004 (Start drill fill inside 20" conductor)
Bit Reached TD	: 2200hr 11 July, 2004
Skid Rig to begin Y3	: 1230hr 8 August, 2004
Total Time on Well	: 55.39 days (55 days 9.25 hours)
Budgeted Time On Well	: 38.55 days
Well Status	: Completed Producer (awaiting flow line connection)
Permit Interests	: Origin Energy Petroleum Pty Ltd 32.5% Origin Energy Northwest Pty Ltd 5.0% AWE Petroleum Pty Ltd 30.0% CalEnergy Gas (Australia) Ltd 20.0% Wandoo Petroleum Pty Ltd 12.5%
Rig name	: ENSCO 102 (Jack Up Rig)
Drilling Contractor	: ENSCO

Drilling Phases

Diameter (inch)	From (m)	To (m)	Mud Type
16"	124.0	900.0	Flocculated / Bentonite / Seawater
12¼"	900.0	2614.0	Seawater / Drispac / Soltex
8½"	2614.0	3235.0	Seawater / Drispac / Soltex

Cased Hole

Casing Diameter (inch)	Casing Type	Shoe Depth (m)
20"	Conductor	220.0 MDRT
13⅜"	Surface	884.6 MDRT
9⅝"	Intermediate	2586.1 MDRT
6⅝"	Production	3234.0 MDRT

MUD LOGGING

Logging Unit Number: 171

Engineers: P. Rady, M. Smith, P. McGilveray, G. Doczy.
Mudloggers: V.B.Jagarlamudi, J.Fernandes, Noel Elliott.

Sampling Interval

Yolla - 4

Sample Type	Number of sets	Quantity per set	Sampling interval	From (m)	To (m)
Washed and Dried	3	100 grams	10 metres	900	1730
Washed and Dried	3	100 grams	3-6 metres	1734	3235

Cuttings Distribution

Company	Unwashed and Dried Samples
Origin Australia	1

Company	Washed and Dried Samples
Origin Australia	1
Mineral Resources Tasmania	1
Geoscience Australia	1

Company	Set of Samplex Trays
Origin Australia	2

WELL SUMMARY

Yolla A platform is located offshore within the Bass basin approximately 120 Km north of Tasmania. The Yolla-4 well is the first of a two well developmental phase of the Yolla field to be deviated and completed from the Yolla platform. Yolla-4 was deviated in a Southerly direction to intersect the Palaeocene sandstone reservoirs of the Intra-Eastern View Coal Measures to ascertain their deliverability for supply to the Victorian domestic market. These reservoirs were previously intersected and evaluated in the Yolla-1 & Yolla-2 wells. The Yolla-4 well also evaluated the top EVCM stratigraphic level.

The Yolla Drilling program was drilled using the ENSCO 102 jack up drilling rig which was cantilevered over the Yolla permanent production / wellhead platform and the 20"conductor casing was installed on both Yolla-4 & 3 prior to spudding Yolla-4. The 20" Conductor was driven to a depth of 220 m and Yolla-4 was spudded @ 21:45 hrs on the18th of June 2004 and drilled to a Total Depth in a 3 Phase programme over 24 days.

16" PHASE
A Hughes Christensen MX1 Tri-cone 16" Bit was used in conjunction with the SperryDrill to drill the 16" Phase. It washed from the Mud line at 124 m to 184 m where competent formation was encountered and then drilled ahead to the $13^3/_8$" Casing depth of 900 m. All returns were to the sea for this section, which was drilled in 24:04 on bottom hours, (30.55 rig hours). The $13^3/_8$" casing was run and set at 884.57 m.

12.25" PHASE
A Hughes 12¼" ATJG8 bit in conjunction with the $9^5/_8$" SperryDrill was run to drill out the Stage collar, shoe track, casing shoe and 12¼" rat hole to 905 m (0.25 hour drill formation / 9.5 hours circulating and drill cement) A successful Formation integrity test of 240 psi (10.5 ppg Equivalent mud weight) with 8.91 ppg was performed prior to pulling out of hole to change the BHA. A Hughes Christensen HCM506 PDC bit with the SperryDrill Motor / MWD directional assembly was then run with an adjustable gauge stabilizer and the hole was kicked-off at 1280 m.
The 12¼" phase was drilled to casing point at 2614 m (2513 m TVD) in 82.2 on bottom hours (113.2 rig hours) with no hole problems besides minor cavings and losses while drilling the lower section and minor over-pull and tight hole encountered on the trip out,.

8.5" PHASE
The 8½" hole was drilled with a Hughes HCW505 PDC bit and steering assembly down to the Core # 1 depth. The cement float and shoe was drilled from 2561 m to 2586 m. The rat hole was drilled to 2614 m prior to performing a leak off test to 10.0 ppg EMW. Drilling continued down to the core point at 2892 m after drilling into the required sand. There were no losses while drilling, though at 2779 m a pressure loss of 300 psi and a 30 bbl loss was seen. Pulling out, minor tight hole was encountered and reamed. A core barrel and a CD93 core head was run and a 27 m core was cut 2892 m to 2919 m with 100% recovery. A new BHA was made up with a British Bits Ltd BB650XA PDC bit and steering assembly and drilling continued down to core point # 2 at 2958 m. A core barrel and a CD93 core head was rerun and drilled from 2958 m to 2985 m, 100 % recovery on surface. A gas peak of 536 units was recorded at 2971.5m while circulating up from coring. No problems encountered pulling out of the hole. A Reed Hycalog DSX173 bit was run with a steerable assembly and drilling continued from 2985 m where mud losses were recorded. While drilling between 2985 and 2988 m, 143 bbl of mud was lost to the formation at a maximum rate of 190 bph. This was thought to go to the clean sands seen in Core #2. At 2991m, when the bit was taken off bottom and placed on bottom again, a further 54 bbl were lost, indicating that these sands had the cake wiped off and thereby took more mud. This loss occurred for 15 min at 162 bph and was cured quickly. Another loss of 32 bbl was seen while drilling between 3020 and 3024m for 20 min at 90 bph.
Drilling continued through the Top 2973 m sand at 3000 m down to the basalt at 3180 m with no losses after 3024 m. A gas peak at 3149 m of 257.7 units was circulated out before drilling to a total depth of 3235 mMD (3097.3 mTVD).
A Wiper trip was performed prior to running wireline logs as follows:
Run # 1, PEX-HRLA-CMR-SP-GR-LEHQT. Unable to get tools down. Pulled out and performed a wiper trip.
Run # 2, PEX-HRLA-CMR-SP-GR-LEHQT. Rerun
Run # 3, FMI-DSI-HNGS-ECS-LEHQT
Run # 4, VSI-GR-LEHQT
Run # 5, MDT-GR-CMR-LEHQT
Run # 6, MSCT-GR

Yolla-4 was tested and then completed with a single oil completion string of 3½" tubing in $6^5/_8$" production casing.

WELL PROFILE

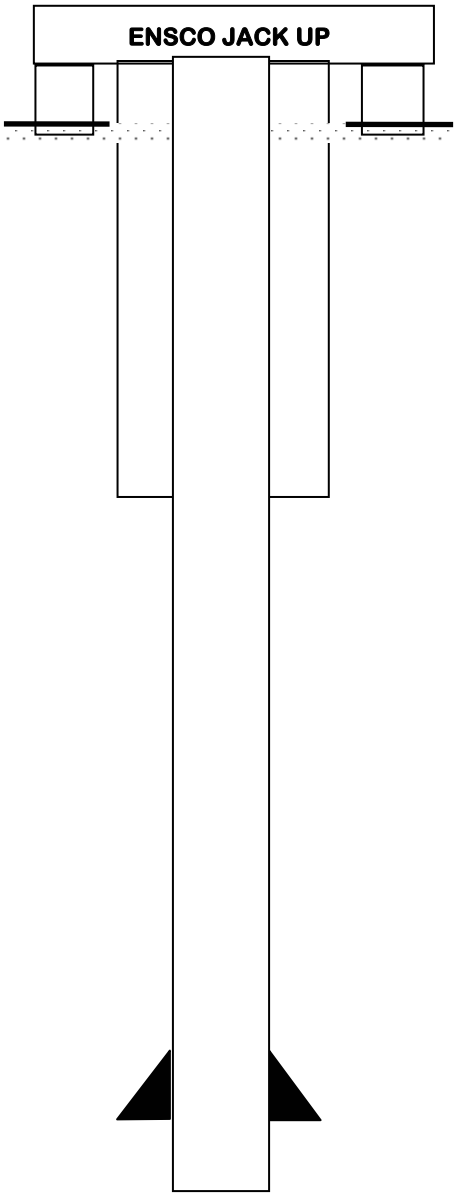
Rotary Table to Mean Sea Level 81.0 m (43 m RT)

Rotary Table to Sea Bed 124.0 m
20" Conductor at 220.0 m

13⅜" Casing Set at 884.57m

9⅝ " Casing Set at 2586.14 m

6⅝" Production casing at 3234.0 m



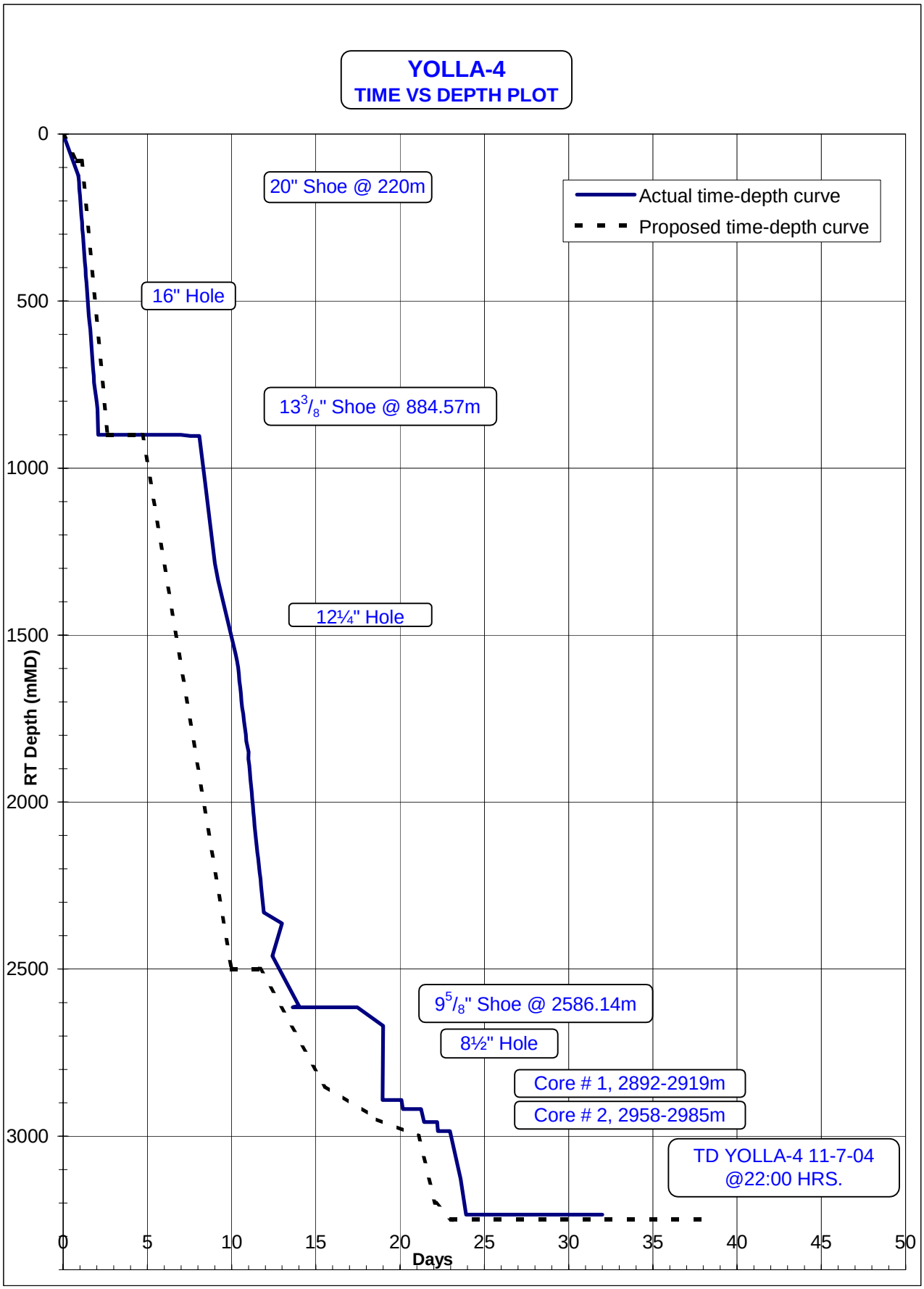
Spudded Yolla-4
18th June 2004

16" hole
124.0 m – 900.0 m

12¼" Hole
900.0 m – 2614.0 m
Mud Weight 8.8 – 9.5 ppg

8½" Hole drilled to 3235.0 m
Mud Weight 9.2 –9.4 ppg

TIME-DEPTH CURVE (measured depth)



BIT RUN SUMMARY

BIT	**Size** (")	**Type**	**Jets**	**In** (m)	**Out**	**Hours**	**Condition**
1	16	Hughes ATJG8	3 x 24	124	900	30.75	2-2-BU-A-E-I-No-TD.
2	12¼	Hughes ATJ-G8	3 x 24	900	905	0.25	1-1-WT-H-E-I-No-TD
3	12¼	Hughes HCM506	6 x 18	905	2614	82.2	1-1-NO-A-X-I-No-TD
4	8½	Hughes HCM505	2 x16 3 x18	2614	2892	14.6	1-1-WT-IN-X-I-No-CP
5	8½	CD93	1.1in^2 TFA	2892	2919.5	1.4	1-1-WT-A-X-I-No-TD
6	8½	BB 650XA	2 x16 4 x18	2919	2958	2.8	1-1-BT-G-X-I-No-CP
7rr	8½	CD93	1.1in^2 TFA	2958	2985	0.77	1-1-WT-A-X-I-No-TD
8	8½	REED HYCALOG DSX173	3 x16 3 x18	2985	3235 TD	12.5	1-1-CT-H-X-I-NO-TD

CASING DATA

Type	**Size** (Inches)	**Weight** (lb/ft)	**Grade**	**Thread**	**Depth** (mMDRT)
Conductor	20"	203	B / X56	RL4S / E60MT	220.0
Surface	$13^{3}/_{8}$"	54.5	K55	BTC	884.57
Intermediate 12¼" Hole	$9^{5}/_{8}$" 10¾"	43.5 51	L80	Vam Top	2586.0
Production	$6^{5}/_{8}$"				3234.0

CEMENTING DATA

$13^{3}/_{8}$" Surface casing STAGE 1

Casing details	**Cement Type**	**Dry Cement Volume** (sx)	**Cement Additives**	**Mix Water** (bbls)	**Slurry Volume** (bbls)	**Slurry Density** (ppg)	**Cement to/from** (mMDRT)	**Casing Pressure Test** (psi)
$13^{3}/_{8}$" Lead Slurry	G	588	0.42 gal/sk D75 0.01 gal/sk D47	185 Seawater	233	12.5	310 m - 785 m	2000
Tail Slurry	G	418	0.01 gal/sk D47	51 Drl water	86	15.8	785 m - 900 m	1500 / 560

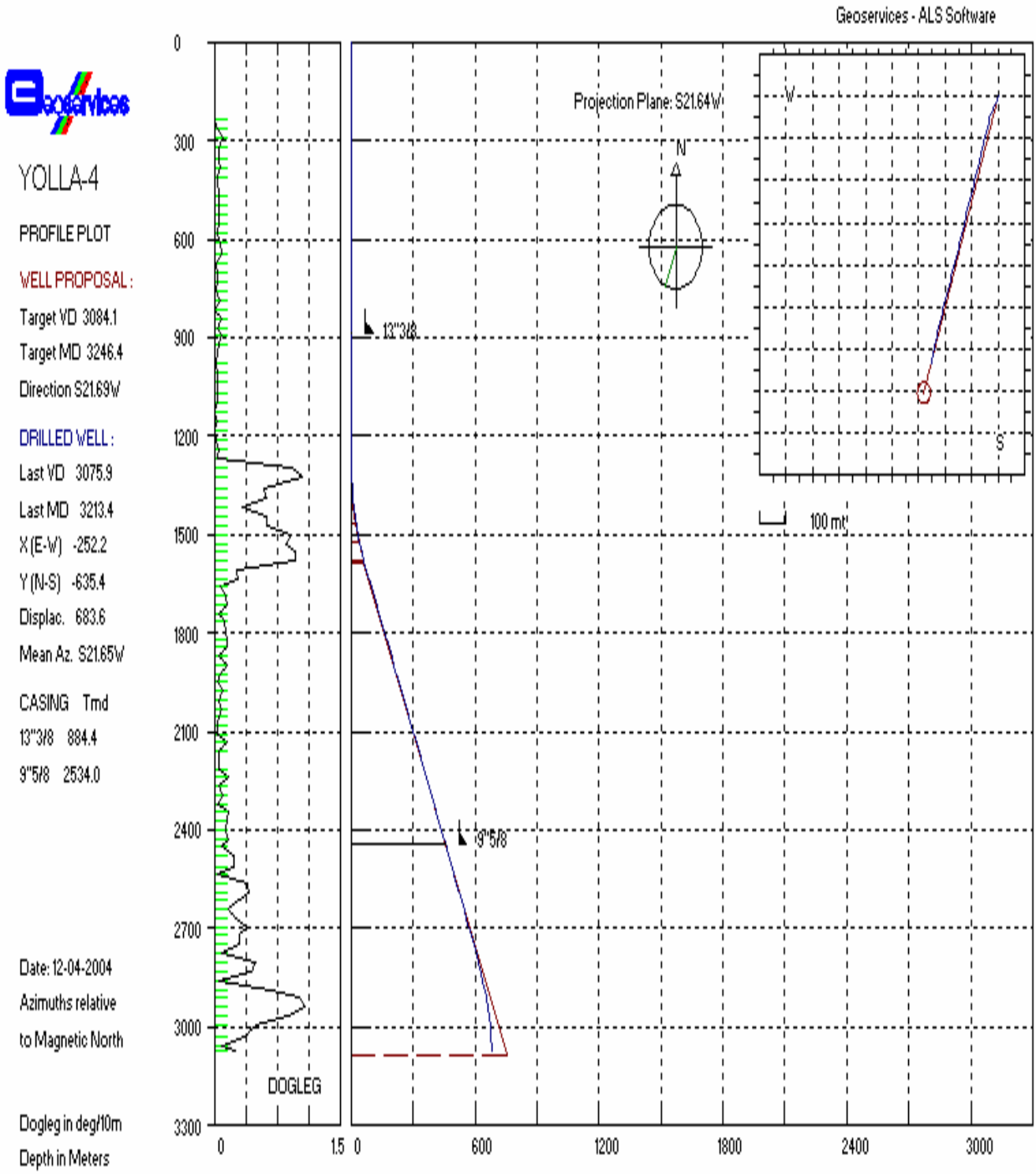
STAGE 2

Casing details	**Cement Type**	**Dry Cement Volume** (sx)	**Cement Additives**	**Mix Water** (bbls)	**Slurry Volume** (bbls)	**Slurry Density** (ppg)	**Cement to/from** (mMDRT)	**Casing Pressure Test** (psi)
$13^{3}/_{8}$" Tail Slurry	G	210	0.01 gal/sk D47 1% BWOC CaCl2	49 Seawater	66	13.5	170 m – 308 m	2000 / 1500

$9^5/_8$" Intermediate casing

Casing details	**Cement Type**	**Dry Cement Volume** (sx)	**Cement Additives**	**Mix Water** (bbls)	**Slurry Volume** (bbls)	**Slurry Density** (ppg)	**Cement to/from** (mMDRT)	**Casing Pressure Test** (psi)
$9^5/_8$" Lead Slurry	G	732	2.5% BWOC Pre Hyd Bentonite 0.05 gal/sk D110 0.01 gal/sk DO 47	214 Drl Water	278	12.5	2586 m	3500
Tail Slurry	G	100	0.65 gal/sk D300 0.01 gal/sk DO 47 0.03 gal/sk D110 0.10 gal/sk D145A	15 Drl Water	27	15.8	1165m - 2586 m	3500

WELL DIRECTIONAL PROFILE



WELL DIARY

18th June 2004

Wait on weather. Raise Tension frame, pick up overshot mandrel and lower same. Mandrel too long, lay out same and modify overshot mandrel. Pick up overshot mandrel and nipple up same. Pick up overshot and divert housing and install same, connect actuator hoses and install wear bushing. Install diverter 10" packer, install control hoses to overshot packer. Function test diverter system, make up 16" BHA and run in hole to 124 m, (mudline). Shallow test MWD and mud motor. Wash out 20" from 124 m to 183 m. Returns to seafloor

19th June 2004

Drill ahead from 183 m to 802 m.

20th June 2004

Drill ahead from 802 m to 900 m pumping 30 bbl sweep every joint w/ returns overboard. Pump 50 bbl HIVIS sweep & pump out w/ seawater to Surface. Displace hole with 832 bbl HIVIS. Slug pipe and Pull out of the hole f/ 900 m to 20" Shoe. Continue to test BOP. Begin to Run in hole, trouble shoot Top drive, take MWD survey @ 220 m and run in hole to 900 m – No fill. Pump 555 bbl of 8.7ppg mud HIVIS pill and spot 105 bbl of 8.5 ppg HIVIS inhibited pill. Pull out of hole with BHA, lay down stabililiser, retrieve wear bushing and rig up to run casing.

21st June 2004

Finish rig up to run $13^3/_8$" casing. Pick up joint of BTC casing and break off collar. Lay out joint and pick up cross over pup and break out Vam top collar. Flip over and install BTC collar and make up same. Pick up and make up $13^3/_8$" Shoe track, check float equipment and continue to pick up and run $13^3/_8$" 54.5# Kto55 BTC casing to 843 m. Pick up and make up $13^3/_8$" W.H. on string, run in hole and land out same. Shoe depth @ 884.57 m. Lay down top landing joint and install cement head and surface lines. Circulate seawater @ 45 SPM. Pressure test surface lines to 2000 psi, OK. Dowell mix and pump 233 bbl (12.5ppg) Lead slurry and 86 bbl (15.8ppg) Tail slurry.

22nd June 2004

Drop wiper plug, flush cement lines, Dowel pump 20 bbl fresh water. Displace 416 bbl sea water with rig pump. Cement in place @ 0115 hrs. Pump plug with 1500 psi, hold for 15 min - casing test OK. Final circulating pressure prior to bump 750 psi @ 175 spm. Open cement head and drop opening cone. Dowell open tool with 590 psi – returns noted. Circulating out @ stage collar until returns clean – 3 bbl/min @ 110 psi. Wait on cement, lay out cement head and pick up landing joint to open slips. Lay down landing joint rig up cement head with Dowell. Load closing plug. Dowell pump 50 bbl seawater and 20 bbl inhibited fresh water, mix and pump 66 bbl 13.5 ppg slurry – 210 sx, 48.4 bbl mix water, release closing plug. Dowell chase w/ 20 bbl fresh water and 135 bbl. Seawater, Bump plug @ 6½ bbl/min to 1500 psi. Hold for 15 min casing test, bleed off, and check floats – holding. Rig down cement head and lay out landing string and running tool. Rig down $13^3/_8$" handling equipment and lay down bails. Rig up to and pull diverter set back and secure on drill floor, pull overshot and lay down same on deck. Rig up to and remove low pressure Riser. Cameron install side valves on wellhead and pressure test same to 5000 psi. Pick up HI-pressure Riser from deck, run same and make up on wellhead. Install CF13 fastlock connector, $13^3/_8$" SK Riser spool with N2 fastlock connector. Readjust tensioner frame elevation with extra shackles and install inner beams on tension frame.

23rd June 2004

Continue BOP installation, test Choke manifold, test annular element, install choke and Kill lines, Pressure test stand pipe.

24th June 2004

Continue to nipple up and pressure test BOPs, SPP manifold and top drive. Make up and run over shot mandrel and diverter package. Replace saver sub and swivel package. Lay down 16" BHA. Make up 12¼" BHA, shallow test mud motor and run in hole to 291 m. Wash to 301 m and tag cement. Drill out cement and plugs.

25th June 2004

Run in hole. Drill out cement and shoe 857 to 883 m. Pump pill, Displace to 8.9 ppg mud. Drill to 905 m, 5 m new formation. Circulate hole clean. Perform FIT to 10.5 ppg. POOH change BHA. Run in hole.

26th June 2004 Slip and cut drill line. Top Drive service. Ream 888 to 905 m. Drill 12¼" hole with surveys. Run carbide at 975 m. Drill 12¼" hole. Power shutdown at 1149 m for 2 hrs. Drill ahead with surveys.

27th June 2004 Drill 12¼" hole. Steer as required to build hole angle.

28th June 2004 Drill 12¼" hole. Steer as required to build hole angle.

29th June 2004 Drill 12¼" hole. Steer as required to build / control hole angle.

30th June 2004 Drill 12¼" hole.

01st July 2004 Drill 12¼" hole to 2614m. Circulate bottoms up. Flow check. Wiper Trip. Tight spots were encountered from 2540 to 2524 m and 2418 to 2110 m (80K overpull). Work pipe, pump slug, POOH to shoe. Tight spots between 1092 to 900 m. Service Top drive at shoe. Run in hole, tight spots work between 900 to 1092 m (30K overpull). Break circulation at 1325 m and re-log hole. Wash-ream down - Run in hole to bottom, circulate. POOH.

02nd July 2004 POOH. Download MWD. Make up Jet tool, pull wear bushing, wash well head and BOP. Clean out Rams. Make up and test BOP. Make up and run 10¾" & $9^5/_8$" casing.

03rd July 2004 Run $9^5/_8$" casing. Run cement and displace. Gas while circulating 81 units, while cementing 42 units.

04th July 2004 Pump & displace cement. Bump plug –3500 psi. Flush cement lines. Back out hanging tool and landing joint. Rig down cement / casing equipment. Rig up jetting tool – wash down BOP - wellhead. Make up seal assembly and run in hole, unable to set. Run jetting tool again and wash down. Rerun seal assembly and set – OK test 5000 psi. Change rams – pull WBRT. Make up 8½" BHA and rack back while cranes available. Pull wear bushing. Make up BOP test tool assembly, run and test BOP, manifold, stand pipe and valves 250 / 5000 psi.

05th July 2004 Finish Test BOP, manifolds, surface equipment 250 / 5000 psi. Rig down test equipment. Install Wear Bushing. Make up 8.5"" BHA. Test MWD – align motor, run in hole, shallow test. Break circulation every 20 stands. Run in hole. Drill cement / float / shoe from 2561 to 2614 m. Drill rat hole to 2614 m, pull back to 2595 m, circulate & condition mud. Pull to 2575m test lines, perform LOT with 9.5 ppg mud, EMW= 10 ppg. Drill 8½" hole, slide as required, surveys on connections.

06th July 2004 Drill 8½" hole, slide as required, surveys on connections. Pressure loss of 300 psi and 30 bbl loss at 2779 m. Continue drill ahead all ok. Flow check at 2802 m due to active increase. Drill 8½" hole, steer as required, control drilling from 2872 m to 2887 m. Flow check, Pull out at 2887 m to shoe. Work tight spots 2740 m, ream through 2653 m. Service Top Drive and PRS monitor well on Trip tank. Run in hole and drill 5 m. Circulate bottoms up. Flow check & POOH. Flow check at shoe. POOH.

07th July 2004 Flow check, pump 30 bbl slug, POOH – damage cables with high winds, PRS upper arm drag chain out of cable guide and hung on top drive and bent. Replace bent sections, repair 3 hours, POOH again. Download MWD, Rack back BHA. Make up core barrel – BHA and run in hole.

08th July 2004 Run in hole with core barrel. Wash from 2865 to 2892m. Drop ball and circulate 150 gpm / 250 psi, pressure increase to 350 psi as ball seated. Do SCRs. Core from 2892 to 2919.5 m. Break core with 25K over-pull. Circulate bottoms up. Flow check and POOH - pump out to 2856 m. Flow check on trip tank - well static. Pump slug and POOH. Change elevators. POOH core #1, 113 m flow check. Rack drill collars in derrick. PJSM on core layout, break out core, 3 x 9.14 m core barrels. Break core head, rack core barrel in derrick. Clear drill floor and lay out excess 16", 12¼" BHA. Make up 8½" Bit-BHA. Check MWD and motor and align. Surface test. Run in BHA and 5" drill pipe.

09th July 2004 Run in BHA # 6 and 5" drill pipe. Log with Sperry Sun from 2885 to 2919 m. (550 gpm / 3000 psi). Drill, slide and survey to 2955 m. Circulate ½ hr (550 gpm / 3000 psi). Drill to 2958 m. Circulate hole clean. Flow check. Pump slug. POOH. Flow check at shoe. Flow check at BHA. Download MWD. Rack back BHA. Make up coring BHA. Hold PJSM, make up core-head to barrel and install inner barrels. RIH with core barrel and BHA to 198 m @ 1.5 min / std. Install auto slips and run in hole with 5" DP to 1069 m @ 1.5 min / std.

10th July 2004 Make up coring BHA. RIH. Service Top Drive and blocks. Ream 2927 to 2958 m. (250 gpm, 700 psi). Drop 1¼" coring ball, pump 150 gpm-440 psi, pressure increase to 490 psi, ball seated. Take SCRs. Core from 2958 to 2985 m. Break core 20K over-pull. Circulate bottoms up, 220 gpm / 700 psi, 536 unit gas peak. Flow check - well static. POOH. Flow check at BHA. Rack BHA in derrick. Lay out core # 2 – 27 m in 3 sections. Break off core head and lay out core barrel. Clear rig floor. Make up 8½" Bit-BHA. Check MWD & Motor aligned, test, Inspect pulsar for debris, shallow test MWD – 400 gpm / 720 psi. RIH, 5" drill pipe install auto slips. Fill string every 15 stands.

11th July 2004 RIH 8½" steerable assembly. Ream 2953 m to 2985 m- 550 gpm/3250 psi. Log core section with Sperry Sun. Drill – slide down to 3095m. Continue drill ahead. Circulate gas @ 3149 m (40% on backup gas). Drill to 3235 m TD. Circulate hole clean. Flow check, pump slug and POOH. (Sliding- 3126-3129 m/ 3131-3137 m/ 3153-3156 m with difficulty in last slide so rotary drill to TD).

12th July 2004 POOH-Wiper Trip. Tight hole at 3150 & 2987 m, work pipe through. 40K over-pull. Run in hole, Circulate hole clean on bottom 550 gpm / 3250 psi. Flow check, POOH 5 stands, pump slug. Flow check at 2579 m, continue to POOH. Flow check at 113 m. Change out auto slips. Lay out BHA. Rig down MWD. Rig up and proceed with Wireline logging runs. Rig up sheaves - rig up string install radioactive sources. Run in – tight hole 2675 m, unable to get down with tools with run # 1 - hang up at 2776 m. Log up and POOH. RIH - Wiper Trip with 8½" rotary assembly. Install auto slips at 149 m with 5" drill pipe. Run in hole

13th July 2004 Run in hole to 2559 m. Fill every 15 stands. PJSM for slip and cut drill line. Service Top drive, crown and blocks. Run in hole 2559 to 3235 m. Tight hole at 2777 m, circulate 2 x bottoms up. 600 gpm / 2600 psi at 3235 m. Gas peak 367 units. Pull out to 3208 m. Flow check, pull out to 2763 m. Tight hole at 3195 / 3085 & 3075 m, pump through zones. Run in hole, circulate hole – condition mud on bottom, gas peak 82 units. Flow check, pull 5 stands, pump slug. POOH. Wash-ream 2646-2790 m. Tight at 2766 & 2783 m. Ream 5 times. 10 K HUD @ 2768 m cleared. Run in hole, wash 3208-3235 m, circulate 1½ times, 82 units gas. Flow check-POOH. Pump through tight spots 3217 / 3169 / 3118 m. 500 gpm / 1750 psi (max 30K over-pull). Pump slug and POOH to 2586 m. Flow check and POOH to 149 m. Flow check. Rack back BHA. Clear rig floor and prepare for wireline.

14th July 2004 PJSM for rig up Schlumberger. Rig up sheaves. Make up tools for string. Load radioactive sources. Run in hole. Log hole to TD. POOH. Make up run #2 and RIH and log. POOH. Rig up run #3.

15th July 2004 Wireline logging run 3, 4,5.

16th July 2004 Wireline logging run 5, 6.

17th July 2004 Pull out of the hole with sidewall core tools, adjust and run in hole again. Take samples. Pull out and lay down tools. Rig down wireline equipment. PJSM for clear floor and make up 8.5" BHA. Run in hole, auto slips installed at 149 m, for 5" drill pipe and run in hole. Hydraulic hose on top drive burst, repair and run in hole. Circulate at shoe until gas down – 1065 units. Flow check. Function test BOP-rams-annular. Emergency shutdown ESD tested. Service top drive-rectify link tilt fault. Run in hole, fill every 15 stands.

18th July 2004 Wash down 3208 m to 3235m. Circulate-condition mud, 3003 unit peak. Flow check. Pull out, unable to pump out of the hole to 2772 m, ream tight hole. (40K overpull). Pull out of the hole to 2656 m. Run in hole, ream down, circulate bottoms up, 34 units gas. Pump out of the hole to shoe, pull out of the hole. Lay out BHA. Rig up to run 6⅝" liner.

Section 2
Geological Summary

GEOLOGICAL SUMMARY

All returns to the seabed prior to 900 m. Drill with a Riser from 900 m to start of 12¼" hole. Drill 8½" hole from 2614 m.

Interval			ROP (ave)	Lithology Description
124	-	187	18 - 57 (31)	Cleaning out 20" conductor. Returns to sea through ported riser.

Interval			ROP (ave)	Lithology Description
187	-	736	14 – 53 (35)	No samples recovered returns to sea through ported riser.
736	-	803	7 – 45 (20)	ROP decreases and associated increase in torque and weight on bit, Formation becoming more argillaceous based on correlation with Yolla-1 and Yolla-2. No samples recovered, returns to sea through ported riser.

Interval			ROP (avg)	Lithology Description
803	-	900	30 – 40 (35)	No samples recovered returns at to sea through ported conductor. Below 803m a notable increase in average ROP is observed after increasing the WOB. Correlation to Yolla-1 would suggest we are in a dominantly Claystone minor Limestone interbedded sequence.

Interval			ROP (avg)	Lithology Description							
900m	-	905m	7 – 19 (15)	CLAYSTONE: olive grey - green grey, soft, sub blocky, calc grains 20%, clay clastic grains 80%, silt tr, accessories: fossil fragments tr, forams tr, shell fragments tr, disseminated pyrite tr.							
Gas 900 – 905m			**Units :**	0.5	**Composition (%)**	127 C1	4 C2	1 C3			
Show Details			No Shows								

Interval			ROP (avg)	Lithology Description Massive Claystone							
905m	-	1049m	8 – 51 (36)	CLAYSTONE: olive grey - green grey, soft, sub blocky, calc grains 20%, clay clastic grains 80%, silt tr%, accessories: fossil fragments tr, forams tr, shell fragments tr, disseminated pyrite tr.							
Gas 905 – 1049m			**Units :**	4	**Composition (%)**	736 C1	23 C2	3 C3	Tr C4	-	
Show Details			No Shows								

Interval	ROP	Lithology Description

1049m - 1100m		(avg) 9.5 – 52 (35)	**Massive Claystone** CLAYSTONE: light-medium grey, off white, very soft, dispersive, calcareous grains: 10% clay, clastic grains: 90% clay, accessories: carbonaceous trace amount, calcareous 10%, calcimetery: 7% calcite.								
Gas 1049 – 1100m		**Units :**	6	**Composition (%)**	1376 C1	0 C2	7 C3	3 C4	Tr C5	-	
Show Details		No Shows									

Interval 1100m - 1242m		**ROP (avg)** 11– 37 (25)	**Lithology Description (Top Angahook Formation 1100m -1057mSS) Massive Claystone** CLAYSTONE: light olive grey, off white, loose-soft, sub blocky, calcareous grains: 10% clay and trace silt, accessories: carbonaceous tr amounts siderite trace amounts, lithic grains trace amounts, calcimetery: 7% calcite.								
Gas 1123 – 1242m		**Units :**	10	**Composition (%)**	1850 C1	100 C2	31 C3	14 C4	4 C5		
Show Details		No Shows									

Interval 1242m - 1280m		**ROP (avg)** 16 – 29 (21)	**Lithology Description Massive Claystone, minor Volcanic influence** CLAYSTONE (1), light - medium grey, very soft, dispersive, trace silt, trace very fine sand, trace carbonaceous grains CLAYSTONE (2) off white – rare red brown, very soft - dispersive, rare slight tuffaceous texture, claystone probably has a volcanic source rock in part.								
Gas 1242 – 1280m		**Units :**	17	**Composition (%)**	2800 C1	236 C2	102 C3	44 C4	15 C5		
Gas Peak 1277m			38		6423	526	239	97	26		
Show Details		No Shows									

Interval 1280m - 1285m		**ROP (avg)** 14 – 16 (25)	**Lithology Description (Top Volcanics 1280MD -1237mSS)** VOLCANIC TUFF, blue grey, soft - dispersive, sub blocky to amorphous, rare very fine sandstone tuffaceous texture with a ground mass of glass, quartz and rare altered feldspar, all mafic minerals are weathered out, commonly the volcanic tuff is weathered to CLAYSTONE. CLAYSTONE, light - medium grey, very soft, dispersive, calcareous, trace silt.								
Gas 1280 – 1285m		**Units :**	15	**Composition (%)**	2018 C1	165 C2	73 C3	35 C4	15 C5		
Show Details		No Shows									

Interval	**ROP**	**Lithology Description**

(m)	(avg)	(1280m Top Volcanics) Volcanic Tuff with Claystone increasing with depth
1280 - 1315m	8 – 19 (16)	VOLCANIC TUFF, blue grey, soft, sub blocky to amorphous, tuffaceous texture in part with a predominantly silt to very fine sand size quartz and glassy ground mass, commonly the tuff is weathered to CLAYSTONE: 10% clay clastic grains: 30% clay, accessories: quartz 25 %, feldspar 3 % CLAYSTONE, light brown grey, very soft, dispersive, calcareous grains: 10% clay clastic grains: 90% clay, accessories: pyrite tr.

Gas 1280 – 1315m	Units :	13	Composition (ppm)	2096 C1	147 C2	54 C3	27 C4	12 C5	
Show Details	No Shows								

Interval	ROP (avg)	Lithology Description Sandstone, Claystone and minor Volcanic Tuff
1315m - 1335m	4 – 28 (14)	SANDSTONE: clear, translucent, loose to rare soft small aggregates, clastic grains: 40% very fine sand, 50% fine sand, 10% medium sand, moderately sorted, sub rounded to occasionally rounded, sub elongate to sub sperical, cements/strengths: siliceous/weak, accessories: tuff 3% as matrix, porosity: inter granular, inferred at 20%. CLAYSTONE, light brown to grey, very soft, dispersive, calcareous grains: 10%, clay clastic grains: 90% clay, accessories: tr fine disseminated pyrite. VOLCANIC TUFF, blue grey, soft, sub blocky, commonly with a fine ash texture, the tuff is composed of silt to very fine sand size quartz grains in a glassy to argillaceous matrix, commonly the tuff is weathered to clay, calcareous grains 10%, clay clastic grains 30-100%, accessories: quartz 25-40%, weathered feldspar 3%

Gas 1315 – 1335m	Units :	12	Composition (ppm)	2220 C1	156 C2	76 C3	35 C4	19 C5	
Gas Peak 1317m		221		19513 C1	3819 C2	3061 C3	1900 C4	907 C5	
Show Details	Gas Show 1316 – 1324m in very fine to fine grained SANDSTONE with good porosity								

Interval	ROP (avg)	Lithology Description Massive Claystone
1335m - 1370m	5.5– 30 (13)	CLAYSTONE, light to medium grey, very soft, amorphous, calcareous grains: 10% clay clastic grains: 80% clay, 5% silt, 5% very fine sand, accessories: tuff 5%, quartz 5%, calcimetery: 11% calcite, 1% dolomite, Minor VOLCANIC TUFF, off white - white coloured, soft, sub blocky, calcareous grains: 10% clay clastic grains: 60% clay, 5% silt, 15% very fine sand, 10% fine sand, accessories: argillaceous 50%

Gas 1335 – 1370m	Units :	21	Composition (ppm)	2188 C1	229 C2	147 C3	98 C4	69 C5	
Show Details	No Shows								

Interval	ROP (avg)	Lithology Description Massive Siltstones and Claystone, minor Volcanic influence

1370m	-	1415m	5.5 – 30 (13)	CLAYSTONE, off white to light grey, very soft, sub blocky, calcareous grains: 20% clay, clastic grains: 60% clay, 10% silt, 10% very fine sand, weak calcareous cement, calcimetery: 29% calcite, 1% dolomite, SILTSTONE, medium to light grey, soft, sub blocky, calcareous grains: 10% clay clastic grains: 10% clay, 50% silt, 20% very fine sand, 10% fine sand, accessories: glauconite 3 %, tr siderite. VOLCANIC TUFF, light grey/brown to off white, soft, sub blocky clastic grains: 50% clay, 30% silt, 20% very fine sand, tr fine sand, accessories: quartz 3 %						
Gas 1370 – 1415m			**Units :**	20	**Composition (ppm)**	2173 C1	260 C2	155 C3	67 C4	26 C5
Gas Peak 1396m			**Units :**	49	**Composition (ppm)**	6109 C1	733 C2	416 C3	171 C4	54 C5
Show Details			No Shows							

Interval			**ROP (avg)**	**Lithology Description** **(Udifferentiated Oligocene 1415mMD -1371mTVDSS)** **Sandstone, Siltstone and Claystone**						
1415m	-	1455m	5.5 – 29 (14)	SANDSTONE: light grey, off white, very soft, sub blocky, calcareous grains: 5% clay clastic grains: 5% clay, 20% silt, 40% very fine sand, 20% fine sand, 10% medium sand, poorly sorted, angular, sub spherical, cements/strengths: calcareous / weak, accessories: glauconite 3%, lithic 5%, pyrite tr,, calcimetery: 36% calcite, 1% dolomite, porosity: inter granular 5%. SILTSTONE: medium to light grey, soft, sub blocky, calcareous grains: 10% clay clastic grains: 10% clay, 50% silt, 20% very fine sand, 10% fine sand, cements/strengths: calcareous / weak, accessories: calcareous10%, glauconite 3%, siderite tr. CLAYSTONE: calcareous, off white - light grey, very soft, dispersive, calcareous grains: 30% clay clastic grains: 50% clay, 10% silt, 10% very fine sand.						
Gas 1415 – 1455m			**Units :**	20	**Composition (ppm)**	2502 C1	292 C2	146 C3	60 C4	23 C5
Show Details			No Shows							

Interval	**ROP**	**Lithology Description**

1455m - 1525		(avg) 6.5 – 43 (17)	**Siltstone and Claystone trace Sandstone** SILTSTONE: light - medium grey, very soft, sub blocky, calcareous grains: 15% clay, 5% silt clastic grains: 10% clay, 50% silt, 20% very fine sand, cements/strengths: calcareous / weak, accessories: lithic 3%, siderite tr. CLAYSTONE: light grey - olive green, very soft, dispersive, calcareous grains: 15% clay clastic grains: 50% clay, 30% silt, 5% very fine sand, accessories, silty 10%, glauconite tr%,, calcimetery: 14% calcite, 1% dolomite. SANDSTONE: off white / light brown, loose-soft aggregates, sub blocky, Calcareous grains, 10% clay, clastic grains: 50% clay, 30% silt, 10% very fine sand, well sorted, sub angular, sub spherical, cements/strengths: calcareous/weak, argillaceous /weak, accessories: silty 25%, sandy 10%, kaolinite 50%, porosity: inter granular, 3%.							
Gas 1455 – 1525m		**Units :**	24	**Composition (ppm)**	3082 C1	361 C2	181 C3	67 C4	22 C5	
Gas Peak 1501m		**Units :**	57	**Composition (ppm)**	7583 C1	924 C2	493 C3	204 C4	66 C5	
Show Details		No Shows								

Interval			**ROP (avg)**	**Lithology Description** **Sandstone and Siltstone**						
1525m	-	1537m	9.6 – 37 (20)	SANDSTONE: off white - light brown, loose - soft, sub blocky, calcareous grains: 10% clay clastic grains: 40% clay, 10% silt, 40% very fine sand, well sorted, sub angular, sub spherical, cements/strengths: calcareous/weak, argillaceous/weak, kaolinite 40%, porosity: inter granular 3% SILTSTONE: brownish grey, very soft, dispersive, calcareous grains: 10% clay clastic grains: 50% clay, 40% silt, cements/strengths: calcareous/weak, accessories: calc 10%						
Gas 1525 – 1537m			**Units :**	40	**Composition (ppm)**	4066 C1	484 C2	253 C3	101 C4	36 C5	
Gas Peak 1526m			**Units :**	48	**Composition (ppm)**	5985 C1	763 C2	439 C3	193 C4	67 C5	
Show Details			No Shows								

Interval (m)			**ROP (avg)**	**Lithology Description** **Siltstone and minor Sandstone**							
1537	-	1721.5	2 – 37 (9.4)	SILTSTONE: brownish grey, very soft, dispersive, calcareous grains: 10% clay clastic grains: 50% clay, 40% silt, accessories: calcareous 5% SANDSTONE: off white - light brown, loose - soft, sub blocky, calcareous grains: 10% clay clastic grains: 40% clay, 10% silt, 40% very fine sand, well sorted, sub angular, sub spherical, cements/strengths: calcareous/weak, argillaceous/weak, accessories: calcareous 5%, silty 10%, kaolinite 10%, porosity: inter granular 3%							
Gas			**Units :**	18.4	**Composition (ppm)**	2168 C1	268 C2	158 C3	73 C4	30 C5	
Show Details			No Shows								

Interval (m)			ROP (avg)	Lithology Description (Demons Bluff Formation 1721.5m MD -1659 mTVDSS) Siltstone, Sandstone, Claystone and minor Dolomite
1721.5	-	1752	10.5 – 33 (20.5)	SILTSTONE: predominantly medium grey, firm, sub blocky, calcareous grains: 5% clay, clastic grains: 20% clay, 60% silt, 15% very fine sand, accessories: calc 5%, calcimetery: 12% calcite, 6% dolomite. SANDSTONE: medium to light brown and dark grey coloured clasts, firm, sub blocky, clastic grains: 5% clay, 15% silt, 50% very fine sand, 30% fine sand, moderately sorted, sub angular, sub equant, silicious cement with moderate strength, accessories: calc 5% porosity: inter granular, 5%. CLAYSTONE: silty, light grey coloured, very soft, dispersive, calcareous grains: 5% clay clastic grains: 60% clay, 30% silt, 5% very fine sand, accessories: argillaceous debris 5%. Minor DOLOMITE: medium brown, firm to moderately hard, angular, sharp fragments.

Gas	Units :	46	Composition (ppm)	5420 C1	736 C2	364 C3	161 C4	75 C5	-
Show Details	No Shows								

Interval			ROP (avg)	Lithology Description Massive Siltstone trace Sandstone
1752m	-	1870m	9.5– 31 (22)	SILTSTONE: dark grey /brown, soft - firm, sub blocky, clastic grains: 30% clay, 50% silt, 5% very fine sand, 10% fine sand, accessories: sandy 5%, mica tr, carbonaceous tr. SANDSTONE: brown / grey, soft, sub blocky to blocky, clay clastic grains: 30% clay, 40% silt, 30% very fine sand, well sorted, sub angular, slightly elongate, cements/strengths: calcareous /weak, siliceous / weak, porosity: inter granular trace.

Gas	Units :	53	Composition (ppm)	7396 C1	998 C2	341 C3	88 C4	24 C5	
Show Details	No Shows								

Interval (m)			ROP (avg)	Lithology Description Siltstone
1870	-	1880	16 – 33 (26)	SILTSTONE: dark grey /brown, medium, soft - firm, sub blocky, clastic grains: 30% clay, 50% silt, 20% very fine sand, accessories: arenaceous 20%, micro mica tr, carbonaceous grains tr,

Gas	Units :	60	Composition (ppm)	8711 C1	1175 C2	421 C3	42 C4	69 C5	
Show Details	No Shows								

Interval (m)			ROP (avg)	Lithology Description Sandstone and Siltstone (Eastern View Coal Measures 1879.5m MD 1801m TVDSS)
1880	-	1914	9.6 – 49 (29)	SANDSTONE: medium brown, very soft, sub blocky, clastic grains: 30% clay, 30% silt, 40% very fine sand, well sorted, sub rounded, sub spherical, cements /strengths: argillaceous / weak, accessories: carbonaceous grains tr porosity: inter granular trace. SILTSTONE: brownish / grey, black / grey, very soft, sub blocky, calcareous grains trace clay, clastic grains: 20% clay, 40% silt, 30% very fine sand, accessories: arenaceous, pyrite tr, carbonaceous grains and micro laminae tr.

Gas	Units :	173	Composition (ppm)	18387 C1	3318 C2	2237 C3	423 C4	656 C5	-
Show Details	1908m – 1914m Trace fluorescence, very dull, pinpoint, dark yellow, no direct cut, no crush cut and no residue ring. (Top EVCM TEV4 sand @ 1908 mMD -1827 mTVDSS)								

Interval			ROP (avg)	Lithology Description Very fine grained Sandstone and Siltstone
1914m	-	1938m	13– 46 (37)	SANDSTONE: off white light green, very soft, sub blocky, clastic grains: 30% clay, 70% very fine sand, well sorted, sub rounded, sub elongate, cements/strengths: argillaceous / weak, siliceous / weak, accessories: glauconite 3% porosity: inter granular, tr. SILTSTONE: brownish / grey, black / grey, very soft, sub blocky, clastic grains: 20% clay, 40% silt, 30% very fine sand, accessories: arenaceous 10%, pyrite tr, carbonaceous specks tr.

Gas	Units :	79	Composition (ppm)	6629 C1	1291 C2	1086 C3	231 C4	389 C5	
Show Details	No Shows								

Interval			ROP (avg)	Lithology Description Fine to medium grained Sandstone and Siltstone
1938m	-	1968m	11– 43 (33)	SANDSTONE: off white light brown grey /brown, soft - friable, sub blocky clastic grains: 30% clay, 30% fine sand, 40% medium sand, moderately sorted, sub rounded, sub elongate, cements/strengths: argillaceous/weak, siliceous/weak, pyrite/strong, accessories: pyrite tr porosity: inter granular 3%. SILTSTONE: brown grey, soft - friable, sub fissile, clastic grains: 10% clay, 70% silt, tr very fine sand, accessories: mica tr, carbonaceous grains tr.

Gas	Units :	40	Composition (ppm)	2332 C1	474 C2	477 C3	129 C4	233 C5	
Show Details	No Shows								

Interval			ROP (avg)	Lithology Description
				Sandstone (fine and very coarse), Siltstone occasional Coal
1968m	-	2022m	16 – 71 (38)	SANDSTONE: off white, clear translucent, loose - soft, sub blocky, clastic grains: 30% clay, 10% medium sand, 40% coarse sand, 20% very coarse sand, poorly sorted, sub angular, sub spherical, siliceous/weak, accessories: kaolinite 25% porosity: inter granular 20%. SANDSTONE: white, off white, soft, sub blocky, clastic grains: 30% clay, 70% fine sand, well sorted, rounded, sub spherical, argillaceous/weak, accessories: kaolinite 25% porosity: inter granular 5%. SILTSTONE: medium brown, black/brown, soft - friable, sub fissile, clastic grains: tr clay, 70% silt, 30% very fine sand, accessories: mica tr, carbonaceous grains and laminae tr. COAL: black coloured, firm, brittle, blocky, vitreous to sub vitreous.

Gas	Units :	19.4	Composition (ppm)	873 C1	145 C2	153 C3	52 C4	96 C5	
Show Details	No Shows								

Interval			ROP (avg)	Lithology Description
				Sandstone (fine and very coarse), Siltstone occasional Coal
2022m	-	2069m	11 – 48 (33)	SANDSTONE: off white, clear translucent, loose - soft, sub blocky, clastic grains: 30% clay, 10% medium sand, 40% coarse sand, 20% very coarse sand, poorly sorted, sub angular, sub spherical, siliceous/weak, accessories: kaolinite 25% porosity: inter granular 20%. SANDSTONE: white, off white, soft, sub blocky, clastic grains: 30% clay, 70% fine sand, well sorted, rounded, sub spherical, argillaceous/weak, accessories: kaolinite 25% porosity: inter granular 5%. SILTSTONE: medium brown, black/brown, soft-friable, sub fissile, clastic grains: tr clay, 70% silt, 30% very fine sand, accessories: mica tr, carbonaceous grains and laminae tr. COAL: black coloured, firm, brittle, blocky, vitreous to sub vitreous.

Gas	Units :	5.7	Composition (ppm)	257 C1	30 C2	24 C3	9 C4	14 C5	
Show Details	No Shows								

Interval			ROP (avg)	Lithology Description
				Interbedded Sandstone, Siltstone and Coal
2069m	-	2136m	10– 47 (29)	SANDSTONE: clear - off white, loose - soft, sub blocky, clastic grains: 20% clay, 40% very fine sand, 30% fine sand, 10% coarse sand, moderately sorted, sub angular, sub elongate, cements/strengths: argillaceous/weak, siliceous/tr, accessories: kaolinite 15%, carbonaceous grains tr porosity: inter granular 10%. SILTSTONE: white - brown, very soft, dispersive, clastic grains: 50% clay, 40% silt, 10% very fine sand, accessories: calc tr, kaolinite 25 %. COAL: black, sub vitreous to vitreous, sub conchoidal to hackly fracture, friable – firm, blocky, accessories: argillaceous tr.

Gas	Units :	14	Composition (ppm)	994 C1	141 C2	139 C3	35 C4	42 C5	
Show Details	No Shows								

Interval			ROP (avg)	Lithology Description Interbedded Sandstone and Siltstone occasionally grading to Claystone and Coal						
2136m	-	2322m	13– 45 (25)	SANDSTONE: clear - translucent, loose, massive, clastic grains: 5% silt, 15% very fine sand, 30% fine sand, 20% medium sand, 20% coarse sand, 5% very coarse sand, very poorly sorted, sub angular, sub spherical, cements/strengths: argillaceous/tr, accessories: fossils tr, carbonaceous grains tr porosity: inter granular 20%. SILTSTONE: off white - light brown, very soft, dispersive, clastic grains: 40% clay, 40% silt, 15% very fine sand, 5% fine sand, accessories: sandy 20%, carbonaceous grains and carbonaceous laminae 5%. CLAYSTONE: light grey, moderately hard, blocky, calc grains: 30% clay, 10% silt clastic grains: 40% clay, 20% silt, accessories: calc 25%. COAL: black, sub vitreous to vitreous, sub conchoidal to hackly fracture, friable – firm, blocky, accessories: argillaceous tr.						
Gas			**Units :**	32	**Composition (ppm)**	3733 C1	346 C2	141 C3	63 C4	14 C5	
Gas peaks in Coal 2318m			**Units :**	158	**Composition (ppm)**	27266 C1	1904 C2	522 C3	153 C4	22 C5	
Show Details			No Shows								

Interval			ROP (avg)	Lithology Description Interbedded Sandstone and Siltstone and Coal						
2322m	-	2363m	14– 41 (23)	SANDSTONE: off white - clear, translucent, loose - soft, dispersive, clastic grains: 40% clay, 30% very fine sand, 20% fine sand, 10% medium sand, moderately sorted, sub angular, sub spherical, cements/strengths: argillaceous / weak, accessories: kaolinite 20% porosity: inter granular 3%. SILTSTONE: light brown / speckled black, firm, sub blocky, clastic grains: 90% silt, 10% very fine sand, accessories: argillaceous tr, carbonaceous grains and laminae 15% COAL: black, firm, brittle, blocky, sub conchoidal to hackly fracture, accessories: argillaceous tr, silty tr						
Gas			**Units :**	22	**Composition (ppm)**	2279 C1	212 C2	116 C3	60 C4	21 C5	
Gas Peak in Coal 2375m			**Units :**	125	**Composition (ppm)**	22018 C1	1420 C2	359 C3	117 C4	20 C5	
Gas Peak in Coal 2406m			**Units :**	109	**Composition (ppm)**	22464 C1	1181 C2	317 C3	104 C4	16 C5	
Show Details			No Shows								

Interval (m)	ROP (avg)	Lithology Description Interbedded Sandstone and Siltstone and Coal

2363	-	2385	8.8 – 19 (14.5)	SANDSTONE: off white - light brown, loose – soft aggregates, clastic grains: 40% clay, 40% very fine sand, 10% fine sand, well sorted, rounded, sub spherical, cements/strengths: argillaceous/weak, accessories: kaolinite 20% porosity: inter granular 3%. SILTSTONE: light brown / speckled black, firm, sub blocky to sub fissile, clastic grains: 80% silt, 10% very fine sand, 10% fine sand, accessories: argillaceous tr, carbonaceous grains and laminae 15 %. COAL: black, sub vitreous to vitreous, firm, blocky, accessories: argillaceous tr, silty tr.							
Gas			**Units :**	40.1	**Composition (ppm)**	6584 C1	475 C2	150 C3	44 C4	10 C5	
Show Details			No Shows								

Interval (m)			**ROP (avg)**	**Lithology Description** **Sandstone and Siltstone Coal and minor Claystone**							
2385	-	2451	5.5 – 31 (15)	SANDSTONE: off white - light brown, loose - soft, clastic grains: 40% clay, 50% very fine sand, tr fine sand, well sorted, rounded, sub spherical, cements/strengths: argillaceous weak, accessories: kaolinite 20% porosity: inter granular 3%. SILTSTONE: medium brownish / black, soft - firm, sub fissile, clastic grains: tr clay, 80% silt, 20% very fine sand, accessories: sandy 20%, carbonaceous grains and laminae 15%, micro mica tr. COAL: black, sub vitreous to vitreous, firm, blocky, accessories: argillaceous tr, silty tr. CLAYSTONE: olive grey, firm, sub blocky to splintery, calc grains: 20% clay clastic grains: 80% clay, accessories: calc 20% homogenous in form.							
Gas			**Units :**	32.1	**Composition (ppm)**	6111 C1	388 C2	144 C3	48 C4	11 C5	-
Show Details			No Shows								

Interval			**ROP (avg)**	**Lithology Description** **Fine grained Sandstone, Siltstone and Claystone**							
2451m	-	2497m	1.6– 42 (18.5)	SANDSTONE, clear to translucent, off white, loose, massive, clastic grains: 10% silt, 20% very fine sand, 40% fine sand, 30% medium sand, well sorted, sub round, sub spherical, weak kaolinite cement, occasionally developing to matrix supported, accessories: argillaceous debris 5%, porosity: inter granular, 15%. CLAYSTONE, light grey coloured, moderately hard, blocky, calcareous grains: 10% clay, clastic grains: 70% clay, 20% silt, accessories: calcareous material 5%, argillaceous debris 3%. SILTSTONE, medium brown to dark grey, firm, blocky, clastic grains: 10% clay, 70% silt, 10% very fine sand, accessories: argillaceous debris 10% and trace carbonaceous material.							
Gas			**Units :**	42.9	**Composition (ppm)**	8271 C1	445 C2	176 C3	51 C4	12 C5	
Gas Peak in coal			**Units :**	184	**Composition (ppm)**	38360 C1	1882 C2	637 C3	223 C4	35 C5	
Show Details			No Shows								

Interval	**ROP**	**Lithology Description**

2497m	-	2602m	(avg) 5.5 – 53 (21)	**Interbedded Sandstone, Siltstone and Coal** COAL, black to dark brown, friable to firm, blocky, accessories: trace argillaceous material. (**COAL MARKER** @ 2516.5m MD, -2381 m TVDSS) SILTSTONE, dark brown to grey, firm to moderately hard, blocky, clastic grains: 15% clay, 70% silt, 15% very fine sand, accessories: argillaceous material 10%, trace calcareous material, carbonaceous matter 5%. SANDSTONE, off white to light brown, very soft, sub blocky, clastic grains: 30% clay, 10% silt, 60% very fine sand, tr fine sand, well sorted, sub angular, sub spherical, weak argillaceous cement, accessories: argillaceous material 20% porosity: inter-granular 3%.							
Gas			**Units :**	32	**Composition (ppm)**	5522 C1	471 C2	282 C3	127 C4	36 C5	
Gas Peak in coal			**Units:**	354	**Composition (ppm)**	71453	4799	1420	356	70	
Show Details			No Shows								

Interval 2602m	-	2614m	**ROP (avg)** 23– 37 (20)	**Lithology Description** **Sandstone and Siltstone** SANDSTONE: off white - light brown friable aggregates, clear to translucent loose grains, clastic grains: 20% clay, 20% fine sand, 60% medium sand, moderately sorted, sub angular – sub rounded, sub elongate, cements/strengths: argillaceous / weak, calcareous / weak, accessories: kaolinite matrix 10% porosity: inter granular 15%. SILTSTONE: medium-dark brownish / grey, firm, blocky, arenaceous to argillaceous, clastic grains: 10% clay, 80% silt, 10% very fine sand, accessories: carbonaceous grains 5 %, calcareous tr.							
Gas			**Units :**	364	**Composition (ppm)**	48779 C1	6734 C2	4982 C3	2446 C4	927 C5	
Show Details			2602m – 2614m Fluorescence in Sandstone 70%, bright, even, light green, no direct cut, very slow bleeding crush cut, bright, light green patchy residue ring. Gas 364units over a background of 117units, see above for gas composition.								

Interval (m) 2614	-	2630	**ROP (avg)** 8.2 – 38 (13.5)	**Lithology Description** **Siltstone and Kaolinitic Sandstone, with minor Claystone** SILTSTONE, medium brown to dark grey, soft, sub blocky, clastic grains: 15% clay, 70% silt, 15% very fine sand, accessories: carbonaceous material 5% and coal 5%. SANDSTONE, kaolinitic, off white to cream, very soft, dispersive, clastic grains: 50% clay, 5% silt, 40% very fine sand, 5% fine sand, well sorted, sub angular, sub spherical, weak argillaceous cement, accessories: kaolinite 30% CLAYSTONE, light grey to blue grey, firm, blocky, calc grains: 15% clay, clastic grains: 70% clay, 15% silt, accessories: trace argillaceous material, calcareous 15%.							
Gas			**Units :**	60	**Composition (ppm)**	8639 C1	869 C2	798 C3	402 C4	176 C5	-
Show Details			2614-2630, In sandstone aggregates low in kaolinite matrix, 50% fluorescence, bright yellow, moderately fast, even crush cut, bright green, bleeding direct cut and a thin pale green residue.								

Interval (m)			ROP (avg)	Lithology Description Massive Siltstone							
2630	-	2657	20 – 39 (27)	SILTSTONE: medium to dark grey, moderately hard, blocky, accessories: trace argillaceous material and trace pyrite.							
Gas			**Units :**	61	**Composition (ppm)**	8681 C1	875 C2	803 C3	420 C4	185 C5	-
Show Details											

Interval (m)			ROP (avg)	Lithology Description Siltstone, Sandstone and Coal							
2657	-	2670	15.5 – 37 (26)	SILTSTONE: dark grey greyish / black, firm, sub blocky to platy, clastic grains: trace clay, tr very fine sand, accessories: argillaceous tr, micro mica tr. SANDSTONE: off white, white / light brown, very soft, sub blocky, clastic grains: 80% very fine sand, 20% fine sand, well sorted, sub rounded, sub spherical, cements/strengths: siliceous / wk, argillaceous / weak, accessories: kaolinite matrix 20 % porosity: inter granular 3%. 2652m – 2658m Trace residual fluorescence. COAL: black, firm brittle, blocky, rare sub conchoidal to common hackly fracture, tr clay, tr silty.							
Gas			**Units :**	50	**Composition (ppm)**	8667 C1	664 C2	442 C3	127 C4	53 C5	-
Gas Pk 2657 coal				121		21951	1459	917	350	133	
Gas Pk 2663 coal				139		27851	1564	746	221	79	
Show Details			Sandstone 2652m – 2658m Trace Fluorescence: dull yellow, no direct cut, no crush cut, trace broken pale cream residue ring.								

Interval (m)			ROP (avg)	Lithology Description Massive Siltstone and Coal near base							
2670	-	2712	5.1 – 34 (28)	SILTSTONE: dark grey greyish / black, firm, sub blocky to sub fissile, clastic grains: trace clay, 95% silt, 5% very fine sand, accessories: argillaceous tr, micro mica tr COAL: black, dull to sub vitreous, firm, blocky and brittle, sub conchoidal to hackly fracture, tr silt.							
Gas			**Units :**	33	**Composition (ppm)**	4726 C1	472 C2	313 C3	83 C4	43 C5	-
Show Details			No shows								

Interval (m)			ROP (avg)	Lithology Description Slightly metamorphosed Siltstone above Igneous Intrusive							
2712	-	2719	14.5 – 34 (23)	SILTSTONE: (1) grey / black, sub vitreous, firm – moderately hard, blocky, clastic grains: 100% silt, cements/strengths: pyrite / strong, accessories: vitreous carbonaceous 20%, pyrite tr. SILTSTONE: (2) dark grey greyish / black, firm, sub fissile, clastic grains: tr clay, 95% silt, 5% very fine sand, accessories: argillaceous tr, micro mica tr.							
Gas			**Units :**	5	**Composition (ppm)**	486 C1	52 C2	22 C3	7 C4	4 C5	-
Show Details											

Interval (m)			ROP (avg)	Lithology Description (Igneous Intrusive 2719 mMD -2565.5 mTVDSS)							
2719	-	2767	7.5 – 33 (14)	IGNEOUS INTRUSIVE: (granodiorite) mottled white green, speckled black, soft to firm occasionally hard, medium to coarse crystal size, common quartz, biotite, plagioclase, black to green pyroxene, calcareous, commonly altered to clay with a chlorotic ground mass.							
Gas			**Units :**	11	**Composition (ppm)**	1131 C1	182 C2	128 C3	9 C4	5 C5	-
Show Details			No shows								

Interval (m)			ROP (avg)	Lithology Description Massive Siltstone trace Dolomite							
2767	-	2860	6 – 39 (21)	SILTSTONE: medium - dark grey, brownish grey, friable - firm, sub fissile, clastic grains: 25% clay, 70% silt, 5% very fine sand, accessories: dolomite in part tr, micro mica tr, pyrite tr. DOLOMITE: (trace) light brown / tan coloured, firm – moderately hard, blocky, 5% clay.							
Gas			**Units :**	5	**Composition (ppm)**	480 C1	58 C2	56 C3	28 C4	14 C5	-
Show Details			No shows								

Interval (m)			ROP (avg)	Lithology Description (2718 Sand 2860 mMD -2694 mTVDSS)							
2860	-	2866	13.5 – 32 (24)	SANDSTONE: (30%), light greyish yellow, soft - firm, sub blocky, clastic grains: 10% clay, 10% silt, 50% very fine sand, 30% fine sand, moderately sorted, sub angular, sub elongate to sub spherical, cements/strengths: siliceous / weak, argillaceous / weak, accessories: argillaceous matrix 10 - 20%, porosity: inter granular 3%. Fluorescence see below. SILTSTONE: (70%) medium - dark grey brownish grey, friable - firm, sub fissile clastic grains: 20% clay, 75% silt, 5% very fine sand, accessories: micro mica tr, fine pyrite tr.							
Gas			**Units :**	9	**Composition (ppm)**	891 C1	100 C2	79 C3	66 C4	17 C5	-
Show Details			Fluorescence: trace: trace dim yellow, trace to very slow direct and crush cut, dim cream broken film residue ring.								

Interval (m)			ROP (avg)	Lithology Description Siltstone and minor Sandstone							
2866	-	2883	18 – 37 (17.5)	SILTSTONE: (90%) medium - dark grey, brown / grey, soft - friable, sub fissile clastic grains: 30% clay, 65% silt, 5% very fine sand, accessories very fine mica tr. SANDSTONE: (10%) light greyish yellow, soft - friable, sub blocky, clastic grains: 10% clay, 10% silt, 40% very fine sand, 40% fine sand, moderately sorted, sub angular, sub elongate, cements/strengths: siliceous / weak, argillaceous / weak, accessories: common argillaceous and silty matrix, porosity: inter granular 3%.							
Gas			**Units :**	11.5	**Composition (ppm)**	1544 C1	151 C2	101 C3	51 C4	27 C5	-
Show Details			Fluorescence: trace: trace dim yellow, trace to very slow direct and crush cut, dim cream broken film residue ring.								

Interval (m)			ROP (avg)	Lithology Description							
2883	-	2892	17 – 118 (47)	SANDSTONE: clear - translucent, light brown surface stain, loose to very rare small aggregates (2-4 grains) clastic grains: 20% medium sand, 40% coarse sand, 40% very coarse sand, poorly sorted, very angular, common fractured grains, very elongate, quartz overgrowths, cements/strengths: occasional strong siliceous cement, porosity: inter granular 20%. SILTSTONE: medium - dark grey, brown / grey, very soft - friable, sub fissile to sub blocky, clastic grains: 30% clay, 65% silt, 5% very fine sand, accessories fine mica tr.							
Gas			**Units :**	15	**Composition (ppm)**	1787 C1	181 C2	97 C3	39 C4	19 C5	-
Max gas recorded At 2888m				359	**From Aux gas detector**	45084	4011	1658	553	146	
Show Details			No fluorescence. Minor gas show (see above).								

Interval (m)			ROP (avg)	Lithology Description
				Core (1) : 2755 Sand 2899 mMD (-2729 mTVDSS) **2892m – 2919m** **Cut 27m recovered 27m**
2892	-	2893		SILTSTONE; dark brown – black / grey, moderately hard - hard, clastic grains: 20% clay, 70% silt, 10% very fine sand, accessories: mica tr%.
2893	-	2894		COAL: black, vitreous, firm, blocky, hackly occasional sub conchoidal fracture, clastic grains: 30% clay, 10% silt.
2894	-	2895		SILTSTONE: dark to medium brown, hard, clastic grains: 10% clay, 50% silt, 40% very fine sand, accessories: argillaceous 15%, carbonaceous tr.
2895	-	2900.8		SANDSTONE: pale cream - light brown, moderately hard, clastic grains: 20% silt, 40% very fine sand, 40% fine sand, mod sorted, sub angular, sub spherical, cements/strengths: argillaceous / moderately strong, accessories: silty 15%, porosity: inter granular 5 - 15%: Hydrocarbon Fluorescence 5 – 40% moderately bright green, no direct cut, no crush cut, bright cream broken film residue.
2900.8	-	2905.8		SANDSTONE: clear, translucent light brown, firm - friable, clastic grains: 30% fine sand, 40% medium sand, 30% coarse sand, poorly sorted, sub angular, sub spherical, cements/strengths: argillaceous / trace, porosity: inter granular 20%. Hydrocarbon Fluorescence 10 – 50% dull to moderately bright green, very slow to no direct cut, very slow to no crush cut, dull to bright cream broken film residue ring.
2905.8	-	2907.8		SANDSTONE: light brown, firm – moderately hard, clastic grains: 30% silt, 40% very fine sand, 30% fine sand, tr medium sand, moderately sorted, sub angular, sub spherical, cements/strengths: argillaceous / weak, porosity: inter granular 15%: Hydrocarbon Fluorescence; 50 – 90% moderately bright to bright green, very slow direct cut, very slow crush cut, bright cream broken film residue ring.
2907.8	-	2911		SANDSTONE: medium - light brown, firm – moderately hard, clastic grains: 30% silt, 70% very fine sand, tr fine sand, well sorted, sub angular, sub spherical, cement/strengths: argillaceous / moderately hard, porosity: inter granular 10%. Hydrocarbon Fluorescence: trace.
2911	-	2919.5		SILTSTONE: dark grey to grey black, firm – moderately hard, sub fissile, clastic grains: 10% clay, 90% silt, accessories: mica tr, occasionally very carbonaceous and gradational to CARBONACEOUS SILTSTONE.

Gas 2892 – 2909	**Units :**	390	**Composition (ppm)**	74579 C1	6491 C2	2767 C3	1121 C4	392 C5	-
Gas 2909 – 2919		60		9294	947	490	214	87	
Show Details	Hydrocarbon Fluorescence associated with most sandstone, see above.								

Interval (m)			ROP (avg)	Lithology Description Siltstone, Claystone with minor Sandstone at the top of the section								
2919	-	2940	4.1 – 29 (14)	SILTSTONE: medium brownish grey to dark grey, firm to moderately hard, blocky to occasionally sub fissile, clastic grains: clay 30%, silt 60% very fine sand 10%, trace pyrite and micro mica, carbonaceous to very carbonaceous in part. CLAYSTONE: light grey to medium greyish brown, soft, amorphous and dispersive, clastic grains: clay 70%, silt 20%, very fine sand 10%, slightly calcareous. SANDSTONE: light to medium brown, firm to moderately hard, blocky, clastic grains: very fine sand 70%, fine sand 30%, medium sand trace, coarse sand trace, moderately to moderately well sorted, sub angular, sub spherical to sub elongate, moderately strong argillaceous cement, porosity inter granular 10%, no fluorescence.								
Gas average			**Units :**	4	**Composition (ppm)**	491 C1	54 C2	31 C3	10 C4	45 C5	-	
Show Details			No Hydrocarbon Shows									

Interval (m)			ROP (avg)	Lithology Description Siltstone and Sandstone with minor Claystone at the base of the section								
2940	-	2958	19 – 41 (27)	SILTSTONE: medium grey to dark brown, firm to moderately hard, sub blocky, clastic grains: clay 30%, silt 50% very fine sand 15%, fine sand 5%, trace pyrite and micro mica, trace carbonaceous. SANDSTONE: light brown – clear to translucent, loose to small friable aggregates, clastic grains: clay 10%, silt 40%, very fine sand 20%, medium sand 20%, coarse sand 10%, poorly sorted, sub angular, sub elongate, weak argillaceous cement, porosity inter granular 5 -10%, no fluorescence. CLAYSTONE: light to medium grey, soft - dispersive, clastic grains: clay 70%, silt 15%, very fine sand 5%, slightly calcareous.								
Gas average			**Units :**	12	**Composition (ppm)**	1860 C1	180 C2	99 C3	41 C4	18 C5	-	
Peak at 2946m				30		5197	501	273	104	43		
Show Details			No Hydrocarbon Shows									

Interval (m)			ROP (avg)	Lithology Description **Core (2) 2958m – 2985m : Top 2809 SAND – 2959 mMD (-2785.5 mTVDSS)** **Cut 27m** **Recovered 27.4m (100%)**
2958	-	2963	9 – 53 (35)	**Core Summary** SANDSTONE: light to medium brown, firm to moderately hard, Clastic grains: silt 20%, very fine sand 30%, fine sand 40%, medium sand 20% coarse sand trace, poorly sorted, sub angular, sub spherical, moderate to strong argillaceous cement, porosity inter granular 10 – 15%. Fluorescence trace to nil, dull green, patchy, no direct cut, very slow to trace crush cut, dull white cream residue ring.
2964	-	2967.5	36 – 65 (52)	SANDSTONE: light to medium brown, occasionally dark brown, moderately hard, Clastic grains: silt trace, very fine sand 5%, fine sand 10%, medium sand 30%, coarse sand 30%, very coarse sand 20%, granular sand trace, very poorly sorted, sub angular, sub elongate, moderately strong siliceous cement, porosity inter granular 15 – 20%. Fluorescence trace to nil, dull green, patchy, no direct cut, very slow to trace crush cut, dull white cream residue ring.
2968.5	-	2977.8	16 – 63 (47)	SANDSTONE: light brownish grey to medium grey, firm, clastic grains; clay matrix 10%, very fine sand 10%, fine sand 70%, medium sand 10%, moderately sorted, rounded, weak argillaceous cement, moderately strong siliceous cement, occasional carbonaceous grains, porosity inter granular 10%. Fluorescence trace, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.
2978.8	-	2985.4	16 – 61 (38)	SANDSTONE: (Becoming finer with depth) light brownish grey, firm, clastic grains; clay matrix 20%, silt 30%, very fine sand 40%, fine sand 10%, well sorted, rounded, sub spherical, moderate strong argillaceous cement. Porosity intergranular 10% decreasing to 3% with depth. Fluorescence trace down to 2981m, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.

Gas average 2958m – 2985m	Units :	446	Composition (ppm)	76806 C1	7681 C2	3451 C3	1377 C4	456 C5	-
Show Details	Gas show occurred throughout the cored section from 2958m – 2985m. Fluorescence was present intermittently from 2958m to 2981m see descriptions above.								

Interval (m)			ROP (avg)	Lithology Description **Siltstone with minor Sandstone**
2985	-	3000	3.5 – 19 (17)	SILTSTONE: medium brown / grey, soft - firm, sub blocky, clastic grains: 20% clay, 75% very fine sand, 5% fine sand, accessories: carbonaceous grains tr. SANDSTONE: clear - translucent, loose - soft, sub blocky, clastic grains: 10% clay, 40% fine sand, 50% medium sand, tr coarse sand, poorly sorted, sub angular - angular, sub elongate, cements/strengths: argillaceous / weak, porosity: inter granular 10%.

Gas average	Units :	15	Composition (ppm)	1872 C1	188 C2	110 C3	64 C4	39 C5	-
Show Details	No Hydrocarbon shows								

Interval (m)			ROP (avg)	Lithology Description Sandstone and minor siltstone							
3000		3021	11 -37 (18)	SANDSTONE: white, clear - translucent, loose – soft, clastic grains: 20% fine sand, 40% medium sand, 30% coarse sand, 10% very coarse sand, poorly sorted, angular, elongate, cements/strengths: siliceous / weak, porosity: inter granular 20%. SILTSTONE: medium brown / grey, soft - firm, sub blocky, clastic grains: 20% clay, 75% very fine sand, 5% fine sand, accessories: carbonaceous tr.							
Gas average			**Units :**	22	**Composition (ppm)**	3399 C1	263 C2	118 C3	51 C4	27 C5	-
Gas Peak 3003m				94		16643	1421	660	270	98	
Show Details			Gas show with no fluorescence occurred from 3003m – 3006m. see gas peak above.								

Interval (m)			ROP (avg)	Lithology Description Massive Siltstone with minor Claystone, Sandstone occurs only near the top if the section.							
3021	-	3114	8.3 – 41 (21)	SILTSTONE: medium - dark greyish brown, firm, sub fissile, clastic grains: 30% clay, 60% silt, 10% very fine sand, tr fine sand, accessories: carbonaceous tr, mica tr. CLAYSTONE: light grey, soft to dispersive, clastic grains: 50% clay, 30% silt, 20% very fine sand. SANDSTONE: off white, light brown, soft – friable, clastic grains: 30% clay, 30% silt, 30% very fine sand, 10% fine sand, well sorted, sub rounded, sub spherical, cements/strengths: argillaceous / weak, accessories: carbonaceous grains tr, porosity inter granular tr.							
Gas average			**Units :**	8	**Composition (ppm)**	776 C1	85 C2	68 C3	32 C4	18 C5	-
Show Details			No Shows								

Interval (m)			ROP (avg)	Lithology Description Sandstone and Siltstone							
3114	-	3137	6.4 – 42 (16)	SANDSTONE: off white - light brown, moderately hard, sub blocky, clastic grains: 15% clay, 5% silt, 40% very fine sand, 40% fine sand, tr medium sand, well sorted, sub angular, sub spherical, cements/strengths: argillaceous / moderately hard, accessories: argillaceous 15%, carbonaceous tr porosity: inter granular 5%. SILTSTONE: light - med brown, grey, firm – moderately hard, sub fissile, clastic grains: 10% clay, 70% silt, 20% very fine sand, tr fine sand, accessories: carbonaceous tr, mica tr.							
Gas average			**Units :**	30	**Composition (ppm)**	4007 C1	534 C2	403 C3	172 C4	69 C5	-
Peak 3117m				207		30703	3466	2559	1122	421	

Show Details	Gas shows in Sandstones with no fluorescence from 3115m – 3120m. see above for gas peak.

Interval (m)			ROP (avg)	Lithology Description Sandstone and Siltstone **Top 2973 SAND at 3137mMD (-2957 mTVDSS)**						
3137	-	3180	8.8 – 53 (25)	SANDSTONE: (2973 m sand best porosity associated with gas shows) off white - light brown, soft, sub blocky, clastic grains: 10% clay, 20% very fine sand, 30% fine sand, 40% medium sand, moderately sorted, sub angular, sub spherical, cements/strengths: argillaceous / weak, accessories: kaolinite 15% porosity: inter granular 10%. SANDSTONE: (lower porosity sands below 3162m) off white - light brown, firm, sub blocky, clastic grains: 30% clay, 60% very fine sand, 10% fine sand, well sorted, sub angular, sub spherical, cements/strengths: argillaceous / moderately strong, accessories: kaolinite 25 % porosity: inter granular 5%. SILTSTONE: light - medium grey, moderately hard, sub blocky, clastic grains: 20% clay, 50% silt, 30% very fine sand, accessories: carbonaceous tr.						
Gas average			**Units :**	77	**Composition (ppm)**	14253 C1	878 C2	327 C3	141 C4	50 C5	-
Gas peak 3149m				258		50257	3117	1108	486	184	-
Gas Peak 3162m				222		36866	2684	2036	1233	513	-
Show Details			Gas show with no fluorescence, 3139m – 3151m, 3160m – 3164m.								

Interval (m)			ROP (avg)	Lithology Description **Pyroclastic Volcanics, Sandstones, Siltstones**						
3180	-	3192	22 – 41 (30)	VOLCANICS (PYROCLASTIC): off white – very light brown mottled, occasionally pale yellowish brown, firm, blocky, very fine groundmass, rare weathered feldspar and pyroxene, trace indistinct flow structure, commonly weathered to CLAY, trace black translucent OBSIDIAN. SANDSTONE: light brown - light grey, firm, sub blocky, clastic grains: 30% clay, 60% very fine sand, 10% fine sand, well sorted, sub angular, sub spherical, cements/strengths: argillaceous/mod, accessories: kaolinite 25% porosity: inter granular 5%. SILTSTONE: med - dark grey, moderately hard, sub fissile, clastic grains: 30% clay, 40% silt, 30% very fine sand, tr fine sand, accessories: carbonaceous tr.						
Gas average			**Units :**	6	**Composition (ppm)**	880 C1	46 C2	23 C3	13 C4	7 C5	-

Interval (m)			ROP (avg)	Lithology Description **Volcanic pyroclastic grading to Volcanic (ultramafic) with depth**
3192	-	3235	8.8 – 43 (23)	VOLCANICS (PYROCLASTIC): as above VOLCANIC: (ultramafic) dark greenish / black, reddish brown / purplish grey, very common olivine to 70% occasionally weathering to serpentinite, minor pyroxene, occasional red / brown Fe oxide ground mass, common free calcite, rare indistinct flow structure.

Gas average 3192m – 3209m	**Units :**	5	**Composition (ppm)**	592 C1	33 C2	20 C3	14 C4	11 C5	-
Show Details	No hydrocarbon shows.								

GAS REPORT

Background gas was first observed from a depth of 900 mMDRT, where it was present in low concentrations of around 1 to 2 units. Present solely as methane (C1), it remained at this low concentration until around 1280 mMDRT where the gas concentrations increased and good gas shows were present through the volcanics and down into the Eastern View formation where coal gas was observed. Background gas increased from 15 to 50 units and to 100 units at the base of the 12¼" hole where good sand was encountered early, with a maximum gas reading of 372.8 units. Good fluorescence was seen in the base sand and the gas plot showed a good oil zone had been encountered. A wiper trip was performed and upon circulating at 1325 m running in the hole, a trip gas peak of 1726.8 units was encountered. Upon running in to bottom at 2614 m in the 12¼" hole, the maximum gas circulated up peaked at 663.8 units. The $9^5/_8$" casing was set higher at 2586 m to include the sands in the production hole. Minor CO_2 was recorded in this zone where coals were drilled and a maximum of 15% was recorded from 2517 to 2521 m.
Good gas shows while circulating up the sample from Core # 1, peaked at 434 units at 2901 m, and the gas was mainly dry with ratios of Methane to C4 of 89 / 7 / 3 / 1 / Tr (%). Gas was recorded while drilling Core # 2 with a maximum peak at 2971.5 m with a 536 unit, gas peak. The gas recorded in these cored sands showed up as dominantly Methane.

Gas Peaks listed below are from the Reserval gas equipment. An FCP-FGP backup gas system was run as well, the gas ratio plots show the same trends with variation in % of gas recorded. (1% = 50 units = 10000 ppm). The Reserval gas is more analytical of gas readings and picks up more background gases and has a constant mud flow. The Backup GZII degasser has a higher mud flow through it and liberates more gas from the mud to the chamber and during gas zones it tends to saturate with gas and tends to give a lot higher readings from the FCP-FGP. The calibrations were checked during the well and are very accurate with the FCP-FGP calibrated to 99 % Methane. These have been double checked by the wellsite in situ.

Gas Peaks

Depth metres	**Total Gas** Peak / Trip units	**C_1 ppm**	**C_2 ppm**	**C_3 ppm**	**iC_4 ppm**	**nC_4 ppm**	**iC_5 ppm**	**nC_5 ppm**
1277.0	37.6	6423	526	239	47	50	10	16
1317.0	221.5	19513	3819	3061	771	1129	435	504
1501.0	57.7	7583	924	493	77	127	32	34
1599.0	60.6	8910	999	475	66	104	23	25
1607.0	88.7	12986	1491	725	103	162	36	39
1628.0	67.1	9378	1112	535	74	119	28	29
1642.0	76.4	10556	1357	740	112	178	42	45
1660.0	76.3	10357	1289	706	110	173	44	46
1671.0	69.0	8976	1238	711	111	179	45	46
1682.0	90.2	11460	1781	1059	166	271	71	72
1700.0	112.1	14625	1976	1165	191	301	80	82
1715.0	124.8	15253	2323	1436	244	395	118	117
1750.0	62.1	8431	1066	455	67	113	39	38
1803.0	74.5	11422	1232	370	43	59	18	19
1841.0	75.9	11687	1316	386	39	52	12	13
1862.0	84.6	12337	1506	479	48	69	13	15
1890.0	159.3	21884	2934	1373	181	281	57	63
1900.0	264.5	26783	5330	3778	709	1082	320	329
1909.0	281.1	23104	5127	4447	949	1472	480	485
2299.0	81.3	13233	1048	332	70	33	6	12

2318.0	157.9	27266	1904	522	111	42	6	16
2375.0	125.6	22018	1420	359	90	27	5	15
2406.0	109.3	22464	1181	317	80	24	3	13
2417.0	128.9	26587	1430	409	113	34	5	19
2481.0	184.6	38360	1882	637	162	61	8	27
Depth metres	**Total Gas** Peak / Trip units	**C_1 ppm**	**C_2 ppm**	**C_3 ppm**	**iC_4 ppm**	**nC_4 ppm**	**iC_5 ppm**	**nC_5 ppm**
2493.0	167.9	34903	1748	636	148	62	9	29
2567.0	142.4	28167	1715	747	140	109	16	40
2594.0	354.3	71453	4799	1420	166	190	24	46
2604.0	372.8	51137	6804	5004	1051	1409	435	515
2608.0	363.8	48779	6734	4982	1070	1376	416	511
1325.0	1726.8							
2614.0	663.8							
2621.0	87.5	11036	1316	1275	300	494	100	219
2626.0	137.6	17748	2025	1935	469	592	185	229
2657.0	121.1	21951	1459	917	118	232	74	69
2721.0	76.6	15719	1079	312	30	38	14	14
2768.0	8.3	973	96	89	15	25	8	10
2892.0	425							
2901.0	434.6	83647	7087	2938	465	701	207	190
2919.5	49.2							
2946.0	30.4	5197	501	273	41	73	22	21
2958.0	35.4							
2971.5	536.1	93352	9406	4213	652	1041	289	283
2985.0	108							
3003.0	94.6	16643	1421	660	102	168	49	48
3042.0	24.3	3288	341	278	36	78	22	22
3117.0	207.1	30703	3466	2559	427	696	214	206
3149.0	257.7	50257	3117	1108	200	286	98	86
3162.0	222.6	36866	2684	2036	474	759	255	258
3235.0	63.6							

MASTERLOG
YOLLA-4

GENERAL

Country : AUSTRALIA
Permit : T/L1
Field : YOLLA
Basin : BASS BASIN
Well Type : Development
Rig Name : ENSCO 102

POSITION

Latitude : 039 50' 40.592"S
Longitude : 145 49' 06.057"E
UTM Co-ord X : 398,905.07m E
UTM Co-ord Y : 5,588,821.47m N
RT to MSL : 43.0m
RT to Sea Bed : 124m

HOLE / CASING INFO

16" Hole to (mMDRT) : 900m
12 1/4" Hole to (mMDRT) : 2614m
8 1/2" Hole to (mMDRT) : 3235m
20" Conductor @ (mMDRT) : 220m
13 3/8" SHOE @ (mMDRT) : 884.57m
9 5/8" Shoe @ (mMDRT) : 2586.14m

DATE / DEPTH

Spud Date : 18-06-2004
Total Depth Date : 11-07-2004
Total Depth : 3235 mRT
True Vertical Depth : 3097.2mRT
Log Scale : 1/ 500
Final Status : Run 6 5/8"Liner

ENGINEERS

Phil Rady
Mark Smith
Paul Mc Gilveray
Gideon Doczy

ABBREVIATIONS

MW	Mud Weight	WOB	Weight on Bit (klbs)
FV	Funnel Viscosity	RPM	Rotations Per Min
PV	Plastic Viscosity	FLW	Flow Rate (gpm)
YP	Yield Point	SPP	Pump Pressure (psi)
Gel	Gel Strength	RR	Re-Run Bit
WL	Water Loss	TG	Trip Gas
KCl	Potassium Chloride	CG	Connection Gas
Cl	Chlorides	BG	Background Gas
Incl	Inclination	DGP	Drilled Gas Peak
Az	Azimuth	MM	Mud Motor

LITHOLOGY LEGEND

Claystone, Siltstone, Fine SST, Medium SST, Coarse SST, Shale, Marl, Limestone, Dolomite, Chert, Conglomerate, Coal, Bryozoa, Calcareous, Iron Minerals, Corals, Foraminifera, Lithic Fragment, Carb Fragments, Silty, Intrusives, Glauconite, Pyrite, Cement

ENGINEERING LEGEND

Shoe
MDT POINTS:
Bauxite, Deviation surve, Sidewall Core, Mud gain, Core
RFT, FIT, DST, Cement

ROP (m/hr) 100 80 60 40 20 0
WOB (klbs) 50 25 0
MWD Gamma Ray (api) 0 100 200
DEPTH (m) (TVD)
CUTTINGS LITHOLOGY % 0 100
INTERPRETIVE
RESERVAL TG & CHROMATOGRAPH
C1, C2, C3, iC4, nC4, iC5, nC5, TG
Total Gas in ppm
Chromatograph in ppm
1 10 100 1K 10K 100K
CALCIMETRY % 0 100
DIRECT FLUOR good fair poor
LITHOLOGY DESCRIPTIONS and REMARKS

120
130
140
150
160
170

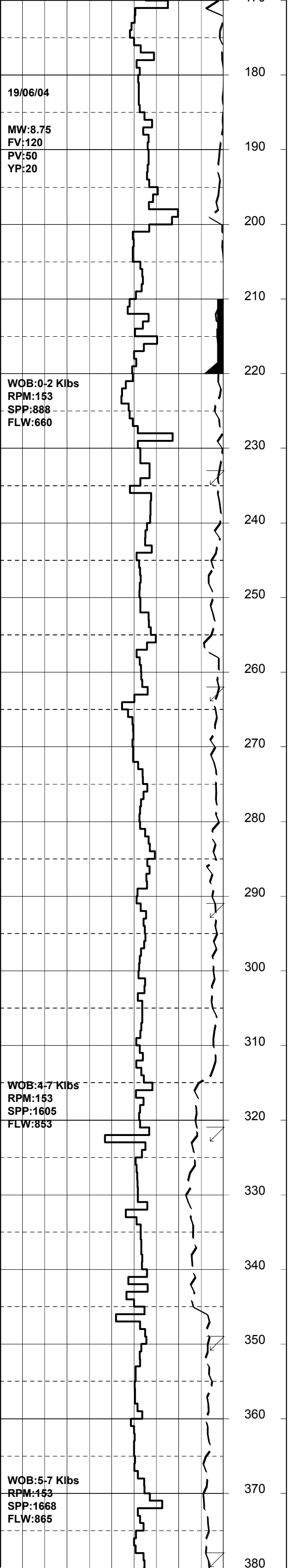
WOB:0-2 Klbs
RPM:152
SPP:1160
FLW:860

No Gas

YOLLA 4 SPUDDED at 21:45 HRS, on the 18th June 2004

Bit #1: 16" 406.4mm
Hughes MX-1 Jets: 3x24
In: 124.8m Out: 900m
Run: 775.2m Hrs: 24.03
Cond: 2-2-BU-A-E-I-NO-TD

Returns to sea level



No Gas

Returns to sea level

20" Conductor set @ 220 m

Survey:234.93mMD(234.9mTVD)
0.36°inc 136.39°az

Survey:263.91mMD(263.9mTVD)
0.28°inc 126.75°az

Survey:292.95mMD(292.9mTVD)
0.17°inc 195.49°az

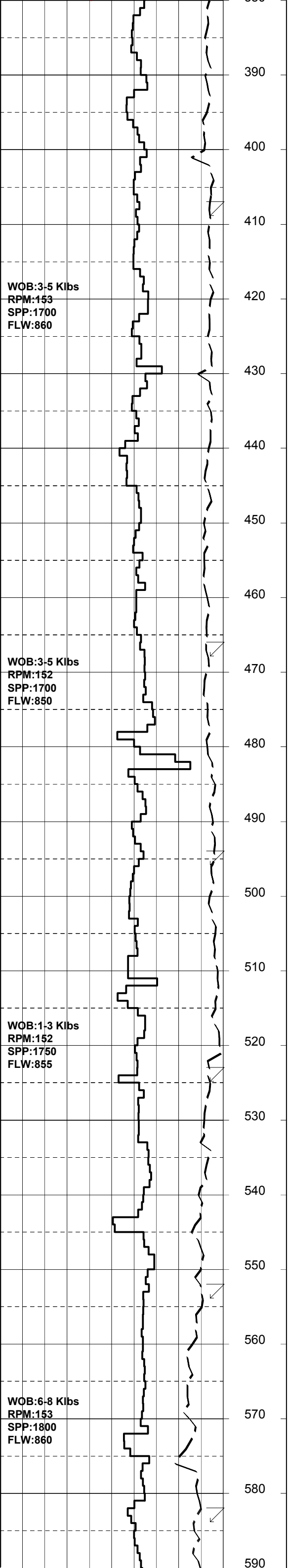
No Gas

Returns to sea level

Survey:322.02mMD(322.0mTVD)
0.13°inc 143.72°az

Survey:351.03mMD(351.0mTVD)
0.18°inc 92.31°az

Survey:380.07mMD(380.0mTVD)



0.13°inc 175.00°az

No Gas

Returns to sea level

Survey:409.12mMD(409.1mTVD)
0.15°inc 207.88°az

Survey:467.21mMD(467.2mTVD)
0.21°inc 111.56°az

Survey:496.22mMD(496.2mTVD)
0.11°inc 142.76°az

No Gas

Returns to sea level

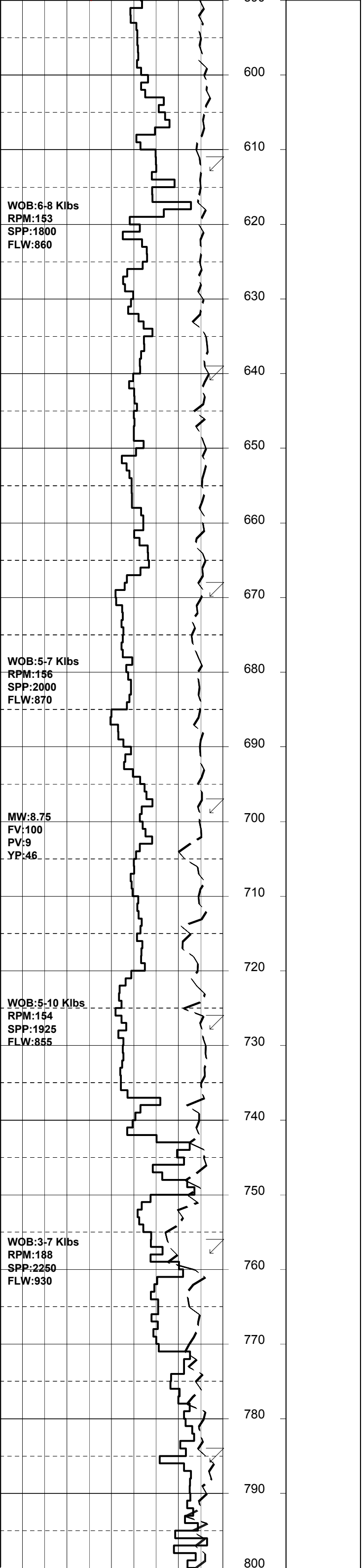
Survey:525.22mMD(525.2mTVD)
0.03°inc 253.98°az

Survey:554.15mMD(554.1TVD)
0.09°inc 53.82°az

Survey:583.18mMD(583.2mTVD)
0.07°inc 106.21°az

No Gas

Returns to sea level



Survey:612.22mMD(612.2mTVD)
0.22°inc 174.73°az

Survey:641.28mMD(641.3mTVD)
0.04°inc 53.15°az

Survey:670.34mMD(670.3mTVD)
0.0°inc 96.38°az

No Gas

Returns to sea level

Survey:699.34mMD(699.3mTVD)
0.07°inc 29.72°az

Survey:728.37mMD(728.4mTVD)
0.07°inc 122.55°az

Survey:757.46mMD(757.4mTVD)
0.04°inc 139.75°az

Survey:786.52mMD(786.5mTVD)
0.17°inc 344.46°az

No Gas

Returns to sea level

20/06/04

WOB:5-12 Klbs
RPM:190
SPP:2300
FLW:90

WOB:6-12 Klbs
RPM:190
SPP:2300
FLW:915

MW:8.75
FV:113
PV:8
YP:43

MW:8.8
FV:90
PV:29
YP:36
Gel: 5/7
Cl: 17K
pH: 9.0

WOB: 6-15 Klbs
RPM/DHM: 160
SPP: 2470 psi
FLW: 874 gpm

WOB: 6-10 Klbs
RPM/DHM: 155
SPP: 2426 psi
FLW: 846 gpm

810
820
830
840
850
860
870
880
890
900
910
920
930
940
950
960
970
980
990
1000
1010

Survey:815.78mMD(815.8mTVD)
0.17°inc 337.74°az

Survey:844.82mMD(844.8mTVD)
0.06°inc 187.19°az

Survey:873.83mMD(873.8mTVD)
0.04°inc 42.38°az

No Gas

Survey:892.74mMD(892.7mTVD)
0.13°inc 290.73°az

97 / 3 / Tr

Survey:921.22mMD(921.2mTVD)
0.04°inc 217.54°az

Survey:978.82mMD(978.8mTVD)
0.04°inc 300.15°az

Survey:1008.39mMD(1008.3mTVD)
0.10°inc 198.92°az

13 3/8" Casing set @ 884.57 m

Returns to sea level

Bit #2: 12.25" 311.15mm
Hughes ATS68 Jets: 3x24
In: 900m Out: 905m
Run: 5.0m Hrs: 0.25
Cond: 1-1-WT-H-E-I-N-TD

Bit #3: 12.25" 311.15mm
Hughes HCM 506 Jets: 6x18
In: 905m Out: 2614m
Run: 1709m Hrs:82.5
Cond:1-1-NO-A-X-I-NO-TD

FIT PERFORMED @ 905 m
240 psi (EMW=10.5 ppg)
8.91 ppg mud

CLAYSTONE:lt gy,sft-amor,blky mod calc-calc,tr pyr,tr off wh LMST,com shell frag.

CLAYSTONE:lt gy-gy,lt olv gy sft,stky,sbblky-amor,mod calc, tr foram,tr foss,tr diss pyr.

CARBIDE IN 975 m:
Theor Stk: 3347
Act Strks: 3550
Hole 6% Overgauge

CLAYSTONE:lt gy-med lt gy,off wh, sft,stky,sbblky-amor,mod calc,tr foram.

WOB: 10 Klbs
RPM/DHM: 180
SPP: 2510 psi
FLW: 856 gpm

1020
1030
1040
1050
1060
1070
1080
1090
1100
1110
1120
1130
1140
1150
1160
1170
1180
1190
1200
1210
1220

95 / 4 / 1 / Tr

Survey:1037.45mMD(1037.4mTVD)
0.04°inc 248.53°az

CLAYSTONE:lt gy-med lt gy,off wh,sft,stky,sbblky-amor,mod calc,tr foram.

Survey:1066.52mMD(1066.5mTVD)
0.05°inc 102.1°az

95 / 4 / 1 / Tr

CLAYSTONE:lt gy-med lt gy,off wh,sft,stky,sbblky-amor,mod calc,tr foram,disp i/p.

Survey:1095.58mMD(1095.6mTVD)
0.06°inc 254.10°az

ANGAHOOK FORMATION
1100 mMD(-1057mTVDSS)

WOB: 10 Klbs
RPM/DHM: 180
SPP: 2560 psi
FLW: 852 gpm

95 / 4 / 1 / Tr

Survey:1124.59mMD(1124.59mTVD)
0.06°inc 23.63°az

CLAYSTONE:lt-med gy,occ lt olv gy,tr calc,tr vf aren,tr pyr,tr glauc,tr carb spks,occ mulcol lith frags,sft-v sft,sbblky, occ amor.

Survey:1153.61mMD(1153.61mTVD)
0.04°inc 261.67°az

94 / 5 / 1 / Tr

CLAYSTONE:lt-med gy,occ lt olv gy,tr vf aren occ g/t arg SLTST, occ carb spks,tr forams,sft, sbblky-amor.

Survey:1182.64mMD(1182.6mTVD)
0.05°inc 290.3°az

92 / 5 / 2 / 1 / Tr

SILTSTONE:med-lt gy,arg,occ calc,v sft,occ frm,sbblky.

Survey:1211.67mMD(1211.6mTVD)
0.09°inc 274.15°az

CLAYSTONE:lt gy,med gy,v sft,

vf aren i/p occ g/t arg SLTST,
occ carb spks,sbblky,amor i/p.

1230

1240

Survey:1240.72mMD(1240.7mTVD)
0.2°inc 314.87°az

WOB: 10-14 Klbs
RPM/DHM: 180
SPP: 2578 psi
FLW: 858 gpm

SILTSTONE:med-lt gy,arg,occ calc,v sft,occ frm,sbblky.

1250

1260

1270

Survey:1269.77mMD(1269.7mTVD)
0.13°inc 311.09°az

CLAYSTONE:lt gy-med gy,occ olv gry,v sft-sft,disp,sticky, amor,sbblky,mod calc,occ slty i/p.

89 / 7 / 3 / 1 / Tr

1280

MIOCENE VOLCANICS
1280 mMD(-1237 mTVDSS)

CLAYSTONE:lt brn/gy,blu gy i/p,tr-non calc,sft-disp,stky.

SYSTEM SHUTDOWN 1282-1295 m

1290

MW: 8.8
FV: 150
PV: 29
YP: 36
Gel:4/7
pH: 8.9
Cl: 18K

1300

Survey:1298.83mMD(1298.8mTVD)
2.64°inc 214.65°az

VOLCANIC TUFF:blu gy,v sft,-disp,sbblky i/p,grd to clay, occ tr qtz-feld,mod-tr calc.

STEERING FROM 1300-1315 m

WOB: 10-14 Klbs
RPM/DHM: 180
SPP: 2578 psi
FLW: 858 gpm

1310

CLAYSTONE:med gy,brn/gy,v sft-stky,amor-sbblky,mod calc.

68 / 13 / 10 / 6 / 3

SANDSTONE:trnsl,trnsp,clr, vf-f,occ med,dom lse,sa-sr mod srt,mnr arg cly mtx,tr calc,gd inf por,no fluor.

1320

STEERING FROM 1323-1336 m

WOB: 5-14 Klbs
RPM/DHM: 55-180
SPP: 2551 psi
FLW: 858 gpm

70 / 12 / 9 / 6 / 3

Survey:1327.87mMD(1327.8mTVD)
5.64°inc 210.09°az

1330

SANDSTONE: trnsl, trnsp, clr, vf-f, occ med, dom lse, sa-sr mod srt, mnr arg cly mtx, tr calc, gd inf por, no fluor.

1340

CLAYSTONE:lt gy-med gy,amor, sft-stky,sbblky,disp,mod calc.

STEERING FROM 1352-1356 m

1350

Survey:1356.9mMD(1356.6mTVD)
7.29°inc 213.82°az

1360

80 / 10 / 6 / 3 / 1

STEERING FROM 1360-1368 m

WOB: 5-14 Klbs
RPM/DHM: 112-180
SPP: 2850 psi
FLW: 856 gpm

VOLCANIC TUFF:lt blu/gy,off wh, amor-rr sbblky,occ weath to CLAY.

1370

83 / 8 / 5 / 3 / 1

STEERING FROM 1381-1394 m

1380

CLAYSTONE:lt gy-med gy,amor, sft-stky,sbblky-disp,mod calc slty i/p.

Survey:1385.94mMD(1385.4mTVD)
9.08°inc 215.12°az

SILTSTONE:lt-med brn gy,v sft sbblky-amor,abdt cly mtx,occ tuff mtx,tr pyr.

1390

82 / 10 / 5 / 2 / 1

WOB: 10-20 Klbs
RPM/DHM: 150-180
SPP: 2675 psi
FLW: 863 gpm

1400

VOLCANIC TUFF:off wh-pl gy, occ lt blu/gy,g/t CLYST,amor, tr sbblky.

SILTSTONE:med brn/gy,tr lt brn/gry,v arg,tr glauc,tr nod pyr,com clay mtx,occ tuff mtx,sbblky-amor.

1410

Survey:1414.97mMD(1414mTVD)
10.04°inc 215.43°az

STEERING FROM 1410-1414 m

77 / 12 / 7 / 3 / 1

UNDIFFERENTIATED OLIGOCENE
1415 mMD(-1371 mTVDSS)

1420

STEERING FROM 1421-1429 m

WOB: 15-30 Klbs

1430

SANDSTONE:clr-trnsl,occ v pl

RPM: 0-70
MMRPM:110
SPP: 2750-2900 psi
FLW: 850 gpm

1440

Survey:1444.0MD(1442.5mTVD)
11.83°inc 214.02°az

82 / 10 / 5 / 2 / 1

1450

SILTSTONE:med brn/gy,occ pl brn-off wh,v arg,mnr vf aren occ g/t to vf SST,calc i/p,occ glauc, tr nod pyr,v sft-frm,sbblky-amor.

STEERING FROM 1455-1469 m

1460

1470

Survey:1473.07MD(1470.8mTVD)
13.63°inc 214.58°az

82 / 10 / 5 / 2 / 1

CLAYSTONE:lt brn/gy,lt brn,tr occ wh,i/p vf aren,occ g/t SLTST,stcky i/p,disp i/p,occ glauc,v sft-disp i/p,amor-sbblky.

STEERING FROM 1482-1497 m

1480

SILTSTONE:med brn,lt brn/gy i/p,arg,aren occ grd to vf SST, calc i/p,tr glauc,sft-occ frm, sbblky,amor i/p.

1490

81 / 10 / 6 / 2 / 1

CLAYSTONE:med gry/brn,pl brn-off wh i/p,g/t to arg SLTST i/p, tr calc,tr glauc,v sft-disp, amor,tr sbblky.

1500

82 / 10 / 5 / 2 / 1

Survey:1502.13MD(1502.13mTVD)
16.24°inc 212.73°az

SANDSTONE:clr-trnsl,pl gy i/p, vf occ g/t aren SLTST,wl srt, sr-sa,tr calc cmt,com clay mtx, lse,fr inf por,no fluor.

STEERING FROM 1508-1527 m

1510

WOB: 30 Klbs
RPM: 0-65
MMRPM:110
SPP: 2800-2950 psi
FLW: 840 gpm

SILTSTONE:med brn/gy,lt brn/gy i/p,arg,aren occ g/t vf SST,i/p calc,tr glauc,occ nod pyr,sft, occ frm,sbblky,amor i/p.

1520

SILTSTONE:med brn/gy,tr gy/gn, arg,sft,sbblky,pr calc cmt,i/p grd to vf SST.

MW: 8.95
FV: 220
PV: 36
YP: 82
Gel:8/14
pH: 8.2
Cl: 16K

80 / 10 / 6 / 3 / 1

1530

Survey:1531.17MD(1526.6mTVD)
18.62°inc 210.88°az

83 / 9 / 5 / 2 / 1

SANDSTONE:off wh,lt brn,pl gy i/p,lse-fri agg,v f g/t aren SLTST sa,hi spher,off wh arg mtx to 60% wk sil and arg cmt,pr vis por, no fluor.

STEERING FROM 1537-1555 m

28-06-04

1540

WOB: 15-20 Klbs
RPM: 70
MMRPM:110
SPP: 2907 psi
FLW: 855 gpm

1550

75 / 11 / 8 / 4 / 2

SANDSTONE:off wh,lt brn,pl gy i/p,lse-fri agg,v f g/t aren SLTST, sa-sr,com off wh arg mtx to 60%, wk sil and arg cmt,pr vis por, no fluor.

1560

Survey:1560.2MD(1554.0mTVD)
20.69°inc 205.27°az

83 / 9 / 5 / 2 / 1

SILTSTONE:med brn/gy,tr gy/gn, arg,sft,sbblky,pr calc cmt,tr pyr, tr dol.g/t vf SST.

STEERING FROM 1568-1585 m

1570

WOB: 15-20 Klbs
RPM: 70
MMRPM:110
SPP: 3155 psi
FLW: 851 gpm

1580

SILTSTONE:brn/gy,occ gn/gy arg,com aren g/t vf SST,sft amor-blky,tr pyr,tr dol.

1590

Survey:1589.27MD(1580.9mTVD)
23.33°inc 202.68°az

1600

SANDSTONE:off wh/lt brn,pl gy trnsl,lse-fri to occ frm agg,vf gn,g/t SLTST,sa-sr,abdt off wh arg mtx,tr calc,wk sil cmt,tr foram,pr vis por,no fluor.

1610

83 / 10 / 5 / 2 / Tr

1620

Survey:1618.31MD(1607.5mTVD)
29.06°inc 202.94°az

WOB: 10-15 Klbs
RPM: 80
MMRPM:110
SPP: 3159 psi
FLW: 849 gpm

SILTSTONE: brn/gy,brn,arg,com aren occ g/t vf SST,rr glauc,rr dol,v sft-disp,amor-sbblky.

1630

83 / 10 / 5 / 2 / Tr

1640

SANDSTONE(Tr):pl gy-off wh,pl brn,dom vf occ g/t aren SLTST,

com arg mtx, sa-sr,lse,pr vis por,no fluor.

Survey:1647.36MD(1634.0mTVD)
24.83°inc 202.34°az

SILTSTONE: brn,occ med gy/brn, arg,i/p disp,aren i/p,tr glauc, v sft,sbblky-amor.

1650

1660

81 / 10 / 6 / 2 / 1

SANDSTONE: pl gy-trnsl,i/p pl brn,dom vf occ g/t aren SLTST, wl srt,sa-sr,com arg mtx,lse, pr vis por,no fluor.

1670

Survey:1676.43MD(1660.3mTVD)
25.02°inc 202.40°az

SILTSTONE:brn,occ med brn/gy, tr gy/gn,v arg i/p g/t CLYST, tr diss & nod pyr,tr glauc,sft, disp i/p,amor-sbblky.

1680

77 / 12 / 7 / 3 / 1

1690

1700

79 / 11 / 6 / 3 / 1

Survey:1705.50MD(1686.60mTVD)
25.32°inc 201.82°az

SANDSTONE: trnsl,v pl gy,tr pl brn,vf,wl srt,sa-sr,com arg mtx, lse,occ fri aggs,pr vis por,no fluor.

1710

77 / 12 / 7 / 3 / 1

SILTSOTNE:med-dk brn,occ med brn/gy,arg g/t CLYST i/p,aren occ g/t vf SST,sft,disp i/p,tr dol, sbblky-amor.

1720

DEMONS BLUFF FORMATION
1721.5 mMD(-1658 mTVDSS)

1730

STEERING FROM 1733-1735 m

Survey:1734.51MD(1712.80mTVD)
25.53°inc 201.82°az

WOB: 15-25 Klbs
RPM: 65
MMRPM:110
SPP: 3600 psi
FLW: 840 gpm

1740

SANDSTONE:lt-med gy,pl brn, vf-occ f,mod wl srt,sa-sr i/p, mod sil cmt,occ slty mtx,arg mtx i/p,tr glauc,mod hd aggs, pr vis por,no fluor.

1750

83 / 10 / 4 / 2 / 1

SILTSTONE:dk brn,dk gy/brn i/p,tr gn,arg,tr aren,tr calc, sft-frm,tr mod hd,sbblky.

1760

Survey:1763.53MD(1739.0mTVD)
25.65°inc 200.93°az

SANDSTONE:lt gy,trnsl-off wh, vf,mod wl srt,sa-sr,mod sil cmt, slty mtx,fri-mod hd aggs,occ lse, pr vis por,no fluor.

1770

1780

SILTSTONE:dk brn,dk gy/brn i/p,tr lt gn,arg,tr aren,frm, occ mod hd,sbblky.

1790

Survey:1792.59MD(1770.00mTVD)
25.45°inc 200.34°az

STEERING FROM 1791-1794 m

1800

87 / 9 / 3 / 1 / Tr

SANDSTONE:pl gry,trnsl,com vf, g/t aren SLTST,mod wl srt,sa-sr, mod-wk sil cmt,com slty mtx,fri-occ mod hd aggs,lse i/p,pr vis & inf por,no fluor.

1810

1820

Survey:1850.69MD(1817.9mTVD)
24.6°inc 199.87°az

SILTSTONE:dk brn,occ dk gy/ brn,tr pl brn,arg,rr aren,tr glauc,sft-frm,tr mod hd,sbblky, i/p disp.

1830

1840

STEERING FROM 1848-1856 m

1850

WOB: 15-22 Klbs
RPM: 65-80
MMRPM:110
SPP: 3690 psi
FLW: 847 gpm

29-06-04

MW: 9.1
FV: 220
PV: 49
YP: 61
Gel:8/13
pH: 8.5
Cl: 18K

WOB: 18-22 Klbs
RPM: 70
MMRPM:110
SPP: 3665 psi
FLW: 853 gpm

WOB: 18-22 Klbs
RPM: 75
MMRPM:110
SPP: 3890 psi
FLW: 847 gpm

WOB: 10-20 Klbs
RPM: 80
MMRPM:110
SPP: 3800 psi
FLW: 846 gpm

1860
1870
1880
1890
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
2030
2040
2050
2060

84 / 11 / 4 / 1 / Tr

Survey:1879.53MD(1844.1mTVD)
24.2°inc 200.32°az

72 / 13 / 9 / 4 / 2

64 / 14 / 12 / 7 / 3

Survey:1908.49MD(1870.5mTVD)
24.21°inc 200.0°az

69 / 13 / 10 / 6 / 2

Survey:1937.54MD(1897.0mTVD)
24.12°inc 200.96°az

61 / 13 / 14 / 8 / 4

Survey:1966.58MD(1923.5mTVD)
24.31°inc 200.78°az

Survey:1993.63MD(1948.2mTVD)
24.4°inc 200.84°az

CHANGE GZG RESERVAL RUBBER

Survey:2024.63MD(1976.4mTVD)
24.68°inc 200.81°az

Survey:2053.67MD(2002.8mTVD)
24.62°inc 201.15°az

SILTSTONE:dk brn,dk gy/brn arg,com aren,tr micmic,com carb flks,frm,tr mod hd,sbblky-blky.

EASTERN VIEW COAL MEASURE
1880.0 mMD(-1801.5 mTVDSS)

SILTSTONE:dk brn,dk gy/brn,arg occ aren,tr micmic,com carb flks,frm-sft,sbblky,grd to vf SST i/p.

SANDSTONE:dk brn,dk gy/brn vf,dom lse-fri,rnd,abdt arg mtx, wk arg cmt,pr inf por,no fluor.

SANDSTONE:brn/gy,trnsl,off wh dom vf-f,lse-fri to frm agg,rnd--sr,mod wl srt,abdt off wh/brn arg mtx,wk-mod sil cmt,tr carb flks,pr-v pr vis por,no fluor.

SANDSTONE:off wh,lt grn gy, vf-f,sa-sr,mod srt,wk sil cmt, arg mtx 10-50 %,tr glauc grns, pr-fr vis por,tr fluor.

FLUORESCENCE:Tr,v dll,dk yel pinpt fluor,no dir cut,no c/c no res ring.

SILTSTONE:dk brn,dk gy/brn arg,occ aren,tr micmic,com carb flk,frm-sft,sbblky,g/t vf SST i/p.

SANDSTONE:off wh,lt grn gy, vf-f,occ med-tr crs grn,sa-sr pr srt,wk sil cmt,arg mtx 10 -50 %,pr-fr vis por,no fluor.

SILTSTONE:med-dk brn,sft-frm,micmic,tr carb flks,arg sbblky-sbfiss,aren i/p g/t vf SST.

SANDSTONE:off wh,lt brn,trnsl, vf-crs grn,sa-sr,pr srt,mnr arg mtx,wk calc cmt,tr liths, dom lse-fri,fr inf por,no fluor.

SANDSTONE:off wh,lt brn,clr trnsl,vf-crs,dom lse,frm-fri aggs,sa-sr,pr srt,arg mtx i/p, wk calc cmt,tr liths,fr inf por, no fluor.

COAL:blk,dll-sbvit,ang, brit,slty,g/t CARB SLTST.

SILTSTONE:brn/gy,sft-fri, aren-arg,micmic,carb spks, sbblky-sbfiss.

SANDSTONE:off wh,lt brn,clr trnsl,vf-crs,dom lse,frm-fri aggs,sa-sr,pr srt,arg mtx i/p, wk calc cmt,tr liths,gd inf por, no fluor.

SILTSTONE:brn,brn/gy,aren-arg,blk carb SLTST i/p g/t COAL,com carb flks & micrlam, micmic,frm-fri,sbblky-sbfiss.

SANDSTONE:off wh,lt brn,clr trnsl,vf-f,com med-crs grn, sa-sr,mod wl srt,wk calc cmt i/p,wk-mod sil cmt i/p,com off

2070
2080
2090
2100
2110
2120
2130
2140
2150
2160
2170
2180
2190
2200
2210
2220
2230
2240
2250
2260
2270

WOB: 10-20 Klbs
RPM: 75
MMRPM:110
SPP: 3861 psi
FLW: 830 gpm

WOB: 5-12 Klbs
RPM: 75
MMRPM:110
SPP: 3950 psi
FLW: 820 gpm

73 / 10 / 10 / 5 / 2

Survey:2082.69MD(2029.1mTVD)
24.81°inc 200.83°az

Survey:2111.7MD(2055.4mTVD)
24.82°inc 201.15°az

74 / 11 / 10 / 4 / 1

69 / 10 / 11 / 7 / 3

Survey:2140.77MD(2081.74mTVD)
24.85°inc 200.99°az

Survey:2169.79MD(2108.07mTVD)
24.93°inc 200.86°az

82 / 9 / 5 / 3 / 1

Survey:2198.77MD(2134.39mTVD)
24.52°inc 200.98°az

82 / 8 / 6 / 3 / 1

Survey:2227.82MD(2160.83mTVD)
24.44°inc 201.27°az

85 / 8 / 4 / 2 / 1

85 / 8 / 4 / 2 / 1

wh arg mtx i/p,fri-occ frm agg dom lse,rr pyr,gd inf-pr vis por no fluor.

COAL:blk,vit-sbvit,sbconch frac,frm-brit,blky.

SILTSTONE:med brn,blk/brn, arg-aren,g/t vf SST i/p,sft -sub frm,brit i/p,micmic,com carb spks & lam,sbblky-sbfiss.

SANDSTONE:off wh,lt brn,clr trnsl,vf-f,com med-crs grn, sa-sr,mod wl srt,wk calc cmt i/p,wk-mod sil cmt i/p,com off wh arg mtx i/p,fri-occ frm agg dom lse,rr pyr,gd inf-pr vis por no fluor.

SANDSTONE:clr-trnsl,tr opq, f-med,crs-v crs i/p,pr srt,sa, occ sr,ang i/p,wk-loc mod sil cmt,abdt wh arg mtx,lse,fri-occ mod hd aggs,pr vis por,no fluor.

COAL:blk,sbvit,dll-ea i/p occ g/t carb SLTST,brit-mod hd, sbconch,blky-sbblky.

SANDSTONE:clr-trnsl,med-f,occ crs,mod pr srt,sa-sr,abdt wh arg mtx,tr glauc,lse,fri-occ mod hd aggs,pr vis por,no fluor.

SILTSTONE:lt brn,lt brn/gy,arg, tr carb occ g/t slty COAL,sft-frm occ mod hd,sbblky.

SANDSTONE:clr-trnsl,occ opq, gen f,vf i/p,mod wl srt,sa-sr,abdt wh arg mtx,tr lt gry crs qtz,lse, fri-occ mod hd aggs,pr vis por, no fluor.

SANDSTONE:trnsl,clr,f-vf,mod wl srt,sa-sr,com off wh-pl brn arg mtx,lse,fri aggs,pr vis por, no fluor.

SILTSTONE:med brn,med gy/brn, dk gy i/p,arg,tr carb,tr diss pyr, frm-occ mod hd,sbblky,occ sbfiss.

SANDSTONE:clr-trnsl,opq i/p, med-crs,com v crs grs,pr srt, sa,sr,loc mod strg sil cmt,slty mtx,i/p wh arg mtx,lse-occ mod h aggs,pr vis por,no fluor.

SILTSTONE:med gy/brn,lt brn, dk gy i/p,arg,tr carb,tr diss pyr frm-occ mod hd,sbblky,occ sbfiss.

SANDSTONE:1)trnsl,pl-med gy, com vf occ g/t aren SLTST,mod wl srt,sa-sr,wk-loc mod strg sil cmt,com wh arg mtx,fri-occ mod hd aggs,pr vis por,no fluor. 2)trnsl,opq,clr i/p,crs-v crs, tr med,pr srt,sa-sr,lse,tr foss, fr vis por,no fluor.

SANDSTONE:clr-trnsl,opq i/p, vf-f,med-crs grs i/p,mod wl srt, sa-sr,com slty & arg mtx,fri aggs, lse i/p,pr-fr inf por,no fluor.

2280
2290
2300
2310
2320
2330
2340
2350
2360
2370
2380
2390
2400
2410
2420
2430
2440
2450
2460
2470
2480

88 / 7 / 3 / 2 / tr

Survey:2285.83MD(2213.70mTVD)
24.70°inc 201.15°az

90 / 7 / 2 / 1

90 / 7 / 2 / 1

Survey:2314.86MD(2240.10mTVD)
24.23°inc 201.20°az

91 / 6 / 2 / 1

Survey:2343.92MD(2266.6mTVD)
24.31°inc 200.91°az

90 / 7 / 2 / 1

91 / 7 / 2 / Tr

Survey:2372.95MD(2293.1mTVD)
24.14°inc 201.39°az

92 / 6 / 2 / Tr

Survey:2401.99MD(2319.6mTVD)
24.08°inc 201.51°az

94 / 5 / 1

93 / 5 / 1 / 1

Survey:2431.06MD(2346.05mTVD)
23.67°inc 201.95°az

93 / 5 / 2 / Tr

Survey:2460.09MD(2372.6mTVD)
24.06°inc 202.38°az

WOB: 10-16 Klbs
RPM: 75
MMRPM:110
SPP: 3880 psi
FLW: 825 gpm

30-06-04

MW: 9.35
FV: 120
PV: 50
YP: 52
Gel:7/11
pH: 8.3
Cl: 18K

WOB: 8-18 Klbs
RPM: 60-70
MMRPM:110
SPP: 3956 psi
FLW: 836 gpm

WOB: 15-40 Klbs
RPM: 70
MMRPM:110
SPP: 3716 psi
FLW: 824 gpm

SANDSTONE:trnsl-clr,pl brn i/p, com med,f i/p,mod wl srt,sa-sr, occ slty mtx,wh arg mtx i/p,tr qtz, com lse,occ fri aggs,fr vis por, no fluor.

SANDSTONE:trnsl,clr,tr mlky wh, vf-f,med-crs i/p,mod srt,sa-sr, slty mtx,abdt wh-pl brn arg mtx, pr vis por,no fluor.

SILTSTONE:med brn,lt gy/brn, occ dk gy,arg,carb i/p,frm-occ mod hd,sbblky.

COAL:blk,sbvit,occ dll-ea g/t carb SLTST i/p,brit,occ mod hd, sbconch-unevn,sbblky.

SANDSTONE:off wh,lt brn,vf-f, med-crs i/p,mod wl srt,sa-rnd, hi spher,abdt wh kaol mtx to 70 %,pr vis por,no fluor.

SILTSTONE:lt brn,spkld blk, frm,sbblky-fiss,aren,com carb spks & lam,micmic,l/B w/ vf-f wh SST

COAL:blk,dk gy/blk,dll-vit i/p,ang-unevn frac,brit-mod hd,sbblky,slty i/p.

4 % CO2 with peak @ 2375m

SILTSTONE:brn/gy,spkld blk, frm-fri,sbblky-fiss,aren,com carb spks & lam,micmic,l/B w/ vf-f SST

SANDSTONE:off wh,lt brn,vf-f,sbrnd-rnd,wl srt,abdt wh kaol mtx to 70 %,pr vis por, no fluor.

CLAYSTONE:lt gy,frm-mod hd blky,mod calc.

COAL:blk,dk gy/blk,dll-vit i/p,ang-unevn frac,brit-mod hd,sbblky,slty i/p.

SILTSTONE:lt brn-med brn gy, occ dk brn gy,sft-frm,occ mod hd,carb i/p,banded carb lam, micmic,non calc.

SILTSTONE:lt brn-med brn gy, occ dk brn gy,sft-frm,occ mod hd,carb i/p,banded carb lam, micmic,non calc.

COAL:blk,dk gy/blk,dll-vit i/p,ang-unevn frac, brit-mod hd,sbblky,slty i/p.

STEERING 2458m-2464m

LARGE CAVINGS AT Shakers
25-32mmx6-10mmx3mm Thick

CLAYSTONE:gn,pl gy/gn,calc i/p,frm-mod hd,occ hd,wxy txt,sbblky,occ blky.

STEERING 2467m-2469m

COAL:blk,dk gy/blk,sbvit,occ

2490
2500
2510
2520
2530
2540
2550
2560
2570
2580
2590
2600
2610
2620
2630
2640
2650
2660
2670
2680
2690

93 / 5 / 2 / Tr / Tr

Survey:2489.15MD(2399.11mTVD)
24.33°inc 201.67°az

93 / 5 / 2 / Tr / Tr

Survey:2518.23MD(2425.65mTVD)
23.85°inc 201.39°az

GZG GAS TRAP NOT OPERATIONAL
DELASCO PUMP RUBBER REPLACED
RESERVAL GAS DATA NOT
RECORDED FROM 2515m TO 2544m

Survey:2547.21MD(2452.30mTVD)
23.63°inc 201.5°az

91 / 6 / 2 / 1

Survey:2576.3MD(2478.9mTVD)
24.22°inc 200.69°az

92 / 6 / 2 / Tr

77 / 10 / 8 / 4 / 1

76 / 11 / 8 / 4 / 1

Survey:2611.46MD(2510.9mTVD)
24.70°inc 202.18°az

Trip Gas 1726.8u at
1325 m Circulate down
TG 663.6u 2614m on btm

PROBE ADJUSTMENT AT FLOW TROUGH

75 / 9 / 9 / 5 / 2

76 / 9 / 8 / 5 / 2

Survey:2640.54MD(2537.3mTVD)
24.67°inc 201.96°az

88 / 6 / 4 / 1 / 1

92 / 5 / 2 / 1

Survey:2669.53MD(2563.8mTVD)
23.53°inc 202.06°az

WOB: 15-30 Klbs
RPM: 70
MMRPM:110
SPP: 4100 psi
FLW: 824 gpm

MW: 9.35
FV: 95
PV: 47
YP: 51
Gel:7/11
pH: 7.5
Cl: 18K

MW: 9.55
FV: 130
PV: 50
YP: 56
01-07-04

05-07-04
WOB: 18-30 Klbs
RPM: 0
MMRPM:160
SPP: 2970 psi
FLW:570 gpm

06-07-04

WOB: 15 Klbs
RPM: 80
MMRPM:150-160
SPP: 3018 psi
FLW:547 gpm

dll,brit-mod hd,slty i/p,sbconch, sbblky-blky.

SANDSTONE:clr-trnsl,pl brn i/p, f-vf,med i/p,mod wl srt,sa-sr, occ calc cmt,slty & arg mtx i/p, lse,fri-occ mod hd aggs,pr vis por,no fluor.

SILTSTONE:gy/brn,med brn,arg, tr carb,tr micmic,mod hd-frm, occ hd,sbblky-sbfiss.

COAL MARKER
2516.5 mMD (-2381 mTVDSS)

COAL: blk,dk gy/blk i/p,sbvit, slty i/p,brit-mod hd,sbconch, unevn i/p,sbblky-blky.

SILTSTONE:brn/gy,lt brn,arg, tr carb g/t CARB SLTST, frm-mod hd,occ hd,sbblky-sbfiss.

COAL:blk,dk gy/blk,dll-vit i/p,ang-unevn frac, brit-mod hd,sbblky.

STEERING 2544m-2546m

SANDSTONE:clr-trnsl,pl brn i/p, f-vf,occ med,mod wl srt,sa-sr, tr calc cmt,abdt wh arg mtx,occ lse,pr vis por,no fluor.

SILTSTONE:brn/gy,lt brn,arg, tr carb grd to carb SLTST,frm-mod hd,occ hd,sbblky-sbfiss.

STEERING 2574m-2579m

SANDSTONE:clr-trnsl,pl brn i/p, f-vf,occ med,mod wl srt,sa-sr, tr calc cmt,abdt wh arg mtx,occ lse,pr vis por,no fluor.

9 5/8" CASING SHOE @ 2586.14m

COAL:blk,dk gy/blk,dll-vit i/p,ang-unevn fract, brit-mod hd,sbblky.

SANDSTONE:clr-trnsl,f-med, occ vf,sr-r, sb sph,pr srt wk-mod sil cmt,abdt wh arg-occ slty mtx,occ lse-mod hd, gd vis por,fluor.

FLUOR:(2602m-2614m) 70% Snd Bri even lt gn fluor,no dir cut,v slw crsh/cut,bri lt crm ptchy res/r.

Bit #4: 8.5" HUGHES
HCM505 Jets:3x18,2x16
In: 2614m Out:2892m
Run:278m Hrs:14.6
Cond:1-1-WT-N-X-I-NO-CP

LOT @ 2614m: EMW=10 ppg

SANDSTONE: off wh-trnsl, lt brn, vf-f, sr-sa, wl srt,wk-mod sil cmt,abdt wh arg-occ slty mtx,occ lse-mod hd agg, pr-occ fr vis por, tr fluor.

Fluor: tr-5% 2614-2625m brt gn, bldg dir cut, stmg crush cut, thn res ring.

SILTSTONE:dk gy-brn/gy,arg, carb i/p,frm-mod hd,sbblky-fiss, g/t CLYST i/p.

SILTSTONE:dk gy-brn, gy/blk, frm, fiss-blky, arg, aren i/p, micmic, com carb.

COAL: blk, dll-sbvit, sb-conch-hkly, brit.

Fluor: Tr dll yell ppt fluor, no cut, no c/c,tr brkn pl crm res ring, 2652m-2658m

SANDSTONE: off wh-lt brn, trnsl, vf, sr-rnd, mod wl srt, wk sil cmt,abdt wh arg mtx, sft-fri agg, tr pyr, ti-pr vis por,fluor.

STEERING 2692 m-2712 m

SILTSTONE:dk gy-brn, gy/blk, frm, fiss-blky, arg, aren i/p, micmic, com carb.

MW: 9.25
FV: 66
PV: 28
YP: 19
Gel:5/7
pH: 8.5
Cl: 20K

WOB: 15-20 Klbs
RPM: 80
MMRPM:160
SPP: 3106 psi
FLW: 559 gpm

WOB: 10-15 Klbs
RPM: 80
MMRPM:160
SPP: 3106 psi
FLW: 559 gpm

WOB: 5-22 Klbs
RPM: 80
MMRPM:160
SPP: 2988 psi
FLW: 524 gpm

MW: 9.3
FV: 76
PV: 30
YP: 28
Gel:7/11
pH: 8.7
Cl: 19K

WOB: 5-22 Klbs
RPM: 80
MMRPM:160
SPP: 2988 psi
FLW: 524 gpm

8-7-04
Bit #5: 8.5" CD93
Jets:1.1 TFA
In: 2892m Out:2919.5m

2700
2710
2720
2730
2740
2750
2760
2770
2780
2790
2800
2810
2820
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2880
2890
2900

Survey:2697.47MD(2589.3mTVD)
24.64°inc 201.35°az

91 / 7 / 2

90 / 8 / 2

FLUSH GAS SAMPLE LINE

92 / 6 / 2

Survey:2725.97MD(2615.1mTVD)
25.42°inc 200.74°az

Survey:2755.82MD(2642.0mTVD)
25.68°inc 199.78°az

81 / 8 / 7 / 3 / 1

Survey:2784.8MD(2668.2mTVD)
25.0°inc 199.95°az

77 / 9 / 8 / 4 / 2

76 / 9 / 9 / 4 / 2

Survey:2813.8MD(2694.52mTVD)
23.99°inc 199.06°az

75 / 9 / 9 / 5 / 2

Survey:2842.8MD(2721.14mTVD)
23.15°inc 199.25°az

79/ 8 / 7 / 4 / 2

Survey:2867.3MD(2743.68mTVD)
22.75°inc 200.82°az

PICK UP OFF BOTTOM FOR FLOW CHECK

85/ 8 / 4 / 2 / 1

Interval
2887m-2892m
contaminated

COAL: blk, sbvit-vit, sb-conch-hkly, brit-hd.

WEATHERED IGNEOUS: wh-off wh /lt gy, sft, chlor, tr qtz/ feld & biot, weather to CLYST.

IGNEOUS INTRUSIVE ROCK
2719 mMD (-2565.7mTVDSS)

1)SILTSTONE: gy/blk, dll-sbvit frm-hd, blky, vf pyr, metamor txt, g/t CARB SLTST.
2)SILTSTONE:med-lt gy, med gy, frm, blky-sbblky, no calc, occ arg.

IGNEOUS INTRUSION: mottld off wh/grn/blk, sft-frm, occ hd, f-med crystal sz,calc,qtz, biot, feld, pyrox, pyr i/p, v weath & chlor.

IGNEOUS INTRUSION: mottld off wh/grn/blk, sft-hd, occ hd, f-med crystal sz,calc,qtz, biot, feld, pyrox, pyr i/p, v weath & chlor.

SANDSTONE: off wh, trnsl, clr gn, fri aggs, vf-rr med, sa-sr, wl srt, abdt arg mtx, no vis por, no fluor.

SILTSTONE: dk gy, gy/blk, sft -frm, arg, occ aren, sbblky-sb fiss, micmic, non calc, occ med brn gy-med gy, v sft-sft, arg, g/t CLYST.

DOLOMITE:off wh-lt yel brn, occ pl brn, sft, arg, blky.

SILTSTONE:dk gy, gy/blk, aren, tr-rr pyr, micmic, dol i/p,sbfiss-sbblky, frm-hd.

Control Drilling 2872-2887 m

SILTSTONE:med-dk gy-gy brn, aren, occ arg, micmic, tr pyr, dol i/p, frm-hd, sbblky-sbfiss.

STEERING 2835 m-2839 m

SILTSTONE:med-dk gy-gy brn, aren, occ arg,micmic,frm-hd,com britt,sbblky-sbfiss.

TOP 2718 SAND
2860 mMD(-2694 mTVDSS)

STEERING 2864 m-2870 m

SANDSTONE:lt gysh yel,vf-f, sr-r,wk sil cmt,com fri aggs, slty/arg mtx, ti vis por.

FLUOR:tr 2859-2871m dll yel ppt fluor, slw dir cut thn flm res.

STEERING 2873 m-2874 m

SILTSTONE:med-dk gy-gy brn, aren, occ arg,micmic,frm-hd,com britt,sbblky-sbfiss.

STEERING 2878 m-2883 m

TOP 2755 SAND
2899 mMD(-2729 mTVDSS)

SANDSTONE:clr-trnsl lt brn stn, med-v crs, sa-vang, lse, com frac grns, strng sil cmt,tr arg mtx, fr-gd inf por, no fluor.

CORE # 1: 2892m-2919.5m

COAL: blk,sbvit-vit, frm,blky, hckly-occ sbconch fract, brit.

Run:27.5m Hrs:1.4
COND:1-1-WT-A-X-I-NO-TD
MW: 9.3
FV: 80
PV: 30
YP: 28
Gel:7/11
pH: 8.8
Cl: 19K
WOB: 5-10 Klbs
RPM: 70-95
SPP: 550-617 psi
FLW: 200 gpm

9-?-04
Bit #6: 8.5" BBL 650XA
Jets:3x18,2x16
In: 2919.5m Out:2958m
Run:38.5m Hrs:2.8
Cond:1-1-BT-G-X-I-NO-CP

WOB: 4-13 Klbs
RPM: 70-80
MM: 170
SPP: 3298-3650 psi
FLW: 550 gpm
MW: 9.4
FV: 86
PV: 28
YP: 27
Gel:6/9
pH: 9.0
Cl: 19K

10-?-04
Bit#7RR: 8.5" CD9[illegible]
Jets:1-1 TFA
In: 2958m Out:2985m
Run:27m Hrs:0.7?
COND:1-1-WT-A-X-I-NO-TD
MW: 9.4
FV: 85
PV: 33
YP: 36
WOB: 5-7 Klbs
RPM: 94
SPP: 758-807 psi
FLW: 225 gpm

11-?-04
Bit #8: 8.5" REED HYCALOG
DSX173 Jets:3x18,3x16
In: 2985m Out:3235m
Run:250m Hrs:12.5
Cond:1-1-CT-H-X-I-NO-TD
MW: 9.4 WOB: 6-10 Klbs
FV: 82 RPM: 77
PV: 31 MM : 160
YP: 33 SPP: 3145-3420 psi
Gel:7/11 FLW: 550 gpm
pH: 8.8
Cl: 20K

WOB: 20-22 Klbs
RPM: 92
MM : 162
SPP: 3200-3307 psi
FLW: 556 gpm

WOB: 6-8 Klbs
RPM: 93
MM : 162
SPP: 3242-3326 psi
FLW: 548 gpm

WOB: 10 Klbs
RPM: 94
MM : 160
SPP: 3515 psi
FLW: 556 gpm

2910
2920
2930
2940
2950
2960
2970
2980
2990
3000
3010
3020
3030
3040
3050
3060
3070
3080
3090
3100
3110

89/ 7 / 3 / 1 / tr
CORE # 1
Survey:2902.8MD(2776.39mTVD)
22.9°inc 201.36°az
Survey:2931.8MD(2803.26mTVD)
21.52°inc 200.5°az
85/ 8 / 4 / 2 / 1
84/ 9 / 4 / 2 / 1
Survey:2960.8MD(2830.5mTVD)
20.27°inc 200.15°az
CORE # 2
85 / 9 / 4 / 2 / 2
80 / 9 / 5 / 3 / 3
Survey:2989.92MD(2857.7mTVD)
20.2°inc 199.81°az
91 / 5 / 3 / 1 / tr
83 / 8 / 5 / 3 / 1
Survey:3018.96MD(2885.2mTVD)
18.34°inc 198.4°az
84 / 8 / 5 / 2 / 1
Survey:3047.97MD(2912.9mTVD)
15.45°inc 196.93°az
77 / 9 / 8 / 4 / 2
Survey:3076.96MD(2941.0mTVD)
12.32°inc 197.17°az
Survey:3105.9MD(2969.4mTVD)
9.62°inc 198.91°az

vf-f, mod srt, sa, sb sph, mod strg arg cmt, slty i/p, pr vis por, tr-40 % fluor.

SANDSTONE: clr-trnsl, lt brn, fri-frm, f-crs, pr srt, sa, sb sph, tr arg cmt,gd vis por, 90-tr fluor.

Fluor:tr-90% 2895-2908m dll-mod bri gn, vslw-no dir cut, no c/c,dll-bri crm brkn flm r/r.

SILTSTONE: dk-med brn, blk/gy frm-mod hd, arg, mnr aren-vf snd i/p, com carb g/t CARB SLTST micmic i/p, sbblky-sbfiss.

STEERING 2923 m-2930 m

CLAYSTONE:med brn gy-gy, sft, amor-blky, occ aren, g/t SLTST.

SILTSTONE: dk-med brn,rr g/t vf SST, tr carb,tr mic, frm-mod hd, sbfiss.

SANDSTONE: clr-off wh, vf-f, occ v crs, sr-rnd, fri-frm aggs, arg mtx, ti vis por, no fluor.

CORE # 2: 2958m-2985m

TOP 2809 SAND
2959 mMD(-2785.5 mTVDSS)

SANDSTONE: lt-med brn,occ dk brn,mod hd,tr slt,med-v crs,occ vf-f,rr gran,v pr srtd,sbang,sb elong,mod sil cmt,por exc 15-20%

Fluor:3% ptchy,dll-occ bri grn, no dir cut, v slw c/cut, bri wh /crm res/r, 2958-2981m.

SANDSTONE: lt brn/gry,20% cly mtx,30% slt,50% vf-occ f,wl srt, rnd,sb sph,mod strng arg cmt, por 3%.

SILTSTONE: med gy-med dk gy, oc brn gy,frm-mod hd,aren i/p, blky-sbblky,micmic, carb i/p.

STEERING 2991 m-3002 m

SANDSTONE: wh,clr-trnsl,vf-f, occ med,sbang-sbrnd,sb sph, pr srt,arg mtx,no vis por,no fluor.

SANDSTONE: wh,clr-trnsl,vf-med, sbang-sbrnd,occ vf rnd,sb sph, pr srt,tr v crs frstd,arg mtx, no vis por,no fluor.

SILTSTONE: med gy-med dk gy, frm-mod hd,aren i/p,occ g/t vf sst,blky-sbblky,micmic, carb i/p.

STEERING 3020 m-3031 m

SILTSTONE: med gy-med dk gy, frm-mod hd,arg,occ aren i/p, blky-sbblky,micmic,carb i/p.

SANDSTONE:wh,frm-fri,clr-trnsl, vf-f,occ med,rnd,sb sph,pr-mod wl srt,arg slty mtx,fr sil cmt, no vis por,no fluor.

STEERING 3050 m-3063 m

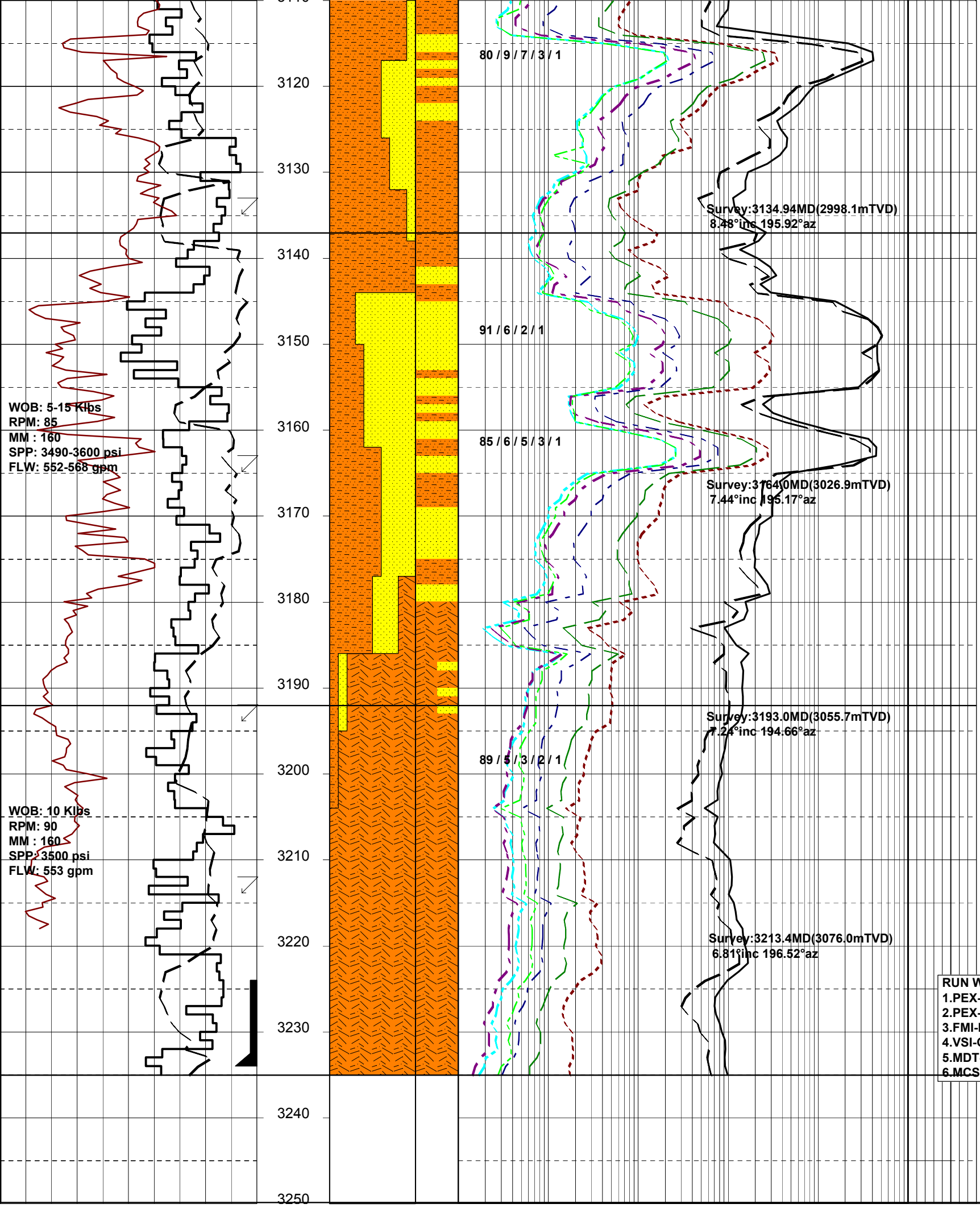
SILTSTONE: med dk gy-dk gy, frm-hd,arg,occ aren i/p, sb blky-sbfiss,micmic.

STEERING 3079 m-3087 m

CLAYSTONE: lt gy, v sft, disp, blky,occ aren i/p.

SILTSTONE: med dk gy-dk gy, frm-hd,arg,occ aren i/p, sb blky-sbfiss,micmic.

SILTSTONE: med brn/gy-dk gy, frm-hd, aren, com carb flk & miclam, micmic, sbblky.



SANDSTONE: wh-pl brn, trnsl vf-f, sr-sa, wl srt, com hd aggs w/ mod sil cmt, com off wh/slty arg mtx, crs lse grn i/p, tr carb flk/liths, pr-ti vis por, pr inf por, no fluor.

STEERING 3127 m- 3130 m

STEERING 3133 m- 3138 m

TOP 2973 SAND
3137 mMD (-2957 mTVDSS)

SILTSTONE: gy-dk gy, micmic, aren, com carb flk & miclam, frm-hd, sbblky.

SANDSTONE:pl gry-wh, trnsl, clr, vf-crs, dom med, sa-ang pr srt, mod sil cmt, tr ov/gths tr mtx, dom lse-hd agg, fr inf-ti vis por, no fluor.

STEERING 3156 m- 3159 m

SANDSTONE:pl gry-wh, trnsl, clr, vf-med, sa-ang, mod srt, mod sil cmt, tr ov/gths, com arg mtx, dom lse-hd agg, fr inf-ti vis por, no fluor.

TOP BASALT
3192 mMD (-3011.5 mTVDSS)

VOLCANIC Pyroclastic:off wh-v lt brn mott,pl ylsh/brn,frm,blky, vf grnd mass,rr weathered felds and pyroxene,tr indistinct flow structure,com weathered to clay, tr blk,trnsl vol glass.

BASALT: dk grn/blk,rdsh brn/ purple/gry,v com olivine,occ weathered to pyroxene,occ red/brn Fe oxide grnd mass, comm free calcite,indistinct flw structure in fine grnd mass.

6 5/8" Liner run to 3234m

TD YOLLA-4 ON THE 11-7-2004
@ 22:00 Hours
DRILLERS DEPTH: 3235.0 mMD
LOGGING DEPTH : 3235.5 mMD

RUN WIRELINE LOGS:
1.PEX-HRLA-CMR-SP-GR-LEHQT
2.PEX-HRLA-CMR-SP-GR-LEHQT(Rerun)
3.FMI-DSI-HNGS-ECS-LEHQT
4.VSI-GR-LEHQT
5.MDT-GR-CMR-LEHQT
6.MCST-GR

Origin energy

DRILLING LOG

Geoservices logging

FROM :(mt) 120 TO :(mt) 3250 SCALE : 1/ 1000

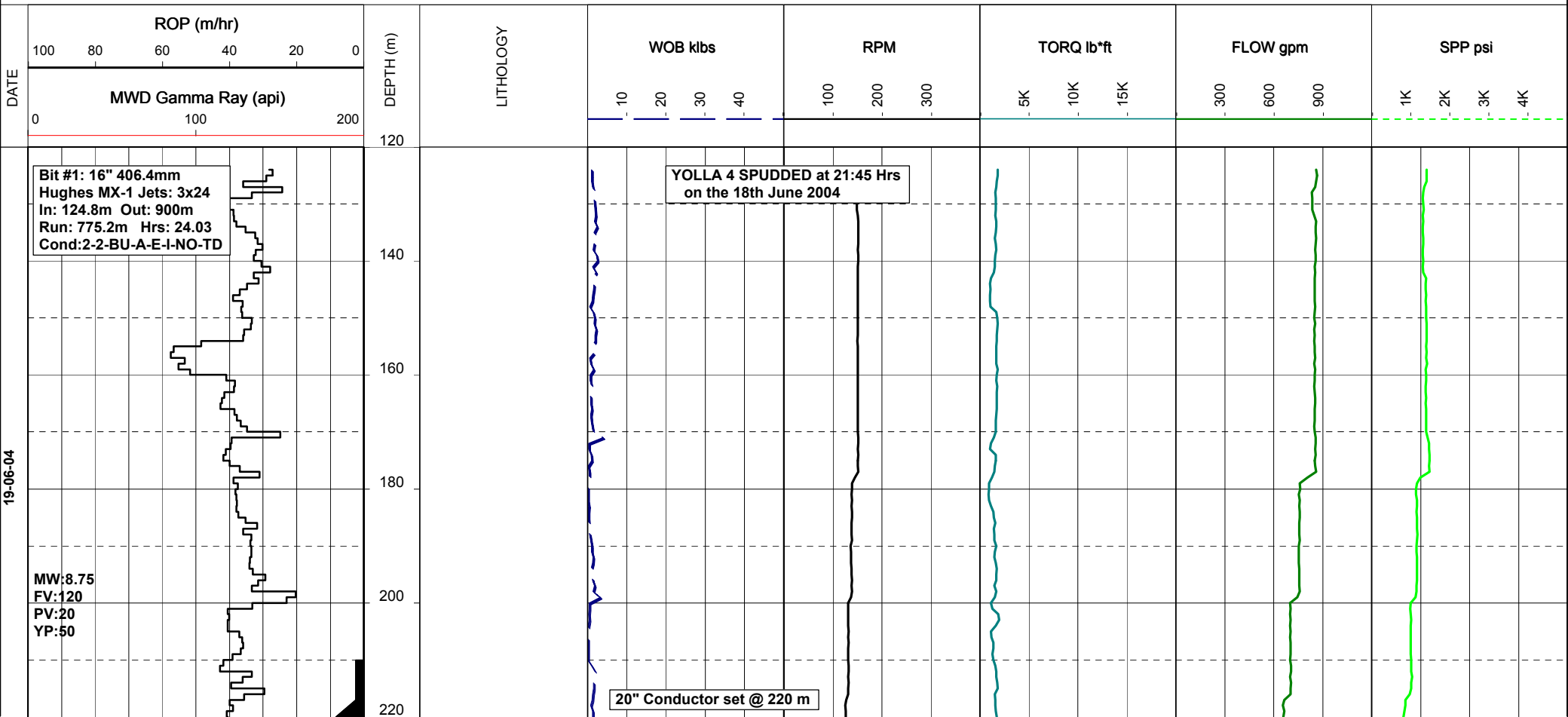
Well Name : YOLLA-4
Company : Origin energy

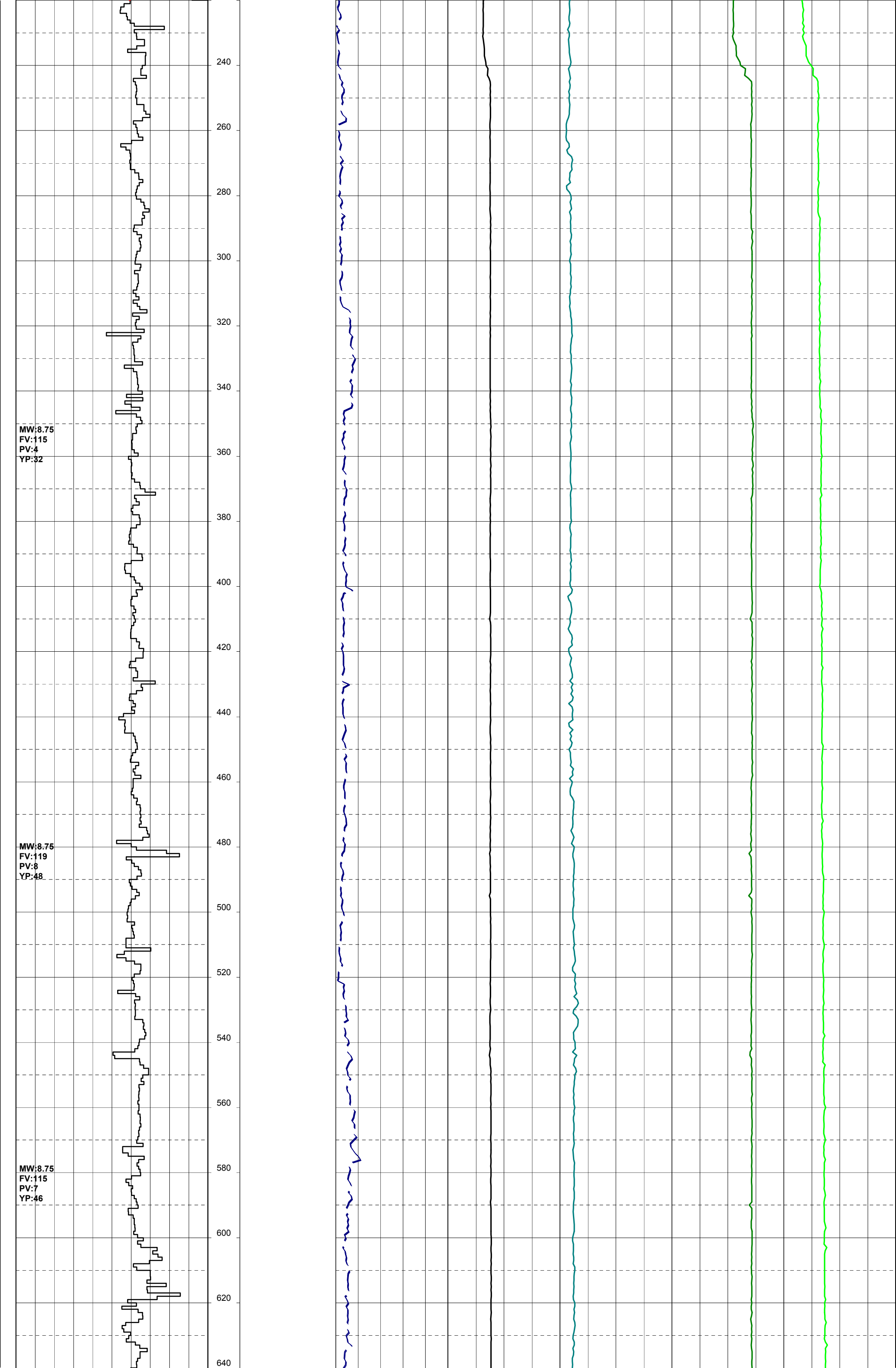
Country : AUSTRALIA

RT-MSL : 43.0m
RT-SEABED : 124m

Final TD : 3235 mRT
Final TVD : 3097.2mRT

Generated by ALS Package




240
260
280
300
320
340
MW:8.75
FV:115
PV:4
YP:32
360
380
400
420
440
460
MW:8.75
FV:119
PV:8
YP:48
480
500
520
540
560
MW:8.75
FV:115
PV:7
YP:46
580
600
620
640

20-06-04

MW:8.75
FV:100
PV:9
YP:46

660
680
700
720
740
760
780
800
820
840

MW:8.75
FV:113
PV:8
YP:43

Bit #2: 12.25" 311.15mm
Hughes ATS68 Jets: 3x24
In: 900m Out: 905m
Run: 5.0m Hrs:.25
Cond:1-1-WT-H-E-I-N-TD

25-06-04

26-06-04

Bit #3: 12.25" 311.15mm
Hughes HCM 506 Jets: 6x18
In: 905m Out: 2614m
Run: 1709m Hrs:82.5
Cond:1-1-NO-A-X-I-NO-TD

MW:8.8
FV:90
PV:29
YP:36
Gel: 5/7
Cl: 17K
pH: 9.0

WOB: 6-10 Klbs
RPM/DHM: 155
SPP: 2426 psi
FLW: 846 gpm

860
880
900
920
940
960
980
1000
1020
1040
1060

13 3/8" Casing @ 884.57 m

WOB: 10 Klbs
RPM/DHM: 180
SPP: 2560 psi
FLW: 852 gpm

WOB: 10-14 Klbs
RPM/DHM: 180
SPP: 2578 psi
FLW: 858 gpm

MW: 8.8
FV: 150
PV: 29
YP: 36
Gel:4/7
pH: 8.9
Cl: 18K

WOB: 5-14 Klbs
RPM/DHM: 55-180
SPP: 2551 psi
FLW: 858 gpm

WOB: 15-30 Klbs
TDRPM: 0-65
MMRPM: 110
SPP: 2900 psi
FLW: 845 gpm

SYSTEM SHUTDOWN 1282-1295 m
SLIDE 1300-1315 m
SLIDE 1323-1336 m
SLIDE 1352-1356 m
SLIDE 1360-1368 m
SLIDE 1381-1394 m
SLIDE 1410-1414 m
SLIDE 1421-1429 m
SLIDE 1432-1439 m
SLIDE 1455-1469 m

28-06-04

MW: 8.95
FV: 220
PV: 36
YP: 82
Gel:8/14
pH: 8.2
Cl: 16K

WOB: 15-20 Klbs
RPM: 70
MMRPM:110
SPP: 2907 psi
FLW: 855 gpm

WOB: 15-20 Klbs
RPM: 70
MMRPM:110
SPP: 3155 psi
FLW: 851 gpm

WOB: 10-15 Klbs
RPM: 80
MMRPM:110
SPP: 3159 psi
FLW: 849 gpm

1500
1520
1540
1560
1580
1600
1620
1640
1660
1680
1700
1720
1740
1760
1780
1800
1820
1840
1860
1880
1900

SLIDE 1482-1497 m
SLIDE 1508-1527 m
SLIDE 1537-1554 m
SLIDE 1567-1574 m
SLIDE 1575-1584 m
STEERING FROM 1733-1735 m
STEERING FROM 1791-1794 m
STEERING FROM 1848-1856 m

29-06-04

WOB: 15-25 Klbs
RPM: 65
MMRPM:110
SPP: 3600 psi
FLW: 840 gpm

WOB: 15-22 Klbs
RPM: 65-80
MMRPM:110
SPP: 3690 psi
FLW: 847 gpm

1920
1940
1960
1980
2000
2020
2040
2060
2080
2100
2120
2140
2160
2180
2200
2220
2240
2260
2280
2300
2320

WOB: 10-20 Klbs
RPM: 75
MMRPM:110
SPP: 3847 psi
FLW: 839 gpm

WOB: 10-20 Klbs
RPM: 75
MMRPM:110
SPP: 3861 psi
FLW: 830 gpm

WOB: 5-12 Klbs
RPM: 75
MMRPM:110
SPP: 3950 psi
FLW: 820 gpm

WOB: 10-16 Klbs
RPM: 75
MMRPM:110
SPP: 3880 psi
FLW: 825 gpm

30-06-04

WOB: 10-16 Klbs
RPM: 75
MMRPM:110
SPP: 3880 psi
FLW: 825 gpm

MW: 9.35
FV: 120
PV: 50
YP: 52
Gel:7/11
pH: 8.3
Cl: 18K

WOB: 8-18 Klbs
RPM: 60-70
MMRPM:110
SPP: 3956 psi
FLW: 836 gpm

WOB: 15-40 Klbs
RPM: 70
MMRPM:110
SPP: 3716 psi
FLW: 824 gpm

2340
2360
2380
2400
2420
2440
2460
2480
2500

STEERING 2458m-2464m
STEERING 2467m-2469m

WOB: 15-30 Klbs
RPM: 70
MMRPM:110
SPP: 4100 psi
FLW: 824 gpm

9 5/8" Casing Shoe @ 2586.14m

MW: 9.35
FV: 95
PV: 47
YP: 51
Gel:7/11
pH: 7.5
Cl: 18K

02-07-04

05-07-04

Bit #4: 8.5" HUGHES
HCM505 Jets:3x18,2x16
In: 2614m Out:2892m
Run:278m Hrs:14.6
Cond:1-1-WT-IN-X-I-NO-CP

06-07-04

WOB: 15 Klbs
RPM: 80
MMRPM:150-160
SPP: 3018 psi
FLW:547 gpm

MW: 9.25
FV: 66
PV: 28
YP: 19
Gel:5/7
pH: 8.5
Cl: 20K

WOB: 15-20 Klbs
RPM: 80
MMRPM:160
SPP: 3106 psi
FLW: 559 gpm

2520
2540
2560
2580
2600
2620
2640
2660
2680
2700
2720
2740

STEERING 2544m-2546m
STEERING 2574m-2579m
STEERING 2614m-2624m
STEERING 2692 m-2712 m

WOB: 15-22 Klbs
RPM: 80
MMRPM:160
SPP: 2988 psi
FLW: 524 gpm

MW: 9.3
FV: 76
PV: 30
YP: 28
Gel:7/11
pH: 8.7
Cl: 19K

2760
2780
2800
2820
2840
2860

STEERING 2835 m-2839 m

WOB: 8-12 Klbs
RPM: 0-80
MMRPM:160
SPP: 2900 psi
FLW: 524 gpm

STEERING 2864 m-2870 m
STEERING 2873 m-2874 m
STEERING 2878 m-2883 m

2880

07-07-04

Bit #5: 8.5" CD93
Jets:1.1 TFA
In: 2892m Out:2919.5m
Run:27.5m Hrs:1.4

2900

WOB: 5-10 Klbs
RPM: 70-95
SPP: 550-617 psi
FLW: 200 gpm

09-07-04

Bit #6: 8.5" BBL 650XA
Jets:3x18,2x16
In: 2919.5m Out:2958m
Run:38.5m Hrs:2.8
Cond:1-1-BT-G-X-I-NO-CP

2920

STEERING 2923 m-2930 m

MW: 9.4
FV: 86
PV: 28

WOB: 4-13 Klbs
RPM: 70-80
MM: 170
SPP: 3298-3650 psi
FLW: 550 gpm

2940

7-04

Bit #7RR: 8.5" CD93
Jets:1.1 TFA
In: 2958m Out:2985m
Run:27m Hrs:0.77
COND:1-1-WT-A-X-I-NO-TD

10-0

2960

11-07-04

Bit #8: 8.5" REED HYCALOG
DSX173 Jets:3x18,3x16
In: 2985m Out:3235m
Run:250m Hrs:12.5
Cond:1-1-CT-H-X-I-NO-TD

2980

STEERING 2991 m-3002 m

MW: 9.4
FV: 82
PV: 31
YP: 33
Gel:7/11
pH: 8.8
Cl: 20K

3000
3020

STEERING 3020 m-3031 m

3040

WOB: 6-8 Klbs
RPM: 93
MM : 162
SPP: 3242-3326 psi
FLW: 548 gpm

STEERING 3050 m-3063 m

3060
3080

STEERING 3079 m-3087 m

WOB: 10 Klbs
RPM: 94
MM : 160
SPP: 3515 psi
FLW: 556 gpm

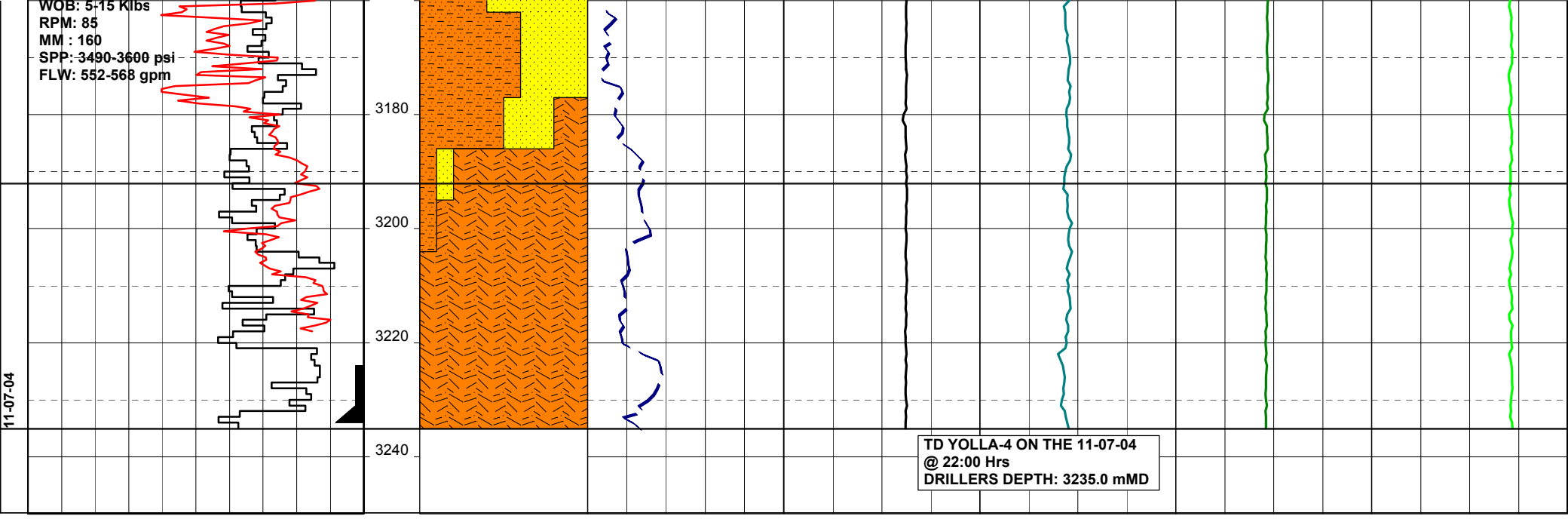
3100
3120

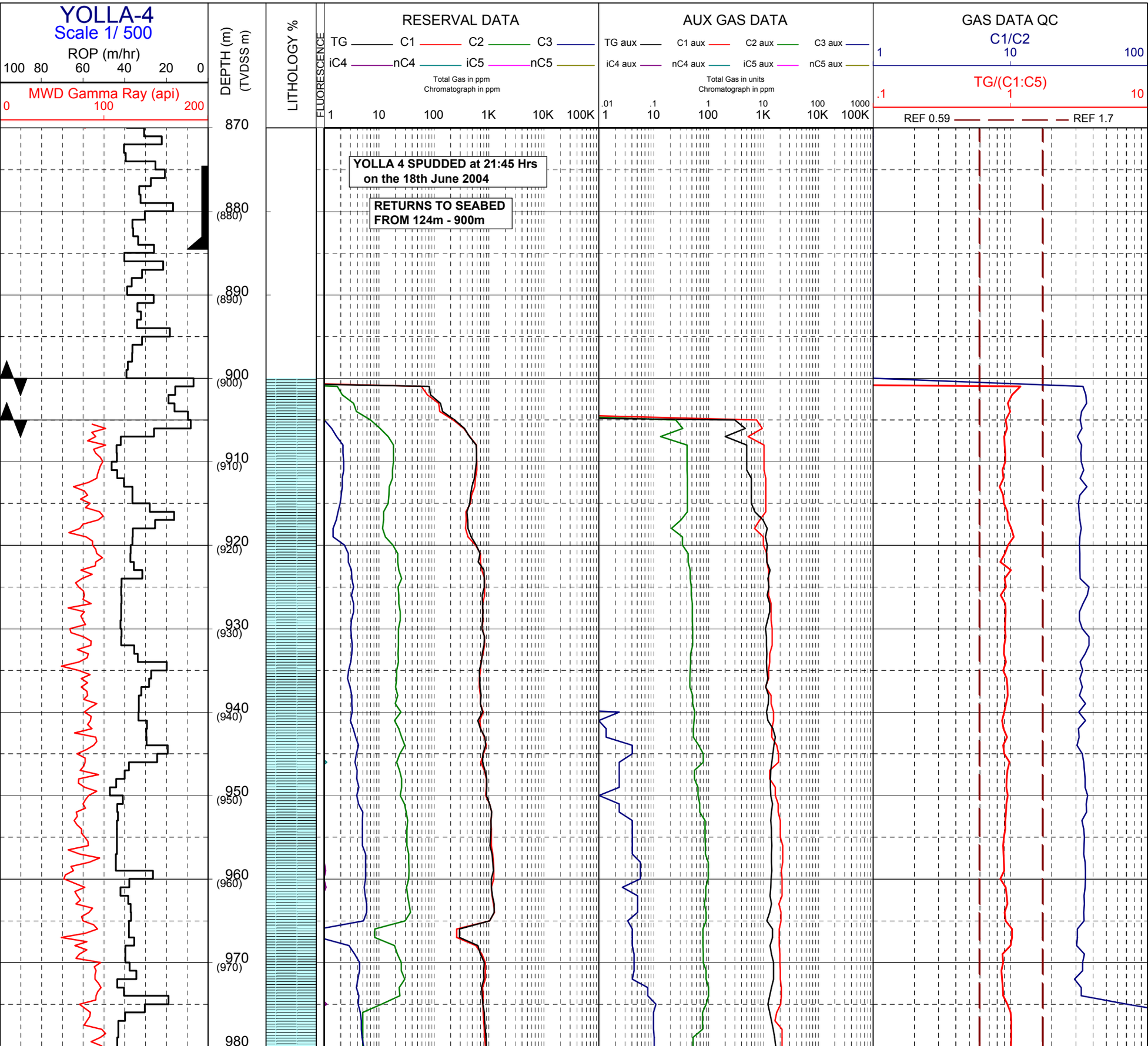
STEERING 3127 m- 3130 m
STEERING 3133 m- 3138 m

3140

STEERING 3156 m- 3159 m

3160


WOB: 5-15 Klbs
RPM: 85
MM : 160
SPP: 3490-3600 psi
FLW: 552-568 gpm
3180
3200
3220
3240
11-07-04
TD YOLLA-4 ON THE 11-07-04
@ 22:00 Hrs
DRILLERS DEPTH: 3235.0 mMD

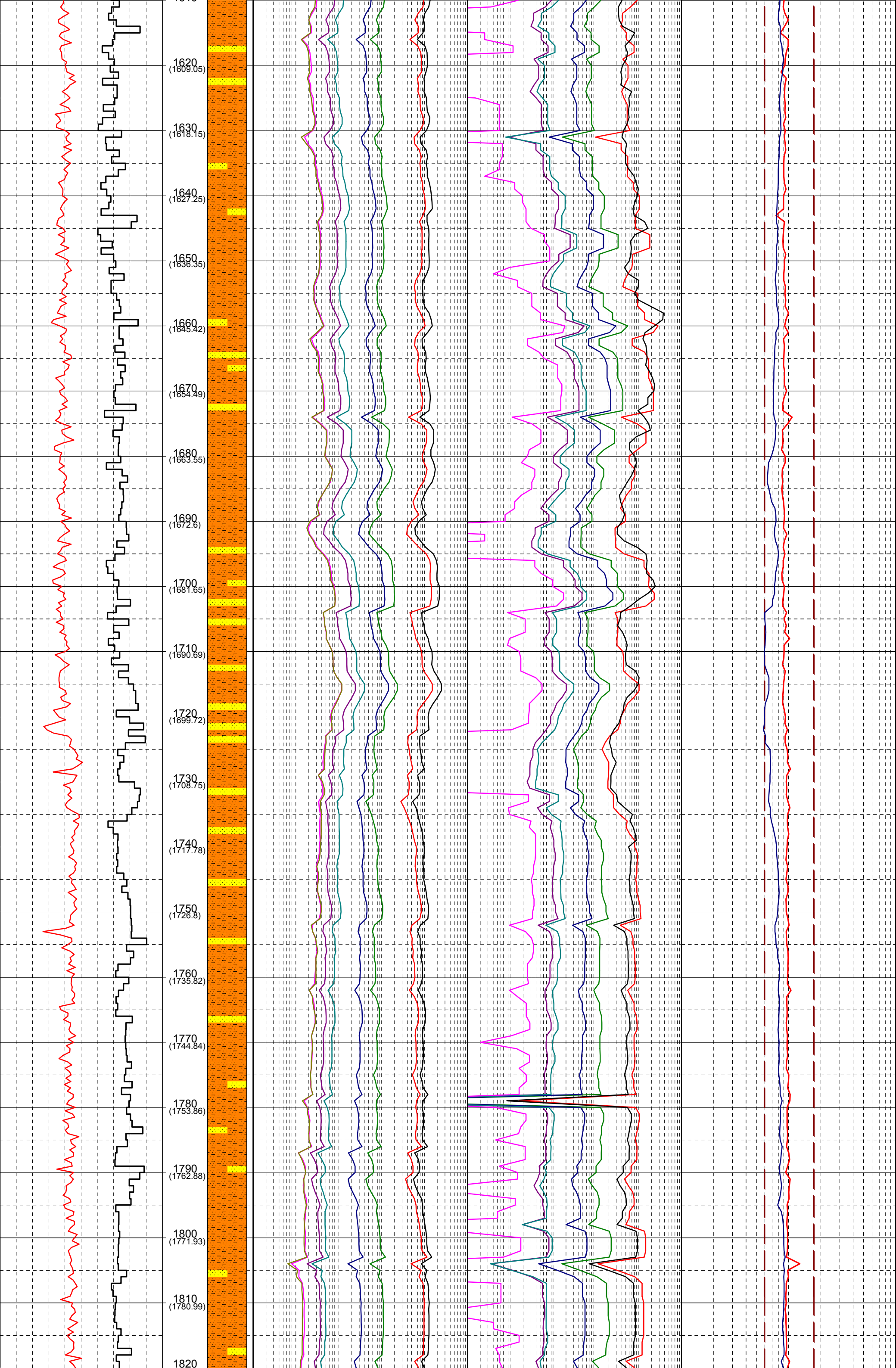

YOLLA-4
Scale 1/ 500
ROP (m/hr)
100 80 60 40 20 0
MWD Gamma Ray (api)
0 100 200
DEPTH (m)
(TVDSS m)
LITHOLOGY %
FLUORESCENCE
RESERVAL DATA
TG C1 C2 C3
iC4 nC4 iC5 nC5
Total Gas in ppm
Chromatograph in ppm
1 10 100 1K 10K 100K
AUX GAS DATA
TG aux C1 aux C2 aux C3 aux
iC4 aux nC4 aux iC5 aux nC5 aux
Total Gas in units
Chromatograph in ppm
.01 .1 1 10 100 1000
1 10 100 1K 10K 100K
GAS DATA QC
C1/C2
1 10 100
TG/(C1:C5)
.1 1 10
REF 0.59 REF 1.7
YOLLA 4 SPUDDED at 21:45 Hrs
on the 18th June 2004
RETURNS TO SEABED
FROM 124m - 900m
870
880 (880)
890 (890)
900 (900)
910 (910)
920 (920)
930 (930)
940 (940)
950 (950)
960 (960)
970 (970)
980

990 (990)
1000 (1000)
1010 (1010)
1020 (1020)
1030 (1030)
1040 (1040)
1050 (1050)
1060 (1060)
1070 (1070)
1080 (1080)
1090 (1090)
1100 (1100)
1110 (1110)
1120 (1120)
1130 (1130)
1140 (1140)
1150 (1150)
1160 (1160)
1170 (1170)
1180 (1180)
1190

1200 (1200)
1210 (1210)
1220 (1220)
1230 (1230)
1240 (1240)
1250 (1250)
1260 (1260)
1270 (1270)
1280 (1279.99)
1290 (-888.25)
1300 (1299.98)
1310 (1309.96)
1320 (1319.93)
1330 (1329.89)
1340 (1339.83)
1350 (1349.77)
1360 (1359.69)
1370 (1369.59)
1380 (1379.49)
1390 (1389.37)
1400

SYSTEM SHUTDOWN 1282-1295 m

1410 (1409.09)
1420 (1418.93)
1430 (1428.75)
1440 (1438.57)
1450 (1448.35)
1460 (1458.1)
1470 (1467.85)
1480 (1477.54)
1490 (14872)
1500 (1496.87)
1510 (1506.43)
1520 (1515.97)
1530 (1525.51)
1540 (1534.94)
1550 (1544.36)
1560 (1553.78)
1570 (1563.05)
1580 (1572.32)
1590 (1581.59)
1600 (1590.74)
1610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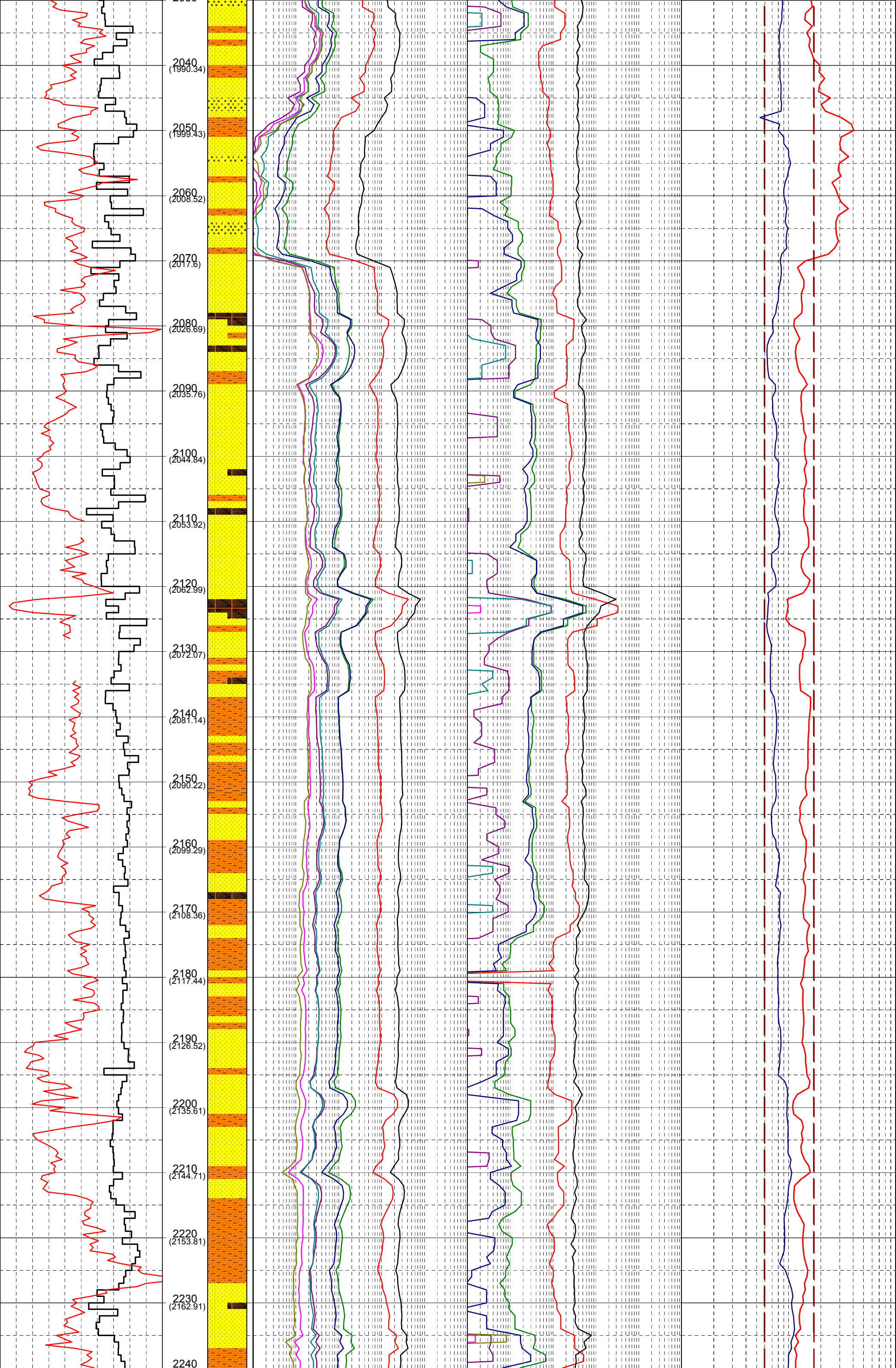
(1609.05)
1630
(1618.15)
1640
(1627.25)
1650
(1636.35)
1660
(1645.42)
1670
(1654.49)
1680
(1663.55)
1690
(1672.6)
1700
(1681.65)
1710
(1690.69)
1720
(1699.72)
1730
(1708.75)
1740
(1717.78)
1750
(1726.8)
1760
(1735.82)
1770
(1744.84)
1780
(1753.86)
1790
(1762.88)
1800
(1771.93)
1810
(1780.99)
1820

1830 (1799.12)
1840 (1808.18)
1850 (1817.24)
1860 (1826.34)
1870 (1835.45)
1880 (1844.56)
1890 (1853.68)
1900 (1862.8)
1910 (1871.92)
1920 (1881.04)
1930 (1890.17)
1940 (1899.29)
1950 (1908.41)
1960 (1917.53)
1970 (1926.65)
1980 (1935.76)
1990 (1944.87)
2000 (1953.97)
2010 (1963.07)
2020 (1972.16)
2030

CHANGE GZG RESERVAL RUBBER


2040
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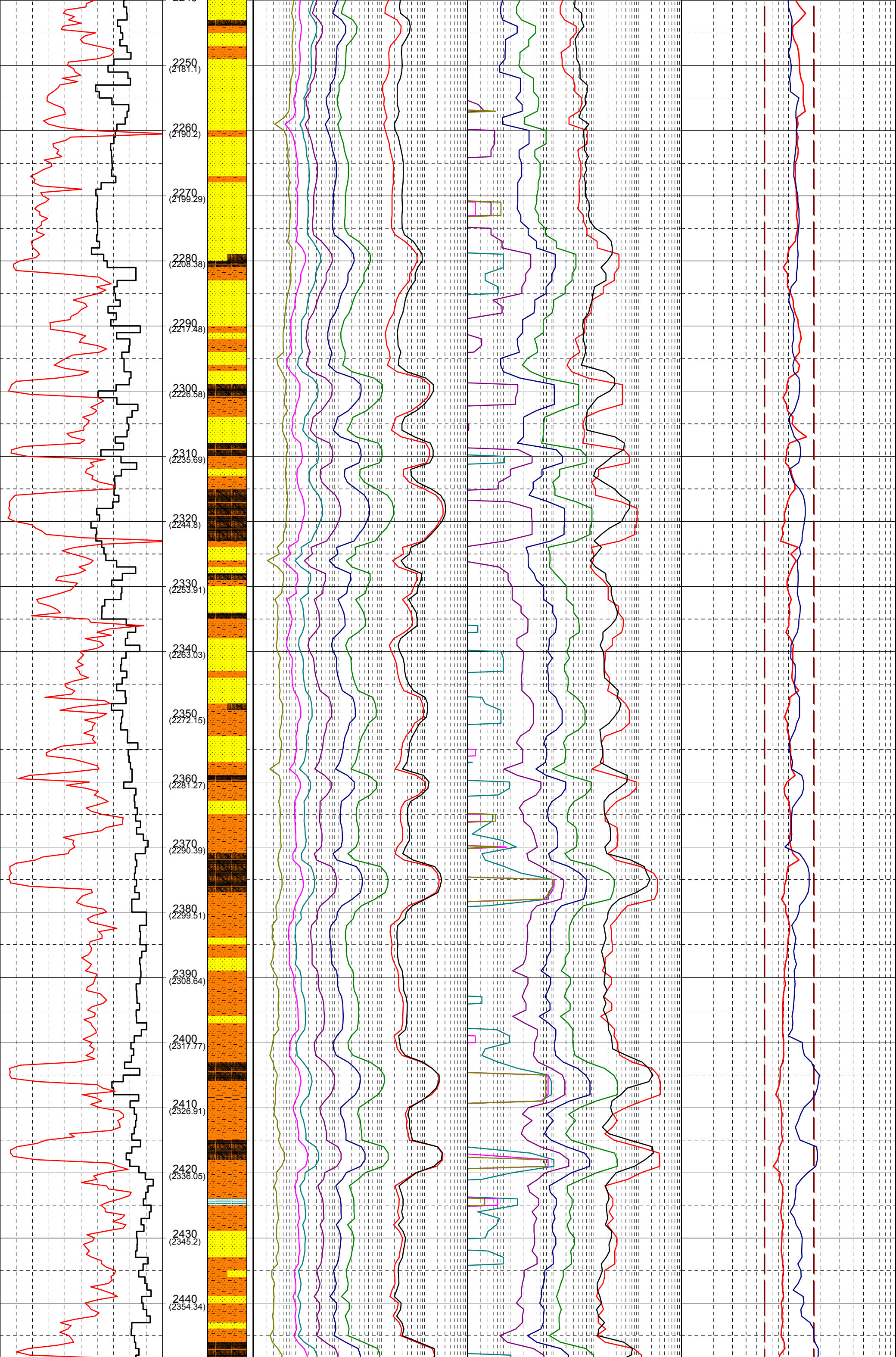
2050
(1999.43)
2060
(2008.52)
2070
(2017.6)
2080
(2026.69)
2090
(2035.76)
2100
(2044.84)
2110
(2053.92)
2120
(2062.99)
2130
(2072.07)
2140
(2081.14)
2150
(2090.22)
2160
(2099.29)
2170
(2108.36)
2180
(2117.44)
2190
(2126.52)
2200
(2135.61)
2210
(2144.71)
2220
(2153.81)
2230
(2162.91)
2240


2250
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2260
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2270
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2280
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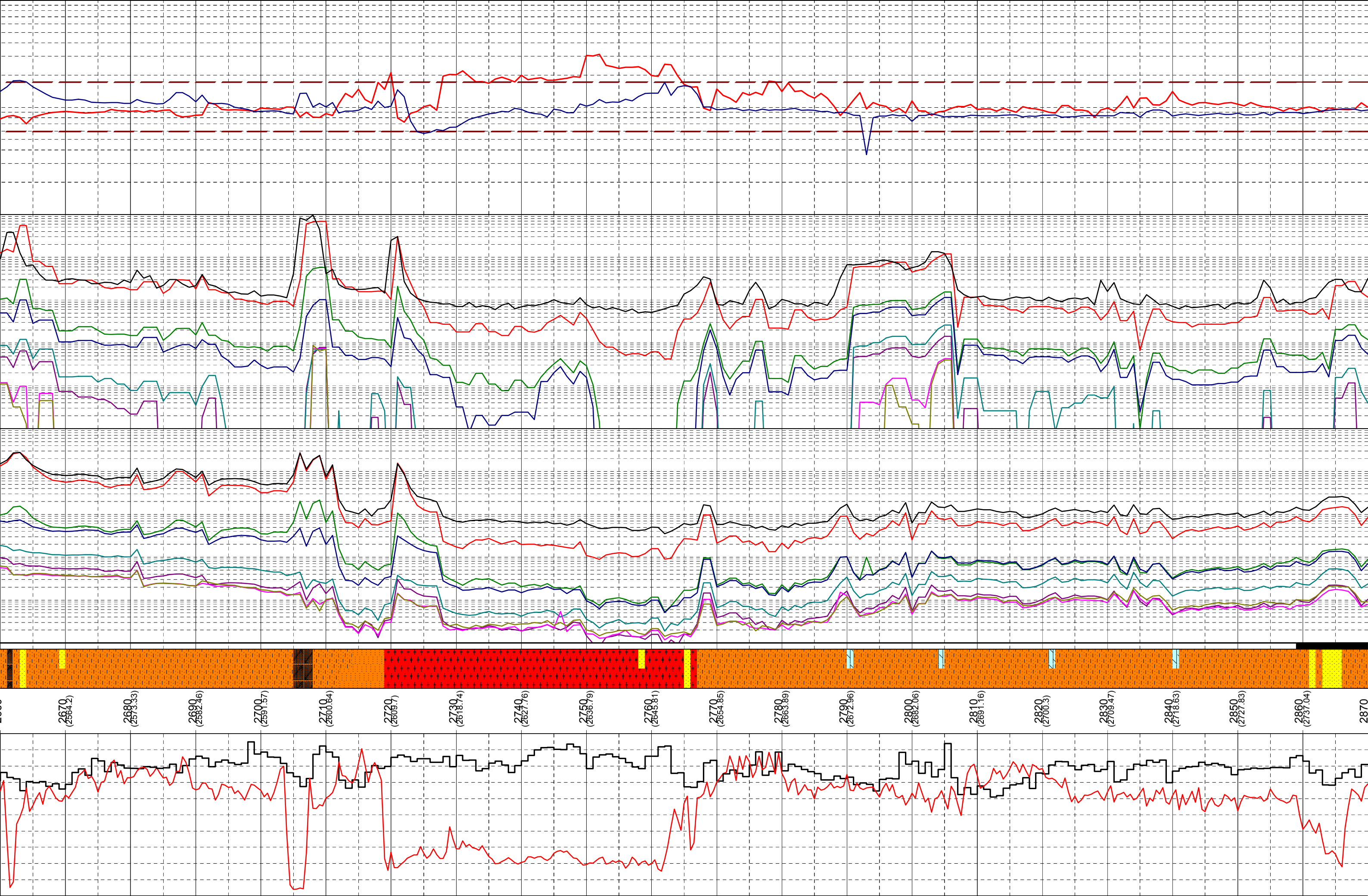
2290
(2217.48)
2300
(2226.58)
2310
(2235.69)
2320
(2244.8)
2330
(2253.91)
2340
(2263.03)
2350
(2272.15)
2360
(2281.27)
2370
(2290.39)
2380
(2299.51)
2390
(2308.64)
2400
(2317.77)
2410
(2326.91)
2420
(2336.05)
2430
(2345.2)
2440
(2354.34)
2450

2460 (2372.63)
2470 (2381.75)
2480 (2390.87)
2490 (2400)
2500 (2409.12)
2510 (2418.25)
2520 (2427.39)
2530 (2436.54)
2540 (2445.69)
2550 (2454.84)
2560 (2463.99)
2570 (2473.13)
2580 (2482.25)
2590 (2491.36)
2600 (2500.46)
2610 (2509.56)
2620 (2518.65)
2630 (2527.74)
2640 (2536.82)
2650 (2545.95)
2660

REPLACED GZG PUMP RUBBER
RESERVAL GAS DATA NOT
RECORDED from 2515m - 2544m

ADJUST GZG PROBE AT FLOW TROUGH


2670 (2564.2)
2680 (2573.33)
2690 (2582.46)
2700 (2591.57)
2710 (2600.64)
2720 (2609.7)
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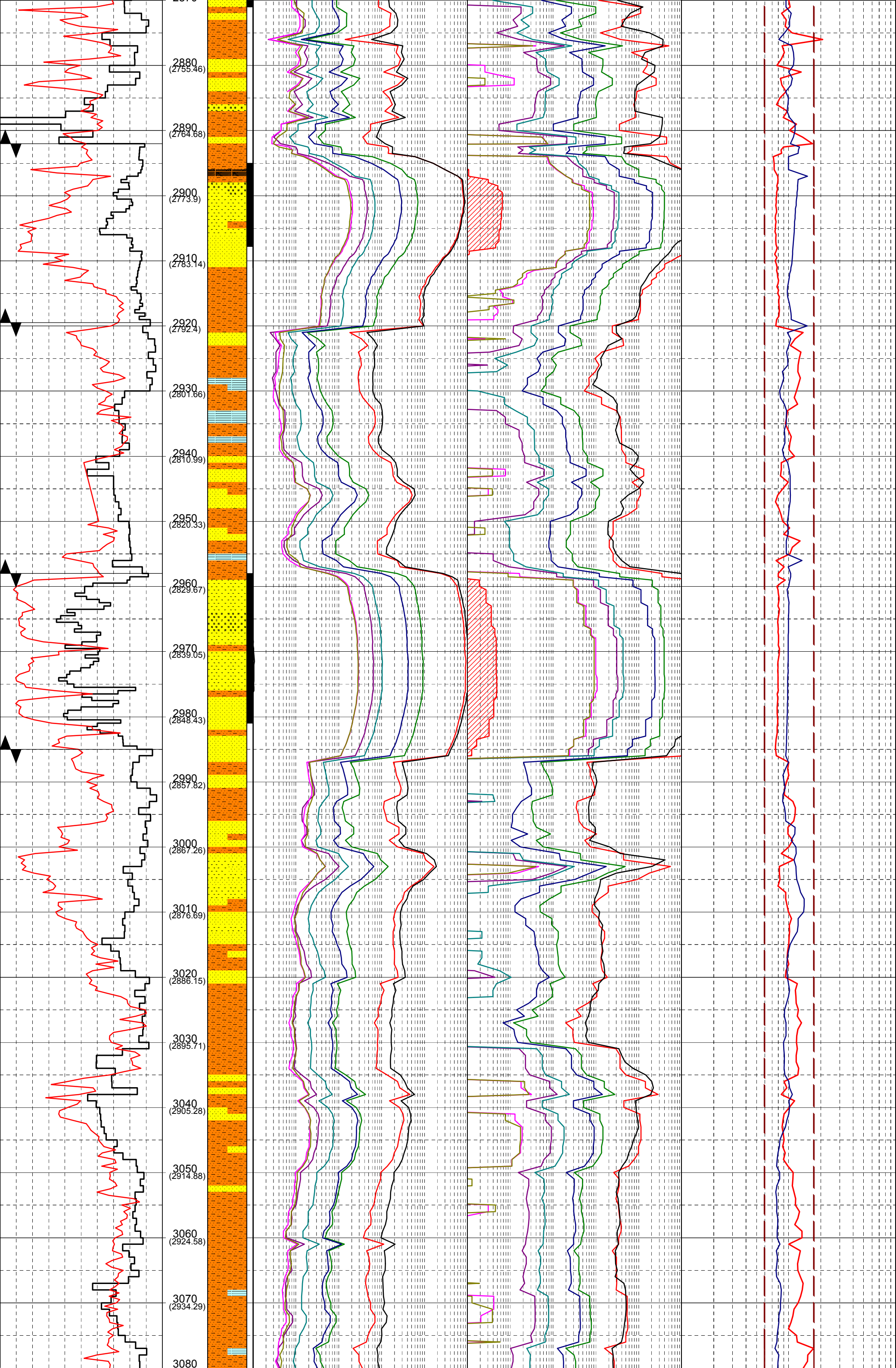
2750 (2636.79)
2760 (2645.81)
2770 (2654.85)
2780 (2663.89)
2790 (2672.96)
2800 (2682.06)
2810 (2691.16)
2820 (2700.3)
2830 (2709.47)
2840 (2718.63)
2850 (2727.83)
2860 (2737.04)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2920
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2940
(2810.99)
2950
(2820.33)
2960
(2829.67)
2970
(2839.05)
2980
(2848.43)
2990
(2857.82)
3000
(2867.26)
3010
(2876.69)
3020
(2886.15)
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3050
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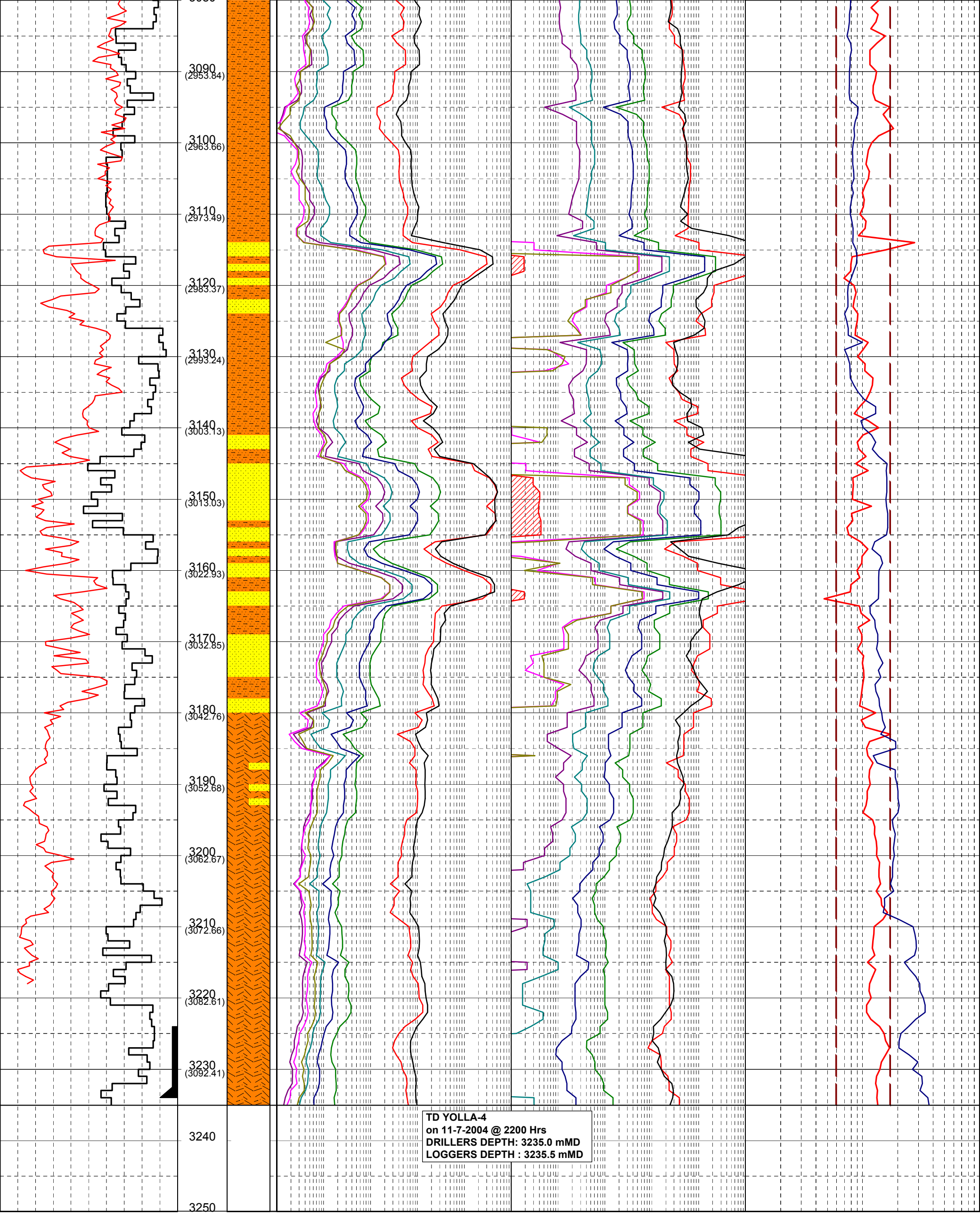
3080


3090
(2953.84)
3100
(2963.66)
3110
(2973.49)
3120
(2983.37)
3130
(2993.24)
3140
(3003.13)
3150
(3013.03)
3160
(3022.93)
3170
(3032.85)
3180
(3042.76)
3190
(3052.68)
3200
(3062.67)
3210
(3072.66)
3220
(3082.61)
3230
(3092.41)
3240
3250
TD YOLLA-4
on 11-7-2004 @ 2200 Hrs
DRILLERS DEPTH: 3235.0 mMD
LOGGERS DEPTH : 3235.5 mMD

HOLE STABILITY LOG

WELL : YOLLA-4

FROM (m): 120 TO (m): 3250 SCALE: 1/ 1000

Country	: AUSTRALIA	**POSITION**		**CASING**	
State	: TASMANIA	Latitude	: 039 50' 40.592"S	16" Hole to (mMDRT)	: 900m
Field	: YOLLA	Longitude	: 145 49' 06.057"E	12 1/4" Shoe @ (mMDRT)	: 2614m
Permit	: T/L1	UTM	: 398,905.07m E	8 1/2" Hole to (mMDRT)	: 3235m
Well Type	: Development	UTM	: 5,588,821.47m N	20" Shoe at (mMDRT)	: 220m
Rig Name	: ENSCO 102	RT-MSL (mRT)	: 43.0m	13 3/8" Shoe (mMDRT)	: 884.57m
		RT-Seabed (m)	: 124m	9 5/8" Shoe at (mMDRT)	: 2586.14m

Spud Date	: 18-06-2004
TD Date	: 11-07-2004
TD (mMDRT)	: 3235 mRT
TVD (mTVDSS)	: 3097.2mRT
Status	: Run 6 5/8"Liner

ABBREVIATIONS

MW MUD WEIGHT
FV FUNNEL VISCOSITY
PV PLASTIC VISCOSITY
YP YIELD POINT
FC FILTER CAKE
SOL SOLIDS
WL FILTRATE
SD SAND - %
S SALINITY - PPM
RM MUD RESISTIVITY
RMF MUD FILTRATE
C CARBIDE TEST
LAT LOGGED AFTER TRIP
DS DEVIATION SURVEY

NB NEW BIT
RR RERUN BIT
CB CORE BIT
WOB WEIGHT ON BIT
RPM REVS PER MINUTE
FLC FLOW CHECK
CR CIRCULATE RETURNS
PR POOR RETURNS
NR NO RETURNS
BG BACKGROUND GAS
TG TRIP GAS
STG SHORT TRIP GAS
CG CONNECTION GAS
SG SWAB GAS
SVG SURVEY GAS

LITHOLOGY LEGEND

Claystone
Siltstone
Fine SST
Medium SST
Coarse SST
Conglomerate
Marl
Limestone
Dolomite
Chert
Conglomerate
Coal
Bryozoa
Calcareous
Iron Minerals
Corals
Foraminifera
Lithic Fragment
Carb Fragments
Silty
Intrusives
Glauconite
Pyrite
Cement

ENGINEERING LEGEND

Core
RFT
Mud gain
Mud loss
Shoe
Volc Modifier
Deviation survey

MWD Gamma Ray (api) 0 100 200

Rate of Penetration metres per hour 100 50 0

Weight on Bit 50 40 30 20 10 0

DEPTH MD (m)

SHOES

CORES

INTERPRETIVE LITHOLOGY

Weight on Hook (klbs) 0 200 400

Torque (klb*ft) 0 10K 20K

Torque Max (klb*ft) 0 10K 20K

RPM 0 100 200

SPP psi 0 2500 5K

Total Gas units .5 5 50

Total Gas Wrap Units 50 500 5K

120
140
160
180

WOB:0-2 Klbs
RPM:152
SPP:1160
FLW:860

No Gas

Comments

Text Referring to Drilling
Text refering to Wiper Trip
Text Referring to TRIP 1
Text Referring to TRIP 2
Text Referring to TRIP 3
Text Referring to TRIP 4
Text Referring to TRIP 5

YOLLA-4 SPUDDED:21:45 hrs on the 18th June 2004

Bit #1: 16" 406.4mm
Hughes MX-1 Jets: 3x24
In: 124.8m Out: 900m
Run: 775.2m Hrs: 24.03
Cond:2-2-BU-A-E-I-No-TD

Returns to sea level

19/06/04

Every stand 3 sweeps were pumped. Two 30-35 bbl sweeps of flocculated Bentonite / Seawater were pumped at first & second single. At the end of the final single, 35-50 bbl of non flocculated Hi-Vis bentonite was spotted around BHA.

On pulling out for casing 220m 35 klbs Overpull

20" Conductor set @ 220m

On Wiper Trip to Conductor shoe @220m 10-15 Klb Overpull

MW:8.75
FV:120
PV:20
YP:50

WOB:0-2 Klbs
RPM:153
SPP:888
FLW:660

200
220
240
260

No Gas

Returns to sea level

280
300
320

WOB:4-7 Klbs
RPM:153
SPP:1605
FLW:853

MW:8.75
FV:115
PV:4
YP:32

340

WOB:5-7 Klbs
RPM:153
SPP:1668
FLW:865

360

No Gas

Returns to sea level

380
400
420

WOB:3-5 Klbs
RPM:152
SPP:1700
FLW:860

440
460

No Gas

Returns to sea level

MW:8.75
FV:119
PV:8
YP:48

480

WOB:1-3 Klbs
RPM:152
SPP:1750
FLW:850

500
520
540

WOB:6-8 Klbs
RPM:156
SPP:1800
FLW:860

560

No Gas

On Wiper Trip to Conductor shoe: f/ 562 - 545m 10-15 Klb Overpull

MW:8.75
FV:115
PV:7
YP:46

580

Returns to sea level

600

620
640
660
680
700
720
740
760
780
800
820
840
860
880
900
920
940
960
980
1000
1020

No Gas

No Gas

No Gas

WOB:5-7 Klbs
RPM:156
SPP:2000
FLW:870

MW:8.75
FV:100
PV:9
YP:46

WOB:5-10 Klbs
RPM:154
SPP:1925
FLW:855

WOB:3-7 Klbs
RPM:188
SPP:2225
FLW:930

WOB:5-12 Klbs
RPM:190
SPP:2300
FLW:920

WOB:5-12 Klbs
RPM:190
SPP:2300
FLW:915

MW:8.8
FV:90
PV:29
YP:36
Gel: 5/7
Cl: 17K
pH: 9.0

WOB: 6-10 Klbs
RPM/DHM: 155
SPP: 2426 psi
FLW: 846 gpm

WOB: 10 Klbs
RPM/DHM: 180
SPP: 2510 psi
FLW: 856 gpm

Returns to sea level

On pulling out for casing
712m - 709m 15 klbs O/P

On pulling out for casing
753m - 749m 10-15 klbs O/P

On Wiper Trip to Conductor
763m - 750m 10-15 klbs O/P

On pulling out for casing
763m- 61.5m 10-15 klbs O/P

On pulling out for casing
767m - 765m 10-15 klbs O/P

On pulling out for casing
771m - 770m 15 klbs O/P

On Wiper Trip to Conductor
773m - 768m 10-30 klbs O/P

On Wiper Trip to Conductor
788m - 777m 10-35 klbs O/P

On pulling out for casing
794m - 785m 10-20 klbs O/P

On Wiper Trip to Conductor
796m - 792m 10-20 klbs O/P

On pulling out for casing
798m - 797m 10-20 klbs O/P

On pulling out for casing
802m 10-15 klbs O/P

On Wiper Trip to Conductor
805.5m - 798m 10-15 klbs O/P

20/06/04

Returns to sea level

13 3/8" Csg set @ 884.6m

Bit #2: 12.25" 311.15mm
Hughes ATS68 Jets: 3x24
In: 900m Out: 905m
Run: 5.0m Hrs:.25
Cond:1-1-WT-H-E-I-N-TD

25/06/04

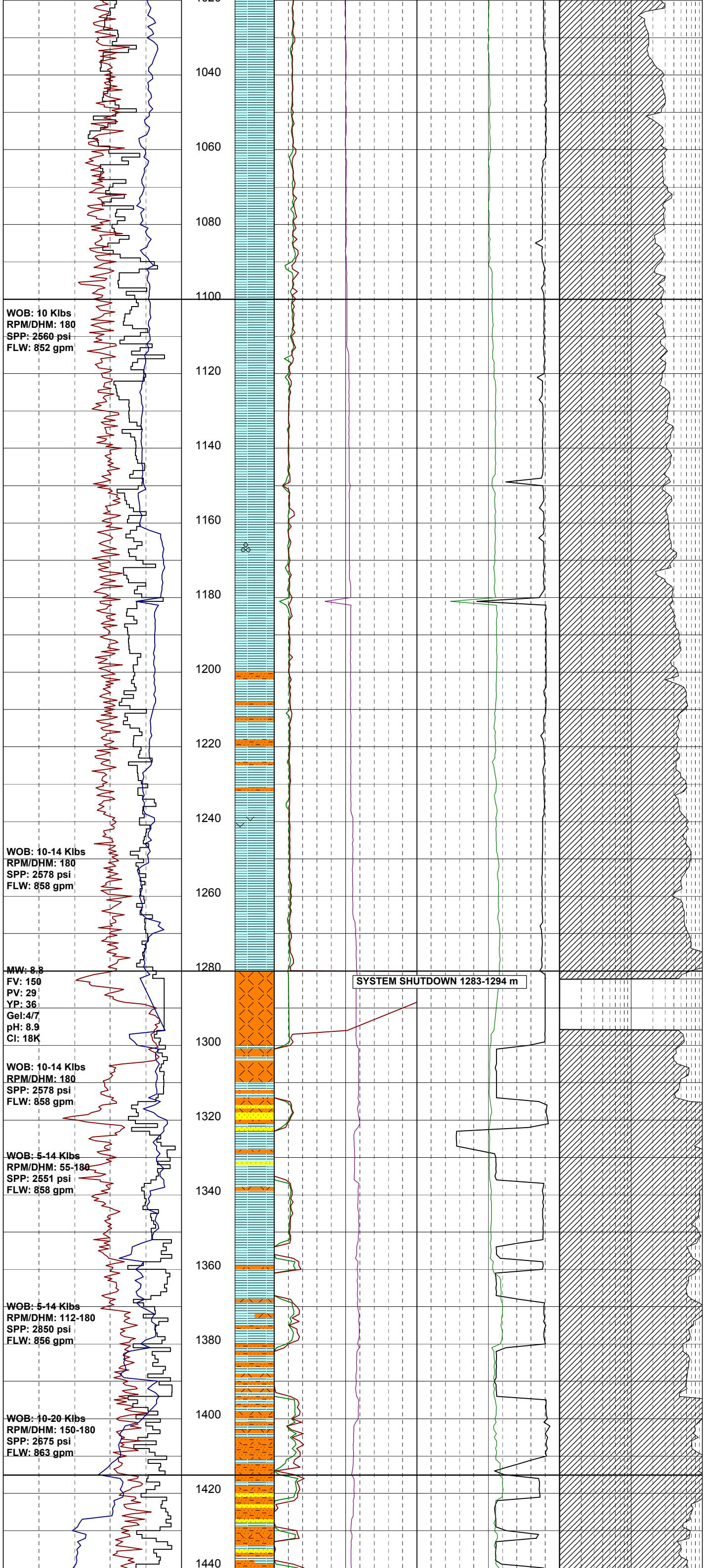
Bit #3: 12.25" 311.15mm
HTC HCM 506 Jets:6x18
In: 905m Out: 2614m
Run: 1709m Hrs:82.5
Cond:1-1-NO-A-X-I-No-TD

FIT done @ 905m
240 psi (EMW=10.5 ppg)
8.91 ppg mud

DRILL with
SEAWATER / DRISPAC
SOLTEX MUD SYSTEM

26/06/04

CARBIDE IN 975 m:
Theor Stk: 3347
Act Strks: 3550
Hole 6% Overgauge


1040
1060
1080
1100
WOB: 10 Klbs
RPM/DHM: 180
SPP: 2560 psi
FLW: 852 gpm
1120
1140
1160
1180
1200
1220
1240
WOB: 10-14 Klbs
RPM/DHM: 180
SPP: 2578 psi
FLW: 858 gpm
1260
1280
MW: 8.8
FV: 150
PV: 29
YP: 36
Gel:4/7
pH: 8.9
Cl: 18K
SYSTEM SHUTDOWN 1283-1294 m
1300
WOB: 10-14 Klbs
RPM/DHM: 180
SPP: 2578 psi
FLW: 858 gpm
1320
WOB: 5-14 Klbs
RPM/DHM: 55-180
SPP: 2551 psi
FLW: 858 gpm
1340
1360
WOB: 5-14 Klbs
RPM/DHM: 112-180
SPP: 2850 psi
FLW: 856 gpm
1380
1400
WOB: 10-20 Klbs
RPM/DHM: 150-180
SPP: 2675 psi
FLW: 863 gpm
1420
1440
ANGAHOOK Formation
1100mMD(-1057mTVDSS)
DRILL with
SEAWATER / DRISPAC
SOLTEX MUD SYSTEM
TOP VOLCANICS
1280 mMD(-1237mTVDSS)
SLIDE 1300-1315 m
27/06/04
SLIDE 1323-1336 m
While Re-Logging MWD f/
1325m Max Gas 1726 Units
Recorded after Wiper Trip
From 2614 m
SLIDE 1352-1356 m
SLIDE 1360-1368 m
SLIDE 1381-1394 m
SLIDE 1410-1414 m
UNDIFF OLIGOCENE
1415mMD(-1371mTVDSS)
SLIDE 1421-1429 m
SLIDE 1432-1439 m

DRILL WITH
SEAWATER / DRISPAC
SOLTEX MUD SYSTEM

SLIDE 1455-1469 m

1460

1480

SLIDE 1482-1497 m

WOB: 30 Klbs
RPM: 0-65
MMRPM:110
SPP: 2800-2950 psi
FLW: 840 gpm

1500

28-06-04

SLIDE 1508-1527 m

MW: 8.95
FV: 220
PV: 36
YP: 82
Gel:8/14
pH: 8.2
Cl: 16K

1520

1540

SLIDE 1537-1554 m

WOB: 15-20 Klbs
RPM: 70
MMRPM:110
SPP: 2907 psi
FLW: 855 gpm

1560

SLIDE 1567-1574 m

1580

SLIDE 1575-1584 m

WOB: 15-20 Klbs
RPM: 70
MMRPM:110
SPP: 3155 psi
FLW: 851 gpm

1600

1620

1640

WOB: 10-15 Klbs
RPM: 80
MMRPM:110
SPP: 3159 psi
FLW: 849 gpm

1660

1680

1700

1720

TOP DEMONS BLUFF
1723mMD(-1659mTVDSS)

WOB: 15-25 Klbs
RPM: 65
MMRPM:110
SPP: 3600 psi
FLW: 840 gpm

SLIDE 1733-1735 m

1740

1760

1780

SLIDE 1791-1794 m

1800

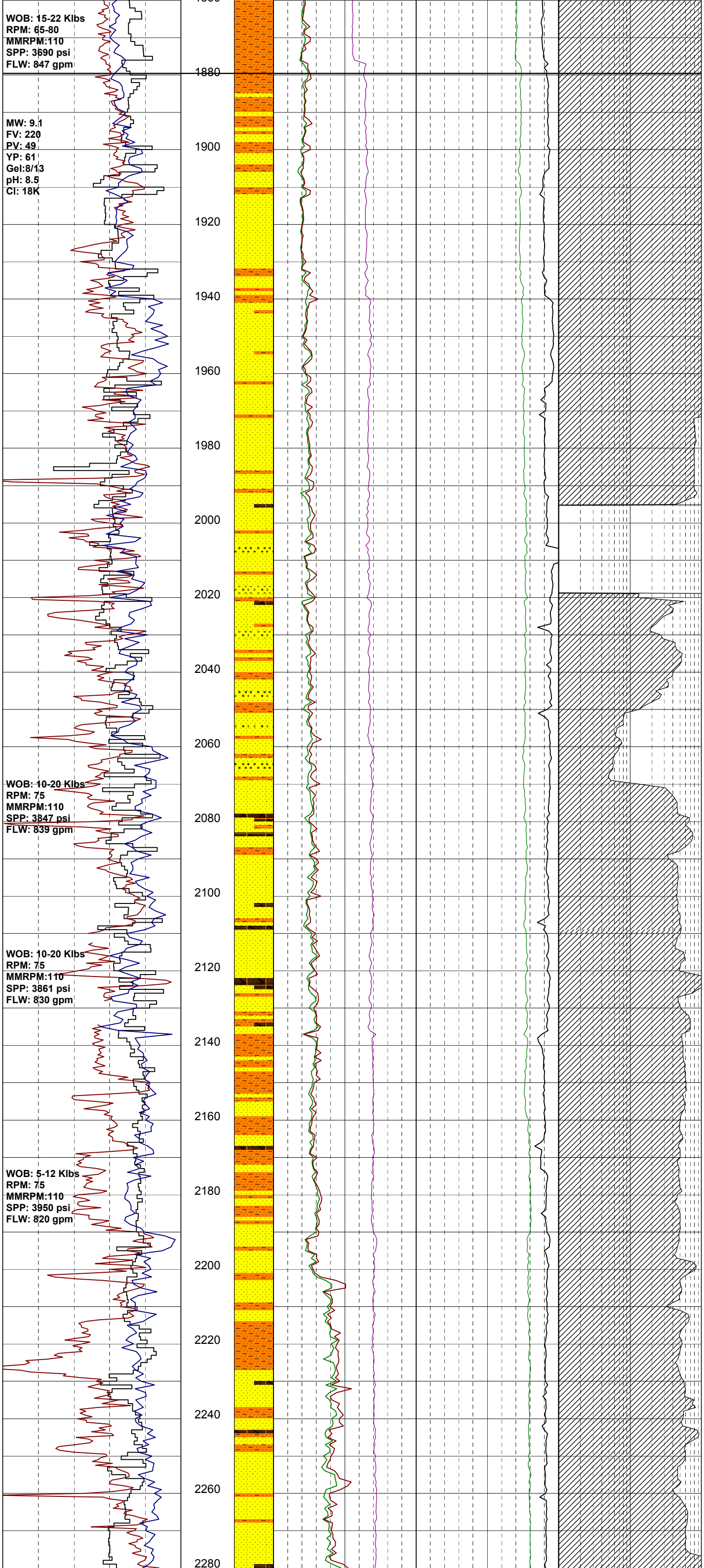
1820

1840

SLIDE 1848-1856 m

29-06-04

1860


WOB: 15-22 Klbs
RPM: 65-80
MMRPM:110
SPP: 3690 psi
FLW: 847 gpm
MW: 9.1
FV: 220
PV: 49
YP: 61
Gel:8/13
pH: 8.5
Cl: 18K
WOB: 10-20 Klbs
RPM: 75
MMRPM:110
SPP: 3847 psi
FLW: 839 gpm
WOB: 10-20 Klbs
RPM: 75
MMRPM:110
SPP: 3861 psi
FLW: 830 gpm
WOB: 5-12 Klbs
RPM: 75
MMRPM:110
SPP: 3950 psi
FLW: 820 gpm
1880
1900
1920
1940
1960
1980
2000
2020
2040
2060
2080
2100
2120
2140
2160
2180
2200
2220
2240
2260
2280
Eastern View Coal Measures
1879.5mMD (-1801mTVDSS)

WOB: 10-16 Klbs
RPM: 75
MMRPM:110
SPP: 4050 psi
FLW: 830 gpm

2300

2320

30-06-04

WOB: 10-16 Klbs
RPM: 75
MMRPM:110
SPP: 3880 psi
FLW: 825 gpm

2340

2360

MW: 9.35
FV: 120
PV: 50
YP: 52
Gel:7/11
pH: 8.3
Cl: 18K

2380

2400

WOB: 8-18 Klbs
RPM: 60-70
MMRPM:110
SPP: 3956 psi
FLW: 836 gpm

2420

2440

WOB: 15-40 Klbs
RPM: 70
MMRPM:110
SPP: 3716 psi
FLW: 824 gpm

2460

STEERING 2458m-2464m

25-32mm x 6-10mm x 3mm
Cavings over Shakers
Mostly Angahook

STEERING 2467m-2469m

2480

2500

2520

COAL MARKER
2516.5mMD(-2381mTVDSS)

GZG GAS TRAP NOT OPERATIONAL
DELASCO PUMP RUBBER REPLACED
RESERVAL GAS DATA NOT
RECORDED FROM 2515m TO 2544m

2540

STEERING 2544m-2546m

WOB: 15-30 Klbs
RPM: 70
MMRPM:110
SPP: 4100 psi
FLW: 824 gpm

2560

MW: 9.35
FV: 95
PV: 47
YP: 51
Gel:7/11
pH: 7.5
Cl: 18K

2580

STEERING 2574m-2579m

9 5/8" Csg Shoe:2586.1m

WIPER TRIP @ 2614 m

TIGHT SPOTS POOH @
2540-2524 m (80K O/P)
2418-2110 m (80K O/P)
1092-900m various spots
RIH tight spots worked
900-1092m (30K O/P)

2600

01-07-04

2620

05-07-04

TRIP GAS from WIPER
TRIP 663.8 Units

TIGHT SPOTS RIH @
2545-REAM TO 2601m

POOH f/2601m hole good

WOB: 18-30 Klbs
RPM: 0
MMRPM:160
SPP: 2970 psi
FLW:570 gpm

2640

Bit #4: 8.5" HUGHES
HCM505 Jets:3x18,2x16
In: 2614m Out:2892m
Run:278m Hrs:14.6
Cond:1-1-WT-IN-X-I-No-TD

LOT @ 2614m:EMW=10 ppg

2660

06-07-04

MW: 9.25
FV: 66
PV: 28
YP: 19
Gel:5/7
pH: 8.5
Cl: 20K

2680

STEERING 2692 m-2712 m

WOB: 15 Klbs

2700

RPM: 80
MMRPM:150-160
SPP: 3018 psi
FLW:547 gpm

2720

IGNEOUS INTRUSIVE ROCK
2719 mMD (-2565.5mTVDSS)

2740

2760

Run W/line logs:tight hole 2675m:hang up 2776 m POOH-Run Wiper Trip to TD

2780

Control Drill 2872-2887m

2800

WOB: 15-22 Klbs
RPM: 80
MMRPM:160
SPP: 2988 psi
FLW: 524 gpm

2820

MW: 9.3
FV: 76
PV: 30
YP: 28
Gel:7/11
pH: 8.7
Cl: 19K

2840

STEERING 2835 m-2839m

STEERING 2864 m-2870m

2860

TOP 2718 SAND
2860mMD(-2694mTVDSS)

STEERING 2873m-2874m

STEERING 2878m-2883m

WOB: 8-12 Klbs
RPM: 0-80
MMRPM:160
SPP: 2900 psi
FLW: 524 gpm

2880

TOP 2755 SAND
2899mMD(-2729mTVDSS)

WIPER TRIP @ 2887m

MW: 9.3
FV: 80
PV: 30

8-7-04

TIGHT SPOT 2740m Work Ream Spot Thru 2653m

2900

YP: 28
Gel:7/11
pH: 8.8
Cl: 19K

WOB: 5-10 Klbs
RPM: 70-95
SPP: 550-617 psi
FLW: 200 gpm

CORE #1: 2892m-2919.5m

Bit #5: 8.5" CD93
Jets:1.1 TFA
In: 2892m Out:2919.5m
Run:27.5m Hrs:1.4
Cond:1-1-WT-A-X-I-No-TD

2920

9-7-04

STEERING 2923 m-2930m

MW: 9.4
FV: 86
PV: 28
YP: 27
Gel:6/9
pH: 9.0
Cl: 19K

WOB: 4-13 Klbs
RPM: 70-80
MM: 170
SPP: 3298-3650 psi
FLW: 550 gpm

2940

Bit #6: 8.5" BBL 650XA
Jets:3x18,2x16
In: 2919.5m Out:2958m
Run:38.5m Hrs:2.8
Cond: 1-1-BT-G-X-I-No-CP

REAM 2927 - 2958m RIH

TOP 2809 SAND
2959mMD(-2785.5mTVDSS)

2960

MW: 9.4
FV: 85
PV: 33
YP: 36
Gel:8/11
pH: 9.2
Cl: 20K

CORE #2: 2958m-2985m

Bit #7: 8.5" CD93
Jets:1.1 TFA
In: 2958m Out:2985m
Run:27.0m Hrs:0.77
Cond:1-1-WT-A-X-I-No-TD

10-7-04

Reciprocate pipe prior POOH

2980

WOB: 6-10 Klbs
RPM: 77-80
MM: 160
SPP: 3145-3420 psi
FLW: 550 gpm

MW: 9.4
FV: 82
PV: 31
YP: 33
Gel:7/10
pH: 8.8
Cl: 20K

Bit #8: 8.5" Reed Hycalog DSX173 Jets:3x18,3x16
In: 2985m Out:3235m
Run:250m Hrs:12.5
Cond:1-1-CT-H-X-I-No-TD

11-7-04

3000

STEERING 2991m-3002m

230 bbl Mud losses to cored sands while drill f/2985m to 2991m

3020

STEERING 3020m-3031m

REAM 2953-2985m while RIH @ 2985m

WOB: 6-8 Klbs
RPM: 93
MM : 162
SPP: 3242-3326 psi
FLW: 548 gpm

3040

3060

STEERING 3050m-3063m

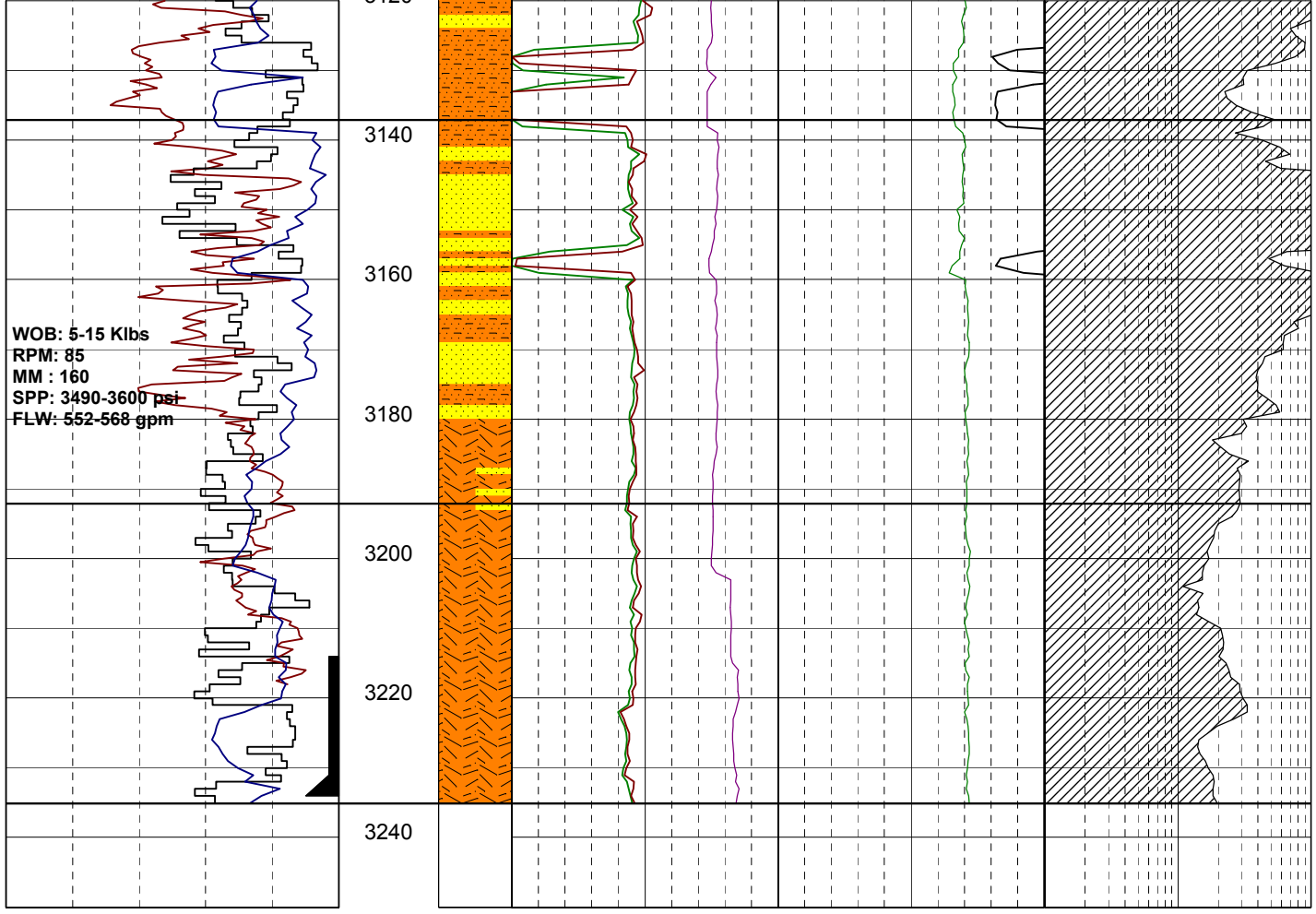
3080

STEERING 3079m-3087m

3100

WOB: 10 Klbs
RPM: 94
MM : 160
SPP: 3515 psi
FLW: 556 gpm

3120



STEERING 3127m- 3130m

STEERING 3133m- 3138m

TOP 2973 SAND
3137mMD(-2957mTVDSS)

STEERING 3156m-3159m

11-7-04

TOP BASALT
3192mMD(-3011.5mTVDSS)

WIPER TRIP from 3235 m:
Tight Hole @ 3150 & 2987m
with 40K overpull-Worked

WIPER TRIP for Wireline
Tight 2777m, Circ 2xB/U

Reciprocate pipe
prior POOH

POOH f/Wiper Trip 2
PUMP thru tight spots
3195, 3085, 3075m

TD YOLLA-4 on 11-7-04
@ 22:00 HOURS
Drillers Dpth:3235.0mMD

6 5/8" Liner set @ 3234m

APPENDIX 7: MWD-LWD REPORT

Sperry-Sun

End of Well Report
for
Origin Energy Resources

Rig:	ENSCO 102
Well:	Yolla-4
Field:	Yolla
Country:	Australia
Job No:	AU-FE-0003018092
Date:	18-Jun-04
API No:	

HALLIBURTON

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5. Directional Survey Data

General Information

Company:	Origin Energy Resources	
Rig:	ENSCO 102	
Well:	Yolla-4	
Field:	Yolla	
Country:	Australia	
API Number:		
Sperry-Sun Job Number:	AU-FE-0003018092	
Job start date:	18-Jun-04	
Job end date:	14-Jul-04	
North reference:	Grid	
Declination:	12.738	deg
Dip angle:	-70.455	deg
Total magnetic field:	61067	nT
Date of magnetic data:	17-Jun-04	
Wellhead coordinates N:	39 deg. 50 min 40.592 sec South	
Wellhead coordinates E:	145 deg. 49 min 6.057 sec East	
Vertical section direction:	Closure	deg
MWD Engineers:	M. Lee	I. Hancock

Company Representatives:	M. Jackson	H. Flink
	M. Nasarczyk	C. Holgate
Company Geologist:	M. Woodmansee	M. Tindale
Lease Name:	T/L1	
Unit Number:	040602	
State:	Tasmania	
County:		

Operational Overview

Sperry-Sun Drilling Services were contracted by Origin Energy Resources to provide Logging While Drilling (LWD) services for the drilling of the Yolla-4 well on the jackup drilling rig ENSCO 102.

16" Hole Section:
This section was drilled in one bit run using Sperry-Sun's Directional While Drilling (DWD) tool and a Directional (PCD-R) sonde for deviation control. The section was drilled to TD at 900.0 mMDRT.

12¼" Hole Section:
This section was drilled in one bit run using Sperry-Sun's P4M Formation Evaluation While Drilling (FEWD) tool suite, comprising Dual Gamma Ray (DGR), Four Phase Electromagnetic Resistivity (EWR-P4) for logging purposes, with a Position Monitor (PM) for deviation control. The section was drilled to TD at 2614.0 mMDRT. A repeat section was logged after drilling from 1310.0 to 1340.0 mMDRT.

8½" Hole Section:
This section was drilled in three bit runs using Sperry-Sun's P4M Formation Evaluation While Drilling (FEWD) tool suite, comprising Dual Gamma Ray (DGR), Four Phase Electromagnetic Resistivity (EWR-P4) for logging purposes, with a Position Monitor (PM) for deviation control. The first run was drilled to core point at 2892.0 mMDRT. The second run wiped over the cored section to 2919.5 mMDRT and drilled to the second core point at 2958.0 mMDRT. The third run wiped over the cored section to 2985.0 mMDRT and drilled ahead to well TD at 3235.0 mMDRT.

Summary of MWD runs

Run No.	Bit No.	Hole Size (in)	MWD Service	Start Depth (m)	End Depth (m)	Drill/Wipe Distance (m)	Run Start Date Time	Run End Date Time	BRT Hrs.	Oper. Hrs.	Circ. Hrs.	Max. Temp. (degC)	Serv. Int.	Trip for MWD	Failure Type
0100	1	16.00	DWD	220.00	900.00	680.00	18-Jun-04 18:15	20-Jun-04 20:00	49.75	49.75	29.50	23.40	No	No	
0300	3	12.25	P4M-DIR-FE	905.00	2614.00	1709.00	25-Jun-04 18:14	02-Jul-04 06:39	156.41	156.41	117.17	93.00	No	No	
0400	4	8.50	P4M-DIR-FE	2614.00	2892.00	278.00	05-Jul-04 07:03	07-Jul-04 10:06	51.06	51.06	27.53	114.00	No	No	
0600	6	8.50	P4M-DIR-FE	2892.00	2958.00	66.00	08-Jul-04 22:03	09-Jul-04 19:28	21.42	21.42	7.25	120.00	No	No	
0800	8	8.50	P4M-DIR-FE	2958.00	3235.00	277.00	10-Jul-04 18:18	12-Jul-04 13:18	42.99	42.99	24.11	118.00	No	No	
TOTALS ==>						3010.00			321.63	321.63	205.56		0	0	

Bitrun Summary

Run Time Data

MWD Run :	0100
Rig Bit No:	1
Hole Size :	16.00 in
Run Start :	18-Jun-04 18:15
Run End :	20-Jun-04 20:00
BRT Hrs :	49.75
Circ. Hrs :	29.50
Oper. Hrs :	49.75

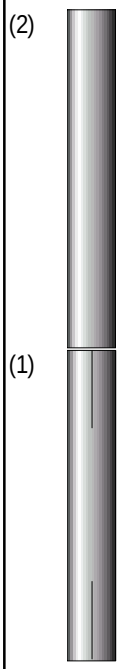
Drilling Data

Start Depth :	220.00	m
End Depth :	900.00	m
Footage :	680.00	m
Avg. Flow Rate :	920.00	gpm
Avg. RPM :	80.00	rpm
Avg. WOB :	8.00	klb
Avg. ROP :	28.33	m/hr
Avg. SPP :	2350.00	psig

Mud Data

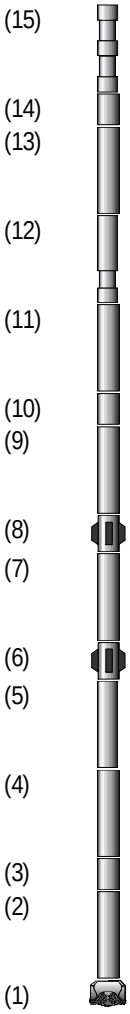
Mud Type :	Seawater/Sweeps			
Weight / Visc :	8.75	ppg /	100.00	spqt
Chlorides :	N/A	ppm		
PV / YP :	9.00	cp /	46.00	pa
Solids/Sand :	N/A	% /	0	%
%Oil / O:W :	N/A	% /	N/A	
pH/Fluid Loss:	N/A	pH /	N/A	cptm
Max. Temp. :	23.40	degC		

MWD Schematics



2. 9½" DWD 1200 System
   SN : 10608154
   0.00 m From Bit
1. PCD
   SN : 538
   20.03 m From Bit

BHA Schematics



	Component	Length (m)	O.D. (in)	I.D. (in)
15.	9 x HWDP	84.67	5.000	3.000
14.	Cross Over Sub	0.95	6.688	3.063
13.	2 x Drill Collar	18.95	8.500	2.880
12.	Drilling Jars	9.95	8.250	3.125
11.	3 x Drill Collar	28.60	8.500	2.875
10.	Cross Over Sub	1.23	8.250	2.938
09.	2 x Drill Collar	18.79	9.500	3.000
08.	Integral Blade Stabilizer	2.14	9.500	3.060
07.	NMDC	8.51	9.500	3.250
06.	Integral Blade Stabilizer	1.91	9.625	3.063
05.	MWD HOS	3.12	9.500	3.250
04.	NMDC	9.04	9.500	3.250
03.	Float Sub	0.95	9.630	3.250
02.	9-5/8" SperryDrill Lobe 6/7	9.53	9.625	6.135
01.	Hughes MX-1	0.42	16.000	3.000

Comments

Drilled 16" hole to section TD at 900.0 mMDRT. Good detection throughout run.

MWD Performance

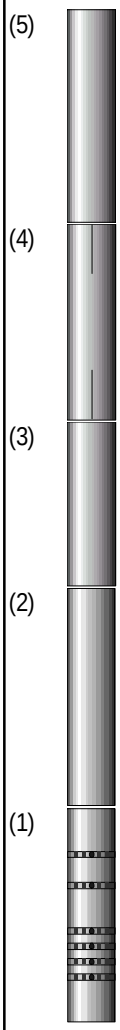
Tool OD / Type :	9.50	in /	DWD	
MWD Real-time%:	100.00	%		
MWD Recorded%:	100.00	%		
Min. Inc. :	0.00	deg /	670.34	m
Max. Inc. :	0.36	deg /	234.93	m
Final Az. :	42.38	deg		
Max Op. Press. :	1497	psig		

HALLIBURTON Sperry-Sun

Bitrun Summary

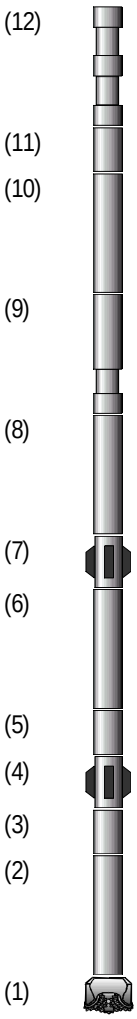
Run Time Data		Drilling Data			Mud Data				
MWD Run :	0300	Start Depth :	905.00	m	Mud Type :	Drispac/Soltex			
Rig Bit No:	3	End Depth :	2614.00	m	Weight / Visc :	9.20	ppg /	114.00	spqt
Hole Size :	12.25 in	Footage :	1709.00	m	Chlorides :	18000	ppm		
Run Start :	25-Jun-04 18:14	Avg. Flow Rate :	850.00	gpm	PV / YP :	46.00	cp /	56.00	pa
Run End :	02-Jul-04 06:39	Avg. RPM :	60.00	rpm	Solids/Sand :	5.0	% /	0.25	%
BRT Hrs :	156.41	Avg. WOB :	13.70	klb	%Oil / O:W :	0	% /	0:94	
Circ. Hrs :	117.17	Avg. ROP :	18.60	m/hr	pH/Fluid Loss:	8.60	pH /	3.90	cptm
Oper. Hrs :	156.41	Avg. SPP :	3950.00	psig	Max. Temp. :	93.00	degC		

MWD Schematics



5. 8" P4M 650 System
   SN : 8451
   0.00 m From Bit
4. PM
   SN : 97847
   23.59 m From Bit
3. HCIM
   SN : 132882
2. DGR
   SN : 84171
   20.22 m From Bit
1. EWR-P4
   SN : 144719
   17.23 m From Bit

BHA Schematics



	Component	Length (m)	O.D. (in)	I.D. (in)
12.	9 x HWDP	84.66	5.000	3.060
11.	Cross Over Sub	0.99	8.000	3.000
10.	2 x Drill Collar	18.82	8.500	2.810
09.	Drilling Jars	9.95	8.250	3.125
08.	5 x Drill Collar	47.56	8.250	2.813
07.	Integral Blade Stabilizer	1.99	9.625	3.000
06.	MWD	12.95	8.300	3.050
05.	Float Sub	0.74	8.000	3.000
04.	Adjustable Gauge Stabilizer	3.33	8.250	2.810
03.	Cross Over Sub	1.21	8.250	3.000
02.	9-5/8" SperryDrill Lobe 6/7	9.59	9.625	6.135
01.	Hughes HCM 506	0.37	12.250	3.000

Comments

Drilled 12¼" hole to section TD at 2614.0 mMDRT. Good detection throughout run and all recorded data recovered on surface. Wiped interval from 1310.0 to 1340.0 mMDRT after drilling. No recorded data was recovered from the EWR-P4 tool for the wipe section due to memory fill caused by longer than expected run.

MWD Performance

Tool OD / Type :	8.00	in /	P4M	
MWD Real-time%:	99.00	%		
MWD Recorded%:	100.00	%		
Min. Inc. :	0.04	deg /	921.22	m
Max. Inc. :	25.65	deg /	1763.53	m
Final Az. :	200.69	deg		
Max Op. Press. :	3944	psig		

Bitrun Summary

Run Time Data

MWD Run :	0400
Rig Bit No:	4
Hole Size :	8.50 in
Run Start :	05-Jul-04 07:03
Run End :	07-Jul-04 10:06
BRT Hrs :	51.06
Circ. Hrs :	27.53
Oper. Hrs :	51.06

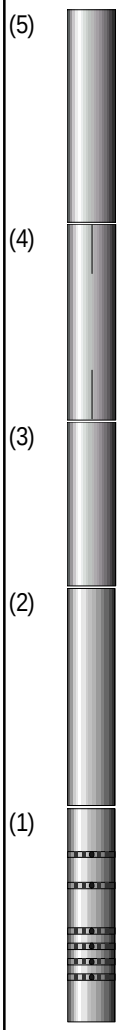
Drilling Data

Start Depth :	2614.00	m
End Depth :	2892.00	m
Footage :	278.00	m
Avg. Flow Rate :	550.00	gpm
Avg. RPM :	80.00	rpm
Avg. WOB :	17.00	klb
Avg. ROP :	19.03	m/hr
Avg. SPP :	2950.00	psig

Mud Data

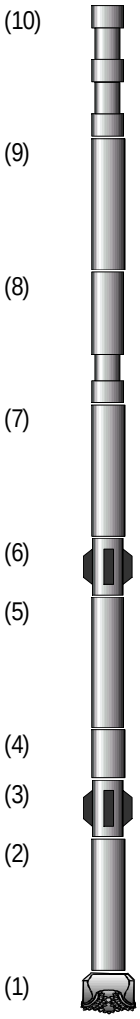
Mud Type :	Drispac/Soltex			
Weight / Visc :	9.25	ppg /	66.00	spqt
Chlorides :	20000	ppm		
PV / YP :	28.00	cp /	19.00	pa
Solids/Sand :	5.4	% /	0.10	%
%Oil / O:W :	0	% /	0:92	
pH/Fluid Loss:	8.50	pH /	4.20	cptm
Max. Temp. :	114.00	degC		

MWD Schematics



5. 6¾" P4M 650 System
   SN : 8480
   0.00 m From Bit
4. PM
   SN : 168022
   20.27 m From Bit
3. HCIM
   SN : 191770
2. DGR
   SN : 188554
   16.95 m From Bit
1. EWR-P4
   SN : 99881
   13.94 m From Bit

BHA Schematics



	Component	Length (m)	O.D. (in)	I.D. (in)
10.	9 x HWDP	84.59	5.000	3.060
09.	2 x Drill Collar	18.65	6.750	2.810
08.	Drilling Jars	9.42	6.750	2.880
07.	6 x Drill Collar	55.99	6.750	2.813
06.	Integral Blade Stabilizer	1.59	6.750	2.940
05.	MWD	12.82	6.750	2.251
04.	Float Sub	0.77	6.750	3.000
03.	Adjustable Gauge Stabilizer	3.24	7.000	2.810
02.	7" SperryDrill Lobe 7/8	7.65	7.000	4.750
01.	Hughes HCM 505	0.23	8.500	1.560

Comments

Drilled the 8½" hole section to the first core point at 2892.0 mMDRT. POOH for coring run. Good detection throughout run and all recorded data recovered on surface.

MWD Performance

Tool OD / Type :	6.75	in /	P4M	
MWD Real-time%:	99.00	%		
MWD Recorded%:	100.00	%		
Min. Inc. :	22.75	deg /	2867.34	m
Max. Inc. :	25.68	deg /	2755.82	m
Final Az. :	200.82	deg		
Max Op. Press. :	4412	psig		

Bitrun Summary

Run Time Data

MWD Run :	0600
Rig Bit No:	6
Hole Size :	8.50 in
Run Start :	08-Jul-04 22:03
Run End :	09-Jul-04 19:28
BRT Hrs :	21.42
Circ. Hrs :	7.25
Oper. Hrs :	21.42

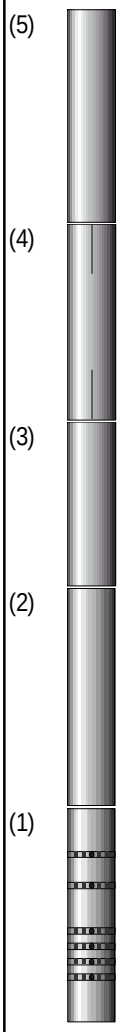
Drilling Data

Start Depth :	2892.00	m
End Depth :	2958.00	m
Footage :	66.00	m
Avg. Flow Rate :	560.00	gpm
Avg. RPM :	80.00	rpm
Avg. WOB :	12.00	klb
Avg. ROP :	17.50	m/hr
Avg. SPP :	3125.00	psig

Mud Data

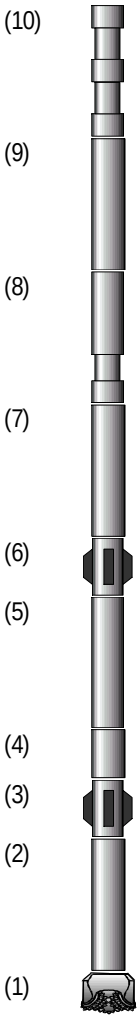
Mud Type :	Drispac/Soltex			
Weight / Visc :	9.40	ppg /	86.00	spqt
Chlorides :	19000	ppm		
PV / YP :	28.00	cp /	27.00	pa
Solids/Sand :	6.5	% /	0.10	%
%Oil / O:W :	0	% /	0:92.5	
pH/Fluid Loss:	9.00	pH /	3.60	cptm
Max. Temp. :	120.00	degC		

MWD Schematics



5. 6¾" P4M 650 System
   SN : 8480
   0.00 m From Bit
4. PM
   SN : 168022
   20.37 m From Bit
3. HCIM
   SN : 191770
2. DGR
   SN : 188554
   17.05 m From Bit
1. EWR-P4
   SN : 99881
   14.04 m From Bit

BHA Schematics



	Component	Length (m)	O.D. (in)	I.D. (in)
10.	9 x HWDP	84.59	5.000	3.060
09.	2 x Drill Collar	18.65	6.750	2.810
08.	Drilling Jars	9.42	6.750	2.880
07.	6 x Drill Collar	55.99	6.750	2.813
06.	Integral Blade Stabilizer	1.59	6.750	2.940
05.	MWD	12.82	6.750	2.251
04.	Float Sub	0.77	6.750	3.000
03.	Adjustable Gauge Stabilizer	3.24	7.000	2.810
02.	7" SperryDrill Lobe 7/8	7.65	7.000	4.750
01.	British Bits BB650XA	0.33	8.500	1.560

Comments

Logged previously cored section and drilled 8½" hole to core point at 2958.0 mMDRT. POOH for coring run. Good detection throughout run and all recorded data recovered on surface.

MWD Performance

Tool OD / Type :	6.75	in /	P4M	
MWD Real-time%:	99.25	%		
MWD Recorded%:	100.00	%		
Min. Inc. :	21.52	deg /	2931.86	m
Max. Inc. :	22.90	deg /	2902.83	m
Final Az. :	200.50	deg		
Max Op. Press. :	4529	psig		

Bitrun Summary

Run Time Data

MWD Run :	0800
Rig Bit No:	8
Hole Size :	8.50 in
Run Start :	10-Jul-04 18:18
Run End :	12-Jul-04 13:18
BRT Hrs :	42.99
Circ. Hrs :	24.11
Oper. Hrs :	42.99

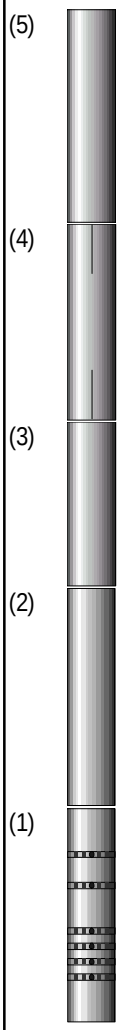
Drilling Data

Start Depth :	2958.00	m
End Depth :	3235.00	m
Footage :	277.00	m
Avg. Flow Rate :	550.00	gpm
Avg. RPM :	85.00	rpm
Avg. WOB :	10.00	klb
Avg. ROP :	20.40	m/hr
Avg. SPP :	3500.00	psig

Mud Data

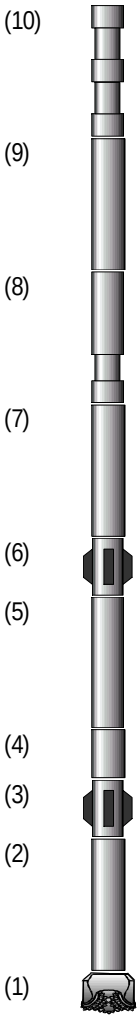
Mud Type :	Drispac/Soltex			
Weight / Visc :	9.40	ppg /	81.00	spqt
Chlorides :	20000	ppm		
PV / YP :	34.00	cp /	37.00	pa
Solids/Sand :	6.4	% /	0.20	%
%Oil / O:W :	0	% /	0:92.5	
pH/Fluid Loss:	9.00	pH /	4.00	cptm
Max. Temp. :	118.00	degC		

MWD Schematics



5. 6¾" P4M 650 System
   SN : 8480
   0.00 m From Bit
4. PM
   SN : 168022
   20.27 m From Bit
3. HCIM
   SN : 191770
2. DGR
   SN : 188554
   16.95 m From Bit
1. EWR-P4
   SN : 99881
   13.94 m From Bit

BHA Schematics



	Component	Length (m)	O.D. (in)	I.D. (in)
10.	9 x HWDP	84.59	5.000	3.060
09.	2 x Drill Collar	18.65	6.750	2.810
08.	Drilling Jars	9.42	6.750	2.880
07.	6 x Drill Collar	55.99	6.750	2.813
06.	Integral Blade Stabilizer	1.59	6.750	2.940
05.	MWD	12.82	6.750	2.251
04.	Float Sub	0.77	6.750	3.000
03.	Adjustable Gauge Stabilizer	3.24	7.000	2.810
02.	7" SperryDrill Lobe 7/8	7.65	7.000	4.750
01.	Reed Hycalog DSX173	0.23	8.500	1.560

Comments

Logged previously cored section and drilled 8½" hole to well TD at 3235.0 mMDRT. Good detection throughout run and all recorded data recovered on surface.

MWD Performance

Tool OD / Type :	6.75	in /	P4M	
MWD Real-time%:	99.25	%		
MWD Recorded%:	100.00	%		
Min. Inc. :	6.55	deg /	3235.00	m
Max. Inc. :	20.27	deg /	2960.85	m
Final Az. :	197.10	deg		
Max Op. Press. :	4967	psig		

Directional Survey Data

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
234.93	0.36	136.39	234.93	0.53 S	0.51 E	0.31	TIE-IN
263.91	0.28	126.75	263.91	0.64 S	0.63 E	0.36	0.10
292.95	0.17	195.49	292.95	0.72 S	0.67 E	0.42	0.27
322.02	0.13	143.72	322.02	0.79 S	0.68 E	0.48	0.14
351.03	0.18	92.31	351.03	0.82 S	0.74 E	0.48	0.15
380.07	0.13	175.00	380.07	0.85 S	0.79 E	0.50	0.22
409.12	0.15	207.88	409.12	0.92 S	0.78 E	0.57	0.09
467.21	0.21	111.56	467.21	1.03 S	0.84 E	0.65	0.14
496.22	0.11	142.76	496.22	1.07 S	0.90 E	0.66	0.13
525.22	0.03	253.98	525.22	1.09 S	0.91 E	0.68	0.13
554.15	0.09	53.82	554.15	1.08 S	0.92 E	0.66	0.13
583.18	0.07	106.21	583.18	1.07 S	0.96 E	0.64	0.08
612.22	0.22	174.73	612.22	1.13 S	0.98 E	0.69	0.21
641.28	0.04	53.15	641.28	1.18 S	1.00 E	0.73	0.25
670.34	0.00	96.38	670.34	1.17 S	1.00 E	0.72	0.04
699.34	0.07	29.72	699.34	1.16 S	1.01 E	0.70	0.07
728.37	0.07	122.55	728.37	1.15 S	1.04 E	0.69	0.10
757.46	0.04	139.75	757.46	1.17 S	1.06 E	0.70	0.03
786.52	0.17	344.46	786.52	1.14 S	1.05 E	0.67	0.22
815.78	0.17	337.74	815.78	1.05 S	1.02 E	0.60	0.02
844.82	0.06	187.19	844.82	1.03 S	1.01 E	0.58	0.24
873.83	0.04	42.38	873.83	1.03 S	1.01 E	0.59	0.10
892.74	0.13	290.73	892.74	1.02 S	1.00 E	0.58	0.23
921.22	0.04	217.54	921.22	1.02 S	0.96 E	0.59	0.13
978.82	0.04	300.15	978.82	1.02 S	0.93 E	0.61	0.03
1008.39	0.10	198.92	1008.39	1.04 S	0.91 E	0.63	0.12
1037.45	0.04	248.53	1037.45	1.07 S	0.89 E	0.66	0.09
1066.52	0.06	102.10	1066.52	1.08 S	0.90 E	0.67	0.09
1095.58	0.06	254.10	1095.58	1.08 S	0.90 E	0.67	0.11
1124.59	0.06	23.63	1124.59	1.07 S	0.89 E	0.67	0.11
1153.61	0.04	261.67	1153.61	1.06 S	0.88 E	0.66	0.08
1182.64	0.05	290.30	1182.64	1.06 S	0.86 E	0.67	0.02
1211.67	0.09	274.15	1211.67	1.06 S	0.83 E	0.67	0.05
1240.72	0.20	314.87	1240.72	1.02 S	0.77 E	0.66	0.15
1269.77	0.13	311.09	1269.77	0.96 S	0.71 E	0.63	0.08
1298.83	2.64	214.65	1298.82	1.49 S	0.31 E	1.27	2.74
1327.87	5.64	210.09	1327.78	3.27 S	0.79 W	3.33	3.12
1356.90	7.29	213.82	1356.62	6.04 S	2.53 W	6.55	1.76
1385.94	9.08	215.12	1385.36	9.44 S	4.88 W	10.58	1.86
1414.97	10.04	215.43	1413.99	13.38 S	7.66 W	15.26	0.99

Directional Survey Data

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
1444.00	11.83	214.02	1442.49	17.91 S	10.79 W	20.63	1.87
1473.07	13.63	214.58	1470.85	23.20 S	14.40 W	26.88	1.86
1502.13	16.24	212.73	1498.92	29.44 S	18.54 W	34.20	2.74
1531.17	18.62	210.88	1526.63	36.83 S	23.12 W	42.77	2.52
1560.20	20.69	205.27	1553.97	45.44 S	27.68 W	52.46	2.89
1589.27	23.33	202.68	1580.92	55.40 S	32.10 W	63.34	2.90
1618.31	24.06	202.94	1607.51	66.16 S	36.62 W	75.01	0.77
1647.36	24.73	202.43	1633.97	77.23 S	41.25 W	87.00	0.72
1676.43	25.02	202.40	1660.34	88.53 S	45.91 W	99.23	0.31
1705.50	25.32	201.82	1686.65	99.99 S	50.56 W	111.59	0.40
1734.51	25.53	200.98	1712.85	111.58 S	55.11 W	124.05	0.43
1763.53	25.65	200.93	1739.02	123.29 S	59.59 W	136.58	0.12
1792.59	25.45	200.34	1765.24	135.02 S	64.01 W	149.11	0.33
1821.64	25.62	200.08	1791.46	146.77 S	68.33 W	161.63	0.21
1850.69	24.60	199.87	1817.76	158.35 S	72.55 W	173.95	1.06
1879.53	24.20	200.32	1844.02	169.54 S	76.64 W	185.86	0.46
1908.49	24.21	200.00	1870.44	180.69 S	80.73 W	197.73	0.14
1937.54	24.12	200.96	1896.94	191.83 S	84.89 W	209.62	0.42
1966.58	24.31	200.78	1923.43	202.96 S	89.14 W	221.53	0.22
1995.63	24.40	200.84	1949.89	214.15 S	93.39 W	233.51	0.09
2024.63	24.68	200.81	1976.27	225.41 S	97.67 W	245.55	0.29
2053.67	24.62	201.15	2002.67	236.72 S	102.01 W	257.66	0.16
2082.69	24.81	200.83	2029.03	248.05 S	106.36 W	269.80	0.24
2111.74	24.82	201.15	2055.40	259.43 S	110.72 W	281.99	0.14
2140.77	24.85	200.99	2081.74	270.81 S	115.11 W	294.18	0.08
2169.79	24.93	200.86	2108.07	282.22 S	119.47 W	306.39	0.10
2198.77	24.52	200.98	2134.39	293.54 S	123.80 W	318.51	0.43
2227.82	24.44	201.27	2160.83	304.77 S	128.13 W	330.55	0.15
2256.84	24.65	200.97	2187.23	316.01 S	132.48 W	342.60	0.25
2285.83	24.70	201.15	2213.57	327.31 S	136.83 W	354.70	0.09
2314.86	24.23	201.20	2239.99	338.52 S	141.17 W	366.72	0.49
2343.92	24.31	200.91	2266.49	349.66 S	145.46 W	378.66	0.15
2372.95	24.14	201.39	2292.96	360.77 S	149.76 W	390.57	0.27
2401.99	24.08	201.51	2319.47	371.81 S	154.09 W	402.43	0.08
2431.06	23.67	201.95	2346.05	382.74 S	158.45 W	414.20	0.45
2460.09	24.06	202.38	2372.60	393.62 S	162.88 W	425.95	0.44
2489.15	24.33	201.67	2399.11	404.66 S	167.35 W	437.85	0.41
2518.23	23.85	201.39	2425.65	415.70 S	171.70 W	449.73	0.50
2547.21	23.63	201.50	2452.18	426.56 S	175.97 W	461.39	0.24
2576.30	24.22	200.69	2478.77	437.56 S	180.21 W	473.19	0.69

Directional Survey Data

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
2611.46	24.70	202.18	2510.78	451.11 S	185.53 W	487.74	0.67
2640.54	24.67	201.95	2537.20	462.37 S	190.10 W	499.89	0.10
2669.53	23.53	202.06	2563.66	473.34 S	194.53 W	511.72	1.18
2697.47	24.64	201.35	2589.17	483.93 S	198.75 W	523.12	1.24
2725.97	25.42	200.74	2614.99	495.19 S	203.08 W	535.18	0.87
2755.82	25.68	199.78	2641.92	507.27 S	207.53 W	548.05	0.49
2784.80	25.00	199.95	2668.11	518.93 S	211.75 W	560.45	0.70
2813.82	23.99	199.06	2694.52	530.27 S	215.77 W	572.47	1.11
2842.87	23.15	199.25	2721.15	541.25 S	219.58 W	584.08	0.87
2867.34	22.75	200.82	2743.68	550.21 S	222.85 W	593.62	0.90
2902.83	22.90	201.36	2776.39	563.06 S	227.80 W	607.38	0.22
2931.86	21.52	200.50	2803.27	573.30 S	231.72 W	618.35	1.46
2960.85	20.27	200.15	2830.35	583.00 S	235.32 W	628.69	1.30
2989.92	20.20	199.81	2857.63	592.45 S	238.75 W	638.74	0.15
3018.96	18.34	198.40	2885.04	601.50 S	241.89 W	648.31	1.98
3047.97	15.45	196.93	2912.79	609.53 S	244.46 W	656.72	3.02
3076.96	12.32	197.17	2940.93	616.18 S	246.50 W	663.65	3.24
3105.90	9.82	198.91	2969.33	621.47 S	248.21 W	669.20	2.61
3134.94	8.48	195.92	2998.00	625.87 S	249.60 W	673.80	1.48
3164.00	7.44	195.17	3026.78	629.74 S	250.68 W	677.80	1.07
3193.01	7.24	194.66	3055.55	633.32 S	251.63 W	681.48	0.22
3213.45	6.81	196.52	3075.84	635.73 S	252.31 W	683.97	0.70
3235.00	6.55	197.10	3097.24	638.13 S	253.03 W	686.47	0.38

Directional Survey Data

CALCULATION BASED ON Minimum Curvature METHOD

SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 201.69 DEGREES (GRID)
A TOTAL CORRECTION OF 11.98 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 3235.00 METRES
IS 686.47 METRES ALONG 201.63 DEGREES (GRID)

Final survey extrapolated to TD

sperry-sun DRILLING SERVICES

Survey and Drilling Parameters

Customer : Origin Energy Resources Ltd
Well Name : Yolla # 4
Rig : 102

Field : Bass Strait
Slot : Yolla A Platform
Job # : AU-DD-0003018092

North Ref : Grid **Declination :** ° **VS Dir :** 201.69° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS									
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m)	Coordinates E/W (m)	DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (lbs)	RPM	Flow Rate (gpm)	Stand Pipe (psi)	Orientation From (m)	Orientation To (m)	Tool Face (deg)	ROP (m/hr)	BHA No. (#)	Comment
0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00									1	Tieon
234.93	0.36	136.39	234.9	0.3	-0.5	0.5	0.05	0.05	0.00	2	40	650	850				36	1	
263.91	0.28	126.75	263.9	0.4	-0.6	0.6	0.10	-0.08	0.00	2	40	650	850				36	1	
292.95	0.17	195.49	292.9	0.4	-0.7	0.7	0.28	-0.11	0.00	2	40	650	850				36	1	
322.02	0.13	143.72	322.0	0.5	-0.8	0.7	0.14	-0.04	0.00	2	40	650	850				36	1	
351.03	0.18	92.31	351.0	0.5	-0.8	0.7	0.15	0.05	0.00	2	40	650	850				36	1	
380.07	0.13	175.00	380.1	0.5	-0.9	0.8	0.22	-0.05	0.00	2	40	650	850				36	1	
409.12	0.15	207.89	409.1	0.6	-0.9	0.8	0.08	0.02	0.00	2	40	650	850				36	1	
467.21	0.21	111.56	467.2	0.6	-1.0	0.8	0.14	0.03	0.00	2	40	850	1600				36	1	
496.22	0.11	142.76	496.2	0.7	-1.1	0.9	0.13	-0.10	0.00	2	40	850	1600				36	1	
525.22	0.03	253.98	525.2	0.7	-1.1	0.9	0.13	-0.08	0.00	2	40	850	1880				37	1	
554.15	0.09	53.82	554.1	0.7	-1.1	0.9	0.12	0.06	0.00	5	40	850	1800				36	1	
583.18	0.07	106.21	583.2	0.6	-1.1	1.0	0.08	-0.02	0.00	7	40	850	1800				38	1	
612.22	0.22	174.73	612.2	0.7	-1.1	1.0	0.21	0.15	0.00	6	40	850	1800				39	1	
641.28	0.04	53.15	641.3	0.7	-1.2	1.0	0.25	-0.19	0.00	6	40	850	1800				37	1	
670.34	0.00	96.38	670.3	0.7	-1.2	1.0	0.04	-0.04	0.00	6	40	850	1850				38	1	
699.34	0.07	29.72	699.3	0.7	-1.2	1.0	0.07	0.07	0.00	4	40	850	1900				37	1	
728.37	0.07	122.55	728.4	0.7	-1.2	1.0	0.10	0.00	0.00	5	40	850	1900				38	1	
757.46	0.04	139.75	757.5	0.7	-1.2	1.1	0.03	-0.03	0.00	5	40	850	1900				38	1	
786.52	0.17	344.46	786.5	0.7	-1.1	1.1	0.21	0.13	0.00	15	80	875	2075				25	1	
815.78	0.17	337.74	815.8	0.6	-1.1	1.0	0.00	0.00	0.00	15	80	925	2250				15	1	
844.82	0.06	187.19	844.8	0.6	-1.0	1.0	0.23	-0.11	0.00	15	80	925	2250				15	1	
873.83	0.04	42.38	873.8	0.6	-1.0	1.0	0.10	-0.02	0.00	35	70	920	2300				20	1	
892.74	0.13	290.73	892.7	0.6	-1.0	1.0	0.24	0.14	0.00	35	70	920	2300				20	1	
921.22	0.04	217.54	921.2	0.6	-1.0	1.0	0.13	-0.09	0.00	9	70	860	2445				33	3	
978.82	0.04	300.15	978.8	0.6	-1.0	0.9	0.03	0.00	0.00	9	70	850	2498				40	3	
1008.39	0.10	198.92	1008.4	0.6	-1.1	0.9	0.12	0.06	0.00	9	70	850	2498				40	3	
1037.45	0.04	248.53	1037.4	0.7	-1.1	0.9	0.08	-0.06	0.00	9	70	850	2550				33	3	
1066.52	0.05	102.10	1066.5	0.7	-1.1	0.9	0.09	0.01	0.00	9	70	850	2500				38	3	
1095.58	0.06	254.10	1095.6	0.7	-1.1	0.9	0.11	0.01	0.00	9	70	855	2650				30	3	
1124.56	0.06	23.63	1124.6	0.7	-1.1	0.9	0.11	0.00	0.00	9	70	850	2650				30	3	

sperry-sun DRILLING SERVICES

Survey and Drilling Parameters

Customer : Origin Energy Resources Ltd
Well Name : Yolla # 4
Rig : 102

Field : Bass Strait
Slot : Yolla A Platform
Job # : AU-DD-0003018092

North Ref : Grid **Declination :** ° **VS Dir :** 201.69° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS									
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m)	Coordinates E/W (m)	DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (lbs)	RPM	Flow Rate (gpm)	Stand Pipe (psi)	Orientation From (m)	Orientation To (m)	Tool Face (deg)	ROP (m/hr)	BHA No. (#)	Comment
1153.61	0.04	261.67	1153.6	0.7	-1.1	0.9	0.09	-0.02	0.00	9	70	855	2735				25	3	
1182.64	0.05	290.30	1182.6	0.7	-1.1	0.9	0.00	0.01	0.00	9	70	850	2725				27	3	
1211.67	0.09	274.15	1211.7	0.7	-1.1	0.8	0.05	0.04	0.00	9	70	850	2725				27	3	
1240.72	0.20	314.87	1240.7	0.7	-1.0	0.8	0.15	0.11	0.00	9	70	850	2725				27	3	
1269.77	0.13	311.09	1269.8	0.6	-1.0	0.7	0.07	-0.07	0.00	9	70	850	2725				27	3	
1298.83	2.64	214.65	1298.8	1.3	-1.5	0.3	2.74	2.59	0.00	12	70	850	2600	1280	1294	158L	20	3	
1327.87	5.64	210.09	1327.8	3.3	-3.3	-0.8	3.12	3.10	-4.71	10		850	2600	1300	1315	158L	15	3	
														1323	1328	158L		3	
1356.90	7.29	213.82	1356.6	6.6	-6.0	-2.5	1.76	1.71	3.85	12	70	850	2600	1328	1336	158L	16	3	
														1352	1356	HS		3	
1385.94	9.08	215.12	1385.4	10.6	-9.5	-4.9	1.86	1.85	1.34	14		850	2780	1360	1368	HS	11	3	
														1381	1386	20L		3	
1414.97	10.04	215.43	1414.0	15.3	-13.4	-7.7	0.99	0.99	0.32	15	70	850	3000	1386	1394	20L	14	3	
														1410	1414	40L		3	
1444.00	11.83	214.02	1442.5	20.6	-17.9	-10.8	1.87	1.85	-1.46	20	70	850	2850	1421	1429	30L	14	3	
														1432	1439	25L		3	
1473.07	13.63	214.58	1470.8	26.9	-23.2	-14.4	1.86	1.86	0.58	15	70	850	2850	1455	1469	25L	14	3	
1502.13	16.24	212.73	1498.9	34.2	-29.4	-18.5	2.74	2.69	-1.91	15	70	830	2850	1482	1497	35L	18	3	
1531.17	18.62	210.88	1526.6	42.8	-36.8	-23.1	2.52	2.46	-1.91	20	70	840	2850	1508	1527	45L	20	3	
1560.20	20.69	205.27	1554.0	52.5	-45.5	-27.7	2.89	2.14	-5.80	20	70	850	2990	1537	1554	60L	23	3	
1589.27	23.33	202.68	1580.9	63.4	-55.4	-32.1	2.90	2.72	-2.67	20	70	850	3100	1567	1574	30L	30	3	
														1575	1584	60L		3	
1618.31	24.06	202.94	1607.5	75.0	-66.2	-36.6	0.76	0.75	0.27	20	70	850	3100				30	3	
1647.35	24.73	202.43	1634.0	87.0	-77.2	-41.2	0.73	0.69	-0.53	20	70	850	3300				30	3	
1676.43	25.02	202.40	1660.3	99.2	-88.5	-45.9	0.30	0.30	-0.03	20	70	850	3575				25	3	
1705.50	25.32	201.82	1686.6	111.6	-100.0	-50.6	0.40	0.31	-0.60	20	70	850	3575				25	3	
1734.51	25.53	200.98	1712.8	124.1	-111.6	-55.1	0.43	0.22	-0.87	20	70	840	3520	1731	1734	160L	19	3	
1763.53	25.65	200.93	1739.0	136.6	-123.3	-59.6	0.13	0.12	-0.05	20	70	840	3520				22	3	
1792.59	25.45	200.34	1765.2	149.1	-135.0	-64.0	0.33	-0.21	-0.61	20		850	3250	1788	1793	LS	20	3	
1821.64	25.62	200.08	1791.5	161.6	-146.8	-68.3	0.21	0.18	-0.27	20	70	850	3600	1793	1793	LS	23	3	
1850.69	24.60	199.87	1817.8	174.0	-158.4	-72.5	1.06	-1.05	-0.22	14		830	3200	1846	1851	170R	15	3	

sperry-sun DRILLING SERVICES

Survey and Drilling Parameters

Customer : Origin Energy Resources Ltd
Well Name : Yolla # 4
Rig : 102

Field : Bass Strait
Slot : Yolla A Platform
Job # : AU-DD-0003018092

North Ref : Grid **Declination :** ° **VS Dir :** 201.69° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS									
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m)	Coordinates E/W (m)	DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (lbs)	RPM	Flow Rate (gpm)	Stand Pipe (psi)	Orientation From (m)	Orientation To (m)	Tool Face (deg)	ROP (m/hr)	BHA No. (#)	Comment
1879.53	24.20	200.32	1844.0	185.9	-169.6	-76.6	0.46	-0.42	0.47	15	70	850	3700	1851	1856	170R	28	3	
1908.49	24.21	200.00	1870.4	197.7	-180.7	-80.7	0.14	0.01	-0.33	15	70	850	3700				28	3	
1937.54	24.11	200.96	1896.9	209.6	-191.8	-84.9	0.42	-0.10	0.99	15	70	850	3700				28	3	
1966.58	24.32	200.78	1923.4	221.5	-203.0	-89.1	0.23	0.22	-0.19	15	70	850	3700				28	3	
1995.63	24.40	200.84	1949.9	233.5	-214.2	-93.4	0.09	0.08	0.06	15	70	850	3700				28	3	
2024.63	24.68	200.81	1976.3	245.6	-225.4	-97.7	0.29	0.29	-0.03	15	80	850	3850				28	3	
2053.67	24.62	201.15	2002.7	257.7	-236.7	-102.0	0.16	-0.06	0.35	15	80	850	3850				28	3	
2082.69	24.81	200.83	2029.0	269.8	-248.1	-106.4	0.24	0.20	-0.33	15	80	850	3850				28	3	
2111.74	24.82	201.15	2055.4	282.0	-259.4	-110.7	0.14	0.01	0.33	15	80	850	3900				28	3	
2140.77	24.85	200.99	2081.7	294.2	-270.8	-115.1	0.08	0.03	-0.17	18	80	850	3900				28	3	
2169.79	24.93	200.86	2108.1	306.4	-282.2	-119.5	0.10	0.08	-0.13	18	80	830	3980				23	3	
2198.77	24.52	200.98	2134.4	318.5	-293.6	-123.8	0.43	-0.42	0.12	18	80	830	3980				26	3	
2227.82	24.44	201.27	2160.8	330.6	-304.8	-128.1	0.15	-0.08	0.30	18	80	815	3950				23	3	
2256.84	24.65	200.94	2187.2	342.6	-316.0	-132.5	0.26	0.22	-0.34	15	80	815	3950				30	3	
2285.72	24.70	201.75	2213.5	354.7	-327.3	-136.9	0.36	0.05	0.84	18	80	815	3950				23	3	
2314.86	24.23	201.20	2240.0	366.7	-338.5	-141.3	0.54	-0.48	-0.57	20	80	825	4150				43	3	
2343.92	24.31	200.91	2266.5	378.7	-349.6	-145.6	0.15	0.08	-0.30	20	80	825	3860				20	3	
2372.95	24.14	201.39	2293.0	390.6	-360.7	-149.9	0.27	-0.18	0.50	15	80	845	4220				17	3	
2401.99	24.08	201.51	2319.5	402.5	-371.8	-154.2	0.08	-0.06	0.12	15	80	845	4220				13	3	
2431.06	23.67	201.95	2346.0	414.2	-382.7	-158.6	0.46	-0.42	0.45	15	80	845	4220				15	3	
2460.09	24.06	202.38	2372.6	426.0	-393.6	-163.0	0.44	0.40	0.44	15	80	845	4220				13	3	
2489.15	24.33	201.67	2399.1	437.9	-404.6	-167.5	0.41	0.28	-0.73	25	80	830	3950	2471	2477	40R	24	3	
2518.23	23.85	201.39	2425.6	449.7	-415.7	-171.8	0.51	-0.50	-0.29	20	80	830	3950				21	3	
2547.21	23.63	201.50	2452.2	461.4	-426.5	-176.1	0.23	-0.23	0.11	20	80	830	3950	2542	2544	30L	24	3	
2576.30	24.22	200.69	2478.8	473.2	-437.5	-180.3	0.70	0.61	-0.84	30		830	3950	2571	2576	HS	7	3	
2611.46	24.69	202.18	2510.8	487.8	-451.1	-185.7	0.66	0.40	1.27	20	80	830	3950	2576	2578	HS	20	3	
2640.54	24.67	201.95	2537.2	499.9	-462.3	-190.2	0.10	-0.02	-0.24	15	80	550	2925	2614	2624	10L	29	4	
2669.53	23.53	202.06	2563.7	511.7	-473.3	-194.6	1.18	-1.18	0.11	15	80	550	2925				24	4	
2697.47	24.60	201.35	2589.2	523.1	-483.9	-198.9	1.19	1.15	-0.76	15		550	2900	2690	2697	30L	13	4	
2725.97	25.42	200.74	2615.0	535.2	-495.2	-203.2	0.90	0.86	-0.64	18	85	550	3000	2697	2711	30L	14	4	
2755.82	25.68	199.78	2641.9	548.1	-507.2	-207.6	0.49	0.26	-0.96	18	85	550	3050				17	4	

sperry-sun DRILLING SERVICES

Survey and Drilling Parameters

Customer : Origin Energy Resources Ltd
Well Name : Yolla # 4
Rig : 102

Field : Bass Strait
Slot : Yolla A Platform
Job # : AU-DD-0003018092

North Ref : Grid **Declination :** ° **VS Dir :** 201.69° (from Wellhead)

WELLBORE SURVEY										DRILLING PARAMETERS									
Measured Depth (m)	Incl Angle (deg)	Azi Dir (deg)	Vertical Depth (m)	Vertical Section (m)	Coordinates N/S (m)	Coordinates E/W (m)	DLS (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	WOB (lbs)	RPM	Flow Rate (gpm)	Stand Pipe (psi)	Orientation From (m)	Orientation To (m)	Tool Face (deg)	ROP (m/hr)	BHA No. (#)	Comment
2784.80	25.03	199.95	2668.1	560.5	-518.9	-211.9	0.68	-0.67	0.18	16	85	550	3050				17	4	
2813.82	23.99	199.06	2694.5	572.5	-530.2	-215.9	1.14	-1.08	-0.92	18	80	550	2900				25	4	
2842.87	23.15	199.25	2721.1	584.1	-541.2	-219.7	0.87	-0.87	0.20	18	80	550	3075	2834	2834	30R	21	4	
2867.34	22.75	200.82	2743.7	593.6	-550.2	-223.0	0.90	-0.49	1.92	18		550	3075	2863	2867	20R	18	4	
2902.83	22.90	201.36	2776.4	607.4	-563.0	-227.9	0.22	0.13	0.46	15	80	550	3050	2867	2870	20R	30	5	
														2872	2875	30R		5	
														2877	2883	10L		5	
2931.86	21.52	200.50	2803.3	618.4	-573.3	-231.8	1.47	-1.43	-0.89	12		560	3200	2922	2932	170L	4	6	
2960.85	20.27	200.15	2830.3	628.7	-583.0	-235.4	1.30	-1.29	-0.36	15	80	550	3200	2932	2955	170L	10	7	
2989.92	20.20	199.81	2857.6	638.8	-592.4	-238.9	0.14	-0.07	-0.35	15	80	550	3200				10	8	
3018.96	18.34	198.40	2885.0	648.3	-601.5	-242.0	1.98	-1.92	-1.46	12	85	550	3200	2991	3002	170L	18	8	
3047.97	15.45	196.93	2912.8	656.7	-609.5	-244.6	3.02	-2.99	-1.52	12	85	550	3200	3020	3031	170L	20	8	
3076.96	12.32	197.17	2940.9	663.7	-616.2	-246.6	3.24	-3.24	0.25	12	85	550	3200	3050	3062	170R	30	8	
3105.90	9.82	198.91	2969.3	669.2	-621.4	-248.3	2.61	-2.59	1.80	12	85	550	3450	3079	3087	170R	31	8	
3134.94	8.48	195.92	2998.0	673.8	-625.8	-249.7	1.47	-1.38	-3.09	5		560	3400	3125	3129	160L	10	8	
														3131	3135	150R		8	
3164.00	7.44	195.17	3026.8	677.8	-629.7	-250.8	1.08	-1.07	-0.77	10	85	560	3525	3135	3137	150R	14	8	
														3153	3156	170R		8	
3193.01	7.24	194.66	3055.6	681.5	-633.3	-251.7	0.22	-0.21	-0.53	10	85	560	3525				27	8	
3213.45	6.81	196.52	3075.8	684.0	-635.7	-252.4	0.71	-0.63	2.73	10	85	560	3525				27	8	
3235.00	6.55	197.10	3097.2	686.5	-638.1	-253.1	0.37	-0.36	0.81	10	85	560	3525				20	8	

WELL INFORMATION

MWD Run Number	100	300	400	600	800
Date run completed	20-Jun-04	02-Jul-04	07-Jul-04	09-Jul-04	12-Jul-04
Rig Bit Number	1	3	4	6	8
Bit Size (in)	16	12.25	8.5	8.5	8.5
Tool Nominal OD (in)	9.5	8.0	6.75	6.75	6.75
Log Start Depth (MD, m)	220.00	905.00	2,614.00	2,892.00	2,958.00
Log End Depth (MD, m)	900.00	2,614.00	2,892.00	2,958.00	3,235.00
Drill or Wipe	Drilling	Drilling	Drilling	Drilling	Drilling
Drill/Wipe Start Date and Time	19-Jun-04 01:15	26-Jun-04 04:57	05-Jul-04 20:42	09-Jul-04 05:19	11-Jul-04 00:58
Drill/Wipe End Date and Time	20-Jun-04 04:30	01-Jul-04 00:17	06-Jul-04 21:59	09-Jul-04 11:36	11-Jul-04 22:00
Min Inc (deg) @ Depth (MD, m)	0.00 @ 670.34	0.04 @ 921.22	22.75 @ 2,867.34	21.52 @ 2,931.86	6.55 @ 3,235.00
Max Inc (deg) @ Depth (MD, m)	0.36 @ 234.93	25.65 @ 1,763.53	25.68 @ 2,755.82	22.90 @ 2,902.83	20.27 @ 2,960.85
Bit TFA(in2) / Bit Type	1.325 / Hughes MX-1	1.491 / Hughes HCM506	1.138 / Hughes HCM505	1.387 / BB650XA	1.335 / Reed DSX173
Flow Rate (gpm)	920	850	550	560	550
Max AV (mpm) / CV (mpm) @ MWD	31.2 / 132.9	73.8 / 204.0	154.2 / 166.2	156.6 / 184.2	156.6 / 219.0
Fluid Type	Seawater/Sweeps	Drispac/Soltex	Drispac/Soltex	Drispac/Soltex	Drispac/Soltex
Density (ppg) / Viscosity (spqt)	8.75 / 100	9.20 / 114	9.25 / 66	9.40 / 86	9.40 / 81
Filtrate CL (ppm)	N/A	18,000	20,000	19,000	20,000
pH / Fluid Loss (cptm)	N/A / N/A	8.60 / 3.9	8.50 / 4.2	9.00 / 3.6	9.00 / 4.0
PV (cp) / YP (pa)	9 / 46	46 / 56	28 / 19	28 / 27	34 / 37
% Solids / % Sand	N/A / 0	5.0 / 0.25	5.4 / 0.10	6.5 / 0.10	6.4 / 0.20
% Oil / Oil:Water Ratio	N/A / N/A	0 / 0:94	0 / 0:92	0 / 0:92.5	0 / 0:92.5
Rm @ Measured Temp (degC)	N/A @ N/A	1.20 @ 21.10	1.00 @ 19.00	0.90 @ 20.00	0.85 @ 17.00
Rmf @ Measured Temp (degC)	N/A @ N/A	1.10 @ 21.10	0.90 @ 19.00	0.85 @ 20.00	0.80 @ 17.00
Rmc @ Measured Temp (degC)	N/A @ N/A	1.40 @ 21.10	1.20 @ 19.00	1.10 @ 20.00	1.20 @ 17.00
Max Tool Temp (degC) / Source	23.40 / PCD-R	93.00 / EWR-P4	114.00 / EWR-P4	120.00 / HCIM	118.00 / EWR-P4
Rm @ Max Tool Temp (degC)	N/A @ N/A	0.45 @ 93.00	0.30 @ 114.00	0.26 @ 120.00	0.23 @ 118.00
Lead MWD Engineer	M. Lee	M. Lee	M. Lee	M. Lee	M. Lee
Customer Representative	M. Jackson	M. Jackson	H. Flink	H.Flink	H. Flink

SENSOR INFORMATION

Downhole Processor Information

Tool Type	PCD	HCIM	HCIM	HCIM	HCIM
Software Version	3.32	66.37	66.37	66.37	66.37
Sub Serial Number	10599306	154547	104328	104328	104328
Insert Serial Number	538	132882	191770	191770	191770
Logging String Serial Number	10599306	DM90047858HGR8	DM90049412H1GR6	DM90049412H1GR6	DM90049412H1GR6
Date and Time Initialized	16-Jun-04 17:00	25-Jun-04 18:17	05-Jul-04 07:05	08-Jul-04 22:06	10-Jul-04 18:21
Date and Time Read	20-Jun-04 12:00	01-Jul-04 06:39:00	07-Jul-04 10:06:29	09-Jul-04 19:28:52	12-Jul-04 13:18:08

Directional Sensor Information

Tool Type	PCD	PM	PM	PM	PM
Distance From Bit (m)	20.03	23.59	20.27	20.37	20.27
Software Version	3.32	N/A	N/A	N/A	N/A
Sub Serial Number	10599306	61119	30806	30806	30806
Sonde Serial Number	538	97847	168022	168022	168022
Sensor ID Number	10599306	688	500	500	500
Survey String Serial Number	10599306	DM90047862M8	DM90047860M6	DM90047860M6	DM90047860M6
Toolface Offset (deg)	N/A	194.4	97.1	97.1	97.1

Gamma Ray Sensor Information

Tool Type		DGR	DGR	DGR	DGR
Distance From Bit (m)		20.22	16.95	17.05	16.95
Recorded Sample Period (sec)		12	14	14	14
Software Version		N/A	N/A	N/A	N/A
Sub Serial Number		102971	90625	90625	90625
Insert/Sonde Serial Number		84171	188554	188554	188554

Resistivity Sensor Information

Tool Type		EWR-P4	EWR-P4	EWR-P4	EWR-P4
Distance From Bit (m)		17.23	13.94	14.04	13.94
Recorded Sample Period (sec)		14	16	16	16
Software Version		1.38	1.38	1.38	1.38
Sub Serial Number		82377	60579	60579	60579
Receiver Insert Serial Number		144719	99881	99881	99881
Transmitter Insert Serial Number		79562	123853	123853	123853
Receiver Orientation		Down	Down	Down	Down

REMARKS

1. All depths are bit depths and referenced to the drillers pipe tally.

2. AV/CV is calculated at the MWD collar using the Power Law for water based muds and the Binghams Plastic Law for oil based muds.

3. Curve mnemonics are :

SGRC - Smoothed Gamma Ray Combined, api
SEXP - Smoothed Extra Shallow Phase-Shift Derived Resistivity, ohm-m
SESP - Smoothed Shallow Phase-Shift Derived Resistivity, ohm-m
SEMP - Smoothed Medium Phase-Shift Derived Resistivity, ohm-m
SEDP - Smoothed Deep Phase-Shift Derived Resistivity, ohm-m
SROP - Smoothed Rate of Penetration, m/hr
SFXE - Smoothed Resistivity Formation Exposure Time, hr
STEM - Smoothed Temperature from Resistivity tool, degrees C

4. The second bit run drilled from 900.0 to 905.0 mMDRT without the use of the MWD tool.

5. Repeat section wiped over the interval 1310.0 - 1340.0 mMDRT at 12:04 to 13:50 after drilling while running in hole with rotary and pumps.

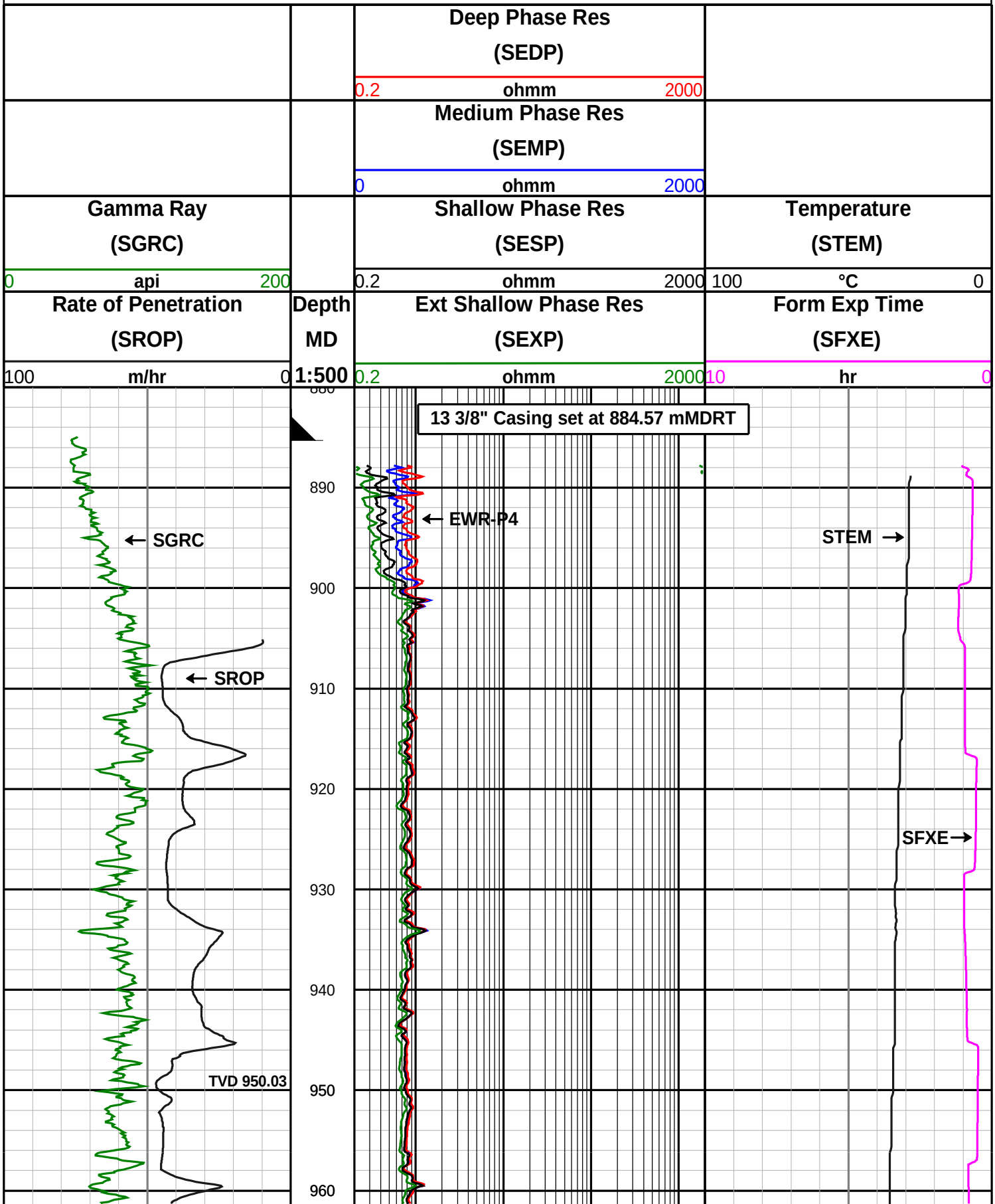
6. EWR-P4 memory was filled prior to logging the repeat section due to a longer than expected run length, thus realtime data was presented over this interval.

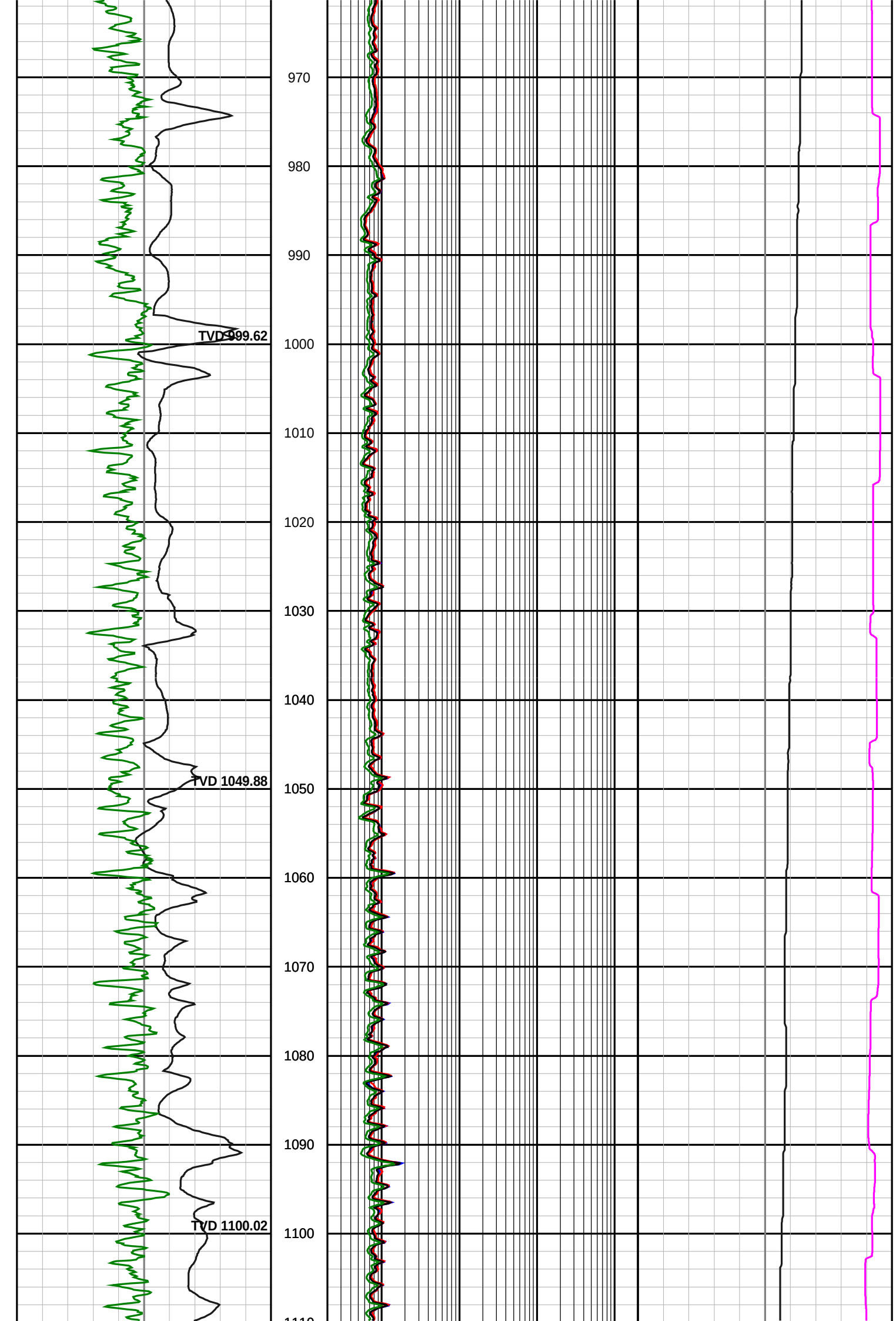
7. Run 500 was a coring run from 2892.0 to 2919.5 mMDRT, which was logged before drilling run 600.

8. Run 700 was a coring run from 2958.0 to 2985.0 mMDRT, which was logged before drilling run 800.

WARRANTY

HALLIBURTON ENERGY SERVICES (HES) WILL USE ITS BEST EFFORTS TO FURNISH CUSTOMERS WITH ACCURATE INFORMATION AND INTERPRETATIONS THAT ARE PART OF, AND INCIDENT TO, THE SERVICES PROVIDED. HOWEVER, HES CANNOT AND DOES NOT WARRANT THE ACCURACY OR CORRECTNESS OF SUCH INFORMATION AND INTERPRETATIONS. UNDER NO CIRCUMSTANCES SHOULD ANY SUCH INFORMATION OR INTERPRETATION BE RELIED UPON AS THE SOLE BASIS FOR ANY DRILLING, COMPLETION, PRODUCTION, OR FINANCIAL DECISION OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING VENTURE, DRILLING RIG OR ITS CREW OR ANY OTHER THIRD PARTY. THE CUSTOMER HAS FULL RESPONSIBILITY FOR ALL DRILLING, COMPLETION AND PRODUCTION OPERATION. HES MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE SERVICES RENDERED. IN NO EVENT WILL HES BE LIABLE FOR FAILURE TO OBTAIN ANY PARTICULAR RESULTS OR FOR ANY DAMAGES, INCLUDING, BUT NOT LIMITED TO, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, RESULTING FROM THE USE OF ANY INFORMATION OR INTERPRETATION PROVIDED BY HES.

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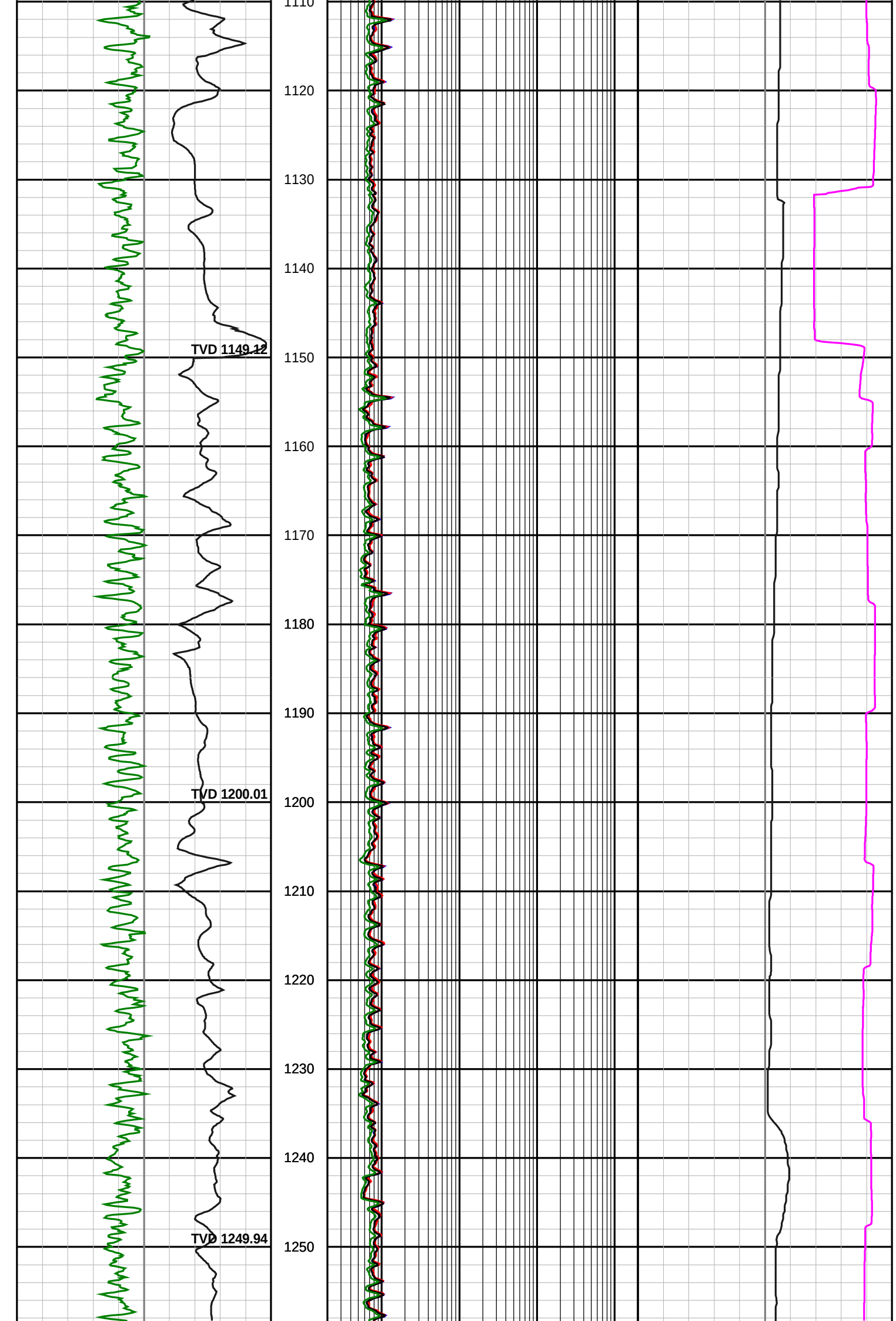
TVD 1100.02
1100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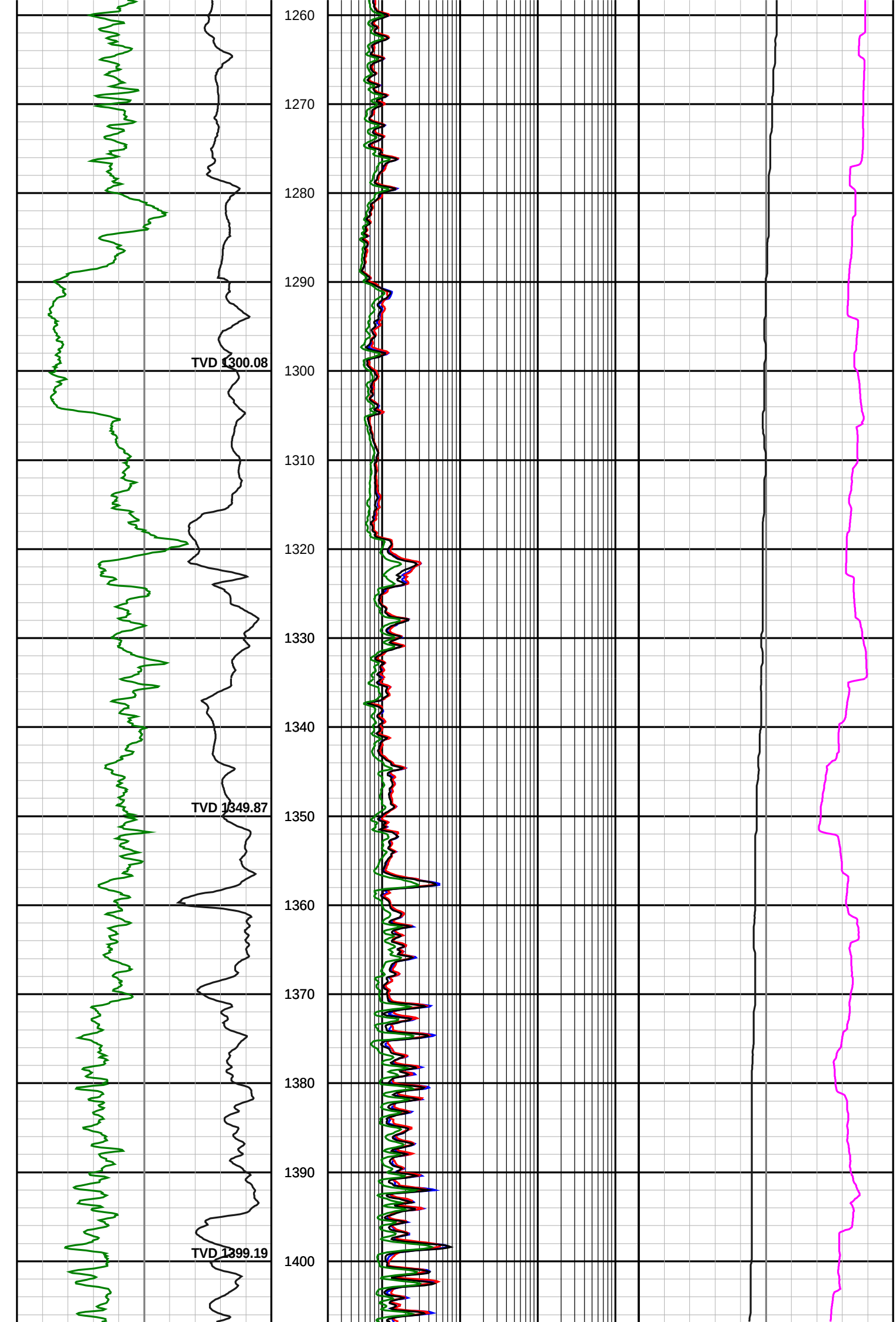
TVD 1249.94
1250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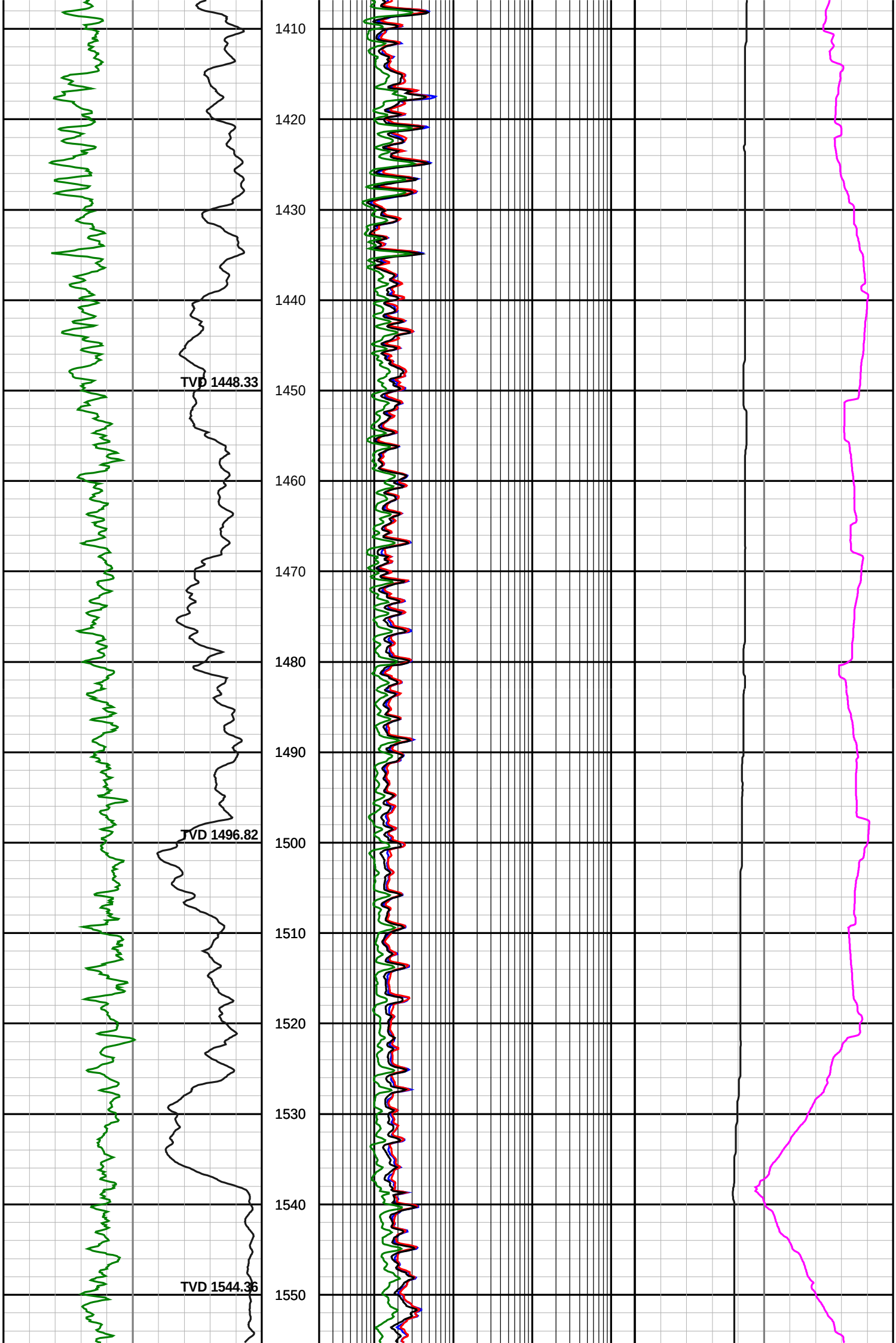
TVD 1399.19
1400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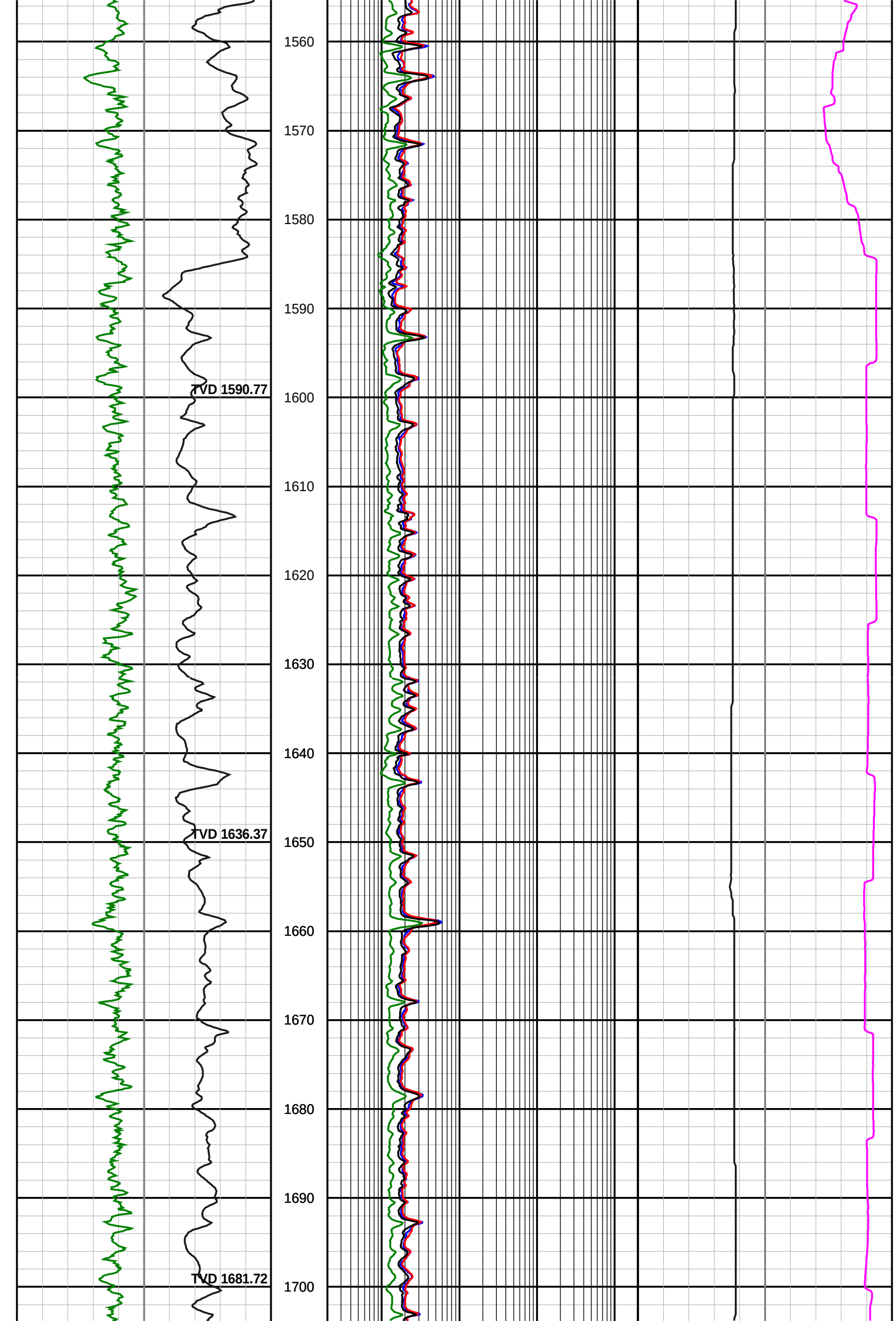
TVD 1544.36
1550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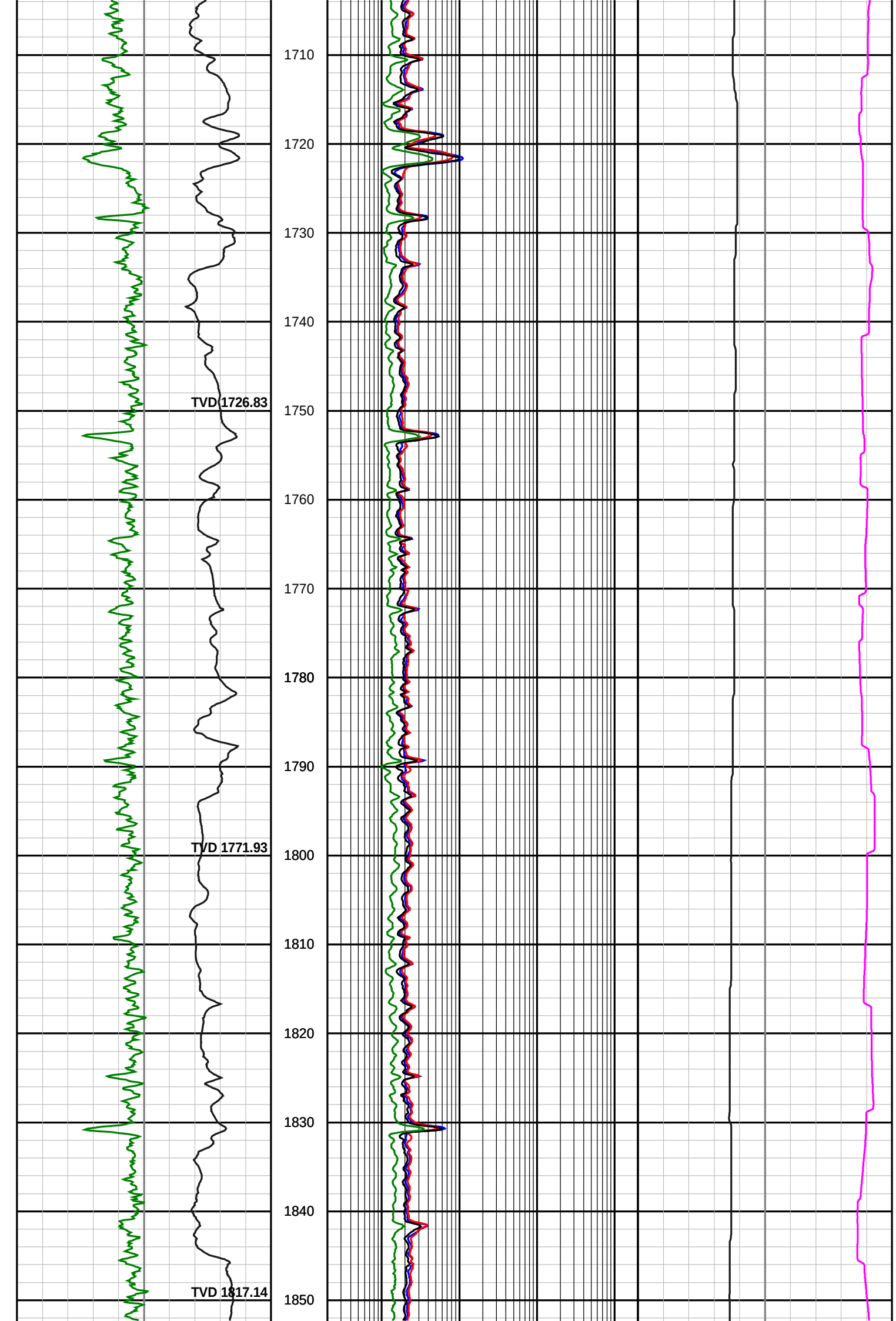
TVD 1681.72
1700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TVD 1817.14
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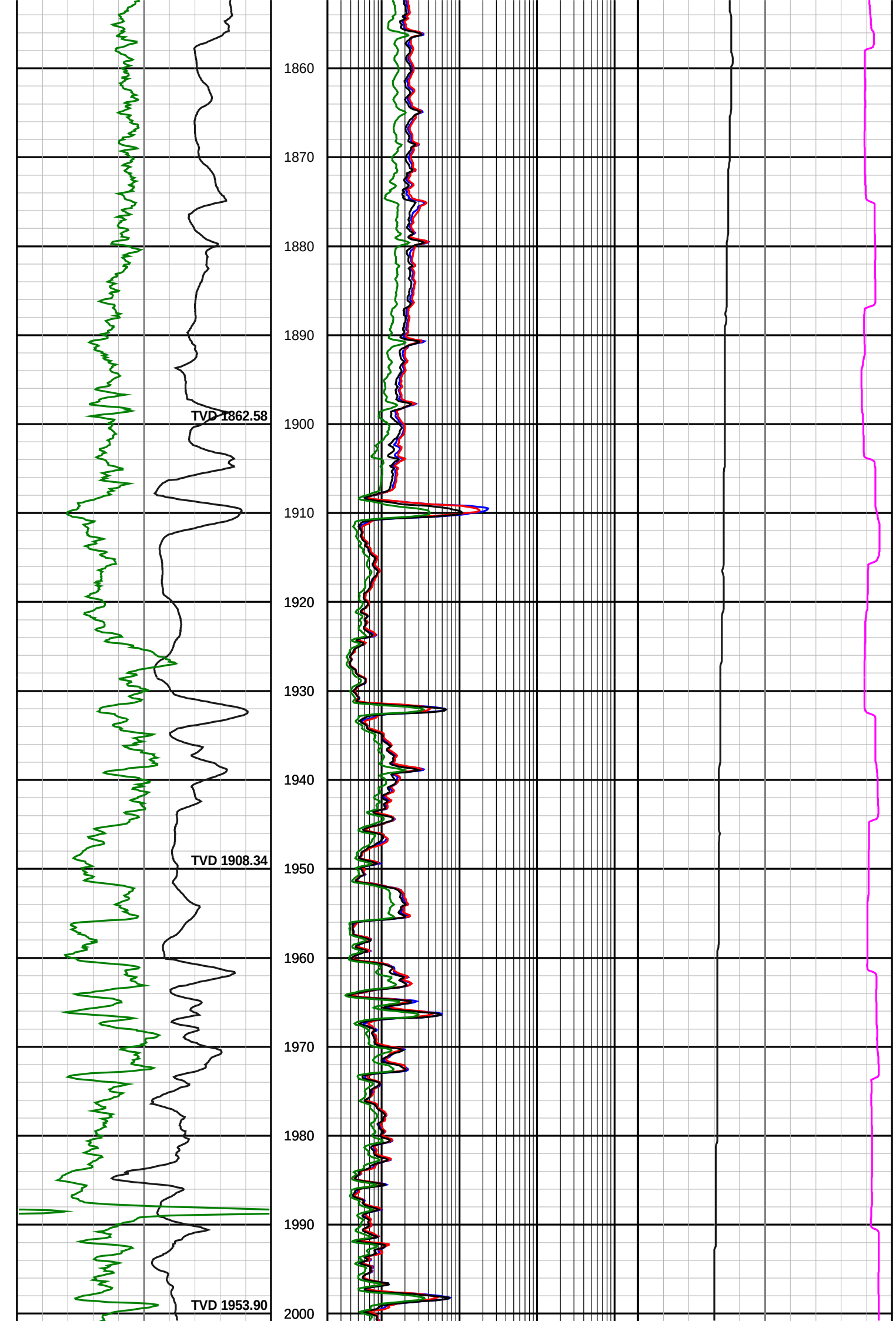
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1940
TVD 1908.34
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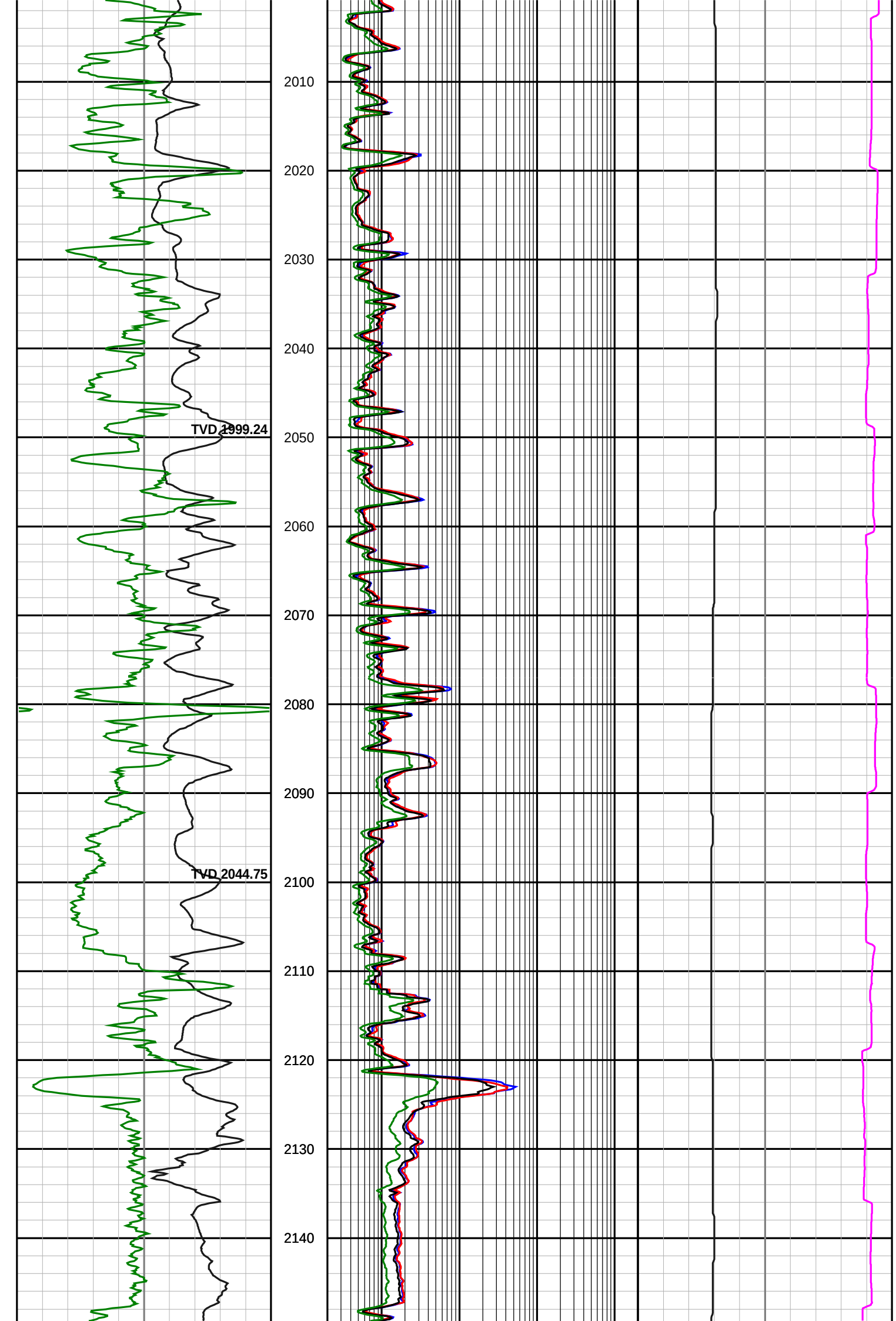
1960
1970
1980
1990
TVD 1953.90
2000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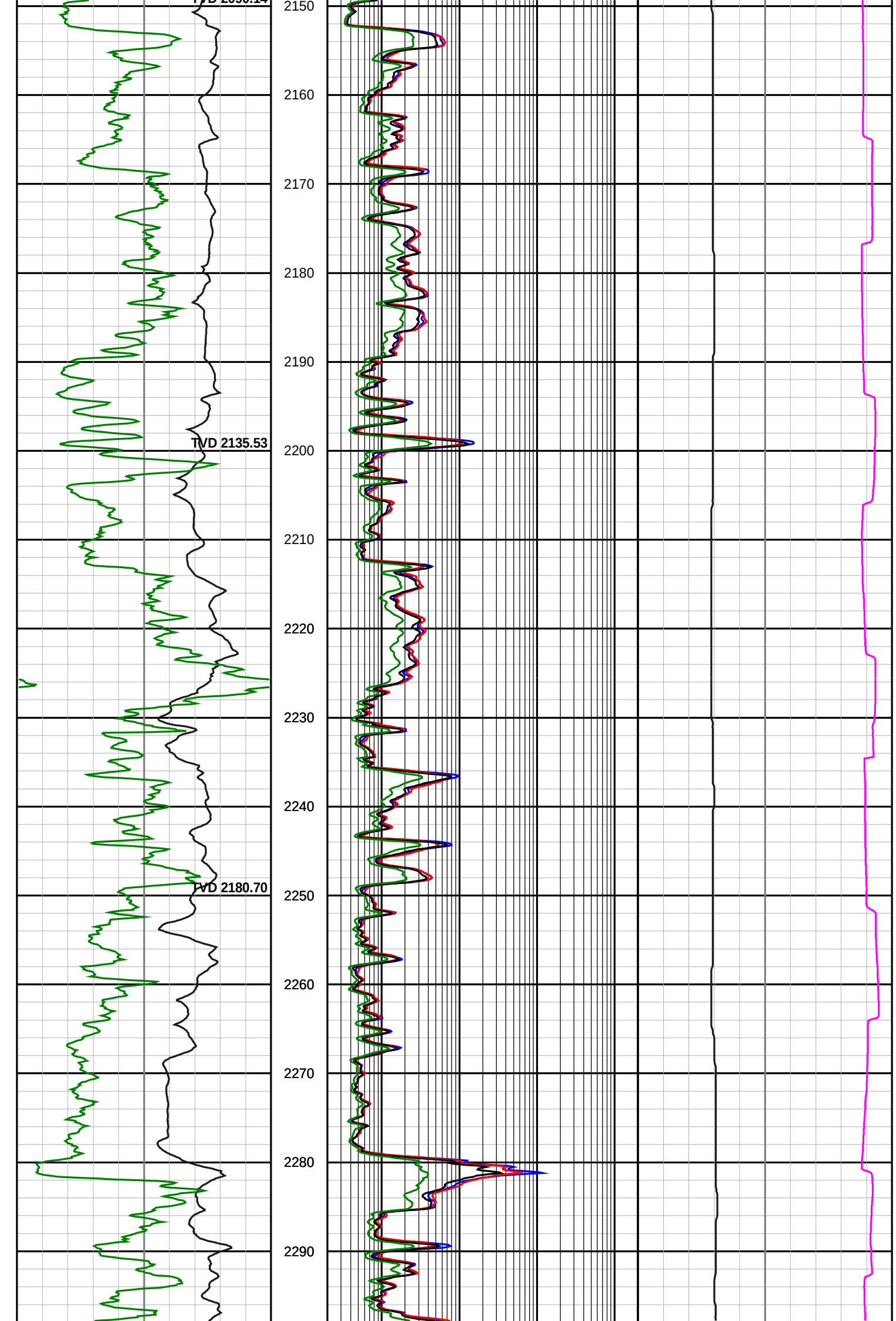
2130
2140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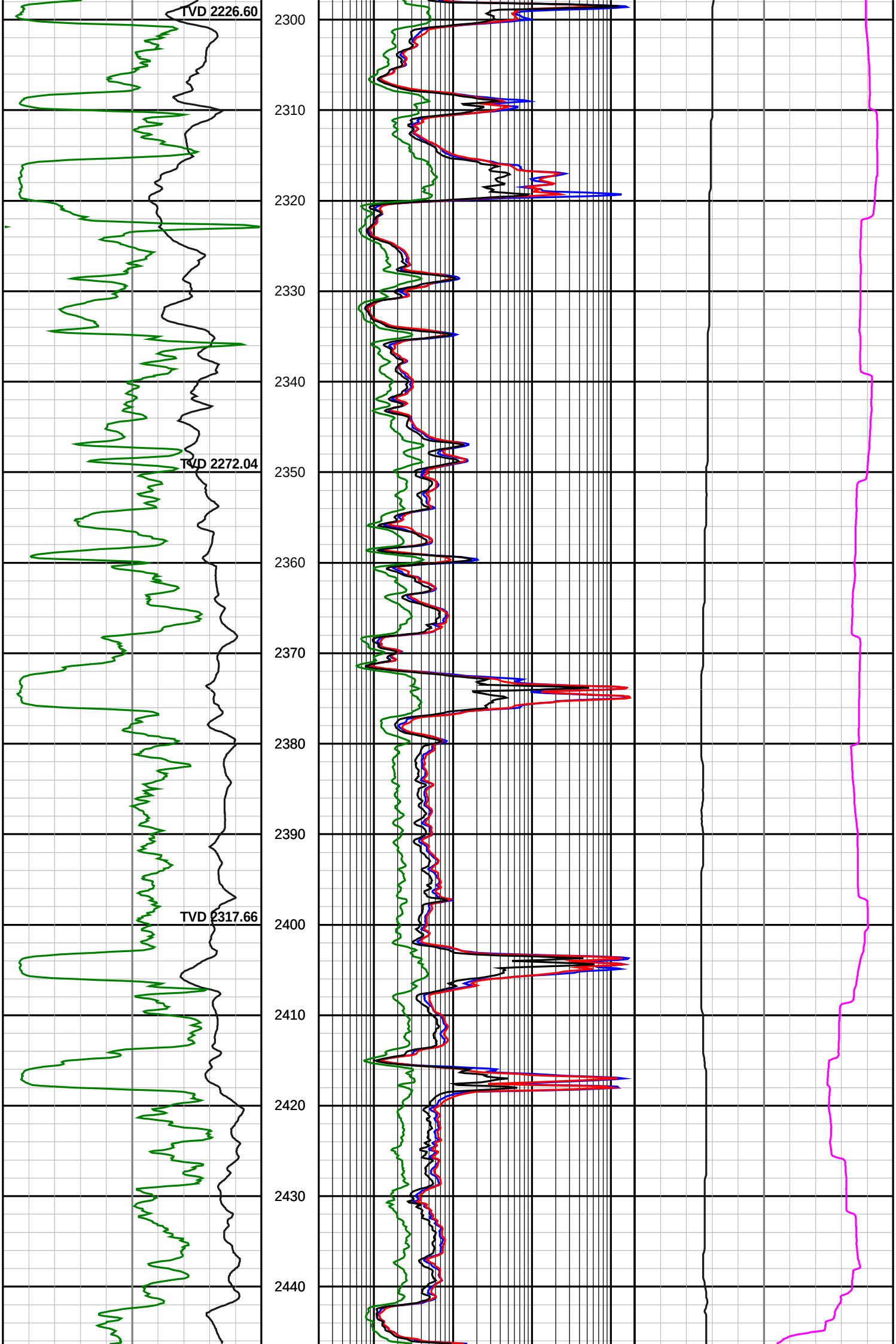
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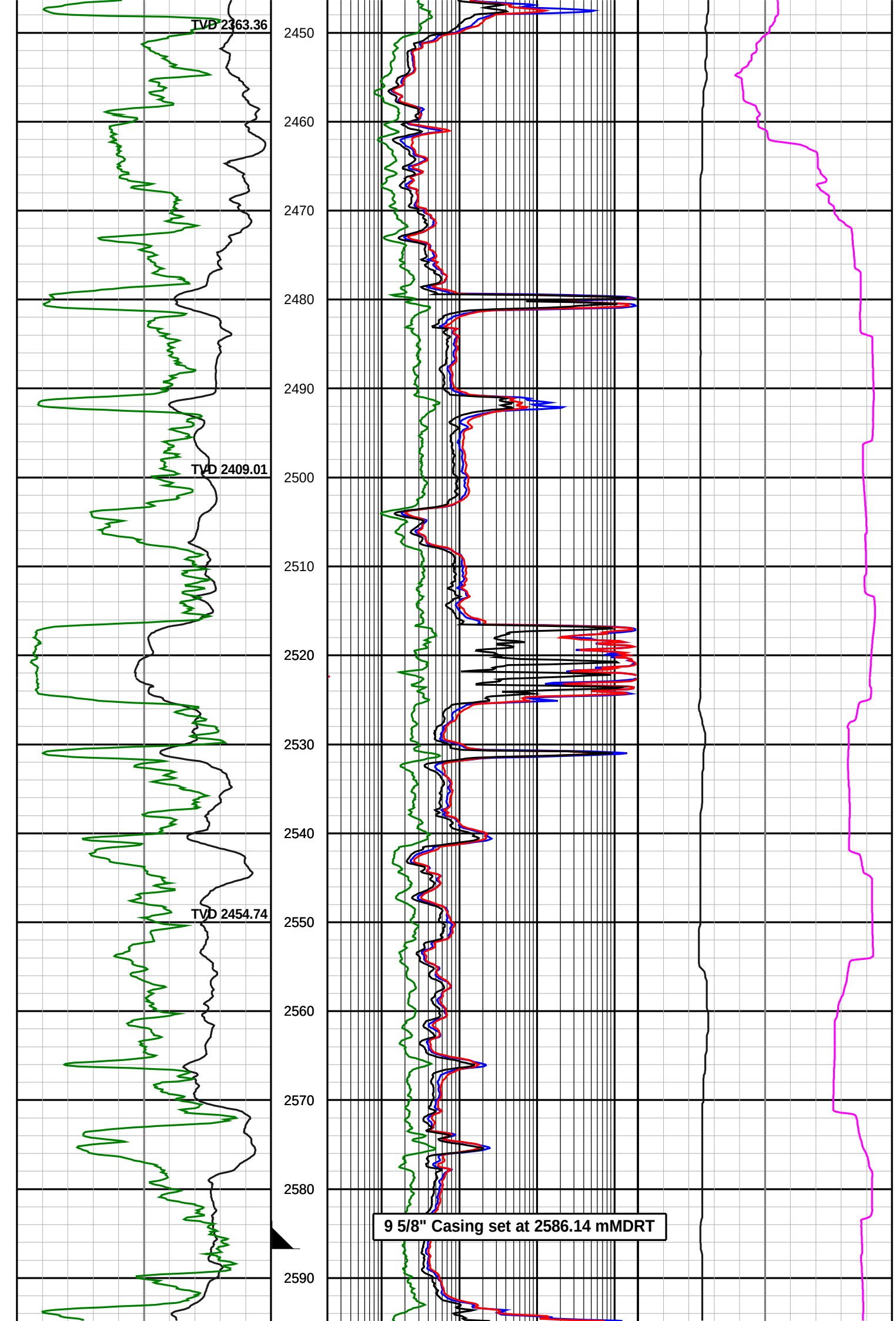
2430
2440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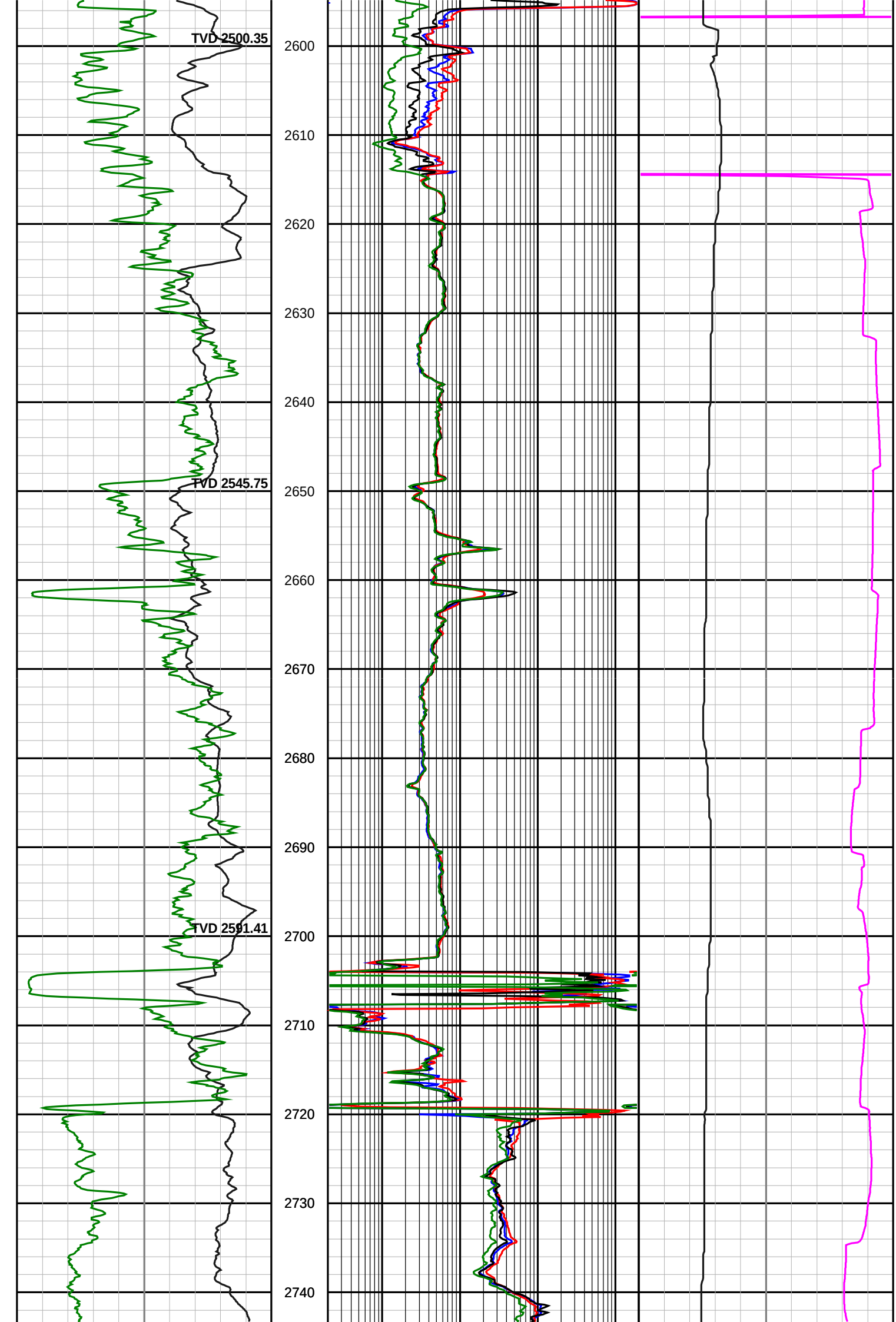
2580
2590
9 5/8" Casing set at 2586.14 mMDRT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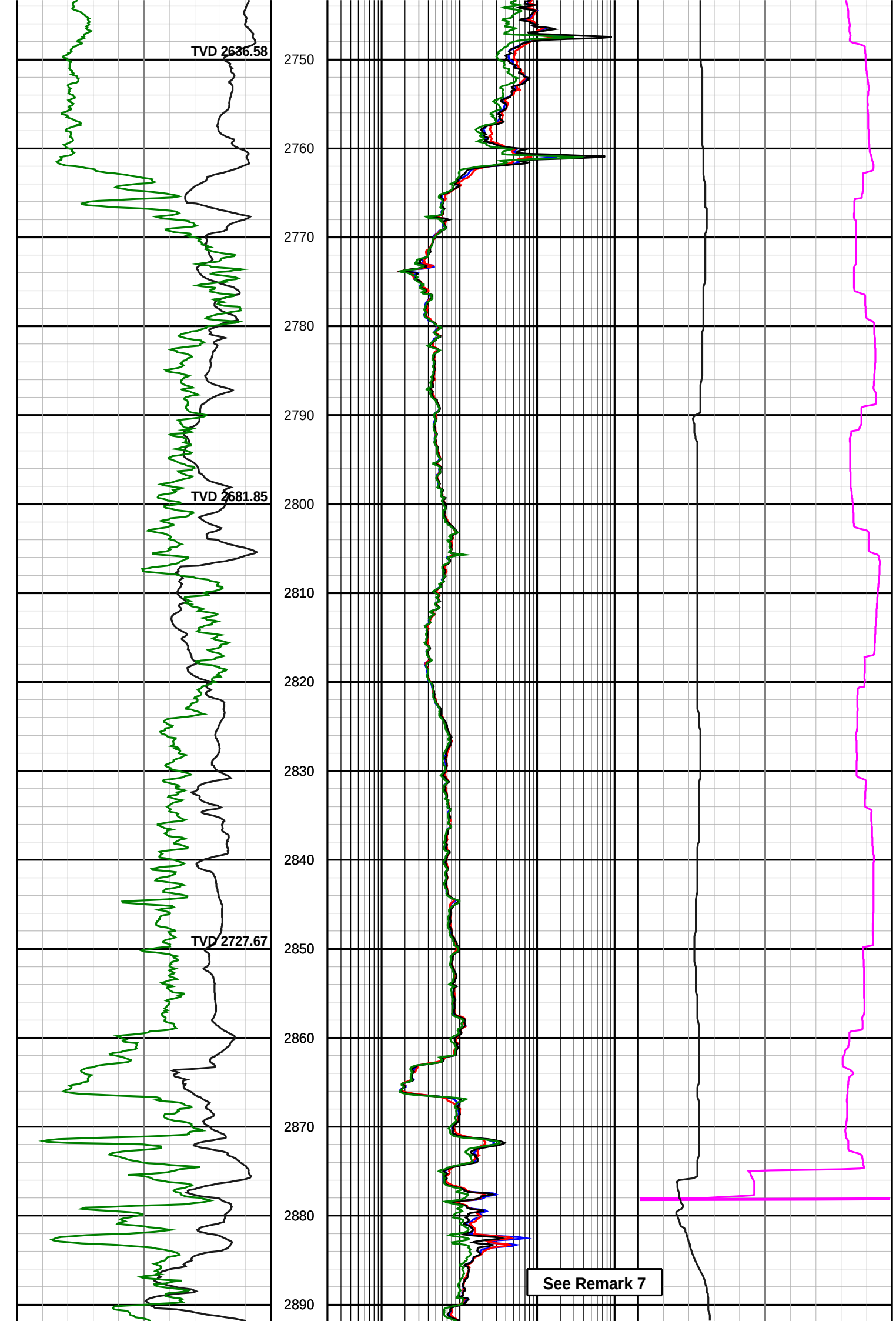
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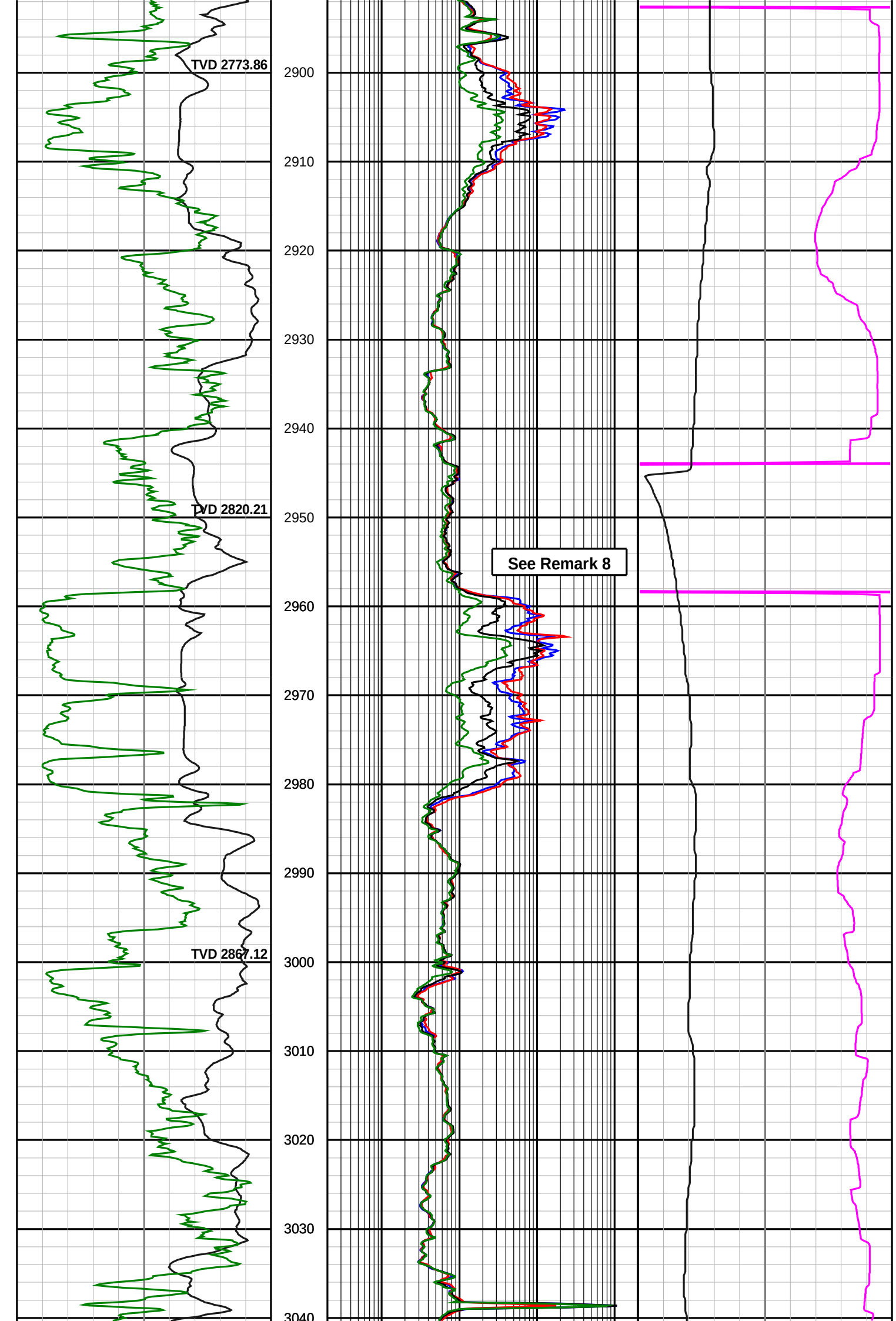
See Remark 7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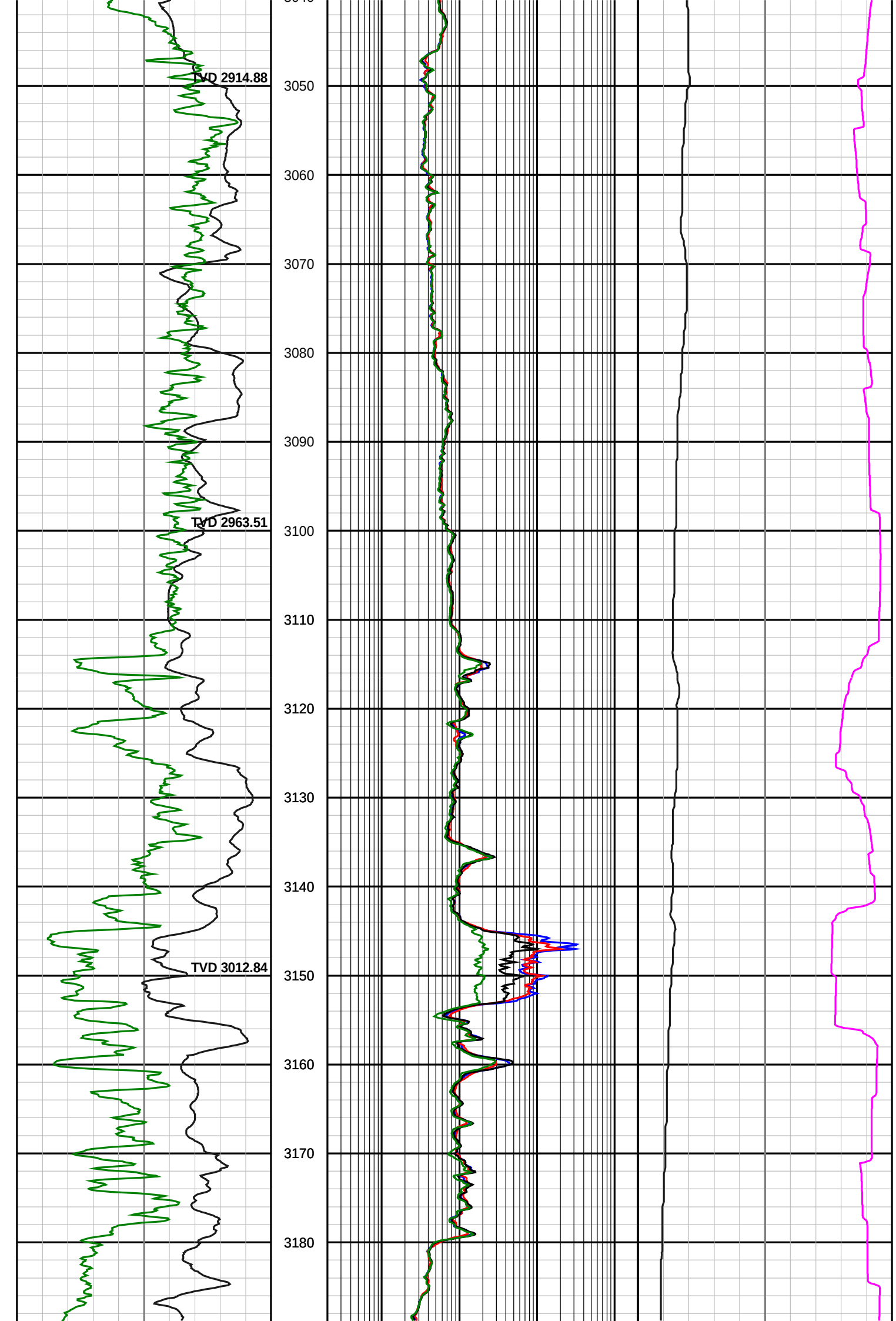
See Remark 8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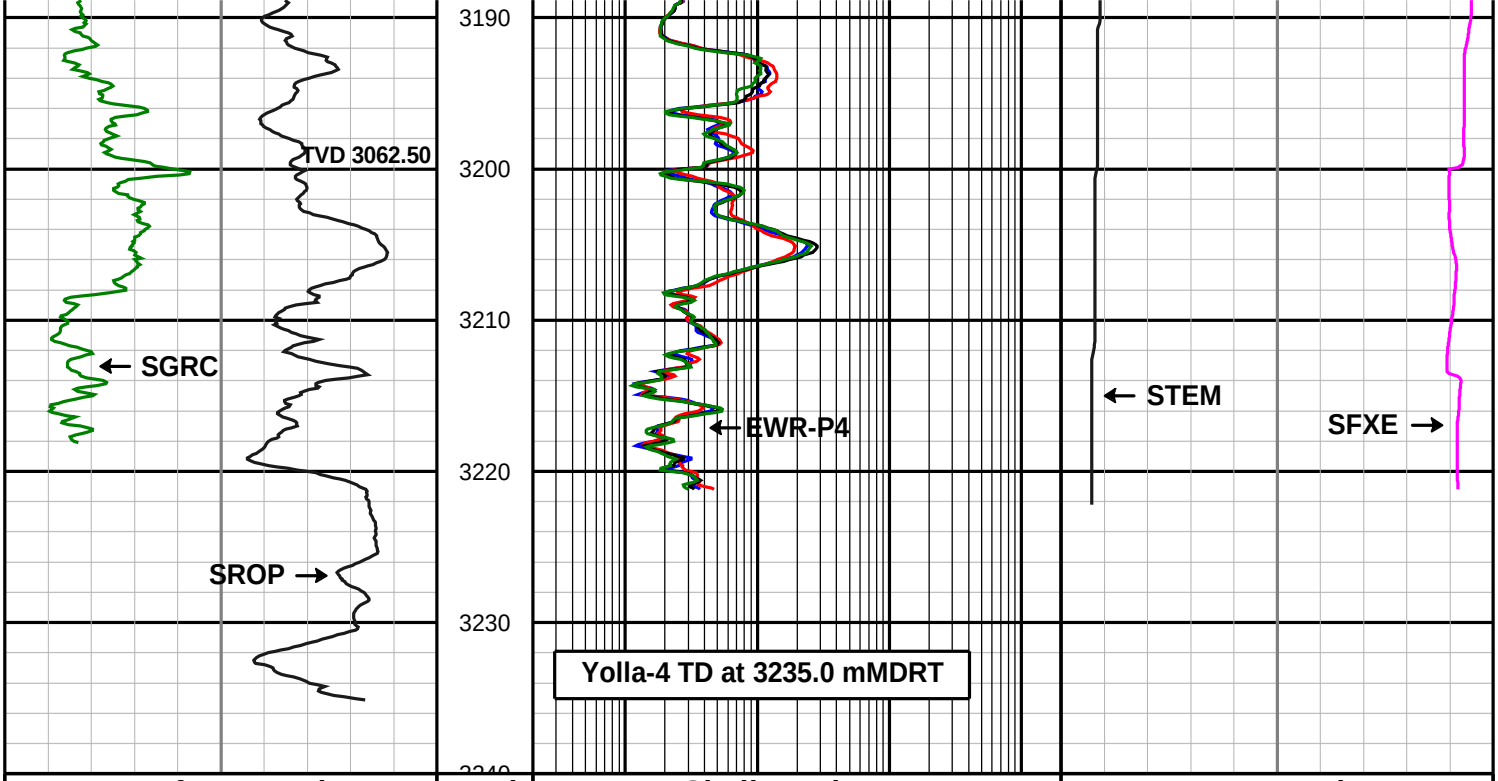


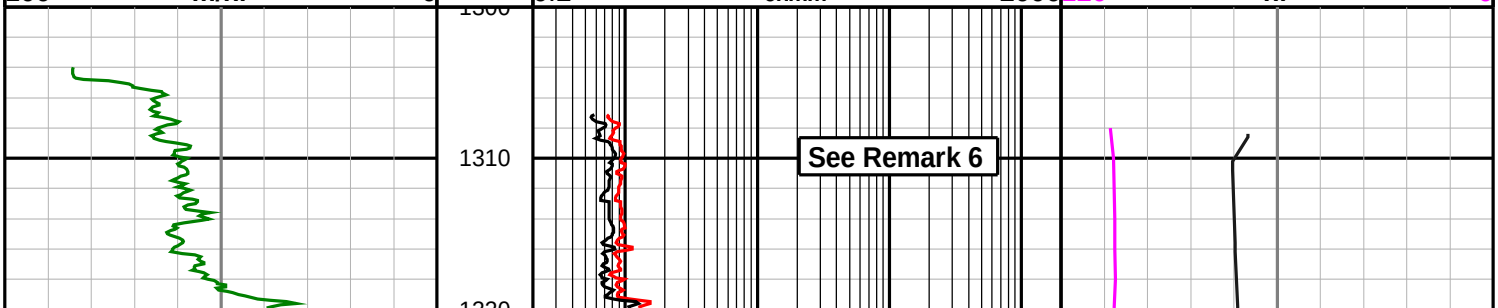
Rate of Penetration (SROP)	Depth MD	Ext Shallow Phase Res (SEXP)	Form Exp Time (SFXE)
100 m/hr 0	1:500	0.2 ohmm 2000	10 hr 0
Gamma Ray (SGRC)		**Shallow Phase Res (SESP)**	**Temperature (STEM)**
0 api 200		0.2 ohmm 2000	100 °C 0
		Medium Phase Res (SEMP)	
		0 ohmm 2000	
		Deep Phase Res (SEDP)	
		0.2 ohmm 2000	

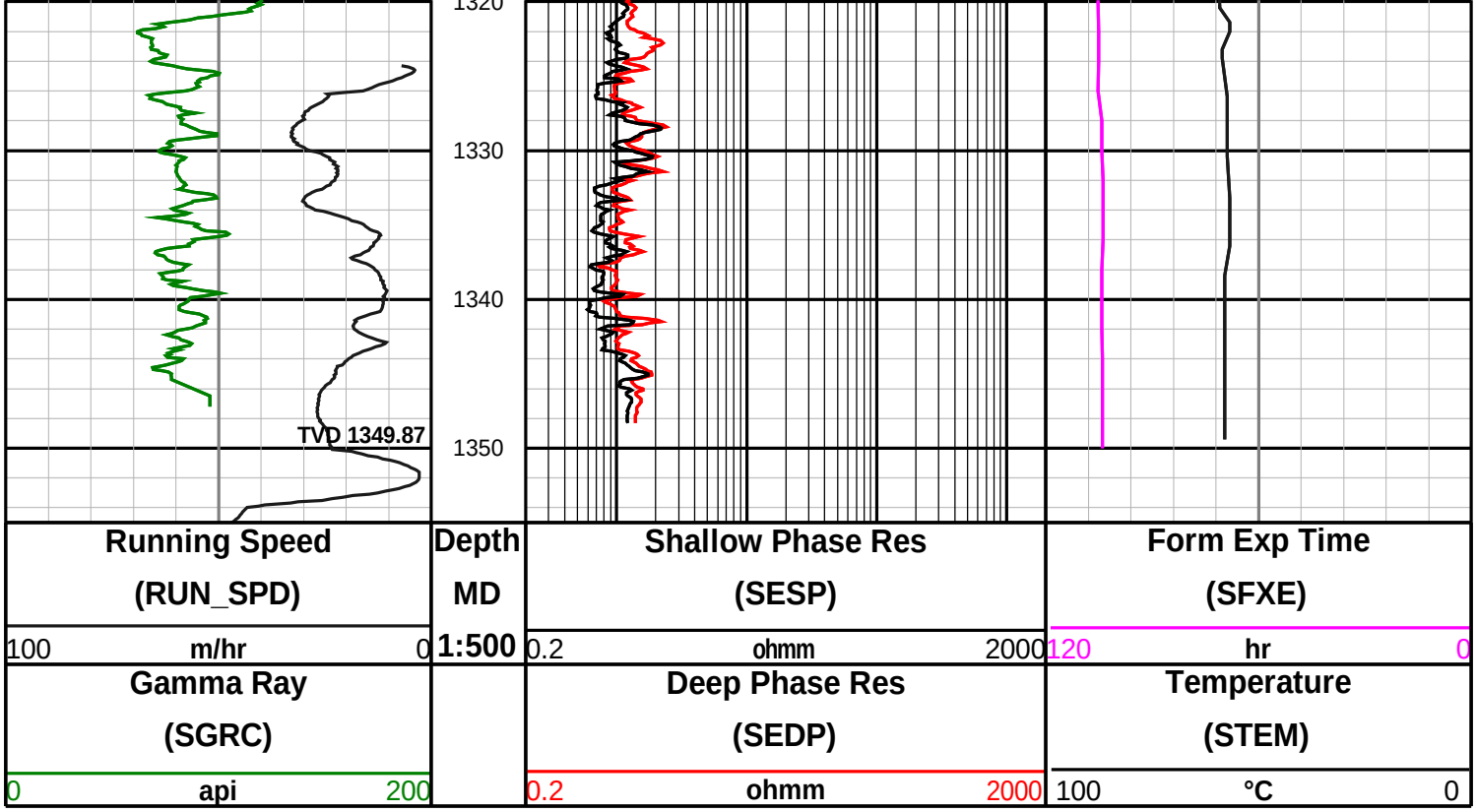
Origin Energy Resources

Yolla-4

Repeat section wiped over the interval 1310.0 - 1340.0 mMDRT at 12:04 to 13:50 after drilling while running in hole with rotary and pumps

Gamma Ray (SGRC)		Deep Phase Res (SEDP)	Temperature (STEM)
0 api 200		0.2 ohmm 2000	100 °C 0
Running Speed (RUN_SPD)	**Depth MD**	**Shallow Phase Res (SESP)**	**Form Exp Time (SFXE)**
100 m/hr 0	1:500	0.2 ohmm 2000	120 hr 0





DIRECTIONAL SURVEY REPORT

Origin Energy Resources
Yolla-4
Yolla
Tasmania
Australia
AU-FE-0003018092
Final survey extrapolated to TD

Measured Depth (metres)	*Inclination (degrees)*	*Direction (degrees)*	*Vertical Depth (metres)*	*Latitude (metres)*	*Departure (metres)*	*Vertical Section (metres)*	*Dogleg (deg/30m)*
0.000	0.00	0.00	0.000	0.000 N	0.000 E	0.000	TIE-IN
234.930	0.36	136.39	234.928	0.533 S	0.508 E	0.308	0.05
263.910	0.28	126.75	263.908	0.641 S	0.627 E	0.364	0.10
292.950	0.17	195.49	292.948	0.723 S	0.671 E	0.424	0.27
322.020	0.13	143.72	322.018	0.790 S	0.679 E	0.483	0.14
351.030	0.18	92.31	351.028	0.817 S	0.744 E	0.485	0.15
380.070	0.13	175.00	380.068	0.852 S	0.792 E	0.499	0.22
409.120	0.15	207.88	409.118	0.920 S	0.777 E	0.568	0.09
467.210	0.21	111.56	467.207	1.027 S	0.837 E	0.645	0.14
496.220	0.11	142.76	496.217	1.069 S	0.903 E	0.659	0.13
525.220	0.03	253.98	525.217	1.094 S	0.913 E	0.679	0.13
554.150	0.09	53.82	554.147	1.082 S	0.924 E	0.664	0.13
583.180	0.07	106.21	583.177	1.073 S	0.960 E	0.642	0.08
612.220	0.22	174.73	612.217	1.133 S	0.982 E	0.690	0.21
641.280	0.04	53.15	641.277	1.181 S	0.995 E	0.729	0.25
670.340	0.00	96.38	670.337	1.174 S	1.004 E	0.720	0.04
699.340	0.07	29.72	699.337	1.159 S	1.013 E	0.703	0.07
728.370	0.07	122.55	728.367	1.154 S	1.036 E	0.689	0.10
757.460	0.04	139.75	757.457	1.171 S	1.058 E	0.697	0.03
786.520	0.17	344.46	786.517	1.137 S	1.053 E	0.667	0.22
815.780	0.17	337.74	815.777	1.053 S	1.024 E	0.600	0.02
844.820	0.06	187.19	844.817	1.027 S	1.006 E	0.583	0.24
873.830	0.04	42.38	873.827	1.034 S	1.011 E	0.588	0.10
892.740	0.13	290.73	892.737	1.022 S	0.996 E	0.581	0.23
921.220	0.04	217.54	921.217	1.018 S	0.961 E	0.591	0.13

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
978.820	0.04	300.15	978.817	1.022 S	0.930 E	0.606	0.03
1008.390	0.10	198.92	1008.387	1.041 S	0.912 E	0.631	0.12
1037.450	0.04	248.53	1037.447	1.070 S	0.894 E	0.664	0.09
1066.520	0.06	102.10	1066.517	1.076 S	0.898 E	0.668	0.09
1095.580	0.06	254.10	1095.577	1.083 S	0.897 E	0.675	0.11
1124.590	0.06	23.63	1124.587	1.075 S	0.889 E	0.670	0.11
1153.610	0.04	261.67	1153.607	1.063 S	0.885 E	0.661	0.08
1182.640	0.05	290.30	1182.637	1.061 S	0.864 E	0.666	0.02
1211.670	0.09	274.15	1211.667	1.055 S	0.830 E	0.674	0.05
1240.720	0.20	314.87	1240.716	1.017 S	0.770 E	0.661	0.15
1269.770	0.13	311.09	1269.766	0.960 S	0.709 E	0.630	0.08
1298.830	2.64	214.65	1298.816	1.489 S	0.305 E	1.270	2.74
1327.870	5.64	210.09	1327.777	3.273 S	0.790 W	3.333	3.12
1356.900	7.29	213.82	1356.622	6.038 S	2.531 W	6.546	1.76
1385.940	9.08	215.12	1385.364	9.444 S	4.876 W	10.578	1.86
1414.970	10.04	215.43	1413.991	13.381 S	7.660 W	15.265	0.99
1444.000	11.83	214.02	1442.493	17.908 S	10.792 W	20.629	1.87
1473.070	13.63	214.58	1470.848	23.198 S	14.402 W	26.878	1.86
1502.130	16.24	212.73	1498.924	29.435 S	18.542 W	34.204	2.74
1531.170	18.62	210.88	1526.630	36.829 S	23.117 W	42.766	2.52
1560.200	20.69	205.27	1553.970	45.445 S	27.685 W	52.459	2.89
1589.270	23.33	202.68	1580.920	55.400 S	32.097 W	63.341	2.90
1618.310	24.06	202.94	1607.512	66.157 S	36.622 W	75.008	0.77
1647.360	24.73	202.43	1633.968	77.227 S	41.249 W	87.004	0.72
1676.430	25.02	202.40	1660.342	88.530 S	45.911 W	99.231	0.31
1705.500	25.32	201.82	1686.651	99.986 S	50.565 W	111.595	0.40
1734.510	25.53	200.98	1712.851	111.582 S	55.109 W	124.050	0.43
1763.530	25.65	200.93	1739.025	123.288 S	59.591 W	136.583	0.12
1792.590	25.45	200.34	1765.243	135.016 S	64.008 W	149.113	0.33
1821.640	25.62	200.08	1791.456	146.767 S	68.334 W	161.631	0.21
1850.690	24.60	199.87	1817.760	158.352 S	72.545 W	173.952	1.06
1879.530	24.20	200.32	1844.024	169.541 S	76.639 W	185.862	0.46
1908.490	24.21	200.00	1870.438	180.688 S	80.732 W	197.732	0.14
1937.540	24.12	200.96	1896.943	191.827 S	84.892 W	209.620	0.42
1966.580	24.31	200.78	1923.428	202.956 S	89.136 W	221.529	0.22
1995.630	24.40	200.84	1949.893	214.154 S	93.392 W	233.508	0.09
2024.630	24.68	200.81	1976.273	225.412 S	97.674 W	245.551	0.29
2053.670	24.62	201.15	2002.666	236.721 S	102.010 W	257.662	0.16
2082.690	24.81	200.83	2029.028	248.050 S	106.356 W	269.795	0.24
2111.740	24.82	201.15	2055.396	259.433 S	110.723 W	281.986	0.14
2140.770	24.85	200.99	2081.742	270.810 S	115.106 W	294.177	0.08
2169.790	24.93	200.86	2108.066	282.218 S	119.468 W	306.390	0.10
2198.770	24.52	200.98	2134.390	293.540 S	123.795 W	318.510	0.43
2227.820	24.44	201.27	2160.829	304.768 S	128.133 W	330.546	0.15
2256.840	24.65	200.97	2187.226	316.014 S	132.477 W	342.601	0.25
2285.830	24.70	201.15	2213.569	327.308 S	136.826 W	354.702	0.09
2314.860	24.23	201.20	2239.994	338.517 S	141.168 W	366.722	0.49
2343.920	24.31	200.91	2266.486	349.662 S	145.459 W	378.664	0.15
2372.950	24.14	201.39	2292.960	360.769 S	149.756 W	390.573	0.27
2401.990	24.08	201.51	2319.468	371.809 S	154.094 W	402.435	0.08
2431.060	23.67	201.95	2346.050	382.738 S	158.450 W	414.200	0.45
2460.090	24.06	202.38	2372.598	393.616 S	162.882 W	425.945	0.44
2489.150	24.33	201.67	2399.105	404.656 S	167.347 W	437.855	0.41
2518.230	23.85	201.39	2425.652	415.699 S	171.704 W	449.725	0.50
2547.210	23.63	201.50	2452.179	426.559 S	175.969 W	461.393	0.24
2576.300	24.22	200.69	2478.770	437.565 S	180.214 W	473.188	0.69
2611.460	24.70	202.18	2510.775	451.113 S	185.535 W	487.744	0.67
2640.540	24.67	201.95	2537.199	462.367 S	190.097 W	499.887	0.10
2669.530	23.53	202.06	2563.662	473.341 S	194.532 W	511.723	1.18
2697.470	24.64	201.35	2589.169	483.934 S	198.747 W	523.124	1.24
2725.970	25.42	200.74	2614.992	495.189 S	203.077 W	535.182	0.87
2755.820	25.68	199.78	2641.923	507.267 S	207.534 W	548.053	0.49
2784.800	25.00	199.95	2668.115	518.932 S	211.749 W	560.449	0.70
2813.820	23.99	199.06	2694.522	530.272 S	215.768 W	572.472	1.11
2842.870	23.15	199.25	2721.148	541.245 S	219.580 W	584.077	0.87

HALLIBURTON

Yolla-4

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
2867.340	22.75	200.82	2743.681	550.211 S	222.847 W	593.615	0.90
2902.830	22.90	201.36	2776.392	563.055 S	227.801 W	607.381	0.22
2931.860	21.52	200.50	2803.268	573.303 S	231.724 W	618.353	1.46
2960.850	20.27	200.15	2830.350	582.999 S	235.316 W	628.690	1.30
2989.920	20.20	199.81	2857.627	592.447 S	238.751 W	638.739	0.15
3018.960	18.34	198.40	2885.039	601.499 S	241.893 W	648.311	1.98
3047.970	15.45	196.93	2912.794	609.528 S	244.460 W	656.720	3.02
3076.960	12.32	197.17	2940.933	616.180 S	246.498 W	663.654	3.24
3105.900	9.82	198.91	2969.332	621.467 S	248.210 W	669.200	2.61
3134.940	8.48	195.92	2998.002	625.869 S	249.601 W	673.804	1.48
3164.000	7.44	195.17	3026.782	629.744 S	250.681 W	677.804	1.07
3193.010	7.24	194.66	3055.555	633.325 S	251.635 W	681.484	0.22
3213.450	6.81	196.52	3075.841	635.732 S	252.305 W	683.969	0.70
3235.000	6.55	197.10	3097.245	638.133 S	253.030 W	686.467	0.38

CALCULATION BASED ON MINIMUM CURVATURE METHOD

SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 201.69 DEGREES (GRID)
A TOTAL CORRECTION OF 11.98 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 3235.000 METRES
IS 686.467 METRES ALONG 201.63 DEGREES (GRID)

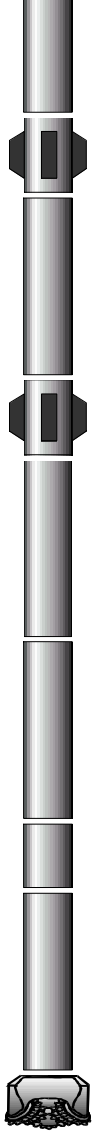
MWD RUN 100 - BHA

	Component Length (m)
HWDP	84.670
Sub	.950
Drill Collar	18.950
Jar	9.950
Drill Collar	28.600
Sub	1.230
Drill Collar	

MWD RUN 100 - MWD

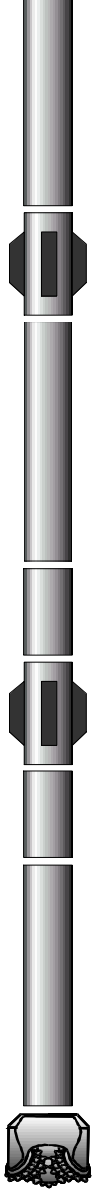
	Sensor Measure Point Distance To Bit (m)
MWD	

Date Printed:29 July 2004



MWD RUN 300 - BHA

MWD RUN 300 - MWD



Drill Collar 47.560

Stabilizer 1.990

MWD 12.950

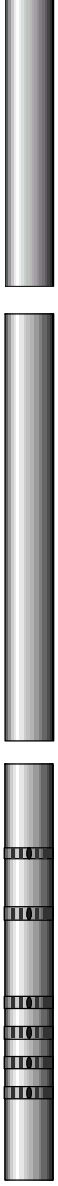
Sub .740

Stabilizer 3.330

Sub 1.210

Motor 9.590

Bit .370



Processor

Gamma Ray 20.220

Resistivity 17.230

MWD RUN 400 - BHA

Component Length (m)

HWDP 84.590

Drill Collar 18.650

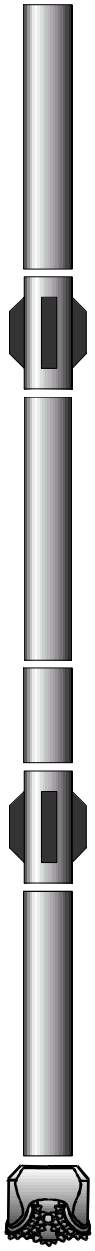
Jar 9.420

MWD RUN 400 - MWD

Sensor Measure Point Distance To Bit (m)

MWD

Directional 20.270



Drill Collar 55.990

Stabilizer 1.590

MWD 12.820

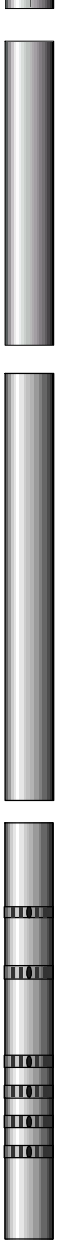
Sub .770

Stabilizer 3.240

Motor 7.650

Bit .230

MWD RUN 600 - BHA



Processor

Gamma Ray 16.950

Resistivity 13.940

MWD RUN 600 - MWD

Component Length (m)

HWDP 84.590

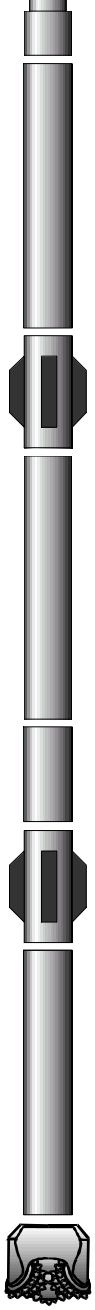
Drill Collar 18.650

Jar 9.420

Sensor Measure Point Distance To Bit (m)

MWD

Directional 20.370



Drill Collar 55.990

Stabilizer 1.590

MWD 12.820

Sub .770

Stabilizer 3.240

Motor 7.650

Bit .330

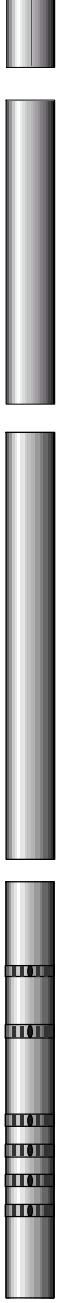
MWD RUN 800 - BHA

Component Length (m)

HWDP 84.590

Drill Collar 18.650

Jar 9.420



Processor

Gamma Ray 17.050

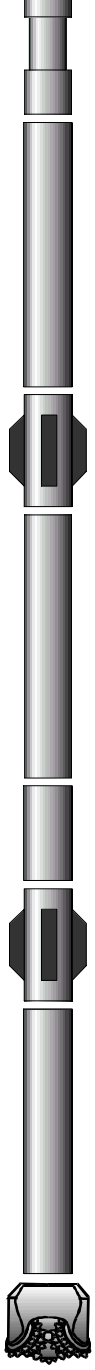
Resistivity 14.040

MWD RUN 800 - MWD

Sensor Measure Point Distance To Bit (m)

MWD

Directional 20.270



Drill Collar 55.990

Stabilizer 1.590

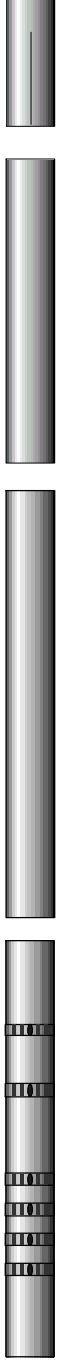
MWD 12.820

Sub .770

Stabilizer 3.240

Motor 7.650

Bit .230



Processor

Gamma Ray 16.950

Resistivity 13.940

WELL INFORMATION

MWD Run Number	100	300	400	600	800
Date run completed	20-Jun-04	02-Jul-04	07-Jul-04	09-Jul-04	12-Jul-04
Rig Bit Number	1	3	4	6	8
Bit Size (in)	16	12.25	8.5	8.5	8.5
Tool Nominal OD (in)	9.5	8.0	6.75	6.75	6.75
Log Start Depth (TVD, m)	220.00	900.00	2513.08	2766.45	2827.68
Log End Depth (TVD, m)	900.00	2513.08	2766.45	2827.68	3097.24
Drill or Wipe	Drilling	Drilling	Drilling	Drilling	Drilling
Drill/Wipe Start Date and Time	19-Jun-04 01:15	26-Jun-04 04:57	05-Jul-04 20:42	09-Jul-04 05:19	11-Jul-04 00:58
Drill/Wipe End Date and Time	20-Jun-04 04:30	01-Jul-04 00:17	06-Jul-04 21:59	09-Jul-04 11:36	11-Jul-04 22:00
Min Inc (deg) @ Depth (TVD, m)	0.00 @ 670.34	0.04 @ 921.22	22.75 @ 2743.68	21.52 @ 2803.27	6.55 @ 3097.24
Max Inc (deg) @ Depth (TVD, m)	0.36 @ 234.93	25.65 @ 1739.03	25.68 @ 2641.92	22.90 @ 2776.39	20.27 @ 2830.35
Bit TFA(in2) / Bit Type	1.325 / Hughes MX-1	1.491 / Hughes HCM506	1.138 / Hughes HCM505	1.387 / BB650XA	1.335 / Reed DSX173
Flow Rate (gpm)	920	850	550	560	550
Max AV (mpm) / CV (mpm) @ MWD	31.2 / 132.9	73.8 / 204.0	154.2 / 166.2	156.6 / 184.2	156.6 / 219.0
Fluid Type	Seawater/Sweeps	Drispac/Soltex	Drispac/Soltex	Drispac/Soltex	Drispac/Soltex
Density (ppg) / Viscosity (spqt)	8.75 / 100	9.20 / 114	9.25 / 66	9.40 / 86	9.40 / 81
Filtrate CL (ppm)	N/A	18,000	20,000	19,000	20,000
pH / Fluid Loss (cptm)	N/A / N/A	8.60 / 3.9	8.50 / 4.2	9.00 / 3.6	9.00 / 4.0
PV (cp) / YP (pa)	9 / 46	46 / 56	28 / 19	28 / 27	34 / 37
% Solids / % Sand	N/A / 0	5.0 / 0.25	5.4 / 0.10	6.5 / 0.10	6.4 / 0.20
% Oil / Oil:Water Ratio	N/A / N/A	0 / 0:94	0 / 0:92	0 / 0:92.5	0 / 0:92.5
Rm @ Measured Temp (degC)	N/A @ N/A	1.20 @ 21.10	1.00 @ 19.00	0.90 @ 20.00	0.85 @ 17.00
Rmf @ Measured Temp (degC)	N/A @ N/A	1.10 @ 21.10	0.90 @ 19.00	0.85 @ 20.00	0.80 @ 17.00
Rmc @ Measured Temp (degC)	N/A @ N/A	1.40 @ 21.10	1.20 @ 19.00	1.10 @ 20.00	1.20 @ 17.00
Max Tool Temp (degC) / Source	23.40 / PCD-R	93.00 / EWR-P4	114.00 / EWR-P4	120.00 / HCIM	118.00 / EWR-P4
Rm @ Max Tool Temp (degC)	N/A @ N/A	0.45 @ 93.00	0.30 @ 114.00	0.26 @ 120.00	0.23 @ 118.00
Lead MWD Engineer	M. Lee	M. Lee	M. Lee	M. Lee	M. Lee
Customer Representative	M. Jackson	M. Jackson	H. Flink	H.Flink	H. Flink

SENSOR INFORMATION

Downhole Processor Information

Tool Type	PCD	HCIM	HCIM	HCIM	HCIM
Software Version	3.32	66.37	66.37	66.37	66.37
Sub Serial Number	10599306	154547	104328	104328	104328
Insert Serial Number	538	132882	191770	191770	191770
Logging String Serial Number	10599306	DM90047858HGR8	DM90049412H1GR6	DM90049412H1GR6	DM90049412H1GR6
Date and Time Initialized	16-Jun-04 17:00	25-Jun-04 18:17	05-Jul-04 07:05	08-Jul-04 22:06	10-Jul-04 18:21
Date and Time Read	20-Jun-04 12:00	02-Jul-04 06:39:00	07-Jul-04 10:06:29	09-Jul-04 19:28:52	12-Jul-04 13:18:08

Directional Sensor Information

Tool Type	PCD	PM	PM	PM	PM
Distance From Bit (m)	20.03	23.59	20.27	20.37	20.27
Software Version	3.32	N/A	N/A	N/A	N/A
Sub Serial Number	10599306	61119	30806	30806	30806
Sonde Serial Number	538	97847	168022	168022	168022
Sensor ID Number	10599306	688	500	500	500
Survey String Serial Number	10599306	DM90047862M8	DM90047860M6	DM90047860M6	DM90047860M6
Toolface Offset (deg)	N/A	194.4	97.1	97.1	97.1

Gamma Ray Sensor Information

Tool Type		DGR	DGR	DGR	DGR
Distance From Bit (m)		20.22	16.95	17.05	16.95
Recorded Sample Period (sec)		12	14	14	14
Software Version		N/A	N/A	N/A	N/A
Sub Serial Number		102971	90625	90625	90625
Insert/Sonde Serial Number		84171	188554	188554	188554

Resistivity Sensor Information

Tool Type		EWR-P4	EWR-P4	EWR-P4	EWR-P4
Distance From Bit (m)		17.23	13.94	14.04	13.94
Recorded Sample Period (sec)		14	16	16	16
Software Version		1.38	1.38	1.38	1.38
Sub Serial Number		82377	60579	60579	60579
Receiver Insert Serial Number		144719	99881	99881	99881
Transmitter Insert Serial Number		79562	123853	123853	123853
Receiver Orientation		Down	Down	Down	Down

REMARKS

1. All depths are bit depths and referenced to the drillers pipe tally.

2. AV/CV is calculated at the MWD collar using the Power Law for water based muds and the Binghams Plastic Law for oil based muds.

3. Curve mnemonics are :

SGRC - Smoothed Gamma Ray Combined, api
SEXP - Smoothed Extra Shallow Phase-Shift Derived Resistivity, ohm-m
SESP - Smoothed Shallow Phase-Shift Derived Resistivity, ohm-m
SEMP - Smoothed Medium Phase-Shift Derived Resistivity, ohm-m
SEDP - Smoothed Deep Phase-Shift Derived Resistivity, ohm-m
SROP - Smoothed Rate of Penetration, m/hr
SFXE - Smoothed Resistivity Formation Exposure Time, hr
STEM - Smoothed Temperature from Resistivity tool, degrees C

4. The second bit run drilled from 900.0 to 905.0 mTVDRT without the use of the MWD tool.

5. Repeat section wiped over the interval 1310.0 - 1340.0 mTVDRT at 12:04 to 13:50 on 01-July-04 after drilling while running in hole with rotary and pumps.

6. EWR-P4 memory was filled prior to logging the repeat section due to a longer than expected run length, thus realtime data was presented over this interval.

5. Run 500 was a coring run from 2766.45 to 2791.79 mTVDRT, which was logged before drilling run 600.

6. Run 700 was a coring run from 2827.68 to 2853.01 mTVDRT, which was logged before drilling run 800.

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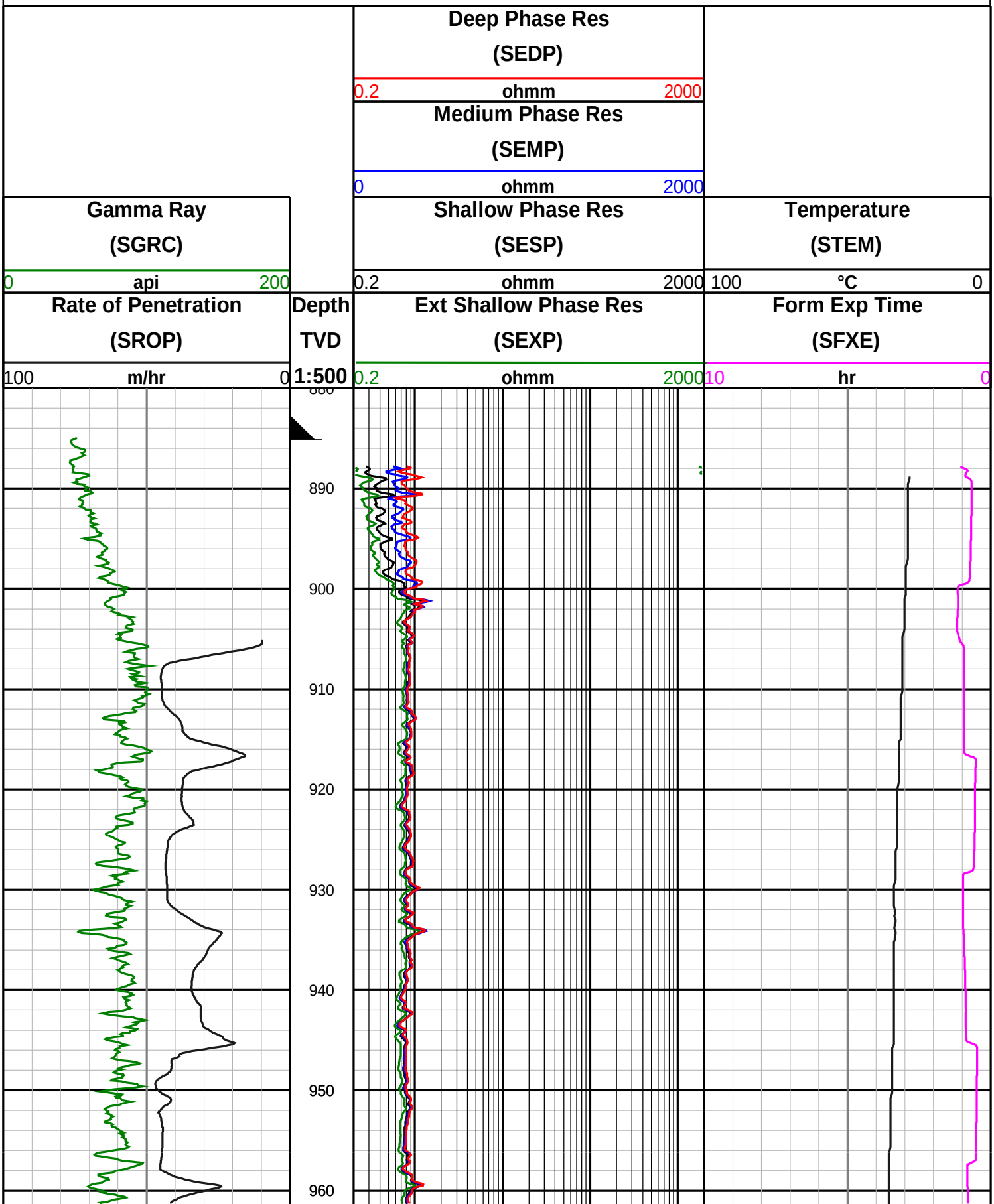

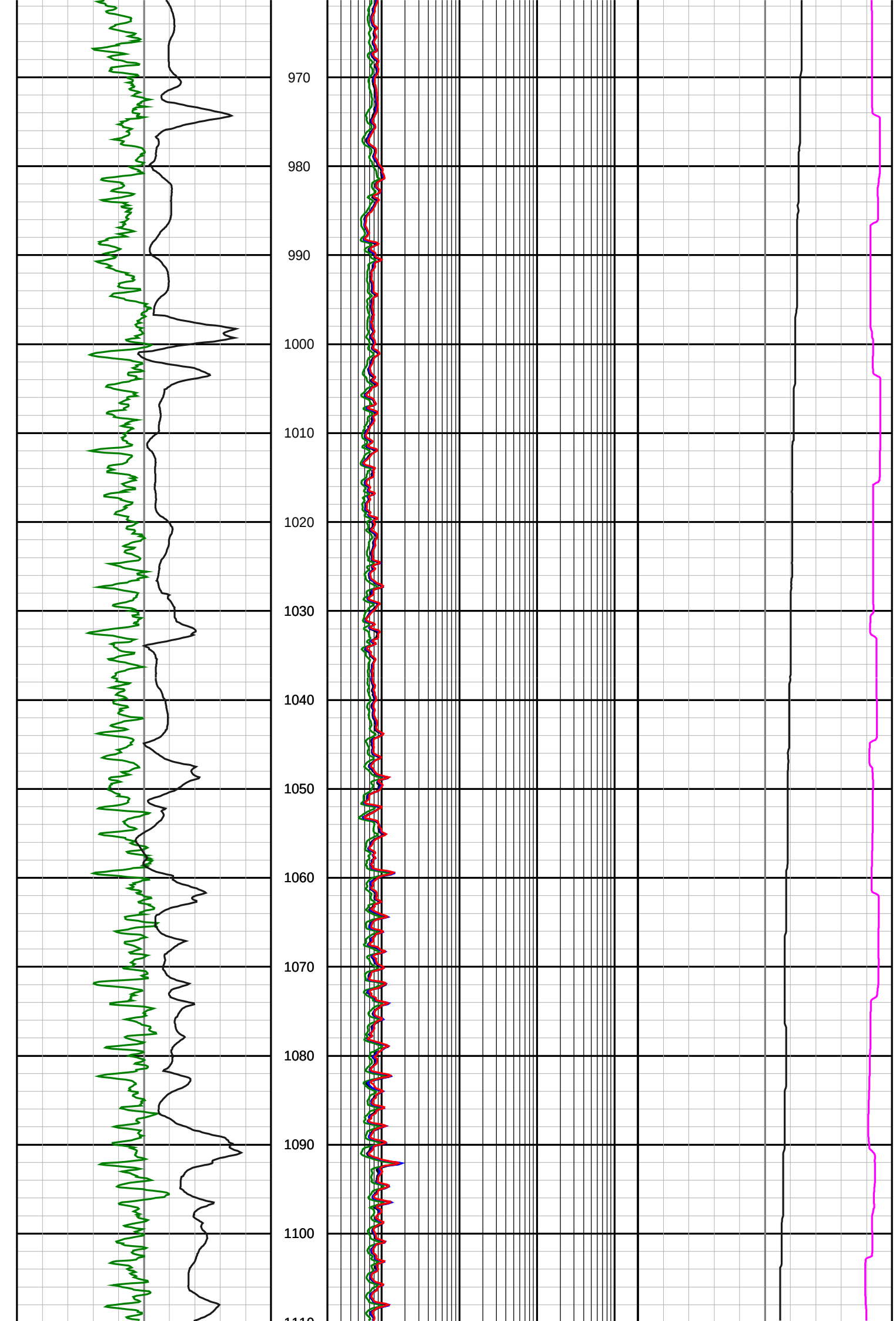
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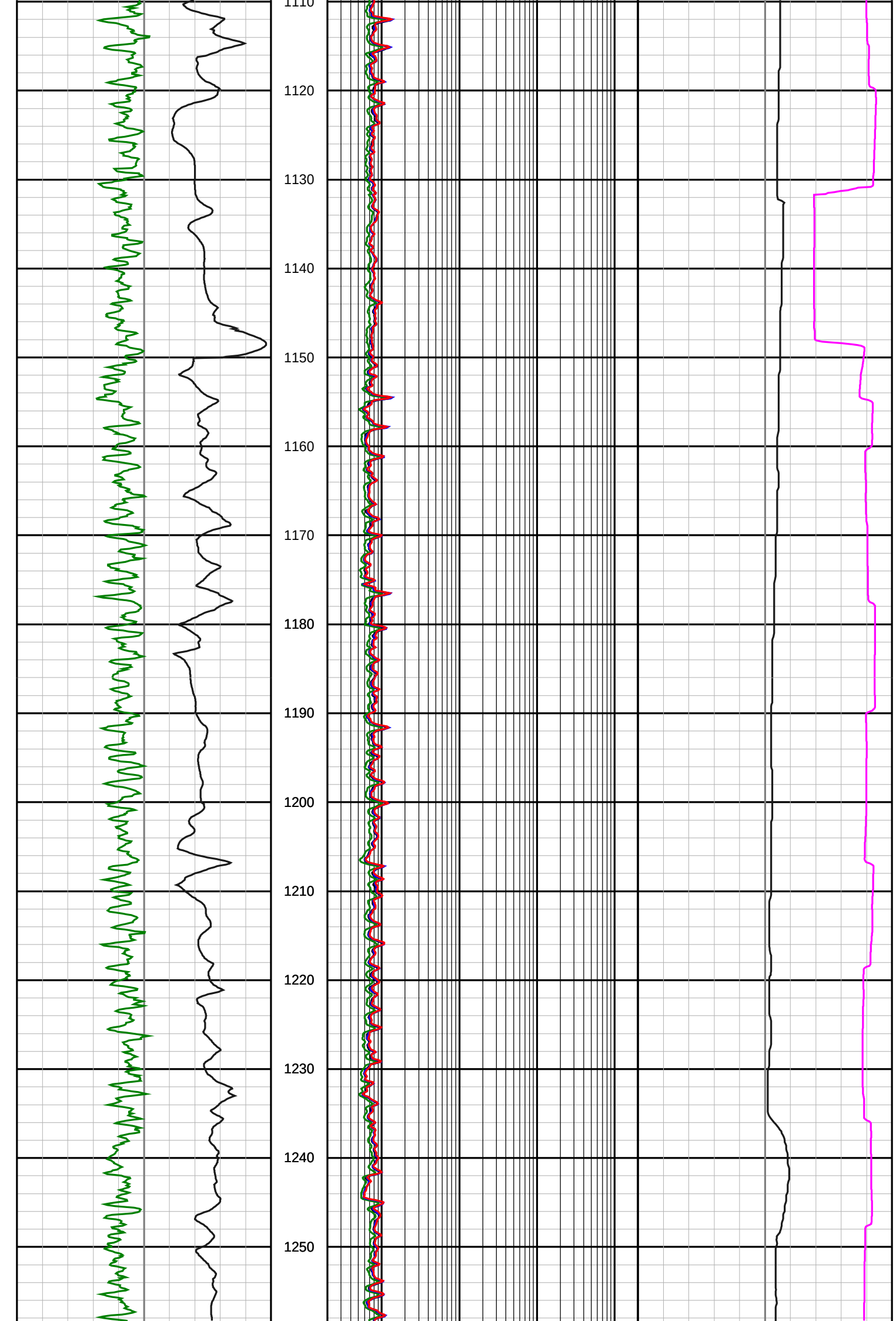
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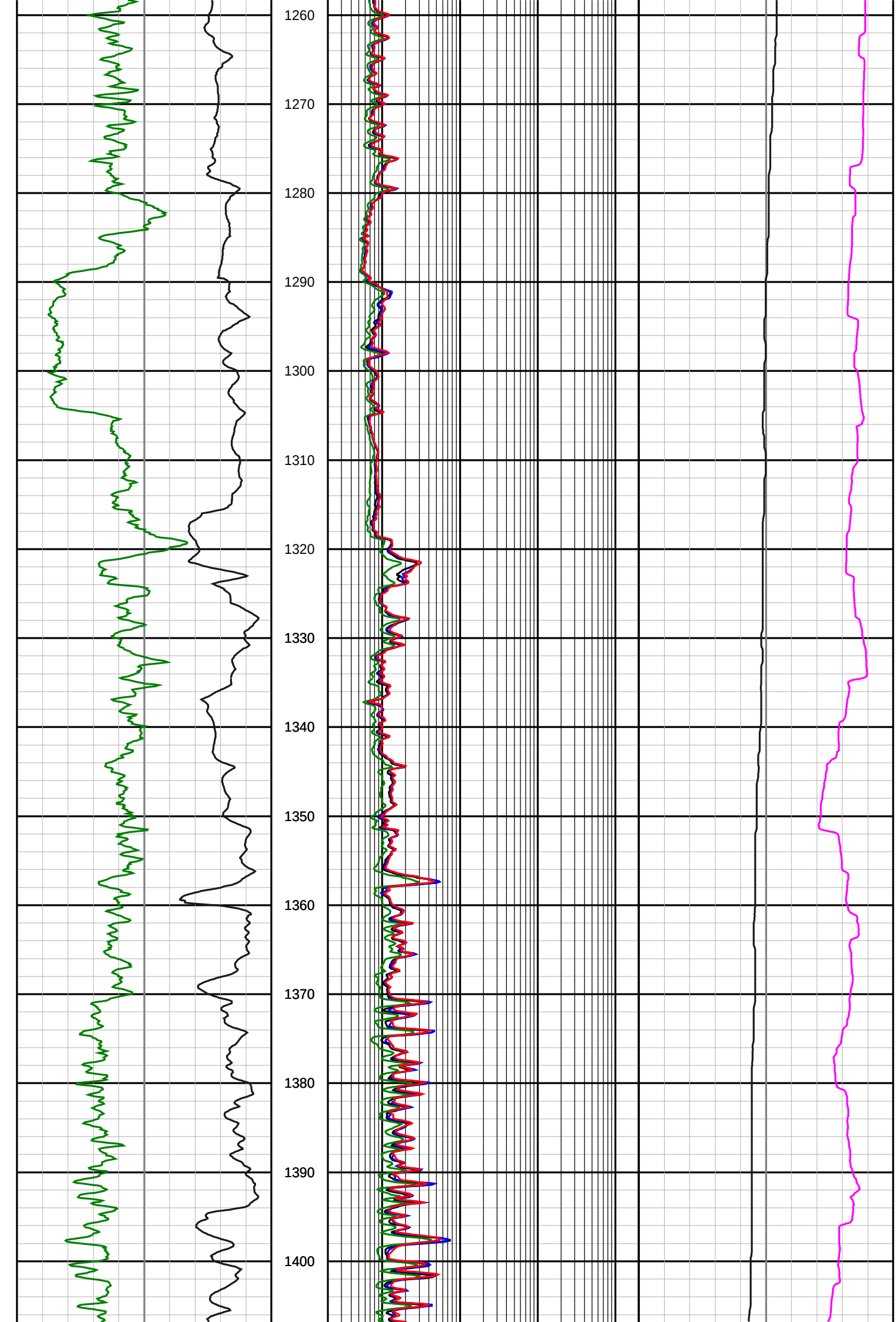
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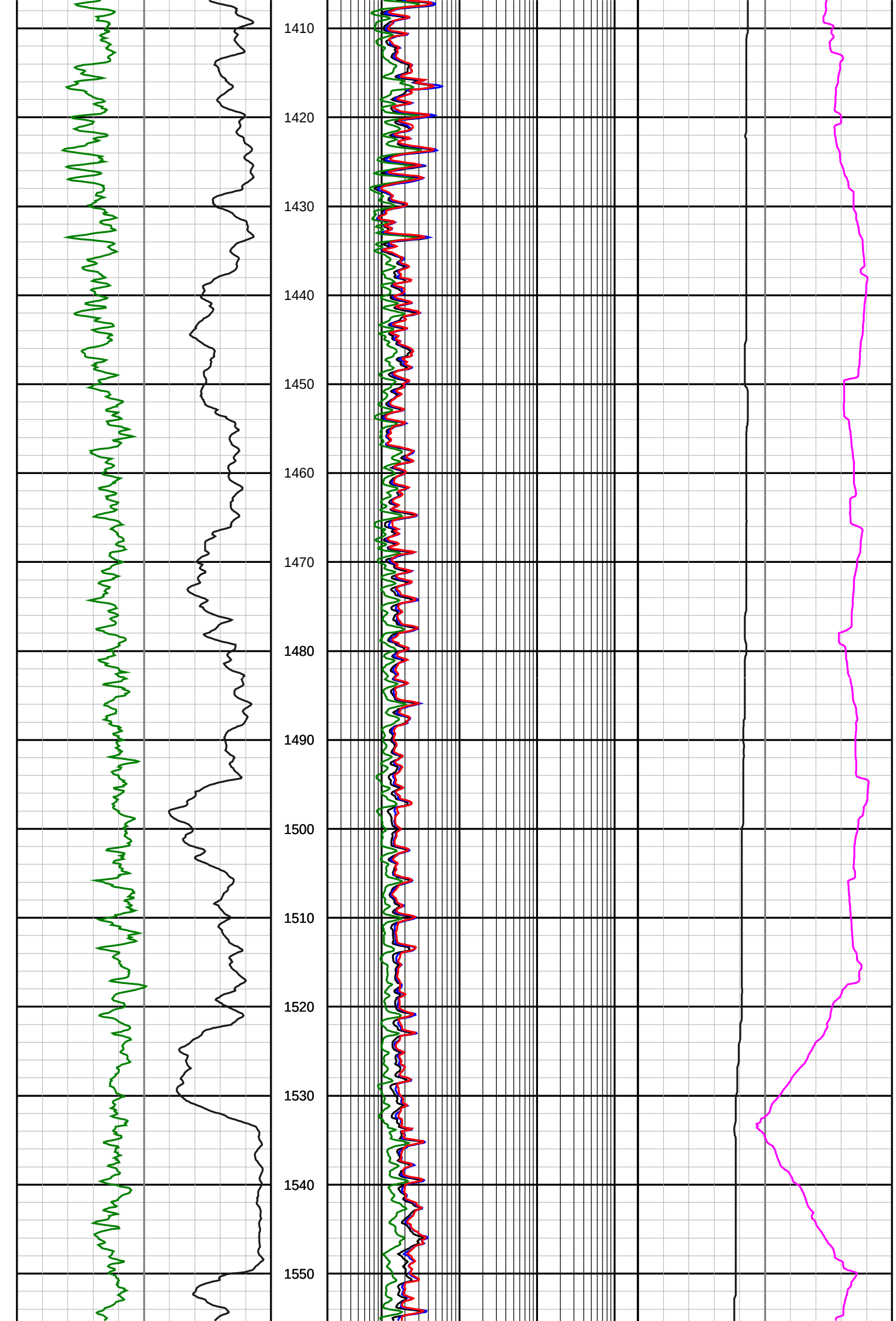
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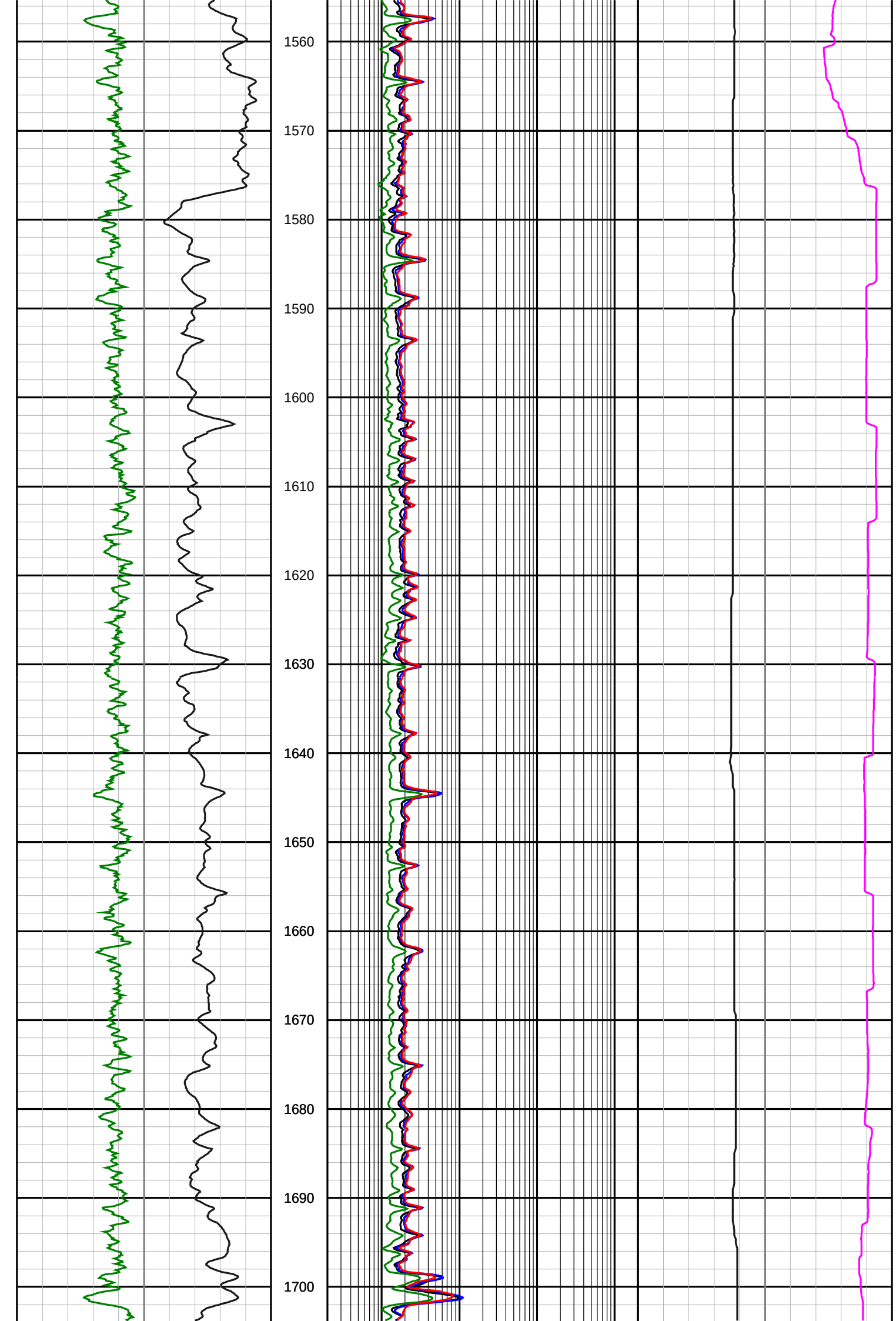
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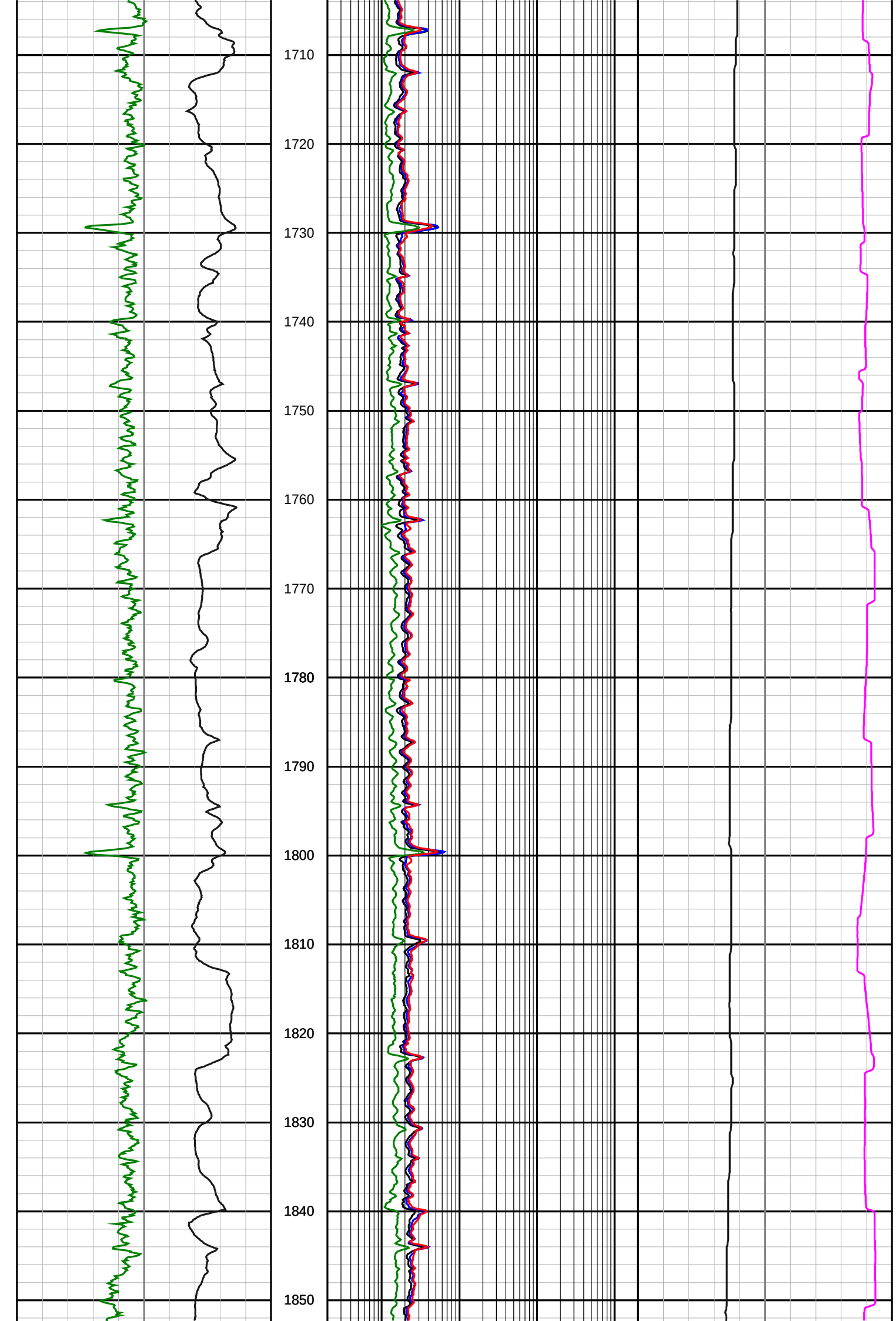
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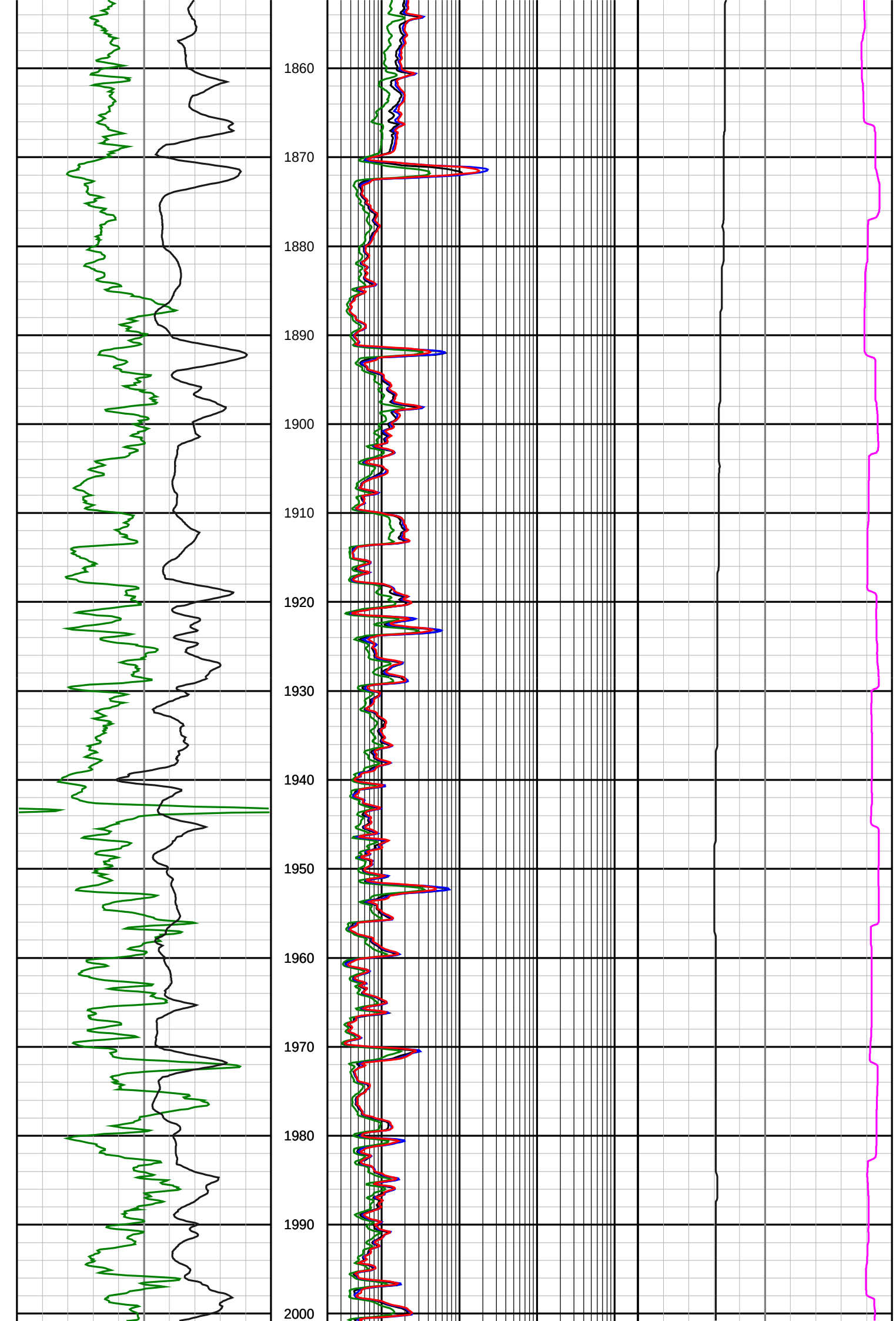
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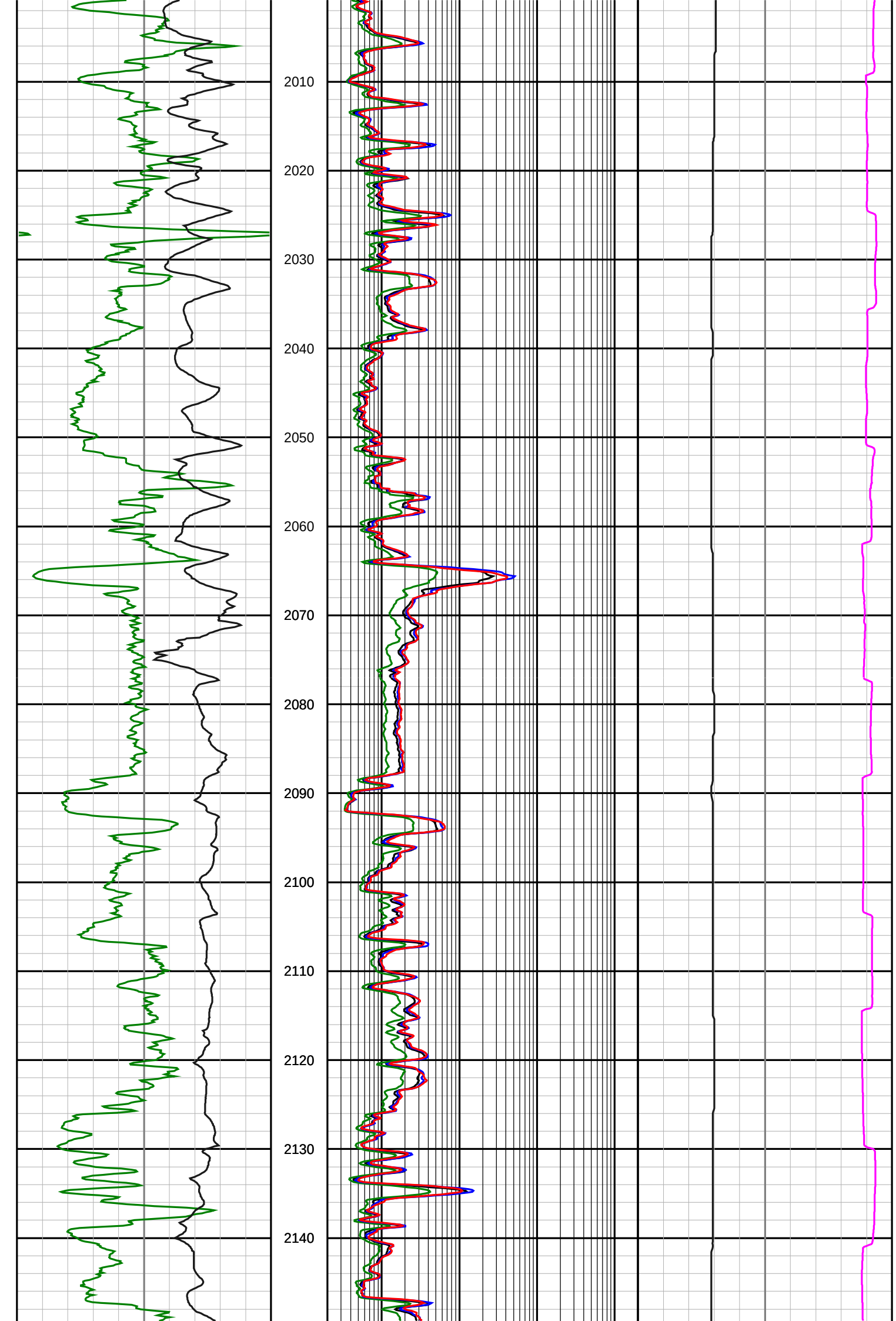
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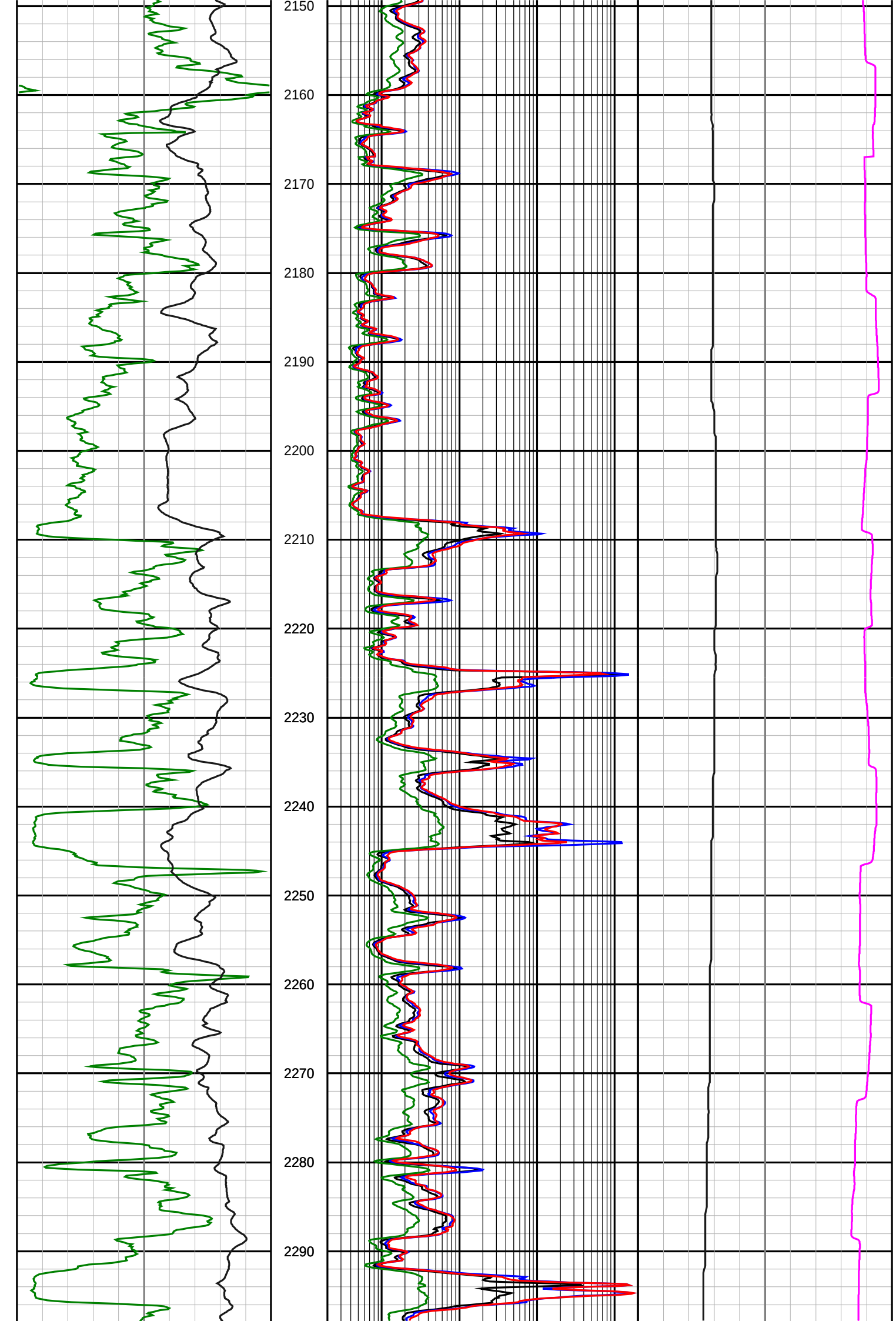
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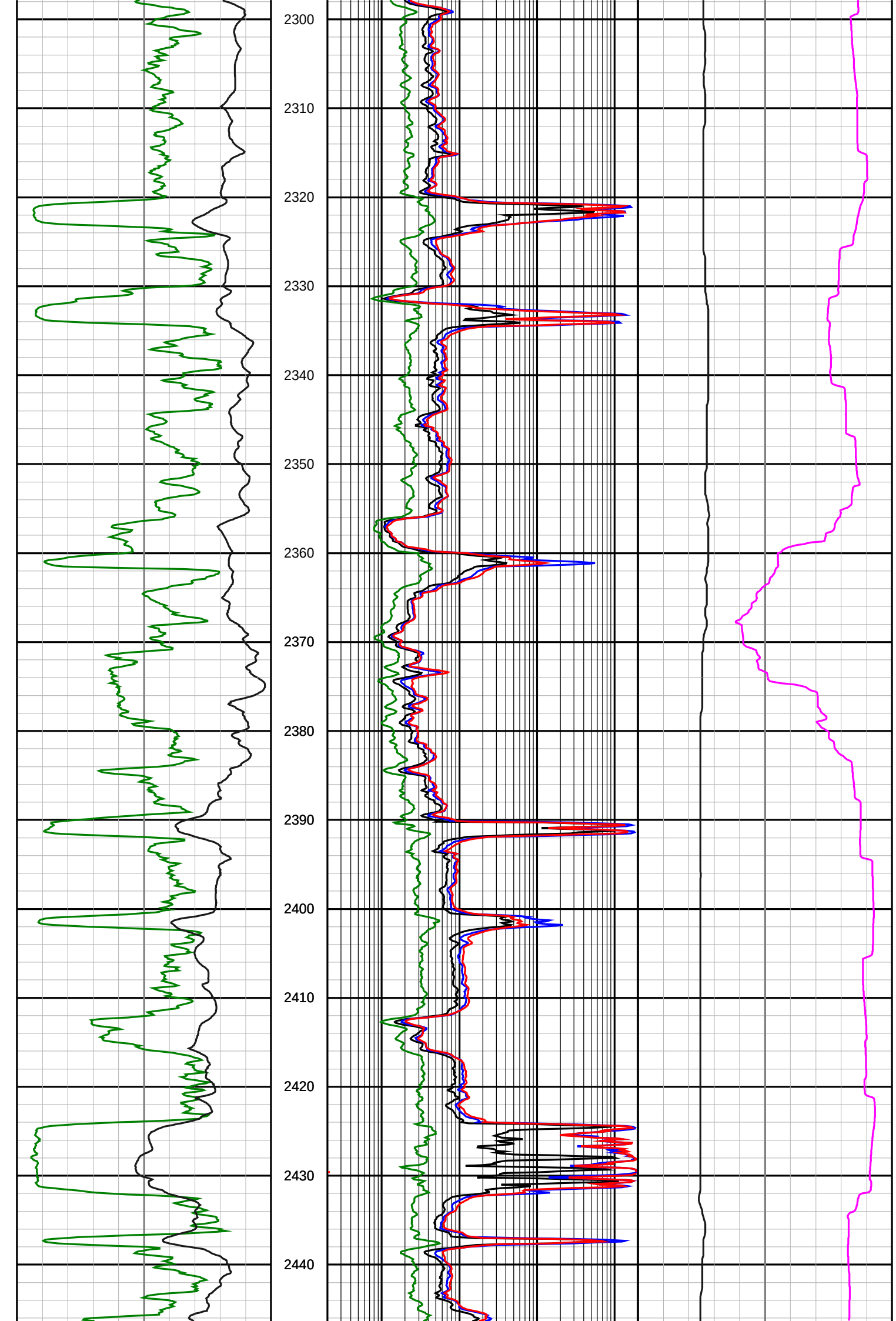
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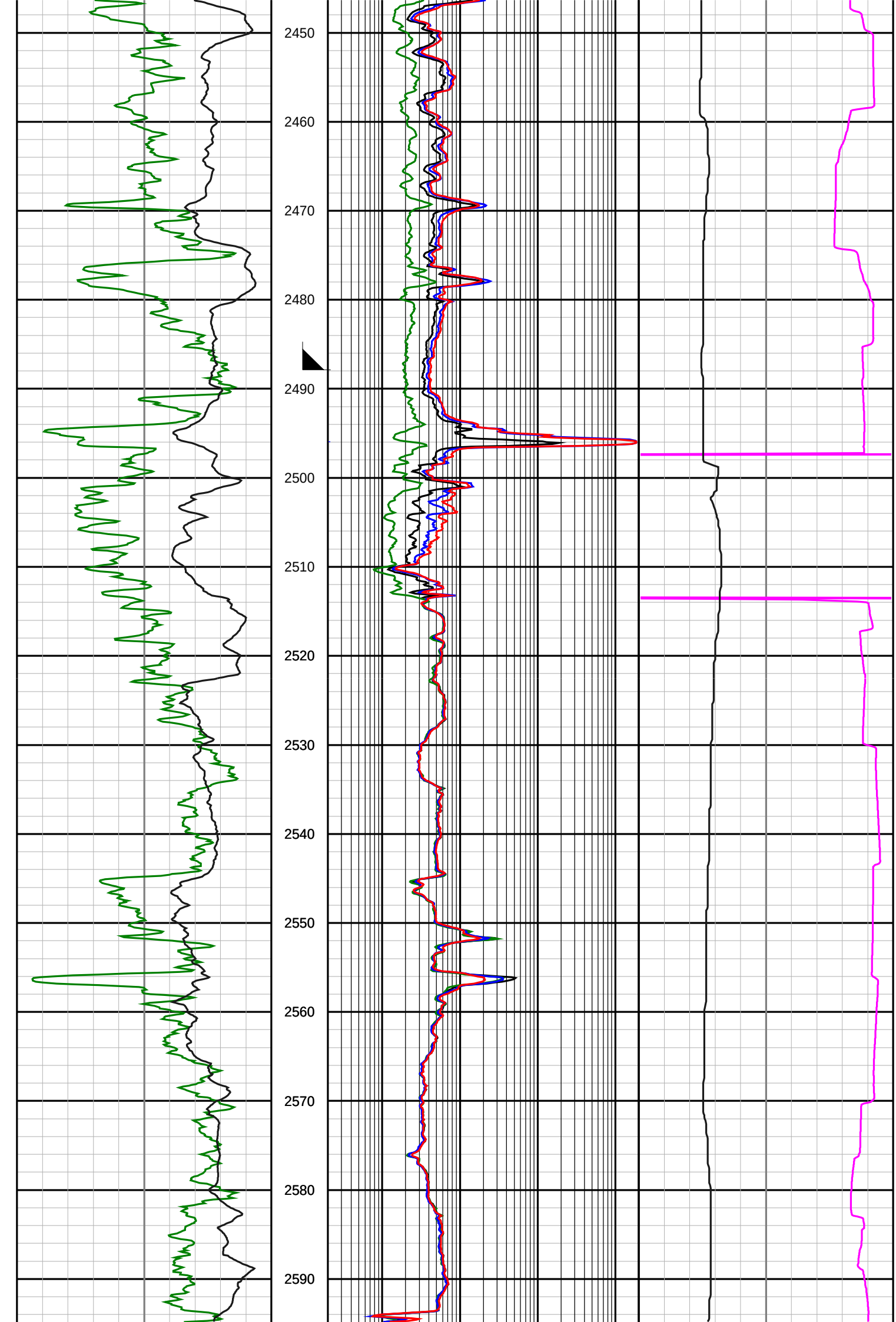
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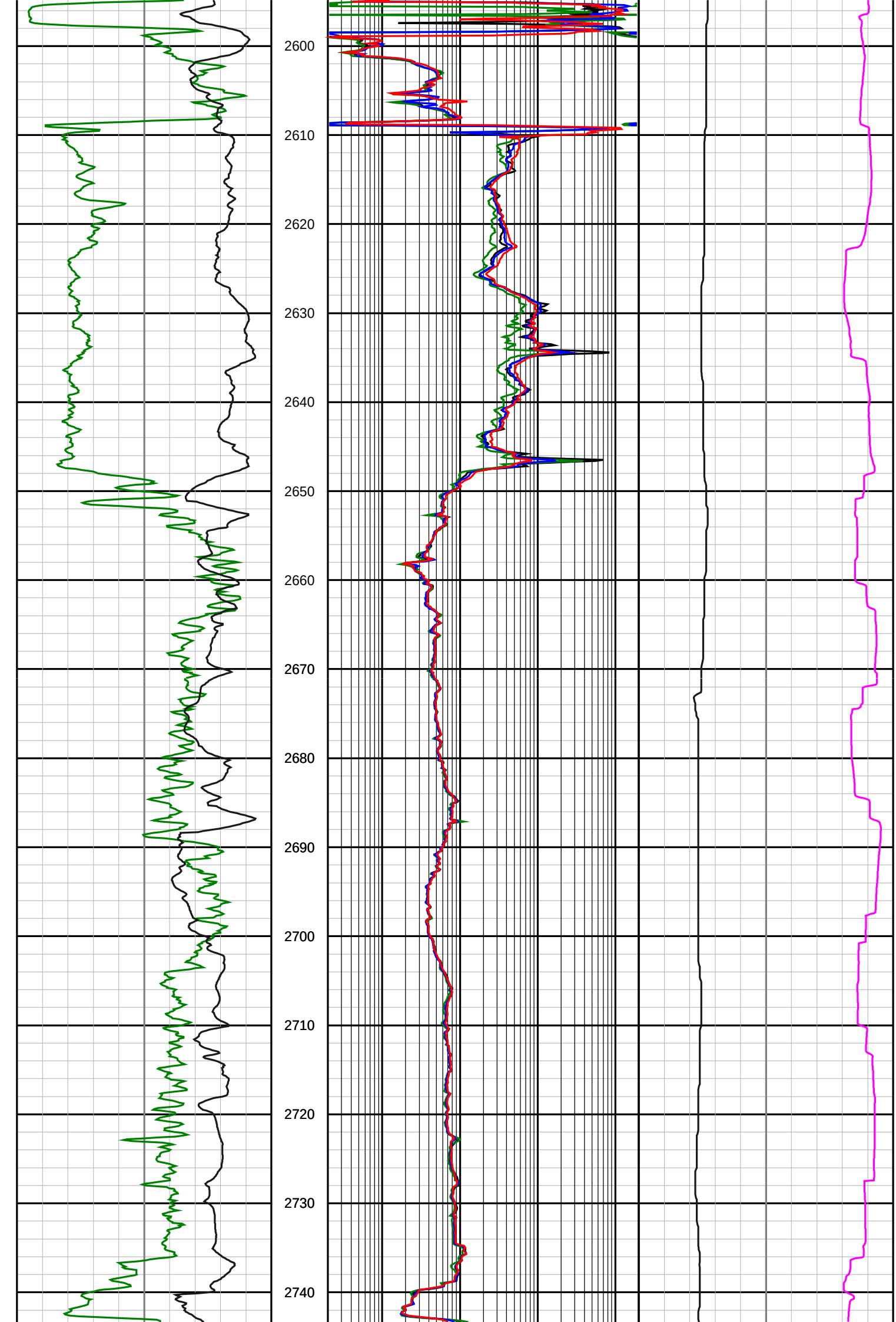
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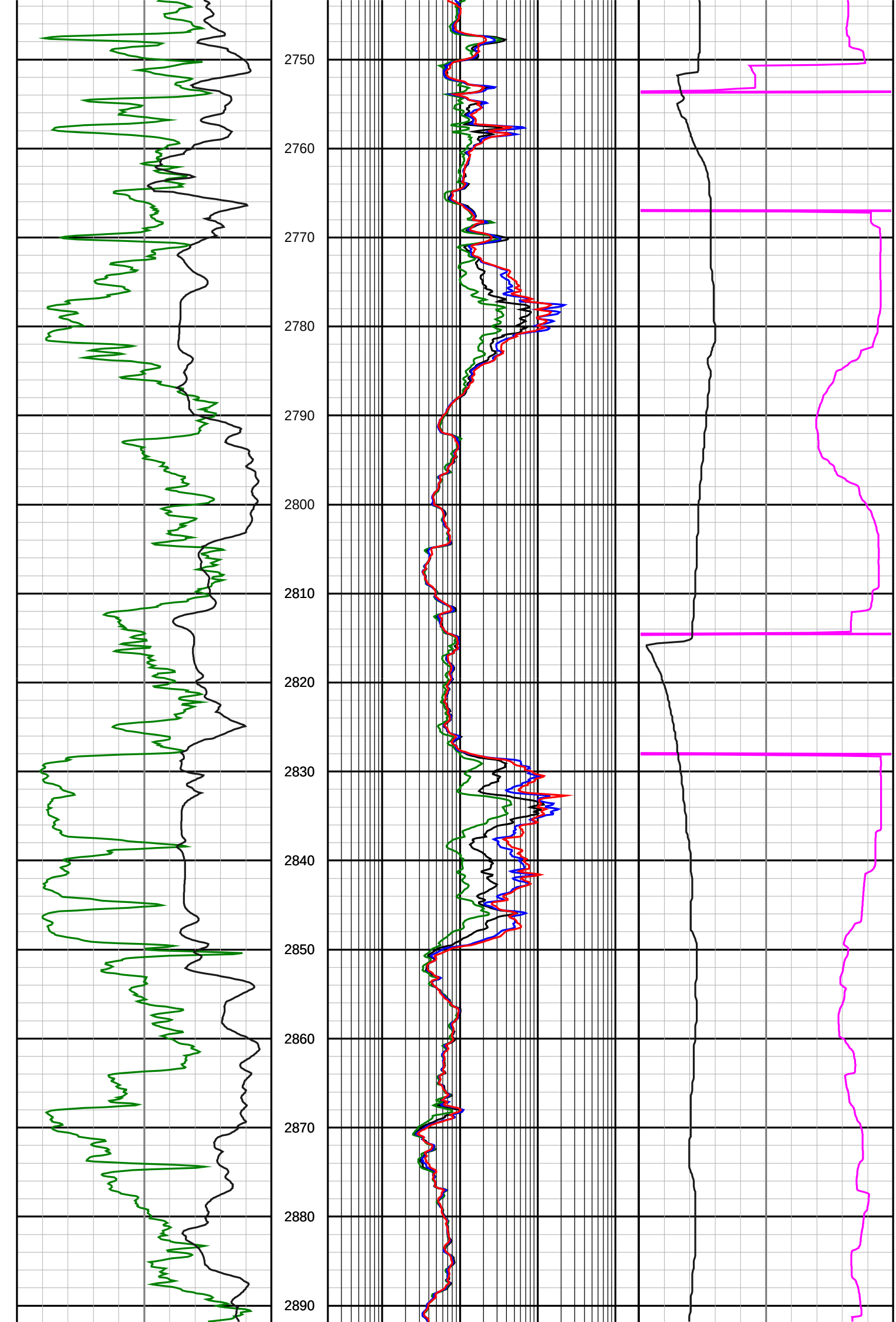
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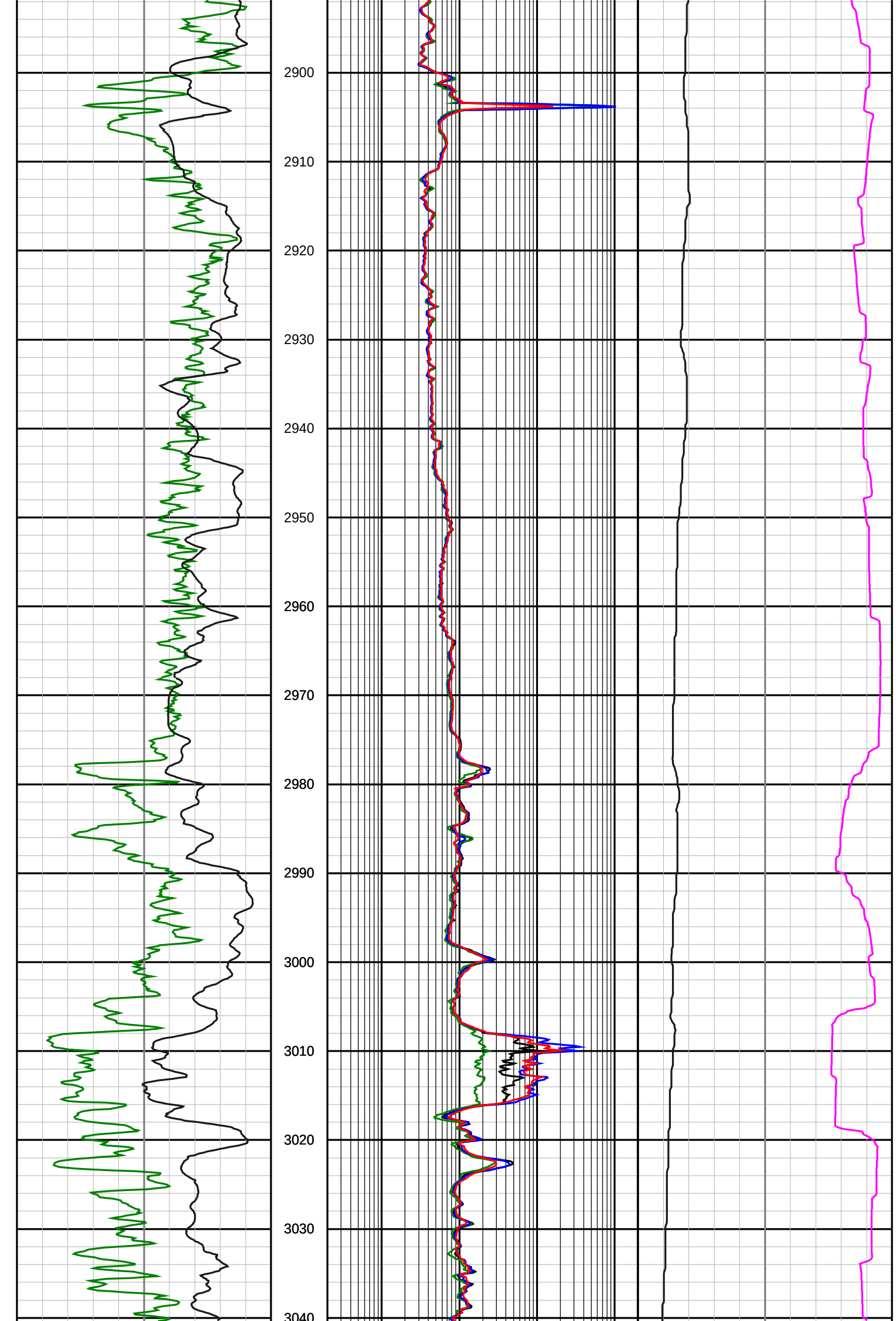
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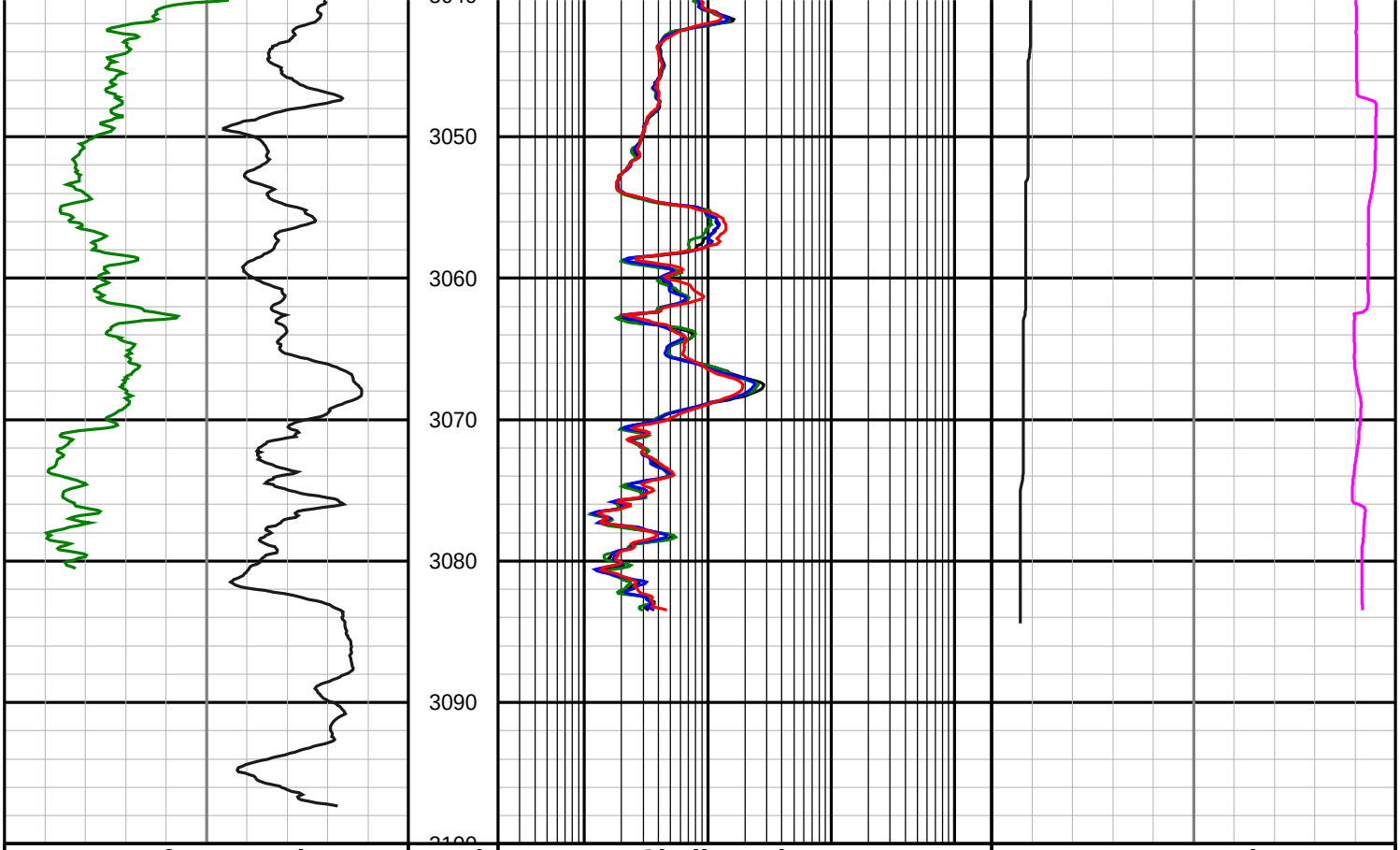
3030
3040



Rate of Penetration (SROP)	Depth TVD	Ext Shallow Phase Res (SEXP)	Form Exp Time (SFXE)
100 m/hr 0	1:500	0.2 ohmm 2000	10 hr 0

Gamma Ray (SGRC)		Shallow Phase Res (SESP)	Temperature (STEM)
0 api 200		0.2 ohmm 2000	100 °C 0

		Medium Phase Res (SEMP)	
		0 ohmm 2000	

		Deep Phase Res (SEDP)	
		0.2 ohmm 2000	

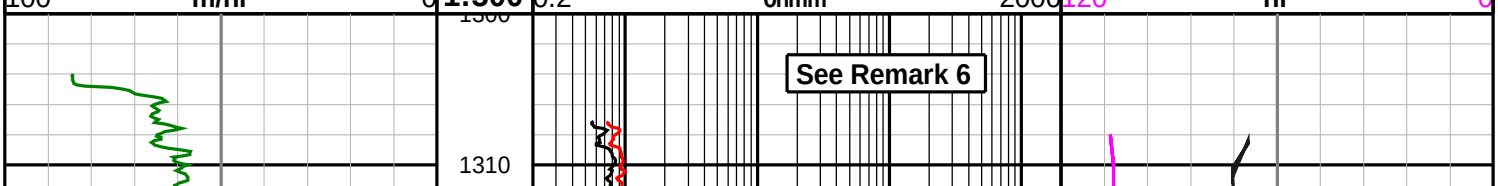
Origin Energy Resources

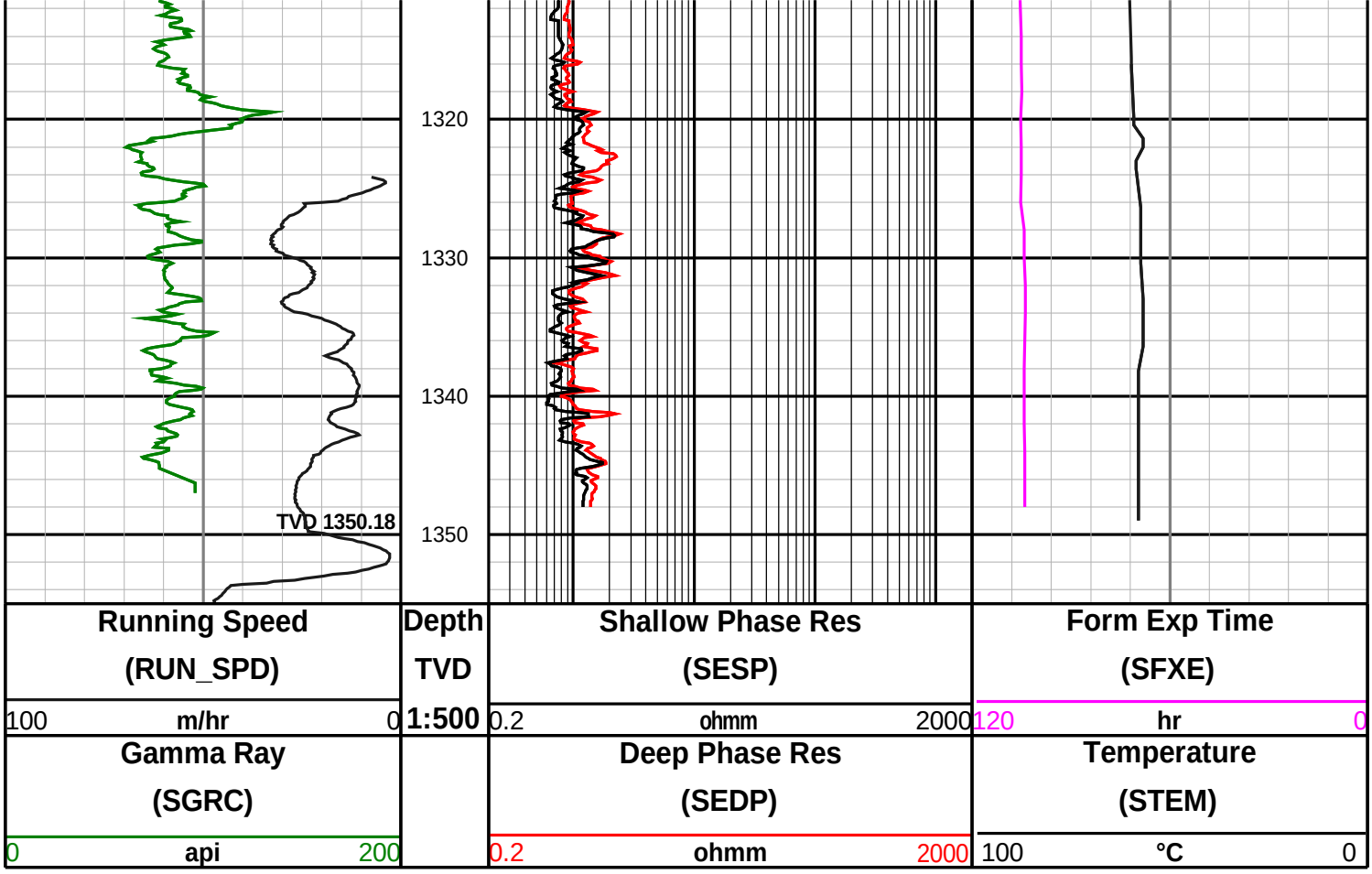
Yolla-4

Repeat section wiped over the interval 1310.0 - 1340.0 mMDRT at 12:04 to 13:50 after drilling while running in hole with rotary and pumps

Gamma Ray (SGRC)		Deep Phase Res (SEDP)	Temperature (STEM)
0 api 200		0.2 ohmm 2000	100 °C 0

Running Speed (RUN_SPD)	Depth TVD	Shallow Phase Res (SESP)	Form Exp Time (SFXE)
100 m/hr 0	1:500	0.2 ohmm 2000	120 hr 0





DIRECTIONAL SURVEY REPORT

Origin Energy Resources
Yolla-4
Yolla
Tasmania
Australia
AU-FE-0003018092
Final survey extrapolated to TD

Measured Depth (metres)	*Inclination (degrees)*	*Direction (degrees)*	*Vertical Depth (metres)*	*Latitude (metres)*	*Departure (metres)*	*Vertical Section (metres)*	*Dogleg (deg/30m)*
0.000	0.00	0.00	0.000	0.000 N	0.000 E	0.000	TIE-IN
234.930	0.36	136.39	234.928	0.533 S	0.508 E	0.308	0.05
263.910	0.28	126.75	263.908	0.641 S	0.627 E	0.364	0.10
292.950	0.17	195.49	292.948	0.723 S	0.671 E	0.424	0.27
322.020	0.13	143.72	322.018	0.790 S	0.679 E	0.483	0.14
351.030	0.18	92.31	351.028	0.817 S	0.744 E	0.485	0.15
380.070	0.13	175.00	380.068	0.852 S	0.792 E	0.499	0.22
409.120	0.15	207.88	409.118	0.920 S	0.777 E	0.568	0.09
467.210	0.21	111.56	467.207	1.027 S	0.837 E	0.645	0.14
496.220	0.11	142.76	496.217	1.069 S	0.903 E	0.659	0.13
525.220	0.03	253.98	525.217	1.094 S	0.913 E	0.679	0.13
554.150	0.09	53.82	554.147	1.082 S	0.924 E	0.664	0.13
583.180	0.07	106.21	583.177	1.073 S	0.960 E	0.642	0.08
612.220	0.22	174.73	612.217	1.133 S	0.982 E	0.690	0.21
641.280	0.04	53.15	641.277	1.181 S	0.995 E	0.729	0.25
670.340	0.00	96.38	670.337	1.174 S	1.004 E	0.720	0.04
699.340	0.07	29.72	699.337	1.159 S	1.013 E	0.703	0.07
728.370	0.07	122.55	728.367	1.154 S	1.036 E	0.689	0.10
757.460	0.04	139.75	757.457	1.171 S	1.058 E	0.697	0.03
786.520	0.17	344.46	786.517	1.137 S	1.053 E	0.667	0.22

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
815.780	0.17	337.74	815.777	1.053 S	1.024 E	0.600	0.02
844.820	0.06	187.19	844.817	1.027 S	1.006 E	0.583	0.24
873.830	0.04	42.38	873.827	1.034 S	1.011 E	0.588	0.10
892.740	0.13	290.73	892.737	1.022 S	0.996 E	0.581	0.23
921.220	0.04	217.54	921.217	1.018 S	0.961 E	0.591	0.13
978.820	0.04	300.15	978.817	1.022 S	0.930 E	0.606	0.03
1008.390	0.10	198.92	1008.387	1.041 S	0.912 E	0.631	0.12
1037.450	0.04	248.53	1037.447	1.070 S	0.894 E	0.664	0.09
1066.520	0.06	102.10	1066.517	1.076 S	0.898 E	0.668	0.09
1095.580	0.06	254.10	1095.577	1.083 S	0.897 E	0.675	0.11
1124.590	0.06	23.63	1124.587	1.075 S	0.889 E	0.670	0.11
1153.610	0.04	261.67	1153.607	1.063 S	0.885 E	0.661	0.08
1182.640	0.05	290.30	1182.637	1.061 S	0.864 E	0.666	0.02
1211.670	0.09	274.15	1211.667	1.055 S	0.830 E	0.674	0.05
1240.720	0.20	314.87	1240.716	1.017 S	0.770 E	0.661	0.15
1269.770	0.13	311.09	1269.766	0.960 S	0.709 E	0.630	0.08
1298.830	2.64	214.65	1298.816	1.489 S	0.305 E	1.270	2.74
1327.870	5.64	210.09	1327.777	3.273 S	0.790 W	3.333	3.12
1356.900	7.29	213.82	1356.622	6.038 S	2.531 W	6.546	1.76
1385.940	9.08	215.12	1385.364	9.444 S	4.876 W	10.578	1.86
1414.970	10.04	215.43	1413.991	13.381 S	7.660 W	15.265	0.99
1444.000	11.83	214.02	1442.493	17.908 S	10.792 W	20.629	1.87
1473.070	13.63	214.58	1470.848	23.198 S	14.402 W	26.878	1.86
1502.130	16.24	212.73	1498.924	29.435 S	18.542 W	34.204	2.74
1531.170	18.62	210.88	1526.630	36.829 S	23.117 W	42.766	2.52
1560.200	20.69	205.27	1553.970	45.445 S	27.685 W	52.459	2.89
1589.270	23.33	202.68	1580.920	55.400 S	32.097 W	63.341	2.90
1618.310	24.06	202.94	1607.512	66.157 S	36.622 W	75.008	0.77
1647.360	24.73	202.43	1633.968	77.227 S	41.249 W	87.004	0.72
1676.430	25.02	202.40	1660.342	88.530 S	45.911 W	99.231	0.31
1705.500	25.32	201.82	1686.651	99.986 S	50.565 W	111.595	0.40
1734.510	25.53	200.98	1712.851	111.582 S	55.109 W	124.050	0.43
1763.530	25.65	200.93	1739.025	123.288 S	59.591 W	136.583	0.12
1792.590	25.45	200.34	1765.243	135.016 S	64.008 W	149.113	0.33
1821.640	25.62	200.08	1791.456	146.767 S	68.334 W	161.631	0.21
1850.690	24.60	199.87	1817.760	158.352 S	72.545 W	173.952	1.06
1879.530	24.20	200.32	1844.024	169.541 S	76.639 W	185.862	0.46
1908.490	24.21	200.00	1870.438	180.688 S	80.732 W	197.732	0.14
1937.540	24.12	200.96	1896.943	191.827 S	84.892 W	209.620	0.42
1966.580	24.31	200.78	1923.428	202.956 S	89.136 W	221.529	0.22
1995.630	24.40	200.84	1949.893	214.154 S	93.392 W	233.508	0.09
2024.630	24.68	200.81	1976.273	225.412 S	97.674 W	245.551	0.29
2053.670	24.62	201.15	2002.666	236.721 S	102.010 W	257.662	0.16
2082.690	24.81	200.83	2029.028	248.050 S	106.356 W	269.795	0.24
2111.740	24.82	201.15	2055.396	259.433 S	110.723 W	281.986	0.14
2140.770	24.85	200.99	2081.742	270.810 S	115.106 W	294.177	0.08
2169.790	24.93	200.86	2108.066	282.218 S	119.468 W	306.390	0.10
2198.770	24.52	200.98	2134.390	293.540 S	123.795 W	318.510	0.43
2227.820	24.44	201.27	2160.829	304.768 S	128.133 W	330.546	0.15
2256.840	24.65	200.97	2187.226	316.014 S	132.477 W	342.601	0.25
2285.830	24.70	201.15	2213.569	327.308 S	136.826 W	354.702	0.09
2314.860	24.23	201.20	2239.994	338.517 S	141.168 W	366.722	0.49
2343.920	24.31	200.91	2266.486	349.662 S	145.459 W	378.664	0.15
2372.950	24.14	201.39	2292.960	360.769 S	149.756 W	390.573	0.27
2401.990	24.08	201.51	2319.468	371.809 S	154.094 W	402.435	0.08
2431.060	23.67	201.95	2346.050	382.738 S	158.450 W	414.200	0.45
2460.090	24.06	202.38	2372.598	393.616 S	162.882 W	425.945	0.44
2489.150	24.33	201.67	2399.105	404.656 S	167.347 W	437.855	0.41
2518.230	23.85	201.39	2425.652	415.699 S	171.704 W	449.725	0.50
2547.210	23.63	201.50	2452.179	426.559 S	175.969 W	461.393	0.24
2576.300	24.22	200.69	2478.770	437.565 S	180.214 W	473.188	0.69
2611.460	24.70	202.18	2510.775	451.113 S	185.535 W	487.744	0.67
2640.540	24.67	201.95	2537.199	462.367 S	190.097 W	499.887	0.10
2669.530	23.53	202.06	2563.662	473.341 S	194.532 W	511.723	1.18
2697.470	24.64	201.35	2589.169	483.934 S	198.747 W	523.124	1.24

HALLIBURTON

Yolla-4

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
2725.970	25.42	200.74	2614.992	495.189 S	203.077 W	535.182	0.87
2755.820	25.68	199.78	2641.923	507.267 S	207.534 W	548.053	0.49
2784.800	25.00	199.95	2668.115	518.932 S	211.749 W	560.449	0.70
2813.820	23.99	199.06	2694.522	530.272 S	215.768 W	572.472	1.11
2842.870	23.15	199.25	2721.148	541.245 S	219.580 W	584.077	0.87
2867.340	22.75	200.82	2743.681	550.211 S	222.847 W	593.615	0.90
2902.830	22.90	201.36	2776.392	563.055 S	227.801 W	607.381	0.22
2931.860	21.52	200.50	2803.268	573.303 S	231.724 W	618.353	1.46
2960.850	20.27	200.15	2830.350	582.999 S	235.316 W	628.690	1.30
2989.920	20.20	199.81	2857.627	592.447 S	238.751 W	638.739	0.15
3018.960	18.34	198.40	2885.039	601.499 S	241.893 W	648.311	1.98
3047.970	15.45	196.93	2912.794	609.528 S	244.460 W	656.720	3.02
3076.960	12.32	197.17	2940.933	616.180 S	246.498 W	663.654	3.24
3105.900	9.82	198.91	2969.332	621.467 S	248.210 W	669.200	2.61
3134.940	8.48	195.92	2998.002	625.869 S	249.601 W	673.804	1.48
3164.000	7.44	195.17	3026.782	629.744 S	250.681 W	677.804	1.07
3193.010	7.24	194.66	3055.555	633.325 S	251.635 W	681.484	0.22
3213.450	6.81	196.52	3075.841	635.732 S	252.305 W	683.969	0.70
3235.000	6.55	197.10	3097.245	638.133 S	253.030 W	686.467	0.38

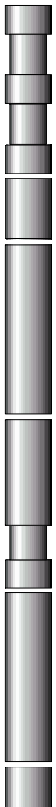
CALCULATION BASED ON MINIMUM CURVATURE METHOD

SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 201.69 DEGREES (GRID)
A TOTAL CORRECTION OF 11.98 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 3235.000 METRES
IS 686.467 METRES ALONG 201.63 DEGREES (GRID)

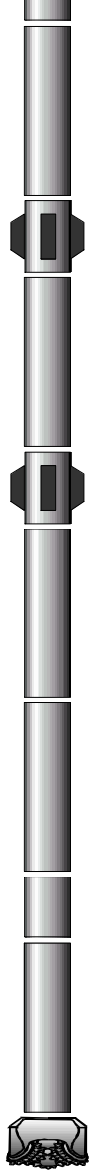
MWD RUN 100 - BHA



	Component Length (m)
HWDP	84.670
Sub	.950
Drill Collar	18.950
Jar	9.950
Drill Collar	28.600
Sub	1.230

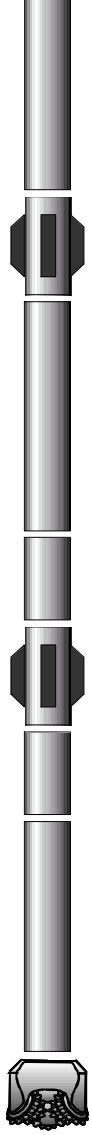
MWD RUN 100 - MWD

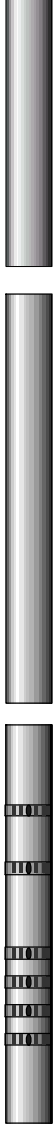
	Sensor Measure Point Distance To Bit (m)
MWD	



MWD RUN 300 - BHA

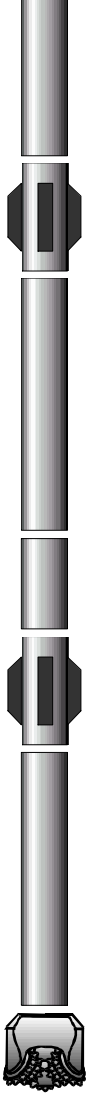
MWD RUN 300 - MWD

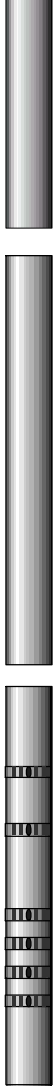




MWD RUN 400 - BHA

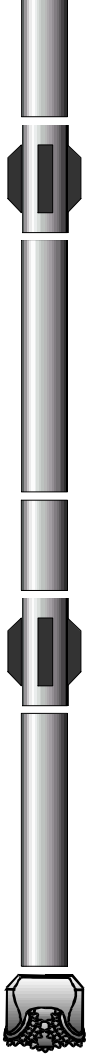
MWD RUN 400 - MWD





MWD RUN 600 - BHA

MWD RUN 600 - MWD



Stabilizer 1.590

MWD 12.820

Sub .770

Stabilizer 3.240

Motor 7.650

Bit .330

MWD RUN 800 - BHA

Component Length (m)

HWDP 84.590

Drill Collar 18.650

Jar 9.420

Drill Collar 55.990

Processor

Gamma Ray 17.050

Resistivity 14.040

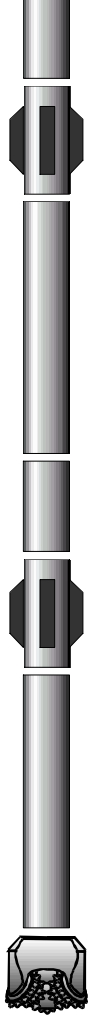
MWD RUN 800 - MWD

Sensor Measure Point Distance To Bit (m)

MWD

Directional 20.270

Processor



Stabilizer

1.590

MWD

12.820

Sub

.770

Stabilizer

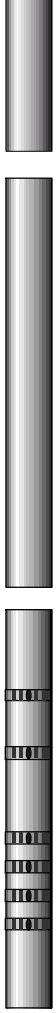
3.240

Motor

7.650

Bit

.230



Gamma Ray

16.950

Resistivity

13.940

APPENDIX 8: WIRELINE LOGGING REPORT

Schlumberger

Schlumberger - Reservoir EvaluationWireline

Yolla –4 Operation Report

Greg Ruthven
Senior Field Engineer
August 2004

1 Executive Summary

Highlights

- All wireline operations were completed safely with no incidents or injuries.
- Most open hole log data requested was recorded successfully.
- In total, all wireline runs were completed with better than 98% operating efficiency.
- Data transmission facilities on the rig enabled prepared data to be quickly transmitted to town.
- After failing to reach bottom on run #1 and the wiper trip being performed, hole conditions were excellent through the remainder of the logging runs. Minimal over-pulls were experienced and the tools were able to reach TD on all subsequent occasions. The MDT data demonstrated that overbalance was under 500psi so the risk of differential sticking was low.
- The MDT was used to retrieve 1 x 450cc gas sample, 1 x 450cc water sample and 3 x 450cc oil samples.
- All perforating runs were performed successfully with zero lost time and zero misfires.

Lowlights

- The logging tools failed to reach TD on the first run, hanging up at numerous depths before finally stopping at 2776m MD. A wiper trip was required to improve hole conditions and the tool string was reconfigured prior to subsequent runs. Caliper logs later demonstrated that a ledge was present at around this depth.
- During Run #2 (HRLA-PEX-CMR-SP), the CMR data was not being displayed correctly due to a software version incompatibility. Later investigation proved that the tool was functioning correctly. The CMR was combined with the MDT (Run #5) and logged successfully.
- The winch shut down during Run #4 and 45 minutes was lost before it could be restarted. Investigation showed that the winch motor was low on diesel, but this was not indicated on the gauge. The refuelling frequency was increased and no further problems were observed.
- Once the VSI tool was retrieved to surface at the completion of Run #4 it was observed that the bridle connecting shuttles #2 and #3 had formed a knot around shuttle #2, changing the separation distance between the shuttles. Schlumberger DCS in Perth corrected the data.
- An attempt to capture a water sample at 2614m MD with the MDT failed. It appeared that bottle #3 in the MRMS (multi-sample module) was already open and had probably been filled at an earlier depth. Bottle #3 was found to contain gas when it was opened at surface.
- The MAXIS acquisition system froze during Run #5 after the tool had been tuned. Acquisition software and hardware was rebooted and the tool had to be retuned prior to commencing the main log. 2 hours and 5 minutes in total were lost.
- Some difficulty was experienced in finding a suitable location in the well for tuning the CMR. Limited suitable locations existed in this well and some time was spent before finding a reliable tuning location at 2869m MD.
- A low core recovery rate was achieved with the MSCT due to large variations in the formation types at the requested core depths. The weight-on-bit setting was adjusted at surface during the run which improved recovery but no core could be drilled at some depths.

- During the 2nd and 3rd HSD perforating gun runs, the gun assembly snagged at the base of the shooting nipple while pulling out of hole. Lifting the shooting nipple and shaking it by hand while pulling the tool string through overcame this.
- Generation of TVDSS logs could not be performed as quickly as expected. This was due to limitations of SLB software for this purpose and inexperience on the part of the engineers as this is an unusual request. In addition, it was thought before the job that TVDSS logs were needed for all tools but it was later apparent that it was only required for some services. Consequently, TVDSS data was unnecessarily prepared for some services before the TVDSS data for more critical services.

2 Logging Job Details

2.1 Time Analysis

Run	Operating Time (Hrs)	Lost Time (Hrs)
1: CMR-HRLA-PEX-SP-GR	7.2	0.0
2: HRLA-PEX-CMR-SP-GR	8.8	0.0
3: FMI-DSI-ECS-HNGS	12.2	0.0
4: VSP(4-shuttle VSI)-GR	11.3	0.7
5: MDT-CMR-GR	34.3	2.1
6: MSCT-GR	17.0	0.0
7: USIT-CBL-VDL-GR-CCL	5.5	0.0
8: HSD Gun 4½" (2962.5-2973m MD)	8.8	0.0
9: HSD Gun 4½" (2902.5-2914m MD)	6.2	0.0
10: HSD Gun 4½" (2604-2610m MD)	5.2	0.0
11: Junk Basket-Gauge Ring (5.75")	4.0	0.0
12: CPST (completion packer)	4.8	0.0
13: Enerjet 2-1/8" (3149-3155m MD)	10.8	0.0
14: Enerjet 2-1/8" (3151.5-3157.5m MD)	8.7	0.0
Total	**144.8**	**2.8**
Lost Time / Total Operating Time = 1.9%		

2.2 Crew Members

Open Hole Logging

Title	1st Crew	2nd Crew
Engineer	Greg Ruthven	Kevin Hermansen
Crew Chief	Marcus Cave	Tony Goodwin
Operator	Kevin Kerr	Ben Taylor
MDT Specialist	Richard de Groot	
Seismic Specialist	Shoichi Nakanishi	
Seismic Boat Crew	Rob Duncan	

Cased Hole Logging/Perforating

Title	1st Crew	2nd Crew
Engineer/Technician	Greg Ruthven	Rod Miller
Crew Chief	Rick Murray	Darren Watts
Operator	Kevin Kerr	Ben Taylor
Operator (crew change)	Rob Duncan	Gary Martin

2.3 Run Operation

2.3.1 Run 1: CMR-HRLA-PEX-SP-GR, commenced July 12

Tool string configuration: SP-CMR-HRLA-TLD-HGNS-LEHQT

After commencing rig-up at 13:00, the tools were run in hole at 14:45. The tools began hanging up at 2675m MD. An attempt was made to tune the CMR at 2650m MD as it was suspected there was a small water body here, but there was insufficient signal to tune successfully. The tools were run in hole again but continually held up at various depths between 2675m and 2698m MD for a period of 35 minutes before breaking through. However, at 17:05 the tools began hanging up at 2776m MD. After attempting to pass this depth for 35 minutes, we were advised to pull out of hole and log as we pulled out. The CMR was not logged because it had not been tuned. Rig down was completed at 20:15.

The down log that was performed in this run was unreliable because the tool string frequently hung up while running in hole, causing tension fluctuations which would have made this log unusable for correlation purposes. In the absence of a down log, the limited data acquired from this run in hole was correlated to Sperry Sun MWD logs at the request of the well site geologists so these logs did not represent true Wireline depth.

2.3.2 Run 2: HRLA-PEX-CMR-SP-GR, commenced July 14

Tool string configuration: SP-blank electrode-HRLA-TLD-HGNS-CMR-LEHQT

In order to assist the tools to pass any washouts, the tool string was reconfigured to ensure that the lower tools were stood off from the side of the hole. This could not be achieved with the CMR at the bottom of the tool string so it was shifted above the nuclear tools.

After commencing rig-up at 00:25, the tools were run in hole at 01:45. Difficulty was experienced in running the tool string below the casing shoe but the tools passed successfully after 25 minutes. The CMR was tuned successfully at 2869.3m MD, and the main log was commenced at 04:30.

It became apparent shortly thereafter that the CMR data being displayed was incomplete and there was a suspicion that the tool was not working adequately. It was decided not to troubleshoot this at the time due to the high well temperature, so the CMR would be re-run later in combination with the MDT. The logging speed was increased from the CMR speed of 600ft/hr to the Platform Express high-resolution speed of 1800ft/hr.

The main log was recorded from logger's TD of 3235.5m MD to the casing shoe at 2590m MD. The repeat section, commenced at 06:15, was recorded from 2660m to 2590m MD. The tools reached surface at 07:30 and were rigged down at 9:15. The maximum temperature recorded in this run was 126ºC, marginally above the Platform Express maximum temperature rating of 125ºC.

Data quality for this run was good. The neutron porosity data was corrected for hole size, mud weight, pressure-temperature, borehole salinity and formation salinity. The density data was corrected for hole size (this parameter was "zoned" from 8.5" to 12.25" at 2617.5m MD Wireline depth, the depth at which the change in bit size was observed on the log), and the nuclear mud

type was set to barite as there was barite present in the mud. Further details of these corrections can be found in the remarks section of the log header.

Full Wireline "First Run in hole" procedures were followed for this run as the depth correlation in Run 1 was unable to be performed to these procedures (see explanation above). After setting the zero depth with the tool string at surface, the rig-up length at surface was measured at 89.1m. As the tool string approached TD, the rig-up length was measured again at 89.0m so a +0.1m depth shift was applied. A down log was recorded and the main log pass was correlated to this, yielding a stretch correction of 5.0m. Unfortunately there was confusion and scepticism regarding the depth accuracy from this run. The depth for this run was approximately 4.0m lower than driller's depths, including the data from Run #1 which had been circulated previously. The reason for this confusion is that the data from the two runs was correlated to two different sources due to the hole problems in Run #1. Had an accurate down log been recorded in Run #1, the data from this run would have been correlated to that down log and this confusion would not have arisen.

Issue Description:
Some CMR data was not being displayed in the log presentations being viewed on the screen. This gave the impression that the tool was not functioning correctly, so it was decided to continue logging the HRLA-PEX-SP and re-run the CMR later with the MDT.

Analysis and Resolution:
Only minimal troubleshooting was performed immediately due to the well temperature being at the upper limit for the Platform Express. However, later analysis on the data file showed that the tool was acquiring all data correctly. The log presentation formats being used had been provided from a previous Origin Energy logging job in Western Australia, but had been produced using an earlier version of the log acquisition software. The formats had displayed correctly while running in hole, but an incompatibility across software versions caused them to not display correctly during the main logging pass. New presentation formats were generated prior to re-running the CMR with the MDT.

2.3.3 Run 3: FMI-DSI-ECS-HNGS, commenced July 14

Tool string configuration: FMI-DSI-ECS-HNGS-DTPC-LEHQT
The rig-up of this tool string commenced at 09:15 and the tools were run in hole at 10:40. The tools ran to bottom without incident and the main log was commenced at 12:55, logged from TD to the casing shoe. The repeat section was commenced at 16:20 and was logged from 2724m to 2610m MD. For these logs, the DSI was logged in BCR and P&S modes. The barite and potassium corrections were applied to the HNGS data, and ECS Clay option was set to Arenite as per the advice of the well-site geologist. The DSI-HNGS were logged through casing from the casing shoe at 2590m to the sea bed at 124m MD. The DSI was only logged in P&S mode through casing and the total gamma ray was displayed from the HNGS. Further details of corrections and logging modes can be found in the remarks section of the log header.

The tool string reached surface at 19:50 and was rigged down at 21:25. The maximum recorded temperature for this run was 133ºC.

2.3.4 Run 4: VSP-GR, commenced July 14

Tool string configuration: VSI (4 shuttles with 20m spacing)-GR-LEHQT

The rig-up of this tool string commenced at 21:25 and the tools were run in hole at 22:25. After performing the down-hole tool electronics checks, two check shots were performed at 1950m and 2510m MD while running in hole. Running-in speeds were kept low to allow for better monitoring of tool movement on the shuttle noise sensors. No problems were observed on the noise sensors while running to bottom. Depth correlation began at 00:50 (July 15th) and the survey proper was commenced at 01:40. Five shots were stacked at each level in most cases, with seven shots being stacked in some cases where noise was encountered. In addition, a few noisy levels were repeated during the survey. Tube waves were encountered as the shuttles approached surface, and the survey was halted early due to the presence of strong tube waves. The highest level recorded was at 770m MD.

The tool string reached surface at approximately 07:45 and it was observed that the bridle between shuttles #2 and #3 had formed a knot around shuttle #2, which would have caused the reported depth of shuttles #3 and #4 to be incorrect. Measurements indicated that the spacing between shuttles #2 and #3 had been reduced by 5m.

The tool was rigged down at 08:45. The maximum recorded temperature for this run was 136ºC.

Issue Description (winch shutdown):

The seismic survey was interrupted at approximately 04:45 when the logging unit's winch motor shut down. It was restarted at 05:30 after it had been re-fuelled and the survey resumed.

Analysis and Resolution:

The logging crew had been keeping track of unit refuelling, but the fuel gauge on the winch driver's panel was still indicating that there was sufficient fuel remaining in the tank. While there was initial uncertainty as to whether a lack of fuel was the cause of the shutdown, refuelling was the only corrective measure undertaken and no further instances occurred. After this incident, the fuel gauge has failed to read levels below ¾ full. Consequently, the logging crew maintained an 18-hour maximum period before refuelling the tank, which worked successfully. Details of this rule have been placed in the rig book and a replacement fuel gauge/sender is being organised.

Issue Description (knot in bridle):

The bridle between shuttle #2 and shuttle #3 was tangled around shuttle #2, causing the spacing between these shuttles to be reduced by 5 metres, from 20m to 15m. This could not be detected until the tools reached surface after the run. Shuttle #2 still appeared to provide consistent waveforms with noise occasionally detected. Schlumberger DCS in Perth were able to correct the data in processing

Analysis and Resolution:

There is an inherently greater risk of hanging up and tangling bridles when running shuttles joined by flexible bridles. To counter this, the VSI shuttles contain a noise sensor that is monitored by the

engineer while the tool string is run into the well. On this occasion, no issues were observed while running in hole, either from the noise sensors or from the surface cable tension. Running-in speeds were kept to the Schlumberger recommended maximum speed of 5000ft/hr.

2.3.5 Run 5: MDT-CMR-GR, commenced July 15

Tool string configuration: MDT (MRPS-MRHY-MRPO-LFA-MRMS-MRPC)-GR-CMR-LEHQT

After commencing rig-up of this tool string at 08:45, the tools were run in hole at 10:15. Depth correlation began at 11:15, and the first pretest was performed at 11:45. In total, 53 pretests were performed while running in hole from 2604.4m to 3174.7m MD. Of these tests, 33 were good, 11 were tight tests, 1 test failed to seal and 8 were classified as unrecognisable (these include points that are possibly super-charged). The pretests were completed at 00:10 on July 16. Various fluid gradients were determinable as a result of the pretest results.

Another correlation was performed to confirm the tool depth, then the pumping and sampling program was begun at 00:35. A summary of station information is presented in the table below.

Depth (m MD)	Time Begun	Pumped Volume (L)	Pumping Time (min)	Fluid type	Samples taken	Notes
3174.5	00:35	-	-	-	-	Tight pretest, no pumping performed
3174.8	00:45	2.9	32	Uncertain	-	Pumping aborted, large drawdown
3118.5	01:40	29.3	24	Gas + water trace	-	Fluid analysis performed
3005.7	02:20	35.1	28	Gas + water trace	1 x 450cc	
2871.0	03:25	20.5	45	Water	1 x 450cc	
2614.5	04:45	8.8	35	Water	See notes	Sample attempt failed
2609.5	05:35	35.7	28	Oil	2 x 450cc	
2606.4	06:20	62.5	48	Oil	1 x 450cc	

While attempting to sample at 2614.5m MD, the acquisition software indicated that the attempts to open the sample chamber (bottle #3 in the MRMS) had failed. It was decided to abandon sampling attempts at this depth and to continue the remaining samples as planned. Sampling was completed at 07:20.

The tool string was moved to 2869.3m and the CMR was tuned successfully at 07:35 before continuing to TD to commence logging the main CMR pass at 08:05. Upon beginning the main pass it was observed that the static magnetic field strength of the CMR had changed significantly since the tuning had been performed, so the log was stopped in order for the tool to be re-tuned. This can commonly occur when large quantities of magnetic debris cling to the tool's static magnets and affect the magnetic field that they generate. The tool was successfully re-tuned at 3201m MD at 08:40.

At 08:55, problems were encountered in re-powering the magnets of the CMR while attempting to begin the main log. The problem appeared to be originating from acquisition hardware or software at surface. The engineer made various attempts to re-power the tool, restart and re-initialise the software and reboot surface acquisition processors before successfully powering up the tools again. An attempt was made at 09:55 to re-tune the CMR at 3201m MD, but on this occasion the signal was insufficient for accurate tuning. It is likely that the tool position was slightly different from the previous successful attempt, either in depth or orientation, as the tool had been moved during the surface acquisition problems in order to minimise the risk of sticking. A few attempts were made to tune the tool, before returning to 2869.3m where the CMR was tuned successfully at 10:45.

The main logging pass began at 11:00 and was run from TD to 2594m MD (the CMR magnet power must be turned off prior to entering casing to avoid tool damage) at a speed of 600 ft/hr. The tool was tuned again at 2869.3m prior to beginning the repeat section at 15:10. The repeat section was performed from 2705m to 2594m MD. Full details of the CMR logging mode can be found in the remarks section of the log header. The tools reached surface at 17:45 and were rigged down at 19:00. The maximum recorded temperature during this run was 146°C.

Issue Description (MDT sample chamber failure):
While attempting to sample at 2614.5m MD, the acquisition software indicated that the attempts to open the sample chamber (bottle #3 in the MRMS) had failed. The pump profile also suggested that attempts to divert fluid flow into bottle #3 were not successful. The acquisition software indicated that the bottle was "Close Bottle" command, issued subsequently, was successful.

Analysis and Resolution:
A further analysis of the sampling log from the first sampling depth at 3005.7m MD indicates a longer filling time than usual, which suggests that bottle #3 was already open at this time. This is confirmed by the fact that bottle #3 contained gas when it reached surface, and 3005.7m is the only depth at which gas had been diverted to sample chambers prior to closing bottle #3 at 2614.5m MD. Bottle #3 may also have contained traces of water from both 2871.0m and 2614.5m MD.

The valves used in the multi-sample module (MRMS) are single-shot valves that are actuated by a spring that is held back by a wire-wound washer. An electrical current is sent to the washer where it burns a resistor, thus breaking the washer, releasing the washer, and allowing the spring to actuate the valve. It appears that one of these washers has failed when submitted to downhole temperatures and has released prematurely, thus opening bottle #3 prior to any sampling being performed. No indication of this can be seen at surface. All other washers functioned successfully during this run.

Issue Description (CMR acquisition locking up):
While attempting to begin the main CMR logging pass, the surface system would not allow magnet power to be sent to the tool. It appeared to be a software fault, so the engineer went through a sequence of restarting software, rebooting acquisition computers and finally shutting down the

entire surface acquisition system and restarting it. The final step was successful in enabling the tools to be powered and the logging to resume. 2 hours and 5 minutes were lost from the time the main log was attempted at 08:55 to the time it could proceed at 11:00. This period includes time taken to tune the CMR again.

Analysis and Resolution:
This type of acquisition system failure is difficult to predict given the complexity of the operating system and processors. The latest software and newest acquisition processors were in use for logging on Yolla-4. As part of the successful reboot of the entire surface acquisition system, the engineer disallowed the MDT from the acquisition tool string, which may have been a reason for the success of the final attempt. When logging MDT and CMR in combination in the future, engineers will be advised during briefing sessions to disallow the MDT from acquisition while performing CMR logging passes to minimise the risk of this failure recurring.

Issue Description (CMR tuning difficulties):
Difficulties were encountered in finding a suitable location in the well for tuning the CMR. Tuning was successful at 2869.3m on numerous occasions, but only one other tuning attempt was successful at 3201m MD.

Analysis and Resolution:
When tuning the CMR downhole, a location must be selected where there is a high hydrogen concentration to achieve sufficient amplitude for accurate tuning. This is typically achieved in high-porosity water-bearing reservoirs or in washouts, but can sometimes be achieved in shales. It is also common practice to tune the tool as close as possible to the start of the logging interval to minimise the risk of the magnets accumulating magnetic debris prior to the logging pass, making the tune results invalid. The 8-1/2" hole section in Yolla-4 presented limited suitable tuning locations. Attempts were made to tune the CMR in some washouts, particularly at 3201m (near TD where the main log began) but with limited success, possibly due to tool orientation. In hindsight, the most reliable tuning location in the well was in the water-bearing sand at 2869.3m MD and this location could have been used throughout. For future wells, it would be helpful if possible CMR tuning locations could be provided prior to the commencement of logging.

2.3.6 Run 6: MSCT-GR, commenced July 16

Tool string configuration: MSCT-GR-LEHQT
After commencing rig-up of this tool string at 19:00, surface tool checks were performed and the tools were run in hole at 21:00. Correlation began at 22:30 and coring commenced at 22:45 at 3159.0m MD. Difficulty was encountered in drilling this core with the coring motor frequently stalling. Cores were attempted at 3158.0m and 3157.0m MD, but in each case the coring bit was unable to penetrate into the formation and the coring motor was stalling. The decision was made at 23:40 to pull the tool to surface, adjust the weight-on-bit setting to make it lighter, then run back in hole to resume coring. The tool reached surface at 01:10 (July 17th), adjustments were made and checked, and the tool was run back in hole at 01:55.

Correlation started again at 03:25, with coring resuming at 04:00 at 3159.0m MD. On this occasion the bit penetrated to the full core length without stalling. Another core was successfully recovered at 3158.0m, but attempts at 3157.0m and 3156.0m again failed to achieve good penetration. The tool was moved up to the washout at 2597.0m MD in order to cycle the tool in the hope of washing out debris that could have been clogging the moving parts. After this, coring was resumed from 2604.0m and cores were taken while moving downwards. Seven successive cores were recovered between 2604.0m and 2614.5m MD. Good penetration was also achieved at 2868.5m MD, although it was later found that this core was not recovered. Three cores were attempted at 2871.0m, 3006.0m and 3007.5m MD, but in each case only minimal penetration was achieved and each attempt was aborted. The tool was pulled back to 2598.0m to clean out any debris again before returning down to 3149.5m. Two more cores were attempted at 3149.5m and 3151.0m MD but neither was successful and it was decided at 10:00 to abort the coring run. In total, 9 cores were recovered from 20 attempts. The tool was at surface at 11:00 and the wireline sheaves were rigged down at 12:00. The maximum recorded temperature during this run was 146°C.

Issue Description (CMR acquisition locking up):
Core recovery was poor due to the inability of the coring bit to penetrate some of the formations.

Analysis and Resolution:
The poor coring bit penetration appears to have been the result of multiple factors. The weight-on-bit can only be altered manually while the tool is at surface and can not be controlled remotely. Consequently, the setting that is appropriate for some formations may be inappropriate for others. The soft and friable nature of some of the formations in Yolla-4 may have hindered bit penetration by plugging the hole being drilled. In hindsight, the weight-on-bit was probably too strong when the tool was initially run in hole, and core recovery improved dramatically once it had been reduced at surface. In addition, significant wear was present on the tool's translation plates (side plates on which the bit pivots from the travel position to the drilling position). This wear may have inhibited the movement of the bit downhole. For future jobs, greater knowledge of the lithology at the desired core depths and prior to the job will assist with setting the weight-on-bit prior to running in hole. Also, replacement translation plates are being sought to replace the worn plates on the tool.

2.3.7 Run 7: USIT-CBL-VDL-GR-CCL, commenced July 22

Tool string configuration: USIT-DSLT-GR-LEHQT

Rig-up commence at 14:00 and the tool string was run in hole at 15:00. The fluid properties log was performed while the tool was run in hole, and at 16:30 the repeat section commenced. The repeat section was logged from 3185m to 3090m MD at the request of the well site witness. The main log began at 16:50 and was conducted from 3185m to the base of the liner hanger at 2546m MD. The USIT was logged with a vertical resolution of 6 inches and an azimuthal resolution of 5 degrees. The top of cement was observed on the log at 2555m MD. The log was completed at 17:40 and the tool string was rigged down at 19:15. The maximum temperature recorded during this run was 131°C.

2.3.8 Runs 8 to 10: 4½" HSD Perforating guns, commenced July 22

Tool string configuration: HSD gun (4.5" OD, 12 shots/ft, 34JL Ultrajet charges)-CCL

Preparations for the perforating runs began at 19:15. The rig crew rigged up the shooting nipple while the Schlumberger crew shifted the perforating guns to the cantilever deck and prepared to connect them. The dual pack-off was connected to the shooting nipple and the pressure test was performed. After the pressure test, the perforating head was assembled, the guns were connected and armed, and they were run in hole at 00:00 (midnight, July 23). Correlation began at 00:55, the first gun was shot at 01:25 to perforate from 2962.5m to 2973m MD. The gun reached surface at 03:15 and was broken out at 03:45. All charges fired successfully.

Make-up of gun #2 commenced at 03:45. The gun was armed and run in hole at 05:15. Correlation began at 06:30 and the gun was shot at 07:10 to perforate from 2902.5m to 2914m MD. The gun snagged at the base of the shooting nipple at 09:00 and the pipe rams had to be opened in order to pull the guns through the shooting nipple. The gun was pulled out of the hole at 09:50 and was laid down at 10:15. All charges fired successfully.

Make-up of gun #3 commenced at 10:15. The gun was armed and run in hole at 11:30. Correlation began at 12:20 and the gun was shot at 13:05 to perforate from 2604m to 2610m MD. As with the previous run, the gun snagged at the base of the shooting nipple. The gun was pulled out of the hole at 14:45 and the wireline sheaves were rigged down at 15:30. All charges fired successfully.

Issue Description:

Guns #2 and #3 snagged at the base of the shooting nipple while attempting to pull out of hole. The remedy was for the driller to open the pipe rams and pick up the shooting nipple so that it could be shaken by hand while the gun was pulled through it.

Analysis and Resolution:

The base of the shooting nipple has a flat profile, as does the cross-over section of the gun string which connects from the 3-3/8" firing head to the 4-1/2"gun, so it is highly likely that this is the point where the gun string is becoming caught. In order to assist the guns in passing into the shooting nipple, an order has been placed for tapered crossover adapters that can be placed between the firing head and the gun.

2.3.9 Run 11: Junk Basket, commenced July 24

Tool string configuration: 5.75" Gauge Ring-Junk Basket-CCL

Rig-up of the junk basket commenced at 08:00 and the tool was run into the well at 08:45. No trouble was experienced in running the tool to bottom. The junk basket reached TD at 10:05, was at surface at 11:40 and was rigged down at 12:00.

2.3.10 Run 12: CPST (packer and tail pipe assembly), commenced July 24

Tool string configuration: Tail pipe-completion packer-CPST-CCL

After the tail pipe and completion packer had been connected, rig-up of the Schlumberger tools commenced at 14:00. The packer setting tool (CPST) was armed and connected to the completion packer assembly, and was run in hole at 15:00. Correlation began at 16:45, the packer was

positioned on depth at 2983.1m MD, and the packer was set. The setting tool reached surface at 18:10 and the wireline sheaves were rigged down at 18:45.

2.3.11 Runs 13 and 14: 2-1/8" Phased Enerjet Perforating guns, commenced July 29

Tool string configuration: 2-1/8" Phased Enerjet gun (6 shots/ft, PowerJet charges)-CCL

Due to a late change in the well testing program, the through-tubing Enerjet perforating was brought forward. Once the Schlumberger explosives were brought back onto the rig, the Schlumberger crew on board was woken early so that they could begin loading the guns. Preparation of the guns and pressure equipment began at 03:00 and the JSA for rigging up took place at 08:30. The wireline lubricator was installed and pressure tested, the guns were connected and armed, and the gun string was run in hole at 13:00. Depth correlation began at 14:30 and the gun was positioned on depth, ready to shoot, at 14:50. Once the boats, helicopters and well testing personnel were in position, the gun was fired at 15:10 to perforate the interval from 3149.0m to 3155.0m MD. The tool was then lowered below the perforations and kept there until the well was shut in at 17:15. The tool reached surface at 18:50 and was laid out at 19:20. All charges fired successfully.

The second gun was connected and armed, the broken connection was pressure tested again, the well was opened and the gun string was run in hole at 21:00. The gun reached bottom at 22:30 and was kept there until well flow was established at 23:30. Depth correlation began at this time, the gun was positioned on depth and the gun was shot at 00:05 (July 30th). The well was shut in at 00:30, the gun reached surface at 02:00 and the wireline sheaves were rigged down at 04:00. All charges fired successfully.

3 General Comments and Conclusions

The Yolla-4 wireline operations involved careful planning and co-ordination between the Formation Evaluation and Drilling teams from Origin Energy, the drilling company Ensco, Schlumberger DCS and Schlumberger REW. Equipment arrived on time, but the preparation of equipment on the rig was rushed in two cases – both initially prior to rigging up for Run #1, and later when only one crew was on board when the through-tubing perforating was called for. In each case, Schlumberger operations occurred earlier than expected due to fast drilling in the first case, and unexpected well test results in the second. Thankfully, rushed preparation did not create any additional issues for operations on Yolla-4.

The Wireline operations were conducted efficiently and as per program. However there is room for improvement. In particular, with the lessons learned from Yolla-4, CMR data should be able to be gathered in the first run in combination with nuclear and resistivity tools which may assist with MDT planning. However, in order to efficiently log CMR at this early stage, greater collaboration will be needed between the well site geologists and the Schlumberger engineer to ensure that suitable locations are planned for tuning the CMR, especially given that no Wireline logs will have been acquired at this stage. Greater familiarity with TVDSS conversions should enable True Vertical Depth log data to be provided faster and new procedures should assist in minimising the risk of the lost time failures recurring on future jobs.

Communication tools in the logging unit (external phone line and LAN line) were beneficial and enabled faster decision-making. However, the lack of dial-up access to the Schlumberger network denied the Schlumberger engineers access to excellent online support facilities. Schlumberger personnel were advised prior to reaching the rig that they would have dialup access, so they were unable to prepare for this. Schlumberger personnel can overcome this situation by installing Virtual Private Network software on their laptop computers.

APPENDIX 9: VELOCITY SURVEY REPORT

Initial Field Report

Q-Borehole Survey Report

Schlumberger

Survey type:

Company: Origin Energy Resources Ltd.

Well: Yolla-4

Field: Yolla

Country: Australia

Run: 4

Date: 15-Jul-2004

Recorded by: Greg Ruthven / Kevin Hermansen

Witnessed by: Mike Woodmansee / Mark Tindale

Field Report
- Not depth corrected (shorter bridle issue)
- Final report and processing will be provided by Schlumberger DCS

Final Report is after this field report.

Well Information

Company	**Origin Energy Resources Ltd.**
Well	**Yolla-4**
Field	**Yolla**
Country	Australia
State	Tasmania
Logging Date	15-Jul-2004
Run Number	3
Service Order	VEA041000905
Well Head (Latitude)	39 50' 40.5920" S
Well Head (Longitude)	145 49' 06.0569" E
Well Head (X Coordinate)	398905.2 UTM
Well Head (Y Coordinate)	5588821.5 UTM
Total Depth - Driller	3235.0 m
Total Depth - Logger	3235.5 m
Maximum Hole Deviation	25.6 deg
Azimuth of Maximum Deviation	200.9 deg
Program Version	12C0-301
Bit Size	12.250 in
Recorded by	Greg Ruthven / Kevin Hermansen
Witnessed by	Mike Woodmansee / Mark Tindale

Elevation Information

Permanent Datum	Mean Sea Level
Elevation Permanent Datum	0.0 m
Above Permanent Datum	43.0 m
Drilling Measured From	Drill Floor (RT)
Derrick Floor	43.0 m
Ground Level	-81.0 m
Kelly Bush	43.0 m
Log Measured From	Drill Floor (RT)
Elevation Log Zero	43.0 m

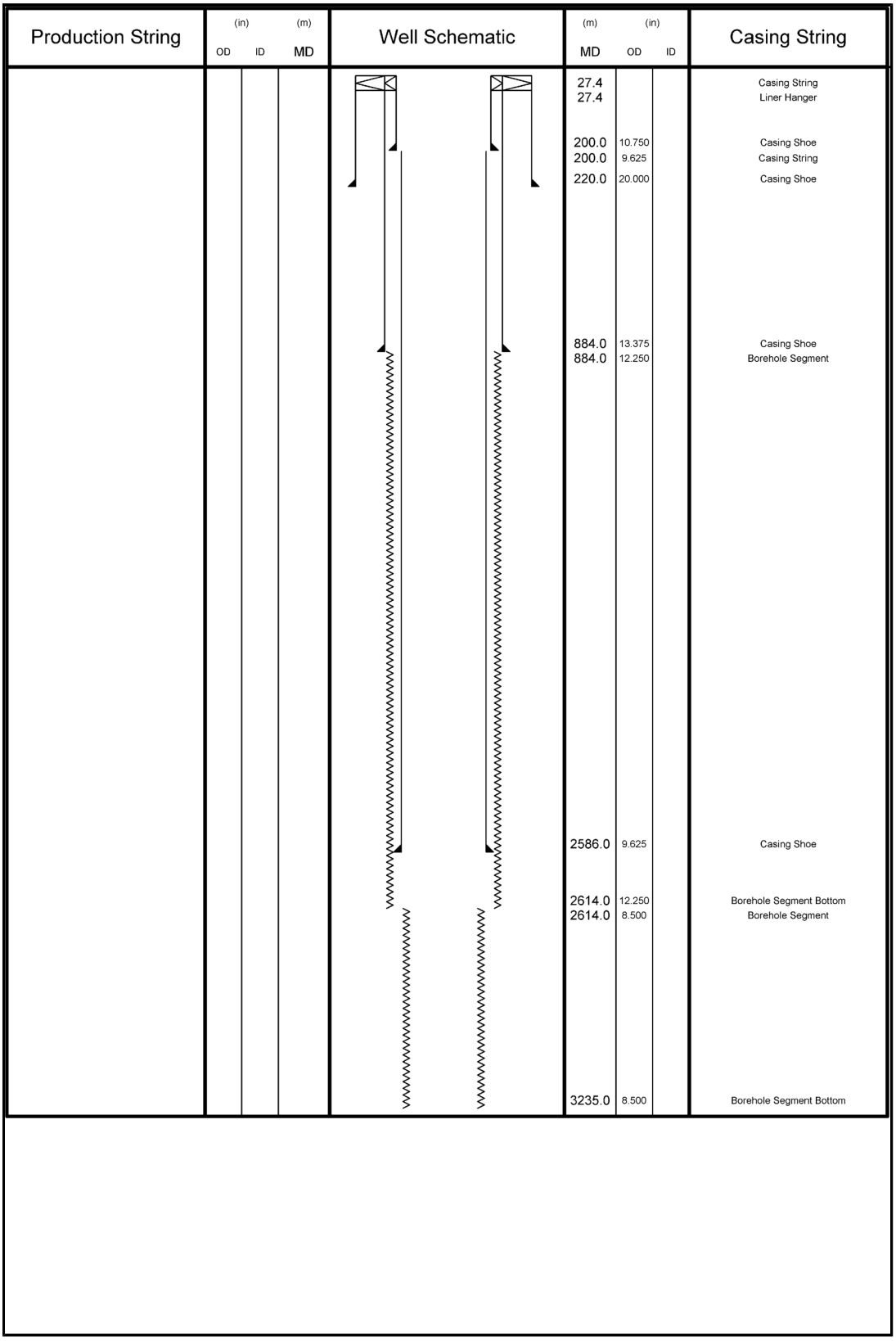
Depth Corrected Information

Water Velocity	1524.0 m/s
Seismic Reference Datum	0.0 m

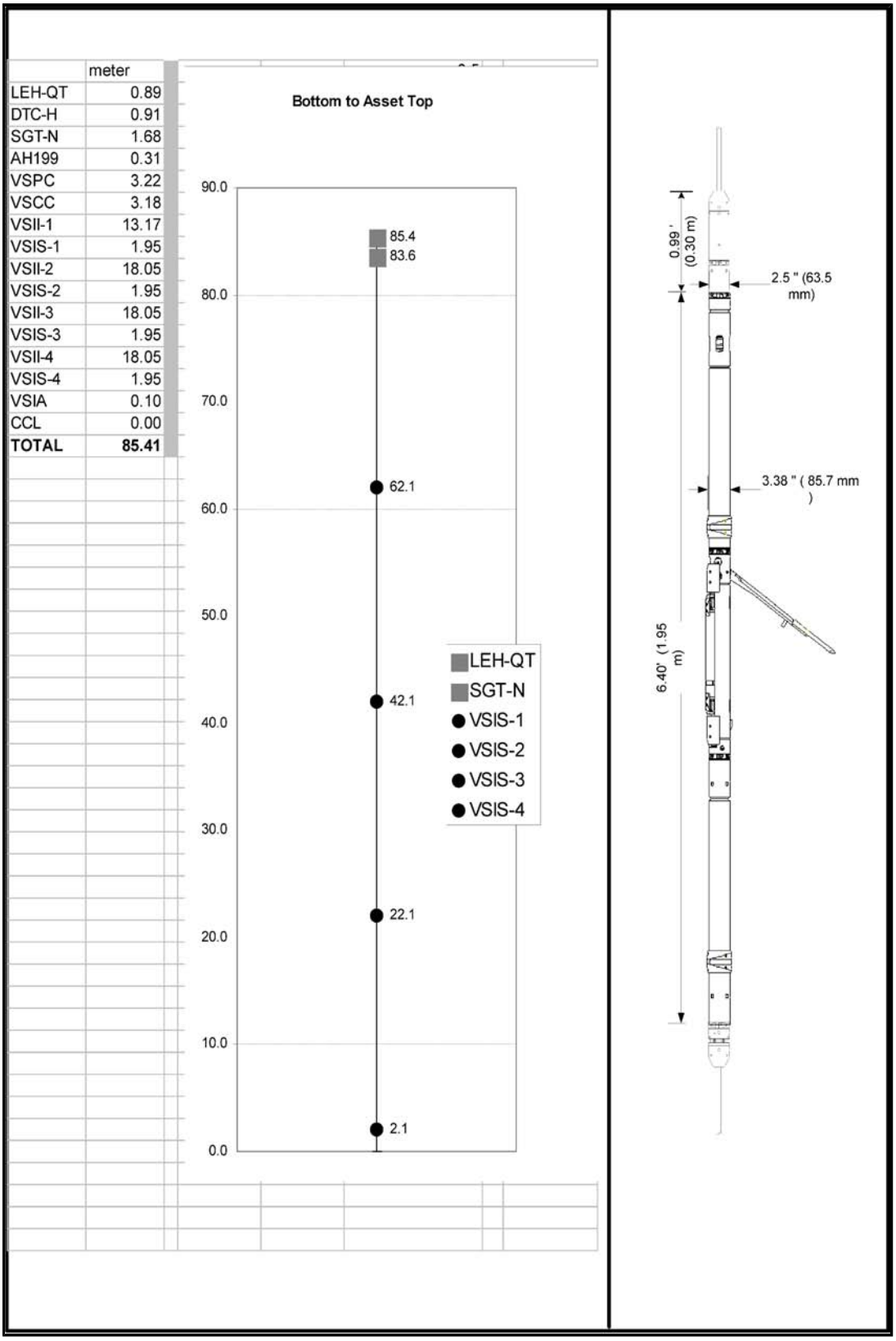
Remarks

Subsequent run in hole.
Log correlated to previous log (CMR-HRLA-PEX-SP) using GR.
Toolstring run as per toolsketch. DVSP acquired with 4 shuttles.
Two G Guns were used with 2000 psi and 6 m bellow Mean Sea Level.
Time reference from TGS-8 (S2) and hydrophone was 3.2 m bellow gun (for qc only).
Survey interval from 3230 to around 1070 when casing arrivals starts.
Data affected by noise at some intervals.
Bridle below shuttle number 2 (from top) was found wrapped around tool causing 5 m shorter bridle.
This will affect depth measurements on both shuttle number 3 and 4.
TD not tagged. Driller's TD used.
Survey station/level 2590 was moved up 5 m due to casing shoe. See observer notes (job listing).
Two stations/levels were overlapped with (20 m higher) due to noise on shuttle 2 and 4.
These two overlaps were at stations 2750 and 2670 and were re-shot at 2730 and 2650 respectively.
Maximum recorded temperature was 136 degC (head thermometer).
Low and high tide data only available from 8 Jun 2004 - High tide level + 0.9 m and low tide level -0.5 m.
Additional mud data:
PV/YP = 31/27, Gels = 6/9/11 LGS/HGS = 5.6%/0.4%

Well Sketch


Production String
(in)
OD
ID
(m)
MD
Well Schematic
(m)
MD
(in)
OD
ID
Casing String
27.4
Casing String
27.4
Liner Hanger
200.0
10.750
Casing Shoe
200.0
9.625
Casing String
220.0
20.000
Casing Shoe
884.0
13.375
Casing Shoe
884.0
12.250
Borehole Segment
2586.0
9.625
Casing Shoe
2614.0
12.250
Borehole Segment Bottom
2614.0
8.500
Borehole Segment
3235.0
8.500
Borehole Segment Bottom

Tool Sketch


meter
LEH-QT 0.89
DTC-H 0.91
SGT-N 1.68
AH199 0.31
VSPC 3.22
VSCC 3.18
VSII-1 13.17
VSIS-1 1.95
VSII-2 18.05
VSIS-2 1.95
VSII-3 18.05
VSIS-3 1.95
VSII-4 18.05
VSIS-4 1.95
VSIA 0.10
CCL 0.00
TOTAL 85.41
Bottom to Asset Top
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
85.4
83.6
62.1
42.1
22.1
2.1
LEH-QT
SGT-N
VSIS-1
VSIS-2
VSIS-3
VSIS-4
0.99 ' (0.30 m)
2.5 " (63.5 mm)
3.38 " (85.7 mm)
6.40' (1.95 m)

Downhole Equipment Information

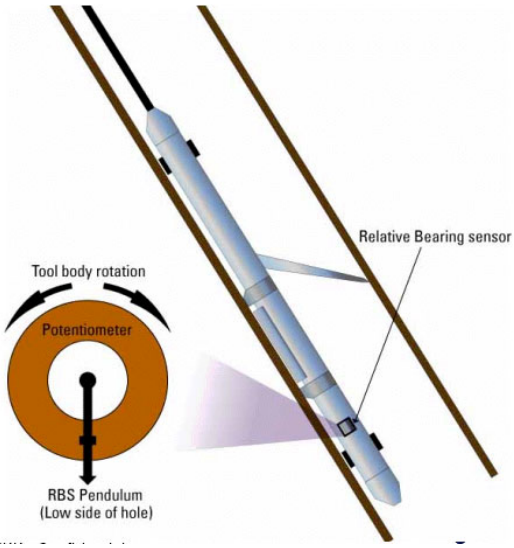
Tool Type	VSI
Surface Equipment	WSAM-TGS-8
Combined Tool	DTC-H, SGT-N
Number of Shuttles	4
Nominal Receiver Spacing	20 m
Gimbaled (Y/N)	N
Downhole Geophone Type	GAC-D x 3 each (Orthogonal)
Sensitivity	> 0.5 V/G +/- 5 %
Natural Frequency	20 Hz
GAC band width	2 – 200 Hz
Coil Resistance	1500 Ohm +/- 5 % @ 25 Deg C
Receiver #1	VSIS # 8230
Receiver #2	VSIS # 8226
Receiver #3	VSIS # 8228
Receiver #4	VSIS # 8229

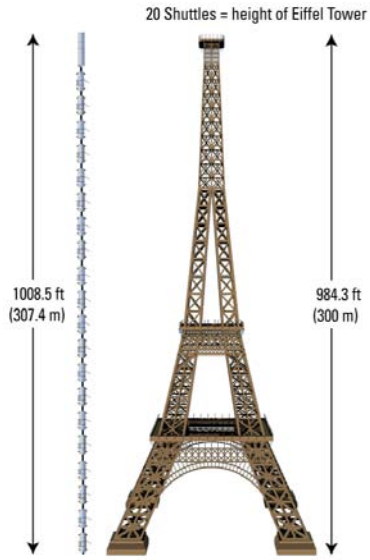
VSI Tool Specification

Minimum Tool Length	5340 mm
Tool Diameter	3 3/8 in or 2 ½ in without standoff
Minimum Hole/Casing Size	3 in (slim caliper configuration)
Maximum Hole/Casing Size	22 in (large caliper configuration)
Maximum Operating Temperature	150 deg C
Maximum Operating Pressure	20,000 psi
Maximum Deviation	90 deg
Telemetry System	Digital Telemetry System
Decimation	1.5, 1, 2 or 4 msec
Maximum Anchoring force (6 in)	76 kgf
Maximum Anchoring force (15 in)	91 kgf
Clamping System	Mechanical

Sensors

Manufacturer	Schlumberger KK
Model	GAC-D
Natural Frequency	20 Hz
Sensitivity	0.5 V/G
Coil Resistance	1500 Ohm





General Information

Survey Type	Vertical Incidence VSP
Surface Recording Length	1000.0 ms
Suface Sampling Rate	1.0 ms
Downhole Recording Length	5000.0 ms
Downhole Sampling Rate	1.0 ms
Top of Survey	770.0 m
Bottom of Survey	3230.0 m
Number of Shots	176
Number of Downhole Traces	704
Number of Downhole Traces used for Processing	646

Source Configuration (Air Gun)

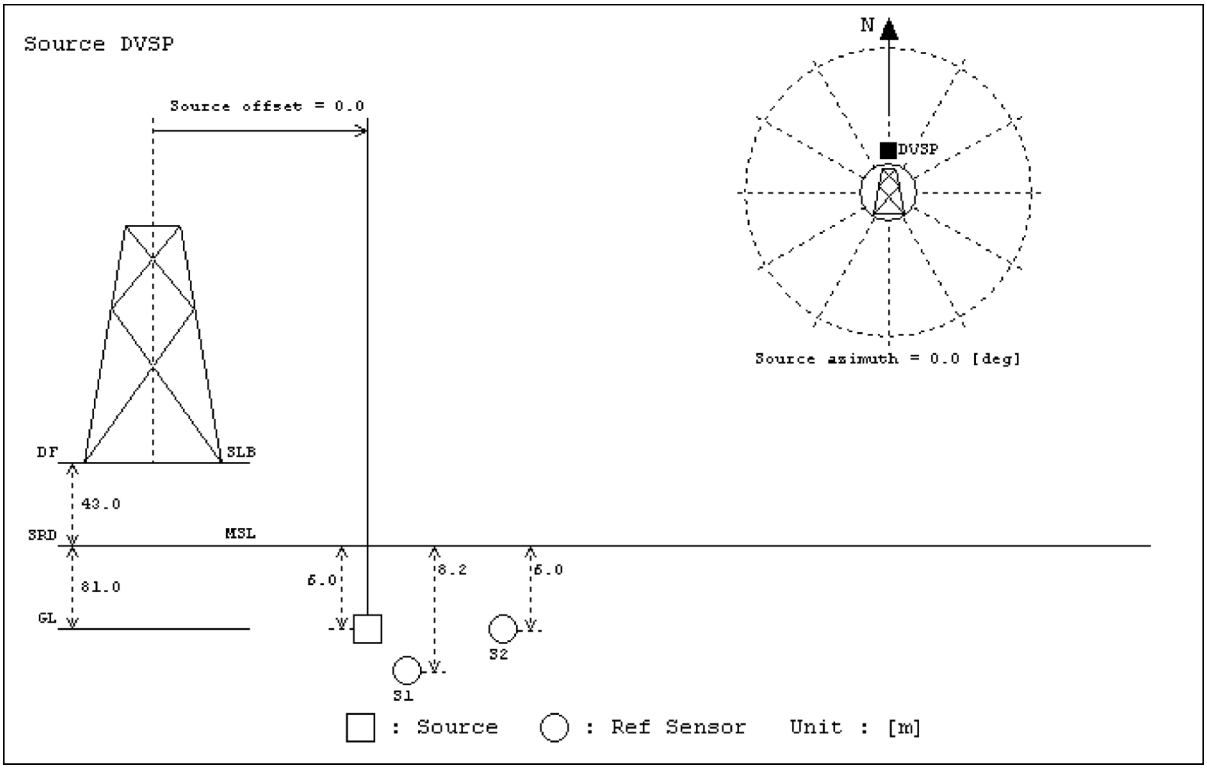
Source Location (Rig, Boat, Pit, Borehole)	Boat
Source Offset (for fixed offset)	Vertical Incidence – see navigation listing
Source Azimuth (for fixed offset)	Vertical Incidence – see navigation listing
Source Depth from Surface	6 m
Source Depth from Logging Zero	49 m

Gun Controller Model Name	TGS-8
Gun Type	G-Gun
Gun Configuration (3 Gun Cluster, Gun Array, etc.)	2 Gun Cluster
Gun Chamber Volumes	150 in

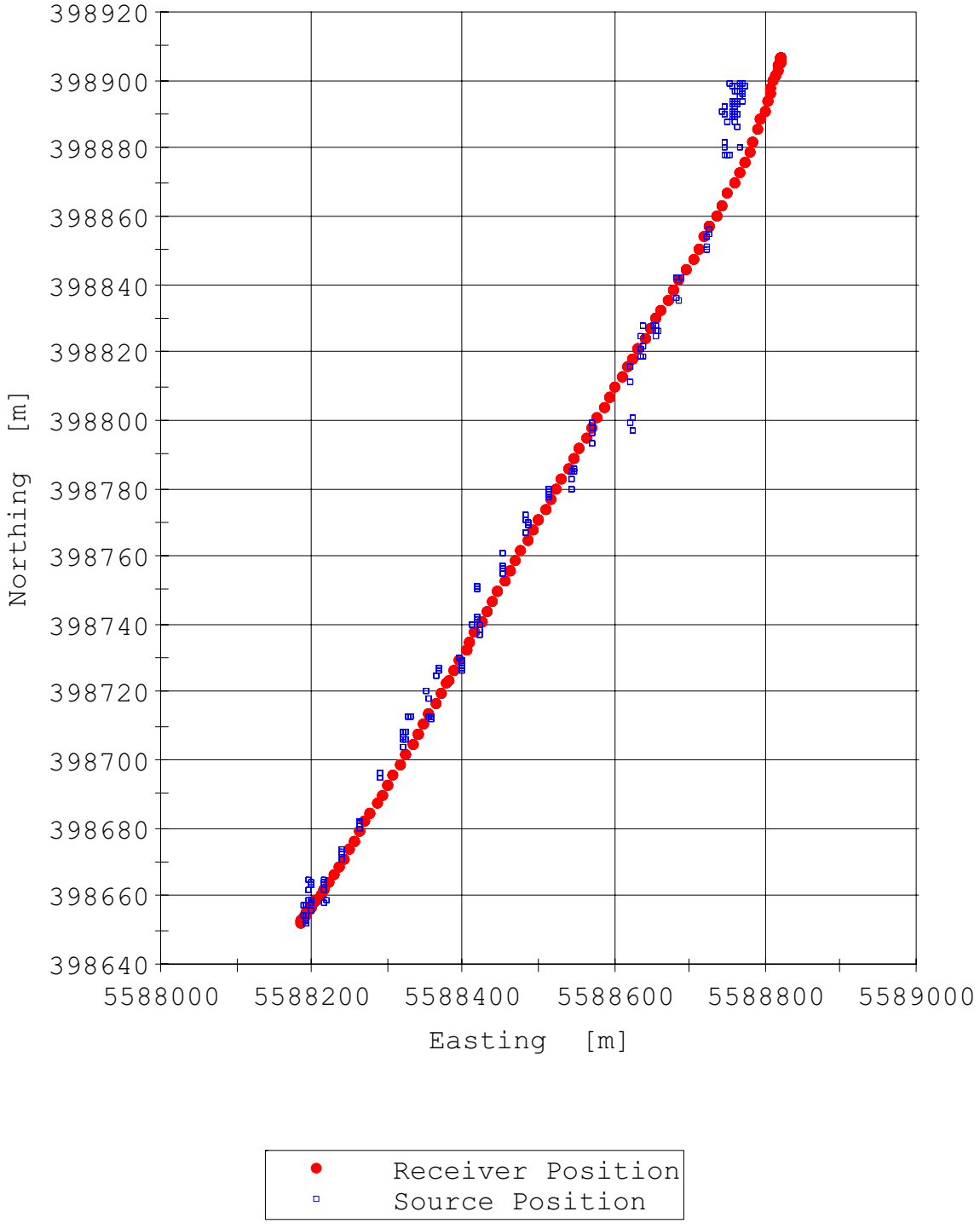
Surface Sensor Configuration

Number of Surface Reference Sensors	2
Surface Recording Length	1000 ms
Surface Sampling Rate	1
Sensor Type (S1)	Hydrophone
Sensor Type (S2)	TGS-8 estimated firing time
Sensor Depth from Surface (S1)	9.2 m (3.2 m below gun – used for QC only)
Sensor Depth from Surface (S2)	On gun – 6 m
Sensor Depth from Logging Zero (S1)	52.2 m
Sensor Depth from Logging Zero (S2)	49 m
Sensor Offset from Source (S1)	0
Sensor Offset from Source (S2)	0

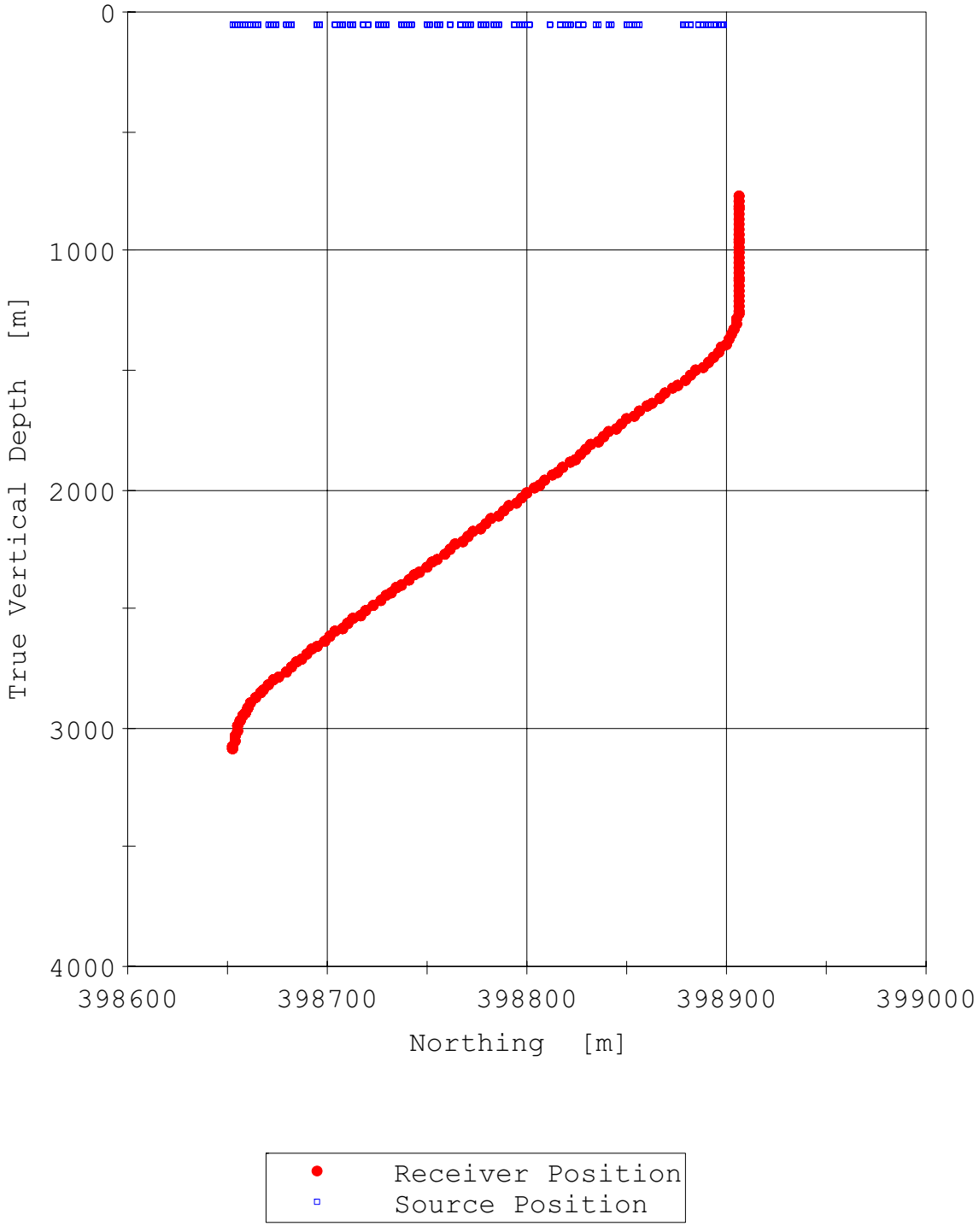
Source Geometry Sketch



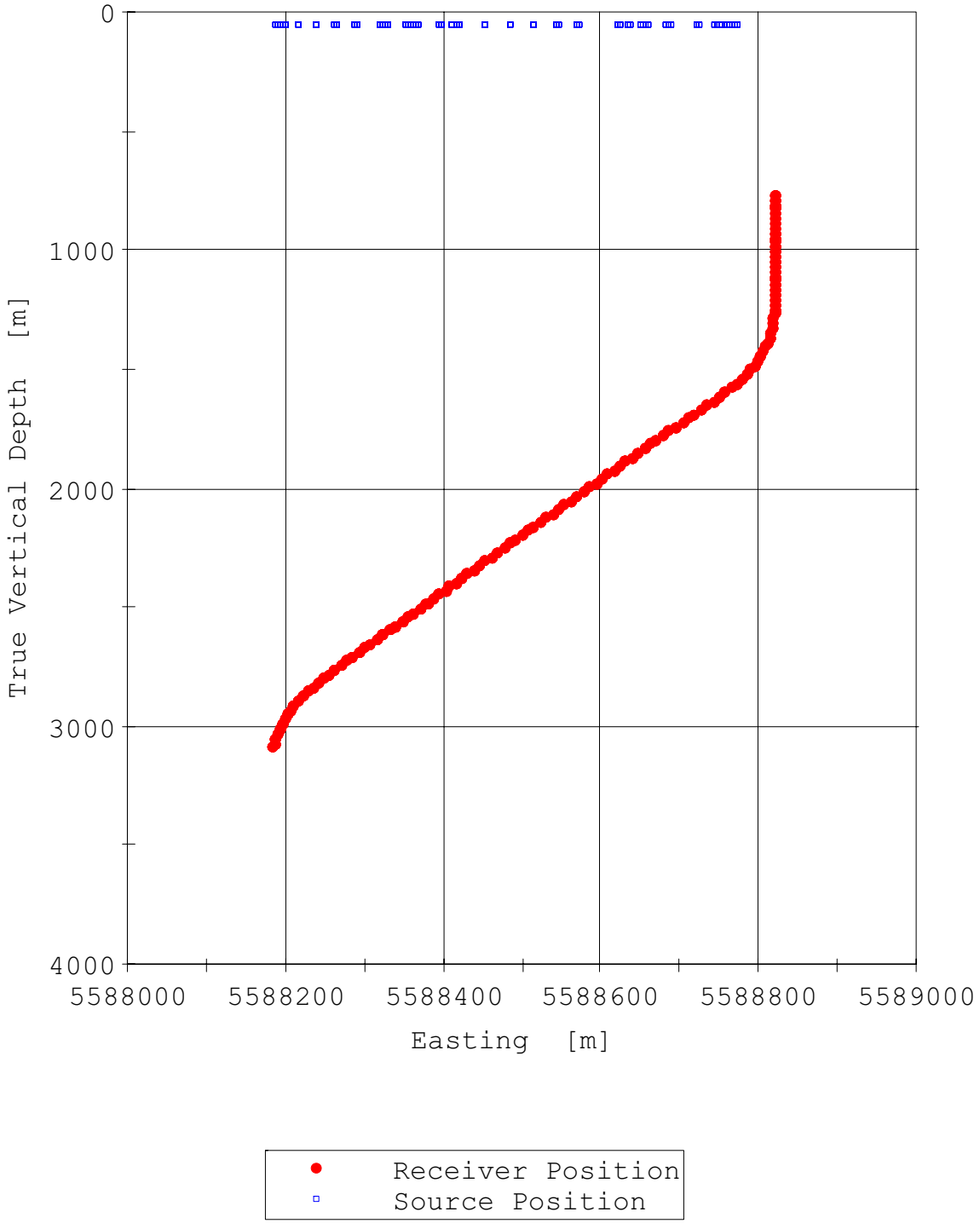
Geometry Infomation Page (X-Y)



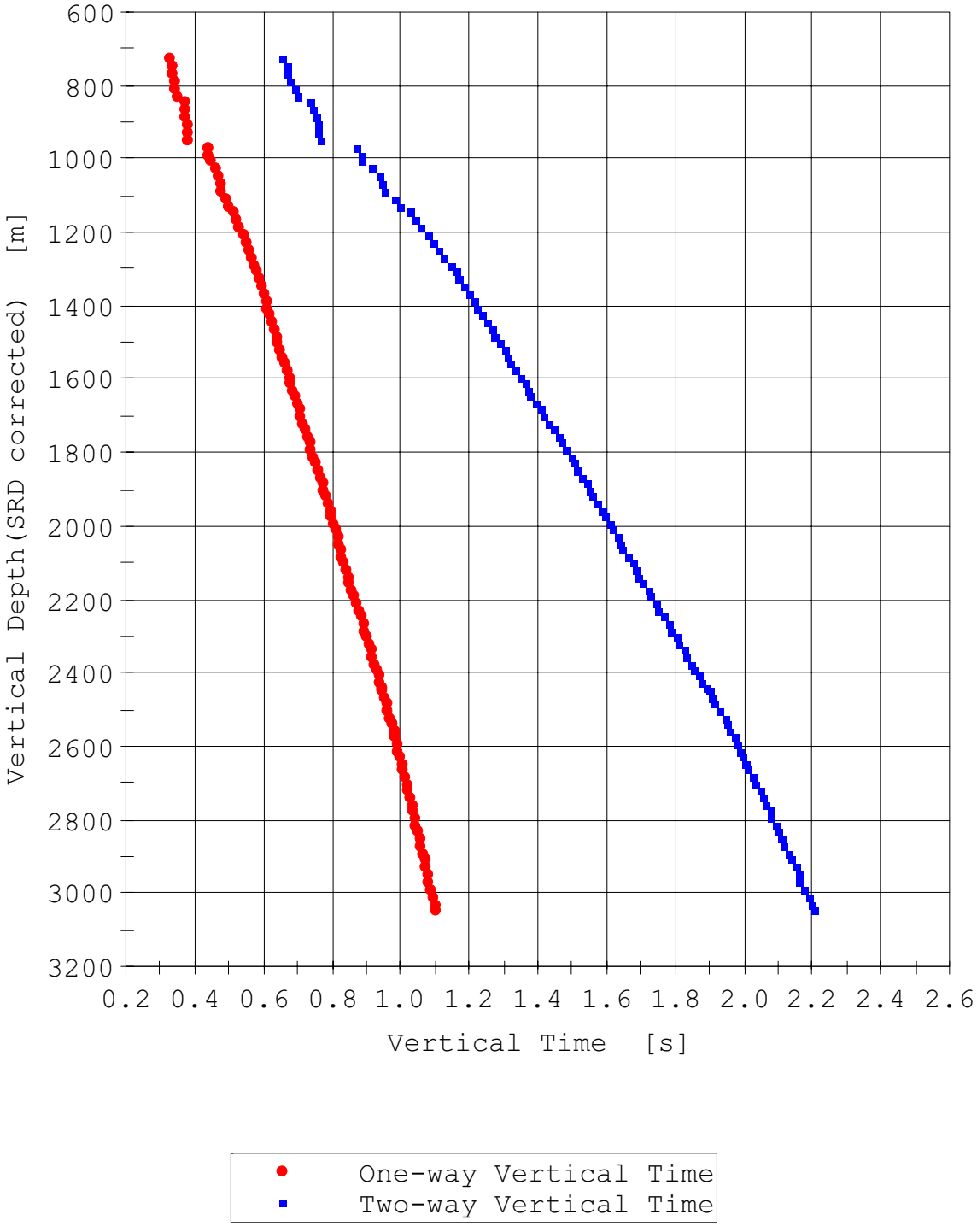
Geometry Infomation Page (X-Z)



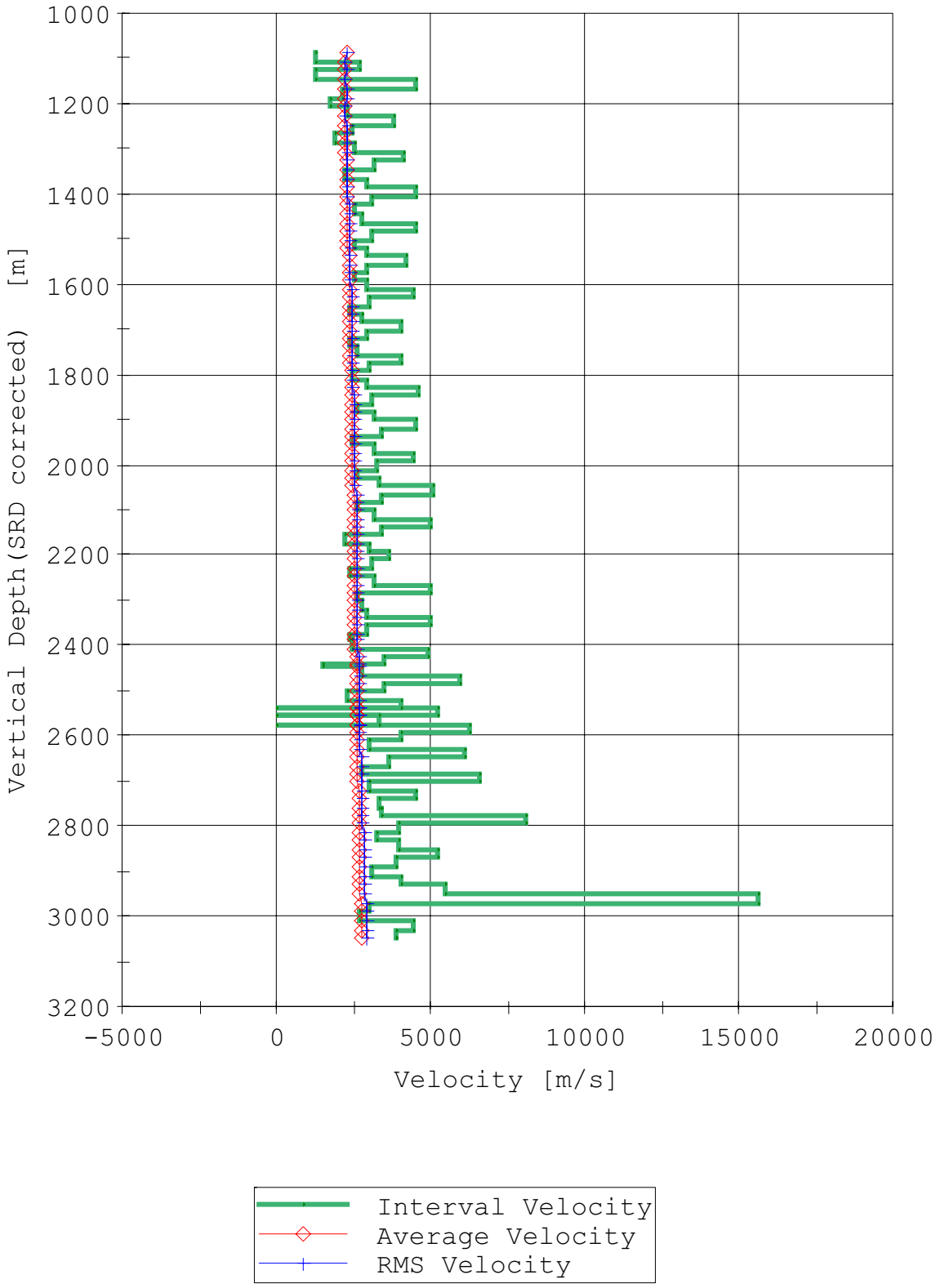
Geometry Infomation Page (Y-Z)



Time Depth Plot Page



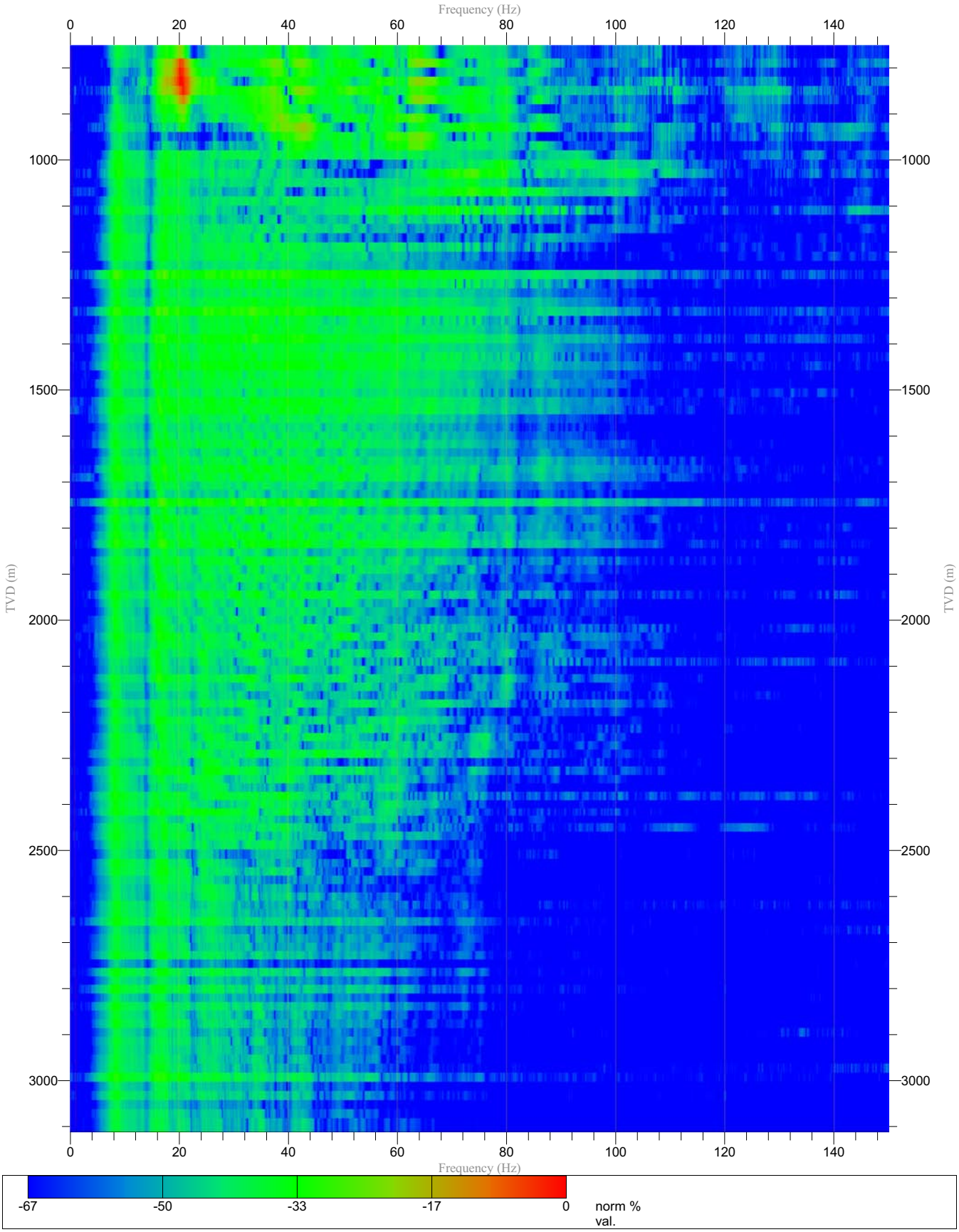
Velocity Plot Page



Schlumberger

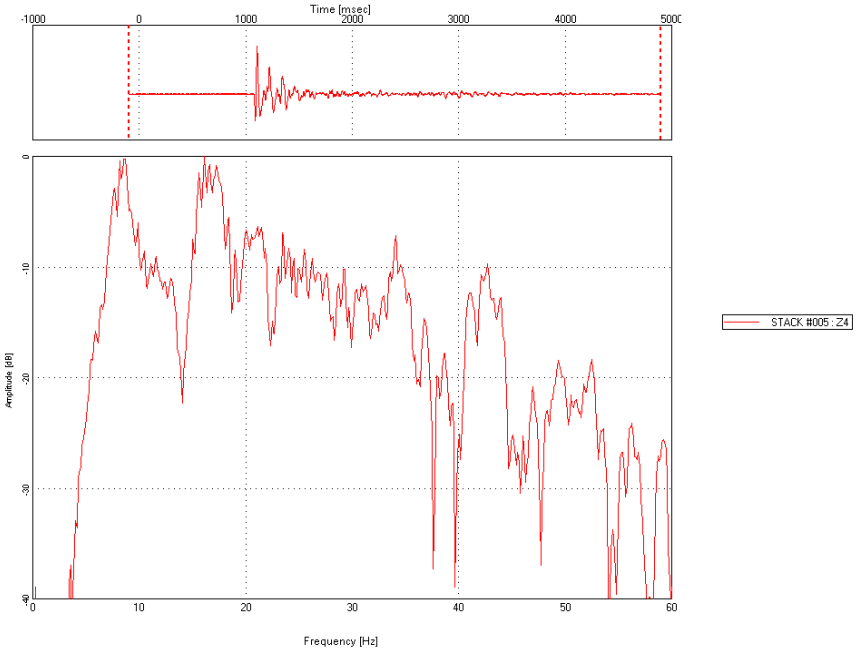
Raw Stack (TRY)	Normalization Trace by Trace (432%) Polarity Normal One Way Time (ms) Scaling 3.0 cm/sec, 1/11150	

Spectral Analyser2(Amplitude) Apply FZ	Normalization Trace by Trace (100%) Polarity Normal Frequency (Hz) Scaling 0.1 cm/Hz, 1/11190

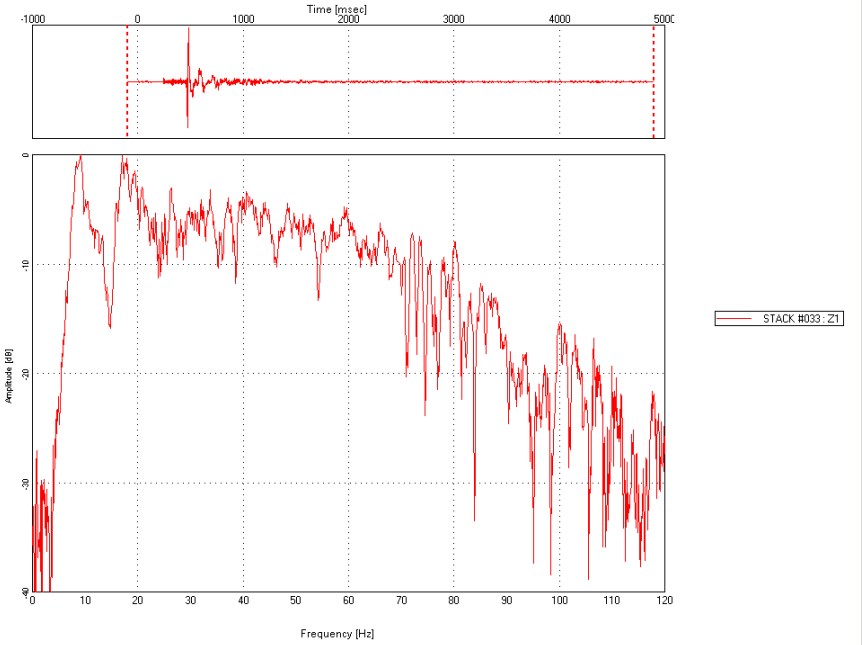


mai

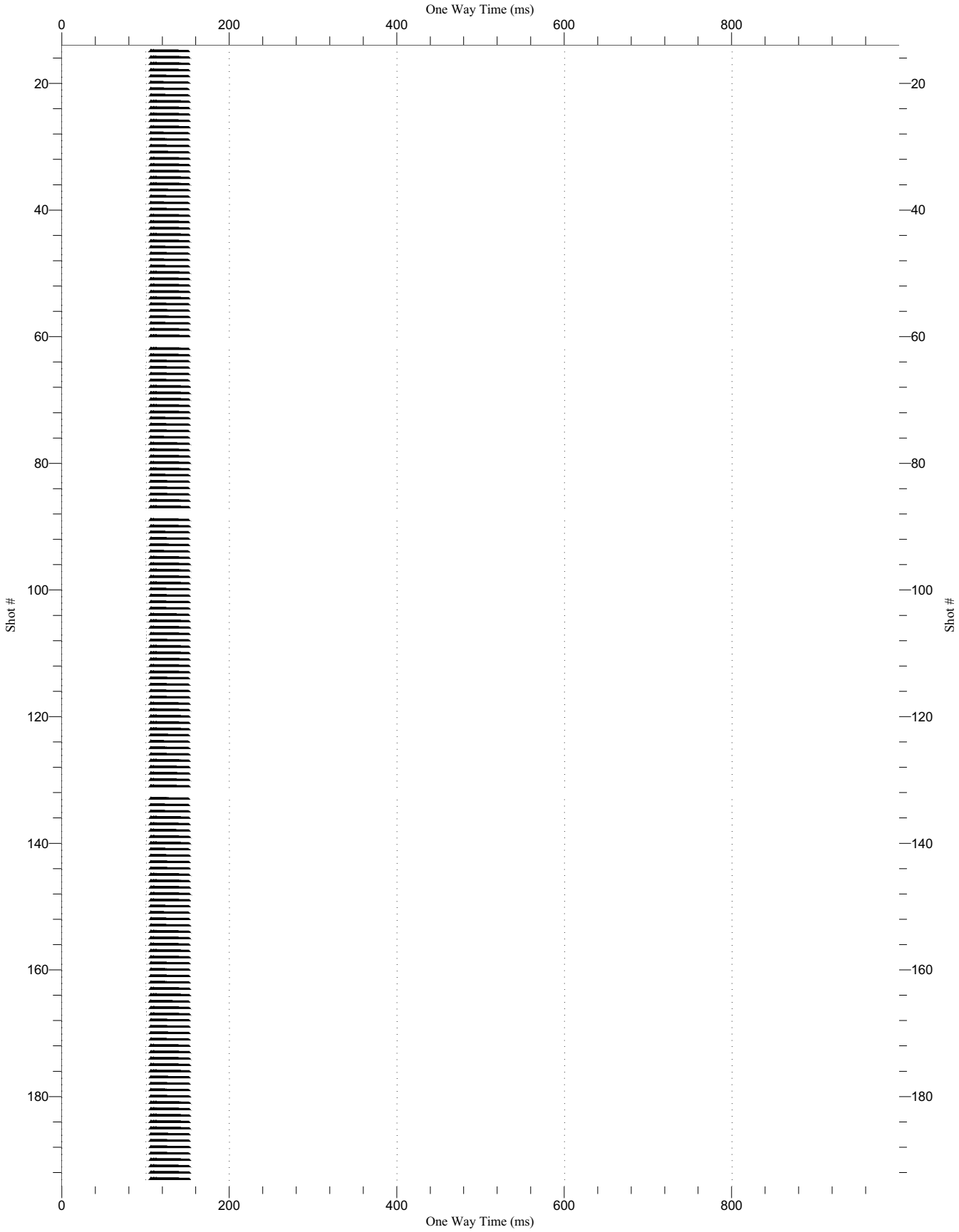
Frequency Spectrum @ 3150 m (Cable Depth)



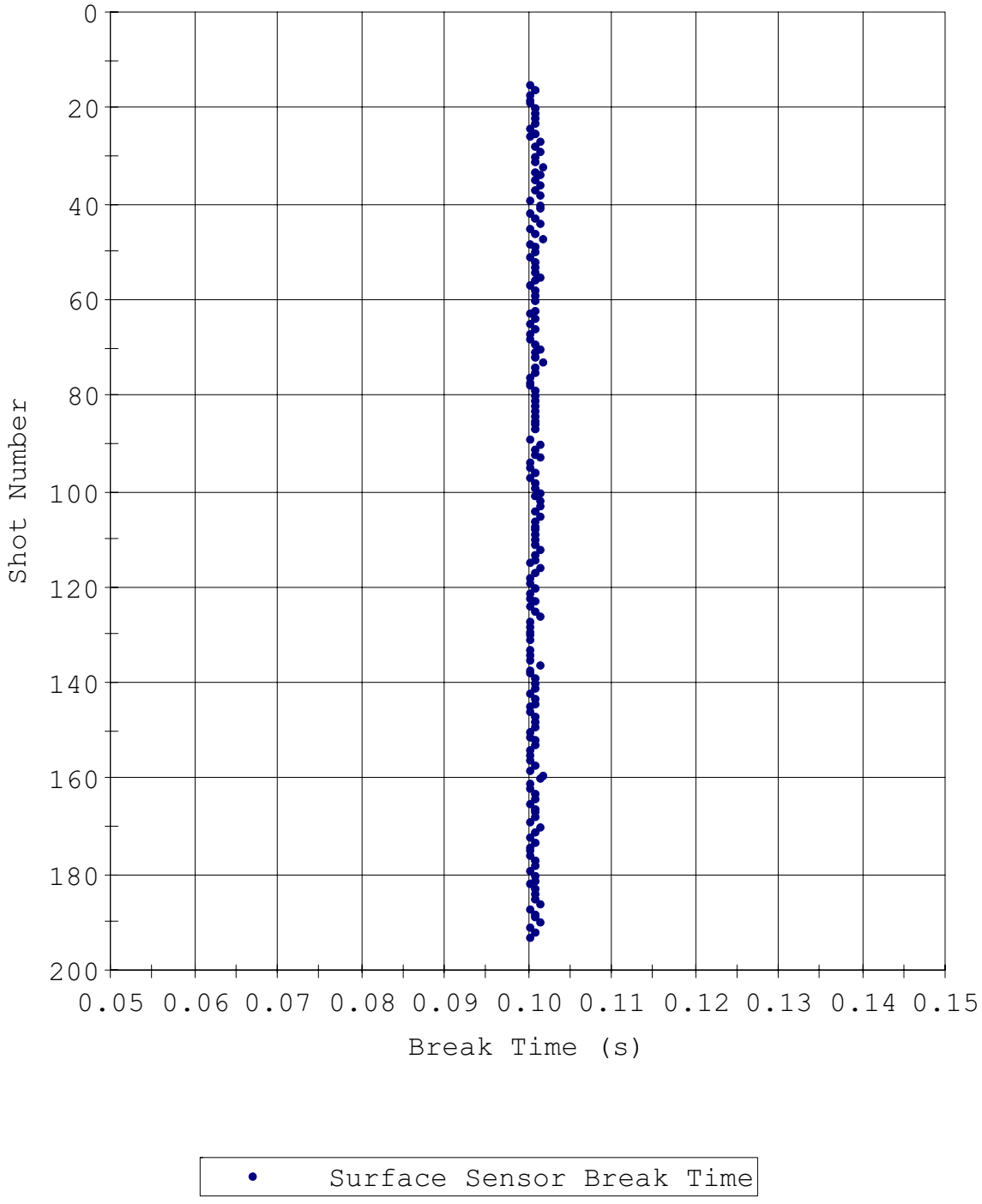
Frequency Spectrum @ 1090 m (Cable Depth)



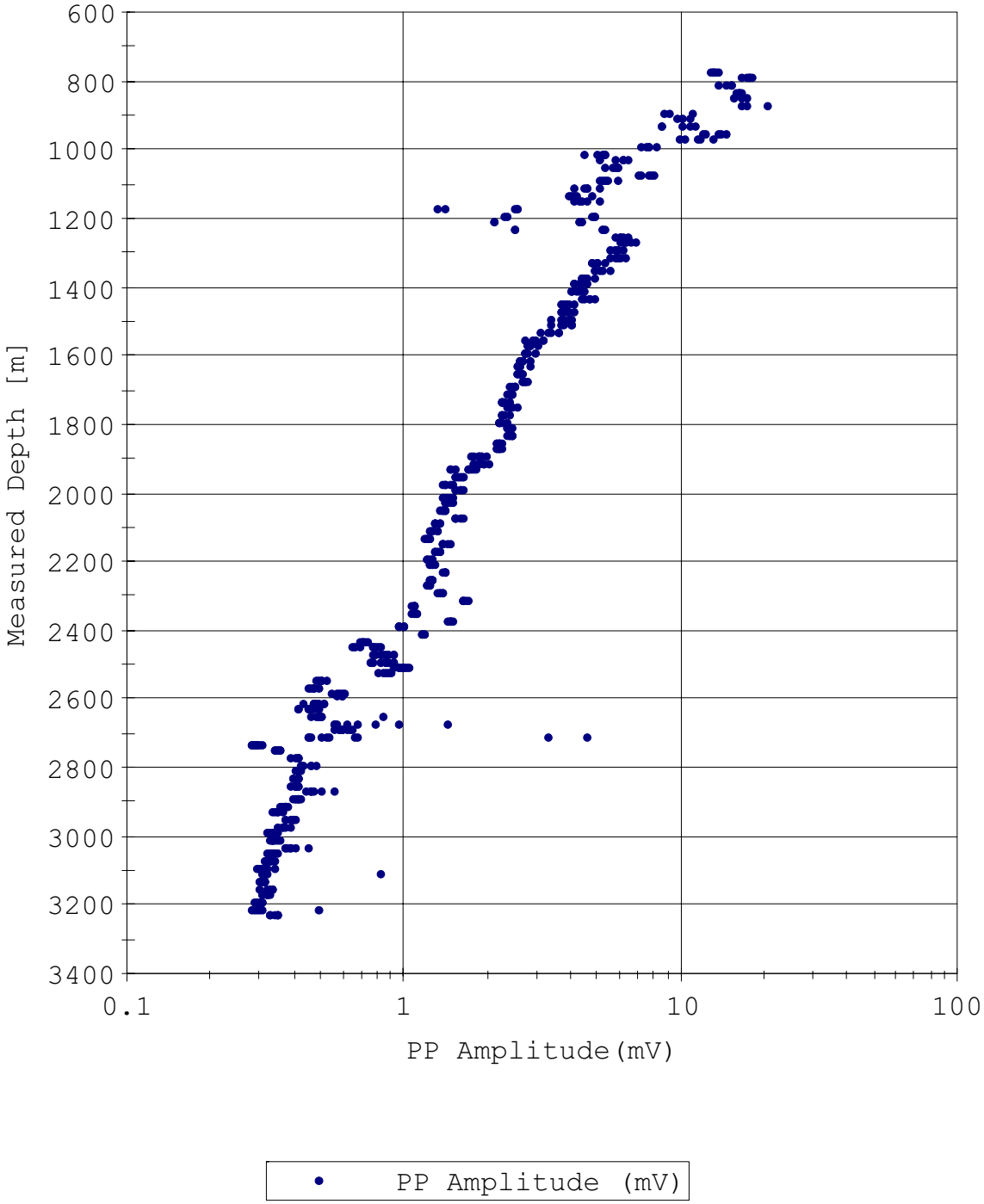
Source Sensor Signature	Normalization Trace by Trace (45%) Polarity Normal One Way Time (ms) Scaling 15.54 cm/sec, 0.12/cm	



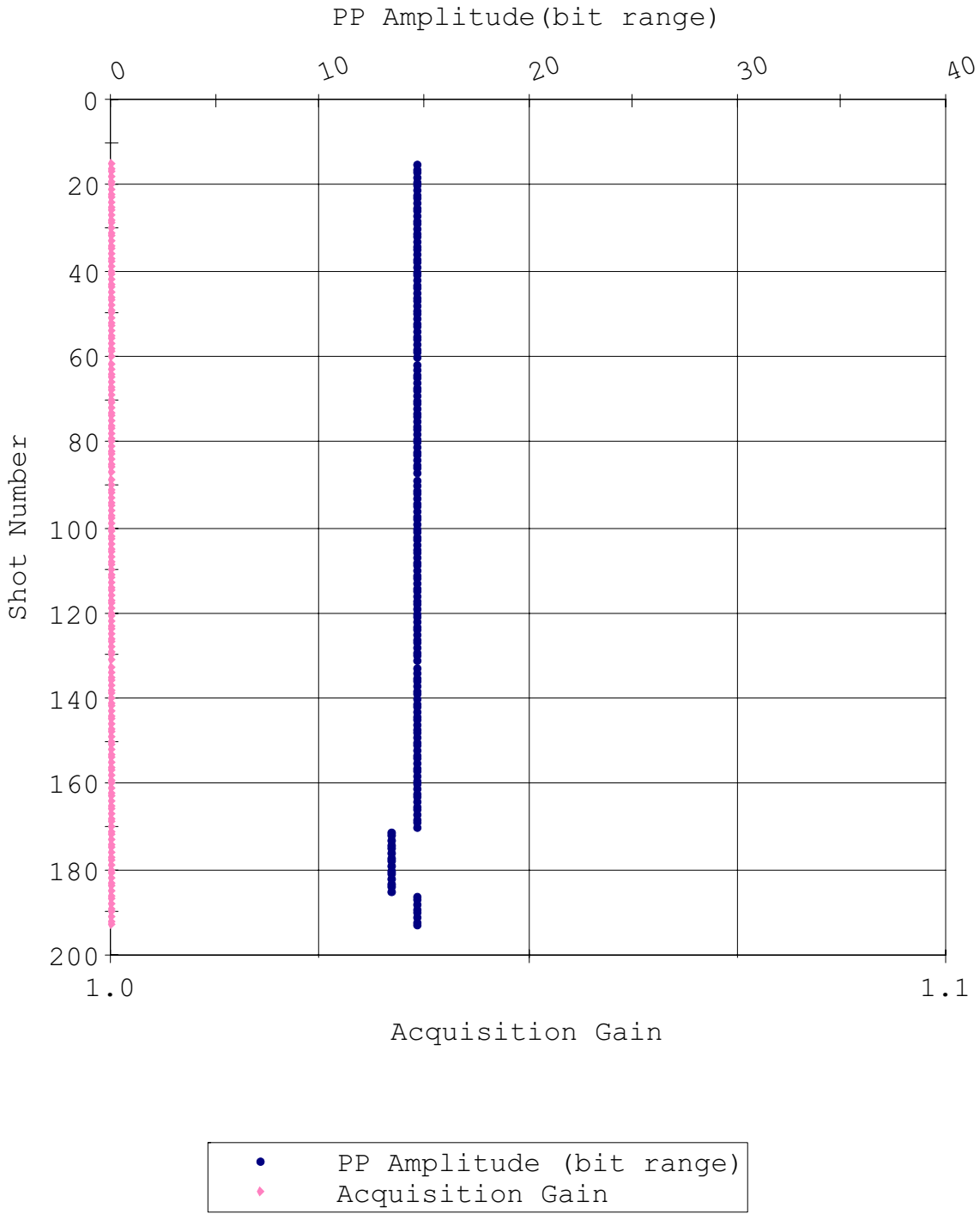
Surface Sensor QC Plot Page



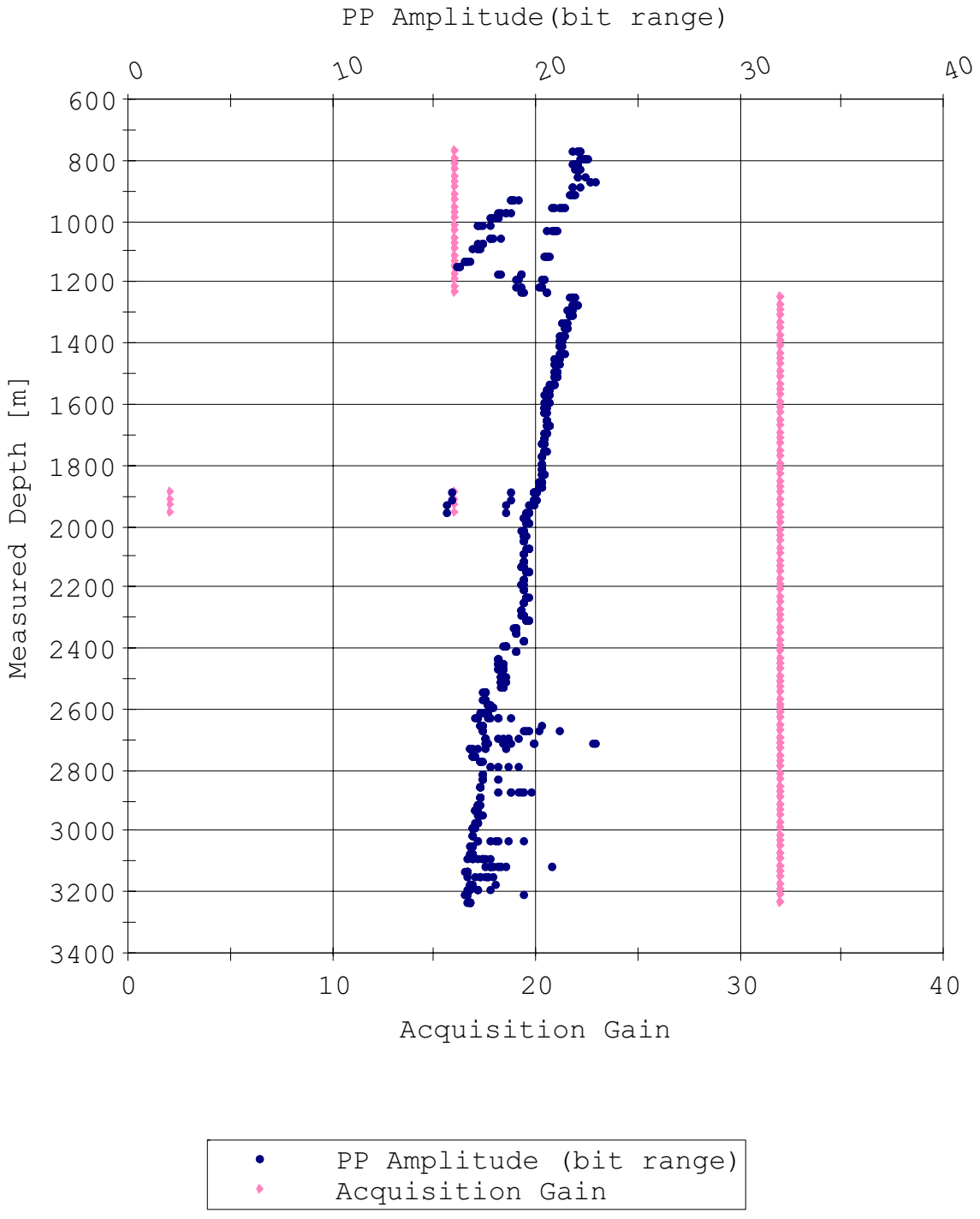
Peak To Peak Plot (Z)



Amplitude QC Plot (Surface)



Amplitude QC Plot (Z)



Schlumberger

Shot Summary Listing (1/5)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
770.0	1	37	92.6	9.5	835.6	189, 190, 191, 192, 193
790.0	2	37	12.4	9.1	656.0	189, 190, 191, 192, 193
810.0	3	37	24.7	9.5	770.7	189, 190, 191, 192, 193
830.0	4	37	-5.6	9.6	782.8	189, 190, 191, 192, 193
850.0	1	36	90.5	9.5	812.3	186, 187, 188
870.0	2	36	12.5	9.1	677.8	186, 187, 188
890.0	3	36	24.6	9.5	764.1	186, 187, 188
910.0	4	36	-7.2	9.6	772.4	186, 187, 188
930.0	1	35	92.4	9.6	826.2	181, 182, 183, 184, 185
950.0	2	35	11.3	9.1	684.8	181, 182, 183, 184, 185
970.0	3	35	28.3	9.6	759.6	181, 182, 183, 184, 185
990.0	4	35	-10.7	9.6	777.5	181, 182, 183, 184, 185
1010.0	1	34	91.4	9.5	792.2	176, 177, 178, 179, 180
1030.0	2	34	12.0	9.0	677.5	176, 177, 178, 179, 180
1050.0	3	34	34.4	9.5	763.3	176, 177, 178, 179, 180
1070.0	4	34	-12.6	9.6	776.8	176, 177, 178, 179, 180
1090.0	1	33	89.1	9.5	779.4	171, 172, 173, 174, 175
1110.0	2	33	15.9	9.0	638.6	171, 172, 173, 174, 175
1130.0	3	33	40.5	9.6	734.5	171, 172, 173, 174, 175
1150.0	4	33	-13.1	9.6	738.5	171, 172, 173, 174, 175
1170.0	1	32	96.4	9.5	781.6	166, 167, 168, 169, 170
1190.0	2	32	18.2	9.0	655.2	166, 167, 168, 169, 170
1210.0	3	32	55.8	9.5	741.5	166, 167, 168, 169, 170
1230.0	4	32	-14.7	9.6	745.3	166, 167, 168, 169, 170
1249.9	1	31	96.5	9.5	800.8	161, 162, 163, 164, 165
1269.9	2	31	29.8	9.0	639.2	161, 162, 163, 164, 165
1289.9	3	31	56.1	9.6	730.5	161, 162, 163, 164, 165
1309.9	4	31	-9.3	9.6	744.0	161, 162, 163, 164, 165

Shot Summary Listing (2/5)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
1330.0	1	30	36.4	9.4	792.5	156, 157, 158, 159, 160
1350.0	2	30	-9.0	9.0	645.9	156, 157, 158, 159, 160
1370.0	3	30	17.3	9.5	731.0	156, 157, 158, 159, 160
1390.0	4	30	1.5	9.5	723.3	156, 157, 158, 159, 160
1410.0	1	29	30.0	9.4	771.0	151, 152, 153, 154, 155
1430.0	2	29	-14.2	8.9	625.4	151, 152, 153, 154, 155
1450.0	3	29	16.3	9.4	720.9	151, 152, 153, 154, 155
1470.0	4	29	0.6	9.5	707.0	151, 152, 153, 154, 155
1490.0	1	28	31.0	9.4	753.4	146, 147, 148, 149, 150
1510.0	2	28	-9.0	9.0	620.7	146, 147, 148, 149, 150
1530.0	3	28	14.2	9.4	686.5	146, 147, 148, 149, 150
1550.0	4	28	0.2	9.5	679.7	146, 147, 148, 149, 150
1570.0	1	27	24.1	9.3	744.8	141, 142, 143, 144, 145
1590.0	2	27	-17.3	8.9	597.8	141, 142, 143, 144, 145
1610.0	3	27	10.3	9.4	696.2	141, 142, 143, 144, 145
1630.0	4	27	-0.5	9.5	684.4	141, 142, 143, 144, 145
1650.0	1	26	22.0	9.3	776.5	136, 137, 138, 139, 140
1670.0	2	26	-17.9	8.9	618.7	136, 137, 138, 139, 140
1690.0	3	26	10.7	9.4	678.2	136, 137, 138, 139, 140
1710.0	4	26	-0.9	9.5	671.7	136, 137, 138, 139, 140
1730.0	1	25	21.8	9.4	734.6	130, 131, 133, 134, 135
1750.0	2	25	-18.1	8.8	611.8	130, 131, 133, 134, 135
1770.0	3	25	10.3	9.4	666.4	130, 131, 133, 134, 135
1790.0	4	25	-1.4	9.5	648.8	130, 131, 133, 134, 135
1810.0	1	24	20.8	9.4	731.7	124, 125, 126, 127, 128, 129
1830.0	2	24	-17.8	8.9	600.2	124, 125, 126, 127, 128, 129
1850.0	3	24	10.1	9.4	663.3	124, 125, 126, 127, 128, 129
1870.0	4	24	-1.5	9.5	646.1	124, 125, 126, 127, 128, 129

Shot Summary Listing (3/5)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
1890.0	1	23	19.3	9.3	728.2	119, 120, 121, 122, 123
1910.0	2	23	-17.5	8.9	629.0	119, 120, 121, 122, 123
1930.0	3	23	10.3	9.4	678.9	119, 120, 121, 122, 123
1950.0	4	23	-2.7	9.5	654.2	119, 120, 121, 122, 123
1970.0	1	22	20.2	9.3	721.7	114, 115, 116, 117, 118
1990.0	2	22	-17.3	8.9	601.3	114, 115, 116, 117, 118
2010.0	3	22	10.1	9.4	654.7	114, 115, 116, 117, 118
2030.0	4	22	-3.8	9.5	644.1	114, 115, 116, 117, 118
2050.0	1	21	21.2	9.3	727.1	109, 110, 111, 112, 113
2070.0	2	21	-16.4	8.9	609.6	109, 110, 111, 112, 113
2090.0	3	21	10.3	9.4	667.6	109, 110, 111, 112, 113
2110.0	4	21	-0.5	9.5	613.0	109, 110, 111, 112, 113
2130.0	1	20	20.5	9.3	714.7	104, 105, 106, 107, 108
2150.0	2	20	-18.7	8.9	602.4	104, 105, 106, 107, 108
2170.0	3	20	10.0	9.4	650.0	104, 105, 106, 107, 108
2190.0	4	20	-0.6	9.5	611.4	104, 105, 106, 107, 108
2210.0	1	19	20.0	9.3	727.1	99, 100, 101, 102, 103
2230.0	2	19	-17.6	8.9	596.0	99, 100, 101, 102, 103
2250.0	3	19	10.0	9.4	649.2	99, 100, 101, 102, 103
2270.0	4	19	-1.4	9.5	618.6	99, 100, 101, 102, 103
2290.0	1	18	21.9	9.3	695.4	94, 95, 96, 97, 98
2310.0	2	18	-17.1	8.9	579.7	94, 95, 96, 97, 98
2330.0	3	18	9.6	9.4	620.1	94, 95, 96, 97, 98
2350.0	4	18	-2.0	9.5	606.1	94, 95, 96, 97, 98
2370.0	1	17	19.6	9.3	695.9	89, 90, 91, 92, 93
2390.0	2	17	-17.0	8.9	580.8	89, 90, 91, 92, 93
2410.0	3	17	10.1	9.4	626.7	89, 90, 91, 92, 93
2430.0	4	17	-2.5	9.5	613.1	89, 90, 91, 92, 93

Shot Summary Listing (4/5)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
2450.0	1	16	23.6	9.3	677.5	83, 84, 85, 86, 87
2470.0	2	16	-16.4	8.8	548.5	83, 84, 85, 86, 87
2490.0	3	16	9.9	9.4	587.5	83, 84, 85, 86, 87
2510.0	4	16	-3.7	9.4	565.5	83, 84, 85, 86, 87
2525.0	1	15	22.2	9.3	682.3	78, 79, 80, 81, 82
2545.0	2	15	-14.4	8.8	530.3	78, 79, 80, 81, 82
2565.0	3	15	9.6	9.4	569.6	78, 79, 80, 81, 82
2585.0	4	15	-6.2	9.4	573.5	78, 79, 80, 81, 82
2590.0	1	13	15.5	9.8	668.7	75, 76, 77
2610.0	2	13	-22.5	12.9	464.9	75, 76, 77
2630.0	3	13	7.2	9.3	583.3	75, 76, 77
2650.0	4	13	-7.5	9.9	599.3	75, 76, 77
2670.0	1	11	21.8	9.5	646.9	67, 68, 69
2690.0	1	10	26.2	9.6	651.0	59, 60, 62, 63, 64, 65, 66, 67, 68, 69
2690.0	2	11	-19.1	9.1	517.5	59, 60, 62, 63, 64, 65, 66, 67, 68, 69
2710.0	2	10	-17.5	9.3	546.1	66, 67, 68, 69
2710.0	3	11	11.0	9.2	572.9	66, 67, 68, 69
2730.0	3	10	16.3	10.6	534.4	59, 60, 62, 63, 64, 65, 66, 67, 68, 69
2730.0	4	11	-1.1	9.2	484.4	59, 60, 62, 63, 64, 65, 66, 67, 68, 69
2750.0	4	10	-4.8	9.2	570.3	59, 60, 62, 63, 64, 65, 66
2770.0	1	9	24.7	9.1	632.0	54, 55, 56, 57, 58
2790.0	2	9	-4.0	9.5	525.8	54, 55, 56, 57, 58
2810.0	3	9	-4.0	9.8	556.9	54, 55, 56, 57, 58
2830.0	4	9	-8.9	9.7	538.8	54, 55, 56, 57, 58
2850.0	1	8	23.1	9.4	625.7	47, 48, 49, 50, 51, 52, 53
2870.0	2	8	-6.2	9.2	483.0	47, 48, 49, 50, 51, 52, 53
2890.0	3	8	-8.7	9.4	553.7	47, 48, 49, 50, 51, 52, 53
2910.0	4	8	-7.2	9.1	533.4	47, 48, 49, 50, 51, 52, 53

Shot Summary Listing (5/5)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
2930.1	1	7	26.9	9.3	573.7	42, 43, 44, 45, 46
2950.1	2	7	4.7	9.2	469.9	42, 43, 44, 45, 46
2970.1	3	7	-7.4	9.4	564.2	42, 43, 44, 45, 46
2990.1	4	7	-13.0	9.3	540.1	42, 43, 44, 45, 46
3009.9	1	6	36.4	9.1	583.8	35, 36, 37, 38, 39, 40, 41
3029.9	2	6	5.7	9.3	458.7	35, 36, 37, 38, 39, 40, 41
3049.9	3	6	-8.4	9.4	546.1	35, 36, 37, 38, 39, 40, 41
3069.9	4	6	-17.8	9.4	514.6	35, 36, 37, 38, 39, 40, 41
3090.0	1	5	47.3	8.7	524.7	27, 28, 29, 30, 31, 33, 34
3110.0	2	5	16.9	9.0	459.5	27, 28, 29, 30, 31, 33, 34
3130.0	3	5	0.5	9.2	536.0	27, 28, 29, 30, 31, 33, 34
3150.0	4	5	-12.9	9.1	518.1	27, 28, 29, 30, 31, 33, 34
3170.0	1	4	92.5	8.5	579.9	22, 23, 24, 25, 26
3190.0	2	4	48.3	8.9	446.9	22, 23, 24, 25, 26
3210.0	3	4	23.1	9.2	505.1	22, 23, 24, 25, 26
3230.0	4	4	6.9	9.6	503.7	22, 23, 24, 25, 26

Stack Summary Listing (1/5) from VSI_003_DVSP_geo_wavefield_z.ldf

Stack Number ACQUISITION_ SHOT_ NUMBER	Measured Depth [m] CABLE_ LENGTH	True Vertical Depth [m] RECEIVER_ CORRECTION_ Z	Measured Time [s] TRANSIT_ TIME	One-way Vertical Time [s] TRANSIT_ TIME_SRD	Two-way Vertical Time [s] TRANSIT_ TIME_ INITIAL	Interval Velocity [m/s] VELOCITY_ 1	Average Velocity [m/s] VELOCITY_ 2	RMS Velocity [m/s] VELOCITY_ 3
	0	0	0	0	0			
37	770.0	727.0	0.3259	0.3290	0.6580			
37	790.0	747.0	0.3304	0.3335	0.6670			
37	810.0	767.0	0.3330	0.3362	0.6723			
37	830.0	787.0	0.3366	0.3398	0.6796			
36	850.0	807.0	0.3418	0.3448	0.6896			
36	870.0	827.0	0.3464	0.3494	0.6989			
36	890.0	847.0	0.3658	0.3689	0.7377			
36	910.0	867.0	0.3692	0.3723	0.7445			
35	930.0	887.0	0.3719	0.3751	0.7503			
35	950.0	907.0	0.3759	0.3791	0.7582			
35	970.0	927.0	0.3774	0.3807	0.7613			
35	990.0	947.0	0.3789	0.3822	0.7643			
34	1010.0	967.0	0.4319	0.4352	0.8704			
34	1030.0	987.0	0.4383	0.4415	0.8831			
34	1050.0	1007.0	0.4396	0.4429	0.8857			
34	1070.0	1027.0	0.4541	0.4573	0.9147			
33	1090.0	1047.0	0.4667	0.4699	0.9399			
33	1110.0	1067.0	0.4710	0.4743	0.9485			
33	1130.0	1087.0	0.4728	0.4761	0.9521		2283.2	2283.2
						1298.7		
33	1150.0	1107.0	0.4882	0.4915	0.9829		2252.4	2258.9
						2670.7		
32	1170.0	1127.0	0.4958	0.4990	0.9979		2258.6	2265.6
						1243.1		
32	1190.0	1147.0	0.5119	0.5151	1.0301		2226.9	2240.8
						4511.0		
32	1210.0	1167.0	0.5163	0.5195	1.0390		2246.4	2269.8
						2115.5		
32	1230.0	1187.0	0.5257	0.5289	1.0579		2244.1	2267.1
						1760.4		
31	1249.9	1206.9	0.5371	0.5403	1.0805		2234.0	2257.7
						2283.7		
31	1269.9	1226.9	0.5458	0.5490	1.0980		2234.7	2258.1
						3779.2		
31	1289.9	1246.9	0.5511	0.5543	1.1086		2249.5	2277.4
						2433.5		
31	1309.9	1266.9	0.5593	0.5625	1.1250		2252.2	2279.7
						1924.6		

Stack Summary Listing (2/5) from VSI_003_DVSP_geo_wavefield_z.ldf

Stack Number ACQUISITION_SHOT_NUMBER	Measured Depth [m] CABLE_LENGTH	True Vertical Depth [m] RECEIVER_CORRECTION_Z	Measured Time [s] TRANSIT_TIME	One-way Vertical Time [s] TRANSIT_TIME_SRD	Two-way Vertical Time [s] TRANSIT_TIME_INITIAL	Interval Velocity [m/s] VELOCITY_1	Average Velocity [m/s] VELOCITY_2	RMS Velocity [m/s] VELOCITY_3
30	1330.0	1286.9	0.5695	0.5729	1.1458		2246.2	2273.8
						2558.2		
30	1350.0	1306.8	0.5773	0.5807	1.1614		2250.4	2277.8
						4135.4		
30	1370.0	1326.6	0.5820	0.5855	1.1710		2265.8	2299.1
						3185.0		
30	1390.0	1346.4	0.5882	0.5917	1.1834		2275.5	2310.2
						2248.7		
29	1410.0	1366.1	0.5971	0.6005	1.2009		2275.1	2309.3
						2965.9		
29	1430.0	1385.7	0.6037	0.6071	1.2142		2282.6	2317.5
						4489.0		
29	1450.0	1405.3	0.6080	0.6114	1.2229		2298.4	2340.1
						3103.1		
29	1470.0	1424.8	0.6142	0.6177	1.2355		2306.6	2349.2
						2543.1		
28	1490.0	1444.2	0.6216	0.6253	1.2507		2309.4	2351.6
						2789.6		
28	1510.0	1463.4	0.6284	0.6322	1.2645		2314.7	2356.8
						4558.6		
28	1530.0	1482.5	0.6326	0.6364	1.2729		2329.4	2378.0
						3103.4		
28	1550.0	1501.4	0.6386	0.6425	1.2850		2336.8	2385.9
						2576.2		
27	1570.0	1520.0	0.6459	0.6498	1.2995		2339.4	2388.1
						2947.4		
27	1590.0	1538.6	0.6522	0.6560	1.3121		2345.3	2394.1
						4191.6		
27	1610.0	1556.9	0.6565	0.6604	1.3208		2357.5	2410.4
						2935.3		
27	1630.0	1575.1	0.6627	0.6666	1.3333		2362.9	2415.8
						2514.4		
26	1650.0	1593.3	0.6700	0.6739	1.3477		2364.5	2416.9
						2905.7		
26	1670.0	1611.5	0.6762	0.6801	1.3602		2369.5	2421.8
						4436.7		
26	1690.0	1629.6	0.6803	0.6842	1.3684		2381.8	2438.8
						3039.3		
26	1710.0	1647.7	0.6862	0.6901	1.3803		2387.5	2444.6
						2391.4		
25	1730.0	1665.8	0.6939	0.6977	1.3954		2387.5	2444.0
						2746.7		
25	1750.0	1683.8	0.7004	0.7043	1.4085		2390.9	2447.0
						4070.1		
25	1770.0	1701.8	0.7048	0.7087	1.4174		2401.4	2460.5
						2939.3		
25	1790.0	1719.9	0.7109	0.7148	1.4297		2406.0	2465.0
						2371.0		
24	1810.0	1737.9	0.7186	0.7224	1.4449		2405.6	2464.0
						2608.9		
24	1830.0	1756.0	0.7255	0.7294	1.4587		2407.5	2465.4
						4080.5		
24	1850.0	1774.1	0.7299	0.7338	1.4676		2417.7	2478.4
						3023.1		
24	1870.0	1792.3	0.7359	0.7398	1.4797		2422.6	2483.3
						2438.8		
23	1890.0	1810.6	0.7434	0.7473	1.4946		2422.8	2482.8
						2963.3		

Stack Summary Listing (3/5) from VSI_003_DVSP_geo_wavefield_z.ldf

Stack Number ACQUISITION_ SHOT_ NUMBER	Measured Depth [m] CABLE_ LENGTH	True Vertical Depth [m] RECEIVER_ CORRECTION_ Z	Measured Time [s] TRANSIT_ TIME	One-way Vertical Time [s] TRANSIT_ TIME_SRD	Two-way Vertical Time [s] TRANSIT_ TIME_ INITIAL	Interval Velocity [m/s] VELOCITY_ 1	Average Velocity [m/s] VELOCITY_ 2	RMS Velocity [m/s] VELOCITY_ 3
23	1910.0	1828.8	0.7495	0.7535	1.5069		2427.2	2487.1
						4571.1		
23	1930.0	1847.0	0.7535	0.7575	1.5149		2438.5	2502.7
						3085.4		
23	1950.0	1865.3	0.7595	0.7634	1.5267		2443.5	2507.7
						2634.0		
22	1970.0	1883.5	0.7664	0.7703	1.5406		2445.2	2508.9
						3179.0		
22	1990.0	1901.7	0.7721	0.7760	1.5521		2450.6	2514.5
						4549.8		
22	2010.0	1919.9	0.7761	0.7800	1.5601		2461.4	2529.1
						3379.3		
22	2030.0	1938.1	0.7816	0.7854	1.5708		2467.7	2535.9
						2463.8		
21	2050.0	1956.3	0.7889	0.7928	1.5856		2467.6	2535.2
						3142.2		
21	2070.0	1974.5	0.7946	0.7986	1.5971		2472.5	2540.2
						4432.0		
21	2090.0	1992.6	0.7987	0.8027	1.6053		2482.5	2553.4
						3246.7		
21	2110.0	2010.8	0.8043	0.8083	1.6165		2487.8	2558.8
						2586.0		
20	2130.0	2029.0	0.8114	0.8153	1.6306		2488.6	2559.1
						3339.7		
20	2150.0	2047.1	0.8168	0.8207	1.6414		2494.3	2565.0
						5066.4		
20	2170.0	2065.3	0.8204	0.8243	1.6486		2505.5	2581.1
						3376.8		
20	2190.0	2083.4	0.8258	0.8297	1.6594		2511.1	2587.1
						2647.8		
19	2210.0	2101.6	0.8326	0.8365	1.6731		2512.2	2587.6
						3141.6		
19	2230.0	2119.8	0.8384	0.8423	1.6847		2516.6	2591.8
						4960.5		
19	2250.0	2138.0	0.8421	0.8460	1.6920		2527.2	2606.7
						3411.3		
19	2270.0	2156.2	0.8474	0.8513	1.7027		2532.7	2612.5
						2243.7		
18	2290.0	2174.4	0.8555	0.8594	1.7189		2530.0	2609.3
						3054.5		
18	2310.0	2192.6	0.8615	0.8654	1.7308		2533.6	2612.6
						3624.8		
18	2330.0	2210.8	0.8665	0.8704	1.7409		2539.9	2619.6
						3107.4		
18	2350.0	2229.0	0.8724	0.8763	1.7526		2543.7	2623.1
						2410.1		
17	2370.0	2247.2	0.8799	0.8839	1.7677		2542.5	2621.4
						3161.9		
17	2390.0	2265.5	0.8857	0.8896	1.7793		2546.6	2625.3
						5004.3		
17	2410.0	2283.8	0.8894	0.8933	1.7866		2556.6	2639.3
						2624.9		
17	2430.0	2302.1	0.8963	0.9003	1.8005		2557.1	2639.2
						2813.0		
16	2450.0	2320.3	0.9028	0.9068	1.8135		2559.0	2640.5
						2909.8		
16	2470.0	2338.6	0.9091	0.9130	1.8261		2561.4	2642.5
						4993.0		

Stack Summary Listing (4/5) from VSI_003_DVSP_geo_wavefield_z.ldf

Stack Number ACQUISITION_SHOT_NUMBER	Measured Depth [m] CABLE_LENGTH	True Vertical Depth [m] RECEIVER_CORRECTION_Z	Measured Time [s] TRANSIT_TIME	One-way Vertical Time [s] TRANSIT_TIME_SRD	Two-way Vertical Time [s] TRANSIT_TIME_INITIAL	Interval Velocity [m/s] VELOCITY_1	Average Velocity [m/s] VELOCITY_2	RMS Velocity [m/s] VELOCITY_3
16	2490.0	2356.9	0.9127	0.9167	1.8334		2571.1	2656.0
						2938.5		
16	2510.0	2375.1	0.9190	0.9229	1.8458		2573.5	2658.0
						2343.8		
15	2525.0	2388.8	0.9248	0.9288	1.8575		2572.1	2656.1
						2467.9		
15	2545.0	2407.1	0.9322	0.9362	1.8723		2571.3	2654.7
						4953.3		
15	2565.0	2425.4	0.9359	0.9399	1.8797		2580.6	2667.6
						3519.2		
15	2585.0	2443.7	0.9411	0.9450	1.8901		2585.8	2673.0
						1521.3		
13	2590.0	2448.2	0.9441	0.9480	1.8961		2582.4	2670.1
						2777.3		
13	2610.0	2466.4	0.9507	0.9546	1.9092		2583.8	2670.9
						5980.9		
13	2630.0	2484.6	0.9537	0.9576	1.9153		2594.5	2687.8
						3471.4		
13	2650.0	2502.8	0.9590	0.9629	1.9257		2599.3	2692.7
						2265.7		
11	2670.0	2521.1	0.9670	0.9709	1.9419		2596.5	2689.5
						4062.6		
10	2690.0	2539.3	0.9715	0.9754	1.9509		2603.3	2697.4
						4.8		
11	2690.0	2539.3	0.9735	0.9774	1.9548		2598.1	2694.7
						5214.5		
10	2710.0	2557.5	0.9769	0.9809	1.9617		2607.4	2707.8
						-11.6		
11	2710.0	2557.5	0.9761	0.9801	1.9601		2609.5	2708.9
						3318.1		
10	2730.0	2575.6	0.9816	0.9855	1.9710		2613.4	2712.6
						21.3		
11	2730.0	2575.6	0.9820	0.9860	1.9719		2612.3	2712.0
						6259.6		
10	2750.0	2593.7	0.9849	0.9888	1.9777		2622.9	2729.1
						4016.5		
9	2770.0	2611.7	0.9894	0.9933	1.9867		2629.2	2736.3
						2976.2		
9	2790.0	2629.8	0.9955	0.9994	1.9988		2631.4	2737.8
						6111.4		
9	2810.0	2648.0	0.9985	1.0024	2.0048		2641.7	2754.0
						3633.6		
9	2830.0	2666.3	1.0035	1.0074	2.0149		2646.7	2759.1
						2782.1		
8	2850.0	2684.7	1.0101	1.0140	2.0281		2647.5	2759.2
						6615.3		
8	2870.0	2703.1	1.0129	1.0168	2.0337		2658.4	2777.1
						2987.6		
8	2890.0	2721.6	1.0191	1.0230	2.0460		2660.4	2778.4
						4507.6		
8	2910.0	2740.0	1.0232	1.0271	2.0542		2667.8	2787.4
						3303.5		
7	2930.1	2758.6	1.0288	1.0327	2.0654		2671.2	2790.5
						3412.0		
7	2950.1	2777.3	1.0342	1.0382	2.0764		2675.1	2794.1
						8062.1		
7	2970.1	2796.0	1.0366	1.0405	2.0810		2687.1	2816.9
						3999.7		

Stack Summary Listing (5/5) from VSI_003_DVSP_geo_wavefield_z.ldf

Stack Number ACQUISITION_SHOT_NUMBER	Measured Depth [m] CABLE_LENGTH	True Vertical Depth [m] RECEIVER_CORRECTION_Z	Measured Time [s] TRANSIT_TIME	One-way Vertical Time [s] TRANSIT_TIME_SRD	Two-way Vertical Time [s] TRANSIT_TIME_INITIAL	Interval Velocity [m/s] VELOCITY_1	Average Velocity [m/s] VELOCITY_2	RMS Velocity [m/s] VELOCITY_3
7	2990.1	2814.7	1.0413	1.0452	2.0904		2693.0	2823.3
						3287.0		
6	3009.9	2833.5	1.0470	1.0509	2.1018		2696.3	2826.0
						3945.4		
6	3029.9	2852.5	1.0518	1.0557	2.1114		2702.0	2832.1
						5243.0		
6	3049.9	2871.7	1.0554	1.0594	2.1188		2710.7	2844.0
						3884.8		
6	3069.9	2891.1	1.0604	1.0644	2.1288		2716.2	2849.8
						3098.4		
5	3090.0	2910.7	1.0668	1.0707	2.1414		2718.5	2851.3
						4028.7		
5	3110.0	2930.4	1.0716	1.0756	2.1512		2724.4	2857.7
						5504.6		
5	3130.0	2950.1	1.0752	1.0792	2.1583		2733.7	2870.6
						15656.5		
5	3150.0	2969.9	1.0765	1.0804	2.1609		2748.8	2918.4
						3054.5		
4	3170.0	2989.7	1.0830	1.0869	2.1739		2750.6	2919.3
						2728.5		
4	3190.0	3009.6	1.0903	1.0942	2.1884		2750.5	2918.0
						4444.9		
4	3210.0	3029.4	1.0947	1.0987	2.1973		2757.4	2925.9
						3850.5		
4	3230.0	3049.3	1.0999	1.1038	2.2076		2762.5	2930.9

Navigation Message Listing (1/3)

Shot #	Shot Time-UTC	Nav Shot #	Nav Fix #	Nav Shot Time	Gun East [UTM-meter]	Gun North [UTM-meter]	Distance off Line [m]	Along Track Error [m]	Distance off Target [m]
15	12:32:31								
16	12:37:01	72	72	13:38:08	398828	5588639	0	0	0
17	12:39:30	73	73	13:40:37	398822	5588638	0	0	0
18	13:09:39	100	100	14:10:46	398740	5588412	0	0	0
19	13:10:21	101	101	14:11:28	398750	5588418	0	0	0
20	13:10:46	102	102	14:11:53	398751	5588418	0	0	0
21	14:45:56	21	21	15:47:04	398654	5588191	0	0	0
22	14:48:47	22	22	15:49:54	398657	5588192	0	0	0
23	14:49:25	23	23	15:50:33	398652	5588193	0	0	0
24	14:49:53	24	24	15:51:01	398653	5588191	0	0	0
25	14:50:23	25	25	15:51:30	398657	5588189	0	0	0
26	14:51:03	26	26	15:52:10	398654	5588188	0	0	0
27	14:59:09	27	27	16:00:16	398663	5588200	0	0	0
28	15:02:45	28	28	16:03:52	398664	5588199	0	0	0
29	15:03:25	29	29	16:04:32	398665	5588198	0	0	0
30	15:04:01	30	30	16:05:08	398659	5588200	0	0	0
31	15:04:25	31	31	16:05:33	398656	5588199	0	0	0
32	15:04:48	32	32	16:05:55	398659	5588198	0	0	0
33	15:05:10	33	33	16:06:17	398662	5588198	0	0	0
34	15:05:39	34	34	16:06:46	398658	5588199	0	0	0
35	15:11:52	35	35	16:12:59	398662	5588216	0	0	0
36	15:12:12	36	36	16:13:19	398663	5588216	0	0	0
37	15:12:28	37	37	16:13:35	398664	5588216	0	0	0
38	15:12:53	38	38	16:14:01	398664	5588216	0	0	0
39	15:13:24	39	39	16:14:31	398665	5588217	0	0	0
40	15:14:03	40	40	16:15:10	398659	5588218	0	0	0
41	15:14:26	41	41	16:15:33	398658	5588217	0	0	0
42	15:21:52	42	42	16:23:00	398672	5588239	0	0	0
43	15:22:13	43	43	16:23:20	398671	5588239	0	0	0
44	15:22:57	44	44	16:24:04	398672	5588239	0	0	0
45	15:23:12	45	45	16:24:19	398673	5588239	0	0	0
46	15:23:28	46	46	16:24:35	398674	5588239	0	0	0
47	15:29:46	47	47	16:30:54	398680	5588264	0	0	0
48	15:30:07	48	48	16:31:14	398681	5588264	0	0	0
49	15:30:25	49	49	16:31:33	398682	5588264	0	0	0
50	15:30:50	50	50	16:31:57	398682	5588264	0	0	0
51	15:31:16	51	51	16:32:24	398681	5588264	0	0	0
52	15:32:06	52	52	16:33:13	398681	5588263	0	0	0
53	15:32:22	53	53	16:33:30	398681	5588264	0	0	0
54	15:39:25	54	54	16:40:32	398696	5588289	0	0	0
55	15:39:47	55	55	16:40:55	398695	5588289	0	0	0
56	15:40:02	56	56	16:41:10	398695	5588289	0	0	0
57	15:40:43	57	57	16:41:50	398695	5588289	0	0	0
58	15:41:14	58	58	16:42:21	398696	5588290	0	0	0
59	15:47:06	59	59	16:48:13	398706	5588324	0	0	0
60	15:47:38	60	60	16:48:45	398708	5588325	0	0	0
62	15:50:41	61	61	16:51:49	398704	5588322	0	0	0
63	15:51:07	62	62	16:52:14	398706	5588321	0	0	0
64	15:51:22	63	63	16:52:29	398708	5588321	0	0	0
65	15:51:39	64	64	16:52:46	398708	5588321	0	0	0
66	15:51:54	65	65	16:53:01	398707	5588321	0	0	0
67	15:57:47	66	66	16:58:55	398713	5588330	0	0	0
68	15:58:04	67	67	16:59:11	398713	5588329	0	0	0
69	15:58:22	68	68	16:59:29	398713	5588328	0	0	0
70	16:04:15	69	69	17:05:22	398713	5588357	0	0	0
71	16:04:39	71	71	17:05:46	398712	5588357	0	0	0
72	16:04:57	72	72	17:06:04	398713	5588356	0	0	0
73	16:05:25	73	73	17:06:32	398718	5588355	0	0	0
74	16:06:00	74	74	17:07:07	398720	5588353	0	0	0

Navigation Message Listing (2/3)

Shot #	Shot Time-UTC	Nav Shot #	Nav Fix #	Nav Shot Time	Gun East [UTM-meter]	Gun North [UTM-meter]	Distance off Line [m]	Along Track Error [m]	Distance off Target [m]
75	16:14:06	75	75	17:15:13	398725	5588364	0	0	0
76	16:14:42	76	76	17:15:50	398727	5588367	0	0	0
77	16:15:09	77	77	17:16:16	398726	5588369	0	0	0
78	16:26:27	78	78	17:27:34	398730	5588396	0	0	0
79	16:26:56	79	79	17:28:04	398729	5588397	0	0	0
80	16:27:11	80	80	17:28:19	398728	5588397	0	0	0
81	16:27:27	81	81	17:28:34	398726	5588398	0	0	0
82	16:27:47	82	82	17:28:54	398727	5588397	0	0	0
83	16:37:17	83	83	17:38:24	398741	5588420	0	0	0
84	16:37:35	84	84	17:38:42	398742	5588419	0	0	0
85	16:37:51	85	85	17:38:58	398740	5588421	0	0	0
86	16:38:06	86	86	17:39:13	398737	5588421	0	0	0
87	16:38:23	87	87	17:39:30	398738	5588422	0	0	0
89	16:45:33	89	89	17:46:40	398755	5588453	0	0	0
90	16:45:50	90	90	17:46:58	398756	5588453	0	0	0
91	16:46:05	91	91	17:47:13	398756	5588453	0	0	0
92	16:46:20	92	92	17:47:28	398757	5588454	0	0	0
93	16:46:35	93	93	17:47:43	398761	5588454	0	0	0
94	16:52:30	94	94	17:53:37	398767	5588484	0	0	0
95	16:52:45	95	95	17:53:52	398769	5588485	0	0	0
96	16:53:00	96	96	17:54:07	398770	5588485	0	0	0
97	16:53:15	97	97	17:54:22	398771	5588484	0	0	0
98	16:53:30	98	98	17:54:37	398772	5588484	0	0	0
99	16:59:00	99	99	18:00:08	398777	5588515	0	0	0
100	16:59:22	100	100	18:00:29	398780	5588515	0	0	0
101	16:59:37	101	101	18:00:44	398779	5588515	0	0	0
102	17:00:04	102	102	18:01:11	398778	5588515	0	0	0
103	17:00:19	103	103	18:01:26	398779	5588515	0	0	0
104	17:05:33	104	104	18:06:41	398786	5588547	0	0	0
105	17:06:10	105	105	18:07:17	398785	5588546	0	0	0
106	17:06:25	106	106	18:07:33	398783	5588545	0	0	0
107	17:06:41	107	107	18:07:49	398780	5588544	0	0	0
108	17:07:06	108	108	18:08:14	398785	5588543	0	0	0
109	17:12:33	109	109	18:13:41	398793	5588570	0	0	0
110	17:12:48	110	110	18:13:56	398796	5588571	0	0	0
111	17:13:03	111	111	18:14:11	398798	5588570	0	0	0
112	17:13:18	112	112	18:14:26	398799	5588571	0	0	0
113	17:13:34	113	113	18:14:41	398799	5588572	0	0	0
114	17:18:41	114	114	18:19:48	398799	5588623	0	0	0
115	17:18:56	115	115	18:20:03	398797	5588624	0	0	0
116	17:19:12	116	116	18:20:19	398801	5588624	0	0	0
117	17:19:27	117	117	18:20:34	398811	5588623	0	0	0
118	17:19:50	118	118	18:20:57	398816	5588621	0	0	0
119	17:25:25	119	119	18:26:32	398819	5588637	0	0	0
120	17:25:40	120	120	18:26:47	398819	5588636	0	0	0
121	17:25:55	121	121	18:27:02	398821	5588636	0	0	0
122	17:26:29	122	122	18:27:36	398825	5588635	0	0	0
123	17:26:52	123	123	18:27:59	398821	5588635	0	0	0
124	17:32:50	124	124	18:33:57	398825	5588656	0	0	0
125	17:33:05	125	125	18:34:12	398826	5588660	0	0	0
126	17:33:20	126	126	18:34:27	398826	5588657	0	0	0
127	17:33:35	127	127	18:34:42	398826	5588654	0	0	0
128	17:33:50	128	128	18:34:57	398828	5588654	0	0	0
129	17:34:08	129	129	18:35:16	398828	5588652	0	0	0
130	17:41:27	130	130	18:42:35	398842	5588683	0	0	0
131	17:41:53	131	131	18:43:00	398836	5588684	0	0	0
133	17:44:32	133	133	18:45:39	398835	5588685	0	0	0
134	17:45:04	134	134	18:46:11	398841	5588687	0	0	0
135	17:45:19	135	135	18:46:26	398842	5588688	0	0	0

Navigation Message Listing (3/3)

Shot #	Shot Time-UTC	Nav Shot #	Nav Fix #	Nav Shot Time	Gun East [UTM-meter]	Gun North [UTM-meter]	Distance off Line [m]	Along Track Error [m]	Distance off Target [m]
136	18:37:46	136	136	19:38:53	398850	5588722	0	0	0
137	18:38:03	137	137	19:39:10	398851	5588722	0	0	0
138	18:38:23	138	138	19:39:31	398854	5588724	0	0	0
139	18:38:38	139	139	19:39:46	398856	5588725	0	0	0
140	18:38:53	140	140	19:40:01	398855	5588725	0	0	0
141	18:47:10	141	141	19:48:17	398878	5588752	0	0	0
142	18:47:25	142	142	19:48:32	398878	5588750	0	0	0
143	18:47:40	143	143	19:48:47	398878	5588748	0	0	0
144	18:47:55	144	144	19:49:02	398880	5588747	0	0	0
145	18:48:10	145	145	19:49:18	398882	5588748	0	0	0
146	18:57:42	146	146	19:58:49	398890	5588760	0	0	0
147	18:57:57	147	147	19:59:04	398891	5588761	0	0	0
148	18:58:12	148	148	19:59:19	398892	5588761	0	0	0
149	18:58:27	149	149	19:59:34	398893	5588760	0	0	0
150	18:58:42	150	150	19:59:49	398893	5588762	0	0	0
151	19:05:32	151	151	20:06:39	398891	5588744	0	0	0
152	19:05:47	152	152	20:06:54	398892	5588748	0	0	0
153	19:06:02	153	153	20:07:10	398892	5588747	0	0	0
154	19:06:17	154	154	20:07:25	398890	5588747	0	0	0
155	19:06:32	155	155	20:07:40	398888	5588750	0	0	0
156	19:12:30	156	156	20:13:38	398894	5588756	0	0	0
157	19:12:45	157	157	20:13:53	398894	5588762	0	0	0
158	19:13:05	158	158	20:14:12	398897	5588760	0	0	0
159	19:13:20	159	159	20:14:27	398886	5588762	0	0	0
160	19:13:40	160	160	20:14:47	398880	5588767	0	0	0
161	19:19:18	161	161	20:20:26	398893	5588756	0	0	0
162	19:19:33	162	162	20:20:41	398890	5588757	0	0	0
163	19:19:53	163	163	20:21:00	398888	5588761	0	0	0
164	19:20:08	164	164	20:21:15	398889	5588758	0	0	0
165	19:20:23	165	165	20:21:30	398892	5588760	0	0	0
166	19:25:59	166	166	20:27:06	398889	5588759	0	0	0
167	19:26:14	167	167	20:27:21	398889	5588759	0	0	0
168	19:26:29	168	168	20:27:36	398890	5588761	0	0	0
169	19:26:44	169	169	20:27:51	398891	5588761	0	0	0
170	19:27:03	170	170	20:28:10	398890	5588762	0	0	0
171	19:44:44	171	171	20:45:51	398899	5588766	0	0	0
172	19:44:59	172	172	20:46:06	398895	5588765	0	0	0
173	19:45:20	173	173	20:46:28	398897	5588764	0	0	0
174	19:45:39	174	174	20:46:46	398894	5588769	0	0	0
175	19:45:55	175	175	20:47:02	398888	5588761	0	0	0
176	19:52:58	176	176	20:54:05	398899	5588766	0	0	0
177	19:53:13	177	177	20:54:20	398898	5588767	0	0	0
178	19:53:28	178	178	20:54:35	398895	5588768	0	0	0
179	19:53:46	179	179	20:54:54	398894	5588759	0	0	0
180	19:54:01	180	180	20:55:09	398897	5588768	0	0	0
181	19:59:16	181	181	21:00:24	398895	5588766	0	0	0
182	19:59:31	182	182	21:00:39	398896	5588770	0	0	0
183	19:59:46	183	183	21:00:54	398893	5588758	0	0	0
184	20:00:01	184	184	21:01:09	398891	5588757	0	0	0
185	20:00:17	185	185	21:01:24	398898	5588773	0	0	0
186	20:08:45	186	186	21:09:52	398899	5588766	0	0	0
187	20:09:47	187	187	21:10:54	398898	5588762	0	0	0
188	20:10:21	188	188	21:11:29	398898	5588757	0	0	0
189	20:21:09	189	189	21:22:16	398898	5588757	0	0	0
190	20:21:37	190	190	21:22:45	398897	5588771	0	0	0
191	20:21:52	191	191	21:23:00	398895	5588768	0	0	0
192	20:22:09	192	192	21:23:16	398899	5588771	0	0	0
193	20:22:30	193	193	21:23:37	398899	5588754	0	0	0

Observer's Note (1/4)

Well depth [m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
464.9	21:33:51	ENLO	1			
464.9	21:34:18	ENHI	2			
464.9	21:34:38	ETHD	3			
464.9	21:35:38	DRNG	4			
464.9	21:35:58	GA02	5			
464.9	21:36:10	GA04	6			
464.9	21:36:22	GA08	7			
464.9	21:36:34	GA16	8			
464.9	21:36:46	GA32	9			
464.9	21:38:08	XTLK	10			
464.9	21:38:30	XTLK	11			
464.9	21:38:51	XTLK	12			
464.9	21:39:20	EIMP	13			
1950.0	22:31:59	BKGD	14			
1950.0	22:32:31	SHOT	15	2	DVSP	Check shot - M1950 GP=1890 Depth = 5784
1950.0	22:37:01	SHOT	16	2	DVSP	-- GP=Gun Pressure, Depth=Gun Depth
1950.0	22:39:30	SHOT	17	2	DVSP	Check shot - M1950 GP=1890 Depth = 5784
2509.2	23:09:39	SHOT	18	3	DVSP	Check shot - M1950 GP=1644 Depth = 5867
2509.2	23:10:21	SHOT	19	3	DVSP	
2509.2	23:10:46	SHOT	20	3	DVSP	Check shot - M1950 GP=1644 Depth = 5867
3230.0	00:45:56	SHOT	21	4	DVSP	Station 01 - M3230 GP=1922 Depth = 6553
3230.0	00:48:47	SHOT	22	4	DVSP	-- Noisy shuttle - Re-anchoring
3230.0	00:49:25	SHOT	23	4	DVSP	
3230.0	00:49:53	SHOT	24	4	DVSP	
3230.0	00:50:23	SHOT	25	4	DVSP	
3230.0	00:51:03	SHOT	26	4	DVSP	Station 01 - M3230 GP=1922 Depth = 6553
3150.0	00:59:09	SHOT	27	5	DVSP	Station 02 - M3150 GP=1910 Depth = 6299
3150.0	01:02:45	SHOT	28	5	DVSP	
3150.0	01:03:25	SHOT	29	5	DVSP	
3150.0	01:04:01	SHOT	30	5	DVSP	
3150.0	01:04:25	SHOT	31	5	DVSP	
3150.0	01:04:48	SHOT	32	5	DVSP	
3150.0	01:05:10	SHOT	33	5	DVSP	
3150.0	01:05:39	SHOT	34	5	DVSP	Station 02 - M3150 GP=1906 Depth = 6299
3069.9	01:11:52	SHOT	35	6	DVSP	Station 03 - M3070 GP=1898 Depth = 6324
3069.9	01:12:12	SHOT	36	6	DVSP	-- Affected signal on shuttle 2
3069.9	01:12:28	SHOT	37	6	DVSP	
3069.9	01:12:53	SHOT	38	6	DVSP	
3069.9	01:13:24	SHOT	39	6	DVSP	
3069.9	01:14:03	SHOT	40	6	DVSP	
3069.9	01:14:26	SHOT	41	6	DVSP	Station 03 - M3070 GP=1898 Depth = 6324
2990.1	01:21:52	SHOT	42	7	DVSP	Station 04 - M2990 GP=1894 Depth = 6400
2990.1	01:22:13	SHOT	43	7	DVSP	
2990.1	01:22:57	SHOT	44	7	DVSP	
2990.1	01:23:12	SHOT	45	7	DVSP	
2990.1	01:23:28	SHOT	46	7	DVSP	Station 04 - M2990 GP=1894 Depth = 6400
2910.0	01:29:46	SHOT	47	8	DVSP	Station 05 - M2910 GP=1888 Depth = 6299
2910.0	01:30:07	SHOT	48	8	DVSP	-- Affected signal on shuttle 2
2910.0	01:30:25	SHOT	49	8	DVSP	
2910.0	01:30:50	SHOT	50	8	DVSP	
2910.0	01:31:16	SHOT	51	8	DVSP	
2910.0	01:32:06	SHOT	52	8	DVSP	
2910.0	01:32:22	SHOT	53	8	DVSP	Station 05 - M2910 GP=1888 Depth = 6299
2830.0	01:39:25	SHOT	54	9	DVSP	Station 06 - M2830 GP=1884 Depth = 6578
2830.0	01:39:47	SHOT	55	9	DVSP	
2830.0	01:40:02	SHOT	56	9	DVSP	
2830.0	01:40:43	SHOT	57	9	DVSP	
2830.0	01:41:14	SHOT	58	9	DVSP	Station 06 - M2830 GP=1884 Depth = 6578
2750.0	01:47:06	SHOT	59	10	DVSP	Station 07 - M2750 GP=1884 Depth = 6578

Observer's Note (2/4)

Well depth [m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
2750.0	01:47:38	SHOT	60	10	DVSP	
2750.0	01:48:10	BKGD	61			
2750.0	01:50:41	SHOT	62	10	DVSP	
2750.0	01:51:07	SHOT	63	10	DVSP	
2750.0	01:51:22	SHOT	64	10	DVSP	
2750.0	01:51:39	SHOT	65	10	DVSP	
2750.0	01:51:54	SHOT	66	10	DVSP	Station 07 - M2750 GP=1884 Depth = 6578
2730.0	01:57:47	SHOT	67	11	DVSP	Station 7.5- M2730 GP=1878 Depth = 5968
2730.0	01:58:04	SHOT	68	11	DVSP	
2730.0	01:58:22	SHOT	69	11	DVSP	Station 7.5- M2730 GP=1878 Depth = 5968
2670.0	02:04:15	SHOT	70	12	DVSP	Station 08 - M2670 GP=1878 Depth = 6603
2670.0	02:04:39	SHOT	71	12	DVSP	
2670.0	02:04:57	SHOT	72	12	DVSP	
2670.0	02:05:25	SHOT	73	12	DVSP	
2670.0	02:06:00	SHOT	74	12	DVSP	Station 08 - M2670 GP=1878 Depth = 6603
2650.0	02:14:06	SHOT	75	13	DVSP	Station 8.5- M2650 GP=1872 Depth = 6248
2650.0	02:14:42	SHOT	76	13	DVSP	
2650.0	02:15:09	SHOT	77	13	DVSP	Station 8.5- M2650 GP=1872 Depth = 6248
2585.0	02:26:27	SHOT	78	15	DVSP	Station 09 - M2590 GP=1872 Depth = 6426
2585.0	02:26:56	SHOT	79	15	DVSP	-- This station moved 5 m up due to casing
2585.0	02:27:11	SHOT	80	15	DVSP	
2585.0	02:27:27	SHOT	81	15	DVSP	
2585.0	02:27:47	SHOT	82	15	DVSP	Station 09 - M2590 GP=1872 Depth = 6426
2510.0	02:37:17	SHOT	83	16	DVSP	Station 10 - M2510 GP=2006 Depth = 6553
2510.0	02:37:35	SHOT	84	16	DVSP	
2510.0	02:37:51	SHOT	85	16	DVSP	
2510.0	02:38:06	SHOT	86	16	DVSP	
2510.0	02:38:23	SHOT	87	16	DVSP	Station 10 - M2510 GP=2006 Depth = 6553
2430.0	02:45:33	SHOT	89	17	DVSP	Station 11 - M2430 GP=1990 Depth = 6553
2430.0	02:45:50	SHOT	90	17	DVSP	
2430.0	02:46:05	SHOT	91	17	DVSP	
2430.0	02:46:20	SHOT	92	17	DVSP	
2430.0	02:46:35	SHOT	93	17	DVSP	Station 11 - M2430 GP=1990 Depth = 6553
2350.0	02:52:30	SHOT	94	18	DVSP	Station 12 - M2350 GP=1986 Depth = 6299
2350.0	02:52:45	SHOT	95	18	DVSP	
2350.0	02:53:00	SHOT	96	18	DVSP	
2350.0	02:53:15	SHOT	97	18	DVSP	
2350.0	02:53:30	SHOT	98	18	DVSP	Station 12 - M2350 GP=1986 Depth = 6299
2270.0	02:59:00	SHOT	99	19	DVSP	Station 13 - M2270 GP=N/A Depth = N/A
2270.0	02:59:22	SHOT	100	19	DVSP	N/A = not recieved on TGS-8
2270.0	02:59:37	SHOT	101	19	DVSP	
2270.0	03:00:04	SHOT	102	19	DVSP	
2270.0	03:00:19	SHOT	103	19	DVSP	Station 13 - M2270 GP=N/A Depth = N/A
2190.0	03:05:33	SHOT	104	20	DVSP	Station 14 - M2190 GP=N/A Depth = 5968
2190.0	03:06:10	SHOT	105	20	DVSP	
2190.0	03:06:25	SHOT	106	20	DVSP	
2190.0	03:06:41	SHOT	107	20	DVSP	
2190.0	03:07:06	SHOT	108	20	DVSP	Station 14 - M2190 GP=N/A Depth = 5968
2110.0	03:12:33	SHOT	109	21	DVSP	Station 15 - M2110 GP=1652 Depth = 6553
2110.0	03:12:48	SHOT	110	21	DVSP	
2110.0	03:13:03	SHOT	111	21	DVSP	
2110.0	03:13:18	SHOT	112	21	DVSP	
2110.0	03:13:34	SHOT	113	21	DVSP	Station 15 - M2110 GP=1652 Depth = 6553
2030.0	03:18:41	SHOT	114	22	DVSP	Station 16 - M2030 GP=1966 Depth = 5994
2030.0	03:18:56	SHOT	115	22	DVSP	
2030.0	03:19:12	SHOT	116	22	DVSP	
2030.0	03:19:27	SHOT	117	22	DVSP	
2030.0	03:19:50	SHOT	118	22	DVSP	Station 16 - M2030 GP=1966 Depth = 5994
1950.0	03:25:25	SHOT	119	23	DVSP	Station 17 - M1950 GP=1954 Depth = 6070

Observer's Note (3/4)

Well depth [m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
1950.0	03:25:40	SHOT	120	23	DVSP	
1950.0	03:25:55	SHOT	121	23	DVSP	
1950.0	03:26:29	SHOT	122	23	DVSP	
1950.0	03:26:52	SHOT	123	23	DVSP	Station 17 - M1950 GP=1954 Depth = 6070
1870.0	03:32:50	SHOT	124	24	DVSP	Station 18 - M1870 GP=1730 Depth = 6299
1870.0	03:33:05	SHOT	125	24	DVSP	
1870.0	03:33:20	SHOT	126	24	DVSP	
1870.0	03:33:35	SHOT	127	24	DVSP	
1870.0	03:33:50	SHOT	128	24	DVSP	
1870.0	03:34:08	SHOT	129	24	DVSP	Station 18 - M1870 GP=1730 Depth = 6299
1790.0	03:41:27	SHOT	130	25	DVSP	Station 19 - M1790 GP=1958 Depth = 6527
1790.0	03:41:53	SHOT	131	25	DVSP	
1790.0	03:44:32	SHOT	133	25	DVSP	
1790.0	03:45:04	SHOT	134	25	DVSP	
1790.0	03:45:19	SHOT	135	25	DVSP	Station 19 - M1790 GP=1958 Depth = 6527
1710.0	04:37:46	SHOT	136	26	DVSP	Station 20 - M1710 GP=1924 Depth = 6070
1710.0	04:38:03	SHOT	137	26	DVSP	
1710.0	04:38:23	SHOT	138	26	DVSP	
1710.0	04:38:38	SHOT	139	26	DVSP	
1710.0	04:38:53	SHOT	140	26	DVSP	Station 20 - M1710 GP=1924 Depth = 6070
1630.0	04:47:10	SHOT	141	27	DVSP	Station 21 - M1630 GP=1898 Depth = 6146
1630.0	04:47:25	SHOT	142	27	DVSP	
1630.0	04:47:40	SHOT	143	27	DVSP	
1630.0	04:47:55	SHOT	144	27	DVSP	
1630.0	04:48:10	SHOT	145	27	DVSP	Station 21 - M1630 GP=1898 Depth = 6146
1550.0	04:57:42	SHOT	146	28	DVSP	Station 22 - M1550 GP=N/A Depth = 6146
1550.0	04:57:57	SHOT	147	28	DVSP	
1550.0	04:58:12	SHOT	148	28	DVSP	
1550.0	04:58:27	SHOT	149	28	DVSP	
1550.0	04:58:42	SHOT	150	28	DVSP	Station 22 - M1550 GP=N/A Depth = 6146
1470.0	05:05:32	SHOT	151	29	DVSP	Station 23 - M1470 GP=N/A Depth = 6019
1470.0	05:05:47	SHOT	152	29	DVSP	
1470.0	05:06:02	SHOT	153	29	DVSP	
1470.0	05:06:17	SHOT	154	29	DVSP	
1470.0	05:06:32	SHOT	155	29	DVSP	Station 23 - M1470 GP=N/A Depth = 6019
1390.0	05:12:30	SHOT	156	30	DVSP	Station 24 - M1390 GP=N/A Depth = 5994
1390.0	05:12:45	SHOT	157	30	DVSP	
1390.0	05:13:05	SHOT	158	30	DVSP	
1390.0	05:13:20	SHOT	159	30	DVSP	
1390.0	05:13:40	SHOT	160	30	DVSP	Station 24 - M1390 GP=N/A Depth = 5994
1309.9	05:19:18	SHOT	161	31	DVSP	Station 25 - M1310 GP=N/A Depth = 6629
1309.9	05:19:33	SHOT	162	31	DVSP	
1309.9	05:19:53	SHOT	163	31	DVSP	
1309.9	05:20:08	SHOT	164	31	DVSP	
1309.9	05:20:23	SHOT	165	31	DVSP	Station 25 - M1310 GP=N/A Depth = 6629
1230.0	05:25:59	SHOT	166	32	DVSP	Station 26 - M1230 GP=N/A Depth = 6299
1230.0	05:26:14	SHOT	167	32	DVSP	
1230.0	05:26:29	SHOT	168	32	DVSP	
1230.0	05:26:44	SHOT	169	32	DVSP	
1230.0	05:27:03	SHOT	170	32	DVSP	Station 26 - M1230 GP=N/A Depth = 6299
1150.0	05:44:44	SHOT	171	33	DVSP	Station 27 - M1150 GP=N/A Depth = 6121
1150.0	05:44:59	SHOT	172	33	DVSP	
1150.0	05:45:20	SHOT	173	33	DVSP	
1150.0	05:45:39	SHOT	174	33	DVSP	
1150.0	05:45:55	SHOT	175	33	DVSP	Station 27 - M1150 GP=N/A Depth = 6121
1070.0	05:52:58	SHOT	176	34	DVSP	Station 28 - M1070 GP=N/A Depth = 5181
1070.0	05:53:13	SHOT	177	34	DVSP	
1070.0	05:53:28	SHOT	178	34	DVSP	
1070.0	05:53:46	SHOT	179	34	DVSP	

Observer's Note (4/4)

Well depth [m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
1070.0	05:54:01	SHOT	180	34	DVSP	Station 28 - M1070 GP=N/A Depth = 5181
990.0	05:59:16	SHOT	181	35	DVSP	Station 29 - M0990 GP=N/A Depth = N/A
990.0	05:59:31	SHOT	182	35	DVSP	
990.0	05:59:46	SHOT	183	35	DVSP	
990.0	06:00:01	SHOT	184	35	DVSP	
990.0	06:00:17	SHOT	185	35	DVSP	Station 29 - M0990 GP=N/A Depth = N/A
910.0	06:08:45	SHOT	186	36	DVSP	Station 30 - M0910 GP=N/A Depth = N/A
910.0	06:09:47	SHOT	187	36	DVSP	-- Casing arrivals
910.0	06:10:21	SHOT	188	36	DVSP	Station 30 - M0910 GP=N/A Depth = N/A
830.0	06:21:09	SHOT	189	37	DVSP	Station 31 - M0830 GP=N/A Depth = N/A
830.0	06:21:37	SHOT	190	37	DVSP	-- Strong casing arrivals - ending survey
830.0	06:21:52	SHOT	191	37	DVSP	
830.0	06:22:09	SHOT	192	37	DVSP	
830.0	06:22:30	SHOT	193	37	DVSP	Station 31 - M0830 GP=N/A Depth = N/A

VSI Seismic Evaluation Report

ELECTRICAL NOISE LOW TEST

2004/07/14 12:33:51

Shot No: 1 **Station Depth: 464.93 m**

Evaluation Item	Shuttle	Channel	Value	Unit	Lower Limit	Upper Limit	Result
DC Offset	1	X	-25.1956	milli V	-100.0000	100.0000	PASS
RMS Noise Level	1	X	0.1238	micro V	-	0.5000	PASS
Noise Peak	1	X	0.4445	micro V	-	2.0000	PASS
DC Offset	1	Y	-25.1533	milli V	-100.0000	100.0000	PASS
RMS Noise Level	1	Y	0.1254	micro V	-	0.5000	PASS
Noise Peak	1	Y	0.5385	micro V	-	2.0000	PASS
DC Offset	1	Z	-25.1632	milli V	-100.0000	100.0000	PASS
RMS Noise Level	1	Z	0.1215	micro V	-	0.5000	PASS
Noise Peak	1	Z	0.4644	micro V	-	2.0000	PASS
DC Offset	2	X	-25.1431	milli V	-100.0000	100.0000	PASS
RMS Noise Level	2	X	0.1197	micro V	-	0.5000	PASS
Noise Peak	2	X	0.4967	micro V	-	2.0000	PASS
DC Offset	2	Y	-25.1983	milli V	-100.0000	100.0000	PASS
RMS Noise Level	2	Y	0.1209	micro V	-	0.5000	PASS
Noise Peak	2	Y	0.3850	micro V	-	2.0000	PASS
DC Offset	2	Z	-25.2152	milli V	-100.0000	100.0000	PASS
RMS Noise Level	2	Z	0.1211	micro V	-	0.5000	PASS
Noise Peak	2	Z	0.4385	micro V	-	2.0000	PASS
DC Offset	3	X	-25.3375	milli V	-100.0000	100.0000	PASS
RMS Noise Level	3	X	0.1209	micro V	-	0.5000	PASS
Noise Peak	3	X	0.4134	micro V	-	2.0000	PASS
DC Offset	3	Y	-25.2494	milli V	-100.0000	100.0000	PASS
RMS Noise Level	3	Y	0.1193	micro V	-	0.5000	PASS
Noise Peak	3	Y	0.4440	micro V	-	2.0000	PASS
DC Offset	3	Z	-25.1092	milli V	-100.0000	100.0000	PASS
RMS Noise Level	3	Z	0.1217	micro V	-	0.5000	PASS
Noise Peak	3	Z	0.4387	micro V	-	2.0000	PASS
DC Offset	4	X	-25.1526	milli V	-100.0000	100.0000	PASS
RMS Noise Level	4	X	0.1206	micro V	-	0.5000	PASS
Noise Peak	4	X	0.4434	micro V	-	2.0000	PASS
DC Offset	4	Y	-25.3437	milli V	-100.0000	100.0000	PASS
RMS Noise Level	4	Y	0.1240	micro V	-	0.5000	PASS
Noise Peak	4	Y	0.4389	micro V	-	2.0000	PASS
DC Offset	4	Z	-25.2297	milli V	-100.0000	100.0000	PASS
RMS Noise Level	4	Z	0.1258	micro V	-	0.5000	PASS
Noise Peak	4	Z	0.5011	micro V	-	2.0000	PASS

ELECTRICAL NOISE HIGH TEST

2004/07/14 12:34:18

Shot No: 2 **Station Depth: 464.93 m**

Evaluation Item	Shuttle	Channel	Value	Unit	Lower Limit	Upper Limit	Result
DC Offset	1	X	-25.1463	milli V	-100.0000	100.0000	PASS
RMS Noise Level	1	X	0.1206	micro V	-	0.5000	PASS
Noise Peak	1	X	0.4090	micro V	-	2.0000	PASS
DC Offset	1	Y	-24.9561	milli V	-100.0000	100.0000	PASS
RMS Noise Level	1	Y	0.1230	micro V	-	0.5000	PASS
Noise Peak	1	Y	0.4868	micro V	-	2.0000	PASS
DC Offset	1	Z	-25.0061	milli V	-100.0000	100.0000	PASS
RMS Noise Level	1	Z	0.1212	micro V	-	0.5000	PASS
Noise Peak	1	Z	0.4291	micro V	-	2.0000	PASS
DC Offset	2	X	-24.8792	milli V	-100.0000	100.0000	PASS
RMS Noise Level	2	X	0.1232	micro V	-	0.5000	PASS
Noise Peak	2	X	0.4195	micro V	-	2.0000	PASS
DC Offset	2	Y	-24.8228	milli V	-100.0000	100.0000	PASS
RMS Noise Level	2	Y	0.1239	micro V	-	0.5000	PASS
Noise Peak	2	Y	0.4674	micro V	-	2.0000	PASS
DC Offset	2	Z	-25.1681	milli V	-100.0000	100.0000	PASS
RMS Noise Level	2	Z	0.1254	micro V	-	0.5000	PASS
Noise Peak	2	Z	0.4688	micro V	-	2.0000	PASS
DC Offset	3	X	-25.3224	milli V	-100.0000	100.0000	PASS
RMS Noise Level	3	X	0.1205	micro V	-	0.5000	PASS
Noise Peak	3	X	0.4307	micro V	-	2.0000	PASS

DC Offset	3	Y	-24.9995	milli V	-100.0000	100.0000	PASS
RMS Noise Level	3	Y	0.1210	micro V	-	0.5000	PASS
Noise Peak	3	Y	0.4703	micro V	-	2.0000	PASS
DC Offset	3	Z	-24.6644	milli V	-100.0000	100.0000	PASS
RMS Noise Level	3	Z	0.1199	micro V	-	0.5000	PASS
Noise Peak	3	Z	0.4498	micro V	-	2.0000	PASS
DC Offset	4	X	-25.2021	milli V	-100.0000	100.0000	PASS
RMS Noise Level	4	X	0.1177	micro V	-	0.5000	PASS
Noise Peak	4	X	0.4468	micro V	-	2.0000	PASS
DC Offset	4	Y	-25.6669	milli V	-100.0000	100.0000	PASS
RMS Noise Level	4	Y	0.1212	micro V	-	0.5000	PASS
Noise Peak	4	Y	0.4339	micro V	-	2.0000	PASS
DC Offset	4	Z	-25.1647	milli V	-100.0000	100.0000	PASS
RMS Noise Level	4	Z	0.1217	micro V	-	0.5000	PASS
Noise Peak	4	Z	0.4580	micro V	-	2.0000	PASS

ELECTRICAL DISTORTION TEST

2004/07/14 12:34:38

Shot No: 3 **Station Depth: 464.93 m**

Evaluation Item	Shuttle	Channel	Value	Unit	Lower Limit	Upper Limit	Result
Total Harmonic Distortion	1	X	-106.5896	dB	-	-90.0000	PASS
Total Harmonic Distortion	1	Y	-107.2178	dB	-	-90.0000	PASS
Total Harmonic Distortion	1	Z	-104.8712	dB	-	-90.0000	PASS
Total Harmonic Distortion	2	X	-107.6332	dB	-	-90.0000	PASS
Total Harmonic Distortion	2	Y	-109.2593	dB	-	-90.0000	PASS
Total Harmonic Distortion	2	Z	-113.2058	dB	-	-90.0000	PASS
Total Harmonic Distortion	3	X	-101.6860	dB	-	-90.0000	PASS
Total Harmonic Distortion	3	Y	-103.2160	dB	-	-90.0000	PASS
Total Harmonic Distortion	3	Z	-99.7727	dB	-	-90.0000	PASS
Total Harmonic Distortion	4	X	-98.5585	dB	-	-90.0000	PASS
Total Harmonic Distortion	4	Y	-100.0935	dB	-	-90.0000	PASS
Total Harmonic Distortion	4	Z	-97.0349	dB	-	-90.0000	PASS

SYSTEM DYNAMIC RANGE TEST

2004/07/14 12:35:38

Shot No: 4 **Station Depth: 464.93 m**

Evaluation Item	Shuttle	Channel	Value	Unit	Lower Limit	Upper Limit	Result
System Dynamic Range	1	X	107.5348	dB	103.0000	-	PASS
System Dynamic Range	1	Y	107.4358	dB	103.0000	-	PASS
System Dynamic Range	1	Z	107.1812	dB	103.0000	-	PASS
System Dynamic Range	2	X	107.4561	dB	103.0000	-	PASS
System Dynamic Range	2	Y	107.2603	dB	103.0000	-	PASS
System Dynamic Range	2	Z	106.7915	dB	103.0000	-	PASS
System Dynamic Range	3	X	107.4848	dB	103.0000	-	PASS
System Dynamic Range	3	Y	107.4454	dB	103.0000	-	PASS
System Dynamic Range	3	Z	107.2405	dB	103.0000	-	PASS
System Dynamic Range	4	X	107.6880	dB	103.0000	-	PASS
System Dynamic Range	4	Y	107.4184	dB	103.0000	-	PASS
System Dynamic Range	4	Z	107.5491	dB	103.0000	-	PASS

AMPLIFIER GAIN 2 TEST

2004/07/14 12:35:58

Shot No: 5 **Station Depth: 464.93 m**

Evaluation Item	Shuttle	Channel	Value	Unit	Lower Limit	Upper Limit	Result
Gain Accuracy	1	X	0.1463	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	1	X	0.0000	dB	-0.5000	0.5000	PASS
Gain Accuracy	1	Y	0.1407	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	1	Y	0.0000	dB	-0.5000	0.5000	PASS
Gain Accuracy	1	Z	0.1414	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	1	Z	0.0000	dB	-0.5000	0.5000	PASS
Gain Accuracy	2	X	0.1422	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	2	X	0.0000	dB	-0.5000	0.5000	PASS
Gain Accuracy	2	Y	0.1399	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	2	Y	0.0000	dB	-0.5000	0.5000	PASS
Gain Accuracy	2	Z	0.1496	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	2	Z	0.0000	dB	-0.5000	0.5000	PASS
Gain Accuracy	3	X	0.1118	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	3	X	0.0000	dB	-0.5000	0.5000	PASS

Gain Accuracy	3	Y	0.1174	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	3	Y	0.0000	dB	-0.5000	0.5000	PASS
Gain Accuracy	3	Z	0.1133	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	3	Z	0.0000	dB	-0.5000	0.5000	PASS
Gain Accuracy	4	X	0.1050	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	4	X	0.0000	dB	-0.5000	0.5000	PASS
Gain Accuracy	4	Y	0.1220	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	4	Y	0.0000	dB	-0.5000	0.5000	PASS
Gain Accuracy	4	Z	0.1215	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	4	Z	0.0000	dB	-0.5000	0.5000	PASS

AMPLIFIER GAIN 4 TEST

2004/07/14 12:36:10

Shot No: 6 **Station Depth: 464.93 m**

Evaluation Item	Shuttle	Channel	Value	Unit	Lower Limit	Upper Limit	Result
Gain Accuracy	1	X	0.1481	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	1	X	-0.0018	dB	-0.5000	0.5000	PASS
Gain Accuracy	1	Y	0.1419	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	1	Y	-0.0012	dB	-0.5000	0.5000	PASS
Gain Accuracy	1	Z	0.1402	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	1	Z	0.0011	dB	-0.5000	0.5000	PASS
Gain Accuracy	2	X	0.1420	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	2	X	0.0002	dB	-0.5000	0.5000	PASS
Gain Accuracy	2	Y	0.1407	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	2	Y	-0.0008	dB	-0.5000	0.5000	PASS
Gain Accuracy	2	Z	0.1543	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	2	Z	-0.0047	dB	-0.5000	0.5000	PASS
Gain Accuracy	3	X	0.1105	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	3	X	0.0013	dB	-0.5000	0.5000	PASS
Gain Accuracy	3	Y	0.1188	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	3	Y	-0.0014	dB	-0.5000	0.5000	PASS
Gain Accuracy	3	Z	0.1122	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	3	Z	0.0012	dB	-0.5000	0.5000	PASS
Gain Accuracy	4	X	0.1026	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	4	X	0.0024	dB	-0.5000	0.5000	PASS
Gain Accuracy	4	Y	0.1195	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	4	Y	0.0026	dB	-0.5000	0.5000	PASS
Gain Accuracy	4	Z	0.1196	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	4	Z	0.0019	dB	-0.5000	0.5000	PASS

AMPLIFIER GAIN 8 TEST

2004/07/14 12:36:22

Shot No: 7 **Station Depth: 464.93 m**

Evaluation Item	Shuttle	Channel	Value	Unit	Lower Limit	Upper Limit	Result
Gain Accuracy	1	X	0.1506	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	1	X	-0.0043	dB	-0.5000	0.5000	PASS
Gain Accuracy	1	Y	0.1423	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	1	Y	-0.0015	dB	-0.5000	0.5000	PASS
Gain Accuracy	1	Z	0.1403	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	1	Z	0.0011	dB	-0.5000	0.5000	PASS
Gain Accuracy	2	X	0.1424	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	2	X	-0.0002	dB	-0.5000	0.5000	PASS
Gain Accuracy	2	Y	0.1424	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	2	Y	-0.0025	dB	-0.5000	0.5000	PASS
Gain Accuracy	2	Z	0.1583	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	2	Z	-0.0087	dB	-0.5000	0.5000	PASS
Gain Accuracy	3	X	0.1084	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	3	X	0.0035	dB	-0.5000	0.5000	PASS
Gain Accuracy	3	Y	0.1195	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	3	Y	-0.0022	dB	-0.5000	0.5000	PASS
Gain Accuracy	3	Z	0.1130	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	3	Z	0.0003	dB	-0.5000	0.5000	PASS
Gain Accuracy	4	X	0.1027	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	4	X	0.0023	dB	-0.5000	0.5000	PASS
Gain Accuracy	4	Y	0.1194	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	4	Y	0.0027	dB	-0.5000	0.5000	PASS
Gain Accuracy	4	Z	0.1216	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	4	Z	-0.0001	dB	-0.5000	0.5000	PASS

AMPLIFIER GAIN 16 TEST

2004/07/14 12:36:34

Shot No: 8 **Station Depth: 464.93 m**

Evaluation Item	Shuttle	Channel	Value	Unit	Lower Limit	Upper Limit	Result
Gain Accuracy	1	X	0.1464	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	1	X	-0.0001	dB	-0.5000	0.5000	PASS
Gain Accuracy	1	Y	0.1386	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	1	Y	0.0022	dB	-0.5000	0.5000	PASS
Gain Accuracy	1	Z	0.1383	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	1	Z	0.0030	dB	-0.5000	0.5000	PASS
Gain Accuracy	2	X	0.1394	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	2	X	0.0028	dB	-0.5000	0.5000	PASS
Gain Accuracy	2	Y	0.1394	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	2	Y	0.0005	dB	-0.5000	0.5000	PASS
Gain Accuracy	2	Z	0.1556	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	2	Z	-0.0060	dB	-0.5000	0.5000	PASS
Gain Accuracy	3	X	0.1022	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	3	X	0.0096	dB	-0.5000	0.5000	PASS
Gain Accuracy	3	Y	0.1195	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	3	Y	-0.0021	dB	-0.5000	0.5000	PASS
Gain Accuracy	3	Z	0.1100	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	3	Z	0.0033	dB	-0.5000	0.5000	PASS
Gain Accuracy	4	X	0.0989	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	4	X	0.0061	dB	-0.5000	0.5000	PASS
Gain Accuracy	4	Y	0.1134	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	4	Y	0.0086	dB	-0.5000	0.5000	PASS
Gain Accuracy	4	Z	0.1164	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	4	Z	0.0051	dB	-0.5000	0.5000	PASS

AMPLIFIER GAIN 32 TEST

2004/07/14 12:36:46

Shot No: 9 **Station Depth: 464.93 m**

Evaluation Item	Shuttle	Channel	Value	Unit	Lower Limit	Upper Limit	Result
Gain Accuracy	1	X	0.1471	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	1	X	-0.0008	dB	-0.5000	0.5000	PASS
Gain Accuracy	1	Y	0.1408	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	1	Y	-0.0001	dB	-0.5000	0.5000	PASS
Gain Accuracy	1	Z	0.1385	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	1	Z	0.0028	dB	-0.5000	0.5000	PASS
Gain Accuracy	2	X	0.1439	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	2	X	-0.0017	dB	-0.5000	0.5000	PASS
Gain Accuracy	2	Y	0.1395	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	2	Y	0.0004	dB	-0.5000	0.5000	PASS
Gain Accuracy	2	Z	0.1575	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	2	Z	-0.0079	dB	-0.5000	0.5000	PASS
Gain Accuracy	3	X	0.1019	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	3	X	0.0099	dB	-0.5000	0.5000	PASS
Gain Accuracy	3	Y	0.1204	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	3	Y	-0.0030	dB	-0.5000	0.5000	PASS
Gain Accuracy	3	Z	0.1097	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	3	Z	0.0036	dB	-0.5000	0.5000	PASS
Gain Accuracy	4	X	0.1022	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	4	X	0.0028	dB	-0.5000	0.5000	PASS
Gain Accuracy	4	Y	0.1167	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	4	Y	0.0053	dB	-0.5000	0.5000	PASS
Gain Accuracy	4	Z	0.1205	dB	-0.5000	0.5000	PASS
Gain Step Accuracy	4	Z	0.0010	dB	-0.5000	0.5000	PASS

CROSS TALK X TEST

2004/07/14 12:38:08

Shot No: 10 **Station Depth: 464.93 m**

Evaluation Item	Shuttle	Channel	Value	Unit	Lower Limit	Upper Limit	Result
Cross Talk X-Y	1	-	-100.3594	dB	-	-90.0000	PASS
Cross Talk X-Z	1	-	-98.4288	dB	-	-90.0000	PASS
Cross Talk X-Y	2	-	-100.2543	dB	-	-90.0000	PASS
Cross Talk X-Z	2	-	-98.5325	dB	-	-90.0000	PASS
Cross Talk X-Y	3	-	-100.4506	dB	-	-90.0000	PASS

Cross Talk X-Z	3	-	-98.3851	dB	-	-90.0000	PASS
Cross Talk X-Y	4	-	-100.0149	dB	-	-90.0000	PASS
Cross Talk X-Z	4	-	-98.5830	dB	-	-90.0000	PASS

CROSS TALK Y TEST

2004/07/14 12:38:30

Shot No: 11 **Station Depth: 464.93 m**

Evaluation Item	Shuttle	Channel	Value	Unit	Lower Limit	Upper Limit	Result
Cross Talk Y-Z	1	-	-98.0068	dB	-	-90.0000	PASS
Cross Talk Y-X	1	-	-99.5943	dB	-	-90.0000	PASS
Cross Talk Y-Z	2	-	-97.9445	dB	-	-90.0000	PASS
Cross Talk Y-X	2	-	-99.6085	dB	-	-90.0000	PASS
Cross Talk Y-Z	3	-	-98.0002	dB	-	-90.0000	PASS
Cross Talk Y-X	3	-	-99.5730	dB	-	-90.0000	PASS
Cross Talk Y-Z	4	-	-97.5588	dB	-	-90.0000	PASS
Cross Talk Y-X	4	-	-99.5593	dB	-	-90.0000	PASS

CROSS TALK Z TEST

2004/07/14 12:38:51

Shot No: 12 **Station Depth: 464.93 m**

Evaluation Item	Shuttle	Channel	Value	Unit	Lower Limit	Upper Limit	Result
Cross Talk Z-X	1	-	-96.8023	dB	-	-90.0000	PASS
Cross Talk Z-Y	1	-	-96.3836	dB	-	-90.0000	PASS
Cross Talk Z-X	2	-	-96.8634	dB	-	-90.0000	PASS
Cross Talk Z-Y	2	-	-96.6155	dB	-	-90.0000	PASS
Cross Talk Z-X	3	-	-96.5115	dB	-	-90.0000	PASS
Cross Talk Z-Y	3	-	-96.1743	dB	-	-90.0000	PASS
Cross Talk Z-X	4	-	-97.0294	dB	-	-90.0000	PASS
Cross Talk Z-Y	4	-	-96.2743	dB	-	-90.0000	PASS

IMPULSE RESPONSE TEST

2004/07/14 12:39:20

Shot No: 13 **Station Depth: 464.93 m**

Evaluation Item	Shuttle	Channel	Value	Unit	Lower Limit	Upper Limit	Result
Amplitude (0.3Hz)	1	X	-1.5381	dB	-5.0000	-	PASS
Amplitude (400Hz)	1	X	-3.5759	dB	-5.0000	-	PASS
Impulse Amplitude	1	X	573.7178	milli V	-	-	-
Phase Diff. at 0.3Hz from X1	1	X	0.0000	degree	-	-	-
Amplitude (0.3Hz)	1	Y	-1.4704	dB	-5.0000	-	PASS
Amplitude (400Hz)	1	Y	-3.5760	dB	-5.0000	-	PASS
Impulse Amplitude	1	Y	573.4791	milli V	-	-	-
Phase Diff. at 0.3Hz from X1	1	Y	-0.7901	degree	-	-	-
Amplitude (0.3Hz)	1	Z	-1.5598	dB	-5.0000	-	PASS
Amplitude (400Hz)	1	Z	-3.5760	dB	-5.0000	-	PASS
Impulse Amplitude	1	Z	573.3101	milli V	-	-	-
Phase Diff. at 0.3Hz from X1	1	Z	0.1785	degree	-	-	-
Amplitude (0.3Hz)	2	X	-1.4894	dB	-5.0000	-	PASS
Amplitude (400Hz)	2	X	-3.5720	dB	-5.0000	-	PASS
Impulse Amplitude	2	X	574.2813	milli V	-	-	-
Phase Diff. at 0.3Hz from X1	2	X	0.3752	degree	-	-	-
Amplitude (0.3Hz)	2	Y	-1.6092	dB	-5.0000	-	PASS
Amplitude (400Hz)	2	Y	-3.5739	dB	-5.0000	-	PASS
Impulse Amplitude	2	Y	573.9898	milli V	-	-	-
Phase Diff. at 0.3Hz from X1	2	Y	1.4913	degree	-	-	-
Amplitude (0.3Hz)	2	Z	-1.4859	dB	-5.0000	-	PASS
Amplitude (400Hz)	2	Z	-3.5724	dB	-5.0000	-	PASS
Impulse Amplitude	2	Z	574.5685	milli V	-	-	-
Phase Diff. at 0.3Hz from X1	2	Z	0.3038	degree	-	-	-
Amplitude (0.3Hz)	3	X	-1.5174	dB	-5.0000	-	PASS
Amplitude (400Hz)	3	X	-3.5793	dB	-5.0000	-	PASS
Impulse Amplitude	3	X	570.5185	milli V	-	-	-
Phase Diff. at 0.3Hz from X1	3	X	0.7971	degree	-	-	-
Amplitude (0.3Hz)	3	Y	-1.4277	dB	-5.0000	-	PASS
Amplitude (400Hz)	3	Y	-3.5775	dB	-5.0000	-	PASS
Impulse Amplitude	3	Y	571.2465	milli V	-	-	-
Phase Diff. at 0.3Hz from X1	3	Y	-0.1401	degree	-	-	-
Amplitude (0.3Hz)	3	Z	-1.5972	dB	-5.0000	-	PASS
Amplitude (400Hz)	3	Z	-3.5766	dB	-5.0000	-	PASS

Impulse Amplitude	3	Z	571.2098	milli V	-	-	-
Phase Diff. at 0.3Hz from X1	3	Z	1.4827	degree	-	-	-
Amplitude (0.3Hz)	4	X	-1.4561	dB	-5.0000	-	PASS
Amplitude (400Hz)	4	X	-3.5768	dB	-5.0000	-	PASS
Impulse Amplitude	4	X	571.1880	milli V	-	-	-
Phase Diff. at 0.3Hz from X1	4	X	-0.1800	degree	-	-	-
Amplitude (0.3Hz)	4	Y	-1.4369	dB	-5.0000	-	PASS
Amplitude (400Hz)	4	Y	-3.5766	dB	-5.0000	-	PASS
Impulse Amplitude	4	Y	572.0931	milli V	-	-	-
Phase Diff. at 0.3Hz from X1	4	Y	-0.3130	degree	-	-	-
Amplitude (0.3Hz)	4	Z	-1.5432	dB	-5.0000	-	PASS
Amplitude (400Hz)	4	Z	-3.5747	dB	-5.0000	-	PASS
Impulse Amplitude	4	Z	572.2213	milli V	-	-	-
Phase Diff. at 0.3Hz from X1	4	Z	0.7396	degree	-	-	-

Schlumberger

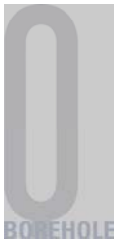
Origin Energy Resources Ltd

YOLLA-4

WELL SEISMIC PROCESSING REPORT

VI-VSP / GEOGRAM

[See also Q-Borehole Survey Report]



FIELD:	Yolla
COUNTRY:	Australia (Tasmania)
COORDINATES:	Latitude: 39 50' 40.5920" S
:	Longitude: 145 49' 06.0569" E
DATE OF SURVEY:	15-JUL-2004
SURVEY TYPE:	Vertical Incidence VSP, Offshore, Airgun
REFERENCE NO:	DS 0904-11

Prepared by: L. Dahlhaus

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1 Introduction

A borehole seismic survey was recorded in one run in the deviated (max 25.6 deg deviation) offshore well Yolla-4 on 15 July 2004. This survey consisted of boat source Vertical Incidence VSP measurements in open and cased hole. The data were acquired using a 4 shuttle Versatile Seismic Imager Tool (VSI-4) downhole and a Parallel Dual Air gun source deployed from a crane on the boat.

Processing of the data consisted of performing VIVSP processing, Sonic calibration and Synthetic seismogram generation. This report describes the processing techniques used, the parameters chosen and presents the results of the data processing. There is a good match between Corridor Stack and Synthetic seismograms. A quick-look tie with the surface seismic data was obtained with a 29 ms bulk time shift.

2 Data Acquisition

The data were acquired in one logging run in both open and cased hole using a four shuttle three component Versatile Seismic Imager Tool (VSI-4) fitted with GAC accelerometers.

Two 150 cu in G-Gun Air guns were used as the source operating under 2000 psi. Due to rough sea conditions during the survey the guns were suspended from a buoy 6m below sea level vertically above the center of the downhole array position. Fugro provided the boat navigation service.

A reference hydrophone was positioned at 3.2 m below the guns. Recording was made with the Macha TGS-8 gun controller system and Schlumberger VSI Workbench/WAVE borehole seismic system.

Good VSP levels were acquired from 3225 m KB to 1205 m KB at 20 m intervals. A minimum of 5 good shots was recorded for each level. Above 1200 m KB more levels were acquired up to 770 m KB, but they were not used for time-depth curve or VIVSP processing because the formation first arrivals could not be reliably picked due to casing ringing.

Initial In-Field processing of the VIVSP data using Schlumberger's WAVE (Wellsite Acquisition, Validation and Evaluation) processing software was done. These results were QC'ed by the DCS Processing Center and are reported in the separate "**Q-Borehole Survey Report**".

Warning:

The acquisition experienced a problem as the bridle below the second shuttle (from top) got wrapped around the tool while running into the hole causing the depth measurements on shuttles 3 and 4 to be 5m shallow. This did have some impact on the final processed results as it increased the maximum trace spacing and made it less regular thus increasing the noise levels in the processing steps. Geometry and deviation corrections have been made to the data and now show coherent time-depth and velocity curves.

Table 1. Survey Parameters

Elevation of KB/RT/DF	43 m above MSL
Elevation of GL	81 m below MSL
Well Deviation	max 25.6 deg
Energy Source	2x 150 cu in Sodera G-Guns (Parallel Cl)
Reference Sensor	TGS-8 PTB signal (S1)
Source & Hyd. Offset	Vertically above center Downhole Array
Source Depth	6 m below MSL
Hydrophone Depth	9.2 m below MSL
Water Velocity	1524 m/s
Tool	4 Shuttle VSI-4 (20 m Spacing)
Sensor Type	3-C GAC – Geophone Accelerometer
Sampling Rate	1 ms.

3 Well Seismic Edit

The initial preparation of the data is called Well Seismic Edit and consists of:

- Load Data
- Edit bad records & Sort Data
- Pick Reference Break times
- Median stack
- Pick Break time on Stacked Data

Each shot of the raw GAC data was evaluated and edited to remove bad traces. The hydrophone data were also evaluated for signature changes and timing shifts. The good shots at each level were stacked, using a median stacking technique, to increase the signal to noise ratio of the data. For better comparison with geophone data, a transform to a 10 Hz/76% damped geophone is applied to the GAC data. This transform from acceleration to velocity is in the field approximated by integrating raw data. After stacking and transform the transit time of each trace was re-computed. The following subsections describe the main aspects of the well seismic edit phase.

3.1 Data Quality

The data quality is generally fairly good, but of limited frequency content, in particular below app 2500 m MD KB. The source signature is stable, showing little pressure and gun depth variations in spite of the rough sea surface conditions. The vertical component data shows fair continuity and some shear contamination. The horizontal components also show some converted shear energy, particularly in the deeper section of the well. All three components are used for obtaining the rotated true vertical component that will be used for the VSP processing.

3.2 Transit Time Measurement

The measured transit time corresponds to a difference between the surface reference time and arrivals recorded by the downhole sensors. The reference time is the recorded Predicted Fire signal of the TGS-8 shooting system. First break picking algorithms were applied on the transformed and filtered geophone data using an inflection point tangent algorithm.

3.3 Stacking

After reordering and selecting the raw shots, a median stack was performed on the three component data. In this method of stacking, at each sample time, the amplitudes of the input traces are read and sorted in ascending order. The output is the median amplitude value from this ordering. If an even number of traces is input, the first is dropped and a median calculated. Then the last is dropped and another median found. The final output is the average of these two median values. The reference time breaks are used as the zero time for stacking. The break time of each trace is recomputed after stacking and rotation. The X, Y and Z component stacks are presented in Figures 2a, 2b and 2c.

VIVSP Processing Chain

The vertical incidence VSP data were processed using standard VSP processing techniques.

The following subsections describe the main aspects of the VIVSP processing chain:

- Survey Geometry / Datum corrections : Well deviation / MSL
- Bandpass Filter : Butterworth Zero Phase, 5-95Hz
- Rotation to Vertical Component : X,Y to HMX / Z,HMX to V
- Signature Deconvolution : PDN, Gap 55 ms , 0.85 s
- Spherical Divergence Correction : Exponent $\alpha = 1.56$
- Trace Normalization : RMS Window 200 ms
- Wavefield Separation : Velocity Filter, 11x1 Tri Mean
- Waveshape Deconvolution : 5-60 Hz Zero Phase, Window 0.5 s
- Upgoing Enhancement : Velocity Filter, 7x3 Tri Mean
- Corridor Stack : 150 ms , 8 deepest traces

3.4 Survey Geometry / Datum corrections

Seismic Reference Datum (SRD) is at Mean Sea Level. A static shift of 3.9 ms was applied to the data to correct to SRD. This correction to SRD was calculated using a surface velocity of 1524 m/s. Survey geometry corrections for the lateral offset of the source position with respect to the downhole receiver in this well taking into account well deviation and recording delay corrections have been applied.

3.5 Bandpass Filter

The effective bandwidth of the recorded data is evaluated by examining the amplitude spectrum of the stacked vertical component presented in Figure 1. A wide zero phase Butterworth Bandpass filter was applied to the data limiting the bandwidth to 5-95 Hz.

3.6 Rotation to Vertical Component

Non-gimballed GAC receivers record the VSI data. When processing a vertical incidence VSP in a deviated well (Figures 19 and 20) the 3 component data need to be rotated to the vertical axis (i.e. Source-Receiver direction). This can be done by first taking the two horizontal components X and Y and determining via energy hodograms around the picked transit time the orientation of the maximum horizontal component (HMX) as shown in Figure 3. The Z and HMX components are then rotated using the well deviation angle and this is QC-ed by determining the rotation angle from the data. (Figure 21). Figure 4 shows the Vertical Component used for further processing.

3.7 Source Signature Deconvolution

Due to the interference of airgun bubble and water column multiples, a rough removal of the source signature was performed. To do this properly a calibrated far field source signature needs to be recorded. This was not available for this survey and predictive deconvolution using the near field hydrophone recording was used instead. Designature tests provided reasonably satisfactory results. The deconvolution filter is designed using a three level sliding window on the reference signal and applied on the full wavefield. The predictive distance or gap is set to 55 ms to keep the main source wavelet untouched and multiples are predicted over a window of 0.85 s. The deconvolution operator is then applied on the whole trace.

3.8 Spherical Divergence Correction

To correct the recorded amplitudes for the loss of energy due to the spherical divergence of the wave front, a time varying gain function of the exponential form:

$$Gain(T) = (T)^{\alpha}$$

where T is the recorded time and α = 1.56 was applied. This equation considers homogeneous spreading and attenuation effects within a gate starting from the shot time.

3.9 Trace Normalization

Trace equalization was applied by normalizing the RMS amplitude of the first break to correct for transmission losses of the direct wave. A normalization window of 200 milliseconds was used. The amplitude corrected vertical component wavefield is displayed in two-way time (Figure 5).

3.10 Wavefield Separation

A velocity filter (coherency) technique was used to separate upgoing and downgoing wavefields.

The downgoing coherent compressional energy is estimated using an 11x1 level tri-mean velocity filter parallel to the direct arrival curve. The filter array is moved down one level after each computation and the process is repeated level by level over the entire dataset. The first break aligned downgoing wavefield is displayed in Figure 6.

The residual wavefield is obtained by subtracting the estimated downgoing coherent energy from the total wavefield. The residual wavefield is dominated by reflected compressional events as shown in Figure 7.

3.11 Zero Phase Waveshape Deconvolution

The waveshaping process shortens the seismic pulse within traces and centers their amplitude peak on the reflector. This improves the resolution of the seismic data and helps to clarify the correlation of the seismic events. It is also applied to collapse the recorded multiples.

The waveshaping deconvolution operator is a double-sided Wiener-Levinson waveshaping filter. The operator is computed for each level of the downgoing wavefield using a design window length of 0.5 s starting 5 ms before the picked break times in order to include the wavelet precisely. The designed outputs were chosen to be zero phase with a bandwidth of 5-60 Hz. Once the design is made upon the downgoing wavefield, it is applied to the both downgoing and upgoing wavefields at the same level as displayed in Figures 8 and 9.

3.12 Upgoing Enhancement

A velocity filter (coherency) technique was used to enhance the zero phase upgoing wavefield.

The upgoing coherent compressional energy is estimated using a 7x3 level tri-mean velocity filter orthogonal to the direct arrival curve. The filter array is moved down one level after each computation and the process is repeated level by level over the entire dataset. This enhanced upgoing wavefield is displayed in two way time (TWT) in Figure 10.

3.13 Corridor Stack

A corridor stack in two way time (TWT) was computed on the enhanced zero phase upgoing wavefield by designing a constant 100 ms timing window along the two-way time depth curve and stacking the data onto a single trace. The deepest 8 traces are stacked entirely. The resulting trace provides the seismic representation of the borehole in vertical two-way time. This corridor stack is displayed in Figure 11 both as a vertical trace and along the 2D projected well path.

A snapshot of the 40 cm/s normal polarity composite display (PLOT-1) is shown in figure 12. A composite display in reverse polarity is included as well (PLOT-2). The polarity convention is explained in Figure 18.

A comparison of the VIVSP data projected onto the surface seismic section provided by Origin (Yolla2 to Yolla4) was made shown in Figures 13, 14a/b and 15a/b showing both normal and reverse polarity. To provide a Quick Look comparison with the surface seismic a constant time of +29ms was applied to the Corridor Stack. /Upgoing wavefield. The surface seismic frequency content near TD is considerably lower than that of the borehole seismic data.

Figures 16a/b show a comparison of the corridor stack with the different synthetic seismograms described in the next section. Both normal and reverse polarities are displayed in these figures.

On Plots 1 and 2 additional panels show the projected and offset regularized VIVSP corridor stack and upgoing wavefield along the surface seismic.

No migration was used as the main travel paths are more or less vertical and the ray paths just below the main fault crossing the wellbore are too complex to resolve.

4 Sonic Calibration Processing

4.1 Sonic Calibration

A 'drift' curve is obtained using the sonic log and the vertical check level times. The term 'drift' is defined as the seismic time (from check shots) minus the sonic time (from integration of edited sonic). Commonly the word 'drift' is used to identify the above difference, or to identify the gradient of drift versus increasing depth, or to identify a difference of drift between two levels.

The gradient of drift, that is the slope of the drift curve, can be negative or positive.

For a negative drift (Δdrift/Δdepth < 0) the sonic time is greater than the seismic time over a certain section of the log.

For a positive drift (Δdrift/Δdepth > 0), the sonic time is less than the seismic time over a certain section of the log.

The drift curve, between two levels, is then an indication of the error on the integrated sonic or an indication of the amount of correction required on the sonic to have the TTI of the corrected sonic match the check shot times.

Two methods of correction to the sonic log are used.

1. Uniform or block shift. This method applies a uniform correction to all the sonic values over the interval. This uniform correction is applied in the case of positive drift and is the average correction represented by the drift curve gradient expressed in µsec/m .

2. ΔT Minimum. In the case of negative drift a second method is used, called Δ minimum. This applies a differential correction to the sonic log, where it is assumed that the greatest amount of transit time error is caused by the lower velocity sections of the log. Over a given interval the method will correct only Δt values which are higher than a threshold, the Δt_{min} . Values of Δwhich are lower than the threshold are not corrected. The correction is a reduction of the excess of Δt over Δt_{min}, $\Delta t - \Delta t_{min}$.

$\Delta t - \Delta t_{min}$ is reduced through multiplication by a reduction coefficient which remains constant over the interval. This reduction coefficient, named G, can be defined as:

$$G = 1 + \frac{drift}{(\Delta t - \Delta t_{min})dZ}$$

Where drift is the drift over the interval to be corrected and the value $(\Delta t - \Delta t_{min})dZ$ is the time difference between the integrals of the two curves Δt and Δt_{min}. only over the intervals where $\Delta t > \Delta t_{min}$.

Hence the corrected sonic: $\Delta t = G(\Delta t - \Delta t_{min}) + \Delta t_{min}$.

4.2 Open Hole Logs

The P&S mode compressional DT curve from the open hole DSI data was used for drift computation. The log quality ranges from fair to good and required some editing.

A density log was available over the same interval as the sonic log. Other logs included as companion curves are: Gamma Ray, Resistivity and Caliper.

4.3 Correction to Datum and Velocity Modeling

The sonic calibration processing has been referenced to Mean Sea Level which the seismic reference datum. Geometry corrections are applied to correct for well deviation, source offset, source depth and SRD elevation.

4.4 Sonic Calibration Results

The checkshot near the top of the sonic log (1205m MD KB) is chosen as the origin for the calibration drift curve. The compressional sonic log was extended using the checkshot data only for the generation of the velocity and time/depth listings.

The drift curve is the correction imposed upon the sonic log. The adjusted sonic curve is considered to be the best result using the available data. A list of shifts used on the sonic data is given in A2 Listing (supplied in digital form on Final Results CD-ROM). A minimum number of knee points was used due to the increased measurement uncertainty introduced by both the well deviation and possible lateral velocity variations in the overburden.

The Velocity Crossplot is presented in Figure 17 and as a separate plot.

5 Synthetic Seismogram Processing

GEOGRAM plots were generated using three different wavelets: 25 Hz, 30 Hz and 35 Hz (Dominant Frequency) zero phase Ricker wavelets.

The presentation includes composite plots on a time scale of 40 cm/sec in both normal and reverse polarity (Plots 1 and 2). The 35 Hz Ricker Synthetics show a good match with the Corridor Stack.

GEOGRAM processing produces synthetic seismic traces based on reflection coefficients generated form sonic and density measurements in the wellbore. The steps in the processing chain are the following:

- Depth to time conversion
- Reflection coefficient generation
- Attenuation coefficient calculation
- Convolution
- Output

5.1 Depth to Time Conversion

Open hole logs are recorded from the bottom to top with a depth index. This data is converted to a two-way time index.

5.2 Primary Reflection Coefficients

Sonic and density data are averaged over chosen time intervals (normally 2 ms). Reflection coefficients are then computed using:

$$R = \frac{r_2.v_2 - r_1.v_1}{r_2.v_2 + r_1.v_1}$$

where:

r_1 = density of the layer above the reflection interface

r_2 = density of the layer below the reflection interface

v_1 = compressional wave velocity of the layer above the reflection interface

v_2 = compressional wave velocity of the layer below the reflection interface

This computation is done for each time interval to generate a set of primary reflection coefficients without transmission losses.

5.3 Primaries with Transmission Losses

Transmission loss on two-way attenuation coefficients is computed using:

$$A_n = (1 - R_1^2).(1 - R_2^2).(1 - R_3^2)...(1 - R_n^2)$$

A set of primary reflection coefficients with transmission loss is generated using:

$$Primary_n = R_n.A_{n-1}$$

5.4 Primaries plus Multiples

Multiples are computed from these input reflection coefficients using the transform technique from the top of the well to obtain the impulse response of the earth. The transform outputs primaries plus multiples.

5.5 Multiples Only

By subtracting previously calculated primaries form the above result we obtain multiples only.

5.6 Wavelet

A theoretical wavelet is chosen to use for convolution with the reflection coefficients previously generated. Choices available include:

Klauder wavelet
Ricker zero phase wavelet
Ricker minimum phase wavelet
Butterworth wavelet
User defined wavelet

Time variant Butterworth filtering can be applied after convolution.

5.7 Polarity Convention

An increase in acoustic impedance gives a positive reflection coefficient, is written to tape as a negative number and is displayed as a white trough under normal polarity. Polarity conventions are displayed in Figure 18.

5.8 Convolution

The standard procedure of convolving the wavelet with reflection coefficients; the output is the synthetic seismogram.

FIGURES

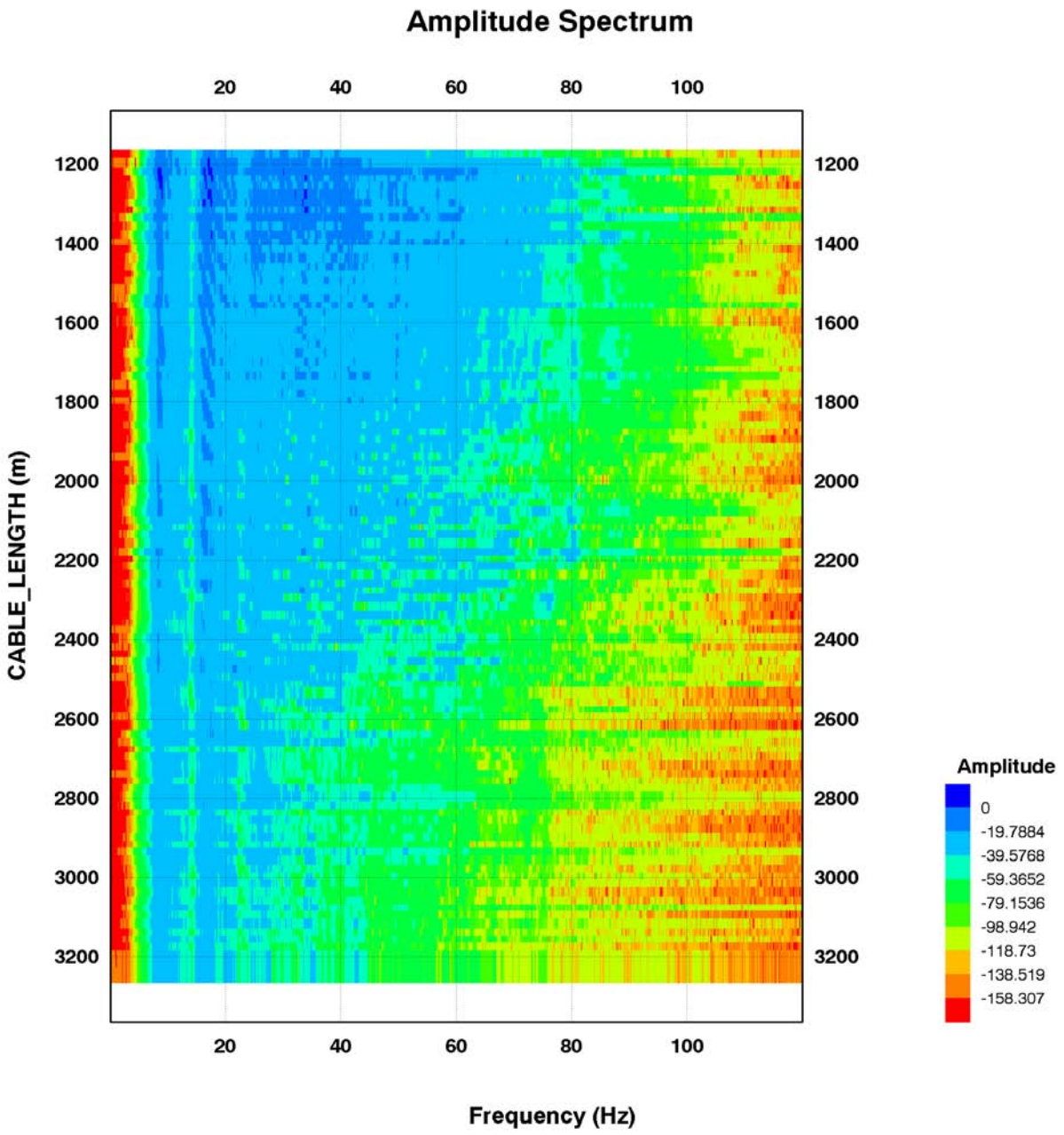


Figure 1. Amplitude Spectrum

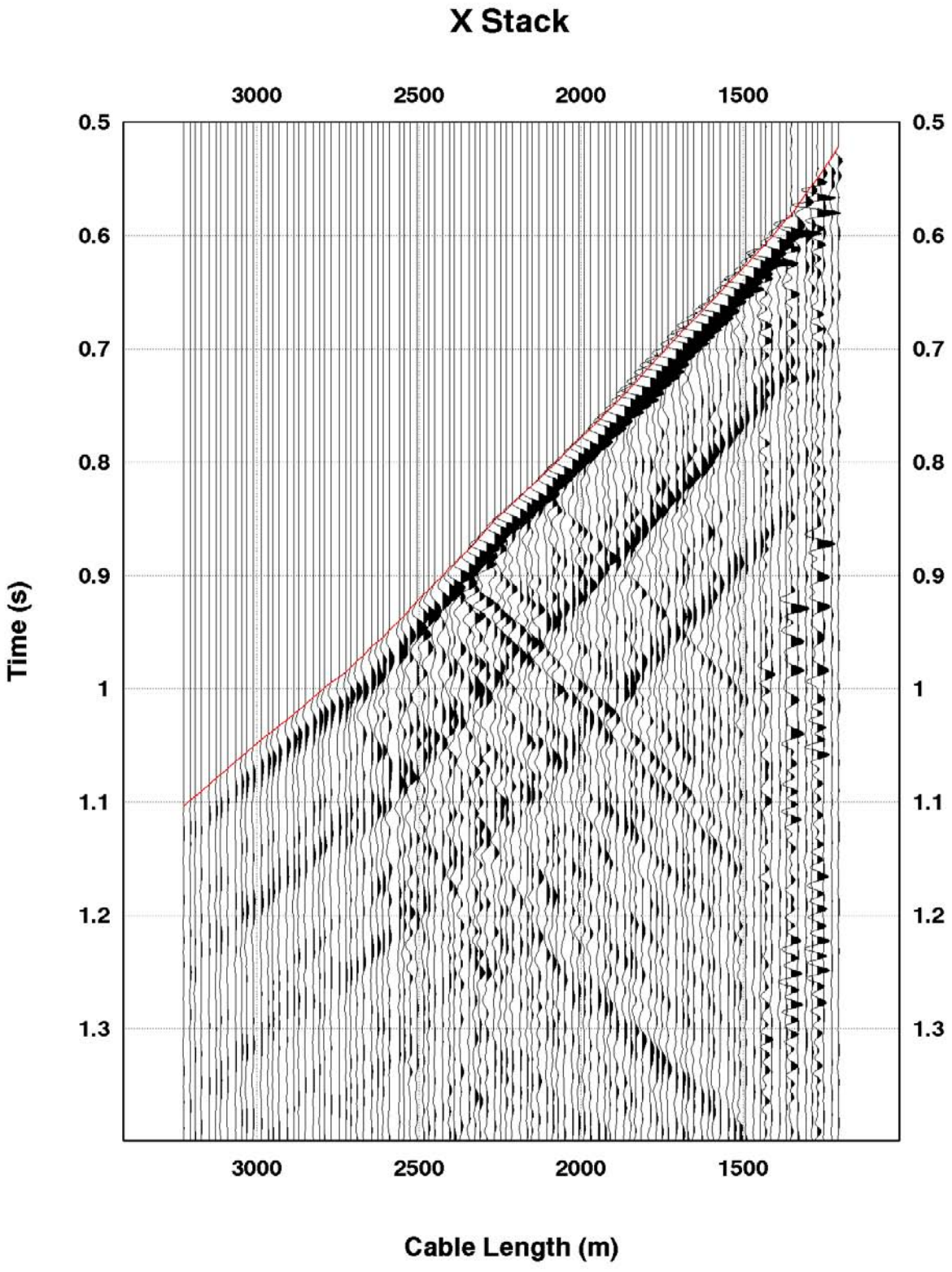


Figure 2a. X Component Stack

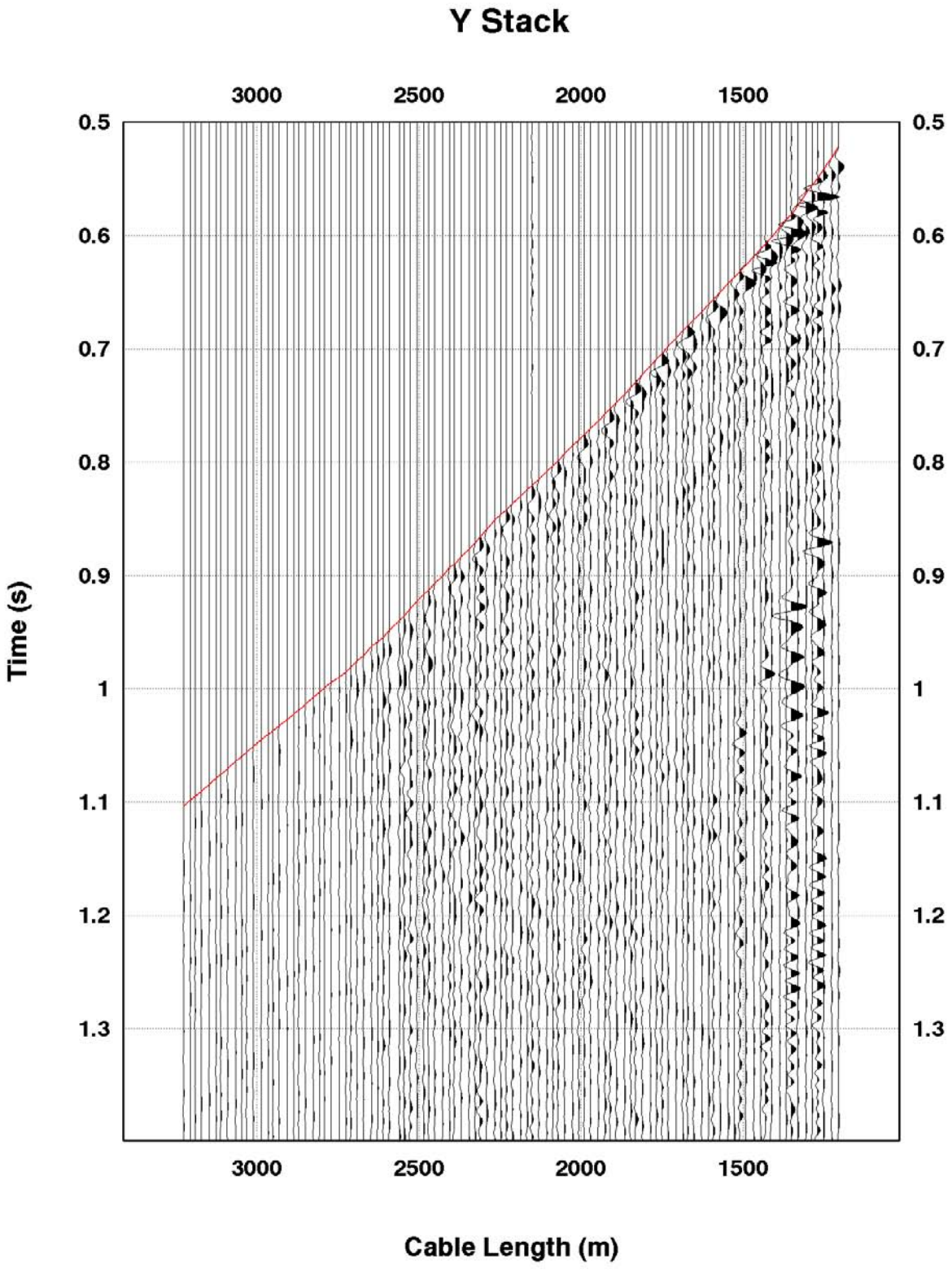


Figure 2b. Y Component Stack

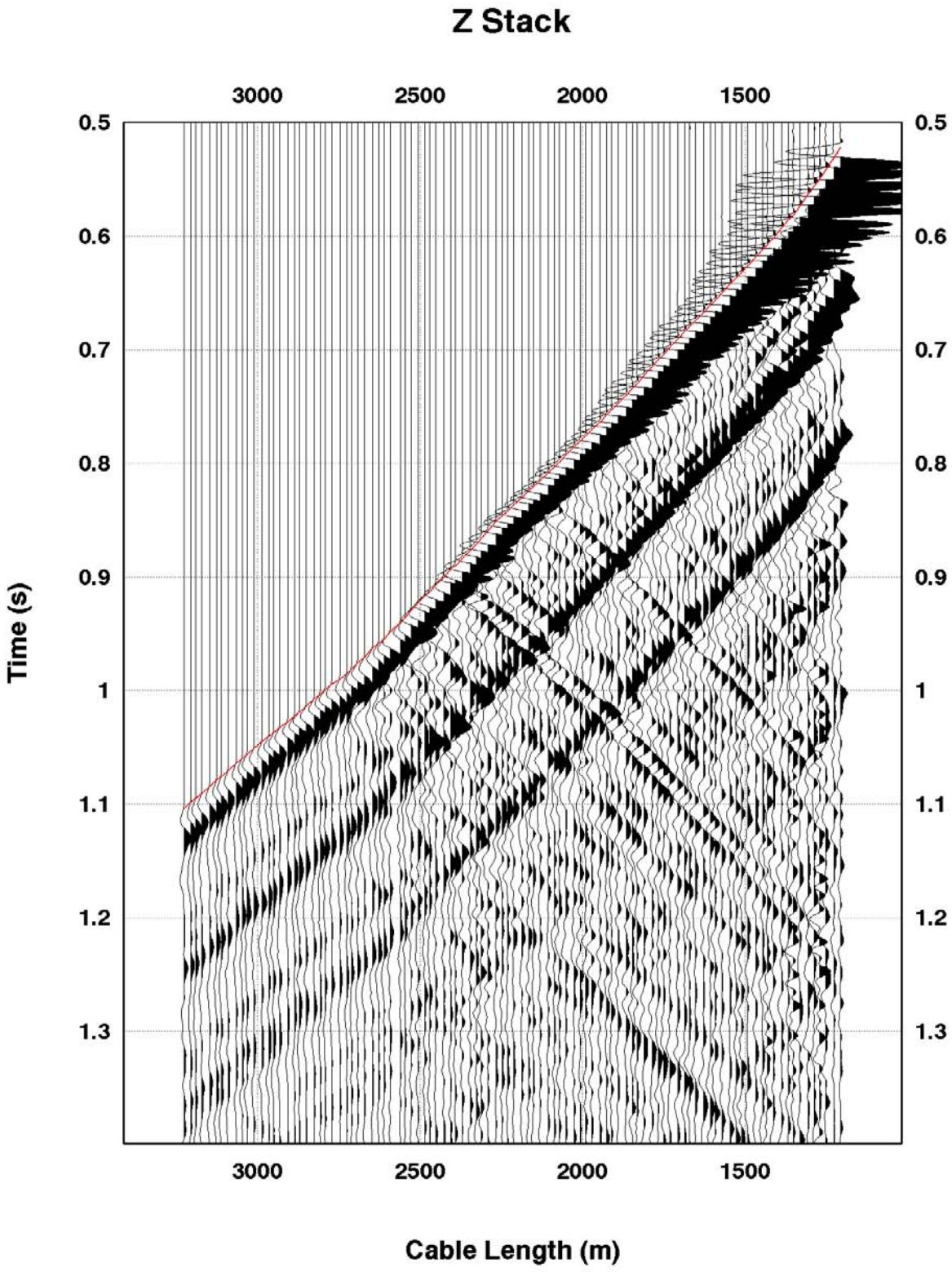


Figure 2c. Z Component Stack

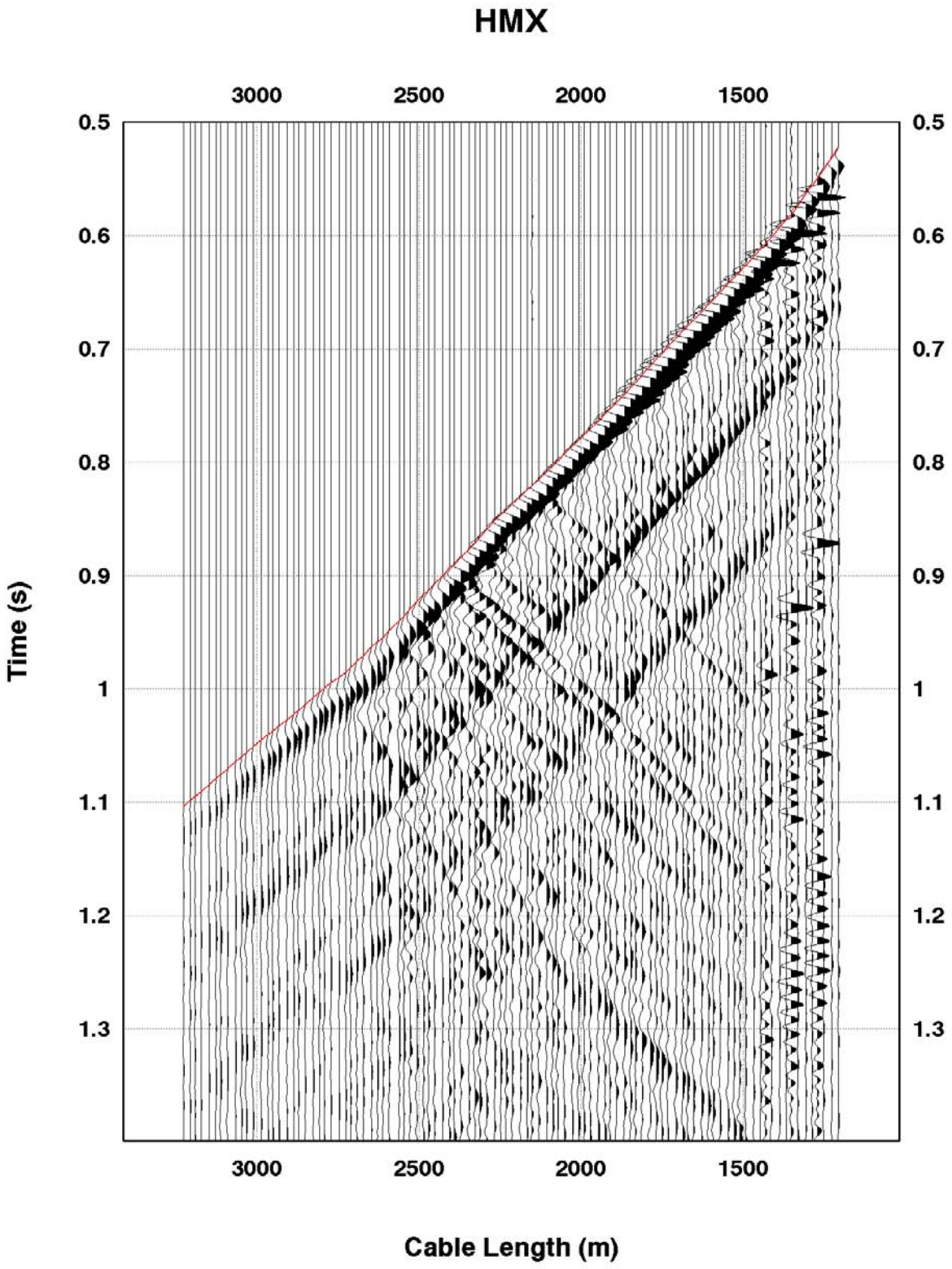


Figure 3. X,Y Components Rotated to HMX Component

Vertical Stack

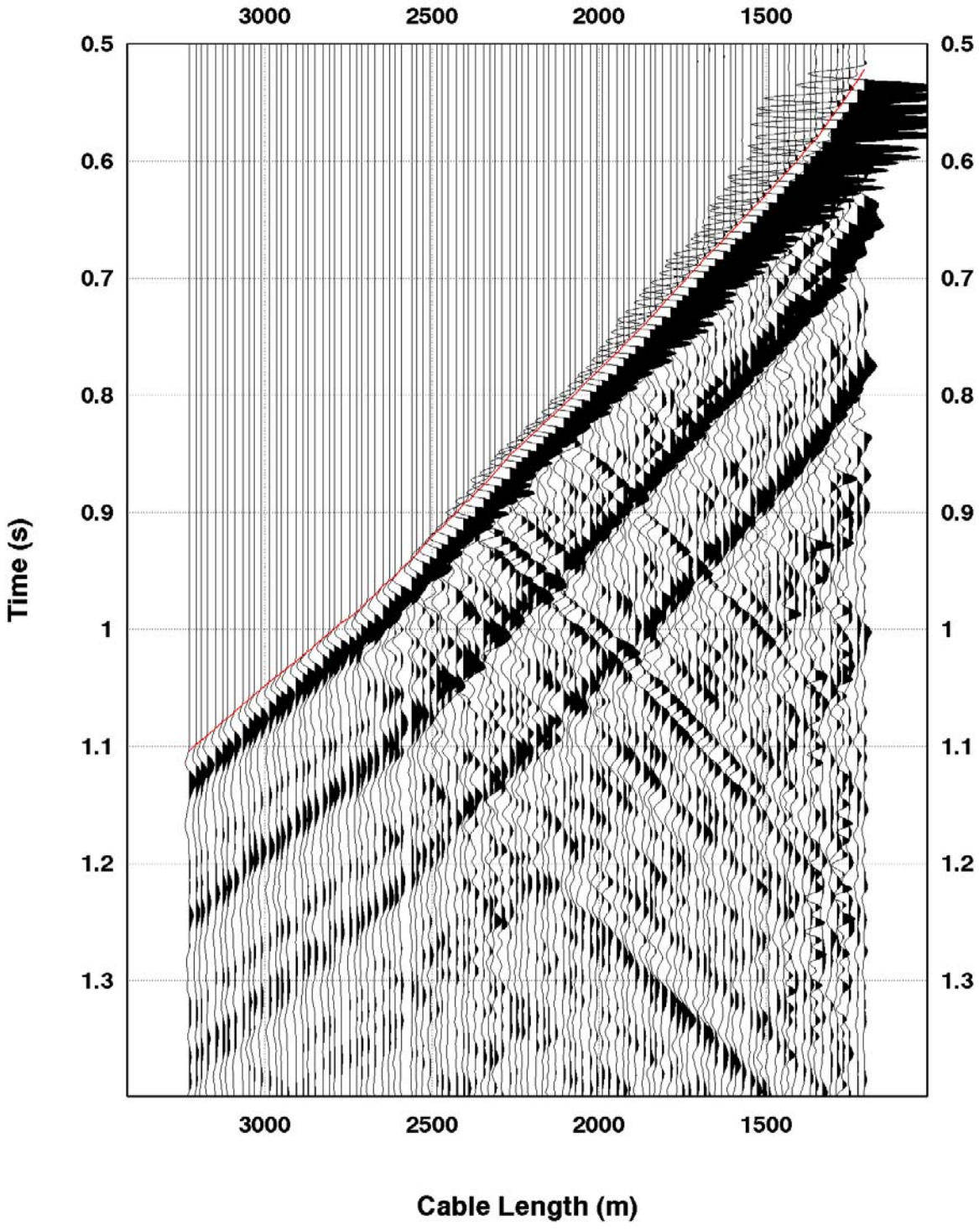


Figure 4. Z,HMX Components Rotated to Vertical Component

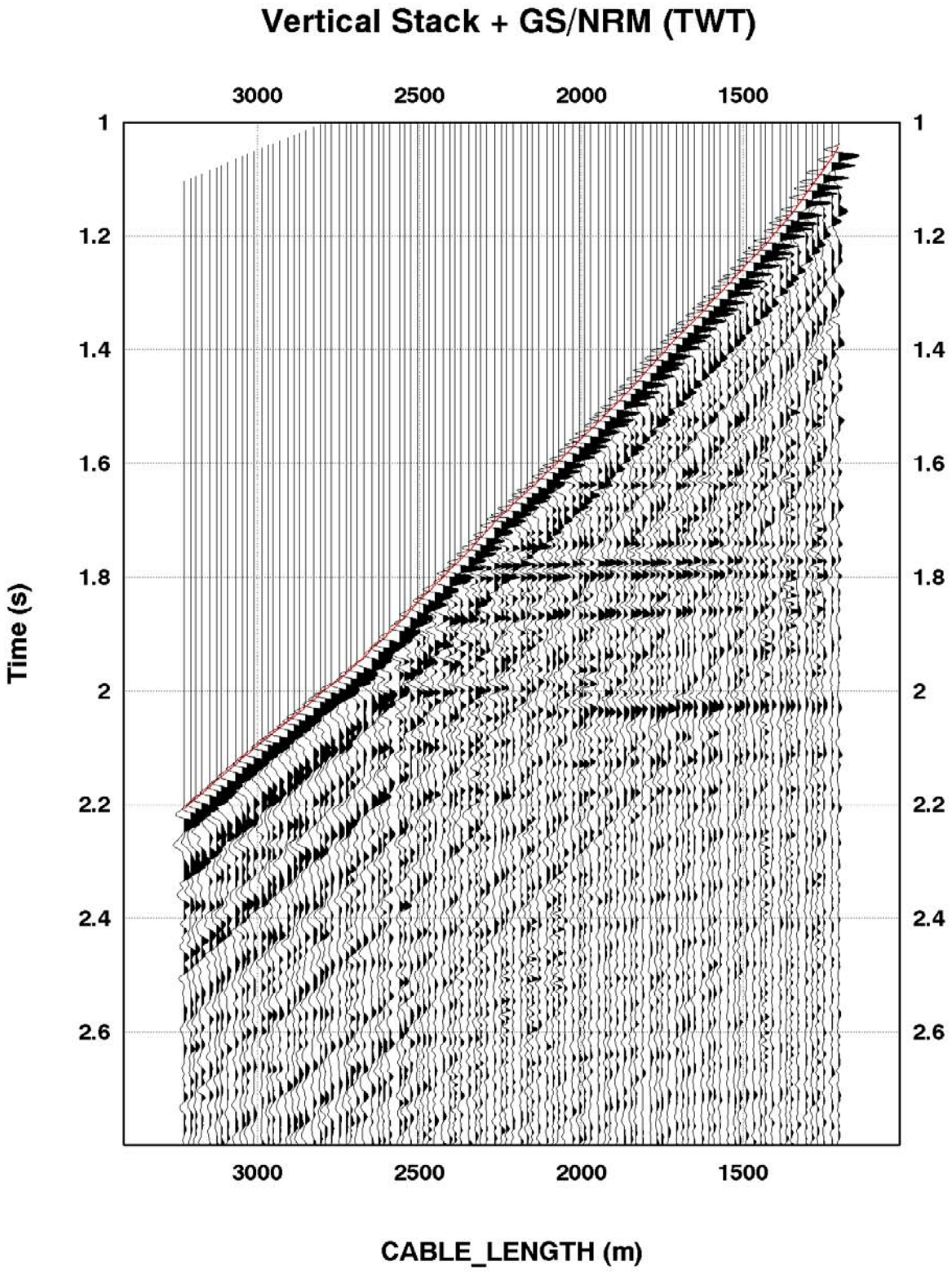


Figure 5. Z Component Stack for VSP processing

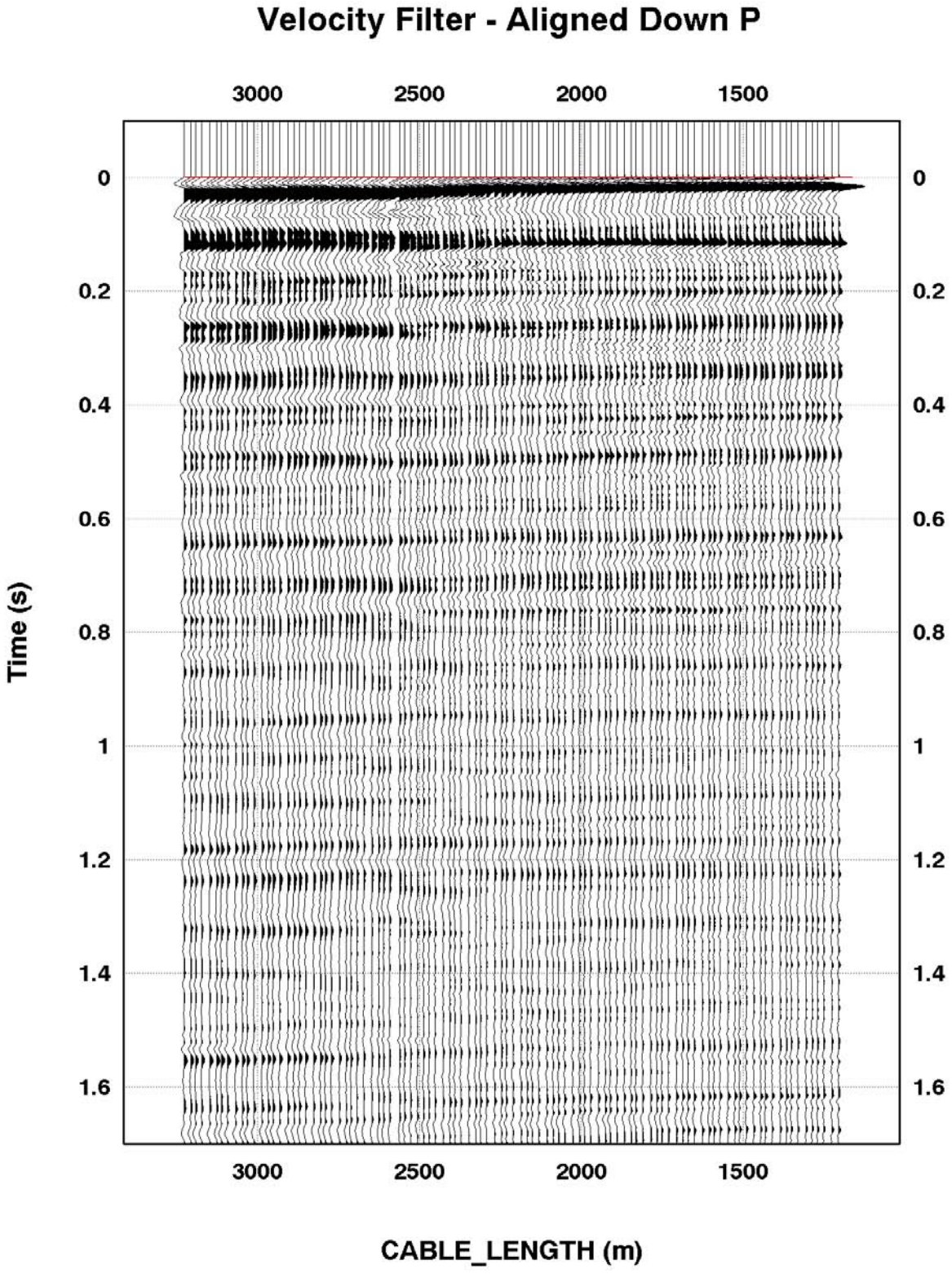


Figure 6. Downgoing Wavefield after Wavefield Separation

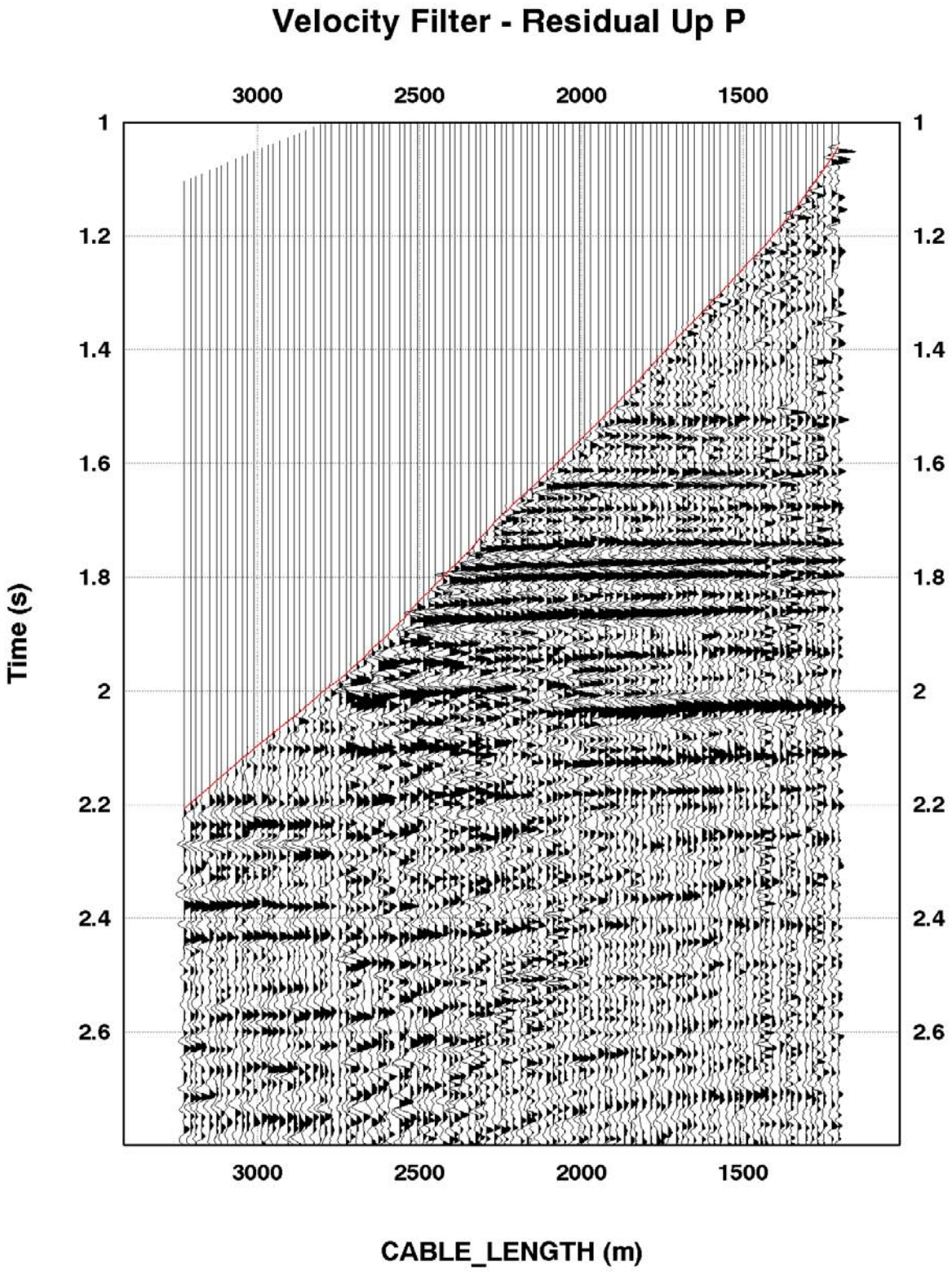


Figure 7. Upgoing Wavefield after Wavefield Separation

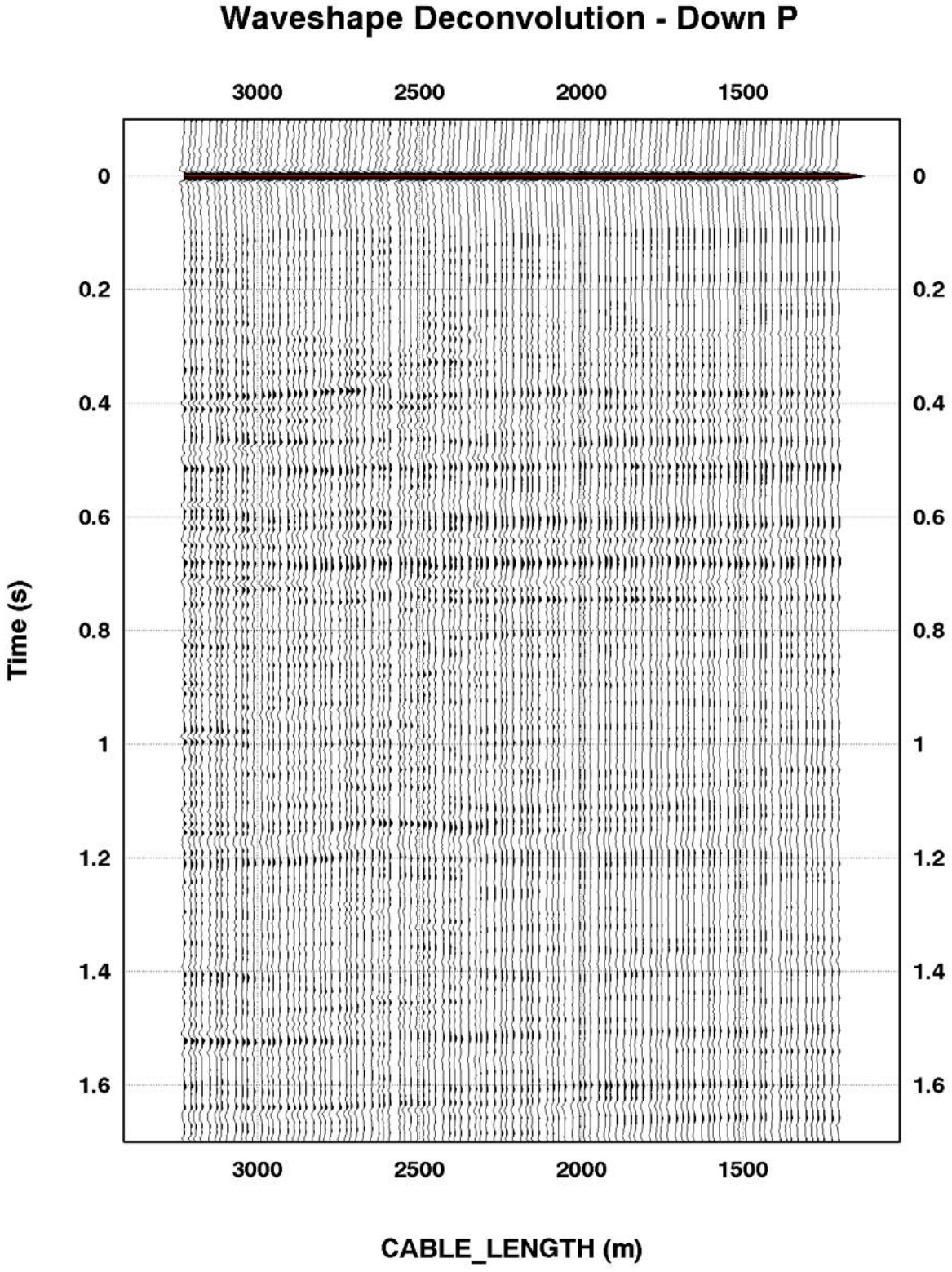


Figure 8. Downgoing Wavefield after Waveshaping Deconvolution

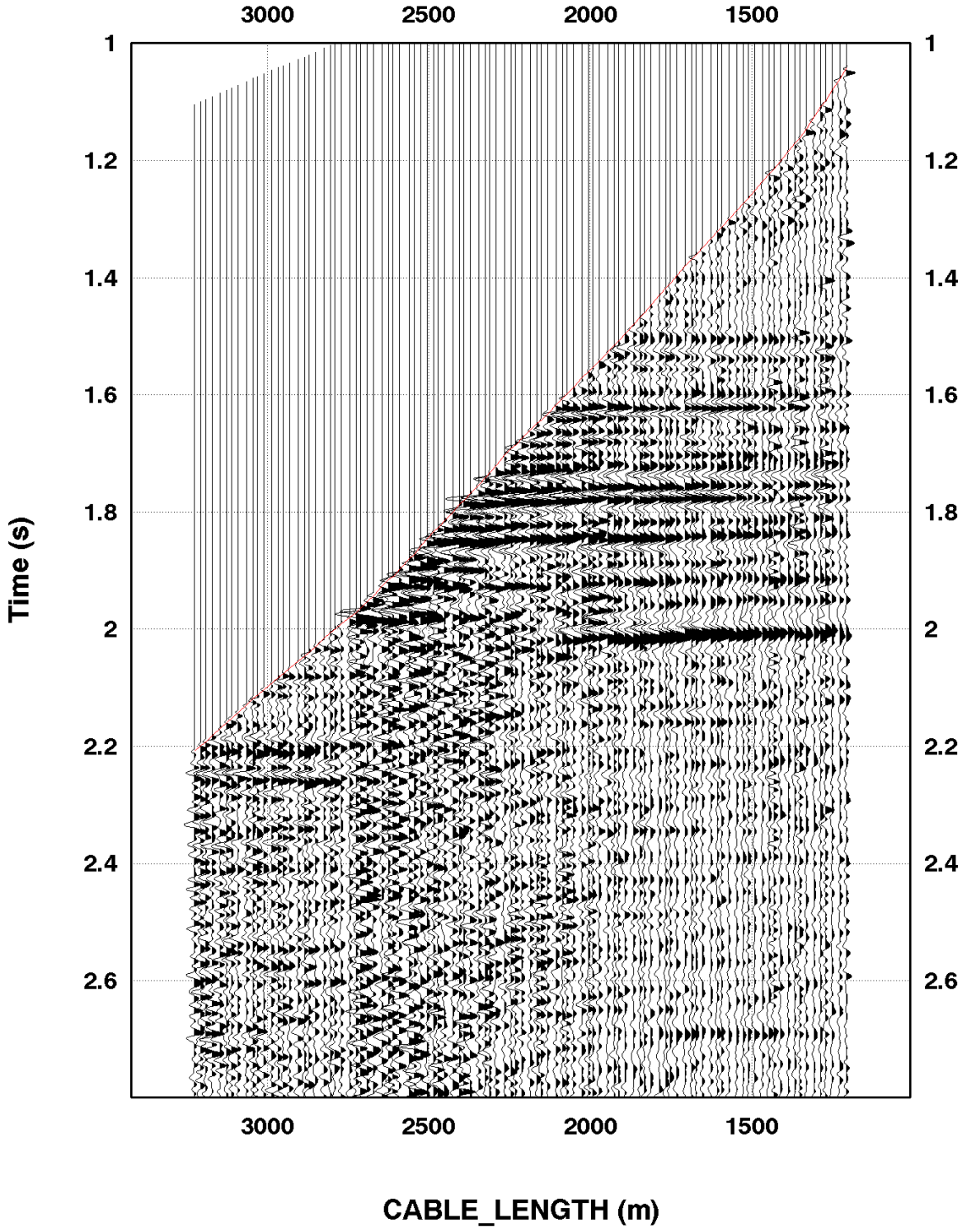


Figure 9. Upgoing Wavefield after Waveshaping Deconvolution

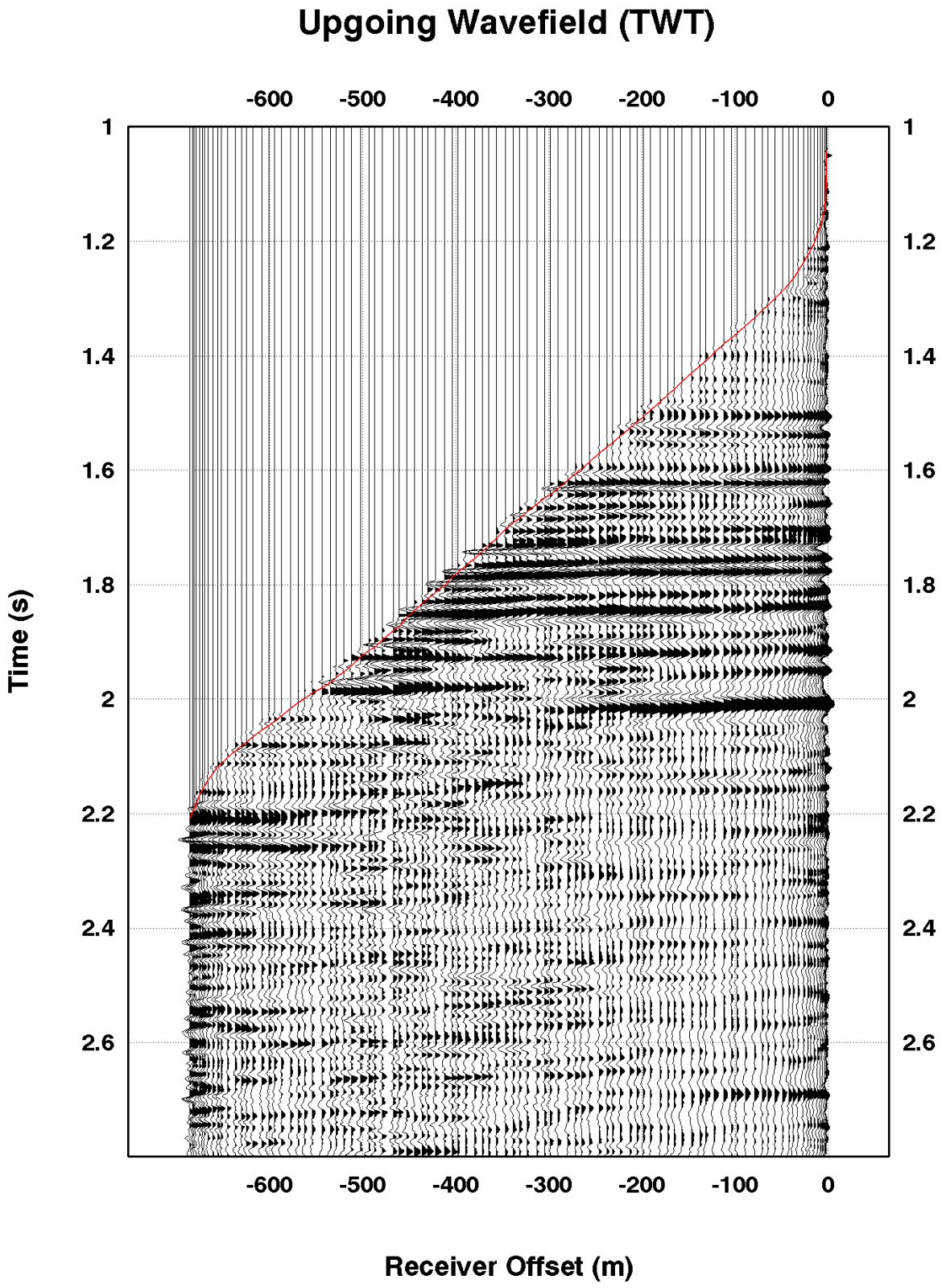


Figure 10. Enhanced Upgoing Wavefield after Waveshaping Deconvolution

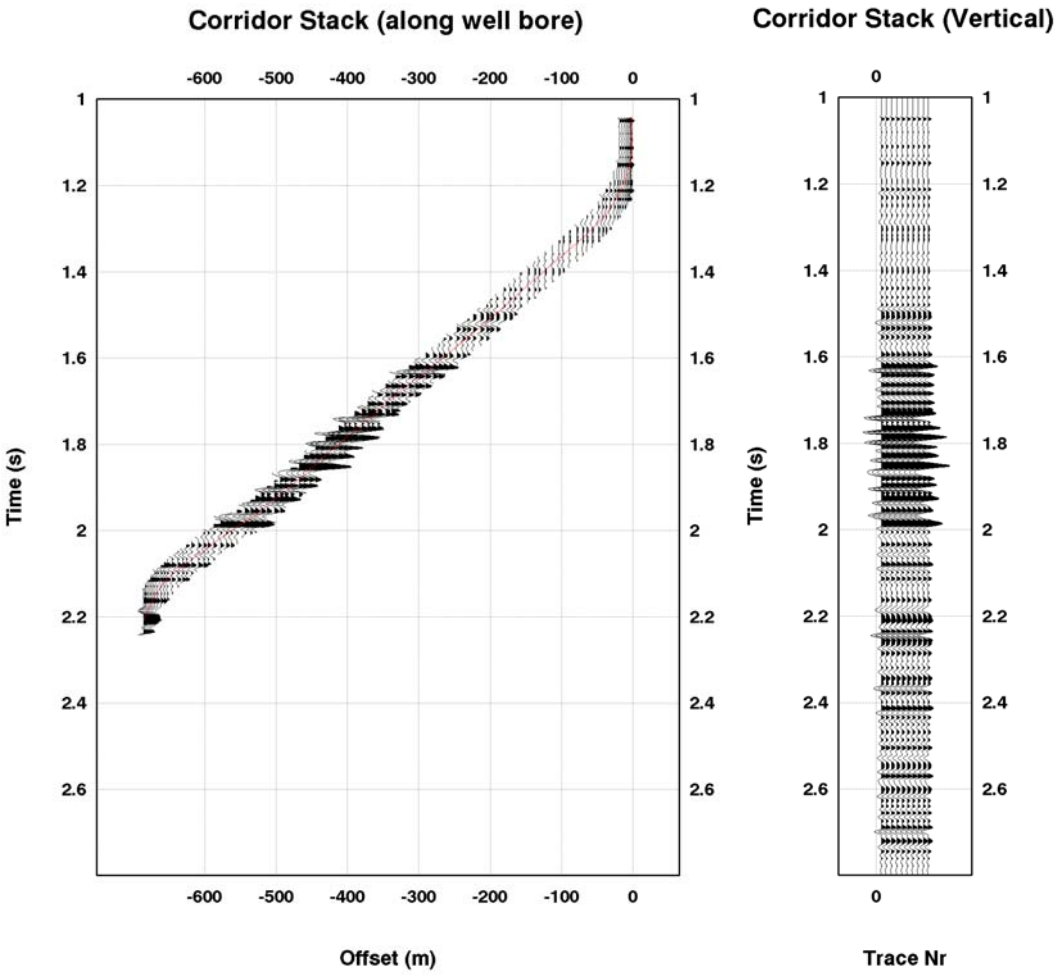


Figure 11. Corridor Stacks: along wellbore and vertical trace

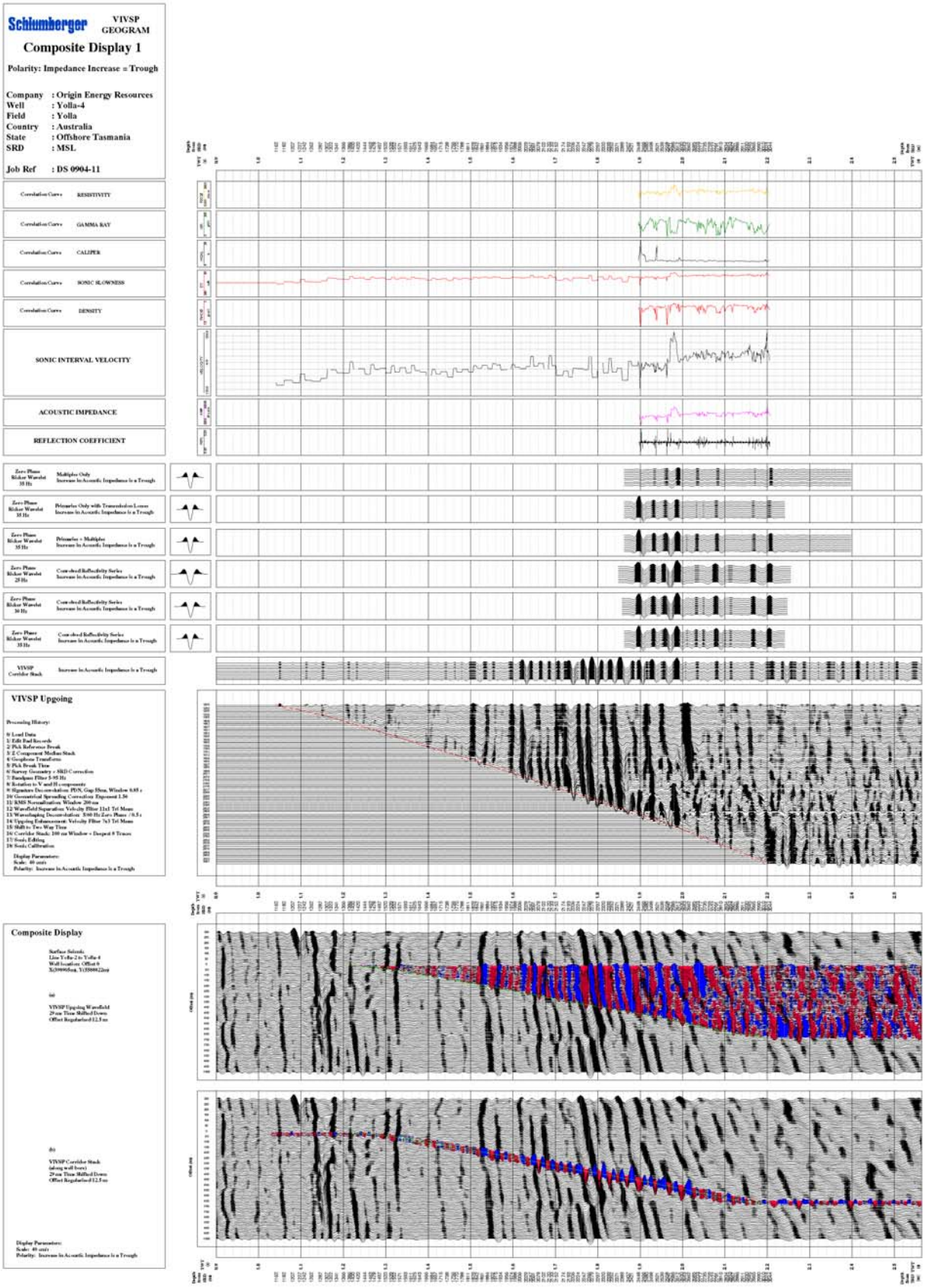


Figure 12. Composite Display (See Plots 1 and 2)

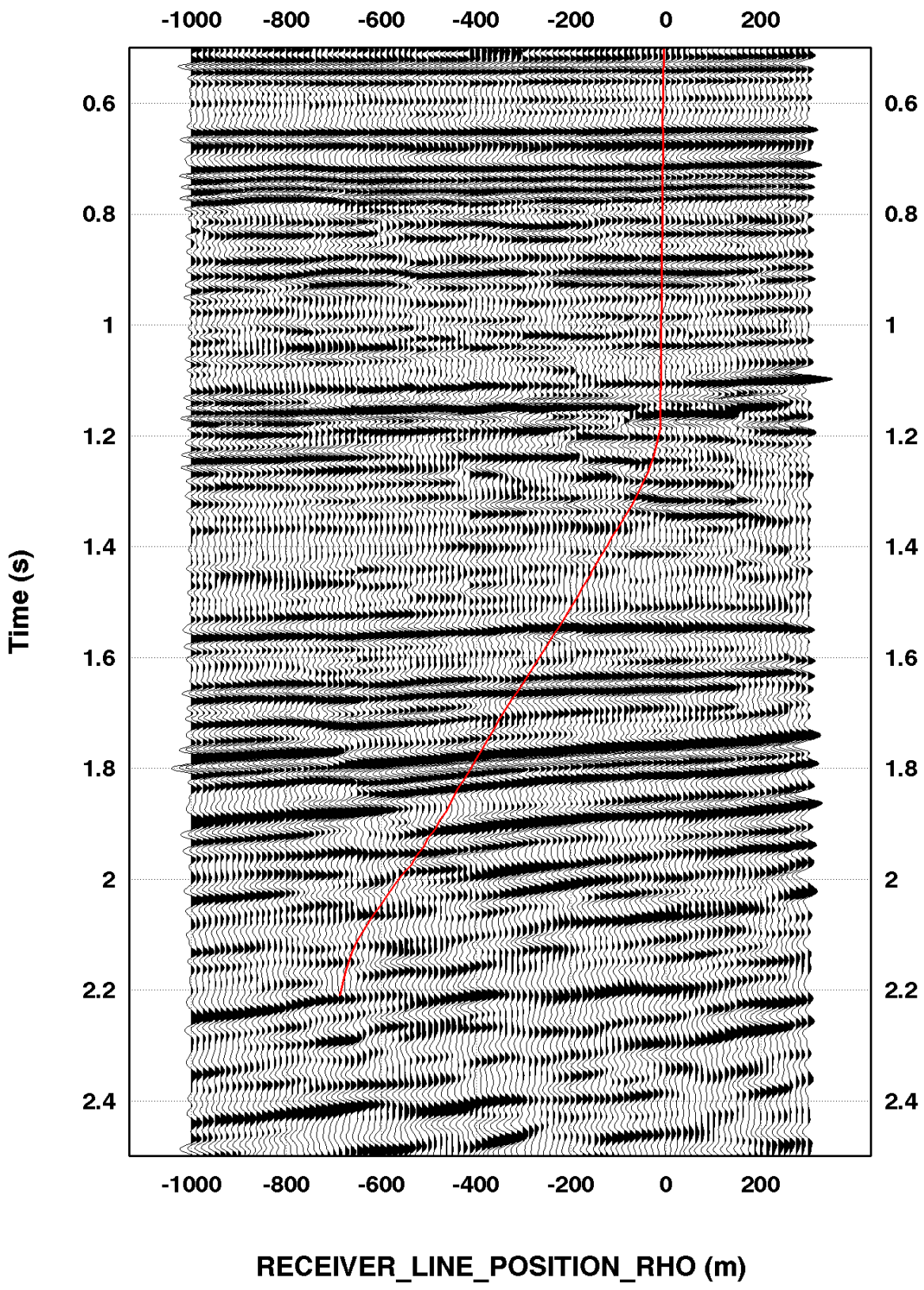


Figure 13. Composite Display of Surface Seismic and borehole track

Polarity: An increase in acoustic impedance is a peak

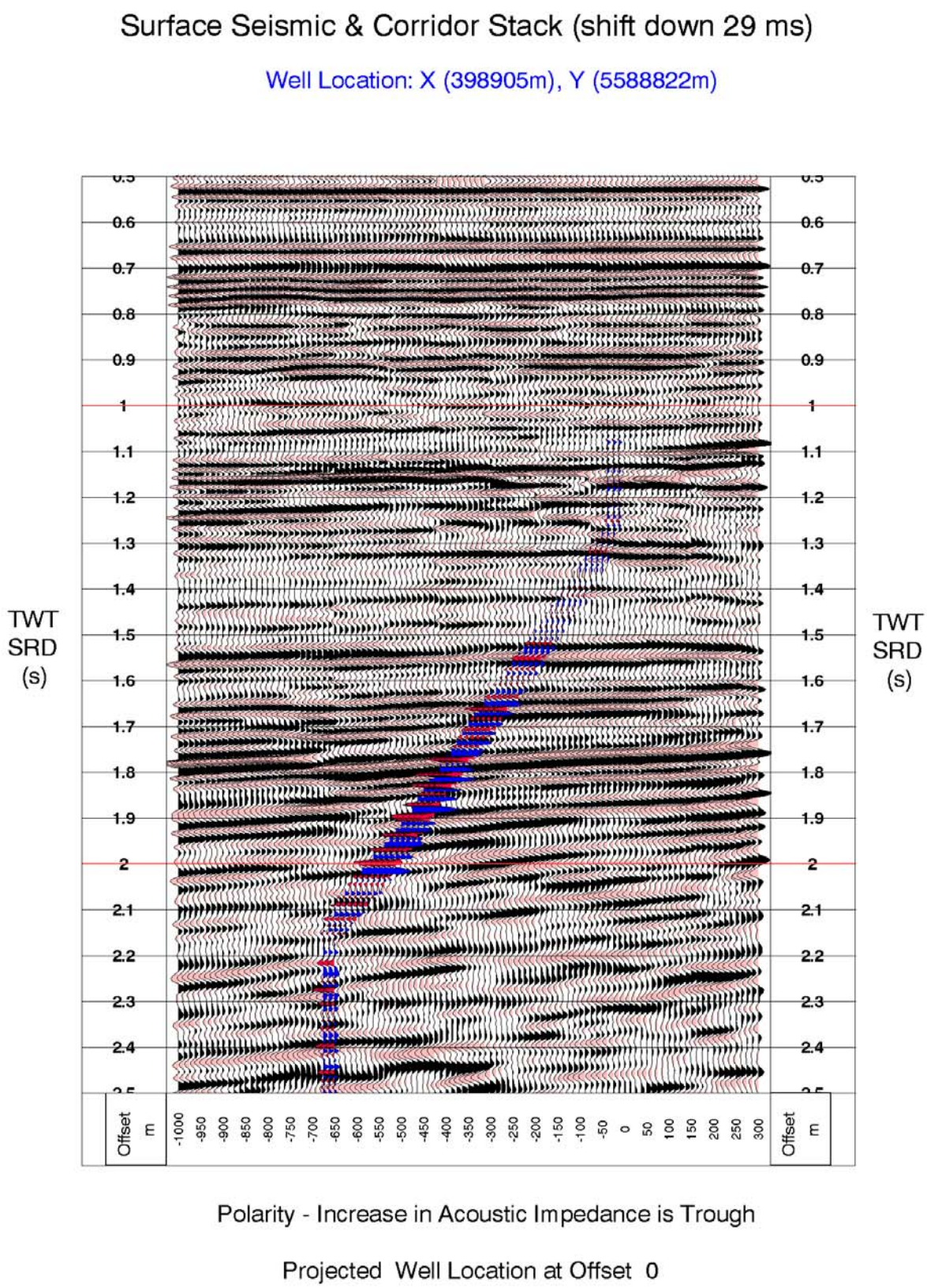


Figure 14a. Composite Display of Surface Seismic and Corridor Stack (N)

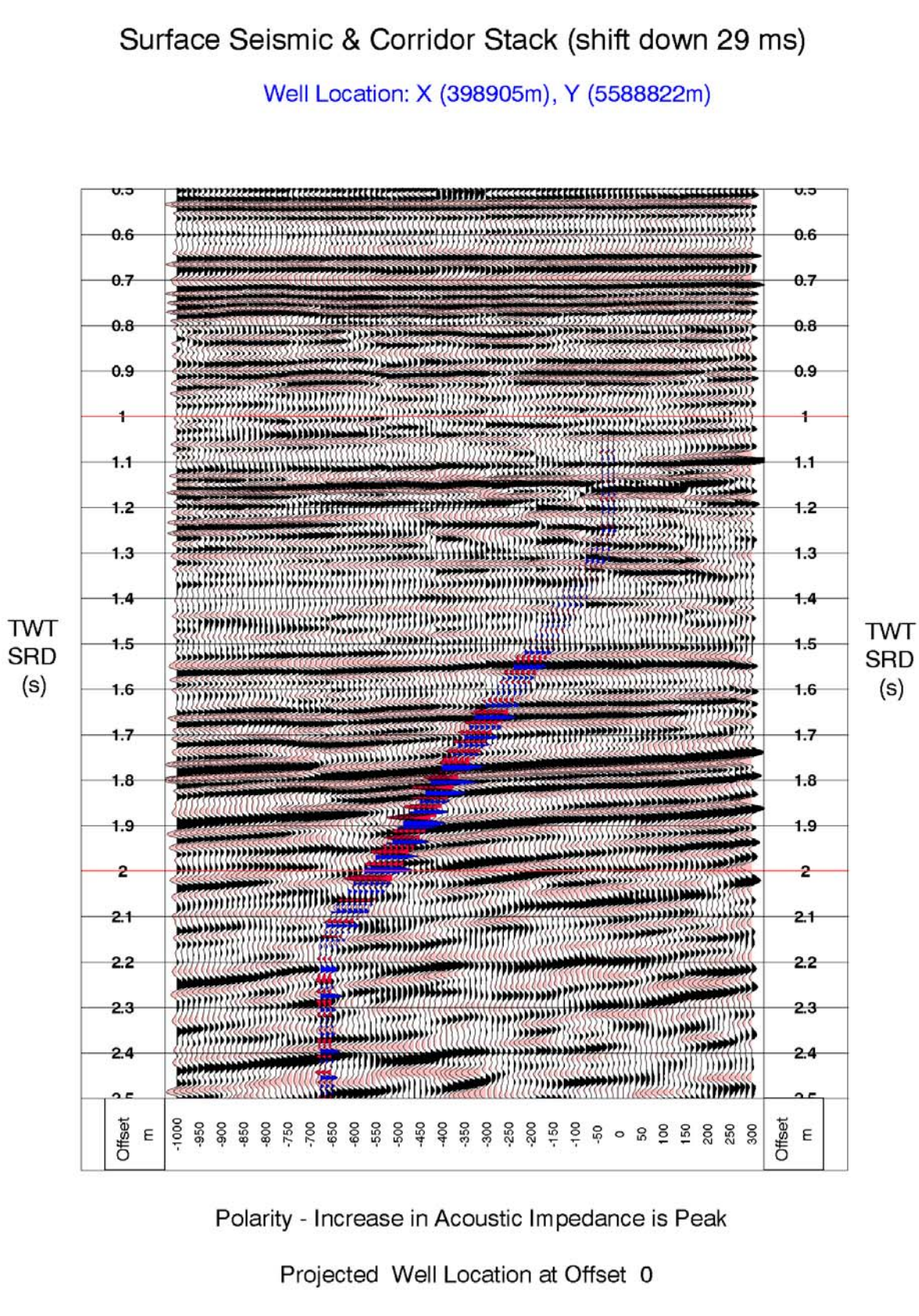


Figure 14b. Composite Display of Surface Seismic and Corridor Stack (R)

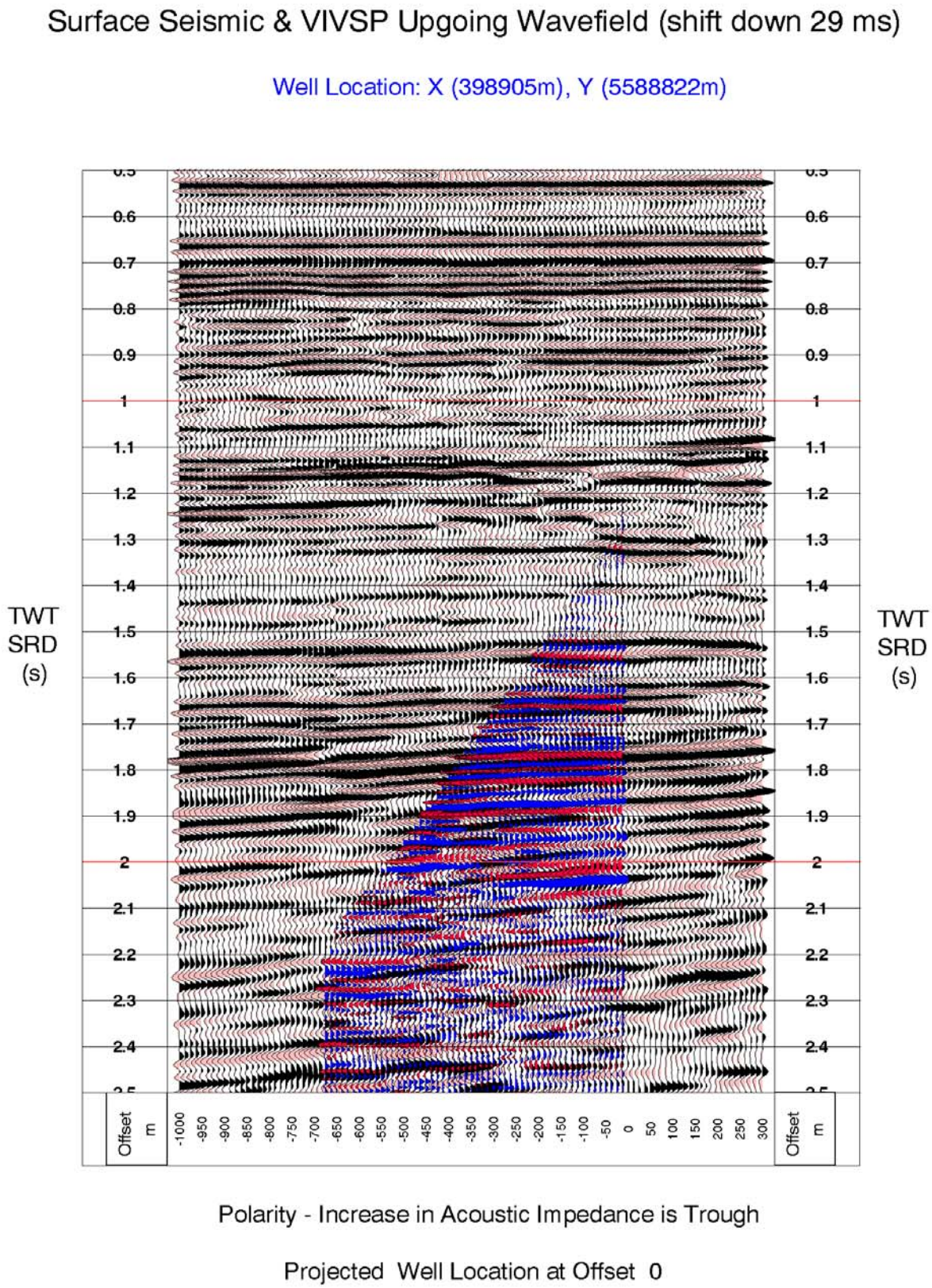
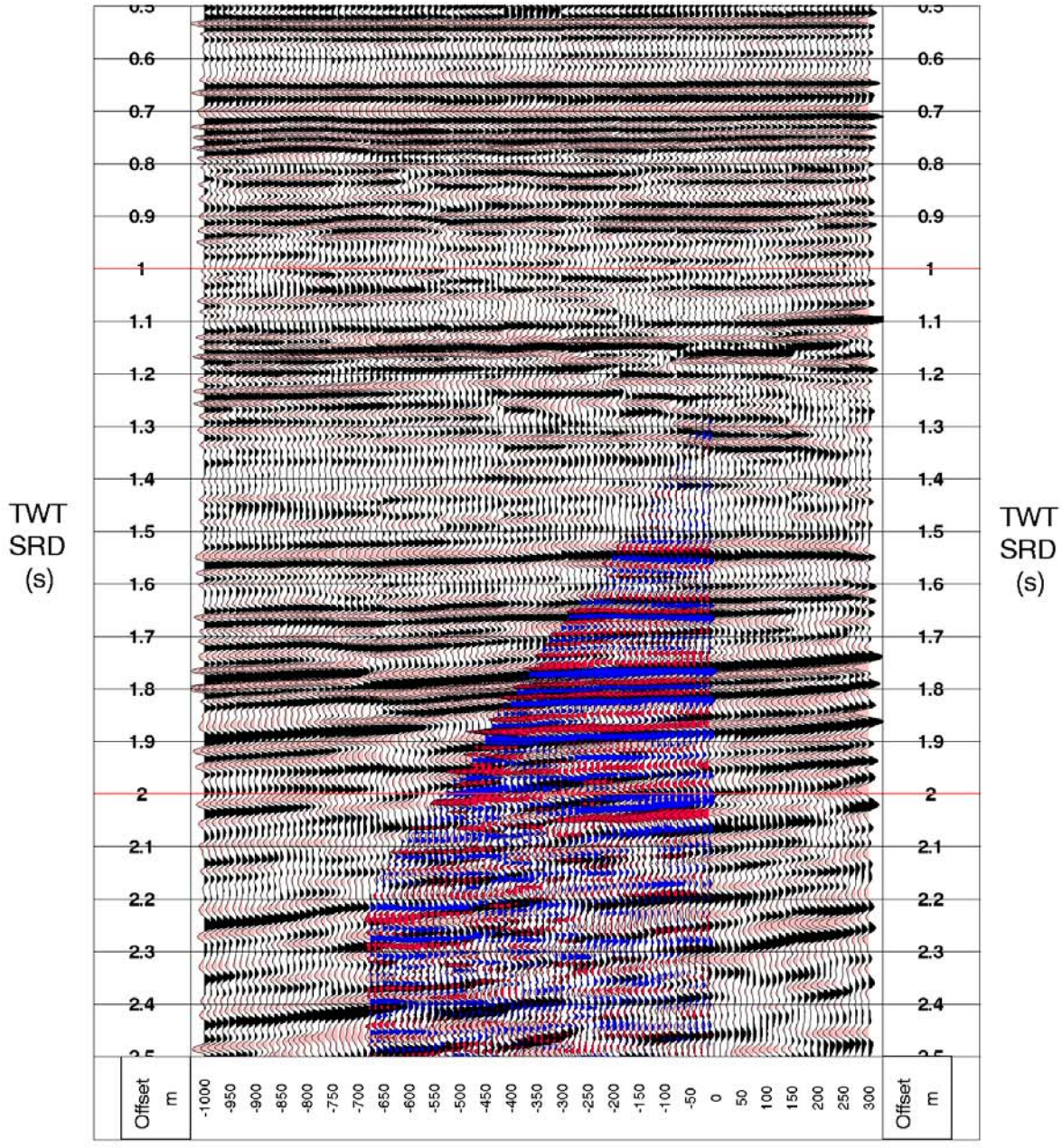


Figure 15a. Display of VIVSP Upgoing Wavefield under the wellbore and Surface Seismic (N)

Surface Seismic & VIVSP Upgoing Wavefield (shift down 29 ms)

Well Location: X (398905m), Y (5588822m)



Polarity - Increase in Acoustic Impedance is Peak

Projected Well Location at Offset 0

Figure 15b. Display of VIVSP Upgoing Wavefield under the wellbore and Surface Seismic (R)

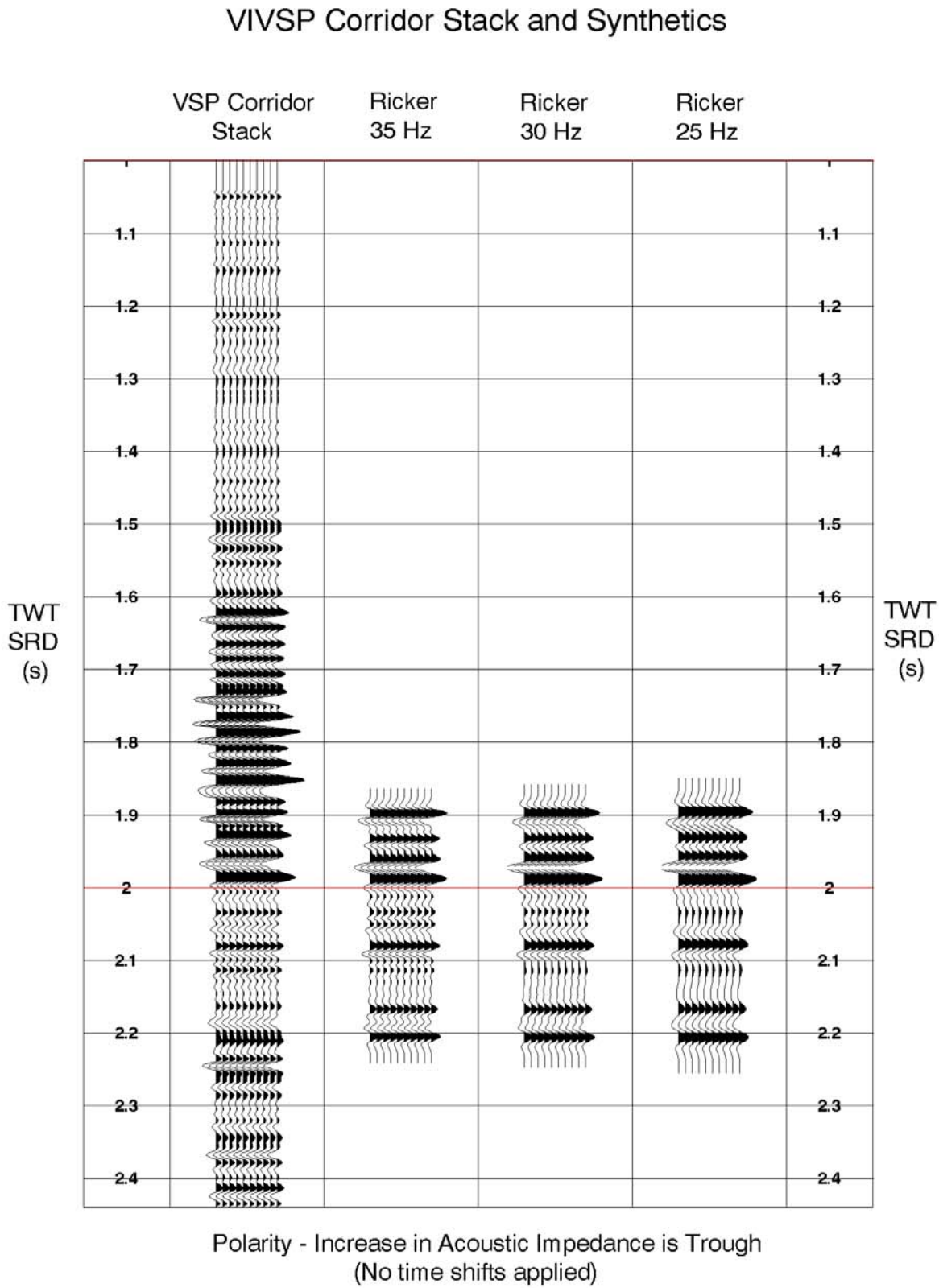


Figure 16a. Display of VIVSP Corridor Stack and Synthetics (N)

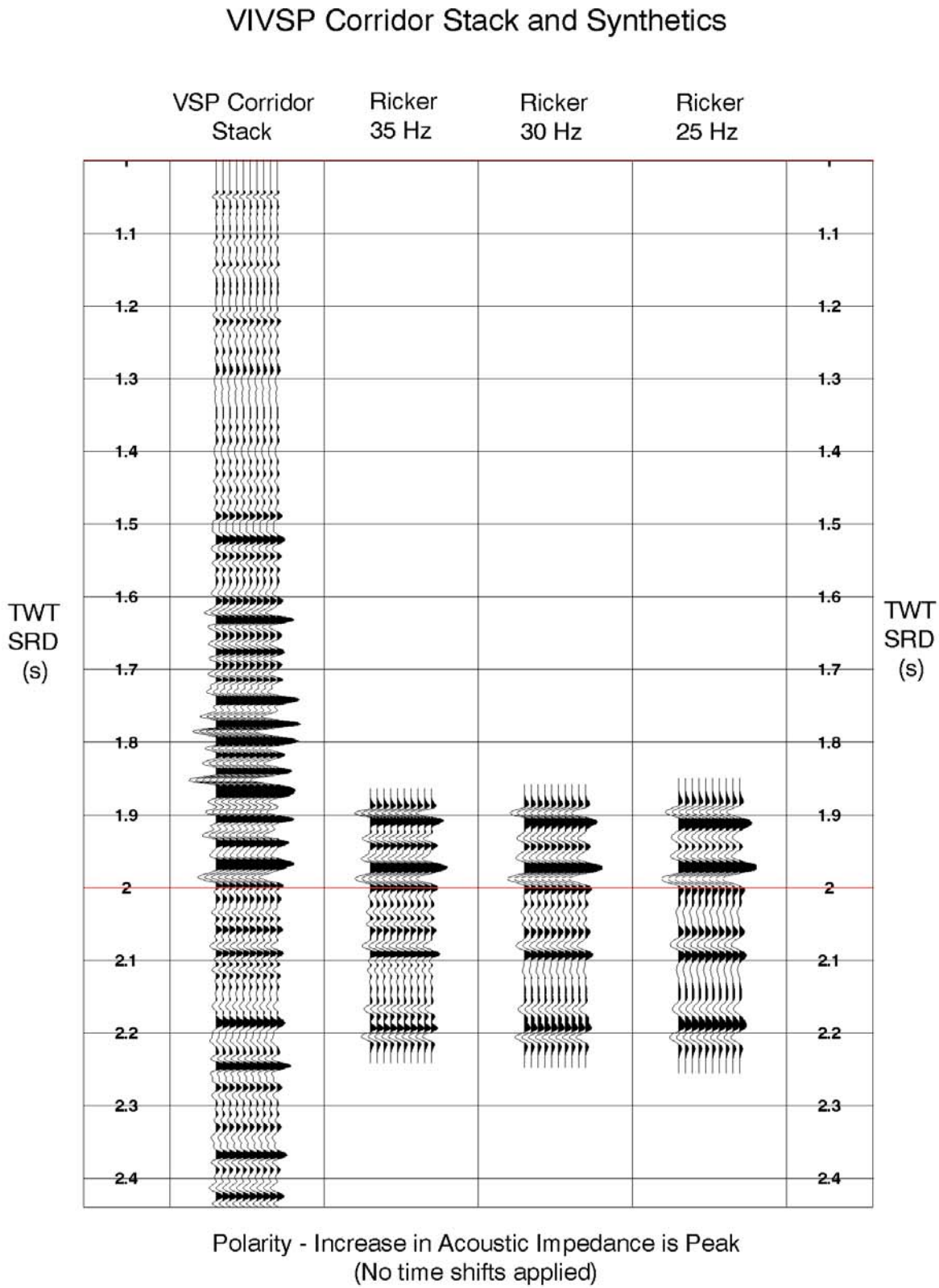


Figure 16b. Display of VIVSP Corridor Stack and Synthetics (R)

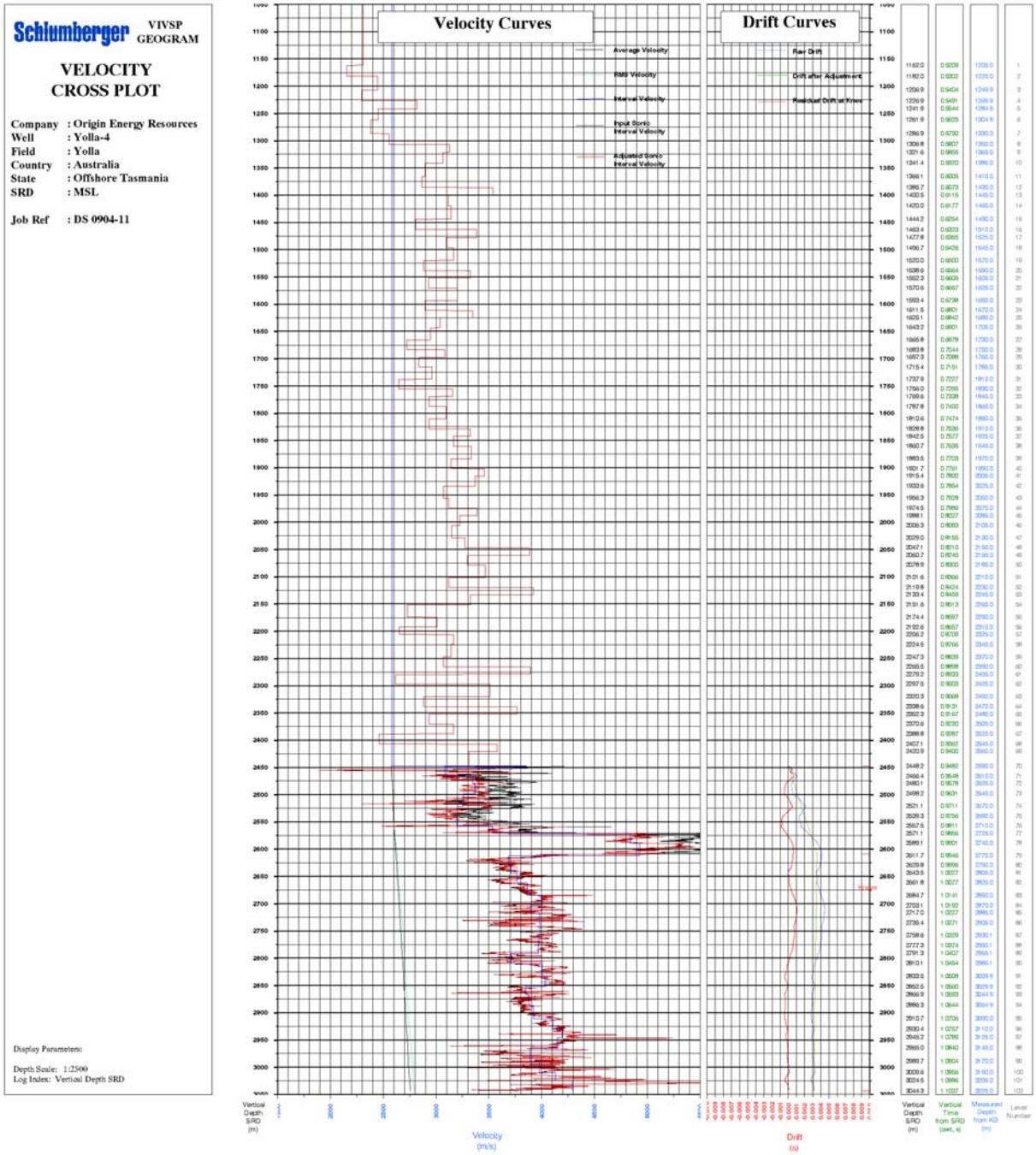


Figure 17. Velocity Crossplot (see Plot Vel 1)

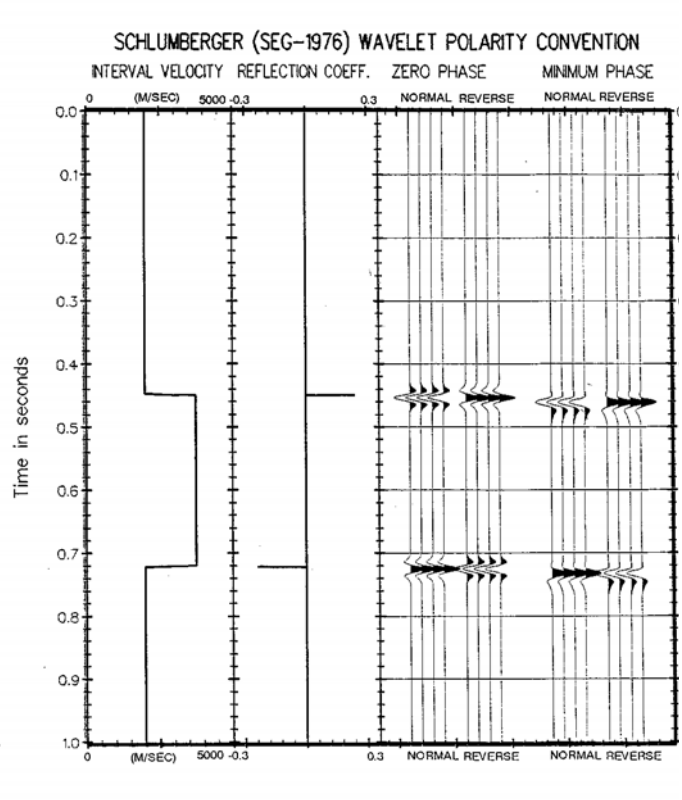


Figure 18. Schlumberger Wavelet Polarity Convention

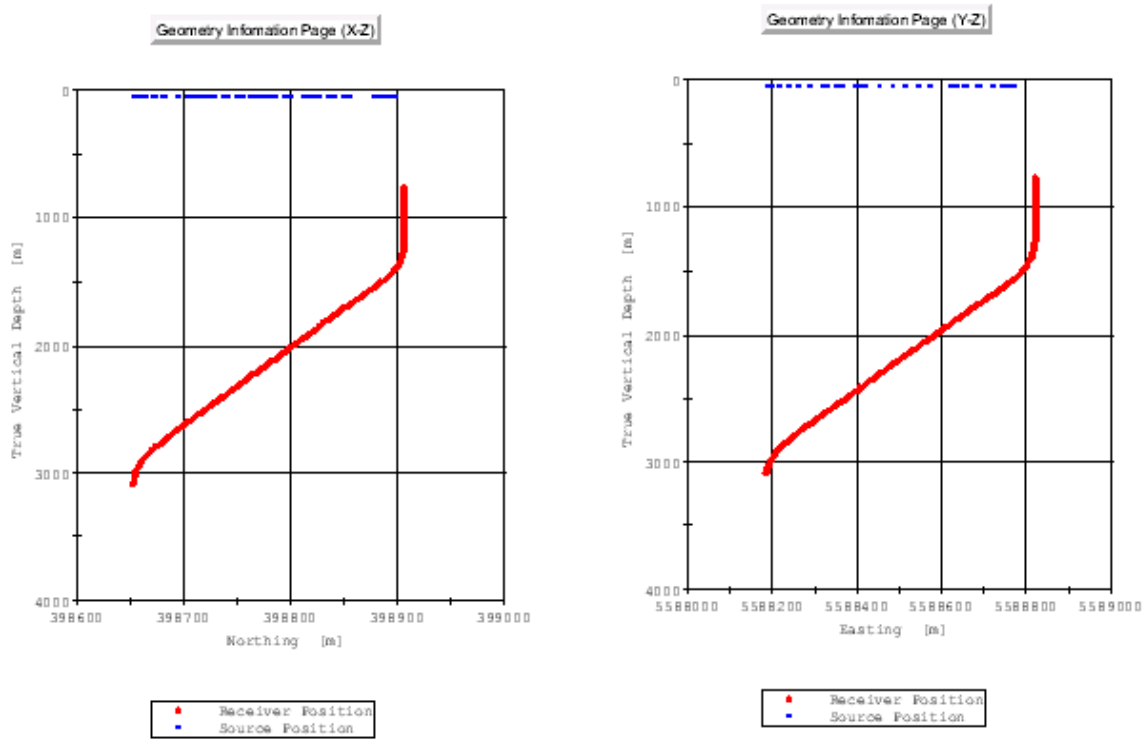


Figure 19. Yolla-4 Well Geometry

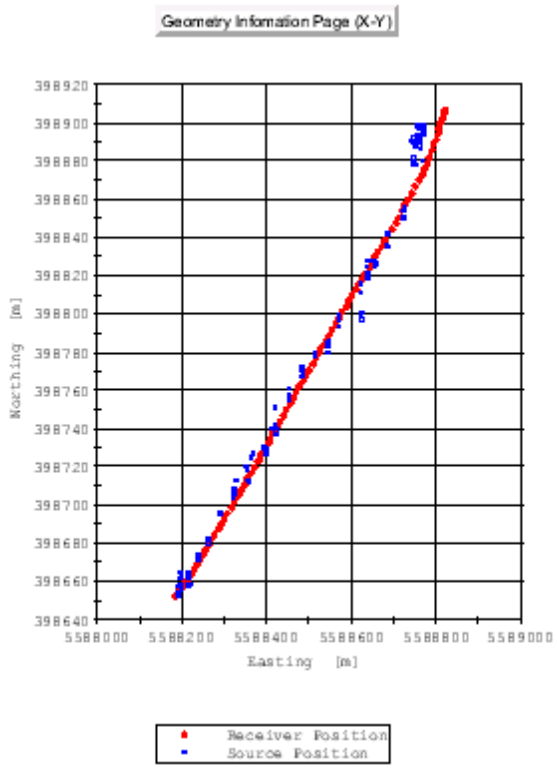


Figure 20. Yolla-4 VIVSP Source and Receiver Locations – Plan View

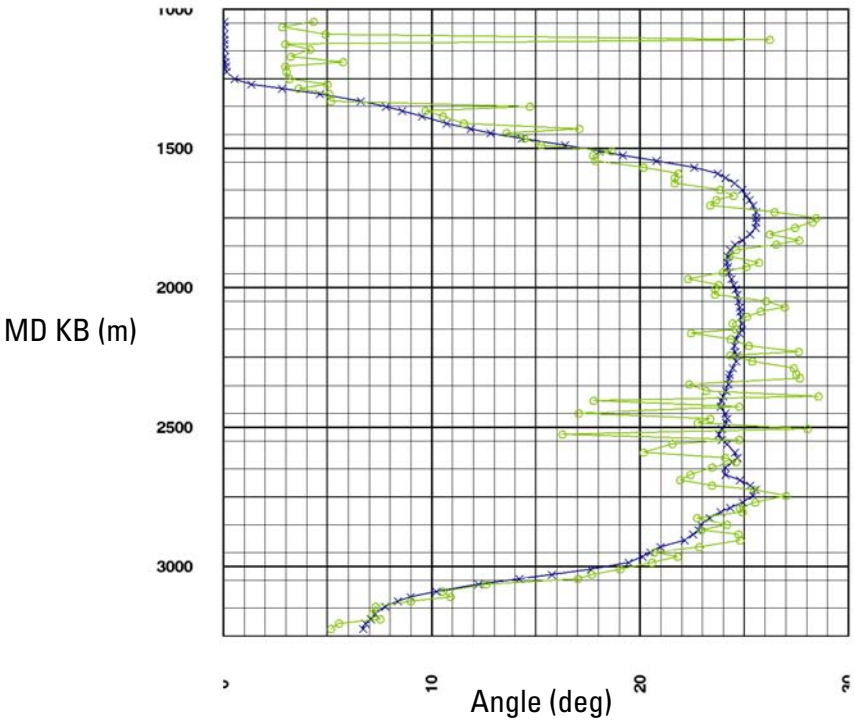


Figure 21. Rotation QC Display - Well deviation (x) vs. Polarization Angle (o)

Attachment 1: Summary of Geophysical Listings

Four geophysical data listings are appended to this report. A1 is included in the report, A2, A3 and A4 are provided in electronic form on the CD-ROM. Following is a brief description of the format.

A1 Check Shot Data

1. Level number: the level number starting from the top level (includes any imposed shots).

2. Vertical depth form SRD: *dsrd*, the depth in meters from seismic reference datum.

3. Measured depth from KB: *dkb*, the depth in meters from KB.

4. Observed travel time HYD to GEO: *tim*0, the transit time picked form the stacked data by subtracting the surface sensor first break time from the downhole sensor first break time.

5. Vertical travel time SRD to GEO: *shtm*, is *timv* – vertical time, corrected for the vertical distance between source and datum.

6. Delta depth between shots: Δ*depth*, the vertical distance between each level.

7. Delta time between shots: Δ*time*, difference in vertical travel time (*shtm*) between each level.

8. Interval velocity between shots: average velocity between each level, Δ*depth*/Δ*time*

9. Average velocity SRD to GEO: average velocity from datum to the checkshot level, shtm/dsrd

A2 Drift & Sonic Adjustment

Zone Set Data

1. Knee number: the knee number starting from the highest knee. (The first knees listed will generally be at SRD and the top of sonic. The drift imposed at these knees will normally be zero.)

2. Measured depth from KB: the depth in meters from KB

3. Vertical depth from SRD: the depth in meters from seismic reference datum.

4. Selected Drift at knee: the value of drift imposed at each knee.

5. Shift: the change in drift divided by the change in depth between any two levels.

6. Delta-T: see section 4 of report for an explanation of Δt_{min}.

7. Reduction factor G: see section 4 of report.

8. Selected Drift Gradient: the gradient of the imposed drift curve.

Sonic Adjustment Data

1. Measured depth from KB: the depth in meters from KB

2. Vertical depth from SRD: the depth in meters from seismic reference datum.

3. Vertical shot time SRD to GEO: the calculated vertical travel time from datum to geophone.

4. Adjusted Sonic Time.

5. Computed drift at level: the checkshot time minus the integrated raw sonic time.

6. Residual Shot Time - Adjusted Sonic Time.

7. Adjusted Interval Velocity.

8. Adjusted RMS Velocity.

9. Adjusted Average Velocity.

A3 Velocity Report

The data in this listing has been resampled in time.

1. Two way travel time from SRD: this is the index for the data in this listing. The first value is at SRD (0 ms) and is reported every 10 ms.

2. Measured depth from KB: the depth from KB at each corresponding value of two way time.

3. Vertical depth from SRD: the vertical depth from SRD at each corresponding value of two way time.

4. Average velocity SRD to GEO: the vertical depth from SRD divided by half the two way time.

5. RMS velocity: the root mean square velocity from datum to the corresponding value of two way time.

$$v_{rms} = \sqrt{(\Sigma v_i^2 t_i / \Sigma t_i)}$$

where v_i is the velocity between each 2 ms interval.

6. Interval velocity: the velocity between each sampled depth.

A4 Time to Depth

1. Two Way Sonic Time from SRD

2-11. Depth at Time, ms: times every 1 ms

Attachment 2: A-1 Well Seismic Report

Client and Well Information

Country	**Australia**
State	**Offshore Tasmania**
Logging Date	**15-Jul-2004**
Company	**Origin Energy**
Field	**Yolla**
Well	**Yolla-4**

Seismic Reference Datum : **MSL**
KB Elevation above MSL : 43 m
Water Velocity : 1524 m/s
Time Picking on Geophone Transformed GAC Stacks
Well deviation and Survey geometry corrections applied
Time picks above 1205 m KB are affected by casing arrivals and have been excluded from time picking

Check Shot Data

LEVEL NUMBER	VERTICAL DEPTH FROM MSL m	MEASURED DEPTH FROM KB m	OBSERVED TRAVEL TIME s	VERTICAL TRAVEL TIME MSL s	DELTA DEPTH m	DELTA TIME s	ACOUSTIC INTERVAL VELOCITY m/s	ACOUSTIC AVERAGE VELOCITY m/s
1	0			0				
							2231	
2	1162	1205	0.5177	0.5209				2231
					20	0.009	2155	
3	1182	1225	0.527	0.5302				2229
					24.9	0.01	2451	
4	1206.9	1249.9	0.5372	0.5404				2234
					20	0.009	2298	
5	1226.9	1269.9	0.5459	0.5491				2235
					15	0.005	2823	
6	1241.9	1284.9	0.5512	0.5544				2240
					20	0.008	2455	

LEVEL NUMBER	VERTICAL DEPTH FROM MSL m	MEASURED DEPTH FROM KB m	OBSERVED TRAVEL TIME s	VERTICAL TRAVEL TIME MSL s	DELTA DEPTH m	DELTA TIME s	ACOUSTIC INTERVAL VELOCITY m/s	ACOUSTIC AVERAGE VELOCITY m/s
7	1261.9	1304.9	0.5593	0.5625				2243
					25	0.011	2387	
8	1286.9	1330	0.5696	0.573				2246
					19.9	0.008	2561	
9	1306.8	1350	0.5773	0.5807				2250
					14.9	0.005	3130	
10	1321.6	1365	0.582	0.5855				2257
					19.8	0.007	3069	
11	1341.4	1385	0.5884	0.592				2266
					24.7	0.009	2898	
12	1366.1	1410	0.5971	0.6005				2275
					19.7	0.007	2871	
13	1385.7	1430	0.6039	0.6073				2282
					14.7	0.004	3542	
14	1400.5	1445	0.608	0.6115				2290
					19.5	0.006	3119	
15	1420	1465	0.6142	0.6177				2299
					24.2	0.008	3147	
16	1444.2	1490	0.6217	0.6254				2309
					19.2	0.007	2810	
17	1463.4	1510	0.6285	0.6323				2315
					14.3	0.004	3387	
18	1477.8	1525	0.6327	0.6365				2322
					18.9	0.006	3102	
19	1496.7	1545	0.6387	0.6426				2329
					23.4	0.007	3168	
20	1520	1570	0.6461	0.65				2339
					18.5	0.006	2886	
21	1538.6	1590	0.6525	0.6564				2344
					13.7	0.004	3327	
22	1552.3	1605	0.6566	0.6605				2350
					18.3	0.006	2933	
23	1570.6	1625	0.6628	0.6667				2356
					22.8	0.007	3206	
24	1593.4	1650	0.67	0.6738				2365
					18.1	0.006	2900	
25	1611.5	1670	0.6762	0.6801				2369
					13.6	0.004	3349	
26	1625.1	1685	0.6802	0.6842				2375

LEVEL NUMBER	VERTICAL DEPTH FROM MSL m	MEASURED DEPTH FROM KB m	OBSERVED TRAVEL TIME s	VERTICAL TRAVEL TIME MSL s	DELTA DEPTH m	DELTA TIME s	ACOUSTIC INTERVAL VELOCITY m/s	ACOUSTIC AVERAGE VELOCITY m/s
					18.1	0.006	3041	
27	1643.2	1705	0.6862	0.6901				2381
					22.6	0.008	2950	
28	1665.8	1730	0.6939	0.6978				2387
					18	0.007	2728	
29	1683.8	1750	0.7005	0.7044				2390
					13.5	0.004	3085	
30	1697.3	1765	0.7048	0.7088				2395
					18	0.006	2839	
31	1715.4	1785	0.7112	0.7151				2399
					22.5	0.008	2966	
32	1737.9	1810	0.7189	0.7227				2405
					18.1	0.007	2651	
33	1756	1830	0.7256	0.7295				2407
					13.6	0.004	3159	
34	1769.6	1845	0.7299	0.7338				2411
					18.2	0.006	2935	
35	1787.8	1865	0.7361	0.74				2416
					22.8	0.007	3101	
36	1810.6	1890	0.7435	0.7474				2423
					18.2	0.006	2937	
37	1828.8	1910	0.7497	0.7536				2427
					13.7	0.004	3329	
38	1842.5	1925	0.7538	0.7577				2432
					18.2	0.006	3170	
39	1860.7	1945	0.7595	0.7635				2437
					22.8	0.007	3338	
40	1883.5	1970	0.7664	0.7703				2445
					18.2	0.006	3146	
41	1901.7	1990	0.7722	0.7761				2450
					13.7	0.004	3460	
42	1915.4	2005	0.7761	0.78				2456
					18.2	0.005	3372	
43	1933.6	2025	0.7816	0.7854				2462
					22.7	0.007	3075	
44	1956.3	2050	0.7889	0.7928				2468
					18.2	0.006	3123	
45	1974.5	2070	0.7947	0.7986				2472
					13.6	0.004	3392	

LEVEL NUMBER	VERTICAL DEPTH FROM MSL m	MEASURED DEPTH FROM KB m	OBSERVED TRAVEL TIME s	VERTICAL TRAVEL TIME MSL s	DELTA DEPTH m	DELTA TIME s	ACOUSTIC INTERVAL VELOCITY m/s	ACOUSTIC AVERAGE VELOCITY m/s
46	1988.1	2085	0.7987	0.8027				2477
					18.2	0.006	3225	
47	2006.3	2105	0.8043	0.8083				2482
					22.7	0.007	3149	
48	2029	2130	0.8116	0.8155				2488
					18.1	0.006	3278	
49	2047.1	2150	0.8171	0.821				2493
					13.6	0.004	3889	
50	2060.7	2165	0.8206	0.8245				2499
					18.2	0.006	3302	
51	2078.9	2185	0.8261	0.83				2505
					22.7	0.007	3469	
52	2101.6	2210	0.8326	0.8366				2512
					18.2	0.006	3121	
53	2119.8	2230	0.8385	0.8424				2516
					13.6	0.004	3925	
54	2133.4	2245	0.8419	0.8459				2522
					18.2	0.006	3328	
55	2151.6	2265	0.8474	0.8513				2527
					22.7	0.008	2731	
56	2174.4	2290	0.8557	0.8597				2529
					18.2	0.006	3013	
57	2192.6	2310	0.8618	0.8657				2533
					13.7	0.005	2656	
58	2206.2	2325	0.8669	0.8709				2533
					18.2	0.006	3168	
59	2224.5	2345	0.8727	0.8766				2538
					22.8	0.007	3145	
60	2247.3	2370	0.8799	0.8839				2543
					18.3	0.006	3076	
61	2265.5	2390	0.8859	0.8898				2546
					13.7	0.004	3899	
62	2279.2	2405	0.8894	0.8933				2551
					18.3	0.007	2619	
63	2297.5	2425	0.8964	0.9003				2552
					22.9	0.007	3516	
64	2320.3	2450	0.9029	0.9068				2559
					18.3	0.006	2889	
65	2338.6	2470	0.9092	0.9131				2561

LEVEL NUMBER	VERTICAL DEPTH FROM MSL m	MEASURED DEPTH FROM KB m	OBSERVED TRAVEL TIME s	VERTICAL TRAVEL TIME MSL s	DELTA DEPTH m	DELTA TIME s	ACOUSTIC INTERVAL VELOCITY m/s	ACOUSTIC AVERAGE VELOCITY m/s
					13.7	0.004	3769	
66	2352.3	2485	0.9128	0.9167				2566
					18.3	0.006	2934	
67	2370.6	2505	0.919	0.923				2568
					18.3	0.006	3171	
68	2388.8	2525	0.9248	0.9287				2572
					18.3	0.007	2463	
69	2407.1	2545	0.9322	0.9362				2571
					13.7	0.004	3585	
70	2420.9	2560	0.9361	0.94				2575
					27.4	0.008	3327	
71	2448.2	2590	0.9443	0.9482				2582
					18.2	0.007	2755	
72	2466.4	2610	0.9509	0.9548				2583
					13.6	0.003	4504	
73	2480.1	2625	0.9539	0.9578				2589
					18.2	0.005	3493	
74	2498.2	2645	0.9591	0.9631				2594
					22.8	0.008	2832	
75	2521.1	2670	0.9672	0.9711				2596
					18.2	0.005	4057	
76	2539.3	2690	0.9717	0.9756				2603
					18.2	0.006	3303	
77	2557.5	2710	0.9772	0.9811				2607
					13.6	0.005	3039	
78	2571.1	2725	0.9817	0.9856				2609
					18	0.005	4042	
79	2589.1	2745	0.9861	0.9901				2615
					22.6	0.005	4936	
80	2611.7	2770	0.9907	0.9946				2626
					18.1	0.005	3712	
81	2629.8	2790	0.9956	0.9995				2631
					13.6	0.003	4299	
82	2643.5	2805	0.9987	1.0027				2636
					18.3	0.005	3667	
83	2661.8	2825	1.0037	1.0077				2642
					23	0.007	3552	
84	2684.7	2850	1.0102	1.0141				2647
					18.4	0.005	3664	

LEVEL NUMBER	VERTICAL DEPTH FROM MSL m	MEASURED DEPTH FROM KB m	OBSERVED TRAVEL TIME s	VERTICAL TRAVEL TIME MSL s	DELTA DEPTH m	DELTA TIME s	ACOUSTIC INTERVAL VELOCITY m/s	ACOUSTIC AVERAGE VELOCITY m/s
85	2703.1	2870	1.0152	1.0192				2652
					13.8	0.004	3859	
86	2717	2885	1.0188	1.0227				2657
					18.4	0.004	4203	
87	2735.4	2905	1.0232	1.0271				2663
					23.2	0.006	4023	
88	2758.6	2930.1	1.029	1.0329				2671
					18.7	0.005	4114	
89	2777.3	2950.1	1.0335	1.0374				2677
					14	0.003	4303	
90	2791.3	2965.1	1.0368	1.0407				2682
					18.8	0.005	3992	
91	2810.1	2985.1	1.0415	1.0454				2688
					23.5	0.006	4302	
92	2833.5	3009.9	1.0469	1.0508				2696
					19	0.005	3714	
93	2852.5	3029.9	1.052	1.056				2701
					14.4	0.003	4284	
94	2866.9	3044.9	1.0554	1.0593				2706
					19.4	0.005	3820	
95	2886.3	3064.9	1.0604	1.0644				2712
					24.5	0.006	3961	
96	2910.7	3090	1.0666	1.0706				2719
					19.6	0.005	3851	
97	2930.4	3110	1.0717	1.0757				2724
					14.8	0.003	4501	
98	2945.2	3125	1.075	1.0789				2730
					19.8	0.005	3953	
99	2965	3145	1.08	1.084				2735
					24.8	0.006	3865	
100	2989.7	3170	1.0864	1.0904				2742
					19.8	0.005	3822	
101	3009.6	3190	1.0916	1.0956				2747
					14.9	0.003	4900	
102	3024.5	3205	1.0947	1.0986				2753
					19.9	0.005	3920	
103	3044.3	3225	1.0997	1.1037				2758

Attachment 3: Listing of Deliverables (CD-ROM)

Report:

VIVSP_report	VIVSP/Geogram Processing Report	PDF
QBH_report	Q-Borehole Survey Report	PDF

Graphics Displays:

comp1	Plot 1. Composite Display 1– Polarity: Trough	TIF / PDF / PDS / CGM
comp2	Plot 2. Composite Display 2 – Polarity: Peak	TIF / PDF / PDS / CGM
vel1	Plot 3. Velocity Crossplot	TIF / PDF / PDS / CGM

Data files plus Verification (.txt) listings:

(Raw data is affected by cable problem as described in Chapter 2 – Data Acquisition, Field LDF only)

Y4_xstk.sgy	stacked x axis data	SEGY
Y4_ystk.sgy	stacked y axis data	SEGY
Y4_zstk.sgy	stacked z axis data	SEGY
Y4_upp.sgy	Zero Phase upgoing wavefield TWT	SEGY
Y4_corstk.sgy	Zero phase corridor stack	SEGY
Y4_upp_reg.sgy	Zero Phase upgoing wavefield TWT (Regularised Offset)	SEGY
Y4_corstk_reg.sgy	Zero phase corridor stack (Regularised Offset)	SEGY
Y4_synt_R35.sgy	Zero Phase Synthetic Seismograms – Ricker 35Hz	SEGY
Y4_synt_R30.sgy	Zero Phase Synthetic Seismograms – Ricker 30Hz	SEGY
Y4_synt_R25.sgy	Zero Phase Synthetic Seismograms – Ricker 25Hz	SEGY
logs_depth.las	Depth indexed Logs	ASCII (LAS)
logs_time.las	Time indexed Logs	ASCII (LAS)
synthetics.las	Synthetic Seismograms and Corridor Stack	ASCII (LAS)
logs_in_mdtvdtwt.xls	Corridor Stack resampled in MD, TVD, TWT (special request)	EXCEL

Listings:

A1	Well_Seismic_Report	EXCEL
A2	Drift_and_Sonic_Adjustment_Report	EXCEL
A3	Velocity_Report	EXCEL
A4	Time_to_Depth_Report	EXCEL

APPENDIX 10: POSITIONING REPORT FOR VELOCITY SURVEY

REPORT FOR THE VSP SURVEY
AT YOLLA-A PLATFORM
WELL: YOLLA-4

FUGRO SURVEY JOB NO. – P0089

Client	:	Origin Energy Resources Ltd C/o Australian Drilling Associates Pty Ltd Suite 2, Level 9 470 Collins Street Melbourne, 3000 Victoria
Date Of Survey	:	8 – 15 July, 2004
Date Of Report	:	23 July, 2004
Checked	:	_____
Authorised	:	_____

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1.0 INTRODUCTION

Fugro Survey Pty Ltd (Fugro) was contracted by Origin Energy Resources Ltd, c/o Australian Drilling Associates Ltd (Origin) to provide positioning services for a Vertical Seismic Profiling (VSP) survey conducted from the jackup rig *ENSCO 102*, using the supply vessel *Ray J. Hope* as the gun vessel. The VSP survey was carried out at the Yolla-A Platform from Well Yolla-4. The Yolla-A platform operated by Origin is located in the Bass Strait, midway between Victoria and Tasmania.

A general location diagram is shown as Figure 1-1.

Surface positioning was achieved utilising a Trimble 4000DS GPS Receiver and Fugro Omnistar Demodulator, together with Fugro software programs, MRDGPS and the Starfix.Seis navigation suite. This report details the equipment used, survey parameters adopted, procedures employed and the results achieved. A section on safety is included in Section 3.0 of this report.

1.1 Scope of Work

Personnel and equipment were provided for:

- Surface navigation of one Gun Handling Vessel and interfacing to the Schlumberger gun control unit, and
- Logging and remote transmission of fixes triggered from the Schlumberger gun control unit.

1.2 Sequence of Events

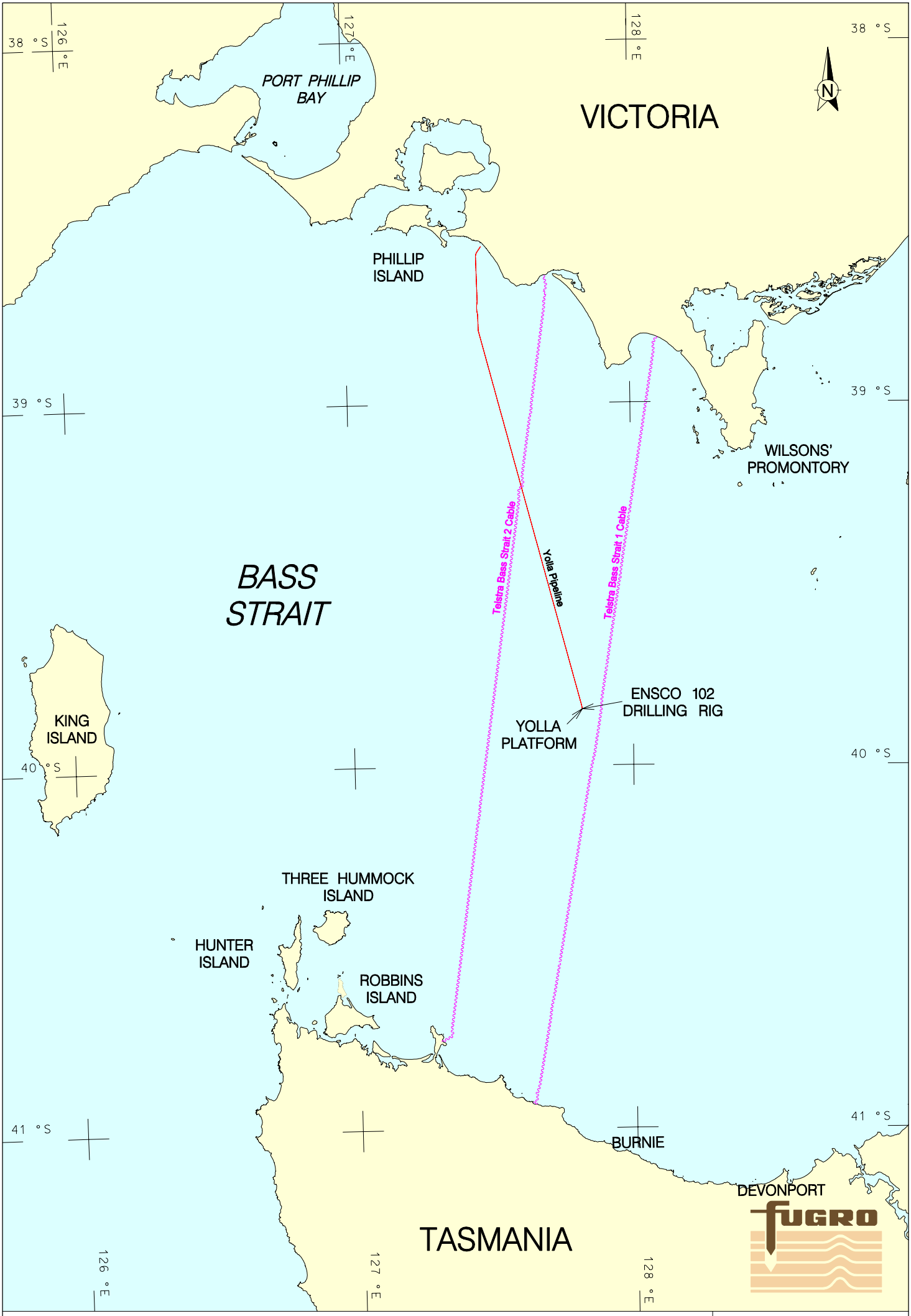
On 8 July, 2004, N. Smith travelled from Perth to Melbourne, overnight in Melbourne and then flew to *ENSCO 102* the following day.

On 11 July, 2004, S. Bradley travelled Perth to Melbourne, overnight in Melbourne and then flew to *ENSCO 102* the following day.

On 12 July, 2004, survey equipment was set up on rig *ENSCO 102* and the following day personnel and equipment were transferred to supply vessel *Ray J. Hope*. Equipment was mobilised and calibrated in preparation for VSP survey.

VSP Survey was carried out on 15 July, 2004, and after completion, all equipment was demobilised and, together with personnel, transferred back to the rig. Fugro personnel departed rig and returned to Perth the same day.

Full details of Fugro involvement in the VSP survey are presented in the Daily Operations Reports included in Appendix A.



GENERAL LOCATION DIAGRAM

FIGURE 1–1

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2.0 RESULTS

2.1 Fixing Details

For the Yolla-4 VSP surveys a minimum of five air gun shots were made at each of the pre-defined hydrophone locations.

Included in Appendix B are the individual fix positions for each shot location. These show the easting and northing of the guns, and also their range and bearing to the Yolla-4 well position.

3.0 SAFETY

All work undertaken by Fugro personnel during the project was conducted within the guidelines of Fugro's Safety Policy as defined in Fugro's Safety Manual (FSSM01) and Offshore Survey Safety Practices (FSSM06).

Fugro personnel worked within project safety guidelines and plans adopted by ENSCO International and Tidewater Marine.

Personal safety equipment was worn throughout the project as required.

No injuries involving Fugro personnel were reported during the project.

4.0 SURVEY PARAMETERS

All coordinates supplied in this report are referenced to the Geodetic Datum of Australia 1994 (GDA94). Global Positioning System (GPS) operates in reference to the World Geodetic System 1984

Datum	**:**	**WGS84**
Reference Spheroid	:	World Geodetic Spheroid 1984
Semi-Major Axis	:	6378137.000m
Inverse flattening	:	298.257223563

Datum	**:**	**Geodetic Datum of Australia 1994 (GDA94)**
Reference Spheroid	:	Geocentric Reference System 1980 (GRS80)
Semi-Major Axis	:	6378137.0m
Inverse flattening (1/f)	:	298.257222101

To all intents and purposes the conversion between WGS84 and GDA94 for this survey is considered negligible, therefore no transformation is required.

The proposed drilling location and all project coordinates are grid coordinates on the Map Grid of Australia.

Projection	**:**	**Transverse Mercator**
Grid	:	Map Grid of Australia (MGA)
Latitude of Origin	:	0°
Central Meridian	:	147° E (UTM Zone 55)
Central Scale Factor	:	0.9996
False Easting	:	500000m
False Northing	:	10000000m
Units	:	Metres

4.1 Differential GPS Reference Stations

The reference stations listed in Table 4-1 were used in the computation of the DGPS position.

Name	Site Id	Latitude	Longitude	Height	Datum
Melbourne	385	37° 48’ 29.029”	144° 57’ 48.019”	82.10m	WGS84
Ceduna	355	32° 07’ 03.074”	133° 41’ 22.836”	7.34m	WGS84
Bathurst	336	33º 25’ 46.902”	149º 34’ 01.959”	756.71m	WGS84

TABLE 4-1 : DIFFERENTIAL GPS REFERENCE STATIONS

4.2 Project Coordinates

Schlumberger supplied the well coordinates, shown in Table 4-2, for the VSP survey.

Well Coordinates	Easting	Northing
Yolla-4	398905.15	5588821.53

TABLE 4-2 : CLIENT SUPPLIED PROJECT COORDINATES

Please refer to Appendix C for a listing of the client supplied target levels for the well.

5.0 EQUIPMENT & PERSONNEL

5.1 Equipment Listing

Source Vessel: *Ray J. Hope*

2 x Starfix.Seis navigation computer and monitors (1 spare)
2 x Trimble 4000DS GPS receivers c/w associated antenna, cabling and interfaces (1 spare)
2 x Fugro Omnistar demodulators (1 spare)
2 x Remote telemetry system (1 spare)
1 x TSS Meridian Gyrocompass
2 x Helmsman's monitor (1 spare)

Rig: Interface to Schlumberger Control System

2 x Remote telemetry system (1 spare)

All equipment was supplied with a complete backup.

Refer to Figure 5-1 for an equipment flow diagram for the VSP survey.

5.2 Vessel

The gun vessel used for the VSP survey from the *ENSCO 102* was the *Ray J. Hope,* a platform Supply Vessel.

Refer to Figure 5-2 for a vessel offset diagram.

5.3 Personnel

Fugro personnel involved in this project were as follows:

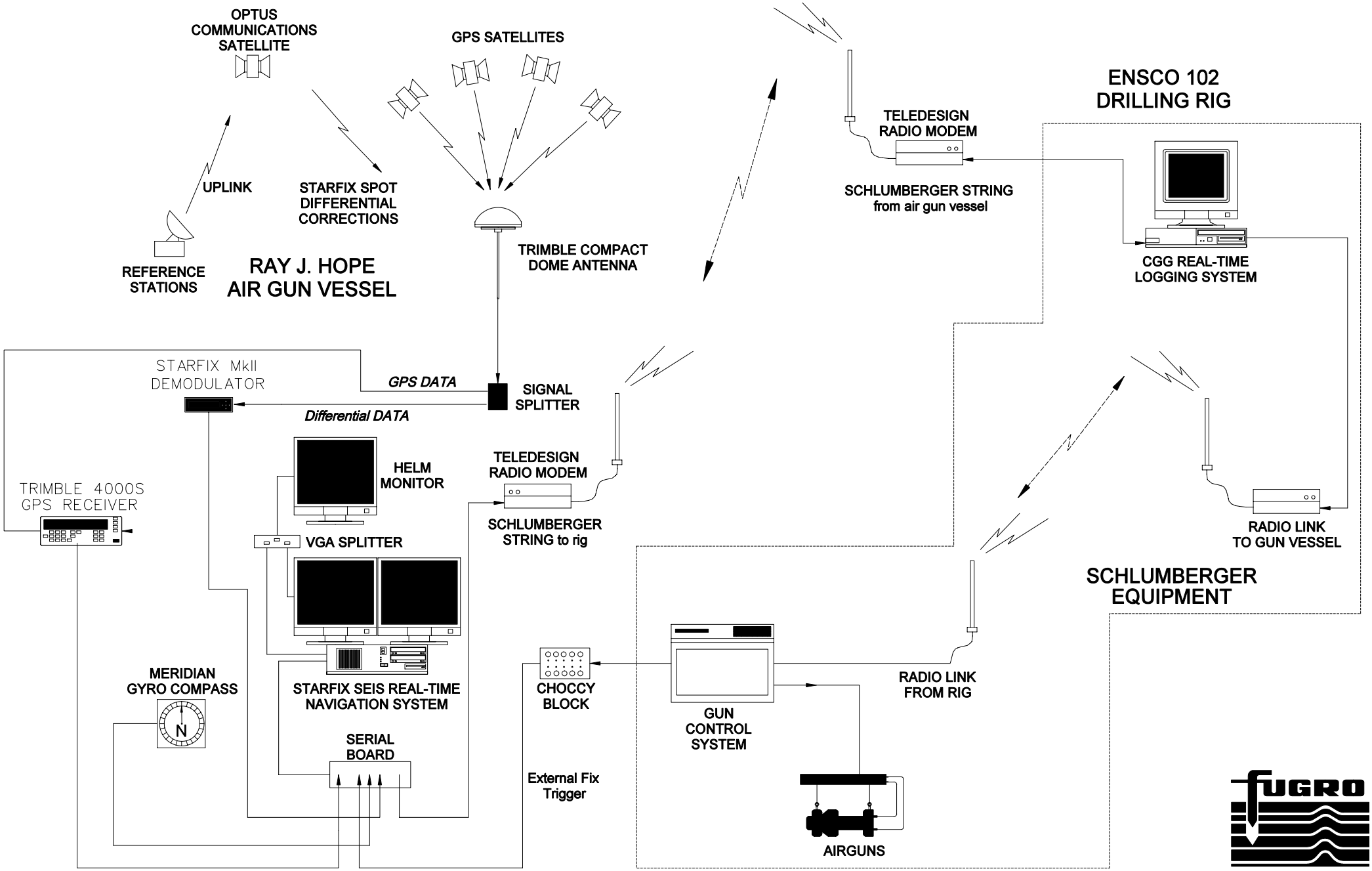
N.Smith	Surveyor	8-15 July, 2004
S.Bradley	Surveyor	11-15 July, 2004

5.4 Navigation Equipment on Board the *Ray J. Hope*

The navigation system comprised a Trimble 4000DS GPS Receiver, Fugro Omnistar demodulator and a Meridian gyrocompass.

The navigation system was interfaced to Fugro's MRDGPS (Multi Reference DGPS) software package, which utilised reference stations at Melbourne, Ceduna and Bathurst.

The navigation system was interfaced to Starfix.Seis for tracking of the gun position on board the *Ray J. Hope*. When the gun was fired the gun position along with vessel heading and fixing details were transmitted via modem back to the Schlumberger logging computer.



EQUIPMENT FLOW DIAGRAM FOR VSP SURVEYS

FIGURE 5–1

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VESSEL OFFSET DIAGRAM – RAY J. HOPE

FIGURE 5–2

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6.0 SURVEY PROCEDURES

6.1 Mobilisation

N.Smith was mobilised from Perth on 8 July, 2004, and transferred to the *ENSCO 102* on 9 July, 2004. S. Bradley was mobilised from Perth on 11 July, 2004, and transferred to the *ENSCO 102* on 12 July, 2004. The telemetry link on the *ENSCO 102* was installed on 12 July, 2004. Fugro personnel and equipment were transferred from the rig to the gun vessel, *Ray J. Hope*, on 13 July, 2004. The survey system for the VSP survey were installed onboard the gun vessel, equipment calibrations were performed and the complete system including communications, was function tested and confirmed as operational on the same day.

The integrity of the navigation system and geodesy was checked by completing transit fixes around the Yolla-A platform. Fix positions (fixes 39 to 46) are included in Appendix B – PC2004_195.

The gyrocompass was calibrated and aligned to the ship's gyro to provide corrected heading information.

6.2 General Survey Procedures

Fugro and Schlumberger undertook the VSP survey on 15 July, 2004, at well Yolla-4 between a target depth of 3,230m and 910m.

The VSP survey was conducted using a down-hole hydrophone tool placed at various depths inside the pre-drilled exploration wells. The gun vessel was statically positioned over pre-determined locations that were provided by Schlumberger, vertically above the position of the hydrophones. The Schlumberger control system passed a gun closure via telemetry to the gun vessel, which in turn fired the guns and took the position of the vessel at the time of firing. This position was transmitted via radio modem back to the Schlumberger control system for logging.

6.3 Demobilisation

The navigation system onboard the *Ray J. Hope* was demobilised, transferred back to the *ENSCO 102*, and packed into the Fugro container onboard the rig. This container was left onboard the rig

Fugro personnel departed the rig on 15 July, 2004, and returned to Perth the same day.

7.0 DISTRIBUTION

Copies of this report have been distributed as follows:

Origin Energy Resources Ltd C/o Australian Drilling Associates Pty Ltd Attn: Mr Michael Lanzer	3 hard copies 1 electronic copy
Fugro Survey Pty Ltd	1 hard copy 1 electronic copy

APPENDIX A
DAILY OPERATIONS REPORTS

DAILY OPERATIONS REPORT

CLIENT: ORIGIN ENERGY / ADA	LOCATION: MELBOURNE	DATE: 8/7/04
PROJECT: YOLLA VSP SURVEY	VESSEL: N/A	JOB NO: P0089

FROM	TO	SUMMARY OF OPERATIONS
1115	1730	N. Smith travels Perth to Melbourne

EQUIPMENT	No.	EQUIPMENT	No.	PERSONNEL	TITLE
PC SEIS	2	UPS	1	N. SMITH	SURVEYOR
GPS RECEIVER	2				
DEMODULATOR	3				
GYRO	1				
RADIO MODEM	4				
MONITORS	4				
PRINTER	1				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION: HOLIDAY INN x 1					

AUTHORISED CONTRACT CHANGES/COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
N. Smith		17705

FSHY01-1

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DAILY OPERATIONS REPORT

FUGRO

CLIENT: ORIGIN ENERGY / ADA	LOCATION: MELBOURNE	DATE: 9/7/04
PROJECT: YOLLA VSP SURVEY	VESSEL: ENSCO 102	JOB NO: P0089

FROM	TO	SUMMARY OF OPERATIONS
1230	1340	N. Smith travels by helicopter from Melbourne to ENSCO 102.
1400		Rig induction.
1600		Meeting with Origin Energy company man, Henry Flink. Confirmed delivery of Fugro survey equipment on board rig. Informed VSP survey will not commence until sometime next week.

EQUIPMENT	No.	EQUIPMENT	No.	PERSONNEL	TITLE
				N. SMITH	SURVEYOR
AS PER					
DOR		# 17705			

VEHICLES:

CONSUMABLES:

ACCOMMODATION:

AUTHORISED CONTRACT CHANGES/COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
N. H. Smith		17706

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DAILY OPERATIONS REPORT

FUGRO

CLIENT: ORIGIN ENERGY / ADA	LOCATION: BASS STRAIT	DATE: 10/7/04
PROJECT: YOLLA VSP SURVEY	VESSEL: ENSCO 102	JOB NO: P0089

FROM	TO	SUMMARY OF OPERATIONS
0000	2400	Standing by on rig

EQUIPMENT	No.	EQUIPMENT	No.	PERSONNEL	TITLE
				N. SMITH	SURVEYOR
AS PER DOR # 17705					

VEHICLES:

CONSUMABLES:

ACCOMMODATION:

AUTHORISED CONTRACT CHANGES/COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
N. Smith		17707

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DAILY OPERATIONS REPORT

FUGRO

CLIENT: ORIGIN ENERGY / AOA	LOCATION: BASS STRAIT	DATE: 11/7/04
PROJECT: YOLLA VSP SURVEY	VESSEL: ENSCO 102	JOB NO: P0089

FROM	TO	SUMMARY OF OPERATIONS
0000	2400	Standing by on rig.
1030		Rig muster drill.
1300		Rig safety meeting
1115	1730	S. Bradley flies Perth to Melbourne and overnights at Holiday Inn

EQUIPMENT	No.	EQUIPMENT	No.	PERSONNEL	TITLE
				N. SMITH	SURVEYOR
AS PER DOR # 17705				S. BRADLEY	"

VEHICLES:	
CONSUMABLES:	
ACCOMMODATION: Holiday Inn x 1	

AUTHORISED CONTRACT CHANGES/COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
N. H. Smith		17708

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DAILY OPERATIONS REPORT

FUGRO

CLIENT: ORIGIN ENERGY/ADA	LOCATION: BASS STRAIT	DATE: 12/7/04
PROJECT: YOLLA VSP SURVEY	VESSEL: ENSCO 102	JOB NO: P0089

FROM	TO	SUMMARY OF OPERATIONS
0000		Standing by on rig.
1230	1340	S. Bradley flies Melbourne to ENSCO 102
1400		S. Bradley attends rig induction.
1700		Informed by company man to prepare to transfer to vessel RAY J HOPE next day.
1800	2030	Set up radio modem system on board rig to interface with Schlumberger equipment. Transfer survey equipment to container for transfer to vessel.

EQUIPMENT	No.	EQUIPMENT	No.	PERSONNEL	TITLE
				N. SMITH	SURVEYOR
AS PER DOR # 17705				S. BRADLEY	"

VEHICLES:

CONSUMABLES:

ACCOMMODATION:

AUTHORISED CONTRACT CHANGES/COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
N. Smith		17709

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DAILY OPERATIONS REPORT

FUGRO

CLIENT: ORIGIN ENERGY/ADA	LOCATION: BASS STRAIT	DATE: 13/7/04
PROJECT: YOLLA VSP SURVEY	VESSEL: ENSCO 102	JOB NO: P0089

FROM	TO	SUMMARY OF OPERATIONS
1045		Transfer from ENSCO 102 to RAY J HOPE
1100	1130	Vessel induction.
1145		Survey equipment transferred to Ray J Hope.
1230	1630	Survey equipment mobilised on board vessel.
1645	1700	Transit fixes taken on YOLLA platform to confirm navigation system.
1915	1945	Test firing of air guns to confirm operational status of all systems

EQUIPMENT	No.	EQUIPMENT	No.	PERSONNEL	TITLE
				N. SMITH	SURVEYOR
AS PER DOR # 17705				S. BRADLEY	"

VEHICLES:	
CONSUMABLES:	
ACCOMMODATION:	

AUTHORISED CONTRACT CHANGES/COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
N. H. Smith		17710

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DAILY OPERATIONS REPORT

CLIENT: ORIGIN ENERGY / AOA	LOCATION: BASS STRAIT	DATE: 14/7/04
PROJECT: YOLLA VSP SURVEY	VESSEL: RAY J HOPE	JOB NO: P0089

FROM	TO	SUMMARY OF OPERATIONS
0000		Standing by awaiting rig operations.
2130		Move to location close to platform ready
		to commence survey.
2333		Five test shots at location 1950 with
		Schlumberger tool down hole.

EQUIPMENT	No.	EQUIPMENT	No.	PERSONNEL	TITLE
				N. SMITH	SURVEYOR
AS PER DOR # 17705				S. BRADLEY	"

VEHICLES:	
CONSUMABLES:	
ACCOMMODATION:	

AUTHORISED CONTRACT CHANGES/COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		17711

FSHY01-1

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DAILY OPERATIONS REPORT

CLIENT: ORIGIN ENERGY / ADA	LOCATION: BASS STRAIT	DATE: 15/7/04
PROJECT: YOLLA VSP SURVEY	VESSEL: RAY J HOPE	JOB NO: P0089

FROM	TO	SUMMARY OF OPERATIONS
0010		Fire test shots at location 2510
0147		Commence VSP Survey at location 3230
0725		Complete VSP Survey
0730	0930	Demobilise survey equipment on Ray J Hope
1130		Personnel transfer to ENSCO 102
1245		Remaining survey equipment packed away in Fugro container on rig.
1400	1515	Fly ENSCO 102 to Melbourne
1800	2000	Fly Melbourne to Perth

EQUIPMENT	No.	EQUIPMENT	No.	PERSONNEL	TITLE
				N. SMITH	SURVEYOR
AS PER DOR # 17705				S. BRADLEY	"

VEHICLES:	
CONSUMABLES:	
ACCOMMODATION:	

AUTHORISED CONTRACT CHANGES/COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
N. M. Smith		17712

FSHY01-1

FSv030

Distribution: White Copy - Office, Yellow Copy - Client, Pink Copy - Project File.

APPENDIX B

RESULTS

13/07/2004 06:40:26 UTC
*** FUGRO SURVEY STARFIX.SEIS ***

```
Header : Project Name                      :   YOLLA VSP SURVEY
         Project Number                    :   P0089
         Project Description               :   VSP SURVEY
         Project Location                  :   YOLLA FIELD
         Client                            :   Origin Energy/ADA
         Client Representative             :
         Client Reference Number           :
         Geophysical Contractor            :   Fugro
         Positioning Contractor            :   Fugro
         Positioning Processing Contractor:   Fugro
         Setup By                          :   Nigel Smith/Steve Bradley
         On                                :   13/07/2004 06:39:10 UTC
         Time Source                       :   9 GPS Raw Data Trimble
         Time Offset                       :   10:00 (Using UTC)
         Vessel                            :   RayJHope

Files    Runline       :   C:\P0089\Database\YollaVSP.srn
         Centreline    :   (None)
         Database      :   C:\P0089\Database\gda94_yolla-a_plat.sdb
         CAD           :   (None)
         Waypoint      :   C:\P0089\Database\Yolla.swy

Logging: Directory     :   c:\NonSession\SEIS\

Fixing : Mode          :   Time
         Start Mode    :   Manual
         Stop Mode     :   Manual
         Fix Devices   :
           Auto-Fix    :   SEIS.RXD
           Manual      :   SEIS.CTS
           External    :   SEIS.DSR
           Offset      :   (None)
           MOB         :   (None)
         Fix Interval  :    20.000s
         Reset at SOL  :   No
         Next Fix No.  :        6
         Fix Increment :        1
         Start FFID    :        6
         Start Man. Fix:        1
         Early Start   :        5s
         Logging Start :        5s

Datum 1: Datum         :  GDA94 (Australia-AUSLIG)
         Spheroid      :  GRS80
         SemiMajor Axis:  6378137.000
         1/Flattening  :  298.2572221010
         Eccentricity^2:  0.006694380022901

         Projection    :  Transverse Mercator (UTM)
         Grid Name     :
         Lat. Origin   :    0d00'00.0000"N
         Lon. Origin   :  147d00'00.0000"E
         False East    :    500000.000m
         False North   :  10000000.000m
         Scale Factor  :  0.9996
         Convergence   :  Australia/New Zealand
```

```
Datum 2: Datum         :  WGS 84
         Spheroid      :  WGS 84
         SemiMajor Axis:  6378137.000
         1/Flattening  :  298.2572235630
         Eccentricity^2:  0.006694379990141

Datum2>1:Parameters    :  From WGS84 to GDA94 (Australia-AUSLIG)
         DX            :     0.0000m         RX            :     0.0000"
         DY            :     0.0000m         RY            :     0.0000"
         DZ            :     0.0000m         RZ            :     0.0000"
         D Scale       :     0.0000ppm       Rot Convention:  +RZ=-RLongitude

Sundry : Vertical Datum:
         Ell. Sep.     :     0.0000m
         Distances     :   Spheroidal
         Bearings      :   True
         Units         :  metres
         Conversion    :     1.0000000000

Main Vessel            :  RayJHope
                       :  C:\FUGRO\SHARED\DATA\VESSEL_SHAPES\RAYJHOPE.SVS

Nav. 1 : System        :  MRDGPS    (In Use)
         Type          :  Lat - Long
         Priority      :     1
         Time-out      :     5.0s
         Offset Name   :  GPS Antenna
         X Offset      :     6.00m
         Y Offset      :     4.60m
         Ant. Height   :    15.20m
         Filter        :  1
Dead Reckoning: No   Timeout:  30.0s

Gyro 1 : System        :  SGBrown    (In Use)
         Priority      :     1
         Time-out      :     3.0s
         Offset Name   :  CRP
         X Offset      :     0.00m
         Y Offset      :     0.00m
         Z Offset      :     0.00m
         Correction    :   144.70 Degrees

Offsets: Name                    X         Y         Z
         Stern                   0.00    -52.75      0.00
         Guns                   15.30     -8.30      0.00
         GPS Antenna             6.00      4.60     15.20
         Crane Base              5.60     -8.30      0.00

O/Ts   : Steered Point:  O/T 0
         Shot         :  O/T 0

O/T  0    PR CRP             Flt:  1 Pos Sys: Datum In-Use
O/T  1    PR Guns            Flt:    Fxd Off: Guns
O/T  2    PR Crane Base      Flt:    Fxd Off: Crane Base
O/T  3    PR GPS Antenna     Flt:    Fxd Off: GPS Antenna

O/T Legend:   PR=Print LG=Log SN=Snap to line
```

```
Printing:
         Fix mark rate   :   1
         Weather Device  :   (None)
         Weather Interval:    60 minutes
         Weather Enabled :   No
         Config Changes  :   No
         System Timeouts :   No
         Concise Header  :   No

Software:Starfix Suite 6.1
         Seis       Ver 2.08.0018
         SeisEngine Ver 2.08.0011
         Display    Ver 2.14.0006
         Anchors    Ver 3.02.0028
         Print      Ver 2.03.0005

--------------------------------------------------------------------------------
13/07/2004  06:44:04 UTC
*** FUGRO SURVEY STARFIX.SEIS ***

Fixing : Mode          :   *Unknown*
         Start Mode    :   Manual
         Stop Mode     :   Manual
         Fix Devices   :
           Auto-Fix    :   SEIS.RXD
           Manual      :   SEIS.CTS
           External    :   SEIS.DSR
           Offset      :   (None)
           MOB         :   (None)
         Fix Interval  :    20.000
         Reset at SOL  :   No
         Next Fix No.  :        1
         Fix Increment :        1
         Start FFID    :        1
         Start Man. Fix:        1
         Early Start   :        5s
         Logging Start :        5s

--------------------------------------------------------------------------------
External Fix   :     39          Time 06:45:55.2 UTC  13/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'46.2768"S 145d49'05.1256"E      0.00m
(datum - local)     398885.258m  5588645.916m
(In Use)            39d50'46.0857"S 145d49'04.9263"E     15.20m (antenna -
WGS84)  HDOP:  0.9
!Heading 268.7T COG 271.9G SOG  1.8 kt

 # Name              Hdg       Easting      Northing        Height
! 0 CRP              269.5T   398885.258m  5588645.916m      0.00m
! 1 Guns             269.5T   398893.230m  5588661.390m      0.00m
! 2 Crane Base       269.5T   398893.437m  5588651.692m      0.00m
! 3 GPS Antenna      269.5T   398880.531m  5588651.817m     15.20m

--------------------------------------------------------------------------------
External Fix   :     40          Time 06:46:41.4 UTC  13/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'46.2157"S 145d49'03.5550"E      0.00m
(datum - local)     398847.910m  5588647.309m
(In Use)            39d50'46.0290"S 145d49'03.3487"E     15.20m (antenna -
WGS84)  HDOP:  0.9
!Heading 267.0T COG 277.9G SOG  1.8 kt
```

```
 # Name              Hdg       Easting      Northing        Height
! 0 CRP             267.2T   398847.910m  5588647.309m      0.00m
! 1 Guns            267.2T   398855.231m  5588663.101m      0.00m
! 2 Crane Base      267.2T   398855.841m  5588653.420m      0.00m
! 3 GPS Antenna     267.2T   398842.942m  5588653.008m     15.20m

--------------------------------------------------------------------------------
External Fix   :     41          Time 06:49:19.4 UTC  13/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'40.4056"S 145d48'58.8277"E      0.00m
(datum - local)     398733.193m  5588824.951m
(In Use)            39d50'40.2729"S 145d48'59.0951"E     15.20m (antenna -
WGS84)  HDOP:  0.9
!Heading   4.7T COG  19.3G SOG  3.3 kt

 # Name              Hdg       Easting      Northing        Height
! 0 CRP               4.8T   398733.193m  5588824.951m      0.00m
! 1 Guns              4.8T   398747.877m  5588815.606m      0.00m
! 2 Crane Base        4.8T   398738.201m  5588816.281m      0.00m
! 3 GPS Antenna       4.8T   398739.498m  5588829.122m     15.20m

--------------------------------------------------------------------------------
External Fix   :     42          Time 06:49:51.7 UTC  13/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'38.7443"S 145d48'59.8396"E      0.00m
(datum - local)     398756.564m  5588876.490m
(In Use)            39d50'38.6207"S 145d49'00.1143"E     15.20m (antenna -
WGS84)  HDOP:  0.9
!Heading   7.2T COG  25.8G SOG  3.4 kt

 # Name              Hdg       Easting      Northing        Height
! 0 CRP               7.3T   398756.564m  5588876.490m      0.00m
! 1 Guns              7.3T   398770.818m  5588866.500m      0.00m
! 2 Crane Base        7.3T   398761.181m  5588867.606m      0.00m
! 3 GPS Antenna       7.3T   398763.049m  5588880.376m     15.20m

--------------------------------------------------------------------------------
External Fix   :     43          Time 06:54:47.2 UTC  13/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'33.3342"S 145d49'06.3007"E      0.00m
(datum - local)     398907.913m  5589045.319m
(In Use)            39d50'33.5231"S 145d49'06.5035"E     15.20m (antenna -
WGS84)  HDOP:  1.5
!Heading  87.9T COG 112.0G SOG  0.8 kt

 # Name              Hdg       Easting      Northing        Height
! 0 CRP              87.9T   398907.913m  5589045.319m      0.00m
! 1 Guns             87.9T   398900.395m  5589029.620m      0.00m
! 2 Crane Base       87.9T   398899.906m  5589039.308m      0.00m
! 3 GPS Antenna      87.9T   398912.809m  5589039.559m     15.20m

--------------------------------------------------------------------------------
External Fix   :     44          Time 06:55:41.4 UTC  13/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'33.5778"S 145d49'08.1327"E      0.00m
(datum - local)     398951.552m  5589038.383m
(In Use)            39d50'33.7734"S 145d49'08.3247"E     15.20m (antenna -
WGS84)  HDOP:  0.9
!Heading  90.4T COG  98.2G SOG  1.7 kt

 # Name              Hdg       Easting      Northing        Height
! 0 CRP              90.4T   398951.552m  5589038.383m      0.00m
! 1 Guns             90.4T   398943.357m  5589023.027m      0.00m
! 2 Crane Base       90.4T   398943.291m  5589032.727m      0.00m
! 3 GPS Antenna      90.4T   398956.193m  5589032.415m     15.20m
```

External Fix : 45 Time 06:59:10.8 UTC 13/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'41.2520"S 145d49'17.6357"E 0.00m
(datum - local) 399180.521m 5588804.761m
(In Use) 39d50'41.4094"S 145d49'17.3918"E 15.20m (antenna -
WGS84) HDOP: 0.9
!Heading 177.5T COG 154.3G SOG 2.6 kt

#	Name	Hdg	Easting	Northing	Height
!	0 CRP	177.5T	399180.521m	5588804.761m	0.00m
!	1 Guns	177.5T	399164.778m	5588812.188m	0.00m
!	2 Crane Base	177.5T	399174.463m	5588812.733m	0.00m
!	3 GPS Antenna	177.5T	399174.789m	5588799.831m	15.20m

External Fix : 46 Time 07:00:05.4 UTC 13/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'43.3692"S 145d49'19.2774"E 0.00m
(datum - local) 399220.397m 5588739.999m
(In Use) 39d50'43.5429"S 145d49'19.0529"E 15.20m (antenna -
WGS84) HDOP: 0.9
!Heading 172.4T COG 142.9G SOG 2.6 kt

#	Name	Hdg	Easting	Northing	Height
!	0 CRP	172.4T	399220.397m	5588739.999m	0.00m
!	1 Guns	172.4T	399204.050m	5588745.979m	0.00m
!	2 Crane Base	172.4T	399213.647m	5588747.394m	0.00m
!	3 GPS Antenna	172.4T	399215.133m	5588734.573m	15.20m

```
14/07/2004  00:46:09 UTC
*** FUGRO SURVEY STARFIX.SEIS ***

Header : Project Name                     :   YOLLA VSP SURVEY
         Project Number                   :   P0089
         Project Description              :   VSP SURVEY
         Project Location                 :   YOLLA FIELD
         Client                           :   Origin Energy/ADA
         Client Representative            :
         Client Reference Number          :
         Geophysical Contractor           :   Fugro
         Positioning Contractor           :   Fugro
         Positioning Processing Contractor:   Fugro
         Setup By                         :   Nigel Smith/Steve Bradley
         On                               :   06/01/1980 00:00:03 UTC
         Time Source                      :   9 GPS Raw Data Trimble
         Time Offset                      :   10:00 (Using UTC)
         Vessel                           :   RayJHope

Files    Runline       :   C:\P0089\Database\YollaVSP.srn
         Centreline    :   (None)
         Database      :   C:\P0089\Database\gda94_yolla.sdb
         CAD           :   (None)
         Waypoint      :   C:\P0089\Database\Yolla.swy

Logging: Directory     :   C:\Fugro_Projects\\P0089\NonSession\SEIS\

Fixing : Mode          :   *Unknown*
         Start Mode    :   Manual
         Stop Mode     :   Manual
         Fix Devices   :
           Auto-Fix    :   SEIS.RXD
           Manual      :   SEIS.CTS
           External    :   SEIS.DSR
           Offset      :   (None)
           MOB         :   (None)
         Fix Interval  :    20.000
         Reset at SOL  :   No
         Next Fix No.  :        1
         Fix Increment :        1
         Start FFID    :        1
         Start Man. Fix:        1
         Early Start   :        5s
         Logging Start :        5s

Datum 1: Datum         :  GDA94 (Australia-AUSLIG)
         Spheroid      :  GRS80
         SemiMajor Axis:  6378137.000
         1/Flattening  :  298.2572221010
         Eccentricity^2:  0.006694380022901

         Projection    :  Transverse Mercator (UTM)
         Grid Name     :
         Lat. Origin   :    0d00'00.0000"N
         Lon. Origin   :  147d00'00.0000"E
         False East    :    500000.000m
         False North   :  10000000.000m
         Scale Factor  :  0.9996
         Convergence   :  Australia/New Zealand
```

```
Datum 2: Datum         :  WGS 84
         Spheroid      :  WGS 84
         SemiMajor Axis:  6378137.000
         1/Flattening  :  298.2572235630
         Eccentricity^2:  0.006694379990141

Datum2>1:Parameters    :  From WGS84 to GDA94 (Australia-AUSLIG)
         DX            :     0.0000m         RX            :     0.0000"
         DY            :     0.0000m         RY            :     0.0000"
         DZ            :     0.0000m         RZ            :     0.0000"
         D Scale       :     0.0000ppm       Rot Convention:  +RZ=-RLongitude

Sundry : Vertical Datum:
         Ell. Sep.     :     0.0000m
         Distances     :   Spheroidal
         Bearings      :   True
         Units         :  metres
         Conversion    :     1.0000000000

Main Vessel            :  RayJHope
                       :  C:\FUGRO\SHARED\DATA\VESSEL_SHAPES\RAYJHOPE.SVS

Nav. 1 : System        :  MRDGPS    (In Use)
         Type          :  Lat - Long
         Priority      :     1
         Time-out      :     5.0s
         Offset Name   :  GPS Antenna
         X Offset      :     6.00m
         Y Offset      :     4.60m
         Ant. Height   :    15.20m
         Filter        :  1
Dead Reckoning: No   Timeout:  30.0s

Gyro 1 : System        :  SGBrown    (In Use)
         Priority      :     1
         Time-out      :     3.0s
         Offset Name   :  CRP
         X Offset      :     0.00m
         Y Offset      :     0.00m
         Z Offset      :     0.00m
         Correction    :   144.70 Degrees

Offsets: Name                     X         Y         Z
         Stern                    0.00    -52.75      0.00
         Guns                    15.30     -8.30      0.00
         GPS Antenna              6.00      4.60     15.20
         Crane Base               5.60     -8.30      0.00

O/Ts   : Steered Point:  O/T 0
         Shot         :  O/T 0

O/T  0    PR CRP              Flt:    Pos Sys: Datum In-Use
O/T  1    PR Guns             Flt:    Fxd Off: Guns
O/T  2    PR Crane Base       Flt:    Fxd Off: Crane Base
O/T  3    PR GPS Antenna      Flt:    Fxd Off: GPS Antenna

O/T Legend:   PR=Print LG=Log SN=Snap to line

Waypoint : Yolla4
Position :  39d50'40.5904"S 145d49'06.0601"E    0.0m
              398905.150mE  5588821.530mN       0.0m
Printing:
         Fix mark rate   :   1
         Weather Device  :   (None)
         Weather Interval:    60 minutes
         Weather Enabled :   No
         Config Changes  :   No
         System Timeouts :   No
         Concise Header  :   No
```

```
Software:Starfix Suite 6.1
         Seis       Ver 2.08.0018
         SeisEngine Ver 2.08.0011
         Display    Ver 2.14.0006
         Anchors    Ver 3.02.0028
         Print      Ver 2.03.0005
--------------------------------------------------------------------------------
External Fix   :     21          Time 15:47:04.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d51'01.3911"S 145d48'54.6872"E      0.00m (datum - local)
398643.365m  5588176.647m
(In Use)            39d51'01.1768"S 145d48'54.5324"E     15.20m (antenna - WGS84)  HDOP:  1.3
!Heading 278.4T COG 127.9G SOG  0.0 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.4T   398643.365m  5588176.647m      0.00m     696.184m      22.85T
! 1 Guns             278.4T   398653.617m  5588190.713m      0.00m     679.302m      22.50T
! 2 Crane Base       278.4T   398652.333m  5588181.098m      0.00m     688.715m      22.30T
! 3 GPS Antenna      278.4T   398639.600m  5588183.203m     15.20m     691.549m      23.35T
--------------------------------------------------------------------------------
External Fix   :     22          Time 15:49:54.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d51'01.3511"S 145d48'54.8192"E      0.00m (datum - local)
398646.486m  5588177.919m
(In Use)            39d51'01.1359"S 145d48'54.6669"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 278.9T COG 139.8G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.7T   398646.486m  5588177.919m      0.00m     693.834m      22.65T
! 1 Guns             278.7T   398656.820m  5588191.926m      0.00m     676.994m      22.28T
! 2 Crane Base       278.7T   398655.480m  5588182.319m      0.00m     686.429m      22.09T
! 3 GPS Antenna      278.7T   398642.759m  5588184.497m     15.20m     689.145m      23.15T
--------------------------------------------------------------------------------
External Fix   :     23          Time 15:50:33.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d51'01.3283"S 145d48'54.6151"E      0.00m (datum - local)
398641.626m  5588178.558m
(In Use)            39d51'01.1144"S 145d48'54.4595"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 278.2T COG 255.7G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.1T   398641.626m  5588178.558m      0.00m     695.070m      23.05T
! 1 Guns             278.1T   398651.823m  5588192.665m      0.00m     678.157m      22.70T
! 2 Crane Base       278.1T   398650.577m  5588183.045m      0.00m     687.553m      22.50T
! 3 GPS Antenna      278.1T   398637.835m  5588185.100m     15.20m     690.479m      23.54T
--------------------------------------------------------------------------------
External Fix   :     24          Time 15:51:01.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d51'01.3801"S 145d48'54.6969"E      0.00m (datum - local)
398643.591m  5588176.987m
(In Use)            39d51'01.1677"S 145d48'54.5381"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 277.5T COG 135.9G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              277.5T   398643.591m  5588176.987m      0.00m     695.783m      22.85T
! 1 Guns             277.5T   398653.637m  5588191.201m      0.00m     678.842m      22.51T
! 2 Crane Base       277.5T   398652.493m  5588181.568m      0.00m     688.219m      22.30T
! 3 GPS Antenna      277.5T   398639.731m  5588183.487m     15.20m     691.236m      23.35T
--------------------------------------------------------------------------------
External Fix   :     25          Time 15:51:30.3 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d51'01.4556"S 145d48'54.8546"E      0.00m (datum - local)
398647.368m  5588174.711m
(In Use)            39d51'01.2460"S 145d48'54.6894"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 276.2T COG 117.7G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              276.2T   398647.368m  5588174.711m      0.00m     696.486m      22.49T
! 1 Guns             276.2T   398657.094m  5588189.147m      0.00m     679.480m      22.18T
! 2 Crane Base       276.2T   398656.166m  5588179.491m      0.00m     688.815m      21.96T
! 3 GPS Antenna      276.2T   398643.363m  5588181.123m     15.20m     692.037m      22.99T
--------------------------------------------------------------------------------
```

External Fix : 26 Time 15:52:10.4 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d51'01.4868"S 145d48'54.7247"E 0.00m (datum - local)
398644.295m 5588173.707m
(In Use) 39d51'01.2768"S 145d48'54.5603"E 15.20m (antenna - WGS84) HDOP: 1.4
!Heading 276.4T COG 255.0G SOG 0.2 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	276.4T	398644.295m	5588173.707m	0.00m	698.560m	22.69T
!	1 Guns	276.4T	398654.051m	5588188.123m	0.00m	681.549m	22.38T
!	2 Crane Base	276.4T	398653.103m	5588178.469m	0.00m	690.881m	22.16T
!	3 GPS Antenna	276.4T	398640.304m	5588180.128m	15.20m	694.121m	23.20T

External Fix : 27 Time 16:00:16.8 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d51'01.0788"S 145d48'55.0829"E 0.00m (datum - local)
398652.641m 5588186.398m
(In Use) 39d51'00.8646"S 145d48'54.9282"E 15.20m (antenna - WGS84) HDOP: 1.0
!Heading 278.4T COG 296.4G SOG 0.3 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	278.5T	398652.641m	5588186.398m	0.00m	683.674m	22.44T
!	1 Guns	278.5T	398662.930m	5588200.438m	0.00m	666.836m	22.06T
!	2 Crane Base	278.5T	398661.621m	5588190.826m	0.00m	676.272m	21.87T
!	3 GPS Antenna	278.5T	398648.893m	5588192.964m	15.20m	678.982m	22.94T

External Fix : 28 Time 16:03:52.7 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d51'01.1426"S 145d48'55.1226"E 0.00m (datum - local)
398653.611m 5588184.444m
(In Use) 39d51'00.9291"S 145d48'54.9662"E 15.20m (antenna - WGS84) HDOP: 1.0
!Heading 278.0T COG 291.0G SOG 0.1 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	278.2T	398653.611m	5588184.444m	0.00m	685.133m	22.30T
!	1 Guns	278.2T	398663.823m	5588198.540m	0.00m	668.281m	21.93T
!	2 Crane Base	278.2T	398662.566m	5588188.922m	0.00m	677.710m	21.74T
!	3 GPS Antenna	278.2T	398649.827m	5588190.990m	15.20m	680.459m	22.80T

External Fix : 29 Time 16:04:32.7 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d51'01.1473"S 145d48'55.1626"E 0.00m (datum - local)
398654.564m 5588184.311m
(In Use) 39d51'00.9338"S 145d48'55.0063"E 15.20m (antenna - WGS84) HDOP: 1.0
!Heading 278.0T COG 282.6G SOG 0.0 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	278.0T	398654.564m	5588184.311m	0.00m	684.907m	22.23T
!	1 Guns	278.0T	398664.734m	5588198.437m	0.00m	668.049m	21.86T
!	2 Crane Base	278.0T	398663.506m	5588188.815m	0.00m	677.474m	21.66T
!	3 GPS Antenna	278.0T	398650.761m	5588190.845m	15.20m	680.243m	22.73T

External Fix : 30 Time 16:05:08.8 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d51'01.0927"S 145d48'54.8988"E 0.00m (datum - local)
398648.272m 5588185.911m
(In Use) 39d51'00.8789"S 145d48'54.7433"E 15.20m (antenna - WGS84) HDOP: 1.0
!Heading 278.2T COG 286.8G SOG 0.2 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	278.4T	398648.272m	5588185.911m	0.00m	685.752m	22.76T
!	1 Guns	278.4T	398658.525m	5588199.977m	0.00m	668.877m	22.40T
!	2 Crane Base	278.4T	398657.241m	5588190.363m	0.00m	678.294m	22.20T
!	3 GPS Antenna	278.4T	398644.507m	5588192.467m	15.20m	681.109m	23.27T

External Fix : 31 Time 16:05:33.0 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d51'01.1287"S 145d48'54.7895"E 0.00m (datum - local)
398645.688m 5588184.767m
(In Use) 39d51'00.9138"S 145d48'54.6363"E 15.20m (antenna - WGS84) HDOP: 1.0
!Heading 278.7T COG 241.8G SOG 0.2 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	278.7T	398645.688m	5588184.767m	0.00m	687.784m	22.93T
!	1 Guns	278.7T	398656.022m	5588198.773m	0.00m	670.923m	22.56T
!	2 Crane Base	278.7T	398654.682m	5588189.166m	0.00m	680.347m	22.37T
!	3 GPS Antenna	278.7T	398641.961m	5588191.344m	15.20m	683.123m	23.43T

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External Fix   :     32          Time 16:05:55.6 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d51'01.1618"S 145d48'54.9452"E      0.00m (datum - local)
398649.402m  5588183.798m
(In Use)            39d51'00.9500"S 145d48'54.7848"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 277.2T COG 106.8G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              277.2T   398649.402m  5588183.798m      0.00m     687.291m      22.61T
! 1 Guns             277.2T   398659.366m  5588198.070m      0.00m     670.342m      22.27T
! 2 Crane Base       277.2T   398658.278m  5588188.431m      0.00m     679.715m      22.06T
! 3 GPS Antenna      277.2T   398645.504m  5588190.276m     15.20m     682.754m      23.12T
--------------------------------------------------------------------------------
External Fix   :     33          Time 16:06:17.5 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d51'01.1657"S 145d48'55.0725"E      0.00m (datum - local)
398652.430m  5588183.717m
(In Use)            39d51'00.9518"S 145d48'54.9170"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 278.2T COG  82.9G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.4T   398652.430m  5588183.717m      0.00m     686.244m      22.37T
! 1 Guns             278.4T   398662.681m  5588197.784m      0.00m     669.399m      22.00T
! 2 Crane Base       278.4T   398661.398m  5588188.169m      0.00m     678.832m      21.81T
! 3 GPS Antenna      278.4T   398648.664m  5588190.272m     15.20m     681.561m      22.87T
--------------------------------------------------------------------------------
External Fix   :     34          Time 16:06:46.3 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d51'01.0979"S 145d48'54.8289"E      0.00m (datum - local)
398646.614m  5588185.729m
(In Use)            39d51'00.8830"S 145d48'54.6758"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 278.7T COG 294.3G SOG  0.5 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.6T   398646.614m  5588185.729m      0.00m     686.544m      22.89T
! 1 Guns             278.6T   398656.930m  5588199.749m      0.00m     669.680m      22.52T
! 2 Crane Base       278.6T   398655.602m  5588190.140m      0.00m     679.102m      22.32T
! 3 GPS Antenna      278.6T   398642.878m  5588192.302m     15.20m     681.886m      23.39T
--------------------------------------------------------------------------------
External Fix   :     35          Time 16:12:59.9 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d51'00.5656"S 145d48'55.0605"E      0.00m (datum - local)
398651.899m  5588202.213m
(In Use)            39d51'00.3497"S 145d48'54.9098"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 279.2T COG 262.6G SOG  0.0 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              279.0T   398651.899m  5588202.213m      0.00m     669.279m      23.00T
! 1 Guns             279.0T   398662.315m  5588216.160m      0.00m     652.438m      22.62T
! 2 Crane Base       279.0T   398660.919m  5588206.561m      0.00m     661.873m      22.42T
! 3 GPS Antenna      279.0T   398648.211m  5588208.813m     15.20m     664.592m      23.51T
--------------------------------------------------------------------------------
External Fix   :     36          Time 16:13:19.9 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d51'00.5807"S 145d48'55.1095"E      0.00m (datum - local)
398653.071m  5588201.765m
(In Use)            39d51'00.3675"S 145d48'54.9524"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 277.9T COG 151.0G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              277.9T   398653.071m  5588201.765m      0.00m     669.252m      22.89T
! 1 Guns             277.9T   398663.200m  5588215.920m      0.00m     652.331m      22.54T
! 2 Crane Base       277.9T   398662.000m  5588206.295m      0.00m     661.722m      22.32T
! 3 GPS Antenna      277.9T   398649.248m  5588208.288m     15.20m     664.675m      23.41T
--------------------------------------------------------------------------------
External Fix   :     37          Time 16:13:35.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d51'00.5816"S 145d48'55.1480"E      0.00m (datum - local)
398653.985m  5588201.749m
(In Use)            39d51'00.3691"S 145d48'54.9892"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 277.5T COG 127.2G SOG  0.1 kt
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 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              277.5T   398653.985m  5588201.749m      0.00m     668.923m      22.82T
! 1 Guns             277.5T   398664.032m  5588215.963m      0.00m     651.983m      22.47T
! 2 Crane Base       277.5T   398662.888m  5588206.330m      0.00m     661.363m      22.25T
! 3 GPS Antenna      277.5T   398650.125m  5588208.249m     15.20m     664.374m      23.34T
--------------------------------------------------------------------------------------------
External Fix   :     38          Time 16:14:01.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d51'00.5907"S 145d48'55.1498"E      0.00m (datum - local)
398654.032m  5588201.468m
(In Use)            39d51'00.3779"S 145d48'54.9918"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 277.7T COG 115.3G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              277.7T   398654.032m  5588201.468m      0.00m     669.166m      22.81T
! 1 Guns             277.7T   398664.120m  5588215.653m      0.00m     652.239m      22.45T
! 2 Crane Base       277.7T   398662.948m  5588206.024m      0.00m     661.626m      22.24T
! 3 GPS Antenna      277.7T   398650.191m  5588207.980m     15.20m     664.598m      23.32T
--------------------------------------------------------------------------------------------
External Fix   :     39          Time 16:14:31.9 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d51'00.5552"S 145d48'55.1561"E      0.00m (datum - local)
398654.166m  5588202.564m
(In Use)            39d51'00.3410"S 145d48'55.0013"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 278.4T COG 298.3G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.4T   398654.166m  5588202.564m      0.00m     668.099m      22.83T
! 1 Guns             278.4T   398664.418m  5588216.631m      0.00m     651.220m      22.46T
! 2 Crane Base       278.4T   398663.134m  5588207.016m      0.00m     660.635m      22.26T
! 3 GPS Antenna      278.4T   398650.401m  5588209.120m     15.20m     663.464m      23.35T
--------------------------------------------------------------------------------------------
External Fix   :     40          Time 16:15:10.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d51'00.5225"S 145d48'54.9418"E      0.00m (datum - local)
398649.062m  5588203.506m
(In Use)            39d51'00.3107"S 145d48'54.7815"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 277.2T COG 264.6G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              277.2T   398649.062m  5588203.506m      0.00m     669.164m      23.27T
! 1 Guns             277.2T   398659.025m  5588217.779m      0.00m     652.170m      22.94T
! 2 Crane Base       277.2T   398657.937m  5588208.140m      0.00m     661.514m      22.71T
! 3 GPS Antenna      277.2T   398645.164m  5588209.984m     15.20m     664.698m      23.79T
--------------------------------------------------------------------------------------------
External Fix   :     41          Time 16:15:33.3 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d51'00.5624"S 145d48'54.9186"E      0.00m (datum - local)
398648.524m  5588202.269m
(In Use)            39d51'00.3521"S 145d48'54.7550"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 276.5T COG 168.6G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              276.5T   398648.524m  5588202.269m      0.00m     670.513m      23.27T
! 1 Guns             276.5T   398658.322m  5588216.656m      0.00m     653.476m      22.96T
! 2 Crane Base       276.5T   398657.346m  5588207.005m      0.00m     662.788m      22.72T
! 3 GPS Antenna      276.5T   398644.551m  5588208.701m     15.20m     666.119m      23.80T
--------------------------------------------------------------------------------------------
External Fix   :     42          Time 16:23:00.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'59.8467"S 145d48'55.4958"E      0.00m (datum - local)
398661.950m  5588224.515m
(In Use)            39d50'59.6321"S 145d48'55.3419"E     15.20m (antenna - WGS84)  HDOP:  1.7
!Heading 278.5T COG 283.9G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.8T   398661.950m  5588224.515m      0.00m     644.826m      22.92T
! 1 Guns             278.8T   398672.320m  5588238.495m      0.00m     627.977m      22.53T
! 2 Crane Base       278.8T   398670.955m  5588228.892m      0.00m     637.408m      22.32T
! 3 GPS Antenna      278.8T   398658.240m  5588231.102m     15.20m     640.152m      23.45T
--------------------------------------------------------------------------------------------
External Fix   :     43          Time 16:23:20.4 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'59.8342"S 145d48'55.4596"E      0.00m (datum - local)
398661.084m  5588224.889m
(In Use)            39d50'59.6196"S 145d48'55.3056"E     15.20m (antenna - WGS84)  HDOP:  1.7
!Heading 278.5T COG 240.0G SOG  0.1 kt
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 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             278.5T   398661.084m  5588224.889m      0.00m     644.807m      23.01T
! 1 Guns            278.5T   398671.377m  5588238.926m      0.00m     627.928m      22.62T
! 2 Crane Base      278.5T   398670.065m  5588229.315m      0.00m     637.343m      22.41T
! 3 GPS Antenna     278.5T   398657.338m  5588231.456m     15.20m     640.174m      23.54T
-------------------------------------------------------------------------------------------
External Fix   :     44          Time 16:24:04.3 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'59.8314"S 145d48'55.5049"E      0.00m (datum - local)
398662.161m  5588224.989m
(In Use)            39d50'59.6172"S 145d48'55.3502"E     15.20m (antenna - WGS84)  HDOP:  1.7
!Heading 278.4T COG 176.3G SOG  0.0 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             278.4T   398662.161m  5588224.989m      0.00m     644.307m      22.92T
! 1 Guns            278.4T   398672.413m  5588239.056m      0.00m     627.422m      22.54T
! 2 Crane Base      278.4T   398671.129m  5588229.441m      0.00m     636.834m      22.33T
! 3 GPS Antenna     278.4T   398658.396m  5588231.546m     15.20m     639.682m      23.46T
-------------------------------------------------------------------------------------------
External Fix   :     45          Time 16:24:19.3 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'59.8374"S 145d48'55.5198"E      0.00m (datum - local)
398662.515m  5588224.811m
(In Use)            39d50'59.6231"S 145d48'55.3650"E     15.20m (antenna - WGS84)  HDOP:  1.7
!Heading 278.4T COG 140.8G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             278.4T   398662.515m  5588224.811m      0.00m     644.339m      22.89T
! 1 Guns            278.4T   398672.768m  5588238.877m      0.00m     627.456m      22.50T
! 2 Crane Base      278.4T   398671.484m  5588229.262m      0.00m     636.870m      22.29T
! 3 GPS Antenna     278.4T   398658.750m  5588231.367m     15.20m     639.711m      23.42T
-------------------------------------------------------------------------------------------
External Fix   :     46          Time 16:24:35.9 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'59.8423"S 145d48'55.5839"E      0.00m (datum - local)
398664.042m  5588224.680m
(In Use)            39d50'59.6291"S 145d48'55.4267"E     15.20m (antenna - WGS84)  HDOP:  1.7
!Heading 277.9T COG 106.2G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             277.8T   398664.042m  5588224.680m      0.00m     643.887m      22.76T
! 1 Guns            277.8T   398674.156m  5588238.846m      0.00m     626.972m      22.38T
! 2 Crane Base      277.8T   398672.966m  5588229.220m      0.00m     636.367m      22.16T
! 3 GPS Antenna     277.8T   398660.212m  5588231.199m     15.20m     639.303m      23.29T
-------------------------------------------------------------------------------------------
External Fix   :     47          Time 16:30:54.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'59.0260"S 145d48'55.8233"E      0.00m (datum - local)
398669.397m  5588249.921m
(In Use)            39d50'58.8125"S 145d48'55.6669"E     15.20m (antenna - WGS84)  HDOP:  1.8
!Heading 278.0T COG 295.7G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             278.0T   398669.397m  5588249.921m      0.00m     618.487m      23.17T
! 1 Guns            278.0T   398679.567m  5588264.047m      0.00m     601.559m      22.79T
! 2 Crane Base      278.0T   398678.339m  5588254.425m      0.00m     610.947m      22.56T
! 3 GPS Antenna     278.0T   398665.593m  5588256.455m     15.20m     613.925m      23.73T
-------------------------------------------------------------------------------------------
External Fix   :     48          Time 16:31:14.8 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'59.0240"S 145d48'55.9140"E      0.00m (datum - local)
398671.552m  5588250.013m
(In Use)            39d50'58.8108"S 145d48'55.7568"E     15.20m (antenna - WGS84)  HDOP:  1.8
!Heading 277.9T COG  93.3G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             277.9T   398671.552m  5588250.013m      0.00m     617.583m      22.99T
! 1 Guns            277.9T   398681.681m  5588264.169m      0.00m     600.656m      22.61T
! 2 Crane Base      277.9T   398680.481m  5588254.543m      0.00m     610.044m      22.37T
! 3 GPS Antenna     277.9T   398667.729m  5588256.536m     15.20m     613.019m      23.55T
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External Fix : 49 Time 16:31:33.3 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'59.0238"S 145d48'55.9304"E 0.00m (datum - local)
398671.941m 5588250.022m
(In Use) 39d50'58.8103"S 145d48'55.7740"E 15.20m (antenna - WGS84) HDOP: 1.0
!Heading 278.0T COG 92.8G SOG 0.1 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	278.0T	398671.941m	5588250.022m	0.00m	617.428m	22.96T
!	1 Guns	278.0T	398682.111m	5588264.147m	0.00m	600.516m	22.57T
!	2 Crane Base	278.0T	398680.883m	5588254.526m	0.00m	609.913m	22.34T
!	3 GPS Antenna	278.0T	398668.138m	5588256.556m	15.20m	612.843m	23.52T

External Fix : 50 Time 16:31:57.4 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'59.0108"S 145d48'55.9156"E 0.00m (datum - local)
398671.584m 5588250.418m
(In Use) 39d50'58.7973"S 145d48'55.7592"E 15.20m (antenna - WGS84) HDOP: 1.8
!Heading 278.0T COG 306.3G SOG 0.0 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	278.0T	398671.584m	5588250.418m	0.00m	617.196m	23.00T
!	1 Guns	278.0T	398681.754m	5588264.544m	0.00m	600.280m	22.61T
!	2 Crane Base	278.0T	398680.526m	5588254.922m	0.00m	609.675m	22.38T
!	3 GPS Antenna	278.0T	398667.780m	5588256.952m	15.20m	612.615m	23.56T

External Fix : 51 Time 16:32:24.2 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'59.0194"S 145d48'55.8894"E 0.00m (datum - local)
398670.966m 5588250.145m
(In Use) 39d50'58.8048"S 145d48'55.7355"E 15.20m (antenna - WGS84) HDOP: 1.0
!Heading 278.5T COG 239.0G SOG 0.1 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	278.8T	398670.966m	5588250.145m	0.00m	617.682m	23.05T
!	1 Guns	278.8T	398681.317m	5588264.139m	0.00m	600.819m	22.64T
!	2 Crane Base	278.8T	398679.966m	5588254.534m	0.00m	610.243m	22.42T
!	3 GPS Antenna	278.8T	398667.247m	5588256.728m	15.20m	613.029m	23.60T

External Fix : 52 Time 16:33:13.3 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'59.0487"S 145d48'55.8610"E 0.00m (datum - local)
398670.302m 5588249.233m
(In Use) 39d50'58.8352"S 145d48'55.7046"E 15.20m (antenna - WGS84) HDOP: 1.2
!Heading 278.0T COG 207.3G SOG 0.2 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	278.0T	398670.302m	5588249.233m	0.00m	618.779m	23.07T
!	1 Guns	278.0T	398680.453m	5588263.373m	0.00m	601.852m	22.69T
!	2 Crane Base	278.0T	398679.238m	5588253.749m	0.00m	611.241m	22.46T
!	3 GPS Antenna	278.0T	398666.490m	5588255.762m	15.20m	614.214m	23.63T

External Fix : 53 Time 16:33:30.0 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'59.0388"S 145d48'55.8979"E 0.00m (datum - local)
398671.174m 5588249.549m
(In Use) 39d50'58.8264"S 145d48'55.7391"E 15.20m (antenna - WGS84) HDOP: 1.0
!Heading 277.5T COG 146.2G SOG 0.1 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	277.5T	398671.174m	5588249.549m	0.00m	618.155m	23.01T
!	1 Guns	277.5T	398681.221m	5588263.763m	0.00m	601.204m	22.63T
!	2 Crane Base	277.5T	398680.077m	5588254.131m	0.00m	610.577m	22.40T
!	3 GPS Antenna	277.5T	398667.314m	5588256.050m	15.20m	613.629m	23.57T

External Fix : 54 Time 16:40:32.8 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'58.2380"S 145d48'56.5629"E 0.00m (datum - local)
398686.650m 5588274.450m
(In Use) 39d50'58.0314"S 145d48'56.3914"E 15.20m (antenna - WGS84) HDOP: 1.1
!Heading 274.9T COG 308.5G SOG 0.1 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	274.9T	398686.650m	5588274.450m	0.00m	589.262m	22.53T
!	1 Guns	274.9T	398696.025m	5588289.116m	0.00m	572.169m	22.20T
!	2 Crane Base	274.9T	398695.330m	5588279.441m	0.00m	581.438m	21.92T
!	3 GPS Antenna	274.9T	398682.492m	5588280.764m	15.20m	584.972m	23.14T

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External Fix   :     55          Time 16:40:55.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'58.2346"S 145d48'56.4969"E      0.00m (datum - local)
398685.081m  5588274.533m
(In Use)            39d50'58.0254"S 145d48'56.3310"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 276.0T COG 290.4G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              275.9T   398685.081m  5588274.533m      0.00m     589.769m      22.67T
! 1 Guns             275.9T   398694.717m  5588289.028m      0.00m     572.730m      22.32T
! 2 Crane Base       275.9T   398693.849m  5588279.367m      0.00m     582.043m      22.05T
! 3 GPS Antenna      275.9T   398681.037m  5588280.920m     15.20m     585.383m      23.28T
--------------------------------------------------------------------------------
External Fix   :     56          Time 16:41:10.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'58.2204"S 145d48'56.4842"E      0.00m (datum - local)
398684.775m  5588274.966m
(In Use)            39d50'58.0087"S 145d48'56.3239"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 277.2T COG 280.7G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              277.4T   398684.775m  5588274.966m      0.00m     589.481m      22.72T
! 1 Guns             277.4T   398694.776m  5588289.212m      0.00m     572.538m      22.32T
! 2 Crane Base       277.4T   398693.663m  5588279.576m      0.00m     581.916m      22.08T
! 3 GPS Antenna      277.4T   398680.894m  5588281.454m     15.20m     584.945m      23.31T
--------------------------------------------------------------------------------
External Fix   :     57          Time 16:41:50.8 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'58.2192"S 145d48'56.4638"E      0.00m (datum - local)
398684.288m  5588274.997m
(In Use)            39d50'58.0046"S 145d48'56.3099"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 278.5T COG 191.5G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              276.9T   398684.288m  5588274.997m      0.00m     589.634m      22.76T
! 1 Guns             276.9T   398694.175m  5588289.323m      0.00m     572.656m      22.38T
! 2 Crane Base       276.9T   398693.139m  5588279.678m      0.00m     582.012m      22.13T
! 3 GPS Antenna      276.9T   398680.356m  5588281.454m     15.20m     585.151m      23.36T
--------------------------------------------------------------------------------
External Fix   :     58          Time 16:42:21.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'58.1962"S 145d48'56.5515"E      0.00m (datum - local)
398686.363m  5588275.735m
(In Use)            39d50'57.9820"S 145d48'56.3968"E     15.20m (antenna - WGS84)  HDOP:  2.0
!Heading 278.4T COG  98.4G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.5T   398686.363m  5588275.735m      0.00m     588.175m      22.60T
! 1 Guns             278.5T   398696.654m  5588289.773m      0.00m     571.327m      22.17T
! 2 Crane Base       278.5T   398695.344m  5588280.162m      0.00m     580.760m      21.94T
! 3 GPS Antenna      278.5T   398682.616m  5588282.301m     15.20m     583.503m      23.18T
--------------------------------------------------------------------------------
External Fix   :     59          Time 16:48:13.5 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'57.1046"S 145d48'56.9794"E      0.00m (datum - local)
398696.086m  5588309.523m
(In Use)            39d50'56.8918"S 145d48'56.8214"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 277.7T COG  16.9G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              277.7T   398696.086m  5588309.523m      0.00m     553.197m      22.97T
! 1 Guns             277.7T   398706.174m  5588323.708m      0.00m     536.261m      22.54T
! 2 Crane Base       277.7T   398705.002m  5588314.079m      0.00m     545.645m      22.28T
! 3 GPS Antenna      277.7T   398692.245m  5588316.035m     15.20m     548.652m      23.60T
--------------------------------------------------------------------------------
External Fix   :     60          Time 16:48:45.4 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'57.0576"S 145d48'57.0834"E      0.00m (datum - local)
398698.538m  5588311.007m
(In Use)            39d50'56.8451"S 145d48'56.9246"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 277.5T COG  65.7G SOG  0.2 kt
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 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             277.7T   398698.538m  5588311.007m      0.00m     550.898m      22.79T
! 1 Guns            277.7T   398708.621m  5588325.195m      0.00m     533.974m      22.36T
! 2 Crane Base      277.7T   398707.452m  5588315.566m      0.00m     543.365m      22.10T
! 3 GPS Antenna     277.7T   398694.694m  5588317.518m     15.20m     546.336m      23.42T
--------------------------------------------------------------------------------------------
External Fix   :     61          Time 16:51:49.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'57.1702"S 145d48'56.8923"E      0.00m (datum - local)
398694.043m  5588307.475m
(In Use)            39d50'56.9599"S 145d48'56.7288"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 276.5T COG 103.3G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             276.5T   398694.043m  5588307.475m      0.00m     555.867m      23.09T
! 1 Guns            276.5T   398703.841m  5588321.862m      0.00m     538.843m      22.70T
! 2 Crane Base      276.5T   398702.865m  5588312.212m      0.00m     548.169m      22.42T
! 3 GPS Antenna     276.5T   398690.070m  5588313.907m     15.20m     551.458m      23.72T
--------------------------------------------------------------------------------------------
External Fix   :     62          Time 16:52:14.9 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'57.1918"S 145d48'56.9968"E      0.00m (datum - local)
398696.534m  5588306.840m
(In Use)            39d50'56.9819"S 145d48'56.8324"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 276.4T COG 109.0G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             276.4T   398696.534m  5588306.840m      0.00m     555.514m      22.82T
! 1 Guns            276.4T   398706.295m  5588321.252m      0.00m     538.498m      22.44T
! 2 Crane Base      276.4T   398705.343m  5588311.599m      0.00m     547.829m      22.16T
! 3 GPS Antenna     276.4T   398692.545m  5588313.263m     15.20m     551.093m      23.46T
--------------------------------------------------------------------------------------------
External Fix   :     63          Time 16:52:29.9 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'57.1842"S 145d48'57.0919"E      0.00m (datum - local)
398698.792m  5588307.105m
(In Use)            39d50'56.9732"S 145d48'56.9299"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 276.9T COG  77.4G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             276.8T   398698.792m  5588307.105m      0.00m     554.424m      22.62T
! 1 Guns            276.8T   398708.666m  5588321.439m      0.00m     537.452m      22.21T
! 2 Crane Base      276.8T   398707.639m  5588311.794m      0.00m     546.814m      21.94T
! 3 GPS Antenna     276.8T   398694.854m  5588313.558m     15.20m     549.933m      23.25T
--------------------------------------------------------------------------------------------
External Fix   :     64          Time 16:52:47.0 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'57.1967"S 145d48'57.0613"E      0.00m (datum - local)
398698.069m  5588306.710m
(In Use)            39d50'56.9846"S 145d48'56.9017"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 277.4T COG 225.6G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             277.4T   398698.069m  5588306.710m      0.00m     555.060m      22.67T
! 1 Guns            277.4T   398708.084m  5588320.946m      0.00m     538.124m      22.25T
! 2 Crane Base      277.4T   398706.962m  5588311.311m      0.00m     547.509m      21.99T
! 3 GPS Antenna     277.4T   398694.195m  5588313.202m     15.20m     550.514m      23.30T
--------------------------------------------------------------------------------------------
External Fix   :     65          Time 16:53:02.0 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'57.1743"S 145d48'57.0323"E      0.00m (datum - local)
398697.372m  5588307.391m
(In Use)            39d50'56.9636"S 145d48'56.8696"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 276.7T COG 340.7G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             276.4T   398697.372m  5588307.391m      0.00m     554.688m      22.76T
! 1 Guns            276.4T   398707.138m  5588321.800m      0.00m     537.677m      22.37T
! 2 Crane Base      276.4T   398706.183m  5588312.147m      0.00m     547.012m      22.09T
! 3 GPS Antenna     276.4T   398693.385m  5588313.815m     15.20m     550.259m      23.40T
--------------------------------------------------------------------------------------------
External Fix   :     66          Time 16:58:55.0 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'56.9221"S 145d48'57.2683"E      0.00m (datum - local)
398702.876m  5588315.242m
(In Use)            39d50'56.7072"S 145d48'57.1151"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 278.7T COG 138.6G SOG  0.3 kt
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 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             278.7T   398702.876m  5588315.242m      0.00m     545.348m      22.54T
! 1 Guns            278.7T   398713.210m  5588329.249m      0.00m     528.521m      22.06T
! 2 Crane Base      278.7T   398711.870m  5588319.642m      0.00m     537.966m      21.82T
! 3 GPS Antenna     278.7T   398699.149m  5588321.820m     15.20m     540.654m      23.16T
--------------------------------------------------------------------------------------------
External Fix   :     67          Time 16:59:11.3 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'56.9346"S 145d48'57.2535"E      0.00m (datum - local)
398702.531m  5588314.852m
(In Use)           39d50'56.7200"S 145d48'57.0996"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 278.5T COG 207.7G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             278.5T   398702.531m  5588314.852m      0.00m     545.840m      22.56T
! 1 Guns            278.5T   398712.807m  5588328.901m      0.00m     528.992m      22.09T
! 2 Crane Base      278.5T   398711.506m  5588319.288m      0.00m     538.427m      21.84T
! 3 GPS Antenna     278.5T   398698.777m  5588321.414m     15.20m     541.171m      23.18T
--------------------------------------------------------------------------------------------
External Fix   :     68          Time 16:59:29.4 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'56.9823"S 145d48'57.2815"E      0.00m (datum - local)
398703.215m  5588313.389m
(In Use)           39d50'56.7716"S 145d48'57.1187"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 276.7T COG 150.8G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             276.4T   398703.215m  5588313.389m      0.00m     546.945m      22.43T
! 1 Guns            276.4T   398712.989m  5588327.793m      0.00m     529.959m      22.02T
! 2 Crane Base      276.4T   398712.029m  5588318.140m      0.00m     539.311m      21.75T
! 3 GPS Antenna     276.4T   398699.231m  5588319.815m     15.20m     542.477m      23.07T
--------------------------------------------------------------------------------------------
External Fix   :     69          Time 17:05:22.9 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'56.0335"S 145d48'57.2352"E      0.00m (datum - local)
398701.728m  5588342.627m
(In Use)           39d50'55.8182"S 145d48'57.0829"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 278.9T COG 284.7G SOG  0.7 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             278.9T   398701.728m  5588342.627m      0.00m     520.458m      23.77T
! 1 Guns            278.9T   398712.103m  5588356.604m      0.00m     503.550m      23.31T
! 2 Crane Base      278.9T   398710.735m  5588347.001m      0.00m     512.952m      23.04T
! 3 GPS Antenna     278.9T   398698.020m  5588349.216m     15.20m     515.877m      24.44T
--------------------------------------------------------------------------------------------
External Fix   :     71          Time 17:05:46.8 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'56.0237"S 145d48'57.2242"E      0.00m (datum - local)
398701.463m  5588342.928m
(In Use)           39d50'55.8087"S 145d48'57.0711"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 278.7T COG  15.4G SOG  0.0 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             278.7T   398701.463m  5588342.928m      0.00m     520.285m      23.81T
! 1 Guns            278.7T   398711.797m  5588356.934m      0.00m     503.362m      23.35T
! 2 Crane Base      278.7T   398710.457m  5588347.327m      0.00m     512.755m      23.08T
! 3 GPS Antenna     278.7T   398697.736m  5588349.506m     15.20m     515.726m      24.48T
--------------------------------------------------------------------------------------------
External Fix   :     72          Time 17:06:04.6 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'56.0521"S 145d48'57.2705"E      0.00m (datum - local)
398702.574m  5588342.065m
(In Use)           39d50'55.8369"S 145d48'57.1182"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 278.9T COG 104.2G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             278.9T   398702.574m  5588342.065m      0.00m     520.646m      23.66T
! 1 Guns            278.9T   398712.949m  5588356.041m      0.00m     503.746m      23.19T
! 2 Crane Base      278.9T   398711.581m  5588346.438m      0.00m     513.153m      22.93T
! 3 GPS Antenna     278.9T   398698.867m  5588348.653m     15.20m     516.053m      24.33T
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External Fix : 73 Time 17:06:32.5 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'56.1023"S 145d48'57.4832"E 0.00m (datum - local)
398707.649m 5588340.586m
(In Use) 39d50'55.8880"S 145d48'57.3284"E 15.20m (antenna - WGS84) HDOP: 1.2
!Heading 278.4T COG 89.6G SOG 0.4 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	278.4T	398707.649m	5588340.586m	0.00m	520.060m	23.08T
!	1 Guns	278.4T	398717.901m	5588354.652m	0.00m	503.166m	22.61T
!	2 Crane Base	278.4T	398716.617m	5588345.037m	0.00m	512.576m	22.35T
!	3 GPS Antenna	278.4T	398703.884m	5588347.142m	15.20m	515.459m	23.75T

External Fix : 74 Time 17:07:07.4 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'56.1430"S 145d48'57.5799"E 0.00m (datum - local)
398709.964m 5588339.361m
(In Use) 39d50'55.9288"S 145d48'57.4252"E 15.20m (antenna - WGS84) HDOP: 1.2
!Heading 278.4T COG 195.2G SOG 0.1 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	278.4T	398709.964m	5588339.361m	0.00m	520.320m	22.80T
!	1 Guns	278.4T	398720.217m	5588353.427m	0.00m	503.448m	22.32T
!	2 Crane Base	278.4T	398718.933m	5588343.812m	0.00m	512.869m	22.05T
!	3 GPS Antenna	278.4T	398706.199m	5588345.917m	15.20m	515.689m	23.46T

External Fix : 75 Time 17:15:13.3 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'55.7801"S 145d48'57.7445"E 0.00m (datum - local)
398713.728m 5588350.601m
(In Use) 39d50'55.5580"S 145d48'57.6096"E 15.20m (antenna - WGS84) HDOP: 1.6
!Heading 282.4T COG 58.5G SOG 0.2 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	282.2T	398713.728m	5588350.601m	0.00m	508.486m	22.88T
!	1 Guns	282.2T	398724.906m	5588363.944m	0.00m	491.940m	22.26T
!	2 Crane Base	282.2T	398722.976m	5588354.438m	0.00m	501.497m	22.07T
!	3 GPS Antenna	282.2T	398710.413m	5588357.396m	15.20m	503.469m	23.52T

External Fix : 76 Time 17:15:50.2 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'55.6650"S 145d48'57.7916"E 0.00m (datum - local)
398714.800m 5588354.164m
(In Use) 39d50'55.4384"S 145d48'57.6702"E 15.20m (antenna - WGS84) HDOP: 1.6
!Heading 285.0T COG 317.4G SOG 0.3 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	285.0T	398714.800m	5588354.164m	0.00m	504.781m	22.92T
!	1 Guns	285.0T	398726.616m	5588366.945m	0.00m	488.520m	22.20T
!	2 Crane Base	285.0T	398724.225m	5588357.545m	0.00m	498.149m	22.06T
!	3 GPS Antenna	285.0T	398711.822m	5588361.113m	15.20m	499.496m	23.54T

External Fix : 77 Time 17:16:16.9 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'55.5977"S 145d48'57.7692"E 0.00m (datum - local)
398714.240m 5588356.232m
(In Use) 39d50'55.3713"S 145d48'57.6469"E 15.20m (antenna - WGS84) HDOP: 1.4
!Heading 284.9T COG 34.5G SOG 0.1 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	284.9T	398714.240m	5588356.232m	0.00m	503.078m	23.07T
!	1 Guns	284.9T	398726.019m	5588369.047m	0.00m	486.783m	22.36T
!	2 Crane Base	284.9T	398723.655m	5588359.640m	0.00m	496.405m	22.21T
!	3 GPS Antenna	284.9T	398711.241m	5588363.172m	15.20m	497.823m	23.69T

External Fix : 78 Time 17:27:34.6 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'54.7371"S 145d48'57.9736"E 0.00m (datum - local)
398718.745m 5588382.830m
(In Use) 39d50'54.5150"S 145d48'57.8386"E 15.20m (antenna - WGS84) HDOP: 1.4
!Heading 282.4T COG 296.9G SOG 0.3 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	282.4T	398718.745m	5588382.830m	0.00m	476.790m	23.78T
!	1 Guns	282.4T	398729.954m	5588396.147m	0.00m	460.174m	23.14T
!	2 Crane Base	282.4T	398728.002m	5588386.646m	0.00m	469.709m	22.92T
!	3 GPS Antenna	282.4T	398715.446m	5588389.633m	15.20m	471.852m	24.47T

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External Fix   :     79          Time 17:28:04.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'54.7034"S 145d48'57.9439"E      0.00m (datum - local)
398718.026m  5588383.858m
(In Use)            39d50'54.4833"S 145d48'57.8039"E     15.20m (antenna - WGS84)  HDOP:  1.4
!Heading 281.4T COG 325.2G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              281.5T   398718.026m  5588383.858m      0.00m     476.127m      23.91T
! 1 Guns             281.5T   398729.040m  5588397.336m      0.00m     459.424m      23.31T
! 2 Crane Base       281.5T   398727.227m  5588387.807m      0.00m     468.927m      23.06T
! 3 GPS Antenna      281.5T   398714.629m  5588390.612m     15.20m     471.286m      24.61T
--------------------------------------------------------------------------------
External Fix   :     80          Time 17:28:19.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'54.7185"S 145d48'57.8799"E      0.00m (datum - local)
398716.510m  5588383.374m
(In Use)            39d50'54.4977"S 145d48'57.7415"E     15.20m (antenna - WGS84)  HDOP:  1.4
!Heading 281.7T COG 271.5G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              281.7T   398716.510m  5588383.374m      0.00m     477.169m      24.05T
! 1 Guns             281.7T   398727.563m  5588396.820m      0.00m     460.469m      23.45T
! 2 Crane Base       281.7T   398725.722m  5588387.297m      0.00m     469.972m      23.21T
! 3 GPS Antenna      281.7T   398713.133m  5588390.138m     15.20m     472.326m      24.75T
--------------------------------------------------------------------------------
External Fix   :     81          Time 17:28:34.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'54.6913"S 145d48'57.8093"E      0.00m (datum - local)
398714.823m  5588384.188m
(In Use)            39d50'54.4715"S 145d48'57.6685"E     15.20m (antenna - WGS84)  HDOP:  1.4
!Heading 281.2T COG 285.5G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              281.2T   398714.823m  5588384.188m      0.00m     477.092m      24.28T
! 1 Guns             281.2T   398725.758m  5588397.731m      0.00m     460.329m      23.70T
! 2 Crane Base       281.2T   398724.000m  5588388.192m      0.00m     469.807m      23.45T
! 3 GPS Antenna      281.2T   398711.386m  5588390.923m     15.20m     472.323m      24.99T
--------------------------------------------------------------------------------
External Fix   :     82          Time 17:28:54.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'54.7012"S 145d48'57.8853"E      0.00m (datum - local)
398716.631m  5588383.908m
(In Use)            39d50'54.4792"S 145d48'57.7503"E     15.20m (antenna - WGS84)  HDOP:  1.4
!Heading 282.4T COG  91.9G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              282.3T   398716.631m  5588383.908m      0.00m     476.630m      24.06T
! 1 Guns             282.3T   398727.826m  5588397.237m      0.00m     459.983m      23.44T
! 2 Crane Base       282.3T   398725.884m  5588387.733m      0.00m     469.507m      23.21T
! 3 GPS Antenna      282.3T   398713.326m  5588390.708m     15.20m     471.727m      24.76T
--------------------------------------------------------------------------------
External Fix   :     83          Time 17:38:25.0 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'53.9885"S 145d48'58.5001"E      0.00m (datum - local)
398730.952m  5588406.076m
(In Use)            39d50'53.7722"S 145d48'58.3502"E     15.20m (antenna - WGS84)  HDOP:  1.5
!Heading 279.4T COG 171.0G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              279.4T   398730.952m  5588406.076m      0.00m     450.620m      23.51T
! 1 Guns             279.4T   398741.448m  5588419.961m      0.00m     433.773m      22.94T
! 2 Crane Base       279.4T   398739.996m  5588410.371m      0.00m     443.210m      22.64T
! 3 GPS Antenna      279.4T   398727.302m  5588412.697m     15.20m     445.964m      24.27T
--------------------------------------------------------------------------------
External Fix   :     84          Time 17:38:42.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'54.0119"S 145d48'58.5372"E      0.00m (datum - local)
398731.842m  5588405.366m
(In Use)            39d50'53.7956"S 145d48'58.3873"E     15.20m (antenna - WGS84)  HDOP:  1.4
!Heading 279.4T COG 171.9G SOG  0.1 kt
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 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             279.5T   398731.842m  5588405.366m      0.00m     450.932m      23.37T
! 1 Guns            279.5T   398742.374m  5588419.225m      0.00m     434.107m      22.79T
! 2 Crane Base      279.5T   398740.898m  5588409.638m      0.00m     443.556m      22.50T
! 3 GPS Antenna     279.5T   398728.209m  5588411.996m     15.20m     446.246m      24.13T
--------------------------------------------------------------------------------------------
External Fix   :     85          Time 17:38:58.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'53.9504"S 145d48'58.4421"E      0.00m (datum - local)
398729.559m  5588407.231m
(In Use)            39d50'53.7355"S 145d48'58.2890"E     15.20m (antenna - WGS84)  HDOP:  1.4
!Heading 278.7T COG 299.8G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             278.8T   398729.559m  5588407.231m      0.00m     450.097m      23.73T
! 1 Guns            278.8T   398739.907m  5588421.227m      0.00m     433.186m      23.19T
! 2 Crane Base      278.8T   398738.557m  5588411.621m      0.00m     442.590m      22.88T
! 3 GPS Antenna     278.8T   398725.838m  5588413.812m     15.20m     445.528m      24.50T
--------------------------------------------------------------------------------------------
External Fix   :     86          Time 17:39:13.8 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'53.9626"S 145d48'58.3183"E      0.00m (datum - local)
398726.621m  5588406.815m
(In Use)            39d50'53.7467"S 145d48'58.1676"E     15.20m (antenna - WGS84)  HDOP:  1.4
!Heading 279.2T COG 268.5G SOG  0.4 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             279.4T   398726.621m  5588406.815m      0.00m     451.633m      24.05T
! 1 Guns            279.4T   398737.116m  5588420.702m      0.00m     434.744m      23.50T
! 2 Crane Base      279.4T   398735.665m  5588411.111m      0.00m     444.159m      23.20T
! 3 GPS Antenna     279.4T   398722.970m  5588413.436m     15.20m     447.034m      24.82T
--------------------------------------------------------------------------------------------
External Fix   :     87          Time 17:39:30.5 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'53.9313"S 145d48'58.3432"E      0.00m (datum - local)
398727.200m  5588407.790m
(In Use)            39d50'53.7147"S 145d48'58.1941"E     15.20m (antenna - WGS84)  HDOP:  1.4
!Heading 279.5T COG  34.9G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             279.5T   398727.200m  5588407.790m      0.00m     450.509m      24.03T
! 1 Guns            279.5T   398737.737m  5588421.645m      0.00m     433.634m      23.48T
! 2 Crane Base      279.5T   398736.257m  5588412.058m      0.00m     443.057m      23.17T
! 3 GPS Antenna     279.5T   398723.569m  5588414.422m     15.20m     445.890m      24.80T
--------------------------------------------------------------------------------------------
14/07/2004  17:39:57 UTC
Alarm: RayJHope, MRDGPS (in-use) timeout (age > 5)
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14/07/2004  17:39:59 UTC
Alarm: RayJHope, MRDGPS (in-use) restored
--------------------------------------------------------------------------------------------
External Fix   :     88          Time 17:40:14.5 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'53.9639"S 145d48'56.5702"E      0.00m (datum - local)
398685.079m  5588406.226m
(In Use)            39d50'53.7500"S 145d48'56.4146"E     15.20m (antenna - WGS84)  HDOP:  1.4
!Heading 278.2T COG 267.4G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             278.2T   398685.079m  5588406.226m      0.00m     470.138m      28.68T
! 1 Guns            278.2T   398695.290m  5588420.323m      0.00m     452.903m      28.37T
! 2 Crane Base      278.2T   398694.034m  5588410.704m      0.00m     462.022m      27.96T
! 3 GPS Antenna     278.2T   398681.294m  5588412.772m     15.20m     466.169m      29.47T
--------------------------------------------------------------------------------------------
External Fix   :     89          Time 17:46:40.4 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'52.9401"S 145d48'59.1002"E      0.00m (datum - local)
398744.785m  5588438.586m
(In Use)            39d50'52.7269"S 145d48'58.9430"E     15.20m (antenna - WGS84)  HDOP:  1.4
!Heading 277.9T COG  95.3G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             277.9T   398744.785m  5588438.586m      0.00m     415.280m      23.48T
! 1 Guns            277.9T   398754.914m  5588452.742m      0.00m     398.325m      22.92T
! 2 Crane Base      277.9T   398753.714m  5588443.116m      0.00m     407.702m      22.57T
! 3 GPS Antenna     277.9T   398740.963m  5588445.109m     15.20m     410.783m      24.32T
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External Fix   :     90          Time 17:46:58.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'52.9381"S 145d48'59.1510"E      0.00m (datum - local)
398745.991m  5588438.666m
(In Use)            39d50'52.7232"S 145d48'58.9979"E     15.20m (antenna - WGS84)  HDOP:  1.4
!Heading 278.7T COG  93.4G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.9T   398745.991m  5588438.666m      0.00m     414.742m      23.33T
! 1 Guns             278.9T   398756.366m  5588452.642m      0.00m     397.872m      22.72T
! 2 Crane Base       278.9T   398754.998m  5588443.039m      0.00m     407.298m      22.40T
! 3 GPS Antenna      278.9T   398742.283m  5588445.254m     15.20m     410.123m      24.16T
--------------------------------------------------------------------------------
External Fix   :     91          Time 17:47:13.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'52.9170"S 145d48'59.1597"E      0.00m (datum - local)
398746.190m  5588439.318m
(In Use)            39d50'52.7014"S 145d48'59.0082"E     15.20m (antenna - WGS84)  HDOP:  1.3
!Heading 279.0T COG  70.4G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.9T   398746.190m  5588439.318m      0.00m     414.063m      23.34T
! 1 Guns             278.9T   398756.565m  5588453.295m      0.00m     397.192m      22.73T
! 2 Crane Base       278.9T   398755.197m  5588443.692m      0.00m     406.618m      22.41T
! 3 GPS Antenna      278.9T   398742.482m  5588445.907m     15.20m     409.445m      24.17T
--------------------------------------------------------------------------------
External Fix   :     92          Time 17:47:28.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'52.8992"S 145d48'59.2014"E      0.00m (datum - local)
398747.173m  5588439.880m
(In Use)            39d50'52.6843"S 145d48'59.0483"E     15.20m (antenna - WGS84)  HDOP:  1.3
!Heading 278.7T COG  62.8G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.7T   398747.173m  5588439.880m      0.00m     413.168m      23.24T
! 1 Guns             278.7T   398757.507m  5588453.886m      0.00m     396.291m      22.64T
! 2 Crane Base       278.7T   398756.167m  5588444.279m      0.00m     405.715m      22.31T
! 3 GPS Antenna      278.7T   398743.446m  5588446.458m     15.20m     408.557m      24.08T
--------------------------------------------------------------------------------
External Fix   :     93          Time 17:47:43.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'52.9015"S 145d48'59.3585"E      0.00m (datum - local)
398750.907m  5588439.858m
(In Use)            39d50'52.6866"S 145d48'59.2053"E     15.20m (antenna - WGS84)  HDOP:  1.3
!Heading 278.7T COG  82.0G SOG  0.5 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.7T   398750.907m  5588439.858m      0.00m     411.773m      22.76T
! 1 Guns             278.7T   398761.236m  5588453.868m      0.00m     394.933m      22.14T
! 2 Crane Base       278.7T   398759.899m  5588444.261m      0.00m     404.375m      21.82T
! 3 GPS Antenna      278.7T   398747.178m  5588446.435m     15.20m     407.115m      23.60T
--------------------------------------------------------------------------------
External Fix   :     94          Time 17:53:37.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'51.9179"S 145d48'59.6469"E      0.00m (datum - local)
398757.359m  5588470.276m
(In Use)            39d50'51.7043"S 145d48'59.4905"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 278.0T COG  89.8G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.0T   398757.359m  5588470.276m      0.00m     381.184m      23.58T
! 1 Guns             278.0T   398767.518m  5588484.410m      0.00m     364.232m      22.97T
! 2 Crane Base       278.0T   398766.298m  5588474.787m      0.00m     373.614m      22.58T
! 3 GPS Antenna      278.0T   398753.550m  5588476.807m     15.20m     376.688m      24.50T
--------------------------------------------------------------------------------
External Fix   :     95          Time 17:53:52.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'51.9087"S 145d48'59.7033"E      0.00m (datum - local)
398758.697m  5588470.575m
(In Use)            39d50'51.6955"S 145d48'59.5462"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 277.9T COG  76.4G SOG  0.3 kt
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 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             277.8T   398758.697m  5588470.575m      0.00m     380.390m      23.41T
! 1 Guns            277.8T   398768.812m  5588484.741m      0.00m     363.438m      22.80T
! 2 Crane Base      277.8T   398767.622m  5588475.114m      0.00m     372.819m      22.41T
! 3 GPS Antenna     277.8T   398754.868m  5588477.095m     15.20m     375.896m      24.33T
--------------------------------------------------------------------------------------------
External Fix   :     96          Time 17:54:07.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'51.9176"S 145d48'59.7670"E      0.00m (datum - local)
398760.214m  5588470.322m
(In Use)            39d50'51.7051"S 145d48'59.6082"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 277.5T COG  96.5G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             277.5T   398760.214m  5588470.322m      0.00m     380.043m      23.18T
! 1 Guns            277.5T   398770.245m  5588484.547m      0.00m     363.082m      22.58T
! 2 Crane Base      277.5T   398769.112m  5588474.914m      0.00m     372.458m      22.19T
! 3 GPS Antenna     277.5T   398756.347m  5588476.819m     15.20m     375.560m      24.11T
--------------------------------------------------------------------------------------------
External Fix   :     97          Time 17:54:22.8 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'51.9224"S 145d48'59.7921"E      0.00m (datum - local)
398760.813m  5588470.182m
(In Use)            39d50'51.7103"S 145d48'59.6326"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 277.4T COG  89.0G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             277.4T   398760.813m  5588470.182m      0.00m     379.944m      23.09T
! 1 Guns            277.4T   398770.818m  5588484.425m      0.00m     362.983m      22.48T
! 2 Crane Base      277.4T   398769.702m  5588474.790m      0.00m     372.358m      22.10T
! 3 GPS Antenna     277.4T   398756.934m  5588476.672m     15.20m     375.463m      24.02T
--------------------------------------------------------------------------------------------
External Fix   :     98          Time 17:54:37.8 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'51.9435"S 145d48'59.8311"E      0.00m (datum - local)
398761.748m  5588469.543m
(In Use)            39d50'51.7310"S 145d48'59.6724"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 277.5T COG 126.4G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             277.5T   398761.748m  5588469.543m      0.00m     380.181m      22.92T
! 1 Guns            277.5T   398771.795m  5588483.757m      0.00m     363.244m      22.30T
! 2 Crane Base      277.5T   398770.651m  5588474.125m      0.00m     372.634m      21.92T
! 3 GPS Antenna     277.5T   398757.888m  5588476.044m     15.20m     375.665m      23.84T
--------------------------------------------------------------------------------------------
External Fix   :     99          Time 18:00:08.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'50.9458"S 145d49'00.0830"E      0.00m (datum - local)
398767.327m  5588500.383m
(In Use)            39d50'50.7377"S 145d48'59.9147"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 275.5T COG  75.4G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             275.5T   398767.327m  5588500.383m      0.00m     349.568m      23.99T
! 1 Guns            275.5T   398776.872m  5588514.939m      0.00m     332.437m      23.46T
! 2 Crane Base      275.5T   398776.065m  5588505.272m      0.00m     341.681m      22.96T
! 3 GPS Antenna     275.5T   398763.243m  5588506.745m     15.20m     345.388m      25.02T
--------------------------------------------------------------------------------------------
External Fix   :    100          Time 18:00:29.5 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'50.9444"S 145d49'00.2047"E      0.00m (datum - local)
398770.218m  5588500.465m
(In Use)            39d50'50.7355"S 145d49'00.0380"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 275.9T COG  81.6G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP             276.0T   398770.218m  5588500.465m      0.00m     348.362m      23.55T
! 1 Guns            276.0T   398779.890m  5588514.937m      0.00m     331.285m      22.98T
! 2 Crane Base      276.0T   398778.998m  5588505.278m      0.00m     340.578m      22.51T
! 3 GPS Antenna     276.0T   398766.189m  5588506.863m     15.20m     344.079m      24.59T
--------------------------------------------------------------------------------------------
External Fix   :    101          Time 18:00:44.6 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'50.9336"S 145d49'00.1396"E      0.00m (datum - local)
398768.666m  5588500.777m
(In Use)            39d50'50.7240"S 145d48'59.9744"E     15.20m (antenna - WGS84)  HDOP:  1.3
!Heading 276.2T COG 288.6G SOG  0.2 kt
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 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              276.2T   398768.666m  5588500.777m      0.00m     348.679m      23.81T
! 1 Guns             276.2T   398778.379m  5588515.221m      0.00m     331.597m      23.24T
! 2 Crane Base       276.2T   398777.459m  5588505.564m      0.00m     340.886m      22.76T
! 3 GPS Antenna      276.2T   398764.655m  5588507.186m     15.20m     344.407m      24.84T
-------------------------------------------------------------------------------------------
External Fix   :    102          Time 18:01:11.3 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'50.9271"S 145d49'00.1124"E      0.00m (datum - local)
398768.017m  5588500.968m
(In Use)            39d50'50.7165"S 145d48'59.9496"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 276.7T COG  90.6G SOG  0.0 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              276.7T   398768.017m  5588500.968m      0.00m     348.759m      23.92T
! 1 Guns             276.7T   398777.856m  5588515.326m      0.00m     331.700m      23.33T
! 2 Crane Base       276.7T   398776.852m  5588505.678m      0.00m     341.008m      22.87T
! 3 GPS Antenna      276.7T   398764.062m  5588507.411m     15.20m     344.443m      24.95T
-------------------------------------------------------------------------------------------
External Fix   :    103          Time 18:01:26.4 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'50.9220"S 145d49'00.1513"E      0.00m (datum - local)
398768.940m  5588501.139m
(In Use)            39d50'50.7095"S 145d48'59.9925"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 277.5T COG  79.1G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              277.4T   398768.940m  5588501.139m      0.00m     348.239m      23.79T
! 1 Guns             277.4T   398778.953m  5588515.377m      0.00m     331.233m      23.16T
! 2 Crane Base       277.4T   398777.832m  5588505.742m      0.00m     340.581m      22.72T
! 3 GPS Antenna      277.4T   398765.064m  5588507.631m     15.20m     343.834m      24.81T
-------------------------------------------------------------------------------------------
External Fix   :    104          Time 18:06:41.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'49.8898"S 145d49'00.4749"E      0.00m (datum - local)
398776.210m  5588533.063m
(In Use)            39d50'49.6766"S 145d49'00.3177"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 277.9T COG 242.1G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.0T   398776.210m  5588533.063m      0.00m     316.059m      24.84T
! 1 Guns             278.0T   398786.376m  5588547.192m      0.00m     299.028m      24.17T
! 2 Crane Base       278.0T   398785.150m  5588537.570m      0.00m     308.359m      23.67T
! 3 GPS Antenna      278.0T   398772.404m  5588539.596m     15.20m     311.707m      25.97T
-------------------------------------------------------------------------------------------
External Fix   :    105          Time 18:07:18.0 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'49.9370"S 145d49'00.4065"E      0.00m (datum - local)
398774.604m  5588531.587m
(In Use)            39d50'49.7249"S 145d49'00.2470"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 277.4T COG 198.8G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.0T   398774.604m  5588531.587m      0.00m     318.064m      25.00T
! 1 Guns             278.0T   398784.778m  5588545.710m      0.00m     301.024m      24.34T
! 2 Crane Base       278.0T   398783.547m  5588536.088m      0.00m     310.350m      23.83T
! 3 GPS Antenna      278.0T   398770.802m  5588538.122m     15.20m     313.725m      26.12T
-------------------------------------------------------------------------------------------
External Fix   :    106          Time 18:07:33.0 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'49.9633"S 145d49'00.3320"E      0.00m (datum - local)
398772.843m  5588530.752m
(In Use)            39d50'49.7523"S 145d49'00.1700"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 276.9T COG 258.1G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              276.7T   398772.843m  5588530.752m      0.00m     319.552m      25.22T
! 1 Guns             276.7T   398782.682m  5588545.110m      0.00m     302.418m      24.65T
! 2 Crane Base       276.7T   398781.678m  5588535.462m      0.00m     311.662m      24.10T
! 3 GPS Antenna      276.7T   398768.888m  5588537.196m     15.20m     315.385m      26.36T
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External Fix   :    107          Time 18:07:49.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'49.9886"S 145d49'00.1888"E      0.00m (datum - local)
398769.449m  5588529.926m
(In Use)            39d50'49.7758"S 145d49'00.0308"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 277.7T COG 261.4G SOG  0.4 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              277.8T   398769.449m  5588529.926m      0.00m     321.720m      25.71T
! 1 Guns             277.8T   398779.555m  5588544.099m      0.00m     304.619m      25.11T
! 2 Crane Base       277.8T   398778.371m  5588534.472m      0.00m     313.894m      24.59T
! 3 GPS Antenna      277.8T   398765.616m  5588536.443m     15.20m     317.489m      26.84T
--------------------------------------------------------------------------------------------
External Fix   :    108          Time 18:08:14.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'50.0346"S 145d49'00.4213"E      0.00m (datum - local)
398774.995m  5588528.584m
(In Use)            39d50'49.8203"S 145d49'00.2666"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 278.4T COG 106.8G SOG  0.6 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.5T   398774.995m  5588528.584m      0.00m     320.647m      24.71T
! 1 Guns             278.5T   398785.284m  5588542.624m      0.00m     303.656m      24.01T
! 2 Crane Base       278.5T   398783.975m  5588533.012m      0.00m     313.017m      23.54T
! 3 GPS Antenna      278.5T   398771.247m  5588535.150m     15.20m     316.226m      25.82T
--------------------------------------------------------------------------------------------
External Fix   :    109          Time 18:13:41.0 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'49.1419"S 145d49'00.7790"E      0.00m (datum - local)
398783.130m  5588556.218m
(In Use)            39d50'48.9263"S 145d49'00.6275"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 279.0T COG  89.7G SOG  0.4 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              279.0T   398783.130m  5588556.218m      0.00m     292.106m      25.46T
! 1 Guns             279.0T   398793.546m  5588570.164m      0.00m     275.103m      24.70T
! 2 Crane Base       279.0T   398792.150m  5588560.565m      0.00m     284.457m      24.17T
! 3 GPS Antenna      279.0T   398779.442m  5588562.818m     15.20m     287.715m      26.67T
--------------------------------------------------------------------------------------------
External Fix   :    110          Time 18:13:56.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'49.1292"S 145d49'00.9029"E      0.00m (datum - local)
398786.070m  5588556.647m
(In Use)            39d50'48.9140"S 145d49'00.7506"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 278.9T COG  81.2G SOG  0.4 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.7T   398786.070m  5588556.647m      0.00m     290.498m      24.96T
! 1 Guns             278.7T   398796.411m  5588570.649m      0.00m     273.508m      24.19T
! 2 Crane Base       278.7T   398795.066m  5588561.042m      0.00m     282.871m      23.67T
! 3 GPS Antenna      278.7T   398782.346m  5588563.227m     15.20m     286.088m      26.19T
--------------------------------------------------------------------------------------------
External Fix   :    111          Time 18:14:11.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'49.1367"S 145d49'00.9491"E      0.00m (datum - local)
398787.171m  5588556.432m
(In Use)            39d50'48.9217"S 145d49'00.7960"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 278.7T COG 105.3G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              278.6T   398787.171m  5588556.432m      0.00m     290.244m      24.75T
! 1 Guns             278.6T   398797.474m  5588570.463m      0.00m     273.258m      23.97T
! 2 Crane Base       278.6T   398796.155m  5588560.853m      0.00m     282.624m      23.45T
! 3 GPS Antenna      278.6T   398783.429m  5588563.002m     15.20m     285.828m      25.97T
--------------------------------------------------------------------------------------------
External Fix   :    112          Time 18:14:26.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'49.1163"S 145d49'01.0112"E      0.00m (datum - local)
398788.638m  5588557.080m
(In Use)            39d50'48.9000"S 145d49'00.8613"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 279.4T COG  78.0G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              279.4T   398788.638m  5588557.080m      0.00m     289.059m      24.54T
! 1 Guns             279.4T   398799.134m  5588570.965m      0.00m     272.145m      23.69T
! 2 Crane Base       279.4T   398797.682m  5588561.374m      0.00m     281.556m      23.20T
! 3 GPS Antenna      279.4T   398784.987m  5588563.701m     15.20m     284.534m      25.75T
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External Fix   :    113          Time 18:14:41.3 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'49.0835"S 145d49'00.9941"E      0.00m (datum - local)
398788.220m  5588558.087m
(In Use)            39d50'48.8672"S 145d49'00.8443"E     15.20m (antenna - WGS84)  HDOP:  1.4
!Heading 279.4T COG 333.0G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              279.3T   398788.220m  5588558.087m      0.00m     288.307m      24.69T
! 1 Guns             279.3T   398798.703m  5588571.982m      0.00m     271.377m      23.86T
! 2 Crane Base       279.3T   398797.260m  5588562.390m      0.00m     280.779m      23.36T
! 3 GPS Antenna      279.3T   398784.563m  5588564.704m     15.20m     283.804m      25.91T
--------------------------------------------------------------------------------
External Fix   :    114          Time 18:19:48.9 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'47.4100"S 145d49'01.0017"E      0.00m (datum - local)
398787.716m  5588609.683m
(In Use)            39d50'47.1934"S 145d49'00.8526"E     15.20m (antenna - WGS84)  HDOP:  1.2
!Heading 279.5T COG 295.4G SOG  0.5 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              279.5T   398787.716m  5588609.683m      0.00m     242.285m      29.76T
! 1 Guns             279.5T   398798.253m  5588623.538m      0.00m     225.068m      29.12T
! 2 Crane Base       279.5T   398796.774m  5588613.951m      0.00m     234.232m      28.33T
! 3 GPS Antenna      279.5T   398784.086m  5588616.314m     15.20m     238.330m      31.30T
--------------------------------------------------------------------------------
External Fix   :    115          Time 18:20:03.9 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'47.4009"S 145d49'00.9547"E      0.00m (datum - local)
398786.596m  5588609.950m
(In Use)            39d50'47.1860"S 145d49'00.8015"E     15.20m (antenna - WGS84)  HDOP:  1.4
!Heading 278.7T COG 297.2G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              279.6T   398786.596m  5588609.950m      0.00m     242.598m      30.02T
! 1 Guns             279.6T   398797.158m  5588623.785m      0.00m     225.374m      29.40T
! 2 Crane Base       279.6T   398795.661m  5588614.201m      0.00m     234.528m      28.60T
! 3 GPS Antenna      279.6T   398782.977m  5588616.588m     15.20m     238.660m      31.56T
--------------------------------------------------------------------------------
External Fix   :    116          Time 18:20:19.4 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'47.4052"S 145d49'01.1442"E      0.00m (datum - local)
398791.101m  5588609.876m
(In Use)            39d50'47.1873"S 145d49'00.9984"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 280.2T COG  86.7G SOG  0.5 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              280.2T   398791.101m  5588609.876m      0.00m     240.491m      29.08T
! 1 Guns             280.2T   398801.799m  5588623.608m      0.00m     223.343m      28.33T
! 2 Crane Base       280.2T   398800.208m  5588614.039m      0.00m     232.583m      27.59T
! 3 GPS Antenna      280.2T   398787.548m  5588616.550m     15.20m     236.385m      30.60T
--------------------------------------------------------------------------------
External Fix   :    117          Time 18:20:34.4 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'47.4362"S 145d49'01.5310"E      0.00m (datum - local)
398800.305m  5588609.044m
(In Use)            39d50'47.2163"S 145d49'01.3901"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 281.2T COG  98.8G SOG  0.9 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              281.2T   398800.305m  5588609.044m      0.00m     237.010m      27.02T
! 1 Guns             281.2T   398811.241m  5588622.586m      0.00m     220.055m      26.03T
! 2 Crane Base       281.2T   398809.483m  5588613.046m      0.00m     229.448m      25.41T
! 3 GPS Antenna      281.2T   398796.869m  5588615.778m     15.20m     232.569m      28.51T
--------------------------------------------------------------------------------
External Fix   :    118          Time 18:20:57.6 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'47.5125"S 145d49'01.7847"E      0.00m (datum - local)
398806.367m  5588606.770m
(In Use)            39d50'47.2962"S 145d49'01.6348"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 279.4T COG 118.4G SOG  0.6 kt
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 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              279.5T   398806.367m  5588606.770m      0.00m     236.455m      25.46T
! 1 Guns             279.5T   398816.901m  5588620.626m      0.00m     219.492m      24.47T
! 2 Crane Base       279.5T   398815.423m  5588611.039m      0.00m     228.880m      23.85T
! 3 GPS Antenna      279.5T   398802.735m  5588613.401m     15.20m     232.026m      26.96T
--------------------------------------------------------------------------------------------
External Fix   :    119          Time 18:26:32.6 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'46.9999"S 145d49'01.9518"E      0.00m (datum - local)
398810.128m  5588622.626m
(In Use)            39d50'46.7965"S 145d49'01.7741"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 273.5T COG 299.5G SOG  0.0 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              272.0T   398810.128m  5588622.626m      0.00m     220.496m      26.29T
! 1 Guns             272.0T   398818.766m  5588637.738m      0.00m     203.136m      25.93T
! 2 Crane Base       272.0T   398818.550m  5588628.040m      0.00m     212.044m      24.87T
! 3 GPS Antenna      272.0T   398805.662m  5588628.727m     15.20m     217.017m      28.05T
--------------------------------------------------------------------------------------------
External Fix   :    120          Time 18:26:47.6 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'47.0541"S 145d49'01.9582"E      0.00m (datum - local)
398810.302m  5588620.957m
(In Use)            39d50'46.8507"S 145d49'01.7805"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 273.5T COG 185.0G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              273.5T   398810.302m  5588620.957m      0.00m     221.929m      26.07T
! 1 Guns             273.5T   398819.333m  5588635.837m      0.00m     204.620m      25.56T
! 2 Crane Base       273.5T   398818.863m  5588626.149m      0.00m     213.645m      24.59T
! 3 GPS Antenna      273.5T   398805.998m  5588627.173m     15.20m     218.247m      27.79T
--------------------------------------------------------------------------------------------
External Fix   :    121          Time 18:27:02.6 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'47.0560"S 145d49'02.0081"E      0.00m (datum - local)
398811.490m  5588620.915m
(In Use)            39d50'46.8529"S 145d49'01.8298"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 273.4T COG 103.4G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              274.2T   398811.490m  5588620.915m      0.00m     221.462m      25.78T
! 1 Guns             274.2T   398820.696m  5588635.688m      0.00m     204.187m      25.20T
! 2 Crane Base       274.2T   398820.112m  5588626.006m      0.00m     213.275m      24.26T
! 3 GPS Antenna      274.2T   398807.260m  5588627.181m     15.20m     217.669m      27.49T
--------------------------------------------------------------------------------------------
External Fix   :    122          Time 18:27:36.3 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'47.0852"S 145d49'02.1830"E      0.00m (datum - local)
398815.658m  5588620.068m
(In Use)            39d50'46.8791"S 145d49'02.0108"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 274.7T COG  98.1G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              274.8T   398815.658m  5588620.068m      0.00m     220.505m      24.71T
! 1 Guns             274.8T   398825.027m  5588634.738m      0.00m     203.307m      23.97T
! 2 Crane Base       274.8T   398824.336m  5588625.062m      0.00m     212.498m      23.12T
! 3 GPS Antenna      274.8T   398811.497m  5588626.380m     15.20m     216.518m      26.39T
--------------------------------------------------------------------------------------------
External Fix   :    123          Time 18:27:59.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'47.0614"S 145d49'02.0273"E      0.00m (datum - local)
398811.947m  5588620.754m
(In Use)            39d50'46.8556"S 145d49'01.8543"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 274.5T COG 277.0G SOG  0.4 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              274.7T   398811.947m  5588620.754m      0.00m     221.415m      25.66T
! 1 Guns             274.7T   398821.288m  5588635.441m      0.00m     204.168m      25.02T
! 2 Crane Base       274.7T   398820.615m  5588625.765m      0.00m     213.296m      24.11T
! 3 GPS Antenna      274.7T   398807.774m  5588627.058m     15.20m     217.548m      27.36T
--------------------------------------------------------------------------------------------
External Fix   :    124          Time 18:33:57.6 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'46.4175"S 145d49'02.2559"E      0.00m (datum - local)
398817.117m  5588640.679m
(In Use)            39d50'46.2232"S 145d49'02.0617"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.9T COG 121.7G SOG  0.2 kt
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 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.9T   398817.117m  5588640.679m      0.00m     201.194m      26.71T
! 1 Guns             269.9T   398825.178m  5588656.106m      0.00m     183.790m      26.56T
! 2 Crane Base       269.9T   398825.329m  5588646.408m      0.00m     192.508m      25.26T
! 3 GPS Antenna      269.9T   398812.425m  5588646.607m     15.20m     198.034m      28.69T
-------------------------------------------------------------------------------------------
External Fix   :    125          Time 18:34:12.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'46.2930"S 145d49'02.3000"E      0.00m (datum - local)
398818.114m  5588644.531m
(In Use)            39d50'46.0992"S 145d49'02.1051"E     15.20m (antenna - WGS84)  HDOP:  1.5
!Heading 269.7T COG   8.6G SOG  0.4 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.7T   398818.114m  5588644.531m      0.00m     197.295m      26.94T
! 1 Guns             269.7T   398826.130m  5588659.981m      0.00m     179.888m      26.82T
! 2 Crane Base       269.7T   398826.310m  5588650.283m      0.00m     188.576m      25.48T
! 3 GPS Antenna      269.7T   398813.404m  5588650.445m     15.20m     194.186m      28.96T
-------------------------------------------------------------------------------------------
External Fix   :    126          Time 18:34:27.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'46.3781"S 145d49'02.2823"E      0.00m (datum - local)
398817.730m  5588641.902m
(In Use)            39d50'46.1860"S 145d49'02.0845"E     15.20m (antenna - WGS84)  HDOP:  1.5
!Heading 269.0T COG 226.4G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.0T   398817.730m  5588641.902m      0.00m     199.826m      26.71T
! 1 Guns             269.0T   398825.566m  5588657.445m      0.00m     182.417m      26.63T
! 2 Crane Base       269.0T   398825.857m  5588647.749m      0.00m     191.068m      25.28T
! 3 GPS Antenna      269.0T   398812.951m  5588647.761m     15.20m     196.768m      28.71T
-------------------------------------------------------------------------------------------
External Fix   :    127          Time 18:34:42.8 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'46.4984"S 145d49'02.3107"E      0.00m (datum - local)
398818.452m  5588638.200m
(In Use)            39d50'46.3055"S 145d49'02.1143"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.4T COG 176.3G SOG  0.5 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.4T   398818.452m  5588638.200m      0.00m     202.852m      26.07T
! 1 Guns             269.4T   398826.378m  5588653.697m      0.00m     185.450m      25.90T
! 2 Crane Base       269.4T   398826.614m  5588644.000m      0.00m     194.179m      24.62T
! 3 GPS Antenna      269.4T   398813.708m  5588644.087m     15.20m     199.674m      28.02T
-------------------------------------------------------------------------------------------
External Fix   :    128          Time 18:34:57.8 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'46.5052"S 145d49'02.3811"E      0.00m (datum - local)
398820.129m  5588638.014m
(In Use)            39d50'46.3109"S 145d49'02.1870"E     15.20m (antenna - WGS84)  HDOP:  1.4
!Heading 269.9T COG 109.7G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              270.0T   398820.129m  5588638.014m      0.00m     202.310m      25.62T
! 1 Guns             270.0T   398828.219m  5588653.426m      0.00m     184.922m      25.35T
! 2 Crane Base       270.0T   398828.352m  5588643.727m      0.00m     193.733m      24.12T
! 3 GPS Antenna      270.0T   398815.447m  5588643.951m     15.20m     199.004m      27.56T
-------------------------------------------------------------------------------------------
External Fix   :    129          Time 18:35:16.0 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'46.5701"S 145d49'02.3733"E      0.00m (datum - local)
398819.971m  5588636.010m
(In Use)            39d50'46.3746"S 145d49'02.1814"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 270.4T COG 165.8G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              270.4T   398819.971m  5588636.010m      0.00m     204.196m      25.42T
! 1 Guns             270.4T   398828.166m  5588651.366m      0.00m     186.819m      25.10T
! 2 Crane Base       270.4T   398828.232m  5588641.666m      0.00m     195.674m      23.91T
! 3 GPS Antenna      270.4T   398815.330m  5588641.978m     15.20m     200.820m      27.33T
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External Fix : 130 Time 18:42:35.2 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'45.5743"S 145d49'03.0275"E 0.00m (datum - local)
398835.112m 5588666.916m
(In Use) 39d50'45.3900"S 145d49'02.8177"E 15.20m (antenna - WGS84) HDOP: 1.1
!Heading 266.2T COG 104.0G SOG 0.1 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	266.2T	398835.112m	5588666.916m	0.00m	169.784m	25.13T
!	1 Guns	266.2T	398842.170m	5588682.828m	0.00m	152.373m	25.18T
!	2 Crane Base	266.2T	398842.940m	5588673.158m	0.00m	160.930m	23.51T
!	3 GPS Antenna	266.2T	398830.049m	5588672.532m	15.20m	166.901m	27.51T

External Fix : 131 Time 18:43:00.4 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'45.5492"S 145d49'02.7515"E 0.00m (datum - local)
398828.542m 5588667.605m
(In Use) 39d50'45.3682"S 145d49'02.5368"E 15.20m (antenna - WGS84) HDOP: 1.5
!Heading 265.0T COG 268.1G SOG 0.5 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	265.0T	398828.542m	5588667.605m	0.00m	171.982m	27.22T
!	1 Guns	265.0T	398835.274m	5588683.657m	0.00m	154.612m	27.63T
!	2 Crane Base	265.0T	398836.242m	5588674.005m	0.00m	162.870m	25.79T
!	3 GPS Antenna	265.0T	398823.366m	5588673.116m	15.20m	169.502m	29.61T

External Fix : 132 Time 18:43:15.5 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'45.6673"S 145d49'02.6774"E 0.00m (datum - local)
398826.828m 5588663.939m
(In Use) 39d50'45.4883"S 145d49'02.4600"E 15.20m (antenna - WGS84) HDOP: 1.3
!Heading 264.4T COG 224.2G SOG 0.3 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	264.5T	398826.828m	5588663.939m	0.00m	176.029m	27.18T
!	1 Guns	264.5T	398833.403m	5588680.055m	0.00m	158.671m	27.65T
!	2 Crane Base	264.5T	398834.465m	5588670.414m	0.00m	166.876m	25.83T
!	3 GPS Antenna	264.5T	398821.599m	5588669.399m	15.20m	173.612m	29.53T

External Fix : 133 Time 18:45:39.8 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'45.4811"S 145d49'02.7317"E 0.00m (datum - local)
398828.043m 5588669.697m
(In Use) 39d50'45.2927"S 145d49'02.5282"E 15.20m (antenna - WGS84) HDOP: 1.1
!Heading 267.7T COG 61.2G SOG 0.4 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	267.7T	398828.043m	5588669.697m	0.00m	170.337m	27.68T
!	1 Guns	267.7T	398835.515m	5588685.418m	0.00m	152.933m	27.85T
!	2 Crane Base	267.7T	398836.033m	5588675.731m	0.00m	161.396m	26.12T
!	3 GPS Antenna	267.7T	398823.130m	5588675.443m	15.20m	167.583m	30.07T

External Fix : 134 Time 18:46:11.4 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'45.4542"S 145d49'02.9677"E 0.00m (datum - local)
398833.641m 5588670.601m
(In Use) 39d50'45.2676"S 145d49'02.7614"E 15.20m (antenna - WGS84) HDOP: 1.1
!Heading 267.0T COG 115.1G SOG 0.4 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	267.1T	398833.641m	5588670.601m	0.00m	167.058m	26.11T
!	1 Guns	267.1T	398840.947m	5588686.400m	0.00m	149.648m	26.17T
!	2 Crane Base	267.1T	398841.567m	5588676.720m	0.00m	158.198m	24.46T
!	3 GPS Antenna	267.1T	398828.667m	5588676.295m	15.20m	164.188m	28.53T

External Fix : 135 Time 18:46:26.4 UTC 14/07/2004
Vessel 1, Nav. 1 MRDGPS 39d50'45.4018"S 145d49'03.0152"E 0.00m (datum - local)
398834.748m 5588672.233m
(In Use) 39d50'45.2199"S 145d49'02.8019"E 15.20m (antenna - WGS84) HDOP: 1.2
!Heading 265.4T COG 29.5G SOG 0.3 kt

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	265.4T	398834.748m	5588672.233m	0.00m	165.109m	26.00T
!	1 Guns	265.4T	398841.574m	5588688.245m	0.00m	147.712m	26.26T
!	2 Crane Base	265.4T	398842.485m	5588678.588m	0.00m	156.118m	24.43T
!	3 GPS Antenna	265.4T	398829.604m	5588677.774m	15.20m	162.442m	28.48T

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External Fix   :    136          Time 19:38:53.5 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'44.2887"S 145d49'03.3273"E      0.00m (datum - local)
398841.711m  5588706.648m
(In Use)            39d50'44.0914"S 145d49'03.1383"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 271.0T COG 200.5G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              271.0T   398841.711m  5588706.648m      0.00m     131.270m      29.67T
! 1 Guns             271.0T   398850.084m  5588721.908m      0.00m     113.859m      29.69T
! 2 Crane Base       271.0T   398850.038m  5588712.208m      0.00m     122.462m      27.51T
! 3 GPS Antenna      271.0T   398837.140m  5588712.670m     15.20m     128.393m      32.75T
--------------------------------------------------------------------------------
External Fix   :    137          Time 19:39:10.3 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'44.2821"S 145d49'03.3645"E      0.00m (datum - local)
398842.594m  5588706.862m
(In Use)            39d50'44.0849"S 145d49'03.1756"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 271.0T COG 133.9G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              271.0T   398842.594m  5588706.862m      0.00m     130.658m      29.37T
! 1 Guns             271.0T   398850.967m  5588722.121m      0.00m     113.247m      29.35T
! 2 Crane Base       271.0T   398850.921m  5588712.422m      0.00m     121.875m      27.19T
! 3 GPS Antenna      271.0T   398838.023m  5588712.884m     15.20m     127.746m      32.47T
--------------------------------------------------------------------------------
External Fix   :    138          Time 19:39:31.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'44.2322"S 145d49'03.5007"E      0.00m (datum - local)
398845.810m  5588708.444m
(In Use)            39d50'44.0367"S 145d49'03.3088"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 270.4T COG  82.8G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              270.4T   398845.810m  5588708.444m      0.00m     127.744m      28.45T
! 1 Guns             270.4T   398854.006m  5588723.801m      0.00m     110.333m      28.38T
! 2 Crane Base       270.4T   398854.072m  5588714.101m      0.00m     118.986m      26.19T
! 3 GPS Antenna      270.4T   398841.170m  5588714.413m     15.20m     124.804m      31.61T
--------------------------------------------------------------------------------
External Fix   :    139          Time 19:39:46.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'44.1825"S 145d49'03.6003"E      0.00m (datum - local)
398848.157m  5588710.007m
(In Use)            39d50'43.9870"S 145d49'03.4084"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 270.4T COG  60.7G SOG  0.4 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              270.4T   398848.157m  5588710.007m      0.00m     125.276m      27.83T
! 1 Guns             270.4T   398856.353m  5588725.364m      0.00m     107.868m      27.66T
! 2 Crane Base       270.4T   398856.419m  5588715.664m      0.00m     116.575m      25.47T
! 3 GPS Antenna      270.4T   398843.516m  5588715.976m     15.20m     122.264m      31.04T
--------------------------------------------------------------------------------
External Fix   :    140          Time 19:40:01.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'44.1945"S 145d49'03.5141"E      0.00m (datum - local)
398846.112m  5588709.609m
(In Use)            39d50'43.9952"S 145d49'03.3289"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 271.9T COG 268.1G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              271.9T   398846.112m  5588709.609m      0.00m     126.572m      28.57T
! 1 Guns             271.9T   398854.707m  5588724.746m      0.00m     109.171m      28.29T
! 2 Crane Base       271.9T   398854.519m  5588715.048m      0.00m     117.939m      26.19T
! 3 GPS Antenna      271.9T   398841.629m  5588715.697m     15.20m     123.466m      31.73T
--------------------------------------------------------------------------------
External Fix   :    141          Time 19:48:17.8 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.3228"S 145d49'04.5450"E      0.00m (datum - local)
398870.257m  5588736.810m
(In Use)            39d50'43.1325"S 145d49'04.3444"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 268.4T COG 336.3G SOG  0.6 kt
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 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              268.4T   398870.257m  5588736.810m      0.00m      91.649m      23.14T
! 1 Guns             268.4T   398877.912m  5588752.443m      0.00m      74.283m      22.27T
! 2 Crane Base       268.4T   398878.317m  5588742.751m      0.00m      83.246m      19.57T
! 3 GPS Antenna      268.4T   398865.411m  5588742.613m     15.20m      88.382m      27.49T
-------------------------------------------------------------------------------------------
External Fix   :    142          Time 19:48:32.9 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.4076"S 145d49'04.5612"E      0.00m (datum - local)
398870.678m  5588734.202m
(In Use)            39d50'43.2238"S 145d49'04.3507"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 266.0T COG 186.5G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              265.9T   398870.678m  5588734.202m      0.00m      93.912m      22.30T
! 1 Guns             265.9T   398877.655m  5588750.148m      0.00m      76.515m      21.82T
! 2 Crane Base       265.9T   398878.475m  5588740.483m      0.00m      85.348m      18.98T
! 3 GPS Antenna      265.9T   398865.587m  5588739.792m     15.20m      90.834m      26.59T
-------------------------------------------------------------------------------------------
External Fix   :    143          Time 19:48:47.9 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.4999"S 145d49'04.5939"E      0.00m (datum - local)
398871.490m  5588731.366m
(In Use)            39d50'43.3184"S 145d49'04.3799"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 265.2T COG 163.8G SOG  0.4 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              265.2T   398871.490m  5588731.366m      0.00m      96.268m      21.23T
! 1 Guns             265.2T   398878.270m  5588747.398m      0.00m      78.876m      20.69T
! 2 Crane Base       265.2T   398879.209m  5588737.744m      0.00m      87.734m      17.96T
! 3 GPS Antenna      265.2T   398866.331m  5588736.893m     15.20m      93.140m      25.40T
-------------------------------------------------------------------------------------------
External Fix   :    144          Time 19:49:03.0 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.5046"S 145d49'04.6400"E      0.00m (datum - local)
398872.588m  5588731.235m
(In Use)            39d50'43.3189"S 145d49'04.4322"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 266.7T COG  92.7G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              265.0T   398872.588m  5588731.235m      0.00m      96.013m      20.59T
! 1 Guns             265.0T   398879.313m  5588747.290m      0.00m      78.629m      19.95T
! 2 Crane Base       265.0T   398880.285m  5588737.639m      0.00m      87.522m      17.27T
! 3 GPS Antenna      265.0T   398867.410m  5588736.744m     15.20m      92.832m      24.75T
-------------------------------------------------------------------------------------------
External Fix   :    145          Time 19:49:18.0 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.4702"S 145d49'04.7113"E      0.00m (datum - local)
398874.269m  5588732.317m
(In Use)            39d50'43.2769"S 145d49'04.5157"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.5T COG  62.6G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.7T   398874.269m  5588732.317m      0.00m      94.432m      19.85T
! 1 Guns             269.7T   398882.284m  5588747.768m      0.00m      77.246m      17.98T
! 2 Crane Base       269.7T   398882.464m  5588738.070m      0.00m      86.512m      15.96T
! 3 GPS Antenna      269.7T   398869.559m  5588738.231m     15.20m      90.609m      23.89T
-------------------------------------------------------------------------------------------
External Fix   :    146          Time 19:58:49.4 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.0789"S 145d49'05.0538"E      0.00m (datum - local)
398882.250m  5588744.489m
(In Use)            39d50'42.8855"S 145d49'04.8582"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.5T COG   6.8G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.5T   398882.250m  5588744.489m      0.00m      80.394m      17.31T
! 1 Guns             269.5T   398890.221m  5588759.963m      0.00m      63.368m      14.39T
! 2 Crane Base       269.5T   398890.428m  5588750.265m      0.00m      72.789m      12.43T
! 3 GPS Antenna      269.5T   398877.523m  5588750.390m     15.20m      76.338m      21.98T
-------------------------------------------------------------------------------------------
External Fix   :    147          Time 19:59:04.4 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.0450"S 145d49'05.0857"E      0.00m (datum - local)
398882.994m  5588745.544m
(In Use)            39d50'42.8516"S 145d49'04.8901"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.5T COG  20.1G SOG  0.1 kt
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 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.8T   398882.994m  5588745.544m      0.00m      79.172m      17.01T
! 1 Guns             269.8T   398891.050m  5588760.974m      0.00m      62.193m      13.86T
! 2 Crane Base       269.8T   398891.204m  5588751.275m      0.00m      71.645m      11.98T
! 3 GPS Antenna      269.8T   398878.299m  5588751.471m     15.20m      75.049m      21.73T
-------------------------------------------------------------------------------------------
External Fix   :    148          Time 19:59:19.5 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.0608"S 145d49'05.1076"E      0.00m (datum - local)
398883.520m  5588745.065m
(In Use)            39d50'42.8661"S 145d49'04.9142"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 270.0T COG 120.3G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              270.0T   398883.520m  5588745.065m      0.00m      79.488m      16.55T
! 1 Guns             270.0T   398891.626m  5588760.468m      0.00m      62.559m      13.25T
! 2 Crane Base       270.0T   398891.748m  5588750.769m      0.00m      72.039m      11.48T
! 3 GPS Antenna      270.0T   398878.844m  5588751.006m     15.20m      75.291m      21.21T
-------------------------------------------------------------------------------------------
External Fix   :    149          Time 19:59:34.5 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.0614"S 145d49'05.1699"E      0.00m (datum - local)
398885.002m  5588745.065m
(In Use)            39d50'42.8659"S 145d49'04.9780"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 270.4T COG 100.6G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              270.4T   398885.002m  5588745.065m      0.00m      79.096m      15.52T
! 1 Guns             270.4T   398893.198m  5588760.422m      0.00m      62.283m      11.82T
! 2 Crane Base       270.4T   398893.264m  5588750.722m      0.00m      71.818m      10.29T
! 3 GPS Antenna      270.4T   398880.361m  5588751.034m     15.20m      74.748m      20.13T
-------------------------------------------------------------------------------------------
External Fix   :    150          Time 19:59:49.6 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.9894"S 145d49'05.1581"E      0.00m (datum - local)
398884.692m  5588747.282m
(In Use)            39d50'42.7943"S 145d49'04.9654"E     15.20m (antenna - WGS84)  HDOP:  1.9
!Heading 270.2T COG 342.2G SOG  0.5 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              270.4T   398884.692m  5588747.282m      0.00m      77.036m      16.16T
! 1 Guns             270.4T   398892.887m  5588762.638m      0.00m      60.171m      12.52T
! 2 Crane Base       270.4T   398892.953m  5588752.938m      0.00m      69.687m      10.84T
! 3 GPS Antenna      270.4T   398880.051m  5588753.250m     15.20m      72.766m      20.94T
-------------------------------------------------------------------------------------------
External Fix   :    151          Time 20:06:40.0 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.6167"S 145d49'05.1123"E      0.00m (datum - local)
398883.858m  5588727.927m
(In Use)            39d50'43.4264"S 145d49'04.9116"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 268.4T COG  61.9G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              268.4T   398883.858m  5588727.927m      0.00m      96.020m      13.57T
! 1 Guns             268.4T   398891.513m  5588743.560m      0.00m      79.175m      10.68T
! 2 Crane Base       268.4T   398891.917m  5588733.869m      0.00m      88.679m       9.34T
! 3 GPS Antenna      268.4T   398879.012m  5588733.730m     15.20m      91.633m      17.34T
-------------------------------------------------------------------------------------------
External Fix   :    152          Time 20:06:55.0 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.4854"S 145d49'05.1449"E      0.00m (datum - local)
398884.581m  5588731.985m
(In Use)            39d50'43.2951"S 145d49'04.9443"E     15.20m (antenna - WGS84)  HDOP:  1.8
!Heading 268.4T COG  49.5G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              268.4T   398884.581m  5588731.985m      0.00m      91.902m      13.69T
! 1 Guns             268.4T   398892.235m  5588747.618m      0.00m      75.052m      10.67T
! 2 Crane Base       268.4T   398892.640m  5588737.927m      0.00m      84.557m       9.27T
! 3 GPS Antenna      268.4T   398879.734m  5588737.788m     15.20m      87.538m      17.64T
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External Fix   :    153          Time 20:07:10.0 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.4837"S 145d49'05.1111"E      0.00m (datum - local)
398883.777m  5588732.026m
(In Use)            39d50'43.2908"S 145d49'04.9148"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.4T COG 319.6G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.4T   398883.777m  5588732.026m      0.00m      92.046m      14.19T
! 1 Guns             269.4T   398891.703m  5588747.523m      0.00m      75.239m      11.06T
! 2 Crane Base       269.4T   398891.938m  5588737.826m      0.00m      84.764m       9.73T
! 3 GPS Antenna      269.4T   398879.032m  5588737.913m     15.20m      87.625m      18.10T
--------------------------------------------------------------------------------------------
External Fix   :    154          Time 20:07:25.0 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.4878"S 145d49'05.0296"E      0.00m (datum - local)
398881.842m  5588731.875m
(In Use)            39d50'43.2918"S 145d49'04.8384"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 270.5T COG 257.3G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              270.5T   398881.842m  5588731.875m      0.00m      92.661m      15.33T
! 1 Guns             270.5T   398890.082m  5588747.207m      0.00m      75.856m      12.22T
! 2 Crane Base       270.5T   398890.120m  5588737.507m      0.00m      85.380m      10.90T
! 3 GPS Antenna      270.5T   398877.218m  5588737.857m     15.20m      88.236m      19.22T
--------------------------------------------------------------------------------------------
External Fix   :    155          Time 20:07:40.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.4082"S 145d49'04.9476"E      0.00m (datum - local)
398879.859m  5588734.304m
(In Use)            39d50'43.2157"S 145d49'04.7505"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.2T COG 322.5G SOG  0.4 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.2T   398879.859m  5588734.304m      0.00m      90.843m      16.93T
! 1 Guns             269.2T   398887.740m  5588749.824m      0.00m      73.809m      14.40T
! 2 Crane Base       269.2T   398888.004m  5588740.128m      0.00m      83.211m      12.65T
! 3 GPS Antenna      269.2T   398875.098m  5588740.177m     15.20m      86.750m      21.03T
--------------------------------------------------------------------------------------------
External Fix   :    156          Time 20:13:38.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.1849"S 145d49'05.2147"E      0.00m (datum - local)
398886.116m  5588741.272m
(In Use)            39d50'42.9889"S 145d49'05.0235"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 270.5T COG 353.1G SOG  1.0 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              270.5T   398886.116m  5588741.272m      0.00m      82.506m      14.10T
! 1 Guns             270.5T   398894.342m  5588756.612m      0.00m      65.829m      10.21T
! 2 Crane Base       270.5T   398894.389m  5588746.912m      0.00m      75.410m       8.96T
! 3 GPS Antenna      270.5T   398881.487m  5588747.250m     15.20m      77.979m      18.43T
--------------------------------------------------------------------------------------------
External Fix   :    157          Time 20:13:53.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.0047"S 145d49'05.2022"E      0.00m (datum - local)
398885.746m  5588746.823m
(In Use)            39d50'42.8105"S 145d49'05.0081"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.9T COG   1.3G SOG  0.6 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              270.8T   398885.746m  5588746.823m      0.00m      77.207m      15.32T
! 1 Guns             270.8T   398894.059m  5588762.116m      0.00m      60.457m      11.33T
! 2 Crane Base       270.8T   398894.051m  5588752.416m      0.00m      70.019m       9.88T
! 3 GPS Antenna      270.8T   398881.151m  5588752.826m     15.20m      72.794m      20.01T
--------------------------------------------------------------------------------------------
External Fix   :    158          Time 20:14:12.3 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.0934"S 145d49'05.3427"E      0.00m (datum - local)
398889.122m  5588744.134m
(In Use)            39d50'42.9000"S 145d49'05.1472"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.5T COG  91.6G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.5T   398889.122m  5588744.134m      0.00m      79.060m      12.46T
! 1 Guns             269.5T   398897.086m  5588759.612m      0.00m      62.458m       8.18T
! 2 Crane Base       269.5T   398897.298m  5588749.914m      0.00m      72.065m       7.01T
! 3 GPS Antenna      269.5T   398884.392m  5588750.032m     15.20m      74.471m      16.95T
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External Fix   :    159          Time 20:14:27.4 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.9943"S 145d49'04.8628"E      0.00m (datum - local)
398877.677m  5588747.039m
(In Use)            39d50'42.8018"S 145d49'04.6658"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.2T COG 281.0G SOG  1.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.2T   398877.677m  5588747.039m      0.00m      79.418m      21.00T
! 1 Guns             269.2T   398885.569m  5588762.553m      0.00m      62.159m      19.12T
! 2 Crane Base       269.2T   398885.826m  5588752.857m      0.00m      71.360m      16.47T
! 3 GPS Antenna      269.2T   398872.919m  5588752.915m     15.20m      75.829m      25.92T
--------------------------------------------------------------------------------
External Fix   :    160          Time 20:14:47.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.8469"S 145d49'04.6122"E      0.00m (datum - local)
398871.661m  5588751.503m
(In Use)            39d50'42.6585"S 145d49'04.4087"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 267.7T COG 280.9G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              267.6T   398871.661m  5588751.503m      0.00m      77.644m      26.32T
! 1 Guns             267.6T   398879.116m  5588767.232m      0.00m      60.233m      26.37T
! 2 Crane Base       267.6T   398879.644m  5588757.546m      0.00m      68.899m      22.49T
! 3 GPS Antenna      267.6T   398866.741m  5588757.244m     15.20m      74.907m      31.61T
--------------------------------------------------------------------------------
External Fix   :    161          Time 20:20:26.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.2255"S 145d49'05.1938"E      0.00m (datum - local)
398885.636m  5588740.013m
(In Use)            39d50'43.0371"S 145d49'04.9903"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 267.7T COG 299.7G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              267.7T   398885.636m  5588740.013m      0.00m      83.843m      14.22T
! 1 Guns             267.7T   398893.108m  5588755.734m      0.00m      66.907m      11.13T
! 2 Crane Base       267.7T   398893.626m  5588746.048m      0.00m      76.378m       9.44T
! 3 GPS Antenna      267.7T   398880.723m  5588745.759m     15.20m      79.633m      18.63T
--------------------------------------------------------------------------------
External Fix   :    162          Time 20:20:41.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.1784"S 145d49'05.0657"E      0.00m (datum - local)
398882.572m  5588741.425m
(In Use)            39d50'42.9886"S 145d49'04.8643"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 268.2T COG 316.1G SOG  0.6 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              268.1T   398882.572m  5588741.425m      0.00m      83.249m      16.50T
! 1 Guns             268.1T   398890.159m  5588757.091m      0.00m      66.178m      13.85T
! 2 Crane Base       268.1T   398890.605m  5588747.401m      0.00m      75.563m      11.86T
! 3 GPS Antenna      268.1T   398877.701m  5588747.207m     15.20m      79.252m      21.03T
--------------------------------------------------------------------------------
External Fix   :    163          Time 20:21:00.3 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.0307"S 145d49'04.9866"E      0.00m (datum - local)
398880.633m  5588745.954m
(In Use)            39d50'42.8423"S 145d49'04.7831"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 267.7T COG 333.2G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              268.5T   398880.633m  5588745.954m      0.00m      79.475m      18.73T
! 1 Guns             268.5T   398888.333m  5588761.565m      0.00m      62.296m      16.42T
! 2 Crane Base       268.5T   398888.709m  5588751.872m      0.00m      71.591m      14.04T
! 3 GPS Antenna      268.5T   398875.803m  5588751.771m     15.20m      75.701m      23.57T
--------------------------------------------------------------------------------
External Fix   :    164          Time 20:21:15.4 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.1628"S 145d49'05.0149"E      0.00m (datum - local)
398881.360m  5588741.891m
(In Use)            39d50'42.9703"S 145d49'04.8179"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.2T COG 168.6G SOG  0.4 kt
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 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.2T   398881.360m  5588741.891m      0.00m      83.139m      17.39T
! 1 Guns             269.2T   398889.241m  5588757.411m      0.00m      66.082m      14.69T
! 2 Crane Base       269.2T   398889.505m  5588747.714m      0.00m      75.476m      12.72T
! 3 GPS Antenna      269.2T   398876.599m  5588747.763m     15.20m      79.121m      21.92T
--------------------------------------------------------------------------------------------
External Fix   :    165          Time 20:21:30.4 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.0879"S 145d49'05.1357"E      0.00m (datum - local)
398884.200m  5588744.237m
(In Use)            39d50'42.8986"S 145d49'04.9336"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 268.0T COG  56.3G SOG  0.4 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              268.0T   398884.200m  5588744.237m      0.00m      80.104m      15.92T
! 1 Guns             268.0T   398891.764m  5588759.914m      0.00m      63.071m      13.01T
! 2 Crane Base       268.0T   398892.225m  5588750.225m      0.00m      72.487m      11.03T
! 3 GPS Antenna      268.0T   398879.320m  5588750.012m     15.20m      76.061m      20.62T
--------------------------------------------------------------------------------------------
External Fix   :    166          Time 20:27:06.6 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.1216"S 145d49'04.9990"E      0.00m (datum - local)
398880.964m  5588743.157m
(In Use)            39d50'42.9286"S 145d49'04.8027"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.4T COG  34.0G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.5T   398880.964m  5588743.157m      0.00m      82.043m      17.91T
! 1 Guns             269.5T   398888.915m  5588758.641m      0.00m      64.969m      15.23T
! 2 Crane Base       269.5T   398889.135m  5588748.943m      0.00m      74.353m      13.20T
! 3 GPS Antenna      269.5T   398876.229m  5588749.051m     15.20m      78.057m      22.51T
--------------------------------------------------------------------------------------------
External Fix   :    167          Time 20:27:21.6 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.0952"S 145d49'05.0220"E      0.00m (datum - local)
398881.500m  5588743.978m
(In Use)            39d50'42.9014"S 145d49'04.8271"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.7T COG  29.3G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              270.3T   398881.500m  5588743.978m      0.00m      81.100m      17.72T
! 1 Guns             270.3T   398889.668m  5588759.349m      0.00m      64.097m      14.74T
! 2 Crane Base       270.3T   398889.752m  5588749.650m      0.00m      73.531m      12.85T
! 3 GPS Antenna      270.3T   398876.849m  5588749.938m     15.20m      77.004m      22.33T
--------------------------------------------------------------------------------------------
External Fix   :    168          Time 20:27:36.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.0470"S 145d49'05.0638"E      0.00m (datum - local)
398882.473m  5588745.476m
(In Use)            39d50'42.8536"S 145d49'04.8682"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.5T COG  34.7G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.4T   398882.473m  5588745.476m      0.00m      79.385m      17.36T
! 1 Guns             269.4T   398890.400m  5588760.973m      0.00m      62.345m      14.45T
! 2 Crane Base       269.4T   398890.635m  5588751.276m      0.00m      71.758m      12.43T
! 3 GPS Antenna      269.4T   398877.729m  5588751.362m     15.20m      75.356m      22.10T
--------------------------------------------------------------------------------------------
External Fix   :    169          Time 20:27:51.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.0375"S 145d49'05.0980"E      0.00m (datum - local)
398883.282m  5588745.778m
(In Use)            39d50'42.8433"S 145d49'04.9038"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.9T COG  69.6G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.7T   398883.282m  5588745.778m      0.00m      78.867m      16.86T
! 1 Guns             269.7T   398891.310m  5588761.223m      0.00m      61.892m      13.68T
! 2 Crane Base       269.7T   398891.482m  5588751.524m      0.00m      71.347m      11.81T
! 3 GPS Antenna      269.7T   398878.577m  5588751.696m     15.20m      74.740m      21.59T
--------------------------------------------------------------------------------------------
External Fix   :    170          Time 20:28:10.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.9986"S 145d49'05.0572"E      0.00m (datum - local)
398882.297m  5588746.968m
(In Use)            39d50'42.8052"S 145d49'04.8616"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.5T COG 287.0G SOG  0.2 kt
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 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.5T   398882.297m  5588746.968m      0.00m      78.007m      17.80T
! 1 Guns             269.5T   398890.269m  5588762.441m      0.00m      60.950m      14.89T
! 2 Crane Base       269.5T   398890.476m  5588752.744m      0.00m      70.353m      12.80T
! 3 GPS Antenna      269.5T   398877.570m  5588752.868m     15.20m      74.014m      22.64T
-------------------------------------------------------------------------------------------
External Fix   :    171          Time 20:45:51.6 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.8775"S 145d49'05.4242"E      0.00m (datum - local)
398890.970m  5588750.814m
(In Use)            39d50'42.6799"S 145d49'05.2360"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 271.2T COG  24.2G SOG  0.7 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              271.2T   398890.970m  5588750.814m      0.00m      72.144m      12.10T
! 1 Guns             271.2T   398899.388m  5588766.049m      0.00m      55.794m       6.69T
! 2 Crane Base       271.2T   398899.313m  5588756.350m      0.00m      65.459m       5.87T
! 3 GPS Antenna      271.2T   398886.416m  5588756.849m     15.20m      67.358m      16.91T
-------------------------------------------------------------------------------------------
External Fix   :    172          Time 20:46:06.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.9218"S 145d49'05.2232"E      0.00m (datum - local)
398886.211m  5588749.386m
(In Use)            39d50'42.7276"S 145d49'05.0290"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 269.9T COG 240.0G SOG  0.7 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.9T   398886.211m  5588749.386m      0.00m      74.609m      15.47T
! 1 Guns             269.9T   398894.272m  5588764.813m      0.00m      57.767m      11.61T
! 2 Crane Base       269.9T   398894.423m  5588755.114m      0.00m      67.295m       9.93T
! 3 GPS Antenna      269.9T   398881.518m  5588755.313m     15.20m      70.327m      20.40T
-------------------------------------------------------------------------------------------
External Fix   :    173          Time 20:46:28.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.9421"S 145d49'05.3345"E      0.00m (datum - local)
398888.864m  5588748.794m
(In Use)            39d50'42.7483"S 145d49'05.1396"E     15.20m (antenna - WGS84)  HDOP:  1.3
!Heading 269.7T COG  36.4G SOG  0.8 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.4T   398888.864m  5588748.794m      0.00m      74.558m      13.38T
! 1 Guns             269.4T   398896.786m  5588764.293m      0.00m      57.861m       9.07T
! 2 Crane Base       269.4T   398897.024m  5588754.596m      0.00m      67.444m       7.68T
! 3 GPS Antenna      269.4T   398884.118m  5588754.679m     15.20m      70.101m      18.22T
-------------------------------------------------------------------------------------------
External Fix   :    174          Time 20:46:46.8 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.7917"S 145d49'05.1899"E      0.00m (datum - local)
398885.367m  5588753.387m
(In Use)            39d50'42.5936"S 145d49'05.0025"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 271.4T COG 269.8G SOG  0.7 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              271.4T   398885.367m  5588753.387m      0.00m      70.976m      16.95T
! 1 Guns             271.4T   398893.830m  5588768.598m      0.00m      54.144m      12.83T
! 2 Crane Base       271.4T   398893.726m  5588758.899m      0.00m      63.682m      11.09T
! 3 GPS Antenna      271.4T   398880.831m  5588759.436m     15.20m      66.705m      22.14T
-------------------------------------------------------------------------------------------
External Fix   :    175          Time 20:47:02.9 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.0452"S 145d49'04.9390"E      0.00m (datum - local)
398879.508m  5588745.493m
(In Use)            39d50'42.8484"S 145d49'04.7493"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 270.9T COG 227.2G SOG  0.6 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              270.9T   398879.508m  5588745.493m      0.00m      80.267m      19.39T
! 1 Guns             270.9T   398887.837m  5588760.777m      0.00m      63.189m      16.66T
! 2 Crane Base       270.9T   398887.819m  5588751.077m      0.00m      72.574m      14.58T
! 3 GPS Antenna      270.9T   398874.919m  5588751.501m     15.20m      76.296m      24.11T
-------------------------------------------------------------------------------------------
```

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External Fix   :    176          Time 20:54:05.6 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.8834"S 145d49'05.3995"E      0.00m (datum - local)
398890.387m  5588750.626m
(In Use)            39d50'42.6845"S 145d49'05.2136"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 271.7T COG 355.5G SOG  0.4 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              271.8T   398890.387m  5588750.626m      0.00m      72.445m      12.52T
! 1 Guns             271.8T   398898.958m  5588765.775m      0.00m      56.113m       7.09T
! 2 Crane Base       271.8T   398898.785m  5588756.077m      0.00m      65.780m       6.31T
! 3 GPS Antenna      271.8T   398885.894m  5588756.707m     15.20m      67.642m      17.30T
--------------------------------------------------------------------------------------------
External Fix   :    177          Time 20:54:20.6 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.8393"S 145d49'05.3267"E      0.00m (datum - local)
398888.637m  5588751.962m
(In Use)            39d50'42.6400"S 145d49'05.1415"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 271.9T COG 313.0G SOG  0.4 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              271.8T   398888.637m  5588751.962m      0.00m      71.521m      14.11T
! 1 Guns             271.8T   398897.210m  5588767.111m      0.00m      55.011m       9.06T
! 2 Crane Base       271.8T   398897.036m  5588757.412m      0.00m      64.647m       7.97T
! 3 GPS Antenna      271.8T   398884.145m  5588758.043m     15.20m      66.890m      19.06T
--------------------------------------------------------------------------------------------
External Fix   :    178          Time 20:54:35.8 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.7946"S 145d49'05.2456"E      0.00m (datum - local)
398886.691m  5588753.314m
(In Use)            39d50'42.5970"S 145d49'05.0574"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 271.2T COG 309.3G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              271.2T   398886.691m  5588753.314m      0.00m      70.689m      15.90T
! 1 Guns             271.2T   398895.109m  5588768.549m      0.00m      53.939m      11.49T
! 2 Crane Base       271.2T   398895.034m  5588758.849m      0.00m      63.509m       9.92T
! 3 GPS Antenna      271.2T   398882.138m  5588759.349m     15.20m      66.321m      21.07T
--------------------------------------------------------------------------------------------
External Fix   :    179          Time 20:54:54.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.0935"S 145d49'05.1985"E      0.00m (datum - local)
398885.695m  5588744.086m
(In Use)            39d50'42.8962"S 145d49'05.0096"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 271.0T COG  34.9G SOG  0.3 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              271.0T   398885.695m  5588744.086m      0.00m      79.872m      14.86T
! 1 Guns             271.0T   398894.068m  5588759.346m      0.00m      63.181m      10.86T
! 2 Crane Base       271.0T   398894.021m  5588749.646m      0.00m      72.760m       9.56T
! 3 GPS Antenna      271.0T   398881.124m  5588750.108m     15.20m      75.375m      19.35T
--------------------------------------------------------------------------------------------
External Fix   :    180          Time 20:55:09.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.7829"S 145d49'05.3147"E      0.00m (datum - local)
398888.330m  5588753.698m
(In Use)            39d50'42.5852"S 145d49'05.1265"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 271.2T COG  13.8G SOG  1.0 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              271.2T   398888.330m  5588753.698m      0.00m      69.905m      14.68T
! 1 Guns             271.2T   398896.747m  5588768.934m      0.00m      53.278m       9.83T
! 2 Crane Base       271.2T   398896.673m  5588759.234m      0.00m      62.887m       8.51T
! 3 GPS Antenna      271.2T   398883.776m  5588759.734m     15.20m      65.406m      19.84T
--------------------------------------------------------------------------------------------
External Fix   :    181          Time 21:00:24.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.8623"S 145d49'05.2518"E      0.00m (datum - local)
398886.866m  5588751.230m
(In Use)            39d50'42.6685"S 145d49'05.0569"E     15.20m (antenna - WGS84)  HDOP:  1.8
!Heading 269.7T COG  12.4G SOG  0.8 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              270.6T   398886.866m  5588751.230m      0.00m      72.658m      15.34T
! 1 Guns             270.6T   398895.137m  5588766.546m      0.00m      55.904m      11.08T
! 2 Crane Base       270.6T   398895.155m  5588756.846m      0.00m      65.469m       9.54T
! 3 GPS Antenna      270.6T   398882.255m  5588757.221m     15.20m      68.281m      20.35T
```

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--------------------------------------------------------------------------------
External Fix   :    182          Time 21:00:39.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.7619"S 145d49'05.2937"E      0.00m (datum - local)
398887.822m  5588754.339m
(In Use)            39d50'42.5681"S 145d49'05.0989"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 269.7T COG  15.9G SOG  0.6 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.7T   398887.822m  5588754.339m      0.00m      69.408m      15.22T
! 1 Guns             269.7T   398895.838m  5588769.789m      0.00m      52.586m      10.96T
! 2 Crane Base       269.7T   398896.017m  5588760.091m      0.00m      62.131m       9.21T
! 3 GPS Antenna      269.7T   398883.112m  5588760.253m     15.20m      65.137m      20.54T
--------------------------------------------------------------------------------
External Fix   :    183          Time 21:00:54.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.1898"S 145d49'05.1497"E      0.00m (datum - local)
398884.575m  5588741.101m
(In Use)            39d50'42.9934"S 145d49'04.9593"E     15.20m (antenna - WGS84)  HDOP:  2.5
!Heading 270.7T COG 196.2G SOG  2.0 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              270.8T   398884.575m  5588741.101m      0.00m      83.042m      15.11T
! 1 Guns             270.8T   398892.878m  5588756.399m      0.00m      66.295m      11.43T
! 2 Crane Base       270.8T   398892.876m  5588746.699m      0.00m      75.852m      10.07T
! 3 GPS Antenna      270.8T   398879.976m  5588747.102m     15.20m      78.592m      19.44T
--------------------------------------------------------------------------------
External Fix   :    184          Time 21:01:09.3 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.1864"S 145d49'05.0710"E      0.00m (datum - local)
398882.703m  5588741.182m
(In Use)            39d50'42.9934"S 145d49'04.8747"E     15.20m (antenna - WGS84)  HDOP:  2.5
!Heading 269.4T COG 258.8G SOG  0.2 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.4T   398882.703m  5588741.182m      0.00m      83.448m      16.37T
! 1 Guns             269.4T   398890.629m  5588756.679m      0.00m      66.475m      13.38T
! 2 Crane Base       269.4T   398890.864m  5588746.981m      0.00m      75.926m      11.61T
! 3 GPS Antenna      269.4T   398877.959m  5588747.068m     15.20m      79.293m      20.82T
--------------------------------------------------------------------------------
External Fix   :    185          Time 21:01:24.4 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.6127"S 145d49'05.4380"E      0.00m (datum - local)
398891.191m  5588758.984m
(In Use)            39d50'42.4189"S 145d49'05.2432"E     15.20m (antenna - WGS84)  HDOP:  1.8
!Heading 269.7T COG  23.8G SOG  2.4 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.5T   398891.191m  5588758.984m      0.00m      64.103m      13.34T
! 1 Guns             269.5T   398899.162m  5588774.458m      0.00m      47.465m       8.01T
! 2 Crane Base       269.5T   398899.369m  5588764.760m      0.00m      57.079m       6.57T
! 3 GPS Antenna      269.5T   398886.463m  5588764.884m     15.20m      59.665m      19.01T
--------------------------------------------------------------------------------
External Fix   :    186          Time 21:09:52.3 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.9130"S 145d49'05.4726"E      0.00m (datum - local)
398892.135m  5588749.736m
(In Use)            39d50'42.7330"S 145d49'05.2566"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 264.7T COG 176.3G SOG  0.8 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              264.7T   398892.135m  5588749.736m      0.00m      72.984m      11.03T
! 1 Guns             264.7T   398898.764m  5588765.830m      0.00m      56.080m       7.30T
! 2 Crane Base       264.7T   398899.794m  5588756.185m      0.00m      65.582m       5.44T
! 3 GPS Antenna      264.7T   398886.924m  5588755.214m     15.20m      68.794m      16.12T
--------------------------------------------------------------------------------
External Fix   :    187          Time 21:10:54.5 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.0157"S 145d49'05.3916"E      0.00m (datum - local)
398890.251m  5588746.545m
(In Use)            39d50'42.8245"S 145d49'05.1923"E     15.20m (antenna - WGS84)  HDOP:  1.1
!Heading 268.7T COG 216.0G SOG  0.4 kt
```

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 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              268.8T   398890.251m  5588746.545m      0.00m      76.472m      12.00T
! 1 Guns             268.8T   398898.013m  5588762.125m      0.00m      59.849m       7.61T
! 2 Crane Base       268.8T   398898.351m  5588752.431m      0.00m      69.452m       6.38T
! 3 GPS Antenna      268.8T   398885.445m  5588752.381m     15.20m      71.921m      16.66T
--------------------------------------------------------------------------------------------
External Fix   :    188          Time 21:11:29.2 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.1651"S 145d49'05.3925"E      0.00m (datum - local)
398890.334m  5588741.938m
(In Use)            39d50'42.9744"S 145d49'05.1926"E     15.20m (antenna - WGS84)  HDOP:  1.0
!Heading 268.5T COG   7.1G SOG  0.1 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              268.5T   398890.334m  5588741.938m      0.00m      80.982m      11.30T
! 1 Guns             268.5T   398898.034m  5588757.548m      0.00m      64.394m       7.10T
! 2 Crane Base       268.5T   398898.411m  5588747.856m      0.00m      74.002m       5.98T
! 3 GPS Antenna      268.5T   398885.505m  5588747.755m     15.20m      76.367m      15.67T
--------------------------------------------------------------------------------------------
External Fix   :    189          Time 21:22:16.7 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.2064"S 145d49'05.4218"E      0.00m (datum - local)
398891.047m  5588740.673m
(In Use)            39d50'43.0180"S 145d49'05.2183"E     15.20m (antenna - WGS84)  HDOP:  1.5
!Heading 267.7T COG 167.1G SOG  0.6 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              268.6T   398891.047m  5588740.673m      0.00m      82.100m      10.65T
! 1 Guns             268.6T   398898.753m  5588756.281m      0.00m      65.580m       6.36T
! 2 Crane Base       268.6T   398899.126m  5588746.588m      0.00m      75.205m       5.35T
! 3 GPS Antenna      268.6T   398886.220m  5588746.491m     15.20m      77.411m      14.92T
--------------------------------------------------------------------------------------------
External Fix   :    190          Time 21:22:45.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.7007"S 145d49'05.3265"E      0.00m (datum - local)
398888.576m  5588756.235m
(In Use)            39d50'42.5078"S 145d49'05.1302"E     15.20m (antenna - WGS84)  HDOP:  1.7
!Heading 269.4T COG 344.4G SOG  0.7 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.4T   398888.576m  5588756.235m      0.00m      67.384m      15.00T
! 1 Guns             269.4T   398896.502m  5588771.732m      0.00m      50.557m      10.61T
! 2 Crane Base       269.4T   398896.738m  5588762.035m      0.00m      60.103m       8.81T
! 3 GPS Antenna      269.4T   398883.832m  5588762.122m     15.20m      63.135m      20.50T
--------------------------------------------------------------------------------------------
External Fix   :    191          Time 21:23:00.1 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.8276"S 145d49'05.2616"E      0.00m (datum - local)
398887.085m  5588752.302m
(In Use)            39d50'42.6343"S 145d49'05.0660"E     15.20m (antenna - WGS84)  HDOP:  1.7
!Heading 269.5T COG 191.5G SOG  0.7 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.4T   398887.085m  5588752.302m      0.00m      71.566m      15.38T
! 1 Guns             269.4T   398895.014m  5588767.797m      0.00m      54.695m      11.44T
! 2 Crane Base       269.4T   398895.248m  5588758.100m      0.00m      64.216m       9.63T
! 3 GPS Antenna      269.4T   398882.342m  5588758.189m     15.20m      67.341m      20.56T
--------------------------------------------------------------------------------------------
External Fix   :    192          Time 21:23:16.4 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'42.7359"S 145d49'05.4586"E      0.00m (datum - local)
398891.731m  5588755.192m
(In Use)            39d50'42.5438"S 145d49'05.2609"E     15.20m (antenna - WGS84)  HDOP:  1.7
!Heading 269.0T COG  92.3G SOG  0.4 kt

 # Name              Hdg       Easting      Northing        Height   Range          Bearing
! 0 CRP              269.0T   398891.731m  5588755.192m      0.00m      67.700m      12.19T
! 1 Guns             269.0T   398899.567m  5588770.735m      0.00m      51.115m       7.03T
! 2 Crane Base       269.0T   398899.858m  5588761.040m      0.00m      60.738m       5.76T
! 3 GPS Antenna      269.0T   398886.952m  5588761.051m     15.20m      63.174m      17.50T
--------------------------------------------------------------------------------------------
External Fix   :    193          Time 21:23:37.3 UTC  14/07/2004
Vessel  1, Nav. 1 MRDGPS       39d50'43.3769"S 145d49'05.4592"E      0.00m (datum - local)
398892.006m  5588735.428m
(In Use)            39d50'43.1845"S 145d49'05.2622"E     15.20m (antenna - WGS84)  HDOP:  4.6
!Heading 269.2T COG 171.0G SOG  4.1 kt
```

#	Name	Hdg	Easting	Northing	Height	Range	Bearing
!	0 CRP	269.2T	398892.006m	5588735.428m	0.00m	87.124m	9.44T
!	1 Guns	269.2T	398899.887m	5588750.948m	0.00m	70.798m	5.02T
!	2 Crane Base	269.2T	398900.150m	5588741.251m	0.00m	80.456m	4.32T
!	3 GPS Antenna	269.2T	398887.244m	5588741.301m	15.20m	82.226m	13.34T

VSP Survey Results

CLIENT:	Origin Energy Resources		**DATUM:**	GDA94
JOB NO.:	P0089		**SPHEROID:**	GRS80
LOCATION	Yolla-A Platform		**PROJECTION:**	UTM
VESSEL:	*Ray J. Hope*		**ZONE:**	55
SURVEYOR:	N.Smith		**CM:**	147
WELL NAME:	**Yolla-4**			
RISER POSITION: Easting	**398905.15**		**DATE:**	**15-Jul-04**
RISER POSITION: Northing	**5588821.53**			

Fix Number	Air Guns Position Easting (m)	Air Guns Position Northing (m)	Target Depth (m)	Range to Well Head (m)	Bearing(T) to Well Head (degrees)	Comments
21	398653.62	5588190.71	3230	679.30	22.50	
22	398656.82	5588191.93	3230	676.99	22.28	
23	398651.82	5588192.67	3230	678.16	22.70	
24	398653.64	5588191.20	3230	678.84	22.51	
25	398657.09	5588189.15	3230	679.48	22.18	
26	398654.05	5588188.12	3230	681.55	22.38	
27	398662.93	5588200.44	3150	666.84	22.06	
28	398663.82	5588198.54	3150	668.28	21.93	
29	398664.73	5588198.44	3150	668.05	21.86	
30	398658.53	5588199.98	3150	668.88	22.40	
31	398656.02	5588198.77	3150	670.92	22.56	
32	398659.37	5588198.07	3150	670.34	22.27	
33	398662.68	5588197.78	3150	669.40	22.00	
34	398656.93	5588199.75	3150	669.68	22.52	
35	398662.32	5588216.16	3070	652.44	22.62	
36	398663.20	5588215.92	3070	652.33	22.54	
37	398664.03	5588215.96	3070	651.98	22.47	
38	398664.12	5588215.65	3070	652.24	22.45	
39	398664.42	5588216.63	3070	651.22	22.46	
40	398659.03	5588217.78	3070	652.17	22.94	
41	398658.32	5588216.66	3070	653.48	22.96	
42	398672.32	5588238.50	2990	627.98	22.53	
43	398671.38	5588238.93	2990	627.93	22.62	
44	398672.41	5588239.06	2990	627.42	22.54	
45	398672.77	5588238.88	2990	627.46	22.50	
46	398674.16	5588238.85	2990	626.97	22.38	
47	398679.57	5588264.05	2910	601.56	22.79	
48	398681.68	5588264.17	2910	600.66	22.61	
49	398682.11	5588264.15	2910	600.52	22.57	
50	398681.75	5588264.54	2910	600.28	22.61	
51	398681.32	5588264.14	2910	600.82	22.64	
52	398680.45	5588263.37	2910	601.85	22.69	
53	398681.22	5588263.76	2910	601.20	22.63	
54	398696.03	5588289.12	2830	572.17	22.20	
55	398694.72	5588289.03	2830	572.73	22.32	
56	398694.78	5588289.21	2830	572.54	22.32	
57	398694.18	5588289.32	2830	572.66	22.38	
58	398696.65	5588289.77	2830	571.33	22.17	
59	398706.17	5588323.71	2750	536.26	22.54	
60	398708.62	5588325.20	2750	533.97	22.36	
61	398703.84	5588321.86	2750	538.84	22.70	

BU-D08 Shot Locations

Fix Number	Air Guns Position Easting	Northing	Target Depth	Range to Well Head	Bearing(T) to Well Head	Comments
62	398706.30	5588321.25	2750	538.50	22.44	
63	398708.67	5588321.44	2750	537.45	22.21	
64	398708.08	5588320.95	2750	538.12	22.25	
65	398707.14	5588321.80	2750	537.68	22.37	
66	398713.21	5588329.25	2750-20	528.52	22.06	
67	398712.81	5588328.90	2750-20	528.99	22.09	
68	398712.99	5588327.79	2750-20	529.96	22.02	
						Fix 69 used as check
70	398712.10	5588356.60	2670	503.55	23.31	
71	398711.80	5588356.93	2670	503.36	23.35	
72	398712.95	5588356.04	2670	503.75	23.19	
73	398717.90	5588354.65	2670	503.17	22.61	
74	398720.22	5588353.43	2670	503.45	22.32	
75	398724.91	5588363.94	2670-20	491.94	22.26	
76	398726.62	5588366.95	2670-20	488.52	22.20	
77	398726.02	5588369.05	2670-20	486.78	22.36	
78	398729.95	5588396.15	2590	460.17	23.14	
79	398729.04	5588397.34	2590	459.42	23.31	
80	398727.56	5588396.82	2590	460.47	23.45	
81	398725.76	5588397.73	2590	460.33	23.70	
82	398727.83	5588397.24	2590	459.98	23.44	
83	398741.45	5588419.96	2510	433.77	22.94	
84	398742.37	5588419.23	2510	434.11	22.79	
85	398739.91	5588421.23	2510	433.19	23.19	
86	398737.12	5588420.70	2510	434.74	23.50	
87	398737.74	5588421.65	2510	433.63	23.48	
88	398695.29	5588420.32	2510	452.90	28.37	
89	398754.91	5588452.74	2430	398.33	22.92	
90	398756.37	5588452.64	2430	397.87	22.72	
91	398756.57	5588453.30	2430	397.19	22.73	
92	398757.51	5588453.89	2430	396.29	22.64	
93	398761.24	5588453.87	2430	394.93	22.14	
94	398767.52	5588484.41	2350	364.23	22.97	
95	398768.81	5588484.74	2350	363.44	22.80	
96	398770.25	5588484.55	2350	363.08	22.58	
97	398770.82	5588484.43	2350	362.98	22.48	
98	398771.80	5588483.76	2350	363.24	22.30	
99	398776.87	5588514.94	2270	332.44	23.46	
100	398779.89	5588514.94	2270	331.29	22.98	
101	398778.38	5588515.22	2270	331.60	23.24	
102	398777.86	5588515.33	2270	331.70	23.33	
103	398778.95	5588515.38	2270	331.23	23.16	
104	398786.38	5588547.19	2190	299.03	24.17	
105	398784.78	5588545.71	2190	301.02	24.34	
106	398782.68	5588545.11	2190	302.42	24.65	
107	398779.56	5588544.10	2190	304.62	25.11	
108	398785.28	5588542.62	2190	303.66	24.01	
109	398793.55	5588570.16	2110	275.10	24.70	
110	398796.41	5588570.65	2110	273.51	24.19	
111	398797.47	5588570.46	2110	273.26	23.97	
112	398799.13	5588570.97	2110	272.15	23.69	
113	398798.70	5588571.98	2110	271.38	23.86	
114	398798.25	5588623.54	2030	225.07	29.12	

BU-D08 Shot Locations

Fix Number	Air Guns Position Easting	Northing	Target Depth	Range to Well Head	Bearing(T) to Well Head	Comments
115	398797.16	5588623.79	2030	225.37	29.40	
116	398801.80	5588623.61	2030	223.34	28.33	
117	398811.24	5588622.59	2030	220.06	26.03	
118	398816.90	5588620.63	2030	219.49	24.47	
119	398818.77	5588637.74	1950	203.14	25.93	
120	398819.33	5588635.84	1950	204.62	25.56	
121	398820.70	5588635.69	1950	204.19	25.20	
122	398825.03	5588634.74	1950	203.31	23.97	
123	398821.29	5588635.44	1950	204.17	25.02	
124	398825.18	5588656.11	1870	183.79	26.56	
125	398826.13	5588659.98	1870	179.89	26.82	
126	398825.57	5588657.45	1870	182.42	26.63	
127	398826.38	5588653.70	1870	185.45	25.90	
128	398828.22	5588653.43	1870	184.92	25.35	
129	398828.17	5588651.37	1870	186.82	25.10	
130	398842.17	5588682.83	1790	152.37	25.18	
131	398835.27	5588683.66	1790	154.61	27.63	
132	398833.40	5588680.06	1790	158.67	27.65	
133	398835.52	5588685.42	1790	152.93	27.85	
134	398840.95	5588686.40	1790	149.65	26.17	
135	398841.57	5588688.25	1790	147.71	26.26	
136	398850.08	5588721.91	1710	113.86	29.69	
137	398850.97	5588722.12	1710	113.25	29.35	
138	398854.01	5588723.80	1710	110.33	28.38	
139	398856.35	5588725.36	1710	107.87	27.66	
140	398854.71	5588724.75	1710	109.17	28.29	
141	398877.91	5588752.44	1630	74.28	22.27	
142	398877.66	5588750.15	1630	76.52	21.82	
143	398878.27	5588747.40	1630	78.88	20.69	
144	398879.31	5588747.29	1630	78.63	19.95	
145	398882.28	5588747.77	1630	77.25	17.98	
146	398890.22	5588759.96	1550	63.37	14.39	All positioning fixes taken
147	398891.05	5588760.97	1550	62.19	13.86	from fix 146 until end of
148	398891.63	5588760.47	1550	62.56	13.25	survey were taken with
149	398893.20	5588760.42	1550	62.28	11.82	standalone GPS navigation
150	398892.89	5588762.64	1550	60.17	12.52	This was due to proximity
151	398891.51	5588743.56	1470	79.18	10.68	of ENSCO 102 rig causing masking of differential
152	398892.24	5588747.62	1470	75.05	10.67	correction signals from
153	398891.70	5588747.52	1470	75.24	11.06	comms satellite.
154	398890.08	5588747.21	1470	75.86	12.22	These positions are also
155	398887.74	5588749.82	1470	73.81	14.40	outside target areas for same reason.
156	398894.34	5588756.61	1390	65.83	10.21	
157	398894.06	5588762.12	1390	60.46	11.33	
158	398897.09	5588759.61	1390	62.46	8.18	
159	398885.57	5588762.55	1390	62.16	19.12	
160	398879.12	5588767.23	1390	60.23	26.37	
161	398893.11	5588755.73	1310	66.91	11.13	
162	398890.16	5588757.09	1310	66.18	13.85	
163	398888.33	5588761.57	1310	62.30	16.42	
164	398889.24	5588757.41	1310	66.08	14.69	
165	398891.76	5588759.91	1310	63.07	13.01	
166	398888.92	5588758.64	1230	64.97	15.23	
167	398889.67	5588759.35	1230	64.10	14.74	

BU-D08 Shot Locations

Fix Number	Air Guns Position Easting	Northing	Target Depth	Range to Well Head	Bearing(T) to Well Head	Comments
168	398890.40	5588760.97	1230	62.35	14.45	
169	398891.31	5588761.22	1230	61.89	13.68	
170	398890.27	5588762.44	1230	60.95	14.89	
171	398899.39	5588766.05	1150	55.79	6.69	
172	398894.27	5588764.81	1150	57.77	11.61	
173	398896.79	5588764.29	1150	57.86	9.07	
174	398893.83	5588768.60	1150	54.14	12.83	
175	398887.84	5588760.78	1150	63.19	16.66	
176	398898.96	5588765.78	1070	56.11	7.09	
177	398897.21	5588767.11	1070	55.01	9.06	
178	398895.11	5588768.55	1070	53.94	11.49	
179	398894.07	5588759.35	1070	63.18	10.86	
180	398896.75	5588768.93	1070	53.28	9.83	
181	398895.14	5588766.55	990	55.90	11.08	
182	398895.84	5588769.79	990	52.59	10.96	
183	398892.88	5588756.40	990	66.30	11.43	
184	398890.63	5588756.68	990	66.48	13.38	
185	398899.16	5588774.46	990	47.47	8.01	
186	398898.76	5588765.83	910	56.08	7.30	
187	398898.01	5588762.13	910	59.85	7.61	
188	398898.03	5588757.55	910	64.39	7.10	
189	398898.75	5588756.28	910	65.58	6.36	
190	398896.50	5588771.73	910	50.56	10.61	
191	398895.01	5588767.80	910	54.70	11.44	
192	398899.57	5588770.74	910	51.12	7.03	
193	398899.89	5588750.95	910	70.80	5.02	

APPENDIX C

CLIENT SUPPLIED INFORMATION

Yolla-4 VIVSP Survey Waypoints (Survey)

Prepared by Shoichi Nakanishi / SLB 12 July 2004

Well head coordinate

Latitude 39º 50’ 40.59” South,

Longitude 145º 49’ 06.06” East

UTM (GDA94 Zone 55)

5588821.53N

398905.15E

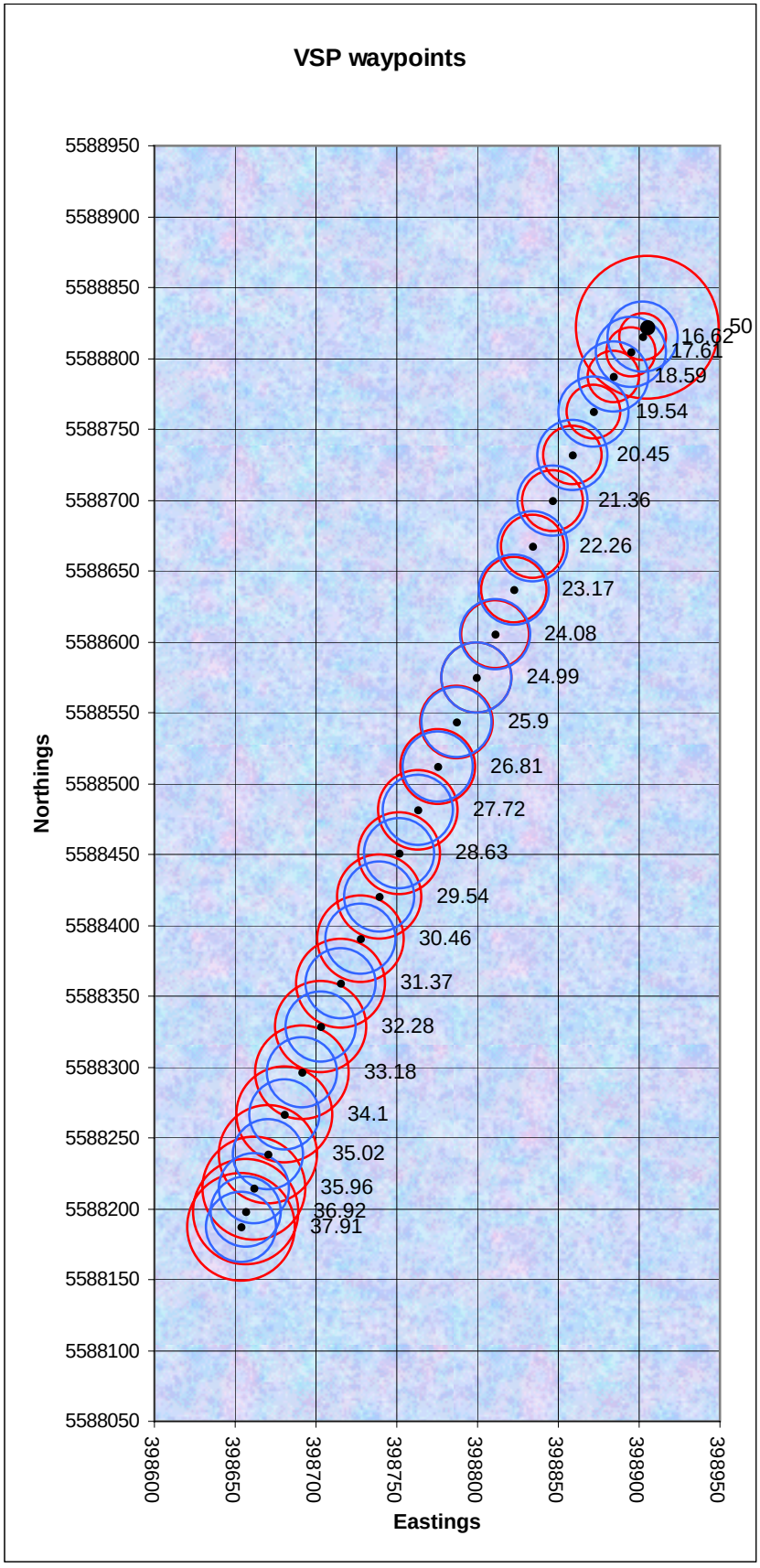
	MD	TVDKB	UTM X	UTM Y	Target T(radius) 1/80
WELLHEAD			398905.15	5588821.53	50
M1390.00	1390	1389.36	398902.38	5588815.12	16.62
M1470.00	1470	1467.85	398894.8	5588804.23	17.61
M1550.00	1550	1544.36	398883.8	5588787.53	18.59
M1630.00	1630	1618.16	398871.39	5588762.14	19.54
M1710.00	1710	1690.71	398858.67	5588731.57	20.45
M1790.00	1790	1762.9	398846.11	5588699.65	21.36
M1870.00	1870	1835.34	398834.16	5588667.42	22.26
M1950.00	1950	1908.3	398822.77	5588636.42	23.17
M2030.00	2030	1981.15	398811.12	5588605.66	24.08
M2110.00	2110	2053.81	398799.2	5588574.51	24.99
M2190.00	2190	2126.42	398787.16	5588543.14	25.9
M2270.00	2270	2199.18	398775.2	5588512.02	26.81
M2350.00	2350	2272.02	398763.22	5588481.02	27.72
M2430.00	2430	2345.07	398751.36	5588450.46	28.63
M2510.00	2510	2418.14	398739.21	5588420.33	29.54
M2590.00	2590	2491.23	398727.32	5588390.11	30.46
M2670.00	2670	2564.08	398715.13	5588359.35	31.37
M2750.00	2750	2636.66	398702.98	5588328.67	32.28
M2830.00	2830	2709.34	398691.29	5588296.63	33.18
M2910.00	2910	2783.02	398680.53	5588266.71	34.1
M2990.00	2990	2857.7	398669.95	5588238.78	35.02
M3070.00	3070	2934.17	398661.4	5588214.18	35.96
M3150.00	3150	3012.9	398656.27	5588197.9	36.92
M3230.00	3230	3092.27	398653.29	5588187.36	37.91

Note:
Source positions are taken from middle of VSI array. MD and TVDKB show VSIS-1 (Bottom) tool depth.

Tool depth vs. Winch depth

#	Waypoints	Winch Depth	Sonde- 1	Sonde- 2	Sonde- 3	Sonde- 4
24	M1390.00	1315.87	1390.00	1370.00	1350.00	1330.00
23	M1470.00	1395.87	1470.00	1450.00	1430.00	1410.00
22	M1550.00	1475.87	1550.00	1530.00	1510.00	1490.00
21	M1630.00	1555.87	1630.00	1610.00	1590.00	1570.00
20	M1710.00	1635.87	1710.00	1690.00	1670.00	1650.00
19	M1790.00	1715.87	1790.00	1770.00	1750.00	1730.00
18	M1870.00	1795.87	1870.00	1850.00	1830.00	1810.00
17	M1950.00	1875.87	1950.00	1930.00	1910.00	1890.00
16	M2030.00	1955.87	2030.00	2010.00	1990.00	1970.00
15	M2110.00	2035.87	2110.00	2090.00	2070.00	2050.00
14	M2190.00	2115.87	2190.00	2170.00	2150.00	2130.00
13	M2270.00	2195.87	2270.00	2250.00	2230.00	2210.00
12	M2350.00	2275.87	2350.00	2330.00	2310.00	2290.00
11	M2430.00	2355.87	2430.00	2410.00	2390.00	2370.00
10	M2510.00	2435.87	2510.00	2490.00	2470.00	2450.00
9	M2590.00	2515.87	2590.00	2570.00	2550.00	2530.00
8	M2670.00	2595.87	2670.00	2650.00	2630.00	2610.00
7	M2750.00	2675.87	2750.00	2730.00	2710.00	2690.00
6	M2830.00	2755.87	2830.00	2810.00	2790.00	2770.00
5	M2910.00	2835.87	2910.00	2890.00	2870.00	2850.00
4	M2990.00	2915.87	2990.00	2970.00	2950.00	2930.00
3	M3070.00	2995.87	3070.00	3050.00	3030.00	3010.00
2	M3150.00	3075.87	3150.00	3130.00	3110.00	3090.00
1	M3230.00	3155.87	3230.00	3210.00	3190.00	3170.00

VSIS spacing 20 m
Distance VSIS and tool Zero (Bottom of VSCC) 14.13 m
Length from bottom VSIS (VSIS-1) to tool Zero 74.13 m



Blue : 25 m radius
Red : 1/80 TVD radius

APPENDIX 11: MDT PRESSURE DATA

			STRAIN GAUGE (PSIG)				QUARTZ GAUGE (PSIA)					STRAIN GAUGE	QUARTZ GAUGE		
Sample No.	**Depth mMD**	**Depth mTVDSS**	Hydrostatic Pressure Before	PPG	Reservoir Pressure	PPG	Hydrostatic Pressure Before	PPG	Reservoir Pressure	PPG	Temp °C	Hydrostatic Pressure After	Hydrostatic Pressure After	Comments	Mobility
1	2604.40	2461.35	4015.90	9.6	3616.00	8.6	4028.12	9.6	3629.19	8.6	114.60	4015.10	4028.07	20cc Good test	12.8
2	2606.50	2463.17	4018.50	9.6			4031.58	9.6			114.70	4018.20	4031.54	20cc + 5cc S lost seal	
3	2607.00	2463.72	4019.20	9.6	3617.10	8.6	4032.44	9.6	3630.31	8.6	114.70	4018.70	4032.21	20cc	331.1
4	2609.50	2465.99	4022.40	9.6	3619.30	8.6	4035.85	9.6	3632.51	8.6	114.70	4022.40	4035.72	20cc good test	171.9
5	2612.0	2468.26	4026.60	9.6			4040.03	9.6			114.80	4026.30	4039.92	Super charged	
6	2612.2	2468.44	4027.00	9.6			4040.41	9.6			115.10			Auto reset, retract re-set, super charged	
7	2612.5	2468.72	4026.20	9.6			4039.38	9.6				4026.10	4039.96	8cc Supercharged	
8	2614.5	2470.53	4029.40	9.6	3623.20	8.6	4043.04	9.6	3636.70	8.6	115.40	4028.90	4042.79	20cc	184.9
9	2617.5	2473.26	4033.90	9.6	3631.70	8.6	4047.38	9.6	3645.14	8.6	115.50	4033.30	4047.31	good test	7.2
10	2623.2	2478.44	4042.00	9.6	3658.30	8.7	4055.46	9.6	3671.95	8.7	115.80	4041.60	4055.58	4.9cc draw down super charged ????	0.4
11	2628.5	2483.25	4049.70	9.6			4063.45	9.6			116.10	4049.50	4063.30	4.7cc draw down tight very slow	
12	2628.00	2482.80	4048.90	9.6			4062.91	9.6			116.60	4048.90	4063.09	Tight	
13	2628.30	2483.10	4049.10	9.6			4062.91	9.6			116.60	4049.10	4063.29	Tight	
14	2653.20	2505.72	4085.80	9.6			4099.53	9.6	3766.88	8.8	116.80	4085.60	4099.42	5.1cc + 4.7cc tight	0.4
15	2654.50	2506.91	4087.60	9.6			4101.48	9.6			117.00	4087.50	4101.39	3.7cc supercharged	0.0
16	2868.5	2701.75	4395.00	9.5			4409.54	9.6				4395.50	4409.56	3.7cc, Tight	
17	2868.8	2702.02	4396.00	9.5	4076.60	8.8	4410.21	9.6	4090.78	8.9	127.70	4395.90	4410.23	20cc, Good test	60.0
18	2871.0	2704.05	4398.90	9.5	4079.40	8.8	4313.35	9.4	4093.51	8.9	127.80	4399.00	4413.26	20cc, Good test	42.4
19	2883.0	2715.12	4416.30	9.5			4430.75	9.6			127.90	4416.50	4430.95	3.6cc, Tight	
20	2882.8	2714.93	4415.90	9.5			4430.48	9.6			128.10	4415.90	4430.81	3.7cc, Tight	
21	2883.2	2715.39	4416.10	9.5	4113.70	8.9	4430.83	9.6	4128.35	8.9	128.50	4416.30	4431.00	20cc, Valid test	6.6
22	2886.5	2718.34	4421.30	9.5	4114.90	8.9	4435.94	9.6	4129.80	8.9	128.50	4421.30	4436.01	20cc	92.2
23	2886.7	2718.53	4421.30	9.5	4115.30	8.9	4436.02	9.6	4129.98	8.9	128.40			20cc	20.4
24	2908.6	2738.71	4453.30	9.5	4132.80	8.8	4468.38	9.6	4147.95	8.9	128.60	4453.00	4468.31	20cc	482.6
25	2909.5	2739.54	4454.30	9.5	4132.90	8.8	4469.57	9.6	4148.08	8.9	129.00	4454.30	4469.48	20cc	35.1
26	2910.7	2740.65	4455.90	9.5	4133.30	8.8	4471.09	9.6	4148.45	8.9	129.40	4455.80	4471.05	20cc	1009.0
27	2911.7	2741.57	4455.10	9.5	4133.60	8.8	4472.32	9.6	4148.73	8.9	129.50	4457.00	4472.18	20cc	287.1

			STRAIN GAUGE (PSIG)				QUARTZ GAUGE (PSIA)					STRAIN GAUGE	QUARTZ GAUGE		
Sample No.	**Depth mMD**	**Depth mTVDSS**	Hydrostatic Pressure Before	PPG	Reservoir Pressure	PPG	Hydrostatic Pressure Before	PPG	Reservoir Pressure	PPG	Temp °C	Hydrostatic Pressure After	Hydrostatic Pressure After	Comments	Mobility
28	2964.0	2790.30	4533.90	9.5	4144.10	8.7	4549.42	9.6	4159.29	8.7	132.90	4534.00	4549.36	20cc	97.1
29	2968.0	2794.05	4540.00	9.5	4145.50	8.7	4555.26	9.6	4160.71	8.7	132.90	4539.50	4555.21	20cc	174.6
30	2971.2	2797.06	4544.20	9.5	4146.20	8.7	4559.50	9.6	4161.46	8.7	133.00	4544.20	4559.55	20cc	179.7
31	2975.3	2800.90	4550.60	9.5	4147.50	8.7	4566.06	9.6	4162.81	8.7	133.00	4550.70	4566.08	20cc	169.2
32	2978.4	2803.81	4554.30	9.5	4148.30	8.7	4569.76	9.6	4163.67	8.7	133.20	4554.30	4569.79	20cc	628.8
33	2981.5	2806.72	4559.00	9.5	4149.40	8.7	4574.54	9.6	4164.77	8.7	133.40	4158.80	4574.57	20cc	273.0
34	2983.0	2808.13	4561.20	9.5	4149.70	8.7	4576.68	9.6	4165.17	8.7	133.80	4561.20	4576.74	20cc	569.2
35	3005.70	2829.48	4594.80	9.5	4161.30	8.6	4610.05	9.6	4176.42	8.7	135.90	4594.70	4609.98	20cc	348.1
36	3007.50	2831.18	4597.40	9.5			4612.68	9.5			135.60	4597.20	4612.53	20cc, tight - slow build to 4177.83	
37a	3007.70	2831.37	4597.60	9.5	4161.60	8.6	4613.01	9.6	4176.98	8.6	135.60	4597.60	4612.95	20cc	45.3
37	3040.10	2862.22	4645.80	9.5			4661.53	9.5			135.60			20cc, Tight, slow to 1967.85 - coal?	
38	3039.80	2862.03	4546.60	9.3			4662.34	9.5			136.10			20cc, Tight, slow to 1943.97, unstable	
39	3040.30	2862.41	4647.50	9.5			4663.10	9.5			136.80			No seal - hydrostatic pressures	
40	3039.60	2861.74	4646.60	9.5	4160.30	8.5	4662.13	9.5	4175.87	8.6	136.60			20cc, Tight, formation collapse	
41	3118.50	2938.75	4768.20	9.5	4361.10	8.7	4783.67	9.5	4376.37	8.7	142.30	4768.20	4783.68	20cc	21.5
42	3118 .70	2938.95	4768.00	9.5	4360.80	8.7	4783.58	9.5	4376.35	8.7	141.60	4767.70	4783.59	20cc	20.2
43	3150.10	2970.00	4817.60	9.5	4370.90	8.6	4833.52	9.5	4386.80	8.7	141.60	4871.50	4833.52	20cc, Good test	174.9
44	3150.20	2970.10	4820.30	9.5	4371.60	8.6	4836.32	9.5	4387.58	8.7	141.90	4820.10	4836.32	20cc	72.0
45	3155.10	2974.96	4825.10	9.5	4372.30	8.6	4841.18	9.5	4388.29	8.6	142.10	4825.10	4841.23	20cc	187.6
46	3157.10	2976.94	4828.30	9.5	4372.90	8.6	4844.32	9.5	4388.90	8.6	142.30	4828.20	4844.31	20cc	241.7
47	3164.40	2984.17	4840.40	9.5	4377.80	8.6	4856.55	9.5	4393.84	8.6	142.60	4840.40	4856.55	20 cc	270.6
48	3167.70	2987.45	4845.10	9.5			4861.26	9.5			143.20	4845.10	4861.11	20cc, Supercharged	
49	3168.00	2987.74	4846.00	9.5			4862.04	9.5			143.20	4846.10	4862.31	20cc, Tight.	
50	3167.40	2987.15	4845.00	9.5			4861.00	9.5			143.40	4845.40	4861.34	20cc, Tight, build slowly from 1781.16	
51	3174.50	2994.09	4856.40	9.5	4417.90	8.6	4872.25	9.5	4433.75	8.7	143.50	4856.20	4872.11	20cc	7.2
52	3174.70	2994.39	4856.60	9.5	4418.70	8.6	4872.58	9.5	4434.12	8.7	143.60	4856.60	4872.50	20cc, pressure still dropping	8.6

			STRAIN GAUGE (PSIG)				QUARTZ GAUGE (PSIA)					STRAIN GAUGE	QUARTZ GAUGE		
Sample No.	**Depth mMD**	**Depth mTVDSS**	Hydrostatic Pressure Before	PPG	Reservoir Pressure	PPG	Hydrostatic Pressure Before	PPG	Reservoir Pressure	PPG	Temp °C	Hydrostatic Pressure After	Hydrostatic Pressure After	Comments	Mobility
Pumpout OFA and sampling program							Post sampling reservoir pressures usually are not stabilised								
53	3174.50	2994.09	4855.20	9.5			4870.95	9.5			143.80	4853.50	4871.39	20cc to tight to pump out	
54	3174.80	2994.49	4855.90	9.5			4871.63	9.5			145.20	4855.50	4871.65	Divert to OFA abort tight	
55	3118.50	2938.75	4767.90	9.5	4359.80	8.7	4783.38	9.5	4374.92	8.7	144.50	4767.10	4783.22		
56	3005.70	2829.48	4594.70	9.5	4162.90	8.6	4608.66	9.5	4176.74	8.7	139.00	4592.00	4607.77	OFA gas, 1 x 450cc sample taken	
57	2871.00	2704.05	4395.50	9.5	4079.40	8.8	4409.15	9.6	4095.00	8.9	131.60	4393.50	4408.58	OFA Water, 1 x 450cc sample taken	
58	2614.50	2470.53	4028.20	9.6	3580.00	8.5	4039.36	9.6	3587.00	8.5	119.80	4024.70	4038.76	OFA Water, sample chamber failed to open	
59	2609.50	2465.99	4018.30	9.6	3618.60	8.6	4031.92	9.6	3632.99	8.6	118.60	4017.40	4031.56	OFA Oil, 2 x 450cc sample taken	
60	2606.50	2463.17	4014.60	9.6	3617.60	8.6	4028.59	9.6	3631.64	8.64	118.40	4013.40	4027.75	OFA Oil, 1 x 450cc sample taken	

APPENDIX 12: RIG MOVE & POSITIONING REPORT

REPORT FOR THE ENSCO 102 RIG MOVE TO THE YOLLA A PLATFORM

FUGRO SURVEY JOB NO. – P0051

Client	:	Origin Energy Resources Ltd C/o Australian Drilling Associates Pty Ltd Suite 2, Level 9 470 Collins Street Melbourne, 3000 Victoria
Date of Survey	:	25 May – 13 June, 2004
Date of Report	:	30 June, 2004
Checked	:	_____
Authorised	:	_____

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ABSTRACT

Between 23 May and 13 June, 2004, Fugro Survey Pty Ltd provided equipment and personnel for the jack-up Mobile Offshore Drilling Unit, Ensco 102, rig move to the Yolla A Platform in the Bass Strait, Australia.

Primary surface positioning was achieved utilising a Trimble Real Time Kinematic (RTK) system and GNS2 Navigation Software. Fugro's Skyfix XP and Skyfix Spot DGPS systems were used as secondary systems.

The final position for the centre stern derived from RTK observations at the Yolla A Platform location was:

Location Name:	**Yolla A**
Easting:	398923.94m
Northing:	5588819.35m
Latitude:	39º 50' 40.669" S
Longitude:	145º 49' 06.849" E
Rig Heading:	101.0º T

This position is 0.50m on a bearing of 278.8° (grid) from the proposed Yolla A location.

The calculated final height of the Rotary Table of the Ensco 102 at the Yolla A location was 43.31m above AHD.

All coordinates in this report are quoted in GDA94 datum and MGA Zone 55 (CM 147° E) projection, unless otherwise stated.

1.0 INTRODUCTION

Fugro Survey Pty Ltd (Fugro) was contracted by Origin Energy Resources Ltd (Origin) to provide positioning survey services onboard the jack-up Mobile Offshore Drilling Unit (MODU), *Ensco 102*, for the rig move from the West Whiptail-1 location to the Yolla A location in Bass Strait, Australia.

A general location diagram is shown as Figure 1-1.

This report details the equipment used, survey parameters adopted, procedures employed and the results achieved. A section on safety is included in Section 3.0 of this report.

1.1 Scope of Work

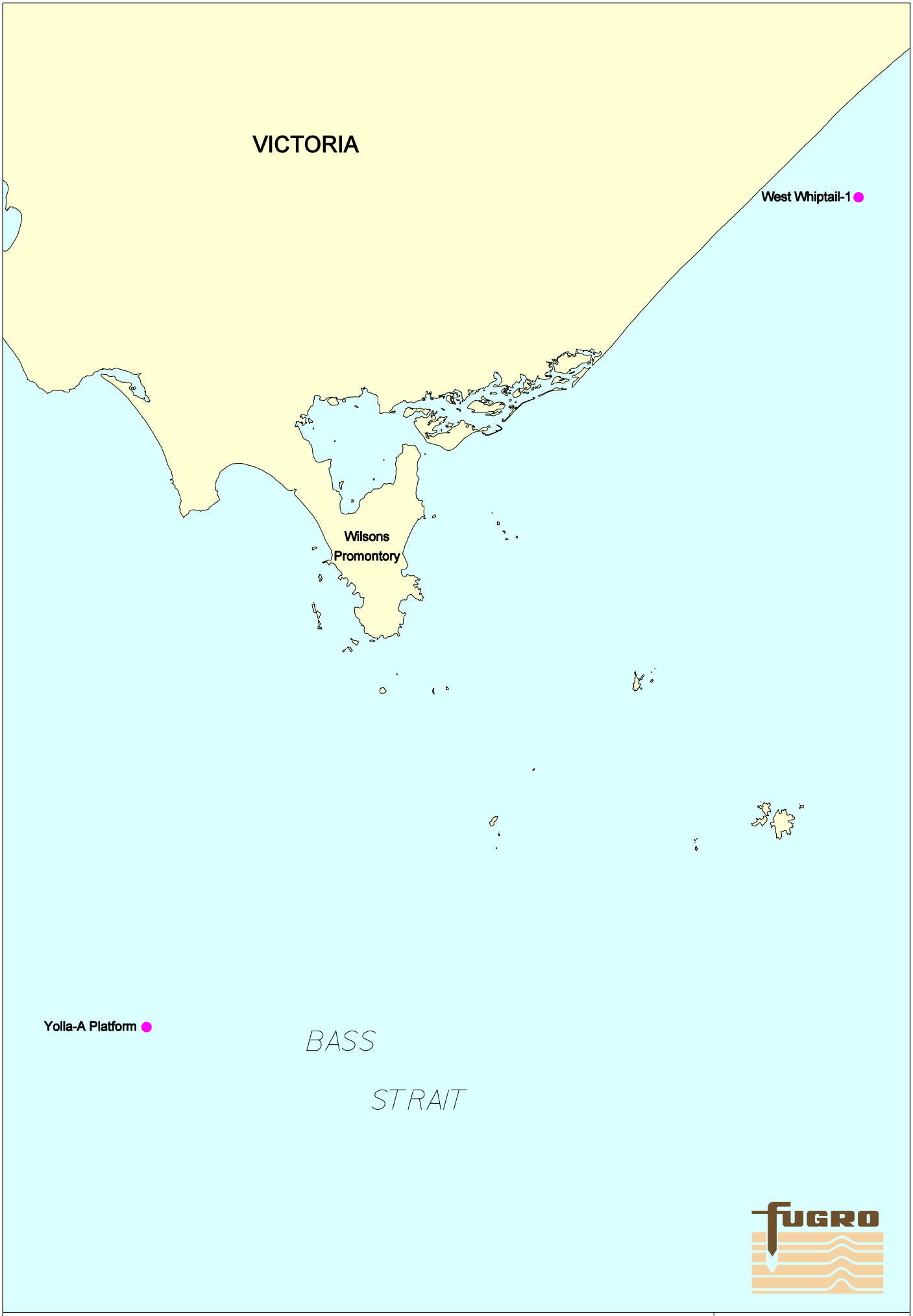
Personnel and equipment were provided on a 24-hour per day basis for:

- Final rig surface positioning for the Yolla A location using RTK observations.

Final reporting of the positioning results.

Sequence of Events

23 May, 2004	Fugro personnel R. Bright and N. Gregory in transit from Perth to Melbourne.
24 May, 2004	Personnel arrive on rig. R. Bright attended safety induction. Completed setting up of equipment on rig.
25 to 26 May, 2004	Checked offsets and setup of Tracs system on rig. Standing by for rig move operations. Carried out check fix at West Whiptail-1 location.
27 May, 2004	Rig move delayed due to problems with winch on rig. Fugro personnel depart rig for transit to Perth until further notice.
3 June, 2004	Fugro personnel R. Bright and N. Gregory in transit from Perth to Melbourne.
4 June, 2004	Personnel arrive on rig. Powered up equipment. Standing by on weather.
5 June, 2004	Mobilised positioning equipment on AHV *Invincible Tide* for anchor operations. Rig departed West Whiptail-1 location for transit to Yolla A Platform. Fugro personnel attended muster drill and rig move meeting.
6 June, 2004	Conducted gyro calibration by sunshot. Arrived at 100m stand off location from platform. Commenced deployment of anchors by AHV *Invincible Tide.*
7 June, 2004	Completed anchor deployment. Tensioned anchors. Rig moved from 100m stand off location to intended location. Issued client with preliminary position fix. Commenced preload operations.



GENERAL LOCATION DIAGRAM

FIGURE 1–1

u:\p0051\final report\figures\figure1-1.dgn

8 to 10 June, 2004	Continued with preload operations. Demobilised positioning equipment on AHV *Invincible Tide*. Recovered anchor spread.
11 June, 2004	Completed preload operations. Rig jacked up to final height.
12 June, 2004	Carried out final fix of centre line stern. Final position accepted by client representative. Logged data for heighting. Received approval from client to commence demobilisation of survey equipment. Demobilised RTK Base Station on platform. All survey equipment demobilised and safely secured.
13 June, 2004	Fugro personnel depart rig for transit to Perth.

Further details of Fugro's involvement in the rig move are presented in Appendix A.

2.0 RESULTS

2.1 Final Position

The final position of the *Ensco 102* centre stern was established by calculating the mean position from one hour of RTK GPS data between 07:30 and 08:30 on 12 June, 2004. During this period, calculated centre stern coordinates from the primary positioning system were logged at five-second intervals in GNS2.

Corrections for the GPS positioning system were derived by the RTK Base Station located on the Yolla A Platform. These corrections were then broadcast to the rig via a radio telemetry link and applied to the observed position.

Information regarding RTK Base Station on Yolla A Platform can be found in Appendix B of this report.

GDA94 geographical position for the *Ensco 102* at the Yolla A final location is shown in Table 2-1.

Position	Method	Latitude	Longitude
Centre Stern at Surface	RTK	39° 50' 40.669" S	145° 49' 06.849" E

TABLE 2-1 : GEOGRAPHICAL POSITION FOR ENSCO 102 AT YOLLA A PLATFORM (GDA94)

GDA94 grid coordinate (CM 147° E) for the *Ensco 102* at the Yolla A Platform location is shown in Table 2-2.

Position	Method	Easting	Northing
Centre Stern at Surface	RTK	398923.94m	5588819.35m

TABLE 2-2 : GRID COORDINATES FOR ENSCO 102 AT YOLLA A PLATFORM (GDA94)

This position is 0.50m at a bearing of 278.8° (grid) from the design location (see Section 6.3 for design position).

A copy of the original final position fix of the rig is contained in Appendix C.

2.2 Rig Heading

The heading of the *Ensco 56* was established by calculating the average heading during one hour of corrected gyro compass readings logged between 07:30 and 08:30 on 12 June, 2004. During this period gyro readings were logged at five-second intervals in GNS2.

The *Ensco 56* rig heading is shown in Table 2-3.

Description	Method	True	Grid
Rig Heading	Gyro	101.0°	100.3°
Proposed Heading	-	100.1°	-

TABLE 2-3 : RIG HEADING

2.3 Anchor Positions

Once the *Ensco 102* was positioned at the 100m stand off location, the *Invincible Tide* deployed four anchors to assist the rig with final positioning.

The locations of the *Ensco 102* anchors at Yolla A Platform are shown in Table 2-4.

Anchor	Easting	Northing	Deployed By
P1	399607m	5589171m	*Invincible Tide*
P2	398553m	5589337m	*Invincible Tide*
S1	399467m	5588245m	*Invincible Tide*
S2	398484m	5588364m	*Invincible Tide*

TABLE 2-4 : ANCHOR POSITIONS (GDA94)

A drawing displaying proposed *Ensco 102* and anchor locations can be found in Appendix D of this report.

2.4 Rotary Table Heighting

Calculation of *Ensco 102* Rotary Table AHD Height

WGS84 Ellipsoidal Height of GPS Antenna	:	48.00m
Ausgeoid98 - WGS84 Ellipsoid Separation	:	+0.53m
Vertical Distance GPS Antenna to Rotary Table	:	-5.22m
AHD Height of *Ensco 102* Rotary Table	**:**	**43.31m**

Check – Sea Surface Measurements

Main Deck to Sea Level	:	31.70m
Main Deck to Rotary Table	:	+12.392m
Tidal Correction	:	+0.9m
LAT to AHD	:	-1.75m
AHD Height of *Ensco 102* Rotary Table	**:**	**43.24m (Sea Surface)**

A diagram of these results is contained in Appendix E.

Final AHD Height of the *Ensco 102* Rotary Table at the Yolla A Platform Location	**:**	**43.31m**

3.0 SAFETY

All work undertaken by Fugro personnel during the project was performed within the guidelines of Fugro's Safety Policy, as defined in Fugro's Safety Manual (FSSM01) and Offshore Survey Safety Practices (FSSM06). Fugro personnel worked within all project safety guidelines and plans adopted by Origin.

No injuries involving Fugro personnel were reported during the project. Fugro personnel attended a Rig Induction upon arrival at the rig and also attended all rig safety meetings and drills.

4.0 SURVEY PROCEDURES

4.1 Mobilisation

The RTK Base Station was setup on the Yolla A Platform on 12 May, 2004. Fugro personnel R. Bright and P. Wells were involved with this phase of the operation. A survey was carried out in order to tie-in the RTK Base GPS antenna to the Yolla A as-built position.

Fugro personnel R. Bright and N. Gregory joined the rig on 24 May, 2004, in preparation for the move to Yolla A Platform. Survey equipment was mobilised and checks were carried out to ensure equipment was functioning correctly. Due to the rig experiencing difficulties, Fugro personnel were demobilised back to Perth on 27 May, 2004, until further notice.

Fugro personnel returned to the rig on 4 June, 2004. Equipment checks were carried out to ensure all equipment was still functioning correctly.

4.2 General Survey Procedures

Jack-down operations at West Whiptail-1 commenced on 5 June, 2004, after which the tow commenced. Upon arrival at the stand off location near Yolla A Platform on 6 June, 2004, the anchors were deployed by the *Invincible Tide* and pre-tensioned. The rig was pinned at the final location on 7 June, 2004. Preloading operations were conducted between 7 and 11 June, 2004. Final position data was logged between 07:30 and 08:30 on 12 June, 2004. A final position report was issued to the Origin Company Representative (see Appendix C).

4.3 Demobilisation

All survey equipment onboard the *Ensco 102*, *Invincible Tide* and Yolla A Platform was demobilised by 13:30 on 12 June, 2004. Equipment remaining onboard the rig was safely secured and stored inside the Fugro container. Remaining equipment was securely stored inside an Origin container that departed the rig on 12 June, 2004, for transit to Melbourne.

Fugro personnel departed the rig on 13 June, 2004, for transit to Perth.

5.0 EQUIPMENT CALIBRATIONS

5.1 DGPS Navigation Integrity Check

A Differential GPS check fix of the centre stern position of the *Ensco 102* at the West Whiptail-1 location was computed using SkyFix XP Satellite Differential GPS. 120 fixes were taken.

The calculated Differential GPS coordinate of the *Ensco 102* at the West Whiptail-1 location is located in Table 5-1.

Latitude	Longitude	Easting	Northing
38° 19' 29.150" S	147° 30' 17.167" E	544121.32m	5758030.22m

TABLE 5-1 : CALCULATED DGPS COORDINATES (GDA94)

The computed Differential GPS check fix coordinate of the *Ensco 102* is located in Table 5-2.

Latitude	Longitude	Easting	Northing
38° 19' 29.138" S	147° 30' 17.178" E	544121.60m	5758030.60m

TABLE 5-2 : COMPUTED DGPS COORDINATES (GDA94)

The Differential GPS check fix of the *Ensco 102* is 0.47m on a bearing of 35.9°(G) from the calculated West Whiptail-1 location.

This check was carried out to confirm the positioning equipment was functioning correctly and to ensure that the correct geodetic datum, transformation and projection parameters were being used. Geodetic calculations were performed using Fugro's GNS2 software.

5.2 Gyro Compass Calibration

A series of sun observations were made from which the rig heading was calculated. The calculated values were then compared to the observed gyro compass values logged in GNS2 and a mean C-O value of +90.21° was determined. This value was applied in GNS2.

Details of the DGPS integrity check and gyro calibrations results are enclosed in Appendix F.

6.0 SURVEY PARAMETERS

6.1 Geodetic Parameters

All coordinates supplied in this report are referenced to the Geodetic Datum of Australia 1994 (GDA94). Global Positioning System (GPS) operates in reference to the World Geodetic System 1984 whilst the SkyFix/SkyFix Spot DGPS reference stations are referenced to the International Terrestrial Reference Frame 2000 (ITRF2000).

Recent research (September, 2002) has shown that the WGS84 (G1150, Epoch 2001.0) and ITRF2000 (Epoch 1997.0) reference frames are essentially identical.

Datum	**:**	**ITRF2000 (Current Epoch: 1 January 2004)**
Reference Spheroid	:	Geocentric Reference System 1980 (GRS80)
Semi-Major Axis	:	6378137.000m
Inverse flattening	:	298.257222101

Datum	**:**	**Geodetic Datum of Australia 1994 (GDA94)**
Reference Spheroid	:	Geocentric Reference System 1980 (GRS80)
Semi-Major Axis	:	6378137.000m
Inverse flattening	:	298.257222101

The following 7-parameter datum transformation was used by Fugro's GNS2 software to convert ITRF2000 (Current Epoch: 1 January, 2004) coordinates to GDA94 coordinates.

X Axis Shift (ΔX)	-0.032m	X Axis Rotation (rX)	+0.0129"
Y Axis Shift (ΔY)	-0.028m	Y Axis Rotation (rY)	+0.0120"
Z Axis Shift (ΔZ)	-0.025m	Z Axis Rotation (rZ)	+0.0135"
Scale Factor (kO)	+0.0058p.p.m.		

The proposed drilling location and all project coordinates are grid coordinates on the Map Grid of Australia.

Projection	**:**	**Universal Transverse Mercator (UTM)**
Grid	:	Map Grid of Australia (MGA)
Latitude of Origin	:	0°
Central Meridian	:	147° E (Zone 55)
Central Scale Factor	:	0.9996
False Easting	:	500000m
False Northing	:	10000000m
Units	:	Metres

6.2 Differential GPS Reference Stations

The reference stations listed in Table 6-1 were used in the computation of the backup MultiFix 4 Differential GPS (DGPS) position. All coordinates are in WGS84.

Description	Site ID	Latitude	Longitude
Melbourne	203	37° 53' 47.944" S	145° 07' 56.688" E

Adelaide	205	35° 17’ 30.127” S	138° 34’ 50.582” E
Sydney	206	33° 59’ 12.479” S	151° 14’ 24.222” E

TABLE 6-1 : DGPS REFERENCE STATIONS (WGS84)

6.3 Project Coordinates

The project target coordinates for the *Ensco 102* at Yolla A Platform location were derived from data supplied by Origin and Ensco Offshore and are shown in Table 6-2.

Location	Easting	Northing	Heading
Yolla A	398924.43m	5588819.27m	101.1° (True)

TABLE 6-2 : PROJECT DESIGN COORDINATES (GDA94)

7.0 EQUIPMENT & PERSONNEL

7.1 Equipment Listing

Survey equipment used for the positioning of the *Ensco 102* was as follows:

Ensco 102

1 x Compaq Desktop Pentium Computer (for GNS2)
1 x Compaq Desktop Pentium Computer (for MultiFix 4)
1 x Compaq Desktop Pentium Computer (Spare)
1x Toshiba Laptop (Remote on Stern of Rig)
1x Trimble RTK System (Rover System)
1x SGB1000 Gyrocompass
1x Trimble GPS Receiver
1x Ashtech GPS Receiver
2x Fugro Skyfix Spot Receivers
1x Nikon Total Station with Prisms
1x TracsComm Telemetry System
1x Tracs TDMA System (Master)

GNS2 version 2.60b, MultiFix 4 version 1.05, plus associated cables and manuals.

Invincible Tide

1x Compaq Desktop Pentium Computer (for GNS2 Remote)
1x Tracs Geopod
1x Fluxgate Compass

Yolla A Platform

1x Trimble RTK Base Station

All systems were provided complete with all necessary cabling, connectors, power supplies, antennae, accessories, manuals and consumables.

7.2 Vessels

The primary vessel for anchor handling was the *Invincible Tide.* Assistance was provided by the *Ray Jay Hope* and the *Keera* during the rig move. Refer to Figure 7-1 and Figure 7-2, for vessel offset diagrams.

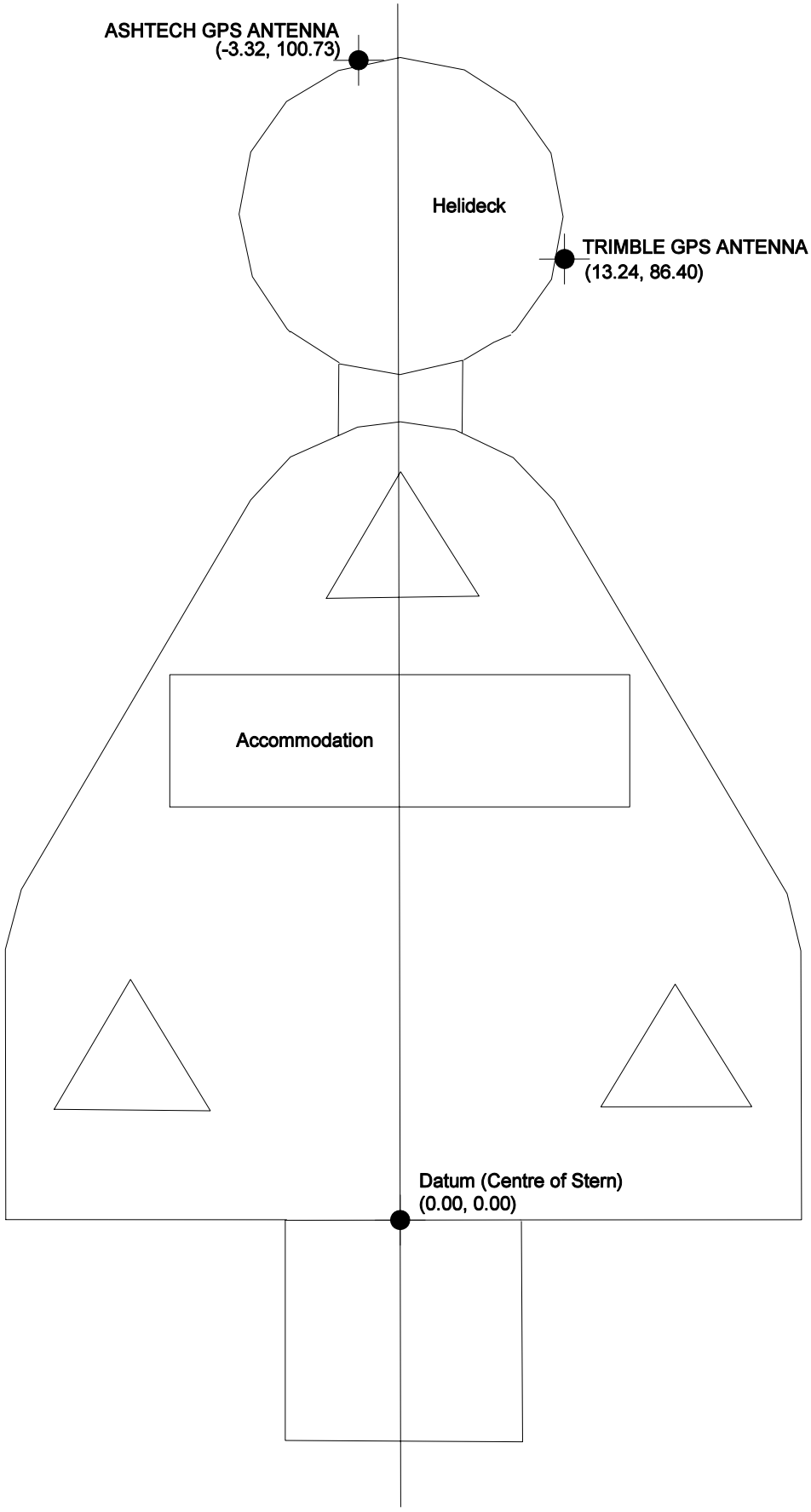
7.3 Personnel

Fugro personnel involved in the rig positioning operation were as follows:

R. Bright	Surveyor	11 May – 13 June, 2004
N. Gregory	Engineer	23 May – 13 June, 2004
P. Wells	Surveyor	11 – 13 May, 2004

Origin was represented during the rig move by:

K. O' Halloran	Company Representative	4 – 13 June, 2004



ENSCO 102 RIG OFFSET DIAGRAM

FIGURE 7–1

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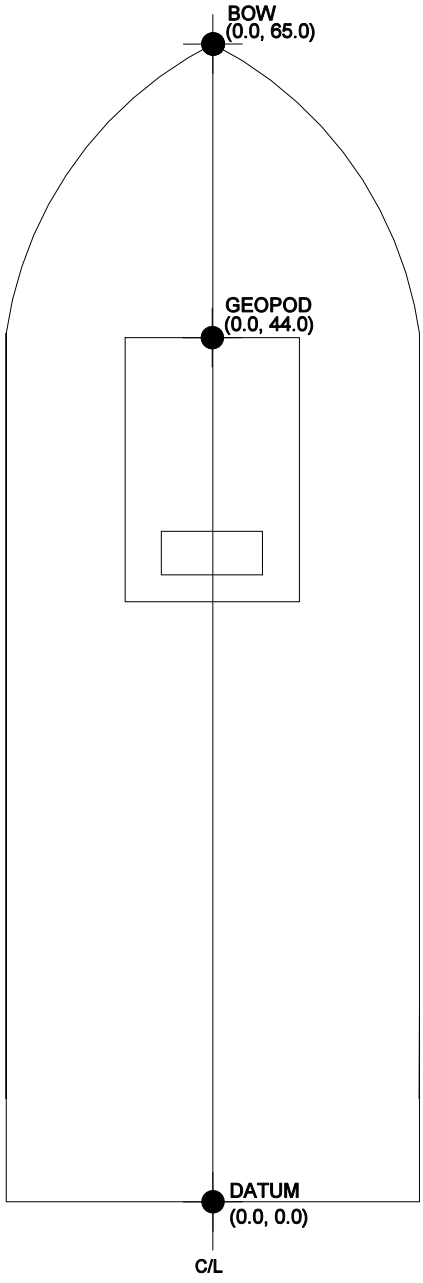


VESSEL OFFSET DIAGRAM – MV INVINCIBLE TIDE

FIGURE 7–2

u:\p0051\final report\figures\figure7-2.dgn

8.0 CONCLUSIONS

On reviewing the rig move and positioning operations undertaken by Fugro onboard the *Ensco 102*, the conclusion was reached that the *Ensco 102* was successfully positioned at the Yolla A Platform location.

9.0 DISTRIBUTION

Copies of this report have been distributed as follows:

Australian Drilling Associates Pty Ltd	: 3 hard copies
Attn: Mr Michael Lanzer	: 1 electronic copy
Fugro Survey Pty Ltd	: 1 hard copy
	: 1 electronic copy

APPENDIX A
DAILY OPERATIONS REPORTS

Fugro Marine Division
FSHY01-1
DAILY OPERATIONS REPORT

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:23/05/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
0750	1115	Fugro Personnel depart Perth for transit to Melbourne
1115	2400	Standing by in Melbourne

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
				R. Bright	Surveyor
				N.Gregory	Engineer

VEHICLES:		
CONSUMABLES:		
ACCOMMODATION:HOLIDAY INN		

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		1

DAILY OPERATIONS REPORT

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:24/05/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
0800	1100	Fugro personnel transited from Melbourne to Longford
1230		Departed Longford by heli for Ensco 102 at West Whiptail-1 location
1240		Arrived on board Ensco 102
1330		Commenced setting up of survey equipment in radio control room
1330	1600	R. Bright attended safety induction
1800		Completed setting up of survey equipment (excl Tracs on board Invincible Tide)

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
Ashtec GPS Receiver	1	Trimble RTK System	1	R. Bright	Surveyor
Trimble GPS Receiver	1	Tracs TDMA	1	N.Gregory	Engineer
Multifix4	1	Remote GNS2	1		
GNS2	1				
Skyfix Spot	2				
Total Station	1				
Gyrocompass	1				

VEHICLES:		
CONSUMABLES:		
ACCOMMODATION:		

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		2

DAILY OPERATIONS REPORT

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:25/05/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
0000	2400	• Checked offsets by means of Total Station observations
		• Setup of Tracs equipment on Ensco 102
		• Unable to conduct gyrocompass calibration by means of sunshot due to weather conditions

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
Ashtec GPS Receiver	1	Trimble RTK System	1	R. Bright	Surveyor
Trimble GPS Receiver	1	Tracs TDMA	1	N.Gregory	Engineer
Multifix4	1	Remote GNS2	1		
GNS2	1				
Skyfix Spot	2				
Total Station	1				
Gyrocompass	1				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		3

Fugro Marine Division
FSHY01-1
DAILY OPERATIONS REPORT

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:26/05/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
0000	2400	Checked Tracs equipment for Invincible Tide on board Ensco 102
		Conducted Gyro calibration by means of sun observation. Result = +89.76º
		Standing by for rig move operations

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
Ashtec GPS Receiver	1	Trimble RTK System	1	R. Bright	Surveyor
Trimble GPS Receiver	1	Tracs TDMA	1	N.Gregory	Engineer
Multifix4	1	Remote GNS2	1		
GNS2	1				
Skyfix Spot	2				
Total Station	1				
Gyrocompass	1				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		4

Fugro Marine Division
FSHY01-1
DAILY OPERATIONS REPORT

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:27/05/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
0000	0900	Standing by for rig move operations
0900		Informed by Esso logistics that Fugro personnel are to depart rig at 1240 for
		Longford.
		Fugro personnel to return to Perth to stand by until further notice

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
Ashtec GPS Receiver	1	Trimble RTK System	1	R. Bright	Surveyor
Trimble GPS Receiver	1	Tracs TDMA	1	N.Gregory	Engineer
Multifix4	1	Remote GNS2	1		
GNS2	1				
Skyfix Spot	2				
Total Station	1				
Gyrocompass	1				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		5

Fugro Marine Division
FSHY01-1
DAILY OPERATIONS REPORT

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:03/06/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
		Fugro personnel in transit from Perth to Melbourne

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
Ashtec GPS Receiver	1	Trimble RTK System	1	R. Bright	Surveyor
Trimble GPS Receiver	1	Tracs TDMA	1	N.Gregory	Engineer
Multifix4	1	Remote GNS2	1		
GNS2	1				
Skyfix Spot	2				
Total Station	1				
Gyrocompass	1				

VEHICLES:		
CONSUMABLES:		
ACCOMMODATION:		

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		6

DAILY OPERATIONS REPORT

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:04/06/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
0530		Fugro personnel and Survey rep depart Melbourne for Longford
0945		Depart Longford by heli for Ensco 102 at West Whiptail-1 location
1000		Arrive on board Ensco 102. Powered up equipment and carried out checks
2400		Standing by for weather

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
Ashtec GPS Receiver	1	Trimble RTK System	1	R. Bright	Surveyor
Trimble GPS Receiver	1	Tracs TDMA	1	N.Gregory	Engineer
Multifix4	1	Remote GNS2	1	K. O'Halloran	Survey Rep
GNS2	1				
Skyfix Spot	2				
Total Station	1				
Gyrocompass	1				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		7

Fugro Marine Division
FSHY01-1
DAILY OPERATIONS REPORT

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:05/06/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
0750		Commenced skidding-in of drill floor
0820		N. Gregory transferred to Invincible Tide to mob positioning equipment for anchor
		operations at Yolla A location
0910		Completed skidding-in
1115		N. Gregory returned from Invincible Tide. Positioning equipment operational
1200		Commenced jacking down
1233		At 20ft air gap
1254		Ray J Hope connected to tow bridal
1450		Rig at tow draft
1452		Under tow to location
1530		Ensco 102 1nm from West Whiptail-1 location
1610		Attended muster drill and rig move meeting
2400		In transit to Yolla A location.
		Position @ midnight: 38º 49.4' S 146º 58.2' E

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
Ashtec GPS Receiver	1	Trimble RTK System	1	R. Bright	Surveyor
Trimble GPS Receiver	1	Tracs TDMA	1	N.Gregory	Engineer
Multifix4	1	Remote GNS2	1	K. O'Halloran	Survey Rep
GNS2	1				
Skyfix Spot	2				
Total Station	1				
Gyrocompass	1				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		8

Fugro Marine Division
FSHY01-1
DAILY OPERATIONS REPORT

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:06/06/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
0000		In transit to Yolla A location
0600		Location: 39º 07.9' S 146º 31.7' E
1200		Location: 39º 29.8' S 146º 03.5' E
1600		Attended meeting with ENSCO reps and client to discuss upcoming operations
1650		Conducted gyro cal by means of sunshot. Result = +90.21º
1730		Rig 1nm from Yolla A location
1810		Invincible Tide connected to rig
1925		Keera connected to rig
2000		Tagged bottom
2005		Rig pinned at 100m stand off location
2010		Keera clear of rig
2030		Invincible Tide disconnected from rig
2159		Port Aft anchor deployed by Invincible Tide. E 398 553m N 5 589 337m
2220		Port Aft anchor buoy splashed
2243		Stbd Aft anchor passed to Invincible Tide
2335		Commenced running of Stbd Aft anchor
2345		Stbd Aft anchor deployed by Invincible Tide. E 398 484m N 5 588 364m
2353		Stbd Aft anchor buoy splashed

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
Ashtec GPS Receiver	1	Trimble RTK Rover	1	R. Bright	Surveyor
Trimble GPS Receiver	1	Tracs TDMA	1	N.Gregory	Engineer
Multifix4	1	Remote GNS2	1	K. O'Halloran	Survey Rep
GNS2	1				
Skyfix Spot	2				
Total Station	1				
Gyrocompass	1				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		9

DAILY OPERATIONS REPORT

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:07/06/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
0000		Rig at 100m stand off location.
0035		Stbd fwd anchor passed to Invincible Tide and made secure
0200		Commenced running out of Stbd fwd anchor
0205		Stbd Fwd anchor deployed by Invincible Tide. E 399 467m N 5 588 245m
0213		Splashed buoy
0230		Port fwd anchor passed to Invincible Tide and made secure
0325		Commenced running out of Port fwd anchor
0332		Port Fwd anchor deployed by Invincible Tide. E 399 607m N 5 589 171m
0340		Splashed buoy
0400		All anchors tensioned at 35 metric tonne
0435		Keera connected to Stbd side of rig in prep for move to final location
0437		Invincible Tide connected to Port side of rig in prep for move to final location
0500		Commenced jacking up of legs
0507		Rig afloat
0510		Commenced final positioning of rig
0600		Rig on location. Lowering legs
0705		Legs at 9ft penetration
0707	0722	Preliminary RTK position fix of rig at 9ft leg penetration
0740		**Issued results of RTK prelim fix to Survey rep and ENSCO pers**
		Result: GDA94 MGA Zone 55 CM 147º East. Centre line of stern position:-
		E 398 925.20m N 5 588 819.46m. Position is 0.79m on a bearing of 77.1º (True)
		from intended location
0830		Keera let go of rig
0845		Invincible Tide let go of rig
1145		Jacked up to 10ft draft penetration 24ft
1435		Rig at 10ft draft penetration 58ft
2055		Rig at 3ft draft
2100		Commenced preload
2400		Continuing preload ops

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
Ashtec GPS Receiver	1	Trimble RTK Rover	1	R. Bright	Surveyor
Trimble GPS Receiver	1	Tracs TDMA	1	N.Gregory	Engineer
Multifix4	1	Remote GNS2	1	K. O'Halloran	Survey Rep
GNS2	1				
Skyfix Spot	2				
Total Station	1				
Gyrocompass	1				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		10

Fugro Marine Division
FSHY01-1
DAILY OPERATIONS REPORT

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:08/06/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
0000	2400	Preload Operations
2055		Excessive leg penetration on Port leg. Minimum observed range from stern to
		East face of platform = 2.7m
2400		Continuing with preload operations

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
Ashtec GPS Receiver	1	Trimble RTK Rover	1	R. Bright	Surveyor
Trimble GPS Receiver	1	Tracs TDMA	1	N.Gregory	Engineer
Multifix4	1	Remote GNS2	1	K. O'Halloran	Survey Rep
GNS2	1				
Skyfix Spot	2				
Total Station	1				
Gyrocompass	1				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		11

DAILY OPERATIONS REPORT

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:09/06/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
0000		Continuing with preload ops
1330		Stopped preloading ops. Standing by due to weather conditions
2100	2400	Continuing with preload ops

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
Ashtec GPS Receiver	1	Trimble RTK Rover	1	R. Bright	Surveyor
Trimble GPS Receiver	1	Tracs TDMA	1	N.Gregory	Engineer
Multifix4	1	Remote GNS2	1	K. O'Halloran	Survey Rep
GNS2	1				
Skyfix Spot	2				
Total Station	1				
Gyrocompass	1				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		12

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:10/06/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
0000		Continuing with preload ops
1320		Commenced recovery of anchor spread
1545		N. Gregory transferred to Invincible Tide to demob positioning equipment
1740		N. Gregory back on rig. Demob complete
2400		Continuing with preload ops. All anchors recovered and racked

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
Ashtec GPS Receiver	1	Trimble RTK Rover	1	R. Bright	Surveyor
Trimble GPS Receiver	1	Tracs TDMA	1	N.Gregory	Engineer
Multifix4	1	Remote GNS2	1	K. O'Halloran	Survey Rep
GNS2	1				
Skyfix Spot	2				
Total Station	1				
Gyrocompass	1				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		13

DAILY OPERATIONS REPORT

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:11/06/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
0000		Continuing with preload ops
1430		Dumped preload
????		Commenced jacking up to final height
1500		Ray Jay Hope released from rig.
1530		Commenced jacking up of rig to working height.
1700		At final height
2400		Standing by to carry out final fix

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
Ashtec GPS Receiver	1	Trimble RTK Rover	1	R. Bright	Surveyor
Trimble GPS Receiver	1	Tracs TDMA	1	N.Gregory	Engineer
Multifix4	1	Remote GNS2	1	K. O'Halloran	Survey Rep
GNS2	1				
Skyfix Spot	2				
Total Station	1				
Gyrocompass	1				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		14

DAILY OPERATIONS REPORT

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:12/06/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
0730	0830	Carried out final fix of centre line stern
		Result: Datum - GDA94, Projection - MGA Zone 55 CM 147º East
		E 398 923.94m 5 588 819.35m Final Heading 101.04º True
		Final Position is 0.50m on a bearing of 279.6º True from intended location
0920		Above position accepted by client
0900	1000	Logged data for heighting survey (Trimble & Ashtech Receivers)
1045		Received permission from client to commence demob of equipment
1100	1145	Demob of RTK Base Station on Yolla A Platform
1330		Completed demob of positioning equipment on rig. All equipment stored securely
		in survey container
		Fugro personnel standing by to depart rig by heli for Melbourne.

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
Ashtec GPS Receiver	1	Trimble RTK Rover	1	R. Bright	Surveyor
Trimble GPS Receiver	1	Tracs TDMA	1	N.Gregory	Engineer
Multifix4	1	Remote GNS2	1	K. O'Halloran	Survey Rep
GNS2	1				
Skyfix Spot	2				
Total Station	1				
Gyrocompass	1				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		15

DAILY OPERATIONS REPORT

CLIENT:ORIGIN ENERGY LTD	LOCATION:YOLLA A PLATFORM	DATE:13/06/04
PROJECT:RIG MOVE	VESSEL:ENSCO 102	JOB NO:P0051

FROM	TO	SUMMARY OF OPERATIONS (UTC+10HRS)
		Fugro personnel and survey rep depart rig by heli for Melbourne

EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
Ashtec GPS Receiver	1	Trimble RTK Rover	1	R. Bright	Surveyor
Trimble GPS Receiver	1	Tracs TDMA	1	N.Gregory	Engineer
Multifix4	1	Remote GNS2	1	K. O'Halloran	Survey Rep
GNS2	1				
Skyfix Spot	2				
Total Station	1				
Gyrocompass	1				

VEHICLES:		
CONSUMABLES:		
ACCOMMODATION:		

AUTHORISED CONTRACT CHANGES / COMMENTS:

Party Chief Signature:	Client Representative Signature:	D O R Number
		16

APPENDIX B

RTK BASE STATION – YOLLA A PLATFORM

Yolla-A Platform RTK GPS Base Station Installation and Slot Measurement
May 2004

To assist with positioning of the Ensco 102 jack-up drilling rig adjacent to the east face of the Yolla-A platform an RTK GPS base station was established on the platform 12 May 2004.

Trimble GPS antenna, Trimtalk radio and antenna were installed on the helideck with Trimble 4000 series GPS receiver and power supply installed on the deck immediately below. Continuous 240v AC power supply was supplied by platform operators (refer attached photographs).

The reference position of the RTK Base Station was computed using:

- Published platform installation carrier phase GPS antenna position (Fugro report 3623D2).
- Published platform heading (Fugro report 3623D2).
- Published offsets from the platform installation carrier phase GPS antenna to the platform Set Out Point (SOP) (Fugro report 3623D2).
- Field observations conducted during RTK Base Station installation.

Field observations are detailed in the attached drawing.

RTK GPS Reference Position

The reference position entered into the RTK GPS Base Station GPS receiver is as follows:

Datum: WGS84

Latitude: 39° 50′ 39.6990″ South
Longitude: 145° 49′ 05.3270″ East
Ellipsoidal Height: 31.300m

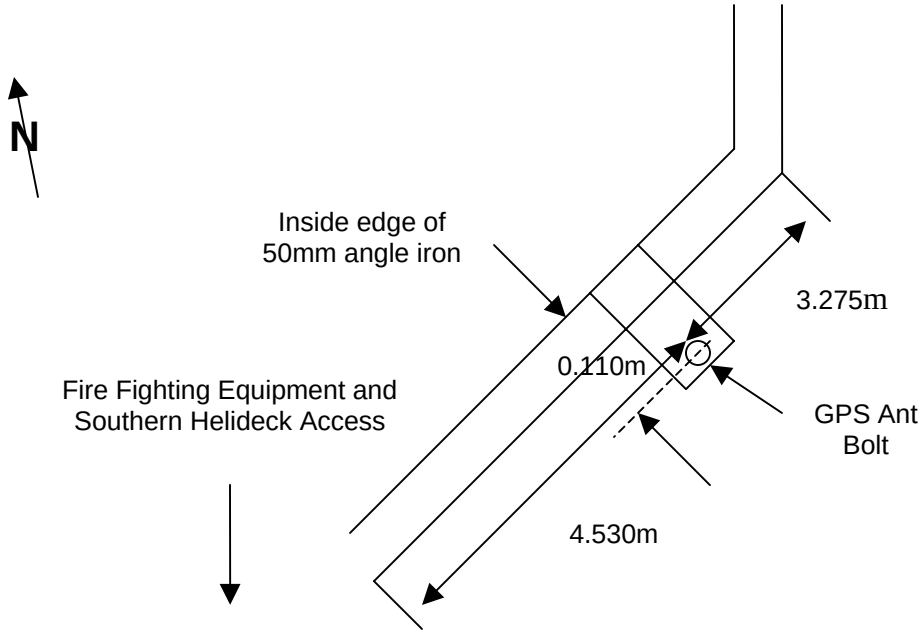
RTK GPS system installation reference sketches and photographs are included below:

RTK GPS Base Station

The following referencing sketch and photographs detail the installation of a Trimble 4000 series RTK GPS and Trimtalk telemetry system on the Yolla-A platform.

RTK GPS antenna mounted on the southeast side of the helideck. The GPS antenna bracket was secured to the 50mm angle iron supporting the helideck lighting cabling.

The following reference sketch details the location GPS antenna position.



Trimtalk telemetry system antenna and radio mounted on safety railing adjacent to firefighting equipment located on south side of helideck. Trimtalk radio placed inside Racal weather-proof box. Antenna and data cabling routed directly down from this point to GPS receiver on deck below. GPS receiver and power supply stored inside Syledis box adjacent to locker below helideck.

Power supply provided by platform electrician. Note that power extension lead required direct hardwire into external power socket located on underside of stairway to helideck (approx 10m lead required).

Well Bay Deck Bench Mark

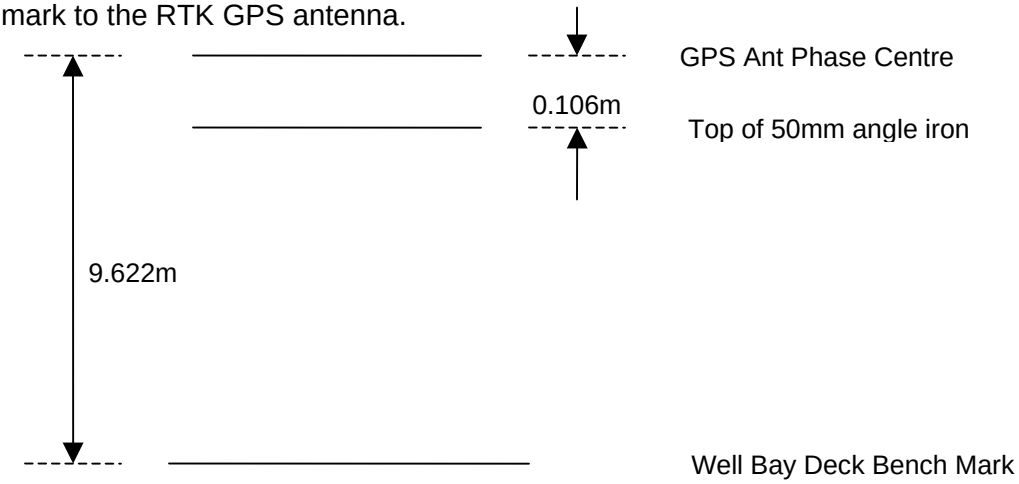
The Yolla-A Well Bay Deck Bench Mark is located on the north side of the northern well bay deck stairway. Bench mark is top of 150mm x 50mm angle iron supporting the safety railing just below the well bay deck flowmesh.

Published height of the Yolla-A Well Bay Deck Bench Mark is:

Datum: WGS84
Ellipsoidal Height: 21.678m
AHD Height: 22.210m

Refer to Fugro Report 3623D2 for details of Carrier Phase GPS processing and geoid-ellipsoid separation.

The following sketch details the height transfer from the Yolla-A Well Bay Deck Bench mark to the RTK GPS antenna.



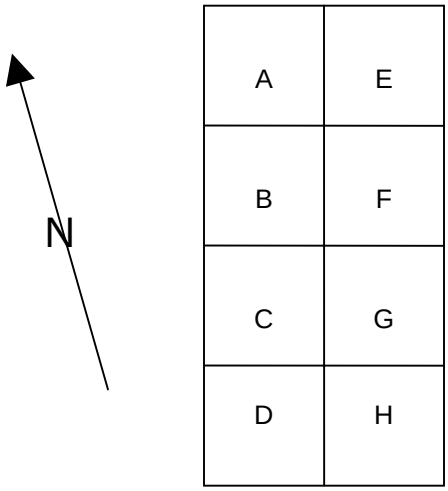
For future reference the height of top of 50mm angle iron below RTK GPS antenna at the RTK GPS antenna location is:

Datum: WGS84
Ellipsoidal Height: 31.194m

Slot Measurement

During installation of the RTK GPS base station check measurements were made to the Yolla-A slot hatch locations. Field observations are detailed in the attached drawing.

The results are tabled below:
Slot hatch naming convention has been derived on site and not referenced to platform design drawings. The slot naming convention is as per the following sketch.



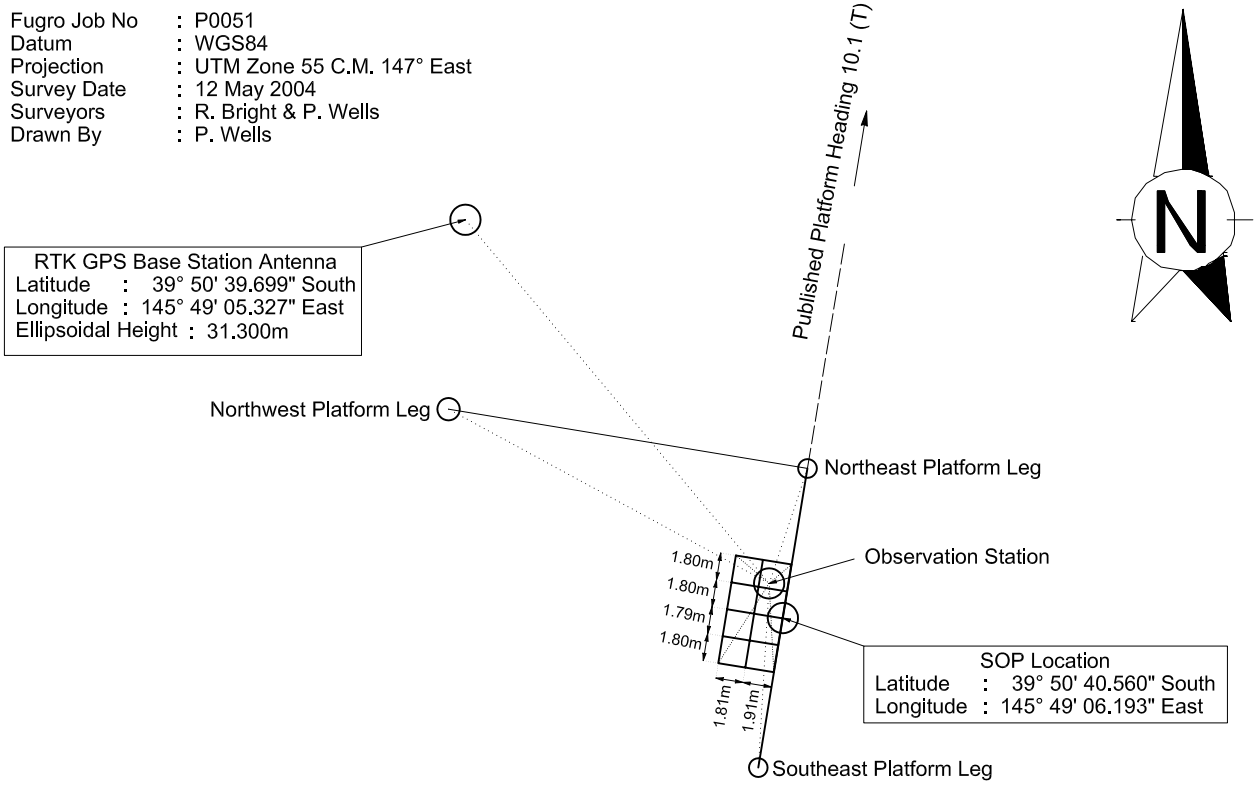
Datum: **WGS84**

Slot Hatch Centre	Latitude (South)	Longitude (East)
A	39° 50' 40.460"	145° 49' 06.097"
B	39° 50' 40.516"	145° 49' 06.083"
C	39° 50' 40.573"	145° 49' 06.070"
D	39° 50' 40.631"	145° 49' 06.056"
E	39° 50' 40.469"	145° 49' 06.173"
F	39° 50' 40.525"	145° 49' 06.152"
G	39° 50' 40.584"	145° 49' 06.146"
H	39° 50' 40.641"	145° 49' 06.133"

Yolla-A RTK GPS Base Station Installation
Platform Observations

Fugro Drawing No P0051-RTK_GPS_Base_Stn_Obs
Not to Scale

Fugro Job No : P0051
Datum : WGS84
Projection : UTM Zone 55 C.M. 147° East
Survey Date : 12 May 2004
Surveyors : R. Bright & P. Wells
Drawn By : P. Wells



Observations

Observations From: Observation Station
Reference Object: RTK GPS Antenna (phase centre)
Reference Bearing Set: 0° 00' 00"

Observation To	Observed Horizontal Angle	Observed Horizontal Distance (m)
RTK GPS Ae	00° 00' 00"	31.244
edge NE leg	53° 56' 43"	7.899
edge NE leg	58° 53' 26"	7.383
edge NE leg	62° 28' 07"	7.760
ctr NE leg	58° 22' 14"	7.993
edge SE leg	226° 05' 36"	12.057
edge SE leg	223° 10' 32"	11.555
edge SE leg	220° 39' 06"	11.881
ctr NE leg	223° 15' 00"	12.166
edge NW leg	339° 34' 58"	23.514
edge NW leg	339° 59' 06"	24.366
edge NW leg	337° 24' 33"	24.671
ctr NW leg	338° 23' 00"	24.056
SW cnr well bay slots	252° 25' 40"	6.238
NW cnr well bay slots	349° 55' 49"	2.867
NE cnr well bay slots	89° 33' 10"	1.929
SE cnr well bay slots	216° 56' 06"	5.855

Observed Height Difference:
Well Bay Deck Bench Mark to RTK GPS Antenna (phase centre) = 9.622m

Fugro Survey Pty Ltd
Hydrographic House, 4 Ledgar Road, BALCATTA WA 6021
Telephone: +61 (0) 8 9344 7166 Fax: +61 (0) 8 9344 8783

APPENDIX C
FINAL POSITION DATA

Fugro Survey Pty Ltd

FINAL POSITION FIX – REAL TIME KINEMATIC (RTK) GPS

Job Decription: Yolla A Platform Rig Move
Job Number: P0051
Thales Surveyor: R. Bright
Client: Origin Energy
Client Representative: K. O'Halloran

Sampling started: 12 Jun 2004 07:30:56
Sampling end: 12 Jun 2004 08:30:50

Ensco102

Intended datum location

Datum: GDA94 (GRS80)
Latitude: 39°50'40.672"S Longitude: 145°49'06.870"E
Projection: MGA Zone 55
Easting: 398924.43 m Northing: 5588819.27 m

Final Antenna Position (T4 Trimble):

Sample size: 720 fixes used out of a total of 720.

Antenna offset

X: 13.24m Y: 86.40m Z: 17.61m
Range: 87.41m Rel Brg from datum to antenna: 8.7°

Datum: ITRF2000 (GRS80)
Latitude: 39°50'41.609"S Longitude: 145°49'10.319"E Spheroidal Ht: 48.12m
Datum: GDA94 (GRS80)
Latitude: 39°50'41.627"S Longitude: 145°49'10.311"E Spheroidal Ht: 48.19m
Projection: MGA Zone 55
Easting: 399006.59 Northing: 5588790.89 Spheroidal Ht: 48.19m

Standard deviations

Long or E: 0.01m
Lat or N: 0.01m
Height: 0.01m
Position: 0.01m

Final Datum Position

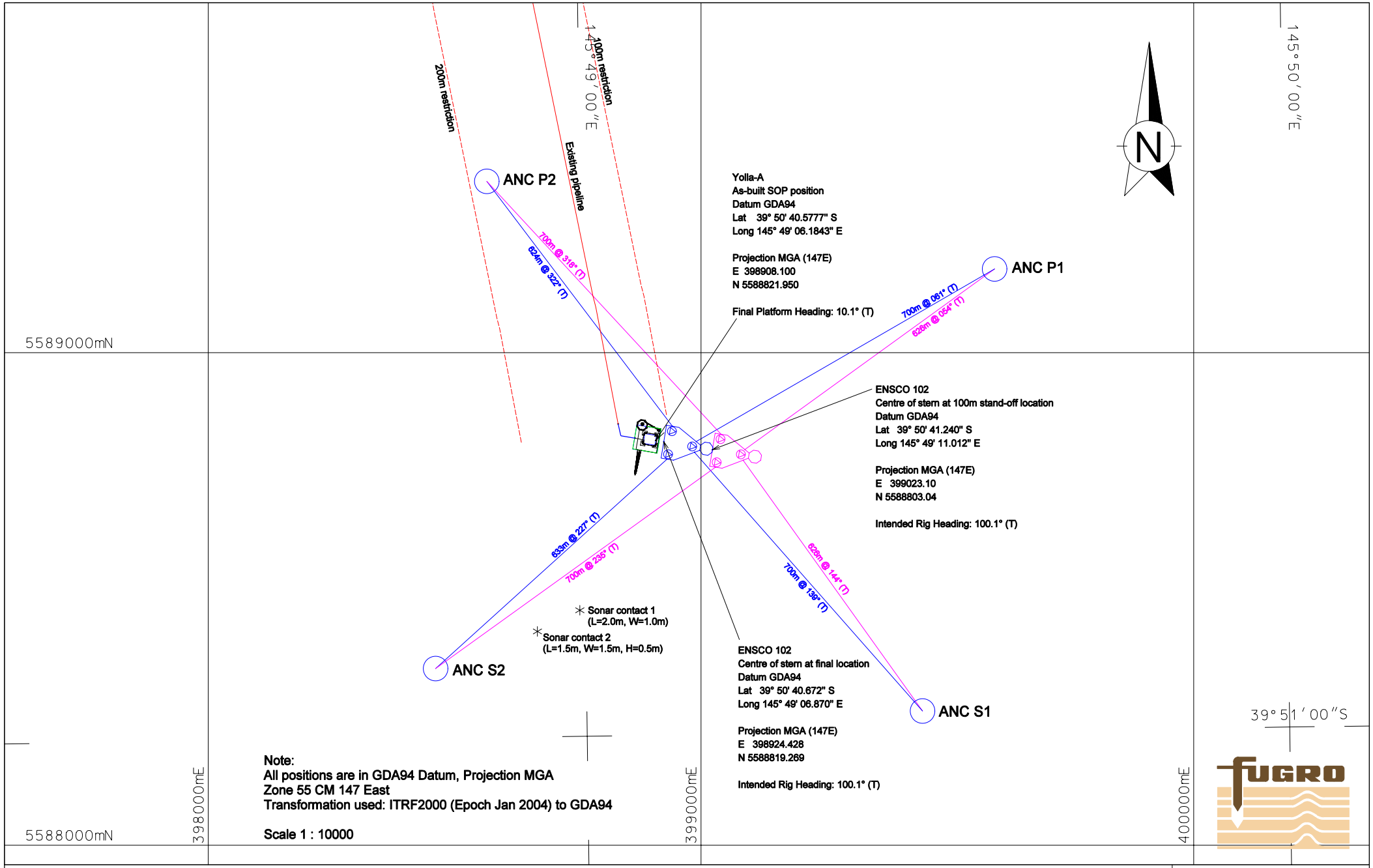
Datum: GDA94 (GRS80)
Latitude: 39°50'40.669"S Longitude: 145°49'06.849"E

Projection: MGA Zone 55
Easting: 398923.94 m Northing: 5588819.35 m

Mean corrected heading: 101.04°T
SD heading: 0.0°T
Intended heading: 100.1°T
Difference from intended: 0.9°
Gyro C-O: 90.2°
Convergence: 0.76°

Final Datum Position is 0.50m on a bearing of 279.6°T (278.8°G) from the intended location.

APPENDIX D
PROPOSED ENSCO 102 AND ANCHOR LOCATIONS



ENSCO 102 PROPOSED ANCHOR PATTERN AT YOLLA–A PLATFORM

FIGURE 2

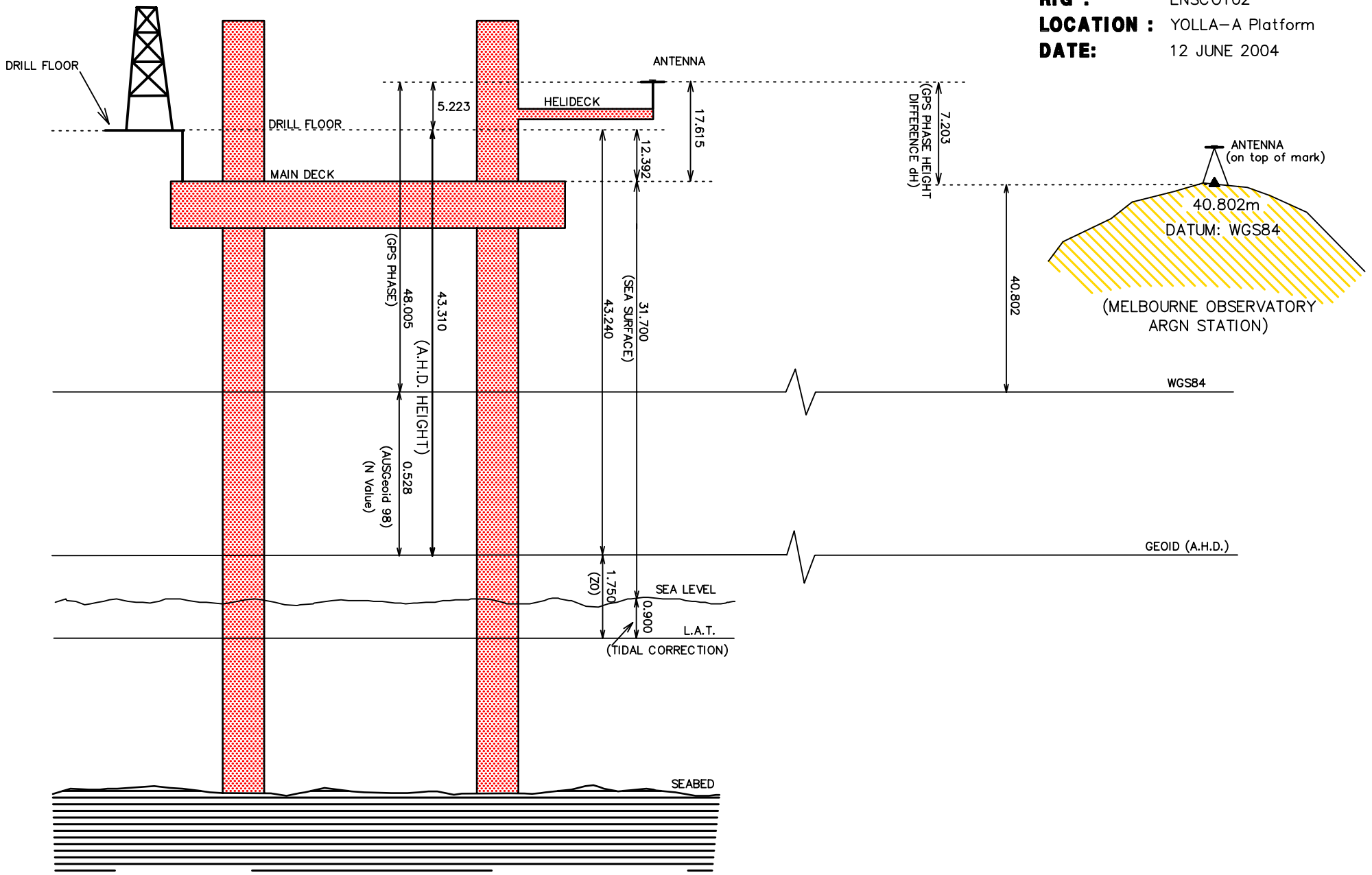
U:\P0051\dgn\figures\frame_figure-2_rev2.dgn

APPENDIX E

ENSCO 102 ROTARY TABLE HEIGHT DIAGRAM AT YOLLA PLATFORM

HEIGHTING OF DRILL FLOOR USING GPS PHASE CARRIER OBSERVATIONS

RIG : ENSC0102
LOCATION : YOLLA–A Platform
DATE: 12 JUNE 2004



Metres : Not to Scale

APPENDIX F
DGPS AND GYRO CHECKS

CHECK FIX AT WEST WHIPTAIL-1 LOCATION

Job Decription: Yolla A Platform Rig Move
Job Number: P0051
Thales Surveyor: R. Bright
Client: Origin Energy Ltd
Client Representative: K.O'Halloran

Sampling started: 25 May 2004 18:35:38
Sampling end: 25 May 2004 18:45:36

Ensco102

Intended datum location

Datum: GDA94 (GRS80)
Latitude: 38°19'29.150"S Longitude: 147°30'17.167"E
Projection: MGA Zone 55
Easting: 544121.32 m Northing: 5758030.22 m

Final Antenna Position (T1 Fugro UKOOA):

Sample size: 120 fixes used out of a total of 120.

Antenna offset

X: -3.33m Y: 118.99m Z: 0.00m
Range: 119.04m Rel Brg from datum to antenna: 358.4°

Datum: ITRF2000 (GRS80)
Latitude: 38°19'31.483"S Longitude: 147°30'21.073"E Spheroidal Ht: 48.83m
Datum: GDA94 (GRS80)
Latitude: 38°19'31.483"S Longitude: 147°30'21.073"E Spheroidal Ht: 48.83m
Projection: MGA Zone 55
Easting: 544215.77 Northing: 5757957.79 Spheroidal Ht: 48.83m

Standard deviations

Long or E: 0.02m
Lat or N: 0.03m
Height: 0.07m
Position: 0.04m

Final Datum Position

Datum: GDA94 (GRS80)
Latitude: 38°19'29.138"S Longitude: 147°30'17.178"E

Projection: MGA Zone 55
Easting: 544121.60 m Northing: 5758030.60 m

Mean corrected heading: 129.00°T
SD heading: 0.0°T
Intended heading: 129.0°T
Difference from intended: 0.0°
Gyro C-O: 89.5°
Convergence: -0.31°

Final Datum Position is 0.47m on a bearing of 35.5°T (35.9°G) from the intended location.

FUGRO SURVEY PTY LTD
Hydrographic House
4 Ledgar Road
Balcatta 6021
Western Australia

Solar Observation for Azimuth (Hour Angle) 2004

Fugro TGS Job Number: P0051
Job Description: Ensco 102 Rig Move to Yolla A Platform
Client: Origin Energy Ltd
Party Chief: R. Bright
Surveyor: R. Bright
Rig Name: Ensco 102
Date: 6 June 2004

Control Point Co-ordinates

Datum: GDA94 Projection: MGA Zone 55 CM 147° East

Latitude (DMS):	-038	49	37
Longitude (DMS):	145	51	22
UTC Correction (HMS):	10.00		

Total Station Observations:

Face	Local Time (HMS)			Observed Direction to R.O. (DMS)			Observed Direction to Sun (DMS)			Observed (O) True Heading (D.D)
Left	16	45	39	000	00	00	243	00	24	328.30
Right	16	45	39	180	00	00	063	00	24	
Left	16	46	04	000	00	00	243	09	25	328.00
Right	16	46	04	180	00	00	063	09	25	
Left	16	46	44	000	00	00	244	15	43	326.80
Right	16	46	44	180	00	00	064	15	43	
Left	16	46	57	000	00	00	244	26	54	326.50
Right	16	46	57	180	00	00	064	26	54	
Left	16	47	18	000	00	00	245	15	38	325.70
Right	16	47	18	180	00	00	065	15	38	
Left	16	47	31	000	00	00	245	56	57	325.00
Right	16	47	31	180	00	00	065	56	57	
Left	16	47	47	000	00	00	246	59	13	323.80
Right	16	47	47	180	00	00	066	59	13	
Left	16	48	05	000	00	00	247	43	06	323.00
Right	16	48	05	180	00	00	067	43	06	
Left	16	48	19	000	00	00	247	55	21	322.80
Right	16	48	19	180	00	00	067	55	21	
Left	16	48	32	000	00	00	247	51	50	322.80
Right	16	48	32	180	00	00	067	51	50	
Left	16	48	47	000	00	00	247	37	50	323.20
Right	16	48	47	180	00	00	067	37	50	
Left										
Right										

Signature

SURVEYOR/PARTY CHIEF

CLIENT SURVEY REPRESENTATIVE

FUGRO SURVEY PTY LTD
Hydrographic House
4 Ledgar Road
Balcatta 6021
Western Australia

Solar Observation for Azimuth (Hour Angle) 2004

Fugro TGS Job Number: P0051
Job Description: Ensco 102 Rig Move to Yolla A Platform
Client: Origin Energy Ltd
Party Chief: R. Bright
Surveyor: R. Bright
Rig Name: Ensco 102
Date: 6 June 2004

Datum: GDA94 Projection: MGA Zone 55 CM 147° East

Average Local Time (HMS)			Average Horizontal Angle (DMS)			Azimuth Sun (DMS)			Azimuth RO (DMS)			Calculated (C) True Heading (D.D)	Observed (O) True Heading (D.D)	C-O (D.D)
16	45	39.0	243	00	24	301	24	54	058	24	30	58.41	328.30	90.11
16	46	04.0	243	09	25	301	20	55	058	11	30	58.19	328.00	90.19
16	46	44.0	244	15	43	301	14	31	056	58	48	56.98	326.80	90.18
16	46	57.0	244	26	54	301	12	27	056	45	33	56.76	326.50	90.26
16	47	18.0	245	15	38	301	09	06	055	53	28	55.89	325.70	90.19
16	47	31.0	245	56	57	301	07	02	055	10	05	55.17	325.00	90.17
16	47	47.0	246	59	13	301	04	29	054	05	16	54.09	323.80	90.29
16	48	05.0	247	43	06	301	01	37	053	18	31	53.31	323.00	90.31
16	48	19.0	247	55	21	300	59	23	053	04	02	53.07	322.80	90.27
16	48	32.0	247	51	50	300	57	19	053	05	29	53.09	322.80	90.29
16	48	47.0	247	37	50	300	54	56	053	17	06	53.28	323.20	90.08

Mean C-O **90.21**

Signature

SURVEYOR/PARTY CHIEF

CLIENT SURVEY REPRESENTATIVE

APPENDIX 13: PALYNOLOGICAL BASIC DATA

YOLLA-4

BASS BASIN, AUSTRALIA

PALYNOLOGY REPORT - BASIC DATA

BY

ROGER MORGAN

Prepared for

ORIGIN ENERGY **October 2004**

REF:BAS.YOLLA-4 BASIC REPORT

YOLLA-4

PALYNOLOGY REPORT - BASIC DATA

INTRODUCTION

Palynological preparations from 15 cuttings samples were examined. Organic yields were high with palynomorph content low. Palynomorph preservation was excellent to good throughout. These details are listed on basic data version of Table 1. Quantitative distribution of all taxa are given on the accompanying range chart.

TABLE 1

SUMMARY OF PALYNOLOGICAL DATA : YOLLA-4

LOG DEPTH (m)	SAMPLE TYPE	MICROFOSSIL YIELD	PERCENTAGE				DIVERSITY *1	
			MICROPLANKTON			SPORE-POLLEN-	MICROPLANKTON	SPORE-POLLEN
			DINOFLAG	SPINY AC.	FRESH ALGAE		-	
1340	CUTTS	LOW	68	5	2	25	MOD	MOD
1405	CUTTS	LOW	44	3	1	52	MOD	MOD
1530	CUTTS	LOW	6	0	1	93	LOW	MOD
1746	CUTTS	LOW	3	0	1	96	EX LOW	HIGH
1884	CUTTS	LOW	2	0	8	90	EX LOW	HIGH
1902	CUTTS	LOW	6	1	7	86	EX LOW	HIGH
2313	CUTTS	LOW	0	0	34	66	NIL	HIGH
2331	CUTTS	LOW	2	1	28	69	EX LOW	HIGH
2370	CUTTS	LOW	12	2	15	71	LOW	MOD
2574	CUTTS	LOW	16	1	2	81	LOW	V. HIGH
2586	CUTTS	LOW	11	1	1	87	LOW	HIGH
2625	CUTTS	LOW	14	0	0	86	LOW	HIGH
2859	CUTTS	LOW	23	0	0	77	EX LOW	HIGH
2925	CUTTS	LOW	13	0	2	85	LOW	HIGH
3168	CUTTS	LOW	<1	0	0	100	EX LOW	HIGH

*1 DIVERSITY	
V HIGH	30+ SPECIES
HIGH	20-29 SPECIES
MOD	10-19 SPECIES
LOW	5-9 SPECIES
EX LOW	1-4 SPECIES

Well Name : YOLLA-4

Operator : ORIGIN

Interval : 1320m - 3188m **Palynological Data Chart : BASIC DATA**

Scale : 1:10000 **% Abundance histogram : Highest occurrence**

Chart date: 21 October 2004 **Roger Morgan**

YOLLA-4

Morgan Palaeo Associates
Maitland, South Australia

Enclosure 1

Sampling
Cutting
Core
Sidewall core

Text Keys
*1 % within discipline (40mm=100%)
*2 In-Situ occurrences

Depth | **Samples** (Samples in Discipline(s) : Paly)

Dinoflagellate Cysts — % within discipline (40mm=100%) / In-Situ occurrences (*2 *1)

Apteodinium australiense
Compositosphaeridium sp.
Hystrichokolpoma rigaudiae
Hystrichokolpoma sp.
Hystrichosphaeridium tubiferum
Impletosphaeridium sp. 1
Lingulodinium machaerophorum
Operculodinium spp.
Paralecaniella indentata
Spiniferites ramosus
Systematophora placacantha
Thalassiphora delicata
Cordosphaeridium inodes
Cordosphaeridium multispinosum
Dapsilidinium pastielsii
Hystrichokolpoma eisenackii
Impagidinium sp.
Nematosphaeropsis balcombiana
Areosphaeridium arcuatum
Deflandrea phosphoritica
Spiniferites spp.
Morkallacysta spp.
Millioudodinium tenuitabulatum
Saeptodinium spp.
Homotrybium tasmaniense
Adnatosphaeridium spp.
Apectodinium quinquelatum
Cordosphaeridium fibrospinosum
Muratodinium fimbriatum
Apectodinium homomorphum
Glaphyrocysta sp.
Apectodinium hyperacanthum
Apectodinium homomorphum (short spines)

AC — *Micrhystridium* spp.

FT — *Microforams* .

AL — *Crassosphaera concinna*

ALBO — *Botryococcus* spp.

MP — *Reworking - Triassic*

Spores And Pollen — % within discipline (40mm=100%) / In-Situ occurrences (*1 *2)

Acaciapollenites myriosporites
Cyathidites australis
Cyathidites minor
Dilwynites tuberculatus
Falcisporites similis
Haloragacidites harrisii
Lygistepollenites florinii
Microcachryidites antarcticus
Nothofagidites emarcidus
Nothofagidites falcatus
Nothofagidites flemingii
Osmundacidites wellmanii
Phyllocladidites mawsonii
Tricolpites sp.
Nothofagidites asperus
Nothofagidites deminutus
Proteacidites spp.
Vitreisporites pallidus
Aglaoreidia qualumis
Araucariacites australis
Ceratosporites equalis
Dilwynites granulatus
Kuylisporites waterbolkii
Periporopollenites vesicus
Proteacidites rectomarginis
Cycadopites follicularis
Dictyophyllidites spp.
Ericipites scabratus
Gleicheniidites spp.
Laevigatosporites ovatus
Malvacipollis subtilis
Podosporites microsaccatus
Triletes tuberculiformis
Verrucosisporites kopukuensis
Callialasporites dampieri
Corollina torosa
Ephedripites spp.
Proteacidites incurvatus
Proteacidites pachypolus
Retitriletes austroclavatidites
Steriesporites punctatus
Verrucosisporites spp.
Clavifera triplex
Proteacidites grandis
Proteacidites leightonii
Stereisporites antiquasporites
Cyathidites splendens
Myrtaceidites tenuis
Polycolporopollenites esobalteus
Proteacidites ornatus
Tetracolporites sp.
Tricolporites "estoutus"
Triporopollenites ambiguus
Cyathidites gigantis
Intratriporopollenites notabilis
Proteacidites tuberculiformis
Beaupreaidites verrucosus
Tricolporites spp.
Callialasporites turbatus
Peninsulapollis gillii
Pennotriletes elatoides
Cupaniedites orthoteichus
Proteacidites clineri ms
Leptolepidites verrucatus
Falcisporites grandis
Polycolpites langstonii
Lygistepollenites balmei
Nothofagidites endurus

FU — *Fungae* .

Samples (Samples in Discipline(s) : Paly)

Total Count — In-Situ occurrences — Total count: Total Count

% Category — In-Situ occurrences — Category %: % Category

FU
MP
AC
AL
FT
ALBO
DC
SP

Depth	Samples	Total Count	% Category
1400m	1340.00m CU	100	
	1405.00m CU	100	
	1530.00m CU	100	
1600m			
	1746.00m CU	100	
1800m			
	1884.00m CU	100	
	1902.00m CU	100	
2000m			
2200m			
	2313.00m CU	100	
	2331.00m CU	100	
2400m	2370.00m CU	100	
	2574.00m CU	99	
2600m	2586.00m CU	100	
	2625.00m CU	100	
2800m	2859.00m CU	100	
	2925.00m CU	100	
3000m			
	3168.00m CU	100	

APPENDIX 14: CASING & CEMENTING REPORTS

OPS-QR-029 (Rev A) Ref: OPS-P-4.5.2.2

DRIVING LOG

Driven For: ORIGIN ENERGY Job No: 021053 Size Pile: 20"x 1"

Rig: ENSCO 102 Location: YOLLA 'A' 4A/4 H/D: 46 Serial No:

Work Started: 14:40 12-06-04 Work Completed: 00:15 16-06-04

Total Running Time for Hammer: Hrs: 2 Mins: 10 Total Welding Time: Hrs: Mins:

Water Depth: 81 mRKB R.K.B. To S/Bed: 124 metres Log Taken By: Steve Thomas / Freddy Wahau

Remarks: Drove conductor to 220 metres Total pipe with 96 metres of penetration @ 57 blows for final 25cm 230 blows for final metre, @ 83% Energy = 120603 Nm per blow.

Total Pipe	Mud Penet M	Mud Penet Ft	Blows/ Foot	KNM Energy
		1		
		2		
		3		
125	1	4		
		5		
		6		
		7		
126	2	8		
		9		
		10		
		11		
127	3	12		
		13		
		14	↓	
		15		
128	4	16		
		17		
		18		
		19		
129	5	20		
		21		
		22		
		23		
130	6	24		
		25		
		26		
		27		
131	7	28		
		29		
		30		
		31		
132	8	32		
		33		
		34		
		35		
133	9	36		
		37		
		38		
		39		
134	10	40		
		41		
		42		
		43		
135	11	44		
		45		
		46		
		47		
136	12	48		
		49		
		50	↓	
		51		
		52		
137	13	53		
		54		
		55		
		56	↓	
138	14	57		
		58		
		59		
		60		
139	15	61		
		62		
		63		
		64		
140	16	65		
		66		
		67		
		68		
141	17	69		
		70		
		71		
		72		
142	18	73		
		74		
		75		
		76		
143	19	77		
		78		
		79		
		80		
144	20	81		
		82		
		83		
		84		
145	21	85		
		86		
		87		
		88		
146	22	89		
		90		
		91		
		92		
147	23	93		
		94		
		95		
		96		
148	24	97		
		98		
		99		
		100	↓	
149	25	101		
		102		
		103		
		104	↓	
150	26	105	2	0
		106		
		107		
		108		
151	27	109		
		110		
		111		
		112		
152	28	113		
		114		
		115		
		116		
153	29	117		
		118		
		119		
		120		
154	30	121		
		122		
		123		
		124		
155	31	125		
		126		
		127		
		128		
156	32	129		
		130		
		131		
		132		
157	33	133		
		134		
		135		
		136		
158	34	137		
		138		
		139		
		140		
159	35	141		
		142		
		143		
		144		
160	36	145		
		146		
		147		
		148		
160	37	149		
		150	↓	
		151		
		152		
162	38	153		
		154		
		155		
		156		
163	39	157		
		158		
		159		
		160	↓	
164	40	161	3	1
		162	2	
		163		
		164		
165	41	165		
		166		
		167		
		168		
166	42	169	↓	
		170	2	
		171	2	
		172	2	1
167	43	173	3	
		174	2	
		175	2	
		176	3	1
168	44	177	3	
		178	3	
		179	3	
		180	4	1
169	45	181	4	
		182	7	
		183	7	
		184	6	1
170	46	185	6	
		186	6	
		187	6	
		188	6	1
171	47	189	6	
		190	6	
		191	6	
		192	5	1
172	48	193	5	
		194	6	
		195	5	
		196	5	1
173	49	197	5	
		198	5	
		199	5	
		200	5	1
174	50			

1st Weld _____ to _____ 4th Weld _____ to _____

2nd Weld _____ to _____ 5th Weld _____ to _____

3rd Weld _____ to _____ 6th Weld _____ to _____

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~~1=49%~~ 2=66% 3=83%

D46 Hammer Settings: Position 1 = 49% = 70850 Nm

2 = 66% = 95901 Nm

3 = 83% = 120,603 Nm

OPS-QR-029 (Rev A) Ref: OPS-P-4.5.2.2

Well - YOLLA 'A' 4

DRIVING LOG CONTINUATION SHEET

Job No: 021053

Total Pipe	Mud Penet M	Mud Penet Ft	Blows/ Foot	KNM Energy
		201	5	
		202	5	
		203	5	
175	51	204	5	1
		205	5	
		206	5	
		207	5	
176	52	208	5	1
		209	5	
		210	5	
		211	5	
177	53	212	5	1
		213	5	
		214	5	
		215	5	
178	54	216	5	1
		217	5	
		218	5	
		219	5	
179	55	220	10	2
		221	10	
		222	10	
		223	9	
180	56	224	11	2
		225	14	
		226	16	
		227	15	
181	57	228	12	2
		229	13	
		230	14	
		231	12	
182	58	232	12	2
		233	13	
		234	10	
		235	11	
183	59	236	11	2
		237	12	
		238	12	
		239	14	
184	60	240	11	2
		241	12	
		242	11	
		243	11	
185	61	244	12	2
		245	11	
		246	11	
		247	12	
186	62	248	11	2
		249	12	
		250	11	
		251	10	
187	63	252	11	2
		253	10	
		254	10	
		255	9	
188	64	256	10	2
		257	10	
		258	9	
		259	8	
189	65	260	10	2
		261	8	
		262	8	
		263	8	
190	66	264	8	2
		265	9	
		266	9	
		267	10	
191	67	268	9	2
		269	10	
		270	10	
		271	11	
192	68	272	15	2
		273	19	
		274	17	
		275	20	
193	69	276	19	2
		277	17	
		278	17	
		279	18	
194	70	280	19	2
		281	20	
		282	20	
		283	21	
195	71	284	19	3
		285	18	
		286	17	
		287	18	
196	72	288	18	3
		289	18	
		290	17	
		291	17	
197	73	292	17	3
		293	17	
		294	18	
		295	17	
198	74	296	17	3
		297	17	
		298	18	
		299	19	
199	75	300	17	3
		301	16	
		302	16	
		303	18	3
200	76	304	17	
		305	17	
		306	18	
		307	18	
201	77	308	18	3
		309	17	
		310	18	
		311	17	
202	78	312	18	3
		313	18	
		314	17	
		315	16	
203	79	316	18	3
		317	18	
		318	17	
		319	16	
204	80	320	15	3
		321	17	
		322	16	
		323	17	
205	81	324	20	3
		325	21	
		326	20	
		327	20	
206	82	328	24	3
		329	24	
		330	24	
		331	24	
207	83	332	24	3
		333	23	
		334	20	
		335	20	
208	84	336	22	3
		337	20	
		338	21	
		339	21	
209	85	340	21	3
		341	22	
		342	21	
		343	19	
210	86	344	19	3
		345	20	
		346	20	
		347	19	
211	87	348	20	3
		349	20	
		350	19	
		351	19	
212	88	352	21	3
		353	21	
		354	20	
		355	20	
213	89	356	21	3
		357	23	
		358	24	
		359	24	
214	90	360	25	3
		361	25	
		362	25	
		363	26	
215	91	364	27	3
		365	30	
		366	30	
		367	30	
216	92	368	30	3
		369	29	
		370	30	
		371	30	
217	93	372	31	3
		373	33	
		374	85	
		375	90	
218	94	376	84	3
		377	72	
		378	72	
		379	67	
219	95	380	62	3
		381	62	
		382	54	
		383	57	
220	96	384	57	3
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20" Conductor Running List Yolla 4 REVISION 1

Pipe Data	
Size (In)	20
Grade	Grade B / X56
Weight (lb/ft)	203
Coupling	RL4S / E60MT
M/up torque (kftlbs)	25
OD (in)	20
ID (in)	18
Capacity (bbl/m)	1.033
M/up loss (m)	0.145
Total number of joints	37.000
Joints Left on Deck	19.00

Well data	
Well Name	Yolla 4
Date running commenced	12/01/2004
Stickup above RKB (m)	10.02
Bottom of hang off padeye (mRKB)	28.68
Top of guide funnel (mRKB)	28.88
Water Depth (mMSL)	81.00

Rig Data	
Name	Ensco 102
D.F.E (mMSL)	43.88
Personnel	Flink / Holgate
Block Weight (Klbs)	80

Platform Data	
Platform Name	Yolla
Top weather deck elevation (mMSL)	22.75
Top mezzanine deck elevation (mMSL)	16.63
Top cellar deck elevation (mMSL)	15.17

Tally

Joint	Gross Length (m)	Net Length (m)	Total Length (m)	Top when landed (mAHD)	Bottom when landed (mAHD)	Comment
Drive Shoe Yolla 4	12.277	12.277	12.28	208.00	220.27	Shoe x E60MT Box (flush), 2 x 6 tonne pad eyes for handling (cut off prior to RIH).
Pin - Pin Yolla 4	12.678	12.478	24.76	195.52	208.00	E60MT pin x RL4S pin
Joint 1	12.243	12.098	36.85	183.42	195.52	RL4S box x pin
Joint 2	13.777	13.632	50.49	169.79	183.42	RL4S box x pin
Joint 3	13.769	13.624	64.11	156.16	169.79	RL4S box x pin
Joint 4	13.765	13.620	77.73	142.54	156.16	RL4S box x pin
Joint 5	13.770	13.625	91.35	128.92	142.54	RL4S box x pin
Joint 6	12.242	12.097	103.45	116.82	128.92	RL4S box x pin
Joint 7	12.234	12.089	115.54	104.73	116.82	RL4S box x pin
Joint 8	12.231	12.086	127.63	92.65	104.73	RL4S box x pin
Joint 9	12.242	12.097	139.72	80.55	92.65	RL4S box x pin
Joint 10	12.231	12.086	151.81	68.46	80.55	RL4S box x pin
Epoxy Joint 1 Yolla 4	13.780	13.635	165.44	54.83	68.46	RL4S box x pin, epoxy coated, shoe penetrates seabed on this joint.
Epoxy Joint 2 Yolla 4	13.780	13.635	179.08	41.19	54.83	RL4S box x pin, epoxy coated.
Wellhead Joint Yolla 4	13.780	13.635	192.71	27.56	41.19	RL4S box x pin, Epoxy coated, 2 x threaded outlets, 8 x 25 tonne pad eyes.
Joint 11	13.827	13.412	206.13	14.15	27.56	RL4S box x pin
Joint 12	12.231	12.086	218.21	2.06	14.15	RL4S box x pin
Joint 13	12.226	12.081	230.29	-10.02	2.06	RL4S box x pin, approximate stickup to drive sub connection.

Notes:

When driving ensure the slings are attached to the elevators to prevent it free falling.
Activate all anti rotation tabs, if any anti rotation tab fails then spot weld the connection.
Stickup height is approximate, drive conductor until hang off pad eyes are approximately 2" above top of guide funnel (roughly level with cellar deck grating).
Landing string will form 'shoetrack' for next conductor driving operation.
ROV to observe shoe enter bell guides.
When handling the epoxy joints, use the gold coloured bored out elevators.
Threaded outlets on epoxy joint 3 allow returns directly to sea during 16" section drilling, bullplugs to be fitted once surface casing installed.
Coat all exposed metal surfaces (boxes) on the epoxy joints with epoxy to prevent localised corrosion.
Pad eyes on epoxy joint 3 allow weight of conductor to be suspended on slings, slings to be removed once surface casing cemented in place.

Joints Left on Deck

Joint	Gross Length (m)	Net Length (m)	Comment
Drive shoe Yolla 3	11.74	11.74	
Pin - Pin Yolla 3			
Landing joint 1 Yolla 4	13.410	13.410	
Landing joint 2 Yolla 4	11.430	11.140	
Joint 14	12.233	12.088	
Joint 15	12.224	12.079	
Joint 16	12.91	12.765	
Joint 17	12.24	12.095	
Joint 18	12.244	12.099	
Joint A	12.22	12.075	
Joint B	12.24	12.095	
Joint C	12.24	12.095	
Joint D	12.25	12.096	
Joint E	12.24	12.095	
Epoxy joint 1 Yolla 3	13.78	13.635	
Epoxy joint 2 Yolla 3	13.78	13.635	
Wellhead Joint Yolla 4	13.780	13.635	
Epoxy joint spare	13.780	13.635	
Wellhead joint spare	13.780	13.635	

Yolla 4 13 3/8" Casing Running list

Size	13 3/8"	13 3/8"
Grade	K55	Q125
Weight (lbs/ft)	54.5	72
Coupling	BTC	Vam top
OD (in)	13.375	13.375
ID (in)	12.643	12.382
Drift (in)	12.459" x 42"	12.25" x 42"
Capacity (bbl/ft)	0.1553	0.1489
OE Displ.(bbl/ft)	0.000	0.000
Tensile stgth (klbs).	1,038	2,599
Burst press(psi)	2,730	8,410
Collapse press (psi)	1,130	2,880
M/U Loss (m)	0.132	0.145
M/U torque(Min) ftlbs	8,950	20,850
M/U torque(Opt) ftlbs	**12,000**	**23,150**
M/U torque(Max) ftlbs	15,000	25,450

Rig:	ENSCO 102
Date:	20/06/2004
Datum:	Top of Wellhead Housing = 27.460
D.F.E (MSL):	43.88
Seabed:	124.00
H.O.P:	27.668
HOP = Taken from cameron drawing	
Hole Depth:	900.00
Shoe:	884.57
Landing string	Casing
OE Displ.	0.000
Landing String Weight (lbs/ft)	54.00
Block Weight (klbs)	80
Mud Weight in Well (SG)	1.05
Planned TOC	785 mAH (Tail) 310 mAH (Lead) 170 mAH (2nd Stage)
Pressure test (psi)	1500
All Depths in m - AH	

Joint	Actual Length	Running Length	Shoe Depth During RIH	Btm. of Jt. Depth when landed	Cntr	Cum. Disp. (bbl)	MD Weight (klbs)	Remarks
Shoe A	12.60	12.60	12.60	884.57	2	0.00	81.95	x1 S'bow 1m from each end of joint
Bakerlock A	12.20	12.07	24.67	871.97	1	0.00	83.84	x 1 S'bow in middle of joint
Float Collar A	12.64	12.51	37.18	859.90	1	0.00	85.80	x 1 S'bow in middle of joint
108	12.01	11.88	49.06	847.39	1	0.00	87.66	x 1 S'bow in middle of joint
109	12.19	12.06	61.12	835.51		0.00	89.55	
110	12.18	12.05	73.17	823.45		0.00	91.44	
111	11.79	11.66	84.83	811.40		0.00	93.27	
112	12.19	12.06	96.89	799.74		0.00	95.16	
113	11.85	11.72	108.61	787.68		0.00	97.00	
114	11.99	11.86	120.47	775.96		0.00	98.86	
115	12.10	11.97	132.44	764.10		0.00	100.73	
116	12.19	12.06	144.50	752.13		0.00	102.62	
117	12.18	12.05	156.55	740.07		0.00	104.51	
118	12.03	11.90	168.45	728.02		0.00	106.37	
119	12.18	12.05	180.50	716.12		0.00	108.26	
120	12.18	12.05	192.55	704.07		0.00	110.15	
121	12.19	12.06	204.61	692.02		0.00	112.04	
122	12.18	12.05	216.66	679.96		0.00	113.93	R/up 350 ton handling equipment
123	12.17	12.04	228.70	667.91		0.00	115.82	Shoe enters open hole
124	11.76	11.63	240.33	655.87		0.00	117.64	
125	12.19	12.06	252.39	644.24		0.00	119.53	
126	12.16	12.03	264.42	632.18		0.00	121.41	
127	12.18	12.05	276.47	620.15		0.00	123.30	
128	12.05	11.92	288.39	608.10		0.00	125.17	
129	12.19	12.06	300.45	596.18		0.00	127.06	
130	12.18	12.05	312.50	584.12		0.00	128.95	
131	12.18	12.05	324.55	572.07		0.00	130.84	
132	12.18	12.05	336.60	560.02		0.00	132.73	
133	12.18	12.05	348.65	547.97		0.00	134.62	
134	11.92	11.79	360.44	535.92		0.00	136.47	
135	12.09	11.96	372.40	524.13		0.00	138.34	
136	12.19	12.06	384.46	512.17		0.00	140.23	
137	12.18	12.05	396.51	500.11		0.00	142.12	
138	12.17	12.04	408.55	488.06		0.00	144.01	
139	12.17	12.04	420.59	476.02		0.00	145.90	
140	12.18	12.05	432.64	463.98		0.00	147.79	
141	12.19	12.06	444.70	451.93		0.00	149.68	
142	12.19	12.06	456.76	439.87		0.00	151.57	
143	12.18	12.05	468.81	427.81		0.00	153.46	
144	12.19	12.06	480.87	415.76		0.00	155.35	
145	12.19	12.06	492.93	403.70		0.00	157.24	
146	12.19	12.06	504.99	391.64		0.00	159.13	
147	12.19	12.06	517.05	379.58		0.00	161.02	
148	12.18	12.05	529.10	367.52		0.00	162.91	
149	12.19	12.06	541.16	355.47		0.00	164.80	
150	12.18	12.05	553.21	343.41		0.00	166.69	
151	12.18	12.05	565.26	331.36	1	0.00	168.58	x 1 S'bow in middle of joint
152	12.04	11.91	577.17	319.31	2	0.00	170.44	x1 Bskt 1m from each end of joint
Stage Collar A	13.00	12.87	590.04	307.40		0.00	172.45	Check ! 27 x 54.5# joints left on deck
XO 1	7.57	7.44	597.48	294.53		0.00	173.62	
201	11.91	11.77	609.25	287.09		0.00	176.06	
202	11.86	11.72	620.97	275.32	1	0.00	178.49	x 1 S'bow in middle of joint
203	12.05	11.91	632.88	263.60		0.00	180.96	
204	11.76	11.62	644.50	251.69	1	0.00	183.37	x 1 S'bow in middle of joint
205	11.45	11.31	655.81	240.07		0.00	185.71	
206	11.78	11.64	667.45	228.76	2	0.00	188.12	x1 S'bow 3m from each end of joint
209	11.26	11.12	678.57	217.12	2	0.00	190.42	x1 Rigid 3m from each end of joint
210	11.72	11.58	690.15	206.00		0.00	192.82	
211	12.14	12.00	702.15	194.42	1	0.00	195.30	x 1 Rigid in middle of joint
XO 2	7.56	7.43	709.58	182.42		0.00	196.47	Check ! 6 x 72# joints left on deck
153	12.16	12.03	721.61	174.99		0.00	198.35	
154	12.19	12.06	733.67	162.96	1	0.00	200.24	x 1 Rigid in middle of joint
155	12.18	12.05	745.72	150.90		0.00	202.13	
156	12.19	12.06	757.78	138.85	1	0.00	204.02	x 1 Rigid in middle of joint
157	12.18	12.05	769.83	126.79		0.00	205.91	
158	12.19	12.06	781.89	114.74	1	0.00	207.80	x 1 Rigid in middle of joint
159	12.18	12.05	793.94	102.68		0.00	209.69	
160	12.17	12.04	805.98	90.63	1	0.00	211.58	x 1 Rigid in middle of joint
161	12.19	12.06	818.04	78.59	1	0.00	213.47	x 1 Rigid in middle of joint
162	12.18	12.05	830.09	66.53	1	0.00	215.36	x 1 Rigid in middle of joint
163	12.19	12.06	842.15	54.48	1	0.00	217.25	x 1 Rigid in middle of joint
164	12.01	11.88	854.03	42.42	1	0.00	219.11	x 1 Rigid in middle of joint
Wellhead A	3.00	2.87	856.90	30.54		0.00	219.57	Check ! 29 joints left on deck
			HOP	**27.67**				
Run Tool	3.98	3.98	860.88	27.67			220.18	
165	12.14	12.01	872.89	23.69			222.04	
166	12.19	12.06	884.95	11.68			223.91	
167	12.18	12.05	897.00	-0.38			225.78	
Cement Head	2.00	2.00	899.00	-12.43			226.09	Check ! 26 joints left on deck
				-14.43		**Top of Cement Head**		

9 5/8" CASING RUNNING LIST

RIG	Ensco 102
WELL	Yolla-4

Australian Drilling Associates Pty Ltd ADA

Casing Details

Casing Size (in)	Weight (lb/ft)	Grade	Connection	ID (in)	Make-up (Opt) (Klbs-ft)
9 5/8	43.5	L80	Vam Top	8.755	13000
10 3/4	51	L80	Vam Top	9.85	15900

Date	2/07/2004
Mud Weight (ppg)	9.5
Hook/Block Weight (Klbs)	90

Shoe Depth (m)	**2586.14**

Casing Tally

Joint Number/ Description	Joint Length (m)	Run Order	Cumulative Length (m)	Final Depth (m)	Connection	Weight on Hook (lbs)	Remarks
Shoe A	12.42	1	12.420	2586.14	BTC pin x VT box	90462	2 spring centralisers between stop collars (1m above shoe, 1m below top of joint)
Inter A	11.86	2	24.280	2573.72	VT pin x BTC box	90903	1 spring centraliser between stop collars (mid joint)
Collar A	12.38	3	36.660	2561.86	BTC pin x VT box	91363	1 spring centraliser between stop collars (mid joint)
114	12.05	4	48.708	2549.48	VT	91811	
113	12.05	5	60.756	2537.43	VT	92259	
112	12.05	6	72.804	2525.38	VT	92707	
111	12.05	7	84.852	2513.33	VT	93155	
110	12.05	8	96.900	2501.28	VT	93603	
109	12.05	9	108.948	2489.24	VT	94051	
108	11.90	10	120.846	2477.19	VT	94493	
107	12.05	11	132.894	2465.29	VT	94941	
106	12.05	12	144.942	2453.24	VT	95389	
105	12.06	13	157.000	2441.19	VT	95838	
104	11.91	14	168.908	2429.14	VT	96280	
103	11.91	15	180.816	2417.23	VT	96723	
102	12.05	16	192.864	2405.32	VT	97171	
101	12.05	17	204.912	2393.27	VT	97619	
100	11.93	18	216.840	2381.22	VT	98063	
99	11.91	19	228.748	2369.30	VT	98506	
98	12.05	20	240.796	2357.39	VT	98953	
97	11.81	21	252.604	2345.34	VT	99393	
96	12.05	22	264.652	2333.53	VT	99841	
95	12.05	23	276.700	2321.48	VT	100288	
94	11.90	24	288.598	2309.44	VT	100731	
93	12.05	25	300.646	2297.54	VT	101179	
92	11.90	26	312.544	2285.49	VT	101621	
91	12.05	27	324.592	2273.59	VT	102069	
90	12.05	28	336.640	2261.54	VT	102517	
89	12.05	29	348.688	2249.49	VT	102965	
88	11.90	30	360.586	2237.45	VT	103408	
87	12.05	31	372.634	2225.55	VT	103856	
86	11.91	32	384.542	2213.50	VT	104298	
85	12.05	33	396.590	2201.59	VT	104746	
84	11.82	34	408.408	2189.54	VT	105186	
83	12.05	35	420.456	2177.73	VT	105634	
82	12.03	36	432.484	2165.68	VT	106081	
81	11.88	37	444.362	2153.65	VT	106523	
80	12.00	38	456.360	2141.77	VT	106969	
79	11.92	39	468.279	2129.77	VT	107412	
78	11.91	40	480.187	2117.86	VT	107855	
77	11.92	41	492.105	2105.95	VT	108298	
76	11.90	42	504.003	2094.03	VT	108740	
75	12.06	43	516.061	2082.13	VT	109189	
74	12.06	44	528.119	2070.07	VT	109637	
73	11.91	45	540.027	2058.02	VT	110080	
72	11.92	46	551.945	2046.11	VT	110523	
71	12.06	47	564.003	2034.19	VT	110971	
70	11.84	48	575.841	2022.13	VT	111411	
69	11.92	49	587.759	2010.29	VT	111855	
68	12.06	50	599.817	1998.38	VT	112303	
67	12.06	51	611.875	1986.32	VT	112751	
66	11.91	52	623.783	1974.26	VT	113194	
65	12.06	53	635.841	1962.35	VT	113642	
64	11.87	54	647.709	1950.29	VT	114084	
63	12.06	55	659.767	1938.43	VT	114532	
62	12.06	56	671.825	1926.37	VT	114980	
61	12.06	57	683.883	1914.31	VT	115429	
60	11.91	58	695.791	1902.25	VT	115871	

Joint Number/ Description	Joint Length (m)	Run Order	Cumulative Length (m)	Final Depth (m)	Connection	Weight on Hook (lbs)	Remarks
59	11.76	59	707.549	1890.34	VT	116309	
58	11.91	60	719.457	1878.59	VT	116751	
57	12.05	61	731.505	1866.68	VT	117199	
56	11.90	62	743.403	1854.63	VT	117642	
55	12.05	63	755.451	1842.73	VT	118090	
54	12.05	64	767.499	1830.68	VT	118538	
53	12.05	65	779.547	1818.64	VT	118986	
52	12.05	66	791.595	1806.59	VT	119434	
51	12.05	67	803.643	1794.54	VT	119882	
50	12.05	68	815.691	1782.49	VT	120330	
49	12.05	69	827.739	1770.44	VT	120778	
48	11.91	70	839.647	1758.40	VT	121220	
47	12.05	71	851.695	1746.49	VT	121668	
46	11.97	72	863.663	1734.44	VT	122113	
45	12.05	73	875.711	1722.47	VT	122561	
44	12.05	74	887.759	1710.42	VT	123009	
43	12.05	75	899.807	1698.38	VT	123457	
42	12.05	76	911.855	1686.33	VT	123905	
41	12.05	77	923.903	1674.28	VT	124353	
40	12.05	78	935.951	1662.23	VT	124801	
39	12.05	79	947.999	1650.18	VT	125249	
38	11.86	80	959.857	1638.14	VT	125690	
37	12.05	81	971.905	1626.28	VT	126138	
36	12.05	82	983.953	1614.23	VT	126586	
35	11.90	83	995.851	1602.18	VT	127029	
34	12.05	84	1007.899	1590.28	VT	127477	
33	11.90	85	1019.797	1578.24	VT	127919	
32	12.05	86	1031.845	1566.34	VT	128367	
31	11.91	87	1043.753	1554.29	VT	128810	
30	12.05	88	1055.801	1542.38	VT	129258	
29	12.05	89	1067.849	1530.33	VT	129706	
28	12.05	90	1079.897	1518.29	VT	130154	
27	11.78	91	1091.675	1506.24	VT	130592	
26	11.93	92	1103.603	1494.46	VT	131035	
25	11.91	93	1115.511	1482.53	VT	131478	
24	12.05	94	1127.559	1470.62	VT	131926	
23	12.05	95	1139.607	1458.58	VT	132374	
22	11.89	96	1151.495	1446.53	VT	132816	
21	12.05	97	1163.543	1434.64	VT	133264	
20	12.05	98	1175.591	1422.59	VT	133712	
233	12.05	99	1187.639	1410.54	VT	134160	
232	12.05	100	1199.687	1398.50	VT	134608	
231	12.05	101	1211.735	1386.45	VT	135056	
230	12.05	102	1223.783	1374.40	VT	135504	
229	12.05	103	1235.831	1362.35	VT	135952	1 spring centraliser between stop collars (mid
228	12.05	104	1247.879	1350.30	VT	136400	1 spring centraliser between stop collars (mid
227	12.06	105	1259.937	1338.26	VT	136848	1 spring centraliser between stop collars (mid
226	12.05	106	1271.985	1326.20	VT	137296	
225	12.05	107	1284.033	1314.15	VT	137744	
224	12.04	108	1296.071	1302.10	VT	138192	
223	12.05	109	1308.119	1290.06	VT	138640	
222	12.05	110	1320.167	1278.02	VT	139088	
221	12.05	111	1332.216	1265.97	VT	139536	
220	11.75	112	1343.964	1253.92	VT	139972	
219	12.05	113	1356.012	1242.17	VT	140420	
218	11.76	114	1367.770	1230.12	VT	140858	
217	12.05	115	1379.818	1218.37	VT	141305	
216	12.05	116	1391.866	1206.32	VT	141753	
215	12.05	117	1403.914	1194.27	VT	142201	
214	12.05	118	1415.962	1182.22	VT	142649	
213	12.05	119	1428.010	1170.17	VT	143097	
212	12.01	120	1440.018	1158.13	VT	143544	
211	12.05	121	1452.066	1146.12	VT	143992	
210	12.05	122	1464.114	1134.07	VT	144440	
209	12.05	123	1476.162	1122.02	VT	144888	
208	12.03	124	1488.190	1109.97	VT	145335	
207	12.05	125	1500.238	1097.95	VT	145783	
206	12.05	126	1512.286	1085.90	VT	146231	
205	12.05	127	1524.334	1073.85	VT	146679	
204	12.05	128	1536.382	1061.80	VT	147127	

Joint Number/ Description	Joint Length (m)	Run Order	Cumulative Length (m)	Final Depth (m)	Connection	Weight on Hook (lbs)	Remarks
203	12.05	129	1548.430	1049.75	VT	147575	
202	12.05	130	1560.478	1037.71	VT	148023	
201	12.06	131	1572.536	1025.66	VT	148471	
200	12.00	132	1584.534	1013.60	VT	148917	
199	12.05	133	1596.582	1001.60	VT	149365	
198	12.05	134	1608.630	989.55	VT	149813	
197	12.05	135	1620.678	977.51	VT	150261	
196	11.91	136	1632.586	965.46	VT	150704	
195	12.04	137	1644.624	953.55	VT	151152	
194	12.06	138	1656.682	941.51	VT	151600	
193	12.01	139	1668.690	929.45	VT	152047	
192	11.68	140	1680.368	917.45	VT	152481	
191	12.05	141	1692.416	905.77	VT	152929	
190	11.87	142	1704.284	893.72	VT	153370	1 rigid centraliser between stop collars
189	11.84	143	1716.122	881.85	VT	153810	1 rigid centraliser between stop collars
188	11.90	144	1728.020	870.01	VT	154253	
187	12.05	145	1740.068	858.12	VT	154701	
186	11.76	146	1751.826	846.07	VT	155138	
185	12.05	147	1763.874	834.31	VT	155586	
184	11.86	148	1775.732	822.26	VT	156027	
183	12.05	149	1787.780	810.40	VT	156475	
182	11.87	150	1799.648	798.36	VT	156916	
181	12.05	151	1811.696	786.49	VT	157364	
180	11.93	152	1823.624	774.44	VT	157807	
179	12.05	153	1835.672	762.51	VT	158255	
178	12.05	154	1847.720	750.46	VT	158703	
177	12.05	155	1859.768	738.42	VT	159151	
176	11.88	156	1871.646	726.37	VT	159593	
175	11.92	157	1883.564	714.49	VT	160036	
174	11.93	158	1895.492	702.57	VT	160480	
173	11.86	159	1907.350	690.64	VT	160921	
172	11.77	160	1919.118	678.79	VT	161358	
171	11.78	161	1930.896	667.02	VT	161796	
170	11.90	162	1942.794	655.24	VT	162239	
169	11.93	163	1954.722	643.34	VT	162682	
168	12.08	164	1966.800	631.41	VT	163131	
167	12.04	165	1978.838	619.34	VT	163579	
166	12.08	166	1990.916	607.30	VT	164028	
165	11.91	167	2002.824	595.22	VT	164471	
164	12.07	168	2014.892	583.31	VT	164919	
163	12.08	169	2026.970	571.24	VT	165368	
162	11.68	170	2038.648	559.16	VT	165803	
161	12.07	171	2050.716	547.49	VT	166251	
160	12.05	172	2062.764	535.42	VT	166699	
159	11.81	173	2074.572	523.37	VT	167138	
158	12.05	174	2086.620	511.56	VT	167586	
157	12.05	175	2098.668	499.51	VT	168034	
156	12.05	176	2110.716	487.47	VT	168482	
155	11.79	177	2122.504	475.42	VT	168921	
154	12.05	178	2134.552	463.63	VT	169369	
153	12.05	179	2146.600	451.58	VT	169817	
152	12.05	180	2158.648	439.53	VT	170265	
151	12.05	181	2170.696	427.49	VT	170713	
150	12.04	182	2182.735	415.44	VT	171160	
149	11.88	183	2194.613	403.40	VT	171602	
148	11.90	184	2206.511	391.52	VT	172044	
147	12.05	185	2218.559	379.62	VT	172492	
146	11.91	186	2230.467	367.58	VT	172935	
145	12.05	187	2242.515	355.67	VT	173383	
144	12.05	188	2254.563	343.62	VT	173831	
143	11.88	189	2266.441	331.57	VT	174273	
142	11.74	190	2278.179	319.69	VT	174709	
141	11.74	191	2289.917	307.96	VT	175146	
140	11.90	192	2301.815	296.22	VT	175588	
139	12.05	193	2313.863	284.32	VT	176036	
138	11.91	194	2325.771	272.27	VT	176479	
137	12.05	195	2337.819	260.36	VT	176927	
136	12.05	196	2349.867	248.32	VT	177375	
135	12.05	197	2361.915	236.27	VT	177823	
134	11.90	198	2373.813	224.22	VT	178265	
133	12.05	199	2385.861	212.32	VT	178713	
Crossover	1.30	200	2387.159	200.27		178761	
14	12.05	201	2399.206	198.98	VT	179286	
13	12.05	202	2411.253	186.93	VT	179812	
12	12.05	203	2423.299	174.88	VT	180337	
11	12.05	204	2435.346	162.84	VT	180862	
10	12.05	205	2447.393	150.79	VT	181387	
9	12.05	206	2459.440	138.74	VT	181912	
8	12.05	207	2471.487	126.70	VT	182437	
7	12.05	208	2483.534	114.65	VT	182963	
6	12.05	209	2495.581	102.60	VT	183488	
5	12.05	210	2507.628	90.55	VT	184013	
4	12.05	211	2519.675	78.51	VT	184538	
3	12.05	212	2531.722	66.46	VT	185063	
2	12.05	213	2543.768	54.41	VT	185588	
1	12.05	214	2555.815	42.37	VT	186114	
10.75in pup B	2.93	215	2558.745	30.32	VT	186241	
			HOP	**27.39**			
Running Tool	3.70	215	2562.445	27.39	VT	186403	
10.75in pup A	2.93	216	2565.375	23.69	VT	186530	
10.75in joint (15)	12.05	217	2577.425	20.76	VT	187056	
9.625in joint	11.86	219	2590.581	7.41	VT pin x BTC box	187553	

Yolla 4 - 6 5/8" Liner Running list

Size	6 5/8"	
Grade	13 Cr	
Weight (lbs/ft)	24	
Coupling	Fox K	
OD (in)	6.625	
ID (in)	5.925	
Drift (in)	5.796" x 42"	
Capacity (bbl/ft)	0.0341	
OE Displ.(bbl/ft)	0.00854	
Tensile stgth (klbs).	555	
Burst press(psi)	7,440	
Collapse press (psi)	5,760	
M/U Loss (m)	0.123	
M/U torque(Min) ftlbs	8,140	
M/U torque(Opt) ftlbs	**8,750**	
M/U torque(Max) ftlbs	9,360	

Rig:	ENSCO 102
Date:	18/07/2004
Datum (mMD):	Top of Wellhead Housing = 27.460
D.F.E (mMSL):	43.88
Seabed (mMD):	124.00
Previous casing shoe (mMD):	2586.00
Liner Hang off point (mMD):	2541.000
Top of liner (mMD):	2534.36
Hole Depth (mMD):	3235.00
Shoe (mMD)	**3233.34**
Landing string	5" HWDP / S135 Drill pipe
Landing String Weight (lbs/ft)	22.60
Landing String OE Disp (bbl/ft)	0.00821
Block Weight (klbs)	85
Mud Weight in Well (SG)	1.12
Planned TOC (mMD)	Top of liner
Pressure test (psi)	4000

Joint	Actual Length	Running Length	Shoe Depth During RIH	Btm. of Jt. Depth when landed	Cntr	Cum. Disp. (bbl)	Hookload in mud (klbs)	Remarks
Shoe A	13.22	13.22	13.22	**3233.34**	2	0.37	85.89	x1 Spiraglide 1m from each end of joint
70	12.18	12.06	25.28	3220.12	1	0.71	86.71	x 1 Spiraglide in middle of joint
Float Collar A	12.99	12.87	38.15	3208.06	1	1.07	87.59	x 1 Spiraglide in middle of joint
Intermediate A	12.61	12.49	50.64	3195.19	1	1.42	88.44	x 1 Spiraglide in middle of joint
69	12.10	11.98	62.62	3182.70	1	1.76	89.26	x 1 Spiraglide in middle of joint
68	11.95	11.83	74.45	3170.72	1	2.09	90.07	x 1 Spiraglide in middle of joint
67	12.00	11.88	86.33	3158.89	1	2.42	90.88	x 1 Spiraglide in middle of joint
Pup A	2.05	1.93	88.26	3147.01	0	2.47	91.02	
66	12.48	12.36	100.62	3145.08	1	2.82	91.86	x 1 Spiraglide in middle of joint
65	12.60	12.48	113.10	3132.72	1	3.17	92.71	x 1 Spiraglide in middle of joint
64	12.60	12.48	125.58	3120.24	1	3.52	93.56	x 1 Spiraglide in middle of joint **Install pip tag in box!**
63	12.61	12.49	138.07	3107.76	1	3.87	94.41	x 1 Spiraglide in middle of joint
62	12.60	12.48	150.55	3095.27	1	4.22	95.26	x 1 Spiraglide in middle of joint
61	12.60	12.48	163.03	3082.79	1	4.57	96.11	x 1 Spiraglide in middle of joint
60	12.60	12.48	175.51	3070.31	1	4.92	96.96	x 1 Spiraglide in middle of joint
59	12.60	12.48	187.99	3057.83	1	5.27	97.81	x 1 Spiraglide in middle of joint
58	12.60	12.48	200.47	3045.35	1	5.62	98.66	x 1 Spiraglide in middle of joint Shoe passes through 10 3/4" / 9 5/8" XO
57	12.60	12.48	212.95	3032.87	1	5.97	99.51	x 1 Spiraglide in middle of joint
56	12.60	12.48	225.43	3020.39	1	6.32	100.36	x 1 Spiraglide in middle of joint
55	12.61	12.49	237.92	3007.91	1	6.67	101.21	x 1 Spiraglide in middle of joint
54	12.61	12.49	250.41	2995.42	1	7.02	102.06	x 1 Spiraglide in middle of joint
53	12.60	12.48	262.89	2982.93	1	7.37	102.91	x 1 Spiraglide in middle of joint
52	12.60	12.48	275.37	2970.45	1	7.72	103.76	x 1 Spiraglide in middle of joint
51	12.60	12.48	287.85	2957.97	1	8.07	104.61	x 1 Spiraglide in middle of joint
Pup B	2.05	1.93	289.78	2945.49	0	8.12	104.75	
50	12.60	12.48	302.26	2943.56	1	8.47	105.60	x 1 Spiraglide in middle of joint
49	12.61	12.49	314.75	2931.08	1	8.82	106.45	x 1 Spiraglide in middle of joint
48	12.60	12.48	327.23	2918.59	1	9.17	107.30	x 1 Spiraglide in middle of joint
47	12.61	12.49	339.72	2906.11	1	9.52	108.15	x 1 Spiraglide in middle of joint **Install pip tag in box!**
46	12.60	12.48	352.20	2893.62	1	9.87	109.00	x 1 Spiraglide in middle of joint
45	12.60	12.48	364.68	2881.14	1	10.22	109.85	x 1 Spiraglide in middle of joint
44	12.60	12.48	377.16	2868.66	1	10.57	110.70	x 1 Spiraglide in middle of joint
43	12.60	12.48	389.64	2856.18	1	10.92	111.55	x 1 Spiraglide in middle of joint
42	12.61	12.49	402.13	2843.70	1	11.27	112.40	x 1 Spiraglide in middle of joint
41	12.60	12.48	414.61	2831.21	1	11.62	113.25	x 1 Spiraglide in middle of joint
40	12.61	12.49	427.10	2818.73	1	11.97	114.10	x 1 Spiraglide in middle of joint
39	12.60	12.48	439.58	2806.24	1	12.32	114.95	x 1 Spiraglide in middle of joint
38	12.60	12.48	452.06	2793.76	1	12.67	115.80	x 1 Spiraglide in middle of joint
37	12.61	12.49	464.55	2781.28	1	13.02	116.65	x 1 Spiraglide in middle of joint
36	12.60	12.48	477.03	2768.79	1	13.37	117.50	x 1 Spiraglide in middle of joint
34	12.60	12.48	489.51	2756.31	1	13.72	118.35	x 1 Spiraglide in middle of joint
33	12.60	12.48	501.99	2743.83	1	14.07	119.20	x 1 Spiraglide in middle of joint
32	12.61	12.49	514.48	2731.35	1	14.42	120.05	x 1 Spiraglide in middle of joint
31	12.60	12.48	526.96	2718.86	1	14.77	120.90	x 1 Spiraglide in middle of joint
30	12.61	12.49	539.45	2706.38	1	15.12	121.75	x 1 Spiraglide in middle of joint
29	12.60	12.48	551.93	2693.89	1	15.47	122.60	x 1 Spiraglide in middle of joint
28	12.61	12.49	564.42	2681.41	1	15.82	123.45	x 1 Spiraglide in middle of joint
27	12.60	12.48	576.90	2668.92	1	16.17	124.30	x 1 Spiraglide in middle of joint
26	12.59	12.47	589.37	2656.44	1	16.52	125.15	x 1 Spiraglide in middle of joint
25	12.60	12.48	601.85	2643.97	1	16.87	126.00	x 1 Spiraglide in middle of joint
24	12.60	12.48	614.33	2631.49	1	17.22	126.85	x 1 Spiraglide in middle of joint
23	12.60	12.48	626.81	2619.01	1	17.57	127.70	x 1 Spiraglide in middle of joint
22	12.61	12.49	639.30	2606.53	1	17.92	128.55	x 1 Spiraglide in middle of joint
21	12.60	12.48	651.78	2594.04	1	18.27	129.40	x 1 Spiraglide in middle of joint
20	12.60	12.48	664.26	2581.56	1	18.62	130.25	x 1 Spiraglide in middle of joint
19	12.61	12.49	676.75	2569.08	1	18.97	131.10	x 1 Spiraglide in middle of joint
18	12.59	12.47	689.22	2556.59	1	19.32	131.95	x 1 Spiraglide in middle of joint
Hanger Assembly A	3.12	3.12	692.34	2544.12	1	19.41	132.16	x 1 Spiraglide in middle of joint Check! 24 joints left on deck
			HOP	**2541.00**				
RS Nipple A	0.66	0.66	693.00	2541.00		19.43	132.20	
ZXP Packer / PBR	5.98	5.98	698.98	2540.34		19.60	132.58	
Run Tool	2.67	2.67	701.65	2534.36		19.67	132.75	
S 135 Landing string	2533.00	2533.00	3234.65	2531.69		87.90	293.78	
Cement Head	5.00	5.00	3239.65	-1.31			294.10	
				-6.31		**Top of Cement Head**		

13 3/8" CASING RUNNING AND CEMENTING REPORT

RIG	Ensco 102
WELL	Yolla-4
DATE	22-Jun-04

Australian Drilling Associates Pty Ltd ADA

STATUS OF WELL BEFORE RUNNING CASING

PREVIOUS CASING		HOLE CONDITIONS			
Size (in)	20	**Size (in)**	16	**Mud Losses**	No losses
Weight (lb/ft)	203	**Depth (mMDRT)**	900	**Caliper Average (in)**	N/A
Grade	B / X52	**Circulating Hours Before**	1.75	**Max Deviation (°)**	0.2
Shoe @ (mMDRT))	220			**Dev. Depth (mMDRT)**	N/A

MUD					
Weight (ppg)	8.6	**Water Loss (cc)**	N/A	**0/10 Gels**	53 / 60
Type	PHG	**Filter Cake (mm)**	N/A	**Sand**	N/A
PV	8	**Solids (%)**	N/A	**Flowline Temp (°C)**	N/A
YP	43	**Salinity (mg/l)**	N/A		

CASING DETAILS

Size (in)	13.375	**Shoe Depth (m)**	884.57	**Total Length**	856.9
Weight (lb/ft)	54.5 / 72	**F. Collar @ (m)**	859.9	**Centralisers**	As per tally
Grade	K55 / Q125	**2nd Stg. Collar @ (m)**	307.4		
Calipered ID (in)	12.643 / 12.382	**Pip Tag(s) @ (m)**	N/A		
Connection	BTC / VAM TOP	**Casing Hanger @ (m)**	27.668	**Displacement (BBL/m)**	N/A
Average Torque (ft-lbs)	11500 / 24000	**Wellhead Type**	Cameron 13 5/8in 10 Kpsi, Fastlock	**Capacity (BBL/m)**	0.5095 / 0.4885

RUNNING CASING

Start Time	5:30	**Joints Received**	101	**Rate (GPM)**	252
Avg Jnts/hr	12	**Joints Run**	72	**Total (BBLs)**	550
Finish Time	19:30	**Joints Left**	29	**Time (mins)**	120
Mud Losses (BBL)	N/A	**Circulating Pressure (psi)**	465	**Time Stopped**	22:30

Comments

Returns taken direct to sea therefore returns could not be measured. From observation returns appeared good through the 6" ports in the 20" conductor.

Hole good condition when RIH. Within 5-10 klbs SWD of theoretical string weight in mud.

The ENSCO 102 (through no fault of the crews) is not set up to run casing very quickly. The PRS is much slower that using pick up elevators and a stabber. Casing runs will therefore be extremely slow (approximately twice as long as a conventional rig). This must be taken into account for Weatherford crew hours (i.e. we will definitely need 2 full crews when running a 'labour intensive' string such as a premium connection that requires J.A.M.). Casing should be made up offline to try and speed up casing runs and reduce open hole time.

Incorrect drifts, number of joints and cross overs sent out. Focus required with logistics.

Encountered some problems 'stabbing' short joints, required manual stabbing. The PRS centralizes longer joints better 'plumb bob effect' – another reason to run casing stands.

2 drift rejects in the heavy wall casing. (Did not drift with welders 12 ¼" drift).

CEMENTING

PRE-FLUSH AND SPACER			
Flush Type	Seawater	**Flush Type**	N/A
Weight (ppg)	8.4	**Weight (ppg)**	N/A
Volume (BBL)	20	**Volume (BBL)**	N/A
Pump Rate (BPM)	7	**Pump Rate (BPM)**	N/A
Pump Press (psi)	500	**Pump Press (psi)**	N/A
Time bottom plug released		N/A - 2 stage cement job, no bottom	

LEAD SLURRY (1ST STAGE)					
Cement Type	G	**Mix Water Type**	Seawater	**Pump Press (psi)**	400
No. of Sacks	588	**Mix Water (gal/sk)**	12.72 water only, 13.15 w/Liquid Additives	**Pump Rate (BPM)**	4 - 7
Volume Used (BBL)	233.7	**Mix Water Volume (BBL)**	178.1 water only, 184.1 w/Liquid Additives	**Calculated TOC (mMDRT)**	306
Weight (ppg)	12.5	**Est Time - BC100 (Hrs)**	4	**Mud Losses**	N/A
Yield (Cu.ft/sk)	2.23	**Actual Time (Hrs)**	1.5		
Additives	0.42 Gal/sk D75 Extender, 0.01 Gal/sk D47 Antifoam				
Comments	Poor rate of delivery of cement from rig to cement unit. Delivery improved when switched to 2nd tank. Suggested that we back blast cmt delivery line, Fluff the tanks regularly and do not pressure up tanks too early before a job in case it is packing it down. The fluffers are apparently 1m above btm of tank. TOC estimated at Stage Collar (Top at 306mMDRT) based on appearance of cement looking fluids from 6" ports upon opening & circulating above SC. Note that Yolla 1 caliper log showed ~1.3" average washout down to ~700m, with greater washout below, presumably due to increased clays below 700m. Calculated cement volume assuming 100% washout on gauge 16" hole.				

TAIL SLURRY (1ST STAGE)					
Cement Type	G	**Mix Water Type**	Drillwater	**Pump Press (psi)**	200
No. of Sacks	418	**Mix Water (gal/sk)**	5.13 water only, 5.147 w/Liquid Additives	**Pump Rate (BPM)**	3
Volume Used (BBL)	86.4	**Mix Water Volume (BBL)**	51.1 water only, 51.2 w/Liquid Additives	**Calculated TOC (mMDRT)**	785
Weight (ppg)	15.8	**Est Time - BC100 (Hrs)**	4	**Mud Losses**	N/A
Yield (Cu.ft/sk)	1.16	**Time 1st Plug Released**	0:17		
Additives	0.01 Gal/sk D47 Antifoam				
Comments	Pumped slurry at low rate due to poor rate of cement delivery from the rig. Comments as above. Cementer mixes as fast as they give cmt , Barge says they delivered as fast as required. Both are watching the weight in surge can. Will suck the surge can down more on next job. Rig pumped 3 times gauge hole volume or 200% excess over 16" gauge hole for tail slurry.				

2nd STAGE SLURRY					
Cement Type	G	**Mix Water Type**	Seawater	**Pump Press (psi)**	350
No. of Sacks	210	**Mix Water (gal/sk)**	9.37 water only, 9.68 w/Liquid Additives	**Pump Rate (BPM)**	5.5
Volume Used (BBL)	66.3	**Mix Water Volume (BBL)**	46.85 water only, 48.4 w/Liquid Additives	**Calculated TOC (mMDRT)**	170
Weight (ppg)	13.5	**Est Time - BC100 (Hrs)**	5.5	**Mud Losses**	N/A
Yield (Cu.ft/sk)	1.77				
Additives	0.01 Gal/sk D47 Antifoam, 0.30 Gal/sk D75 Extender, 1.0 %BWOC S001 Accelerator				
Comments	Mixed and pumped down hole at 5.5bpm. Pre-mixed mix water in blender tank . S/W delivery to unit is not fast enough for extended slurry, need to use a pit . Displaced with 20bbl fresh water and 136bbl seawater at 7bpm, bumped closing plug with 600psi at 4.5bpm. Observed good returns from 6" ports in conductor throughout job, indicating TOC as planned, which was 170mMDRT/170mVDRT. Pumped 100% excess over 16" gauge hole.				

DISPLACEMENT (1st Stage Only)			
Calc Volume (BBL)	436 bbls (20 bbls Halliburton + 416 bbls rig)	**Pump Pressure (psi)**	450
Calc Strokes	2984	**Pump Rate (BBL/min)**	7
Efficiency (%)	97%	**Pump Used (CT/M PUMP)**	Mud pump
Actual Strokes	2976	**Did Plug Bump? Time**	Bumped early 1:22
Actual Efficiency (%)	N/A	**Delta P Prior to Bump**	750
Mud Losses	N/A	**Bump Pressure**	1500 psi applied
		Pressure Held (min)	15
COMMENTS	Good returns from 6" ports in conductor during job. Casing ID callipered using rig floor calipers (only tool available) therefore probably slightly inaccurate (over estimation) of casing volume hence early, (1 bbl) bump. Bump pressure much higher than calculated bump pressure of 63 psi, indicating gauge hole drilled and TOC high (circulated out later via stage collar).		

CASING AND CEMENTING JOB TIMETABLE

1st STAGE					
Operations	**Start Time**	**End Time**	**Pump psi (Initial)**	**Pump psi (Final)**	**Volume (BBLs)**
RIG UP AND RUN CASING	05:30 (21/06/04)	19:30 (21/06/04)			
CIRCULATION	20:30	22:30	500	465	550
SPACER	22:30	22:45	500	500	20
MIX AND PUMP LEAD	22:45	23:30	200	550	233
MIX AND PUMP TAIL	23:30	0:00	550	200	86
RELEASE 1st PLUG	0:17	0:17			
DISPLACEMENT	0:19	1:45		750	435
BUMP PLUG /TEST CASING	1:45	2:00		1500	
BLEED PRES/CHK FLOAT EQUIP.	2:00	2:15			
DROPPED STAGE COLLAR OPENING PLUG	2:15	2:30			
PRESSURED UP TO OPEN STAGE COLLAR	2:30	2:45		550	1.8
CIRCULATED WHILST WOC	2:45	5:00			

2nd STAGE					
Operations	**Start Time**	**End Time**	**Pump psi (Initial)**	**Pump psi (Final)**	**Volume (BBLs)**
RIG UP FOR 2ND STAGE	05:00 (22/06/04)	07:00 (22/06/04)			
CIRCULATION	7:00	7:30	300	300	70
MIX AND PUMP SLURRY	7:30	8:00	300	350	233
RELEASE CLOSING PLUG	8:00	8:01			
DISPLACEMENT	8:01	8:30	350	450	157
BUMP PLUG /TEST CASING	8:30	8:45		1500	

9 5/8" CASING RUNNING AND CEMENTING REPORT

RIG	Ensco 102
WELL	Yolla-4
DATE	4-Jul-04

Australian Drilling Associates Pty Ltd ADA

STATUS OF WELL BEFORE RUNNING CASING

PREVIOUS CASING		HOLE CONDITIONS			
Size (in)	13.375	**Size (in)**	12.25	**Mud Losses**	0
Weight (lb/ft)	54.5 / 72	**Depth (mMDRT)**	2614	**Caliper Average (in)**	N/A
Grade	K55 / Q125	**Circulating Hours Before**	4.25	**Max Deviation (°)**	25.75
Shoe @ (mMDRT))	884.57			**Dev. Depth (mMDRT)**	2614

MUD					
Weight (ppg)	9.5	**Water Loss (ml/30min)**	3.9	**0/10 Gels**	7/11
Type	Seawater/Drispac/ Soltex	**Filter Cake (32nd in)**	1	**Sand (% by vol)**	0.1
PV	43	**Solids (%)**	7.5	**Flowline Temp (°C)**	65
YP (lbs/100 ft2)	46	**Salinity (mg/l)**	18000		

CASING DETAILS

Size (in)	9.625 / 10.75	**Shoe Depth (mMD)**	2586.14	**Total Length**	2558.75
Weight (lb/ft)	43.5 / 51	**F. Collar @ (m)**	2561.86	**Centralisers**	As per tally
Grade	L80	**2nd Stg. Collar @ (m)**	N/A		
Calipered ID (in)	8.875 / 9.850	**Pip Tag(s) @ (m)**	N/A		
Connection	VAM TOP	**Casing Hanger @ (m)**	27.39	**Displacement (BBL/m)**	N/A
Average Torque (ft-lbs)	13000 / 15900	**Wellhead Type**	Cameron 13 5/8in 10 Kpsi, Fastlock	**Capacity (BBL/m)**	0.246 / 0.309

RUNNING CASING

Start Time	17:45	**Joints Received**	221 (9.625in), 21 (10.75in)	**Rate (GPM)**	250
Avg Jnts/hr	9	**Joints Run**	217	**Total (BBLs)**	630
Finish Time	19:15	**Joints Left**	25	**Time (mins)**	145
Mud Losses (BBL)	0	**Circulating Pressure (psi)**	500 - 600	**Time Stopped**	3/07/2004 22:15
Comments	Ran casing as per the following procedure: Picked up and made up 9.625 in shoetrack and ran same to 144 mMD Placed two spring centralisers on the shoe joint and one spring centraliser on the intermediate and float collar joints. RIH 9.625 in casing (43.5 ppf, Vam Top) from 432 mMD to 2385 mMD. Changed out casing elevators from 9.625 in to 10.75 in Picked up and made up 9.625 x 10.75 in crossover and one joint of 10.75 in casing Changed out PS21 slips for Weatherford 10.75 in spiders. Picked up 10.75 in (51 ppf, Vam Top) casing and ran casing string from 2385 mMD to 2555 mMD Made up 10.75 in pup and hanger assembly and 1 joint of 10.75 in casing. Changed out 10.75 in elevators to 9.625 in Made up 10.75 x 9.625 in crossover to 9.625 in landing joint (VT pin x BTC box) Landed casing in wellhead with 380 Klb weight. Casing shoe at 2586.14 mMD Hole was in good condition during entire casing running operation. The following should be noted when making up 10.75 x 9.625 in crossover to 9.625 in landing joint (VT pin x BTC box). 1. This was difficult to make up on the floor and should be made up off the critical path for future wells. 2. Cameron can supply a 10.75 x 9.625 in crossover which can be made up to their hanger running tool.				

CEMENTING

PRE-FLUSH AND SPACER			
Flush Type	Freshwater	**Flush Type**	N/A
Weight (ppg)	8.4	**Weight (ppg)**	N/A
Volume (BBL)	18	**Volume (BBL)**	N/A
Pump Rate (BPM)	6	**Pump Rate (BPM)**	N/A
Pump Press (psi)	500	**Pump Press (psi)**	N/A
Time bottom plug released		22:50	

LEAD SLURRY (1ST STAGE)					
Cement Type	G	**Mix Water Type**	Drill water	**Pump Press (psi)**	500
No. of Sacks	732	**Mix Water (gal/sk)**	12.22 water only, 12.28 w/ Liquid Additives	**Pump Rate (BPM)**	4 - 7
Volume Used (BBL)	278	**Mix Water Volume (BBL)**	213 water only, 214 w/Liquid Additives	**Calculated TOC (mMDRT)**	1234mMDRT per sonic log, 952 per final pump press, 1223 if 20% or 1320 if 30% washout.
Weight (ppg)	12.5	**Time 1st Plug Released**	22:50	**Mud Losses**	0
Yield (Cu.ft/sk)	2.13	**Actual Time (mins)**	45		
Additives	D47 Antifoam (0.01 gal/sk), D20 Bentonite (2.5% BWOC), D110 Retarder (0.05 gal/sk)				
Comments	Poor rate of delivery of cement from rig to cement unit. Yolla 1 had many washouts in this section, so TOC likely lower than calculated, although channeling also likely due to no pipe movement. Loss of sonic log signal showed TOC at 1234mMDRT.				

TAIL SLURRY (1ST STAGE)					
Cement Type	G - HTB	**Mix Water Type**	Drill water	**Pump Press (psi)**	500
No. of Sacks	100	**Mix Water (gal/sk)**	5.63 water only, 6.44 w/ Liquid Additives	**Pump Rate (BPM)**	3
Volume Used (BBL)	27	**Mix Water Volume (BBL)**	15	**Calculated TOC (mMDRT)**	2489 assuming 20% washout
Weight (ppg)	15.8	**Est Time - BC100 (Hrs)**	N/A	**Mud Losses**	0
Yield (Cu.ft/sk)	1.53	**Time 2nd Plug Released**	0:10		
Additives	D47 Antifoam (0.03 gal/sk), D145 Dispersant (0.1 gal/sk), D110 Retarder (0.03 gal/sk), D66 Silica (35% BWOC), D300 Fluid Loss (0.65 gal/sk)				
Comments	Pumped slurry at low rate due to poor rate of cement delivery from the rig.				

2nd STAGE SLURRY					
Cement Type	N/A	**Mix Water Type**	N/A	**Pump Press (psi)**	N/A
No. of Sacks	N/A	**Mix Water (gal/sk)**	N/A	**Pump Rate (BPM)**	N/A
Volume Used (BBL)	N/A	**Mix Water Volume (BBL)**	N/A	**Calculated TOC (mMDRT)**	N/A
Weight (ppg)	N/A	**Est Time - BC100 (Hrs)**	N/A	**Mud Losses**	N/A
Yield (Cu.ft/sk)	N/A				
Additives	N/A				
Comments					

DISPLACEMENT			
Calc Volume (BBL)	20bbls freshwater using cement unit + 638bbls mud using rig pumps	**Pump Pressure (psi)**	500
Calc Strokes	4530	**Pump Rate (spm)**	40
Efficiency (%)	97%	**Pump Used (CT/M PUMP)**	Mud pump
Actual Strokes	4550	**Did Plug Bump? Time**	Yes, 01:35
Actual Efficiency (bbl/stroke)	0.139	**SPP Prior to Bump (psi)**	1200
Mud Losses	0	**Bump Pressure**	3500 psi applied
		Pressure Held (min)	15
COMMENTS	Good returns during cement job. Average casing ID callipered using rig floor calipers (only tool available). The accuracy of these calipers is unknown. This may account for the plug bumping 20 strokes late.		

CASING AND CEMENTING JOB TIMETABLE

1st STAGE					
Operations	**Start Time**	**End Time**	**Pump psi (Initial)**	**Pump psi (Final)**	**Volume (BBLs)**
RIG UP AND RUN CASING	14:30 (2/07/04)	19:15 (3/7/04)			
CIRCULATION	20:00	22:15	500	600	630
SPACER	22:25	22:59	500	500	20
MIX AND PUMP LEAD	22:59	23:50	500	500	278
MIX AND PUMP TAIL	23:50	0:10	500	500	27
RELEASE 1st PLUG	0:10				
DISPLACEMENT	0:15	0:20	500	1200	632
BUMP PLUG /TEST CASING	1:40	2:05	3500	3500	
BLEED PRES/CHK FLOAT EQUIP.	2:05	2:07			

2nd STAGE					
Operations	**Start Time**	**End Time**	**Pump psi (Initial)**	**Pump psi (Final)**	**Volume (BBLs)**
RIG UP FOR 2ND STAGE					
CIRCULATION					
MIX AND PUMP SLURRY					
RELEASE CLOSING PLUG					
DISPLACEMENT					
BUMP PLUG /TEST CASING					

6 5/8" LINER RUNNING AND CEMENTING REPORT

RIG	Ensco 102
WELL	Yolla-4
DATE	20-Jul-04

Australian Drilling Associates Pty Ltd ADA

STATUS OF WELL BEFORE RUNNING LINER

PREVIOUS CASING		HOLE CONDITIONS			
Size (in)	9.625 / 10.75	**Size (in)**	8.5	**Mud Losses**	0
Weight (lb/ft)	43.5 / 51	**Depth (mMDRT)**	3235	**Caliper Average (in)**	12 1/4 (Previous rathole) / 9
Grade	L80	**Circulating Hours Before**	1.75	**Max Deviation (°)**	25.68
Shoe @ (mMDRT))	2586			**Dev. Depth (mMDRT)**	2756

MUD					
Weight (ppg)	9.4	**Water Loss (ml/30min)**	3.9	**0/10 Gels**	4/7
Type	Seawater/Drispac/ Soltex	**Filter Cake (32nd in)**	1	**Sand (% by vol)**	0.1
PV	21	**Solids (%)**	7.2	**Flowline Temp (°C)**	51
YP (lbs/100 ft2)	19	**Salinity (mg/l)**	18000		

LINER DETAILS

Size (in)	6.625	**Shoe Depth (mMD)**	3233	**Total Length**	699
Weight (lb/ft)	24	**F. Collar @ (m)**	3208	**Centralisers**	As per tally
Grade	13 Cr	**L. Collar @ (m)**	3195		
Calipered ID (in)	5.925	**Pip Tag(s) @ (m)**	3107.8 2893.7		
Connection	FOX K	**Liner Hanger @ (m)**	2543	**Displacement (BBL/m)**	0.028
Average Torque (ft-lbs)	8750	**Wellhead Type**	Cameron 13 5/8in 10 Kpsi, Fastlock	**Capacity (BBL/m)**	0.112

RUNNING LINER

Start Time	9:30:00 PM (18/07/04)	**Joints Received**	81	**Rate (GPM)**	320
Avg Jnts/hr	10	**Joints Run**	57	**Total (BBLs)**	327
Finish Time	11:00:00 PM (19/07/04)	**Joints Left**	24	**Time (mins)**	45
Mud Losses (BBL)	0	**Circulating Pressure (psi)**	880	**Time Stopped**	3/07/2004 22:15

Comments

Ran liner as per the following procedure:
Ran 6 5/8", 24#, 13 Cr, Fox K liner to 689 mRT / 689 mTVD, filling string every 5 joints. One reject (uanble to m/up), monitored hole on trip tank, no losses.

Made up liner hanger and flexlock packer assembly to the 6 5/8" liner. Filled PBR with hi vis fluid to prevent debris entering the PBR. SWU / SWD = 55 / 55 KLbs.
Circulated 120 % of string volume (92 bbls) at 500 gpm / 400 psi. No losses.
RIH 6 5/8" liner on 5" HWDP from 689 mRT / 689 mTVD to 871 mRT / 871 mTVD at 1 min per stand, filled pipe every 2 stands. Monitored hole on trip tank, no losses.

RIH 6 5/8" liner on 5" drill pipe from 871mRT / 871 mTVD to 9 5/8" shoe at 2586 mRT / 2488 mTVD at 1 min per stand, filled pipe every 2 stands. Monitored hole on trip tank, no losses.

Circulated 120% of string volume (220 bbls) at 349 gpm / 750 psi whilst rotating the liner, torque readings as follows: 10 RPM = 5 Kftlbs, 20 RPM = 6 Kftlbs, 30 RPM = 6 Kftlbs, no losses.

Cont'd to RIH 6 5/8" liner on 5" drill pipe 9 5/8" from shoe at 2586 mRT / 2488 mTVD to 3213 mRT / 3076 mTVD at 1 min per stand, filled pipe every 2 stands. Monitored hole on trip tank, no losses.
Made up top drive and washed down with 300 gpm / 770 psi from 3213 mRT / 3076 m RT, tagged bottom at 3234 mRT / 3096 mTVD with 10 KLbs, 1 metre hole fill on bottom. Unable to wash down futher.

Made up cement head, took string weights, SWU / SWD = 295 / 233 KLbs. Pulled back to SWU plus 1 m.

Circulated 150% of string volume (327 bbls) with 320 gpm / 880 psi whilst rotating the liner, torque readings as follows: 10 RPM = 9 Kftlbs, 20 RPM = 10.5 Kftlbs. Max gas = 110 units, no losses.

Dropped 1 3/4" phenolic liner setting ball, pumped down same at 3 bpm / 200 psi.
Pressure up string to 1700 psi to set 6 5/8" liner, slacked off liner weight (55 KLbs) plus 30 Klbs running string weight to confirm liner set. Pressured up to 2800 psi to release running tool, bled off pressure and picked up 1 m confirming liner released. Pressured up to 3500 psi to blow out liner ball seat.
Circulated at 4 bpm / 580 psi, 5 bpm / 740 psi, 6 bpm 940 psi, whilst rotating, torque values as follows: 10 RPM = 9 Kftlbs, 20 RPM = 9Kftlbs

CEMENTING

PRE-FLUSH AND SPACER			
Flush Type	Freshwater / Chemical wash	**Flush Type**	N/A
Weight (ppg)	8.4	**Weight (ppg)**	N/A
Volume (BBL)	40	**Volume (BBL)**	N/A
Pump Rate (BPM)	6	**Pump Rate (BPM)**	N/A
Pump Press (psi)	650	**Pump Press (psi)**	N/A
Time bottom plug released		N/A	

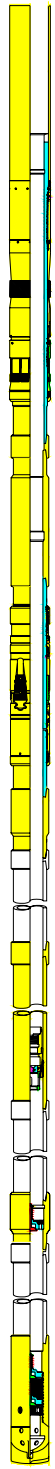
TAIL SLURRY					
Cement Type	HTB	**Mix Water Type**	Drill water	**Pump Press (psi)**	100
No. of Sacks	367	**Mix Water (gal/sk)**	4.10 water only, 6.49 w/ Liquid Additives	**Pump Rate (BPM)**	3
Volume Used (BBL)	101	**Mix Water Volume (BBL)**	35.8 water only, 56.7 w/Liquid Additives	**Calculated TOC (mMDRT)**	2553 per CBL/USIT Log
Weight (ppg)	15.8	**Est Time - BC100 (Hrs)**	N/A	**Mud Losses**	0
Yield (Cu.ft/sk)	1.54	**Time Wiper dart Released**	0:46		
Additives	D600 Gasblock (2.2 gal/sk), D80 Dispersant (0.08gal/sk), D110 Retarder (0.06 gal/sk), D175 Antifoam (0.05gal/sk), D066 Silica (35% BWOC) D122 Chemical wash (0.5gal/bbl), J237A (0.25gal/bbl) - Chemical wash spacer				
Comments	Pumped slurry at low rate due to poor rate of cement delivery from the rig. Used 10% excess over 4 arm caliper log.				

DISPLACEMENT			
Calc Volume (BBL)	90bbls freshwater using cement unit + 124.5bbls mud using rig pumps	**Pump Pressure (psi)**	100
Calc Strokes	896	**Pump Rate (spm)**	6
Efficiency (%)	97%	**Pump Used (CT/M PUMP)**	Mud pump
Actual Strokes	890	**Did Plug Bump? Time**	Yes, 01:43
Actual Efficiency (bbl/stroke)	0.139	**SPP Prior to Bump (psi)**	1250
Mud Losses	0	**Bump Pressure**	4000 psi applied
		Pressure Held (min)	5
COMMENTS	Full returns during job.		

CASING AND CEMENTING JOB TIMETABLE

1st STAGE					
Operations	**Start Time**	**End Time**	**Pump psi (Initial)**	**Pump psi (Final)**	**Volume (BBLs)**
RIG UP AND RUN LINER	21:30 (18/07/04)	23:00 (19/07/04)			
CIRCULATION	(In liner running time)	(In liner running time)	880	880	327
SPACER / Pressure test lines	23:30	00:00	800	800	40
MIX AND PUMP TAIL	00:00	00:46	800	100	101
RELEASE 1st PLUG	00:46				
DISPLACEMENT (cement unit)	00:46	01:02	100	100	90
DISPLACEMENT (rig)	01:02	01:43	100	1250	124.5
BUMP PLUG /TEST CASING	01:43	01:51	4000	4000	
BLEED PRES/CHK FLOAT EQUIP.	01:51	01:52			
Set liner top packer	01:52	02:15			
Reverse circulated	02:15	03:00	Traces of cement only		
Circulated bottoms up	03:00	04:00			

PROPOSED WELL SCHEMATIC



EQUIPMENT AND SERVICES LOCATION

Baker Oil Tools
Liner Hanger Systems

SALES LOCATION

Baker Oil Tools
Sale,Australia 613-51443966

BAKER HUGHES

Baker Oil Tools

Page : 1

OPERATOR: Origin Energy	FAX #	BHP	BHT: 295 deg F
COMPANY REP.: Murray Jackson	PHONE #	MAX DEV.: 25 deg	ZONE DEV.
FIELD: Yolla	WELL NO.: 4	SCREEN SIZE	STARTING WELL
STATE: Melbourne Offshore	LEASE	SAND SIZE	COMPLETION FLUID (weight and type): Brine 9.3 PPG
LOADING DOCK	PHONE #	PERFORATIONS	COATING (type)
RIG NAME: Ensco 102	PHONE #		
PREPARED BY: Hendry Fonseka	PHONE #		
DATE SUBMITTED: 21-07-04	JOB # (version #)		
JOB REPORT #: S-708	WELL TYPE: Gas		

	SIZE	WEIGHT	GRADE	THREAD
CASING	9-5/8	43.50	L-80	Vam Top
LINER	6-5/8	24.00	L-80	K-Fox
TUBING				
WRKSTR.	5.000	19.50		IF

No.	DEPTH	LENGTH	OD	ID	DESCRIPTION
		2534.02			TOP OF LINER
1	2534.02	5.98	8.400	6.277	BAKER ZXP LINER PACKER WITH HOLD-DOWN
	2540				SLIPS x 7"- 29 PPF N.VAM BOX DOWN
2					
2		0.66	7.737	6.187	BAKER RS NIPPLE WITH 7" 29 PPF N.VAM PIN UP
	2540.66				x 7" 29 PPF N.VAM BOX DOWN
3		2.63	8.320	6.290	BAKER HYDRAULIC ROTATING FLEXLOK II LINER
	2543.29				HANGER WITH 7" 29PPF N.VAM PIN UP x 7" 29 PPF
3					N.VAM PIN DOWN
4		0.49	7.680	5.910	BAKER CROSSOVER BUSHING WITH 7" 29 PPF
	2543.78				N.VAM BOX UP x 6-5/8" 24 PPF FOX PIN DOWN
4	5	399.44	7.390	5.920	32 JOINTS OF 6-5/8" 24 PPF 13%Cr CSG K-FOX
	2943.22				
5	6	1.93	7.390	5.920	1 PUP JOINT OF 6-5/8" 24 PPF 13%Cr CASING
	2945.15				
6	7	199.59	7.390	5.920	16 JOINTS OF 6-5/8" 24 PPF 13%Cr CSG K-FOX
	3144.74				
7	8	1.93	7.390	5.920	1 PUP JOINT OF 6-5/8" 24 PPF 13%Cr CASING
	3146.67				
8	9	35.69	7.390	5.920	3 JOINTS OF 6-5/8" 24 PPF 13%Cr CSG K-FOX
9	3182.36				
10	10	12.49	7.390	5.920	1 JOINT OF 6-5/8" 24 PPF 13%Cr CSG, K-FOX
	3194.85				WITH BAKER TYPE II INSERT LANDING COLLAR
11					
	11	12.87	7.390	5.920	1JOINT OF 6-5/8" 24 PPF 13%Cr CSG K-FOX
	3207.72				
12	12	12.06	7.390	5.920	1 JOINT OF 6-5/8" 24 PPF 13%Cr CASING WITH
	3219.78				K-FOX B x P WITH TOPCO SINGLE FLOAT COLLAR
	13	13.22	7.390	5.920	1 JOINT OF 6-5/8" 24 PPF 13%Cr CASING WITH
	3233				K-FOX B x P WITH TOPCO SINGLE FLOAT SHOE
					TD AT 3235 METERS. 9.625" SHOE AT 2586 METERS

ENSCO RIG 102	
PICK UP WEIGHT WITH BLOCKS	380,000 lbs
SLACK OFF WEIGHT WITH BLOCKS	318,000 lbs
BLOCK WEIGHT	85000 POUNDS
LINER LAP IS MTRS INSIDE 9.625" CASING	51.98 MTRS

APPENDIX 15: FIT/LOT SUMMARY SHEETS

13 3/8" CASING SHOE FIT / LOT SUMMARY SHEET

Australian Drilling Associates Pty Ltd ADA

RIG	Ensco 102
WELL	Yolla-4
DATE	25-Jun-04

Casing Size:	13.375 in
Shoe Depth:	885.00 m TVD
Hole Depth:	900.00 m TVD
Mud Weight:	1.07 SG
Pump Rate:	0.5 BPM
Vol pumped:	0.75 BBL
Vol bled back:	0.6 BBL

Target FIT EMW	1.26 SG
Target Surf Press	240 psi

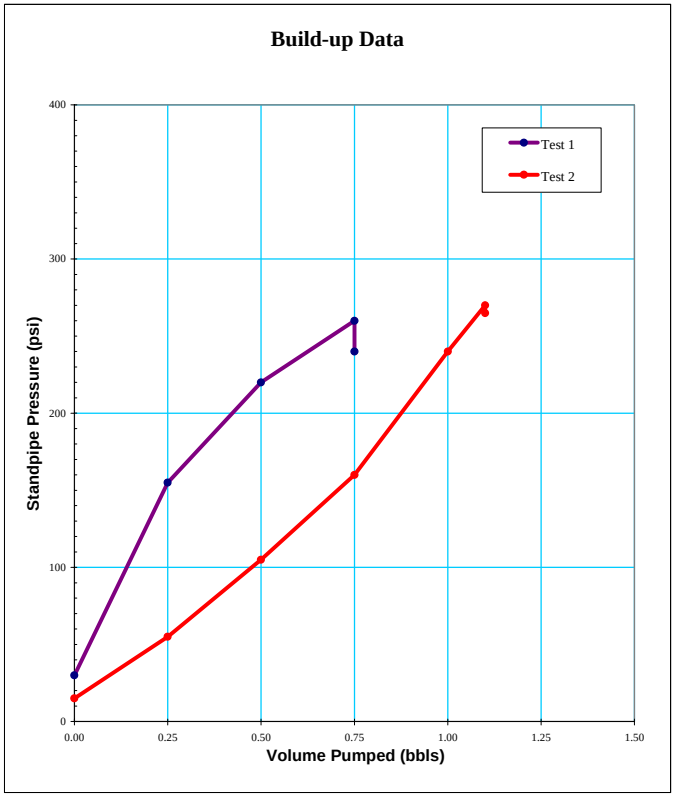
Actual Max Press	265 psi
Actual EMW	**1.28 SG**

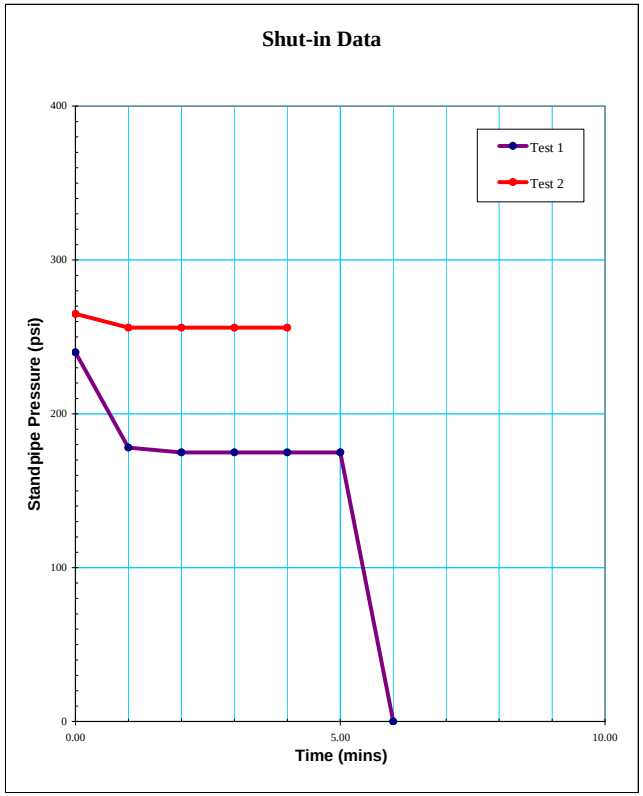
Build-up Data

Volume bbls	Pressure psi	Volume bbls	Pressure psi
Test 1		Test 2	
0.00	30	0.00	15
0.25	155	0.25	55
0.50	220	0.50	105
0.75	260	0.75	160
0.75	240	1.00	240
		1.10	270
		1.10	265

Shut-in Data

Time mins	Pressure psi	Time mins	Pressure psi
Test 1		Test 2	
0.00	240	0.00	265
1.00	178	1.00	256
2.00	175	2.00	256
3.00	175	3.00	256
4.00	175	4.00	256
5.00	175		
6.00	0		





NOTES
Test 1:
1. Performed FIT at 0.5 bpm, recording data every 0.25 bbls pumped.
2. Shut in pressure at 240 psi. 1 min = 178 psi, 2 min = 175 psi, 3 min = 175 psi, 4 min = 175 psi, 5 min = 175 psi.
3. Bleed Back = 0.6 bbls

9 5/8" CASING SHOE FIT / LOT SUMMARY SHEET

Australian Drilling Associates Pty Ltd ADA

RIG	Ensco 102
WELL	Yolla-4
DATE	5-Jul-04

Casing Size:	9.625 in
Shoe Depth:	2488.00 m TVD
Hole Depth:	2513.00 m TVD
Mud Weight:	1.11 SG
Pump Rate:	0.5 BPM
Vol pumped:	0.75 BBL
Vol bled back:	0.6 BBL

Target FIT EMW	1.25 SG
Target Surf Press	510 psi

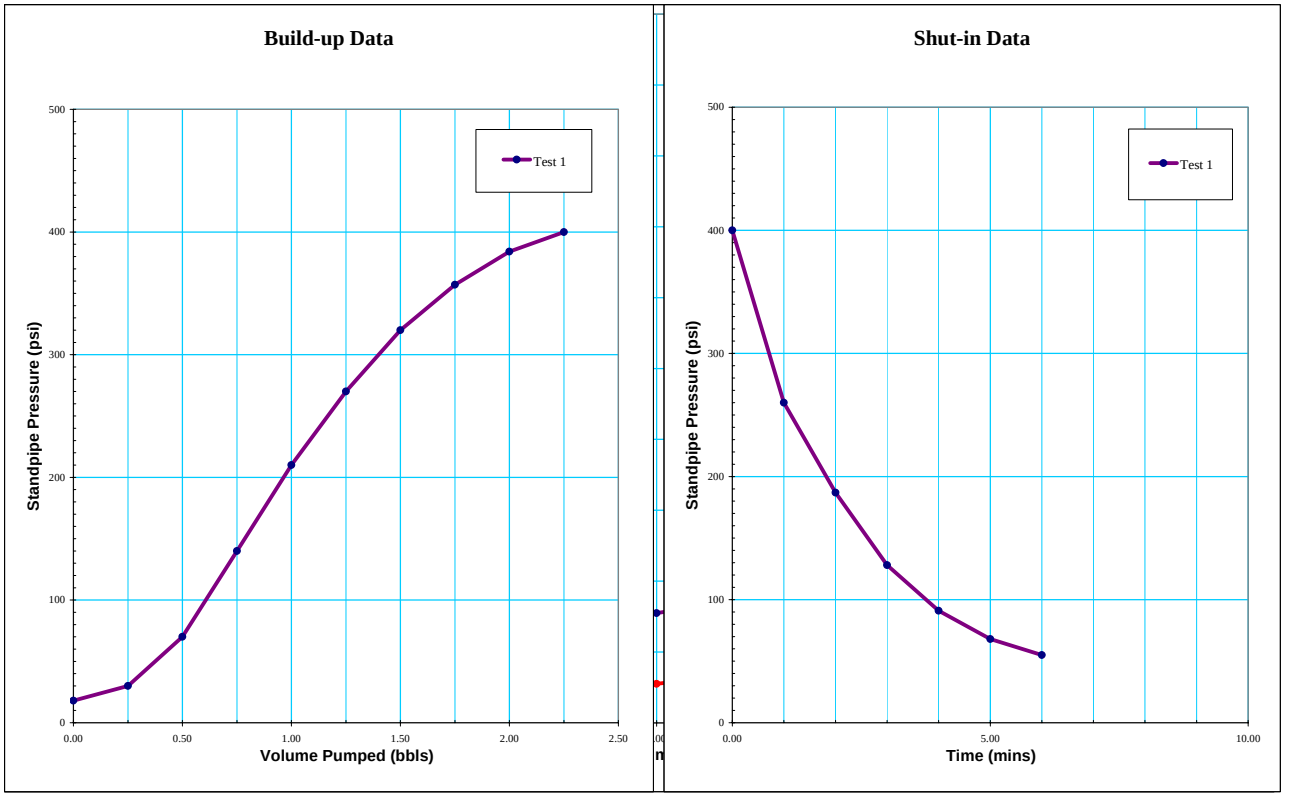
Actual Max Press	320 psi
Actual EMW	**1.20 SG**
	10 ppg

Build-up Data

Volume bbls	Pressure psi	Volume bbls	Pressure psi
Test 1		Test 2	
0.00	18		
0.25	30		
0.50	70		
0.75	140		
1.00	210		
1.25	270		
1.50	320		
1.75	357		
2.00	384		
2.25	400		

Shut-in Data

Time mins	Pressure psi	Time mins	Pressure psi
Test 1		Test 2	
0.00	400		
1.00	260		
2.00	187		
3.00	128		
4.00	91		
5.00	68		
6.00	55		



NOTES

Test 1:

1. Performed FIT at 0.33 bpm, recording data every 0.25 bbls pumped.
2. After 1.5bbl pumped the formation started taking fluid. Based on this 320psi was taken as the maximum actual pressure.
3. At 320psi an EMW of 10ppg is obtained.

APPENDIX 16: DAILY DRILLING REPORTS

DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004

Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Activity Report For Yolla-4

Date : 06 Jun 2004 **Daily Cost : $ 0** **Report Number : 1**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	RM	P	RM		2.5	Ensco 102 at 1nm from Yolla A platform at 17:30 6June, 2004 after departing ESSO's West Whiptail-1 well location at 1530hr 5June, 2004. Moved rig to soft pin location. Statement of facts at 1730hr 6June, 2004: Fuel oil = 266mt Potable water = 253mt Drill water = 160mt Cement = 34.2mt Barite = 48.8mt Bentonite = 21.2mt Soda ash = 27sx (25kg/sx) Caustic soda = 44 pails (25kg/pail) Lime = 75sx (20kg/sx) Calcium chloride = 54 sx (25kg/sx) KCl = 10 bags (1000kg/bag) Sodium bicarbonate = 35sx (25kg/sx) Citric acid = 36sx (25kg/sx) Baracarb-25 = 4 bags (1200kg/bag) Baracarb-100 = 4 bags (1200kg/bag) Barofibre = 80sx (25lb/sx) Barafilm/Petrofree = 1 drum (55gal) Baradefoam-W300 = 2 cans (25lt/can) Barolift = 6 boxes (15lb/box)
0	RM	P	JUD		1.75	Tagged bottom and soft pinned rig. Invincible Tide disconnected from port side and rigged up to run anchors.
0	RM	P	AH		1.75	Invincible Tide ran P2 anchor. Anchor on bottom at 22:00 (Easting 398 553, Northing 5 589 337).
0	RM	P	AH		0.5	Invincible Tide ran S2 anchor. S2 anchor on bottom at 23:45 (Easting 398 484, Northing 5 588 364).

Date : 07 Jun 2004 **Daily Cost : $ 0** **Report Number : 2**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	RM	P	AH		3.75	Continued to run anchors. Starboard-forward anchor on bottom at 02:05. Port-forward anchor on bottom at 03:30.
0	RM	P	AH		1.25	Tensioned all anchors to 35t - ok.
0	RM	P	RM		2	Lowered hull and raised legs 1.5m (5ft) off bottom. Pulled into location on anchors.
0	RM	P	JUD		0.75	Pinned on final location with 2.75m (9ft) penetration. Took Fugro position fix. Heading: 99.54°, Location: 0.4m off planned location.
0	RM	P	JUD		0.75	Lowered legs and raised hull to 3m (10ft). Leg penetration: starboard = 6.4m (21ft), port = 6.1m (20ft), bow = 6.4m (21ft).
0	RM	P	JUD		2.25	Released Keera from starboard aft bollard. Released Invincible Tide released and commenced installation of preload pumps.
0	RM	P	JUD		2.75	Levelled out rig. Commenced preload with 3m (10ft) draft. Initial penetrations: starboard = 6.4m (21ft), bow = 6.4m (21ft), port = 6.1m (20ft).
0	RM	P	JUD		0.75	Starboard leg penetrated at an increment of 0.3m (1ft). Stopped preload pumps. Leg penetration was 7.9m (26ft) with an applied weight of 7646lbs. Bow load was 8135lbs and port load was 8043lbs. Preload water by volume was 67% of total. Experienced rapid uncontrolled leg penetration on starboard leg. Dumped preloads. Bow leg also experienced uncontrolled leg penetration. Rig inclination was +2°. Continued jacking down on starboard and bow legs. Jacked up on port leg. Chord loads on all legs were observed below established safe levels.
0	RM	P	JUD		0.25	Jacked down on port leg and up on starboard leg.
0	RM	P	JUD		6.25	Leg penetrations: starboard = 16.2m (53.2ft), bow = 16.2m (53.3ft), port = 15.9m (52ft). Inspected legs and guides - ok. Informed Ensco Singapore office of situation. Took right phase difference (RPD) readings.
0	RM	P	JUD		0.25	Jacked up to 1m (3ft) draft.
0	RM	P	JUD		3	Commenced preloading on bow leg.

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004

Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 08 Jun 2004 **Daily Cost : $ 0** **Report Number : 3**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	RM	P	JUD		0.5	Dumped preload on bow legs and jacked down on aft legs.
0	RM	TP	JUD	OTH	1	Commenced 2nd stage bow leg preload. Leg penetrations: bow = 18.3 m (60 ft), starboard = 16.5 m (54 ft), port = 16.2 m (53 ft).
0	RM	TP	JUD	OTH	0.75	Hull at 1.1 m (3.5 ft) draft. Dumped preload. Leg penetrations: bow = 18.9 m (62 ft), starboard = 16.8 m (55 ft), port = 16.5 m (54 ft).
0	RM	TP	JUD	OTH	1.25	Commenced 3rd stage bow leg preload.
0	RM	TP	JUD	OTH	0.75	Hull at 3.4 m (11 ft) draft. Dumped preload and jacked down aft legs.
0	RM	TP	JUD	OTH	0.75	Commenced 4th stage bow leg preload. Leg penetrations: bow = 22.3 m (73 ft), starboard = 17.0 m (56 ft), port = 16.5 m (54 ft).
0	RM	TP	JUD	OTH	0.5	Hull at 1.2 m (4 ft) draft. Dumped preload.
0	RM	TP	JUD	OTH	1.25	Commenced 5th stage bow leg preload.
0	RM	TP	JUD	OTH	1.25	Dumped preload. Weather picked up and tide fell.
0	RM	TP	JUD	OTH	2	Commenced 6th stage bow leg preload.
0	RM	TP	JUD	OTH	1	Bow leg preload 100% (21981 lbs). Dumped preload.
0	RM	P	JUD	OTH	0.75	Levelled rig and took rack phase difference readings.
0	RM	P	JUD	OTH	1.25	Stripped bow leg preload tanks.
0	RM	P	JUD		2	Commenced 1st stage port leg preload. 1.4 m (4.5 ft) draft on port leg.
0	RM	P	JUD		0.5	Dumped preload and levelled rig. Leg penetrations: bow = 23.5 m (77 ft), starboard = 17.0 m (56 ft), port = 18.3 m (60 ft).
0	RM	TP	JUD	OTH	2	Commenced 2nd stage port leg preload. 1.0 m (3 ft) draft on port leg.
0	RM	TP	JUD	OTH	1	Dumped preload and levelled rig to 0.3 m (1 ft) draft. Leg penetrations: bow = 23.5 m (77 ft), starboard = 17.0 m (56 ft), port = 18.9 m (62 ft).
0	RM	TP	JUD	OTH	2.5	Commenced 3rd stage port leg preload. Lowered draft to 0.3 m (1 ft) - tide dropping.
0	RM	TP	JUD	OTH	0.5	Experienced rapid uncontrolled leg penetration of 4.3 m (14 ft) on port leg with a weight of 18940 lbs applied (preload water volume was 86% of planned total). Rig inclination exceeded 4°. Fugro positioning equipment showed that rig came within 2.7m of Yolla A platform. Jacked hull down on starboard and bow legs. Dumped port leg preload. The port leg depth was 23.2 m (78 ft) below the mudline following the uncontrolled penetration.
0	RM	TP	JUD	OTH	1	Inspected all rig legs - no visible damage. Levelled hull.
0	RM	TP	JUD	OTH	1.5	Jacked up in increments to zero draft. Coninued dumping preload.

Date : 09 Jun 2004 **Daily Cost : $ 0** **Report Number : 4**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	RM	TP	JUD	OTH	1	Commenced 4th stage port leg preload.
0	RM	TP	JUD	OTH	0.5	0.6 m (2 ft) draft on hull at port leg. Dumped preload.
0	RM	TP	JUD	OTH	3.5	Commenced 5th stage port leg preload with 0.3 m (1 ft) draft. Port leg preloaded to 21196 lbs (96% of 21981 lbs). 100% not possible due to tank capacities and configuration.
0	RM	TP	JUD	OTH	0.5	Held preload for 30 mins - ok.
0	RM	P	JUD	OTH	1.5	Dumped preload and levelled hull. Leg penetrations: bow = 23.5 m (77 ft), starboard = 17.7 m (58 ft), port = 23.8 m (78 ft).
0	RM	P	JUD		1	Commenced starboard leg preload.
0	RM	P	JUD		0.5	Hull at 1.2 m (4 ft) draft. Dumped preload.
0	RM	TP	JUD	OTH	1.5	Levelled hull. Leg penetrations: bow = 23.5 m (77 ft), starboard = 18.3 m (60 ft), port = 23.8 m (78 ft). Commenced 2nd preload stage on starboard leg.
0	RM	TP	JUD	OTH	1.25	Hull 1.1 m (3.5 ft) below water line. Dumped preload.
0	RM	TP	JUD	OTH	1.25	Levelled hull. Leg penetrations: bow = 23.5 m (77 ft), starboard = 18.6 m (61 ft), port = 23.8 m (78 ft). Commenced 3rd preload stage on starboard leg.
0	RM	TP	JUD	WOW	1	Stopped preload due to deteriorating sea conditions. Dumped preload.
0	RM	TP	JUD	WOW	7.5	Jacked clear of 2.5 m wave action. Waited on weather.

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004

Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 09 Jun 2004 **Daily Cost : $ 0** **Report Number : 4**

0	RM	TP	JUD	OTH	2	Wave action moderated to 1.5 m. Resumed 3rd stage preload on starboard leg. Hull in water with draft 0.5 m (1.5 ft). Starboard leg at 18.6 m (61 ft) with 15150 lbs.
0	RM	TP	JUD	OTH	0.5	With 19528 lbs applied to starboard leg a rapid uncontrolled penetration occured. The penetration of the leg went from 18.6 m (61 ft) to 23.8 m (78 ft). The rig inclination was 4.65° with a 5.8 m (19 ft) draft on the starboard leg. Dumped preload.
0	RM	TP	JUD	OTH	0.5	Levelled rig and visually inspected all legs - no damage. Continued dumping preload and jacked hull up incrementally. Leg penetrations: bow = 23.5 m (77 ft), starboard = 23.8 m (78 ft), port = 23.5 m (77 ft).

Date : 10 Jun 2004 **Daily Cost : $ 0** **Report Number : 5**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	RM	TP	JUD	OTH	0.5	Commenced 4th stage of starboard leg preload.
0	RM	TP	JUD	OTH	2.75	Preloaded on starboard leg to 21429 lbs (97% of planned total). Held for 30 mins - ok. Leg penetration 23.8 m (78 ft).
0	RM	TP	JUD	OTH	0.5	Dumped preload - no further settling. Levelled rig above wave action.
0	RM	TP	JUD	OTH	1.25	Jacked down to 4.3 m (14 ft) draft and took RPD readings.
0	RM	TP	JUD	OTH	1.25	Jacked up above wave height.
0	RM	TP	JUD	OTH	1.75	Took RPD readings and equalised loads. Note: Offloaded helifuel containers from Keera.
0	RM	TP	JUD	OTH	5	Jumped ROV into water and commenced inspection of all legs from 50 m below MSL to surface.
0	RM	TP	JUD	OTH	2.5	Invincible Tide retrieved port-bow anchor. ROV continued leg survey.
0	RM	TP	JUD	OTH	1.5	ROV completed survey of rig legs - no damage observed. Retrieved ROV to surface .
0	RM	TP	JUD	OTH	1.75	Preloaded bow leg to 100% with rig hull 0.3 m (1 ft) above wave action. Whilst holding preload the port-aft anchor was retrieved. Spheroidal height at 10.99 m as per Fugro equipment.
0	RM	TP	JUD	OTH	4	Held preload whilst retrieving starboard-aft anchor.
0	RM	TP	JUD	OTH	0.75	Dumped preload after holding for 4 hours. Spheroidal height 10.93 m as per Fugro equipment. Retrieved starboard-bow anchor.
0	RM	TP	JUD	OTH	0.5	Commenced preload on port leg with rig hull 0.3 m (1 ft) above wave action. Spheroidal height 10.99 m.

Date : 11 Jun 2004 **Daily Cost : $ 0** **Report Number : 6**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	RM	TP	JUD	OTH	2.25	Continued preloading on port leg.
0	RM	TP	JUD	OTH	5	Preloaded port leg to 100% - hold for 5 hrs. Spheroidal height 10.95m.
0	RM	TP	JUD	OTH	0.75	Dumped preload.
0	RM	TP	JUD	OTH	6.5	Preloaded starboard leg to 100%, held for 4 hrs. Spheroidal height 10.97 m.
0	RM	TP	JUD	OTH	0.5	Dumped preload. Final leg penetrations: Starboard leg = 23.77 m, Bow = 23.47 m, Port = 23.47 m.
0	RM	P	JUD		0.5	Released Ray J. Hope from tow bridle.
0	RM	P	JUD		1.5	Raised hull to approximately 43.88 m RKB - MSL elevation. Space out from RKB - platform = 21.13 m Bow heading = 101 deg.
0	RM	P	JUD		1	Installed rack chocks.
0	RM	P	SKR		0.25	Held JSA for skidding the cantilever over the Yolla platform.
0	RM	P	SKR		1.75	Skidded cantilever over the Yolla platform to 19m mark aft.
0	PS	P	RU		1	Pulled diverter and setback on rig floor.
0	PS	U	RU	OTH	1.75	Installed pollution control unit (PCU), under rig floor.
0	PS	P	RU		1.25	Prepared to skid transverse to starboard.

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004

Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 12 Jun 2004 **Daily Cost : $ 205,757** **Report Number : 7**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
0	PS	P	RU		1.5	Completed transverse skid to starboard.
0	PS	P	RU		5.25	Installed landing and stairs for Yolla platform access.
0	PS	P	RU		1.25	Skidded catwalk and installed V door ramp. Installed guard rails on platform and removed hatch cover.
0	PS	P	RU		2.75	Remove tie-downs and prepare deck equipment and rig floor for drilling operations.
0	PS	P	RU		1.25	Removed inserts and slide open plates on riser tensioner system. Placed slings, shackles and turnbuckles for conductor support slings on mezzanine deck of platform.
0	CON	P	RU		0.5	Lowered wellhead to mezzanine deck of platform.
0	CON	P	RU		2	Rigged up to run 20"conductor.
0	CON	P	RRC		0.25	Held JSA on running 20"conductor.
127.0	CON	P	CRN		6.25	Ran 20"conductor to 127 m, no problems observed by ROV when entering guide funnels. No loss of weight when seabed penetrated.
127.0	CON	P	CRN		0.25	Held JSA on picking up Franks D 46 hammer.
127.0	CON	P	CRN		1.75	Rigged up Franks D 46 hammer.
127.0	PS	P	RU		1	Installed trip tank overboard line. Note: Conductor drive sub identified earlier as needing inner mandrel for difficult conductor driving operations. Inner mandrel sourced from town with ETA 0930 hrs 13/06/04.

Date : 13 Jun 2004 **Daily Cost : $ 333,040** **Report Number : 8**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
127.0	PS	P	RU		8	Installed shaker overboard hose and flow line to main deck mud ditch. Lifted welding gear for wellhead onto platform. Installed foxhole and foxhole slips, moved iron roughneck tracks to the foxhole. Continue rig up operations while waiting on conductor drive sub inner mandrel.
127.0	PS	U	PUP		1.75	Picked up and racked 5" drill pipe whilst waiting on conductor drive sub inner mandrel.
127.0	PS	U	PUP		4.25	Conductor drive sub inner mandrel arrived on rig via helicopter. Welded mandrel into existing drive sub, operation slowed by poor weather conditions. Continued to pick up drill pipe (total in derrick of 14 stands plus 3 stands of HWDP), whilst waiting on fabrication activities. Unable to pick up pipe from 1400 hrs due to high winds (mean wind speed 40 knts, gusting 45 knts), preventing crane operations.
127.0	PS	TP	WOW	WOW	5	Waited on weather (high winds preventing crane operations). 1400 windspeed = 40 knts gusting 45 knts NW seas 2.5-3 m 1600 windspeed = 40 knts gusting 45 knts NW seas 3-3.5 m 1800 windspeed = 40 knts gusting 45 knts NW seas 3-3.5 m 1900 windspeed = 35 knts gusting 40 knts NW seas 3-3.5 m 1200 windspeed = 40 knts gusting 45 knts NW seas 3-3.5 m 1400 windspeed = 38 knts gusting 45 knts NW seas 3-3.5 m 1600 windspeed = 45 knts gusting 50 knts NW seas 3-3.5 m 1900 windspeed = 35 knts gusting 38 knts NW seas 3-3.5 m. Continued with conductor drive sub fabrication and rig house keeping and maintenance.
127.0	PS	U	PUP		1.5	Continued to pick up drill pipe whilst waiting on MPI inspection of fabricated conductor drive sub. Total pipe in derrick = 18 stands plus 3 stands HWDP. Operations slowed by high winds.
127.0	CON	P	CRN		1.75	Picked up conductor drive sub.
127.0	CON	P	CRN		0.25	Held JSA on conductor hammering operation.
127.0	CON	P	CRN		1.5	Ran 20" conductor from 127 m to 151 m (freefalling at controlled rate).

Date : 14 Jun 2004 **Daily Cost : $ 323,360** **Report Number : 9**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
151.0	CON	P	CRN		0.25	Held JSA on hammering operation with new crew.
169.0	CON	P	CRN		2.5	Continued running 20"conductor from 151 m to 166 m (several blows required to start conductor moving from 150.5 m after making connection). Conductor free falling at controlled rate for remainder of joint. Made new connection, again conductor required several blows before free falling at a

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004
Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 14 Jun 2004 | **Daily Cost : $ 323,360** | **Report Number : 9**

						controlled rate to 166 m. Drove conductor from 166 m to 169 m, total blows 35, average 3-4 blows per foot. Elevator hinge pin fell out of elevators approximately 6 m to the rig floor. No person injured. Stopped job.
169.0	CON	TP	CRN	OEF	1.5	Secured conductor with slips. Removed elevator from conductor for examination. Found hinge pin retaining pin to be sheared. Crane operations shut down from 0230 hrs by high winds, therefore decided to wait on weather improvement before proceeding. Meanwhile repair elevators.
169.0	CON	TP	WOW	WOW	19.75	Waited on weather (high winds preventing crane operations) Meanwhile repaired and relatched elevators to conductor, performed rig maintenance and house keeping. 0500 windspeed = 40 knts gusting 50 knts NNW seas 4-5 m 0600 windspeed = 35 knts gusting 45 knts NW seas 4-5 m 0800 windspeed = 40 knts gusting 45 knts NW seas 5-6 m 1000 windspeed = 35 knts gusting 45 knts NW seas 4-5 m 1200 windspeed = 40 knts gusting 45 knts NW seas 3-4 m 1400 windspeed = 38 knts gusting 45 knts NW seas 4-5 m 1600 windspeed = 45 knts gusting 50 knts NW seas 4-5 m 1800 windspeed = 35 knts gusting 40 knts NW seas 4-5 m 2000 windspeed = 45 knts gusting 56 knts NW seas 4-5 m 2200 windspeed = 45 knts gusting 65 knts NW seas 4-6 m 2400 windspeed = 45 knts gusting 65 knts NW seas 4-6m.

Date : 15 Jun 2004 | **Daily Cost : $ 323,755** | **Report Number : 10**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
169.0	CON	TP	WOW	WOW	4.5	Continued to wait on weather (high winds preventing crane operations). Performed rig maintenance and house keeping activities. 0200 hrs windspeed = 45 knts gusting 65 knts NW seas 4-5 m 0400 hrs windspeed = 30 knts gusting 37 knts WNW seas 4-4.5 m
169.0	CON	P	CRN		0.5	Held JSA on conductor hammering operations, prepared to restart driving conductor.
179.0	CON	P	CRN		1	Drove 20"conductor from 169 m to 179 m, 5 blows per foot required. Seabed penetration 55 m. Unable to continue due to high winds over 40 knts preventing crane operations.
179.0	CON	TP	WOW	WOW	13.5	Waited on weather (high winds prevented crane operations). Performed rig maintenance and house keeping activities. 0800 hrs windspeed = 40 knts gusting 45 knts WSW seas 3-4 m 1000 hrs windspeed = 45 knts gusting 60 knts WSW seas 3-4 m 1200 hrs windspeed = 40 knts gusting 45 knts WSW seas 3-4 m 1400 hrs windspeed = 40 knts gusting 45 knts WSW seas 3-4 m 1600 hrs windspeed = 40 knts gusting 45 knts WSW seas 3-4 m 1800 hrs windspeed = 35 knts gusting 43 knts WSW seas 2-3 m 1900 hrs windspeed = 30 knts gusting 35 knts WSW seas 2-2.5 m.
179.0	CON	P	CRN		0.5	Held JSA and prepared to restart conductor driving operations.
218.0	CON	P	CRN		4	Drove 20" conductor from 179 m to 218 m, easy driving with average blows per foot = 15-20. Formation appeared to firm up considerably at approximately 218 m, up to 90 blows per foot required.

Date : 16 Jun 2004 | **Daily Cost : $ 299,080** | **Report Number : 11**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
220.0	CON	P	CRN		0.5	Continued to drive 20" conductor from 218 m to 220 m (96 m penetration), formation appeared to soften slightly with blow count per foot reducing from 85-90 down to 57. Landed conductor support pad eyes approximately 10 cm above platform cellar deck.
220.0	CON	TP	RU	WOW	2.25	Moved remainder of Leighton Engineering welding equipment from the rig to the platform (unable to do so offline due to high winds). Rigged up to cut and weld 20" conductor.
220.0	CON	U	CCT		0.75	Cut 20" conductor with 45 deg internal bevel 600 mm above base of lowermost landing joint RL4S box connection. Pulled back with landing string above the Yolla platform main deck. Boat alongside from 0250 hrs.

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Date : 16 Jun 2004 **Daily Cost : $ 299,080** **Report Number : 11**

220.0	CON	P	CCT		1	Cut 20" conductor 'stump' 600 mm above Yolla platform cellar deck. Recovered same to Yolla main deck.
220.0	CON	U	CRN		2.5	Picked up 20" wellhead with rig tugger aligned with 20"conductor stump, and tack welded in position. Measurement from cellar deck to top of wellhead housing = 1250 mm. Overboard outlet aligned West to faciliate installation of conductor support slings and maximise wellbay space. Meanwhile prepared to skid transverse to Yolla 3 slot. Yolla 4 operations temporarily suspended. Boat stood down at 0650 hrs. **WELL SUSPENDED FOR CONDUCTOR DRIVING OPERATIONS ON YOLLA 3**

Date : 17 Jun 2004 **Daily Cost : $ 257,278** **Report Number : 12**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
220.0	PS	P	SKR		1	Recommenced operations on Yolla 4. Skidded rig 366 cm to Starboard, rotary table 53 cm to Starboard of rig's centre line.
220.0	PS	P	RU		2	Reconnected service lines, skidded catwalk and lowered V door ramp, connected high pressure mud lines from cantilever to the drill floor.
220.0	PS	P	RU		0.5	Removed deck cover from platform, installed conductor support slings.
220.0	PS	P	RU		2.25	Removed scaffold from around Yolla 4 well head.
220.0	PS	P	RU		1.25	Installed 20" riser adaptor spool onto wellhead as per Cameron rep's instructions.
220.0	PS	P	RU		7.25	Installed conductor tensioner frame cables. Offline tested 20" riser adaptor spool seals to 1000 psi / 15 mins, good test.
220.0	PS	P	RU		2	Nippled up 24" low pressure riser to 20" riser adaptor spool. Ceased operations due to high winds over 40 / 45 knts (cranes shut down).
220.0	PS	TP	WOW	WOW	1.75	Waited on weather (high winds preventing crane operations), performed rig maintenance and house keeping. 2400 windspeed = 45 knts gusting 51 knts seas 4 m.

Date : 18 Jun 2004 **Daily Cost : $ 323,624** **Report Number : 13**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
220.0	PS	TP	WOW	WOW	5	Waited on weather (high winds preventing crane operations), performed rig maintenance and house keeping. 0200 windspeed = 40 knts gusting 45 knts seas 6 m. 0400 windspeed = 25 knts gusting 45 knts seas 6 m.
220.0	PS	U	RR1	OTH	2	Raised riser tensioner frame using BOP hoist to allow access to riser flange. Picked up overshot inner mandrel and installed same. Picked up overshot and lowered into place. Unable to lower fully due to low pressure riser joint handling padeyes. Laid out overshot.
220.0	PS	U	RR1	OTH	1.5	Removed handling padeyes from overshot inner mandrel, cut holes to allow mandrel to be lowered into place.
220.0	PS	P	RR1		2	Picked up modified overshot inner mandrel and nippled up same.
220.0	PS	P	RR1		1.5	Picked up overshot and diverter housing and installed same. Connected actuator hoses.
220.0	PS	P	RR1		0.5	Cleared excess equipment from drill floor.
220.0	PS	P	RU		1	Installed 20" wear bushing.
220.0	PS	P	RU		1.75	Installed 10" diverter packer, installed control hoses and function tested diverter on Port and Starboard lines, closing time = 15 secs.
220.0	SH	P	HBHA		6.25	Make up and RIH with 16" BHA to mud line at 124 mRT / 124 m TVD.
220.0	SH	P	HBHA		0.25	Shallow tested MWD and mud motor, good test.
220.0	SH	P	DM		0	***SPUDDED YOLLA 4 WELL**** Commenced drilling fill inside 20" driven conductor at 124 mRT / 124 m TVD.
220.0	SH	P	DM		2.25	Washed out 20" conductor with the following parameters: WOB: 2klbs, ROP: 40-50 m/hr, SPP: 1160-1325 psi, GPM: 760-855, TRQ: 0-3 kftlbs, SWR: 150, SWU: 150, SWD 150 klbs.

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Pumped high vis sweeps 30/30/50 bbls per stand (spotting final sweep across the BHA prior to connection).

Observed returns via 6" hole in 20" conductor at sea level.

Midnight depth = 183 mAH / 183 mTVD.

Date : 19 Jun 2004 | **Daily Cost : $ 339,675** | **Report Number : 14**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
220.0	SH	P	DM		1.25	Washed out 20" conductor from 183 mRT / 183 mTVD with the following parameters: WOB: 2KLbs, ROP: 40-45 m/hr, SPP: 870-1000 psi, GPM: 650-750, TRQ: 0-3 KFtLbs, SWR: 175-180, SWU: 175, SWD 175 KLbs. Pumped high vis sweeps 30/30/50 bbls per stand (spotting final sweep across the BHA prior to connection). Observed good returns via 6" port in 20" conductor at sea level. Reduced to minimum flow rate necessary for motor (650 gpm) when drilling out conductor shoe at 220 mRT / 220 mRT to reduce chance of washout.
427.0	SH	P	DM		7.25	Drilled ahead 16" hole section from 220 mRT / 220 mTVD to 427 mRT / 427 mTVD. Controlled ROP to prevent overloading of annulus and used mimimum flow rates for hole cleaning to minmise chance of washouts. Took MWD surveys at connections. Average drilling parameters as follows: WOB: 0-2KLbs, ROP: 36-40 m/hr, SPP: 1500-1700 psi, GPM: 700-800, TRQ: 0-3 KFt-Lbs, SWR: 180, SWU: 185, SWD 180 KLbs. Pumped high vis sweeps 30/30/50 bbls per stand (spotting final sweep across the BHA prior to connection). Observed good returns via 6" port in 20" conductor at sea level.
630.0	SH	P	DM		8	Drilled ahead 16" hole at controlled rates from 427 mRT / 427 mTVD to 630 mRT / 630 mTVD. Took MWD surveys at connections. Average drilling parameters as follows: WOB: 3-6 KLbs, ROP: 35-36 m/hr, SPP: 1600-1850 psi, GPM: 850, TRQ: 1-4 KFt-Lbs, SWR: 180-195, SWU: 185-195, SWD 185-195 KLbs. Pumped high vis sweeps 30/30/50 bbls per stand (spotting final sweep across the BHA prior to connection). Observed good returns via 6" port in 20" conductor at sea level.
720.0	SH	P	DM		3	Drilled ahead 16" hole at controlled rates from 630 mRT / 630 mTVD to 720 mRT / 720 mTVD. Took MWD surveys at connections. Average drilling parameters as follows: WOB: 2-10 KLbs, ROP: 31-35 m/hr, SPP: 1850-1900 psi, GPM: 850, TRQ: 1-4 KFt-Lbs, SWR: 195-205, SWU: 195-205, SWD 195-205 KLbs. Pumped high vis sweeps 30/30/50 bbls per stand (spotting final sweep across the BHA prior to connection). Observed good returns via 6" port in 20" conductor at sea level.
802.0	SH	P	DM		4.5	Drilled ahead 16" hole from 720 mRT / 720 mTVD to 802 mRT / 802 mTVD. Formation firming up and becoming increasingly 'ratty', erratic WOB required. Average drilling parameters as follows: WOB: 8-20 KLbs, ROP: 11-35 m/hr, SPP: 1900-2250 psi, GPM: 850-925, TRQ: 2-5 KFt-Lbs, SWR: 205-215, SWU: 205-215, SWD 205-215 KLbs. Pumped high vis sweeps 30/30/50 bbls per stand (spotting final sweep across the BHA prior to connection). Observed good returns via 6" port in 20" conductor at sea level.

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Date : 20 Jun 2004 **Daily Cost : $ 319,965** **Report Number : 15**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
900.0	SH	P	DM		4.5	Drilled ahead 16" hole from 802 mRT / 802 mTVD to 900 mRT / 900 mTVD. Formation continuing to firm up and show 'ratty' character, erratic WOB required. Average drilling parameters as follows: WOB: 8-20 KLbs, ROP: 11-35 m/hr, SPP: 1900-2250 psi, GPM: 850-925, TRQ: 2-5 KFt-Lbs, SWR: 205-215, SWU: 205-215, SWD 205-215 KLbs. Pumped high vis sweeps 30/30/50 bbls per stand (spotting final sweep across the BHA prior to connection). Observed good returns via 6" port in 20" conductor at sea level.
900.0	SH	P	CMD		0.75	Pumped 50 bbl hi vis pill and circulated hole clean.
900.0	SH	P	CMD		1	Displaced open hole to 1.05 SG hi vis mud.
900.0	SH	P	TO		2.5	POOH to 20" conductor shoe at 220 mRT / 220 mTVD. Hole condition good, no over pull.
900.0	SH	P	OTH		2	Serviced top drive whilst resting hole. Moved 13 3/8" handling equipment to the drill floor. Offline tested BOP stack on stump to 250 psi / 5 mins, 7500 psi / 15 mins.
900.0	SH	TP	WO	RE	1.25	Commenced RIH, found top drive hydraulics non functional, trouble shoot same, found loose connections in SCR room for 24 volt signal supply. Rectified problem and function tested all hydraulics, all OK.
900.0	SH	P	TI		1.5	Took MWD survey at 198 mRT / 198 mTVD, inclination 0.31 deg. Performed check trip to TD at 900 mRT / 900 mTVD, hole in good condition, no fill.
900.0	SH	P	CMD		1.25	Re-displaced open hole with 555 bbl, 1.05 SG hi vis mud. Spotted 105 bbl, 1.04 SG inhibited hi vis pill at TD.
900.0	SH	P	TO		2.75	POOH to 20" conductor shoe, hole remaining in good condition, checked weather forecast suitable to allow casing running operation to proceed. (Crane required to lift casing joints).
900.0	SH	P	CMD		3	POOH and stood back BHA, laid out stabiliser and checked bit, graded as 2/2/BU/A/E/I/NO/TD
900.0	SC	P	RRC		1	Pulled 10" diverter element and retrieved 20" wear bushing from wellhead
900.0	SC	P	RRC		0.5	Cleared and tidied rig floor in preparation for running casing.
900.0	SC	P	RRC		0.25	Held JSA on running casing.
900.0	SC	P	RRC		1.25	Changed out pipe racking system pipe handler from 5" to 13 3/8", changed PS21 powerslip inserts from 5" to 13 3/8", changed bails and installed Weatherford La Fleur casing fill up tool to the top drive.
900.0	SC	TP	OTH	OTH	0.5	Wind gust caused drill pipe stand to fall across the derrick, no injuries or equipment damage. Double secured all remaining drill pipe stands and BHA. Pulled back stand and re-secured in different finger.

Date : 21 Jun 2004 **Daily Cost : $ 297,968** **Report Number : 16**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
900.0	SC	P	RRC		1.5	Completed rigging up casing running equipment.
900.0	SC	P	OTH		4	Picked up pup joint, broke off Vam Top box with 35 KFt-Lbs, laid out same. Picked up casing joint and broke off BTC box with 18 KFt-Lbs, laid out same. M/up BTC box to the pup joint with 14 KFt-lbs.
900.0	SC	P	CRN		0.25	Held JSA on running 13 3/8" casing.
900.0	SC	P	CRN		1.25	Made up shoetrack and tested same, OK. 5 spring bow centralizers on shoe track.
900.0	SC	P	CRN		5	Run 13 3/8", 54.5#, K55, BTC to shoe depth 370 mRT / 370 mTVD.
900.0	SC	P	CRN		0.25	Held JSA with new drill crew on running 13 3/8"casing.
900.0	SC	P	CRN		2.25	Continued to run 13 3/8", 54.5#, K55, BTC to shoe depth 577 mRT / 577 mTVD. Installed stage collar in string spaced out to land at 307mRT/307mVDRT (depth when casing string landed out). Installed tandem cement baskets and one spring bow centralizer below SC. Hole condition good over casing run, no tight spots. Filled casing with seawater whilst running, installed centralisers as per programme.
900.0	SC	P	CRN		1.5	Install 72# Q125 X-over BTC Pin x Vam Top Box. Run 9jts 13 3/8", 72#, Q125, Vam Top Casing and install 72# Q125 Vam TOP pin x BTC Box X-Over. Run to shoe depth 709 mRT / 709 mTVD. Drifted same in V door with 12 1/4" drift. Installed spring bow centralizer in middle of every other joint in open hole and 2 rigid centralizers on first joint inside 20" shoe.
900.0	SC	P	CRN		1.75	Continued to run 13 3/8", 54.5#, K55, BTC to shoe depth 854 mRT / 854 mTVD. Installed rigid centralizers in middle of every other joint to mud line and one ever joint above mud line.

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					Hole condition good over casing run, no tight spots. Filled casing with seawater whilst running, installed centralisers as per programme.
900.0	SC	P	CRN	0.75	Picked up Cameron 13 5/8", 10 KPsi, CF13 Fastlock Compact Housing and made up to casing string.
900.0	SC	P	CRN	1	Landed out 13 5/8" compact housing in 20" wellhead at 27.668 mRT on 13 3/8", 54.5#, K55, BTC landing string. Confirmed landout by inspection through side outlets of 20" Wellhead Housing. SWU / SWD prior to landing = 250 / 220 KLbs. Shoe depth = 884.57 mRT / 884.57 mTVD. Stage collar depth = 307.40 mRT / 307 mTVD.
900.0	SC	P	CRN	1	Laid out top landing joint to allow cement head to be installed at rotary level, installed Cement Head and connected up surface lines from the Cement Unit.
900.0	SC	P	CIC	2	Circulated 550 bbls seawater at 6 bpm, 465 psi. Offline held JSA on cementing operations. Observed good returns from Conductor 6" ports.
900.0	SC	P	CMC	0.25	Pressure tested surface lines from cement unit to the drill floor to 2000 psi / 5 mins, OK.
900.0	SC	P	CMC	0.25	Cement unit pumped 20 bbl freshwater spacer.
900.0	SC	P	CMC	0.5	Cement Unit pumped 233 bbl, 12.5 PPG Lead Slurry (588 sacks, 184 bbl mixwater) at 7 bpm. Planned top of Lead Slurry = 310 mRT / 310 mTVD. (Used 100% excess on gauge hole volume per washout observed at this depth in Yolla 1 well)
900.0	SC	P	CMC	0.5	Cement unit pumped 86 bbl 15.8 PPG Tail Slurry (418 sacks, 51 bbl mixwater) at 3 bpm. Planned top of Tail Slurry = 785 mRT / 785 mTVD. (Used 200% excess on gauge hole volume per washout observed at this depth in Yolla 1 well). Good returns observed from Conductor 6" ports throughout the cement job.

Date : 22 Jun 2004 **Daily Cost : $ 542,608** **Report Number : 17**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
900.0	SC	P	CMC		0.5	Dropped 1st Plug, Cement Unit displaced with 20 bbl seawater at 7 bpm.
900.0	SC	P	CMC		1.25	Displaced with 415 bbl Seawater pumped by the rig at 7 bpm. Observed good returns from 6" port in Conductor.
900.0	SC	P	CMC		0.25	Bumped Plug with 750 psi at 3 bpm. Pressure tested Casing to 1500 psi / 15 mins, good test.
900.0	SC	P	CMC		0.25	Bled off pressure and checked Floats holding, OK.
900.0	SC	P	CMC		0.25	Dropped Stage Collar opening Plug, allowed to free fall for 10 minutes. (Stage Collar at 307 mRT / 307 mTVD).
900.0	SC	P	CMC		0.25	Pressured up to 550 psi, lost pressure, observed returns from 6" ports in Conductor. Stage Collar now open.
900.0	SC	P	CMC		2.25	Circulated Seawater using the rig pumps at 3 bpm. Observed good returns from 6" port in Conductor.
900.0	SC	P	CMC		1.25	Cement samples firm, prepared for 2nd stage cement job, loaded closing plug into cement head.
900.0	SC	P	CMC		0.25	Held JSA on second stage cement job.
900.0	SC	P	CMC		0.5	Cement Unit pumped 50 bbl seawater followed by 20 bbl freshwater, (both spacers contained corrosion inhibitor).
900.0	SC	P	CMC		0.25	Pressure tested lines to 2000 psi / 5 mins, good test.
900.0	SC	P	CMC		0.75	Cement unit pumped 66 bbl, 13.5 PPG Slurry (210 sacks, 48 bbl mixwater) at 5 bpm. Planned top of cement = 170 mRT / 170 mTVD. (Used 100% excess on gauge hole volume per washout observed at this depth in Yolla 1 well). Good returns observed from Conductor 6" ports throughout the cement job.
900.0	SC	P	CMC		0.5	Dropped Top Closing Plug, displaced with 20 bbl Freshwater and 136 bbl Seawater at 7 bpm, observed good returns from 6" port in 20" Conductor.
900.0	SC	P	CMC		0.25	Bumped Plug with 600 psi at 4.5 bpm. Pressure tested Casing to 1500 psi / 15 mins, good test.
900.0	SC	P	RRD		1.25	Rigged down Cement head and Landing String
900.0	SC	P	RRD		2	Rigged down 13 3/8" handling equipment and laid out bails, cleared drill floor of excess equipment.
900.0	SC	P	RD		5	Nippled down Diverter, Overshot and 24" Low Pressure Riser
900.0	SC	P	OTH		2.5	Installed side outlet valves on the 13 5/8" Compact Housing, oriented SW / NE. Tested lower valve

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						flange to 5000 psi / 15 mins, good test.
900.0	SC	P	BOP		1	Installed CF 13 Fastlock connector, 13 5/8" 5000 psi Riser Spool c/w N2 Fastlock connector to 13 5/8" Compact Housing.
900.0	SC	U	BOP		3.5	Riser Tensioner Frame slings too short to allow connection of BOP on High Pressure Riser. Supported Riser Tensioner Frame with BOP hoist and added 4 x 55 MT shackles to each Riser Tensioner Sling. Re-attached Riser Tensioner Frame to slings.

Date : 23 Jun 2004 **Daily Cost : $ 323,071** **Report Number : 18**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
900.0	SC	P	BOP		1	Installed inner beams on Riser Tensioner Frame
900.0	SC	P	BOP		4.25	Picked up BOP off test stump. Moved transverse to rotary table, removed test joint and installed safety slings. Lowered onto high pressure riser. Pressure tested choke and kill manifold offline, all tests to 500 psi / 5 mins, 5000 psi / 10 mins.
900.0	SC	P	BOP		3.25	Torqued up N2 connector, installed POD hoses, pressured up Koomey Unit, removed BOP safety slings.
900.0	SC	TP	RR	RE	10.5	Changed out annular packer element, tested replacement to 500 psi / 5mins, 5000 psi / 15 mins, good test. Offline changed out swivel packing. Cranes shut down at 1630 hrs due to high winds (windspeed 40 knts, gusting 50 knts).
900.0	SC	P	BOP		5	Installed choke and kill lines to BOP. Pressure tested standpipe manifold offline, all tests to 500 psi / 5 mins, 5000 psi / 10 mins.

Date : 24 Jun 2004 **Daily Cost : $ 360,944** **Report Number : 19**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
900.0	SC	P	BOP		1	Completed installation of choke and kill lines to BOP.
900.0	SC	P	BOP		4.5	Tested top drive upper IBOP, lower IBOP, choke manifold valves # 1,2,3 and 4. Both choke and kill lines. Tested shear / blind rams. All tests to 500 psi / 5 mins, 5000 psi / 10 mins.
900.0	SC	P	BOP		0.25	Rigged down pressure test equipment.
900.0	SC	P	BOP		3.25	Nippled up overshot inner mandrel, overshot and installed diverter housing assembly. Connected control hoses and energised lock down dogs and seals
900.0	IH1	P	DM		1.5	Installed 13 5/8" wear bushing. Laid out running tool.
900.0	IH1	TP	DM	RE	2.5	Changed out saver sub (damaged during while running drill pipe through the BOP), changed out leaking swivel packing. Pressure tested swivel packing to 3000 psi / 15 mins, good test.
900.0	SH	P	HBHA		1.5	Laid out bit, motor and MWD probe from 16" BHA.
900.0	SH	TP	HBHA	RE	2.5	Pipe racking system (PRS), lower arm not holding position, troubleshot same.
900.0	SH	P	HBHA		1.5	Continued to lay out excess BHA equipment.
900.0	IH1	U	HBHA		2.25	Made up 12 1/4" cleanout BHA.
900.0	IH1	U	HBHA		0.25	Shallow test mud motor with 150 gpm flowrate at 800 psi circulating pressure.
900.0	IH1	U	TI		1	RIH to 291 mRT / 291 mTVD.
900.0	IH1	P	TI		0.25	Washed down to top of cement at 301 mRT / 301 mTVD.
900.0	IH1	P	DFS		1.75	Drilled out cement and stage collar plugs, from 301 mRT / 301 mTVD to 305 mRT / 305 mTVD with the following parameters: WOB: 5-15 KLbs,SPP: 1000 psi, GPM: 750, TRQ: 0-1 KFt-Lbs.

Date : 25 Jun 2004 **Daily Cost : $ 315,882** **Report Number : 20**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004

Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 25 Jun 2004 **Daily Cost : $ 315,882** **Report Number : 20**

900.0	IH1	P	DFS		1	Continued to drill out stage collar plugs from 305 mRT / 305 mTVD to 307 mRT / 307 mTVD with the following parameters: WOB: 5-15 KLbs,SPP: 1000 psi, GPM: 750, TRQ: 0-1 KFt-Lbs. Pumped 40 bbl hi vis pill and worked pipe through section to remove any loose stage collar debris from the wellbore.
900.0	IH1	P	TI		1	RIH with 12 1/4" cleanout BHA from 307 mRT / 307 mTVD to 843 mRT / 843 mTVD.
900.0	IH1	P	TI		0.5	Washed down with 12 1/4" cleanout BHA from 843 mRT / 843 mTVD to top of cement at 857 mRT / 857 mTVD.
900.0	IH1	P	PT		0.5	Pressure tested 13 3/8" casing to 1500 psi / 10 mins against the upper pipe rams, good test, confirming stage collar integrity.
900.0	IH1	P	DFS		3.5	Drilled out plugs, float collar, shoetrack cement and shoe from 857 mRT / 857 mTVD, to 883 mRT / 883 mTVD with the following parameters: WOB: 5-15 KLbs,SPP: 1250 psi, GPM: 750, TRQ: 0-2 KFt-Lbs.
900.0	IH1	P	DFS		0.5	Pumped Hi-Vis pill (50 BBL) and displaced hole with 8.9 ppg mud (seawater/Drispac/Soltex mud system).
900.0	IH1	P	DFS		2.25	Continued to drill from 883 mRT / 873 mTVD. Drilled out shoe at 885 mRT / 885 mTVD and cleaned out rathole to 900 mRT / 900 mTVD. Reduced flow rate from 750 GPM to 450 GPM. Replaced shaker screens.
905.0	IH2	P	DM		0.25	Drilled new formation from 900 mMD / 900 mTVD to 905 mMD / 905 mTVD.
905.0	IH2	P	CMD		0.75	Circulated hole clean. Rotated and reciprocated pipe (850 GPM). Took SCR's.
905.0	IH2	P	LOT		2	Pulled back and rigged up for FIT. Lined up cement unit and broke circulation. Tested lines and performed FIT to 10.5ppg EMW with no leak off. A total of 3 repeats required to isolate system.
905.0	IH2	U	TO		0.5	Held JSA. POOH from 880 mTVD / 880 mMD to 843 mTVD / 843 mMD.
905.0	IH2	U	PS		0.25	Flow checked well - well static. Pumped slug.
905.0	IH2	U	TO		1.25	POOH from 843 mTVD / 843 mMD to 90 mTVD / 90 mMD.
905.0	IH2	U	HBHA		1.5	POOH with BHA.
905.0	IH2	P	HBHA		2	Made up 12 in adjustable gauge stabiliser and function tested same - OK. Picked up new BHA.
905.0	IH2	P	HBHA		1.25	Uploaded and pulse tested MWD (700 GPM, 1050 psi).
905.0	IH2	U	HBHA		1.25	Pulled up and broke out tri-cone bit. Changed mud motor bend to 1.15°. Made up new PDC bit.
905.0	IH2	TP	LOT	OTH	0.25	Closed blind rams and repeated FIT. Pressured up to 265 psi (pumped 1.1 BBL). Pressure stabilised at 256 psi for 5 mins - good test. Confirmed an EMW of 10.64 ppg (1.28 SG).
905.0	IH2	U	TI		2.25	RIH with BHA and installed PS21 slips. Calibrated Sperry Sun depth tracking sensor.
905.0	IH2	U	TI		1.25	RIH to 685 mTVD / 685 mMD.

Date : 26 Jun 2004 **Daily Cost : $ 406,012** **Report Number : 21**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
905.0	IH2	U	TI		0.5	Continued to RIH to 858 mMD.
905.0	IH2	P	RS		0.25	Conducted JSA prior to servicing top drive and slipping and cutting drill line.
905.0	IH2	P	RS		0.5	Serviced travelling equipment and top drive.
905.0	IH2	P	RS		2.25	Slipped and cut 180 ft of drill line. Reset block control upper and lower limits. Checked same with blocks and also checked crown-o-matic with block.
905.0	IH2	U	TI		0.25	RIH from 858 mMD to 888 mMD.
905.0	IH2	P	TI		0.5	Calibrated MWD weight sensor for on and off slips.
905.0	IH2	U	RW		0.5	Washed and reamed from 888 mMD to 905 mMD.
1149.0	IH2	P	DM		9.75	Drilled from 905 mMD to 1149 mMD. WOB = 8 - 11 Klbs, ROP = 39 - 44 m/hr, Flowrate = 840 - 866 GPM, RPM = 75 - 95, Torque = 1 - 2 Kft-lbs
1149.0	IH2	TP	DM	RE	2	Lost power while drilling at 1149 mMD due to loss of cooling water to engines. Picked up off bottom and worked pipe while filling radiators with water and restoring engines.

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Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 26 Jun 2004 **Daily Cost : $ 406,012** **Report Number : 21**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1285.0	IH2	P	DM		7.5	Drilled from 1149 mMD to 1285 mMD (KOP at 1280 mMD at 23:45 Hrs). SCR @ 1207 mMD (8.9ppg MW) 30 40 #1 250 360 #2 260 370

Date : 27 Jun 2004 **Daily Cost : $ 326,574** **Report Number : 22**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1537.0	IH2	P	DM		24	Drilled from 1285 mMD to 1537 mMD. Took surveys every stand down. Footage: Slide 132 mMD Rotate 120 mMD SCR's at 1352 mMD with 9.2ppg mud: 30 SPM 40 SPM MP #1 260 psi 352 psi MP #2 235 psi 345 psi SCR's at 1500 mMD with 9.1ppg mud: 30 SPM 40 SPM MP #1 290 psi 410 psi MP #2 300 psi 415 psi

Date : 28 Jun 2004 **Daily Cost : $ 301,289** **Report Number : 23**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
1870.0	IH2	P	DM		24	Drilled from 1537 mMD to 1870 mMD. Took surveys every stand down. SCR at 1815 mMD (9.1 ppg MW) 30 40 MP #2 320 425 MP #3 310 420 Slide hours = 8.41 hrs Slide m = 51 m Slide ROP (avg) = 6 m/hr Rotate hours = 12.15 hrs Rotate m = 283 m Rotate ROP (avg) = 23.3 m/hr

Date : 29 Jun 2004 **Daily Cost : $ 442,201** **Report Number : 24**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2363.0	IH2	P	DM		24	Drilled 12.25 in hole from 1870 mMD to 2363 mMD. SCR at 2137 mMD (9.3 ppg MW) 30 SPM 40 SPM MP #2 320 410 MP #3 280 400 SCR at 2340 mMD (9.4 ppg MW) 30 SPM 40 SPM MP #1 320 440 MP #3 330 450 Slide hours = 0 hrs Rotate hours = 18.38 Rotate m = 493 m Average ROP = 26.5 m/hr

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Date : 30 Jun 2004 **Daily Cost : $ 331,651** **Report Number : 25**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2610.0	IH2	P	DM		24	Drilled 12.25 in hole from 2363 mMD to 2610 mMD. Took surveys every stand down. SCR at 2515 mMD with 9.4 ppg mud. 30 SPM 40SPM MP #1 350 455 MP #2 340 460 Rotate m = 223 m Rotate time = 15.5 hrs Slide m = 24 m Slide time = 6.3 hrs ROP (Average) 2363 mMD to 2464 mMD = 12.9 m/hr ROP (Average) 2464 mMD to 2610 mMD = 20 m/hr WOB = 2 - 50 Klbs (Average 15 Klbs) Torque = 0 - 10751 lb/ft (Average 8056 lb/ft) Flow rate = 751 - 848 gpm (Average 824 gpm)

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Activity Report For Yolla-4

Date : 01 Jul 2004 **Daily Cost : $ 337,980** **Report Number : 26**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2614.0	IH2	P	DM		0.25	Drilled to TD of 12.25 in hole section at 2614 mMDRT (2513 mTVDRT). Up weight = 340 Klbs Down weight = 320 Klbs Torque = 10-20 Klb/ft.
2614.0	IH2	P	WT		1.75	Circulated 1.5 times bottoms up at 140 SPM (3820 psi, Torque 7 - 10 Klb/ft). Rotated and reciprocated pipe (9.5 ppg MW).
2614.0	IH2	P	WT		2	Flowchecked well - OK. POOH from 2614 mMD to 2369 mMD. Tight spots at 2540 - 2524 mMD (40 Klb overpull) and 2418 - 2410 mMD (30 Klb overpull). Worked through - OK.
2614.0	IH2	P	WT		5.25	Pumped slug and POOH from 2369 mMD to 878 mMD. Tight spots encountered from 1092 mMD to 900 mMD (up to 40 Klb overpull). Conducted trip drill.
2614.0	IH2	P	WT		1	Serviced top drive and travelling blocks. Flow checked well (2.5 bbls/hr losses).
2614.0	IH2	P	WT		1.5	RIH from 878 mMD to 1325 mMD. Tight spots encountered from 900 mMD to 1092 mMD (30 Klbs required to work through).
2614.0	IH2	U	WT		2	Broke circulation and calibrated MWD tool prior to logging gas sand. Logged from 1325 mMD to 1365 mMD (40 RPM, 800 GPM at 2500 psi). A maximum of 1480 units of gas was observed on bottoms up.
2614.0	IH2	P	WT		2.5	RIH from 1365 mMD to 2545 mMD. Tight spot at 2545 mMD.
2614.0	IH2	TP	WT	OTH	1	Reamed tight spots from 2545 mMD to 2601 mMD.
2614.0	IH2	P	CMD		4.25	Circulated and conditioned mud at 2601 mMD (712 GPM, 3300 psi).
2614.0	IH2	P	TO		0.75	Flowchecked and POOH to 2398 mMD.
2614.0	IH2	P	TO		1.75	Pumped slug and continued to POOH to 2050 mMD.

Note: 1. Cranes operated between 07:30 and 14:45. They could not operate the remainder of the day due to high winds.
2. Unable to unload boat after 14:00 due to rough seas.

Date : 02 Jul 2004 **Daily Cost : $ 330,551** **Report Number : 27**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2614.0	IH2	P	TO		5	POOH from 2030 mMD to 192 mMD (BHA). Hole in good condition - no overpull.
2614.0	IH2	P	HBHA		1.5	Flow checked - well static. POOH BHA to 27 mMD.
2614.0	IH2	P	HBHA		0.5	Downloaded MWD tool - OK.
2614.0	IH2	P	HBHA		1.25	Connected top drive and flushed remaining BHA with seawater (80 SPM). Retrieved MWD probe and broke off PDC bit. Bit in very good condition (1-1-NO-A-X-I-NO-TD).
2614.0	IH2	P	WH		1	Drained riser and made up wearbushing running tool on stand of drillpipe. Retrieved and laid down wearbushing.
2614.0	IH2	P	WH		1.25	Made up jetting tool on stand of drillpipe. Connected top drive and washed wellhead and BOP (100 SPM, 130 psi) as per Cameron's instructions. Dumped returns through trip tank. Pulled jetting tool to surface and laid down same.
2614.0	IH2	U	PT		2	Changed out upper 5 in pipe rams to 9.625 in casing rams. Concurrently made up test plug assembly in preparation for BOP testing.
2614.0	IH2	U	PT	OEF	0.75	Ran test plug and filled up BOP with seawater. Performed top ram body test to 200psi using cement unit. Held pressure for 5 mins - OK. Increased pressure to 1500 psi and held for 10 mins - unsuccessful.
2614.0	IH2	U	PT		0.5	Pulled test plug and inspected same. Seal on tool damaged. Replaced seal and reran test plug to wellhead.
2614.0	IH2	U	PT		0.75	Performed pressure test on top ram body to 200psi using cement unit. Held pressure for 5 mins - OK. Increased pressure to 1500 psi and held for 10 mins - OK. POOH and rigged down test plug assembly.
2614.0	IC2	TP	CRN	WOW2		Laying out 9.625" casing on critical path due to inability to offload from boat earlier due to severe weather.

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Date : 02 Jul 2004 **Daily Cost : $ 330,551** **Report Number : 27**

2614.0	IC2	P	RRC		1	Continue to strap and drift casing and clean threads while rigging up drillfloor for running casing.
2614.0	IC2	P	RRC		0.25	Conducted JSA prior to running 9.625/10.75 in casing.
2614.0	IC2	P	CRN		3	Picked up and made up 9.625 in shoetrack and ran same to 144 mMD. Placed two spring centralisers on the shoe joint and one spring centraliser on the intermediate and float collar joints.
2614.0	IC2	TP	CRN	RE	0.5	Tailing arm on pipe racking system performed erratically (arm not releasing brake). Changed out drive.
2614.0	IC2	P	CRN		2	Ran 9.625 in casing to 432 mMD.
2614.0	IC2	TP	CRN	RE	0.75	Hydraulic fluid dripping from upper arm of pipe racking system. Inspected same and found upper arm retract hose damaged. Replaced same.

Date : 03 Jul 2004 **Daily Cost : $ 321,971** **Report Number : 28**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2614.0	IC2	P	CRN		0.25	Conducted casing running JSA.
2614.0	IC2	P	CRN		14	RIH 9.625 in casing (43.5 ppf, Vam Top) from 432 mMD to 2385 mMD. Hole in good condition.
2614.0	IC2	P	CRN		0.5	Changed out casing elevators from 9.625 in to 10.75 in.
2614.0	IC2	P	CRN		0.5	Picked up and made up 9.625 x 10.75 in crossover and one joint of 10.75 in casing.
2614.0	IC2	P	CRN		0.5	Changed out PS21 slips for Weatherford 10.75 in spiders.
2614.0	IC2	P	CRN		1.25	Picked up 10.75 in (51 ppf, Vam Top) casing and ran casing string from 2385 mMD to 2555 mMD.
2614.0	IC2	P	CRN		0.75	Made up 10.75 in pup and hanger assembly and 1 joint of 10.75 in casing.
2614.0	IC2	U	CRN		0.5	Changed out 10.75 in elevators to 9.625 in.
2614.0	IC2	P	CRN		0.5	Made up 10.75 x 9.625 in crossover to 9.625 in landing joint (VT pin x BTC box).
2614.0	IC2	P	CRN		0.5	Landed casing in wellhead with 380 Klb weight. Casing shoe at 2586.14 mMD.
2614.0	IC2	P	CMC		0.75	Conducted JSA prior to conducting cement job. Rigged up cement head to cement lines.
2614.0	IC2	P	CMC		2.25	Established circulation and pumped 1x casing volume (40 SPM, 250 GPM, 600 psi).
2614.0	IC2	P	CMC		0.25	Cement unit pumped 10 bbl freshwater. Pressure tested cement lines to 3500 psi - OK.
2614.0	IC2	P	CMC		1.5	Pumped 8 bbl of freshwater and released bottom plug. Pumped a further 2 bbl of freshwater followed by 278 bbl lead slurry (732 sx, 12.5 ppg). Pumped 27 bbl tail slurry (100 sx w/35%silica, 15.8 ppg). Released top plug and displaced with 20 bbl freshwater. Estimate TOC to be 952mRT using 20% excess over gauge hole for both lead and tail and no observed losses. Note: 1. Able to work cranes all day. 2. Invincible Tide alongside rig at 13:00 - 13:25 and 18:30 - 19:10.

Date : 04 Jul 2004 **Daily Cost : $ 653,552** **Report Number : 29**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2614.0	IC2	P	CMC		2.25	Displaced cement with 20 bbl freshwater using cement unit and 638 bbl mud (9.5 ppg) using rig pumps. Bumped plug with 3500 psi (4500 total strokes, 1200 psi SPP before bump, 24 SPM). Held pressure for 15 mins - OK. Total volume pumped for cement job: 347 bbls at 450 - 600 psi Total losses while circulating: 10 bbls Gas while circulating: 81 units Gas while cementing: 42 units Top of cement estimate: 952 mMD (based on final circ. pressure)
2614.0	IC2	P	RDC		0.5	Flushed cement lines and rigged down same. Rigged down cement head.
2614.0	IC2	P	WH		1.25	Backed out hanger running tool and laid down landing joints.
2614.0	IC2	P	RDC		1.5	Rigged down casing handling tools and rigged up 5 in handling tools.
2614.0	IC2	P	WH		1.75	Picked up and RIH wellhead jetting tool assembly. Jetted BOP and wellhead (100 SPM, 120 psi). POOH and laid down jetting tool assembly.
2614.0	IC2	TP	WH	OEF	1.5	Picked up and made up seal assembly. RIH same and attempted to set - unsuccessful. Pulled back to surface and laid down seal assembly.

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Date : 04 Jul 2004 **Daily Cost : $ 653,552** **Report Number : 29**

2614.0	IC2	TP	WH	OEF	0.75	Made up and RIH jetting tool assembly. Jetted wellhead (100 SPM, 120 psi). POOH and laid down assembly.
2614.0	IC2	P	WH		0.75	Picked up and made up seal assembly. RIH and set same. Confirmed with 20 Klb overpull.
2614.0	IC2	U	WH	OTH	1	Tested seal assembly on wellhead to 5000 psi - OK. POOH seal assembly running tool and laid down same. Concurrently changed out 9.625 in casing rams to 5 in fixed rams.
2614.0	IC2	TP	WH	WOW	0.5	Due to approaching severe weather, picked up wearbushing and made up to running assembly. RIH and set same. POOH wearbushing running assembly and laid down same.
2614.0	PH1	P	HBHA		2.25	Picked up and made up 8.5 in BHA.
2614.0	PH1	P	HBHA		0.75	Uploaded MWD tool.
2614.0	PH1	P	HBHA		3	Picked up and racked back 6.75 in drill collars and drilling jars.
2614.0	PH1	TU	WH	WOW	0.75	Due to approaching severe weather, picked up wearbushing assembly. RIH and pulled same. POOH wearbushing assembly and laid down same.
2614.0	PH1	P	PT		5.5	Rigged up to test BOP's. Pressure tested choke manifold, standpipe and safety valves (250 psi / 5 mins, 5000 psi / 10 mins) - OK. Note: 1. Due to rough sea conditions Invincible Tide could only come alongside rig from 15:40 - 16:00 hrs. 2. Due to strong winds the rig cranes could only operate from 00:00 - 14:40 hrs and 15:40 - 17:00 hrs.

Date : 05 Jul 2004 **Daily Cost : $ 364,471** **Report Number : 30**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2614.0	PH1	P	PT		3	Tested all components of 18.75 in BOP to 250 psi (5 mins) and 5000 psi (10 mins). All tests were successful.
2614.0	PH1	P	PT		1.5	Rigged down BOP test equipment.
2614.0	PH1	P	WH		0.5	Made up wearbusing running assembly and RIH. Set wearbushing and POOH assembly.
2614.0	PH1	P	HBHA		4.25	Picked up and made up 8.5 in BHA. Set mud motor bend to 0.93° and programmed MWD. Ran BHA to 194 mMD and completed shallow pulse test - OK.
2614.0	PH1	P	TI		4.75	RIH BHA from 194 mMD to 2561 mMD. Filled pipe and broke circulation every 20 stands.
2614.0	PH1	P	DFS		2.5	Drilled out cement, float and shoe track from 2561 mMD to 2586 mMD. Cleaned out rathole to 2614 mMD (500 GPM, 2800 psi, 40 RPM).
2614.0	PH1	P	CMD		2.5	POOH to 2595 mMD. Circulated and conditioned mud to 9.2 ppg (550 GPM, 2800 psi).
2614.0	PH1	P	TO		0.5	POOH to 2575 mMD and rigged up pump-in sub and surface lines. Broke circulation.
2614.0	PH1	P	LOT		1	Tested lines to 1000 psi - OK. Performed FIT. Maximum pressure = 320 psi Volume pumped = 1.5 bbls MW = 9.2 ppg Surface pressure 320 psi corresponding to 10 ppg EMW Kick tolerance = 34 bbls (normally pressured formations)
2670.0	PH1	P	DM		3.5	RIH to 2614 mMD and drilled from 2614 mMD to 2670 mMD. SCR at 2630 mMD with 9.4 ppg mud. 30 40 MP #1 340 600 MP #2 340 570 Note: Unable to operate cranes and unload/load boat due to strong winds for entire 24hr period (seas 5-8 m, winds 40-50 knots, gusts 50-60 knots).

Date : 06 Jul 2004 **Daily Cost : $ 342,081** **Report Number : 31**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2872.0	PH1	P	DM		15.5	Drilled 8.5in in hole from 2670 mMD to 2872 mMD. Orient the following sections:

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Date : 06 Jul 2004 **Daily Cost : $ 342,081** **Report Number : 31**

						2690 mMD - 2711 mMD 2834 mMD - 2839 mMD 2863 mMD - 2867 mMD Up weight = 325 Klbs Down weight = 285 Klbs Rotating weight = 310 Klbs Torque = 6-14 Klb/ft Note: At 10:30 5 bbls were gained on the active system. Performed 20 mins flow check - well stable.
2872.0	PH1	P	CMD		0.5	Circulated with 550 GPM (2700 psi).
2887.0	PH1	P	DM		1	Drilled 8.5 in hole from 2872 mMD to 2887 mMD.
2887.0	PH1	P	CS		1.75	Circulated bottoms up at 550 GPM (2700 psi).
2887.0	PH1	U	TO		1.5	Flow checked well and POOH from 2887 mMD to 2575 mMD. Worked through tight spots at 2740 mMD and reamed through tight spot at 2653 mMD.
2887.0	PH1	U	RS		0.5	Serviced top drive and pipe racking system. Monitored well on trip tank.
2887.0	PH1	U	TI		1	RIH BHA from 2575 mMD to 2887 mMD.
2892.0	PH1	P	DM		0.25	Drilled from 2887 mMD to 2892 mMD.
2892.0	PH1	P	CS		1	Circulated bottoms up for sample. Decision made to POOH for coring.
2892.0	PH1	P	TO		1	Flow checked well - OK. POOH from 2892 mMD to 2575 mMD. Note: 1. Crane was able operate between 07:00 and 23:30. 2. Invincible Tide was alongside the rig from 11:45 to 17:00.

Date : 07 Jul 2004 **Daily Cost : $ 379,294** **Report Number : 32**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2892.0	PH1	P	TO		0.25	Flow checked well - well static.
2892.0	PH1	P	TO		1.25	Pumped and displaced 30 bbl slug. POOH from 2575 mMD to 2245 mMD.
2892.0	PH1	TP	RR	RE	2.75	Strong gust of wind blew pipe racking system upper arm drag chain out of cable guides. Drag chain hung up on top drive and was damaged in two sections. Replaced damaged sections of drag chain.
2892.0	PH1	P	TO		4.5	POOH from 2245 mMD to 194 mMD.
2892.0	PH1	P	HBHA		1.25	POOH 8.5 in BHA from 194 mMD to 21 mMD.
2892.0	PH1	P	HBHA		0.75	Downloaded MWD tool and broke out PDC bit (1-1-WT-N-X-I-NO-CP).
2892.0	PH1	P	COR		0.25	Conducted JSA for coring operations.
2892.0	PH1	P	HBHA		2	Picked up and made up core barrel assembly (CD93 PDC bit).
2892.0	PH1	P	TI		1	RIH coring BHA to 198 mMD.
2892.0	PH1	P	TI		4.5	RIH from 198 mMD to 2578 mMD.
2892.0	PH1	TP	RR	RE	4.5	Hydraulic box elevators not latching correctly. Changed out same with new box elevator. New elevator not operating as required. Inspected by Hydraulic Technician and decision was made to change out new elevators with manual elevators. The hydraulic manifold on the original hydraulic box elevators was removed and installed in the new box elevators (4-5 hrs work).
2892.0	PH1	P	TI		1	RIH coring assembly from 2578 mMD to 2720 mMD. Note: 1. Crane operated from 22:00 to 00:00. 2. Invincible Tide was not required alongside rig.

Date : 08 Jul 2004 **Daily Cost : $ 378,812** **Report Number : 33**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2892.0	PH1	P	TI		1.75	RIH coring BHA from 2720 mMD to 2865 mMD.

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004

Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 08 Jul 2004 | **Daily Cost : $ 378,812** | **Report Number : 33**

2892.0	PH1	P	TI	0.25	Washed down coring BHA from 2865 mMD to 2892 mMD. Tagged bottom of hole and checked drill pipe tally against strapout drillers figures.
2892.0	PH1	P	COR	0.25	Coring Engineer dropped 1.25 in ball. Circulated down at 100 GPM to seat ball. Driller took SCR's on all pumps. Driller determined the off bottom torque and pressure reading at the coring flow rate.
2919.0	PH1	P	COR	2	Torque limiter set to 22 klb/ft and commenced cutting core #1 using the following parameters: RPM = 120 WOB = 30 klbs Flow = 250 GPM Cored from 2892 mMD (2766 mTVD) to 2919 mMD (2791.5 mTVD). Broke core with 25 Klb overpull. Note: 1. ROP from 2892 mMD to 2909 mMD = 18 - 20 m/hr 2. ROP from 2909 mMD to 2919 mMD = 12 - 15 m/hr
2919.0	PH1	P	CMD	1.5	Circulated bottoms up following coring operations.
2919.0	PH1	P	TO	3.5	Flow checked well - well static. Pumped out of hole to 2856 mMD.
2919.0	PH1	P	TO	0.25	Flow checked well on trip tank - well static.
2919.0	PH1	P	TO	5.5	Pumped slug and POOH coring assembly from 2856 mMD to 113 mMD.
2919.0	PH1	P	TO	0.25	Flow checked well on trip tank - well static.
2919.0	PH1	P	HBHA	0.75	POOH 6.75 in drill collars and racked back in derrick.
2919.0	PH1	P	HBHA	0.25	Conducted JSA for laying out core barrels.
2919.0	PH1	P	HBHA	1	Broke out and laid out x3 aluminium inner sleeves. A total of 27 m of core was cut and 27 m of core recovered (100%).
2919.0	PH1	P	HBHA	0.25	Broke out PDC corehead and racked back stand of core barrels in derrick.
2919.0	PH1	P	HBHA	0.25	Cleared rig floor and conducted JSA for laying down 16 in and 12.25 in BHA's.
2919.0	PH1	P	HBHA	2.5	Laid out racked back 16 in and 12.25 in BHA components. Back loaded same onto Invincible Tide.
2919.0	PH1	P	HBHA	2.25	Made up 8.5 in BHA. Cleaned debris from MWD pulsar and programmed same.
2919.0	PH1	P	HBHA	0.5	Surface tested motor and MWD (470 GPM, 700 psi) - OK.
2919.0	PH1	P	TI	0.75	RIH BHA to 195 mMD.
2919.0	PH1	P	TI	0.25	RIH from 195 mMD to 340 mMD. Installed PS21 power slips.

Date : 09 Jul 2004 | **Daily Cost : $ 328,583** | **Report Number : 34**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2919.0	PH1	P	TI		5	RIH 8.5in BHA from 340 mMD to 2885 mMD.
2919.0	PH1	P	TI		1.5	Logged with MWD tool from 2885 mMD to 2902 mMD (550 GPM, 3000 psi).
2955.0	PH1	P	DM		4	Drilled 8.5 in hole from 2919 mMD to 2955 mMD. Pick-up weight = 340 klb Slack-off weight = 300 klb Rotating weight = 320 klb Slide from 2922 mMD to 2932 mMD.
2955.0	PH1	P	CMD		0.5	Circulated at 550 GPM and 3000 psi.
2958.0	PH1	P	DM		0.5	Drilled from 2955 mMD to core point #2 at 2958 mMD (2828 mTVD).
2958.0	PH1	P	CMD		1.25	Circulated hole clean (550 GPM, 3000 psi). SCR at 2922 mMD with 9.3 ppg MW. 30 40 MP #1 570 770 MP #2 520 750
2958.0	PH1	P	TO		0.25	Flow checked - well static.
2958.0	PH1	P	TO		1	POOH from 2958 mMD to 9.625 in shoe at 2586 mMD.
2958.0	PH1	P	TO		0.25	Flow checked - well static.
2958.0	PH1	P	TO		3.5	Pumped slug and POOH to 195 mMD.
2958.0	PH1	P	TO		0.25	Flow checked - well static.

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004
Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 09 Jul 2004 **Daily Cost : $ 328,583** **Report Number : 34**

2958.0	PH1	P	HBHA	1.25	POOH BHA and broke off BBL PDC bit (1-1-LT-S-X-I-NO-CP).
2958.0	PH1	P	HBHA	0.75	Downloaded MWD tool and racked back in derrick.
2958.0	PH1	P	HBHA	1.25	Conducted JSA and made up coring BHA. Corehead used on coring run #1 made up to same.
2958.0	PH1	P	TI	0.75	RIH with coring assembly to 198 mMD at 1.5 min/stand to avoid damaging corehead.
2958.0	PH1	P	TI	2	Installed PS21 power slips and RIH to 1069 mMD (1.5 min/stand).
					Note: Weather conditions good for entire 24 hr period - able to operate cranes and have boat alongside as required.

Date : 10 Jul 2004 **Daily Cost : $ 442,191** **Report Number : 35**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2958.0	PH1	P	TI		2.5	RIH from 1069 mMD to 2578 mMD (9.625 in shoe) at 1.5 min/stand.
2958.0	PH1	P	RS		0.5	Serviced top drive and travelling block assembly. Monitored well on trip tank.
2958.0	PH1	P	TI		1	RIH from 2578 mMD to 2927 mMD.
2958.0	PH1	P	TI		0.75	Reamed from 2927 mMD to 2958 mMD (263 GPM, 70 RPM, 700 psi).
2958.0	PH1	P	TI		0.25	Dropped 1.25 in ball and circulated down at 150 GPM and 440 psi. Pressure increased to 490 psi. Recorded SCR's.
2985.0	PH1	P	COR		1	Cut core #2 from 2958 mMD (2828 mTVD) to 2985 mMD (2853 mTVD). Broke core with 20 klb overpull. Parameters during coring: WOB = 5-10 klbs Torque = 10 - 15 klb/ft SPP = 800 - 900 psi RPM = 90 GPM = 220 (38 SPM) Average ROP = 43 m/hr
2985.0	PH1	P	CMD		2	Circulated bottoms up (220 GPM, 700 psi). Maximum gas 536 units.
2985.0	PH1	P	CMD		0.25	Flow checked - well static.
2985.0	PH1	P	TO		1.25	POOH from 2985 mMD to 2579 mMD.
2985.0	PH1	P	PS		0.5	Flow checked - well static. Pumped slug at 35 spm.
2985.0	PH1	P	TO		4	POOH from 2579 mMD to 198 mMD (1 min/stand).
2985.0	PH1	P	TO		0.25	Flow checked - well static.
2985.0	PH1	P	HBHA		0.75	POOH BHA to core barrels and racked back in derrick.
2985.0	PH1	P	HBHA		0.25	Held JSA for handling core barrels.
2985.0	PH1	P	HBHA		1	Laid out core barrels (27 m) in 3 sections.
2985.0	PH1	P	HBHA		1	Broke out core head (1-1-WT-A-X-I-NO-TD) and laid out inner sleeves.
2985.0	PH1	P	HBHA		0.5	Made up 8.5 in BHA. Checked mud motor alignment.
2985.0	PH1	P	HBHA		1.25	Programmed MWD tool and inspected pulsar for debris. Shallow tested MWD at 400 GPM (720 psi).
2985.0	PH1	P	HBHA		0.75	RIH BHA to 194 mMD.
2985.0	PH1	P	TI		4.25	Installed PS21 power slips and RIH from 194 mMD to 2586 mMD (9.625 in shoe). Filled string each 15 stands.
						Note: Weather conditions good for entire 24 hr period - able to operate cranes and have boat alongside as required.

Date : 11 Jul 2004 **Daily Cost : $ 359,437** **Report Number : 36**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
2985.0	PH1	P	TI		0.75	RIH from 2586 mMD (9.625 in shoe) to 2953 mMD.
2985.0	PH1	P	TI		1.25	RIH and logged with MWD from 2953 mMD to 2985 mMD (550 GPM, 3250 psi).

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Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 11 Jul 2004 **Daily Cost : $ 359,437** **Report Number : 36**

						Note: Whilst logging a total of 160 bbl of mud was lost to the formation. The mud weight at the time was 9.5 ppg (heavy). The flow was reduced to 500 GPM and premix mud (8.7 ppg) was added to the system. The losses reduced to zero. The mud may have been lost in the coarse sands of core run #2 (filter cake removed during logging/RIH) or below the 9.625 in shoe where the ECD was 10.2 ppg (FIT to 10 ppg EMW).
3148.0	PH1	P	DM		14.25	Drilled from 2985 mMD to 3148 mMD - no losses. Slide from: 2991 mMD to 3002 mMD 3020 mMD to 3031 mMD 3050 mMD to 3063 mMD 3079 mMD to 3087 mMD 3126 mMD to 3129 mMD 3131 mMD to 3137 mMD Lost a total of 30 bbl through this section. SCR at 3038 mMD with 9.4 ppg MW: 30 40 MP #1 420 720 MP #2 430 700
3148.0	PH1	P	CMD		0.75	Gas peak of 258 units observed at 3148 mMD. Circulated bottoms-up. Gas reduced to zero.
3235.0	PH1	P	DM		5	Drilled from 3148 mMD to TD at 3235 mMD (3097 mMD). Slide from 3153 mMD to 3156 mMD. Rotating weight = 340 klb Pick-up weight = 370 klb Slack-off weight = 315 klb
3235.0	PH1	P	CMD		1.5	Circulated hole clean (550 GPM, 80 RPM).
3235.0	PH1	P	CMD		0.25	Flow checked - well static.
3235.0	PH1	P	DM		0.25	Pumped slug and POOH from 3235 mMD to 3185 mMD. Note: 1. Due to strong winds cranes were unable to operate between 02:00 and 04:00 hrs. 2. R J Hope along side rig from 07:00 to 15:30 hrs.

Date : 12 Jul 2004 **Daily Cost : $ 327,216** **Report Number : 37**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	PH1	P	TO		2	POOH from 3185 mMD to 2586 mMD (9.625 in shoe). Tight hole encountered at 3150 mMD and 2987 mMD (40 klb). Worked through these sections.
3235.0	PH1	U	WT		1.5	RIH from 2586 mMD to 3235 mMD.
3235.0	PH1	U	WT		1.5	Circulated hole at 3235 mMD (550 GPM, 3250 psi). Maximum gas 64 units.
3235.0	PH1	U	WT		0.5	Performed flow check, well static.
3235.0	PH1	U	WT		1.5	POOH from 3235 mRT / 3097 mTVD, slugged pipe after 5 stands. Continued to POOH to 2579 mRT / 2481 mTVD.
3235.0	PH1	P	TO		0.25	Performed flow check, well static.
3235.0	PH1	P	TO		3	POOH from 2579 mRT / 2481 mTVD to 113 mRT / 113 m TVD.
3235.0	PH1	P	TO		0.25	Performed flow check prior to pulling BHA through BOP, well static.
3235.0	PH1	P	HBHA		2.25	POOH with 8 1/2" directional BHA, racked back drill collars and laid out MWD tools, float sub, AGS, motor and bit. Bit grading 1/1/CT/G/X/I/NO/TD.
3235.0	PH1	P	HBHA		0.25	Cleared and tidied rig floor and catwalk.
3235.0	PH1	P	LOG		0.25	Held JSA on wireline logging operations.
3235.0	PH1	P	LOG		0.5	Rigged up Schlumberger wireline (openhole).
3235.0	PH1	P	LOG		1	Made up toolstring #1 (PEX-HRLA-CMR-SP), installed radioactive sources into toolstring.
3235.0	PH1	P	LOG		1.25	RIH with toolstring #1 to 2680 mRT / 2573 mTVD.
3235.0	PH1	TP	LOG	HC	0.25	Toolstring #1 hanging up from 2680 mRT / 2573 m TVD, worked through tight spot.
3235.0	PH1	TP	LOG	HC	0.5	Commenced tuning CMR at 2650 mRT / 2546 m TVD, no good, RIH to 2860 mRT / 2573 m TVD

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Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 12 Jul 2004 **Daily Cost : $ 327,216** **Report Number : 37**

3235.0	PH1	TP	LOG	HC	0.25	Toolstring #1 hanging up between 2675 mRT and 2680 mRT, also between 2687 mRT and 2698 mRT. Worked toolstring through tight spots, no overpull.
3235.0	PH1	TP	LOG	HC	0.5	Toolstring #1 hanging up at 2776 mRT / 2660 mTVD. Unable to work through tight spot, solid tag, no overpull.
3235.0	PH1	P	LOG	HC	0.75	Logged up from 2776 mRT / 2660 mTVD to 9 5/8" shoe at 2586 mRT / 2488 mTVD.
3235.0	PH1	TP	LOG	HC	1	POOH with toolstring #1.
3235.0	PH1	TP	LOG	HC	1	Removed radioactive sources from toolstring #1, laid out toolstring. Found x 2 rubber stabilising fins missing from toolstring dimensions of each rubber fin = 10" x 1.5" x 0.75".
3235.0	PH1	TP	LOG	HC	0.5	Rigged down wireline, cleared catwalk to make up wiper trip BHA.
3235.0	PH1	TP	HBHA	HC	2.25	Made up BHA #9 (8 1/2" wiper trip BHA).
3235.0	PH1	TP	LOG	HC	1	Installed auto slips, RIH with BHA #9 to 585 mRT / 585mTVD.

Notes:

1. Weather conditions good for entire period, able to use cranes / work boats as required.

Date : 13 Jul 2004 **Daily Cost : $ 340,581** **Report Number : 38**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	PH1	TP	TI	HC	3	Cont'd to RIH with BHA #9, (8 1/2" wiper trip BHA) to 2586 mRT / 2488 mTVD.
3235.0	PH1	TP	RS	HC	0.25	Held JSA on slipping and cutting drilling line.
3235.0	PH1	TP	RS	HC	2	Slipped and cut 47 m of drill line, serviced TDS and draw works disk brakes. Re-set block control system.
3235.0	PH1	TP	TI	HC	1.5	Cont'd to RIH with BHA #9, (8 1/2" wiper trip BHA) to 3235 mRT / 3097 mTVD. Lost 15 KLbs weight at 2776 mRT / 2660 mTVD (wire line hold up depth), pulled back (no overpull) wiped spot several times with no further loss of weight. No further tight spots, no fill at TD.
3235.0	PH1	TP	CMD	HC	3.25	Circulated and conditioned mud at 600 GPM / 2600 Psi, until even 9.3 PPG mud weight all round and gas reading < 25 units. Pull back a stand during this operation, max gas during circulation= 367 units.
3235.0	PH1	TP	TO	HC	0.25	Performed flowcheck, well static.
3235.0	PH1	TP	TO	HC	2.25	POOH from 3235 mRT / 3097 mTVD to 2646 mRT / 2542 mTVD. Pumped through tight spots at 3195 mRT, 3085 mRT and 3075 mRT.
3235.0	PH1	TP	TI	HC	1.25	Washed and reamed in from 2646 mRT / 2542 mTVD to 2790 mRT / 2673 mTVD. Tight spots at 2766 mRT, 2768 m RT and 2783 mRT
3235.0	PH1	TP	TI	HC	1	RIH from 2790 mRT / 2673 mTVD to 3208 mRT / 3071 mTVD, no tight spots.
3235.0	PH1	TP	TI	HC	0.25	Washed down from 3208 mRT / 3071mTVD to TD at 3235 mRT / 3097 mTVD, no tight spots, no hole fill.
3235.0	PH1	TP	CMD	HC	1.25	Circulated hole clean to 9.3 PPG mud, (1.5 times bottoms up), max gas = 82 units.
3235.0	PH1	TP	TO	HC	0.25	Performed flowcheck, well static.
3235.0	PH1	TP	TO	HC	1.5	POOH from 3235 mRT / 3097 mTVD to 2880 mRT / 2751mTVD. Pumped through tight spots at 3217 mRT, 3196 mRT, 3118 mRT, max overpull = 30 KLbs.
3235.0	PH1	TP	TO	HC	1	Pumped slug, POOH from 2880 mRT / 2751 mTVD to 9 5/8" casing shoe at 2586 mRT / 2488 mTVD.
3235.0	PH1	TP	TO	HC	0.25	Performed flowcheck, well static.
3235.0	PH1	TP	TO	HC	3	POOH from 9 5/8" casing shoe at 2586 mRT / 2488 mTVD to 149 mRT / 149 mTVD.
3235.0	PH1	TP	TO	HC	0.25	Performed flowcheck prior to pulling BHA through BOP, well static.
3235.0	PH1	TP	HBHA	HC	1.25	Racked back BHA, broke off bit and float sub. Bit graded as 1/1/NO/A/E/I/NO/TD. Total losses whilst POOH = 14.5 bbls
3235.0	PH1	TP	HBHA	HC	0.25	Cleared and tided rig floor, prepared for wireline logging operations.

Notes:

1. Weather conditions good for entire period, able to use cranes / work boats as required.

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004
Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 14 Jul 2004 **Daily Cost : $ 403,201** **Report Number : 39**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	PH1	TP	LOG	HC	0.5	Held JSA on wireline logging operations.
3235.0	PH1	TP	LOG	HC	0.25	Rigged up Schlumberger wireline (openhole).
3235.0	PH1	TP	LOG	HC	1	Made up toolstring #1 re-run (PEX-HRLA-CMR-SP), installed radioactive sources into toolstring.
3235.0	PH1	TP	LOG	HC	2.5	RIH with toolstring #1 re-run to TD at 3235 mRT / 3097 mTVD. Schlumberger depth = 3230 mWL (uncorrected), bottom hole temperature = 125 degC.
3235.0	PH1	P	LOG		2.25	Performed logging run #1 from TD to 9 5/8"casing shoe at 2586 mRT / 2488 mTVD.
3235.0	PH1	P	LOG		0.75	POOH with toolstring #1 re-run from 9 5/8"casing shoe to surface.
3235.0	PH1	P	LOG		1.75	Removed radioactive sources and laid out toolstring #1 re-run.
3235.0	PH1	P	LOG		1.5	Made up toolstring #2 (FMI-DSI-ECS-HNGS), installed radioactive sources into toolstring.
3235.0	PH1	P	LOG		2.5	RIH with toolstring #2 to TD at 3235 mRT / 3097 mTVD. Schlumberger depth = 3235.5 mWL (corrected), bottom hole temperature = 128 degC.
3235.0	PH1	P	LOG		3	Performed logging run #2 from TD to 9 5/8"casing shoe at 2586 mRT / 2488 mTVD.
3235.0	PH1	P	LOG		0.25	RIH from 9 5/8"casing shoe to 2730 mWL for repeat section
3235.0	PH1	P	LOG		1.25	Performed repeat log from 2730 mWL to 9 5/8"casing shoe at 2586 mRT / 2488 mTVD.
3235.0	PH1	P	LOG		2.25	Logged up inside the 9 5/8" casing to surface.
3235.0	PH1	P	LOG		1.75	Removed radioactive sources and laid out toolstring #2.
3235.0	PH1	P	LOG		0.75	Made up toolstring #3 (VSI).
3235.0	PH1	P	LOG		1.75	RIH with toolstring #3 to 2300 mWL, took check shots at 1950 mWL and 2510 mWL.

Notes:

1. Due to poor weather conditions (winds above 40 knts and seas > 4m) unable to use the cranes or work the supply vessel from 0000 hrs to 1200 hrs during this period. This did not impact on the operation.

2. Monitored well on the trip tank during logging operations, well static.

Date : 15 Jul 2004 **Daily Cost : $ 322,318** **Report Number : 40**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	PH1	P	LOG		1.75	RIH with toolstring #3 (VSI-GR) from 2300 mWL to TD at 3235 mRT / 3097 mTVD. Schlumberger depth = 3234 mWL (corrected), bottom hole temperature = 136 degC.
3235.0	PH1	P	LOG		3	Performed logging run #3 from TD to 1715 mWL.
3235.0	PH1	TP	LOG	OEF	0.75	Schlumberger winch stopped, troubleshot same, changed out fuel filter.
3235.0	PH1	P	LOG		2.25	Re-commenced logging run #3 from 1715 mWL to 770 mWL.
3235.0	PH1	P	LOG		0	POOH to surface with tool string #3.
3235.0	PH1	P	LOG		1	Laid out tool string #3.
3235.0	PH1	P	LOG		1.5	Made up tool string #4 (MDT-GR).
3235.0	PH1	P	LOG		1	RIH with tool string #4 to 2461 mWL.
3235.0	PH1	P	LOG		12.75	Performed logging run #4 (pressure measurement phase), from 2461 mWL to 3175 mWL. Bottom hole temperature = 145 degC

52 pressure measurements attempted
34 good
2 lost seal to formation
4 super charged
12 tight.

Notes:

1. Weather conditions good for entire period, able to use cranes / work boats as required.

2. Monitored well on trip tank, 2 bbls lost over last 24 hr period.

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Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 16 Jul 2004 **Daily Cost : $ 631,025** **Report Number : 41**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	PH1	P	LOG		7.5	Continued with wire line logging run #4 from 3175 mWL to 2614 mWL (sampling phase), took samples as follows: 3119 mWL - Fluid Analysis 3006 mWL - 450 cc 2871 mWL - 450 cc 2609 mWL - 450 cc x 2 2607 mWL - 450 cc.
3235.0	PH1	TP	LOG	LTF	1.5	Due to previous failure to get log, tuned CMR from 2869 mWL to 3223 mWL.
3235.0	PH1	TP	LOG	LTF	1	Encountered problems powering up tool, shut down computers and troubleshot same.
3235.0	PH1	TP	LOG	LTF	6.25	Due to previous failure to get log, performed CMR log from TD at 3235 mRT / 3097 mTVD to 9 5/8" shoe at 2586 mRT / 2488 mTVD.
3235.0	PH1	P	LOG		1.5	POOH from 9 5/8" shoe to surface with tool string #4.
3235.0	PH1	P	LOG		1.25	Laid out tool string #4.
3235.0	PH1	P	LOG		1	Made up tool string #5 (MSCT-GR)
3235.0	PH1	TP	LOG	LTF	0.5	Found low insulation on cable head, re-dressed same.
3235.0	PH1	P	LOG		0.5	Conducted surface checks on tool, OK.
3235.0	PH1	P	LOG		1.75	RIH toolstring #5 to 3159 mWL.
3235.0	PH1	P	LOG		0.25	Cut sidewall core at 3159 mWL
3235.0	PH1	TP	LOG	LTF	0.5	Attempted to cut sidewall cores at 3158 mWL and 3157 mWL, no go.
3235.0	PH1	TP	LOG	LTF	0.5	POOH from 3157 mWL to 9 5/8" casing shoe at 2586 mRT / 2488 mTVD to re-set weight on sidewall core bit. Notes: 1. Weather conditions good for entire period, able to use cranes / work boats as required. 2. Monitored well on trip tank, 10 bbls lost over last 24 hr period (12 bbls cumulative).

Date : 17 Jul 2004 **Daily Cost : $ 697,630** **Report Number : 42**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	PH1	TP	LOG	OEF	1.25	Continued to POOH with tool string #5 (MSCT-GR) to reset weight on sidewall core bit.
3235.0	PH1	TP	LOG	OEF	0.75	Tool on surface, adjusted weight on bit settings for sidewall core bit.
3235.0	PH1	TP	LOG	OEF	2	RIH with tool string #5 (re-set) to 3159 mWL.
3235.0	PH1	P	LOG		0.5	Cut sidewall cores at 3159 mWL and 3158 mWL.
3235.0	PH1	TP	LOG	OEF	0.5	Attempted to cut sidewall cores at 3157 mWL and 3156 mWL, no go.
3235.0	PH1	TP	LOG	OEF	0.5	POOH from 3156 mWL to 2597 mWL.
3235.0	PH1	P	LOG		1.5	Cut sidewall cores at 2604 mWL, 2606 mWL, 2607mWL, 2608 mWL, 2610 mWL, 2612 mWL, 2615 mWL.
3235.0	PH1	P	LOG		0.5	RIH with toolstring #5 from 2615 mWL to 2869 mWL
3235.0	PH1	P	LOG		0.25	Cut side wall core at 2869 mWL.
3235.0	PH1	TP	LOG	OEF	0.25	Attempted to cut side wall cores at 2871 mWl, 3006 mWL, 3008 mWL, no go. Tool arm not acutuating correctly.
3235.0	PH1	TP	LOG	OEF	0.75	POOH with tool string #5 from 3008 mWL to 9 5/8" shoe at 2586 mRT / 2488 mTVD. Re-actuated tool.
3235.0	PH1	TP	LOG	OEF	0.25	RIH with tool string #5 from 9 5/8" shoe to 3149 mWL.
3235.0	PH1	TP	LOG	OEF	0.5	Attempted to cut side wall cores at 3150 mWl, 3151 mWL, no go. Aborted run. Total of 20 cores attempted, 8 cores accepted.
3235.0	PH1	P	LOG		1.5	POOH with toolstring #5. Total losses since midnight = 8 bbls, 20 bbls cumulative over entire logging programme.

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Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 17 Jul 2004 **Daily Cost : $ 697,630** **Report Number : 42**

3235.0	PH1	P	LOG		0.75	Laid out toolstring #5.
3235.0	PH1	P	LOG		0.25	Rigged down Schlumberger wire line.
3235.0	PH1	P	HBHA		0.25	Held JSA on wiper trip operations.
3235.0	PH1	P	LOG		1	M/up BHA #10 (8 1/2") wiper trip BHA.
3235.0	PH1	P	TI		1.25	RIH BHA #10 on 5" drill pipe to 470 mRT / 470 mTVD.
3235.0	PH1	TP	RR	RE	0.75	Hydraulic hose on top drive block retract system burst, repaired same.
3235.0	PH1	P	TI		4	Continued to RIH BHA #10 on 5" drill pipe 9 5/8"shoe at 2586 mRT / 2488 mTVD.
3235.0	PH1	U	CMD		0.75	Circulated bottoms up, max gas reading = 1060 units.
3235.0	PH1	U	CMD		0.25	Flow check well, static.
3235.0	PH1	P	BOP		0.25	Function tested BOP.
3235.0	PH1	P	RS		0.5	Performed emergency shut down test for ABS, ESD 1 AND ESD 2, reset all equipment.
3235.0	PH1	P	RS		0.5	Serviced top drive.
3235.0	PH1	TP	RR	RE	0.75	Trouble shoot and rectify top drive link tilt fault.
3235.0	PH1	P	TI		1.75	Continued to RIH with BHA #10 on 5" drill pipe from 9 5/8"shoe at 2586 mRT / 2488 mTVD to 3208 mRT / 3071 mTVD. Hole slick. Notes: 1. Due to poor weather conditions (winds > 40 knts) unable to use cranes between 00:00 hrs and 10:00 hrs. This did not impact on the operation.

Date : 18 Jul 2004 **Daily Cost : $ 335,696** **Report Number : 43**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	PH1	P	TI		0.25	Continued to RIH with BHA #10 (8 1/2" wiper trip BHA) from 3208 mRT / 3071 mTVD to TD at 3235 mRT / 3097 mTVD. Hole slick, no fill.
3235.0	PH1	P	CMD		3.75	Circulated and conditioned mud, unable to reduce mud weight lower than 9 .4 PPG after 5 x bottoms up. Took torque readings on bottom for liner rotation. 10 RPM = 9500 Ft-Lbs 20 RPM = 10000 Ft-Lbs 30 RPM = 10500 Ft-Lbs Max gas reading = 3000 units.
3235.0	PH1	P	CMD		0.25	Flowchecked well static.
3235.0	PH1	TP	TO	HC	3	Pumped out of hole (unable to POOH without the pumps on), with BHA #10 from TD at 3225 mRT / 3097 mTVD to 2772 mRT / 2657mTVD. Hole tight at 3208 mRT, 3140 mRT, 2879 mRT and 2850 mRT. Max overpull = 40 KLbs, reamed tight spots.
3235.0	PH1	TP	TO	HC	0.75	POOH from 2772 mRT / 2657mTVD to 2656 mRT / 2551 mTVD. Hole slick, no pumps required.
3235.0	PH1	TP	TI	HC	1.75	RIH from 2656 mRT / 2551 mTVD to TD at 3235 mRT / 3097 mTVD, reamed through tight spot at 2777 mRT, otherwise hole slick.
3235.0	PH1	TP	CMD	HC	1.25	Circulated bottoms up with 550 gpm / 2200 psi, max gas = 34 units.
3235.0	PH1	TP	TO	HC	0.25	Flowchecked well, static.
3235.0	PH1	P	TO		3.25	Unable to POOH without pumps on, pumped out of hole from TD at 3235 mRT / 3097 mTVD to 2772 mRT / 2657 mTVD. Reamed tight spot at 2908 mRT.
3235.0	PH1	P	TO		0.5	POOH from 2772 mRT / 2657 mTVD to 9 5/8" shoe at 2586 mRT / 2488 mTVD.
3235.0	PH1	P	TO		0.25	Took cased hole torque readings on bottom for liner rotation. 10 RPM = 6000 Ft-Lbs 20 RPM = 7000 Ft-Lbs 30 RPM = 7000 Ft-Lbs.
3235.0	PH1	P	CMD		0.25	Flowchecked well, static.
3235.0	PH1	P	TO		3.5	Pumped slug, dropped 2 3/8" hollow drift into string, POOH from the 9 5/8" shoe at 2586 mRT / 2488

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Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 18 Jul 2004 **Daily Cost : $ 335,696** **Report Number : 43**

					mTVD to 149 mRT / 149 mTVD.
3235.0	PH1	P	TO	0.25	Flowchecked well prior to pulling the BHA through the BOP, static.
3235.0	PH1	P	HBHA	1.5	POOH and rack back BHA #10, recovered drift, laid out 8 1/2" stabilisers and pony drill collar, broke off bit (bit graded as 1/1/NO/A/E/I/NO/TD).
3235.0	PH1	U	RUC	0.75	Torqued connections on Baker cement head (unable to do so off line as required the rig tongs).
3235.0	PH1	P	RRC	0.25	Cleared and tidied rig floor in preparation for running 6 5/8" liner.
3235.0	PH1	P	RRC	1	Rigged up Weatherford 6 5/8" 13 Cr liner running equipment, changed out bails on top drive.
3235.0	PH1	P	TO	0.25	Held JSA on running 6 5/8" 13 Cr liner.
3235.0	PH1	P	CRN	1	Made up shoe track, tested floats OK. Baker locked connections.
					Notes:
					1. Good weather conditions during the period. Cranes and boats available.

Date : 19 Jul 2004 **Daily Cost : $ 347,648** **Report Number : 44**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	PH1	P	CRN		0.5	Held JSA with new crew on running 6 5/8" 13 Cr liner.
3235.0	PH1	P	CRN		7	Ran 6 5/8", 24#, 13 Cr, Fox K liner to 689 mRT / 689 mTVD, filling string every 5 joints. One reject (uanble to m/up), monitored hole on trip tank, no losses.
3235.0	PH1	P	CRN		1.25	Made up liner hanger and flexlock packer assembly to the 6 5/8" liner. Filled PBR with hi vis fluid to prevent debris entering the PBR. SWU / SWD = 55 / 55 KLbs.
3235.0	PH1	P	CRN		0.5	Circulated 120 % of string volume (92 bbls) at 500 gpm / 400 psi. No losses.
3235.0	PH1	P	CRN		0.5	RIH 6 5/8" liner on 5" HWDP from 689 mRT / 689 mTVD to 871 mRT / 871 mTVD at 1 min per stand, filled pipe every 2 stands. Monitored hole on trip tank, no losses.
3235.0	PH1	P	CRN		6.75	RIH 6 5/8" liner on 5" drill pipe from 871mRT / 871 mTVD to 9 5/8" shoe at 2586 mRT / 2488 mTVD at 1 min per stand, filled pipe every 2 stands. Monitored hole on trip tank, no losses.
3235.0	PH1	P	CRN		0.5	Circulated 120% of string volume (220 bbls) at 349 gpm / 750 psi whilst rotating the liner, torque readings as follows: 10 RPM = 5000 Ft-Lbs 20 RPM = 6000 Ft-Lbs 30 RPM = 6000 Ft-Lbs. No losses.
3235.0	PH1	P	CRN		2.75	Cont'd to RIH 6 5/8" liner on 5" drill pipe 9 5/8" from shoe at 2586 mRT / 2488 mTVD to 3213 mRT / 3076 mTVD at 1 min per stand, filled pipe every 2 stands. Monitored hole on trip tank, no losses.
3235.0	PH1	P	CRN		0.75	Made up top drive and washed down with 300 gpm / 770 psi from 3213 mRT / 3076 m RT, tagged bottom at 3234 mRT / 3096 mTVD with 10 KLbs, 1 metre hole fill on bottom. Unable to wash down futher.
3235.0	PH1	P	CRN		0.5	Made up cement head, took string weights, SWU / SWD = 295 / 233 KLbs. Pulled back to SWU plus 1 m.
3235.0	PH1	P	CRN		0.75	Circulated 150% of string volume (327 bbls) with 320 gpm / 880 psi whilst rotating the liner, torque readings as follows: 10 RPM = 9000 Ft-Lbs 20 RPM = 10500 Ft-Lbs Max gas = 110 units. No losses.
3235.0	PH1	P	CRN		0.75	Dropped 1 3/4" phenolic liner setting ball, pumped down same at 3 bpm / 200 psi.
3235.0	PH1	P	CRN		0.25	Pressure up string to 1700 psi to set 6 5/8" liner, slacked off liner weight (55 KLbs) plus 30 Klbs running string weight to confirm liner set. Pressured up to 2800 psi to release running tool, bled off pressure and picked up 1 m confirming liner released. Pressured up to 3500 psi to blow out liner ball seat.
					Liner notes:

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Date : 19 Jul 2004 **Daily Cost : $ 347,648** **Report Number : 44**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
						6 5/8" liner shoe at 3233 mRT / 3095 mTVD Pip tag #1 at 3107.8 mRT / 2971.5 mTVD Pip tag #2 at 2893.7 mRT / 2768.4 mTVD Top of liner at 2534 mRT / 2440 mTVD.
3235.0	PH1	P	CRN		0.25	Circulated at 4 bpm / 580 psi, 5 bpm / 740 psi, 6 bpm 940 psi, whilst rotating, torque values as follows: 10 RPM = 9000 Ft-Lbs 20 RPM = 9000 Ft-Lbs
3235.0	PH1	P	RUC		0.25	Held JSA on liner cementing operation.
3235.0	PH1	P	CMC		0.25	Rigged up cement line to plug dropping head and secured swivel. Commenced liner rotation for cement job, 20 rpm / 7000 Ft-Lbs.
3235.0	PH1	P	CMC		0.25	Cement unit pumped 10 bbls of chemical spacer at 6 bpm. Pressure tested cement line to 4000 psi / 5 mins, OK.
3235.0	PH1	P	CMC		0.25	Cement unit pumped 30 bbls chemical spacer at 6 bpm.
						Notes: 1. Cranes and boats available for entire period.

Date : 20 Jul 2004 **Daily Cost : $ 653,446** **Report Number : 45**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	PH1	P	CMC		0.5	Cement unit mixed and pumped 101 bbls, 15.8 PPG HTB slurry (368 sacks, 57 bbls mixwater) at 3 - 5 bpm.
3235.0	PH1	P	CMC		0.5	Dropped drill pipe wiper dart and flushed through cement lines over board to prevent any cement for following dart. Cement unit displaced drill pipe wiper dart with 10 bbls drill water, 50 bbls seawater and 30 bbls drill water at 6 bpm.
3235.0	PH1	P	CMC		0.5	Rig displaced with mud, at 6 bpm, slowed displacement to 2 bpm to observe drill pipe wiper dart latch into liner wiper plug after 51 bbls pumped, liner wiper plug released with 277 psi.
3235.0	PH1	P	CMC		0.25	Rig continued dipslacement with mud at 6 bpm. Slowed displacement to 2 bpm to observe plug bump with 1250 psi after 124.5 bbls pumped (97% pump efficiency). Full returns throughout the cement job.
3235.0	PH1	P	CMC		0.25	Pressured up with cement unit to 4000 psi, held pressure for 5 mins, good test. Bled off pressure, floats holding OK.
3235.0	PH1	P	CMC		0.25	Picked up running string 3 m, set down 50 KLbs string weight with 10 RPM to set ZXP (liner top packer).
3235.0	PH1	P	CMC		0.25	Pressured up running string to 500 psi, picked up until observed pressure drop to 60 psi, pipe free of RS nipple. Picked up further 7 m, pipe free of liner top.
3235.0	PH1	P	CMC		0.5	Reverse circulated running string contents (140 bbls), at 400 gpm / 2150 psi. Dumped 55 bbls of water (spacer ahead plus interface), very slight traces of cement in returns.
3235.0	PH1	P	CMC		1	Circulated bottoms up.
3235.0	PH1	P	RDC		1.25	Pumped slug, rigged down cement head.
3235.0	PH1	P	TO		4	POOH with liner running string from 2522 mRT / 2429 mTVD to surface.
3235.0	PH1	P	RRD		0.5	Laid out liner setting tool.
3235.0	CTB	P	BOP		0.5	Pulled wear bushing.
3235.0	CTB	U	BOP		0.75	Broke down cement head and laid out same, changed out upper pipe rams to 5 - 7" variable bore rams.
3235.0	CTB	P	BOP		1.25	Rigged up to pressure test BOP.
3235.0	CTB	P	BOP		0.75	Set BOP test plug, opened side outlet valves on wellhead, flushed through BOP and manifolds.
3235.0	CTB	P	BOP		4.75	Pressure tested BOP, standpipe / choke and kill manifolds and IBOPs to 250 psi / 5 mins, 5000 psi / 10 mins.
3235.0	CTB	P	BOP		1	Backed out test string from test plug, pressure tested blind / shear rams to 250 psi / 5 mins, 5000 psi / 10 mins.
3235.0	CTB	P	BOP		1.25	Retrieved test plug, broke down BOP pressure test assembly.
3235.0	CTB	P	BOP		0.5	Set wear bushing.

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3235.0	CTB	U	HBHA	1	Laid out 8" jar for back load
3235.0	CTB	U	HBHA	0.5	Laid out excess equipment, cleared and tidied rig floor.
3235.0	CTB	P	HBHA	0.75	Changed out PRS and Iron roughneck handling equipment to 3 1/2".
3235.0	CTB	P	HBHA	0.25	Held JSA on making up wellbore clean out assembly.
3235.0	CTB	U	HBHA	1	Made up BHA #11 (Wellbore clean up assembly), make and break all 4 3/4" drill collar connections (new pipe) to 80% of make up torque, broke out connection and inspected same, made up to 100% of make up torque. Notes: 1. Cranes / boats available during entire period.

Date : 21 Jul 2004 **Daily Cost : $ 342,982** **Report Number : 46**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	P	HBHA		2	Continued to make up BHA 11 (Wellbore clean out BHA).
3235.0	CTB	P	HBHA		4.5	Continued to make up BHA 11 picking up 591 m of 3 1/2" drill pipe.
3235.0	CTB	U	HBHA		1.25	M/up PBR polish mill and 9 5/8" casing scraper, installed PS 21 power slips.
3235.0	CTB	P	TI		5.25	RIH BHA #11 from 657 mRT / 657 mTVD to 3163 mRT / 3026mTVD on 5" drill pipe. No loss of weight or drag through top of liner.
3235.0	CTB	P	WCU		0.25	Broke circulation, 4 bpm = 450 psi, 6 bpm = 800 psi, 8 bpm = 1350 psi. Took torque readings, 10 RPM = 7 Kft-LBs, 20 RPM = 7.5 Kft-Lbs.
3235.0	CTB	P	WCU		0.5	Washed down from 3163 mRT / 3026 mTVD with 4 bpm / 450 psi and 20 RPM. Tagged PBR at 2534 mRT / 2440 mTVD. No resistance at bit depth of 3187 mRT / 3050 mTVD. Polished PBR.
3235.0	CTB	P	WCU		0.75	Closed upper pipe rams, pressure tested production casing and liner to 4000 psi / 15 mins, good test.
3235.0	CTB	P	WCU		0.75	Pulled back 30 m, installed jetting sub, jetted BOP, riser and wellhead with 960 gpm / 820 psi. Pulled jet sub to surface and laid out same.
3235.0	CTB	P	WCU		0.5	Held JSA on wellbore cleanup. RIH and tagged PBR, pulled back 2 m above PBR.
3235.0	CTB	P	WCU		2.25	Pumped 50 bbls high vis pill, displaced well to seawater with 550 gpm / 3000 psi, dumping mud returns, pumped two hole volumes of seawater.
3235.0	CTB	P	WCU		1.5	POOH from 3187 mRT / 3050 mTVD to 2524 mRT / 2431 mTVD to scrape packer setting interval. Flushed out surface lines and equipment.
3235.0	CTB	P	WCU		1.5	RIH from 2524 mRT / 2431 mTVD to 3187 mTVD and tagged top of liner at 2534 mRT / 2440 mTVD.
3235.0	CTB	P	WCU		1.75	Pulled polish mill back above top of liner rotated string at 50 RPM and pumped clean up at 550 gpm pills as follows: 50 bbl high vis pill 50 bbl 3% detergent pill 100 bbl combined caustic / flocculant pill 50 bbl high vis pill. Dumped returns.
3235.0	CTB	P	WCU		0.75	Displaced pills with filtered seawater (average 3 NTU) at 550 gpm, dumped returns.
3235.0	CTB	P	WCU		0.5	Continued to circulate the well to filtered seawater (average 3 NTU), monitoring return cleanliness (NTU value). Dumped returns. Initial returns from well averaging 100 NTU. Notes: 1 Cranes / boats available during entire period.

Date : 22 Jul 2004 **Daily Cost : $ 382,076** **Report Number : 47**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	P	WCU		2.5	Continued to circulate the well to filtered seawater (average 3 NTU), monitored cleanliness of returns, initial returns from this period 70 NTU, dumped returns. Unable to meet criteria of 3 consecutive 15 minute readings within 5%. NTU values from returns in range on 63 - 68. Decided to proceed with clean up programme.

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Date : 22 Jul 2004 **Daily Cost : $ 382,076** **Report Number : 47**

3235.0	CTB	P	WCU		0.75	Pumped 75 bbls of saturated NaCl brine, spotted 105 bbl sized salt pill from liner landing collar at 3185 mRT / 3048 mTVD to 2404 mRT / 2321 mTVD. Displaced pill with 27 bbls saturated NaCl brine and 107 bbls 8.9 PPG brine.
3235.0	CTB	P	WCU		1	POOH (dry) through sized salt pill from 3185 mRT / 3048 mTVD to 2424 mRT / 2340 mTVD.
3235.0	CTB	P	WCU		2.25	Displaced well from 2424 mRT / 2340 mTVD to 8.9 PPG brine.
3235.0	CTB	P	WCU		2	POOH with 5" drill pipe from 2424 mRT / 2340 mTVD to 657 mRT / 657 mTVD.
3235.0	CTB	P	HBHA		0.25	Laid out 9 5/8" casing scraper and polish mill.
3235.0	CTB	P	HBHA		0.25	Changed out handling equipment from 5" to 3 1/2".
3235.0	CTB	P	HBHA		1	POOH with 3 1/2" drill pipe from 657 mRT / 657 mTVD to 204 mRT / 204mTVD. Racked back same in derrick.
3235.0	CTB	TP	RR	RE	0.5	PRS grip dies slipping on 3 1/2" drill pipe, changed out dies.
3235.0	CTB	P	HBHA		0.75	Continued to POOH with 3 1/2" drill pipe, 4 3/4" drill collars and 6 5/8" casing scraper. Racked back same in derrick. Broke off bit, graded as 1/1/NO/A/E/I/NO/TD.
3235.0	CTB	P	HBHA		0.25	Changed out handling equipment from 3 1/2" to 5".
3235.0	CTB	U	WCU		0.5	Made up BHA 10 3/4" Well Patroller and wellhead jetting sub
3235.0	CTB	U	WCU		1	RIH with 10 3/4" well patroller and wellhead jetting tool, jetted wellhead, BOP and riser with 1160 gpm, 1500 psi, 10 RPM.
3235.0	CTB	U	WCU		0.5	POOH, laid out jetting sub and well patroller, minimal recovery (a few small cuttings chips out of ram cavities).
3235.0	CTB	P	LOG		0.25	Held JSA on cased hole logging operation.
3235.0	CTB	P	LOG		0.5	Rigged up wire line (open hole), for cased hole logging operations.
3235.0	CTB	P	LOG		0.75	Made up toolsting #1 (GR-CCL-CBL-VDL-USIT)
3235.0	CTB	P	LOG		1.75	RIH with toolsting #1 to 3188 mWL.
3235.0	CTB	P	LOG		1	Logged up from 3188 mWL to 2535 mWL. Preliminary results indicated good cemnt job on liner with zonal isolation being acheived. Top of cement = 2555 mRT / 2459 mTVD. (Planned top of cement = top of liner at 2534 m).
3235.0	CTB	P	LOG		1	POOH from 2535 mWL to surface.
3235.0	CTB	P	LOG		0.5	Laid out toolstring #1.
3235.0	CTB	U	PER		1.25	Installed shooting nipple, (closed upper pipe rams), re-built wire line cable head. Lined up to monitor well by pumping via the choke and kill lines.
3235.0	CTB	P	PER		0.25	Held JSA on perforation operations.
3235.0	CTB	U	PER		1	Installed cable head into wire line dual pack off assembly, made up same to shooting nipple. Pressure tested against casing to 2500 psi / 10 mins, good test.
3235.0	CTB	P	PER		1.75	Prepared gun string #1 (10.5 m x 4 1/2", 12spf, 45 / 135, 34JLHMX)
3235.0	CTB	U	PER		0.5	Made up gun string #1 and installed into shooting nipple, made up dual pack off assembly.
						Notes:
						1. Cranes and boats available for entire period.

Date : 23 Jul 2004 **Daily Cost : $ 315,214** **Report Number : 48**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	P	PER		1	RIH with gun string # 1 (10.5 m x 4 1/2", 12spf, 45 / 135, 34JLHMX).
3235.0	CTB	P	PER		0.5	Correlated on depth, pulled up onto shooting depth.
3235.0	CTB	P	PER		0.25	Perforated 6 5/8" liner between 2973 mRT and 2962.5 mRT, good indications of guns firing. Monitored well, observed 1 bbl lost to formation.
3235.0	CTB	P	PER		1.5	POOH with gun string #1. Visually confirmed all shots fired.
3235.0	CTB	P	PER		0.5	Laid out spent guns.
3235.0	CTB	P	PER		1.5	Prepared gun string #2 (11.5 m x 4 1/2", 12spf, 45 / 135, 34JLHMX)
3235.0	CTB	U	PER		0.25	Made up gun string #2 and installed into shooting nipple, made up dual pack off assembly.

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Date : 23 Jul 2004 **Daily Cost : $ 315,214** **Report Number : 48**

3235.0	CTB	P	PER		0.75	RIH gun string # 2.
3235.0	CTB	P	PER		0.75	Correlated on depth, pulled up onto shooting depth.
3235.0	CTB	P	PER		0.5	Perforated 6 5/8" liner between 2914 mRT and 2902.5 mRT, good indications of guns firing. Monitored well, observed 0.4 bbls lost to the formation.
3235.0	CTB	P	PER		1.5	POOH with gun string #1.
3235.0	CTB	TU	TI	OTH	1	Guns hanging up in shooting nipple.
3235.0	CTB	P	PER		0.5	Laid out spent guns. Visually confirmed all shots fired.
3235.0	CTB	P	PER		1	Prepared gun string #3 (6 m x 4 1/2", 12spf, 45 / 135, 34JLHMX)
3235.0	CTB	P	PER		1.25	RIH gun string #3.
3235.0	CTB	P	PER		0.25	Correlated on depth, pulled up onto shooting depth.
3235.0	CTB	P	PER		0.25	Perforated 6 5/8" liner between 2610 mRT and 2604 mRT, good indications of guns firing. Monitored well, static.
3235.0	CTB	P	PER		1.5	POOH with gun string #3. Visually confirmed all shots fired.
3235.0	CTB	P	PER		0.25	Laid out spent guns.
3235.0	CTB	P	PER		0.5	Rigged down wire line
3235.0	CTB	TP	RR	RE	1	Hydraulic hose on aft crane burst, repaired same
3235.0	CTB	U	PER		0.25	Opened upper pipe rams, laid out shooting nipple
3235.0	CTB	P	HBHA		0.5	M/up BHA #12 (Perforation scraper BHA).
3235.0	CTB	P	TI		1.25	RIH on 3 1/2" drill pipe to 526 mRT / 526 mTVD.
3235.0	CTB	P	TI		0.5	Changed out handling equipment from 3 1/2" to 5".
3235.0	CTB	P	TI		5	RIH on 5" drill pipe from 526 mRT / 526 mTVD to 2879 mRT / 2755 mTVD. Monitored well on trip tank, lost 3 bbls during trip in.

Notes:

1. Cranes / boats available during entire period.

Date : 24 Jul 2004 **Daily Cost : $ 380,405** **Report Number : 49**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	P	TI		0.75	RIH with BHA #12 (Perforation scraper BHA) from 2789mRT / 2755 mTVD to 3003 mRT / 2870 mTVD. Scraped all packer setting intervals twice, saw no loss of weight.
3235.0	CTB	P	TI		0.25	Flowchecked well, static.
3235.0	CTB	P	TO		1	POOH from 3003 mRT / 2870 mTVD to 2576 mRT / 2429 mTVD.
3235.0	CTB	P	TO		0.25	Flowchecked well, static.
3235.0	CTB	P	TO		3	POOH from 2576 mRT / 2429 mTVD to 527 mRT / 527mTVD.
3235.0	CTB	P	TO		0.5	Changed out handling gear from 5" to 3 1/2" equipment.
3235.0	CTB	P	TO		0.75	POOH with 3 1/2" drillpipe from 527 mRT / 527mTVD to 61 mRT / 61 mTVD.
3235.0	CTB	P	HBHA		0.75	Racked back BHA, laid out both 6 5/8" casing scrapers, broke off bit, graded as 1/1/NO/A/E/I/NO/TD.
3235.0	CTB	P	RTB		0.5	Pulled wear bushing.
3235.0	CTB	P	RTB		0.25	Spotted tubing running equipment on the drill floor.
3235.0	CTB	U	LOG		0.5	Rigged up wire line (open hole).
3235.0	CTB	U	LOG		0.25	Made up toolstring # 2, (5 3/4" gauge ring / junk basket / CCL toolstring).
3235.0	CTB	U	LOG		1.25	RIH with toolstring #2 to 3023 mWL, no loss of weight when running past perforation intervals.
3235.0	CTB	U	LOG		1.75	POOH with toolstring #2 from 3023 mWl to surface. Checked junk basket contents and recovered a small cup full of hard plastic gun debris.
3235.0	CTB	U	LOG		0.25	Laid out toolstring #2, rig aside wire line
3235.0	CTB	P	RPK		0.25	Rigged up tubing running equipment to m/up 4 1/2" tail pipe / sliding side door / permanent packer assembly.

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Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 24 Jul 2004 **Daily Cost : $ 380,405** **Report Number : 49**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	P	RPK		0.25	Held JSA on making up assembly.
3235.0	CTB	P	RPK		1.25	Made up assembly c/w wireline entry guide, 3.688 RN landing nipple, 3.688 RD sliding side door and Halliburton MWR permanent packer.
3235.0	CTB	P	RPK		0.25	Held JSA on running assembly.
3235.0	CTB	P	RPK		0.25	Rigged up wire line.
3235.0	CTB	P	RPK		0.5	Made up CCL-packer setting tool to the assembly.
3235.0	CTB	P	RPK		2	RIH with assembly.
3235.0	CTB	P	RPK		0.25	Correlated on depth and set packer at 2983 mRT / 2851 mTVD. WEG at 3000 mRT / 2867 mTVD.
3235.0	CTB	P	RPK		1.5	POOH to surface with packer setting toolstring.
3235.0	CTB	P	RPK		0.25	Laid out packer setting toolstring, rigged down wire line.
3235.0	CTB	P	RTB		1.25	Changed bails, rigged up to run completion.
3235.0	CTB	P	RTB		0.25	Held JSA on running the completion.
3235.0	CTB	U	RTB		0.5	Cleared Halliburton workshop from the catwalk.
3235.0	CTB	P	RTB		2.75	RIH completion as per tally to 75 mRT / 75 mTVD. Total tubulars made up during this period: Sub assembly 4B (stinger, 3.688 RD sliding side door). 2 x 4 1/2" blast joints Sub assembly 5B (AHR packer, 3.688 RD sliding side door). 4 1/2", 11.6#, 13 Cr, Fox K tubing x 4 4 1/2", 11.6#, 13 Cr, Fox K tubing pups x 3 Note: See tally for running order.
3235.0	CTB	TP	RTB	OTH	0.5	Unable to make up 4 1/2" upper blast joint. Tried several times without success to make J.A.M. connection. Notes: 1 Boats / cranes available during entire period.

Date : 25 Jul 2004 **Daily Cost : $ 380,638** **Report Number : 50**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	P	RTB		0.5	Held JSA with new crew on running completion.
3235.0	CTB	TP	RTB	OTH	1.25	Unable to m/up connection between 4 1/2" blast joints. Laid out upper blast joint and attempted several times to make connection using back up assembly, no go due to high torque readings. Laid out lower blast joint and made up back up sub assembly. Made up connection between blast joints successfully (both back up assemblies used).
3235.0	CTB	P	RTB		4	Continued to RIH completion from 75 mRT / 75 mTVD to 391 mRT / 391 mTVD. Total tubulars made up during this period: Sub assembly 6B (6 5/8" AHR packer, 3.813 RD sliding side door). 1 x 4 1/2" blast joints Sub assembly 6B (6 5/8" AHR packer, 3.813 RD sliding side door) 4 1/2", 11.6#, 13 Cr, Fox K tubing joints x 30 4 1/2", 11.6#, 13 Cr, Fox K tubing pups x 4 Note: See tally for running order.
3235.0	CTB	P	RTB		0.25	Changed out handling equipment from 4 1/2" to 5".
3235.0	CTB	P	RTB		1	Continued to RIH completion from 391 mRT / 391 mTVD to 472 mRT / 472 mTVD. Total tubulars made up during this period: Sub assembly 8B (4 1/2"- 5" XO, 5" flow coupling). 5", 15#, 13 Cr, Fox K tubing joints x 6. Sub assembly PBR B. Note: See tally for running order.
3235.0	CTB	P	RTB		0.25	Changed out handling equipment from 5" to 7".
3235.0	CTB	P	RTB		16.75	Continued to RIH completion from 472 mRT / 472 mTVD to 2170 mRT / 2108 mTVD. Total tubulars made up during this period:

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Date : 25 Jul 2004 **Daily Cost : $ 380,638** **Report Number : 50**

Sub assembly 11A (5"- 7" XO, 7" flow coupling).
7", 26#, 13 Cr, Fox K tubing joints x 176.

Notes:

1. See tally for running order.
2. Well started to take fluid at with completion string at 2045 mRT / 1995 m TVD. Average loss rate = 4-5 bbl/hr.

Date : 26 Jul 2004 **Daily Cost : $ 1,272,230** **Report Number : 51**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	P	RTB		7.5	Continued to RIH completion from 2170 mRT / 2108 mTVD to 2841 mRT / 2720 mTVD. Total tubulars made up during this period: 7", 26#, 13 Cr, Fox K tubing joints x 68 Notes: 1. See tally for running order. 2. Well continued to take fluid. Average loss rate = 3-4 bbl/hr decreasing to 2 bbl /hr as the completion entered the top of the 6 5/8" liner. 3. No loss of weight as the tubing entered the top of the 6 5/8" liner.
3235.0	CTB	P	RTB		0.75	Made up TRSSSV and control line to tubing string. Monitored well on trip tank, static.
3235.0	CTB	P	RTB		0.25	Pressure tested control line to 7000 psi / 15 mins, good test, bled back control line pressure to 5000 psi.
3235.0	CTB	P	RTB		2	Continued to RIH completion from 2841 mRT / 2720 mTVD to 2941 mRT / 2812 mTVD. Total tubulars made up during this period: 7", 26#, 13 Cr, Fox K tubing joints x 12 Notes: 1. See tally for running order. 2. Well continued to take fluid. Average loss rate = 1-2 bbl/hr. 3. Tubing not self filling, required to be filled every joint.
3235.0	CTB	TP	WO	OTH	0.25	Shut operation down due to helicopter arrival, (unable to use crane to move tubing into the V door).
3235.0	CTB	P	RTB		0.75	Continued to RIH completion from 2941 mRT / 2812 mTVD to tag permanent packer at 2981 mRT / 2849 mTVD, with 15 KLbs weight. Took string weights: SWU = 320 Klbs, SWD = 300 Klbs. Total tubulars made up during this period: 7", 26#, 13 Cr, Fox K tubing joints x 4 Notes: 1. See tally for running order. 2. Well continued to take fluid. Average loss rate = 1-2 bbl/hr. 3. Tubing not self filling, required to be filled every joint. 4. Cross coupling control line clamps installed on every joint above TRSSSV and mid joint on the joint immediately above the TRSSSV. Total number of clamps RIH = 16.
3235.0	CTB	P	RTB		0.5	Pulled back, laid out top joint of 7" tubing and replaced same with a 7" tubing pup joint to reduce stick up through the rotary table.
3235.0	CTB	P	RTB		1.5	Made up TIW / pump in assembly to the tubing. RIH, tagged packer and slacked of 15 Klbs weight.
3235.0	CTB	P	RTB		0.5	Pressure tested surface lines to 4000 psi / 5 mins, OK. Pressure tested tubing to 500 psi / 5 mins monitoring annulus. Seal assembly holding OK in permanent packer bore.
3235.0	CTB	P	RTB		0.5	Increased control line pressure to 6500 psi, pressured up tubing slowly to 4000 psi to set packers in the 6 5/8" liner. Held pressure for 15 mins. Total volume pumped = 5.5 bbls. Observed pressure kick at 3600 psi, PBR possibly sheared.
3235.0	CTB	P	RTB		0.25	Bled off tubing pressure to 3000 psi, 1.1 bbls returned. Closed TRSSSV and bled of upper tubing to 1000 psi, 0.1 bbls returned. Inflow tested TRSSSV for 15 mins, OK, final pressure = 1000 psi. Pressured upper tubing back up to 3000 psi to equalise across the TRSSSV, opened TRSSSV.

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						Picked up tubing, PBR not sheared, sheared out PBR with 70 KLbs over pull. Bled down tubing to 0 psi, 4 bbls returned.
3235.0	CTB	P	RTB		0.75	Rigged down TIW / pump in assembly.
3235.0	CTB	P	RTB		2.25	Pulled back completion 5 joints, made up space out pup joints, 1 x 7" joint and tubing hanger.
3235.0	CTB	P	RTB		0.5	Bled off control line pressure to 0 psi and cut control line. Fed control line through tubing hanger and made up compression fitting to seal off control line port in tubing hanger. Pressured up control line to 5000 psi and opened TRSSSV. Pressure tested control line to 7000 psi / 5 mins, OK.
3235.0	CTB	P	RTB		0.75	RIH with completion on 7" tubing landing string to 2 m above the top of the PBR at 2592 mRT / 2493 mTVD.
3235.0	CTB	P	RTB		1	Made up TIW / pump in assembly to the tubing. Pressure tested surface lines to 2000 psi / 5 mins, OK.
3235.0	CTB	P	RTB		1.25	Pumped 270 bbls of 8.9 PPG, filtered corrosion inhibited brine at 4 bpm with the rig pumps to displace the annulus to packer fluid.
3235.0	CTB	P	RTB		0.25	Held JSA on pumping diesel with the cement unit.
3235.0	CTB	P	RTB		2.5	Cement unit pumped 313 bbls of diesel plus 1 bbl of drill water into tubing.

Date : 27 Jul 2004 **Daily Cost : $ 454,286** **Report Number : 52**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	P	RTB		0.25	Held JSA with new crew on landing out completion and associated pressure testing activities.
3235.0	CTB	P	RTB		1.5	Opened side out let valves on 13 5/8" compact housing and drained BOP and high riser at controlled rate to avoid washing tubing hanger seals. Flushed wellhead with sea water through side outlet valves.
3235.0	CTB	P	RTB		0.75	Took string weights, SWU = 275 Klbs, SWD = 265 Klbs, differential pressure on tubing = 750 psi. RIH and landed out tubing hanger (observed through side outlet valves). Noted tubing pressure increase to 900 psi as seals entered the PBR. Locked down tubing hanger and confirmed locked with 20 klbs over pull, (over SWU).
3235.0	CTB	P	RTB		0.5	Pressure tested tubing hanger between tubing hanger seals to 5000 psi / 15 mins, good test.
3235.0	CTB	P	RTB		1	Flushed line from cement unit to 13 5/8" compact housing side outlet valve. Pressure tested line to 3500 psi / 5 mins, OK. Pressure tested production annulus to 3500 psi / 15 mins, good test, 4.5 bbls pumped and returned. No returns from the tubing.
3235.0	CTB	P	RTB		0.5	Rigged down surface lines, TIW and pump in assembly from the landing string.
3235.0	CTB	U	BOP		0.25	Held JSA on slick line operations.
3235.0	CTB	U	BOP		0.5	Rigged up slickline and made up toolstring #1 (5 3/4" drift).
3235.0	CTB	U	BOP		0.5	RIH with toolstring #1 to 36 mRT / 36m TVD, POOH.
3235.0	CTB	U	BOP		0.25	Laid out toolstring #1, made up toolstring #2 (5 3/4" HE3 timer set bridge plug).
3235.0	CTB	U	BOP		0.25	RIH with toolstring #2 and set HE-3 plug at 35 mRT / 35 mTVD.
3235.0	CTB	U	BOP		0.25	Rigged down slickline equipment.
3235.0	CTB	U	BOP		0.5	Rigged up surface lines, TIW and pump in assembly to the landing string.
3235.0	CTB	U	BOP		0.75	Pressure tested surface lines to 5000 psi / 5 mins, OK. Pressure tested HE-3 plug to 5000 psi / 15 mins from above, pumped 0.4 bbls (5.5 bbls required to set packers), good test.
3235.0	CTB	P	BOP		0.5	Rigged down surface lines, TIW and pump in assembly from the landing string. Bled off control line pressure. Cut control line at the drill floor.
3235.0	CTB	P	BOP		0.5	Released tubing hanger running tool, POOH with landing string and racked back same. Laid out tubing hanger running tool.
3235.0	CTB	P	BOP		0.75	Cleared rig floor of excess equipment, rigged up to pull diverter.
3235.0	CTB	P	BOP		1.5	Pulled diverter, broke out and laid down overshot, nippled down choke lines
3235.0	CTB	P	BOP		2.5	Laid out low pressure riser inner mandrel, nippled down BOP. Concurrently made up 7" high pressure riser.
3235.0	CTB	P	BOP		0.25	Held JSA on BOP lifting operations.
3235.0	CTB	P	BOP		1.25	Lifted BOP off high pressure riser, removed control line from BOP and installed test joint. Set BOP on stump and secured same.

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Date : 27 Jul 2004 **Daily Cost : $ 454,286** **Report Number : 52**

3235.0	CTB	P	BOP		2.75	Continued to pick up 7" high pressure riser and rack back in derrick, lowered riser tensioner frame into PCU, laid out mouse hole, changed out lifting slings to remove 13 5/8" high pressure riser.
3235.0	CTB	P	BOP		1.5	Nippled down 13 5/8" high pressure riser and laid out same.
3235.0	CTB	P	XT		0.5	Raised choke and kill lines, skidded PCU to port (Xmas tree will not fit through the PCU hatch). Terminated control line through the compact housing
3235.0	CTB	P	XT		1.25	Lowered Xmas tree to platform, unable to fit same through hatch.
3235.0	CTB	TP	XT	OTH	0.5	Unbolted beam from platform main deck to allow tree access.
3235.0	CTB	P	XT		0.5	Lowered tree into wellbay, nippled up same and tested void to 5000 psi / 15 mins, good test.
						Notes: 1. Production wing valve oriented to 295 deg. 2. Measurement from swab cap to Yolla mezzanine deck = 2.75 m.
3235.0	CTB	P	FLO		1	Removed conductor support slings from under main deck of platform.
3235.0	CTB	P	FLO		0.5	Spotted coflex hose from drill floor to welltest data header.
3235.0	CTB	P	FLO		0.5	Removed swab cap from Xmas tree, RIH with 7" high pressure riser from derrick.

Date : 28 Jul 2004 **Daily Cost : $ 623,902** **Report Number : 53**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	P	FLO		1	Continued to RIH with 7" high pressure riser, m/up same to Xmas tree.
3235.0	CTB	P	FLO		1.25	Made up flowhead to 7" high pressure riser.
3235.0	CTB	P	FLO		0.25	Removed flowhead swab cap, made up kill line to flowhead, locked open kill line check valve.
3235.0	CTB	P	FLO		0.25	Held JSA on pressure testing operations.
3235.0	CTB	P	FLO		0.75	Flushed through lines, pressure tested to 500 psi / 5 mins, OK. Unable to get 5000 psi test.
3235.0	CTB	TP	FLO	RE	0.5	Found leak in hammer union between cantilever deck and rig floor, changed out gasket.
3235.0	CTB	P	FLO		0.5	Flushed through lines, pressure tested to 500 psi / 5 mins, OK. Pressure tested to 5000 psi / 5 mins, OK.
3235.0	CTB	P	FLO		0.25	Pressure tested flowhead kill wing valve to 500 psi / 5 mins, 5000 psi / 10 mins, good test, bled off pressure.
3235.0	CTB	P	FLO		0.75	Re-installed flowhead swab cap. Pressure tested Xmas tree body, 7" high pressure riser and flowhead against HE-3 plug to 500 psi / 5mins, 5000 psi / 10 mins, opened and monitored void port, good test.
3235.0	CTB	P	FLO		0.75	Made up coflex hose to flowhead flow wing valve, installed control lines to flowhead flow wing valve actuator, functioned flow wing valve, OK.
3235.0	CTB	P	FLO		5.5	Flushed through lines to flowhead, pressure tested well test package, all tests upstream of choke to 500 psi / 5 mins, 4000 psi / 10m mins, downstream to 1000 psi / 10 mins. Made up slickline lubricator on the drill floor.
3235.0	CTB	P	FLO		1	Laid out low pressure riser handling slings. Erected temporary scaffold around flowhead. Calibrated flowmeters on well test package.
3235.0	CTB	U	FLO		1	Riged up slickline (full PCE), m/up tool string #3 (HE-3 plug pulling tool)
3235.0	CTB	U	FLO		0.75	Installed tool string #3 (HE-3 plug retrieval tool) in lubricator, made up lubricator to slickline BOP and pressure tested to 4000 psi / 10 mins, OK.
3235.0	CTB	U	FLO		1	RIH to with tool string #3 to 35 mRT / 35 mTVD and pulled HE-3 plug, allowed pressure to equalise and POOH.
3235.0	CTB	U	FLO		0.25	Laid out HE-3 plug and tool string #3. M/up tool string #4 (3.688" Sliding side door shifting tool). Installed same into lubricator and made up to slickline BOP, pressure tested to 4000 psi / 10m mins, OK.
3235.0	CTB	P	FLO		1.25	RIH with tool string #4 and opened sliding side doors at 2920 mRT / 2792 mTVD, 2980 mRT / 2848 mTVD. Good indications of sliding sleeves being fully open. Noted 3 psi tubing head pressure increase when 1st zone opened and 12 psi pressure increase upon opening 2nd zone. POOH, CITHP = 40 psi.
3235.0	CTB	P	FLO		0.25	Redressed toolstring to toolstring #5 (3.813" Sliding side door shifting tool). Installed same into lubricator and made up to slickline BOP, pressure tested to 4000 psi / 10m mins, OK. CITHP = 40 psi.

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Date : 28 Jul 2004 **Daily Cost : $ 623,902** **Report Number : 53**

3235.0	CTB	P	FLO		1.25	RIH with tool string #5 and opened sliding side door at 2832 mRT / 2711 mTVD, Good indications of sliding sleeve being fully open. Noted tubing head pressure increase to 612 psi. POOH, CITHP = 40 psi. Held JSA on flowing well.
3235.0	CTB	P	FLO		0.25	Redressed toolstring to toolstring #6 (Sliding side door closing tool). Installed same into lubricator and made up to slickline BOP. CITHP = 612 psi.
3235.0	CTB	P	FLO		0.75	Prepared to flow the well, lit Port side burner boom pilot, commenced deluge.
3235.0	CTB	P	FLO		0.75	Began cleaning up well on 12/64" initial choke setting, initial CITHP = 612 psi, took 5 bbls diesel back to separator, tubing pressure decreased to zero psi.
3235.0	CTB	TP	FLO	OTH	2	Shut in well and monitored same whilst discussed way ahead with town. CITHP = 0 psi.
3235.0	CTB	TP	FLO	OTH	1.5	RIH with toolstring #6 and shut all sliding side doors. POOH.
3235.0	CTB	TP	FLO	OTH	0.25	Laid out tool string #6. Made up tool string #7 (2 3/16" drift). Installed same into lubricator and made up to slickline BOP.

Notes:

1. Cranes and boats available for entire period.

Date : 29 Jul 2004 **Daily Cost : $ 339,185** **Report Number : 54**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	TP	LOG	OTH	0.75	RIH with tool string #7 (2 3/16 in drift). Tagged hold up depth at 3190 mWL.
3235.0	CTB	TP	LOG	OTH	0.75	POOH with tool string #7.
3235.0	CTB	TP	LOG	OTH	0.25	Closed FCH master valve / swab valves (THP = 0 psi). Laid out tools.
3235.0	CTB	TP	SLK	OTH	0.25	Made up tool string #8 (pressure memory gauges). Installed same in lubricator and made up to slickline BOP.
3235.0	CTB	TP	SLK	OTH	1.25	RIH tool string #8 to 3149 mWL.
3235.0	CTB	TP	SLK	OTH	2.5	POOH with tool string #8 and took 10 minute pressure readings at 2709 mWL, 2381 mWL, 2051 mWL, 1503 mWL, 1000 mWL, 500 mWL and at surface (lubricator).
3235.0	CTB	TP	SLK	OTH	1	Laid out tools and downloaded pressure gauge data.
3235.0	CTB	TP	SLK	OTH	0.25	Conducted JSA for rigging down lubricator.
3235.0	CTB	TP	SLK	OTH	0.5	Rigged down slickline lubricator and stood back BOP.
3235.0	CTB	U	PER	OTH	0.75	Schlumberger continued to load 6 m x 2-7/8 in 6 spf Enerjet perforating guns. Function tested BOP's.
3235.0	CTB	P	PER		0.25	Conducted JSA for rigging up lubricator.
3235.0	CTB	P	PER		2.75	Made up lubricator assembly on catwalk. Rigged up sheaves, installed BOP's and lubricator.
3235.0	CTB	P	PER		0.5	Flushed lines and filled lubricator. Tested same to 4000 psi (10 mins) - OK.
3235.0	CTB	P	PER		1.25	Broke off lubricator and performed hot check on wireline. Armed guns and picked up same into lubricator. Made up and tested quick test sub to 4000 psi (5 mins) - OK.
3235.0	CTB	P	PER		2	Schlumberger RIH with CCL/perforating gun and correlated on depth.
3235.0	CTB	P	PER		0.5	Backloaded explosive bunker onto R J Hope. Lit burner pilots and started deluge system. Cleared platform of personnel.
3235.0	CTB	P	PER		1.75	Fired guns and perforated from 3149 mWL to 3155 mWL. Flowed well to unload tubing through 24/64 in open choke. Flared off approximately 313 bbl diesel and 40 bbl brine (gas at surface). Final FTP = 2620 psi.
3235.0	CTB	P	PER		1.75	Shut-in choke and POOH wireline (SITHP = 2750 psi).
3235.0	CTB	U	FLO		2	Closed production tree swab valve and FCH master valve. Bled down lubricator. Laid down guns from run #1 and picked up new guns for perforating run #2.
3235.0	CTB	U	PER		1.75	Opened production tree swab valve and FCH master valve. RIH perforating run #2 to 3170 mWL.
3235.0	CTB	U	PER		0.75	Opened choke to 20/64 in and allowed FTHP to stabilise (2535 psi). Flared gas.
3235.0	CTB	U	PER		0.5	Correlated guns on depth with choke open at 20/64 in.

Note: Calm sea and weather conditions allowed the crane to be used and boat to be accessed as required.

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004

Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 30 Jul 2004 **Daily Cost : $ 514,052** **Report Number : 55**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	U	PER		0.25	Correlated guns on depth. Perforated from 3157.5 mWL to 3151.5 mWL. Flowed well on 20/64 in choke. Stabilised THP = 2618 psi.
3235.0	CTB	U	FLO		0.25	Shut in well and monitored pressure for 15 mins. THP = 2715 psi.
3235.0	CTB	U	PER		1.75	POOH to surface perforating run #2.
3235.0	CTB	U	PER		0.25	Closed tree swab valve and FCH master valve. Bled off pressure and closed FCH swab valve. Broke off lubricator and laid out guns (confirmed guns fired).
3235.0	CTB	P	PER		0.25	Conducted JSA prior to rigging down wireline equipment.
3235.0	CTB	P	PER		1.25	Rigged down wire line lubricator, BOP and equipment from rig floor.
3235.0	CTB	P	PER		0.25	Cleared equipment from catwalk.
3235.0	CTB	P	SLK		1.25	Made up slick line BOP and picked up lubricator. Made up pressure gauges and installed same in lubricator. Pressure tested lubricator.
3235.0	CTB	P	SLK		0.75	Flushed lines and lubricator. Pressure tested to 4000 psi (10 mins) - OK.
3235.0	CTB	P	SLK		0.25	Equalised pressure in riser/FCH. Opened swab valve on tree. Opened master valve on FCH.
3235.0	CTB	TP	SLK	OEF	0.25	RIH with slick line to 1500 mWL. Power unit failed.
3235.0	CTB	TP	SLK	OEF	0.75	Cleaned out fuel filters on power pack. Restarted unit.
3235.0	CTB	P	SLK		0.25	RIH with slick line from 1500 mWL to 2997 mWL.
3235.0	CTB	P	SLK		0.75	Set pressure gauges at 2997 mWL RN nipple. POOH with slick line.
3235.0	CTB	P	SLK		0.5	Closed swab valve on tree and closed master valve on FCH. Bled off to burner boom. Closed swab valve on FCH. Broke off lubricator and changed out toolstring to pulling tool.
3235.0	CTB	P	FLO		0.5	Conducted JSA prior to commencing flaring operations. Activated starboard deluge system.
3235.0	CTB	P	FLO		6	Started methanol injection and opened well on 24/64 in adjustable choke via heater to surge tank. Beaned up to 44/64 in to clean up well. Diverted to flare. Brine returns after 53 mins. Switched to fixed 44/64 in choke. Diverted well through separator. Allowed well to stabilise then took 3 x PVT sample sets, 2 x dead oil samples, water samples and carried out contaminant testing. Final stabilised flow rate: 27.2 mmscf/d at 2808 psi FTP. Switched back to adjustable choke and beaned up to 56/64 in to establish maximum drawdown capability. FTP = 2527 psi, estimated rate 38 mmscf/d. At 12:00 FTHP = 2693 psi on 44/64 in choke At 14:00 FTHP = 2787 psi on 44/64 in choke, Gas = 27.1 MMscfd At 16:00 FTHP = 2819 psi on 44/64 in choke, Gas = 27.2 MMscfd At 17:20 FTHP = 2542 psi on 56/64 in choke
3235.0	CTB	U	FLO	OTH	2	Continue to flow 2 hours past 6hr period planned for the zone.
3235.0	CTB	P	SLK	OTH	1	Shut in at choke manifold. RIH with slick line and engaged pressure gauges. POOH same.
3235.0	CTB	TP	SLK	OTH	1	Closed tree swab valve and FCH master valve. Bled off at choke and closed FCH swab valve. Broke open lubricator and installed 3.688 in SSD opening tool. Made up lubricator and opened FCH master valve. Opened FCH swab valve and tested lubricator with riser pressure - OK. Opened tree swab valve.
3235.0	CTB	TP	FLO	OTH	1	RIH with slick line and opened SSD at 2980 mWL (due to failure of zones to flow earlier). POOH slick line.
3235.0	CTB	TP	FLO	OTH	0.5	Closed tree swab valve and FCH master valve. Bled off at choke and closed FCH swab valve. Broke open lubricator and laid down SSD opening tool. Made up lubricator and opened FCH master valve. Opened tree swab valve.
3235.0	CTB	TP	FLO	OTH	0.75	Flowed well through 20/64 in choke. Flare not staying lit. Shut in well at choke and closed FCH master valve.
3235.0	CTB	TP	FLO	OTH	0.5	Prepared to pump diesel to surge tank. Conducted JSA and closed tree swab valve.
3235.0	CTB	TP	FLO	OTH	1.25	Dowell pumped 60 bbls of diesel to surge tank. Pumped 5 bbls drill water to flush lines.
3235.0	CTB	TP	FLO	OTH	0.5	Isolated Dowell and opened FCH master valve. Opened FCH swab valve and tested lubricator with well pressure (5 mins) - OK. Opened tree swab valve. Note: Calm sea and weather conditions allowed cranes to be used and boat to be accessed as required.

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004

Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 31 Jul 2004 **Daily Cost : $ 323,891** **Report Number : 56**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	TP	FLO	OTH	0.25	RIH SSD closing tool on slick line to 2980 mWL.
3235.0	CTB	TP	FLO	OTH	0.5	Jarred up to close SSD at 2980 mWL. Attempted to pass through SSD - unsuccessful.
3235.0	CTB	TP	FLO	OTH	0.25	POOH slick line to surface.
3235.0	CTB	TP	FLO	OTH	0.25	Shut in tree swab valve and closed FCH master valve. Bled off to boom and closed swab valve. Broke open lubricator and changed slick line assembly to SSD opening tool. Made up lubricator.
3235.0	CTB	TP	FLO	OTH	0.25	Opened FCH master valve and FCH swab valve. Pressured up lubricator and opened tree swab valve.
3235.0	CTB	TP	FLO	OTH	0.75	RIH on slick line to 2920 mWL and opened SSD.
3235.0	CTB	TP	FLO	OTH	0.5	POOH slick line to surface.
3235.0	CTB	TP	FLO	OTH	0.5	Closed tree swab valve and FCH master valve. Bled off to boom and closed FCH swab valve. Broke off lubricator and changed assembly to SSD closing tool. Made up lubricator.
3235.0	CTB	TP	FLO	OTH	2	Activated starboard deluge system. Opened well to flare at 0324 hours through 20/64 in adjustable choke and beaned up to 44/64 in. Slug of brine reached surface after 31 minutes. Well stabilised at 3109 psi FTHP. Although final FTP was some 70 psi higher than the previous flow it is possible that the brine slug produced to surface came from the 2809 sand as the SSD may have been partly open and that flow period had to be curtailed. Even so the 2755 sand pressure trend was some 30 psi above the 2809 trend. At 04:30 BSW = 30% brine, 0.1 % sediment At 05:00 BSW = 20% brine, 0.1 % sediment
3235.0	CTB	TP	FLO	OTH	0.25	Shut in well on choke (THP = 3278 psi) and closed tree swab valve. Opened FCH swab valve and pressured up lubricator.
3235.0	CTB	TP	FLO	OTH	0.75	Opened tree swab valve. RIH with slick line to 2920 mWL and closed SSD.
3235.0	CTB	TP	FLO	OTH	0.75	POOH slick line to surface. Closed tree swab valve.
3235.0	CTB	TP	FLO	OTH	0.75	Closed FCH master valve. Bled off to boom and closed swab valve. Broke open lubricator and changed slick line assembly to SSD opening tool. Greased FCH valves.
3235.0	CTB	TP	FLO	OTH	0.75	Equalised pressure to riser, FCH and lubricator. Tested to 3500 psi (5 mins) - OK. RIH with slick line SSD opening assembly. Opened SSD at 2832 mWL.
3235.0	CTB	TP	FLO	OTH	0.75	POOH slick line to surface. Closed tree swab valves.
3235.0	CTB	TP	FLO	OTH	0.25	Closed FCH master valve and bled off through choke.Closed FCH swab valve and broke out lubricator. Changed slick line assembly SSD closing tool. Made up lubricator.
3235.0	CTB	TP	FLO	OTH	0.5	Prepared to flow well. Activated starboard deluge system.
3235.0	CTB	TP	FLO	OTH	1.5	Flowed well on 46/64 in choke to burner boom (THP = 3312 psi). Shut in well at 11:22 on choke.
3235.0	CTB	TP	FLO	OTH	0.5	Opened FCH swab valve and pressured up lubricator using well pressure. RIH with slick line to close SSD at 2832 mWL.
3235.0	CTB	TP	FLO	OTH	0.5	Closed SSD at 2832 mWL and POOH slick line.
3235.0	CTB	TP	FLO	OTH	0.5	Closed tree swab valves. Closed FCH master valve and bled off through choke. Closed FCH swab valve and broke out lubricator. Laid down shifting tool and picked up isolation plug and running tool to set in RN nipple. Made up lubricator and opened FCH master valve and swab valve. Opened tree swab valve.
3235.0	CTB	TP	SLK	OTH	1.5	RIH slickline to 2990 mWL. The assembly hung up and the running tool released the plug. POOH running tool.
3235.0	CTB	TP	SLK	OTH	0.5	Closed tree swab valves. Closed FCH master valve and bled off through choke. Closed FCH swab valve and broke out lubricator. Laid down running tool and picked up GR pulling tool dressed with steel pin. Made up lubricator and opened FCH master valve and swab valve. Tested lubricator with well pressure and opened tree swab valve.
3235.0	CTB	TP	SLK	OTH	2.5	RIH and attempted to retrieve plug at 2990 mWL - unsuccessful. Took 1.75 hours to shear off. POOH.
3235.0	CTB	TP	SLK	OTH	0.75	Closed tree swab valves. Closed FCH master valve and bled off through choke. Closed FCH swab valve and broke out lubricator. Laid down GR pullingl tool and cut 25 ft of slick line wire. Picked up GS pulling tool, dressed with brass pin, and equalising prong. Opened FCH master valve and swab valve. Tested lubricator with well pressure and opened tree swab valve.
3235.0	CTB	TP	SLK	OTH	1.25	RIH to 2500 mWL with plug retrieval assembly. Decision made to POOH as it had not been confirmed that the GS tool skirt would contact the plug fishing neck correctly to allow jarring down to shear off the plug. POOH.
3235.0	CTB	TP	SLK	OTH	0.5	Closed tree swab valves. Closed FCH master valve and bled off through choke. Closed FCH swab valve and broke out lubricator. Removed dogs from GS pulling tool. Made up lubricator and opened

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Date : 31 Jul 2004 **Daily Cost : $ 323,891** **Report Number : 56**

						FCH master valve and swab valve. Tested lubricator with well pressure and opened tree swab valve.
3235.0	CTB	TP	SLK	OTH	0.75	RIH and equalised pressure across plug at 2990 mWL. POOH.
3235.0	CTB	TP	SLK	OTH	0.5	Closed tree swab valves. Closed FCH master valve and bled off through choke. Closed FCH swab valve and broke out lubricator. Pin was sheared confirming that its OK to use GS. Made up GS pulling tool without equalising prong. Made up lubricator and opened FCH master valve and swab valve. Tested lubricator with well pressure and opened tree swab valve.
3235.0	CTB	TP	SLK	OTH	1	RIH and attempted to retrieve plug. Shear pin (brass) sheared on GS pulling tool. POOH.
3235.0	CTB	TP	SLK	OTH	0.5	Closed tree swab valves. Closed FCH master valve and bled off through choke. Closed FCH swab valve and broke out lubricator. Redressed GS pulling tool with new brass shear pins. Made up lubricator and opened FCH master valve and swab valve. Tested lubricator with well pressure and opened tree swab valve.
3235.0	CTB	TP	SLK	OTH	1.25	RIH and latched plug at 2990 mWL. POOH.
						Note: Calm sea and weather conditions allowed the cranes to be worked and boat to be accessed as required.

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Activity Report For Yolla-4

Date : 01 Aug 2004 **Daily Cost : $ 333,192** **Report Number : 57**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	TP	SLK	OTH	0.75	POOH slick line to 700 mWL. Unable to continue POOH - possible hydrate problem. Inspected stuffing box - OK.
3235.0	CTB	TP	SLK	OTH	0.25	Jarred on slick line and POOH to surface. Closed tree swab valve and FCH master valve.
3235.0	CTB	TP	SLK	OTH	1.75	Bled off lubricator through choke and closed FCH swab valve. Broke open lubricator and laid out RN plug. Redressed RN plug (installed CO2 resistant O-rings and packings). Toolstring covered in ice.
3235.0	CTB	TP	SLK	OTH	1.75	Made up RN plug to running assembly and made up lubricator. Opened FCH swab valve and opened FCH master valve. Pressure tested lubricator with well pressure to 3300 psi (5 mins) - OK. Opened tree swab valve. RIH slick line RN plug to 2997 mWL. Attempted to set - plug set at 2994 mWL (3 m high).
3235.0	CTB	TP	SLK	OTH	0.75	POOH running tool. Closed in well and bled off pressure.
3235.0	CTB	TP	SLK	OTH	1	Changed toolstring to GR pulling tool and made up lubricator. Opened FCH swab valve and opened FCH master valve. Pressure tested lubricator with well pressure to 3300 psi (5 mins) - OK. Opened tree swab valve. RIH slick line to 2994 mWL. Latched onto RN plug.
3235.0	CTB	TP	SLK	OTH	1.75	POOH with slick line to 700 mWL. Unable to continue POOH. Waited for ice under stuffing box to dislodge or melt. POOH to 537 m. Unable to POOH.
3235.0	CTB	TP	SLK	OTH	2.25	Closed slick line BOP and bled off pressure from lubricator. Pumped methanol into lubricator to break down hydrates.
3235.0	CTB	TP	SLK	OTH	0.25	Equalised pressure to lubricator and opened BOP. POOH with slick line to surface.
3235.0	CTB	TP	SLK	OTH	1.25	Closed tree swab valve and FCH master valve. Bled off lubricator through choke and closed FCH swab valve. Broke open lubricator and laid out RN plug. Redressed plug and running tool with steel pins and new CO2 resistant packing and O-rings. Laid down lubricator and redressed stuffing box and cable head.
3235.0	CTB	P	SLK		0.75	Picked up lubricator and made up RN plug running assembly. Changed jars (to 20in) and inserted knuckle joint in toolstring. Made up lubricator and pressure tested same with Dowell to 4000 psi (10 mins) - OK. Tested with glycol / water. Rigged up glycol injection line to lubricator.
3235.0	CTB	P	SLK		1.25	Opened well and RIH RN plug on slick line. Set plug in RN profile at 2997 mWL. POOH running tool.
3235.0	CTB	P	SLK		0.5	Bled off tubing pressure from 3300 psi to 2400 psi. Monitored for 15 mins to ensure plug set - OK.
3235.0	CTB	P	SLK		0.5	Closed well and bled off lubricator through choke. Laid down plug running assembly and picked up 3.688 in SSD opening tool.
3235.0	CTB	P	SLK		1	Pressured up lubricator. Opened well and RIH slick line. Opened SSD at 2921 mWL. POOH.
3235.0	CTB	P	SLK		0.25	Closed well and bled off lubricator through choke. Laid down shifting tool and picked up pressure gauges on R lock.
3235.0	CTB	TP	SLK	OEF	0.5	Pressured up lubricator with well pressure and noticed stuffing box bleed plug leak on lubricator. Repaired same and retested - OK. Activated starboard deluge system.
3235.0	CTB	U	FLO		1.25	Opened well to flare via 16/64 in choke. Well flowing through heat exchanger with separator by-passed. Flowed through oil and gas flare line to keep flare alight. Gradually increased choke to 40/64 in adjustable. Final FTHP 2833 psi, rate 21 mmscf/d estimated on choke equation. Shut well in at choke manifold.
3235.0	CTB	P	SLK		1.25	RIH and set pressure gauges in SSD profile at 2990 mWL. POOH with running tool.
3235.0	CTB	P	SLK		0.25	Closed FCH master valve and bled off lubricator pressure through choke. Laid down running tool and picked up 3.688 in SSD closing tool.
3235.0	CTB	P	SLK		0.25	Refueled air compressors and steam exchanger. Activated starboard deluge system.
3235.0	CTB	P	FLO		4.5	Opened well at choke with 20/64 in adj choke. Increased incrementally to 58/64 in. Well not flowed through separator. Estimated well flow rates (choke equation): - 52/64 in choke, FTHP = 2692 psi, Rate = 32 mscfd - 56/64 in choke, FTHP = 2613 psi, Rate = 37 mscfd - 58/64 in choke, FTHP = 2574 psi, Rate = 39 mscfd The following points should be noted: 1. The well was not opened beyond 58/64 in as the downstream pressure was 1072 psi (aim was to keep pressure below 1100 psi to avoid putting out the pilot and shuting down the system). 2. The well was flowed for +/- 5 mins at 58/64 in. During this period the down stream pressure stabilised and started to decrease and the FTHP stabilised. 3. The well cleaned up considerably during each flowing phase, with BS&W peaking at 35%W and 0.1%S before falling off.

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Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 01 Aug 2004 **Daily Cost : $ 333,192** **Report Number : 57**

The well was then flowed on a 52/64 choke and diverted through the separator. Initial gas rate through a 3.75 in orifice plate was 32.8 MMscf/d at 2763 psi FTHP. WHT was 56.4 deg C. Initial metered oil rate was 500 bpd. BS%W 17%W, 0.1%S.

Note: Calm sea and weather condtions allowed the cranes to be used and boat to be accessed as required.

Date : 02 Aug 2004 **Daily Cost : $ 335,336** **Report Number : 58**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	P	FLO		1.5	Flowed 2755 sand on 52/64 choke (2783 psi). Qgas = 32.3 MMscf/d, Qoil = 506 bpd. BS&W 14%W, 0.1%S. Took surge tank levels for oil metering factor.
3235.0	CTB	P	FLO		0.25	Shut well in on choke and monitored build-up (THP = 3240 psi). Final Qgas = 32.3 MMscf/d, Qoil = 561 bpd at FTHP = 2789 psi. BS&W 13%W, 0.1%S. Closed xmas tree swab valve.
3235.0	CTB	P	SLK		0.75	Opened FCH swab and tested lubricator with well pressure. Opened tree swab valve and RIH with slick line shifting tool. Closed SSD at 2920 mWL.
3235.0	CTB	P	SLK		0.5	POOH slick line and closed tree valve and FCH valve.
3235.0	CTB	P	SLK		0.5	Bled off pressure to choke. Closed FCH swab valve and broke out lubricator. Made up SSD opening tool and made up lubricator. Pressure tested lubricator with well pressure to 3175 psi (5 mins) - OK.
3235.0	CTB	P	SLK		0.75	RIH with slick line to 2832 mWL and opened SSD. SITHP dropped slowly from 3175 psi to 3040 psi.
3235.0	CTB	P	SLK		0.75	POOH slick line and closed tree valves and FCH. Bled off pressure.
3235.0	CTB	P	FLO		4.25	Opened well to flow 2458 sand to flare via heater on 20/64 in adjustable choke. Beaned up gradually to 40/64 in. Oil to surface after 66 mins. Tubing volume 320 bbls. FTHP stabilised 1600 psi. WHT = 65° C (BS&W1%W, 0.1% S). Choke equation rate estimate using GOR of 900 scf/bbl = 4100 bopd. Oil too waxy to risk putting into cold separator. Shut well in at FCH master valve and bled off through choke.
3235.0	CTB	TP	FLO	OTH	0.25	Pumped 16 bbls of diesel through kill line and across FCH to burner boom to clear waxy oil from lines. Dowell pumped further 23 bbls to fill surge tank.
3235.0	CTB	P	SLK		1.25	Closed kill valve and opened swab valve. Made up SSD opening tool and RIH same. Opened SSD at 2980 mWL and POOH slickline.
3235.0	CTB	P	FLO		1	Closed FCH swab valves. Opened up well to flare via heater on 16/64 in adjustable choke. Beaned up gradually to 48/64 in adjustable choke. Oil still appeared dominant. Beaned down to 32/64 in adjustable to increase gas ratio near surface. Shut well in at choke manifold.
3235.0	CTB	P	SLK		0.25	Shut in well at FCH master valve. Bled off at choke and broke out lubricator. Made up SSD shifting tool to close 3.813" SSD. Made up lubricator and tested same with well pressure.
3235.0	CTB	P	SLK		1	RIH shifting tool to 2832 mWL. Closed SSD and POOH. Shut FCH master valve.
3235.0	CTB	TP	FLO	OTH	2.25	Opened well to flare via heater on 16/64 in adjustable choke and beaned up slowly to 44/64 in. Well lifted oil consistently in small slugs. THP decreased to 890 psi, gas rate estimated from choke equation was 8.4 mmscf/d. Discussed well performance, suspected liquid loading from returned mud/brine or SSD not fully open. Closed in at choke.
3235.0	CTB	TP	FLO	OTH	0.25	Closed FCH and bled off lubricator. Made up 3.688 in SSD shifting tool to open. Tested lubricator with well pressure (5 mins) - OK.
3235.0	CTB	TP	SLK	OTH	0.75	RIH to check SSD at 2980 mWL. SSD not fully open. Opened same and THP increased from 2670 psi to 3135 psi. Attempted to POOH - unsuccessful. Suspected that wire was below and around toolstring with shifting tool at 2921 mWL.
3235.0	CTB	TP	SLK	OTH	2.75	Made several attempts to free tool - unsuccessful.
3235.0	CTB	TP	SLK	OTH	1.75	Closed rams and bled off lubricator pressure. Broke open lubricator and installed go-devil tool. Made up lubricator and equalised pressure.
3235.0	CTB	TP	SLK	WOE	2	Opened rams and dropped go-devil tool. Made further attempts to free stuck slick line assembly - unsuccessful. Decision made to mobilise downhole slick line cutting tool via helicopter.
3235.0	CTB	TP	SLK	WOE	0.75	Closed rams and bled off lubricator.
3235.0	CTB	TP	SLK	WOE	0.5	Helicopter arrived with downhole slick line cutting tool. Discussed forward program with Halliburton.

Note:
Calm sea and weather conditions allowed the cranes to be used and boat to be accessed as required.

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Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 03 Aug 2004 **Daily Cost : $ 359,875** **Report Number : 59**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	TP	SLK	WOE	14.75	Discussed forward program with Halliburton and town. Waited on additional slick line equipment to be mobilised to rig. Machined down the centralising blades on the slick line cutting tool. Attached centralising blades to go-devil tool and cut muleshoe on same. The following points should be noted: 1. Decision was made not to run slick line cutting tool due to risk associated with cutting the wire prematurely (collision with a crossover or a liquid-gas interface may set the cutter off prematurely). 2. It was decided that the preferred method of cutting the wire was to use a go-devil with a tapered bottom profile. This would shear the wire when it landed out on the previously run go-devil. 3. Centralisation of this tool was critical as a lack of centralisers may result in damaged tubing. However centralisers were not available on the rig for this tool. Centralisers were machined onshore. Centralisers were not machined offshore as they may break off downhole.
3235.0	CTB	TP	SLK	WOE	0.75	Helicopter arrived with additional slick line tools. Closed top set of rams and broke open lubricator. Installed sheeps foot go-devil tool (with centralisers machined onshore) and made up lubricator.
3235.0	CTB	TP	SLK	OTH	1.75	Opened rams and dropped sheeps foot tool. Tool did not cut wire. Worked wire to initiate cut - unsuccessful.
3235.0	CTB	TP	SLK	OTH	0.5	Prepared the well to flow to heat up the well-bore and induce turbulence in an attempt for the go-devil to cut the wire. Activated port side deluge system.
3235.0	CTB	TP	SLK	OTH	3	Opened well on 12/64 in choke and increased to 28/64 in (THP = 2950 psi THT = 38 degC Q=11mmscf/d).
3235.0	CTB	TP	SLK	OTH	1.25	Shut-in well to replace leaking port side deluge hose. Concurrently worked the slick line by applying maximum overpulls of 800 lbs followed by complete slack-offs. This operation neither freed the stuck assembly or cut the slickline.
3235.0	CTB	TP	SLK	OTH	0.75	Opened well on 16/64 in choke and increased to 20/64 in choke. Worked the slick line by applying maximum overpulls of 800 lbs followed by complete slack-offs. This operation neither freed the stuck assembly or cut the slickline.
3235.0	CTB	TP	SLK	OTH	1.25	Slacked off wire and closed rams. Bled of lubricator pressure and broke open same. Cut slick line wire and allowed same to freefall down hole. Made up blind box assembly and installed in lubricator. Made up and equalised lubricator. Note: Calm sea and weather conditions allowed cranes to be used and boats to be accessed as required.

Date : 04 Aug 2004 **Daily Cost : $ 327,017** **Report Number : 60**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	TP	SLK	OTH	1.75	RIH with slick line blind box assembly. Tagged go-devil at 2915 mWL. Picked up and jarred down 15 times - no movement of stuck assembly.
3235.0	CTB	TP	SLK	OTH	1	POOH blind box assembly to surface.
3235.0	CTB	TP	SLK	OTH	0.5	Closed FCH and bled off lubricator to choke. Broke open lubricator and laid down blind box assembly. Made up 5.9 in wire finder assembly. Made up lubricator and tested to 3130 psi with well pressure (5 mins) - OK.
3235.0	CTB	TP	SLK	OTH	0.75	RIH 5.9 in wire grabber assembly to 163 mWL (SSSV at 169 mMD, ID = 5.875 in). Attempted to latch wire - unsuccessful.
3235.0	CTB	TP	SLK	OTH	1.25	Closed slick line BOP and bled off lubricator. Broke open lubricator and confirmed no wire recovered. Changed out 5.9 in wire finder to 4.5 in wirefinder and made up lubricator. Tested lubricator with well pressure to 3160 psi (5 mins) - OK.
3235.0	CTB	TP	SLK	OTH	1.5	Opened BOPs and RIH 4.5 in wirefinder to 151 mWL. Worked grabber to engage wire. POOH grabber assembly.
3235.0	CTB	TP	SLK	OTH	0.25	Closed well at tree swab valve and bled off pressure to choke. Broke out lubricator - no wire. Changed out tool to a 4 pronged spear + wire brush assembly. Made up lubricator and tested with well pressure to 3120 psi (5 mins) - OK.
3235.0	CTB	TP	SLK	OTH	0.75	RIH slick line assembly to 151 mWL. Worked assembly to grab wire - successful. POOH same.
3235.0	CTB	TP	SLK	OTH	0.25	Closed slick line BOP and bled off lubricator pressure.
3235.0	CTB	TP	SLK	OTH	0.25	Conducted JSA for retrieving and laying out fished wire.
3235.0	CTB	TP	SLK	OTH	0.5	Broke off lubricator and retrieved wire. Laid out toolstring and attached three strands of wire to gauge cutter on rope socket. Made up lubricator.
3235.0	CTB	TP	SLK	OTH	1	Equalised lubricator and opened BOP. Pulled wire into lubricator and closed BOP. Bled off lubricator.

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004

Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 04 Aug 2004 **Daily Cost : $ 327,017** **Report Number : 60**

						Cut and laid out section of wire.
3235.0	CTB	TP	SLK	OTH	1.5	Made up and equalised lubricator. Opened BOP and pulled wire into lubricator. Closed BOP and bled off lubricator. Cut and laid out section of wire.
3235.0	CTB	TP	SLK	OTH	0.5	Made up one strand of wire on rope socket. Made up lubricator and equalised same. Opened BOP and pulled rope socket to top of lubricator. Closed BOP and bled off pressure.
3235.0	CTB	TP	SLK	OTH	2.25	Broke out lubricator and cut off rope socket. Rigged down lubricator and restrung wire. Connected wire to winch and installed stuffing box - equalised.
3235.0	CTB	TP	SLK	OTH	0.5	Opened rams and pulled wire to surface. Overpull encountered after 12 m pulled - could not pull wire.
3235.0	CTB	TP	SLK	OTH	1	Bled off lubricator and checked for hydrates. Installed glycol injection line to lubricator and equalised.
3235.0	CTB	TP	SLK	OTH	0.25	Attempted to pull wire - unsuccessful.
3235.0	CTB	TP	SLK	OTH	1	Closed rams and bled off lubricator. Lifted stuffing box - balled up wire found. Re-installed stuffing box and began to disconnect lubricator. Noticed rams leaking and attempted to get rams to seal - unsuccessful. Equalised lubricator.
3235.0	CTB	TP	SLK	OTH	0.25	Opened and closed rams to attempt to get a seal. Gas leaking badly from connection between ram piston and BOP body. Closed swab valve on production tree which cut the slick line wire at this point. Bled off riser at choke.
3235.0	CTB	TP	SLK	OTH	4.5	Laid down lubricator and removed cut wire from riser- only one small ball of wire, remaindewr straight. Closed FCH swab and master valves. Removed BOP from FCH and redressed BOP.
3235.0	CTB	TP	SLK	OTH	1	Rigged up lubricator while redressing BOP.
3235.0	CTB	TP	SLK	OTH	1.5	Continued to redress BOP.
						Note: Calm sea and weather conditions allowed the crane to be used and boats to be accessed as required.

Date : 05 Aug 2004 **Daily Cost : $ 323,727** **Report Number : 61**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	TP	SLK	OTH	2.5	Redressed all rams and replaced all o-rings. Stump tested BOP's to 4000 psi. x1 top and x1 bottom ram leaked.
3235.0	CTB	TP	SLK	OTH	0.75	Changed out leaking o-rings and pressure tested BOP's to 4000 psi. x1 top ram leaked.
3235.0	CTB	TP	SLK	OTH	4.75	Inspected BOP and found a leaking actuating cylinder seal. Stripped down and changed out seals. Decision made to change out all other actuating cylinder seals due to the degradation of the leaking seals. Retested BOP to 4000 psi - OK.
3235.0	CTB	TP	SLK	OTH	2.5	Installed BOP onto FCH. Made up wire catcher toolstring and lubricator. Pressure tested lubricator - leak at connection between bottom and top 7 in lubricator sections. Changed out o-ring and re-tested to 4000 psi - OK.
3235.0	CTB	TP	SLK	OTH	1.25	Opened tree swab valve and FCH master valve. RIH to 302 mWL and set down 10 lbs on wire. Picked up - wire engaged. POOH to surface.
3235.0	CTB	TP	SLK	OTH	0.25	Closed rams and bled off and un-stabbed lubricator.
3235.0	CTB	TP	SLK	OTH	0.75	Cut wire strands and tied wire to rope socket and made up lubricator. Equalised pressure and opened BOP. Pulled wire into lubricator and closed BOP. Bled off pressure.
3235.0	CTB	TP	SLK	OTH	0.5	Un-stabbed lubricator - one strand of wire through BOPs. Cut wire and removed one small ball of wire from lubricator. Tied wire from hole onto rope socket. Re-stabbed lubricator. Equalised and opened BOPs. Picked up to top of lubricator. Closed BOP's and bled off.
3235.0	CTB	TP	SLK	OTH	2.25	Retrieved fished wire. Rigged down lubricator and rigged up single section of lubricator. Threaded wire from well back through stuffing box. Connected wire to wire from winch.
3235.0	CTB	TP	SLK	OTH	1.5	Made up lubricator and equalised pressure. Opened BOP and POOH wire (stripped last 300m through BOP). Total wire recovered including various balled up sections was: 2720 m POOH and +/- 200 m balled and cut = 2920 m.
3235.0	CTB	TP	SLK	OTH	0.25	Closed swab valve and bled off lubricator.
3235.0	CTB	TP	SLK	OTH	3.5	Rigged up spooling device. Unspooled recovered wire onto empty spool. Re-threaded rope socket and stuffing box with new wire. Made up 3.25 in LIB assembly and pulled into lubricator.
3235.0	CTB	TP	SLK	OTH	0.25	Made up and tested lubricator to 4000 psi - OK.
3235.0	CTB	TP	SLK	OTH	1.75	Opened master valve and RIH with LIB assembly to 2915 mWL. Tagged fish and POOH with LIB.

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004

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Date : 05 Aug 2004 **Daily Cost : $ 323,727** **Report Number : 61**

3235.0	CTB	TP	SLK	OTH	0.25	Closed valves and bled off pressure. Laid down and inspected LIB assembly. Indentation on LIB indicated that there was no wire above the sheeps foot go-devil.
3235.0	CTB	TP	SLK	OTH	1	Made up fishing tool assembly and lubricator. Equalised pressure and RIH to 2915 mWL. Latched onto fish and POOH. Note: Favourable sea and weather conditions allowed the cranes to be used and boat to be accessed as required.

Date : 06 Aug 2004 **Daily Cost : $ 348,062** **Report Number : 62**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	TP	SLK	OTH	0.75	POOH sheeps foot go-devil tool. Closed swab valve and bled off pressure. Laid down go-devil assembly and made up 3.25 in LIB assembly.
3235.0	CTB	TP	SLK	OTH	1	Made up lubricator and opened swab valve. RIH with 3.25 in LIB to 2917.5 mWL. Tagged fish and POOH. Closed swab valve and bled off pressure. Laid down LIB assembly and inspected same. Indentation on LIB showed there was no wire above go-devil.
3235.0	CTB	TP	SLK	OTH	0.75	Made up 2.5 in fishing assembly with 3 in bell guide. Made up lubricator and opened swab valve. Whilst doing this a leak was noticed on the Acme connection below the BOP's. Closed swab valve and bled off pressure. Broke Acme connection and installed new o-ring. Made a connection and pressure tested to 500 psi (low) and 4000 psi (high) - OK.
3235.0	CTB	TP	SLK	OTH	1.25	Opened swab valve and RIH with pulling tool to 2917.5 mWL. Latched onto fish and POOH same. Closed swab valve and bled off pressure. Laid down go-devil and made up 3.25 in LIB assembly.
3235.0	CTB	TP	SLK	OTH	3	Made up lubricator and opened swab valve. RIH with 3.25 in LIB to 2920 mWL. Tagged top of stuck shifting assembly and POOH same. Closed swab valve and bled off pressure. Laid down and inspected LIB. Indentation on LIB showed there was no wire above shifting assembly.
3235.0	CTB	TP	SLK	OTH	4.25	Installed 2.5 in pulling tool with 3 in guide. Made up lubricator and opened well. RIH and latched fish at 2920 mWL. Jarred down 3 times lightly on fish. Fish moved down and jar action was regained on fish. Picked up to obstruction. Jarred up three times using fish jars only. Fish came free. POOH with fish. Additional drag indicated wire on fish. Hung up at 7 in x 5 in crossover. Sat down to close jars and jarred up to free fish. POOH. Isolated well and bled off lubricator. Laid down fish (no wire on fish).
3235.0	CTB	TP	SLK	OTH	1	Installed four prong wire grab and scratcher and made up lubricator. Opened well, RIH and worked wire catcher to 2600 mWL. Additional drag of 20 lbs observed.
3235.0	CTB	TP	SLK	OTH	1	POOH with wire catcher assembly to surface.
3235.0	CTB	TP	SLK	OTH	0.5	Closed swab valve and bled off pressure. Broke open lubricator and inspected wire catcher tool - no wire recovered. Made up lubricator and opened swab valve.
3235.0	CTB	TP	SLK	OTH	1.5	Worked wire catcher assembly to 2935 mWL. Unable to run further. POOH to surface with additional drag of 50 lbs in 4 in and 5 in tubing and 15 lb in 7 in tubing.
3235.0	CTB	TP	SLK	OTH	1.5	Closed swab valve and bled off pressure. Recovered approximately 20 m wire, in one piece and laid down wire grab and scratcher. Made up 3.25 in LIB assembly and opened swab valve. Lubricator leaking at connection between lubricator and BOPs. Changed o-ring on connection. Opened swab valve.
3235.0	CTB	TP	SLK	OTH	1.75	RIH with 3.25 in LIB assembly to top of gauge hanger at 2990 mWL. Tagged gauge hanger and POOH. Closed swab valve and bled off pressure. Impression on LIB showed top of gauge hanger clear of debris. Laid down LIB.
3235.0	CTB	TP	SLK	OTH	1	Made up 3.688 in SSD shifting tool assembly. Made up lubricator and opened swab valve.
3235.0	CTB	TP	SLK	OTH	0.5	Whilst RIH shifting assembly held up at 2921 mWL. Fell through and continued to RIH to SSD at 2980 mWL. Confirmed sleeve was open and POOH shifting assembly. Note: 1. Confirmation of the SSD being open at 2980 mWL was made in accordance with the procedure forwarded to rig by Halliburton management (jarred down 4 times, waited 5 mins, monitored pressures, made passes through SSD). 2. When POOH no hold up was seen at 2921 mWL and confirmed SSD was closed at this depth.
3235.0	CTB	TP	SLK	OTH	0.5	POOH with SSD shifting assembly and closed swab valve.
3235.0	CTB	TP	SLK	OTH	0.5	Conducted JSA with crew prior to conducting DST operations on 2809 sand.
3235.0	CTB	P	FLO		3.25	Opened up well and commenced testing 2809 sand on 16/64 in adjustable choke direct to flare. Increased gradually to 54/64 in choke (FTHP = 2725 psi, water = 50%, estimated gas rate = 35 mscf/d).

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Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 06 Aug 2004 **Daily Cost : $ 348,062** **Report Number : 62**

Note: Favourable sea and weather conditions allowed the cranes to be used and boats to be accessed as required.

Date : 07 Aug 2004 **Daily Cost : $ 320,640** **Report Number : 63**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	P	FLO		4.5	Flowed 2809 sand on 54/64 in adjustable choke, BS&W peaking at 75%W, <0.1%S, and stabilising at 25%W, 2750 psi FTHP. Changed to 52/64 in fixed choke and stabilised flow at 2825 psi FTHP and 14%W. Deverted to separator and installed 4.25 in orifice plate in meter. Continued flowing through separator and collected samples. Final flow rate 32.2 mscf/d, 800 bpd condensate at 2850 psi FTHP.
3235.0	CTB	P	FLO		2.75	Sampling programme completed - shut-in well at choke. SITHP 3215 psi. Closed FCH MV and XT SV, bled off to choke. Installed GR pulling tool in lubricator and equalised. Opened well and RIH and retrieved gauges from 2590 m. POOH and isolated the well, bled down lubricator. Laid down gauges and running tool.
3235.0	CTB	U	FLO	OTH	2.75	Picked up SSD closing tool. Made up lubricator, opened well and RIH to close SSD at 2980 m. Checked SSD's closed at 2920 m and 2832 m. POOH, closed in well, bled down lubricator. Checked SSD closing tool, pin sheared. Redressed SSD closing tool.
3235.0	CTB	TU	FLO	OTH	1.25	Picked up redressed SSD closing tool. Made up lubricator, opened well and RIH and checked SSD's closed at 2980 m, 2920 m & 2832 m. POOH, closed in well, bled down lubricator. Checked SSD closing tool - OK. Laid down SSD closing tool. Made up lubricator.
3235.0	CTB	TU	FLO	OTH	1.5	Opened well bled down tubing pressure to 340 psi via test manifold and flared off gas.
3235.0	CTB	TU	FLO	OEF	0.5	Closed well in at test manifold. Monitored pressure. Pressure increased to 1340 psi and rising.
3235.0	CTB	TU	FLO	OTH	1.75	Closed lubricator master valve. Bled off lubricator pressure. Picked up 3.813 in plug assembly. Opened lubricator master valve and RIH, plug held up at 5 in x 4.5 in x-over at 2590 m. POOH. Closed FCH master valve. Bled off lubricator pressure. Recovered ± 30 ml of fine sand from plug. Redressed 3.813 in plug and reconfigured toolstring with knuckle joint.
3235.0	CTB	TU	FLO	OTH	1.5	Opened FCH master valve. RIH with 3.813 in plug assembly to 2594 m, jarred down 6 times to go through nipple, jarred back up 20 times through nipple and cocked setting tool. Set plug in SSD at 2594 m. Released running tool and POOH. Closed FCH master valve and bled off pressure. Laid down plug running tool.
3235.0	CTB	TU	FLO	OEF	1.5	Opened well via choke manifold and flared off gas through port flare boom while bleeding down tubing pressure. Established that 3.813 in plug was leaking. Pressure stabilised at 240 psi.
3235.0	CTB	TU	FLO	OEF	2.75	Made up GR pulling tool with equalising prong. Opened FCH master valve and RIH to 2594 m. Latched plug and equalised pressure to 3215 psi. Jarred free from 3.813 in plug and POOH. Closed FCH master valve and bled off pressure. 3.813 in plug was not on running tool.
3235.0	CTB	TU	FLO	OEF	1.25	Made up GS pulling tool. Opened FCH master valve and RIH to 2594 m. Latched onto 3.813 in plug and pulled free. POOH. Closed FCH master valve and bled off pressure. Retrieved 3.813 in plug and laid down GS running tool. All packing elements and equalising melon "O" rings were damaged, ±25 ml fine sand in bottom section of 3.813 in plug.
3235.0	CTB	TU	FLO	OEF	1.75	Picked up 7 in and 4.5 in tandem wire brushes. Opened FCH master valve and RIH. Cleaned nipples at 2594 m, 2832 m and 2921 m. POOH. Closed FCH master valve and bled off pressure. Laid down brush assembly. Redressed 3.813 in plug with new H2S packing elements and melon "O" rings whilst running brush assembly.
3235.0	CTB	TU	FLO	OEF	0.25	Picked up 3.813 in plug, with floating keys. Opened FCH master valve and RIH.
						Note: Favourable sea and weather conditions allowed the cranes to be used and boats to be accessed as required.

Date : 08 Aug 2004 **Daily Cost : $ 1,575,866** **Report Number : 64**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	TU	FLO	OEF	1	RIH with 3.813 in plug with floating keys to 2594 m. Set plug. POOH with running tool. Closed FCH master valve.
3235.0	CTB	U	FLO		0.75	Opened well on testing manifold and bled down tubing pressure to 2000 psi via starboard flare boom.
3235.0	CTB	U	FLO		0.5	Monitored tubing pressure at test manifold, steady at 2000 psi.
3235.0	CTB	U	FLO		0.75	Opened well on testing manifold and bled down tubing pressure to 100 psi via starboard flare boom.
3235.0	CTB	U	FLO		0.75	Monitored tubing pressure at test manifold, steady at 100 psi.

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Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 08 Aug 2004 **Daily Cost : $ 1,575,866** **Report Number : 64**

3235.0	CTB	U	FLO	0.5	Opened well on testing manifold and bled down tubing pressure to 0 psi via starboard flare boom. Closed SSSV and secured production tree.
3235.0	CTB	P	FLO	0.25	Flushed test equipment with drill water.
3235.0	CTB	P	FLO	1.25	Rigged down Halliburton slick line tools, lubricator and BOP.
3235.0	CTB	P	FLO	0.25	Rigged down scaffolding on rig floor.
3235.0	CTB	P	FLO	2	Rigged down FCH. Pulled riser and racked in derrick. Installed protector cap on production tree.
3235.0	CTB	P	RM	4.5	Prepared to skid from Yolla 4. Disconnected service lines, raised "V" door.
					Note:- YOLLA-4 ended at 12:30 8th Aug 2004.

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Activity Report For Yolla-4

Date : 30 Sep 2004 **Daily Cost : $ 192,304** **Report Number : 65**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	U	RU		0.5	Skidded drill floor from Yolla-3 to Yolla-4 (12 ft starboard) for PLT and production testing (2809 sand) operations. Note 1: The following items were changed out on the Yolla-4 tree whilst production testing Yolla-3; - Master valve (wire cutting gates and seats inserted) - Swab valve (minor leak in previous valve) Note 2: Conducted successful ROV dive.
3235.0	CTB	U	RU		0.25	Connected service lines at aft of drill floor.
3235.0	CTB	U	SLK		1.75	Removed the tree cap. Lowered the FCH and riser onto Yolla-4 tree and made up same. Installed slickline BOP and rigged up kill line and coflexip flow line to FCH. Spotted slickline unit on catwalk. Made up slickline stuffing box to lubricator.
3235.0	CTB	U	SLK		0.75	Picked up lubricator and made up 3.813 in plug retrieval tool and equalising prong. Made up lubricator and connected BOP control lines.
3235.0	CTB	TP	SLK	OEF	1.75	Filled lines, riser and lubricator with drill water. Riser connection at tree and connection below BOP had leaks. Laid down lubricator and BOP. Changed out o-rings on both connections and re-installed BOP. Picked up and made up lubricator.
3235.0	CTB	U	SLK		0.5	Re-filled lines, riser and lubricator with drill water. Tested lines against KWV to 4000 psi (5 mins) - OK. Tested lubricator, flowline to choke and riser/tree against LMV to 500/4000 psi (5/10 mins) - OK.
3235.0	CTB	U	SLK		0.5	Attempted to open SSSV. Did not appear to open. Pumped with cement unit into tubing - no pressure build up. Pressured up again on control line - opened OK.
3235.0	CTB	U	SLK		1.5	RIH with GS pulling tool (without dogs) and equalising prong to 2593 mWL. Sheared equalising ports and POOH with slickline assembly. Closed tree and vented pressure.
3235.0	CTB	U	SLK		3	Made up GR pulling tool and equalising prong. RIH with same to 2593 mWL. Waited on pressure to equalise to 2960 psi. Pulled plug and POOH with same. Closed in tree and vented pressure. Laid down plug.
3235.0	CTB	TU	SLK	OEF	1.5	Made up PLT toolstring to slickline. Included fullbore and in-line spinners, pressure, temperature and nuclear density gauges and GR/CCL. Made up lubricator and tested "quick test" sub to 4000 psi - OK. Opened FCH master valve and swab valve. Opened tree swab valve. RIH assembly to 2800 mWL.
3235.0	CTB	TU	SLK	OEF	1.25	Commenced bleeding down well to flare. Logged as per the following: 1. Logged down to 2995 mMD. 2. Peformed 3 min stations at 2995, 2985, 2950, 2890 and 2800 mMD. 3. Logged down to 2995 mMD. 4. Logged up to 2800 mMD. Shut well in at choke manifold.
3235.0	CTB	TU	SLK	OEF	0.75	POOH with PLT assembly to 670 mMD. Note: Favourable weather and sea conditions allowed the cranes and boats to be accessed as required.

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Activity Report For Yolla-4

Date : 01 Oct 2004 | **Daily Cost : $ 340,352** | **Report Number : 66**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	TU	SLK	OEF	0.25	POOH with PLT assembly.
3235.0	CTB	TU	SLK	OEF	0.25	Closed tree and vented pressure. Laid down PLT assembly and picked up 3.688 in SSD closing tool. Made up lubricator.
3235.0	CTB	TU	SLK	OEF	2.75	Downloaded and analysed PLT data. Data not retrieved from lower tool section (full bore spinner). Data from inline spinner indicated that tailpipe was leaking, but only by the lack of definitive characterisations above the depth of that tool ,which did not reach the lowermost SSD.
3235.0	CTB	TU	SLK	OEF	1.25	Opened well and RIH with SSD closing tool to ensure sleeves closed at 2990 mRT, 2980 mRT, 2920 mRT, 2832 mRT, and 2594 mRT. Bled off tubing pressure from 3196 psi to 3050 psi and monitored well. Observed continued increase in pressure as each sleeve was worked with the shifting tool.
3235.0	CTB	TU	SLK	OEF	0.5	POOH with 3.688 in SSD closing tool.
3235.0	CTB	TU	SLK	OEF	0.25	Closed tree and vented pressure. Laid down SSD closing tool and picked up 3.688 in plug retrieval tool.
3235.0	CTB	TU	SLK	OEF	1.25	Tested "quick test" sub to 4000 psi - OK. RIH to retrieve plug. Jarred down to ensure plug was equalised, jarred up to pull plug. Indication that plug had released - POOH.
3235.0	CTB	TU	SLK	OEF	0.5	Closed well in. Bled off lubricator. No plug retrieved. Made up GS pulling tool. Stabbed lubricator and tested quick test sub to 4000 psi. Opened Tree swab valve.
3235.0	CTB	TU	SLK	OEF	2	RIH. Latched plug. Jarred up 40 times to release. POOH. Jarred up 50 times to come through 3.688" SSD at 2990 mRT and again to pass through 3.688"SSD at 2980 mRT. Came through 3.688" SSD at 2921 mRT easily. POOH.
3235.0	CTB	TU	SLK	OEF	0.75	Closed well in. Bled off lubricator. Plug retrieved with no packing elements remaining. Equalising ports were washed out. Approximately 2 litres of fine sand recovered from trash sub. Made up new plug. Stabbed lubricator and tested quick test sub to 4000 psi.
3235.0	CTB	TU	SLK	OEF	0.25	Prepared to flow well to flare to lift packing rings from well.
3235.0	CTB	TU	SLK	OEF	0.5	Opened well to flare and beaned up over 15 minutes to 64/64 in choke. Water to surface at 10:20. Well slugged water for ±3 minutes. Stabilised at FTP = 2145 psi. Leak detected in gas flare line near burner boom. Shut well in.
3235.0	CTB	TU	SLK	OEF	2	Opened swab valve on flow head. RIH with "RN" plug. SITHP = 3304 psi. Jarred through SSD at 2921 mRT - 10 jars Jarred through SSD at 2980 mRT - 12 jars Jarred through SSD at 2990 mRT - 40 jars Jarred back up through SSD at 2990 mRT to cock tool - 40 jars Jarred back down to attempt to pass through SSD at 2990 mRT - 40 jars unsuccessful. Top pin must have sheared causing plug to try to set. Jarred up 4 times and sheared off plug. POOH. Closed well in, bled down lubricator. Laid down running tool.
3235.0	CTB	TU	SLK	OEF	0.5	Closed well in and vented lubricator. Changed out running tool to "GS" pulling tool with prong.
3235.0	CTB	TU	SLK	OEF	0.75	Opened well. RIH. Latched plug. POOH with minimal jarring through SSDs. Closed in well. Bled off lubricator. Recovered plug. Plug in very good condition. Some debris still remaining in well. Made up 3.25" blind box and wire scratcher.
3235.0	CTB	TU	SLK	OEF	0.5	Stabbed lubricator and tested quick test sub. Quick test sub leaked. Replaced O-ring in quick test sub.
3235.0	CTB	TU	SLK	OEF	0.25	Made up lubricator and attempted to pressure up - no success.
3235.0	CTB	TU	SLK	OEF	0.5	Broke off lubricator and recovered seals from top of swab valve. Changed out "O" rings and installed the lubricator. Pressure tested quick test sub to 4000 psi.
3235.0	CTB	TU	SLK	OEF	0.75	RIH with scratcher assembly to 3010 m. Worked assembly.
3235.0	CTB	TU	SLK	OEF	0.5	POOH with wireline. Closed in Tree at swab valve. Vented lubricator. Laid down wire scratcher assembly. Picked up 3.688" plug assembly.
3235.0	CTB	TU	SLK	OEF	0.75	Opened Tree swab valve. RIH with plug assembly and set plug at 2998 m.
3235.0	CTB	TU	SLK	OEF	0.5	POOH with wireline. Closed Tree the swab valve. Vented the lubricator. Laid down running tool. Picked up SSD opening assembly.
3235.0	CTB	TU	SLK	OEF	1	Opened well, bled off pressure from 3260 to 3015 psi. Monitored the well - Plug held, no pressure build up.

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004

Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 01 Oct 2004 | **Daily Cost : $ 340,352** | **Report Number : 66**

3235.0	CTB	U	SLK	2	RIH with 3.688" SSD opening assembly to 2981 m. Equalised pressure at 2981 m. Pressure increased from 3075 to 3150 psi, fully opened SSD at 2981 m (2809 sand).
3235.0	CTB	U	SLK	0.75	POOH with SSD opening assembly. Closed Tree swab valve. Vented lubricator. Laid down tool assembly.
3235.0	CTB	U	SLK	0.75	Laid down wireline BOP. Installed riser cap.
3235.0	CTB	U	WCU	2	Open well (2809 sand) on 16/64"choke and bean up gradually to 48/64". Choke back to 36/64" - BS&W consistent at 5-8% with trace sediment. Downstrean pressures erratic and high due to hydrates - flow well to warm up lines.

Date : 02 Oct 2004 | **Daily Cost : $ 342,752** | **Report Number : 67**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	CTB	U	WCU		4.5	Continued to flow well until hydrates cleared downstream of choke. Took preliminary CGR samples. Installed fixed 36/64" choke and diverted flow to separator. Trimmed separator to 750 psi. Took wellhead and separator PVT samples. Preliminary separator rates, 500 STBOPD and 18 MMscf/d. CO2 = 18% and H2S = 35 ppm.
3235.0	CTB	U	RD		2.5	Shut in well at choke. Final shut-in pressure 3228 psia. Close XT SV, UMGV and TRSV. Bled off riser to flare boom. Pumped out separator and surge tank contents and flared off.
3235.0	CTB	U	RD		0.5	Rigged down and laid out slick line lubricator.
3235.0	CTB	U	RD		1.5	Rigged down and laid out scaffolding, flowline, kill line and flow head from the rig floor.
3235.0	CTB	U	RD		0.25	Installed tree cap and tested same to 4,000 psi.
3235.0	CTB	U	RD		0.75	Broke out and laid down riser.
3235.0	CTB	U	WCU		0.25	-: YOLLA OPERATIONS COMPLETED :- All further costs related to rig mobilisation / demobilisation.
3235.0	RMO	U	RD		0.75	Picked up 7 in shooting nipple, broke out pup joint and laid down same. Cleared rig of all 7 in handling equipment.
3235.0	RMO	U	RD		1.5	Held JSA. Picked up and installed fox hole and slips. Changed out inserts and prepared rig floor for laying down 3½ in drill pipe.
3235.0	RMO	P	RD		1	Cleared cantilever deck.
3235.0	RMO	U	PLD		9.75	Laid out 96 joints 3½ in drill pipe, 12 joints 3½ in HWDP and 12 joints 4¾ in drill collars from derrick. Rigged down Schlumberger test equipment and backloaded flare booms to the MV "Ray J Hope".
3235.0	RMO	U	PLD		0.25	Held JSA. Changed out pipe handling equipment from 3½ in to 5 in.
3235.0	RMO	U	PLD		0.5	Laid down 9 joints 5 in HWDP.

Date : 03 Oct 2004 | **Daily Cost : $ 310,417** | **Report Number : 68**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	RMO	U	PLD		2.75	Laid down 6 jts 5 in HWDP and 6 Joints 6¾ in drill collars.
3235.0	RMO	U	PLD		21.25	Laid down 363 joints of 5 in drill pipe from the derrick. Backloaded Schlumberger test equipment. Note:- Unable to complete backload to vessel due to adverse weather, wind 35 knots with squalls. Cranes continued to work on rig.

Date : 04 Oct 2004 | **Daily Cost : $ 293,839** | **Report Number : 69**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	RMO	P	RM		2	Prepared the rig to traverse to centre line.
3235.0	RMO	P	RM		1	Skid the rig 1 ft 9 in to Port. Secured substructure.
3235.0	RMO	P	RM		12	Prepared to skid in the cantilever. Removed drain hoses from the shakers and trip tank. Removed flow line covers and dismantled return line sections. Recovered access stairs from the rig to the platform. Raised and secured the PCU. Disconnected mud and cement service lines. Cleared remainder of equipment from main deck area prior to skidding cantilever inboard.

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Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 04 Oct 2004 | **Daily Cost : $ 293,839** | **Report Number : 69**

3235.0	RMO	P	RM		0.25	Held pre-skidding JSA.
3235.0	RMO	P	RM		1.25	Skidded cantilever inboard 30 ft. Stopped skidding to prepare drill floor for drilling line change out.
3235.0	RMO	U	RM		7.5	Continued with preparations to secure the rig for the rig move. Also waiting on daylight to change drilling line spool and for RJHope to return.

Date : 05 Oct 2004 | **Daily Cost : $ 337,943** | **Report Number : 70**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	RMO	U	RM		6	Continued to prepare for rig move. (Serviced BOP & changed out hoist cable on PRS).
3235.0	RMO	U	RM		15.5	Offloaded Trefoil 1 spud equipment and tubulars from R.J. Hope. Reeved new drill line onto blocks. Spooled old drill line from draw works onto spare cable drum.
3235.0	RMO	P	RM		2.5	Secured cargo and prepared for rig move. Repaired service loops to TDS. Note: Favourable weather conditions permitted the cranes and vessels to be operated as required.

Date : 06 Oct 2004 | **Daily Cost : $ 294,962** | **Report Number : 71**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	RMO	P	RM		11.5	Secured cargo and prepared rig for move. Continued Rig maintenance and repairs.
3235.0	RMO	P	RM		3	Skidded cantilever in and pinned in stowed position.
3235.0	RMO	TP	WOW	WOW	9.5	Wait on Weather window to jack down and move rig.

Date : 07 Oct 2004 | **Daily Cost : $ 289,538** | **Report Number : 72**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	RMO	TP	WOW	WOW	24	Wait on Weather window to jack down and move rig. Weather conditions: 01.00 Wind = 30 knt @ 045°, Swell = 1.0 m, Seas = 2.0 m. 03.00 Wind = 30 knt @ 045°, Swell = 1.5 m, Seas = 2.0 m. 05.00 Wind = 27 knt @ 045°, Swell = 1.5 m, Seas = 2.0 m. 08.00 Wind = 28 knt @ 045°, Swell = 2.0 m, Seas = 1.0 m. 10.00 Wind = 30 knt @ 045°, Swell = 2.0 m, Seas = 1.0 m. 12.00 Wind = 12 knt @ 045°, Swell = 1.0 m, Seas = 1.0 m. 14.00 Wind = 30 knt @ 290°, Swell = 1.0 m, Seas = 1.5 m. 16.00 Wind = 30 knt @ 290°, Swell = 1.0 m, Seas = 1.5 m. 18.00 Wind = 35 knt @ 300°, Swell = 3.0 m, Seas = 1.5 m. 20.00 Wind = 48 knt @ 270°, Swell = 2.0 m, Seas = 2.0 m. 22.00 Wind = 45 knt @ 270°, Swell = 2.0 m, Seas = 2.0 m. 24.00 Wind = 45 knt @ 270°, Swell = 3.0 m, Seas = 2.0 m.

Date : 08 Oct 2004 | **Daily Cost : $ 294,963** | **Report Number : 73**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	RMO	TP	WOW	WOW	24	Wait on Weather window to jack down and move rig. Weather conditions: 01.00 Wind = 45 knt @ 270°, Swell = 3.0 m, wave = 2.0, Seas = 5.0 m. 03.00 Wind = 57 knt @ 270°, Swell = 5.0 m, wave = 3.0, Seas = 8.0 m. 06.00 Wind = 45 knt @ 240°, Swell = 5.0 m, wave = 2.0, Seas = 7.0 m. 08.00 Wind = 40 knt @ 240°, Swell = 4.0 m, wave = 2.0, Seas = 6.0 m. 10.00 Wind = 38 knt @ 240°, Swell = 4.0 m, wave = 2.0, Seas = 6.0 m. 12.00 Wind = 28 knt @ 240°, Swell = 3.0 m, wave = 2.0, Seas = 5.0 m. 14.00 Wind = 26 knt @ 240°, Swell = 2.0 m, wave = 1.0, Seas = 3.0 m.

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004
Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 08 Oct 2004 **Daily Cost : $ 294,963** **Report Number : 73**

16.00 Wind = 25 knt @ 240°, Swell = 2.0 m, wave = 2.0, Seas = 4.0 m.
18.00 Wind = 30 knt @ 270°, Swell = 3.0 m, wave = 2.0, Seas = 5.0 m.
20.00 Wind = 25 knt @ 250°, Swell = 2.0 m, wave = 2.0, Seas = 4.0 m.
22.00 Wind = 30 knt @ 248°, Swell = 1.5 m, wave = 2.0, Seas = 3.5 m.
24.00 Wind = 20 knt @ 280°, Swell = 2.0 m, wave = 1.5, Seas = 3.5 m.

Date : 09 Oct 2004 **Daily Cost : $ 304,522** **Report Number : 74**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	RMO	TP	WOW	WOW	9.5	Wait on Weather window to jack down and move rig. Continue with rig maitenance. Weather conditions: 02.00 Wind = 25 knt @ 280°, Swell = 2.0 m, wave = 1.5, Seas = 3.5 m. 04.00 Wind = 20 knt @ 280°, Swell = 2.0 m, wave = 1.5, Seas = 3.5 m. 06.00 Wind = 20 knt @ 280°, Swell = 2.0 m, wave = 1.5, Seas = 3.5 m. 08.00 Wind = 15 knt @ 220°, Swell = 2.0 m, wave = 1.0, Seas = 3.0 m.
3235.0	RMO	P	JUD		1.5	Released rack chocks on all 3 legs. 10.00 Wind = 15 knt @ 220°, Swell = 2.0 m, wave = 1.0, Seas = 3.0 m.
3235.0	RMO	P	JUD		1.75	Prepared to lower hull. Took RPD readings and adjusted legs as neccessary. Held pre Jacking JSA. 12.00 Wind = 10 knt @ 220°, Swell = 2.0 m, wave = 1.0, Seas = 3.0 m.
3235.0	RMO	P	JUD		0.5	Jacked down 5 ft, removed flume line. Jacked rig down 14 ft. A chord teeth rubbing hard against upper right jack guides. Jacked down to 0.5° stbd, still rubbing. Upper aft on C chord also rubbing hard.
3235.0	RMO	TP	WOW	WOW	2.75	Stopped jacking down to review Rig leg/hull alignment with rig manager and OIM. 14.00 Wind = 17 knt @ 240°, Swell = 1.5 m, wave = 1.0, Seas = 2.5 m. 16.00 Wind = 18 knt @ 240°, Swell = 1.5 m, wave = 1.0, Seas = 2.5 m.
3235.0	RMO	P	JUD		1.5	Jacked rig down to 0.3° to stern and jack legs individually in small increments to 30 ft air gap.
3235.0	RMO	TP	WOW	WOW	1.25	Stopped jacking down took RPD readings and updated PLMS. 18.00 Wind = 25 knt @ 250°, Swell = 1.5 m, wave = 1.5, Seas = 3.0 m.
3235.0	RMO	P	JUD		1	Jacked down to 29 ft to 3 ft above seas (12 ft above MSL). Combined seas 2.5 m with occaisional 3.0 m at 8 secs.
3235.0	RMO	P	JUD		2.25	Connected Ray J. Hope to bow tow bridle. Held rig abadonment drill. 20.00 Wind = 20 knt @ 250°, Swell = 1.5 m, wave = 1.5, Seas = 3.0 m.
3235.0	RMO	TP	WOW	WOW	2	Wait on weather to jack into water and move rig. 22.00 Wind = 20 knt @ 250°, Swell = 1.5 m, wave = 1.5, Seas = 3.0 m. 24.00 Wind = 16 knt @ 250°, Swell = 1.5 m, wave = 1.5, Seas = 3.0 m.

Date : 10 Oct 2004 **Daily Cost : $ 293,522** **Report Number : 75**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	RMO	TP	WOW	WOW	6	Wait on Weather window to jack down and move rig. Weather conditions: 02.00 Wind = 13 knt @ 250°, Swell = 1.5 m, wave = 1.0, Seas = 2.5 m. 04.00 Wind = 9 knt @ 250°, Swell = 1.5 m, wave = 1.0, Seas = 2.5 m. 06.00 Wind = 10 knt @ 290°, Swell = 1.5 m, wave = 0.5, Seas = 2.0 m.
3235.0	RMO	P	JUD		0.75	Commenced jacking down operations. Jacked down to 11 ft draft.
3235.0	RMO	P	JUD		2.5	Checked water tight integrity of lower hull. Re-checked RPD readings. 08.00 Wind = 11 knt @ 300°, Swell = 1.5 m, wave = 0.3, Seas = 1.8 m.
3235.0	RMO	P	JUD		0.25	Jacked down to 23 ft draft. Calculated towing draft 19.95 ft.
3235.0	RMO	P	JUD		0.25	Connected high pressure jetting line (can top) to Bow leg.
3235.0	RMO	P	JUD		1	Jet with high pressure jetting line (can top) on Bow leg. Pumped 426 bbl, staged up from 350 gpm to

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Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 10 Oct 2004 | **Daily Cost : $ 293,522** | **Report Number : 75**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
						500 gpm, 0 psi. 10.00 Wind = 11 knt @ 320°, Swell = 1.5 m, wave = 0.3, Seas = 1.8 m.
3235.0	RMO	P	JUD		0.25	Connected to low pressure jetting line (can bottom) with Mud pumps.
3235.0	RMO	P	JUD		3.5	Jet on low pressure jetting line (can bottom) with Mud pumps at 500 gpm, 0 psi. 12.00 Wind = 12 knt @ 340°, Swell = 1.5 m, wave = 0.6, Seas = 2.1 m.
3235.0	RMO	P	JUD		2	Connected deluge pump to high pressure jetting line (can top) and commenced jetting upper side of can. Continued to jet on low pressure line (can bottom) with Mud pumps. Increased mud pumps to 700 gpm on low pressure jetting line. 14.00 Wind = 14 knt @ 330°, Swell = 1.5 m, wave = 0.6, Seas = 2.1 m. 16.00 Wind = 11 knt @ 330°, Swell = 1.5 m, wave = 0.6, Seas = 2.1 m.
3235.0	RMO	P	JUD		0.75	Bow leg moved 5 ft plus lost 2 ft draft (7 ft total). Stopped pumping.
3235.0	RMO	TP	JUD	OTH	0.5	Connected high pressure jetting line (can top) to Port leg to free same.
3235.0	RMO	TP	JUD	OTH	1.25	Jet at 500 gpm on high pressure line (can top) with mud pumps on both Port & Stbd legs. 18.00 Wind = 08 knt @ 330°, Swell = 1.5 m, wave = 0.2, Seas = 1.7 m.
3235.0	RMO	TP	JUD	OTH	1.75	Changed over and connected mud pumps to low pressure jets (can bottom) on Port leg. Staged up with with mud pumps from 350 to 500 gpm, no pressure. Commenced filling Tank 3S to trim Bow down on barge. 20.00 Wind = 12 knt @ 010°, Swell = 1.5 m, wave = 0.2, Seas = 1.7 m.
3235.0	RMO	TP	JUD	OTH	0.25	Connected deluge pumps to high pressure jetting line (can top) on both Port & Stbd legs. Continued pumping at 500 gpm through low pressure jets. Trimmed rig down 10 in to correct for tide.
3235.0	RMO	TP	JUD	OTH	2.5	Commenced pumping with deluge pumps on high pressure jetting line (can top) on both Port & Stbd legs. Continued to pump at 500 gpm on low pressure jetting line (can bottom) on Port leg, 3200 bbl pumped. Filled tank 3S to 17 ft to hold Bow trim. 22.00 Wind = 16 knt @ 010°, Swell = 1.5 m, wave = 0.2, Seas = 1.7 m.
3235.0	RMO	TP	JUD	OTH	0.5	Increased flow rate on low pressure jetting line (can bottom) to 700 gpm, 0 psi on Port leg. Continued jetting on high pressure jetting line (can top) with deluge pumps on both Port and Stbd legs. 24.00 Wind = 18 knt @ 010°, Swell = 1.5 m, wave = 0.2, Seas = 1.7 m.

Date : 11 Oct 2004 | **Daily Cost : $ 290,174** | **Report Number : 76**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	RMO	TP	JUD	OTH	4.75	Continued to pump on low pressure jetting line (can bottom) at 700 gpm, 0 psi on Port leg. Continued jetting on high pressure jetting line (can top) with deluge pumps on Port & Stbd legs. ROV out of water as unable to hold position or observe operations due to strong currents. 02.00 Wind = 19 knt @ 350°, Swell = 1.0 m, wave = 0.5, Seas = 1.5 m. 04.00 Wind = 20 knt @ 350°, Swell = 1.0 m, wave = 0.6, Seas = 1.6 m.
3235.0	RMO	TP	JUD	OTH	6.75	Continued to pump on low pressure jetting line (can bottom) at 700 gpm, 0 psi on Port leg. Stopped jetting on Low pressure jetting line (can top) with deluge pump on Stbd leg. Continued jetting on high pressure jetting line (can top) with deluge pumps on Port only. 06.00 Wind = 23 knt @ 340°, Swell = 1.0 m, wave = 1.0, Seas = 2.0 m. 08.00 Wind = 28 knt @ 330°, Swell = 1.5 m, wave = 2.0, Seas = 3.5 m. 10.00 Wind = 28 knt @ 335°, Swell = 2.5 m, wave = 1.5, Seas = 4.0 m.
3235.0	RMO	TP	JUD	OTH	7.5	Increased pump rate on low pressure jetting line (can bottom) to 900 gpm, 0 psi on Port leg. Continued jetting on high pressure jetting line (can top) with deluge pumps on Port leg. Repositioned ROV at NE corner of Yolla platform for clear definition of platform mat and Port leg, observed jetting plume with sonar reflection, visual observation impaired by cloud from pumping. 12.00 Wind = 30 knt @ 350°, Swell = 2.5 m, wave = 1.5, Seas = 4.0 m. 14.00 Wind = 26 knt @ 340°, Swell = 1.5 m, wave = 1.5, Seas = 3.0 m. 16.00 Wind = 25 knt @ 295°, Swell = 1.5 m, wave = 1.5, Seas = 3.0 m. 18.00 Wind = 15 knt @ 300°, Swell = 1.0 m, wave = 0.5, Seas = 1.5 m.
3235.0	RMO	TP	JUD	OTH	0.25	Port leg at 64 ft penetration, 13 ft progress. Stopped jetting (25,860 bbls pumped below can), Stopped pulling on Port leg and trimmed rig.
3235.0	RMO	TP	JUD	OTH	0.5	Repositioned ROV on SE corner of Yolla platform to view platform mat and Stbd leg.
3235.0	RMO	TP	JUD	OTH	1	Commenced pumping on Stbd leg high pressure jetting line (can top) with deluge pump and low pressure jetting line (can bottom) with Mud pumps at 250 gpm. Observed 60 psi on deluge pumps. Stopped pumping and changed over Mud pumps to high pressure jetting line. ROV observed jetting plume with sonar reflection, visual observation impaired by cloud from pumping. Indication from sonar, no break out of the flow around or underneath the Yolla platform. Only flow indication from the leg penetration. Started stripping water from 7S1 and 4P1 to ballast rig. 20.00 Wind = 10 knt @ 260°, Swell = 1.0 m, wave = 0.3, Seas = 1.3 m.
3235.0	RMO	TP	JUD	OTH	0.5	Commenced pumping on Stbd leg down high pressure jetting line with Mud pumps at 250 gpm, 0 psi

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						and staged up to 700 gpm, 0 psi.
3235.0	RMO	TP	JUD	OTH	0.25	Stopped pumping on Stbd leg with mud pumps. Changed over to deluge pumps on high pressure jetting line (can top) and mud pumps on low pressure jetting line (can bottom).
3235.0	RMO	TP	JUD	OTH	0.5	Commenced pumping with deluge pump down high pressure jetting line (can top) on Stbd leg, 0 psi. Started pumping 250 gpm with Mud pumps down low pressure jetting line (can bottom), 0 psi. ROV in position and observed plume with sonar, visual observation impaired by cloud from pumping. 22.00 Wind = 10 knt @ 250°, Swell = 1.0 m, wave = 0.3, Seas = 1.3 m.
3235.0	RMO	TP	JUD	OTH	1	Increased pump rate on Mud pumps to 700 gpm down low pressure jetting line. Once circulation established commenced pulling on Stbd leg.
3235.0	RMO	TP	JUD	OTH	1	Increased pump rate on Mud pumps to 930 gpm down low pressure jetting line. Recovered ROV due to loss of thrust. Found rope tangled in vertical thruster. 24.00 Wind = 10 knt @ 270°, Swell = 1.0 m, wave = 0.3, Seas = 1.3 m.

Date : 12 Oct 2004 **Daily Cost : $ 295,598** **Report Number : 77**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	RMO	TP	JUD	OTH	14.25	Continued pumping with deluge pump down high pressure jetting line (can top) on Stbd leg, 0 psi. Pumped at 930 gpm with Mud pumps down low pressure jetting line (can bottom), 0 psi. ROV repaired and back in position observing plume with sonar, visual observation impaired by cloud from pumping. 02.00 Wind = 13 knt @ 340°, Swell = 1.0 m, wave = 0.3, Seas = 1.3 m. 04.00 Wind = 13 knt @ 330°, Swell = 1.0 m, wave = 0.3, Seas = 1.3 m. 06.00 Wind = 13 knt @ 330°, Swell = 1.0 m, wave = 0.3, Seas = 1.3 m. 08.00 Wind = 16 knt @ 340°, Swell = 1.2 m, wave = 0.3, Seas = 1.5 m. 10.00 Wind = 18 knt @ 350°, Swell = 1.6 m, wave = 0.4, Seas = 2.0 m. 12.00 Wind = 17 knt @ 340°, Swell = 1.8 m, wave = 0.4, Seas = 2.2 m. 14.00 Wind = 14 knt @ 330°, Swell = 1.0 m, wave = 0.5, Seas = 1.5 m.
3235.0	RMO	TP	JUD	OTH	0.25	Stopped pumps and changed over mud pumps to high pressure jetting line (can top) and deluge pump to low pressure jetting line (can bottom) on Stbd leg.
3235.0	RMO	TP	JUD	OTH	4	Continued attempting to free Stbd leg. Jet with deluge pump on low pressure jetting line at 700 gpm. Mud pumps on high pressure jetting line staged up to 1400 gpm. No progress over 2 hrs. Reduced pump rate on mud pumps from 1400 to 1170 gpm due to concerns of eroding walls above spud can through some nozzle positions. Initial indication of leg movement @ 18.00 hr with total movement of 1½ ft. 16.00 Wind = 17 knt @ 350°, Swell = 1.0 m, wave = 0.5, Seas = 1.5 m. 18.00 Wind = 16 knt @ 000°, Swell = 1.0 m, wave = 0.5, Seas = 1.5 m.
3235.0	RMO	TP	WOW	WOW	0.75	Stopped pumping and prepared to jack rig back up to safe air gap due to approaching adverse weather system.
3235.0	RMO	TP	WOW	WOW	1.75	Jacked down Stbd and Bow legs to original penetration at 78 ft & 77 ft respectively. Port leg encountered resistance while jacking down final penetration at 73 ft. Pumped out ballast and jacked rig up to 1 ft above maximum seas. 20.00 Wind = 20 knt @ 020°, Swell = 1.2 m, wave = 0.3, Seas = 1.5 m.
3235.0	RMO	TP	WOW	WOW	3	Wait on weather to recommence jacking down. 22.00 Wind = 20 knt @ 030°, Swell = 1.3 m, wave = 0.3, Seas = 1.6 m. 24.00 Wind = 31 knt @ 290°, Swell = 2.0 m, wave = 1.5, Seas = 3.5 m.

Date : 13 Oct 2004 **Daily Cost : $ 290,173** **Report Number : 78**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	RMO	TP	WOW	WOW	24	Wait on weather to recommence jacking down. 02.00 Wind = 36 knt @ 290°, Swell = 2.0 m, wave = 1.5, Seas = 3.5 m. 04.00 Wind = 26 knt @ 270°, Swell = 1.5 m, wave = 1.5, Seas = 3.0 m. 06.00 Wind = 29 knt @ 270°, Swell = 1.5 m, wave = 0.5, Seas = 2.0 m. 08.00 Wind = 20 knt @ 320°, Swell = 2.0 m, wave = 1.0, Seas = 3.0 m. 10.00 Wind = 20 knt @ 320°, Swell = 2.0 m, wave = 1.0, Seas = 3.0 m. 12.00 Wind = 21 knt @ 310°, Swell = 2.5 m, wave = 1.5, Seas = 4.0 m. 14.00 Wind = 18 knt @ 290°, Swell = 2.0 m, wave = 1.0, Seas = 3.0 m. 16.00 Wind = 16 knt @ 255°, Swell = 1.5 m, wave = 1.0, Seas = 2.5 m. 18.00 Wind = 16 knt @ 270°, Swell = 1.5 m, wave = 1.0, Seas = 2.5 m. 20.00 Wind = 22 knt @ 270°, Swell = 1.5 m, wave = 1.5, Seas = 3.0 m. 22.00 Wind = 25 knt @ 270°, Swell = 1.5 m, wave = 1.5, Seas = 3.0 m. 24.00 Wind = 29 knt @ 280°, Swell = 1.7 m, wave = 2.0, Seas = 3.7 m.

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004

Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 14 Oct 2004 **Daily Cost : $ 290,174** **Report Number : 79**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	RMO	TP	WOW	WOW	24	W.O.W. to recommence jacking down and move. 04.00 Wind = 28 knt @ 280°, Swell = 2.0 m, wave = 1.5, Seas = 3.5 m. 08.00 Wind = 35 knt @ 280°, Swell = 2.5 m, wave = 2.5, Seas = 5.0 m. 12.00 Wind = 26 knt @ 270°, Swell = 3.0 m, wave = 2.5, Seas = 5.5 m. 16.00 Wind = 25 knt @ 265°, Swell = 2.5 m, wave = 1.5, Seas = 4.0 m. 20.00 Wind = 30 knt @ 270°, Swell = 2.0 m, wave = 1.5, Seas = 3.5 m. 24.00 Wind = 28 knt @ 280°, Swell = 2.5 m, wave = 2.0, Seas = 4.5 m.

Date : 15 Oct 2004 **Daily Cost : $ 301,031** **Report Number : 80**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	RMO	TP	WOW	WOW	24	W.O.W. to recommence jacking down and move. 04.00 Wind = 28 knt @ 280°, Swell = 2.5 m, wave = 2.0, Seas = 4.5 m. 08.00 Wind = 40 knt @ 250°, Swell = 2.0 m, wave = 2.5, Seas = 4.5 m. 12.00 Wind = 34 knt @ 230°, Swell = 3.5 m, wave = 2.5, Seas = 6.0 m. 16.00 Wind = 24 knt @ 250°, Swell = 3.0 m, wave = 2.5, Seas = 5.5 m. 20.00 Wind = 27 knt @ 230°, Swell = 2.0 m, wave = 2.0, Seas = 4.0 m. 24.00 Wind = 25 knt @ 225°, Swell = 2.0 m, wave = 2.0, Seas = 4.0 m.

Date : 16 Oct 2004 **Daily Cost : $ 312,035** **Report Number : 81**

Depth (m)	Phase	Cls	Op	R.C.	Hrs	Activity
3235.0	RMO	TP	WOW	WOW	8	W.O.W. to recommence jacking down and move. 03.00 Wind = 25 knt @ 225°, Swell = 2.0 m, wave = 2.0, Seas = 4.0 m. 06.00 Wind = 19 knt @ 225°, Swell = 1.5 m, wave = 1.0, Seas = 2.5 m. 08.00 Wind = 16 knt @ 180°, Swell = 1.5 m, wave = 0.5, Seas = 2.0 m.
3235.0	RMO	TP	JUD	WOW	0.5	Ray J Hope prepared to go on tow bridle.
3235.0	RMO	TP	JUD	WOW	1	Ray J Hope connected to tow bridle and payed out work wire.
3235.0	RMO	TP	JUD	WOW	1	Held pre-jacking and towing JSA. Jacked down to 10 ft draft. 10.00 Wind = 15 knt @ 180°, Swell = 1.5 m, wave = 0.5, Seas = 2.0 m.
3235.0	RMO	TP	JUD	WOW	0.5	Performed lower hull integrity checks - hull secure. Connected jetting hoses to Stbd leg.
3235.0	RMO	TP	JUD	WOW	0.5	Jacked rig down to jetting draft. Commeced jetting with the deluge pump on the high pressure jetting line (can top), 60 psi.
3235.0	RMO	TP	JUD	OTH	1	Commenced pulling while jetting on Stbd leg and held tension on Port & Bow leg, jet with the mud pumps at 350 gpm on the low pressure jetting line (can bottom) then staged mud pumps up to 700 gpm, 0 psi. Continued jetting with the deluge pump on the high pressure jetting line (can top). 12.00 Wind = 9 knt @ 180°, Swell = 1.5 m, wave = 0.5, Seas = 2.0 m
3235.0	RMO	P	JUD		1.25	Stbd leg free, stopped pulling on legs. Stopped jetting, 875 bbl pumped on Stbd leg. Disconnected jetting hoses from Stbd leg. Note:- Total time taken to pull legs; Bow leg = 7½ hrs, Port leg = 25¼ hrs and Starboard leg = 24¼ hrs.
3235.0	RMO	P	JUD		0.75	Connected Invincible Tide to Stbd midships. 14.00 Wind = 5 knt @ 180°, Swell = 1.2 m, wave = 0.0, Seas = 1.2 m
3235.0	RMO	P	JUD		1.5	Pulled legs ±6 ft. Port & Stbd legs hung up, worked on freeing legs. 16.00 Wind = 5 knt @ 180°, Swell = 1.2 m, wave = 0.0, Seas = 1.2 m
3235.0	RMO	P	JUD		0.5	Trimmed rig with ballast.
3235.0	RMO	P	JUD		1.75	Bow & Stbd legs free. Worked / pulled on Port leg held up at 46 ft below seabed. 18.00 Wind = 5 knt @ 180°, Swell = 1.0 m, wave = 0.0, Seas = 1.0 m
3235.0	RMO	P	JUD		0.5	Connected jetting lines to port leg.
3235.0	RMO	P	JUD		1	Worked / pulled on Port leg while jetting with the mud pumps at 350 gpm on the low pressure jetting line (can bottom) then staged mud pumps up to 500 gpm, 0 psi. Freed Port leg. Stopped jetting, 678 bbl pumped.
3235.0	RMO	P	JUD		0.25	Disconnected jetting lines and commenced jacking all 3 legs up. 20.00 Wind = 5 knt @ 180°, Swell = 1.0 m, wave = 0.0, Seas = 1.0 m
3235.0	RMO	P	JUD		0.5	Bow leg held up at 16 ft below sea bed. Worked / pulled bow leg.

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DFE above MSL : 43.0m | Lat : 39 Deg 50 Min 40.5920 Sec | Spud Date : 18 Jun 2004 | Release Date : 16 Oct 2004

Water Depth : 81.0m | Long : 145 Deg 49 Min 06.0569 Sec | Spud Time : 21:45 | Release Time : 22:00

Date : 16 Oct 2004 **Daily Cost : $ 312,035** **Report Number : 81**

3235.0	RMO	P	JUD	0.5	Bow leg freed. Jacked up all 3 legs freely.
3235.0	RMO	P	JUD	0.25	All 3 Legs clear of sea bed. Disconnected Invicible Tide from Stbd midships
3235.0	RMO	P	RM	0.75	Underway to clear from Yolla platform. 22.00 Wind = 5 knt @ 065°, Swell = 1.0 m, wave = 0.0, Seas = 1.0 m
3235.0	RMO	P	RM	0	*** RIG 1 NAUTICAL MILE FROM YOLLA PLATFORM. END OF YOLLA PROGRAMME. *** Collected data for Statement of Facts.

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APPENDIX 17: DAILY GEOLOGICAL REPORTS

ORIGIN ENERGY CSG LIMITED
DAILY GEOLOGICAL REPORT

WELL:	Yolla-4	**REPORT No.:**	1	**DAYS FROM SPUD:**	1	**DATE:**	18 Jun 04
0000 hrs DEPTH:	183m	**LAST DEPTH:**	0m	**24 HR PROGRESS:**	183m	**PTD:**	
0600 OPS:	Drilling ahead 16" hole at 350m Last survey 292.95m 0.17 inc, 195.49 Az						
REMARKS:	Yolla -4 SPUD at 21:45 hrs on the 18th June 2004. All returns are at sea level through a ported riser.						
	Geologists: Mike Woodmansee / Mark Tindale						

PRIMARY OBJECTIVES:		**SECONDARY OBJECTIVES:**	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004			**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**		**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =**	MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =**	43	**Metres R.T.**				

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES TVDSS				Offset wells	
					Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed (m)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm		-1062			-1042.0	-1075.0
Top Volcanics		-1201			-1225.9	-1265.5
Base Volcanics		-1378			-1290.9	-1303.5
Top Demons Bluff		-1670			-1656.9	-1693.0
Top EVCM		-1830			-1787.9	-1831.5
Coal Marker		-2395			-2331.9	-2392.5
Fault		-2540				
Top 2718		-2664			-2706.9	-2751.0
Top 2755		-2699			-2743.9	-2780.0
Top 2809		-2775			-2797.9	-2847.0
Top 2973		-2950			-2961.9	-3017.5
Top Basalt		-3005			-3019.9	-3070.5
TOTAL DEPTH						

Interval			**ROP (ave)**	**Lithology Description**									
124	-	187	18 - 57 (31)	Cleaning out 20" conductor. Returns at sea level through ported riser.									
Gas n/a			**Units :**	n/a	**Composition (%) :**		/		/		/		/
Show Details			n/a										

Surveys		
No surveys before midnight		

ORIGIN ENERGY CSG LIMITED
DAILY GEOLOGICAL REPORT

WELL:	Yolla-4	**REPORT No.:**	2	**DAYS FROM SPUD:**	2	**DATE:**	19 Jun 04
0000 hrs DEPTH:	802m	**LAST DEPTH:**	183m	**24 HR PROGRESS:**	619m	**PTD:**	
0600 OPS:	Circulation bottoms up at 16in hole section TD (900m). Last survey 873.83m 0.04 inc, 42.38 Az						
REMARKS:	All returns are at sea level through a ported riser. 30-35bbl hi-vis sweeps pumped on the first two singles of each stand, 50bbl hi-vis sweep spotted at BHA for every connection.						
	Geologists: Mike Woodmansee / Mark Tindale						

PRIMARY OBJECTIVES:		**SECONDARY OBJECTIVES:**	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =** MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**				

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES TVDSS				Offset wells	
					Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed (m)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm		-1062			-1042.0	-1075.0
Top Volcanics		-1201			-1225.9	-1265.5
Base Volcanics		-1378			-1290.9	-1303.5
Top Demons Bluff		-1670			-1656.9	-1693.0
Top EVCM		-1830			-1787.9	-1831.5
Coal Marker		-2395			-2331.9	-2392.5
Fault		-2540				
Top 2718		-2664			-2706.9	-2751.0
Top 2755		-2699			-2743.9	-2780.0
Top 2809		-2775			-2797.9	-2847.0
Top 2973		-2950			-2961.9	-3017.5
Top Basalt		-3005			-3019.9	-3070.5
TOTAL DEPTH						

Interval			**ROP (ave)**	**Lithology Description**
187	-	736	14 – 53 (35)	No samples recovered returns at sea level through ported riser.
736	-	803	7 – 45 (20)	ROP decreases and associated increase in torque and weight on bit, Formation becoming more argillaceous based on correlation with Yolla 1 and Yolla 2. No samples recovered, returns at sea level through ported riser.

Gas n/a	**Units :**	n/a	**Composition (%) :**		/		/		/		/	
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Show Details	n/a											

ORIGIN ENERGY CSG LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 3 **DAYS FROM SPUD:** 3 **DATE:** 20 Jun 04 **0000 hrs DEPTH:** 900m
LAST DEPTH: 802m **24 HR PROGRESS:** 98m

0600 OPS: Preparing to run 13 3/8" casing.

REMARKS: 16" hole section TD (900m) reached at 04:30hrs on 20th June 04. Hole displace to Hi-Vis mud prior to running a Wiper Trip to the 20in conductor. MWD survey at the conductor shoe 220m 0.31 dir, no Az measured. Held pre-job safety meeting prior to running 13 3/8in casing.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =** MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**				

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES TVDSS				Offset wells	
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed (m)**	**Diff.**	**High Low**	**Yolla 1 (m)**	**Yolla 2 (m)**
Water Bottom	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm		-1062			-1042.0	-1075.0
Top Volcanics		-1201			-1225.9	-1265.5
Base Volcanics		-1378			-1290.9	-1303.5
Top Demons Bluff		-1670			-1656.9	-1693.0
Top EVCM		-1830			-1787.9	-1831.5
Coal Marker		-2395			-2331.9	-2392.5
Fault		-2540				
Top 2718		-2664			-2706.9	-2751.0
Top 2755		-2699			-2743.9	-2780.0
Top 2809		-2775			-2797.9	-2847.0
Top 2973		-2950			-2961.9	-3017.5
Top Basalt		-3005			-3019.9	-3070.5
TOTAL DEPTH						

Interval			**ROP (avg)**	**Lithology Description**
803	-	900	30 – 40 (35)	No samples recovered returns at sea level through ported conductor. Below 803m a notable increase in average ROP is observed after increasing the WOB. Correlation to Yolla-1 would suggest we are in a dominantly Claystone minor Limestone interbedded sequence, this however cannot be proved.

Gas n/a	**Units :**	n/a	**Composition (%) :**		/		/		/		/	
Show Details	n/a													

ORIGIN ENERGY CSG LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 4 **DAYS FROM SPUD:** 4 **DATE:** 21 Jun 04 **0000 hrs DEPTH:** 900m
LAST DEPTH: 900m **24 HR PROGRESS:** 0m

0600 OPS: Waiting on first stage 13 3/8" cement job to cure prior to pumping second stage.

REMARKS: Rig up and run 13 3/8'' casing. Casing landed at 884.57m MD at 19:20hrs. Circulated casing. Conducted a Pre Job Safety Meeting. Run Stage (1) of the cement program, pumped 233bbl 12.5ppg Lead followed by 86bbl 15.8ppg Tail.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =** MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES TVDSS				Offset wells	
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed (m)**	**Diff.**	**High Low**	**Yolla 1 (m)**	**Yolla 2 (m)**
Water Bottom	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm		-1062			-1042.0	-1075.0
Top Volcanics		-1201			-1225.9	-1265.5
Base Volcanics		-1378			-1290.9	-1303.5
Top Demons Bluff		-1670			-1656.9	-1693.0
Top EVCM		-1830			-1787.9	-1831.5
Coal Marker		-2395			-2331.9	-2392.5
Fault		-2540				
Top 2718		-2664			-2706.9	-2751.0
Top 2755		-2699			-2743.9	-2780.0
Top 2809		-2775			-2797.9	-2847.0
Top 2973		-2950			-2961.9	-3017.5
Top Basalt		-3005			-3019.9	-3070.5
TOTAL DEPTH						

Interval	**ROP (avg)**	**Lithology Description**
		No metres drilled, no returns to surface.

Gas n/a	**Units :**	n/a	**Composition (%) :**		/		/		/		/			
Show Details	n/a													

ORIGIN ENERGY CSG LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 5 **DAYS FROM SPUD:** 5 **DATE:** 22 Jun 04 **0000 hrs DEPTH:** 900m
LAST DEPTH: 900m **24 HR PROGRESS:** 0m

0600 OPS: Installing BOP.

REMARKS: Displace first stage cement job with 416bbl seawater and bump plug with 1500psi / 15min. Drop opening cone and circulate through stage collar. Held Pre-Job Satety Meeting on second stage of 13 3/8" casing job. Pump 50 bbl SW followed by 20bbl FW, pump cement slurry (66bbl at 13.5ppg), displace with 20bbl FW followed by 135bbl SW, bump plug 1500psi / 15min. Rig down $13^3/_8$" handling equipment, pull diverter set, rig up to and remove low pressure Riser. Cameron install side valves on wellhead and pressure test. Install hi-pressure Riser. Re-adjust tension frames and install inner beams.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =** MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES TVDSS				Offset wells	
					Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed (m)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm		-1062			-1042.0	-1075.0
Top Volcanics		-1201			-1225.9	-1265.5
Base Volcanics		-1378			-1290.9	-1303.5
Top Demons Bluff		-1670			-1656.9	-1693.0
Top EVCM		-1830			-1787.9	-1831.5
Coal Marker		-2395			-2331.9	-2392.5
Fault		-2540				
Top 2718		-2664			-2706.9	-2751.0
Top 2755		-2699			-2743.9	-2780.0
Top 2809		-2775			-2797.9	-2847.0
Top 2973		-2950			-2961.9	-3017.5
Top Basalt		-3005			-3019.9	-3070.5
TOTAL DEPTH						

Interval	**ROP (avg)**	**Lithology Description**
		No metres drilled, no samples.

Gas n/a	**Units :**	n/a	**Composition (%) :**		/		/		/		/			
Show Details	n/a													

ORIGIN ENERGY CSG LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 6 **DAYS FROM SPUD:** 6 **DATE:** 23 Jun 04 **0000 hrs DEPTH:** 900m
LAST DEPTH: 900m **24 HR PROGRESS:** 0m

0600 OPS: Installing LP riser / bell-nipple assembly.

REMARKS: Install inner beams and tensioner frame. Install BOP, test choke manifold, change out annular element, change swivel packing on top drive. Cranes shut down at16:30 hrs due to hi-wind (40-50 knots). Install choke and kill lines, pressure test stand pipe.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =** MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES TVDSS				Offset wells	
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed (m)**	**Diff.**	**High Low**	**Yolla 1 (m)**	**Yolla 2 (m)**
Water Bottom	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm		-1062			-1042.0	-1075.0
Top Volcanics		-1201			-1225.9	-1265.5
Base Volcanics		-1378			-1290.9	-1303.5
Top Demons Bluff		-1670			-1656.9	-1693.0
Top EVCM		-1830			-1787.9	-1831.5
Coal Marker		-2395			-2331.9	-2392.5
Fault		-2540				
Top 2718		-2664			-2706.9	-2751.0
Top 2755		-2699			-2743.9	-2780.0
Top 2809		-2775			-2797.9	-2847.0
Top 2973		-2950			-2961.9	-3017.5
Top Basalt		-3005			-3019.9	-3070.5
TOTAL DEPTH						

Interval	**ROP (avg)**	**Lithology Description**										
		No metres drilled, no samples.										
Gas n/a	**Units :**	n/a	**Composition (%) :**		/		/		/		/	
Show Details	n/a											

ORIGIN ENERGY CSG LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 7 **DAYS FROM SPUD:** 7 **DATE:** 24 Jun 04 **0000 hrs DEPTH:** 900m
LAST DEPTH: 900m **24 HR PROGRESS:** 0m

0600 OPS: Drilling 13 3/8" shoe track at 872m.

REMARKS: Install choke and kill lines, pressure test stand pipe. Test top drive upper and lower IBOP. Test choke valve and pressure test shear rams. Make up overshot mandrel and install diverter. Run wear bushing, replace saver-sub and repair replace leaking swivel package. Lay down 16" BHA, make up 12 ¼" BHA, shallow test mud motor. RIH to 291m, wash down 291 – 301m. 301m tag cement, drill cement and plugs 301 – 307m.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =** MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES TVDSS				Offset wells	
					Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed (m)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm		-1062			-1042.0	-1075.0
Top Volcanics		-1201			-1225.9	-1265.5
Base Volcanics		-1378			-1290.9	-1303.5
Top Demons Bluff		-1670			-1656.9	-1693.0
Top EVCM		-1830			-1787.9	-1831.5
Coal Marker		-2395			-2331.9	-2392.5
Fault		-2540				
Top 2718		-2664			-2706.9	-2751.0
Top 2755		-2699			-2743.9	-2780.0
Top 2809		-2775			-2797.9	-2847.0
Top 2973		-2950			-2961.9	-3017.5
Top Basalt		-3005			-3019.9	-3070.5
TOTAL DEPTH						

Interval	**ROP (avg)**	**Lithology Description**									
		No metres drilled, no samples.									
Gas nil gas while drilling cmt/plugs at 301m	**Units :**	No Gas	**Composition (%)** nil:	-	/	-	/	-	/	-	/	-
Show Details	n/a										

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 8 **DAYS FROM SPUD:** 8 **DATE:** 25 Jun 04 **0000 hrs DEPTH:** 905m
LAST DEPTH: 900m **24 HR PROGRESS:** 5m

0600 OPS: Drilling ahead 12 ¼" hole at 929m in the Torquay Group. Last sample at 910m 100% Calcareous Claystone

REMARKS: Pump Hi-Vis, RIH 307m – 843m, wash 843m – 857m and tag cement. Test casing to 1500psi/5min good. Drill cement and shoe track 857 – 883m, pump Hi-Vis 50bbl then displace well to 8.9ppg Seawater/Soltex/Drispac mud. Drill to 905m, 5m new formation. Circulate hole clean, pull out to 880m, pressure test surface lines and conduct F.I.T to 10.5ppg EMW. POH to surface. Make up 12 ¼" BHA, upload MWD and set motor bend to 1.15deg. RIH, calibrate MWD depth tracking, RIH to 685m.
MWD sensor distances from bit: directional 23.6m, gamma ray 20.2m, resistivity 17.23m.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =** MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES TVDSS				Offset wells	
					Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed (m)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm		-1062			-1042.0	-1075.0
Top Volcanics		-1201			-1225.9	-1265.5
Base Volcanics		-1378			-1290.9	-1303.5
Top Demons Bluff		-1670			-1656.9	-1693.0
Top EVCM		-1830			-1787.9	-1831.5
Coal Marker		-2395			-2331.9	-2392.5
Fault		-2540				
Top 2718		-2664			-2706.9	-2751.0
Top 2755		-2699			-2743.9	-2780.0
Top 2809		-2775			-2797.9	-2847.0
Top 2973		-2950			-2961.9	-3017.5
Top Basalt		-3005			-3019.9	-3070.5
TOTAL DEPTH						

Interval			**ROP (avg)**	**Lithology Description**
900m	-	905m	7 – 19 (15)	CLAYSTONE: olive grey - green grey, soft, sub blocky, calc grains 20%, clay clastic grains 80%, silt tr%, accessories: fossil fragments tr %, forams tr %, shell fragments tr %, disseminated pyrite tr%.

Gas 900 – 905m	**Units :**	0.5	**Composition (%)**	127 C1	4 C2	1 C3	-	-	-	-	-	-
Show Details	No Shows											

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 9 **DAYS FROM SPUD:** 9 **DATE:** 26 Jun 04 **0000 hrs DEPTH:** 1285m
LAST DEPTH: 905m **24 HR PROGRESS:** 380m

0600 OPS: Drilling ahead 12 ¼" hole at 1352m in the Volcanics. Last sample 1345m 100% Claystone Trace Volcanic Tuff.

REMARKS: RIH to 685 - 858m. Service top drive, cut and slip drill line. RIH 858m – 888m, calibrate MWD hook load sensor. Wash and ream 888m – 905m, drill ahead 905m – 1149m. Rig lost power 14:30 – 16:30hrs. Drill ahead 1149m – 1285m.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =** MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES TVDSS				Offset wells	
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed (m)**	**Diff.**	**High Low**	**Yolla 1 (m)**	**Yolla 2 (m)**
Water Bottom	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics		-1378			-1290.9	-1291.0
Top Demons Bluff		-1670			-1656.9	-1680.5
Unconformity						
Top EVCM		-1830			-1787.9	-1819.0
Coal Marker		-2395			-2331.9	-2380.5
Fault		-2540				
Top 2718		-2664			-2706.9	-2738.5
Top 2755		-2699			-2743.9	-2767.5
Top 2809		-2775			-2797.9	-2834.5
Top 2973		-2950			-2961.9	-3005.0
Top Basalt		-3005			-3019.9	-3058.0
TOTAL DEPTH						

Interval	**ROP (avg)**	**Lithology Description Massive Claystone**
905m - 1049m	8 – 51 (36)	CLAYSTONE: olive grey - green grey, soft, sub blocky, calc grains 20%, clay clastic grains 80%, silt tr%, accessories: fossil fragments tr %, forams tr %, shell fragments tr %, disseminated pyrite tr%.

Gas 905 – 1049m	**Units :**	4	**Composition (%)**	736 C1	23 C2	3 C3	Tr C4	-	
Show Details	No Shows								

Interval	**ROP (avg)**	**Lithology Description Massive Claystone**

1049m	-	1100m	9.5 – 52 (35)	CLAYSTONE: light-medium grey, off white, very soft, dispersive, calcareous grains: 10% clay, clastic grains: 90% clay, accessories: carbonaceous trace amount, calcareous 10 %, calcimetery: 7% calcite.						
Gas 1049 – 1100m			**Units :**	6	**Composition (%)**	1376 C1	0 C2	7 C3	3 C4	Tr C5	-
Show Details			No Shows							

Interval			**ROP (avg)**	**Lithology Description (Top Angahook Formation 1100m -1057mSS) Massive Claystone**							
1100m	-	1242m	11– 37 (25)	CLAYSTONE: light olive grey, off white, loose-soft, sub blocky, calcareous grains: 10% clay and trace silt, accessories: carbonaceous tr amounts siderite trace amounts, lithic grains trace amounts, calcimetery: 7% calcite.							
Gas 1123 – 1242m			**Units :**	10	**Composition (%)**	1850 C1	100 C2	31 C3	14 C4	4 C5	
Show Details			No Shows								

Interval			**ROP (avg)**	**Lithology Description Massive Claystone, minor Volcanic influence**							
1242m	-	1280m	16 – 29 (21)	CLAYSTONE (1), light - medium grey, very soft, dispersive, trace silt, trace very fine sand, trace carbonaceous grains CLAYSTONE (2) off white – rare red brown, very soft - dispersive, rare slight tuffaceous texture, claystone probably has a volcanic source rock in part.							
Gas 1242 – 1280m			**Units :**	17	**Composition (%)**	2800 C1	236 C2	102 C3	44 C4	15 C5	
Gas Peak 1277m				38		6423	526	239	97	26	
Show Details			No Shows								

Interval			**ROP (avg)**	**Lithology Description (Top Volcanics 1280MD -1237mSS)**							
1280m	-	1285m	14 – 16 (25)	VOLCANIC TUFF, blue grey, soft - dispersive, sub blocky to amorphous, rare very fine sandstone tuffaceous texture with a ground mass of glass, quartz and rare altered feldspar, all mafic minerals are weathered out, commonly the volcanic tuff is weathered to CLAYSTONE. CLAYSTONE, light - medium grey, very soft, dispersive, calcareous, trace silt.							
Gas 1280 – 1285m			**Units :**	15	**Composition (%)**	2018 C1	165 C2	73 C3	35 C4	15 C5	
Show Details			No Shows								

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 10 **DAYS FROM SPUD:** 10 **DATE:** 27 Jun 04 **0000 hrs DEPTH:** 1537m
LAST DEPTH: 1285m **24 HR PROGRESS:** 252m

0600 OPS: Drilling ahead 12 ¼" hole in the Undifferentiated Oligocene. Last sample 1555m 60% Siltstone 40% Sandstone.

REMARKS: Drilling ahead 1285m – 1537m rotating and sliding as required.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
E9astern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =** MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES TVDSS					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (TVDSS)**	**Geological Pick (MD)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	-81	124.8	-81.8	-0.8	High	-79	-81.5
Angahook Fm	-1057	1100	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	-1237	1280	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	-1371	1415	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff			-1670			-1656.9	-1680.5
Unconformity							
Top EVCM			-1830			-1787.9	-1819.0
Coal Marker			-2395			-2331.9	-2380.5
Fault			-2540				
Top 2718			-2664			-2706.9	-2738.5
Top 2755			-2699			-2743.9	-2767.5
Top 2809			-2775			-2797.9	-2834.5
Top 2973			-2950			-2961.9	-3005.0
Top Basalt			-3005			-3019.9	-3058.0
TOTAL DEPTH							

Interval (m)			**ROP (avg)**	**Lithology Description (1280m Top Volcanics) Volcanic Tuff with Claystone increasing with depth**
1280	-	1315m	8 – 19 (16)	VOLCANIC TUFF, blue grey, soft, sub blocky to amorphous, tuffaceous texture in part with a predominantly silt to very fine sand size quartz and glassy ground mass, commonly the tuff is weathered to CLAYSTONE: 10% clay clastic grains: 30% clay, accessories: quartz 25 %, feldspar 3 % CLAYSTONE, light brown grey, very soft, dispersive, calcareous grains: 10% clay clastic grains: 90% clay, accessories: pyrite trace %

Gas 1280 – 1315m	**Units :**	13	**Composition (ppm)**	2096 C1	147 C2	54 C3	27 C4	12 C5	
Show Details	No Shows								

Interval			ROP (avg)	Lithology Description Sandstone, Claystone and minor Volcanic Tuff						
1315m	-	1335m	4 – 28 (14)	SANDSTONE, clear translucent, loose to rare soft small aggregates, clastic grains: 40% very fine sand, 50% fine sand, 10% medium sand, moderately sorted, sub rounded to occasionally rounded, sub elongate to sub sperical, cements/strengths: siliceous/weak, accessories: tuff 3 % as matrix, porosity: inter granular, inferred at 20%. CLAYSTONE, light brown to grey, very soft, dispersive, calcareous grains: 10%, clay clastic grains: 90% clay, accessories: fine disseminated pyrite tr %. VOLCANIC TUFF, blue grey, soft, sub blocky, commonly with a fine ash texture, the tuff is composed of silt to very fine sand size quartz grains in a glassy to argillaceous matrix, commonly the tuff is weathered to clay, calcareous grains 10%, clay clastic grains 30-100%, accessories: quartz 25-40 %, weathered feldspar 3 %						
Gas 1315 – 1335m			**Units :**	12	**Composition (ppm)**	2220 C1	156 C2	76 C3	35 C4	19 C5	-
Gas Peak 1317m				221		19513 C1	3819 C2	3061 C3	1900 C4	907 C5	-
Show Details			Gas Show 1316 – 1324m in very fine to fine grained SANDSTONE with good porosity.								

Interval			ROP (avg)	Lithology Description Massive Claystone						
1335m	-	1370m	5.5– 30 (13)	CLAYSTONE, light to medium grey, very soft, amorphous, calcareous grains: 10% clay clastic grains: 80% clay, 5% silt, 5% very fine sand, accessories: tuff 5 %, quartz 5 %, calcimetery: 11% calcite, 1% dolomite, Minor VOLCANIC TUFF, off white - white coloured, soft, sub blocky, calcareous grains: 10% clay clastic grains: 60% clay, 5% silt, 15% very fine sand, 10% fine sand, accessories: argillaceous 50 %						
Gas 1335 – 1370m			**Units :**	21	**Composition (ppm)**	2188 C1	229 C2	147 C3	98 C4	69 C5	
Show Details			No Shows								

Interval			ROP (avg)	Lithology Description (Base Volcanics 1415m) Massive Siltstones and Claystone, minor Volcanic influence						
1370m	-	1415m	5.5 – 30 (13)	CLAYSTONE, off white to light grey, very soft, sub blocky, calcareous grains: 20% clay, clastic grains: 60% clay, 10% silt, 10% very fine sand, weak calcareous cement, calcimetery: 29% calcite, 1% dolomite, SILTSTONE, medium to light grey, soft, sub blocky, calcareous grains: 10% clay clastic grains: 10% clay, 50% silt, 20% very fine sand, 10% fine sand, accessories: glauconite 3 %, trace siderite. VOLCANIC TUFF, light grey/brown to off white, soft, sub blocky clastic grains: 50% clay, 30% silt, 20% very fine sand, tr% fine sand, accessories: quartz 3 %						
Gas 1370 – 1415m			**Units :**	20	**Composition (ppm)**	2173 C1	260 C2	155 C3	67 C4	26 C5	
Gas Peak 1396m			**Units :**	49	**Composition (ppm)**	6109 C1	733 C2	416 C3	171 C4	54 C5	
Show Details			No Shows								

Interval			ROP (avg)	Lithology Description Sandstone, Siltstone and Claystone						
1415m	-	1455m	5.5 – 29 (14)	SANDSTONE: light grey, off white, very soft, sub blocky, calcareous grains: 5% clay clastic grains: 5% clay, 20% silt, 40% very fine sand, 20% fine sand, 10% medium sand, poorly sorted, angular, sub spherical, cements/strengths: calcareous / weak, accessories: glauconite 3 %, lithic 5 %, pyrite tr %,, calcimetery: 36% calcite, 1% dolomite, porosity: inter granular 5%. SILTSTONE: medium to light grey, soft, sub blocky, calcareous grains: 10% clay clastic grains: 10% clay, 50% silt, 20% very fine sand, 10% fine sand, cements/strengths: calcareous / weak, accessories: calcareous 10 %, glauconite 3 %, siderite tr %. CLAYSTONE: calcareous, off white - light grey, very soft, dispersive, calcareous grains: 30% clay clastic grains: 50% clay, 10% silt, 10% very fine sand.						
Gas 1415 – 1455m			**Units :**	20	**Composition (ppm)**	2502 C1	292 C2	146 C3	60 C4	23 C5	
Show Details			No Shows								

Interval			ROP (avg)	Lithology Description Siltstone and Claystone trace Sandstone						
1455m	-	1525	6.5 – 43 (17)	SILTSTONE: light - medium grey, very soft, sub blocky, calcareous grains: 15% clay, 5% silt clastic grains: 10% clay, 50% silt, 20% very fine sand, cements/strengths: calcareous / weak, accessories: lithic 3 %, siderite tr %. CLAYSTONE: light grey - olive green, very soft, dispersive, calcareous grains: 15% clay clastic grains: 50% clay, 30% silt, 5% very fine sand, accessories, silty 10 %, glauconite tr %,, calcimetery: 14% calcite, 1% dolomite. SANDSTONE: off white / light brown, loose-soft aggregates, sub blocky, Calcareous grains, 10% clay, clastic grains: 50% clay, 30% silt, 10% very fine sand, well sorted, sub angular, sub spherical, cements/strengths: calcareous/weak, argillaceous/weak, accessories: silty 25 %, sandy 10 %, kaolinite 50 %, porosity: inter granular, 3%.						
Gas 1455 – 1525m			**Units :**	24	**Composition (ppm)**	3082 C1	361 C2	181 C3	67 C4	22 C5	
Gas Peak 1501m			**Units :**	57	**Composition (ppm)**	7583 C1	924 C2	493 C3	204 C4	66 C5	
Show Details			No Shows								

Interval	ROP (avg)	Lithology Description Sandstone and Siltstone

1525m	-	1537m	9.6 – 37 (20)	SANDSTONE: off white - light brown, loose - soft, sub blocky, calcareous grains: 10% clay clastic grains: 40% clay, 10% silt, 40% very fine sand, well sorted, sub angular, sub spherical, cements/strengths: calcareous/weak, argillaceous/weak, kaolinite 40 %, porosity: inter granular 3% SILTSTONE: brownish grey, very soft, dispersive, calcareous grains: 10% clay clastic grains: 50% clay, 40% silt, cements/strengths: calcareous/weak, accessories: calc 10 %						
Gas 1525 – 1537m			**Units :**	40	**Composition (ppm)**	4066 C1	484 C2	253 C3	101 C4	36 C5	
Gas Peak 1526m			**Units :**	48	**Composition (ppm)**	5985 C1	763 C2	439 C3	193 C4	67 C5	
Show Details			No Shows								

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 11 **DAYS FROM SPUD:** 11 **DATE:** 28 Jun 04 **0000 hrs DEPTH:** 1870m
LAST DEPTH: 1537m **24 HR PROGRESS:** 333m

0600 OPS:	Drilling ahead 12 ¼" hole in the Eastern View Coal Measures. Last sample 1986m 10% Siltstone 90% Sandstone.
REMARKS:	Drilling ahead 12 ¼" hole from 1537m to 1870m rotating and sliding as required. Hole was been kicked off from 1280m at 0.13Deg Inc to 24.6 Inc 199.87Az at 185.690m.
	Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		**SECONDARY OBJECTIVES:**	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =** MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker			-2395			-2331.9	-2380.5
Fault			-2540				
Top 2718			-2664			-2706.9	-2738.5
Top 2755			-2699			-2743.9	-2767.5
Top 2809			-2775			-2797.9	-2834.5
Top 2973			-2950			-2961.9	-3005.0
Top Basalt			-3005			-3019.9	-3058.0
TOTAL DEPTH							

Interval (m)			**ROP (avg)**	**Lithology Description** **Siltstone and minor Sandstone**
1537	-	1723	2 – 37 (9.4)	SILTSTONE: brownish grey, very soft, dispersive, calcareous grains: 10% clay clastic grains: 50% clay, 40% silt, accessories: calcareous 5 % SANDSTONE: off white - light brown, loose - soft, sub blocky, calcareous grains: 10% clay clastic grains: 40% clay, 10% silt, 40% very fine sand, well sorted, sub angular, sub shrerical, cements/strengths: calcareous/weak, argillaceous/weak, accessories: calcareous 5 %, silty 10 %, kaolinite 10 %, porosity: inter granular 3%

Gas	**Units :**	18.4	**Composition (ppm)**	2168 C1	268 C2	158 C3	73 C4	30 C5	
Show Details	No Shows								

Interval (m)			ROP (avg)	Lithology Description (Demons Bluff Formation, 1723m MD) Siltstone, Sandstone, Claystone and minor Dolomite
1723	-	1752	10.5 – 33 (20.5)	SILTSTONE: predominantly medium grey, firm, sub blocky, calcareous grains: 5% clay, clastic grains: 20% clay, 60% silt, 15% very fine sand, accessories: calc 5 %, calcimetery: 12% calcite, 6% dolomite. SANDSTONE: medium to light brown and dark grey coloured clasts, firm, sub blocky, clastic grains: 5% clay, 15% silt, 50% very fine sand, 30% fine sand, moderately sorted, sub angular, sub equant, silicious cement with moderate strength, accessories: calc 5 % porosity: inter granular, 5%. CLAYSTONE: silty, light grey coloured, very soft, dispersive, calcareous grains: 5% clay clastic grains: 60% clay, 30% silt, 5% very fine sand, accessories: argillaceous debris 5 %. Minor DOLOMITE: medium brown, firm to moderately hard, angular, sharp fragments.

Gas	Units :	46	Composition (ppm)	5420 C1	736 C2	364 C3	161 C4	75 C5	-
Show Details	No Shows								

Interval			ROP (avg)	Lithology Description Massive Siltstone trace Sandstone
1752m	-	1870m	9.5– 31 (22)	SILTSTONE: dark grey /brown, soft - firm, sub blocky, % clastic grains: 30% clay, 50% silt, 5% very fine sand, 10% fine sand, accessories: sandy 5 %, mica tr %, carbonaceous tr %. SANDSTONE: brown / grey, soft, sub blocky to blocky, clay clastic grains: 30% clay, 40% silt, 30% very fine sand, well sorted, sub angular, slightly elongate, cements/strengths: calcareous /weak, siliceous / weak, porosity: inter granular trace.

Gas	Units :	53	Composition (ppm)	7396 C1	998 C2	341 C3	88 C4	24 C5	
Show Details	No Shows								

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 12 **DAYS FROM SPUD:** 12 **DATE:** 29 Jun 04 **0000 hrs DEPTH:** 2363m
LAST DEPTH: 1870m **24 HR PROGRESS:** 493m

0600 OPS:	Drilling ahead 12 ¼" hole in the Eastern View Coal Measures. Last sample 2424m 85% Siltstone 10% Sandstone 5% Claystone.
REMARKS:	Drilling ahead 12 ¼" hole from 1870m to 2363m rotating and sliding as required. Last survey 2372.95m 24.14inc, 201.39Az.
	Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		**SECONDARY OBJECTIVES:**	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004			**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**		**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =**	MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =**	43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

						Offset wells	
	All Depth are in METRES					Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
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Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Unconformity							
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker			-2395			-2331.9	-2380.5
Fault			-2540				
Top 2718			-2664			-2706.9	-2738.5
Top 2755			-2699			-2743.9	-2767.5
Top 2809			-2775			-2797.9	-2834.5
Top 2973			-2950			-2961.9	-3005.0
Top Basalt			-3005			-3019.9	-3058.0
TOTAL DEPTH							

Interval (m)			**ROP (avg)**	**Lithology Description Siltstone**
1870	-	1880	16 – 33 (26)	SILTSTONE: dark grey /brown, medium, soft - firm, sub blocky, clastic grains: 30% clay, 50% silt, 20% very fine sand, accessories: arenaceous 20 %, micro mica tr %, carbonaceous grains tr %,

Gas	**Units :**	60	**Composition (ppm)**	8711 C1	1175 C2	421 C3	42 C4	69 C5	
Show Details	No Shows								

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

Interval (m)			ROP (avg)	Lithology Description Sandstone and Siltstone (Eastern View Coal Measures, 1880m MD 1801.5mSS)
1880	-	1914	9.6 – 49 (29)	SANDSTONE: medium brown, very soft, sub blocky, clastic grains: 30% clay, 30% silt, 40% very fine sand, well sorted, sub rounded, sub spherical, cements/strengths: argillaceous / weak, accessories: carbonaceous grains tr % porosity: inter granular trace. SILTSTONE: brownish / grey, black / grey, very soft, sub blocky, calcareous grains trace% clay, clastic grains: 20% clay, 40% silt, 30% very fine sand, accessories: arenaceous, pyrite tr %, carbonaceous grains and micro laminae tr %.

Gas	Units :	173	Composition (ppm)	18387 C1	3318 C2	2237 C3	423 C4	656 C5	-
Show Details	1908m – 1914m Trace fluorescence, very dull, pinpoint, dark yellow, no direct cut, no crush cut and no residue ring.								

Interval			ROP (avg)	Lithology Description Very fine grained Sandstone and Siltstone
1914m	-	1938m	13– 46 (37)	SANDSTONE: off white light green, very soft, sub blocky, clastic grains: 30% clay, 70% very fine sand, well sorted, sub rounded, sub elongate, cements/strengths: argillaceous / weak, siliceous / weak, accessories: glauconite 3 % porosity: inter granular, trace. SILTSTONE: brownish / grey, black / grey, very soft, sub blocky, clastic grains: 20% clay, 40% silt, 30% very fine sand, accessories: arenaceous 10 %, pyrite tr %, carbonaceous specks tr %,

Gas	Units :	79	Composition (ppm)	6629 C1	1291 C2	1086 C3	231 C4	389 C5	
Show Details	No Shows								

Interval			ROP (avg)	Lithology Description Fine to medium grained Sandstone and Siltstone
1938m	-	1968m	11– 43 (33)	SANDSTONE: off white light brown grey /brown, soft - friable, sub blocky clastic grains: 30% clay, 30% fine sand, 40% medium sand, moderately sorted, sub rounded, sub elongate, cements/strengths: argillaceous/weak, siliceous/weak, pyrite/strong, accessories: pyrite tr % porosity: inter granular 3%. SILTSTONE: brown grey, soft - friable, sub fissile, clastic grains: 10% clay, 70% silt, tr% very fine sand, accessories: mc tr %, carbonaceous grains tr %,

Gas	Units :	40	Composition (ppm)	2332 C1	474 C2	477 C3	129 C4	233 C5	
Show Details	No Shows								

Interval			ROP (avg)	Lithology Description Sandstone (fine and very coarse), Siltstone occasional Coal						
1968m	-	2022m	16 – 71 (38)	SANDSTONE: off white, clear translucent, loose - soft, sub blocky, clastic grains: 30% clay, 10% medium sand, 40% coarse sand, 20% very coarse sand, poorly sorted, sub angular, sub spherical, siliceous/weak, accessories: kaolinite 25 % porosity: inter granular 20%. SANDSTONE: white, off white, soft, sub blocky, clastic grains: 30% clay, 70% fine sand, well sorted, rounded, sub spherical, argillaceous/weak, accessories: kaolinite 25 % porosity: inter granular 5%. SILTSTONE: medium brown, black/brown, soft-friable, sub fissile, clastic grains: tr% clay, 70% silt, 30% very fine sand, accessories: mica tr %, carbonaceous grains and laminae tr %. COAL: black coloured, firm, brittle, blocky, vitreous to sub vitreous.						
Gas			**Units :**	19.4	**Composition (ppm)**	873 C1	145 C2	153 C3	52 C4	96 C5	
Show Details			No Shows								

Interval			ROP (avg)	Lithology Description Sandstone (fine and very coarse), Siltstone occasional Coal						
2022m	-	2069m	11 – 48 (33)	SANDSTONE: off white, clear translucent, loose - soft, sub blocky, clastic grains: 30% clay, 10% medium sand, 40% coarse sand, 20% very coarse sand, poorly sorted, sub angular, sub spherical, siliceous/weak, accessories: kaolinite 25 % porosity: inter granular 20%. SANDSTONE: white, off white, soft, sub blocky, clastic grains: 30% clay, 70% fine sand, well sorted, rounded, sub spherical, argillaceous/weak, accessories: kaolinite 25 % porosity: inter granular 5%. SILTSTONE: medium brown, black/brown, soft-friable, sub fissile, clastic grains: tr% clay, 70% silt, 30% very fine sand, accessories: mica tr %, carbonaceous grains and laminae tr %. COAL: black coloured, firm, brittle, blocky, vitreous to sub vitreous.						
Gas			**Units :**	5.7	**Composition (ppm)**	257 C1	30 C2	24 C3	9 C4	14 C5	
Show Details			No Shows								

Interval			ROP (avg)	Lithology Description Interbedded Sandstone, Siltstone and Coal						
2069m	-	2136m	10– 47 (29)	SANDSTONE: clear - off white, loose - soft, sub blocky, clastic grains: 20% clay, 40% very fine sand, 30% fine sand, 10% coarse sand, moderately sorted, sub angular, sub elongate, cements/strengths: argillaceous/weak, siliceous/tr, accessories: kaolinite 15 %, carbonaceous grains tr % porosity: inter granular 10%. SILTSTONE: white - brown, very soft, dispersive, clastic grains: 50% clay, 40% silt, 10% very fine sand, accessories: calc tr %, kaolinite 25 %. COAL: black, sub vitreous to vitreous, sub conchoidal to hackly fracture, friable – firm, blocky, accessories: argillaceous tr %.						
Gas			**Units :**	14	**Composition (ppm)**	994 C1	141 C2	139 C3	35 C4	42 C5	
Show Details			No Shows								

Interval			ROP (avg)	Lithology Description Interbedded Sandstone and Siltstone occasionally grading to Claystone and Coal						
2136m	-	2322m	13– 45 (25)	SANDSTONE: clear - translucent, loose, massive, clastic grains: 5% silt, 15% very fine sand, 30% fine sand, 20% medium sand, 20% coarse sand, 5% very coarse sand, very poorly sorted, sub angular, sub spherical, cements/strengths: argillaceous/tr, accessories: fossils tr %, carbonaceous grains tr % porosity: inter granular 20%. SILTSTONE: off white - light brown, very soft, dispersive, clastic grains: 40% clay, 40% silt, 15% very fine sand, 5% fine sand, accessories: sandy 20 %, carbonaceous grains and carbonaceous laminae 5 %. CLAYSTONE: light grey, moderately hard, blocky, calc grains: 30% clay, 10% silt clastic grains: 40% clay, 20% silt, accessories: calc 25 %. COAL: black, sub vitreous to vitreous, sub conchoidal to hackly fracture, friable – firm, blocky, accessories: argillaceous tr %.						
Gas			**Units :**	32	**Composition (ppm)**	3733 C1	346 C2	141 C3	63 C4	14 C5	
Gas peaks in Coal 2318m			**Units :**	158	**Composition (ppm)**	27266 C1	1904 C2	522 C3	153 C4	22 C5	
Show Details			No Shows								

Interval			ROP (avg)	Lithology Description Interbedded Sandstone and Siltstone and Coal						
2322m	-	2363m	14– 41 (23)	SANDSTONE: off white - clear, translucent, loose - soft, dispersive, clastic grains: 40% clay, 30% very fine sand, 20% fine sand, 10% medium sand, moderately sorted, sub angular, sub spherical, cements/strengths: argillaceous / weak, accessories: kaolinite 20 % porosity: inter granular 3%. SILTSTONE: light brown / speckled black, firm, sub blocky, clastic grains: 90% silt, 10% very fine sand, accessories: argillaceous tr %, carbonaceous grains and laminae 15 % COAL: black, firm, brittle, blocky, sub conchoidal to hackly fracture, accessories: argillaceous tr %, silty tr %						
Gas			**Units :**	22	**Composition (ppm)**	2279 C1	212 C2	116 C3	60 C4	21 C5	
Gas Peak in Coal 2375m			**Units :**	125	**Composition (ppm)**	22018 C1	1420 C2	359 C3	117 C4	20 C5	
Gas Peak in Coal 2406m			**Units :**	109	**Composition (ppm)**	22464 C1	1181 C2	317 C3	104 C4	16 C5	
Show Details			No Shows								

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 13 **DAYS FROM SPUD:** 13 **DATE:** 30 Jun 04 **0000 hrs DEPTH:** 2610m
LAST DEPTH: 2363m **24 HR PROGRESS:** 247m

0600 OPS: Running wiper trip at 12 ¼" section TD 2613m. Last sample 2613m 60% Sandstone 40% Siltstone.

REMARKS: Drilling ahead 12 ¼" hole from 2363m to 2610m rotating and sliding as required. **Hydrocarbon Show occurred from 2602m - 2614m section TD.** Hydrocarbon shows occurred in fine to medium sandstone with fair to good porosity, 70% fluorescence was observed in the sandstone with a significant associated gas show.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004			**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**		**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =**	MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =**	43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Unconformity							
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault			-2540				
Top 2718			-2664			-2706.9	-2738.5
Top 2755			-2699			-2743.9	-2767.5
Top 2809			-2775			-2797.9	-2834.5
Top 2973			-2950			-2961.9	-3005.0
Top Basalt			-3005			-3019.9	-3058.0
TOTAL DEPTH							

Interval (m)			ROP (avg)	Lithology Description Interbedded Sandstone and Siltstone and Coal							
2363	-	2385	8.8 – 19 (14.5)	SANDSTONE: off white - light brown, loose – soft aggregates, clastic grains: 40% clay, 40% very fine sand, 10% fine sand, well sorted, rounded, sub spherical, cements/strengths: argillaceous/weak, accessories: kaolinite 20 % porosity: inter granular 3%. SILTSTONE: light brown / speckled black, firm, sub blocky to sub fissile, clastic grains: 80% silt, 10% very fine sand, 10% fine sand, accessories: argillaceous tr %, carbonaceous grains and laminae 15 %. COAL: black, sub vitreous to vitreous, firm, blocky, accessories: argillaceous tr %, silty tr %.							
Gas			**Units :**	40.1	**Composition (ppm)**	6584 C1	475 C2	150 C3	44 C4	10 C5	
Show Details			No Shows								

Interval (m)			ROP (avg)	Lithology Description Sandstone and Siltstone Coal and minor Claystone							
2385	-	2451	5.5 – 31 (15)	SANDSTONE: off white - light brown, loose - soft, clastic grains: 40% clay, 50% very fine sand, tr% fine sand, well sorted, rounded, sub spherical, cements/strengths: argillaceous weak, accessories: kaolinite 20 % porosity: inter granular 3%. SILTSTONE: medium brownish / black, soft - firm, sub fissile, clastic grains: tr% clay, 80% silt, 20% very fine sand, accessories: sandy 20 %, carbonaceous grains and laminae 15 %, micro mica tr %. COAL: black, sub vitreous to vitreous, firm, blocky, accessories: argillaceous tr %, silty tr %. CLAYSTONE: olive grey, firm, sub blocky to splintery, calc grains: 20% clay clastic grains: 80% clay, accessories: calc 20 % homogenous in form.							
Gas			**Units :**	32.1	**Composition (ppm)**	6111 C1	388 C2	144 C3	48 C4	11 C5	-
Show Details			No Shows								

Interval			ROP (avg)	Lithology Description Fine grained Sandstone, Siltstone and Claystone							
2451m	-	2497m	1.6– 42 (18.5)	SANDSTONE, clear to translucent, off white, loose, massive, clastic grains: 10% silt, 20% very fine sand, 40% fine sand, 30% medium sand, well sorted, sub round, sub spherical, weak kaolinite cement, occasionally developing to matrix supported, accessories: argillaceous debris 5 %, porosity: inter granular, 15%. CLAYSTONE, light grey coloured, moderately hard, blocky, calcareous grains: 10% clay, clastic grains: 70% clay, 20% silt, accessories: calcareous material 5 %, argillaceous debris 3 %. SILTSTONE, medium brown to dark grey, firm, blocky, clastic grains: 10% clay, 70% silt, 10% very fine sand, accessories: argillaceous debris 10 % and trace carbonaceous material.							
Gas			**Units :**	42.9	**Composition (ppm)**	8271 C1	445 C2	176 C3	51 C4	12 C5	
Gas Peak in coal			**Units :**	184	**Composition (ppm)**	38360 C1	1882 C2	637 C3	223 C4	35 C5	

Show Details	No Shows

Interval			**ROP (avg)**	**Lithology Description** **Interbedded Sandstone, Siltstone and Coal**
2497m	-	2602m	5.5 – 53 (21)	COAL, black to dark brown, friable to firm, blocky, accessories: trace argillaceous material. SILTSTONE, dark brown to grey, firm to moderately hard, blocky, clastic grains: 15% clay, 70% silt, 15% very fine sand, accessories: argillaceous material 10 %, trace calcareous material, carbonaceous matter 5 %. SANDSTONE, off white to light brown, very soft, sub blocky, clastic grains: 30% clay, 10% silt, 60% very fine sand, tr% fine sand, well sorted, sub angular, sub spherical, weak argillaceous cement, accessories: argillaceous material 20 % porosity: inter-granular 3%.

Gas	**Units :**	32	**Composition (ppm)**	5522 C1	471 C2	282 C3	127 C4	36 C5	
Gas Peak in coal	**Units:**	354	**Composition (ppm)**	71453	4799	1420	356	70	
Show Details	No Shows								

Interval			**ROP (avg)**	**Lithology Description** **Sandstone and Siltstone**
2602m	-	2614m	23– 37 (20)	SANDSTONE: off white - light brown friable aggregates, clear to translucent loose grains, clastic grains: 20% clay, 20% fine sand, 60% medium sand, moderately sorted, sub angular – sub rounded, sub elongate, cements/strengths: argillaceous / weak, calcareous / weak, accessories: kaolinite matrix 10 % porosity: inter granular 15%. SILTSTONE: medium - dark brownish / grey, firm, blocky, arenaceous to argillaceous, clastic grains: 10% clay, 80% silt, 10% very fine sand, accessories: carbonaceous grains 5 %, calcareous tr %.

Gas	**Units :**	364	**Composition (ppm)**	48779 C1	6734 C2	4982 C3	2446 C4	927 C5	
Show Details	2602m – 2614m Fluorescence in Sandstone 70%, bright, even, light green, no direct cut, very slow bleeding crush cut, bright, light green patchy residue ring. Gas 364units over a background of 117units, see above for gas composition.								

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 14 **DAYS FROM SPUD:** 14 **DATE:** 1 Jul 04 **0000 hrs DEPTH:** 2614m
LAST DEPTH: 2610m **24 HR PROGRESS:** 4m

0600 OPS: POH at 12 ¼" section TD 2614m. Last sample 2614m 60% Sandstone 40% Siltstone with hydrocarbon shows. 70% fluorescence was observed in the sandstone with a significant associated gas show.

REMARKS: Drilled ahead to 2614m and circulated hole clean. Run wiper-trip, pull out to 878m (inside 13 3/8" shoe). Hole tight from 2540 – 2524m 80k O/P, 2418 – 2110m 80k O/P. Serviced top drive and travelling blocks. RIH and conduct LWD pass over volcanics 1325m – 1365m bit depth, maximum gas while LWD logging 1726units (34.5%). RIH reamed tight spot 2545m – 2601m, ran to bottom, circulated and conditioned mud, pumped slug and POH. Bottoms up gas 663 units (13.3%).

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07	
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47	
Rig release Date:		**G.L =** MSL	**Metres R.T.**		**20" Conductor Depth: =**	220	Metres	
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**		**13 3/8" Casing Depth:=**	884	meters	

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
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Unconformity							
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault			-2540				
Top 2718			-2664			-2706.9	-2738.5
Top 2755			-2699			-2743.9	-2767.5
Top 2809			-2775			-2797.9	-2834.5
Top 2973			-2950			-2961.9	-3005.0
Top Basalt			-3005			-3019.9	-3058.0
TOTAL DEPTH							

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

Interval			ROP (avg)	Lithology Description Sandstone and Siltstone
2610m	-	2614m	23– 37 (20)	SANDSTONE: off white - light brown friable aggregates, clear to translucent loose grains, clastic grains: 20% clay, 20% fine sand, 60% medium sand, moderately sorted, sub angular – sub rounded, sub elongate, cements/strengths: argillaceous / weak, calcareous / weak, accessories: kaolinite matrix 10 % porosity: inter granular 15%. SILTSTONE: medium - dark brownish / grey, firm, blocky, arenaceous to argillaceous, clastic grains: 10% clay, 80% silt, 10% very fine sand, accessories: carbonaceous grains 5 %, calcareous tr %.

Gas	Units :	364	Composition (ppm)	48779 C1	6734 C2	4982 C3	2446 C4	927 C5	
Show Details	2610m – 2614m Fluorescence in Sandstone 70%, bright, even, light green, no direct cut, very slow bleeding crush cut, bright, light green patchy residue ring. Gas 364units over a background of 117units, see above for gas composition.								

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 15 **DAYS FROM SPUD:** 15 **DATE:** 2 Jul 04 **0000 hrs DEPTH:** 2614m
LAST DEPTH: 2614m **24 HR PROGRESS:** 0m

0600 OPS: Running 9 5/8" casing at 1175m.

REMARKS: POH from 2050m, flow check well and down load LWD, retrieve LWD probe. Jet BOP, install 9 5/8" Rams and make up test plug. Pressure test BOP (leaking), pull test plug and replace seal re-run and test BOP to 2000psa/5min (ok). Hold Pre-Job Safety Meeting on running 9 5/8" casing. Run 9 5/8" casing to 432m.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =** MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Unconformity							
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault			-2540				
Top 2718			-2664			-2706.9	-2738.5
Top 2755			-2699			-2743.9	-2767.5
Top 2809			-2775			-2797.9	-2834.5
Top 2973			-2950			-2961.9	-3005.0
Top Basalt			-3005			-3019.9	-3058.0
TOTAL DEPTH							

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 16 **DAYS FROM SPUD:** 16 **DATE:** 3 Jul 04 **0000 hrs DEPTH:** 2614m
LAST DEPTH: 2614m **24 HR PROGRESS:** 0m

0600 OPS: Making up BOP jetting tool.

REMARKS: Run 9 5/8" casing from 432m to 2385m. Change casing elevators from 9 5/8" to 10 ¾", run 10 ¾" casing from 2385m to land at 2586.14m. Rig up cement circulating head and circulate casing, bottoms up 81 units max gas. Pressure test cement lines 3000psi ok. Pump 278bbl "G" 12.5ppg Lead Slurry followed by 27 bbl 15.8ppg Tail Slurry. Drop top plug and pump 20 bbl FW.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07	
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47	
Rig release Date:		**G.L =** MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres	
Rig ENSCO 102		**R.T =** 43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	meters	

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Unconformity							
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault			-2540				
Top 2718			-2664			-2706.9	-2738.5
Top 2755			-2699			-2743.9	-2767.5
Top 2809			-2775			-2797.9	-2834.5
Top 2973			-2950			-2961.9	-3005.0
Top Basalt			-3005			-3019.9	-3058.0
TOTAL DEPTH							

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 17 **DAYS FROM SPUD:** 17 **DATE:** 4 Jul 04 **0000 hrs DEPTH:** 2614m
LAST DEPTH: 2614m **24 HR PROGRESS:** 0m

0600 OPS: Making up 8 ½" BHA, prior to RIH.

REMARKS: Pump and displace cement with rig pumps, bump plug and pressure test casing to 3500psi/15min. Flush cement lines and rig down cement head. M/U jetting assembly and jet BOP. Run seal assembly, unable to set seal assembly pull out and re-jet BOP. Re-run seal assembly and pressure test to 5000psi. Change out 9 5/8" rams to 5" fixed rams. Make up BOP test tool assembly. Make up 8 ½" BHA and upload LWD. Rack back 6 ¾" DC and Jars. Pull wear bushing. Test BOP, choke manifold, standpipe and safety valves, 250psi/5min, 5000psi/10min.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07	
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47	
Rig release Date:		**G.L =** MSL	**Metres R.T.**		**20" Conductor Depth: =**	220	Metres	
Rig ENSCO 102		**R.T =** 43	**Metres R.T.**		**13 3/8" Casing Depth:=**	884	Meters	
			Metres R.T.		**9 5/8" Casing Depth:=**	2586	Meters	

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Unconformity							
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault			-2540				
Top 2718			-2664			-2706.9	-2738.5
Top 2755			-2699			-2743.9	-2767.5
Top 2809			-2775			-2797.9	-2834.5
Top 2973			-2950			-2961.9	-3005.0
Top Basalt			-3005			-3019.9	-3058.0
TOTAL DEPTH							

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 18 **DAYS FROM SPUD:** 18 **DATE:** 5 Jul 04 **0000 hrs DEPTH:** 2670m
LAST DEPTH: 2614m **24 HR PROGRESS:** 56m

0600 OPS: Drilling ahead 8 ½" hole at 2747m in the Eastern View Coal Measures. Drilling to the first core point in the "2755 sandstone". Last sample 2736m 100% igneous intrusive rock: mottled off white / green / black, soft to firm occasionally hard, fine to medium crystal size, quartz, biotite, feldspar, pyrite and occasional pyroxene crystals, commonly weathered and chloritic.

REMARKS: Finish pressure testing BOP, choke manifold and stand pipe pressure manifold to 250psi/5min, 5000psi/10min. Install wear bushing. Make up bit, motor and upload LWD. RIH to 138m and shallow test LWD. RIH fill pipe every 20 stands. Drill out cement, float and shoe track 2561m – 2586m. Clean out rat hole to 2614m, circulate and condition mud. Pull up to 2575m and perform F.I.T 320psi, 9.2ppg mud to EMW 10ppg. Drill ahead rotate and steer as required 2614m – 2670m.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =** MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	Meters
			Metres R.T.	**9 5/8" Casing Depth:=**		2586	Meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Unconformity							
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault			-2540				
Top 2718			-2664			-2706.9	-2738.5
Top 2755			-2699			-2743.9	-2767.5
Top 2809			-2775			-2797.9	-2834.5
Top 2973			-2950			-2961.9	-3005.0
Top Basalt			-3005			-3019.9	-3058.0
TOTAL DEPTH							

Interval (m)			ROP (avg)	Lithology Description Siltstone and Kaolinitic Sandstone, with minor Claystone								
2614	-	2630	8.2 – 38 (13.5)	SILTSTONE, medium brown to dark grey, soft, sub blocky, clastic grains: 15% clay, 70% silt, 15% very fine sand, accessories: carbonaceous material 5 % and coal 5 %. SANDSTONE, kaolinitic, off white to cream, very soft, dispersive, clastic grains: 50% clay, 5% silt, 40% very fine sand, 5% fine sand, well sorted, sub angular, sub spherical, weak argillaceous cement, accessories: kaolinite 30 % CLAYSTONE, light grey to blue grey, firm, blocky, calc grains: 15% clay, clastic grains: 70% clay, 15% silt, accessories: trace argillaceous material, calcareous 15 %.								
Gas			**Units :**	60	**Composition (ppm)**	8639 C1	869 C2	798 C3	402 C4	176 C5	-	
Show Details			2614-2630, In sandstone aggregates low in kaolinite matrix, 50% fluorescence, bright yellow, moderately fast, even crush cut, bright green, bleeding direct cut and a thin pale green residue.									

Interval (m)			ROP (avg)	Lithology Description Massive Siltstone								
2630	-	2657	20 – 39 (27)	SILTSTONE: medium to dark grey, moderately hard, blocky, accessories: trace argillaceous material and trace pyrite.								
Gas			**Units :**	61	**Composition (ppm)**	8681 C1	875 C2	803 C3	420 C4	185 C5	-	
Show Details												

Interval (m)			ROP (avg)	Lithology Description Siltstone, Sandstone and Coal								
2657	-	2670	15.5 – 37 (26)	SILTSTONE: dark grey greyish / black, firm, sub blocky to platy, clastic grains: trace% clay, tr% very fine sand, accessories: argillaceous tr %, micro mica tr % SANDSTONE: off white, white / light brown, very soft, sub blocky, clastic grains: 80% very fine sand, 20% fine sand, well sorted, sub rounded, sub spherical, cements/strengths: siliceous / wk, argillaceous / weak, accessories: kaolinite matrix 20 % porosity: inter granular 3%. 2652m – 2658m Trace residual fluorescence. COAL: black, firm brittle, blocky, rare sub conchoidal to common hackly fracture, tr% clay, tr% silty.								
Gas			**Units :**	50	**Composition (ppm)**	8667 C1	664 C2	442 C3	127 C4	53 C5	-	
Gas Pk 2657 coal				121		21951	1459	917	350	133		
Gas Pk 2663 coal				139		27851	1564	746	221	79		
Show Details			Sandstone 2652m – 2658m Trace Fluorescence: dull yellow, no direct cut, no crush cut, trace broken pale cream residue ring.									

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 19 **DAYS FROM SPUD:** 19 **DATE:** 6 Jul 04 **0000 hrs DEPTH:** 2892m
LAST DEPTH: 2670m **24 HR PROGRESS:** 222m

0600 OPS: POH to core.

REMARKS: Drill ahead 8 ½" hole 2670m – 2825m, rotate and slide as required, survey at each connection. Control drill 2825m – 2872m, reduce weight to keep ROP around 20m/hr. Flow check at 2887m and POH to 2575m. Reamed tight hole while tripping out at 2740m and 2655m. Serviced top drive. RIH 2575m – 2887m drilled ahead on instructions 2887m – 2892m, circulated bottoms up and POH.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004			**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**		**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =**	MSL	**Metres R.T.**		**20" Conductor Depth: =**	220	Metres
Rig	ENSCO 102	**R.T =**	43	**Metres R.T.**		**13 3/8" Casing Depth:=**	884	Meters
				Metres R.T.		**9 5/8" Casing Depth:=**	2586	Meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Unconformity							
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault	2498-2524?		-2540				
Igneous Intrusive	2719	-2565.5	-	-	-	-	-2566.5
Top 2718	2860	-2694	-2664	30	Low	-2706.9	-2738.5
Top 2755	2883	-2715	-2699	16	Low	-2743.9	-2767.5
Top 2809			-2775			-2797.9	-2834.5
Top 2973			-2950			-2961.9	-3005.0
Top Basalt			-3005			-3019.9	-3058.0
TOTAL DEPTH							

Interval (m)			ROP (avg)	Lithology Description Massive Siltstone and Coal near base							
2670	-	2712	5.1 – 34 (28)	SILTSTONE: dark grey greyish / black, firm, sub blocky to sub fissile, clastic grains: trace% clay, 95% silt, 5% very fine sand, accessories: argillaceous tr %, micro mica tr % COAL: black, dull to sub vitreous, firm, blocky and brittle, sub conchoidal to hackly fracture, tr% silt.							
Gas			**Units :**	33	**Composition (ppm)**	4726 C1	472 C2	313 C3	83 C4	43 C5	-
Show Details			No shows								

Interval (m)			ROP (avg)	Lithology Description Slightly metamorphosed Siltstone above Igneous Intrusive							
2712	-	2719	14.5 – 34 (23)	SILTSTONE: (1) grey / black, sub vitreous, firm – moderately hard, blocky, clastic grains: 100% silt, cements/strengths: pyrite / strong, accessories: vitreous carbonaceous 20 %, pyrite tr % SILTSTONE: (2) dark grey greyish / black, firm, sub fissile, clastic grains: tr% clay, 95% silt, 5% very fine sand, accessories: argillaceous tr %, micro mica tr %							
Gas			**Units :**	5	**Composition (ppm)**	486 C1	52 C2	22 C3	7 C4	4 C5	-
Show Details											

Interval (m)			ROP (avg)	Lithology Description Igneous Intrusive							
2719	-	2767	7.5 – 33 (14)	IGNEOUS INTRUSIVE: (granodiorite) mottled white green, speckled black, soft to firm occasionally hard, medium to coarse crystal size, common quartz, biotite, plagioclase, black to green pyroxene, calcareous, commonly altered to clay with a chlorotic ground mass.							
Gas			**Units :**	11	**Composition (ppm)**	1131 C1	182 C2	128 C3	9 C4	5 C5	-
Show Details			No shows								

Interval (m)			ROP (avg)	Lithology Description Massive Siltstone trace Dolomite							
2767	-	2860	6 – 39 (21)	SILTSTONE: medium - dark grey, brownish grey, friable - firm, sub fissile, clastic grains: 25% clay, 70% silt, 5% very fine sand, accessories: dolomite in part tr %, micro mica tr %, pyrite tr %, DOLOMITE: (trace) light brown / tan coloured, firm – moderately hard, blocky, 5% clay.							
Gas			**Units :**	5	**Composition (ppm)**	480 C1	58 C2	56 C3	28 C4	14 C5	-
Show Details			No shows								

Interval (m)			ROP (avg)	Lithology Description 2518 Sand								
2860	-	2866	13.5 – 32 (24)	SANDSTONE: (30%), light greyish yellow, soft - firm, sub blocky, clastic grains: 10% clay, 10% silt, 50% very fine sand, 30% fine sand, moderately sorted, sub angular, sub elongate to sub spherical, cements/strengths: siliceous / weak, argillaceous / weak, accessories: argillaceous matrix 10 - 20%, porosity: inter granular 3%. Fluorescence see below. SILTSTONE: (70%) medium - dark grey brownish grey, friable - firm, sub fissile clastic grains: 20% clay, 75% silt, 5% very fine sand, accessories: micro mica tr %, fine pyrite tr %,								
Gas			**Units :**	9	**Composition (ppm)**	891 C1	100 C2	79 C3	66 C4	17 C5	-		
Show Details			Fluorescence: trace: trace dim yellow, trace to very slow direct and crush cut, dim cream broken film residue ring.									

Interval (m)			ROP (avg)	Lithology Description Siltstone and minor Sandstone								
2866	-	2883	18 – 37 (17.5)	SILTSTONE: (90%) medium - dark grey, brown / grey, soft - friable, sub fissile clastic grains: 30% clay, 65% silt, 5% very fine sand, accessories very fine mica tr % SANDSTONE: (10%) light greyish yellow, soft - friable, sub blocky, clastic grains: 10% clay, 10% silt, 40% very fine sand, 40% fine sand, moderately sorted, sub angular, sub elongate, cements/strengths: siliceous / weak, argillaceous / weak, accessories: common argillaceous and silty matrix, porosity: inter granular 3%.								
Gas			**Units :**	11.5	**Composition (ppm)**	1544 C1	151 C2	101 C3	51 C4	27 C5	-		
Show Details			Fluorescence: trace: trace dim yellow, trace to very slow direct and crush cut, dim cream broken film residue ring.									

Interval (m)			ROP (avg)	Lithology Description 2755 Sand								
2883	-	2892	17 – 118 (47)	Note: top of sand picked at 2883m based on sample returns, ROP suggests a top of 2885m, this discrepancy will be resolved with the next MWD pass. Note: sample from 2887m – 2992m was severely contaminated from the wiper trip and has not been included in the description. SANDSTONE: clear - translucent, light brown surface stain, loose to very rare small aggregates (2-4 grains) clastic grains: 20% medium sand, 40% coarse sand, 40% very coarse sand, poorly sorted, very angular, common fractured grains, very elongate, quartz overgrowths, cements/strengths: occasional strong siliceous cement, porosity: inter granular 20%. SILTSTONE: medium - dark grey, brown / grey, very soft - friable, sub fissile to sub blocky, clastic grains: 30% clay, 65% silt, 5% very fine sand, accessories fine mica tr %.								
Gas			**Units :**	15	**Composition (ppm)**	1787 C1	181 C2	97 C3	39 C4	19 C5	-		
Max gas recorded At 2888m				359	**From Aux gas detector**	45084	4011	1658	553	146			

Show Details	No fluorescence. Minor gas show (see above)

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 20 **DAYS FROM SPUD:** 20 **DATE:** 7 Jul 04 **0000 hrs DEPTH:** 2892m
LAST DEPTH: 2892m **24 HR PROGRESS:** 0m

0600 OPS: Filling trip tank prior to POH. Core cut 2892m – 2919.5m. Last sample from 2919m 10% coal, 60% sandstone, 40% siltstone.

REMARKS: Flow checked well at 2575m, POH 2575m – 2245m. Trouble-shoot PRS (upper arm drag chain detached from cable guide). POH 2245m to surface, download MWD and lay down bit. Hold Pre-Job Safety Meeting on running coring assembly. RIH with coring assembly to 2578m. Trouble-shoot Hydraulic Elevators (not latching properly). RIH with manual elevators 2578m – 2720m.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004			**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**		**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =**	MSL	**Metres R.T.**		**20" Conductor Depth: =**	220	Metres
Rig	ENSCO 102	**R.T =**	43	**Metres R.T.**		**13 3/8" Casing Depth:=**	884	Meters
				Metres R.T.		**9 5/8" Casing Depth:=**	2586	Meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault	2567-2575		-2540				
Igneous Intrusive	2719	-2565.5	-	-	-	-2572.9	-2566.5
Top 2718	2860	-2694	-2664	30	Low	-2706.9	-2738.5
Top 2755	2883	-2715	-2699	16	Low	-2743.9	-2767.5
Top 2809			-2775			-2797.9	-2834.5
Top 2973			-2950			-2961.9	-3005.0
Top Basalt			-3005			-3019.9	-3058.0
TOTAL DEPTH							

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 21 **DAYS FROM SPUD:** 21 **DATE:** 8 Jul 04 **0000 hrs DEPTH:** 2919m
LAST DEPTH: 2892m **24 HR PROGRESS:** 27m

0600 OPS: Filling trip tank prior to POH. Core cut 2892m – 2919.5m. Last sample from 2919m 10% coal, 60% sandstone, 40% siltstone.

REMARKS: RIH to 2865m with coring assembly. Wash 2865m – 2892m drop ball observe pressure increase 250 – 350psi as ball seats. Take SCR's and cut core from 2892m – 2919m. Break off core with 25k over-pull. Circulate bottoms up, flow check and POH to 2856m, flow check, pump slug and POH, flow check again at 113m. Hold Pre-Job Safety Meeting on laying down core inner barrels. Break out 3 core barrels. 27m core recovered (100%). Lay down excess 16" and 12 ¼" BHA from derrick for back-load. Pick up 8 ½" bit, align motor and upload MWD, surface test MWD and Motor and RIH.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07	
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47	
Rig release Date:		**G.L =** MSL	**Metres R.T.**		**20" Conductor Depth: =**	220	Metres	
Rig ENSCO 102		**R.T =** 43	**Metres R.T.**		**13 3/8" Casing Depth:=**	884	Meters	
			Metres R.T.		**9 5/8" Casing Depth:=**	2586	Meters	

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault	2567-2575		-2540				
Igneous Intrusive	2719	-2565.5	-	-	-	-2572.9	-2566.5
Top 2718	2860	-2694	-2664	30	Low	-2706.9	-2738.5
Top 2755	2883	-2715	-2699	16	Low	-2743.9	-2767.5
Top 2809			-2775			-2797.9	-2834.5
Top 2973			-2950			-2961.9	-3005.0
Top Basalt			-3005			-3019.9	-3058.0
TOTAL DEPTH							

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

Interval (m)			ROP (avg)	Lithology Description
				Core (1) 2755 Sand **2892m - 2919m** **Cut 27m recovered 27m**
2892				SILTSTONE: dark brown – black / grey, moderately hard - hard, clastic grains: 20% clay, 70% silt, 10% very fine sand, accessories: mica tr%.
2893				SANDSTONE: light brown – grey, moderately hard, clastic grains: 30% silt, 40% very fine sand, 30% fine sand, mod sorted, sub angular, sub spherical, cements/strengths: argillaceous / moderately strong, accessories: argillaceous 15% porosity: inter granular 5%. No fluorescence.
2894				COAL: black, vitreous, firm, blocky, hackly occasional sub conchoidal fracture, clastic grains: 30% clay, 10% silt.
2895				SILTSTONE: dark to medium brown, hard, clastic grains: 10% clay, 50% silt, 40% very fine sand, accessories: argillaceous 15%, carbonaceous tr%.
2896	-	2900		SANDSTONE: pale cream - light brown, moderately hard, clastic grains: 20% silt, 40% very fine sand, 40% fine sand, mod sorted, sub angular, sub spherical, cements/strengths: argillaceous / moderately strong, accessories: silty 15%, porosity: inter granular 5 - 15%: Hydrocarbon Fluorescence 5 – 40% moderately bright green, no direct cut, no crush cut, bright cream broken film residue.
2900.8	-	2904.8		SANDSTONE: clear, translucent light brown, firm - friable, clastic grains: 30% fine sand, 40% medium sand, 30% coarse sand, poorly sorted, sub angular, sub spherical, cements/strengths: argillaceous / trace, porosity: inter granular 20%. Hydrocarbon Fluorescence 10 – 50% dull to moderately bright green, very slow to no direct cut, very slow to no crush cut, dull to bright cream broken film residue ring.
2905.8	-	2906.8		SANDSTONE: light brown, firm – moderately hard, clastic grains: 30% silt, 40% very fine sand, 30% fine sand, tr% medium sand, moderately sorted, sub angular, sub spherical, cements/strengths: argillaceous / weak, porosity: inter granular 15%: Hydrocarbon Fluorescence; 50 – 90% moderately bright to bright green, very slow direct cut, very slow crush cut, bright cream broken film residue ring.
2907.8	-	2911		SANDSTONE: medium - light brown, firm – moderately hard, clastic grains: 30% silt, 70% very fine sand, tr% fine sand, well sorted, sub angular, sub spherical, cement/strengths: argillaceous / moderately hard, porosity: inter granular 10%. Hydrocarbon Fluorescence: trace.
2912	-	2919.5		SILTSTONE: dark grey to grey black, firm – moderately hard, sub fissile, clastic grains: 10% clay, 90% silt, accessories: mica tr%, occasionally very carbonaceous and gradational to CARBONACEOUS SILTSTONE.

Gas 2892 - 2909	**Units :**	390	**Composition (ppm)**	74579 C1	6491 C2	2767 C3	1121 C4	392 C5	-
Gas 2909 - 2919		60		9294	947	490	214	87	
Show Details	Hydrocarbon Fluorescence associated with most sandstone, see above.								

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 22 **DAYS FROM SPUD:** 22 **DATE:** 9 Jul 04 **0000 hrs DEPTH:** 2958m
LAST DEPTH: 2919m **24 HR PROGRESS:** 39m

0600 OPS: Circulating on bottom after cutting Core (2) 2958m – 2985m.

REMARKS: Run in hole to 2885m. MWD log cored section to 2919m. Drill ahead, rotate and slide as required to 2955m, circulate. Drill ahead 2955m – 2958m. Circulate hole clean, flow check and POH 2958m – 2586m. Flow check in casing, POH to 195m and flow check, pull to surface. Break out bit and down-load MWD and rack back. Hole Pre-Job Safety Meeting on making up core barrel. Run in hole with coring assembly.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004			**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**		**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =**	MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =**	43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	Meters
				Metres R.T.	**9 5/8" Casing Depth:=**		2586	Meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault	2567-2575		-2540				
Igneous Intrusive	2719	-2565.5	-	-	-	-2572.9	-2566.5
Top 2718	2860	-2694	-2664	30	Low	-2706.9	-2738.5
Top 2755	2899	-2729	-2699	30	Low	-2743.9	-2767.5
Top 2809			-2775			-2797.9	-2834.5
Top 2973			-2950			-2961.9	-3005.0
Top Basalt			-3005			-3019.9	-3058.0
TOTAL DEPTH							

Interval (m)			ROP (avg)	Lithology Description Siltstone, Claystone with minor Sandstone at the top of the section							
2919	-	2940	4.1 – 29 (14)	SILTSTONE: medium brownish grey to dark grey, firm to moderately hard, blocky to occasionally sub fissile, clastic grains: clay 30%, silt 60% very fine sand 10%, trace pyrite and micro mica, carbonaceous to very carbonaceous in part. CLAYSTONE: light grey to medium greyish brown, soft, amorphous and dispersive, clastic grains: clay 70%, silt 20%, very fine sand 10%, slightly calcareous. SANDSTONE: light to medium brown, firm to moderately hard, blocky, clastic grains: very fine sand 70%, fine sand 30%, medium sand trace, coarse sand trace, moderately to moderately well sorted, sub angular, sub spherical to sub elongate, moderately strong argillaceous cement, porosity inter granular 10%, no fluorescence.							
Gas average			**Units :**	4	**Composition (ppm)**	491 C1	54 C2	31 C3	10 C4	45 C5	-
Show Details			No Hydrocarbon Shows								

Interval (m)			ROP (avg)	Lithology Description Siltstone and Sandstone with minor Claystone at the base of the section							
2940	-	2958	19 – 41 (27)	SILTSTONE: medium grey to dark brown, firm to moderately hard, sub blocky, clastic grains: clay 30%, silt 50% very fine sand 15%, fine sand 5%, trace pyrite and micro mica, trace carbonaceous. SANDSTONE: light brown – clear to translucent, loose to small friable aggregates, clastic grains: clay 10%, silt 40%, very fine sand 20%, medium sand 20%, coarse sand 10%, poorly sorted, sub angular, sub elongate, weak argillaceous cement, porosity inter granular 5 -10%, no fluorescence. CLAYSTONE: light to medium grey, soft - dispersive, clastic grains: clay 70%, silt 15%, very fine sand 5%, slightly calcareous.							
Gas average			**Units :**	12	**Composition (ppm)**	1860 C1	180 C2	99 C3	41 C4	18 C5	-
Peak at 2946m				30		5197	501	273	104	43	
Show Details			No Hydrocarbon Shows								

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 23 **DAYS FROM SPUD:** 23 **DATE:** 10 Jul 04 **0000 hrs DEPTH:** 2985m
LAST DEPTH: 2958m **24 HR PROGRESS:** 27m

0600 OPS: Drilling ahead 8 ½" hole in the Eastern View Coal Measures at 3020m.

REMARKS: Run in hole to 2578m. Service top drive. Run in hole 2578m – 2927m. Ream down to 2958m, drop core barrel ball and take SCR's. Cut core (2) from 2958m – 2985m, break core with 20k O/P and circulate bottoms up 536units max gas. Flow check and POH 2985m – 2579m, flow check POH 2579m, 198m flow check, POH to surface. Hold Pre-Job Safety Meeting on laying down the core barrel, recover core 27.4m 100% recovery. Make up 8 ½" bit, align motor and upload MWD. Shallow test MWD and RIH to 2586m.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date	**TD =**		**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:	**G.L =**	MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig ENSCO 102	**R.T =**	43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	Meters
			Metres R.T.	**9 5/8" Casing Depth:=**		2586	Meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault	2567-2575		-2540				
Igneous Intrusive	2719	-2565.5	-	-	-	-2572.9	-2566.5
Top 2718	2860	-2694	-2664	30	Low	-2706.9	-2738.5
Top 2755	2899	-2729	-2699	30	Low	-2743.9	-2767.5
Top 2809	2959	-2785.5	-2775	10.5	Low	-2797.9	-2834.5
Top 2973			-2950			-2961.9	-3005.0
Top Basalt			-3005			-3019.9	-3058.0
TOTAL DEPTH							

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

Interval (m)			ROP (avg)	Lithology Description **Core (2) 2958m – 2985m (2809 sand)** **Cut 27m** **Recovered 27.4m (100%)**
2958	-	2963	9 – 53 (35)	**Core Summary** (typical sand descriptions for each interval, for more detail please refer to the lithology description file) SANDSTONE: light to medium brown, firm to moderately hard, Clastic grains: silt 20%, very fine sand 30%, fine sand 40%, medium sand 20% coarse sand trace, poorly sorted, sub angular, sub spherical, moderate to strong argillaceous cement, porosity inter granular 10 – 15%. Fluorescence trace to nil, dull green, patchy, no direct cut, very slow to trace crush cut, dull white cream residue ring.
2964	-	2967.5	36 – 65 (52)	SANDSTONE: light to medium brown, occasionally dark brown, moderately hard, Clastic grains: silt trace, very fine sand 5%, fine sand 10%, medium sand 30%, coarse sand 30%, very coarse sand 20%, granular sand trace, very poorly sorted, sub angular, sub elongate, moderately strong siliceous cement, porosity inter granular 15 – 20%. Fluorescence trace to nil, dull green, patchy, no direct cut, very slow to trace crush cut, dull white cream residue ring.
2968.5	-	2977.8	16 – 63 (47)	SANDSTONE: light brownish grey to medium grey, firm, clastic grains; clay matrix 10%, very fine sand 10%, fine sand 70%, medium sand 10%, moderately sorted, rounded, weak argillaceous cement, moderately strong siliceous cement, occasional carbonaceous grains, porosity inter granular 10%. Fluorescence trace, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.
2978.8	-	2985.4	16 – 61 (38)	SANDSTONE: (Becoming finer with depth) light brownish grey, firm, clastic grains; clay matrix 20%, silt 30%, very fine sand 40%, fine sand 10%, well sorted, rounded, sub spherical, moderate strong argillaceous cement. Porosity intergranular 10% decreasing to 3% with depth. Fluorescence trace down to 2981m, dull to bright green, patchy, no direct cut, very slow to trace crush cut, white cream residue ring.

Gas average 2958m – 2985m	**Units :**	446	**Composition (ppm)**	76806 C1	7681 C2	3451 C3	1377 C4	456 C5	-

Show Details	Gas show occurred throughout the cored section from 2958m – 2985m. Fluorescence was present intermittently from 2958m to 2981m see descriptions above.

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 24 **DAYS FROM SPUD:** 24 **DATE:** 11 Jul 04 **0000 hrs DEPTH:** 3235
LAST DEPTH: 2985m **24 HR PROGRESS:** 250m

0600 OPS: POH to log at 3070m.

REMARKS: RIH from 2586m to 2953m. Ream from 2953m – 2985m and log with MWD over cored section. Drilled ahead rotate and slide as required from 2985m – 3235m (3235m hole TD). Circulate hole clean and flow check, pump slug and POH from 3235m – 3185m.
TD reached at 22:00hrs on 11th July.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004			**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**		**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =**	MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =**	43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	Meters
				Metres R.T.	**9 5/8" Casing Depth:=**		2586	Meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault	2567-2575		-2540				
Igneous Intrusive	2719	-2565.5	-	-	-	-2572.9	-2566.5
Top 2718	2860	-2694	-2664	30	Low	-2706.9	-2738.5
Top 2755	2899	-2729	-2699	30	Low	-2743.9	-2767.5
Top 2809	2959	-2785.5	-2775	10.5	Low	-2797.9	-2834.5
Top 2973	3137	-2957	-2950	7	Low	-2961.9	-3005.0
Top Basalt	3192	-3011.5	-3005	6.5	Low	-3019.9	-3058.0
TOTAL DEPTH	3235	-3054.2					

Interval (m)			ROP (avg)	Lithology Description Siltstone with minor Sandstone						
2985	-	3000	3.5 – 19 (17)	SILTSTONE: medium brown / grey, soft - firm, sub blocky, clastic grains: 20% clay, 75% very fine sand, 5% fine sand, accessories: carbonaceous grains tr %. SANDSTONE: clear - translucent, loose - soft, sub blocky, clastic grains: 10% clay, 40% fine sand, 50% medium sand, tr% coarse sand, poorly sorted, sub angular - angular, sub elongate, cements/strengths: argillaceous / weak, porosity: inter granular 10%.						
Gas average			**Units :**	15	**Composition (ppm)**	1872 C1	188 C2	110 C3	64 C4	39 C5	-
Show Details			No Hydrocarbon shows								

Interval (m)			ROP (avg)	Lithology Description Sandstone and minor siltstone						
3000		3021	11 -37 (18)	SANDSTONE: white, clear - translucent, loose – soft, clastic grains: 20% fine sand, 40% medium sand, 30% coarse sand, 10% very coarse sand, poorly sorted, angular, elongate, cements/strengths: siliceous / weak, porosity: inter granular 20%. SILTSTONE: medium brown / grey, soft - firm, sub blocky, clastic grains: 20% clay, 75% very fine sand, 5% fine sand, accessories: carbonaceous tr %.						
Gas average			**Units :**	22	**Composition (ppm)**	3399 C1	263 C2	118 C3	51 C4	27 C5	-
Gas Peak 3003m				94		16643	1421	660	270	98	
Show Details			Gas show with no fluorescence occurred from 3003m – 3006m. see gas peak above.								

Interval (m)			ROP (avg)	Lithology Description Massive Siltstone with minor Claystone, Sandstone occurs only near the top if the section.						
3021	-	3114	8.3 – 41 (21)	SILTSTONE: medium - dark greyish brown, firm, sub fissile, clastic grains: 30% clay, 60% silt, 10% very fine sand, tr% fine sand, accessories: carbonaceous tr %, mica tr %. CLAYSTONE: light grey, soft to dispersive, clastic grains: 50% clay, 30% silt, 20% very fine sand. SANDSTONE: off white, light brown, soft – friable, clastic grains: 30% clay, 30% silt, 30% very fine sand, 10% fine sand, well sorted, sub rounded, sub shperical, cements/strengths: argillaceous / weak, accessories: carbonaceous grains tr % porosity inter granular tr%.						
Gas average			**Units :**	8	**Composition (ppm)**	776 C1	85 C2	68 C3	32 C4	18 C5	-
Show Details			No Shows								

Interval (m)	ROP (avg)	Lithology Description Sandstone and Siltstone

3114	-	3137	6.4 – 42 (16)	SANDSTONE: off white - light brown, moderately hard, sub blocky, clastic grains: 15% clay, 5% silt, 40% very fine sand, 40% fine sand, tr% medium sand, well sorted, sub angular, sub spherical, cements/strengths: argillaceous / moderately hard, accessories: argillaceous 15 %, carbonaceous tr % porosity: inter granular 5%. SILTSTONE: light - med brown, grey, firm – moderately hard, sub fissile, clastic grains: 10% clay, 70% silt, 20% very fine sand, tr% fine sand, accessories: carbonaceous tr %, mica tr %.							
Gas average			**Units :**	30	**Composition (ppm)**	4007 C1	534 C2	403 C3	172 C4	69 C5	-
Peak 3117m				207		30703	3466	2559	1122	421	
Show Details			Gas shows in Sandstones with no fluorescence from 3115m – 3120m. see above for gas peak.								

Interval (m)			**ROP (avg)**	**Lithology Description Sandstone and Siltstone (Top 2973 SD at 3137m)**							
3137	-	3180	8.8 – 53 (25)	SANDSTONE: (2973sand best porosity associated with gas shows) off white - light brown, soft, sub blocky, clastic grains: 10% clay, 20% very fine sand, 30% fine sand, 40% medium sand, moderately sorted, sub angular, sub spherical, cements/strengths: argillaceous / weak, accessories: kaolinite 15 % porosity: inter granular 10%. SANDSTONE: (lower porosity sands below 3162m) off white - light brown, firm, sub blocky, clastic grains: 30% clay, 60% very fine sand, 10% fine sand, well sorted, sub angular, sub spherical, cements/strengths: argillaceous / moderately strong, accessories: kaolinite 25 % porosity: inter granular 5%. SILTSTONE: light - medium grey, moderately hard, sub blocky, clastic grains: 20% clay, 50% silt, 30% very fine sand, accessories: carbonaceous tr %							
Gas average			**Units :**	77	**Composition (ppm)**	14253 C1	878 C2	327 C3	141 C4	50 C5	-
Gas peak 3149m				258		50257	3117	1108	486	184	-
Gas Peak 3162m				222		36866	2684	2036	1233	513	-
Show Details			Gas show with no fluorescence, 3139m – 3151m, 3160m – 3164m.								

Interval (m)	**ROP (avg)**	**Lithology Description Pyroclastic Volcanics, Sandstones, Siltstones**

3180	-	3192	22 – 41 (30)	VOLCANICS (PYROCLASTIC): off white – very light brown mottled, occasionally pale yellowish brown, firm, blocky, very fine groundmass, rare weathered feldspar and pyroxene, trace indistinct flow structure, commonly weathered to CLAY, trace black translucent OBSIDIAN. SANDSTONE: light brown - light grey, firm, sub blocky, clastic grains: 30% clay, 60% very fine sand, 10% fine sand, well sorted, sub angular, sub spherical, cements/strengths: argillaceous/mod, accessories: kaolinite 25 % porosity: inter granular 5%. SILTSTONE: med - dark grey, moderately hard, sub fissile, clastic grains: 30% clay, 40% silt, 30% very fine sand, tr% fine sand, accessories: carbonaceous tr %							
Gas average			**Units :**	6	**Composition (ppm)**	880 C1	46 C2	23 C3	13 C4	7 C5	-

Interval (m)			**ROP (avg)**	**Lithology Description** **Volcanic pyroclastic grading to Volcanic (ultramafic) with depth**							
3192	-	3235	8.8 – 43 (23)	VOLCANICS (PYROCLASTIC): as above VOLCANIC: (ultramafic) dark greenish / black, reddish brown / purplish grey, very common olivine to 70% occasionally weathering to serpentinite, minor pyroxene, occasional red / brown Fe oxide ground mass, common free calcite, rare indistinct flow structure.							
Gas average 3192m – 3209m			**Units :**	5	**Composition (ppm)**	592 C1	33 C2	20 C3	14 C4	11 C5	-
Show Details			No hydrocarbon shows.								

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 25 **DAYS FROM SPUD:** 25 **DATE:** 12 Jul 04 **0000 hrs DEPTH:** 3235
LAST DEPTH: 3235m **24 HR PROGRESS:** 0m

0600 OPS: RIH for Wiper-Trip current depth 2879m.

REMARKS: POH from TD at 3185m to 2586m. RIH for Wiper-Trip 2586m -3235m, circulate hole clean (max gas 732units). Flow check, POH 5 stands and pump slug. POH to 2579m flow-check, POH 2579m – 113m flow-check. POH to surface lay down MWD, BHA, Motor and variable gauge stabilizer. Hold Pre-Job Safety Meeting on rigging up Wireline. Rig up sheaths and run wireline Run (1) PEX-HRLA-CMR-SP-GR-LEHQT. Tight hole while running in at 2675m and 2776m, unable to pass 2776m, log up from 2776m. Rig down wireline, make up 8 ½" rotary assemble and RIH to 585m for a wiper-trip to bottom.
Temperature from Wireline Run (1) 111degC at 2776m after 12hr 50min. Assuming temperature gradient of 4.3deg/100m bottom hole temperature estimate after 12hrs 50min is 130.7 deg C at 3235m.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =** MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	Meters
			Metres R.T.	**9 5/8" Casing Depth:=**		2586	Meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault	2567-2575		-2540				
Igneous Intrusive	2719	-2565.5	-	-	-	-2572.9	-2566.5
Top 2718	2860	-2694	-2664	30	Low	-2706.9	-2738.5
Top 2755	2899	-2729	-2699	30	Low	-2743.9	-2767.5
Top 2809	2959	-2785.5	-2775	10.5	Low	-2797.9	-2834.5
Top 2973	3137	-2957	-2950	7	Low	-2961.9	-3005.0
Top Basalt	3192	-3011.5	-3005	6.5	Low	-3019.9	-3058.0
TOTAL DEPTH	3235	-3054.2					

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 26 **DAYS FROM SPUD:** 26 **DATE:** 13 Jul 04 **0000 hrs DEPTH:** 3235
LAST DEPTH: 3235m **24 HR PROGRESS:** 0m

0600 OPS: Running Wireline log Run (2) PEX-HRLA-CMR-SP-GR-LEHQT.

REMARKS: RIH to 2559m. Held Pre-Job Safety Meeting then inspect brake, service top drive and crown block. RIH 2559m – 3235m wipe tight hole at 2777m, circulate 2 x BU at 3235m, max gas 367units. POH to 3208m circulate and flow check. POH 3208m – 2763m, pump through tight spots at 3195m, 3085m, 3075m, POH to 2646m. RIH wash and ream 2646m – 2790m, tight 2766m and 2783m, ream through tight spots 5 times. RIH 2790m – 3208m, wash down 3208m – 3235m. Circulate 1 ½ x BU, gas 82 units. Flow check and POH 3235m – 2880m, pump through tight spots at 3217m, 3169m and 3118m, pump slug and POH from 2880m. Flow check at shoe 2586m. POH to 149m, flow check. POH to surface and rack back BHA, clear rig floor and prepare for wireline logging.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07	
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47	
Rig release Date:		**G.L =** MSL	**Metres R.T.**		**20" Conductor Depth: =**	220	Metres	
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**		**13 3/8" Casing Depth:=**	884	Meters	
			Metres R.T.		**9 5/8" Casing Depth:=**	2586	Meters	

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault	2567-2575		-2540				
Igneous Intrusive	2719	-2565.5	-	-	-	-2572.9	-2566.5
Top 2718	2860	-2694	-2664	30	Low	-2706.9	-2738.5
Top 2755	2899	-2729	-2699	30	Low	-2743.9	-2767.5
Top 2809	2959	-2785.5	-2775	10.5	Low	-2797.9	-2834.5
Top 2973	3137	-2957	-2950	7	Low	-2961.9	-3005.0
Top Basalt	3192	-3011.5	-3005	6.5	Low	-3019.9	-3058.0
TOTAL DEPTH	3235	-3054.2					

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 27 **DAYS FROM SPUD:** 27 **DATE:** 14 Jul 04 **0000 hrs DEPTH:** 3235
LAST DEPTH: 3235m **24 HR PROGRESS:** 0m

0600 OPS: Running Wire-line log Run (4) VSI-GR_LE HQT current depth 1475m.

REMARKS: Hold Pre-Job Safety Meeting on rigging up Schlumberger wire-line. Rig up Sheaths, rig up wire-line Run (2) PEX-HRLA-CMR-SP-GR-LEHQT, wire-line TD 3235.5m BHT 125degC. Run wire-line Run (3) FMI-DSI-HNGS-ECS-LEHQT. Rig up and Run into hole Wire-line Run (4) VSI-GR-LEHQT.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date	**TD =**		**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:	**G.L =**	MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig ENSCO 102	**R.T =**	43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	Meters
			Metres R.T.	**9 5/8" Casing Depth:=**		2586	Meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault	2567-2575		-2540				
Igneous Intrusive	2719	-2565.5	-	-	-	-2572.9	-2566.5
Top 2718	2860	-2694	-2664	30	Low	-2706.9	-2738.5
Top 2755	2899	-2729	-2699	30	Low	-2743.9	-2767.5
Top 2809	2959	-2785.5	-2775	10.5	Low	-2797.9	-2834.5
Top 2973	3137	-2957	-2950	7	Low	-2961.9	-3005.0
Top Basalt	3192	-3011.5	-3005	6.5	Low	-3019.9	-3058.0
TOTAL DEPTH	3235	-3054.2					

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 28 **DAYS FROM SPUD:** 28 **DATE:** 15 Jul 04 **0000 hrs DEPTH:** 3235
LAST DEPTH: 3235m **24 HR PROGRESS:** 0m

0600 OPS: Running Wireline log Run (5) MDT-GR-CMR-LEHQT collecting formation fluid and gas samples. Pre-test summary 52 stations 34 valid tests, 2 lost seals, 4 supercharged, 12 tight.

REMARKS: Run Wireline log Run (4) VSI-GR-LEHQT survey 3230m – 770m. Run Wireline log Run (5) MDT-GR-CMR-LEHQT (pressure tests and samples).

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date	**TD =**		**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:	**G.L =**	MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig ENSCO 102	**R.T =**	43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	Meters
			Metres R.T.	**9 5/8" Casing Depth:=**		2586	Meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault	2567-2575		-2540				
Igneous Intrusive	2719	-2565.5	-	-	-	-2572.9	-2566.5
Top 2718	2860	-2694	-2664	30	Low	-2706.9	-2738.5
Top 2755	2899	-2729	-2699	30	Low	-2743.9	-2767.5
Top 2809	2959	-2785.5	-2775	10.5	Low	-2797.9	-2834.5
Top 2973	3137	-2957	-2950	7	Low	-2961.9	-3005.0
Top Basalt	3192	-3011.5	-3005	6.5	Low	-3019.9	-3058.0
TOTAL DEPTH	3235	-3054.2					

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 29 **DAYS FROM SPUD:** 29 **DATE:** 16 Jul 04 **0000 hrs DEPTH:** 3235
LAST DEPTH: 3235m **24 HR PROGRESS:** 0m

0600 OPS: Running Wireline log Run (6) MSCT-GR_LEHQT, cut 7 cores of 25.

REMARKS: Run Wireline log Run (5) MDT-GR-CMR-LEHQT (sampling program). OFA and sampling program. 8 sample stations, 1 OFA analysis only, 2 tight ,3 stations 1x 450cc sample taken, 1 station sample chamber failed to open,1 station 2 x 450cc samples taken. Run down to bottom and log up to 9 5/8" casing shoe with CMR. (2hrs 47min lost time during CMR log). POH to surface and recover samples. Run in hole wireline Run (6) MSCT-GR

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**	**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =** MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig	ENSCO 102	**R.T =** 43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	Meters
			Metres R.T.	**9 5/8" Casing Depth:=**		2586	Meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault	2567-2575		-2540				
Igneous Intrusive	2719	-2565.5	-	-	-	-2572.9	-2566.5
Top 2718	2860	-2694	-2664	30	Low	-2706.9	-2738.5
Top 2755	2899	-2729	-2699	30	Low	-2743.9	-2767.5
Top 2809	2959	-2785.5	-2775	10.5	Low	-2797.9	-2834.5
Top 2973	3137	-2957	-2950	7	Low	-2961.9	-3005.0
Top Basalt	3192	-3011.5	-3005	6.5	Low	-3019.9	-3058.0
TOTAL DEPTH	3235	-3054.2					

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 30 **DAYS FROM SPUD:** 30 **DATE:** 17 Jul 04 **0000 hrs DEPTH:** 3235
LAST DEPTH: 3235m **24 HR PROGRESS:** 0m

0600 OPS: Pulling out of the hole, post wireline logging wipertrip to 3235m TD.

REMARKS:

Run in hole wireline Run (6) MSCT-GR, attempt 3 cores in the 2973sand, bit stalling POH to adjust WOB. Run in cut 4 cores in the 2973m sand, pull up to 9 5/8" casing shoe to clear actuating arm, cut 7 cores in the 2458sand, cut 2 cores in the 2718sand and 2 cores in sands below the 2809sands. Pull up to 9 5/8" casing shoe to clear actuating arm, run in and cut 2 cores in the 2973sand. Results 20 cores attempted, 8 cores accepted. POH Schlumberger and rigged down. Made up 8 ½" rotary assembly, install auto-slips and repaired hydraulic hose on top drive. RIH to 2560m fill pipe each 15 stands, circulate bottoms up 1.5 x hole volume, max gas 1065units. Function test BOP and annulus, check emergence shut-down and service top drive. RIH 2560m to 3208m.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004		**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date	**TD =**		**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:	**G.L =**	MSL	**Metres R.T.**	**20" Conductor Depth: =**		220	Metres
Rig ENSCO 102	**R.T =**	43	**Metres R.T.**	**13 3/8" Casing Depth:=**		884	Meters
			Metres R.T.	**9 5/8" Casing Depth:=**		2586	Meters

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault	2567-2575		-2540				
Igneous Intrusive	2719	-2565.5	-	-	-	-2572.9	-2566.5
Top 2718	2860	-2694	-2664	30	Low	-2706.9	-2738.5
Top 2755	2899	-2729	-2699	30	Low	-2743.9	-2767.5
Top 2809	2959	-2785.5	-2775	10.5	Low	-2797.9	-2834.5
Top 2973	3137	-2957	-2950	7	Low	-2961.9	-3005.0
Top Basalt	3192	-3011.5	-3005	6.5	Low	-3019.9	-3058.0
TOTAL DEPTH	3235	-3054.2					

ORIGIN ENERGY RESOURCES LIMITED
DAILY GEOLOGICAL REPORT

WELL: Yolla-4 **REPORT No.:** 31 **DAYS FROM SPUD:** 31 **DATE:** 18 Jul 04 **0000 hrs DEPTH:** 3235
LAST DEPTH: 3235m **24 HR PROGRESS:** 0m

0600 OPS: Running in hole with 6 5/8" liner .

REMARKS:

Washing down from 3208m – 3235m. Circulate and condition mud 9.5+ to 9.4ppg, max gas 3003units. Flow-check. Attempt POH no go, pump out 3235m – 2772m, ream through tight spots at 3208m, 3140m, 2879m and 2850m. POH 2772m – 2656m. RIH 2656m – 3235m, ream through 2777m, circulate B/U max gas 34units. Attempt POH no go, pumped out from 3235m – 3121m, reamed tight hole at 2908m, 2905m. POH 2889m – 2586m (shoe), unable to POH without pumps below 2772m. Flow check, pump slug and drop 2 3/8" hollow rabbit. POH to surface. Recover rabbit, B/O bit and lay down 8 ½" STAB. Clear fig floor. Rig up 6 5/8" liner handling equipment. Hold Pre-Job Safety Meeting on running 6 5/8" liner. Pick up and make up shoe track. While pumping through tight hole the cuttings consisted of; 80% small siltstone commonly carbonaceous cuttings, 10% coal and 10% volcanic mainly pyroclastic.

Geologists: Mike Woodmansee / Mark Tindale

PRIMARY OBJECTIVES:		SECONDARY OBJECTIVES:	
Eastern View Coal Measures	Sands 2718, 2755, 2809, 2973	Eastern View Coal Measures	Top Formation

Spud Date:	18th June 2004			**Surface Location**	**Latitude**	39°50'40.5920"S	**Easting**	398905.07
TD Reached Date		**TD =**		**Metres R.T.**	**Longitude**	145°49'06.0569"E	**Northing**	5588821.47
Rig release Date:		**G.L =**	MSL	**Metres R.T.**	**20" Conductor Depth: =**	220	Metres	
Rig	ENSCO 102	**R.T =**	43	**Metres R.T.**	**13 3/8" Casing Depth:=**	884	Meters	
				Metres R.T.	**9 5/8" Casing Depth:=**	2586	Meters	

(Nearby Well / Facility: Yolla A Production Platform adjacent)

	All Depth are in METRES					Offset wells	
						Yolla 1	Yolla 2
FORMATION TOPS: * Geophysical	**Geological Pick (MD)**	**Geological Pick (TVDSS)**	**Prognosed (mTVDSS)**	**Diff.**	**High Low**	**(m)**	**(m)**
Water Bottom	124.8	-81	-81.8	-0.8	High	-79	-81.5
Angahook Fm	1100	-1057	-1062	-5	High	-1042.0	-1062.5
Top Volcanics	1280	-1237	-1201	+36	Low	-1250.9	-1265.5
Base Volcanics	1415	-1371	-1378	-7	High	-1290.9	-1291.0
Top Demons Bluff	1723	-1659	-1670	-11	High	-1656.9	-1680.5
Top EVCM	1879.5	-1801				-1787.9	-1819.0
Top EVCM TEV4 sand	1908	-1827	-1830	-3	High	-1819.0	-1863.5
Coal Marker	2516.5	-2381	-2395	-14	High	-2331.9	-2380.5
Fault	2567-2575		-2540				
Igneous Intrusive	2719	-2565.5	-	-	-	-2572.9	-2566.5
Top 2718	2860	-2694	-2664	30	Low	-2706.9	-2738.5
Top 2755	2899	-2729	-2699	30	Low	-2743.9	-2767.5
Top 2809	2959	-2785.5	-2775	10.5	Low	-2797.9	-2834.5
Top 2973	3137	-2957	-2950	7	Low	-2961.9	-3005.0
Top Basalt	3192	-3011.5	-3005	6.5	Low	-3019.9	-3058.0
TOTAL DEPTH	3235	-3054.2					

APPENDIX 18: MUD ENGINEERS REPORTS

Well Name	**Yolla-4**
Operator	**Origin Energy Resources Ltd**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Interval Inventory Report

Interval # 01		**From Date**	**15/06/2004**		**Top of Interval**		**0.0 m**	
Max. Hole Size / Bit Size	**16.000 / 16.000 in**	**To Date**	**22/06/2004**		**Bottom of Interval**		**900.0 m**	
Product Name	**Units**	**Starting**	**Received**	**Used**	**Returned**	**Ending**	**Weight lb**	
BARACARB 100	1200 kg bulk		4.000		4.000			
BARACARB 25	1200 kg bag		4.0		4.0			
Baracide	25 kg can		8.0			8.0	440.92	
BARACOR 129	25 kg can		64.0	2.0		62.0	3,417.16	
BARA-DEFOAM W300	25 l can		2.0			2.0	96.72	
BARAFILM	55 gal drum		1.0			1.0	422.00	
barite	100 lb bulk		2,443.000			2,443.000	244,300.00	
BAROFIBRE	25 lb bag		80.0			80.0	2,000.00	
BAROLIFT	15 lb box		6.0			6.0	90.00	
bentonite	100 lb bulk		1,771.000	1,040.000		731.000	73,100.00	
calcium chloride	25 kg bag		54.0			54.0	2,976.24	
caustic soda	25 kg pail		108.0	24.0		84.0	4,629.71	
Circal 60/16	1200 kg bag		4.0			4.0	10,582.19	
Circal Y	1200 kg bag		4.0			4.0	10,582.19	
citric acid	25 kg bag		36.0			36.0	1,984.16	
CON DET	25 l can		20.0			20.0	1,129.13	
Desco CF	25 lb bag		40.0			40.0	1,000.00	
Drispac R	50 lb bag		120.0			120.0	6,000.00	
Drispac Superlo	50 lb bag		160.0			160.0	8,000.00	
EZ SPOT	208 l drum		4.0			4.0	4,216.00	
Flowzan	25 kg bag		80.0			80.0	4,409.25	
guar gum	25 kg bag		52.0			52.0	2,866.01	
Kwikseal Coarse	40 lb bag		20.0			20.0	800.00	
Kwikseal Medium	40 lb bag		20.0			20.0	800.00	
lime	20 kg bag		75.0	12.0		63.0	2,777.82	
PETROFREE ESTER	208 l drum		24.0			24.0	9,458.51	
Potassium Chloride Bulk	1000 kg bulk		10.000	1.000		9.000	19,841.60	
sapp	25 kg bag		40.0			40.0	2,204.62	
soda ash	25 kg bag		67.0	10.0		57.0	3,141.59	
sodium bicarbonate	25 kg bag		35.0			35.0	1,929.04	
Soltex	50 lb bag		240.0			240.0	12,000.00	
					Total Weight of Products in Stock lb		**435,194.87**	
					Total Weight of Products in Stock, Metric Tons		**197.40**	

Well Name	**Yolla-4**
Operator	**Origin Energy Resources Ltd**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Interval Inventory Report

Interval # 02		**From Date**	**23/06/2004**		**Top of Interval**		**900.0 m**	
Max. Hole Size / Bit Size	**18.000 / 16.000 in**	**To Date**	**04/07/2004**		**Bottom of Interval**		**2,614.0 m**	
Product Name	**Units**	**Starting**	**Received**	**Used**	**Returned**	**Ending**	**Weight lb**	
Ammonium Bisulphite	260 kg drum		8.0			8.0	4,585.61	
BARACARB 100	1200 kg bulk	8.000				8.000	21,164.38	
BARACARB 25	1200 kg bag	8.0				8.0	21,164.38	
Baracide	25 kg can	8.0	32.0	4.0		36.0	1,984.16	
BARACOR 129	25 kg can	62.0		56.0		6.0	330.69	
BARA-DEFOAM W300	25 l can	2.0	16.0	1.0		17.0	822.12	
BARAFILM	55 gal drum	1.0				1.0	422.00	
barite	100 lb bulk	2,443.000	1,014.000		500.000	2,957.000	295,700.00	
BAROFIBRE	25 lb bag	80.0				80.0	2,000.00	
BAROLIFT	15 lb box	6.0				6.0	90.00	
bentonite	100 lb bulk	731.000		140.000		591.000	59,100.00	
bentonite	25 kg bag		288.0	46.0		242.0	13,337.97	
calcium chloride	25 kg bag	54.0		7.0		47.0	2,590.43	
caustic soda	25 kg pail	84.0		27.0		57.0	3,141.59	
Circal 60/16	1200 kg bag	4.0				4.0	10,582.19	
Circal Y	1200 kg bag	4.0				4.0	10,582.19	
citric acid	25 kg bag	36.0				36.0	1,984.16	
CON DET	25 l can	20.0				20.0	1,129.13	
Desco CF	25 lb bag	40.0	40.0	40.0		40.0	1,000.00	
Drispac R	50 lb bag	120.0	280.0	216.0		184.0	9,200.00	
Drispac Superlo	50 lb bag	160.0	360.0	230.0		290.0	14,500.00	
EZ SPOT	208 l drum	4.0				4.0	4,216.00	
Flowzan	25 kg bag	80.0	80.0	38.0		122.0	6,724.10	
guar gum	25 kg bag	52.0				52.0	2,866.01	
Kwikseal Coarse	40 lb bag	20.0				20.0	800.00	
Kwikseal Medium	40 lb bag	20.0				20.0	800.00	
lime	20 kg bag	63.0		7.0		56.0	2,469.18	
NO-SULF	17 kg pail		57.0			57.0	2,136.28	
PETROFREE ESTER	208 l drum	24.0				24.0	9,458.51	
Potassium Chloride Bulk	1000 kg bulk	9.000				9.000	19,841.60	
sapp	25 kg bag	40.0				40.0	2,204.62	
soda ash	25 kg bag	57.0	40.0	23.0		74.0	4,078.55	
sodium bicarbonate	25 kg bag	35.0				35.0	1,929.04	
Soltex	50 lb bag	240.0	400.0	360.0		280.0	14,000.00	
					Total Weight of Products in Stock lb		**982,129.75**	
					Total Weight of Products in Stock, Metric Tons		**445.49**	

Well Name	**Yolla-4**
Operator	**Origin Energy Resources Ltd**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Interval Inventory Report

Interval # 03		**From Date**	**05/07/2004**		**Top of Interval**		**2,614.0 m**	
Max. Hole Size / Bit Size	**8.500 / 8.500 in**	**To Date**	**20/07/2004**		**Bottom of Interval**		**3,235.0 m**	
Product Name	**Units**	**Starting**	**Received**	**Used**	**Returned**	**Ending**	**Weight lb**	
Ammonium Bisulphite	260 kg drum	8.0	4.0	9.0		3.0	1,719.61	
BARABUF	50 lb bag		30.0			30.0	1,500.00	
BARACARB 100	1200 kg bulk	8.000				8.000	21,164.38	
BARACARB 25	1200 kg bag	8.0				8.0	21,164.38	
Baracide	25 kg can	36.0		17.0		19.0	1,047.20	
BARACOR 100	208 l drum		4.0			4.0	1,833.04	
BARACOR 129	25 kg can	6.0		3.0		3.0	165.35	
BARA-DEFOAM W300	25 l can	17.0		2.0		15.0	725.40	
BARAFILM	55 gal drum	1.0				1.0	422.00	
barite	100 lb bulk	3,957.000		659.000		3,298.000	329,800.00	
BAROFIBRE	25 lb bag	80.0				80.0	2,000.00	
BAROLIFT	15 lb box	6.0				6.0	90.00	
bentonite	100 lb bulk	591.000				591.000	59,100.00	
bentonite	25 kg bag	242.0		1.0		241.0	13,282.85	
calcium chloride	25 kg bag	47.0				47.0	2,590.43	
caustic soda	25 kg pail	57.0	32.0	67.0		22.0	1,212.54	
Circal 60/16	1200 kg bag	4.0				4.0	10,582.19	
Circal Y	1200 kg bag	4.0				4.0	10,582.19	
citric acid	25 kg bag	36.0				36.0	1,984.16	
CON DET	25 l can	20.0				20.0	1,129.13	
Desco CF	25 lb bag	40.0		4.0		36.0	900.00	
Drispac R	50 lb bag	184.0		33.0		151.0	7,550.00	
Drispac Superlo	50 lb bag	290.0		168.0		122.0	6,100.00	
EZ SPOT	208 l drum	4.0				4.0	4,216.00	
Flowzan	25 kg bag	122.0		46.0		76.0	4,188.78	
guar gum	25 kg bag	52.0				52.0	2,866.01	
Kwikseal Coarse	40 lb bag	20.0				20.0	800.00	
Kwikseal Medium	40 lb bag	20.0	20.0			40.0	1,600.00	
lime	20 kg bag	56.0				56.0	2,469.18	
NO-SULF	17 kg pail	57.0				57.0	2,136.28	
N-VIS P PLUS	50 lb bag		50.0			50.0	2,500.00	
PETROFREE ESTER	208 l drum	24.0				24.0	9,458.51	
Potassium Chloride Bulk	1000 kg bulk	9.000				9.000	19,841.60	
salt	1200 kg bulk		40.000			40.000	105,821.88	
sapp	25 kg bag	40.0				40.0	2,204.62	
soda ash	25 kg bag	74.0		29.0		45.0	2,480.20	
sodium bicarbonate	25 kg bag	35.0		9.0		26.0	1,433.00	
Soltex	50 lb bag	280.0		280.0				
Soltex Potassium	50 lb bag		80.0	5.0		75.0	3,750.00	
UltraSal 20E	50 lb bag		144.0			144.0	7,200.00	

Well Name	Yolla-4
Operator	Origin Energy Resources Ltd
Contractor	Ensco Australia Pty Ltd
Rig No	Ensco 102
Unit System	Esso

Interval Inventory Report

Total Weight of Products in Stock lb	1,651,740.66
Total Weight of Products in Stock, Metric Tons	749.22

Well Name	**Yolla-4**
Operator	**Origin Energy Resources Ltd**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Interval Inventory Report

Interval # 04	**From Date**	**21/07/2004**		**Top of Interval**		**3,235.0 m**	
Max. Hole Size / Bit Size	**To Date**	**08/08/2004**		**Bottom of Interval**		**3,235.0 m**	
Product Name	**Units**	**Starting**	**Received**	**Used**	**Returned**	**Ending**	**Weight lb**
Ammonium Bisulphite	260 kg drum	3.0	4.0	2.0		5.0	2,866.01
BARABUF	50 lb bag	30.0		3.0		27.0	1,350.00
BARACARB 100	1200 kg bulk	8.000				8.000	21,164.38
BARACARB 25	1200 kg bag	8.0				8.0	21,164.38
Baracide	25 kg can	19.0		2.0		17.0	936.96
BARACOR 100	208 l drum	4.0		1.0		3.0	1,374.78
BARACOR 129	25 kg can	3.0				3.0	165.35
BARA-DEFOAM W300	25 l can	15.0				15.0	725.40
BARAFILM	55 gal drum	1.0				1.0	422.00
barite	100 lb bulk	3,298.000				3,298.000	329,800.00
BAROFIBRE	25 lb bag	80.0				80.0	2,000.00
BAROLIFT	15 lb box	6.0				6.0	90.00
bentonite	100 lb bulk	591.000	690.000			1,281.000	128,100.00
bentonite	25 kg bag	241.0				241.0	13,282.85
calcium chloride	25 kg bag	47.0				47.0	2,590.43
caustic soda	25 kg pail	22.0	32.0	15.0		39.0	2,149.51
Circal 60/16	1200 kg bag	4.0				4.0	10,582.19
Circal Y	1200 kg bag	4.0				4.0	10,582.19
citric acid	25 kg bag	36.0				36.0	1,984.16
CON DET	25 l can	20.0		14.0		6.0	338.74
Desco CF	25 lb bag	36.0				36.0	900.00
Drispac R	50 lb bag	151.0				151.0	7,550.00
Drispac Superlo	50 lb bag	122.0				122.0	6,100.00
EZ SPOT	208 l drum	4.0				4.0	4,216.00
Flowzan	25 kg bag	76.0		13.0		63.0	3,472.28
guar gum	25 kg bag	52.0				52.0	2,866.01
Kwikseal Coarse	40 lb bag	20.0				20.0	800.00
Kwikseal Medium	40 lb bag	40.0				40.0	1,600.00
lime	20 kg bag	56.0				56.0	2,469.18
NO-SULF	17 kg pail	57.0				57.0	2,136.28
N-VIS P PLUS	50 lb bag	50.0		12.0		38.0	1,900.00
PETROFREE ESTER	208 l drum	24.0				24.0	9,458.51
Potassium Chloride Bulk	1000 kg bulk	9.000				9.000	19,841.60
salt	1200 kg bulk	40.000	2.000	32.000		10.000	26,455.47
sapp	25 kg bag	40.0				40.0	2,204.62
soda ash	25 kg bag	45.0				45.0	2,480.20
sodium bicarbonate	25 kg bag	26.0				26.0	1,433.00
Soltex	50 lb bag						
Soltex Potassium	50 lb bag	75.0				75.0	3,750.00
UltraSal 20E	50 lb bag	144.0		90.0		54.0	2,700.00

Well Name	Yolla-4
Operator	Origin Energy Resources Ltd
Contractor	Ensco Australia Pty Ltd
Rig No	Ensco 102
Unit System	Esso

Interval Inventory Report

Total Weight of Products in Stock lb	2,305,743.13
Total Weight of Products in Stock, Metric Tons	1,045.87

Company	**Origin Energy Resources Ltd**
Well Name	**Yolla-4**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Fluid Volume Record Report

			Additions							Losses					Volumes			
Report No	Date	Initial Volume bbl	Received & Mixed bbl	Base bbl	Water bbl	Barite bbl	Chemicals bbl	Other bbl	Daily Total bbl	SCE bbl	Downhole bbl	Misc bbl	Returned & Mixed bbl	Daily Total bbl	Hole Volume bbl	Active Pit Volume bbl	Reserve Volume bbl	Final Volume bbl
Interval # 01																		
Fluid Name:	**Seawater**																	
003	17/06/2004				227.2				227.2						227.2			227.2
004	18/06/2004	227.2										30.0		30.0	197.2			197.2
005	19/06/2004	197.2			460.2				460.2						657.3			657.3
006	20/06/2004	657.3			93.5				93.5			750.8		750.8				
007	21/06/2004				1.0				1.0								1.0	1.0
008	22/06/2004	1.0										1.0		1.0				
Cumulative Volume					781.9				781.9			781.8		781.8				
Fluid Name:	**Seawater/Bentonite**																	
003	17/06/2004		247.0		162.9		0.1		410.0								410.0	410.0
005	19/06/2004	410.0	935.2		320.0		1.7		1,256.9			1,293.9		1,293.9			373.0	373.0
006	20/06/2004	373.0	90.0		59.0				149.0			482.0		482.0			40.0	40.0
007	21/06/2004	40.0											40.0	40.0				
Cumulative Volume			1,272.2		541.9		1.8		1,815.9			1,775.9	40.0	1,815.9				
Fluid Name:	**Hi-Vis Bentonite Sweeps**																	
001	15/06/2004				1,540.5		50.5		1,591.0								1,591.0	1,591.0
002	16/06/2004	1,591.0			615.2		5.8		621.0								2,212.0	2,212.0
003	17/06/2004	2,212.0			1,268.0		49.0		1,317.0				247.0	247.0			3,282.0	3,282.0
004	18/06/2004	3,282.0			7.5		14.5		22.0								3,304.0	3,304.0
005	19/06/2004	3,304.0					3.2		3.2			350.0	935.2	1,285.2			2,022.0	2,022.0
006	20/06/2004	2,022.0										854.1	90.0	944.1	750.9		327.0	1,077.9
007	21/06/2004	1,077.9	40.0						40.0			867.9		867.9			250.0	250.0
008	22/06/2004	250.0										58.0		58.0			192.0	192.0
Cumulative Volume			40.0		3,431.2		123.0		3,594.2			2,130.0	1,272.2	3,402.2				

Company	**Origin Energy Resources Ltd**
Well Name	**Yolla-4**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Fluid Volume Record Report

			Additions							Losses					Volumes			
Report No	Date	Initial Volume bbl	Received & Mixed bbl	Base bbl	Water bbl	Barite bbl	Chemicals bbl	Other bbl	Daily Total bbl	SCE bbl	Downhole bbl	Misc bbl	Returned & Mixed bbl	Daily Total bbl	Hole Volume bbl	Active Pit Volume bbl	Reserve Volume bbl	Final Volume bbl
Interval # 02																		
Fluid Name:	**Hi-Vis Bentonite Sweeps**																	
010	24/06/2004	192.0										17.0	175.0	192.0				
Cumulative Volume												17.0	175.0	192.0				
Fluid Name:	**Seawater/Drispac/Soltex**																	
011	25/06/2004		987.1						987.1			76.8		76.8	429.3	398.0	83.0	910.3
012	26/06/2004	910.3	1,036.0				3.3		1,039.3	410.7		100.0		510.7	599.9	604.0	235.0	1,438.9
013	27/06/2004	1,438.9	426.8				2.5		429.3	294.7				294.7	712.5	626.0	235.0	1,573.5
014	28/06/2004	1,573.5	738.5				3.5		742.0	288.1				288.1	864.4	708.0	455.0	2,027.4
015	29/06/2004	2,027.4	804.6				3.4		808.0	391.8				391.8	1,090.5		1,353.0	2,443.5
016	30/06/2004	2,443.5	437.6				3.8		441.4	550.3				550.3	1,203.6	757.0	374.0	2,334.6
017	1/07/2004	2,334.6	249.0				0.6		249.6	146.5				146.5	1,221.8		1,216.0	2,437.8
018	2/07/2004	2,437.8					0.5		0.5	55.5				55.5	1,281.8	662.0	439.0	2,382.8
019	3/07/2004	2,382.8								76.1				76.1	631.7	523.0	1,152.0	2,306.7
020	4/07/2004	2,306.7								41.0	10.0	380.0		431.0	631.7	300.0	944.0	1,875.7
Cumulative Volume			4,679.6				17.6		4,697.2	2,254.7	10.0	556.8		2,821.5				
Fluid Name:	**Premix**																	
009	23/06/2004				2,214.1		51.9		2,266.0								2,266.0	2,266.0
010	24/06/2004	2,266.0	175.0				3.1		178.1								2,444.1	2,444.1
011	25/06/2004	2,444.1											987.1	987.1			1,457.0	1,457.0
012	26/06/2004	1,457.0											932.0	932.0			525.0	525.0
013	27/06/2004	525.0			600.0		9.8		609.8				426.8	426.8			708.0	708.0
014	28/06/2004	708.0			600.0		3.5		603.5				738.5	738.5			573.0	573.0
015	29/06/2004	573.0			600.0		16.6		616.6				804.6	804.6		385.0		385.0
016	30/06/2004	385.0			300.0		1.6		301.6				437.6	437.6			249.0	249.0
017	1/07/2004	249.0											249.0	249.0				
Cumulative Volume			175.0		4,314.1		86.5		4,575.6				4,575.6	4,575.6				

Company	**Origin Energy Resources Ltd**
Well Name	**Yolla-4**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Fluid Volume Record Report

			Additions							Losses					Volumes			
Report No	Date	Initial Volume bbl	Received & Mixed bbl	Base bbl	Water bbl	Barite bbl	Chemicals bbl	Other bbl	Daily Total bbl	SCE bbl	Downhole bbl	Misc bbl	Returned & Mixed bbl	Daily Total bbl	Hole Volume bbl	Active Pit Volume bbl	Reserve Volume bbl	Final Volume bbl
Fluid Name:	**PHBentonite**																	
011	25/06/2004				401.6		19.4		421.0								421.0	421.0
012	26/06/2004	421.0											104.0	104.0			317.0	317.0
Cumulative Volume					401.6		19.4		421.0				104.0	104.0				

Company	**Origin Energy Resources Ltd**
Well Name	**Yolla-4**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Fluid Volume Record Report

			Additions							Losses					Volumes			
Report No	Date	Initial Volume bbl	Received & Mixed bbl	Base bbl	Water bbl	Barite bbl	Chemicals bbl	Other bbl	Daily Total bbl	SCE bbl	Downhole bbl	Misc bbl	Returned & Mixed bbl	Daily Total bbl	Hole Volume bbl	Active Pit Volume bbl	Reserve Volume bbl	Final Volume bbl
Interval # 03																		
Fluid Name:	**Seawater/Drispac/Soltex**																	
021	5/07/2004	1,875.7	318.6				5.6		324.2	56.6				56.6	575.4	538.0	1,030.0	2,143.4
022	6/07/2004	2,143.4	624.8		60.0	2.1	10.0		696.9	95.6	30.0	50.0		175.6	628.7	460.0	1,576.0	2,664.7
023	7/07/2004	2,664.7				3.0	0.2		3.2			12.9		12.9	628.0	476.0	1,551.0	2,655.0
024	8/07/2004	2,655.0	23.9				1.2		25.1	27.7		6.7		34.4	679.7	425.0	1,541.0	2,645.7
025	9/07/2004	2,645.7	211.0				5.9		216.9	25.5				25.5	680.1	463.0	1,694.0	2,837.1
026	10/07/2004	2,837.1								7.7		10.0		17.7	648.5	490.0	1,681.0	2,819.5
027	11/07/2004	2,819.5	392.0			28.4	9.9		430.3	70.3	190.0	50.0		310.3	691.5	501.0	1,747.0	2,939.5
028	12/07/2004	2,939.5	59.8			3.4	2.7		65.9	37.2		663.0		700.2	757.2	353.0	1,195.0	2,305.2
029	13/07/2004	2,305.2	293.0		23.0	5.3	2.3		323.6	32.6		60.0		92.6	781.2	431.0	1,324.0	2,536.2
030	14/07/2004	2,536.2			1.7		0.3		2.0						781.2	434.0	1,323.0	2,538.2
031	15/07/2004	2,538.2				2.6			2.6			127.6		127.6	781.2	460.0	1,172.0	2,413.2
032	16/07/2004	2,413.2					1.0		1.0						781.2	461.0	1,172.0	2,414.2
033	17/07/2004	2,414.2					0.3		0.3	0.7				0.7	694.8	369.0	1,350.0	2,413.8
034	18/07/2004	2,413.8			35.0		1.2		36.2	55.8				55.8	781.2	318.0	1,295.0	2,394.2
035	19/07/2004	2,394.2					0.6		0.6			653.6		653.6	781.2	318.0	642.0	1,741.2
036	20/07/2004	1,741.2										80.8		80.8	697.4	220.0	743.0	1,660.4
Cumulative Volume			1,923.1		119.7	44.8	41.2		2,128.8	409.7	220.0	1,714.6		2,344.3				
Fluid Name:	**Premix**																	
021	5/07/2004				1,110.0		26.6		1,136.6				318.6	318.6			818.0	818.0
022	6/07/2004	818.0			550.0		14.8		564.8				624.8	624.8			758.0	758.0
023	7/07/2004	758.0	50.0		9.4				59.4								817.4	817.4
024	8/07/2004	817.4	3.2				0.3		3.5				23.9	23.9			797.0	797.0
025	9/07/2004	797.0											211.0	211.0			586.0	586.0
027	11/07/2004	586.0											392.0	392.0			194.0	194.0
028	12/07/2004	194.0	44.0		102.0		2.8		148.8				59.8	59.8			283.0	283.0
029	13/07/2004	283.0	10.0						10.0				293.0	293.0				

Company	**Origin Energy Resources Ltd**
Well Name	**Yolla-4**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Fluid Volume Record Report

			Additions							Losses					Volumes			
Report No	Date	Initial Volume bbl	Received & Mixed bbl	Base bbl	Water bbl	Barite bbl	Chemicals bbl	Other bbl	Daily Total bbl	SCE bbl	Downhole bbl	Misc bbl	Returned & Mixed bbl	Daily Total bbl	Hole Volume bbl	Active Pit Volume bbl	Reserve Volume bbl	Final Volume bbl
Cumulative Volume			107.2		1,771.4		44.5		1,923.1				1,923.1	1,923.1				

Fluid Name: PHBentonite

023	7/07/2004	317.0											50.0	50.0			267.0	267.0
024	8/07/2004	267.0					0.2		0.2				3.2	3.2			264.0	264.0
028	12/07/2004	264.0											44.0	44.0			220.0	220.0
029	13/07/2004	220.0											10.0	10.0			210.0	210.0
030	14/07/2004	210.0										8.0		8.0			202.0	202.0
036	20/07/2004	202.0										202.0		202.0				
Cumulative Volume							0.2		0.2			210.0	107.2	317.2				

Company	**Origin Energy Resources Ltd**
Well Name	**Yolla-4**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Fluid Volume Record Report

			Additions							Losses					Volumes			
Report No	Date	Initial Volume bbl	Received & Mixed bbl	Base bbl	Water bbl	Barite bbl	Chemicals bbl	Other bbl	Daily Total bbl	SCE bbl	Downhole bbl	Misc bbl	Returned & Mixed bbl	Daily Total bbl	Hole Volume bbl	Active Pit Volume bbl	Reserve Volume bbl	Final Volume bbl
Interval # 04																		
Fluid Name:	**Seawater**																	
037	21/07/2004				631.6				631.6						631.6			631.6
038	22/07/2004	631.6										631.5		631.5				
Cumulative Volume					631.6				631.6			631.5		631.5				
Fluid Name:	**Seawater/Drispac/Soltex**																	
037	21/07/2004	1,660.4										993.4		993.4		667.0		667.0
039	23/07/2004	667.0										667.0		667.0				
Cumulative Volume												1,660.4		1,660.4				
Fluid Name:	**8.9 ppg NaCl Brine**																	
037	21/07/2004				947.8		52.2		1,000.0								1,000.0	1,000.0
038	22/07/2004	1,000.0	147.0		342.0		17.4		506.4			278.0		278.0	697.4		531.0	1,228.4
039	23/07/2004	1,228.4										125.0		125.0	697.4		406.0	1,103.4
040	24/07/2004	1,103.4										59.0		59.0	697.4		347.0	1,044.4
041	25/07/2004	1,044.4										9.0		9.0	697.4		338.0	1,035.4
042	26/07/2004	1,035.4											305.0	305.0	697.4		33.0	730.4
043	27/07/2004	730.4										343.0	387.4	730.4				
Cumulative Volume			147.0		1,289.8		69.6		1,506.4			814.0	692.4	1,506.4				
Fluid Name:	**Saturated Salt/Sized Salt**																	
037	21/07/2004				207.2		42.8		250.0								250.0	250.0
038	22/07/2004	250.0											147.0	147.0			103.0	103.0
039	23/07/2004	103.0										24.0		24.0			79.0	79.0
043	27/07/2004	79.0										79.0		79.0				
Cumulative Volume					207.2		42.8		250.0			103.0	147.0	250.0				
Fluid Name:	**Inhibited Brine**																	

Company	**Origin Energy Resources Ltd**
Well Name	**Yolla-4**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Fluid Volume Record Report

			Additions							Losses					Volumes			
Report No	Date	Initial Volume bbl	Received & Mixed bbl	Base bbl	Water bbl	Barite bbl	Chemicals bbl	Other bbl	Daily Total bbl	SCE bbl	Downhole bbl	Misc bbl	Returned & Mixed bbl	Daily Total bbl	Hole Volume bbl	Active Pit Volume bbl	Reserve Volume bbl	Final Volume bbl
042	26/07/2004						5.0		5.0								310.0	310.0
043	27/07/2004	310.0	387.4						387.4						697.4			697.4
Cumulative Volume			387.4				5.0		392.4									

Well Name	**Yolla-4**
Operator	**Origin Energy Resources Ltd**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Interval Chemical Concentration

Interval # 01		**From Report Date**	**15/06/2004**	**Top of Interval**	**0.0 m**
Max. Hole Size / Bit Size	**16.000 / 16.000 in**	**To Report Date**	**22/06/2004**	**Bottom of Interval**	**900.0 m**

Fluid Name: Seawater/Bentonite

Material	Average ppb	Minimum ppb	Maximum ppb
bentonite	18.18	15.59	20.39
caustic soda	0.39	0.21	0.62
lime	0.26	0.23	0.32
Potassium Chloride Bulk	0.38	0.37	0.38
soda ash	0.10	0.09	0.11

Fluid Name: Hi-Vis Bentonite Sweeps

Material	Average ppb	Minimum ppb	Maximum ppb
bentonite	27.79	22.02	29.54
caustic soda	0.12	0.10	0.14
lime	0.01	0.01	0.01
Potassium Chloride Bulk	0.66	0.66	0.67
soda ash	0.16	0.15	0.17

Well Name	**Yolla-4**
Operator	**Origin Energy Resources Ltd**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Interval Chemical Concentration

Interval # 02		**From Report Date**	**23/06/2004**	**Top of Interval**	**900.0 m**
Max. Hole Size / Bit Size	**18.000 / 12.900 in**	**To Report Date**	**04/07/2004**	**Bottom of Interval**	**2,614.0 m**

Fluid Name: Hi-Vis Bentonite Sweeps

Material	Average ppb	Minimum ppb	Maximum ppb
bentonite	32.08	29.16	33.25
caustic soda	0.14	0.14	0.14
Desco CF	1.43	1.43	1.43
lime	0.01	0.01	0.01
Potassium Chloride Bulk	0.66	0.66	0.66
soda ash	0.15	0.15	0.15

Fluid Name: Seawater/Drispac/Soltex

Material	Average ppb	Minimum ppb	Maximum ppb
Baracide	0.04	0.03	0.06
BARACOR 129	0.65	0.39	0.76
BARA-DEFOAM W300	0.01	0.01	0.02
bentonite	1.98	1.35	3.75
caustic soda	0.28	0.01	0.41
Desco CF	0.13	0.09	0.23
Drispac R	2.32	2.05	2.47
Drispac Superlo	2.40	2.05	2.58
Flowzan	0.42	0.27	0.54
lime	0.05	0.00	0.11
Potassium Chloride Bulk	0.04	0.03	0.07
soda ash	0.30	0.20	0.46
Soltex	4.11	3.75	4.91

Fluid Name: Premix

Material	Average ppb	Minimum ppb	Maximum ppb
Baracide	0.04	0.01	0.05
bentonite	1.04	0.14	2.09
caustic soda	0.00	0.00	0.01
Desco CF	0.08	0.01	0.16
Drispac R	1.99	1.65	2.44
Drispac Superlo	2.02	1.97	2.12
Flowzan	0.19	0.04	0.29
lime	0.00	0.00	0.00
Potassium Chloride Bulk	0.02	0.00	0.05
soda ash	0.27	0.04	0.49

Well Name	**Yolla-4**
Operator	**Origin Energy Resources Ltd**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Interval Chemical Concentration

Soltex	3.96	2.18	5.30

Fluid Name:	**PHBentonite**		
Material	**Average ppb**	**Minimum ppb**	**Maximum ppb**
bentonite	33.25	33.25	33.25
Desco CF	1.43	1.43	1.43

Well Name	**Yolla-4**
Operator	**Origin Energy Resources Ltd**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Interval Chemical Concentration

Interval # 03		**From Report Date**	**05/07/2004**	**Top of Interval**	**2,614.0 m**
Max. Hole Size / Bit Size	**8.500 / 8.500 in**	**To Report Date**	**20/07/2004**	**Bottom of Interval**	**3,235.0 m**

Fluid Name: Seawater/Drispac/Soltex

Material	Average ppb	Minimum ppb	Maximum ppb
Ammonium Bisulphite	1.15	0.78	1.37
Baracide	0.18	0.05	0.34
BARACOR 129	0.41	0.34	0.62
BARA-DEFOAM W300	0.03	0.01	0.03
barite	12.58	1.09	18.72
bentonite	1.41	0.91	1.80
caustic soda	0.88	0.40	1.29
Desco CF	0.10	0.06	0.13
Drispac R	1.61	1.43	2.14
Drispac Superlo	3.21	2.56	3.52
Flowzan	0.79	0.47	0.89
lime	0.05	0.04	0.08
Potassium Chloride Bulk	0.02	0.01	0.03
soda ash	0.49	0.22	0.59
sodium bicarbonate	0.14	0.11	0.22
Soltex	5.08	4.17	5.56
Soltex Potassium	0.08	0.01	0.09

Fluid Name: Premix

Material	Average ppb	Minimum ppb	Maximum ppb
Baracide	0.06	0.02	0.08
BARA-DEFOAM W300	0.03	0.02	0.03
bentonite	2.60	0.08	6.49
caustic soda	0.13	0.00	0.24
Desco CF	0.18	0.01	0.56
Drispac R	0.39	0.29	0.60
Drispac Superlo	2.99	2.08	3.51
Flowzan	0.54	0.47	0.61
lime	0.00	0.00	0.00
Potassium Chloride Bulk	0.00	0.00	0.00
soda ash	0.06	0.02	0.17
Soltex	6.06	4.03	8.39
Soltex Potassium	0.72	0.70	0.73

Fluid Name: PHBentonite

Well Name	**Yolla-4**
Operator	**Origin Energy Resources Ltd**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Interval Chemical Concentration

Material	Average ppb	Minimum ppb	Maximum ppb
Baracide	0.21	0.21	0.21
bentonite	33.23	33.23	33.25
Desco CF	1.42	1.42	1.43

Well Name	**Yolla-4**
Operator	**Origin Energy Resources Ltd**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Interval Chemical Concentration

Interval # 04	**From Report Date**	**21/07/2004**	**Top of Interval**	**3,235.0**	**m**
Max. Hole Size / Bit Size	**To Report Date**	**08/08/2004**	**Bottom of Interval**	**3,235.0**	**m**

Fluid Name: Seawater/Drispac/Soltex

Material	Average ppb	Minimum ppb	Maximum ppb
Ammonium Bisulphite	1.35	1.35	1.35
Baracide	0.34	0.34	0.34
BARACOR 129	0.38	0.38	0.38
BARA-DEFOAM W300	0.03	0.03	0.03
barite	18.44	18.44	18.44
bentonite	1.77	1.77	1.77
caustic soda	1.29	1.29	1.29
Desco CF	0.13	0.13	0.13
Drispac R	1.53	1.53	1.53
Drispac Superlo	3.24	3.24	3.24
Flowzan	0.89	0.89	0.89
lime	0.04	0.04	0.04
Potassium Chloride Bulk	0.01	0.01	0.01
soda ash	0.52	0.52	0.52
sodium bicarbonate	0.11	0.11	0.11
Soltex	5.36	5.36	5.36
Soltex Potassium	0.09	0.09	0.09

Fluid Name: 8.9 ppg NaCl Brine

Material	Average ppb	Minimum ppb	Maximum ppb
BARABUF	0.06	0.06	0.06
N-VIS P PLUS	0.23	0.23	0.24
salt	46.46	39.68	47.75
UltraSal 20E	1.76	1.76	1.77

Fluid Name: Saturated Salt/Sized Salt

Material	Average ppb	Minimum ppb	Maximum ppb
BARABUF	0.60	0.60	0.60
N-VIS P PLUS	2.40	2.40	2.40
salt	126.98	126.98	126.98
UltraSal 20E	18.00	18.00	18.00

Fluid Name: Inhibited Brine

Material	Average ppb	Minimum ppb	Maximum ppb

Well Name	**Yolla-4**
Operator	**Origin Energy Resources Ltd**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Interval Chemical Concentration

Ammonium Bisulphite	2.67	1.64	3.70
BARABUF	0.06	0.06	0.06
Baracide	0.26	0.16	0.36
BARACOR 100	1.07	0.66	1.48
caustic soda	0.26	0.16	0.36
N-VIS P PLUS	0.23	0.23	0.23
salt	47.19	46.97	47.40
UltraSal 20E	1.74	1.74	1.75

Operator	**Origin Energy Resources Ltd**
Well Name	**Yolla-4**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Fluid Property Recap : Water-Based Fluid

Date	Depth	FL Temp	Density	Funn Visc	Rheology 49 Deg C					Filtration					Filtrate Analysis						MBT	Sand	Retort Analysis				Rheometer Dial Readings					
					PV	lbs/100 ft2				API	HTHP	Cake API	Cake HTHP	Temp	pH	Pm	Pf	Mf	Cl	Total Hardness	ppb Eq.	% by vol	% by vol				600	300	200	100	6	3
	m	Deg C	ppg	sec/qt	cP	YP	10S	10M	30M	ml/30 min	ml/30 min	32nd in		Deg C		ml	ml	ml	mg/l	mg/l			Corr Solid	LGS	NAP Base	Water						
Interval # 01										**From Date**				**15/06/2004**						**Top of Interval**			**0.0**		**m**							
Max. Hole Size / Bit Size	**16.000 / 16.000 in**									**To Date**				**22/06/2004**						**Bottom of Interval**			**900.0**		**m**							
17/06/2004	0		8.75	120	20	52																			0.1	92.0	72.0				
17/06/2004	0		8.75	120	19	54																			0.1	92.0	73.0				
18/06/2004	0		8.75	115	19	51																			0.1	89.0	70.0				
18/06/2004	0		8.75	120	20	50																			0.1	90.0	70.0				
19/06/2004	343		8.75	115	4	32																			0.1	40.0	36.0				
19/06/2004	481		8.75	119	8	48	22	29							9.10				1,600	480					0.1	64.0	56.0				
19/06/2004	576		8.75	115	7	46	19	26							9.60				1,750	420					0.1	60.0	53.0				
19/06/2004	0		8.75	100	9	46																			0.1	64.0	55.0				
20/06/2004	900		8.75	113	8	43	17	23							9.20				1,550	420					0.1	59.0	51.0				
Interval # 02										**From Date**				**23/06/2004**						**Top of Interval**			**900.0**		**m**							
Max. Hole Size / Bit Size	**18.000 / 12.900 in**									**To Date**				**04/07/2004**						**Bottom of Interval**			**2,614.0**		**m**							
25/06/2004	905		8.85	88	30	42	4	6	9	5.8		1			9.10	0.50	0.30	1.10	18,000	340	4.0	0.10	2.57	2.506		96.4	102.0	72.0	58.0	39.0	9.0	7.0
25/06/2004	905		8.80	90	29	36	5	7	12	5.8		1			9.00	0.50	0.30	1.10	17,000	360	4.5	0.10	2.31	2.306		96.7	94.0	65.0	51.0	34.0	7.0	5.0
26/06/2004	1,020	42	8.80	154	34	46	4	7	9	6.5	16.2	1	2	121	8.70	0.15	0.30	1.20	19,000	340	4.0	0.15	2.11	2.047		96.8	114.0	80.0	64.0	46.0	9.0	6.0
26/06/2004	1,149	41	8.90	168	42	63	8	11	14	5.0	15.9	1		121	8.60	0.15	0.20	1.00	18,000	360	7.0	0.15	2.97	2.935		96	147.0	105.0	86.0	59.0	12.0	8.0
26/06/2004	1,180	50	8.90	170	37	46	7	10	11	4.9	15.8	1	2	121	8.60	0.35	0.25	0.95	18,500	360	6.0	0.10	2.95	2.921		96	120.0	83.0	66.0	45.0	10.0	7.0
26/06/2004	905		8.80	150	29	36	4	7	9	5.8	15.0	1		121	8.90	0.45	0.30	1.00	18,000	360	6.0	0.10	2.16	2.077		96.8	94.0	65.0	51.0	34.0	8.0	5.0
27/06/2004	1,318	63	8.90	180	36	58	8	13	17	4.9	16.5	1	2	121	8.20	0.30	0.25	0.80	18,000	300	9.0	0.10	2.97	2.935		96	130.0	94.0	76.0	52.0	11.0	8.0
27/06/2004	1,352	51	8.90	192	40	58	8	13	18	4.8	14.2	1	2	121	8.60	0.25	0.25	0.50	18,000	280	8.0	0.15	2.97	2.935		96	138.0	98.0	79.0	54.0	12.0	8.0
27/06/2004	1,421	58	8.95	188	39	57	7	13	17	4.9	14.5	1	2	121	8.80	0.20	0.20	0.50	18,000	280	8.0	0.15	3.37	3.365		95.6	135.0	96.0	79.0	53.0	12.0	9.0
27/06/2004	1,474		8.95	220	36	82	8	14	17	5.0	15.4	1	2	121	8.20	0.45	0.20	0.70	16,000	300	10.0	0.10	3.47	3.42		95.6	154.0	118.0	87.0	59.0	12.0	8.0
28/06/2004	1,552	56	9.00	220	48	69	9	15	19	4.8	15.0	1	2	121	8.20	0.40	0.25	0.65	18,000	260	9.0	0.10	3.68	3.593		95.3	165.0	117.0	94.0	65.0	12.0	8.0
28/06/2004	1,592	58	9.00	228	54	78	9	16	19	4.9	13.6	1	2	121	8.80	0.20	0.15	45.00	18,000	280	10.0	0.10	3.58	3.392		95.4	186.0	132.0	106.0	73.0	14.0	10.0
28/06/2004	1,672	58	9.10	180	49	70	8	13	17	4.6	13.4	1	2	121	8.80	0.20	0.15	0.50	18,000	280	10.0	0.15	4.39	4.251		94.6	168.0	119.0	102.0	66.0	12.0	8.0
28/06/2004	1,825	65	9.10	220	49	61	8	13	17	4.7	15.4	1	2	121	8.50	0.25	0.25	0.75	18,000	260	10.5	0.10	4.49	4.452		94.5	159.0	110.0	88.0	59.0	12.0	7.0
29/06/2004	1,922	58	9.15	173	46	49	8	13	15	4.2	13.5	1	2	121	8.50	0.30	0.15	0.60	18,000	280	10.0	0.15	4.89	4.881		94.1	141.0	95.0	75.0	50.0	10.0	7.0
29/06/2004	2,078	58	9.20	114	50	48	6	13	15	3.9		1		121	8.60	0.25	0.20	0.45	18,000	220	11.0	0.25	4.99	4.707		94	148.0	98.0	81.0	54.0	10.0	7.0

Operator	**Origin Energy Resources Ltd**
Well Name	**Yolla-4**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Fluid Property Recap : Water-Based Fluid

Date	Depth	FL Temp	Density	Funn Visc	Rheology 49 Deg C					Filtration					Filtrate Analysis						MBT	Sand	Retort Analysis				Rheometer Dial Readings					
					PV	lbs/100 ft2				API	HTHP	Cake API	Cake HTHP	Temp	pH	Pm	Pf	Mf	Cl	Total Hardness	ppb Eq.	% by vol	% by vol				600	300	200	100	6	3
	m	Deg C	ppg	sec/qt	cP	YP	10S	10M	30M	ml/30 min	ml/30 min	32nd in		Deg C		ml	ml	ml	mg/l	mg/l			Corr Solid	LGS	NAP Base	Water						
29/06/2004	2,170	59	9.25	118	45	53	7	13	18	4.0	13.3	1	2	121	8.80	0.20	0.15	0.40	18,000	240	10.0	0.10	5.4	5.137		93.6	143.0	98.0	79.0	53.0	10.0	7.0
29/06/2004	2,272	67	9.35	120	50	52	7	11	14	4.0	11.1	1	2	121	8.30	0.25	0.15	0.55	18,000	320	11.0	0.10	6.41	6.397		92.6	152.0	102.0	82.0	53.0	9.0	6.0
30/06/2004	2,422	69	9.35	189	47	53	8	11	14	3.9	11.5	1	2	121	8.30	0.25	0.15	0.50	18,500	300	11.0	0.20	6.38	6.383		92.6	147.0	100.0	76.0	51.0	11.0	6.0
30/06/2004	2,461	62	9.20	98	46	48	7	10	14	3.8	11.7	1	2	121	8.80	0.20	0.15	0.45	18,000	260	10.0	0.15	5.19	5.109		93.8	140.0	94.0	73.0	47.0	9.0	6.0
30/06/2004	2,477	64	9.25	102	51	54	7	11	14	3.6	11.8	1	2	121	8.80	0.20	0.10	0.40	18,000	240	11.0	0.10	5.4	5.137		93.6	156.0	105.0	84.0	54.0	9.0	7.0
30/06/2004	2,542	65	9.35	95	47	51	7	11	13	4.1	12.0	1	2	121	7.50	0.05	0.15	0.85	18,000	360	10.0	0.10	6.41	6.397		92.6	145.0	98.0	76.0	49.0	9.0	6.0
01/07/2004	2,614		9.40	100	47	51	7	11	15	4.0	11.4	1	2	121	8.20	0.20	0.25	0.65	18,000	300	10.0	0.10	6.71	6.626		92.3	145.0	98.0	77.0	51.0	10.0	7.0
01/07/2004	2,614		9.40	124	46	49	6	10	14	3.4	10.6	1	2	121	8.30	0.10	0.10	0.45	19,000	420	11.0	0.10	6.36	5.995		92.6	141.0	95.0	76.0	49.0	9.0	7.0
01/07/2004	2,614		9.55	130	50	56	9	12	15	3.3	10.4	1	2	121	8.20	0.15	0.15	0.35	18,000	340	10.5	0.10	7.82	7.713		91.2	156.0	106.0	83.0	56.0	11.0	8.0
02/07/2004	2,614		9.55	136	49	57	7	11		4.0	10.6	1	2	121	8.20	0.15	0.15	0.55	18,000	360	10.0	0.10	7.82	7.713		91.2	155.0	106.0	83.0	56.0	11.0	8.0
02/07/2004	2,614		9.45	124	39	46	7	10		3.8	10.4	1	2	121	8.30	0.15	0.10	0.50	18,000	360	10.0	0.10	7.01	6.854		92	124.0	85.0	67.0	46.0	10.0	7.0
03/07/2004	2,614		9.50	168	44	46	6	11	13	3.9		1		121	8.30	0.15	0.10	0.40	18,000	360	10.0	0.10	7.52	7.484		91.5	134.0	90.0	71.0	46.0	9.0	7.0
03/07/2004	2,614		9.50	165	43	46	7	11	13	3.8	11.0	1	2	121	8.40	0.15	0.10	0.40	18,000	360	10.0	0.10	7.52	7.484		91.5	132.0	89.0	70.0	45.0	9.0	7.0
04/07/2004	2,614		9.50	163	44	45	6	12	14	4.0		1		121	8.30	0.20	0.10	0.45	18,000	320	9.0	0.10	7.22	6.881		91.8	133.0	89.0	71.0	46.0	9.0	7.0
04/07/2004	2,614		9.50	160	44	41	8	12	14	3.6	11.0	1	2	121	8.30	0.15	0.10	0.40	19,000	360	10.0	0.10	7.47	7.456		91.5	129.0	85.0	67.0	43.0	9.0	7.0
Interval # 03										**From Date**				**05/07/2004**						**Top of Interval**			**2,614.0**	**m**							
Max. Hole Size / Bit Size			**8.500 / 8.500 in**							**To Date**				**20/07/2004**						**Bottom of Interval**			**3,235.0**	**m**							
05/07/2004	2,614		9.50	165	45	42	8	12	13	3.8	10.8	1	2	121	8.30	0.15	0.10	0.40	19,000	360	10.0	0.10	7.47	7.456		91.5	132.0	87.0	68.0	44.0	9.0	7.0
05/07/2004	2,632	55	9.25	66	28	19	5	7	8	4.2	11.4	1	2	121	8.50	0.20	0.10	0.30	20,000	640	7.5	0.10	5.4	5.28		93.5	75.0	47.0	37.0	24.0	6.0	4.0
06/07/2004	2,730	56	9.30	65	28	27	7	10	12	3.8	11.0	1	2	121	8.50	0.20	0.10	0.40	21,000	600	7.5	0.10	5.86	5.881		93	83.0	55.0	43.0	29.0	8.0	6.0
06/07/2004	2,796	59	9.30	61	27	21	5	7	10	3.5	10.8	1	2	121	9.00	0.45	0.15	0.65	19,500	520	6.0	0.20	5.32	4.719		93.6	75.0	48.0	37.0	24.0	7.0	5.0
06/07/2004	2,870	64	9.10	64	30	26	5	7	9	3.4	10.8	1	2	121	8.80	0.35	0.10	0.55	19,000	580	5.5	0.20	4.44	4.423		94.5	86.0	56.0	42.0	28.0	6.0	4.0
06/07/2004	2,887		9.30	76	30	28	7	11	12	3.8	11.2	1	2	121	8.70	0.25	0.10	0.30	19,000	540	6.0	0.20	5.95	5.94		93	88.0	58.0	46.0	31.0	8.0	6.0
07/07/2004	2,892		9.30	78	29	31	8	11	14	3.6	11.0	1	2	121	8.70	0.22	0.10	0.33	19,500	560	6.0	0.15	5.53	5.121		93.4	89.0	60.0	47.0	33.0	8.0	6.0
07/07/2004	2,892		9.30	80	30	28	7	11	13	3.5	10.8	1	2	121	8.80	0.25	0.10	0.30	19,000	540	6.0	0.20	5.95	5.94		93	88.0	58.0	46.0	33.0	8.0	6.0
08/07/2004	2,919	55	9.40	71	29	29	7	10	12	3.8	11.2	1	2	121	8.70	0.20	0.10	0.30	19,000	560	6.0	0.20	6.46	6.196		92.5	87.0	58.0	46.0	31.0	8.0	6.0
08/07/2004	2,919		9.35	83	28	24	6	8	12	3.4	11.6	1	2	121	9.20	0.45	0.15	0.57	19,500	620	5.5	0.10	6.23	6.154		92.7	80.0	52.0	41.0	27.0	7.0	5.0
08/07/2004	2,919		9.40	86	28	27	6	9	11	3.6	11.8	1	2	121	9.00	0.35	0.15	0.40	19,000	600	6.0	0.10	6.46	6.196		92.5	83.0	55.0	43.0	29.0	7.0	5.0
09/07/2004	2,919		9.40	88	29	32	7	10	11	3.8	11.4	1	2	121	9.00	0.30	0.15	0.40	19,000	600	6.0	0.10	6.46	6.196		92.5	90.0	61.0	48.0	37.0	8.0	6.0

Operator	**Origin Energy Resources Ltd**
Well Name	**Yolla-4**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Fluid Property Recap : Water-Based Fluid

Date	Depth	FL Temp	Density	Funn Visc	Rheology 49 Deg C					Filtration					Filtrate Analysis						MBT	Sand	Retort Analysis				Rheometer Dial Readings					
					PV	lbs/100 ft2				API	HTHP	Cake API	Cake HTHP	Temp	pH	Pm	Pf	Mf	Cl	Total Hardness			% by vol				600	300	200	100	6	3
	m	Deg C	ppg	sec/qt	cP	YP	10S	10M	30M	ml/30 min	ml/30 min	32nd in		Deg C		ml	ml	ml	mg/l	mg/l	ppb Eq.	% by vol	Corr Solid	LGS	NAP Base	Water						
09/07/2004	2,824	64	9.35	73	39	35	7	10	12	3.9	10.6	1	2	121	8.60	0.30	0.12	0.60	18,500	680	4.5	0.20	6.38	6.383		92.6	113.0	74.0	58.0	38.0	9.0	6.0
09/07/2004	2,958		9.40	85	33	36	8	11	13	3.5	11.0	1	2	121	9.20	0.50	0.15	0.30	20,000	680	5.0	0.20	6.41	6.167		92.5	102.0	69.0	54.0	37.0	9.0	7.0
10/07/2004	2,958	57	9.40	81	34	37	8	12	13	3.6	10.4	1	2	121	9.00	0.45	0.15	0.30	20,000	660	5.0	0.20	6.41	6.167		92.5	105.0	71.0	55.0	37.0	9.0	7.0
10/07/2004	2,985		9.40	77	35	37	8	12	14	3.7	10.6	1	2	121	8.70	0.37	0.12	0.28	19,500	680	5.0	0.15	6.44	6.181		92.5	107.0	72.0	57.0	39.0	9.0	7.0
10/07/2004	2,985		9.40	82	31	33	7	10	11	3.6	10.4	1	2	121	8.80	0.30	0.15	0.30	20,000	640	5.0	0.20	6.41	6.167		92.5	95.0	64.0	51.0	36.0	8.0	6.0
11/07/2004	2,998	62	9.50	59	28	22	5	8	10	3.8	11.6	1	2	121	8.90	0.25	0.15	0.40	19,500	780	4.0	0.10	6.94	6.437		92	78.0	50.0	38.0	25.0	6.0	4.0
11/07/2004	3,054	64	9.40	70	36	29	7	9	11	3.6	11.2	1	2	121	8.80	0.22	0.11	0.60	18,500	680	4.0	0.15	5.98	5.205		93	101.0	65.0	53.0	34.0	8.0	6.0
11/07/2004	3,129	68	9.40	68	35	34	8	10	12	3.8	11.6	1	2	121	9.00	0.28	0.15	0.65	19,000	730	4.5	0.15	6.46	6.196		92.5	104.0	69.0	54.0	37.0	9.0	7.0
11/07/2004	3,217	68	9.45	68	33	29	7	10	12	4.0	12.0	1	2	121	9.00	0.55	0.15	0.45	18,500	680	6.0	0.10	6.99	6.84		92	95.0	62.0	48.0	32.0	8.0	6.0
12/07/2004	3,235	65	9.50	72	32	31	6	10	12	3.6	11.6	1	2	121	9.00	0.50	0.15	0.40	19,000	680	5.5	0.10	6.97	6.452		92	95.0	63.0	48.0	32.0	7.0	5.0
12/07/2004	3,235		9.45	83	33	25	6	8	11	3.4	11.0	1	2	121	9.00	0.58	0.18	0.58	19,000	620	5.0	0.11	6.66	6.223		92.3	91.0	58.0	45.0	29.0	8.0	6.0
12/07/2004	3,235		9.45	86	33	29	6	10	12	3.8	11.0	1	2	121	9.00	0.50	0.15	0.40	19,000	640	5.0	0.10	6.46	5.821		92.5	95.0	62.0	47.0	30.0	7.0	5.0
13/07/2004	3,235	64	9.35	70	31	27	6	9	11	3.8	11.4	1	2	121	8.90	0.23	0.12	0.70	18,500	760	4.5	0.10	6.28	6.182		92.7	89.0	58.0	46.0	32.0	8.0	6.0
13/07/2004	3,235	62	9.30	65	25	24	5	10	12	4.1	11.8	1	2	121	9.10	0.30	0.16	0.78	18,000	620	5.0	0.10	6	5.968		93	74.0	49.0	38.0	26.0	7.0	5.0
13/07/2004	3,235		9.35	76	30	26	6	9	11	3.7	12.0	1	2	121	9.10	0.40	0.15	0.50	18,500	640	5.0	0.10	5.98	5.579		93	86.0	56.0	44.0	28.0	7.0	5.0
14/07/2004	3,235		9.30	88	29	23	5	8		3.5	11.6	1	2	121	8.80	0.23	0.12	0.63	18,000	660	5.0	0.10	5.8	5.566		93.2	81.0	52.0	41.0	37.0	7.0	5.0
14/07/2004	3,235		9.35	90	29	26	6	9	11	3.6	12.0	1	2	121	8.90	0.40	0.15	0.50	18,500	680	5.0	0.10	5.98	5.579		93	84.0	55.0	43.0	28.0	7.0	5.0
15/07/2004	3,235		9.35	93	27	27	7	9	12	3.5	11.8	1	2	121	8.80	0.27	0.12	0.60	18,000	660	4.5	0.10	5.8	5.192		93.2	81.0	54.0	43.0	29.0	8.0	6.0
15/07/2004	3,235		9.35	95	29	27	6	9	11	3.6	12.2	1	2	121	8.80	0.30	0.10	0.40	18,500	640	5.0	0.10	5.98	5.579		93	85.0	56.0	45.0	30.0	7.0	5.0
16/07/2004	3,235		9.30	70	19	18	4	6	7	3.9	12.6	1	2	121	8.50	0.23	0.08	0.55	19,000	700	4.5	0.10	5.75	5.538		93.2	56.0	37.0	30.0	21.0	6.0	4.0
16/07/2004	3,235		9.30	70	18	19	4	6	7	3.8	12.5	1	2	121	8.50	0.25	0.10	0.45	18,500	700	5.0	0.10	5.88	5.753		93.1	55.0	37.0	30.0	21.0	6.0	4.0
17/07/2004	3,235		9.30	78	22	23	5	9	10	3.5	12.0	1	2	121	8.80	0.38	0.20	0.77	19,000	680	4.5	0.10	5.85	5.739		93.1	67.0	45.0	35.0	23.0	6.0	4.0
17/07/2004	3,235		9.30	78	21	24	5	9	10	3.5	12.4	1	2	121	8.65	0.30	0.20	0.65	18,000	700	5.0	0.10	5.9	5.767		93.1	66.0	45.0	35.0	23.0	6.0	4.0
18/07/2004	3,235	54	9.45	64	22	17	4	6	9	4.0	12.8	1		121	8.50	0.22	0.08	0.85	17,500	720	6.0	0.10	6.23	5.26		92.8	61.0	39.0	31.0	20.0	5.0	3.0
18/07/2004	3,235	60	9.40	60	23	25	4	7	9	3.8	12.0	1	2	121	8.80	0.28	0.15	0.95	17,500	700	5.5	0.10	6.03	5.233		93	71.0	48.0	38.0	26.0	6.0	4.0
18/07/2004	3,235		9.40	90	24	22	5	8	10	3.9	12.2	1	2	121	8.60	0.25	0.20	0.70	18,000	720	5.0	0.10	6	5.219		93	70.0	46.0	36.0	24.0	6.0	4.0
19/07/2004	3,235		9.45	76	23	22	4	8		3.9	12.4	1	2	121	8.60	0.22	0.16	0.75	17,000	680	5.0	0.10	6.15	5.073		92.9	68.0	45.0	36.0	24.0	6.0	4.0
19/07/2004	3,235	51	9.65	75	21	19	4	7	9	4.1	12.4	1	2	121	8.50	0.20	0.20	0.60	18,000	700	5.0	0.10	7.82	6.964		91.2	61.0	40.0	32.0	22.0	6.0	4.0
20/07/2004	3,234		8.55	28											13.00										0.1						

Operator	**Origin Energy Resources Ltd**
Well Name	**Yolla-4**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Fluid Property Recap : Water-Based Fluid

Date	Depth	FL Temp	Density	Funn Visc	Rheology 49 Deg C					Filtration					Filtrate Analysis						MBT	Sand	Retort Analysis				Rheometer Dial Readings					
					PV	lbs/100 ft2				API	HTHP	Cake API	Cake HTHP	Temp	pH	Pm	Pf	Mf	Cl	Total Hardness	ppb Eq.	% by vol	% by vol				600	300	200	100	6	3
	m	Deg C	ppg	sec/qt	cP	YP	10S	10M	30M	ml/30 min	ml/30 min	32nd in		Deg C		ml	ml	ml	mg/l	mg/l			Corr Solid	LGS	NAP Base	Water						
Interval # 04										**From Date**				**21/07/2004**						**Top of Interval**			**3,235.0**		**m**						
Max. Hole Size / Bit Size										**To Date**				**08/08/2004**						**Bottom of Interval**			**3,235.0**		**m**						

Company	**Origin Energy Resources Ltd**
Well Name	**Yolla-4**
Contractor	**Ensco Australia Pty Ltd**
Rig Name	**Ensco 102**
Unit System	**Esso**

Fluid Program Exception Report

Report No	Date	Time	Depth m	Property Name	Unit System	Actual Value	Exception	Program Min	Program Max
007	21/06/2004	19:30	900	Density	ppg	8.55	Low	8.70	8.90
011	25/06/2004	21:15	905	Total Hardness	mg/l	360	Low	400	
011	25/06/2004	13:00	905	Total Hardness	mg/l	340	Low	400	
012	26/06/2004	2:00	905	pH	-	8.90	Low	9.00	
012	26/06/2004	2:00	905	Total Hardness	mg/l	360	Low	400	
012	26/06/2004	9:30	1,020	pH	-	8.70	Low	9.00	
012	26/06/2004	9:30	1,020	Total Hardness	mg/l	340	Low	400	
012	26/06/2004	15:00	1,149	Yield Point	lbs/100 ft2	63	High	25	35
012	26/06/2004	18:15	1,180	Yield Point	lbs/100 ft2	46	High	25	35
013	27/06/2004	3:00	1,318	Yield Point	lbs/100 ft2	58	High	25	35
013	27/06/2004	10:00	1,352	Yield Point	lbs/100 ft2	58	High	25	35
013	27/06/2004	14:00	1,421	Yield Point	lbs/100 ft2	57	High	25	35
013	27/06/2004	18:45	1,474	Yield Point	lbs/100 ft2	82	High	25	35
014	28/06/2004	4:07	1,552	Yield Point	lbs/100 ft2	69	High	25	35
014	28/06/2004	9:30	1,592	Yield Point	lbs/100 ft2	78	High	25	35
014	28/06/2004	15:00	1,672	Yield Point	lbs/100 ft2	70	High	25	35
014	28/06/2004	18:25	1,825	Yield Point	lbs/100 ft2	61	High	25	35
015	29/06/2004	3:00	1,922	Yield Point	lbs/100 ft2	49	High	25	35
015	29/06/2004	10:00	2,078	Yield Point	lbs/100 ft2	48	High	25	35
015	29/06/2004	14:00	2,170	Yield Point	lbs/100 ft2	53	High	25	35
015	29/06/2004	19:00	2,272	Yield Point	lbs/100 ft2	52	High	25	35
016	30/06/2004	4:41	2,422	Yield Point	lbs/100 ft2	53	High	20	30
016	30/06/2004	10:00	2,461	Yield Point	lbs/100 ft2	48	High	20	30
016	30/06/2004	14:30	2,477	Yield Point	lbs/100 ft2	54	High	20	30
016	30/06/2004	18:30	2,542	pH	-	7.50	Low	8.20	9.20
016	30/06/2004	18:30	2,542	Yield Point	lbs/100 ft2	51	High	20	30
017	01/07/2004	22:30	2,614	Density	ppg	9.55	High	9.10	9.40
017	01/07/2004	10:00	2,614	Yield Point	lbs/100 ft2	49	High	20	30
017	01/07/2004	22:30	2,614	Yield Point	lbs/100 ft2	56	High	20	30
017	01/07/2004	4:30	2,614	Yield Point	lbs/100 ft2	51	High	20	30

Company	**Origin Energy Resources Ltd**
Well Name	**Yolla-4**
Contractor	**Ensco Australia Pty Ltd**
Rig Name	**Ensco 102**
Unit System	**Esso**

Fluid Program Exception Report

Report No	Date	Time	Depth m	Property Name	Unit System	Actual Value	Exception	Program Min	Program Max
018	02/07/2004	22:30	2,614	Density	ppg	9.45	High	9.10	9.40
018	02/07/2004	4:30	2,614	Density	ppg	9.55	High	9.10	9.40
018	02/07/2004	22:30	2,614	Yield Point	lbs/100 ft2	46	High	20	30
018	02/07/2004	4:30	2,614	Yield Point	lbs/100 ft2	57	High	20	30
019	03/07/2004	20:00	2,614	Density	ppg	9.50	High	9.10	9.40
019	03/07/2004	20:00	2,614	Yield Point	lbs/100 ft2	46	High	20	30
019	03/07/2004	13:00	2,614	Density	ppg	9.50	High	9.10	9.40
019	03/07/2004	13:00	2,614	Yield Point	lbs/100 ft2	46	High	20	30
020	04/07/2004	11:00	2,614	Density	ppg	9.50	High	9.10	9.40
020	04/07/2004	11:00	2,614	Yield Point	lbs/100 ft2	45	High	20	30
020	04/07/2004	19:30	2,614	Density	ppg	9.50	High	9.10	9.40
020	04/07/2004	19:30	2,614	Yield Point	lbs/100 ft2	41	High	20	30
021	05/07/2004	3:00	2,614	Density	ppg	9.50	High	9.10	9.40
021	05/07/2004	3:00	2,614	Yield Point	lbs/100 ft2	42	High	20	30
021	05/07/2004	21:45	2,632	Yield Point	lbs/100 ft2	19	Low	20	30
023	07/07/2004	8:00	2,892	Yield Point	lbs/100 ft2	31	High	20	30
025	09/07/2004	8:30	2,824	Yield Point	lbs/100 ft2	35	High	20	30
025	09/07/2004	4:30	2,919	Yield Point	lbs/100 ft2	32	High	20	30
025	09/07/2004	19:30	2,958	Yield Point	lbs/100 ft2	36	High	20	30
026	10/07/2004	5:00	2,958	Yield Point	lbs/100 ft2	37	High	20	30
026	10/07/2004	19:00	2,985	Yield Point	lbs/100 ft2	33	High	20	30
026	10/07/2004	12:45	2,985	Yield Point	lbs/100 ft2	37	High	20	30
027	11/07/2004	4:00	2,998	Density	ppg	9.50	High	9.10	9.40
027	11/07/2004	14:30	3,129	Yield Point	lbs/100 ft2	34	High	20	30
027	11/07/2004	21:00	3,217	Density	ppg	9.45	High	9.10	9.40
028	12/07/2004	11:00	3,235	Density	ppg	9.45	High	9.10	9.40
028	12/07/2004	20:00	3,235	Density	ppg	9.45	High	9.10	9.40
028	12/07/2004	4:30	3,235	Density	ppg	9.50	High	9.10	9.40
028	12/07/2004	4:30	3,235	Yield Point	lbs/100 ft2	31	High	20	30
032	16/07/2004	8:00	3,235	Yield Point	lbs/100 ft2	18	Low	20	30

Company	**Origin Energy Resources Ltd**
Well Name	**Yolla-4**
Contractor	**Ensco Australia Pty Ltd**
Rig Name	**Ensco 102**
Unit System	**Esso**

Fluid Program Exception Report

Report No	Date	Time	Depth m	Property Name	Unit System	Actual Value	Exception	Program Min	Program Max
032	16/07/2004	18:30	3,235	Yield Point	lbs/100 ft2	19	Low	20	30
034	18/07/2004	9:15	3,235	Density	ppg	9.45	High	9.10	9.40
034	18/07/2004	9:15	3,235	Yield Point	lbs/100 ft2	17	Low	20	30
035	19/07/2004	10:00	3,235	Density	ppg	9.45	High	9.10	9.40
035	19/07/2004	20:30	3,235	Density	ppg	9.65	High	9.10	9.40
035	19/07/2004	20:30	3,235	Yield Point	lbs/100 ft2	19	Low	20	30
036	20/07/2004	21:00	3,234	pH	-	13.00	High	8.20	9.20
036	20/07/2004	21:00	3,234	Density	ppg	8.55	Low	9.10	9.40

Operations Log Recap

Well Name	**Yolla-4**
Operator	**Origin Energy Resources Ltd**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Interval #	**01**		**From Report**	**001**	**Top of Interval**	**0.00**	**m**
Max. Hole/Bit Size	**16.000 / 16.000**	**in**	**To Report**	**008**	**Bottom of Interval**	**900.00**	**m**

For Report # 001 On 15/06/2004	**Operation at Depth 0 m**
Rig Activity	Baroid engineer arrived on location at 16:30 hrs on June 7, 2004 while rig was pre-loaded prior to jacking up. After all 3 legs had punched through, the rig was jacked up and preloaded. Skidded over Yolla-4 and commenced driving 20" conductor drive pipe until excessive wind speed halted operations.
Activity	Wait on weather to drive conductor
Fluid Treatment	Daily New Volume : 1591 bbls Total New Volume : 1591 bbls Mixed 1591 bbls of pre-hydrated bentonite, using all bentonite available on the rig. Will continue mixing more volume when additional bentonite is received. Dressed shaker and mud cleaner with screens as below. Rearranged sack room contents based on order of chemical usage and in readiness for additional products yet to arrive. Note that Mud Engineering charges on this first report are for 9 days.
For Report # 002 On 16/06/2004	**Operation at Depth 0 m**
Rig Activity	Resumed hammering 20" drive pipe conductor when wind speed dropped. Drove conductor to 220 m on Yolla-4. Skidded over Yolla-3 and drove 20" conductor.
Activity	Drive conductor on Yolla-3
Fluid Treatment	Daily New Volume : 621 bbls Total New Volume : 2212 bbls Received additional Bentonite and Barite from the "RJ Hope". Continued mixing pre-hydrated bentonite. Additional palletized chemicals on boat but not yet off-loaded.
For Report # 003 On 17/06/2004	**Operation at Depth 220 m**
Rig Activity	Finished driving 20" conductor to 215 m on Yolla-3. Skid back over Yolla-4 and commence rigging up for drilling.
Activity	Prepare Rig to spud Yolla-4
Fluid Treatment	Daily New Volume : 1707.2 bbls Total New Volume : 3919.2 bbls Finished mixing initial volume of 3282 bbls of pre-hydrated bentonite. Also prepared 410 bbls of seawater diluted pre-hydrated bentonite in Pit #7. Total volume currently available is 3692 bbls. Received chemicals for use in the 12 1/4" interval from the "RJ Hope", including contingency stuck pipe additives,
For Report # 004 On 18/06/2004	**Operation at Depth 220 m**
Rig Activity	Waited on weather. Resumed rigging up for drilling when wind speed dropped. Made up BHA and RIH. Spudded Yolla-4 at 21:45 hrs on June 18, 2004 when starting to clean out 20" drive pipe conductor from seabed at 124.8 m RKB.
Activity	Drilling
Fluid Treatment	Daily Volume Made: 22 bbls Total Volume Made: 3941.2 bbls
For Report # 005 On 19/06/2004	**Operation at Depth 802 m**
Rig Activity	Continued drilling 16" hole to 802 m at report time.

Interval #	**01**		**From Report**	**001**	**Top of Interval**	**0.00**	**m**
Max. Hole/Bit Size	**16.000 / 16.000**	**in**	**To Report**	**008**	**Bottom of Interval**	**900.00**	**m**

Activity	Drilling
Fluid Treatment	Daily New Volume : 785 Total New Volume : 4726.2 For the 16" section, on every stand 3 sweeps were pumped. Two 30-35 bbl sweeps of flocculated Bentonite/Seawater were pumped at the first and second single of the stand. At the end of the final single, a 35-50 bbl of non-flocculated Hi-VIs bentonite was pumped and spotted around the BHA before the connection. This procedure was maintained for every stand.

For Report	**# 006**	**On**	**20/06/2004**	**Operation at Depth**	**900 m**

Rig Activity	Continued to drill 16" interval to TD at 900 m. Circulated 50 bbl hi-vis sweep, displacing with seawater. Displaced open hole with 150% open hole volume. Pulled out to 20" shoe and waited for weather to improve. Ran back to bottom (no fill) and pumped 150% of open hole volume and spotted 129 bbls of KCl inhibited hi-vis prehydrated bentonite on bottom. Pulled out of hole
Activity	Run casing
Fluid Treatment	Daily New Volume: 152.5 bbl Total Volume: 4878.7 bbl Continued sweeping, using 3 sweeps per stand. At TD, pumped a 50 bbl sweep of Hi-Vis bentonite, then displaced the hole with 150% of open hole section with Hi-Vis bentonite. 159 bbls of KCl inhibited hi-vis bentonite prepared in Pit #9. Used air pump to consolidate dead volume from Pits #1,2,3 and 4 into Pit #5 to provide more pumpable contingency volume. Unable to mix barite slug for trips out of hole due to line from surge tank to venturi blocking up with damp product. Dismantled line. Cleaned again.

For Report	**# 007**	**On**	**21/06/2004**	**Operation at Depth**	**900 m**

Rig Activity	Started to run 13 3/8" casing. Waited on weather. Finished running casing and completed the first stage of the cement job.
Activity	Cementing
Fluid Treatment	Daily Volume Made: 1bbl Total Volume Made: 4879.7 bbl Cleaned pits for cement job and consolidated residual mud from the 9 pits used for the previous section. Tested chlorides of Drillwater : 950 mg/l Received 31 metric ton of Bentonite from boat.

For Report	**# 008**	**On**	**22/06/2004**	**Operation at Depth**	**900 m**

Rig Activity	Cemented second stage of 13-3/8" casing. Pressure test casing. Remove riser and nipple-up wellhead valves.
Activity	Wait on cement, nipple-up wellhead
Fluid Treatment	Building Seawater/Drispac/Soltex mud for 12-1/4" interval. Baracor 129 was used in the cementing operation, as an oxygen scavenger in front of the second stage of the cement job.

Interval #	**02**		**From Report**	**009**	**Top of Interval**	**900.00**	**m**
Max. Hole/Bit Size	**18.000 / 12.900**	**in**	**To Report**	**020**	**Bottom of Interval**	**2614.00**	**m**

For Report # 009 On 23/06/2004	**Operation at Depth 900 m**
Rig Activity	Nipple-up BOP's on wellhead and change out annular packer. Pressure Test.
Activity	Test B.O.P's
Fluid Treatment	Daily Volume Made:2266 bbl Total Volume Made:2266 bbl Continue building Seawater/Drispac/Soltex mud for the 12-1/4" interval.
For Report # 010 On 24/06/2004	**Operation at Depth 900 m**
Rig Activity	Continue annular repairs, nipple-up and pressure test BOP's. RIH with BHA and drillout stage collar.
Activity	Drill Out Stage Collar
Fluid Treatment	Daily Volume Made: 3.1 bbl Total Volume Made: 2269.1 bbl Pumped a 30 bbl Hi-Vis Bentonite sweep while drilling out the stage collar.
For Report # 011 On 25/06/2004	**Operation at Depth 905 m**
Rig Activity	Continue to drill stage collar and RIH to shoe. Pump hi-vis bentonite sweep and displace with Seawater/Drispac/Soltex mud. Drill shoe and 5m of new formation. Circulate bottoms-up and perform FIT to 10.5 EMW. POOH, lay-out rock bit/clean-out BHA and pick-up PDC/drilling assembly. RIH with drilling BHA
Activity	RIH with BHA
Fluid Treatment	Pumped 30 bbl Hi-vis bentonite sweep while drilling casing shoe followed by displacement with Seawater/Drispac/Soltex mud. Dressed all shakers with 80 mesh screens to avoid losses on displacement. Building bentonite/Desco CF for addition to premix. Used 2x 80 mesh new screens
For Report # 012 On 26/06/2004	**Operation at Depth 1290 m**
Rig Activity	Ran into bottom with drilling assembly. Started drilling the 12.25" Section.
Activity	Drilling
Fluid Treatment	While drilling, adding 0.5 lb/m of Drispac R and Drispac L to active system to maintain excess product concentration. Added BARACOR-129 oxygen scavenger and maintaining residual concentration to control corrosion. Added an additional 2.0 ppb prehydrated bentonite/Desco-CF to active to assist API and HTHP fluid loss and to increase low shear rate viscosity. Changed screens on shakers 3 and 4 to 150 mesh. Changed screens on shaker 5 to used 180 mesh.
For Report # 013 On 27/06/2004	**Operation at Depth 1537 m**
Rig Activity	Continue to drill the 12.25" section
Activity	Drilling
Fluid Treatment	Maintaining volume and properties with additions of premix to the active. Added caustic directly to the active to maintain pH.

Interval #	**02**		**From Report**	**009**	**Top of Interval**	**900.00**	**m**
Max. Hole/Bit Size	**18.000 / 12.900**	**in**	**To Report**	**020**	**Bottom of Interval**	**2614.00**	**m**

	Continued to add Drispac R and Drispac SL at a rate of .3lb/m. Dressed shaker 2 with 150 mesh (used) screens.
For Report # 014 On 28/06/2004	**Operation at Depth 1870 m**
Rig Activity	Continued to drill the 12.25" section
Activity	Drilling
Fluid Treatment	Continue adding Drispac R and Drispac SL for cuttings inhibition at a rate of 0.3 lb/m each. Maintaining volume and properties with additions of premix to the active. Dilution rate at 1.33 bbls/m. Adding 6-8lt/m seawater at shaker to counter mud dehydration and increasing high-end rheology caused by flow line temperatures. Used: 2x 150 new screens.
For Report # 015 On 29/06/2004	**Operation at Depth 2366 m**
Rig Activity	Continued drilling the 12.25" section.
Activity	Drilling
Fluid Treatment	Continue seawater addition at the flowline at a rate of 6-8lt/min to counter effects of dehydration. Continue additions of Drispac R and Drispac L at 0.5 lbs/m while drilling for cuttings inhibition. Changed screens on shakers 1 and 2 to 180 mesh and on shakers 3 and 4 to 200 mesh when sand content in mud increased to 0.25% -0.30%. Sand content subsequently decreased to 0.1%. Changed screens on shaker 5 (mud cleaner) to 265 mesh. Used: 8 x 180 and 12 x 200 and 4 * 265 new screens
For Report # 016 On 30/06/2004	**Operation at Depth 2614 m**
Rig Activity	Continued Drilling the 12.25" Section. Cavings noted at shakers while sliding for angle possibly from Angahook formation at 1100-1280 (upper) and 1415-1723 (lower). Small CO2 contamination detected by drop in pH (7.5) and increase in mf, confirmed with Geoservices, treated the 670 mg/l Bicarbonates with 0.2 lb/bbl Lime.
Activity	Drilling
Fluid Treatment	Maintaining volume and properties with addition of premix to the active. Continue additions of Drispac SL to active for inhibition. Reducing additions of Drispac R to lower high-end rheology. Mixing .15ppb Flozan to active to assist in low end rheology. Used: 2 X 200 and 4 x 230 new screens.
For Report # 017 On 01/07/2004	**Operation at Depth 2614 m**
Rig Activity	TD at 12:15 am. Start to POOH (perform wiper trip to shoe) and pump slug. Tight spots from 1092m to 900m, with 30K over pull. Service top drive at shoe then RIH, log with LWD tool from 1325m to 1365m, 40 rpm with 800 gpm at 2500 psi, had 148-units of max. gas on btms.up. Continue to RIH with another tight spot tagged at 2545m, ream tight spots from 2545 m to 2601 m. Circulate and condition mud at 2601 m with 712 gpm. Start to POOH and pump a slug.

Interval #	**02**		**From Report**	**009**	**Top of Interval**	**900.00**	**m**
Max. Hole/Bit Size	**18.000 / 12.900**	**in**	**To Report**	**020**	**Bottom of Interval**	**2614.00**	**m**

Activity	POOH
Fluid Treatment	Added Caustic and Baracor-129 to maintain drilling fluid properties while POOH and run casing. Some coal cutttings noted on bottoms up after reaming tight spots from 2545 m to 2601 m. While POOH, started to run the reserve mud through the desilter to try and reduce the solids loading of the mud.
For Report # 018 On 02/07/2004	**Operation at Depth 2614 m**
Rig Activity	Continue to POOH, no overpull on trip out. Download MWD & rack BHA in derrick. Pull wear bushing and flush well head. Change upper pipe rams & test BOP. R/U casing equipment and run 9-5/8" casing.
Activity	Run 9-5/8" casing
Fluid Treatment	No treatments. Received partial load of mud chemicals from the Invincible Tide.
For Report # 019 On 03/07/2004	**Operation at Depth 2614 m**
Rig Activity	Continue run casing and set at 2586 m. Mix and pump cement as per program. Displace cement with rig pumps.
Activity	Displace Cement
Fluid Treatment	Received remaining mud chemicals from the Invincible Tide. Bentonite used for cementing.
For Report # 020 On 04/07/2004	**Operation at Depth 2614 m**
Rig Activity	Continue to displace cement with rig pumps - bump plug. Flush lines & R/D cement head. Wash BOP & wellhead w/ jetting assy. Set hanger. Change upper pipe rams. P/U & M/U 8-1/2" BHA and rack in derrick. Test BOP.
Activity	Testing B.O.P.
Fluid Treatment	Dump and clean sand traps in preparation for 8-1/2" interval. Also dump some reserve mud salvaged during previous section. Building dilution volume for next interval - volume and chemicals not considered on this report.

Interval #	**03**		**From Report**	**021**	**Top of Interval**	**2614.00**	**m**
Max. Hole/Bit Size	**8.500 / 8.500**	**in**	**To Report**	**036**	**Bottom of Interval**	**3235.00**	**m**

For Report # 021 On 05/07/2004	**Operation at Depth 2670 m**
Rig Activity	Completed pressure testing BOP's. Ran wear bushing. Made up BHA. motor and MWD. Shallow pulse tested. Ran in hole and tagged TOC at 2562 m. Drilled out casing and cleaned rat hole to bottom. Pulled up to shoe and circulated while bleeding in light weight premix to reduce active mud weight to 9.2 ppg In/Out. Conducted LOT to 10.0 ppg EMW. Drill ahead from 2614m to 2670m.
Activity	Drilling
Fluid Treatment	Daily New Volume : 5.6 bbls (8 1/2" Interval) Total New Volume : 5.6 bbls (8 1/2" Interval) Using Pit #10 only as active. Pre-treated surface mud with sodium bicarbonate to reduce the effect of cement. Added additional sodium bicarbonate while drilling cement. Reduced surface active volume prior to bleeding in premix to reduce the active system mud weight. Added ammonium bisulphite to active to maintain sulphite residual. Commenced treatment of active system with Flowzan to increase 6 rpm reading towards specification after thinning mud system with premix.
For Report # 022 On 06/07/2004	**Operation at Depth 2892 m**
Rig Activity	Continued drilling 8-1/2" hole from 2670 m. Hole took 30 bbls at 2779 m. Flow checked-OK. Circulated sample at 2887 m. Commence POOH for coring. POOH to shoe and service top drive. Tight spots encountered at 2740m - work through, and 2653m - ream. Run back in hole and drill a further 5m to 2892m. Circulate hole clean at core point & POOH.
Activity	Tripping
Fluid Treatment	Daily New Volume : 636.9 bbls Total New Volume : 1769.6 bbls Continued treatment of active system with Flowzan to increase low-end rheology, Drispac & Soltex to reduce filtrate loss. Maintained volume in active with premix. Alternated premixes based rheology. Removed volume from active to increase dilution & maintain mud weight. Added caustic and soda ash to active. From 04:00 commenced adding water to active at 4.3 bbls/hr to replace evaporation losses. Operated desilter. Underflow only 0.2 ppg higher than mud weight at 20 psi. Sulfides=0 ppm @ 2870 m. Note that suction mud weight is taken with a pressurized mud balance. Used 1 NEW flat 265 mesh shaker screen.
For Report # 023 On 07/07/2004	**Operation at Depth 2892 m**
Rig Activity	Continued pulling out of hole. Worked on PRS cable tray and finished pulling out of hole Picked up core barrel and made up coring BHA. RIH with coring BHA to shoe. Change elevators
Activity	Tripping
Fluid Treatment	Daily New Volume : 12.6 bbls Total New Volume : 1782.2 bbls Completed mixing pit of new premix. Treated surface active mud with caustic soda and ammonium bisulphite. Added 50 bbls of pre-hydrated bentonite to new premix in Pit #1. Commenced patching torn shaker screens with silicone-scrapped 7 screens to

Interval #	**03**		**From Report**	**021**	**Top of Interval**	**2614.00**	**m**
Max. Hole/Bit Size	**8.500 / 8.500**	**in**	**To Report**	**036**	**Bottom of Interval**	**3235.00**	**m**

	damaged to repair. Removed all cones from desilter and cleaned, inspected and serviced them as required.
For Report # 024 On 08/07/2004	**Operation at Depth 2919 m**
Rig Activity	Finished changing out elevators and continued running in hole with core barrel. Circulated and dropped ball. Cut core #1 from 2892-2919 m. Pulled out with core barrel and laid out core. L/D excess 12-1/4" BHA from derrick for backload. M/U 8-1/2" BHA and RIH.
Activity	Tripping
Fluid Treatment	Daily New Volume : 1.7 bbls Total New Volume : 1783.9 bbls Added caustic to active system to maintain pH. Added Baracide & caustic soda to reserve mud to treat and prevent mud bacterial degragation. Added Drispac-R to surface active volume to reduce HTHP filtrate loss.
For Report # 025 On 09/07/2004	**Operation at Depth 2958 m**
Rig Activity	Continue RIH with 8-1/2" drilling assembly. Wash down to 2919m and drill 8-1/2" hole to 2952 m. Circulated hole clean and pulled out to core. Made up core barrel and ran in to cut core #2. Desilter only operating at 13 psi (pump discharge 40 psi), despite all work done on it. Isolating cones only makes 2 psi difference and mud flows back down cone overflow. Equalized desilter suction and discharge tanks and added defoamer without any improvement.
Activity	Tripping
Fluid Treatment	Daily New Volume : 5.9 bbls Total new Volume : 1789.8 bbls Treated active system with caustic & ammonium bisulphite for pH & sulphite residual. Added BARACIDE to active to prevent bacterial degradation. Mixed Drispac and Flowzan to reduce HTHP filtrate loss and maintain low-end rheology. Transferred premix into system to maintain mud weight. Increased active mud weight to 9.4 ppg by bleeding in former excess active volume. Added Soltex to aid HTHP. Cleaned ditch magnets on trip - minimal metal on magnets.
For Report # 026 On 10/07/2004	**Operation at Depth 2985 m**
Rig Activity	Ran in hole with core barrel. Circulated and dropped ball. Cut core #2 from 2958-2985 m. Circulated and pulled out of hole. Laid out core. M/U 8-1/2" drilling assembly and RIH.
Activity	Tripping
Fluid Treatment	Daily New Volume : 0 bbls Total New Volume : 1789.8 bbls Transferred mud from Pit #11 to Pit #2 and commenced cleaning Pit #11 for eventual brine mixing. Also started flushing Pits 6, 7, 8 and 11 with seawater.
For Report # 027 On 11/07/2004	**Operation at Depth 3235 m**
Rig Activity	Continued running in the hole to 2958m. Reamed 27m of cored section to 2983m. Drilled 8-1/2" hole directional hole from 2983m to 3225m. Circulate 2 times bottoms up and shakers clean. Flow check, pump slug & commence POOH to shoe for check

Interval #	**03**		**From Report**	**021**	**Top of Interval**	**2614.00**	**m**
Max. Hole/Bit Size	**8.500 / 8.500**	**in**	**To Report**	**036**	**Bottom of Interval**	**3235.00**	**m**

	trip.
Activity	Tripping
Fluid Treatment	Daily New Volume : 37.7 bbls Total New Volume : 1827.5 bbls Replaced damaged shaker screens with pre-used screens. Repaired damaged screens. Continued to operate desilter but still inefficient. Lost approx. 170 bbls active mud while washing/reaming through cored section. Losses cured themselves. Bled in premix to reduce and maintain mud weight at 9.4 ppg. Weight had increased due to numerous barite slugs. Treated active as required to maintain required properties. H2S=0 ppm @ 2998 m, 3129 m & 3217 m.
Issues	Issue 1 - Losses encountered while reaming section previously cored from 2958m - 2985m. No treatments were made to active mud system during the coring run, whilst 2 slugs had been pumped prior to the current run. As a result the mud weight increased from 9.4 ppg to 9.5 ppg. Results from DFG indicated the ECD at bottom and at the shoe to be 10.2 ppg. The leak off test at the casing shoe was 10.0 ppg. Losses may have occurred at the shoe or in the freshly reamed very porous sands. The action taken was to circulate and monitor the losses, while bleeding in 'light' premix to active system. Losses ceased after approximately 45 minutes. Mud weight was reduced to 94 ppg. Further losses of 20 bbls occurred drilling from 3021 m - 3025 m. These losses healed within 5 minutes.

For Report	**# 028**	**On**	**12/07/2004**	**Operation at Depth**	**3235 m**

Rig Activity	Continued to pull out to the 10-3/4" casing shoe at 2614m. Ran back to TD at 3235 m and circulated hole clean. Flow checked well, pumped slug and pulled out of hole. Broke out bit and laid out motor and MWD. Rigged up Schlumberger and ran in hole to run wireline logs. Wireline held up at 2776m. POOH with wireline, R/D & M/U 8-1/2" clean out assembly. RIH with BHA.
Activity	RIH w/ Wiper Trip Assembly
Fluid Treatment	Daily New Volume : 110.9 bbls Total New Volume : 1938.4 bbls On final circulation at TD following wiper trip, added ammonium bisulphite & caustic soda to the active system over 1 circ., prior to running logs. Dumped 510 bbls of heavy, solids-laden excess mud from Pit #4 & commenced cleaning pit. This mud was again showing indications of bacterial degradation. Dumped & cleaned sandtrap, possum bellys & shaker beds. Mixed additional premix for bleeding into the active to reduce active mud wt to 9.3+/- ppg on wiper trip.

For Report	**# 029**	**On**	**13/07/2004**	**Operation at Depth**	**3235 m**

Rig Activity	Continued running in hole for wiper trip. Slipped and cut drilling line and serviced top drive at 2559 m. Ran in to bottom at 3235 m - no fill. Wiped out - tight at 2777 m. Circulated 2 times bottoms up. Pulled to 3208 m and circulated. Worked tight spots at 3198 , 3085 and 3075 m. Wash & ream in hole to 2790m, tight at 2766m & 2783m - work tight spots. Cont RIH to 3208m and wash down to 3235m. Circulate hole clean with 1.5 x b/u. POOH to 2880m, pumping thru tight spots at 3217m, 3169m & 3118m. Flow check well, pump slug & POOH. Prepare to rig up wireline.

Interval #	**03**		**From Report**	**021**	**Top of Interval**	**2614.00**	**m**
Max. Hole/Bit Size	**8.500 / 8.500**	**in**	**To Report**	**036**	**Bottom of Interval**	**3235.00**	**m**

Activity	Tripping
Fluid Treatment	Daily New Volume : 30.6 bbls Total New Volume : 1979.0 bbls Bled premix into the active system when circulating on bottom to reduce the acive mud weight to 9.3 ppg +/-. Added pre-hydrated gel to premix unpumpable volume and also bled into active to control mud weight. Dosed mud with additional caustic, biocide and ammonium bisulphite prior to pulling out to resume wireline logging. Dressed shakers with repaired previously used finer screens. H2S=0 ppm @ 3235 m.
For Report # 030 On 14/07/2004	**Operation at Depth 3235 m**
Rig Activity	Completed rigging up Schlumberger wireline and conducted wireline logging operations.
Activity	Wire Line logs
Fluid Treatment	Daily New Volume : 2 bbls Total New Volume : 1981 bbls Continued cleaning pits 4, 5, 6, 7, 8 & 11 in preparation for well clean up and completion. Due to mud still being in use and the mixing lines required, these pits cannot yet be considered for brine mixing at this stage. In the process of cleaning and flushing the lines required to isolate fluids. Serviced shakers and patched torn screens. Added caustic soda and baracide to excess mud in Pits #2 and #3 to prevent bacterial degradation.
For Report # 031 On 15/07/2004	**Operation at Depth 3235 m**
Rig Activity	Continued wireline logging operations.
Activity	Wire Line logs
Fluid Treatment	Daily New Volume : 2.6 bbls Total New Volume : 1983.6 bbls In preparation for mixing of brine for the completion, all surface mud (Active & Reserve) was transferred to the OBM side of the pit system. The ACTIVE SUCTION PIT is now PIT #7, rather than the former Pit #10. Premixed additional slug volume to avoid contaminating mixing lines should additional slugs be required later. Continued to clean pits and trough, flush and isolate mixing lines.
For Report # 032 On 16/07/2004	**Operation at Depth 3235 m**
Rig Activity	Continued wireline logging operations.
Activity	Wire Line logs
Fluid Treatment	Daily New Volume : 1 bbls Total New Volume : 1984.6 bbls Treated surface active volume to increase rheology, pH and biocide. Also treated excess volume which again was showing signs of bacterial degradation. Completed all the pit cleaning possible in preparation for mixing completion brine. Still need to clean Pits #9, #7 plus the shaker area and flowline trough. Have received all chemicals required for completion cleanup based on information received to-date. Also 1 bulk bag of NaCl salt. Remaining 39 bags of salt still on Invincible Tide. An additional 40 bags (also 1.2 mt are on order).

Interval #	**03**		**From Report**	**021**	**Top of Interval**	**2614.00**	**m**
Max. Hole/Bit Size	**8.500 / 8.500**	**in**	**To Report**	**036**	**Bottom of Interval**	**3235.00**	**m**

For Report	**# 033**	**On**	**17/07/2004**	**Operation at Depth**	**3235 m**
Rig Activity				Continued wireline logging operations. Completed logging and rigged down wireline. Perform wiper trip to the shoe and circulate at the shoe, continue wiper trip to TD.	
Activity				Wire Line logs	
Fluid Treatment				Daily New Volume : 0.3 bbls Total New Volume : 1984.9 bbls Added additional baracide to all surface mud volume (active and excess), due to bacterial degradation-H2S alarm went off indicating 5 ppm.	

For Report	**# 034**	**On**	**18/07/2004**	**Operation at Depth**	**3235 m**
Rig Activity				Continued running in hole for wiper trip following logging. Washed from 3208 to bottom at 3235 m. Circulated and reduced mud weight. Maximum gas was 3003 units. Unable to pull out of hole. Pumped out to 2772 m, reaming through tight spots at 3208, 3146, 2879 and 2850 m. Maximum overpull was 40K. Pulled out to 2650 m and ran back in to 3235 m. Reamed tight spot at 2777 m. Circulated bottoms up. Unable to pull out without pumps. Pumped out from 3235 m to 2772m, pump slug and POOH	
Activity				Prepare to run liner	
Fluid Treatment				Daily New Volume : 36.2 bbls Total New Volume : 2021.1 bbls Treated active system to increase rheology and reduce fluid loss. Ran mud cleaner (desilter) and added water at flowline to reduce mud weight from 9.55 to 9.4 ppg. Entire system was 9.3 ppg prior to logging. Bacterial degradation of old excess mud still very obvious. Commenced mixing NaCl salt for use in completion. Will not charge off until commencement of completion operations. Note that brine appears to be discoloured.	

For Report	**# 035**	**On**	**19/07/2004**	**Operation at Depth**	**3235 m**
Rig Activity				Continued to run 6 5/8" liner. Liner successfully to bottom (3234m) Started the cementing operation.	
Activity				Cementing	
Fluid Treatment				Daily Volume Made: 0.6 bbl Total Volume Made: 2021.7 bbl Sacks of benonite and Drispac R used during liner running operations. Treated old excess mud for bacterial degradation. No improvement in Pit #2 with 15+ ppm H2S readings. Dumped overboard-653 bbls. Continued preparing 8.9ppg NaCl brine for completion and cleaning pits for completion pills	

For Report	**# 036**	**On**	**20/07/2004**	**Operation at Depth**	**3235 m**
Rig Activity				Continued cement operation, Test B.O.P's and make up clean out assembly Note: Mud Test peformed was on Caustic Seawater (pH = 13)	
Activity				Prepare to run BHA and casing scrapers	
Fluid Treatment				Prepared Completion Pills for completion phase: 150 bbls of Caustic Seawater 75 bbls of CON DET detergent pill (3% v/v)	

Interval #	**03**		**From Report**	**021**	**Top of Interval**	**2614.00**	**m**
Max. Hole/Bit Size	**8.500 / 8.500**	**in**	**To Report**	**036**	**Bottom of Interval**	**3235.00**	**m**

1000 bbls of 8.9 ppg NaCl Brine
380 bbls of saturated (10ppg) NaCl Brine
130 bbls of Sized Salt Pill
180 bbls of Hi-Vis Sweeps

Filtering was conducted on the brine:
8.9ppg = 4.3 NTU
10ppg = 150 NTU

Interval #		**04**		**From Report**	**037**	**Top of Interval**	**3235.00 m**
Max. Hole/Bit Size		**0.000 / 0.000 in**		**To Report**	**055**	**Bottom of Interval**	**3235.00 m**
For Report	**# 037**	**On**	**21/07/2004**	**Operation at Depth**		**3235 m**	
Rig Activity				Continued to RIH with clean out assembly to 3187m. Pump cleanout pills, 50 bbl Hi-Vis pill, 50 bbl CON DET pill, 100 bbl caustic pill, 50 bbl Hi-Vis pill. Circulate with seawater and check NTU readings every 15 mins.			
Activity				Circulating Seawater			
For Report	**# 038**	**On**	**22/07/2004**	**Operation at Depth**		**3235 m**	
Rig Activity				Continue to circulate well with sea water until NTU readings stabilize, 63 NTU (@ 550 gpm). Pump 75 bbl 10 ppg Brine, 105 bbl sized salt pill, 27 bbl 10 ppg Brine, 107 bbl 8.9 ppg Brine, POOH from 3185 to 2424m. Displace well to 8.9 ppg Brine, POOH, start preparing rig for perforating.			
Activity				RIH CBL			
Fluid Treatment				Mixed 400 bbl of 8.9 ppg Brine NTU readings gradually came down while circulating seawater. Initially NTU 100, by the end of the circulation the NTU had come down to 63.			
For Report	**# 039**	**On**	**23/07/2004**	**Operation at Depth**		**3235 m**	
Rig Activity				Continue to POOH with casing scraper. Make-up and RIH with CBL log on wireline. Rig-up wireline for perforating. Run and shoot perforations at target depths on three separate runs. Rig-out wireline. Make-up and RIH with 6-5/8" casing scraper to scrape perforated intervals.			
Activity				RIH with casing scraper			
Fluid Treatment				Dumped remaining polymer mud and continued to clean mud pits.			
For Report	**# 040**	**On**	**24/07/2004**	**Operation at Depth**		**3235 m**	
Rig Activity				Continue RIH with 6-5/8" scraper and scrape packer setting interval. POOH and lay out scraper. Make-up and RIH with gauge ring and junk basket on wireline. Make-up Halliburton MWR packer and RIH to setting depth at 2983m.			
Activity				Run Howco MWR packer			
Fluid Treatment				Flushed and ran desilter with seawater to check operating pressures.			
For Report	**# 041**	**On**	**25/07/2004**	**Operation at Depth**		**3235 m**	
Rig Activity				Continue to RIH and set MWR packer at 2983m. Make-up seal assembly and RIH on completion tubing.			
Activity				Run Completion			
For Report	**# 042**	**On**	**26/07/2004**	**Operation at Depth**		**3235 m**	
Rig Activity				Continue making up and RIH with completion tubing. Rig up and pressure test TIW valve. Space-out for landing string in seal assembly.			
Activity				Run Completion			
Fluid Treatment				Prepared 300 bbls of 8.9 ppg filtered brine/ inhibited packer fluid as follows: 0.5 ppb Caustic Soda 0.25 ppb BARACIDE 0.8 lts/bbl BARACOR100 1.59 lts/bbl Ammonium Bisulphite			
For Report	**# 043**	**On**	**27/07/2004**	**Operation at Depth**		**3235 m**	

Interval #	**04**		**From Report**	**037**	**Top of Interval**	**3235.00**	**m**
Max. Hole/Bit Size	**0.000 / 0.000**	**in**	**To Report**	**055**	**Bottom of Interval**	**3235.00**	**m**

Rig Activity	Continue to space out for seal assembly. Displace tubing/9-5/8" annulus with inhibited 8.9 ppg filtered brine. Displace tubing to diesel fuel. Land tubing string and pressure test. Nipple down BOP's
Activity	Nipple down BOP's
Fluid Treatment	Received 31.3m/t of bentonite from RJ Hope.

For Report	**# 044**	**On**	**28/07/2004**	**Operation at Depth**	**3235 m**
Rig Activity				Nipple-up well head. Rig-up and pressure test surface testing equipment.	
Activity				Pressure test	
Fluid Treatment				Preparing spud mud for Yolla-3	

For Report	**# 045**	**On**	**29/07/2004**	**Operation at Depth**	**3235 m**
Rig Activity				Continue to rig-up and pressure test well testing package. Rig-up slick line, retrieve HE-3 plug and open SSD valves. Attempt to flow well. Initial pressure at 612 psi dropping to 0 psi. Run slickline and close SSD valves. RIH with slickline and drift and tag at 3190m. Make-up and run pressure gauge tools. Make-up, RIH and perforate lower interval. Open well and flare casing contents.	
Activity				Well testing	
Fluid Treatment				Continue preparing spud mud for Yolla-3.	

For Report	**# 046**	**On**	**30/07/2004**	**Operation at Depth**	**3235 m**
Rig Activity				Flow well to unload tubing. Flare diesel. M/U& RIH w/ perf guns to 3170m and shoot 2nd set of bottom hole perfs. RIH & set pressure gauges on slickline. Open well and flare gas. Continue with well testing.	
Activity				Well Testing	
Fluid Treatment				Continue preparing spud mud for Yolla-3.	

For Report	**# 047**	**On**	**31/07/2004**	**Operation at Depth**	**3235 m**
Rig Activity				Continue with well testing program.	
Activity				Well Testing	

For Report	**# 048**	**On**	**01/08/2004**	**Operation at Depth**	**3235 m**
Rig Activity				Continue with well testing program.	
Activity				Well Testing	

For Report	**# 049**	**On**	**02/08/2004**	**Operation at Depth**	**3235 m**
Rig Activity				Continued with well testing program.	
Activity				Well Testing	
Fluid Treatment				Charged additional Engineering Days on this report. 2nd engineer on location 30/07/04 - not charged on mud reports on: 30/7, 31/7 & 1/8.	

Interval #	**04**		**From Report**	**037**	**Top of Interval**	**3235.00**	**m**
Max. Hole/Bit Size	**0.000 / 0.000**	**in**	**To Report**	**055**	**Bottom of Interval**	**3235.00**	**m**

For Report # 050 On 03/08/2004	**Operation at Depth 3235 m**
Rig Activity	Continued with well testing program.
Activity	Fishing
For Report # 051 On 04/08/2004	**Operation at Depth 3235 m**
Rig Activity	Continued with fishing operations.
Activity	Fishing
Fluid Treatment	Please note: Discrepancy in bentonite stocks between Mud Reports and Barge Engineer Report is due to the spud mud for Yolla-3 having been mixed, but not charged to this well's mud reports. The bentonite was used from 28/7 to 30/7 in preparing the spud mud. The cost and volume of this mud will be considered on the first mud report for Yolla-3. The Barge Report shows the correct actual stock on board.
For Report # 052 On 05/08/2004	**Operation at Depth 3235 m**
Rig Activity	Continued with fishing operations.
Activity	Fishing
Fluid Treatment	Please note: Discrepancy in bentonite stocks between Mud Reports and Barge Engineer Report is due to the spud mud for Yolla-3 having been mixed, but not charged to this well's mud reports. The bentonite was used from 28/7 to 30/7 in preparing the spud mud. The cost and volume of this mud will be considered on the first mud report for Yolla-3. The Barge Report shows the correct actual stock on board.
For Report # 053 On 06/08/2004	**Operation at Depth 3235 m**
Rig Activity	Continued with completion operations.
Activity	Well Testing
For Report # 054 On 07/08/2004	**Operation at Depth 3235 m**
Rig Activity	Continued with completion operations.
Activity	Well Testing
For Report # 055 On 08/08/2004	**Operation at Depth 3235 m**
Rig Activity	Finished completion operations. Rigged down completion equipment. Prepared to skid to Yolla-3 at 12:30 hrs.
Activity	Skid Rig to Yolla-3
Fluid Treatment	Final report for Yolla-4 covering up to 12:30 hrs. A second mud report, covering Yolla-3 operations will be submitted for the balance of today. To balance today's costs, will charge 1 Engineering day to Yolla-4 and 1 day to Yolla-3.

Well Name	Yolla-4
Operator	Origin Energy Resources Ltd
Contractor	Ensco Australia Pty Ltd
Rig No	Ensco 102
Unit System	Esso

Deviation Actual

Survey Date	MD m	TVD m	Angle	Direction	Horiz Displ. m
19/06/2004	235	235	0.36	136.3	0.7
19/06/2004	293	293	0.17	195.4	0.9
19/06/2004	351	351	0.18	92.3	1.1
19/06/2004	467	467	0.21	111.5	1.3
19/06/2004	554	554	0.09	53.8	1.4
19/06/2004	641	641	0.04	53.1	1.5
19/06/2004	728	728	0.07	122.5	1.5
20/06/2004	816	816	0.17	337.7	1.4
20/06/2004	874	874	0.04	42.3	1.4
28/06/2004	921	921	0.04	217.5	0.3
28/06/2004	1,008	1,008	0.10	198.9	0.4
28/06/2004	1,067	1,067	0.10	102.1	0.4
28/06/2004	1,125	1,125	0.10	23.6	0.4
28/06/2004	1,183	1,183	0.10	290.3	0.4
28/06/2004	1,241	1,241	0.20	314.8	0.4
28/06/2004	1,299	1,299	2.60	214.6	1.1
28/06/2004	1,328	1,328	5.60	201.1	3.1
28/06/2004	1,386	1,385	9.10	215.1	10.5
28/06/2004	1,444	1,442	11.80	214.0	20.9
28/06/2004	1,502	1,499	16.20	212.7	34.7
01/07/2004	1,560	1,554	20.60	205.2	52.5
01/07/2004	1,618	1,608	24.10	202.9	75.1
01/07/2004	1,676	1,660	25.10	202.4	99.3
01/07/2004	1,735	1,713	25.50	200.9	124.1
01/07/2004	1,793	1,765	25.40	200.3	149.2
01/07/2004	1,851	1,818	24.60	199.8	174.0
01/07/2004	1,908	1,870	24.20	200.0	197.8
01/07/2004	1,967	1,923	24.30	200.7	221.6
01/07/2004	2,025	1,976	24.60	200.8	245.6
01/07/2004	2,083	2,029	24.80	201.1	268.8
01/07/2004	2,141	2,082	24.80	200.9	294.3
01/07/2004	2,199	2,134	24.50	200.9	318.5
01/07/2004	2,257	2,187	24.60	200.9	342.6
01/07/2004	2,315	2,240	24.20	201.2	366.7
01/07/2004	2,373	2,293	24.10	201.3	390.6
01/07/2004	2,431	2,346	23.60	201.9	414.2
01/07/2004	2,489	2,399	24.30	201.6	437.8
01/07/2004	2,547	2,452	23.60	201.5	461.4
05/07/2004	2,612	2,511	24.70	202.2	487.8
06/07/2004	2,785	2,668	25.00	200.0	560.5
06/07/2004	2,843	2,721	23.20	199.3	584.1
08/07/2004	2,903	2,776	22.90	201.4	607.4
10/07/2004	2,961	2,830	20.30	200.2	628.7
11/07/2004	3,019	2,885	18.30	198.4	648.3
11/07/2004	3,077	2,941	12.30	197.2	663.7
11/07/2004	3,135	2,998	8.50	195.9	673.8
11/07/2004	3,193	3,056	7.20	194.7	681.5
11/07/2004	3,213	3,076	6.80	196.5	684.0

Company	**Origin Energy Resources Ltd**
Well Name	**Yolla-4**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Bit Record Report

Run No	Bit No	Bit Size in	Bit Manufacturer	Bit Type	Bit Style	IADC Code	Serial Number	Jet or TFA sq-in	Depth Out m	Run Length m	ROP m/hr	WOB lb	Bit RPM	Pump Press psi	Pump OutPut gpm	Fluid Type	Fluid Weight ppg	Hole Angle	Bit Grading	Reason Pulled
1	1	16.000	HTC	MX-1	MT	117	6023745	3x24	900.0	680.0	27.2	10,000.0	157	1,750.0	860	Seawater-gel	8.75	0.04	2-2-BU-A-E-I-NO-TD	TD - Total/Casing Depth
2	2	12.250	HTC	ATJ-G8	MT	347	6010776	1x24|1x24|1x24	905.0	5.0						Flowzan/Drispac	8.70		1-1-WT-H-E-I-NO-BHA	BHA - Change BHA
3	3	12.250	HTC	HCM 506	FC		700138	6x18	2,614.0	1,714.0	14.6	15.0	70	4,000.0	866	Flowzan/Drispac	9.30	24.5	1-1-NO-A-X-I-NO-TD	TD - Total/Casing Depth
4	4	8.500	HTC	HCM 505	FC		7104781	2x16|3x18	2,892.0	278.0	11.7	12,000.0	245	3,050.0	556	Flowzan/Drispac	9.30	23.2	1-1-WT-N-X-I-NO-CP	CP - Core Point
5	5	8.500	DBS	CD 93	CH	M233	7000743	12.600	2,919.0	27.0	19.3	10,000.0	80	600.0	200	Flowzan/Drispac	9.30	23.2	1-1-NT-A-X-No-TD	Finish cutting core #1
6	6	8.500	BRITISH BITS	BB 650XA	FC		609940	2x16|4x18	2,958.0	39.0	9.2	13,000.0	242	3,290.0	585	Flowzan/Drispac	9.40	23	1-1-BT-G-X-I-No-CP	CP - Core Point
7	5R1	8.500	DBS	CD 93	CH	M233	7000743	12.600	2,985.0	27.0	36.0	6,000.0	95	790.0	222	Flowzan/Drispac	9.40	23.2	1-1-NT-A-X-No-TD	Finish cutting core #2
8	7	8.500	REED-HYCALOG	DSX173	FC	M322	206589	3x16|3x18	3,235.0	250.0	20.0	12.0	220	3,380.0	556	Flowzan/Drispac	9.40	23.2	1-1-CT-H-X-I-NO-TD	TD - Total/Casing Depth
9	8	8.500	HTC	MX20DHX	IN		6024400	3x24	3,235.0				40	2,400.0	568	Flowzan/Drispac	9.35	6.8	Wiper trip	LOG - Run Logs
10	9RR1	8.500	HTC	MX20DHX	IN		602440	3x24	3,235.0					2,130.0	585	Flowzan/Drispac	9.30	6.8	Wiper trip	TD - Total/Casing Depth

Well Name	**Yolla-4**
Operator	**Origin Energy Resources Ltd**
Contractor	**Ensco Australia Pty Ltd**
Rig No	**Ensco 102**
Unit System	**Esso**

Well Issues Report

	From Report	**022**	**Date**	**06/07/2004**	**@**	**2,779 m**			
	To Report	**027**	**Date**	**11/07/2004**	**@**	**2,985 m**	**Drilled:**	**206 m**	

Rpt No	Report Date	Issue No	Issue Causes	Depth From (m)	Depth To (m)	Formation Name	Fluid Name	Action(s) Taken	Results
022	06/07/2004	1	Mud Volume: Lost Circulation - Link to Formation	2,779	2,779	Eastern V.C Measures	Seawater/Drispac/Soltex	Circulate	Resolved
027	11/07/2004	2	Mud Volume: Lost Circulation - Link to Formation	2,958	2,985	Eastern V.C Measures	Seawater/Drispac/Soltex	Circulate	Resolved

ORIGIN ENERGY RESOURCES LTD
BAROID DRILLING FLUID RECAP
YOLLA-4
BASS STRAIT, VICTORIA.

Prepared by Tony Kowalski, Adam Martin
Dan Cotter, Hayden Butler

Date June/July/August, 2004

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10. DAILY MUD REPORTS

1. WELL SUMMARY

1.1 Well Data

Well Name	:	Yolla-4
Operator	:	Origin Energy Resources Ltd
Well Type	:	Deviated/Production
Bottom Hole Temperature	:	93°C (Dynamic), 145°C (Static)
Location	:	T/L1, Bass Strait, Victoria
Contractor/Rig	:	ENSCO 102
Start Date (Rig)	:	06/06/04 (17:30 Hrs)
Baroid On Location	:	07/06/2004
Spud Date (Clean out Conductor)	:	18/06/2004 (21:45 Hrs)
RT to Mudline	:	124.8 m
Total Depth	:	3235 m MD, 3097 m TVD
Date TD Reached	:	11/07/2004 (22:00 Hrs)
Total Days Actual Drilling	:	16 Days
Date Released	:	08/08/2004 (12:30 hrs)
Total Days on Well	:	55 Days (Does not include pre-loading, driving pipe on Yolla-3 and wait for weather.
Drilling Cuttings Volume	:	1699 bbls

1.2 Formation Tops

Formation	MD (m)	TVD (m)	Inclination (deg.)
Seabed	124.8	124.8	00.00
Angahook Formation	1100	1100	00.00
Top Miocene Volcanics	1280	1280	00.00
Base Volcanics	1415	1413.9	10.04
Demons Bluff	1723	1712.8	25.53
Eastern View Coal Measures	1879.5	1844.1	24.20
Top EVCM TEV4 Sand	1908	1870.4	24.21
Coal Marker	2516.5	2425.6	23.85
Igneous Intrusion	2719	2565.7	25.00
2718 Sand	2860	2736	25.4
2755 Sand	2899	2773	22.7
2809 Sand	2959	2829	20.2
2973 Sand	3137	3001	8.4
Basalt	3192	3054	7.2
Total Depth	3235	3097	6.8

1.3 Casing Program

20”	Driven Conductor	@	220 m MDRT
13 3/8”	Surface casing	@	884.5 m MDRT
9 5/8”/10 ¾”	Intermediate Casing	@	2586 m MDRT
6 5/8”	Production Liner	@	2534 m – 3235 m MDRT

1.4 Personnel

Drilling Supervisors	:	Henry Flink	Mark Nasarczyk
	:	Murray Jackson	Chris Holgate
Baroid Field Service Reps.	:	Tony Kowalski	Adam Martin
	:	Dan Cotter	Hayden Butler

2. COST SUMMARY

2.1 Drilling Fluid Costs

	Drilling Fluid	Hole Size	MD From	MD To	Cost USD $
	Driven 20” Conductor – (No Fluid)	20”	0 m	220m	
1.	Seawater/Hi-Vis Bentonite Sweeps	16”	220m	900m	
2.	Seawater/Drispac/Soltex	12.25”	900m	2,614m	
3.	Seawater/Drispac/Soltex	8.5”	900 m	3,235 m	

Mud Materials Used For Drilling	**Total USD $**
Materials Used For Cementing	**USD$**
Materials Used For Completion	**USD$**
Total Materials	**USD $**

2.2 Engineering Costs

Service Representatives	From (date)	To (date)	Days
Tony Kowalski	07/06/2004	20/06/2004	14
	05/07/2004	18/07/2004	14
	02/08/2004	08/08/04	6.5
Adam Martin	17/06/2004	01/07/2004	15
	16/07/2004	23/07/2004	8
Dan Cotter	21/06/2004	04/07/2004	14
	19/07/2004	01/08/2004	14
Hayden Butler	02/07/2004	15/07/2004	14
	30/07/2004	08/08/04	9.5
Total Days:			**109**

Service Cost @ AUD $	**@ USD $**

Total Cost of Materials & Engineering:	**USD $**

3. PERFORMANCE SUMMARY

3.1 Comments

Overall the drilling fluids performed well, with no mud related problems occurring. The Seawater/Hi-Vis Bentonite Sweeps, spud mud performed as planned and this section was drilled below programmed cost. The Seawater/Drispac/Soltex system was effective, with the $12^1/_4$" hole section drilled and cased without incident and the $8^1/_2$" hole section drilled close to gauge.

However, the Seawater/Drispac/Soltex mud system proved to be difficult to control as programmed. The mud formulation required modification due to unacceptably high rheology. The dilution/consumption rates and total mud volume used were significantly higher than programmed, primarily as a result of controlling the mud weight. The total well cost for drilling fluid was 11.5% higher than programmed. Many of the target properties for this fluid were not achieved, as attempting to do so would have required higher concentrations of chemicals, resulting in unacceptably high costs. Despite this, well bore stability was not compromised at any time.

3.2 Performance Indicators

Interval 1. (220 m – 900m)	**Program**	**Actual**	**Achieved (+/- 10 %)**
• Drilled, m	869	680	Yes
• Volume Built, bbl	5,569	4,138	Yes
• Consumption Rate, bbl/m	-	4.60	Yes
• Mud Cost / bbl, USD $			
• Mud Cost / m, USD $			
• Interval Mud Cost, USD $			

Interval 2. (900 m – 2614 m)	**Program**	**Actual**	**Achieved (+/- 10 %)**
• Drilled, m	1,365	1,714	No
• Volume Built, bbl	3,283	4,839	No
• Dilution Rate, bbl/m	1.25	1.76	No
• Consumption Rate, bbl/m	2.40	2.94	No
• Mud Cost / bbl, USD $			
• Mud Cost / m, USD $			
• Interval Mud Cost, USD $			

Interval 3. (2614 m – 3235 m)	**Program**	**Actual**	**Achieved (+/- 10 %)**
• Drilled, m	955	621	Yes
• Volume Built, bbl	1,575	2,021	No
• Dilution Rate, bbl/m	1.00	2.70	No
• Consumption Rate, bbl/m	1.65	4.78	No
• Mud Cost / bbl, USD $			
• Mud Cost / m, USD $			
• Interval Mud Cost, USD $			

- **Cost of Materials Used For Drilling**
- **Materials Used For Cementing**
- **Materials Used For Completion**
- **Total Well Cost, USD$ (Materials Only)**

Explanation of Non-Conformance

Interval 1:

- All Performance Indicators were met or exceeded.

Interval 2:

- Interval Drilled: TD for this interval was extended when weather did not allow for offloading the 9-5/8" casing.
- Volume Built, Dilution Rate, Consumption Rate: Volumes increased with the extra hole drilled for interval TD. Dilution and consumption rates were increased in response to the unexpected high rheology of the mud as programmed. An increase in dilution was also required to maintain mud weight at programmed levels.
- Mud Cost/bbl and Mud Cost/m: While the total interval cost was slightly higher than programmed, mud costs per m and per barrel were lower than programmed. As rheology increased through the interval, new premixes were built with less than the programmed concentrations of Drispac R, Flozan and pre-hydrated bentonite. Barite, which was programmed for the interval, was not used.

Interval 3:

- Volume Built, Dilution Rate, Consumption Rate: The volume built for the interval was higher than programmed. This was due to the fact that dilution was used as the primary means of controlling the mud weight. The resulting dilution and consumption rates were higher than anticipated due to a number of factors. A large volume of premix was required to dilute the 9.5 ppg salvaged mud in order to commence drilling with a 9.2 ppg mud weight. In practice, this means the true salvaged volume utilized in the interval was less than that calculated. Also, the desilter didn't seem to work efficiently which meant (aside from the shakers), dilution was the only method of mud weight control. Multiple trips were made for coring and wiper trips, on each occasion a slug was pumped, again necessitating increased dilution to reduce mud weight. In addition, approximately 200 bbls of mud was lost downhole, requiring further premix volume to be built.
- Mud Cost/bbl: The mud cost per barrel was approximately 22% higher than programmed due to the increased concentration of chemicals used in trying to achieve the target mud properties. In particular, the amount of Soltex used in maintaining a low filtrate loss was significantly more than programmed. This may in part have been due to the high downhole temperatures experienced. The quantity of Flowzan used was also higher than programmed, as the low end rheology was constantly below specification. Extra Flowzan was used for viscosity to substitute for the reduction of Drispac R additions after the excessive high end rheology experienced in the $12^{1}/_{4}$" section. The amount of caustic and barite used were also more than estimated in the program. Also, the amount of Ammonium Bisulphite required to maintain 100 ppm residual sulphites seemed high, particularly as the BHT increased.
- Mud Cost/m: The mud cost per metre was exceedingly high compared to the program. This was due to the increased volume and cost of the mud used. It is also a result of the reduced interval length which makes it difficult to compare consumption rates against the target.
- Interval Cost: The total interval mud cost was more than 50% over the programmed figure due to a number of factors as discussed above.

4. INTERVAL - 1

4.1 SUMMARY

A 20" conductor was first driven on Yolla-4 to 220m. The rig was then skidded over Yolla-3 and the conductor driven to 215m. After skidding back over Yolla-4, the well was spudded and the16" hole interval successfully drilled to 900m with seawater and 30-50 bbl hi-vis sweeps pumped every joint. The first 2 sweeps per stand were hi-vis bentonite diluted with seawater and flocked with lime, while the 3rd one was undiluted 35 ppb pre-hydrated bentonite. Prior to a wiper trip to the 20" conductor shoe, a 50 bbl hi-vis undiluted bentonite sweep was circulated around, and the open hole displaced with the same fluid to 150% of open hole volume. After waiting on weather, the 13 3/8" casing was successfully run and cemented at 884.5m MD.

16" Hole From 220m To 900m In 2 Days

Drilling Fluid Seawater/ Bentonite Sweeps
Formations Torquay Group

Properties **Programmed** **Actual (Typical Drilling)**

	Min	Max	Min	Max	Conformance
Funnel Viscosity	-	<120	115	120	Yes
Calcium (mg/lt)	>400		420	480	Yes
Chlorides (mg/lt)	>1500		1550	1750	Yes

Explanation of Non-Conformance
- All properties were maintained in the programmed range.

Maintenance
- While driving the 20" conductor, an initial volume of 3282 bbls of 35 ppb pre-hydrated bentonite was mixed prior to the commencement of drilling 16" hole below the conductor.
- Initially, 410 bbls of the pre-hydrated bentonite was diluted with seawater to a finished concentration of 20 ppb bentonite. The dilution proportions commenced at approximately 60/40 seawater to pre-hydrated bentonite, but were adjusted as required.
- The seawater diluted pre-hydrated bentonite was then flocked with 0.5 ppb lime and an additional 0.25 ppb caustic soda.
- The pit of flocculated Seawater/Bentonite was topped up whenever the volume dropped to 200 bbls, and the concentrations of caustic soda and lime adjusted based on the final rheology and alkalinity of the previous 200 bbls.
- Efforts were made to conserve the pre-hydrated bentonite where possible, as weather conditions prevented offloading additional bentonite from the boat, and guar gum could not be used.
- A further 411 bbls of flocculated seawater pre-hydrated bentonite was prepared prior to reaching casing depth at 900 m.
- At TD at 900 m, a 50 bbl hi-vis undiluted pre- hydrated bentonite sweep was displaced around with seawater. The open hole was displaced with the same fluid to 150% of open hole volume.
- After the wiper trip to the shoe and back (no fill), the open hole was again displaced with undiluted pre-hydrated bentonite to 150% of open hole volume, less the inhibited pill.
- 159 bbls of KCl inhibited undiluted pre-hydrated bentonite was displaced with seawater and spotted on bottom.

Solids Control Equipment
- In this interval, all returns were to the sea via ports in the 20" conductor, hence no solids control equipment was utilized.

4.2 EVALUATION

Comments
This interval was drilled and cased trouble free.

Problems, Causes, Remedial Action Taken or Recommended

Hole Conditions

1) Problem None
   Cause
   Action

Drilling Fluid

1) Problem KCl was not programmed for this interval. Had to shovel bulk bag of KCl into mixing hopper by hand.
   Cause Casing bay was full, which prevented installation of the deck hopper over the salt chute. High winds delayed the removal of the casing to the pipe deck.
   Action Suggested that a pallet of 25 kg sacks of KCl be available for next well.

Solids Control and Mud Mixing Equipment

1) Problem Occasional difficulties mixing bulk bentonite and barite from the surge tank.
   Cause Feed line is on a 45 deg angle. Product becomes wet and blocks line.
   Action Dismantled lines and cleaned.

4.3 RECOMMENDATIONS FOR IMPROVEMENT

Hole Conditions

- None

Drilling Fluid

- Have a contingency pallet of 25 kg sacks of KCl available for this interval on the next well.
- Reconsider the possible use of Guar Gum for some of the sweeps while drilling this interval on future wells.

Solids Control and Mud Mixing Equipment

- Consider modifications to the mud bulk products system.

5.0 INTERVAL - 2

5.1 SUMMARY

This section was drilled in 1 bit run using a 12 ¼" PDC bit. The section was drilled successfully with no major hole problems. Some tight spots were noticed while tripping back to TD after the wiper trip to the shoe (suspected coal sloughing), however these were reamed without trouble. Some gas was encountered in the volcanics (1325-1365 m MD) as well as in the Eastern View Coal Measures (2602 – 2614 m MD). The interval was extended beyond the programmed total depth to 2416m when weather would not allow for off-loading the 9-5/8"casing.

The casing was successfully run to 2586m and cemented without problem.

12 ¼" Hole From 900m To 2416m In 7 Days

Drilling Fluid Seawater/Drispac/Soltex
Formations Torquay Group, Angahook, Miocene Volcanics, Demons Bluff, Eastern View Coal Measures

Properties	**Programmed**		**Actual (Typical Drilling)**		
	Min	**Max**	**Min**	**Max**	**Conformance**
Mud Weight, ppg	8.7	9.4	8.7	9.4	Yes
Yield Point (lb/100 ft²)			29	54	n/a
Dial 6 rpm (lb/100 ft²)	10	15	9	14	Yes
Low Gravity Solids (% by vol)		<6.0	2.0	7.7	No
API Filtrate (cc/30 min)		<4.0	3.3	6.5	No
HTHP Filtrate (200° F-ml)		<12.0	10.6	16.5	No
MBT (ppb)		<15.0		11	Yes
pH	8.2	9.2	7.5	9.0	No
Total Hardness (mg/l)		<400	240	360	Yes

Explanation of Non-Conformance

- .Low gravity solids increased following the wiper trip at TD. This was possibly due to fine solids generated on the trip. Some of the shaker screens were also found to be worn following the trip.
- API and HTHP fluid losses were difficult to control at programmed levels. The fluid loss did drop in the latter stages of the interval through the incorporation of drilled solids. As programmed, however, the low API and HTHP losses may be a bit ambitious for the fluid type.
- The pH dropped for a short period of time when drilling through a CO2 bearing sand at interval TD. The system was treated with small amounts of lime and additions of caustic soda were continued.

Maintenance

- Fully specified Seawater/Drispac/Soltex mud was premixed at programmed concentrations and allowed to shear while WOC and nippling-up BOP's. Seawater was used as the make-up fluid to provide a similar chemistry to connate water and minimize near-wellbore water transportation.
- The stage collar, cement and shoe were drilled with seawater and the casing swept with hi-vis bentonite left over from the previous interval. At the casing shoe a hi-vis sweep was pumped followed by displacement with new Seawater/Drispac/Soltex mud.
- A constant mud formulation was maintained from the initial displacement. This provided full inhibition for improved hole conditions and cuttings integrity and avoided any initial period of reduced mud performance.
- Pre-hydrated bentonite remaining from the previous interval was treated with 4 ppb of Desco-CF and then transferred to the premix to obtain a final bentonite concentration of 4-5 ppb.

- An additional 2ppb pre-hydrated bentonite/Desco CF was added to the active system after the commencement of drilling to assist in lowering API and HTHP fluid loss.
- Immediately following displacement, Drispac R and L were added to the active system at a rate of 0.5 lb/m each to maintain an excess in the system. Drispac R and L, encapsulating polymers, were added continuously throughout the interval to control solids build-up.
- The entire active system was treated with BARACOR-129 oxygen scavenger. Sulfite concentrations were monitored and maintained through regular product additions.
- High flow-line temperatures (up to 70 degs.C) resulted in dehydration of the mud through evaporation. This, in conjunction with continuous additions of PAC R for inhibition, caused increasing funnel viscosity, PV/YP and high-end rheology. Small amounts of seawater (6-8 lt/min) were added at the shaker to replace free water to the system. The amount of Drispac being added to the system was also reduced. The high-end rheology dropped to acceptable limits with little effect on other properties.
- While drilling to 2614m, CO2 contamination was detected by a drop in pH and an increase in Mf alkalinity. The active system was treated with .02 lbs/bbl lime and continued additions of caustic soda.
- Dilution rates with new premix were maintained at an average rate of 1.76 bbls/m. This rate was higher than programmed in response to high mud rheology and the requirement to maintain low mud weights.

Solids Control Equipment

- The 4 Derrick FLC 415 shakers were initially dressed with 4 x 125 mesh screens on shakers #1 and #2 and 4 x 80 mesh screens on #3 and #4 shakers. All were previously used screens.
- Slight losses of new un-sheared mud over the 125 mesh screens on shakers 1 and 2 on displacement resulted in these screens being replaced with 80 mesh. Shaker 5, the mud cleaner shaker, was also dressed with 80 mesh screens and brought into line.
- Following displacement, after the mud had warmed up and received initial shearing through the bit, the screens were downsized to 150 mesh and then to 200 mesh.
- The Derrick mud cleaner was dressed with 4 previously used 180 mesh screens and upgraded to 265 mesh as mud properties permitted.
- The mud cleaner was operated through the interval. However, as there was very little sand being generated from the cuttings (1.0-1.5%), its operational effectiveness is inconclusive.

5.2 EVALUATION

Comments

A Seawater/Drispac/Soltex mud system was chosen to drill the 12-1/4" interval following a study of hole stability vs. mud chemistry conducted by Stuart Douglas on behalf of Australian Drilling Associates. Drispac, an encapsulating polymer, provided the inhibition necessary to control clay swelling and solids build-up in the mud. Borehole instability and API/HTHP fluid losses were controlled by using Soltex to coat the well-bore and plug microfractures.

While the system performed well in its inhibitive qualities, there was a problem with high and increasing mud rheology through the interval. The polymers were premixed at programmed amounts and continuous additions for inhibition were maintained through the interval. The high-end rheology of the initial premix was greater than expected and rose with maintenance additions. This, coupled with dehydration of the system due to flow-line temperatures, produced unexpectedly high funnel viscosity, PV/YP and high-end rheometer readings. It became necessary to add seawater at the shakers and reduce additions of Drispac R.

The premix formulation will be altered for the next interval. Concentrations of Drispac R, which produces high end rheology, will be lowered. Programmed amounts of Flowzan should produce sufficient low-end rheology for hole cleaning. Inhibition will be provided for by increased concentrations of Drispac SL.

Problems, Causes, Remedial Action Taken or Recommended

Hole Conditions

1) Problem Cavings/slivers from Angahook Formation (1100m-1723m) while drilling at 2600m.
   Cause Possibly generated during sliding interval.
   Action Circulate clean at TD and on wiper trip. No further problems.

Drilling Fluid

1) Problem Increasing funnel viscosity / high end rheology.
   Cause Mud dehydration due to high flow line temperatures. Continuous addition of Drispac R (a viscosifier) for inhibition.
   Action Ran 6-8 lt/min seawater at shakers. Reduced Drispac R additions. Rheology slowly dropped to acceptable levels as free water was replaced without adversely affecting other properties.

2) Problem Drop in pH and increase in Mf in active mud.
   Cause CO_2 contamination.
   Action Treat with .02 lbs/bbl lime and continuing caustic soda additions.

Solids Control and Mud Mixing Equipment

1) Problem Desilter is not performing as effectively as designed.
   Cause Possibly due to high mud rheology.
   Action Will monitor next interval.

5.3 RECOMMENDATIONS FOR IMPROVEMENT

Hole Conditions

- None.

Drilling Fluid

- Premixes will be modified on the next interval to reduce the high funnel viscosity and high-end rheology. Drispac R concentrations will be reduced to lower funnel viscosity and PV/YP. A slight increase in Flozan concentrations will improve the low end (6 rpm) rheology. Drispac SL concentrations will be increased to ensure sufficient encapsulation of drilled solids.

Solids Control and Mud Mixing Equipment.

- Monitor mud cleaner for performance.

6. INTERVAL - 3

6.1 SUMMARY

This section was drilled successfully to TD at 3235 m without significant hole problems. A steerable assembly with PDC bit and MWD tools was used to drill the section. After cleaning out the rat hole, the active system was circulated to reduce the mud weight and a LOT conducted to 10.0 ppg EMW. The hole was drilled from 2614 m to the first core point at 2892m. Core #1 was cut from 2892 m to 2919 m with 100% recovery. A further 39 m was drilled to reach the second core point at 2958 m. Core #2 was also cut with 100% recovery to a depth of 2985 m.

While reaming the 27 m of cored hole from 2958 m, with the next drilling assembly, significant downhole losses were observed. The mud weight was reduced by dilution with premix while drilling ahead and monitoring losses, which were observed to cease without requiring LCM. The hole was then drilled to TD without problems. A wiper trip was conducted to the 10-3/4" casing shoe prior to pulling out for wireline logging.

The logging tool hung up at 2776m on the initial run and a clean out trip was required. Subsequent logging runs were successful over a period of 4 days, and the caliper log indicated a fairly good, gauge hole. During the wiper trip following the lengthy wireline logging program, during which the hole was not circulated for almost 5 days, difficulty was experienced in pulling out of the hole off bottom. The mud had deteriorated somewhat and after conditioning we pumped out to 2772 m. The 6 5/8" liner was successfully run and set from 2534m to 3235m.

8 ½ " Hole From 2614 m To 3235 m In 7 Days

Drilling Fluid Seawater/Drispac/Soltex
Formations Eastern View Coal Measures, Fault, 2718 Sand, 2755 Sand, 2809 Sand, GWC2, 2952 Sand, 2973 Sand, 2973 Base, Basalt

Properties	**Programmed**		**Actual (Typical)**		
	Min	**Max**	**Min**	**Max**	**Conformance**
Mud Weight, ppg	9.1	9.4	9.1	9.5	No
Plastic Viscosity (cps)		ALAP	28	44	n/a
Yield Point (lb/100 ft²)	20	30	19	45	No
Dial 6 rpm (lb/100 ft°)	10	15	6	9	No
Low Gravity Solids (% by vol)		<5.0%	4.4	7.5	No
API Filtrate (cc/30 min)		<3.0	3.4	4.2	No
HPHT Filtrate @ 250°F(cc/30 min)		<10.0	10.4	12.0	No
MBT (ppb)		<10.0	4.0	10.0	Yes
pH	8.2	9.3	8.3	9.2	Yes

Explanation of Non-Conformance

- The mud weight of the volume salvaged from the previous section was 9.5 ppg. This was reduced to 9.2 ppg at the commencement of drilling through dilution of premix. Density was maintained within the program range for the majority of the interval. The only occasion where mud weight exceeded the programmed range was on the initial circulation after the second coring run. The mud weight was maintained at 9.4 ppg while drilling prior to reaching core point, as requested. Two slugs were pumped prior to reaming the cored section, one for the trip out with the drilling BHA and another for pulling out with the core. The weight increase was due to barite in the slugs, not low gravity (drilled) solids. The weight was reduced to within the programmed range by dilution while drilling the final section to TD.
- Plastic Viscosity was high initially in the mud volume used in the previous interval. This was reduced by dilution at the start of the interval and maintained below 36 cps for the rest of the 81/2" hole section.

- As for PV, the Yield Point was initially high in the salvaged mud volume. After dilution, the YP was dropped to 19 when the system was thinned down to reduce weight and viscosity. It was generally maintained in the range of 25 – 35 throughout the interval.
- The 6 rpm reading was below the programmed specification for the entire interval. This was deliberately allowed as increasing the 6 rpm would result in a corresponding increase in the high shear rate rheology as experienced in the previous hole section. The extra expense of using higher concentrations of Flowzan were not justified as calculations with Baroid's 'Drill Ahead Hydraulics' indicated the hole was being cleaned effectively with the rheology obtained. When the 6 rpm decreased as low as 6, additions of Flowzan were made directly to the active system. The 6 rpm reading was maintained at the higher end of the stated range for most of the interval.
- The maximum Low Gravity Solids was in the mud salvaged at the end of the previous hole section. The minimum LGS obtained of 4.4% was immediately after the initial dilution of the system. Subsequently, LGS were generally in the range of 5.1% to 6.2%. After the initial dilution, mud weight was allowed to increase to 9.3 ppg with a corresponding increase in the percentage of drill solids. Maintaining LGS below 5% was not achievable due to the high dilution rates necessary. In addition, the desilter (mud cleaner) was not operating effectively for much of the interval (see notes on solids control equipment below).
- The API and HTHP filtrate loss exceeded the programmed specification for the entire interval. As stated in the discussion for the 12-1/4" interval, these targets are probably not achievable with this mud system as formulated. Additions of Drispac and Soltex were made directly to the active system if the fluid loss was observed to 'drift' while drilling. However, it would require significantly higher product concentrations to actually achieve the programmed targets.

Maintenance

- After dumping and cleaning the sand trap and solids control pits, a total of 945 bbls of mud used in drilling the $12^{1}/_{4}$" section was salvaged for use in this interval.
- New premix volume was mixed for bleeding into the active system to reduce the mud weight once drilling of 8 ½" hole commenced.
- Additions of Drispac R, which increases high-end rheology, were reduced so as to avoid the elevated high-end rheology experienced in the 12 ¼" hole interval.
- Premix mud was mixed with increased additions of Drispac SL to compensate for the reduced concentration of Drispac R.
- The surface active system was reduced for this interval, and the mud pre-treated with sodium bicarbonate and citric acid prior to, and while drilling, cement.
- Once the casing had been drilled, the drill string was pulled up into the casing and the surface volume reduced. The active system was circulated while the light weight premix was bled in until the mud weight was reduced to 9.2 ppg, after which a LOT was carried out to an EMW of 10.0 ppg.
- Soda Ash was added to the active system to reduce the calcium content which had increased after drilling the cement.
- Commenced drilling 8 ½" hole and continued to mix and bleed new premix into the active system to control the mud weight. The surface volume was usually reduced prior to bleeding in, and the excess mud retained in the reserve pits rather than being dumped.
- Increased dilution rates were generally necessary to reduce the mud weight back after trips due to the weight increase from slugs.
- Water was added directly to the active system at the flowline trough, as required to replace water lost from evaporation at the high flowline temperatures. The water additions also helped to control the mud weight, but it was then necessary to ensure that programmed product concentrations were maintained.
- Additional Flowzan was added to the premix, and also directly to the active, to increase and maintain the low-end rheology.
- Increased additions of Soltex and Drispac SL were made directly to the active system to compensate for the reduction in Drispac R additions.

- High dilution rates of new light weight premix were required to control the active system mud

weight. As above, the active surface system was reduced either prior to the addition of the premix, or by diverting returning fluid to another pit via the trough prior to the diluted mud returning to surface.

- All excess mud was retained in reserve pits, in the event it might be required later on this well, or for possible use as sweep fluid on the 16" interval of the next well.
- Additional dilution premix was prepared shortly prior to reaching programmed TD due to the increase in the active mud weight which was primarily the result of the numerous barite slugs pumped at this time.
- On the final circulation, prior to pulling out to run wireline logs, the mud to be left downhole was dosed with additional Ammonium Bisulphite and caustic soda in anticipation of a lengthy period during which the well would not be circulated.

Solids Control Equipment

- For the commencement of the 8 ½" hole interval, the 4 Derrick FLC 415 shakers were dressed primarily with 200 mesh screens along with 3x180 and 3x230 mesh.
- As screens became torn, they were removed and patched. The screens use to replace the screens being repaired were, in most cases, of a comparable mesh.
- The shakers performed well, and no new screens were required.
- The Derrick mud cleaner (of which only the desilter was utilized) was dressed with 265 mesh screens for the entire interval.
- The mud cleaner (desilter) did not prove to be an effective piece of solids control equipment, although unlike the previous interval, considerable sand intervals were drilled.
- While the mud weight ranged between 9.3 and 9.5 ppg, the highest cone underflow weight observed was only 9.6 ppg.
- The pressure on the discharge side of the desilter pump was in excess of 40 psi, while the pressure on the desilter manifold never exceeded 11-20 psi. An effective desilter should operate in the pressure range of 35-40 psi.
- Attempts to increase the operating pressure by closing the valves on a number of the cones made very little difference in the pressure, and in some cases, whole mud flowed out of the bottom of these isolated cones. This indicated that the mud was discharging "backwards", that is flowing from the manifold, through the "processed mud" elbow and out the cone.
- The entire desilter was twice entirely disassembled and lines disconnected and thoroughly cleaned. The orifice nozzles were also all replaced and the interior of all cones inspected for excessive wear. There was none. The pump was torn down and the impeller and wash plate inspected, and were found to be in good condition.
- Not having any other effective solids control equipment except the shakers contributed to the high dilution rates required to control the mud weight during this interval.

6.2 EVALUATION

Comments

The 8 ½" hole interval was drilled with basically the same Seawater/Drispac/Soltex mud used for the 12 ¼" interval. Controlling the mud weight within the programmed range proved difficult and dilution volumes were significant.

The premix formulation was changed in this interval, based on experience in the 12 ¼" interval, which reduced the high-end rheology but in turn, the low end rheology was lower than programmed. However, Baroid's Drill Ahead Hydraulics software indicated that the hole was being cleaned. The problem with the first wireline log hanging up at 2776 m was attributed to a formation change, while the difficulties coming off bottom on the wiper trip following logging could have been a function of several factors; time sensitive formation, 5 days without circulating the hole which led to some deterioration of some mud properties, variations in the mud weight prior to logging or a combination of these factors.

Achieving the programmed API and HTHP fluid losses were basically unachievable, even with significant increases in the concentration of fluid loss additives.

Another area where difficulties were encountered was maintaining the mud weight at 9.3 +/- ppg. Although this was achievable, it required considerable dilution, along with the required concentrations of chemicals required to maintain the other properties. At TD, there was approximately 1600 bbls of excess mud in the reserve pits. It was hoped to be able to utilize this mud for sweeps in the 16" hole interval of Yolla-3, but this fluid started showing indications of bacterial degradation and due to the expense of treating for this it was decided to dump this mud once the liner had been set.

Problems, Causes, Remedial Action Taken or Recommended

Hole Conditions

1) Problem Lost approximately 170 bbls downhole while reaming down the freshly cored hole section for core #2.
   Cause Losses appeared to have occurred in the 2809 Sand which had just been cored and which was reported to have a relatively high porosity. The other possibility is that the formation broke down near the shoe due to the ECD exceeding the 10.0 ppg EMW leak off test achieved. The mud weight was certainly higher after when circulation commenced, mainly due to two slugs having been pumped from the coring run and trip out with the previous drilling BHA. In addition, surface volume of mud had cooled significantly and slightly increased in density and viscosity. This may also have contributed to higher ECD on commencing circulation.
   Action Transferred used reserve mud back into active to replace lost volume. Bled in premix at a steady rate to reduce the mud weight and therefore ECD. Losses stopped of their own accord following this action. Strictly monitored hole volume and mud weight following losses.

Drilling Fluid

1) Problem Difficulties in controlling mud weight.
   Cause Although the shakers are very good, the only other solids control equipment is the mud cleaner, which has proved to be ineffective. See below.
   Action See below.

2) Problem Requested API and HTHP fluid losses were never achieved.
   Cause There is some doubt as to whether these fluid losses could be achieved with the mud formulation being run. Although achievable at surface, they are very difficult to maintain under the conditions experienced during the drilling of this interval.
   Action Maintained fluid losses as low as thought practical and economical.

3) Problem Ammonium Bisulphite consumption appeared to be excessive in maintaining the programmed 100 ppm residual sulphites. Also, despite maintaining the sulphites at the required concentration for the majority of the interval, there were occasional

indications of bacterial degradation, in both the active and excess mud volume.

Cause It appears that a sufficient concentration of Ammonium Bisulphite alone is not effective in preventing bacterial buildup.

Action Added Baracide biocide, in conjunction with (but not at the same time as) the Ammonium Bisulphite.

Solids Control and Mud Mixing Equipment

1) Problem Mud cleaner (desilter) still did not work effectively. Underflow weight only about 0.2 ppg higher than the mud weight.

Cause Although pump discharge was 40> psi, the desilter manifold pressure gauge only indicated 11-20 psi. Tried 3 different gauges. Isolating some of the cones made little difference.

Action The entire desilter was stripped down twice and lines disconnected and cleaned. The pump was also disassembled and inspected. No problems were detected.

2) Problem Mixing bulk barite and bentonite from the surge tank is still time consuming.

Cause The angle of the feed line restricts rate of product addition allowing the product to get wet and eventually block the feed line.

Action Shut down mixing. Disassemble feed line and unblock. Rig and operator personnel have been appraised of the problem.

6.3 RECOMMENDATIONS FOR IMPROVEMENT

Hole Conditions

- Be aware on the next well of the possibility of again losing returns in the porous sands when back in the hole following cutting a core.
- Perhaps we need to highlight the results of Drill Ahead Hydraulics better. We have been asked to use it to calculate ECD and provide a copy of the output to the Drilling Supervisor when drilling. Results while drilling prior to the second core point indicated that ECD was already very close to the leak off test result at the shoe, and yet no instruction was issued to reduce the weight. On the contrary we were asked to maintain the weight at 9.4 ppg. The onus is obviously on us to draw attention to our results, otherwise we are simply producing irrelevant output that nobody looks at.

Drilling Fluid

- Consider reappraising the mud program in regards to realistically achievable API and HTHP fluid losses. The concentrations of chemicals used were higher than programmed and yet the targets were still not achieved. The use of bentonite was minimized in the premixes for this section due to concern about rheology in the previous interval. It may be of benefit to include a low concentration of bentonite regardless to assist in controlling filtrate loss.
- Some thought must also be given in regards to low end rheology, possibly basing it on real and apparent hole cleaning as modeled with Baroid's Drill Ahead Hydraulics software. A target 6 rpm of 10 -15 is probably excessive for the hole angle of 24 degrees in $8^1/_2$" hole.
- Be aware of the costs of relying primarily on dilution as a means of controlling mud weight should desilter performance not be improved.
- Use of a biocide in all make up water for premixes should be considered a must to avoid bacterial degradation.
- It was noted, throughout the drilling of this interval, that filter cake quality varied quite extensively, and not necessarily as a function of the fluid loss value itself. The reason for theses variations was not determined, although it was noted that the filter cake quality on mud checks carried out on the suction pit volume during logging were all good quality.

Solids Control and Mud Mixing Equipment.

- Pay serious attention to bulk mixing problems.
- Attempt to find the cause of the ineffectiveness of the desilter.
- Consider the use of a centrifuge on future wells.
- Consideration could be given to running finer mesh shaker screens than the average 200 mesh screen size used during this interval. Finer screens would be more expensive and usable life shorter than the coarser screens. If the shakers are to be our only reliable means of solids control, then the added cost of finer screens should be compared to that of the cost of dilution to control the mud weight.

7. COMPLETION INTERVAL

7.1 SUMMARY

After setting the 7" liner, a 5-3/4" bit and 6-5/8" x 9-5/8" scraper assembly was run to clean through the liner hanger and scrape any residual cement from the casing. A 50 bbl hi-vis pill was pumped and the well displaced to seawater. A short trip to the top of the liner was made to scrape the packer setting intervals. When back on bottom, the clean-up pills were pumped and the well circulated with seawater until acceptable Ntu readings were obtained at surface.

A filtered saturated NaCl sized salt pill was spotted in the 7" liner, the pipe pulled to 2404m and the 9-5/8" casing displaced to filtered 8.9 ppg NaCl brine. Production intervals were perforated at programmed depths. There were no brine losses following the perforations. Casing scrapers were re-run to remove any debris remaining from the perforations and to scrape the packer setting depths. The completion tubing was run to depth and prior to stinging into the permanent packer the tubing/9-58" annulus was displaced to filtered inhibited 8.9 ppg NaCl brine and the tubing displaced to diesel fuel.

Pressures from the three perforated intervals were not sufficient to overcome the hydrostatic of the diesel and allow the well to flow. The bottom zone was, therefore, perforated and the diesel displaced from the well. The bottom interval was allowed to flow for a clean-up period and then the upper intervals opened for clean-up.

Completion Fluid Filtered 8.9ppg NaCl Brine, Saturated NaCl brine/Sized Salt pill, Inhibited NaCl packer fluid

Properties	**Programmed**		**Actual (Typical)**		
	Min	**Max**	**Min**	**Max**	**Conformance**
Brine Weight (ppg)		8.9		8.9	Yes
Saturated Salt Weight		10.0		10.0	Yes
Filtered Brine Ntu			4.3		n/a
Saturated Salt Ntu			63		n/a

Explanation of Non-Conformance

- Brine properties conformed to programmed specification.

Maintenance

- Prior to mixing for completion operations the brine pits were cleaned and mixing lines thoroughly flushed.
- The following sweeps were prepared for clean-up operations:
    1. 75 bbls CON DET
    2. 175 bbls caustic wash
    3. 185 bbls hi-vis Flozan sweep
- 1400 bbls of 8.9 ppg NaCl was prepared in advance of completion operations.
- 250 bbls of 10 ppg saturated NaCl brine was prepared in pit 10.
- 130 bbls of the saturated NaCl brine was transferred to a separate pit and a sized salt pill prepared with N-VIS P PLUS and UltraSal 20E at programmed concentrations.
- A 6-5/8" and 9-5/8" scraper assembly was run, the packer setting intervals scraped and a 50bbl hi-vis sweep followed by two hole volumes of seawater pumped. All returns to surface were dumped. A short trip to the liner lap followed.
- The well clean-up sweeps were pumped in the following order; 50 bbls hi-vis, 75 bbls CON DET detergent, 175 bbls caustic wash and 50 bbls hi-vis. The sweeps were followed by seawater and returns were monitored for Ntu readings.

- While circulating clean-up sweeps/seawater, surface/trip tanks, flow lines, desilter/degasser and choke/kill lines were all flushed with seawater.
- Once seawater turbidity readings were stable at 63 Ntu, the sized salt pill was spotted inside the liner to 200m above the proposed top perforation. The pill was preceded and followed by saturated NaCl brine to minimize dissolution of sized salt particles.
- The pipe was pulled to 2424m and the casing displaced to 8.9ppg NaCl brine.
- The packer fluid was prepared as follows and displaced to the completion tubing/9-5/8" annulus.

  300 bbls filtered 8.9 ppg brine
  0.5 ppb caustic soda
  0.25 ppb BARACIDE
  0.8 lt/bbl BARACOR 100
  1.59 lt/bbl Ammonium Bisulphite

Problems, Causes, Remedial Action Taken or Recommended
Hole Conditions

- None

Completion Brine

- None

Solids Control and Mud Mixing Equipment

- There were not enough filter cartridges sent out with the filtration unit. More filtering could have been done on the volume of brine used to lower Ntu values had a sufficient supply of cartridges been sent out

7.2 EVALUATION

Comments
The filtered brine as utilized for this completion was a suitable completion fluid and was successfully employed as programmed. Filtration of the brine was able to proceed as planned to produce very low turbidity readings. However, due to the quality of the drill water, there were not sufficient cartridges available for filtering the required volume to achieve the best possible NTU readings.

7.3 RECOMMENDATIONS FOR IMPROVEMENT

Hole Conditions

- None

Completion Brine

- None

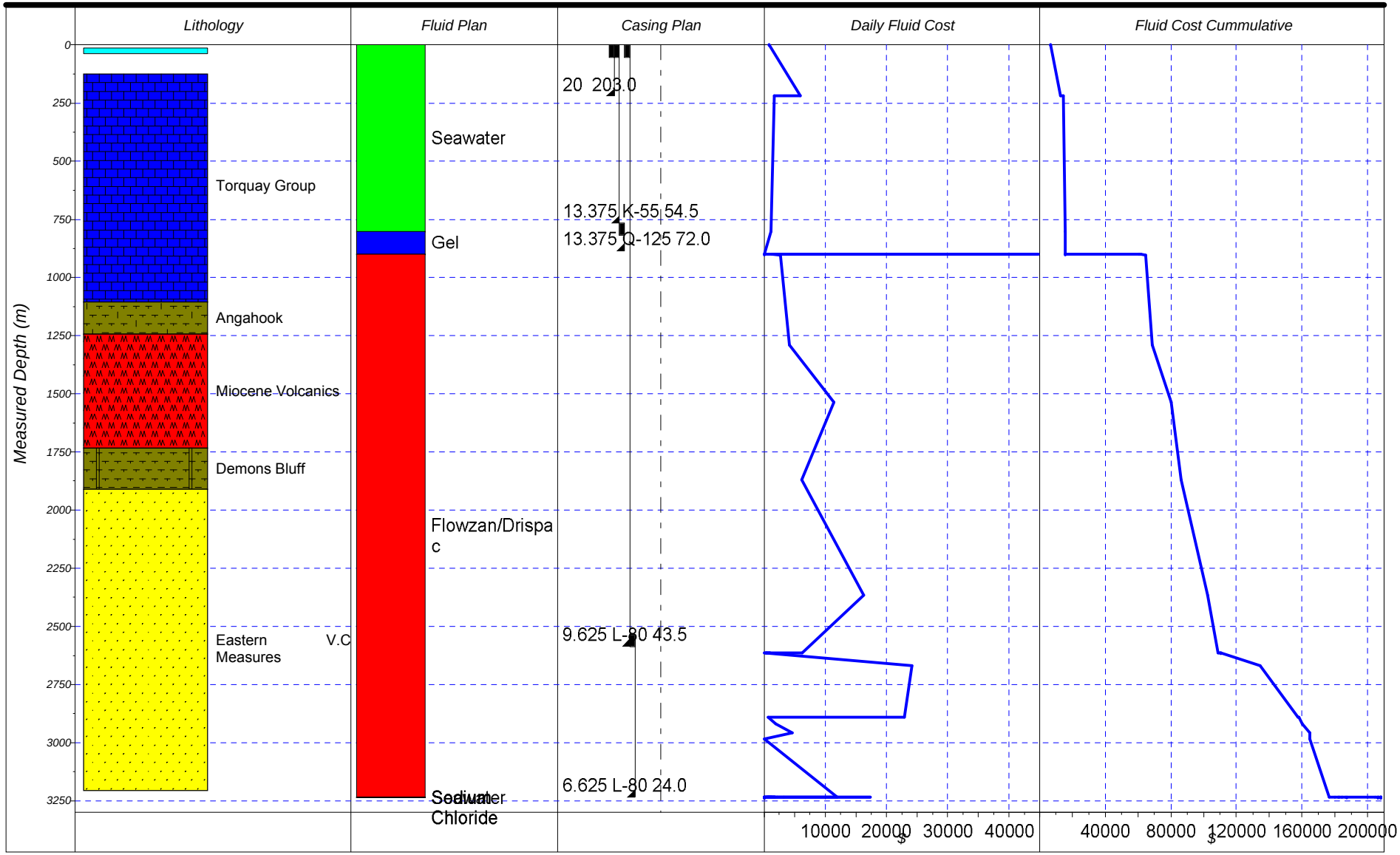
Solids Control and Mud Mixing Equipment.

- Ensure a sufficient quantity of cartridges be supplied with the filtration unit.

Daily Costs v Depth

Well : Yolla-4

Operator : Origin Energy Resources Ltd



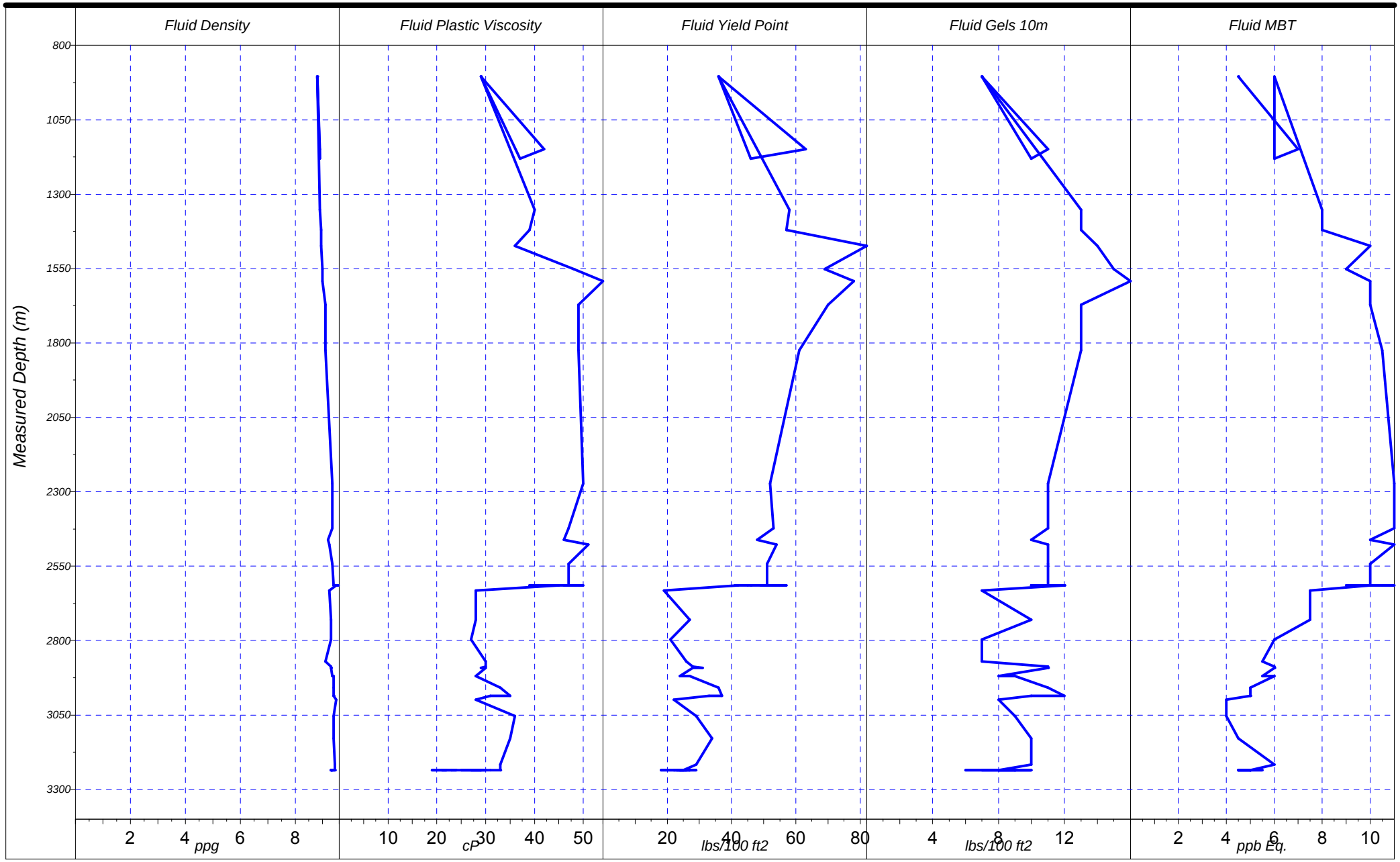
Baroid Drilling Fluids

Printed On 28/10/2004

Recap Properties Water Based Depth Set 1

Well : Yolla-4

Operator : Origin Energy Resources Ltd



Recap Propereties Water Based Depth Set 2

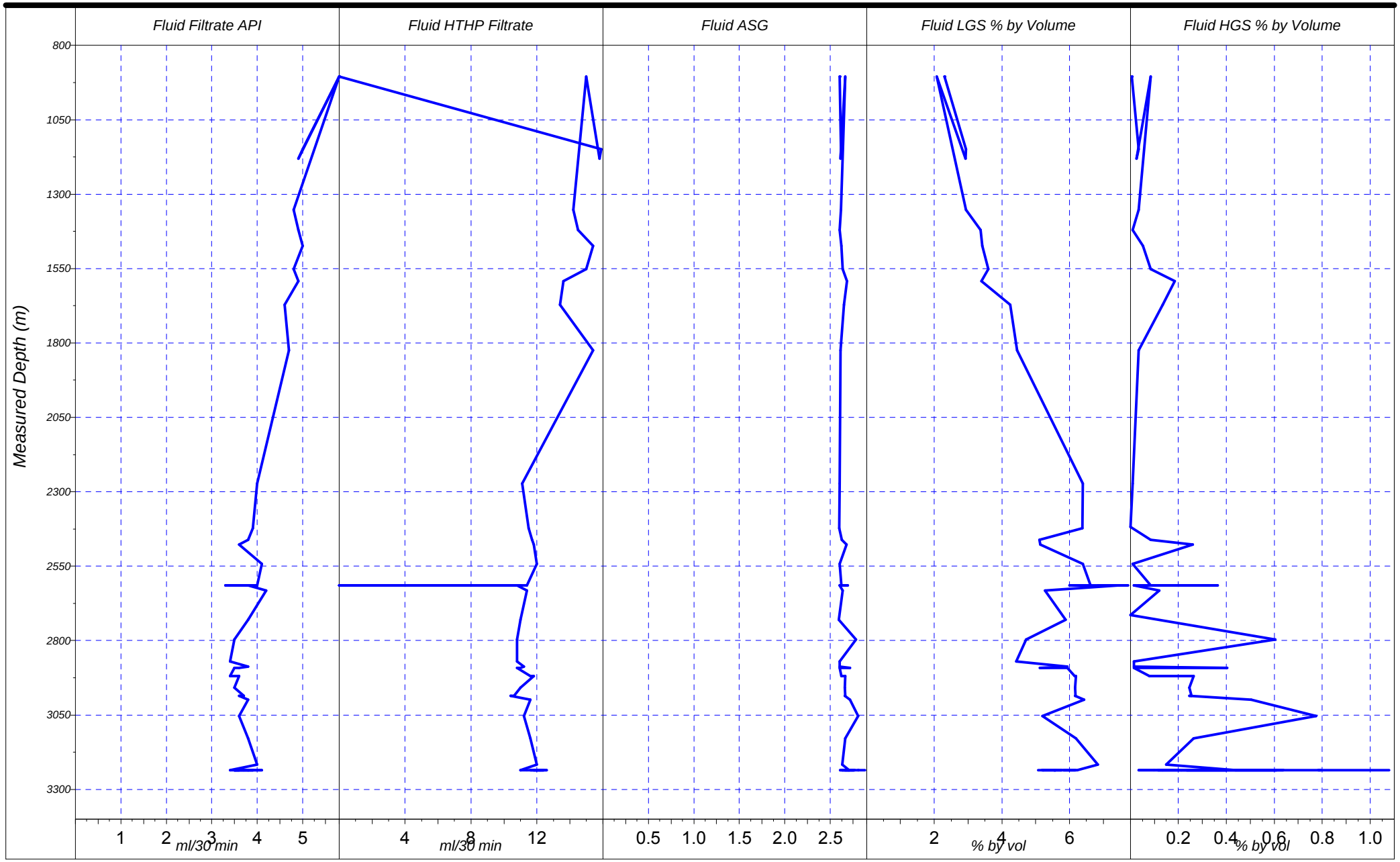
Well : Yolla-4

Operator : Origin Energy Resources Ltd

Recap Properties Water Based Depth Set 3

Well : Yolla-4

Operator : Origin Energy Resources Ltd



APPENDIX 19: WATER ANALYSIS & PVT REPORTS

(A) Petrolab Report

A. C. N. # 008 130 667

Adelaide, November 22, 2004
P. O. Box 410
Magill
S. A. 5072

Origin Energy Resources Limited
1 King William Street
PO Box 1199
Adelaide
S.A. 5000

Subject : Reservoir Fluid Study
Well: Yolla # 4
File: O – 24035

Attention: Mr. Joe Parvar

Dear Sirs,

In July and August, 2004 representatives of Petrolab made two trips to the Ensco 102 for on-site field analyses for the Yolla gas development. During the first trip we transferred MDT wireline bottom hole samples into PVT storage cylinders and confirmed the fluid types. Of the six samples transferred, one was gas condensate, two were water and three were oil reservoir fluids.

During the well test of Yolla 4 in August, we collected separator samples of three different gas zones and ran tests for Hydrogen Sulphide, Mercaptans and Carbonyl Sulphide in the produced separator gas. Other contaminants trapped in chemical solutions, including Radon, Polonium, Lead, Cobalt, Copper, Nickel, Vanadium, Zinc and Mercury were sent back to Adelaide for analyses by third parties.

The bottom hole and surface samples were also submitted to Adelaide where they were used in a reservoir fluid study in our laboratory. The results of these tests are presented in the following report.

Upon arrival in the laboratory, the samples were subjected to quality checks in order to select the most representative samples to be used.

We determined the single phase opening pressures of the separator gas samples, at approximately 10 °C higher than the separator temperature, to see if any leakage had taken place during transportation. We then determined the compositions by means of gas chromatography.

The validity of the separator liquid samples was checked by measuring their bubble point pressures at room temperature and correlating these pressures with gas opening pressures and field separator pressures.

The compositions of the separator liquid samples were determined by flashing the samples under atmospheric conditions into two phases. Through measurements of densities, molecular weights, quantities produced and compositions of the evolved stock tank gas and liquid from the flash experiments, we were able to mathematically recombine these products into the desired fluid compositions.

The compositions were extended to C-12+ by means of Capillary Column Gas Chromatography on the flashed stock tank liquids.

Mathematical recombinations of the separator products into their produced field ratios, after corrections of the produced separator gas rates, resulted in the actual produced reservoir fluid compositions.

These standard corrections result in more accurate gas rates by dividing out the assumed field values of the gas gravity and super compressibility factors (Fg and Fpv) and multiplying in, the values of these factors found in the laboratory.

We then continued with actual physical recombinations of samples from each reservoir using the same ratios as used for the mathematical recombinations.

The recombined reservoir fluids were charged to a visual P V T cell and thermally expanded to their respective reservoir temperatures. During a constant composition expansion at this temperature, the saturation pressures were observed.

The compositions of the oil and gas bottom hole samples were determined by flashing the samples the same way the separator liquids had been flashed and their validity was corroborated by determining their saturation pressures at reservoir temperature. The composition of the best oil reservoir fluid was extended to C - 20+ by means of a High Temperature Distillation.

This most representative oil bottom hole reservoir fluid was then introduced to a high pressure PVT cell and thermally expanded to the reservoir temperature of 262 °F. During a constant composition expansion at this temperature, the bubble point of 3264 psig was confirmed. Other data obtained during this pressure - volume relations experiment, include relative volume versus pressure, oil thermal expansion and compressibility above bubble point and calculated Y- function below it.

The solution gas in this reservoir fluid was then differentially vaporised and in steps removed from the oil phase at decreasing pressures in the system.

During this experiment, a total of 785 standard cubic feet of gas were liberated from every barrel of residual oil at 60 °F. The associated relative oil volume factor was measured to be 1.5008 barrels of saturated fluid per barrel of residual oil. Additional properties, including oil density and compositions of the evolved gases were measured during each point of the pressure depletions.

During a similar pressure depletion at the reservoir temperature of 262 °F, the viscosity of the oil

phase of the reservoir fluid was determined in a rolling ball viscosimeter. The viscosity of the fluid was found to vary from a minimum of 0.369 centipoise at the bubble point to a maximum of 1.382 centipoise at atmospheric pressure.

A single stage separator tests were performed to determine the effects of separator pressure and temperature upon gas - oil ratio, stock tank oil gravity and formation volume factor.

Routine water analyses were performed on stock tank water samples recovered from the separator, two bottom hole samples and a drilling mud sample collected from the mud pit.

A variety of tests including, wax, asphaltene and BTX content, pour and cloud point were also run on recovered stock tank liquid.

We thank Origin Energy Resources Limited for the opportunity to be of service. Please do not hesitate in contacting us should you require any further information or if we can assist you in any other way.

Yours Sincerely,

Jan G. Bon
Manager

PETROLAB

Company : Origin Energy Resources Limited
Well : Yolla #4 File : O - 24035

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Gas Contaminates

SUMMARY OF RESULTS

SAMPLED AT SEPARATOR @ 500 psig & 48 °C

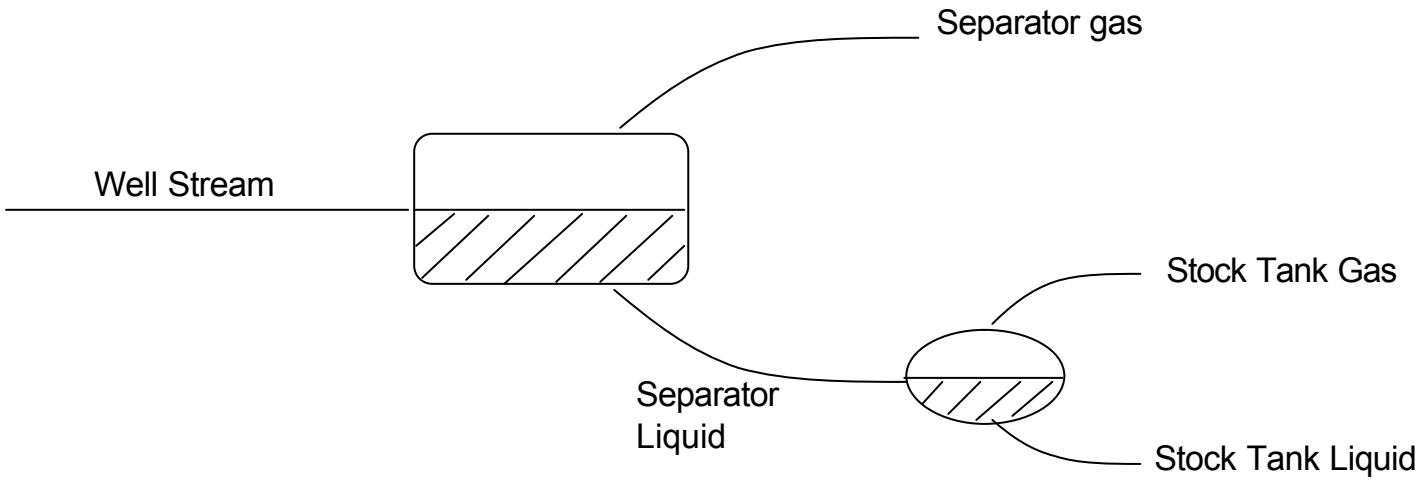
Component	Units		2973 SAND	2973 SAND	2809 SAND	2809 SAND	2755 SAND	2755 SAND
H2S	PPM Vol	(1)	36.8	38.4	27.4	28.1	27.8	27.7
HRS	PPM Vol	(1)	1.3	1.7	2.5	1.7	1.1	1.7
COS	PPM Vol	(1)	N/D	N/D	N/D	N/D	N/D	N/D
Rn222	Bq/m^3	(2)	<50	<50	<50	<50	<50	<50
Po210	Bq/m^3	(3)	<50	<50	<50	<50	<50	<50
Pb210	Bq/m^3	(3)	<200	<200	<200	<200	<200	<200
Hg	mg/m^3	(4)	0.897	0.904	0.664	0.505	0.340	0.253
Potassium	mg/m^3	(5)	0.1	<0.05	<0.05	<0.05	0.3	0.1
Sodium	mg/m^3	(5)	0.6	0.3	0.2	<0.05	0.8	0.2
Barium	mg/m^3	(5)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Calcium	mg/m^3	(5)	1.2	0.3	1.1	2.4	3.4	0.4
Iron	mg/m^3	(5)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Magnesium	mg/m^3	(5)	0.1	0.1	0.1	0.1	0.1	0.1
Strontium	mg/m^3	(5)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	mg/m^3	(5)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silicon	mg/m^3	(5)	0.4	0.2	0.2	<0.05	0.1	0.1
Aluminium	mg/m^3	(5)	<0.05	<0.05	0.2	<0.05	0.1	<0.05
Lithium	mg/m^3	(5)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium	mg/m^3	(5)	1.2	<0.05	0.1	0.1	0.1	<0.05
Chromium	mg/m^3	(5)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vanadium	mg/m^3	(5)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel	mg/m^3	(5)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Zinc	mg/m^3	(5)	0.3	0.2	0.5	0.9	1.2	0.4
Lead	mg/m^3	(5)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Copper	mg/m^3	(5)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	mg/m^3	(5)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Manganese	mg/m^3	(5)	<0.05	0.1	<0.05	0.1	<0.05	<0.05
Tin	mg/m^3	(5)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phosphorous	mg/m^3	(5)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Molybdenum	mg/m^3	(5)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

(1) Wet Chemistry
(2) Rn222 - by gamma counting while desorbing of charcoal
(3) By alpha counting of absorbed solution
(4) Cold Vapour Atomic Absorbtion
(5) By Inductively Coupled Plasma

BTX Analysis

Sand	2973			2809			2755		
	B	T	X	B	T	X	B	T	X
Wt% of BTX - ST Gas	1.28	1.60	0.89	0.85	1.21	0.70	1.00	1.24	0.65
Wt% of BTX - ST Liquid	1.23	5.24	7.58	0.86	4.35	6.72	1.08	5.03	6.76
Wt% of BTX - Sep Gas	0.52	0.59	0.25	0.23	0.31	0.16	0.41	0.51	0.22
Wt% of BTX - Sep Liquid	1.24	5.03	7.19	0.86	4.07	6.19	1.07	4.71	6.25

	B	T	X	B	T	X	B	T	X
Wt% of BTX - Well Stream	**0.56**	**0.83**	**0.62**	**0.29**	**0.66**	**0.73**	**0.47**	**0.86**	**0.74**



Surface Samples

Surface Samples Validity Check
2973 Sand
Saturation Pressure : 384 psig @ 68 ° F

Surface Samples Set # 1of 3

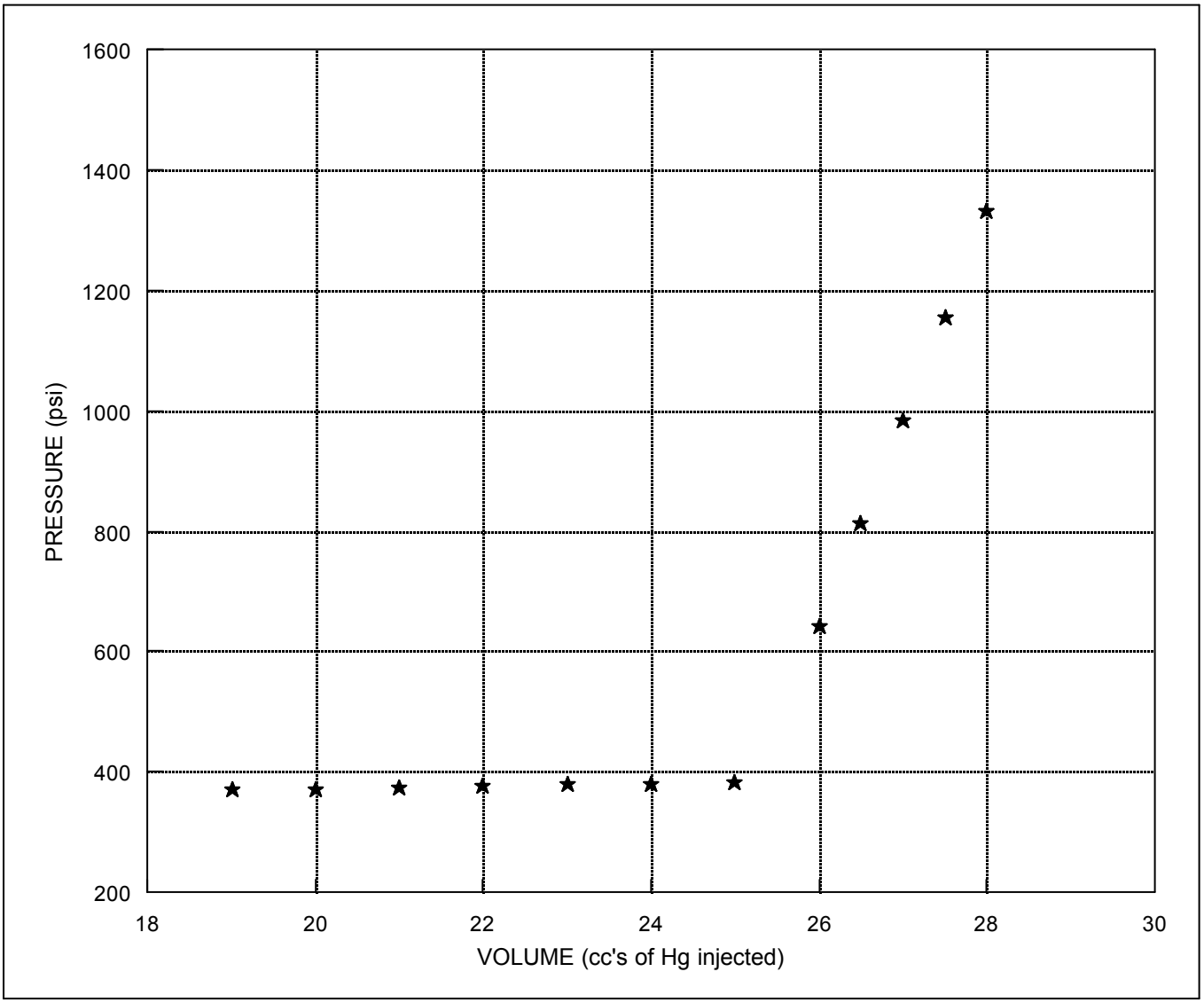
Sampling Conditions

Date	:	July 30, 2004
Pressure	:	499 psig
Temperature	:	124 ° F

Cylinder #	:	PA 3418 (gas)
Opening Pressure	:	565 psig @ 140 °F

Cylinder #	:	L - 209 (liquid)
Opening Pressure	:	386 psig @ 68 °F

Volume (cc's)	Pressure (psi)
19.00	371
20.00	372
21.00	375
22.00	377
23.00	379
24.00	381
25.00	384
26.00	642
26.50	813
27.00	983
27.50	1155
28.00	1333



Surface Samples Validity Check
Sand 2973
Saturation Pressure : 384 psig @ 66 ° F

Surface Samples Set # 2 of 3

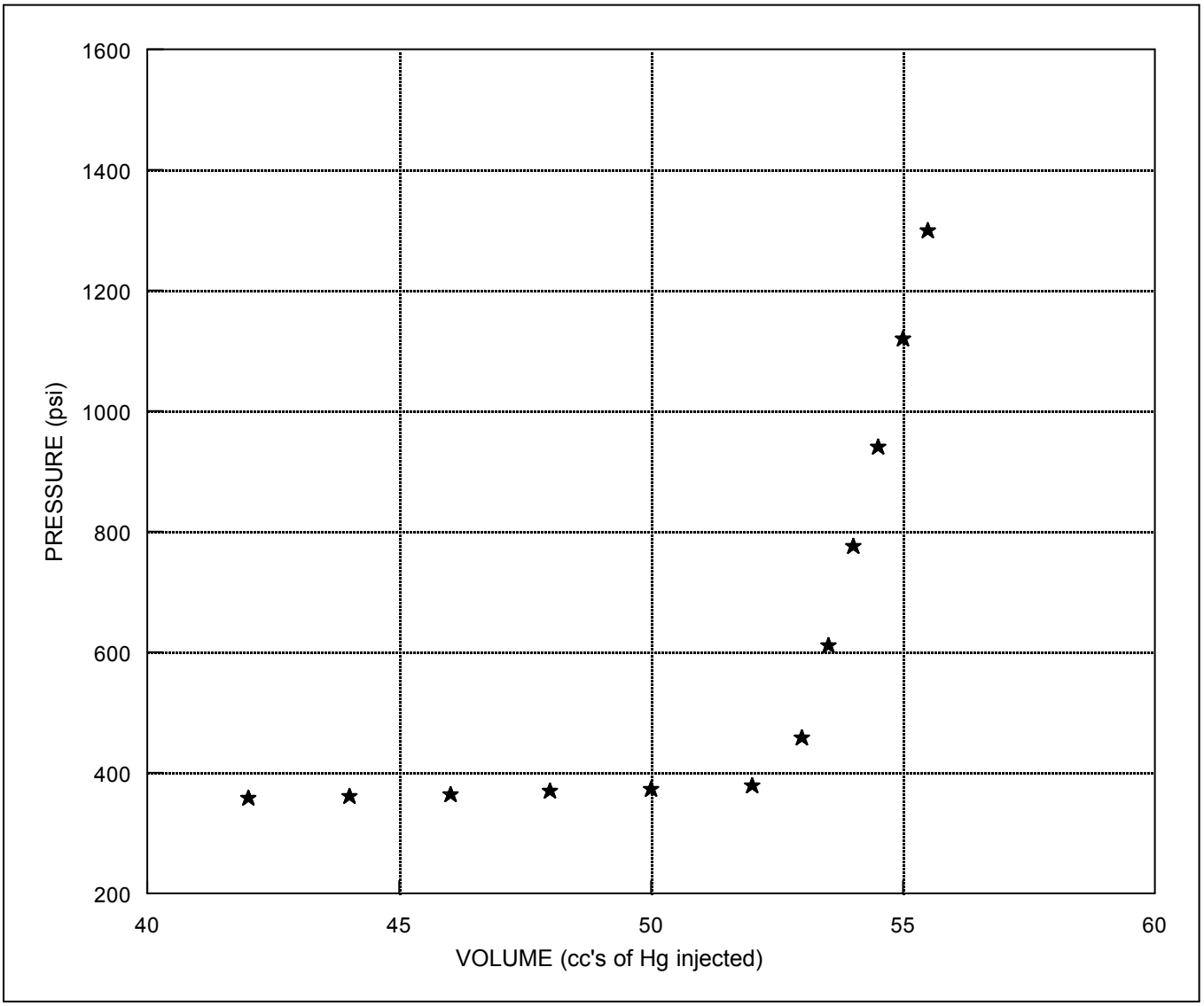
Sampling Conditions

Date	:	July 30, 2004
Pressure	:	501 psig
Temperature	:	127 ° F

Cylinder #	:	EC 9460 (gas)
Opening Pressure	:	572 psig @ 142 °F

Cylinder #	:	L - 442 (liquid)
Opening Pressure	:	341 psig @ 66 °F

Volume (cc's)	Pressure (psi)
42.00	360
44.00	364
46.00	366
48.00	371
50.00	374
52.00	380
53.00	459
53.50	614
54.00	776
54.50	943
55.00	1122
55.50	1301



Surface Samples Validity Check
2755 Sand
Saturation Pressure : 399 psig @ 66 ° F

Surface Samples Set # 3 of 3

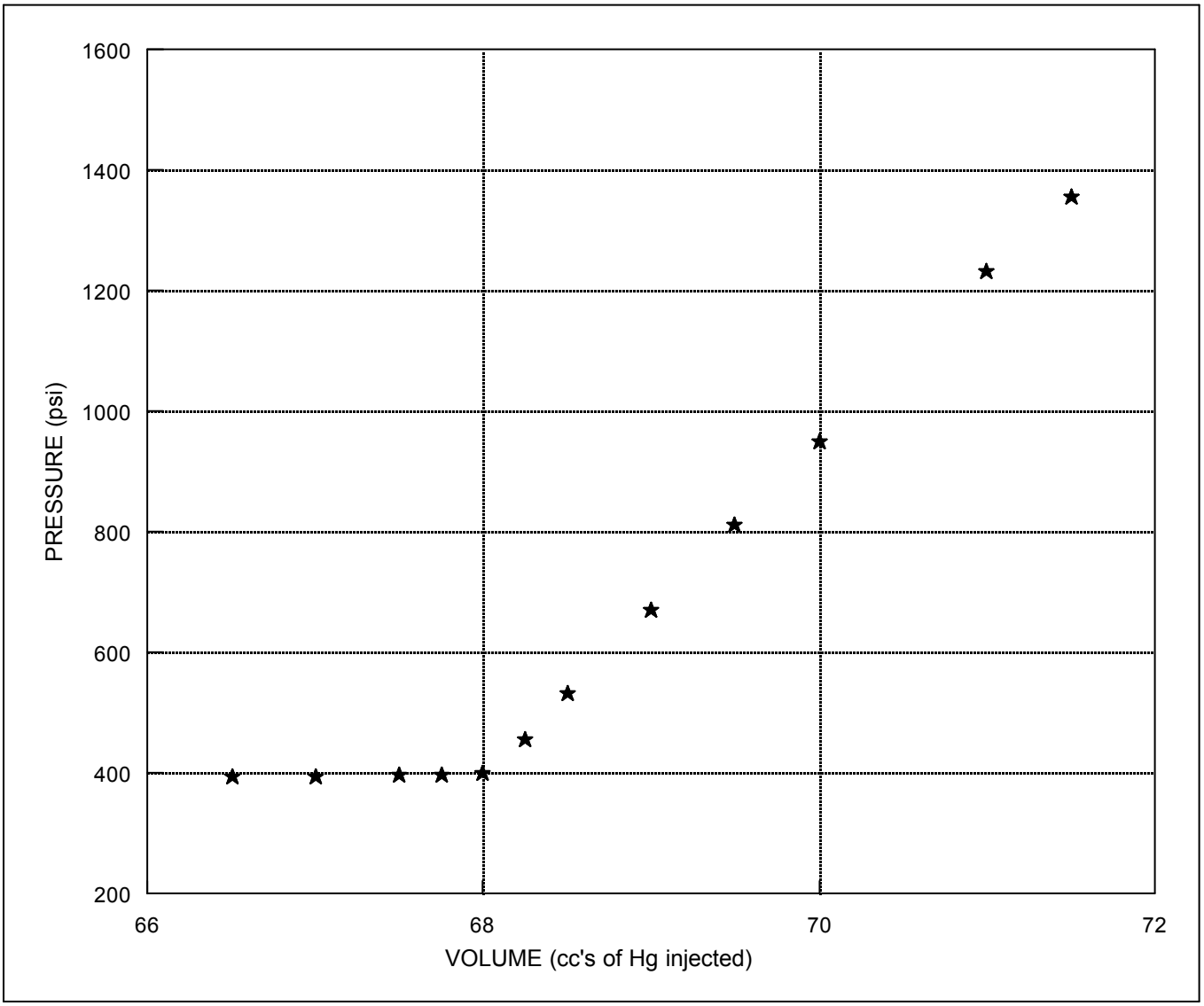
Sampling Conditions

Date	:	August 1, 2004
Pressure	:	497 psig
Temperature	:	108 ° F

Cylinder #	:	EE 8593 (gas)
Opening Pressure	:	89 psig @ 150 °F

Cylinder #	:	L - 033 (liquid)
Opening Pressure	:	392 psig @ 66 °F

Volume (cc's)	Pressure (psi)
66.50	394
67.00	395
67.50	397
67.75	397
68.00	400
68.25	458
68.50	533
69.00	672
69.50	812
70.00	951
71.00	1235
71.50	1358



Surface Samples Validity Check
2755 Sand
Saturation Pressure : 399 psig @ 66 ° F

Surface Samples Set # 1of 3

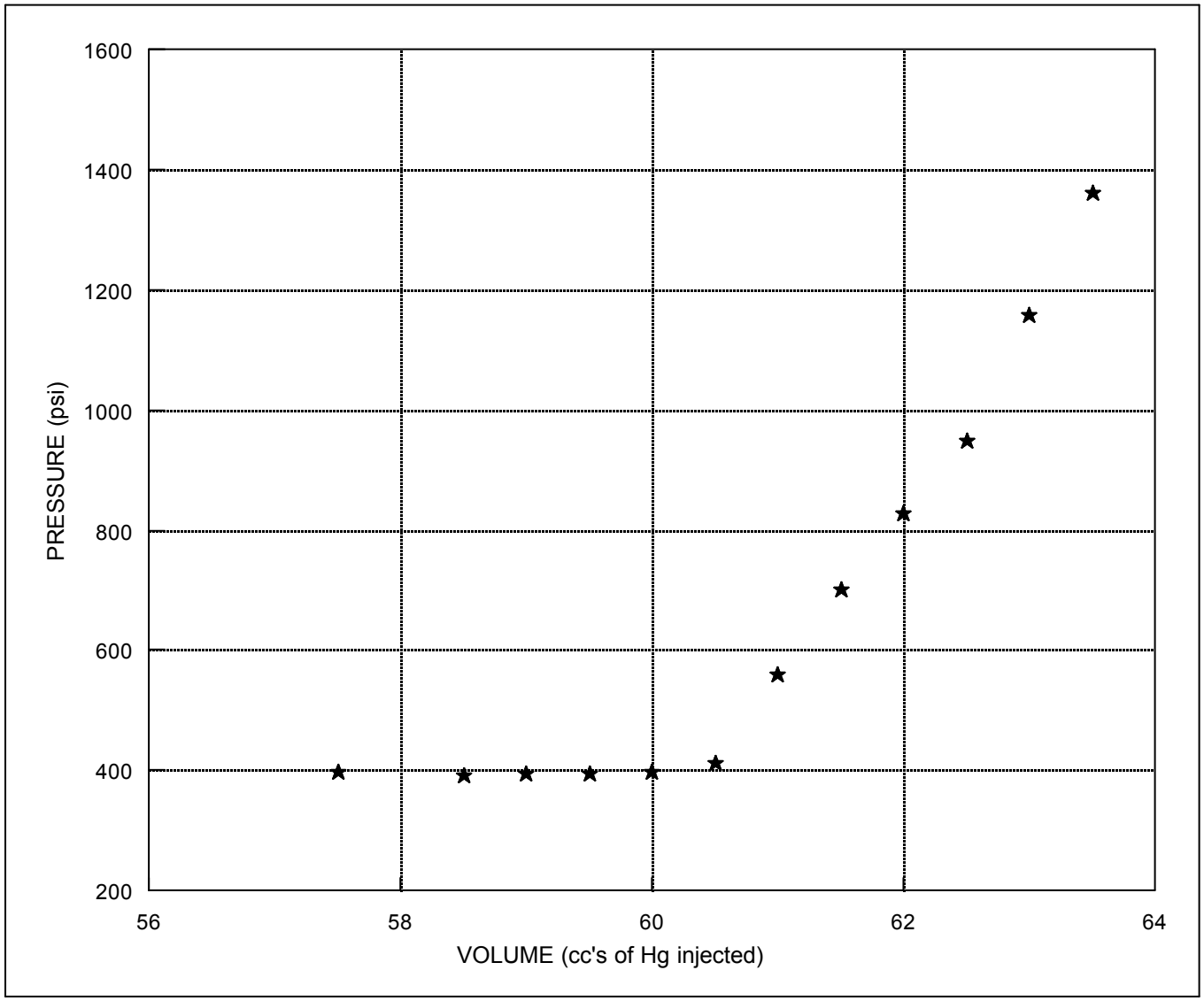
Sampling Conditions

Date	:	August 1, 2004
Pressure	:	497 psig
Temperature	:	109 ° F

Cylinder #	:	PA 3421 (gas)
Opening Pressure	:	575 psig @ 131 °F

Cylinder #	:	L - 412 (liquid)
Opening Pressure	:	398 psig @ 66 °F

Volume (cc's)	Pressure (psi)
57.50	398
58.50	391
59.00	394
59.50	393
60.00	397
60.50	411
61.00	560
61.50	701
62.00	829
62.50	950
63.00	1159
63.50	1362



Surface Samples Validity Check
Sand 2809
Saturation Pressure : 392 psig @ 66 ° F

Surface Samples Set # 2 of 3

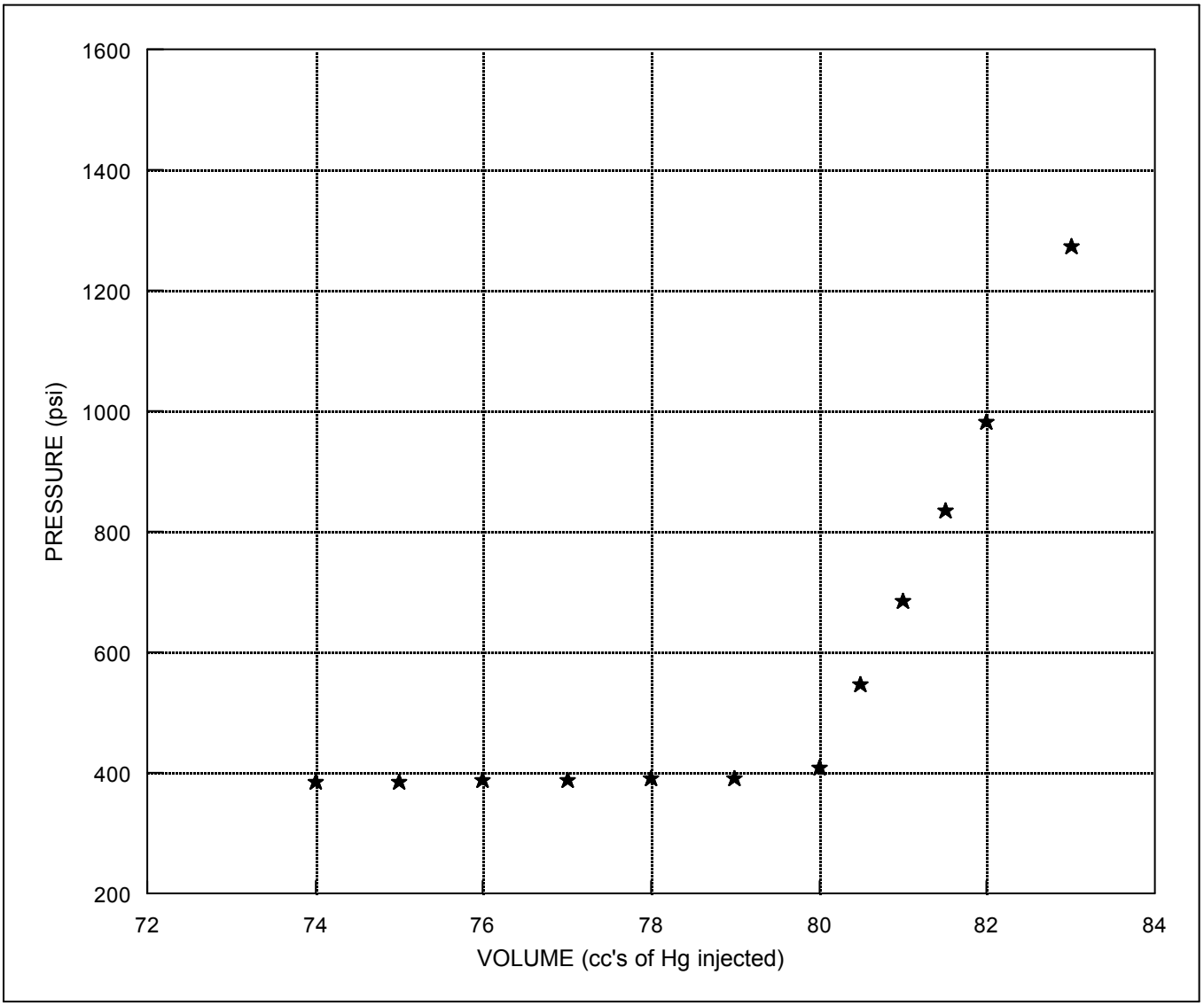
Sampling Conditions

Date	:	August 7, 2004
Pressure	:	516 psig
Temperature	:	118 ° F

Cylinder #	:	PA 3429 (gas)
Opening Pressure	:	570 psig @ 144 °F

Cylinder #	:	L - 611 (liquid)
Opening Pressure	:	353 psig @ 66 °F

Volume (cc's)	Pressure (psi)
74.00	386
75.00	386
76.00	388
77.00	388
78.00	391
79.00	392
80.00	409
80.50	548
81.00	686
81.50	835
82.00	983
83.00	1276



Surface Samples Validity Check
2809 Sand
Saturation Pressure : 391 psig @ 66 ° F

Surface Samples Set # 3 of 3

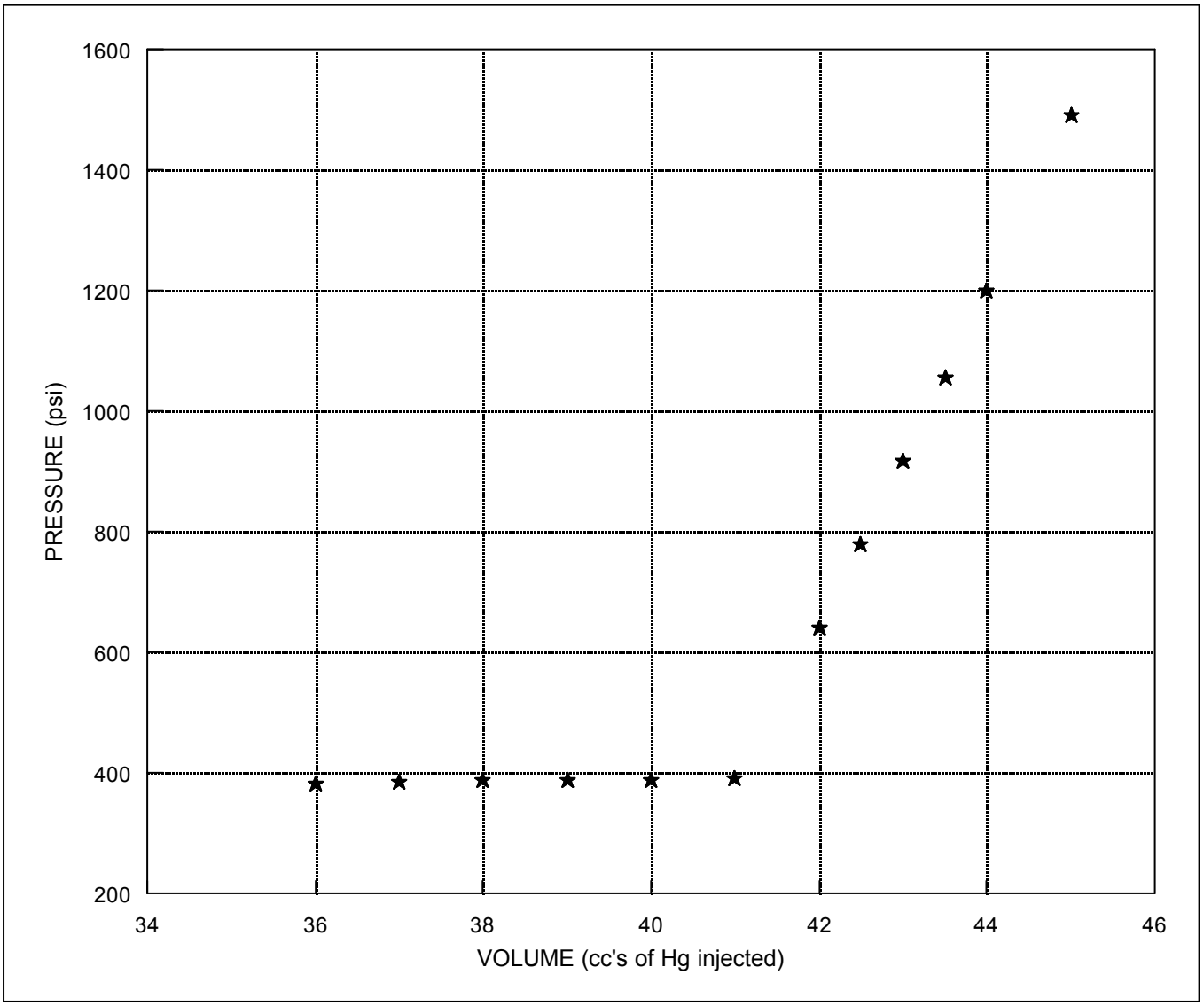
Sampling Conditions

Date	:	August 7, 2004
Pressure	:	506 psig
Temperature	:	120 ° F

Cylinder #	:	PA 3419 (gas)
Opening Pressure	:	560 psig @ 136 °F

Cylinder #	:	L - 610 (liquid)
Opening Pressure	:	357 psig @ 66 °F

Volume (cc's)	Pressure (psi)
36.00	383
37.00	386
38.00	388
39.00	388
40.00	389
41.00	391
42.00	641
42.50	780
43.00	918
43.50	1057
44.00	1200
45.00	1491



FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY

Component		2458 m Mol %	2755 m Mol %	2809 m Mol %	2973 m Mol %
Hexanes minus	C6-	2.56	9.86	10.24	3.98
Hexanes	C6	2.91	8.89	8.97	5.97
Heptanes	C7	7.59	19.44	19.66	17.36
Octanes	C8	5.72	13.59	13.31	14.55
Nonanes	C9	6.33	13.12	12.82	15.69
Decanes	C10	5.07	7.57	7.67	9.28
Undecanes	C11	3.64	4.48	4.61	5.30
Dodecanes	C12	3.25	3.40	3.44	4.35
Tridecanes	C13	3.88	3.21	3.36	3.94
Tetradecanes	C14	3.51	2.84	2.44	2.66
Pentadecanes	C15	4.74	2.59	2.84	3.38
Hexadecanes	C16	4.06	1.89	1.78	2.09
Heptadecanes	C17	4.98	1.88	1.92	2.15
Octadecanes	C18	3.33	1.24	1.19	1.26
Nonadecanes	C19	3.13	1.01	0.90	1.08
Eicosanes	C20	3.28	0.91	0.82	1.04
Heneicosanes	C21	3.46	0.79	0.76	0.95
Docosanes	C22	3.11	0.70	0.63	0.79
Tricosanes	C23	3.83	0.60	0.56	0.80
Tetracosanes	C24	3.43	0.52	0.50	0.72
Pentacosanes	C25	3.29	0.44	0.42	0.65
Hexacosanes	C26	3.00	0.32	0.34	0.53
Heptacosanes	C27	3.02	0.25	0.28	0.45
Octacosanes	C28	2.33	0.16	0.19	0.31
Nonacosanes	C29	2.11	0.12	0.14	0.25
Triacontanes plus	C30	1.44	0.07	0.08	0.16
Hentriacontanes	C31	1.13	0.04	0.05	0.11
Dotriacontanes	C32	0.66	0.02	0.02	0.06
Tritriacontanes	C33	0.59	0.02	0.02	0.04
Tetratriacontanes	C34	0.26	0.01	0.01	0.03
Pentatriacontanes Plus	C35+	0.36	0.02	0.03	0.07
TOTAL		100.00	100.00	100.00	100.00

Molecular Weight Calculated *	:	226.1	132.8	132.1	144.7
Density @ 60 °F Calculated *	:	0.8439	0.7706	0.7696	0.7861
Molecular Weight Measured	:	230.82	130.50	132.72	141.08
Density @ 60 °F Measured	:	0.8240	0.7858	0.7850	0.8086
Cloud Point (° C)	:	49	8	11	17
Pour Point (° C)	:	39	-3	3	9
Asphaltene Content (wt%)	:	0.18	0.03	0.05	0.03
Wax Content (wt%)	:	25.0	4.1	4.3	5.8

*Calculation based on generalized properties as published by Katz and Firoozabadi

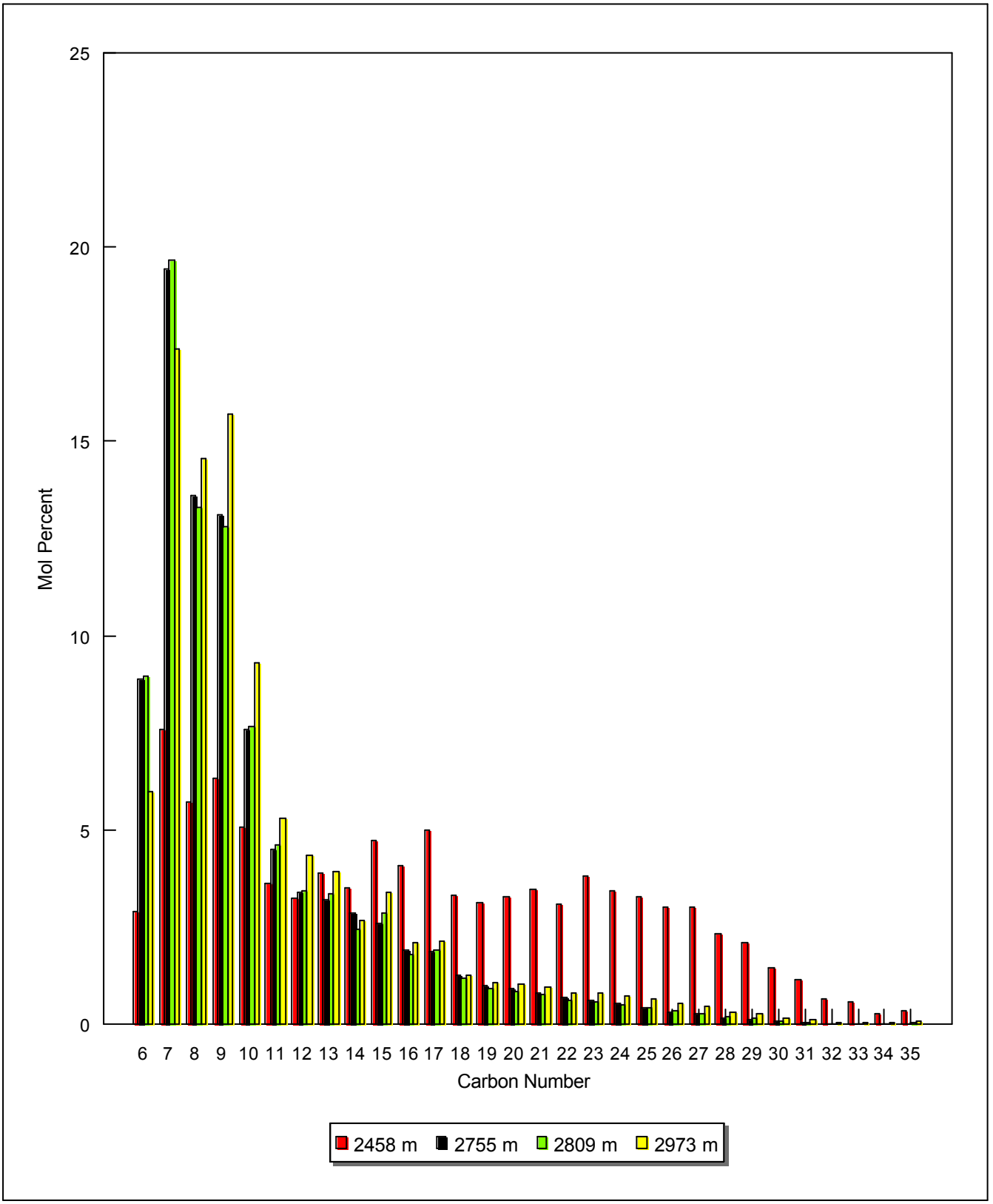
20% 2458 oil - 80% 2755 condensate

Cloud Point (° C)	:	22
Pour Point (° C)	:	18
Asphaltene Content (wt%)	:	0.05

10% 2458 oil - 90% 2755 condensate

Cloud Point (° C)	:	17
Pour Point (° C)	:	15
Asphaltene Content (wt%)	:	0.03

FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY



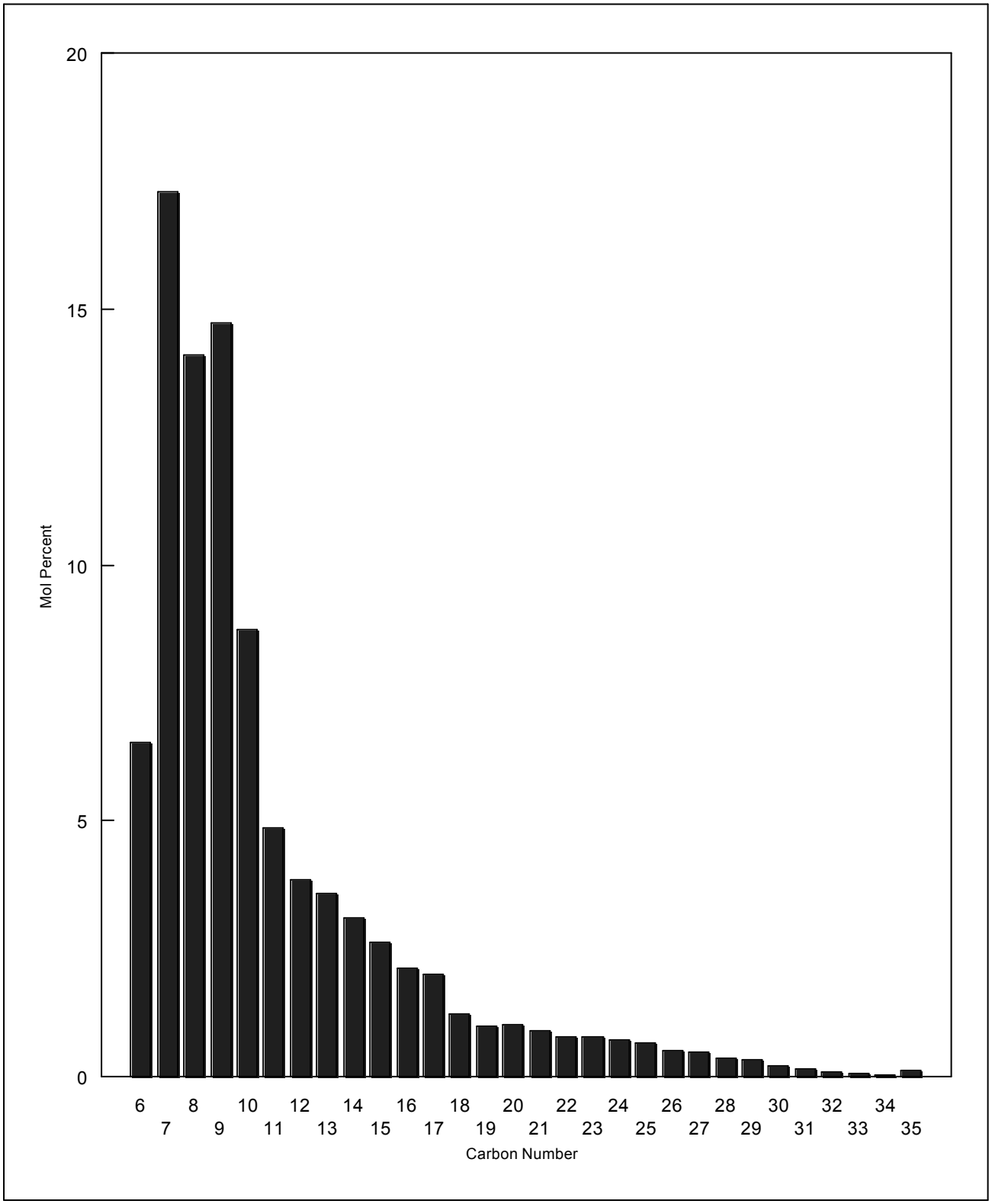
FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
2973 SAND
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 209

Component		Mol %
Hexanes minus	C6-	7.32
Hexanes	C6	6.51
Heptanes	C7	17.29
Octanes	C8	14.09
Nonanes	C9	14.72
Decanes	C10	8.73
Undecanes	C11	4.85
Dodecanes	C12	3.85
Tridecanes	C13	3.56
Tetradecanes	C14	3.09
Pentadecanes	C15	2.63
Hexadecanes	C16	2.10
Heptadecanes	C17	1.99
Octadecanes	C18	1.22
Nonadecanes	C19	0.98
Eicosanes	C20	1.00
Heneicosanes	C21	0.89
Docosanes	C22	0.78
Tricosanes	C23	0.76
Tetracosanes	C24	0.71
Pentacosanes	C25	0.64
Hexacosanes	C26	0.51
Heptacosanes	C27	0.48
Octacosanes	C28	0.35
Nonacosanes	C29	0.31
Triacontanes	C30	0.21
Hentriacontanes	C31	0.15
Dotriacontanes	C32	0.09
Tritriacontanes	C33	0.06
Tetratriacontanes	C34	0.02
Pentatriacontanes Plus	C35+	0.11
TOTAL		100.00

Molecular Weight Calculated *	:	141.5
Density @ 60 °F Calculated *	:	0.7814
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.8033

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
2973 SAND
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 209



PETROLAB

Company : Origin Energy Resources Ltd. | Page : 13 of 92
Well : Yolla # 4 | File : O - 24035

COMPOSITIONAL ANALYSIS OF SEPARATOR LIQUID

2973 SAND

Cylinder # L - 209

Component		Stock Tank Liquid Mol %	Stock Tank Gas Mol %	Separator Liquid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	0.38	24.10	5.28
Nitrogen	N2	0.00	0.22	0.05
Methane	C1	0.26	44.05	9.32
Ethane	C2	0.47	12.48	2.95
Propane	C3	1.26	9.06	2.87
Iso-Butane	iC4	0.83	2.33	1.14
N-Butane	nC4	1.67	3.20	1.99
Iso-Pentane	iC5	1.48	1.05	1.39
N-Pentane	nC5	1.70	0.93	1.54
Hexanes	C6	6.46	1.07	5.34
Heptanes	C7	17.15	0.97	13.81
Octanes	C8	13.98	0.34	11.16
Nonanes	C9	14.60	0.16	11.62
Decanes	C10	8.66	0.04	6.88
Undecanes	C11	4.81	0.00	3.82
Dodecanes Plus	C12+	26.28	0.00	20.84
TOTAL		100.00	100.00	100.00

Ratios				
Molar Ratio	:	0.7932	0.2068	1.0000
Mass Ratio	:	0.9428	0.0572	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.1324 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	194 SCF	--
Stream Properties				
Molecular Weight	:	139.9	32.57	117.7
Density obs. (gm/cc)	:	0.7814 @ 60 °F	--	0.7323 @ PT*
Gravity (AIR = 1.000)	:	49.4 °API @ 60 °F	1.132	61.6
GHV (BTU/scf)	:	--	1299	--
Hexanes Plus Properties				
Mol %	:	91.95	2.58	73.47
Molecular Weight	:	147.0	94.6	146.7
Density (gm/cc @ 60 °F)	:	0.7908	0.6818	0.7903
Gravity (°API @ 60 °F)	:	47.3	75.8	47.4
Heptanes Plus Properties				
Mol %	:	85.49	1.51	68.13
Molecular Weight	:	151.8	102.1	151.6
Density (gm/cc @ 60 °F)	:	0.7960	0.6919	0.7956
Gravity (°API @ 60 °F)	:	46.1	72.8	46.2
Decanes Plus Properties				
Mol %	:	39.75	0.04	31.54
Molecular Weight	:	203.0	134.0	202.9
Density (gm/cc @ 60 °F)	:	0.8316	0.7278	0.8315
Gravity (°API @ 60 °F)	:	38.5	62.7	38.5
Undecanes Plus Properties				
Mol %	:	31.09	0.00	24.66
Molecular Weight	:	222.2	--	222.2
Density (gm/cc @ 60 °F)	:	0.8413	--	0.8413
Gravity (°API @ 60 °F)	:	36.5	--	36.5
Dodecanes Plus Properties				
Mol %	:	26.28	0.00	20.84
Molecular Weight	:	235.9	--	235.9
Density (gm/cc @ 60 °F)	:	0.8477	--	0.8477
Gravity (°API @ 60 °F)	:	35.3	--	35.3

* (P)ressure : 499 psig * (T)emperature : 124 °F

PETROLAB

Company : Origin Energy Resources Ltd.	Page : 14 of 92
Well : Yolla # 4	File : O - 24035

COMPOSITIONAL ANALYSIS OF SEPARATOR GAS CYLINDER # PA - 3418 2973 SAND

Component		Mol %	GPM
Hydrogen Sulphide	H2S	0.00	
Carbon Dioxide	CO2	20.17	
Nitrogen	N2	0.22	
Methane	C1	71.23	
Ethane	C2	5.15	1.378
Propane	C3	1.74	0.480
Iso-Butane	iC4	0.42	0.138
N-Butane	nC4	0.50	0.158
Iso-Pentane	iC5	0.14	0.051
N-Pentane	nC5	0.13	0.047
Hexanes	C6	0.14	0.054
Heptanes	C7	0.10	0.042
Octanes	C8	0.03	0.014
Nonanes	C9	0.02	0.010
Decanes	C10	0.01	0.005
Undecanes	C11	0.00	0.000
Dodecanes Plus	C12+	0.00	0.000
TOTAL		100.00	2.377

Pressure Base	:	14.696
Zsc	:	0.997
Mol Weight	:	23.69
Gas Gravity	:	0.820
Pc	:	746.4
Tc	:	407.5
Mol Weight C6+	:	94.4
Density C6+	:	0.6815
Mol Weight C7+	:	103.6
Density C7+	:	0.6937
Mol Weight C10+	:	134.0
Density C10+	:	0.7278
Mol Weight C11+	:	--
Density C11+	:	--
Mol Weight C12+	:	--
Density C12+	:	--
Heating Value (BTU/ft3)		
Gross	:	916
Nett	:	828
Wobbe Index	:	1011
Zpt *	:	0.932

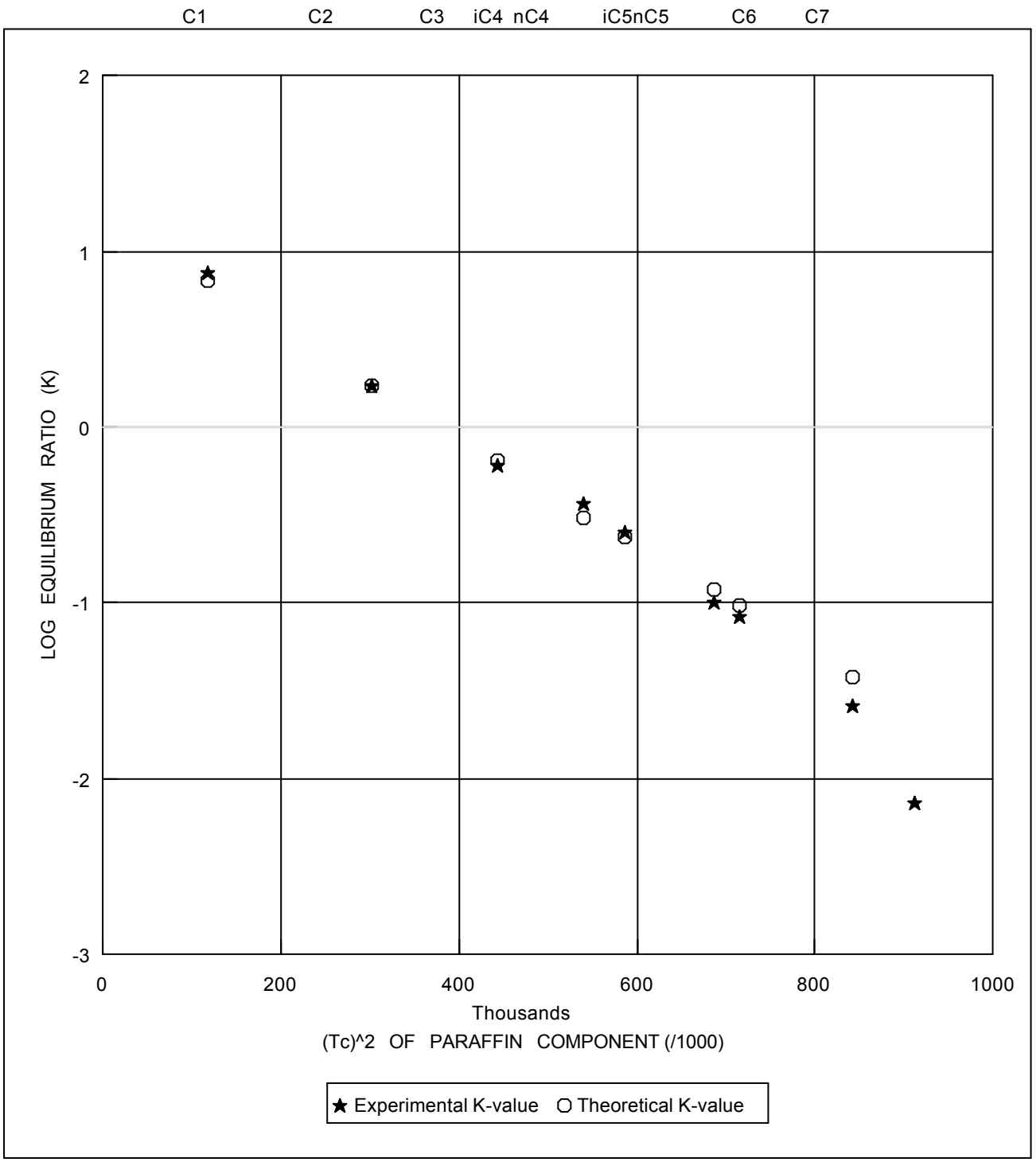
* (P)ressure : 499 psig * (T)emperature : 124 °F

Date Sampled: July 30, 2004 @ 15.15 hrs

Laboratory Opening Pressure : 565 psig @ : 140 °F

SEPARATOR SAMPLES QUALITY CHECK

On Separator Samples From Gas Cylinder # PA - 3418 and Liquid Cylinder # L - 209



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Company : Origin Energy Resources Ltd.	Page : 16 of 92
Well : Yolla # 4	File : O - 24035

COMPOSITIONAL ANALYSIS OF RECOMBINED RESERVOIR FLUID

Using Separator Samples from 2973 SAND in

Component		Cyl # L - 209 Separator Liquid Mol %	Cyl # PA - 3418 Separator Gas Mol %	Recombined Fluid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	5.28	20.17	20.00
Nitrogen	N2	0.05	0.22	0.22
Methane	C1	9.32	71.23	70.54
Ethane	C2	2.95	5.15	5.13
Propane	C3	2.87	1.74	1.75
Iso-Butane	iC4	1.14	0.42	0.43
N-Butane	nC4	1.99	0.50	0.52
Iso-Pentane	iC5	1.39	0.14	0.15
N-Pentane	nC5	1.54	0.13	0.15
Hexanes	C6	5.34	0.14	0.20
Heptanes	C7	13.81	0.10	0.25
Octanes	C8	11.16	0.03	0.15
Nonanes	C9	11.62	0.02	0.15
Decanes	C10	6.88	0.01	0.09
Undecanes	C11	3.82	0.00	0.04
Dodecanes Plus	C12+	20.84	0.00	0.23
TOTAL		100.00	100.00	100.00

Ratios				
Molar Ratio	:	0.0112	0.9888	1.0000
Mass Ratio	:	0.0533	0.9467	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000	--	-- @ PT**
Gas Liquid Ratio	:	1.0000 @ PT*	73026 SCF ***	--
Stream Properties				
Molecular Weight	:	117.67	23.69	24.75
Density obs. (gm/cc)	:	0.7323 @ PT*	--	-- @ PT**
Gravity (AIR = 1.000)	:	61.55 API @ 60 ° F	0.820	--
GHV (BTU/scf)	:	--	916	--
Hexanes Plus Properties				
Mol %	:	73.47	0.30	1.11
Molecular Weight	:	146.7	94.4	132.8
Density (gm/cc @ 60 °F)	:	0.7903	0.6815	0.7672
Gravity (°API @ 60 °F)	:	47.4	75.9	52.8
Heptanes Plus Properties				
Mol %	:	68.13	0.16	0.91
Molecular Weight	:	151.6	103.6	143.3
Density (gm/cc @ 60 °F)	:	0.7956	0.6937	0.7814
Gravity (°API @ 60 °F)	:	46.2	72.3	49.4
Decanes Plus Properties				
Mol %	:	31.54	0.01	0.36
Molecular Weight	:	202.9	134.0	201.1
Density (gm/cc @ 60 °F)	:	0.8315	0.7278	0.8294
Gravity (°API @ 60 °F)	:	38.5	62.7	38.9
Undecanes Plus Properties				
Mol %	:	24.66	0.00	0.27
Molecular Weight	:	222.2	--	222.2
Density (gm/cc @ 60 °F)	:	0.8413	--	0.8413
Gravity (°API @ 60 °F)	:	36.5	--	36.5
Dodecanes Plus Properties				
Mol %	:	20.84	0.00	0.23
Molecular Weight	:	235.9	--	235.9
Density (gm/cc @ 60 °F)	:	0.8477	--	0.8477
Gravity (°API @ 60 °F)	:	35.3	--	35.3

* (P)ressure : 499 psig * (T)emperature : 124 °F

** Saturation (P)ressure : 5000 psig * (T)emperature : 60 °F

*** 73026 SCF / SEP BBL @ PT = 82697 SCF / ST BBL

82697 = 82658 * (1.1040 * 1.0358) / (1.1043 * 1.0350)

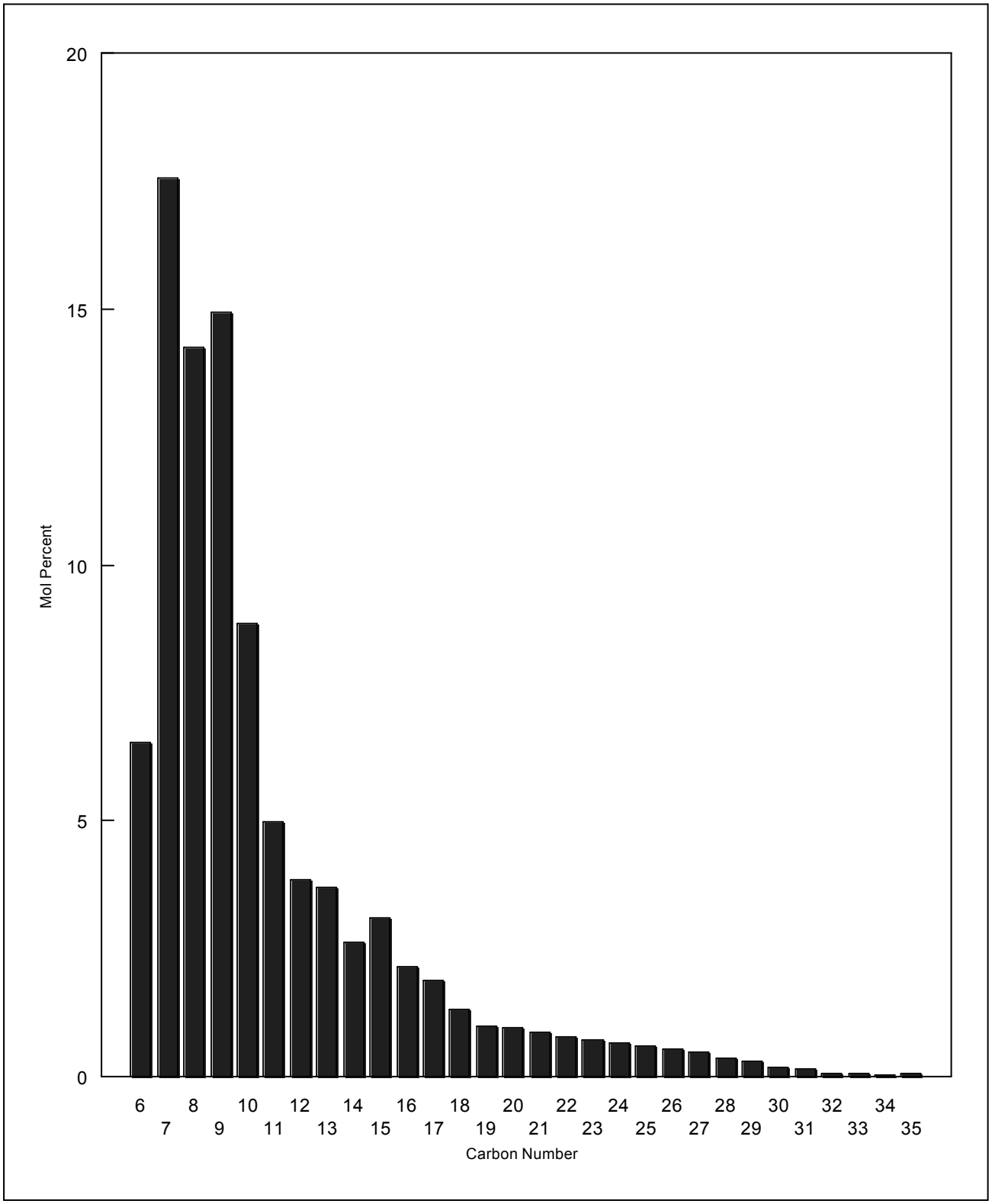
FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
2973 SAND
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 442

Component		Mol %
Hexanes minus	C6-	6.66
Hexanes	C6	6.54
Heptanes	C7	17.56
Octanes	C8	14.25
Nonanes	C9	14.93
Decanes	C10	8.86
Undecanes	C11	4.97
Dodecanes	C12	3.85
Tridecanes	C13	3.70
Tetradecanes	C14	2.61
Pentadecanes	C15	3.10
Hexadecanes	C16	2.14
Heptadecanes	C17	1.87
Octadecanes	C18	1.31
Nonadecanes	C19	0.98
Eicosanes	C20	0.95
Heneicosanes	C21	0.87
Docosanes	C22	0.77
Tricosanes	C23	0.72
Tetracosanes	C24	0.66
Pentacosanes	C25	0.59
Hexacosanes	C26	0.53
Heptacosanes	C27	0.47
Octacosanes	C28	0.34
Nonacosanes	C29	0.28
Triacontanes	C30	0.18
Hentriacontanes	C31	0.13
Dotriacontanes	C32	0.06
Tritriacontanes	C33	0.04
Tetratriacontanes	C34	0.02
Pentatriacontanes Plus	C35+	0.06
TOTAL		100.00

Molecular Weight Calculated *	:	141.3
Density @ 60 °F Calculated *	:	0.7815
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.8033

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
2973 SAND
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 442



PETROLAB

Company : Origin Energy Resources Ltd. | Page : 19 of 92
Well : Yolla # 4 | File : O - 24035

COMPOSITIONAL ANALYSIS OF SEPARATOR LIQUID

2973 SAND

Cylinder # L - 442

Component		Stock Tank Liquid Mol %	Stock Tank Gas Mol %	Separator Liquid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	0.37	24.00	5.21
Nitrogen	N2	0.00	0.21	0.04
Methane	C1	0.26	43.83	9.19
Ethane	C2	0.46	12.37	2.90
Propane	C3	1.26	9.07	2.86
Iso-Butane	iC4	0.83	2.31	1.13
N-Butane	nC4	1.76	3.37	2.09
Iso-Pentane	iC5	1.58	1.12	1.49
N-Pentane	nC5	1.79	0.98	1.63
Hexanes	C6	6.42	1.13	5.34
Heptanes	C7	17.25	1.01	13.92
Octanes	C8	14.00	0.36	11.20
Nonanes	C9	14.66	0.18	11.70
Decanes	C10	8.70	0.05	6.93
Undecanes	C11	4.88	0.01	3.88
Dodecanes Plus	C12+	25.76	0.00	20.49
TOTAL		100.00	100.00	100.00

Ratios				
Molar Ratio	:	0.7952	0.2048	1.0000
Mass Ratio	:	0.9426	0.0574	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.1344 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	193 SCF	--
Stream Properties				
Molecular Weight	:	138.6	32.79	116.9
Density obs. (gm/cc)	:	0.7799 @ 60 °F	--	0.7297 @ PT*
Gravity (AIR = 1.000)	:	49.7 °API @ 60 °F	1.140	62.2
GHV (BTU/scf)	:	--	1314	--
Hexanes Plus Properties				
Mol %	:	91.68	2.74	73.46
Molecular Weight	:	145.9	95.0	145.5
Density (gm/cc @ 60 °F)	:	0.7897	0.6823	0.7890
Gravity (°API @ 60 °F)	:	47.5	75.7	47.7
Heptanes Plus Properties				
Mol %	:	85.25	1.61	68.12
Molecular Weight	:	150.5	102.8	150.3
Density (gm/cc @ 60 °F)	:	0.7948	0.6927	0.7944
Gravity (°API @ 60 °F)	:	46.4	72.6	46.5
Decanes Plus Properties				
Mol %	:	39.34	0.06	31.30
Molecular Weight	:	201.0	136.1	200.9
Density (gm/cc @ 60 °F)	:	0.8303	0.7299	0.8303
Gravity (°API @ 60 °F)	:	38.8	62.2	38.8
Undecanes Plus Properties				
Mol %	:	30.64	0.01	24.37
Molecular Weight	:	220.0	146.9	220.0
Density (gm/cc @ 60 °F)	:	0.8401	0.7399	0.8401
Gravity (°API @ 60 °F)	:	36.8	59.6	36.8
Dodecanes Plus Properties				
Mol %	:	25.76	0.00	20.49
Molecular Weight	:	233.8	--	233.8
Density (gm/cc @ 60 °F)	:	0.8466	--	0.8466
Gravity (°API @ 60 °F)	:	35.5	--	35.5

* (P)ressure : 501 psig * (T)emperature : 127 °F

PETROLAB

Company : Origin Energy Resources Ltd.	Page : 20 of 92
Well : Yolla # 4	File : O - 24035

COMPOSITIONAL ANALYSIS OF SEPARATOR GAS CYLINDER # EC - 9460 2973 SAND

Component		Mol %	GPM
Hydrogen Sulphide	H2S	0.00	
Carbon Dioxide	CO2	20.16	
Nitrogen	N2	0.20	
Methane	C1	71.25	
Ethane	C2	5.13	1.373
Propane	C3	1.70	0.469
Iso-Butane	iC4	0.40	0.131
N-Butane	nC4	0.49	0.155
Iso-Pentane	iC5	0.16	0.059
N-Pentane	nC5	0.15	0.054
Hexanes	C6	0.16	0.062
Heptanes	C7	0.12	0.051
Octanes	C8	0.04	0.018
Nonanes	C9	0.03	0.015
Decanes	C10	0.01	0.005
Undecanes	C11	0.00	0.000
Dodecanes Plus	C12+	0.00	0.000
TOTAL		100.00	2.392

Pressure Base	:	14.696
Zsc	:	0.997
Mol Weight	:	23.73
Gas Gravity	:	0.822
Pc	:	746.2
Tc	:	407.8
Mol Weight C6+	:	95.0
Density C6+	:	0.6824
Mol Weight C7+	:	103.9
Density C7+	:	0.6941
Mol Weight C10+	:	134.0
Density C10+	:	0.7278
Mol Weight C11+	:	--
Density C11+	:	--
Mol Weight C12+	:	--
Density C12+	:	--
Heating Value (BTU/ft3)		
Gross	:	919
Nett	:	831
Wobbe Index	:	1014
Zpt *	:	0.933

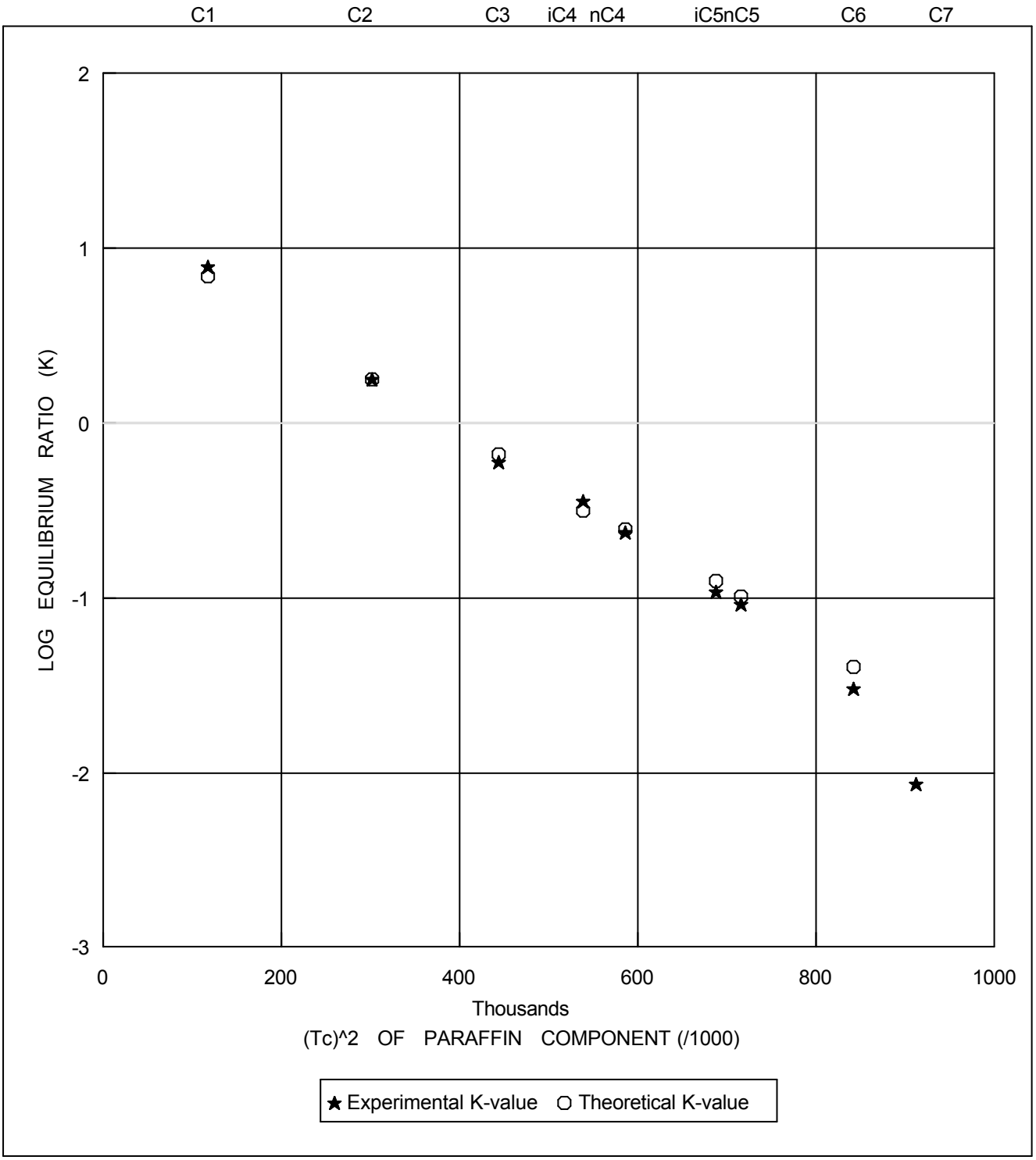
* (P)ressure : 501 psig * (T)emperature : 127 °F

Date Sampled: July 30, 2004 @ 16.15 hrs

Laboratory Opening Pressure : 570 psig @ : 140 °F

SEPARATOR SAMPLES QUALITY CHECK

On Separator Samples From Gas Cylinder # EC - 9460 and Liquid Cylinder # L - 442



PETROLAB

Company : Origin Energy Resources Ltd.	Page : 22 of 92
Well : Yolla # 4	File : O - 24035

COMPOSITIONAL ANALYSIS OF RECOMBINED RESERVOIR FLUID

Using Separator Samples from 2973 SAND in

Component		Cyl # L - 442 Separator Liquid Mol %	Cyl # EC - 9460 Separator Gas Mol %	Recombined Fluid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	5.21	20.16	20.00
Nitrogen	N2	0.04	0.20	0.20
Methane	C1	9.19	71.25	70.58
Ethane	C2	2.90	5.13	5.11
Propane	C3	2.86	1.70	1.71
Iso-Butane	iC4	1.13	0.40	0.41
N-Butane	nC4	2.09	0.49	0.51
Iso-Pentane	iC5	1.49	0.16	0.17
N-Pentane	nC5	1.63	0.15	0.17
Hexanes	C6	5.34	0.16	0.22
Heptanes	C7	13.92	0.12	0.27
Octanes	C8	11.20	0.04	0.16
Nonanes	C9	11.70	0.03	0.16
Decanes	C10	6.93	0.01	0.09
Undecanes	C11	3.88	0.00	0.04
Dodecanes Plus	C12+	20.49	0.00	0.20
TOTAL		100.00	100.00	100.00

Ratios				
Molar Ratio	:	0.0109	0.9891	1.0000
Mass Ratio	:	0.0513	0.9487	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000	--	-- @ PT**
Gas Liquid Ratio	:	1.0000 @ PT*	75588 SCF ***	--
Stream Properties				
Molecular Weight	:	116.91	23.73	24.75
Density obs. (gm/cc)	:	0.7297 @ PT*	--	-- @ PT**
Gravity (AIR = 1.000)	:	62.22 API @ 60 ° F	0.822	--
GHV (BTU/scf)	:	--	919	--
Hexanes Plus Properties				
Mol %	:	73.46	0.36	1.14
Molecular Weight	:	145.5	95.0	129.9
Density (gm/cc @ 60 °F)	:	0.7890	0.6824	0.7622
Gravity (°API @ 60 °F)	:	47.7	75.7	54.0
Heptanes Plus Properties				
Mol %	:	68.12	0.20	0.92
Molecular Weight	:	150.3	103.9	140.5
Density (gm/cc @ 60 °F)	:	0.7944	0.6941	0.7769
Gravity (°API @ 60 °F)	:	46.5	72.2	50.5
Decanes Plus Properties				
Mol %	:	31.30	0.01	0.33
Molecular Weight	:	200.9	134.0	199.0
Density (gm/cc @ 60 °F)	:	0.8303	0.7278	0.8281
Gravity (°API @ 60 °F)	:	38.8	62.7	39.2
Undecanes Plus Properties				
Mol %	:	24.37	0.00	0.24
Molecular Weight	:	220.0	--	220.0
Density (gm/cc @ 60 °F)	:	0.8401	--	0.8401
Gravity (°API @ 60 °F)	:	36.8	--	36.8
Dodecanes Plus Properties				
Mol %	:	20.49	0.00	0.20
Molecular Weight	:	233.8	--	233.8
Density (gm/cc @ 60 °F)	:	0.8466	--	0.8466
Gravity (°API @ 60 °F)	:	35.5	--	35.5

* (P)ressure : 501 psig * (T)emperature : 127 °F

** Saturation (P)ressure : 5000 psig * (T)emperature : 60 °F

*** 75588 SCF / SEP BBL @ PT = 85750 SCF / ST BBL

85750 = 85758 * (1.1031 * 1.0354) / (1.1043 * 1.0343)

MEASURED DEW POINT @ 311 °F IS 3595 PSIG

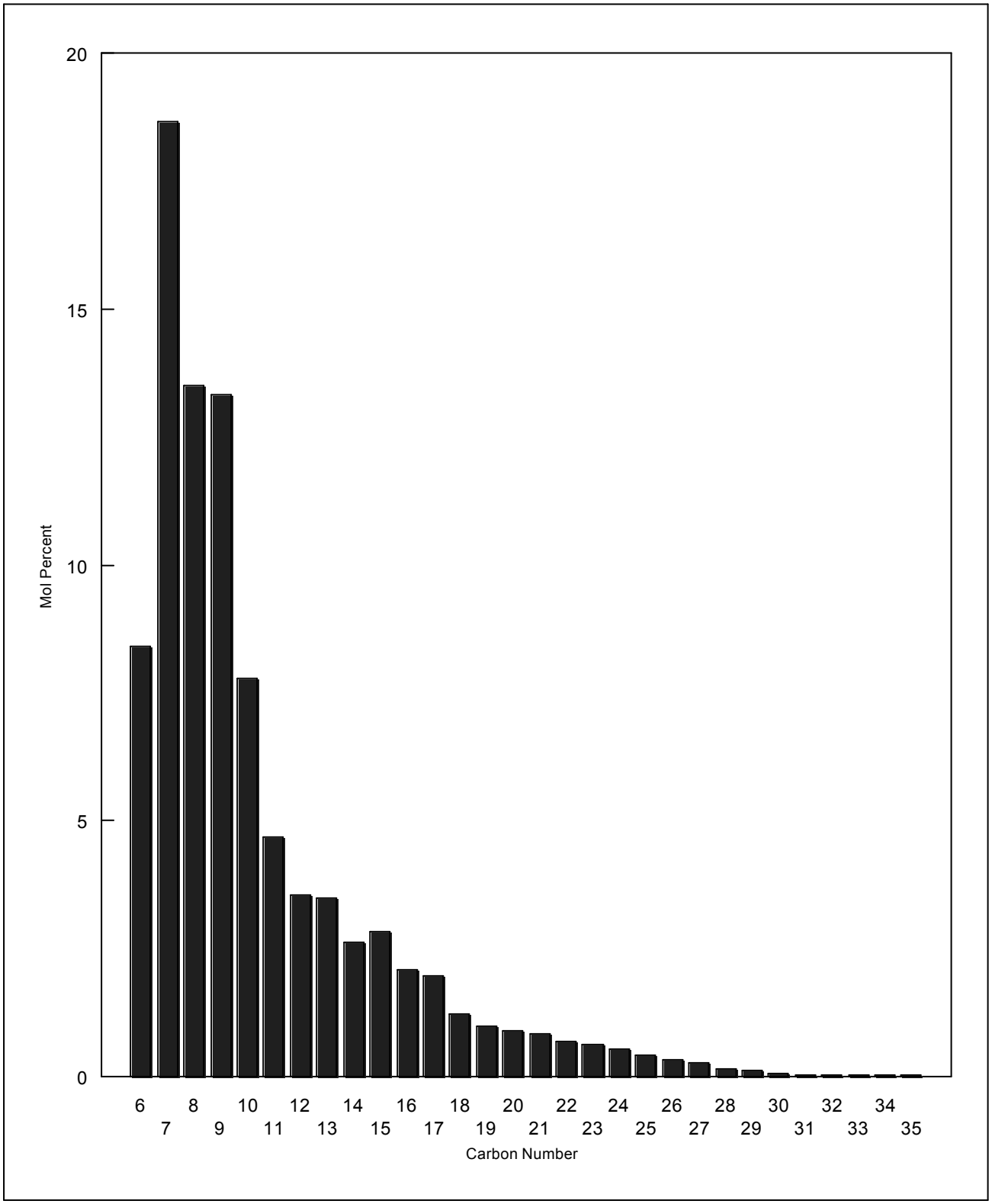
FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
2755 SAND
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 033

Component		Mol %
Hexanes minus	C6-	9.97
Hexanes	C6	8.41
Heptanes	C7	18.68
Octanes	C8	13.52
Nonanes	C9	13.33
Decanes	C10	7.79
Undecanes	C11	4.68
Dodecanes	C12	3.53
Tridecanes	C13	3.49
Tetradecanes	C14	2.62
Pentadecanes	C15	2.84
Hexadecanes	C16	2.07
Heptadecanes	C17	1.95
Octadecanes	C18	1.23
Nonadecanes	C19	0.97
Eicosanes	C20	0.90
Heneicosanes	C21	0.82
Docosanes	C22	0.68
Tricosanes	C23	0.63
Tetracosanes	C24	0.52
Pentacosanes	C25	0.42
Hexacosanes	C26	0.31
Heptacosanes	C27	0.25
Octacosanes	C28	0.15
Nonacosanes	C29	0.10
Triacontanes	C30	0.05
Hentriacontanes	C31	0.03
Dotriacontanes	C32	0.01
Tritriacontanes	C33	0.01
Tetratriacontanes	C34	0.01
Pentatriacontanes Plus	C35+	0.03
TOTAL		100.00

Molecular Weight Calculated *	:	133.3
Density @ 60 °F Calculated *	:	0.7710
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.7855

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
2755 SAND
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 033



PETROLAB

Company : Origin Energy Resources Ltd. | Page : 25 of 92
Well : Yolla # 4 | File : O - 24035

COMPOSITIONAL ANALYSIS OF SEPARATOR LIQUID

2755 SAND

Cylinder # L - 033

Component		Stock Tank Liquid Mol %	Stock Tank Gas Mol %	Separator Liquid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	0.36	23.21	6.17
Nitrogen	N2	0.00	0.06	0.02
Methane	C1	0.22	37.20	9.63
Ethane	C2	0.54	14.32	4.04
Propane	C3	1.75	12.62	4.52
Iso-Butane	iC4	1.03	2.88	1.50
N-Butane	nC4	2.41	4.62	2.97
Iso-Pentane	iC5	1.79	1.27	1.66
N-Pentane	nC5	2.18	1.19	1.93
Hexanes	C6	8.38	1.18	6.55
Heptanes	C7	18.61	0.93	14.12
Octanes	C8	13.47	0.32	10.13
Nonanes	C9	13.28	0.15	9.94
Decanes	C10	7.76	0.04	5.80
Undecanes	C11	4.66	0.01	3.48
Dodecanes Plus	C12+	23.54	0.00	17.54
TOTAL		100.00	100.00	100.00

Ratios				
Molar Ratio	:	0.7457	0.2543	1.0000
Mass Ratio	:	0.9176	0.0824	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.1668 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	266 SCF	--
Stream Properties				
Molecular Weight	:	131.7	34.68	107.0
Density obs. (gm/cc)	:	0.7712 @ 60 °F	--	0.7208 @ PT*
Gravity (AIR = 1.000)	:	51.8 °API @ 60 °F	1.207	64.6
GHV (BTU/scf)	:	--	1440	--
Hexanes Plus Properties				
Mol %	:	89.72	2.63	67.56
Molecular Weight	:	140.1	94.2	139.7
Density (gm/cc @ 60 °F)	:	0.7834	0.6811	0.7826
Gravity (°API @ 60 °F)	:	49.0	76.0	49.1
Heptanes Plus Properties				
Mol %	:	81.34	1.45	61.01
Molecular Weight	:	145.9	102.4	145.6
Density (gm/cc @ 60 °F)	:	0.7901	0.6923	0.7897
Gravity (°API @ 60 °F)	:	47.4	72.7	47.5
Decanes Plus Properties				
Mol %	:	35.97	0.05	26.82
Molecular Weight	:	195.5	136.6	195.5
Density (gm/cc @ 60 °F)	:	0.8267	0.7303	0.8266
Gravity (°API @ 60 °F)	:	39.5	62.1	39.5
Undecanes Plus Properties				
Mol %	:	28.20	0.01	21.02
Molecular Weight	:	212.4	146.9	212.4
Density (gm/cc @ 60 °F)	:	0.8358	0.7399	0.8357
Gravity (°API @ 60 °F)	:	37.6	59.6	37.6
Dodecanes Plus Properties				
Mol %	:	23.54	0.00	17.54
Molecular Weight	:	225.4	--	225.4
Density (gm/cc @ 60 °F)	:	0.8422	--	0.8422
Gravity (°API @ 60 °F)	:	36.4	--	36.4

* (P)ressure : 497 psig * (T)emperature : 108 °F

PETROLAB

Company : Origin Energy Resources Ltd.	Page : 26 of 92
Well : Yolla # 4	File : O - 24035

COMPOSITIONAL ANALYSIS OF SEPARATOR GAS CYLINDER # EE - 8593 2755 SAND

Component		Mol %	GPM
Hydrogen Sulphide	H2S	0.00	
Carbon Dioxide	CO2	20.64	
Nitrogen	N2	0.19	
Methane	C1	68.52	
Ethane	C2	6.41	1.716
Propane	C3	2.56	0.706
Iso-Butane	iC4	0.42	0.138
N-Butane	nC4	0.63	0.199
Iso-Pentane	iC5	0.18	0.066
N-Pentane	nC5	0.16	0.058
Hexanes	C6	0.15	0.058
Heptanes	C7	0.09	0.038
Octanes	C8	0.04	0.018
Nonanes	C9	0.01	0.005
Decanes	C10	0.00	0.000
Undecanes	C11	0.00	0.000
Dodecanes Plus	C12+	0.00	0.000
TOTAL		100.00	3.002

Pressure Base	:	14.696
Zsc	:	0.997
Mol Weight	:	24.31
Gas Gravity	:	0.842
Pc	:	748.2
Tc	:	414.6
Mol Weight C6+	:	92.2
Density C6+	:	0.6783
Mol Weight C7+	:	100.9
Density C7+	:	0.6903
Mol Weight C10+	:	--
Density C10+	:	--
Mol Weight C11+	:	--
Density C11+	:	--
Mol Weight C12+	:	--
Density C12+	:	--
Heating Value (BTU/ft3)		
Gross	:	938
Nett	:	849
Wobbe Index	:	1023
Zpt *	:	0.921

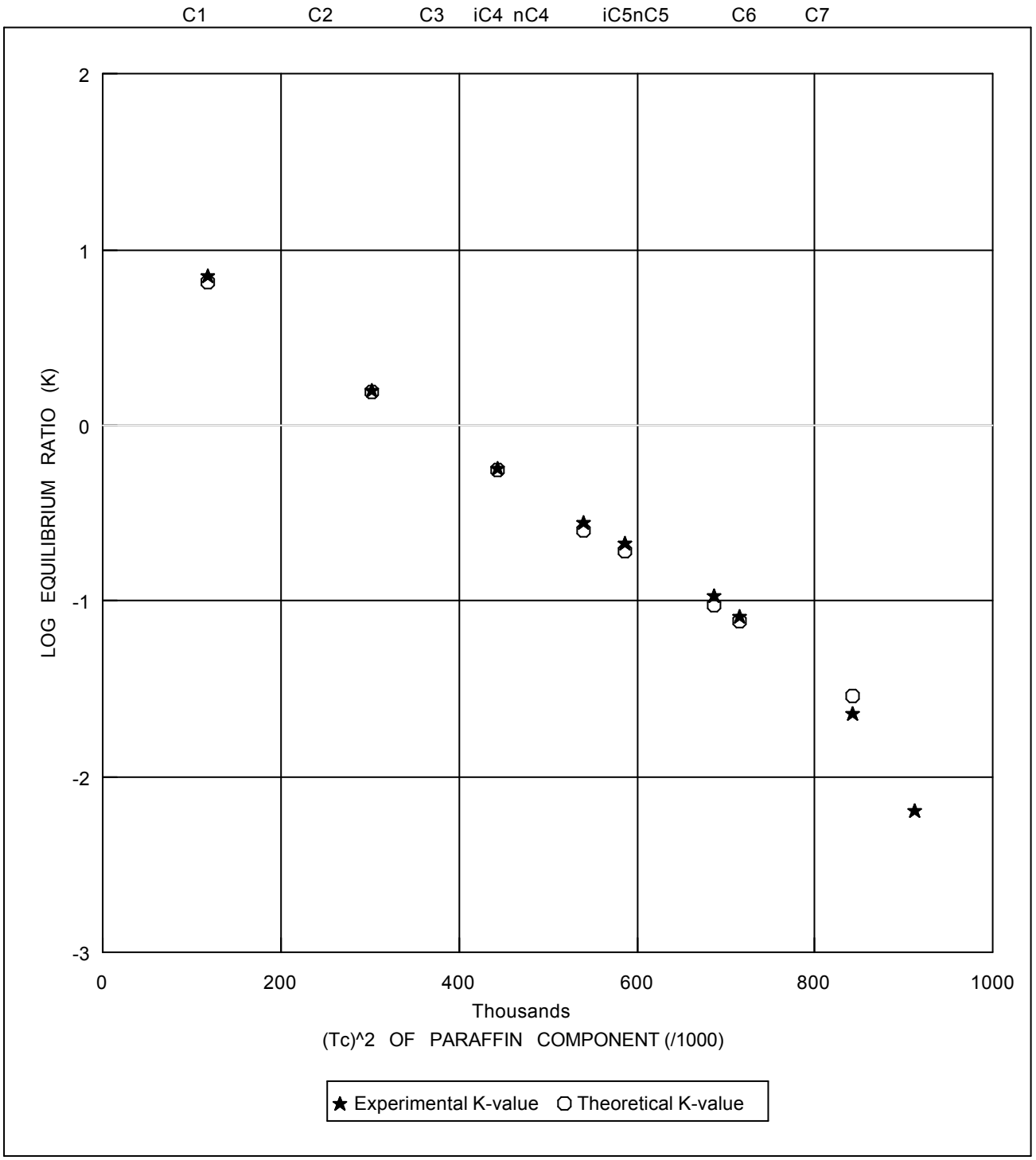
* (P)ressure : 497 psig * (T)emperature : 108 °F

Date Sampled: August 01, 2004 @ 00.00 hrs

Laboratory Opening Pressure : 562 psig @ : 140 °F

SEPARATOR SAMPLES QUALITY CHECK

On Separator Samples From Gas Cylinder # EE - 8593 and Liquid Cylinder # L - 033



PETROLAB

Company : Origin Energy Resources Ltd.	Page : 28 of 92
Well : Yolla # 4	File : O - 24035

COMPOSITIONAL ANALYSIS OF RECOMBINED RESERVOIR FLUID

Using Separator Samples from 2755 SAND in

Component		Cyl # L - 033 Separator Liquid Mol %	Cyl # EE - 8593 Separator Gas Mol %	Recombined Fluid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	6.17	20.64	20.34
Nitrogen	N2	0.02	0.19	0.19
Methane	C1	9.63	68.52	67.29
Ethane	C2	4.04	6.41	6.36
Propane	C3	4.52	2.56	2.60
Iso-Butane	iC4	1.50	0.42	0.44
N-Butane	nC4	2.97	0.63	0.68
Iso-Pentane	iC5	1.66	0.18	0.21
N-Pentane	nC5	1.93	0.16	0.20
Hexanes	C6	6.55	0.15	0.28
Heptanes	C7	14.12	0.09	0.38
Octanes	C8	10.13	0.04	0.25
Nonanes	C9	9.94	0.01	0.22
Decanes	C10	5.80	0.00	0.12
Undecanes	C11	3.48	0.00	0.07
Dodecanes Plus	C12+	17.54	0.00	0.37
TOTAL		100.00	100.00	100.00

Ratios				
Molar Ratio	:	0.0208	0.9792	1.0000
Mass Ratio	:	0.0856	0.9144	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000	--	-- @ PT**
Gas Liquid Ratio	:	1.0000 @ PT*	42108 SCF ***	--
Stream Properties				
Molecular Weight	:	107.04	24.31	26.03
Density obs. (gm/cc)	:	0.7208 @ PT*	--	-- @ PT**
Gravity (AIR = 1.000)	:	64.63 API @ 60 ° F	0.842	--
GHV (BTU/scf)	:	--	938	--
Hexanes Plus Properties				
Mol %	:	67.56	0.29	1.69
Molecular Weight	:	139.7	92.2	131.7
Density (gm/cc @ 60 °F)	:	0.7826	0.6783	0.7687
Gravity (°API @ 60 °F)	:	49.1	76.9	52.4
Heptanes Plus Properties				
Mol %	:	61.01	0.14	1.41
Molecular Weight	:	145.6	100.9	141.3
Density (gm/cc @ 60 °F)	:	0.7897	0.6903	0.7818
Gravity (°API @ 60 °F)	:	47.5	73.3	49.3
Decanes Plus Properties				
Mol %	:	26.82	0.00	0.56
Molecular Weight	:	195.5	--	195.5
Density (gm/cc @ 60 °F)	:	0.8266	--	0.8266
Gravity (°API @ 60 °F)	:	39.5	--	39.5
Undecanes Plus Properties				
Mol %	:	21.02	0.00	0.44
Molecular Weight	:	212.4	--	212.4
Density (gm/cc @ 60 °F)	:	0.8357	--	0.8357
Gravity (°API @ 60 °F)	:	37.6	--	37.6
Dodecanes Plus Properties				
Mol %	:	17.54	0.00	0.37
Molecular Weight	:	225.4	--	225.4
Density (gm/cc @ 60 °F)	:	0.8422	--	0.8422
Gravity (°API @ 60 °F)	:	36.4	--	36.4

* (P)ressure : 497 psig * (T)emperature : 108 °F

** Saturation (P)ressure : 5000 psig * (T)emperature : 60 °F

*** 42108 SCF / SEP BBL @ PT = 49133 SCF / ST BBL

49133 = 48936 * (1.0899 * 1.0420) / (1.0872 * 1.0403)

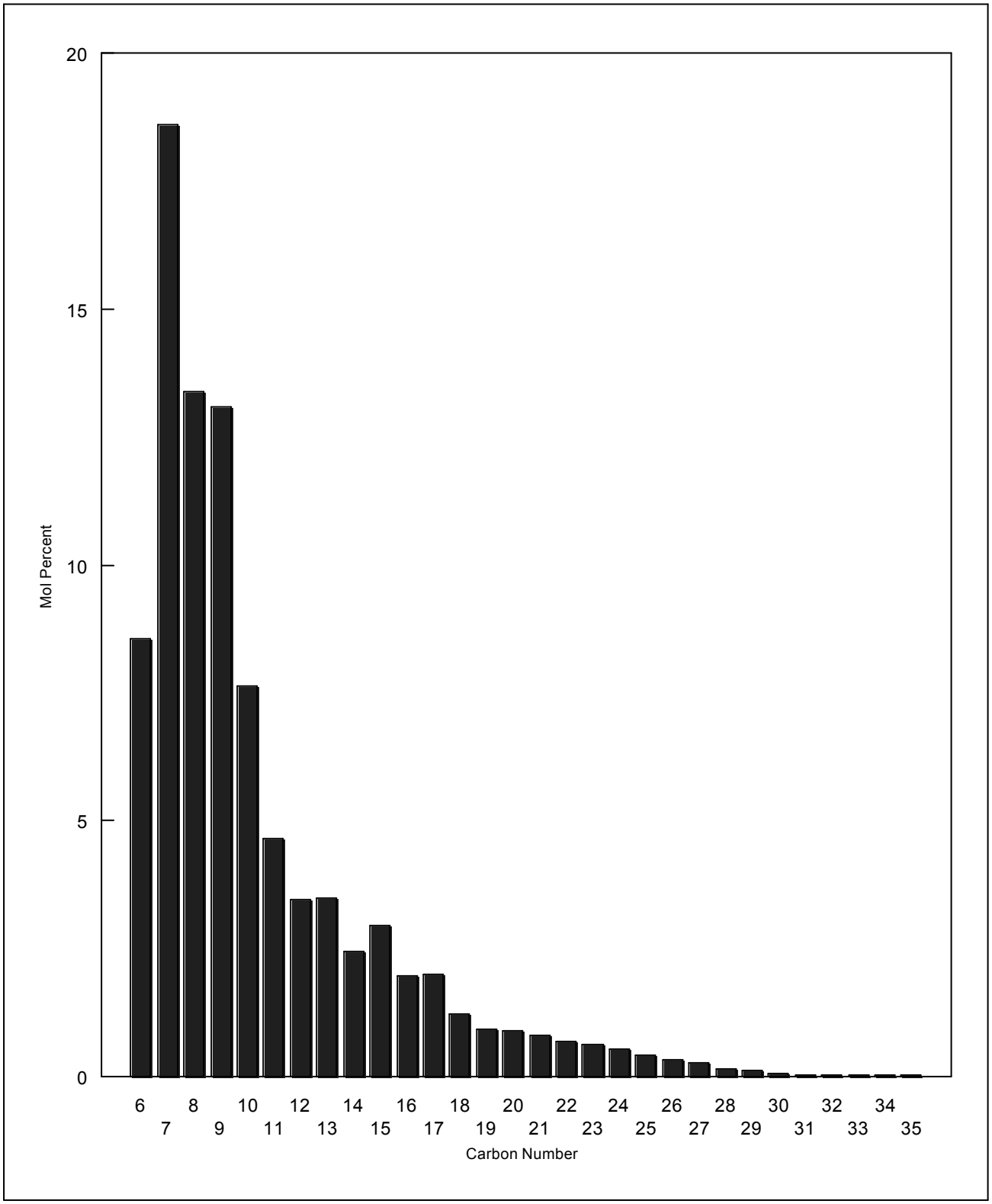
FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
2755 SAND
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 412

Component		Mol %
Hexanes minus	C6-	10.80
Hexanes	C6	8.55
Heptanes	C7	18.62
Octanes	C8	13.39
Nonanes	C9	13.08
Decanes	C10	7.62
Undecanes	C11	4.65
Dodecanes	C12	3.44
Tridecanes	C13	3.48
Tetradecanes	C14	2.44
Pentadecanes	C15	2.96
Hexadecanes	C16	1.97
Heptadecanes	C17	2.00
Octadecanes	C18	1.23
Nonadecanes	C19	0.93
Eicosanes	C20	0.90
Heneicosanes	C21	0.80
Docosanes	C22	0.67
Tricosanes	C23	0.61
Tetracosanes	C24	0.52
Pentacosanes	C25	0.41
Hexacosanes	C26	0.31
Heptacosanes	C27	0.25
Octacosanes	C28	0.14
Nonacosanes	C29	0.10
Triacontanes	C30	0.05
Hentriacontanes	C31	0.02
Dotriacontanes	C32	0.01
Tritriacontanes	C33	0.02
Tetratriacontanes	C34	0.01
Pentatriacontanes Plus	C35+	0.02
TOTAL		100.00

Molecular Weight Calculated *	:	132.3
Density @ 60 °F Calculated *	:	0.7692
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.7855

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
2755 SAND
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 412



PETROLAB

Company : Origin Energy Resources Ltd. | Page : 31 of 92
Well : Yolla # 4 | File : O - 24035

COMPOSITIONAL ANALYSIS OF SEPARATOR LIQUID

2755 SAND

Cylinder # L - 412

Component		Stock Tank Liquid Mol %	Stock Tank Gas Mol %	Separator Liquid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	0.36	22.99	6.14
Nitrogen	N2	0.00	0.06	0.02
Methane	C1	0.22	36.93	9.60
Ethane	C2	0.54	14.34	4.06
Propane	C3	1.77	12.73	4.57
Iso-Butane	iC4	1.05	2.93	1.53
N-Butane	nC4	2.48	4.76	3.06
Iso-Pentane	iC5	1.88	1.33	1.74
N-Pentane	nC5	2.27	1.24	2.01
Hexanes	C6	8.57	1.24	6.70
Heptanes	C7	18.67	0.96	14.15
Octanes	C8	13.43	0.32	10.08
Nonanes	C9	13.11	0.14	9.80
Decanes	C10	7.64	0.03	5.70
Undecanes	C11	4.66	0.00	3.47
Dodecanes Plus	C12+	23.35	0.00	17.37
TOTAL		100.00	100.00	100.00

Ratios

Molar Ratio	:	0.7446	0.2554	1.0000
Mass Ratio	:	0.9166	0.0834	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.1693 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	268 SCF	--

Stream Properties

Molecular Weight	:	131.3	34.82	106.6
Density obs. (gm/cc)	:	0.7705 @ 60 °F	--	0.7195 @ PT*
Gravity (AIR = 1.000)	:	52.0 °API @ 60 °F	1.212	65.0
GHV (BTU/scf)	:	--	1454	--

Hexanes Plus Properties

Mol %	:	89.44	2.69	67.27
Molecular Weight	:	139.9	93.5	139.4
Density (gm/cc @ 60 °F)	:	0.7831	0.6802	0.7823
Gravity (°API @ 60 °F)	:	49.0	76.3	49.2

Heptanes Plus Properties

Mol %	:	80.86	1.45	60.57
Molecular Weight	:	145.8	101.6	145.5
Density (gm/cc @ 60 °F)	:	0.7900	0.6912	0.7895
Gravity (°API @ 60 °F)	:	47.4	73.0	47.6

Decanes Plus Properties

Mol %	:	35.65	0.03	26.54
Molecular Weight	:	195.6	134.0	195.6
Density (gm/cc @ 60 °F)	:	0.8267	0.7278	0.8267
Gravity (°API @ 60 °F)	:	39.5	62.7	39.5

Undecanes Plus Properties

Mol %	:	28.01	0.00	20.84
Molecular Weight	:	212.4	--	212.4
Density (gm/cc @ 60 °F)	:	0.8357	--	0.8357
Gravity (°API @ 60 °F)	:	37.7	--	37.7

Dodecanes Plus Properties

Mol %	:	23.35	0.00	17.37
Molecular Weight	:	225.4	--	225.4
Density (gm/cc @ 60 °F)	:	0.8422	--	0.8422
Gravity (°API @ 60 °F)	:	36.4	--	36.4

* (P)ressure : 497 psig * (T)emperature : 109 °F

PETROLAB

Company : Origin Energy Resources Ltd.	Page : 32 of 92
Well : Yolla # 4	File : O - 24035

COMPOSITIONAL ANALYSIS OF SEPARATOR GAS CYLINDER # PA - 3421 2755 SAND

Component		Mol %	GPM
Hydrogen Sulphide	H2S	0.00	
Carbon Dioxide	CO2	20.64	
Nitrogen	N2	0.22	
Methane	C1	68.53	
Ethane	C2	6.43	1.721
Propane	C3	2.55	0.703
Iso-Butane	iC4	0.40	0.131
N-Butane	nC4	0.62	0.196
Iso-Pentane	iC5	0.17	0.062
N-Pentane	nC5	0.16	0.058
Hexanes	C6	0.15	0.058
Heptanes	C7	0.09	0.038
Octanes	C8	0.03	0.014
Nonanes	C9	0.01	0.005
Decanes	C10	0.00	0.000
Undecanes	C11	0.00	0.000
Dodecanes Plus	C12+	0.00	0.000
TOTAL		100.00	2.986

Pressure Base	:	14.696
Zsc	:	0.997
Mol Weight	:	24.29
Gas Gravity	:	0.841
Pc	:	748.3
Tc	:	414.3
Mol Weight C6+	:	91.6
Density C6+	:	0.6776
Mol Weight C7+	:	100.5
Density C7+	:	0.6897
Mol Weight C10+	:	--
Density C10+	:	--
Mol Weight C11+	:	--
Density C11+	:	--
Mol Weight C12+	:	--
Density C12+	:	--
Heating Value (BTU/ft3)		
Gross	:	936
Nett	:	847
Wobbe Index	:	1021
Zpt *	:	0.922

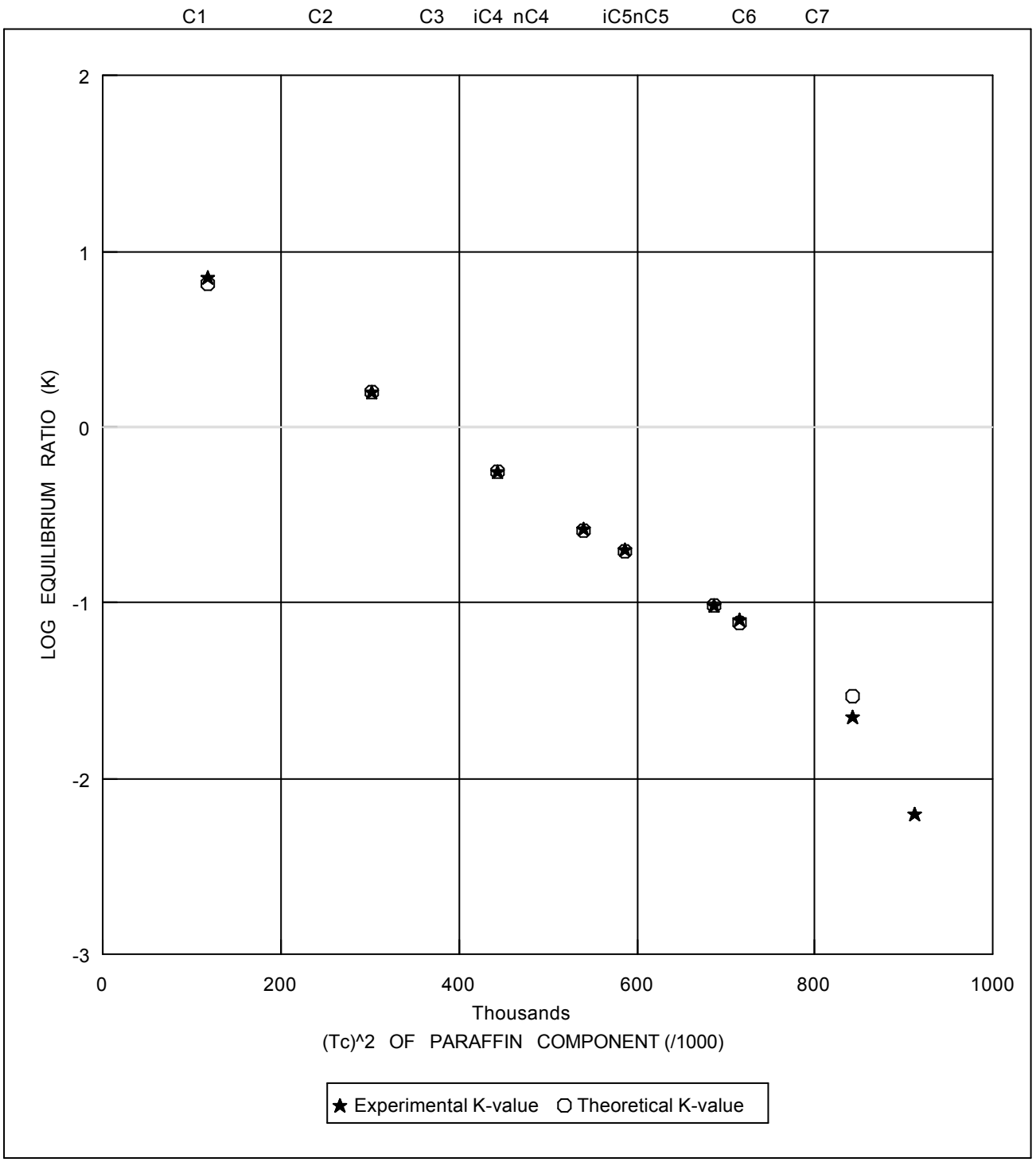
* (P)ressure : 497 psig * (T)emperature : 109 °F

Date Sampled: August 01, 2004 @ 01.00 hrs

Laboratory Opening Pressure : 584 psig @ : 140 °F

SEPARATOR SAMPLES QUALITY CHECK

On Separator Samples From Gas Cylinder # PA - 3421 and Liquid Cylinder # L - 412



PETROLAB

Company : Origin Energy Resources Ltd.	Page : 34 of 92
Well : Yolla # 4	File : O - 24035

COMPOSITIONAL ANALYSIS OF RECOMBINED RESERVOIR FLUID

Using Separator Samples from 2755 SAND in

Component		Cyl # L - 412 Separator Liquid Mol %	Cyl # PA - 3421 Separator Gas Mol %	Recombined Fluid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	6.14	20.64	20.33
Nitrogen	N2	0.02	0.22	0.22
Methane	C1	9.60	68.53	67.27
Ethane	C2	4.06	6.43	6.38
Propane	C3	4.57	2.55	2.59
Iso-Butane	iC4	1.53	0.40	0.42
N-Butane	nC4	3.06	0.62	0.67
Iso-Pentane	iC5	1.74	0.17	0.20
N-Pentane	nC5	2.01	0.16	0.20
Hexanes	C6	6.70	0.15	0.29
Heptanes	C7	14.15	0.09	0.39
Octanes	C8	10.08	0.03	0.25
Nonanes	C9	9.80	0.01	0.22
Decanes	C10	5.70	0.00	0.12
Undecanes	C11	3.47	0.00	0.07
Dodecanes Plus	C12+	17.37	0.00	0.38
TOTAL		100.00	100.00	100.00

Ratios				
Molar Ratio	:	0.0214	0.9786	1.0000
Mass Ratio	:	0.0877	0.9123	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000	--	-- @ PT**
Gas Liquid Ratio	:	1.0000 @ PT*	40998 SCF ***	--
Stream Properties				
Molecular Weight	:	106.63	24.29	26.05
Density obs. (gm/cc)	:	0.7195 @ PT*	--	-- @ PT**
Gravity (AIR = 1.000)	:	64.98 API @ 60 ° F	0.841	--
GHV (BTU/scf)	:	--	936	--
Hexanes Plus Properties				
Mol %	:	67.27	0.28	1.72
Molecular Weight	:	139.4	91.6	131.8
Density (gm/cc @ 60 °F)	:	0.7823	0.6776	0.7691
Gravity (°API @ 60 °F)	:	49.2	77.1	52.3
Heptanes Plus Properties				
Mol %	:	60.57	0.13	1.43
Molecular Weight	:	145.5	100.5	141.5
Density (gm/cc @ 60 °F)	:	0.7895	0.6897	0.7823
Gravity (°API @ 60 °F)	:	47.6	73.5	49.2
Decanes Plus Properties				
Mol %	:	26.54	0.00	0.57
Molecular Weight	:	195.6	--	195.6
Density (gm/cc @ 60 °F)	:	0.8267	--	0.8267
Gravity (°API @ 60 °F)	:	39.5	--	39.5
Undecanes Plus Properties				
Mol %	:	20.84	0.00	0.45
Molecular Weight	:	212.4	--	212.4
Density (gm/cc @ 60 °F)	:	0.8357	--	0.8357
Gravity (°API @ 60 °F)	:	37.7	--	37.7
Dodecanes Plus Properties				
Mol %	:	17.37	0.00	0.38
Molecular Weight	:	225.4	--	225.4
Density (gm/cc @ 60 °F)	:	0.8422	--	0.8422
Gravity (°API @ 60 °F)	:	36.4	--	36.4

* (P)ressure : 497 psig * (T)emperature : 109 °F

** Saturation (P)ressure : 5000 psig * (T)emperature : 60 °F

*** 40998 SCF / SEP BBL @ PT = 47939 SCF / ST BBL

47939 = 47491 * (1.0904 * 1.0416) / (1.0808 * 1.0410)

MEASURED DEW POINT @ 289 °F IS 3815 PSIG

PETROLAB

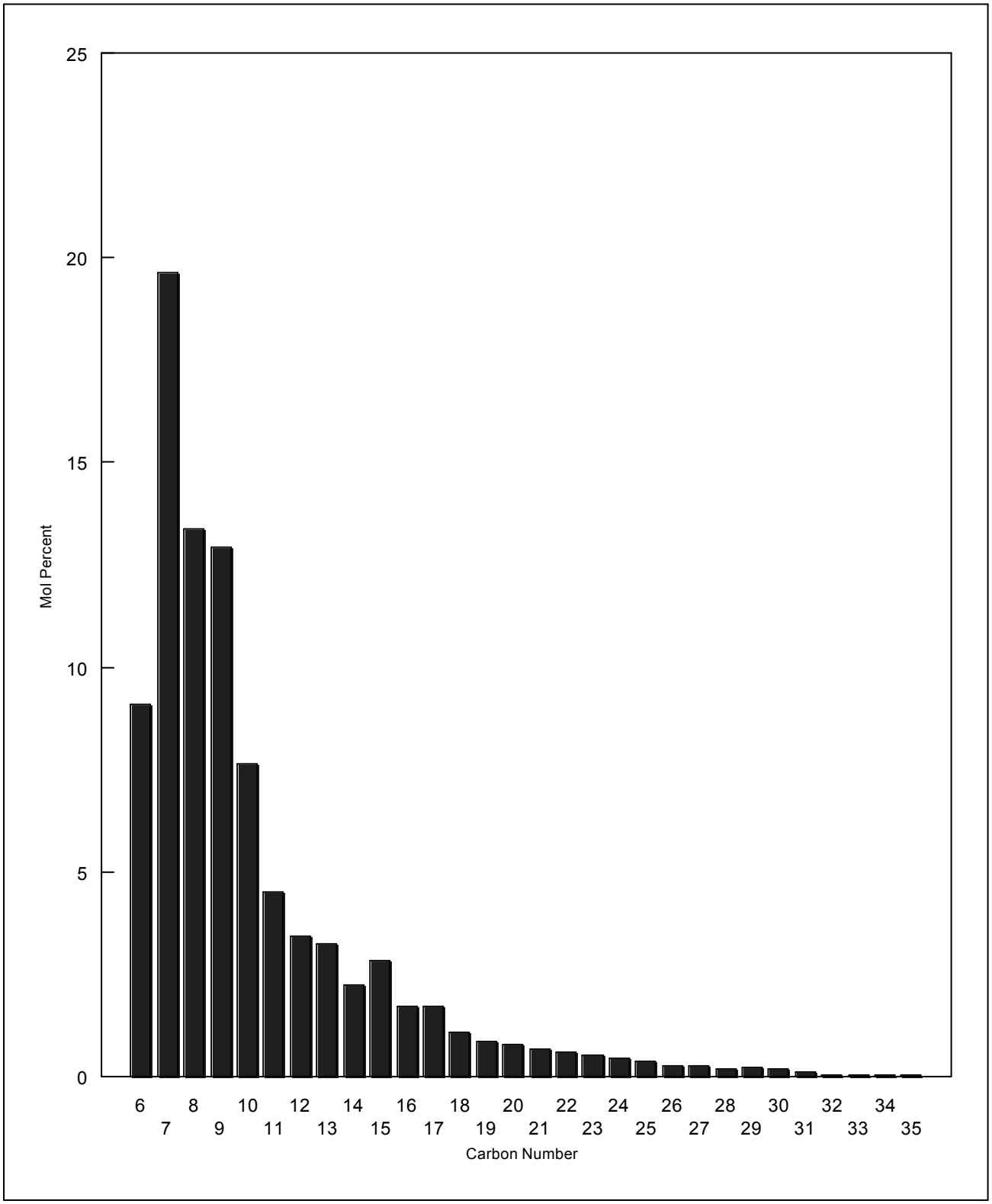
FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
2809 SAND
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 611

Component		Mol %
Hexanes minus	C6-	11.17
Hexanes	C6	9.08
Heptanes	C7	19.64
Octanes	C8	13.37
Nonanes	C9	12.92
Decanes	C10	7.64
Undecanes	C11	4.51
Dodecanes	C12	3.42
Tridecanes	C13	3.23
Tetradecanes	C14	2.24
Pentadecanes	C15	2.83
Hexadecanes	C16	1.72
Heptadecanes	C17	1.71
Octadecanes	C18	1.07
Nonadecanes	C19	0.84
Eicosanes	C20	0.76
Heneicosanes	C21	0.67
Docosanes	C22	0.58
Tricosanes	C23	0.51
Tetracosanes	C24	0.44
Pentacosanes	C25	0.35
Hexacosanes	C26	0.27
Heptacosanes	C27	0.25
Octacosanes	C28	0.18
Nonacosanes	C29	0.22
Triacontanes	C30	0.16
Hentriacontanes	C31	0.10
Dotriacontanes	C32	0.04
Tritriacontanes	C33	0.02
Tetratriacontanes	C34	0.02
Pentatriacontanes Plus	C35+	0.04
TOTAL		100.00

Molecular Weight Calculated *	:	130.5
Density @ 60 °F Calculated *	:	0.7676
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.7832

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
2809 SAND
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 611



PETROLAB

Company : Origin Energy Resources Ltd. | Page : 37 of 92
Well : Yolla # 4 | File : O - 24035

COMPOSITIONAL ANALYSIS OF SEPARATOR LIQUID

2809 SAND

Cylinder # L - 611

Component		Stock Tank Liquid Mol %	Stock Tank Gas Mol %	Separator Liquid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	0.32	20.65	5.65
Nitrogen	N2	0.00	0.06	0.02
Methane	C1	0.21	34.58	9.22
Ethane	C2	0.55	15.04	4.35
Propane	C3	1.95	14.59	5.27
Iso-Butane	iC4	1.18	3.45	1.78
N-Butane	nC4	2.82	5.68	3.57
Iso-Pentane	iC5	2.00	1.50	1.87
N-Pentane	nC5	2.50	1.45	2.22
Hexanes	C6	9.04	1.39	7.04
Heptanes	C7	19.56	1.06	14.71
Octanes	C8	13.32	0.37	9.92
Nonanes	C9	12.87	0.14	9.53
Decanes	C10	7.61	0.04	5.63
Undecanes	C11	4.49	0.00	3.31
Dodecanes Plus	C12+	21.58	0.00	15.91
TOTAL		100.00	100.00	100.00

Ratios				
Molar Ratio	:	0.7379	0.2621	1.0000
Mass Ratio	:	0.9101	0.0899	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.1879 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	281 SCF	--
Stream Properties				
Molecular Weight	:	128.8	35.84	104.4
Density obs. (gm/cc)	:	0.7673 @ 60 °F	--	0.7103 @ PT*
Gravity (AIR = 1.000)	:	52.7 °API @ 60 °F	1.248	67.5
GHV (BTU/scf)	:	--	1570	--
Hexanes Plus Properties				
Mol %	:	88.47	3.00	66.05
Molecular Weight	:	137.9	93.5	137.4
Density (gm/cc @ 60 °F)	:	0.7811	0.6802	0.7802
Gravity (°API @ 60 °F)	:	49.5	76.3	49.7
Heptanes Plus Properties				
Mol %	:	79.43	1.61	59.01
Molecular Weight	:	144.1	101.6	143.8
Density (gm/cc @ 60 °F)	:	0.7885	0.6913	0.7879
Gravity (°API @ 60 °F)	:	47.8	73.0	47.9
Decanes Plus Properties				
Mol %	:	33.68	0.04	24.85
Molecular Weight	:	195.5	134.0	195.5
Density (gm/cc @ 60 °F)	:	0.8268	0.7278	0.8268
Gravity (°API @ 60 °F)	:	39.5	62.7	39.5
Undecanes Plus Properties				
Mol %	:	26.07	0.00	19.22
Molecular Weight	:	213.4	--	213.4
Density (gm/cc @ 60 °F)	:	0.8365	--	0.8365
Gravity (°API @ 60 °F)	:	37.5	--	37.5
Dodecanes Plus Properties				
Mol %	:	21.58	0.00	15.91
Molecular Weight	:	227.3	--	227.3
Density (gm/cc @ 60 °F)	:	0.8433	--	0.8433
Gravity (°API @ 60 °F)	:	36.1	--	36.1

* (P)ressure : 516 psig * (T)emperature : 118 °F

PETROLAB

Company : Origin Energy Resources Ltd.	Page : 38 of 92
Well : Yolla # 4	File : O - 24035

COMPOSITIONAL ANALYSIS OF SEPARATOR GAS CYLINDER # PA - 3429 2809 SAND

Component		Mol %	GPM
Hydrogen Sulphide	H2S	0.00	
Carbon Dioxide	CO2	19.89	
Nitrogen	N2	0.17	
Methane	C1	67.79	
Ethane	C2	7.31	1.956
Propane	C3	3.10	0.855
Iso-Butane	iC4	0.45	0.147
N-Butane	nC4	0.73	0.230
Iso-Pentane	iC5	0.18	0.066
N-Pentane	nC5	0.16	0.058
Hexanes	C6	0.12	0.047
Heptanes	C7	0.07	0.029
Octanes	C8	0.02	0.009
Nonanes	C9	0.01	0.005
Decanes	C10	0.00	0.000
Undecanes	C11	0.00	0.000
Dodecanes Plus	C12+	0.00	0.000
TOTAL		100.00	3.402

Pressure Base	:	14.696
Zsc	:	0.997
Mol Weight	:	24.37
Gas Gravity	:	0.844
Pc	:	745.3
Tc	:	416.8
Mol Weight C6+	:	91.6
Density C6+	:	0.6775
Mol Weight C7+	:	100.7
Density C7+	:	0.6900
Mol Weight C10+	:	--
Density C10+	:	--
Mol Weight C11+	:	--
Density C11+	:	--
Mol Weight C12+	:	--
Density C12+	:	--
Heating Value (BTU/ft3)		
Gross	:	961
Nett	:	870
Wobbe Index	:	1046
Zpt *	:	0.921

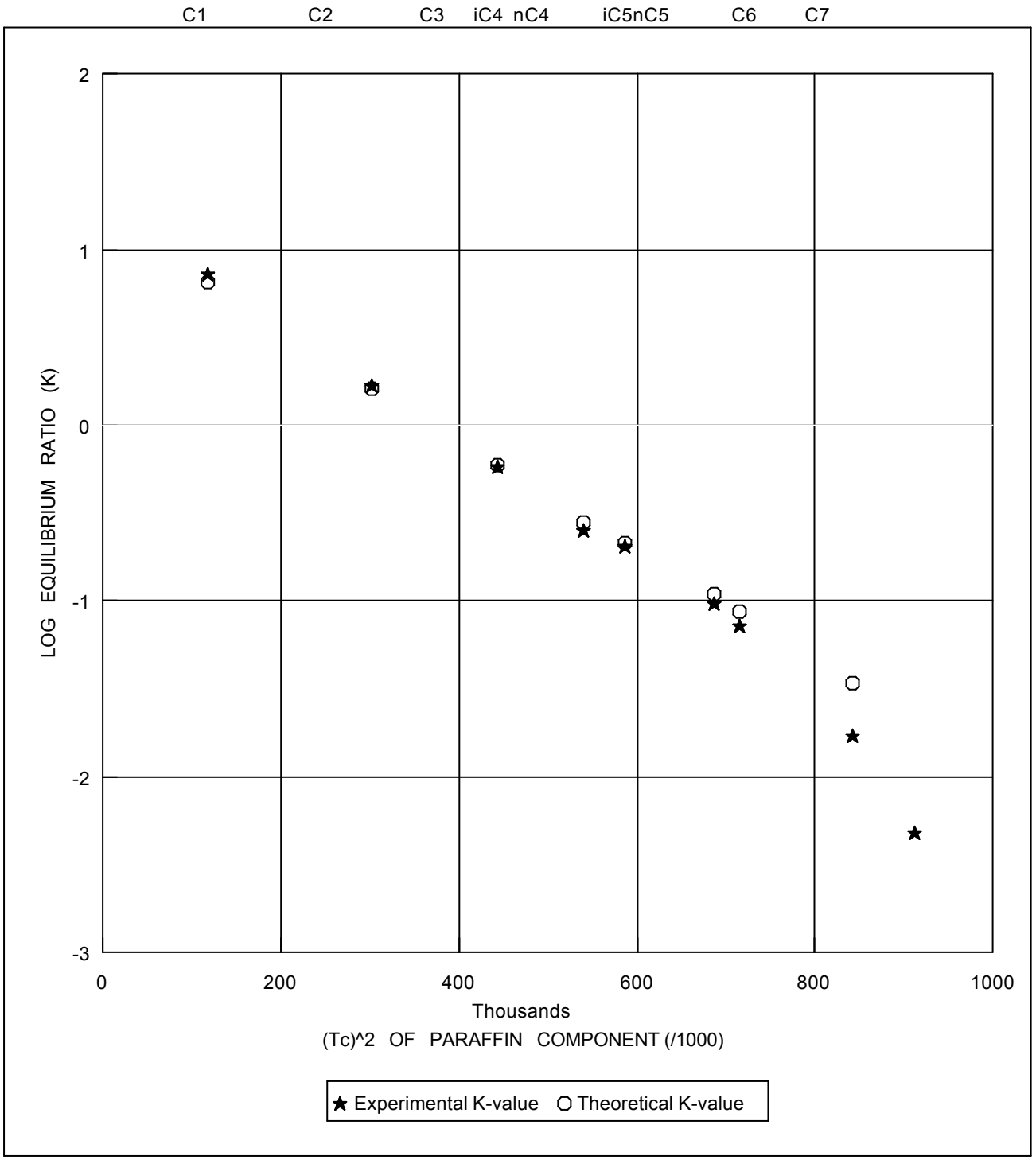
* (P)ressure : 516 psig * (T)emperature : 118 °F

Date Sampled: August 07, 2004 @ 03.45 hrs

Laboratory Opening Pressure : 567 psig @ : 140 °F

SEPARATOR SAMPLES QUALITY CHECK

On Separator Samples From Gas Cylinder # PA - 3429 and Liquid Cylinder # L - 611



PETROLAB

Company : Origin Energy Resources Ltd.	Page : 40 of 92
Well : Yolla # 4	File : O - 24035

COMPOSITIONAL ANALYSIS OF RECOMBINED RESERVOIR FLUID

Using Separator Samples from 2809 SAND in

Component		Cyl # L - 611 Separator Liquid Mol %	Cyl # PA - 3429 Separator Gas Mol %	Recombined Fluid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	5.65	19.89	19.55
Nitrogen	N2	0.02	0.17	0.17
Methane	C1	9.22	67.79	66.39
Ethane	C2	4.35	7.31	7.24
Propane	C3	5.27	3.10	3.15
Iso-Butane	iC4	1.78	0.45	0.48
N-Butane	nC4	3.57	0.73	0.80
Iso-Pentane	iC5	1.87	0.18	0.22
N-Pentane	nC5	2.22	0.16	0.21
Hexanes	C6	7.04	0.12	0.29
Heptanes	C7	14.71	0.07	0.42
Octanes	C8	9.92	0.02	0.26
Nonanes	C9	9.53	0.01	0.24
Decanes	C10	5.63	0.00	0.13
Undecanes	C11	3.31	0.00	0.08
Dodecanes Plus	C12+	15.91	0.00	0.37
TOTAL		100.00	100.00	100.00

Ratios				
Molar Ratio	:	0.0239	0.9761	1.0000
Mass Ratio	:	0.0948	0.9052	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000	--	-- @ PT**
Gas Liquid Ratio	:	1.0000 @ PT*	37021 SCF ***	--
Stream Properties				
Molecular Weight	:	104.45	24.37	26.28
Density obs. (gm/cc)	:	0.7103 @ PT*	--	-- @ PT**
Gravity (AIR = 1.000)	:	67.51 API @ 60 ° F	0.844	--
GHV (BTU/scf)	:	--	961	--
Hexanes Plus Properties				
Mol %	:	66.05	0.22	1.79
Molecular Weight	:	137.4	91.6	131.9
Density (gm/cc @ 60 °F)	:	0.7802	0.6775	0.7704
Gravity (°API @ 60 °F)	:	49.7	77.2	52.0
Heptanes Plus Properties				
Mol %	:	59.01	0.10	1.50
Molecular Weight	:	143.8	100.7	141.0
Density (gm/cc @ 60 °F)	:	0.7879	0.6900	0.7827
Gravity (°API @ 60 °F)	:	47.9	73.4	49.1
Decanes Plus Properties				
Mol %	:	24.85	0.00	0.58
Molecular Weight	:	195.5	--	195.5
Density (gm/cc @ 60 °F)	:	0.8268	--	0.8268
Gravity (°API @ 60 °F)	:	39.5	--	39.5
Undecanes Plus Properties				
Mol %	:	19.22	0.00	0.45
Molecular Weight	:	213.4	--	213.4
Density (gm/cc @ 60 °F)	:	0.8365	--	0.8365
Gravity (°API @ 60 °F)	:	37.5	--	37.5
Dodecanes Plus Properties				
Mol %	:	15.91	0.00	0.37
Molecular Weight	:	227.3	--	227.3
Density (gm/cc @ 60 °F)	:	0.8433	--	0.8433
Gravity (°API @ 60 °F)	:	36.1	--	36.1

* (P)ressure : 516 psig * (T)emperature : 118 °F

** Saturation (P)ressure : 5000 psig * (T)emperature : 60 °F

*** 37021 SCF / SEP BBL @ PT = 43979 SCF / ST BBL

43979 = 43727 * (1.0883 * 1.0420) / (1.0834 * 1.0408)

PETROLAB

FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY

2809 SAND

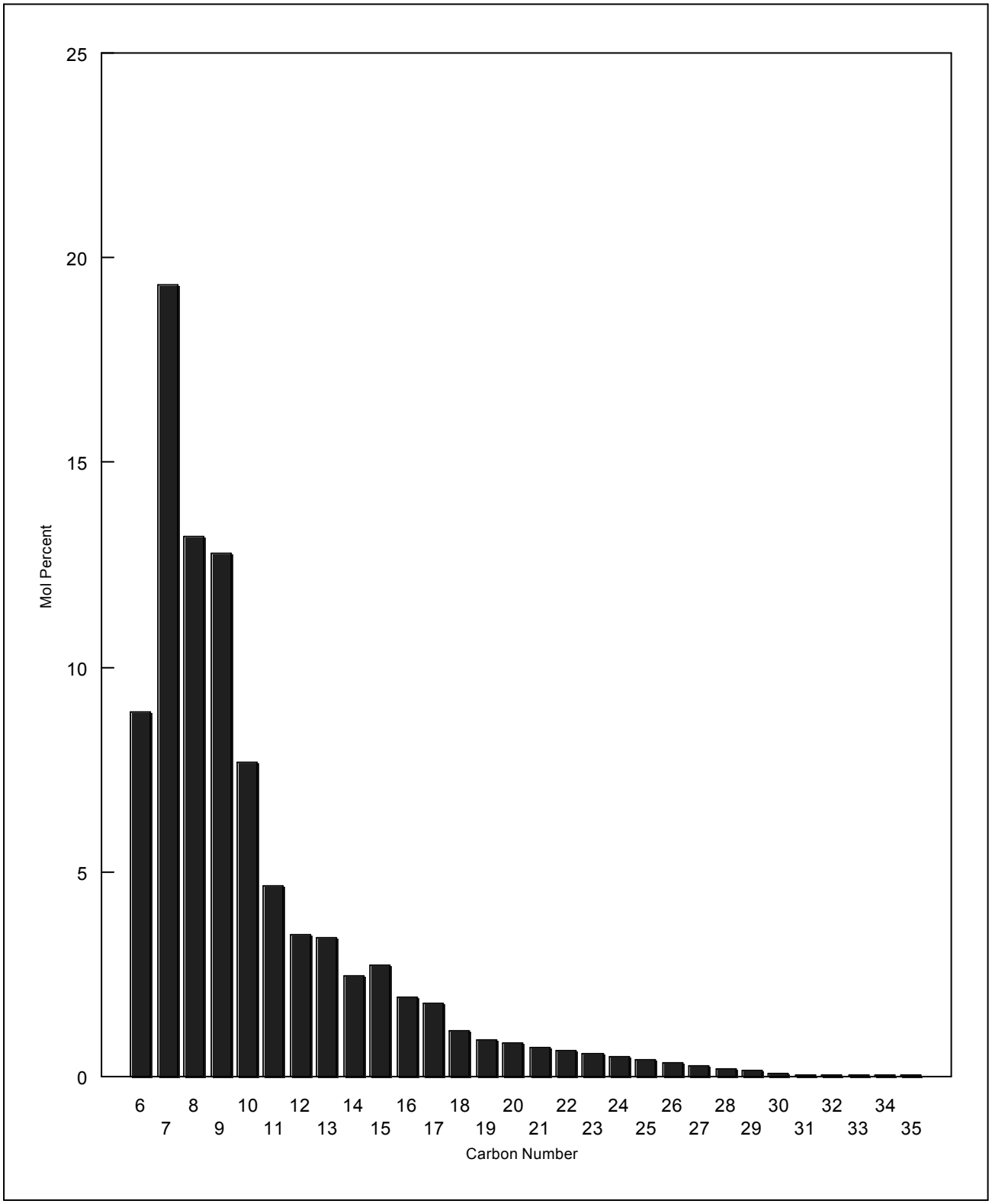
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 610

Component		Mol %
Hexanes minus	C6-	11.06
Hexanes	C6	8.91
Heptanes	C7	19.35
Octanes	C8	13.20
Nonanes	C9	12.78
Decanes	C10	7.68
Undecanes	C11	4.64
Dodecanes	C12	3.47
Tridecanes	C13	3.39
Tetradecanes	C14	2.44
Pentadecanes	C15	2.73
Hexadecanes	C16	1.94
Heptadecanes	C17	1.78
Octadecanes	C18	1.12
Nonadecanes	C19	0.89
Eicosanes	C20	0.80
Heneicosanes	C21	0.69
Docosanes	C22	0.62
Tricosanes	C23	0.54
Tetracosanes	C24	0.47
Pentacosanes	C25	0.41
Hexacosanes	C26	0.32
Heptacosanes	C27	0.27
Octacosanes	C28	0.17
Nonacosanes	C29	0.13
Triacontanes	C30	0.06
Hentriacontanes	C31	0.04
Dotriacontanes	C32	0.02
Tritriacontanes	C33	0.02
Tetratriacontanes	C34	0.02
Pentatriacontanes Plus	C35+	0.04
TOTAL		100.00

Molecular Weight Calculated *	:	131.2
Density @ 60 °F Calculated *	:	0.7684
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.7832

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
2809 SAND
On Stock Tank Oil from atmospheric flash of sample in cylinder # L - 610



PETROLAB

Company : Origin Energy Resources Ltd. | Page : 43 of 92
Well : Yolla # 4 | File : O - 24035

COMPOSITIONAL ANALYSIS OF SEPARATOR LIQUID

2809 SAND

Cylinder # L - 610

Component		Stock Tank Liquid Mol %	Stock Tank Gas Mol %	Separator Liquid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	0.32	20.82	5.83
Nitrogen	N2	0.00	0.05	0.01
Methane	C1	0.21	35.41	9.67
Ethane	C2	0.55	15.04	4.44
Propane	C3	1.91	14.25	5.23
Iso-Butane	iC4	1.11	3.25	1.69
N-Butane	nC4	2.75	5.53	3.50
Iso-Pentane	iC5	1.91	1.43	1.78
N-Pentane	nC5	2.36	1.37	2.10
Hexanes	C6	8.90	1.32	6.87
Heptanes	C7	19.34	1.01	14.41
Octanes	C8	13.19	0.35	9.74
Nonanes	C9	12.77	0.13	9.37
Decanes	C10	7.68	0.04	5.62
Undecanes	C11	4.64	0.00	3.39
Dodecanes Plus	C12+	22.37	0.00	16.35
TOTAL		100.00	100.00	100.00

Ratios				
Molar Ratio	:	0.7312	0.2688	1.0000
Mass Ratio	:	0.9087	0.0913	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.1930 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	290 SCF	--
Stream Properties				
Molecular Weight	:	129.7	35.45	104.4
Density obs. (gm/cc)	:	0.7684 @ 60 °F	--	0.7094 @ PT*
Gravity (AIR = 1.000)	:	52.5 °API @ 60 °F	1.234	67.8
GHV (BTU/scf)	:	--	1544	--
Hexanes Plus Properties				
Mol %	:	88.88	2.85	65.75
Molecular Weight	:	138.6	93.5	138.1
Density (gm/cc @ 60 °F)	:	0.7817	0.6802	0.7808
Gravity (°API @ 60 °F)	:	49.3	76.3	49.5
Heptanes Plus Properties				
Mol %	:	79.98	1.53	58.88
Molecular Weight	:	144.6	101.6	144.3
Density (gm/cc @ 60 °F)	:	0.7889	0.6912	0.7884
Gravity (°API @ 60 °F)	:	47.7	73.0	47.8
Decanes Plus Properties				
Mol %	:	34.68	0.04	25.36
Molecular Weight	:	194.8	134.0	194.8
Density (gm/cc @ 60 °F)	:	0.8263	0.7278	0.8263
Gravity (°API @ 60 °F)	:	39.6	62.7	39.6
Undecanes Plus Properties				
Mol %	:	27.01	0.00	19.74
Molecular Weight	:	212.1	--	212.1
Density (gm/cc @ 60 °F)	:	0.8357	--	0.8357
Gravity (°API @ 60 °F)	:	37.7	--	37.7
Dodecanes Plus Properties				
Mol %	:	22.37	0.00	16.35
Molecular Weight	:	225.6	--	225.6
Density (gm/cc @ 60 °F)	:	0.8424	--	0.8424
Gravity (°API @ 60 °F)	:	36.3	--	36.3

* (P)ressure : 506 psig * (T)emperature : 120 °F

PETROLAB

Company : Origin Energy Resources Ltd.	Page : 44 of 92
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COMPOSITIONAL ANALYSIS OF SEPARATOR GAS CYLINDER # PA - 3419 2809 SAND

Component		Mol %	GPM
Hydrogen Sulphide	H2S	0.00	
Carbon Dioxide	CO2	19.97	
Nitrogen	N2	0.15	
Methane	C1	67.57	
Ethane	C2	7.30	1.954
Propane	C3	3.12	0.860
Iso-Butane	iC4	0.46	0.151
N-Butane	nC4	0.76	0.240
Iso-Pentane	iC5	0.19	0.070
N-Pentane	nC5	0.18	0.065
Hexanes	C6	0.15	0.058
Heptanes	C7	0.09	0.038
Octanes	C8	0.04	0.018
Nonanes	C9	0.02	0.010
Decanes	C10	0.00	0.000
Undecanes	C11	0.00	0.000
Dodecanes Plus	C12+	0.00	0.000
TOTAL		100.00	3.464

Pressure Base	:	14.696
Zsc	:	0.997
Mol Weight	:	24.50
Gas Gravity	:	0.849
Pc	:	745.4
Tc	:	417.8
Mol Weight C6+	:	93.1
Density C6+	:	0.6797
Mol Weight C7+	:	102.3
Density C7+	:	0.6921
Mol Weight C10+	:	--
Density C10+	:	--
Mol Weight C11+	:	--
Density C11+	:	--
Mol Weight C12+	:	--
Density C12+	:	--
Heating Value (BTU/ft3)		
Gross	:	966
Nett	:	875
Wobbe Index	:	1049
Zpt *	:	0.923

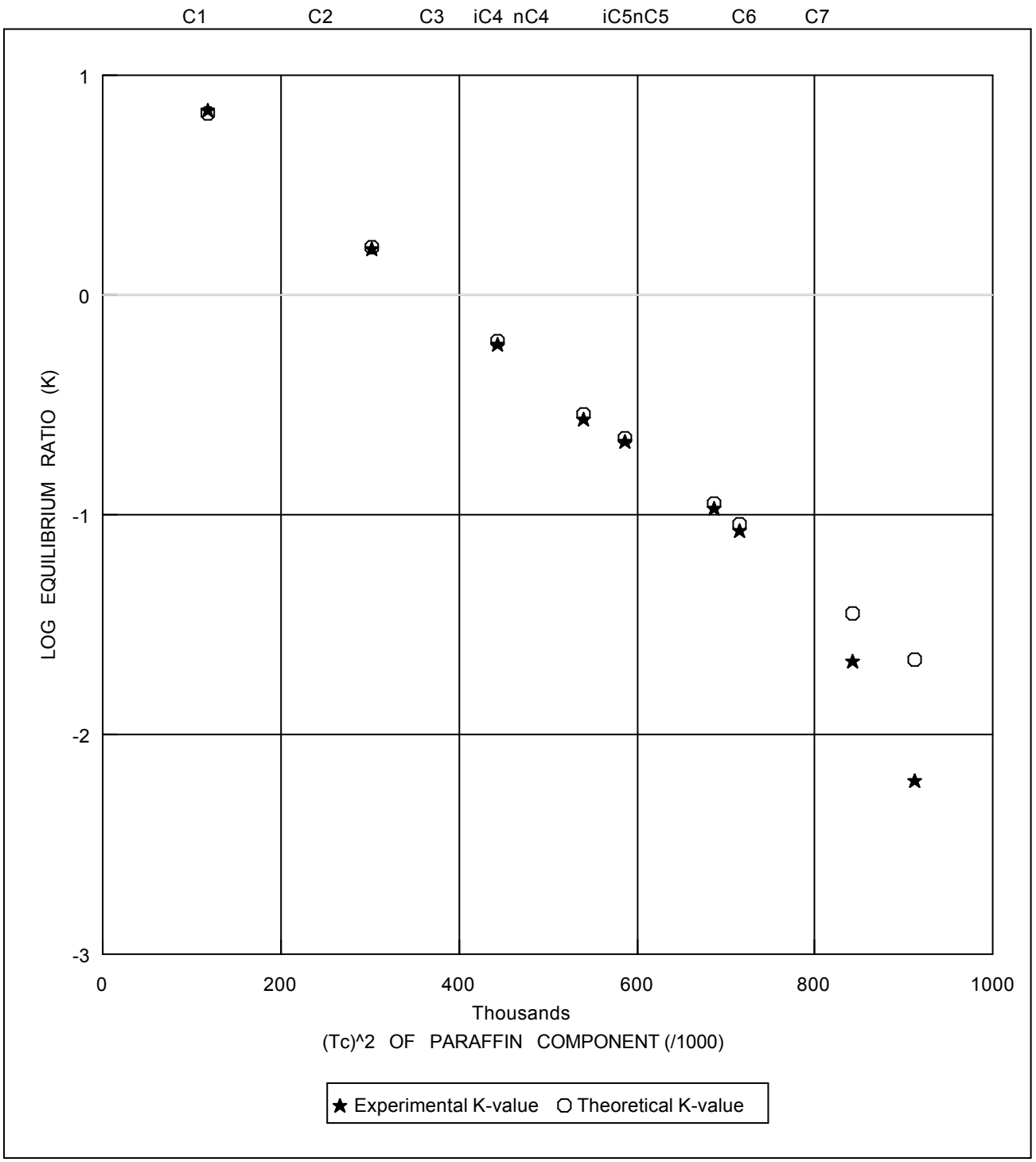
* (P)ressure : 506 psig * (T)emperature : 120 °F

Date Sampled: August 07, 2004 @ 04.15 hrs

Laboratory Opening Pressure : 563 psig @ : 140 °F

SEPARATOR SAMPLES QUALITY CHECK

On Separator Samples From Gas Cylinder # PA - 3419 and Liquid Cylinder # L - 610



PETROLAB

Company : Origin Energy Resources Ltd.	Page : 46 of 92
Well : Yolla # 4	File : O - 24035

COMPOSITIONAL ANALYSIS OF RECOMBINED RESERVOIR FLUID

Using Separator Samples from 2809 SAND in

Component		Cyl # L - 610 Separator Liquid Mol %	Cyl # PA - 3419 Separator Gas Mol %	Recombined Fluid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	5.83	19.97	19.63
Nitrogen	N2	0.01	0.15	0.15
Methane	C1	9.67	67.57	66.17
Ethane	C2	4.44	7.30	7.23
Propane	C3	5.23	3.12	3.17
Iso-Butane	iC4	1.69	0.46	0.49
N-Butane	nC4	3.50	0.76	0.83
Iso-Pentane	iC5	1.78	0.19	0.23
N-Pentane	nC5	2.10	0.18	0.23
Hexanes	C6	6.87	0.15	0.31
Heptanes	C7	14.41	0.09	0.44
Octanes	C8	9.74	0.04	0.27
Nonanes	C9	9.37	0.02	0.25
Decanes	C10	5.62	0.00	0.14
Undecanes	C11	3.39	0.00	0.08
Dodecanes Plus	C12+	16.35	0.00	0.38
TOTAL		100.00	100.00	100.00

Ratios				
Molar Ratio	:	0.0241	0.9759	1.0000
Mass Ratio	:	0.0952	0.9048	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000	--	-- @ PT**
Gas Liquid Ratio	:	1.0000 @ PT*	36600 SCF ***	--
Stream Properties				
Molecular Weight	:	104.35	24.50	26.42
Density obs. (gm/cc)	:	0.7094 @ PT*	--	-- @ PT**
Gravity (AIR = 1.000)	:	67.76 API @ 60 ° F	0.849	--
GHV (BTU/scf)	:	--	966	--
Hexanes Plus Properties				
Mol %	:	65.75	0.30	1.87
Molecular Weight	:	138.1	93.1	131.0
Density (gm/cc @ 60 °F)	:	0.7808	0.6797	0.7682
Gravity (°API @ 60 °F)	:	49.5	76.5	52.5
Heptanes Plus Properties				
Mol %	:	58.88	0.15	1.56
Molecular Weight	:	144.3	102.3	140.4
Density (gm/cc @ 60 °F)	:	0.7884	0.6921	0.7810
Gravity (°API @ 60 °F)	:	47.8	72.8	49.5
Decanes Plus Properties				
Mol %	:	25.36	0.00	0.60
Molecular Weight	:	194.8	--	194.8
Density (gm/cc @ 60 °F)	:	0.8263	--	0.8263
Gravity (°API @ 60 °F)	:	39.6	--	39.6
Undecanes Plus Properties				
Mol %	:	19.74	0.00	0.46
Molecular Weight	:	212.1	--	212.1
Density (gm/cc @ 60 °F)	:	0.8357	--	0.8357
Gravity (°API @ 60 °F)	:	37.7	--	37.7
Dodecanes Plus Properties				
Mol %	:	16.35	0.00	0.38
Molecular Weight	:	225.6	--	225.6
Density (gm/cc @ 60 °F)	:	0.8424	--	0.8424
Gravity (°API @ 60 °F)	:	36.3	--	36.3

* (P)ressure : 506 psig * (T)emperature : 120 °F

** Saturation (P)ressure : 5000 psig * (T)emperature : 60 °F

*** 36600 SCF / SEP BBL @ PT = 43663 SCF / ST BBL

43663 = 43506 * (1.0856 * 1.0410) / (1.0834 * 1.0394)

MEASURED DEW POINT @ 296 °F IS 3748 PSIG

WATER ANALYSIS

Sand 2973

Customer Sample ID		W 2	W 3	W 4
Sample Type		Water	Water	Water
Sample Time		1300	1435	1605
Test/Reference	Unit			
PROPERTIES: APHA 20th Ed				
pH at Measured Temp.*		5.7	5.9	5.9
Measured Temp.*	°C	19.8	19.8	19.8
Electrical Conductivity @ 25°C*	µS/cm	45700	33100	26600
Resistivity @ 25°C*	M.Ohm	0.22	0.30	0.38
ANIONS mg/L APHA 20th ed				
Hydroxide as OH*	mg/L	<1	<1	<1
Carbonate as CO3*	mg/L	<1	<1	<1
Bicarbonate as HCO3*	mg/L	276	576	624
Chloride as Cl*	mg/L	19846	13361	9945
Nitrate as NO3*	mg/L	<0.1	<0.1	<0.1
Sulphate as SO4*	mg/L	2541	1859	1504
Total Anions*	mg/L	22663	15796	12073
ANIONS meq/L APHA 20th ed				
Hydroxide as OH*	meq/L	<0.01	<0.01	<0.01
Carbonate as CO3*	meq/L	<0.01	<0.01	<0.01
Bicarbonate as HCO3*	meq/L	4.52	9.44	10.22
Chloride as Cl*	meq/L	559.04	376.37	280.14
Nitrate as NO3*	meq/L	<0.01	<0.01	<0.01
Sulphate as SO4*	meq/L	52.91	38.71	31.31
Total Anions*	meq/L	616.47	424.51	321.68
CATIONS mg/L APHA 20th ed				
Potassium as K*	mg/L	335	240	177
Sodium as Na*	mg/L	10850	7840	6030
Calcium as Ca*	mg/L	365	246	183
Magnesium as Mg*	mg/L	963	576	381
Total Cations*	mg/L	12513	8902	6771
CATIONS meq/L APHA 20th ed				
Potassium as K*	meq/L	8.57	6.14	4.53
Sodium as Na*	meq/L	471.94	341.02	262.29
Calcium as Ca*	meq/L	18.21	12.28	9.13
Magnesium as Mg*	meq/L	79.26	47.41	31.36
Total Cations*	meq/L	577.98	406.84	307.30
DERIVED PARAMETERS APHA 20th ed				
Ion balance (Diff * 100/Sum)*	%	3.22	2.13	2.29
Acceptance Criteria*	%	5	5	5
Satisfactory*		Yes	Yes	Yes
Total Alkalinity (calc as CaCO3)*	mg/L	226	472	511
Total Cations + Anions*	mg/L	35176	24698	18844
Hardness (calc as CaCO3)*	mg/L	4877	2986	2026
Calculated Total Dissolved Solids	mg/L	29248	21184	17024

WATER ANALYSIS

Sand 2755

Customer Sample ID		W 5	W 6	W 7	W 8
Sample Type		Water	Water	Water	Water
Sample Time		2215	2310	0000	0058
Test/Reference	Unit				
PROPERTIES: APHA 20th Ed					
pH at Measured Temp.*		5.9	5.4	5.3	5.8
Measured Temp.*	°C	19.8	19.9	19.9	19.9
Electrical Conductivity @ 25°C*	µS/cm	6070	5330	4850	4400
Resistivity @ 25°C*	M.Ohm	1.65	1.88	2.06	2.27
ANIONS mg/L APHA 20th ed					
Hydroxide as OH*	mg/L	<1	<1	<1	<1
Carbonate as CO3*	mg/L	<1	<1	<1	<1
Bicarbonate as HCO3*	mg/L	312	240	204	228
Chloride as Cl*	mg/L	2433	2040	1795	1601
Nitrate as NO3*	mg/L	<0.1	<0.1	<0.1	<0.1
Sulphate as SO4*	mg/L	725	730	679	605
Total Anions*	mg/L	3469	3010	2678	2433
ANIONS meq/L APHA 20th ed					
Hydroxide as OH*	meq/L	<0.01	<0.01	<0.01	<0.01
Carbonate as CO3*	meq/L	<0.01	<0.01	<0.01	<0.01
Bicarbonate as HCO3*	meq/L	5.11	3.93	3.34	3.74
Chloride as Cl*	meq/L	68.54	57.46	50.56	45.10
Nitrate as NO3*	meq/L	<0.01	<0.01	<0.01	<0.01
Sulphate as SO4*	meq/L	15.09	15.19	14.14	12.59
Total Anions*	meq/L	88.73	76.59	68.04	61.42
CATIONS mg/L APHA 20th ed					
Potassium as K*	mg/L	69	67	61	54
Sodium as Na*	mg/L	1745	1560	1412	1248
Calcium as Ca*	mg/L	48	38	32	31
Magnesium as Mg*	mg/L	48	26	22	20
Total Cations*	mg/L	1910	1691	1527	1353
CATIONS meq/L APHA 20th ed					
Potassium as K*	meq/L	1.76	1.71	1.56	1.38
Sodium as Na*	meq/L	75.90	67.86	61.42	54.28
Calcium as Ca*	meq/L	2.40	1.90	1.60	1.55
Magnesium as Mg*	meq/L	3.95	2.14	1.81	1.65
Total Cations*	meq/L	84.01	73.61	66.39	58.86
DERIVED PARAMETERS APHA 20th ed					
Ion balance (Diff * 100/Sum)*	%	2.73	1.98	1.23	2.13
Acceptance Criteria*	%	5	5	5	5
Satisfactory*		Yes	Yes	Yes	Yes
Total Alkalinity (calc as CaCO3)*	mg/L	256	197	167	187
Total Cations + Anions*	mg/L	5379	4701	4205	3786
Hardness (calc as CaCO3)*	mg/L	318	202	171	160
Calculated Total Dissolved Solids	mg/L	3885	3411	3104	2816

WATER ANALYSIS

Sand 2809

Customer Sample ID		W 9	W 10	W 11
Sample Type		Water	Water	Water
Sample Time		0200	0310	0414
Test/Reference	Unit			
PROPERTIES: APHA 20th Ed				
pH at Measured Temp.*		5.3	5.1	5.2
Measured Temp.*	°C	19.9	19.9	19.9
Electrical Conductivity @ 25°C*	µS/cm	4850	4480	4030
Resistivity @ 25°C*	M.Ohm	2.06	2.23	2.48
ANIONS mg/L APHA 20th ed				
Hydroxide as OH*	mg/L	<1	<1	<1
Carbonate as CO3*	mg/L	<1	<1	<1
Bicarbonate as HCO3*	mg/L	312	228	228
Chloride as Cl*	mg/L	1929	1790	1568
Nitrate as NO3*	mg/L	<0.1	<0.1	<0.1
Sulphate as SO4*	mg/L	438	346	324
Total Anions*	mg/L	2679	2364	2120
ANIONS meq/L APHA 20th ed				
Hydroxide as OH*	meq/L	<0.01	<0.01	<0.01
Carbonate as CO3*	meq/L	<0.01	<0.01	<0.01
Bicarbonate as HCO3*	meq/L	5.11	3.74	3.74
Chloride as Cl*	meq/L	54.34	50.42	44.17
Nitrate as NO3*	meq/L	<0.01	<0.01	<0.01
Sulphate as SO4*	meq/L	9.12	7.20	6.75
Total Anions*	meq/L	68.57	61.36	54.65
CATIONS mg/L APHA 20th ed				
Potassium as K*	mg/L	46	40	34
Sodium as Na*	mg/L	1416	1288	1070
Calcium as Ca*	mg/L	33	24	22
Magnesium as Mg*	mg/L	33	15	13
Total Cations*	mg/L	1528	1367	1139
CATIONS meq/L APHA 20th ed				
Potassium as K*	meq/L	1.18	1.02	0.87
Sodium as Na*	meq/L	61.59	56.02	46.54
Calcium as Ca*	meq/L	1.65	1.20	1.10
Magnesium as Mg*	meq/L	2.72	1.23	1.07
Total Cations*	meq/L	67.13	59.48	49.58
DERIVED PARAMETERS APHA 20th ed				
Ion balance (Diff * 100/Sum)*	%	1.06	1.56	4.86
Acceptance Criteria*	%	5	5	5
Satisfactory*		Yes	Yes	Yes
Total Alkalinity (calc as CaCO3)*	mg/L	256	187	187
Total Cations + Anions*	mg/L	4207	3731	3259
Hardness (calc as CaCO3)*	mg/L	218	122	108
Calculated Total Dissolved Solids		3104	2867	2579

Bottom Hole Samples

Transferred on July 16 and 17, 2004
@ 5000 psig & 18 °C

Sample Number	Chamber Number	Depth (meters)	Reservoir Pressure (psia)	Reservoir Temperature (ºC)	Content Observed	Opening Pressure (psig)	Volume Water to Transfer Pressure (ccs)	Sample Volume Transferred (ccs)	Transferred into Petrolab Cylinder Number
1.01	MPSR 0066	3005.7	4176	138.9	Gas Condensate	2500	120	340	XC 18541
1.02	MPSR 0123	2871	4093	130.4	Water	1800	50	400	2 * 200 ml flask
1.03	MPSR 0316	2614	3636.7	119.8	Water	1500	100	350	2 * 200 ml flask
1.04	MPSR 0478	2609.5	3632	120	Oil	1980	50	400	XC 18532
1.05	MPSR 1695	2609.5	3632	120	Oil	2000	50	250	XC 18531
1.06	MPSR 1762	2606.5	3630.3	120	Oil	1850	40	410	XC 18533

On-site Analyses on Contents of MPSR tool 1695

Fluid recovered : Oil
Field Density : 0.866 @ 24 ºC
Field API Gravity : 31.7 ° API @ 60 °F
Field GOR (scf / stb) * : > 110 *
*Bottom Hole Reservoir Fluid was hard to flash in field due to high pour point (~ 40 °C) of crude and low ambient temperature

FIELD CHARACTERISTICS :

Field Name	:	Yolla Field
Formation Name	:	Intra-EVCM-2458 Sand
Date first well completed	:	Yolla 4
Original reservoir pressure (psia)	:	3634.7
@ datum (mss)	:	2468
	:	

WELL CHARACTERISTICS :

Depth datum (mss)	:	2468
Elevation above MSL (m)	:	39.9
Total depth (mMD)	:	3234
Producing interval (mMD)	:	2604-2610
Perforated intervals (mMD)	:	2604-2610
Tubing size (inch)	:	7"
Tubing shoe (m)	:	3000
Casing size (inch)	:	9 5/8"
Reservoir temperature (°F)	:	262
Last reservoir pressure (psia)	:	3634.7
Date	:	15/07/2004
Status of well	:	Completed

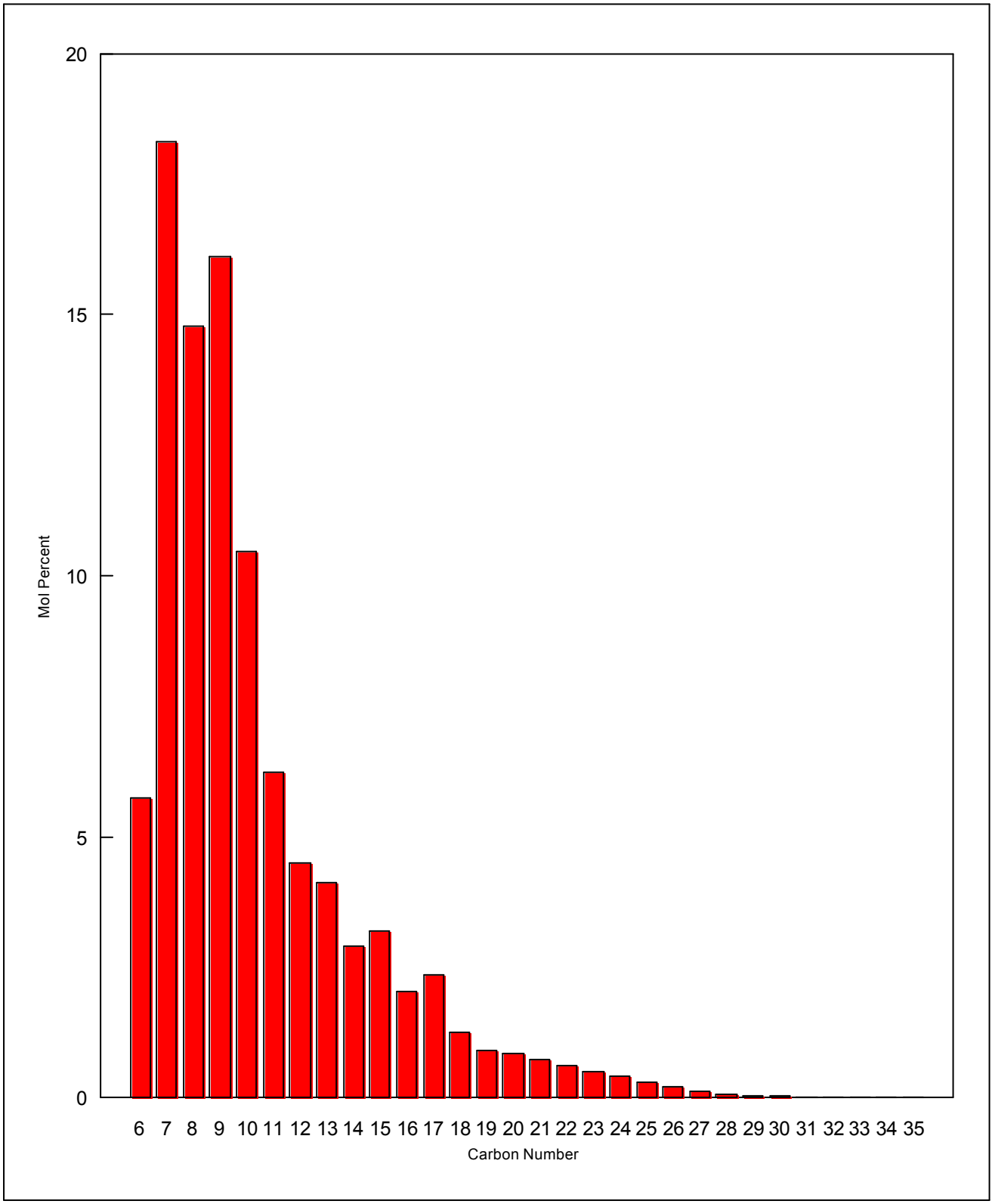
FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
On Stock Tank Oil from atmospheric flash of sample in cylinder # XC 18541

Component		Mol %
Hexanes minus	C6-	3.09
Hexanes	C6	5.74
Heptanes	C7	18.32
Octanes	C8	14.79
Nonanes	C9	16.11
Decanes	C10	10.45
Undecanes	C11	6.25
Dodecanes	C12	4.51
Tridecanes	C13	4.12
Tetradecanes	C14	2.92
Pentadecanes	C15	3.19
Hexadecanes	C16	2.03
Heptadecanes	C17	2.36
Octadecanes	C18	1.27
Nonadecanes	C19	0.90
Eicosanes	C20	0.86
Heneicosanes	C21	0.73
Docosanes	C22	0.62
Tricosanes	C23	0.51
Tetracosanes	C24	0.42
Pentacosanes	C25	0.31
Hexacosanes	C26	0.21
Heptacosanes	C27	0.12
Octacosanes	C28	0.07
Nonacosanes	C29	0.05
Triacontanes	C30	0.03
Hentriacontanes	C31	0.02
Dotriacontanes	C32	0.00
Tritriacontanes	C33	0.00
Tetratriacontanes	C34	0.00
Pentatriacontanes Plus	C35+	0.00
TOTAL		100.00

Molecular Weight Calculated *	:	138.5
Density @ 60 °F Calculated *	:	0.7795
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.7943

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
On Stock Tank Oil from atmospheric flash of sample in cylinder # XC 18541



PETROLAB

Company : Origin Energy Resources Limited | Page : 54 of 92
Well : Yolla #4 | File : O - 24035

COMPOSITIONAL ANALYSIS OF BOTTOM HOLE RESERVOIR FLUID

Cylinder # XC 18541 ex MPSR chamber # 0066 - taken @ 3005.7 meters

Component		Stock Tank Liquid Mol %	Stock Tank Gas Mol %	Reservoir Fluid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	0.27	17.45	17.15
Nitrogen	N2	0.00	0.27	0.27
Methane	C1	0.41	69.20	67.99
Ethane	C2	0.23	6.37	6.26
Propane	C3	0.31	2.28	2.25
Iso-Butane	iC4	0.17	0.51	0.50
N-Butane	nC4	0.53	1.07	1.06
Iso-Pentane	iC5	0.52	0.39	0.39
N-Pentane	nC5	0.69	0.40	0.41
Hexanes	C6	5.74	0.50	0.59
Heptanes	C7	18.31	0.65	0.96
Octanes	C8	14.78	0.32	0.57
Nonanes	C9	16.10	0.24	0.52
Decanes	C10	10.45	0.14	0.32
Undecanes	C11	6.25	0.09	0.20
Dodecanes Plus	C12+	25.24	0.12	0.56
TOTAL		100.00	100.00	100.00

Ratios				
Molar Ratio	:	0.0176	0.9824	1.0000
Mass Ratio	:	0.0879	0.9121	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	-- @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	42277 SCF	--
Stream Properties				
Molecular Weight	:	137.1	25.47	27.4
Density obs. (gm/cc)	:	0.7798 @ 60 °F	--	-- @ PT*
Gravity (AIR = 1.000)	:	49.8 °API @ 60 °F	0.883	--
GHV (BTU/scf)	:	--	1080	--
Hexanes Plus Properties				
Mol %	:	96.87	2.06	3.72
Molecular Weight	:	139.8	106.8	121.9
Density (gm/cc @ 60 °F)	:	0.7833	0.6978	0.7402
Gravity (°API @ 60 °F)	:	49.0	71.1	59.5
Heptanes Plus Properties				
Mol %	:	91.13	1.56	3.13
Molecular Weight	:	143.3	114.1	129.1
Density (gm/cc @ 60 °F)	:	0.7875	0.7066	0.7503
Gravity (°API @ 60 °F)	:	48.0	68.6	56.9
Decanes Plus Properties				
Mol %	:	41.93	0.35	1.08
Molecular Weight	:	185.4	149.7	169.1
Density (gm/cc @ 60 °F)	:	0.8201	0.7424	0.7947
Gravity (°API @ 60 °F)	:	40.9	58.9	46.4
Undecanes Plus Properties				
Mol %	:	31.49	0.21	0.76
Molecular Weight	:	202.5	160.1	187.4
Density (gm/cc @ 60 °F)	:	0.8300	0.7513	0.8090
Gravity (°API @ 60 °F)	:	38.8	56.6	43.2
Dodecanes Plus Properties				
Mol %	:	25.24	0.12	0.56
Molecular Weight	:	216.2	170.0	204.6
Density (gm/cc @ 60 °F)	:	0.8373	0.7592	0.8219
Gravity (°API @ 60 °F)	:	37.3	54.7	40.5

* (P)ressure : 4460 psig * (T)emperature : 282 °F

MEASURED DEW POINT @ 282 °F IS 4460 PSIG

SUMMARY OF RESULTS

Cylinder # XC 18532 ex MPSR chamber # 0478 - Sample 4 taken 2609.5 meters

CONSTANT MASS DATA :

Reservoir Temperature (°F)	:	122
Saturation Pressure (psig)	:	2167
Thermal Expansion of Saturated Oil		
@ 122 °F AND 2167 PSIG (*10^4/°F)	:	8.48
(*10^4/°C)	:	15.26
Compressibility of Saturated Oil		
@ 122 °F AND 2167 PSIG (*10^6/psi)	:	8.48

DIFFERENTIAL VAPORIZATION DATA :

SATURATED OIL @ 122 °F AND 2167 PSIG :

Solution GOR (SCF/Bbl)	:	496
Formation Volume Factor	:	1.2653
Oil density (gm/cc)	:	0.7195
Specific Volume (ft^3/lb)	:	0.0223
Viscosity (cp)	:	1.077
Cloud Point (°C)	:	34
Pour Point (°C)	:	23

RESIDUAL OIL :

API Gravity @ 60 °F	:	40.3
Formation Volume Factor	:	1.0287
Density @ 122 °F (gm/cc)	:	0.8001
Viscosity @ 0 °F (cp)	:	4.056
Cloud Point (°C)	:	40
Pour Point (°C)	:	36
Wax Content (% wt)	:	24.0

FLASH DATA :

1st Separator Pressure (psig)	:	88
1st Separator Temperature (°F)	:	144
2nd Separator Pressure (psig)	:	--
2nd Separator Temperature (°F)	:	--
Stock Tank Pressure (psig)	:	0
Stock Tank Temperature (°F)	:	100
Oil Volume Factor (rbbl/stbbl)	:	1.2773
1st Separator GOR (scf/bbl)	:	500
2nd Separator GOR (scf/bbl)	:	--
Stock Tank GOR (scf/bbl)	:	21
Total GOR (scf/bbl)	:	521
1st Separator Gas Gravity (Air=1)	:	0.828
2nd Separator Gas Gravity (Air=1)	:	--
Stock Tank Gas Gravity (Air=1)	:	1.321
Stock Tank Oil Density (gm/cc)	:	0.8273
Stock Tank Oil Gravity (°API)	:	39.4

DIFFERENTIAL DATA CORRECTED WITH FLASH DATA :

SATURATED OIL @ 122 °F AND 2167 PSIG :

Solution GOR (SCF/Bbl)	:	**521**
Formation Volume Factor (Resbbl/STbbl)	:	**1.277**

Bottom Hole Samples Validity Check in Laboratory

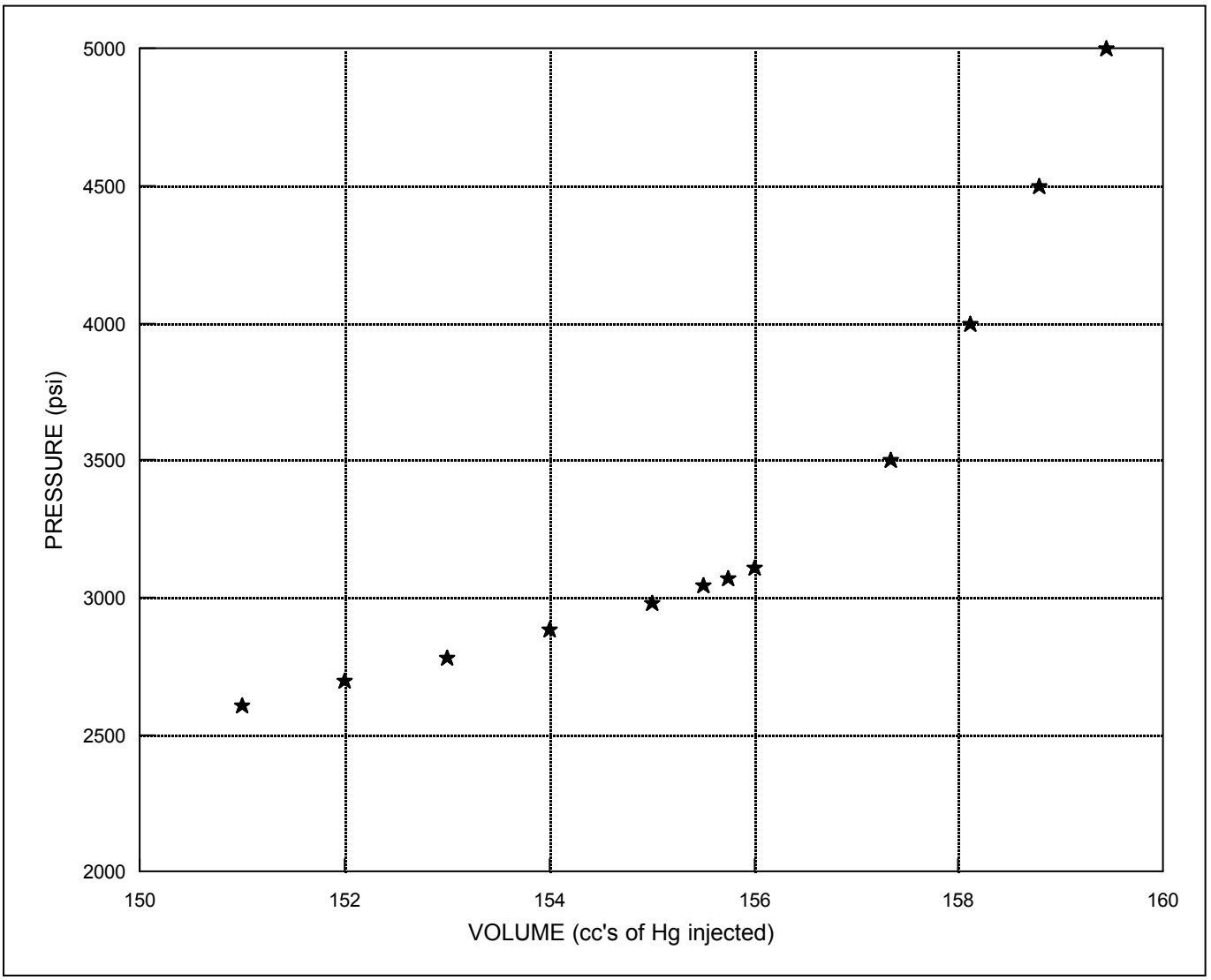
Saturation Pressure : 3220 psig @ 248 ° F

Bottom Hole Sample # 1.06

Sampling Conditions

Date sampled	:	July 17, 2004
Depth sampled (mSS)	:	2463.17
Reservoir Pressure (psig)	:	3618
Reservoir Temperature (°F)	:	245.5
Tool	:	MDT
Chamber #	:	MPSR 1762
Opening Pressure (psig)	:	1850
Transfer Pressure (psig)	:	5000
Transferred to storage cylinder No.	:	XC 18533

Volume (cc's)	Pressure (psi)
159.45	5000
158.79	4500
158.11	4000
157.33	3500
156.00	3108
155.75	3072
155.50	3044
155.00	2981
154.00	2885
153.00	2782
152.00	2696
151.00	2607



Bottom Hole Samples Validity Check in Laboratory

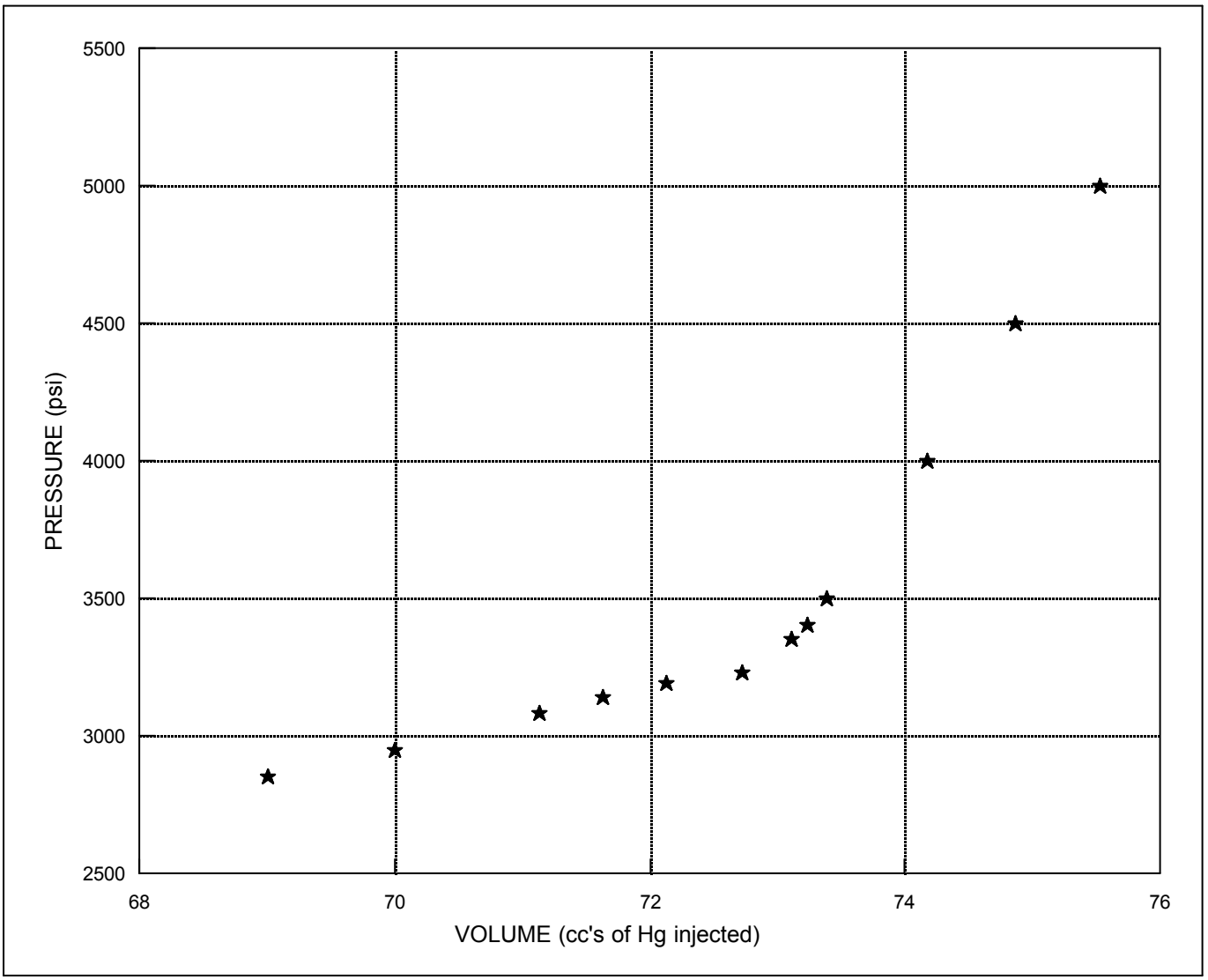
Saturation Pressure : 3264 psig @ 262 ° F

Bottom Hole Sample # 1.04

Sampling Conditions

Date sampled	:	July 17, 2004
Depth sampled (mSS)	:	2465.99
Reservoir Pressure (psig)	:	3620
Reservoir Temperature (°F)	:	262
Tool	:	MDT
Chamber #	:	MPSR 0478
Opening Pressure (psig)	:	1980
Transfer Pressure (psig)	:	5000
Transferred to storage cylinder No.	:	XC 18532

Volume (cc's)	Pressure (psi)
75.53	5000
74.86	4500
74.18	4000
73.39	3500
73.24	3400
73.11	3352
72.73	3229
72.13	3189
71.63	3140
71.14	3081
70.00	2949
69.00	2853



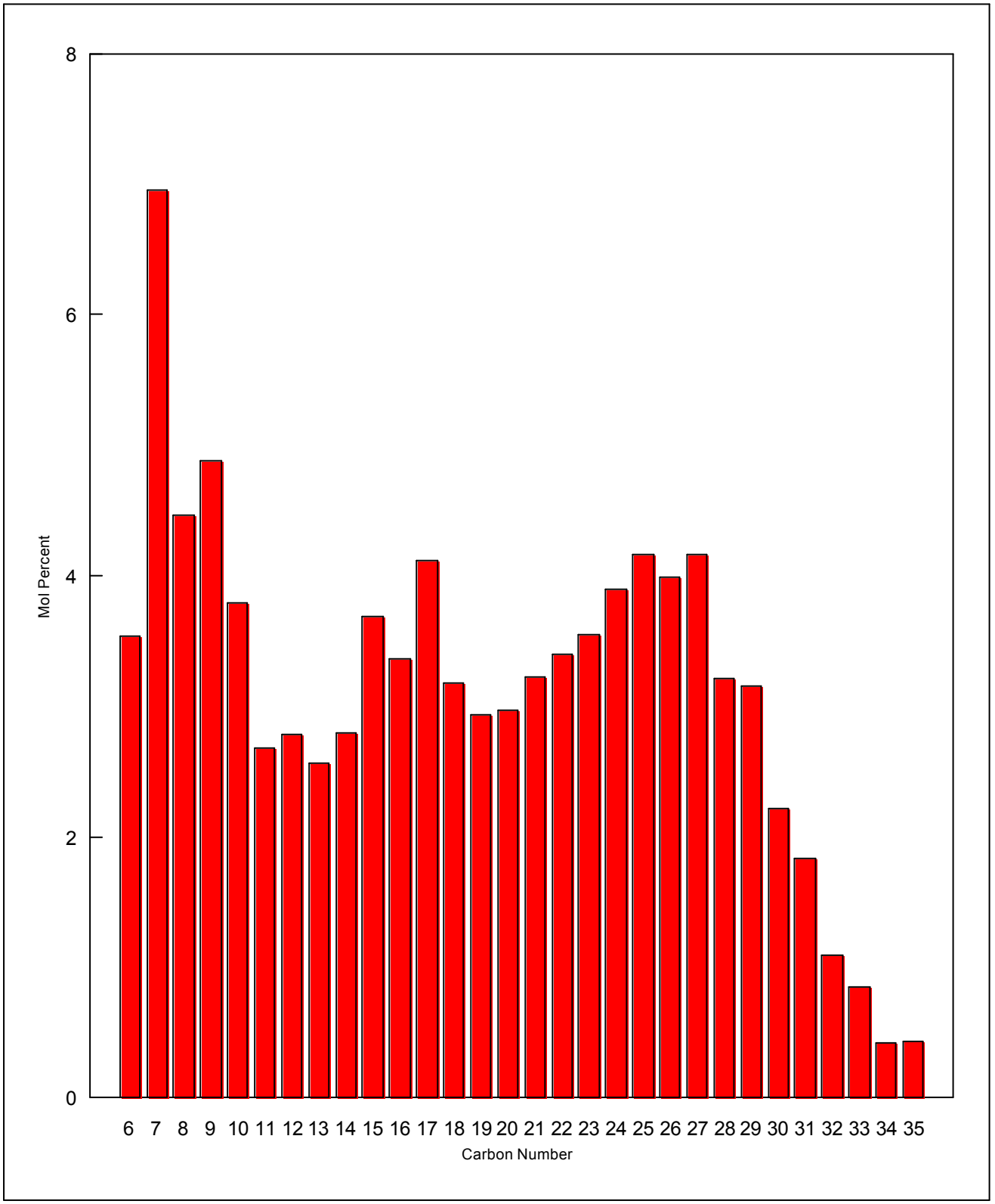
FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
On Stock Tank Oil from atmospheric flash of sample in cylinder # XC 18533

Component		Mol %
Hexanes minus	C6-	5.70
Hexanes	C6	3.54
Heptanes	C7	6.96
Octanes	C8	4.47
Nonanes	C9	4.88
Decanes	C10	3.79
Undecanes	C11	2.68
Dodecanes	C12	2.78
Tridecanes	C13	2.57
Tetradecanes	C14	2.79
Pentadecanes	C15	3.69
Hexadecanes	C16	3.36
Heptadecanes	C17	4.12
Octadecanes	C18	3.18
Nonadecanes	C19	2.93
Eicosanes	C20	2.97
Heneicosanes	C21	3.22
Docosanes	C22	3.40
Tricosanes	C23	3.55
Tetracosanes	C24	3.90
Pentacosanes	C25	4.16
Hexacosanes	C26	3.99
Heptacosanes	C27	4.16
Octacosanes	C28	3.21
Nonacosanes	C29	3.16
Triacontanes	C30	2.21
Hentriacontanes	C31	1.84
Dotriacontanes	C32	1.09
Tritriacontanes	C33	0.85
Tetratriacontanes	C34	0.42
Pentatriacontanes Plus	C35+	0.43
TOTAL		100.00

Molecular Weight Calculated *	:	239.6
Density @ 60 °F Calculated *	:	0.8502
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.8282

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
On Stock Tank Oil from atmospheric flash of sample in cylinder # XC 18533



PETROLAB

Company : Origin Energy Resources Limited | Page : 60 of 92
Well : Yolla #4 | File : O - 24035

COMPOSITIONAL ANALYSIS OF BOTTOM HOLE RESERVOIR FLUID

Cylinder # XC 18533 ex MPSR chamber # 1762 - Sample 6 taken 2606.5 meters

Component		Stock Tank Liquid Mol %	Stock Tank Gas Mol %	Reservoir Fluid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	0.23	18.90	12.30
Nitrogen	N2	0.00	0.17	0.11
Methane	C1	0.28	52.54	34.07
Ethane	C2	0.26	9.69	6.36
Propane	C3	0.74	8.17	5.55
Iso-Butane	iC4	0.43	1.99	1.44
N-Butane	nC4	0.83	2.72	2.05
Iso-Pentane	iC5	0.83	1.07	0.98
N-Pentane	nC5	0.95	0.98	0.97
Hexanes	C6	3.58	1.31	2.11
Heptanes	C7	7.04	1.33	3.35
Octanes	C8	4.52	0.54	1.95
Nonanes	C9	4.94	0.38	1.99
Decanes	C10	3.84	0.13	1.44
Undecanes	C11	2.71	0.03	0.98
Dodecanes Plus	C12+	68.81	0.05	24.35
TOTAL		100.00	100.00	100.00

Ratios				
Molar Ratio	:	0.3534	0.6466	1.0000
Mass Ratio	:	0.8083	0.1917	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.5571 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	860 SCF	--
Stream Properties				
Molecular Weight	:	241.1	31.24	105.4
Density obs. (gm/cc)	:	0.8515 @ 60 °F	--	0.6775 @ PT*
Gravity (AIR = 1.000)	:	34.5 °API @ 60 °F	1.085	77.2
GHV (BTU/scf)	:	--	1359	--
Hexanes Plus Properties				
Mol %	:	95.45	3.77	36.17
Molecular Weight	:	249.9	98.6	239.7
Density (gm/cc @ 60 °F)	:	0.8559	0.6873	0.8501
Gravity (°API @ 60 °F)	:	33.7	74.2	34.8
Heptanes Plus Properties				
Mol %	:	91.87	2.46	34.06
Molecular Weight	:	256.3	106.4	249.3
Density (gm/cc @ 60 °F)	:	0.8586	0.6973	0.8547
Gravity (°API @ 60 °F)	:	33.1	71.2	33.9
Decanes Plus Properties				
Mol %	:	75.36	0.21	26.77
Molecular Weight	:	289.2	144.4	288.4
Density (gm/cc @ 60 °F)	:	0.8697	0.7377	0.8693
Gravity (°API @ 60 °F)	:	31.1	60.1	31.1
Undecanes Plus Properties				
Mol %	:	71.52	0.08	25.33
Molecular Weight	:	297.5	161.4	297.2
Density (gm/cc @ 60 °F)	:	0.8721	0.7524	0.8720
Gravity (°API @ 60 °F)	:	30.6	56.4	30.6
Dodecanes Plus Properties				
Mol %	:	68.81	0.05	24.35
Molecular Weight	:	303.4	170.0	303.2
Density (gm/cc @ 60 °F)	:	0.8739	0.7592	0.8738
Gravity (°API @ 60 °F)	:	30.3	54.7	30.3

* (P)ressure : 3616 psig * (T)emperature : 248 °F

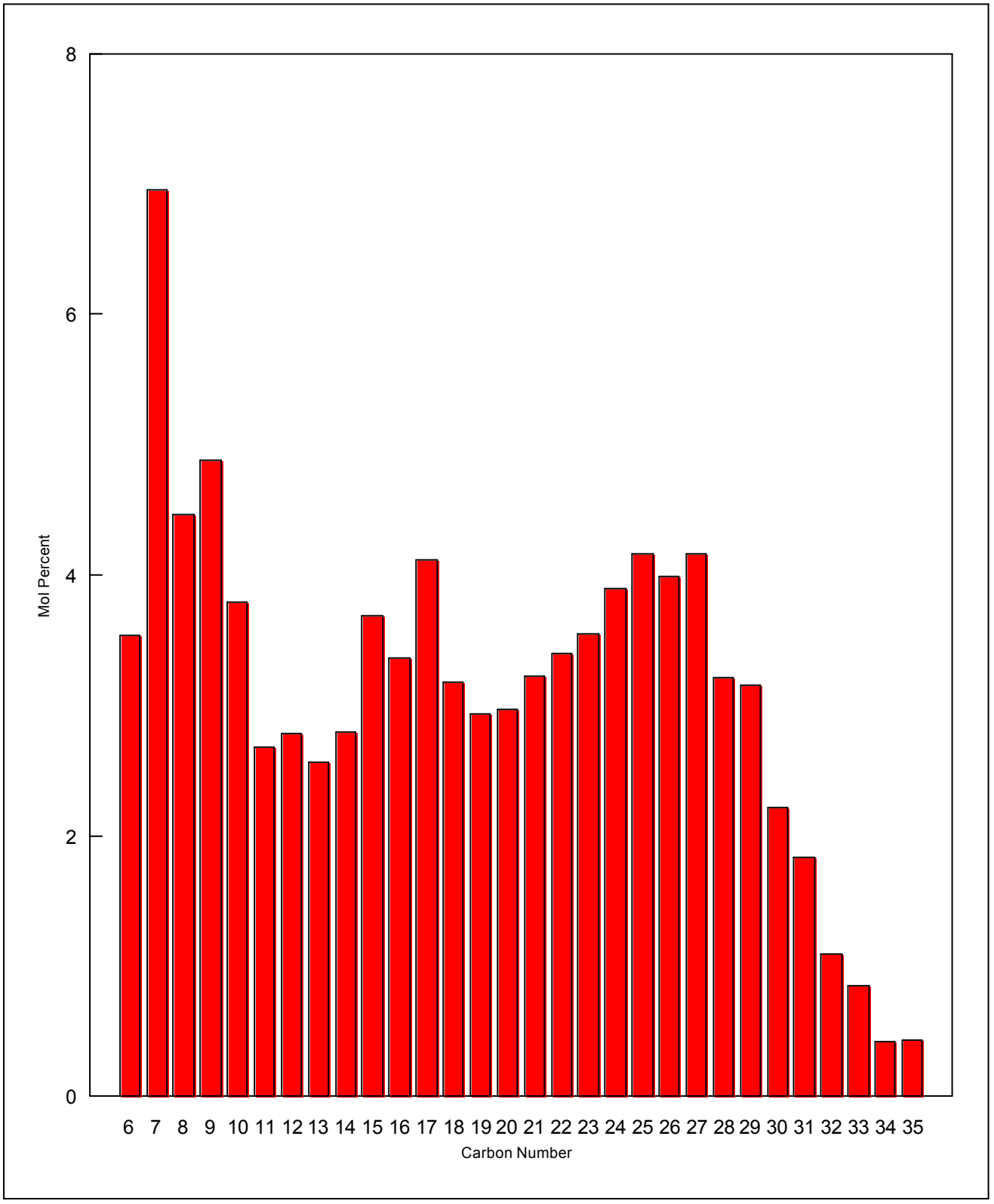
FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
On Stock Tank Oil from atmospheric flash of sample in cylinder # XC 18532

Component		Mol %
Hexanes minus	C6-	5.70
Hexanes	C6	3.54
Heptanes	C7	6.96
Octanes	C8	4.47
Nonanes	C9	4.88
Decanes	C10	3.79
Undecanes	C11	2.68
Dodecanes	C12	2.78
Tridecanes	C13	2.57
Tetradecanes	C14	2.79
Pentadecanes	C15	3.69
Hexadecanes	C16	3.36
Heptadecanes	C17	4.12
Octadecanes	C18	3.18
Nonadecanes	C19	2.93
Eicosanes	C20	2.97
Heneicosanes	C21	3.22
Docosanes	C22	3.40
Tricosanes	C23	3.55
Tetracosanes	C24	3.90
Pentacosanes	C25	4.16
Hexacosanes	C26	3.99
Heptacosanes	C27	4.16
Octacosanes	C28	3.21
Nonacosanes	C29	3.16
Triacontanes	C30	2.21
Hentriacontanes	C31	1.84
Dotriacontanes	C32	1.09
Tritriacontanes	C33	0.85
Tetratriacontanes	C34	0.42
Pentatriacontanes Plus	C35+	0.43
TOTAL		100.00

Molecular Weight Calculated *	:	239.6
Density @ 60 °F Calculated *	:	0.8502
Molecular Weight Measured	:	--
Density @ 60 °F Measured	:	0.8246

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
On Stock Tank Oil from atmospheric flash of sample in cylinder # XC 18532



PETROLAB

Company : Origin Energy Resources Limited | Page : 63 of 92
Well : Yolla #4 | File : O - 24035

COMPOSITIONAL ANALYSIS OF BOTTOM HOLE RESERVOIR FLUID

Cylinder # XC 18532 ex MPSR chamber # 0478 - Sample 4 taken 2609.5 meters

Component		Stock Tank Liquid Mol %	Stock Tank Gas Mol %	Reservoir Fluid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	0.28	19.37	12.43
Nitrogen	N2	0.00	0.18	0.11
Methane	C1	0.32	54.24	34.64
Ethane	C2	0.33	9.62	6.24
Propane	C3	0.99	7.94	5.41
Iso-Butane	iC4	0.62	1.95	1.46
N-Butane	nC4	1.20	2.65	2.12
Iso-Pentane	iC5	1.12	0.93	1.00
N-Pentane	nC5	1.25	0.81	0.97
Hexanes	C6	3.52	0.93	1.87
Heptanes	C7	6.93	0.82	3.04
Octanes	C8	4.45	0.28	1.80
Nonanes	C9	4.86	0.17	1.87
Decanes	C10	3.77	0.08	1.42
Undecanes	C11	2.67	0.03	0.99
Dodecanes Plus	C12+	67.68	0.00	24.63
TOTAL		100.00	100.00	100.00

Ratios				
Molar Ratio	:	0.3635	0.6365	1.0000
Mass Ratio	:	0.8201	0.1799	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.5502 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	832 SCF	--
Stream Properties				
Molecular Weight	:	238.1	29.82	105.5
Density obs. (gm/cc)	:	0.8499 @ 60 °F	--	0.6693 @ PT*
Gravity (AIR = 1.000)	:	34.8 °API @ 60 °F	1.035	79.7
GHV (BTU/scf)	:	--	1270	--
Hexanes Plus Properties				
Mol %	:	93.88	2.31	35.62
Molecular Weight	:	249.9	96.3	243.5
Density (gm/cc @ 60 °F)	:	0.8559	0.6841	0.8524
Gravity (°API @ 60 °F)	:	33.7	75.1	34.3
Heptanes Plus Properties				
Mol %	:	90.36	1.38	33.75
Molecular Weight	:	256.3	104.6	252.4
Density (gm/cc @ 60 °F)	:	0.8586	0.6951	0.8565
Gravity (°API @ 60 °F)	:	33.1	71.9	33.6
Decanes Plus Properties				
Mol %	:	74.12	0.11	27.04
Molecular Weight	:	289.2	137.5	288.8
Density (gm/cc @ 60 °F)	:	0.8697	0.7312	0.8695
Gravity (°API @ 60 °F)	:	31.1	61.8	31.1
Undecanes Plus Properties				
Mol %	:	70.35	0.03	25.62
Molecular Weight	:	297.5	147.0	297.4
Density (gm/cc @ 60 °F)	:	0.8721	0.7400	0.8721
Gravity (°API @ 60 °F)	:	30.6	59.5	30.6
Dodecanes Plus Properties				
Mol %	:	67.68	0.00	24.63
Molecular Weight	:	303.4	--	303.4
Density (gm/cc @ 60 °F)	:	0.8739	--	0.8739
Gravity (°API @ 60 °F)	:	30.3	--	30.3

* (P)ressure : 3264 psig * (T)emperature : 262 °F

FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY
On Stock Tank Oil from atmospheric flash of sample in cylinder # 810693

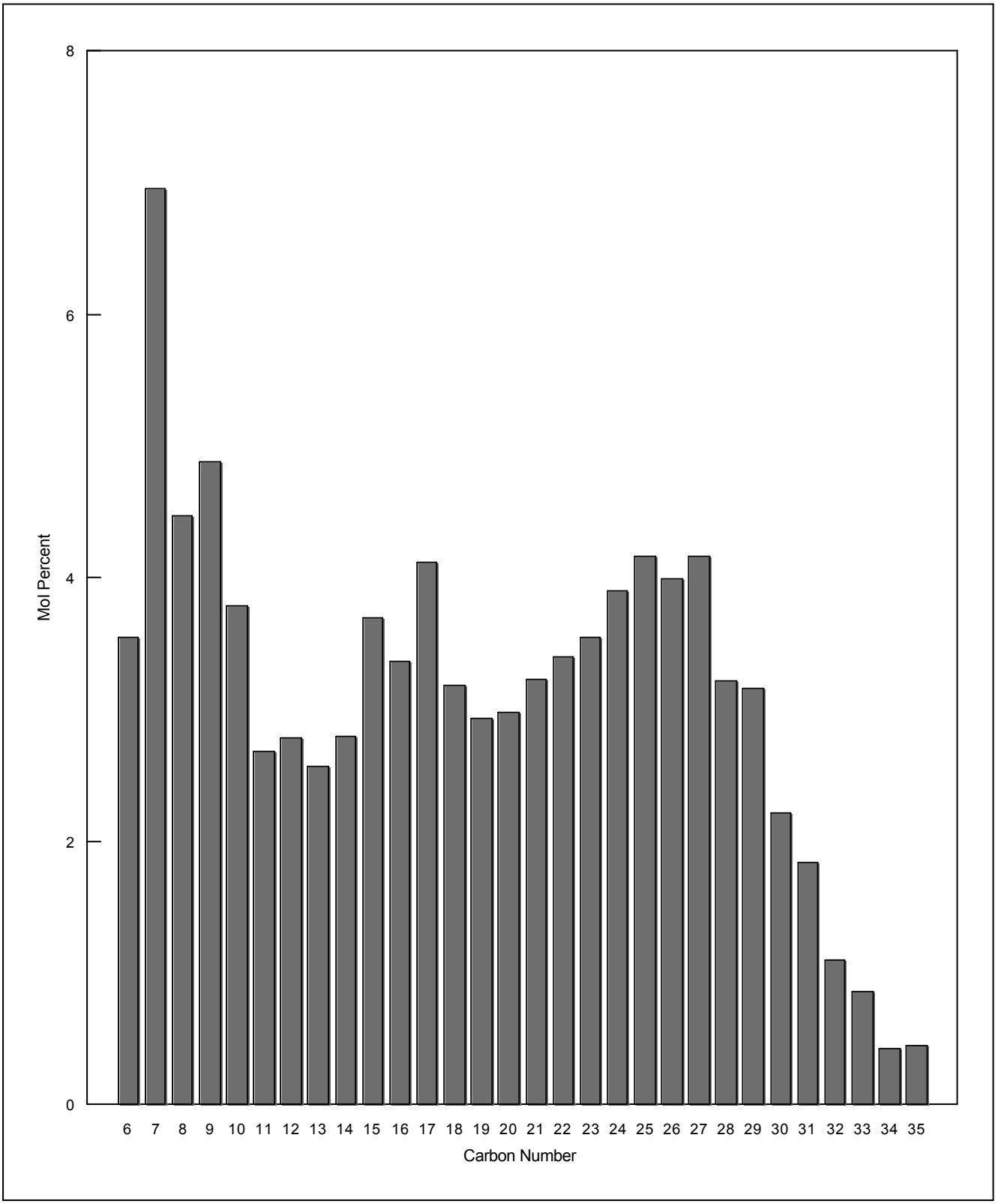
Component		Mol %
Hexanes minus	C6-	5.69
Hexanes	C6	3.54
Heptanes	C7	6.96
Octanes	C8	4.47
Nonanes	C9	4.88
Decanes	C10	3.79
Undecanes	C11	2.68
Dodecanes	C12	2.78
Tridecanes	C13	2.57
Tetradecanes	C14	2.79
Pentadecanes	C15	3.69
Hexadecanes	C16	3.36
Heptadecanes	C17	4.12
Octadecanes	C18	3.18
Nonadecanes	C19	2.93
Eicosanes	C20	2.97
Heneicosanes	C21	3.22
Docosanes	C22	3.40
Tricosanes	C23	3.55
Tetracosanes	C24	3.90
Pentacosanes	C25	4.16
Hexacosanes	C26	3.99
Heptacosanes	C27	4.16
Octacosanes	C28	3.21
Nonacosanes	C29	3.16
Triacontanes	C30	2.21
Hentriacontanes	C31	1.84
Dotriacontanes	C32	1.09
Tritriacontanes	C33	0.85
Tetratriacontanes	C34	0.42
Pentatriacontanes Plus	C35+	0.44
TOTAL		100.00

Molecular Weight Calculated * :	239.6
Density @ 60 °F Calculated * :	0.8502
Molecular Weight Measured :	174.8
Density @ 60 °F Measured :	0.8542

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS BY CAPILLARY GAS CHROMATOGRAPHY

On Stock Tank Oil from atmospheric flash of sample in cylinder # 810693



CONSTANT MASS STUDY
@ 262 °F
Using Bottom Hole Reservoir Fluid

Pressure (psig)		Relative Volume (V/Vsat) (1)	Oil Compressibility (x10^-6)(psig^-1) (2)	Y Function (psig^-1) (3)	Thermal Expansion (x10^-4)(°F^-1) (4)
5000		0.9762	11.54		6.31
4500		0.9823	12.50		6.51
4000		0.9891	13.69		6.72
3620	*	0.9946	14.54		6.90
3500		0.9964	14.87		6.96
3400		0.9979	15.18		7.01
3300		0.9994	15.57		7.07
3264	* *	1.0000	15.72		7.10
3205		1.0070		2.637	
3126		1.0155		2.842	
2965		1.0337		2.992	
2746		1.0652		2.893	
2505		1.1086		2.790	
2154		1.1967		2.620	
1827		1.3186		2.469	
1545		1.4747		2.344	
1255		1.7216		2.218	
992		2.0906		2.100	
720		2.7782		1.987	
505		3.8694		1.904	

* Reservoir Pressure
* * Saturation Pressure

(1) Barrels at indicated pressure per barrel at saturation pressure
(2) Oil Compressibility = - (1/V) * (dV/dP)
(3) Y Function = (Psat - P) / (P)*(V/Vsat-1)
(4) Thermal Expansion = - (1/V) * (dV/dT)

DIFFERENTIAL VAPORIZATION
@ 262 °F
Using Bottom Hole Reservoir Fluid

Pressure (psig)		Gas-Oil Ratio (SCF/Bbl) (1)	Formation Volume Factor (Bo) (2)	(Bt) (3)	Oil Density (gm/cc)	Oil Viscosity (Centipoise)
5000		785	1.4651	1.4651	0.6856	0.427
4000		785	1.4845	1.4845	0.6767	0.393
3800		785	1.4888	1.4888	0.6747	0.386
3620	*	785	1.4928	1.4928	0.6729	0.381
3400		785	1.4977	1.4977	0.6707	0.373
3264	* *	785	1.5008	1.5008	0.6693	0.369
3000		715	1.4672	1.5432	0.6750	0.399
2600		610	1.4173	1.6344	0.6840	0.445
2200		507	1.3677	1.7762	0.6935	0.497
1800		415	1.3257	1.9981	0.7011	0.554
1400		325	1.2834	2.3697	0.7099	0.624
1000		236	1.2391	3.0870	0.7196	0.708
600		152	1.1997	4.8010	0.7272	0.826
250		65	1.1550	10.8811	0.7355	1.046
0		0	1.0978		0.7538	1.382

* Reservoir Pressure
* * Saturation Pressure

(1) Cubic feet of gas at 14.696 psia and 60 °F per barrel of residual oil at 60 °F.
(2) Barrels of oil at indicated pressure and temperature per barrel of residual oil at 60 °F.
(3) Barrels of oil plus liberated gas at indicated pressure and temperature per barrel of residual oil at 60 °F.

Bo and Rs

Differential Data Corrected with Optimum Separator Test

OPTIMUM SEPARATOR TEST:	Pressure (psig) :	800	Temperature (°C) :	18
	(Bofb) :	1.4866	(Rsfb) :	726
DIFFERENTIAL :	(Bodb) :	1.5008	(Rsdb) :	785

(2) Bo=Bod*(Bofb/Bodb)
(4) Bt=Btd*(Bofb/Bodb)
(6) Rs=Rsfb-(Rsdb-Rsd)*(Bofb/Bodb)

Pressure (psig)		(Bod) (1)	(Bo) (2)	(Btd) (3)	(Bt) (4)	(Rsd) (SCF/BBL) (5)	(Rs) (SCF/BBL) (6)
3620	*	1.4928	1.4786	1.4928	1.4786	785	726
3264	* *	1.5008	1.4866	1.5008	1.4866	785	726
3000		1.4672	1.4532	1.5432	1.5285	715	656
2600		1.4173	1.4038	1.6344	1.6189	610	553
2200		1.3677	1.3547	1.7762	1.7593	507	451
1800		1.3257	1.3131	1.9981	1.9791	415	360
1400		1.2834	1.2712	2.3697	2.3472	325	271
1000		1.2391	1.2273	3.0870	3.0576	236	182
600		1.1997	1.1883	4.8010	4.7554	152	99
250		1.1550	1.1440	10.8811	10.7776	65	39
0		1.0978	1.0978			0	0

* Reservoir Pressure
* * Saturation Pressure

(1) Barrels of oil at indicated pressure and temperature per barrel of residual oil at 60 °F
(2) Barrels of oil at indicated pressure and temperature per barrel of stock tank oil at 60 °F
(3) Barrels of oil plus liberated gas at indicated pressure and temperature per barrel of residual oil at 60 °F
(4) Barrels of oil plus liberated gas at indicated pressure and temperature per barrel of stock tank oil at 60 °F
(5) Cubic feet of gas at 14.696 psia and 60 °F per barrel of residual oil at 60 °F
(6) Cubic feet of gas at 14.696 psia and 60 °F per barrel of stock tank oil at 60 °F

DIFFERENTIAL VAPORIZATION
@ 262 °F
Using Bottom Hole Reservoir Fluid

Pressure (psi)	Formation Volume Factor (Bg) (1)	Gas Expansion Factor (E) (2)	Deviation Factor (Z)	Gas Gravity (Air=1.00)	Gas Viscosity (Centipoise) (3)
3264 *					
3000	0.00608	164.526	0.898	0.915	0.0228
2600	0.00697	143.495	0.893	0.912	0.0208
2200	0.00826	121.001	0.897	0.912	0.0190
1800	0.01021	97.946	0.908	0.924	0.0174
1400	0.01327	75.360	0.920	0.943	0.0160
1000	0.01890	52.902	0.940	0.977	0.0148
600	0.03193	31.315	0.962	1.048	0.0136
250	0.07585	13.183	0.984	1.201	0.0124
0			1.000	1.435	0.0113

* Saturation Pressure

(1) Cubic feet of gas at indicated pressure and temperature per cubic foot at 14.696 psia and 60 °F
(2) Cubic feet of gas at 14.696 psia and 60 °F per cubic foot at indicated pressure and temperature
(3) Calculated from correlation of Lee, Gonzales and Eakin

COMPOSITIONAL ANALYSIS OF GASES
LIBERATED DURING DIFFERENTIAL VAPORIZATION

Pressure (psig):		3000	2600	2200
Component		Mol %	Mol %	Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	17.98	18.31	18.60
Nitrogen	N2	0.25	0.23	0.20
Methane	C1	65.78	65.49	64.99
Ethane	C2	7.03	7.17	7.39
Propane	C3	4.15	4.21	4.35
Iso-Butane	iC4	0.88	0.89	0.90
N-Butane	nC4	1.05	1.07	1.09
Iso-Pentane	iC5	0.43	0.41	0.40
N-Pentane	nC5	0.36	0.35	0.35
Hexanes	C6	0.53	0.49	0.48
Heptanes	C7	0.63	0.56	0.53
Octanes	C8	0.30	0.28	0.25
Nonanes	C9	0.25	0.22	0.20
Decanes	C10	0.22	0.18	0.16
Undecanes	C11	0.08	0.08	0.07
Dodecanes Plus	C12+	0.08	0.06	0.04
TOTAL		100.00	100.00	100.00
Stream Properties				
Molecular Weight	:	26.40	26.31	26.32
Gravity (AIR = 1.000)	:	0.915	0.912	0.912
Gross HV (BTU/SCF)	:	1116	1104	1097
Nett HV (BTU/SCF)	:	1014	1003	997
Wobbe Index	:	1167	1156	1149
Critical Pressure (psia)	:	729.8	731.9	733.5
Critical Temperature (°R)	:	433.0	432.7	433.4
GPM Content				
Ethane Plus	:	4.884	4.835	4.868
Propane Plus	:	3.003	2.916	2.890
Butanes Plus	:	1.859	1.755	1.690
Pentanes Plus	:	1.240	1.126	1.051
Hexanes Plus Properties				
Mol %	:	2.09	1.87	1.73
Molecular Weight	:	106.0	105.4	104.2
Density (gm/cc @ 60 °F)	:	0.6968	0.6960	0.6946
Gravity (°API @ 60 °F)	:	71.4	71.6	72.0
Heptanes Plus Properties				
Mol %	:	1.56	1.38	1.25
Molecular Weight	:	113.4	113.0	112.0
Density (gm/cc @ 60 °F)	:	0.7058	0.7052	0.7041
Gravity (°API @ 60 °F)	:	68.8	69.0	69.3
Decanes Plus Properties				
Mol %	:	0.38	0.32	0.27
Molecular Weight	:	142.4	142.3	141.4
Density (gm/cc @ 60 °F)	:	0.7359	0.7358	0.7349
Gravity (°API @ 60 °F)	:	60.6	60.6	60.9
Undecanes Plus Properties				
Mol %	:	0.16	0.14	0.11
Molecular Weight	:	154.0	153.0	152.1
Density (gm/cc @ 60 °F)	:	0.7462	0.7453	0.7445
Gravity (°API @ 60 °F)	:	57.9	58.2	58.4
Dodecanes Plus Properties				
Mol %	:	0.08	0.06	0.04
Molecular Weight	:	161.00	161.00	161.00
Density (gm/cc @ 60 °F)	:	0.75	0.75	0.75
Gravity (°API @ 60 °F)	:	56.47	56.47	56.47

COMPOSITIONAL ANALYSIS OF GASES
LIBERATED DURING DIFFERENTIAL VAPORIZATION

Pressure (psig):		1800	1400	1000
Component		Mol %	Mol %	Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	19.33	20.15	20.99
Nitrogen	N2	0.17	0.12	0.08
Methane	C1	63.64	61.59	58.20
Ethane	C2	7.78	8.47	9.49
Propane	C3	4.55	4.98	5.93
Iso-Butane	iC4	0.91	0.96	1.09
N-Butane	nC4	1.13	1.19	1.38
Iso-Pentane	iC5	0.39	0.39	0.45
N-Pentane	nC5	0.35	0.35	0.38
Hexanes	C6	0.47	0.46	0.53
Heptanes	C7	0.54	0.56	0.65
Octanes	C8	0.27	0.30	0.34
Nonanes	C9	0.21	0.23	0.25
Decanes	C10	0.16	0.16	0.16
Undecanes	C11	0.07	0.07	0.07
Dodecanes Plus	C12+	0.03	0.02	0.01
TOTAL		100.00	100.00	100.00
Stream Properties				
Molecular Weight	:	26.66	27.18	28.17
Gravity (AIR = 1.000)	:	0.924	0.943	0.977
Gross HV (BTU/SCF)	:	1098	1107	1140
Nett HV (BTU/SCF)	:	998	1006	1038
Wobbe Index	:	1142	1140	1153
Critical Pressure (psia)	:	736.5	739.7	742.0
Critical Temperature (°R)	:	436.6	442.0	451.9
GPM Content				
Ethane Plus	:	5.048	5.408	6.166
Propane Plus	:	2.966	3.141	3.626
Butanes Plus	:	1.711	1.768	1.991
Pentanes Plus	:	1.056	1.078	1.198
Hexanes Plus Properties				
Mol %	:	1.75	1.80	2.01
Molecular Weight	:	104.1	104.0	102.9
Density (gm/cc @ 60 °F)	:	0.6944	0.6943	0.6929
Gravity (°API @ 60 °F)	:	72.1	72.1	72.5
Heptanes Plus Properties				
Mol %	:	1.28	1.34	1.48
Molecular Weight	:	111.5	110.9	109.7
Density (gm/cc @ 60 °F)	:	0.7035	0.7028	0.7014
Gravity (°API @ 60 °F)	:	69.5	69.6	70.1
Decanes Plus Properties				
Mol %	:	0.26	0.25	0.24
Molecular Weight	:	140.6	139.8	138.9
Density (gm/cc @ 60 °F)	:	0.7342	0.7334	0.7326
Gravity (°API @ 60 °F)	:	61.1	61.3	61.5
Undecanes Plus Properties				
Mol %	:	0.10	0.09	0.08
Molecular Weight	:	151.2	150.1	148.8
Density (gm/cc @ 60 °F)	:	0.7438	0.7428	0.7416
Gravity (°API @ 60 °F)	:	58.6	58.8	59.1
Dodecanes Plus Properties				
Mol %	:	0.03	0.02	0.01
Molecular Weight	:	161.00	161.00	161.00
Density (gm/cc @ 60 °F)	:	0.75	0.75	0.75
Gravity (°API @ 60 °F)	:	56.47	56.47	56.47

COMPOSITIONAL ANALYSIS OF GASES
LIBERATED DURING DIFFERENTIAL VAPORIZATION

Pressure (psig):		600	250	0
Component		Mol %	Mol %	Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	22.50	25.00	17.11
Nitrogen	N2	0.05	0.03	0.01
Methane	C1	51.46	37.67	18.92
Ethane	C2	11.59	14.95	18.39
Propane	C3	7.66	12.49	24.20
Iso-Butane	iC4	1.51	2.40	6.01
N-Butane	nC4	1.68	2.10	7.79
Iso-Pentane	iC5	0.58	1.03	2.10
N-Pentane	nC5	0.54	0.97	1.71
Hexanes	C6	0.64	1.09	1.73
Heptanes	C7	0.77	0.98	1.46
Octanes	C8	0.42	0.53	0.44
Nonanes	C9	0.31	0.39	0.13
Decanes	C10	0.19	0.22	0.01
Undecanes	C11	0.09	0.12	0.00
Dodecanes Plus	C12+	0.01	0.03	0.00
TOTAL		100.00	100.00	100.01
Stream Properties				
Molecular Weight	:	30.20	34.54	41.04
Gravity (AIR = 1.000)	:	1.048	1.201	1.435
Gross HV (BTU/SCF)	:	1213	1386	1950
Nett HV (BTU/SCF)	:	1106	1269	1792
Wobbe Index	:	1185	1265	1627
Critical Pressure (psia)	:	745.5	748.9	697.4
Critical Temperature (°R)	:	472.0	515.0	592.4
GPM Content				
Ethane Plus	:	7.730	11.107	18.967
Propane Plus	:	4.628	7.106	14.045
Butanes Plus	:	2.516	3.662	7.372
Pentanes Plus	:	1.492	2.213	2.946
Hexanes Plus Properties				
Mol %	:	2.43	3.36	3.77
Molecular Weight	:	103.06	101.63	92.74
Density (gm/cc @ 60 °F)	:	0.69	0.69	0.68
Gravity (°API @ 60 °F)	:	72.5	73.0	76.7
Heptanes Plus Properties				
Mol %	:	1.79	2.27	2.04
Molecular Weight	:	109.87	110.10	100.15
Density (gm/cc @ 60 °F)	:	0.70	0.70	0.69
Gravity (°API @ 60 °F)	:	70.0	69.9	73.6
Decanes Plus Properties				
Mol %	:	0.29	0.37	0.01
Molecular Weight	:	138.97	140.41	134.00
Density (gm/cc @ 60 °F)	:	0.73	0.73	0.73
Gravity (°API @ 60 °F)	:	61.5	61.1	62.7
Undecanes Plus Properties				
Mol %	:	0.10	0.15	0.00
Molecular Weight	:	148.40	149.80	--
Density (gm/cc @ 60 °F)	:	0.74	0.74	--
Gravity (°API @ 60 °F)	:	59.2	58.9	--
Dodecanes Plus Properties				
Mol %	:	0.01	0.03	0.00
Molecular Weight	:	161.00	161.00	--
Density (gm/cc @ 60 °F)	:	0.75	0.75	--
Gravity (°API @ 60 °F)	:	56.47	56.47	--

COMPOSITIONAL ANALYSIS OF
DIFFERENTIALLY DEPLETED LIQUIDS

Pressure (psig):		3000	2600	2200
Component		Mol %	Mol %	Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	12.22	11.64	10.91
Nitrogen	N2	0.07	0.06	0.04
Methane	C1	32.70	29.54	25.85
Ethane	C2	6.36	6.29	6.17
Propane	C3	5.47	5.59	5.72
Iso-Butane	iC4	1.49	1.55	1.61
N-Butane	nC4	2.18	2.28	2.41
Iso-Pentane	iC5	1.03	1.09	1.16
N-Pentane	nC5	1.00	1.07	1.14
Hexanes	C6	1.94	2.08	2.25
Heptanes	C7	3.17	3.42	3.72
Octanes	C8	1.88	2.04	2.22
Nonanes	C9	1.96	2.13	2.33
Decanes	C10	1.49	1.61	1.76
Undecanes	C11	1.04	1.13	1.24
Dodecanes Plus	C12+	26.00	28.49	31.45
TOTAL		100.00	100.00	100.00

Stream Properties

Molecular Weight	:	110.8	118.9	128.5
Density obs. (gm/cc)	:	0.6745	0.6831	0.6928
Gravity (°API @ 60 °F)	:	78.1	75.4	72.6

Hexanes Plus Properties

Mol %	:	37.48	40.91	44.98
Molecular Weight	:	233.1	233.6	234.1
Density (gm/cc @ 60 °F)	:	0.8323	0.8326	0.8329
Gravity (°API @ 60 °F)	:	38.3	38.3	38.2

Heptanes Plus Properties

Mol %	:	35.54	38.82	42.73
Molecular Weight	:	243.8	244.2	244.6
Density (gm/cc @ 60 °F)	:	0.8369	0.8372	0.8374
Gravity (°API @ 60 °F)	:	37.4	37.4	37.3

Decanes Plus Properties

Mol %	:	28.52	31.24	34.46
Molecular Weight	:	266.8	267.0	267.1
Density (gm/cc @ 60 °F)	:	0.8444	0.8444	0.8445
Gravity (°API @ 60 °F)	:	35.9	35.9	35.9

Undecanes Plus Properties

Mol %	:	27.04	29.62	32.69
Molecular Weight	:	278.2	278.2	278.3
Density (gm/cc @ 60 °F)	:	0.8474	0.8474	0.8474
Gravity (°API @ 60 °F)	:	35.3	35.3	35.3

Dodecanes Plus Properties

Mol %	:	26.00	28.49	31.45
Molecular Weight	:	288.4	288.4	288.4
Density (gm/cc @ 60 °F)	:	0.8499	0.8499	0.8499
Gravity (°API @ 60 °F)	:	34.8	34.8	34.8

COMPOSITIONAL ANALYSIS OF
DIFFERENTIALLY DEPLETED LIQUIDS

Pressure (psig):		1800	1400	1000
Component		Mol %	Mol %	Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	10.04	8.91	7.40
Nitrogen	N2	0.03	0.02	0.01
Methane	C1	21.95	17.52	12.44
Ethane	C2	6.01	5.73	5.26
Propane	C3	5.84	5.93	5.93
Iso-Butane	iC4	1.69	1.77	1.85
N-Butane	nC4	2.54	2.69	2.85
Iso-Pentane	iC5	1.24	1.34	1.45
N-Pentane	nC5	1.22	1.32	1.44
Hexanes	C6	2.43	2.65	2.92
Heptanes	C7	4.05	4.44	4.92
Octanes	C8	2.42	2.66	2.95
Nonanes	C9	2.55	2.80	3.12
Decanes	C10	1.93	2.13	2.37
Undecanes	C11	1.36	1.51	1.69
Dodecanes Plus	C12+	34.70	38.57	43.39
TOTAL		100.00	100.00	100.00

Stream Properties

Molecular Weight	:	139.0	151.6	167.0
Density obs. (gm/cc)	:	0.7026	0.7136	0.7261
Gravity (°API @ 60 °F)	:	69.7	66.6	63.2

Hexanes Plus Properties

Mol %	:	49.45	54.77	61.37
Molecular Weight	:	234.6	235.1	235.6
Density (gm/cc @ 60 °F)	:	0.8332	0.8335	0.8338
Gravity (°API @ 60 °F)	:	38.2	38.1	38.0

Heptanes Plus Properties

Mol %	:	47.01	52.12	58.45
Molecular Weight	:	245.0	245.4	245.8
Density (gm/cc @ 60 °F)	:	0.8376	0.8378	0.8380
Gravity (°API @ 60 °F)	:	37.3	37.2	37.2

Decanes Plus Properties

Mol %	:	37.99	42.21	47.45
Molecular Weight	:	267.2	267.2	267.3
Density (gm/cc @ 60 °F)	:	0.8445	0.8446	0.8446
Gravity (°API @ 60 °F)	:	35.9	35.9	35.9

Undecanes Plus Properties

Mol %	:	36.06	40.08	45.08
Molecular Weight	:	278.3	278.4	278.4
Density (gm/cc @ 60 °F)	:	0.8475	0.8475	0.8475
Gravity (°API @ 60 °F)	:	35.3	35.3	35.3

Dodecanes Plus Properties

Mol %	:	34.70	38.57	43.39
Molecular Weight	:	288.5	288.5	288.5
Density (gm/cc @ 60 °F)	:	0.8499	0.8499	0.8499
Gravity (°API @ 60 °F)	:	34.8	34.8	34.8

COMPOSITIONAL ANALYSIS OF
DIFFERENTIALLY DEPLETED LIQUIDS

Pressure (psig):		600	250	0
Component		Mol %	Mol %	Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	5.38	2.25	0.23
Nitrogen	N2	0.01	0.00	0.00
Methane	C1	7.22	2.36	0.11
Ethane	C2	4.41	2.73	0.60
Propane	C3	5.70	4.62	1.96
Iso-Butane	iC4	1.90	1.82	1.25
N-Butane	nC4	3.01	3.16	2.53
Iso-Pentane	iC5	1.56	1.65	1.59
N-Pentane	nC5	1.56	1.65	1.64
Hexanes	C6	3.22	3.56	3.81
Heptanes	C7	5.47	6.19	6.83
Octanes	C8	3.29	3.73	4.18
Nonanes	C9	3.50	4.00	4.52
Decanes	C10	2.66	3.05	3.47
Undecanes	C11	1.90	2.19	2.48
Dodecanes Plus	C12+	49.20	57.04	64.79
TOTAL		100.00	100.00	100.00

Stream Properties

Molecular Weight	:	185.3	209.3	232.2
Density obs. (gm/cc)	:	0.7397	0.7561	0.7703
Gravity (°API @ 60 °F)	:	59.6	55.5	52.0

Hexanes Plus Properties

Mol %	:	69.25	79.77	90.09
Molecular Weight	:	236.3	237.2	238.0
Density (gm/cc @ 60 °F)	:	0.8341	0.8346	0.8350
Gravity (°API @ 60 °F)	:	38.0	37.9	37.8

Heptanes Plus Properties

Mol %	:	66.03	76.20	86.28
Molecular Weight	:	246.3	246.9	247.4
Density (gm/cc @ 60 °F)	:	0.8383	0.8386	0.8389
Gravity (°API @ 60 °F)	:	37.1	37.1	37.0

Decanes Plus Properties

Mol %	:	53.76	62.28	70.74
Molecular Weight	:	267.4	267.5	267.5
Density (gm/cc @ 60 °F)	:	0.8447	0.8447	0.8447
Gravity (°API @ 60 °F)	:	35.9	35.8	35.8

Undecanes Plus Properties

Mol %	:	51.10	59.23	67.28
Molecular Weight	:	278.4	278.5	278.5
Density (gm/cc @ 60 °F)	:	0.8475	0.8475	0.8474
Gravity (°API @ 60 °F)	:	35.3	35.3	35.3

Dodecanes Plus Properties

Mol %	:	49.20	57.04	64.79
Molecular Weight	:	288.5	288.5	288.5
Density (gm/cc @ 60 °F)	:	0.8499	0.8499	0.8499
Gravity (°API @ 60 °F)	:	34.8	34.8	34.8

COMPOSITIONAL ANALYSIS OF
DIFFERENTIALLY DEPLETED LIQUIDS

Pressure (psig):		600	250	0
Component		Mol %	Mol %	Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	5.38	2.25	0.23
Nitrogen	N2	0.01	0.00	0.00
Methane	C1	7.22	2.36	0.11
Ethane	C2	4.41	2.73	0.60
Propane	C3	5.70	4.62	1.96
Iso-Butane	iC4	1.90	1.82	1.25
N-Butane	nC4	3.01	3.16	2.53
Iso-Pentane	iC5	1.56	1.65	1.59
N-Pentane	nC5	1.56	1.65	1.64
Hexanes	C6	3.22	3.56	3.81
Heptanes	C7	5.47	6.19	6.83
Octanes	C8	3.29	3.73	4.18
Nonanes	C9	3.50	4.00	4.52
Decanes	C10	2.66	3.05	3.47
Undecanes	C11	1.90	2.19	2.48
Dodecanes Plus	C12+	49.20	57.04	64.79
TOTAL		100.00	100.00	100.00

Stream Properties

Molecular Weight	:	185.3	209.3	232.2
Density obs. (gm/cc)	:	0.7397	0.7561	0.7703
Gravity (°API @ 60 °F)	:	59.6	55.5	52.0

Hexanes Plus Properties

Mol %	:	69.25	79.77	90.09
Molecular Weight	:	236.3	237.2	238.0
Density (gm/cc @ 60 °F)	:	0.8341	0.8346	0.8350
Gravity (°API @ 60 °F)	:	38.0	37.9	37.8

Heptanes Plus Properties

Mol %	:	66.03	76.20	86.28
Molecular Weight	:	246.3	246.9	247.4
Density (gm/cc @ 60 °F)	:	0.8383	0.8386	0.8389
Gravity (°API @ 60 °F)	:	37.1	37.1	37.0

Decanes Plus Properties

Mol %	:	53.76	62.28	70.74
Molecular Weight	:	267.4	267.5	267.5
Density (gm/cc @ 60 °F)	:	0.8447	0.8447	0.8447
Gravity (°API @ 60 °F)	:	35.9	35.8	35.8

Undecanes Plus Properties

Mol %	:	51.10	59.23	67.28
Molecular Weight	:	278.4	278.5	278.5
Density (gm/cc @ 60 °F)	:	0.8475	0.8475	0.8474
Gravity (°API @ 60 °F)	:	35.3	35.3	35.3

Dodecanes Plus Properties

Mol %	:	49.20	57.04	64.79
Molecular Weight	:	288.5	288.5	288.5
Density (gm/cc @ 60 °F)	:	0.8499	0.8499	0.8499
Gravity (°API @ 60 °F)	:	34.8	34.8	34.8

SEPARATOR TEST

Using Bottom Hole Reservoir Fluid

SEPARATOR Pressure (psig)	SEPARATOR Temperature (°F)	GAS/OIL Ratio (1)	DENSITY (@ 60 °F) °API	DENSITY (@ 60 °F) (gm/cc)	VOLUME Factor (2)	SHRINKAGE Factor (3)	GAS Gravity (Air = 1)
Test # 1							
800	64	391				0.854	0.819
TO							
0	68	339	38.8	0.8300	1.488	0.996	1.171
	Total GOR	730					

(1) Gas/Oil Ratio is reported as cubic feet of gas @ 14.696 psia and 60 °F per barrel of stock tank oil @ 60 °F
(2) Formation Volume Factor is reported as barrels of saturated oil @ 3264 psig and 262°F per barrel of stock tank oil @ 60 °F
(3) Shrinkage Factor is reported as barrels of stock tank oil at @ 60 °F per barrel of separator liquid at separator conditions

RELATIVE VOLUME

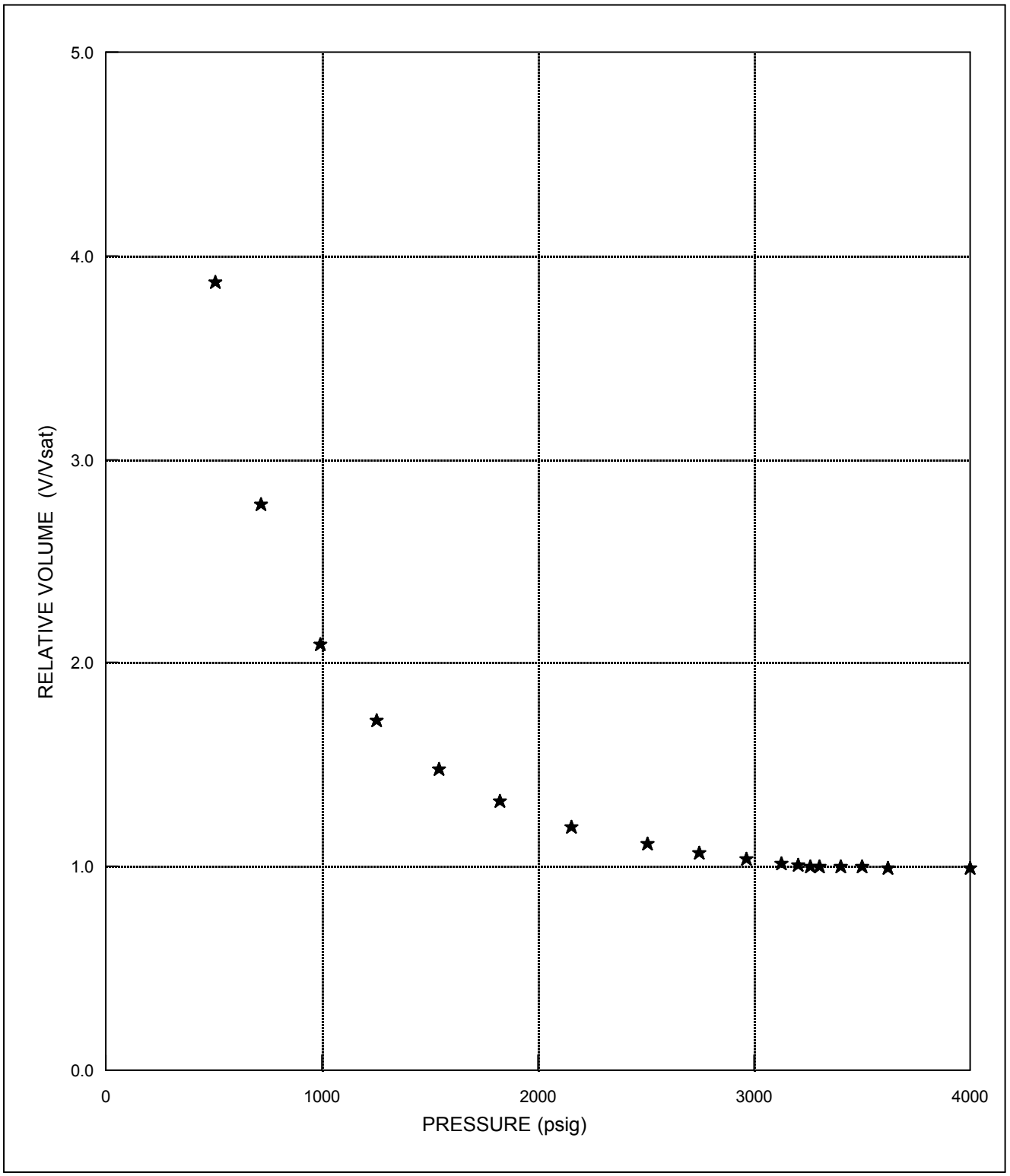
Equation of best fit

ABOVE Psat

RV = +1.10E+00 -6.56E-05 * P +1.75E-08 * P^2 -2.78E-12 * P^3 +1.74E-16 * P^4

BELOW Psat

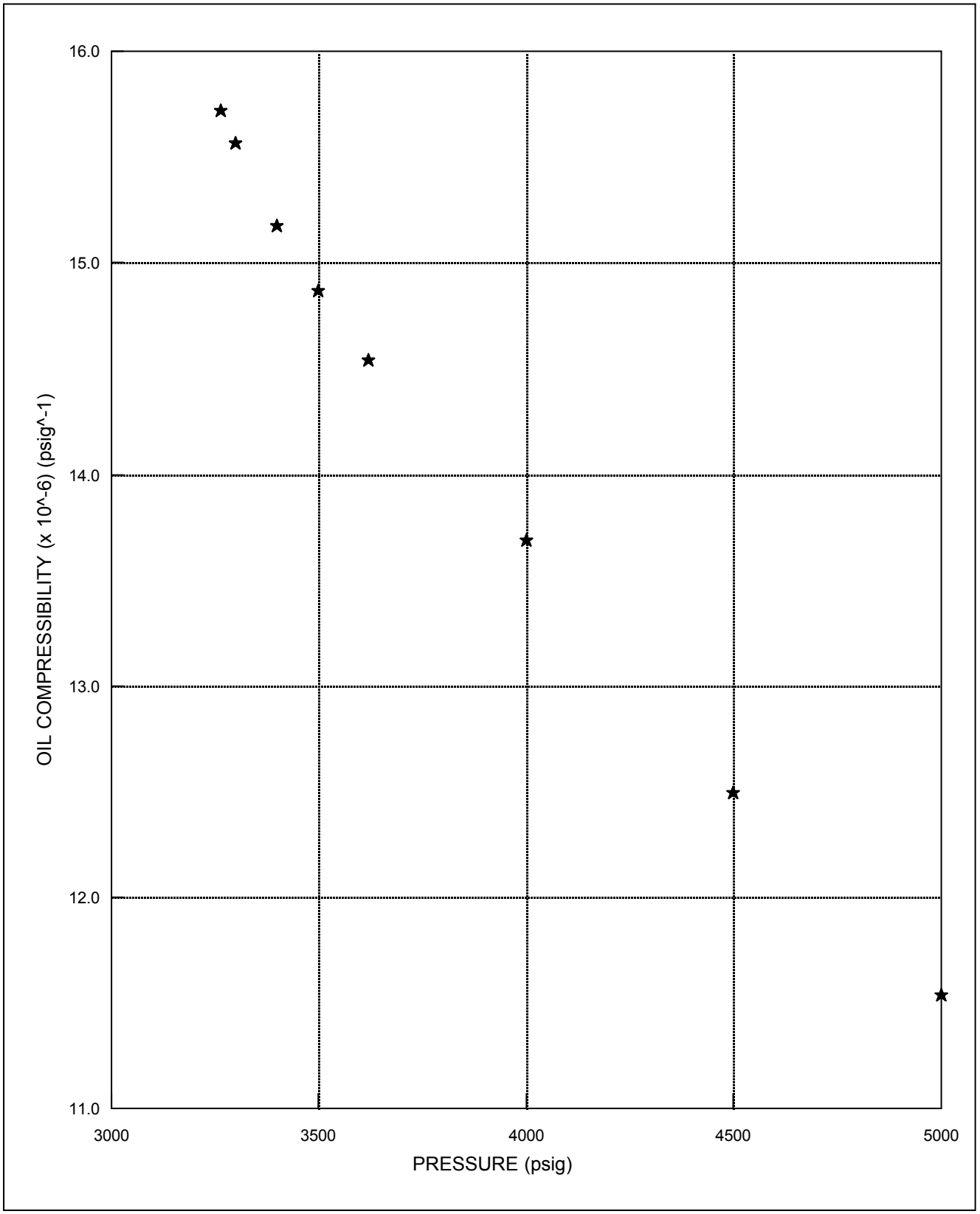
RV = +7.96E+00 -1.15E-02 * P +7.64E-06 * P^2 -2.29E-09 * P^3 +2.54E-13 * P^4



OIL COMPRESSIBILITY

Equation of best fit

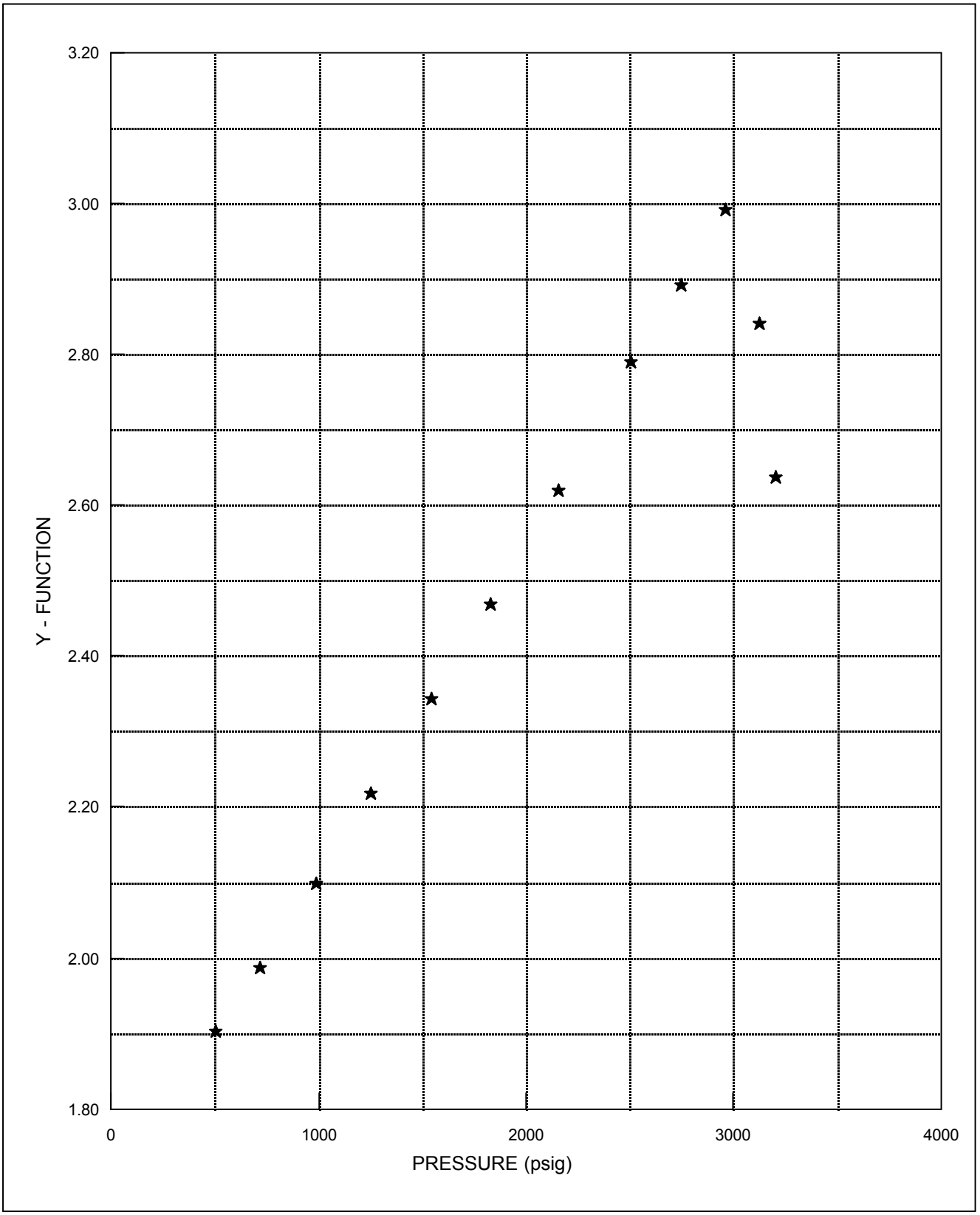
Co = +3.20E+02 -2.91E-01 * P +1.05E-04 * P^2 -1.68E-08 * P^3 +1.01E-12 * P^4



Y - FUNCTION

Equation of best fit

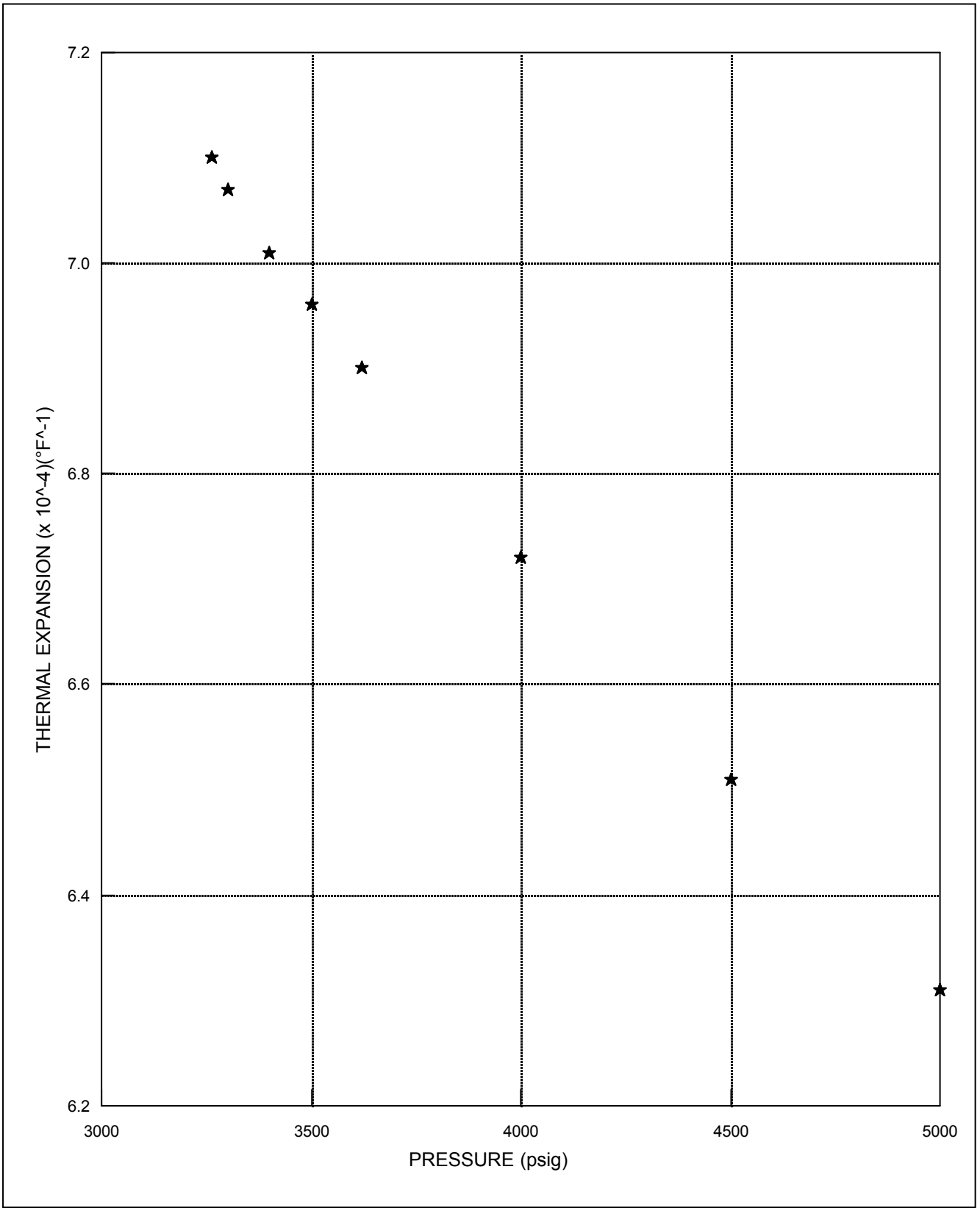
Y = +1.67E+00 +4.40E-04 * P



OIL THERMAL EXPANSION

Equation of best fit

TE = +2.14E+01 -1.22E-02 * P +4.03E-06 * P^2 -6.14E-10 * P^3 +3.52E-14 * P^4

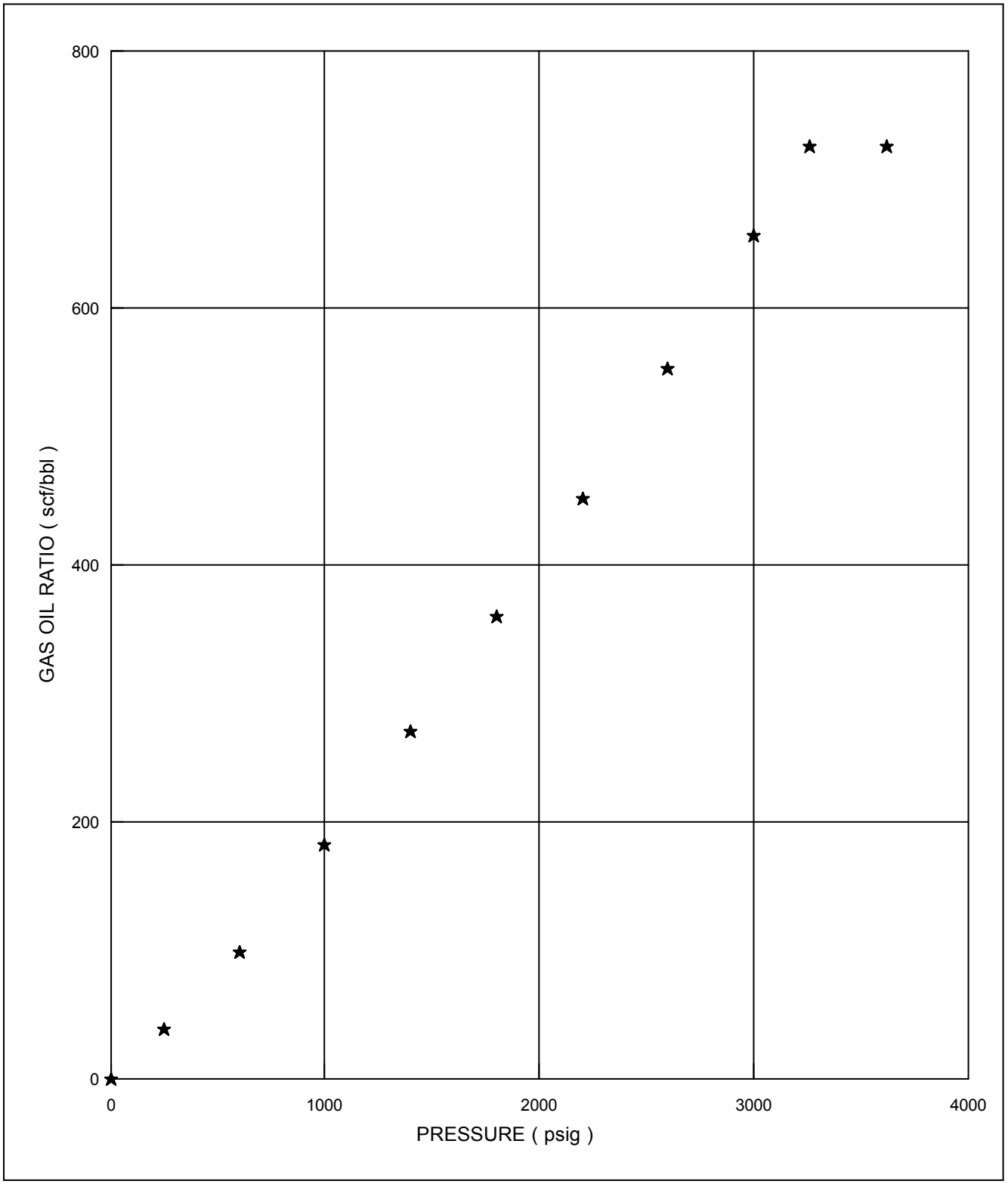


GAS - OIL RATIO

DIFFERENTIAL DATA CORRECTED WITH SEPARATOR TEST

Equation of best fit

GOR = -9.24E-02 +1.41E-01 * P +5.49E-05 * P^2 -1.61E-08 * P^3 +2.13E-12 * P^4

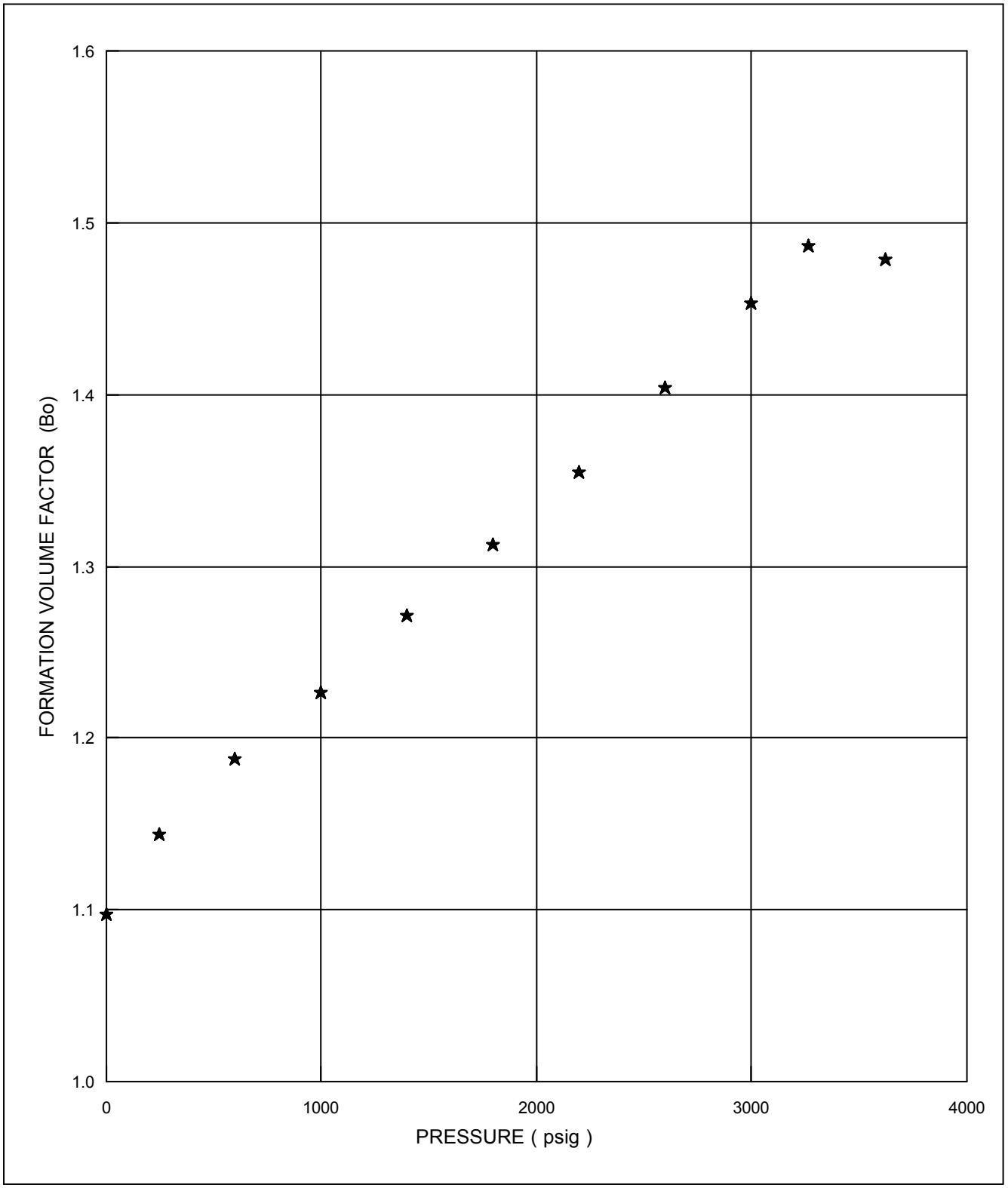


OIL FORMATION VOLUME FACTOR

DIFFERENTIAL DATA CORRECTED WITH SEPARATOR TEST

Equation of best fit

Bo = +1.10E+00 +1.86E-04 * P -8.24E-08 * P^2 +3.16E-11 * P^3 -3.88E-15 * P^4

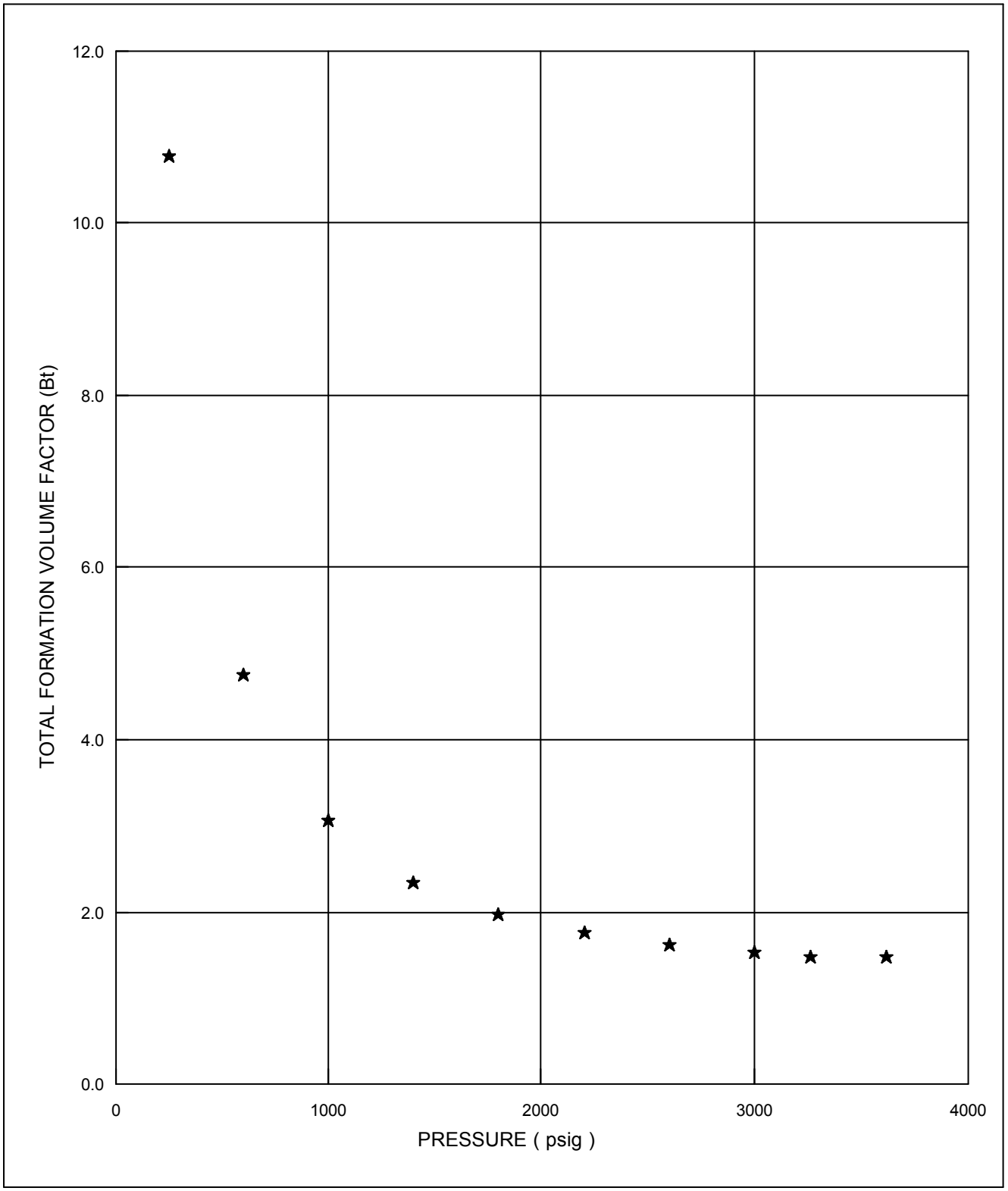


TOTAL FORMATION VOLUME FACTOR

DIFFERENTIAL DATA CORRECTED WITH SEPARATOR TEST

Equation of best fit

Bt = +1.71E+01 -3.18E-02 * P +2.45E-05 * P^2 -8.13E-09 * P^3 +9.66E-13 * P^4



OIL DENSITY

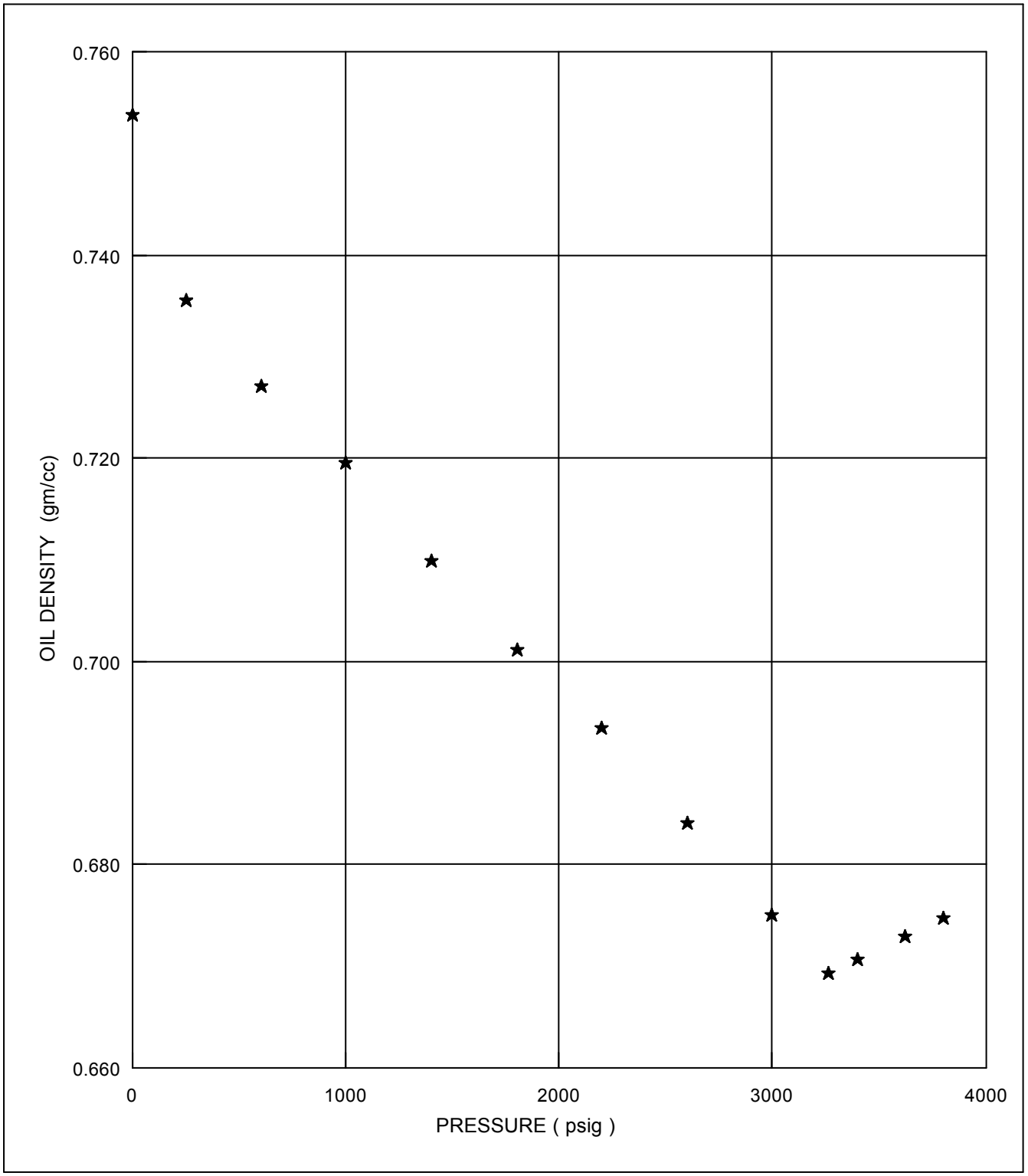
Equation of best fit

ABOVE Psat

Þ = +3.93E-01 +2.61E-04 * P -9.64E-08 * P^2 +1.64E-11 * P^3 -1.04E-15 * P^4

BELOW Psat

Þ = +7.52E-01 -6.26E-05 * P +4.22E-08 * P^2 -1.65E-11 * P^3 +2.18E-15 * P^4



OIL VISCOSITY

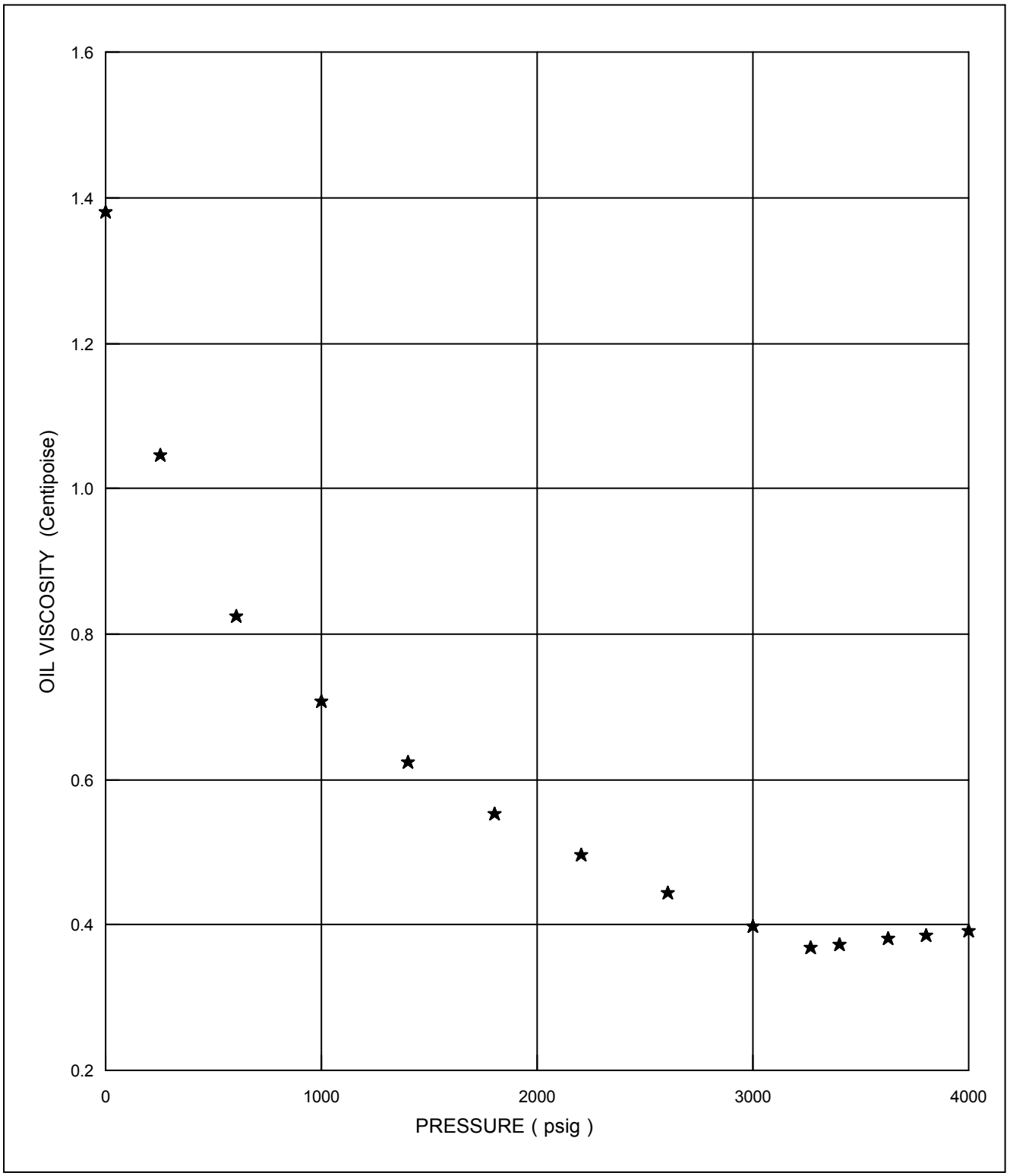
Equation of best fit

ABOVE Psat

μo = -1.66E+00 +2.02E-03 * P -7.63E-07 * P^2 +1.29E-10 * P^3 -8.09E-15 * P^4

BELOW Psat

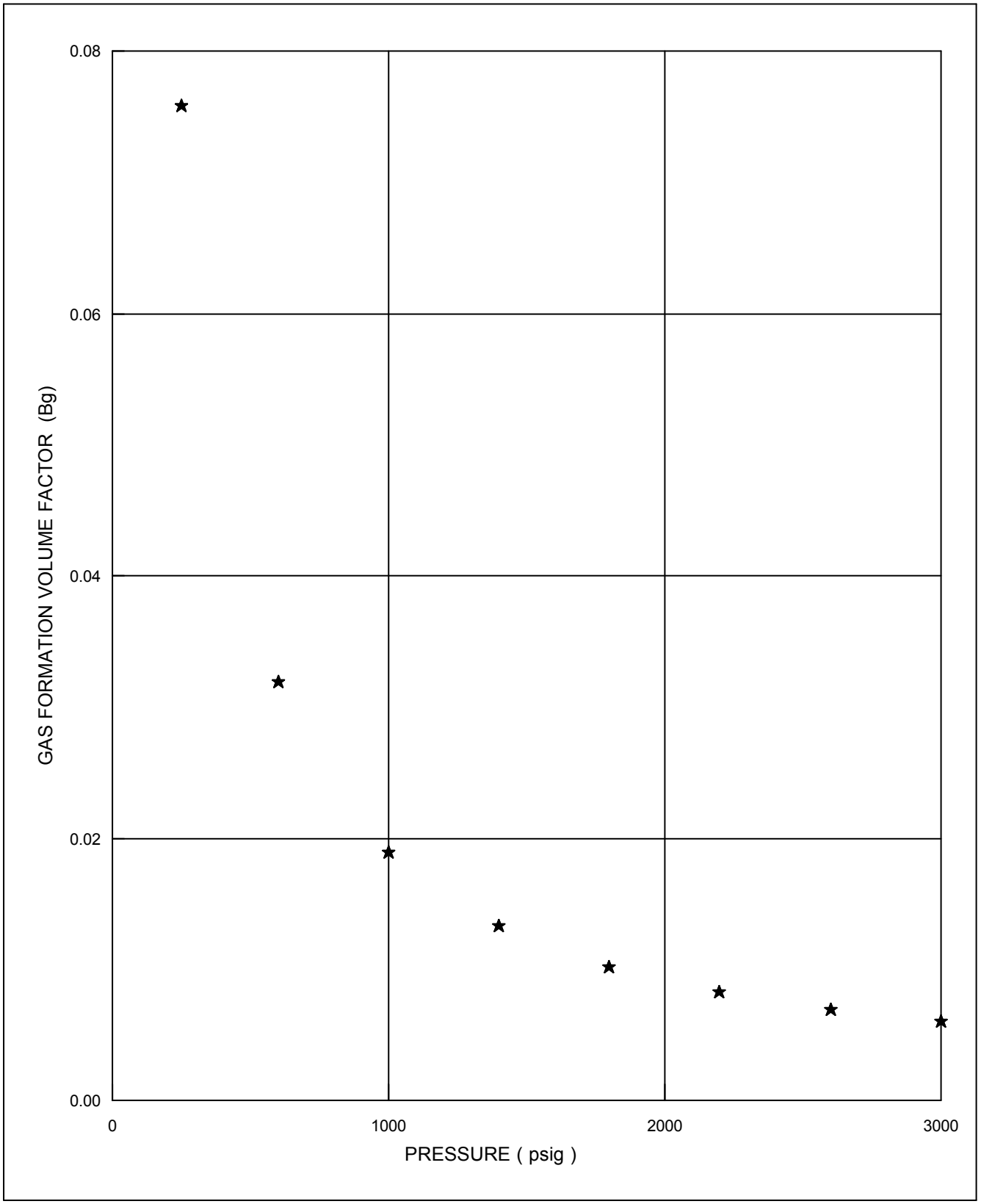
μo = +1.37E+00 -1.46E-03 * P +1.16E-06 * P^2 -4.34E-10 * P^3 +5.82E-14 * P^4



GAS FORMATION VOLUME FACTOR

Equation of best fit

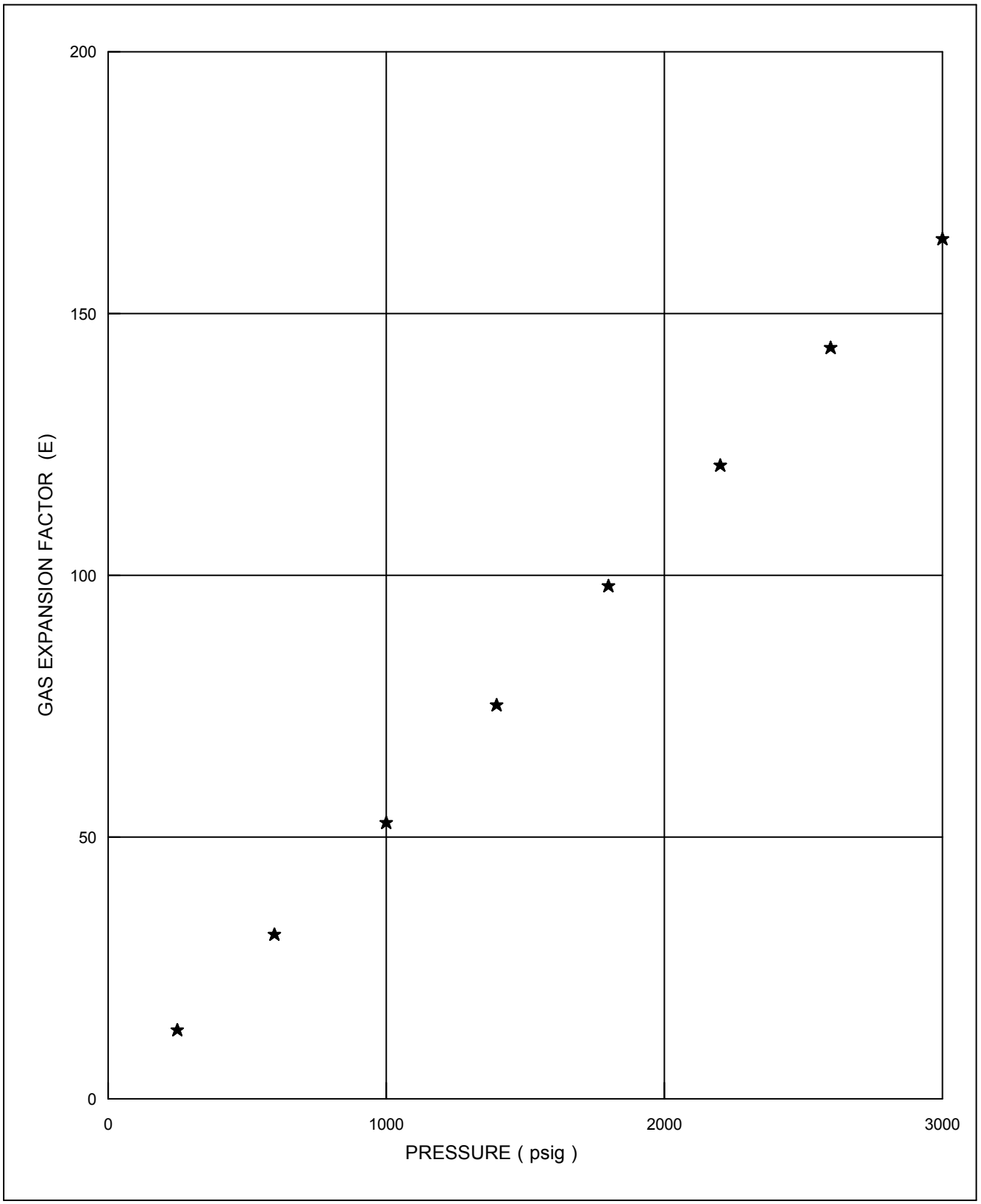
Bg = +1.26E-01 -2.52E-04 * P +2.06E-07 * P^2 -7.30E-11 * P^3 +9.33E-15 * P^4



GAS EXPANSION FACTOR

Equation of best fit

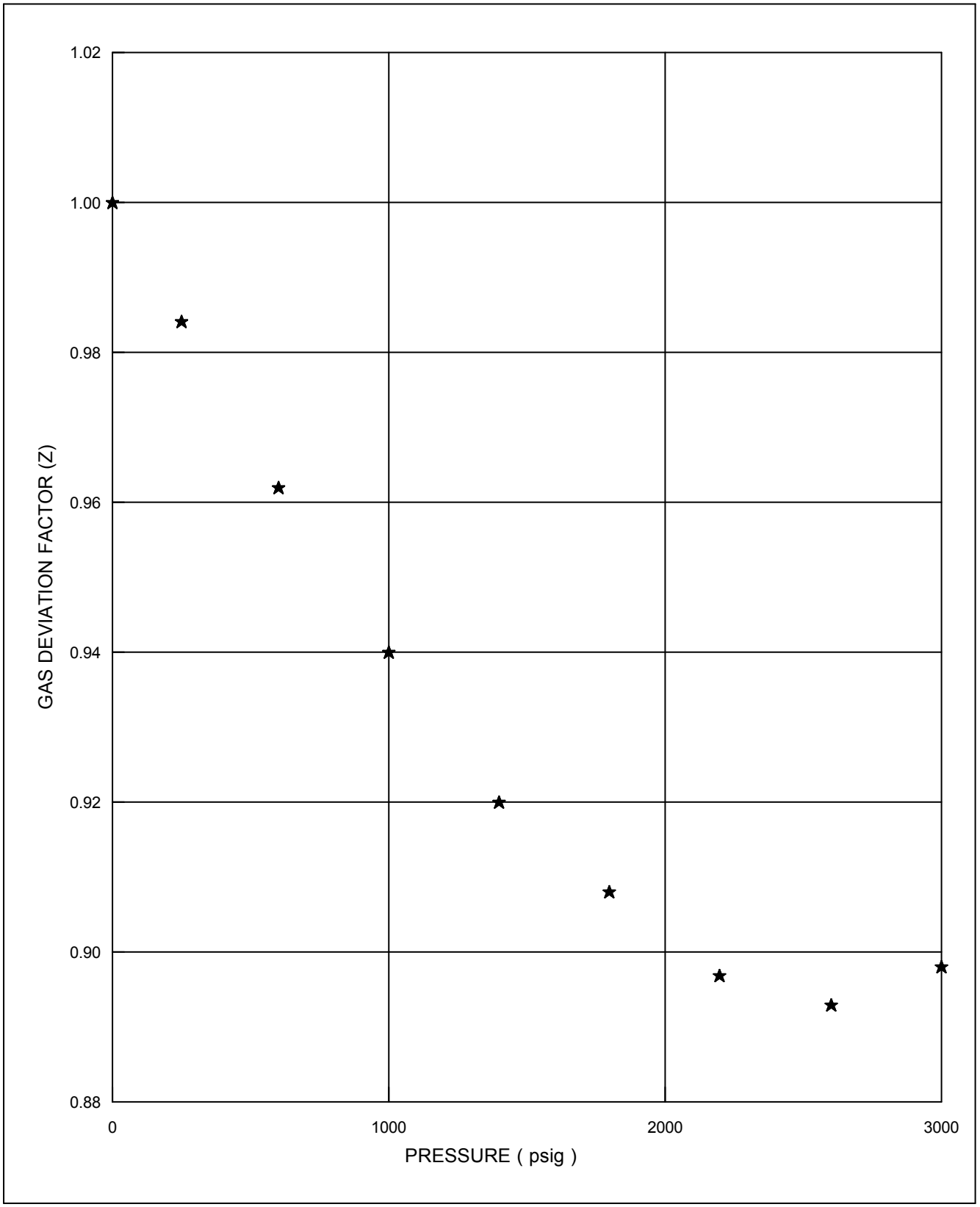
E = +4.89E-01 +5.02E-02 * P +1.58E-06 * P^2 +9.10E-10 * P^3 -3.15E-13 * P^4



GAS DEVIATION FACTOR

Equation of best fit

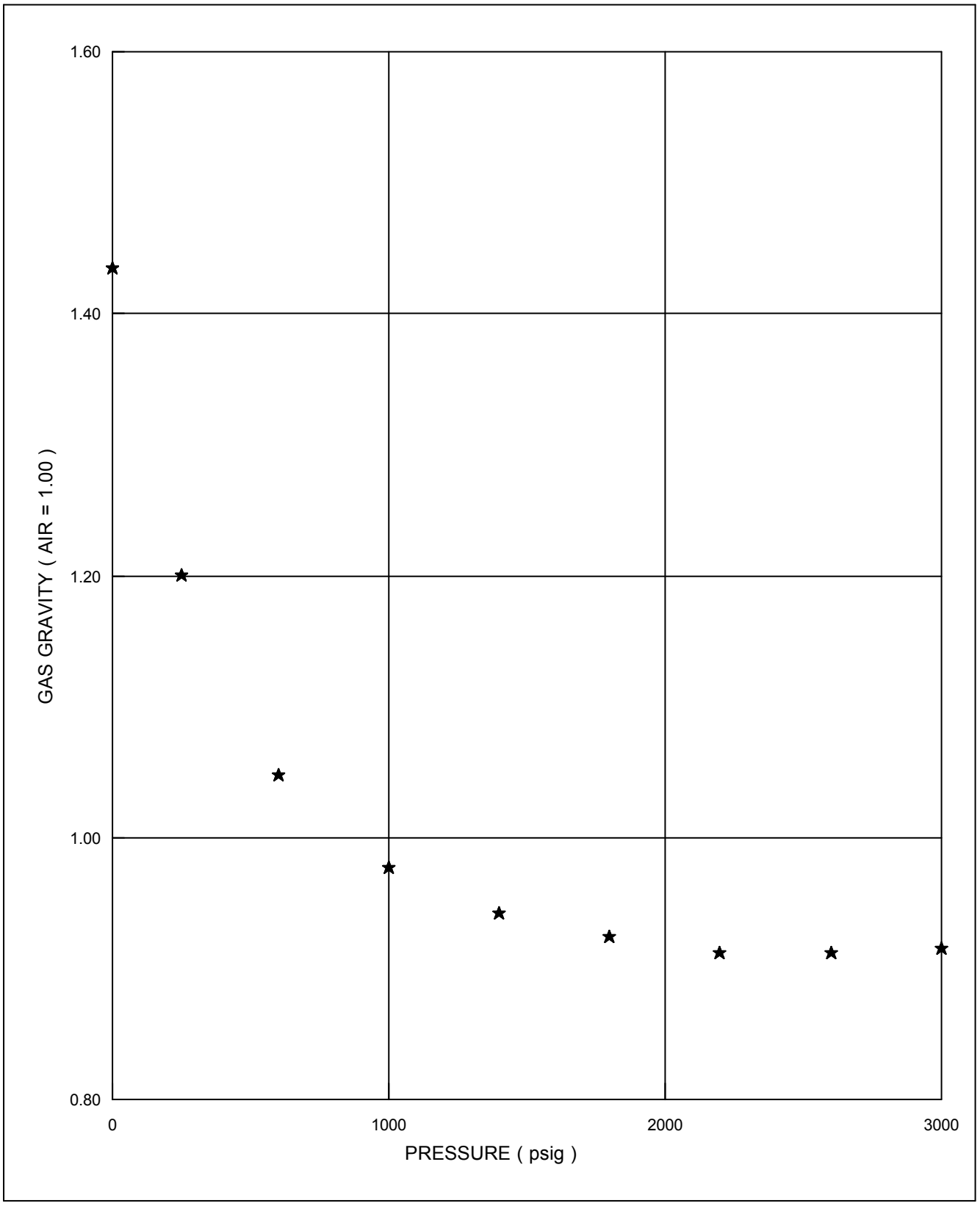
Z = +1.00E+00 -6.87E-05 * P +7.88E-09 * P^2 +8.62E-14 * P^3 +3.73E-16 * P^4



GAS GRAVITY

Equation of best fit

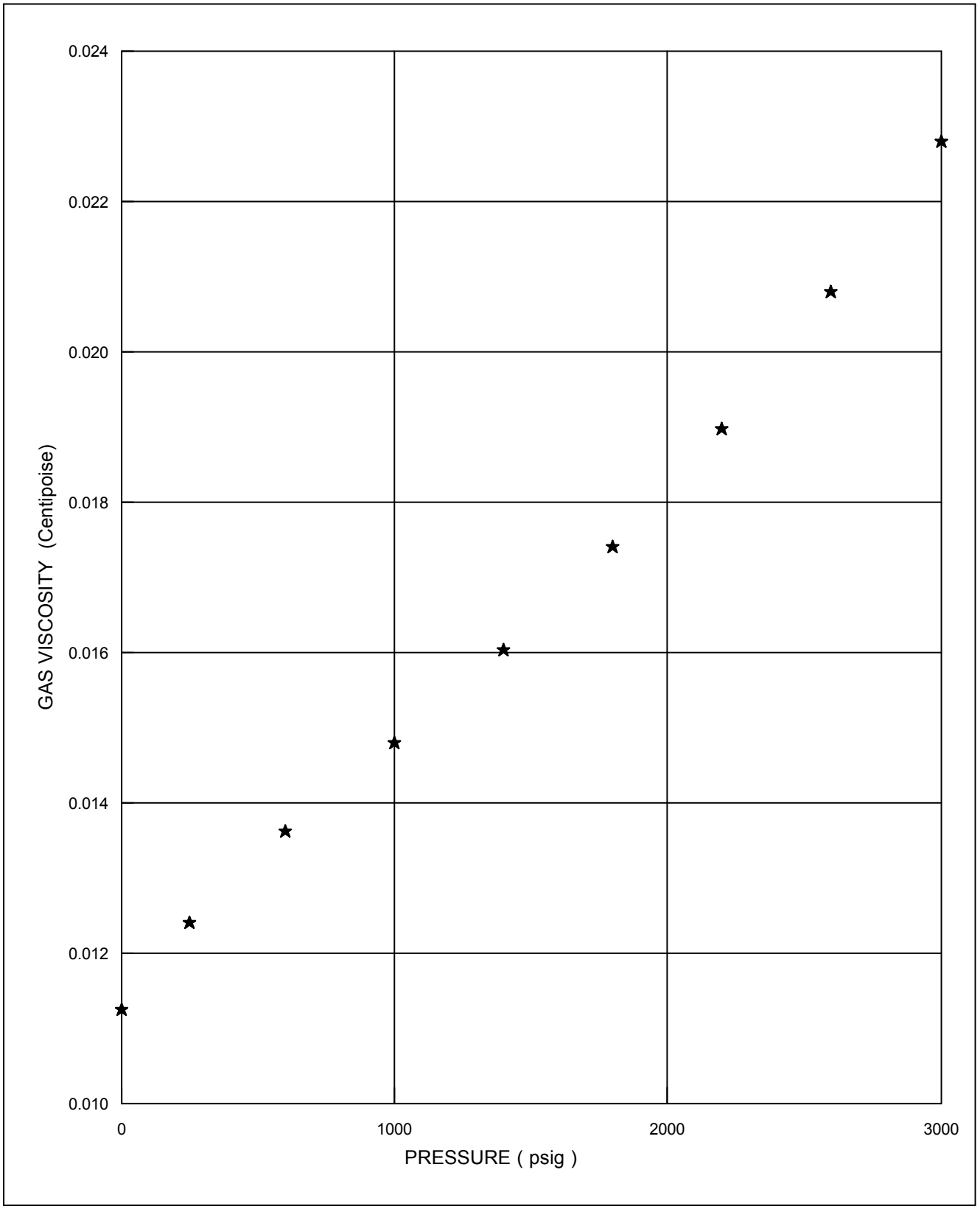
GG = +1.37E+00 -8.11E-04 * P +5.86E-07 * P^2 -1.94E-10 * P^3 +2.41E-14 * P^4



GAS VISCOSITY

Equation of best fit

μg = +1.14E-02 +4.53E-06 * P -1.84E-09 * P^2 +8.42E-13 * P^3 -1.03E-16 * P^4



WATER ANALYSIS

Sample Type		Mud Filtrate	Tool #0123 Depth=2871mMD Water	Tool #0316 Depth=2614mMD Water
Test/Reference	Unit			
PROPERTIES: APHA 20th Ed				
pH at Measured Temp.*		8.0	5.9	6.6
Measured Temp.*	°C	23.2	21.5	21.5
Electrical Conductivity @ 25°C*	µS/cm	65500	48500	62900
Resistivity @ 25°C*	M.Ohm	0.15	0.21	0.16
ANIONS mg/L APHA 20th ed				
Hydroxide as OH*	mg/L	<1	<1	<1
Carbonate as CO3*	mg/L	<1	<1	<1
Bicarbonate as HCO3*	mg/L	1415	840	2938
Chloride as Cl*	mg/L	20113	17383	19879
Nitrate as NO3*	mg/L	<0.1	<0.1	<0.1
Sulphate as SO4*	mg/L	13918	5333	11208
Total Anions*	mg/L	35446	23556	34025
ANIONS meq/L APHA 20th ed				
Hydroxide as OH*	meq/L	<0.01	<0.01	<0.01
Carbonate as CO3*	meq/L	<0.01	<0.01	<0.01
Bicarbonate as HCO3*	meq/L	23.20	13.76	48.17
Chloride as Cl*	meq/L	566.56	489.66	559.97
Nitrate as NO3*	meq/L	<0.01	<0.01	<0.01
Sulphate as SO4*	meq/L	289.78	111.04	233.36
Total Anions*	meq/L	879.55	614.46	841.50
CATIONS mg/L APHA 20th ed				
Potassium as K*	mg/L	784	468	720
Sodium as Na*	mg/L	18760	12540	18120
Calcium as Ca*	mg/L	252	507	789
Magnesium as Mg*	mg/L	436	195	396
Total Cations*	mg/L	20232	13710	20025
CATIONS meq/L APHA 20th ed				
Potassium as K*	meq/L	20.05	11.97	18.41
Sodium as Na*	meq/L	816.01	545.45	788.17
Calcium as Ca*	meq/L	12.57	25.30	39.37
Magnesium as Mg*	meq/L	35.88	16.05	32.59
Total Cations*	meq/L	884.52	598.77	878.55
DERIVED PARAMETERS APHA 20th ed				
Ion balance (Diff * 100/Sum)*	%	0.28	1.29	2.15
Acceptance Criteria*	%	5	5	5
Satisfactory*		Yes	Yes	Yes
Total Alkalinity (calc as CaCO3)*	mg/L	1160	688	2409
Total Cations + Anions*	mg/L	55678	37266	54050
Hardness (calc as CaCO3)*	mg/L	2425	2069	3601
Calculated Total Dissolved Solids	mg/L	41920	31040	40256

DERIVED PARAMETERS If the ion balance in this sample is unsatisfactory it is most likely due to a component or components of the sample that is not within the scope of this analysis.

(B) Amdel reports

10 September 2004

Upstream Origin Energy
Bass Gas Plant
GPO Box 2576
Adelaide
SA 5001

Attention: Joe Parvar

REPORT 04PEAD07987

CLIENT REFERENCE:

WELL NAME/RE: Yolla #4 From 2973 Sand

MATERIAL: Condensate

WORK REQUIRED: Crude oil assay

AUTHOR'S NAME: Mohammad Massoumi

Please direct technical enquiries regarding this work, to the signatory below, under whose supervision the work was carried out. This report relates specifically to the sample or samples submitted for testing.

Diane Cass
Operations Manager
Petroleum Services

dc.rn

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CRUDE OIL ASSAY

Yolla #4 Condensate from 2973 Sand

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Physical Properties of the whole crude oil	1-2
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True Boiling Point Curve	5
Physical Properties of the fractions	6-19
Methods	20
Gas Chromatogram	Appendix

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD07987

Sample: Yolla #4 Condensate Sample
From 2973 Sand

Method		Description	Units	Condensate 2973
IP2	ASTM D611	Aniline Point	℃	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D250	Cloud Point	℃	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D262	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D405	Density @ 15°C	g/mL	0.8100
IP21		Diesel Index		-
	ASTM D518	Trace Elements		
		Silver	mg/kg	<1
		Aluminium	mg/kg	<1
		Boron	mg/kg	<1
		Barium	mg/kg	<1
		Calcium	mg/kg	<1
		Cadmium	mg/kg	<1
		Chromium	mg/kg	<1
		Copper	mg/kg	<1
		Iron	mg/kg	1
		Magnesium	mg/kg	<1
		Manganese	mg/kg	<1
		Molybdenum	mg/kg	<1
		Sodium	mg/kg	<1
		Nickel	mg/kg	<1
		Phosphorus	mg/kg	1
		Lead	mg/kg	<1
		Silicon	mg/kg	<1
		Tin	mg/kg	<1
		Titanium	mg/kg	<1
		Vanadium	mg/kg	<1
		Zinc	mg/kg	<1
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	℃	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	℃	-
IP156	ASTM D131	Fluorescent Indicator Absorption Aromati	% vol	-
IP15	ASTM D97	Pour Point	℃	-
IP365	ASTM D405	Specific Gravity @ 60/60°F		0.8104
IP216		Total Contaminant	mg/L	-
	ASTM D227	Viscosity Index		-
IP289	ASTM D109	Water Reaction Interface Rating		-
	ASTM D400	Total Water And Sediment	%vol	-
	ASTM D400	Water And Sediment(Tube 1)	mL	-
	ASTM D400	Water And Sediment(Tube 2)	mL	-
IP160/9	ASTM D129	API Gravity	degrees	43.11

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 9-Dec-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD07987

CONDENSATE SAMPLE

TEST	UNIT	RESULT
Total Sulphur	mg/kg	173.62
Mercury	mg/kg	0.05
Kinematic Viscosity @ 25°C	cSt	1.509
Acid Number	mg KOH/g	0.022
Hydrogen Sulphide	mg/kg	<1
Mercaptans	mg/kg	1
Lead	ppb	20
Arsenic	ppb	<5
Methanol	%wt	<1

ppb = µg/L

TABLE 1

ASTM D2892 DISTILLATION AND DENSITIES : CONDENSATE YOLLA #4 FROM 2973 (Upstream Origin Energy) Report # 04PEAD07987

Temp (deg F)	Temp (deg C)	Density at 15 °C	Cumulative Weight (%)	Cumulative Volume (%)	Mid Volume (%)	Specific Gravity (60/60 °F)	API Gravity
LPG	LPG	0.5840	1.1	1.5	0.7	0.5842	110.7
158.0	70.0	0.6688	3.8	4.8	3.1	0.6690	80.0
230.0	110.0	0.7583	20.4	22.5	13.7	0.7585	55.1
284.0	140.0	0.7864	33.9	36.5	29.5	0.7866	48.4
302.0	150.0	0.8017	39.5	42.0	39.3	0.8019	45.0
374.0	190.0	0.8043	52.1	54.7	48.4	0.8046	44.4
446.0	230.0	0.8347	63.6	65.9	60.3	0.8350	38.0
519.8	271.0	0.8748	75.3	76.8	71.3	0.8751	30.2
626.0	330.0	0.8624	86.9	87.6	82.2	0.8628	32.5
680.0	360.0	0.8607	92.4	92.8	90.2	0.8611	32.8
680+	360+	0.8452	99.9	100.0	96.4	0.8456	35.8

This report relates specifically to the sample tested.

Approved Signatory _____

Mohammad Massoumi

Accreditation No: 2013

Date 10-Sep-04

TABLE 2

ASTM D2892 DISTILLATION AND DENSITIES
CONDENSATE YOLLA #4 FROM 2973 (Upstream Origin Energy)
Report # 04PEAD07987

Temp (deg F)	Temp (deg C)	Weight (%)	Volume (%)
LPG	LPG	1.1	1.5
158.0	70.0	2.8	3.4
230.0	110.0	16.6	17.7
284.0	140.0	13.5	13.9
302.0	150.0	5.5	5.6
374.0	190.0	12.6	12.7
446.0	230.0	11.5	11.2
519.8	271.0	11.7	10.8
626.0	330.0	11.6	10.9
680.0	360.0	5.6	5.2
680+	360+	7.5	7.2

This report relates specifically to the sample tested.

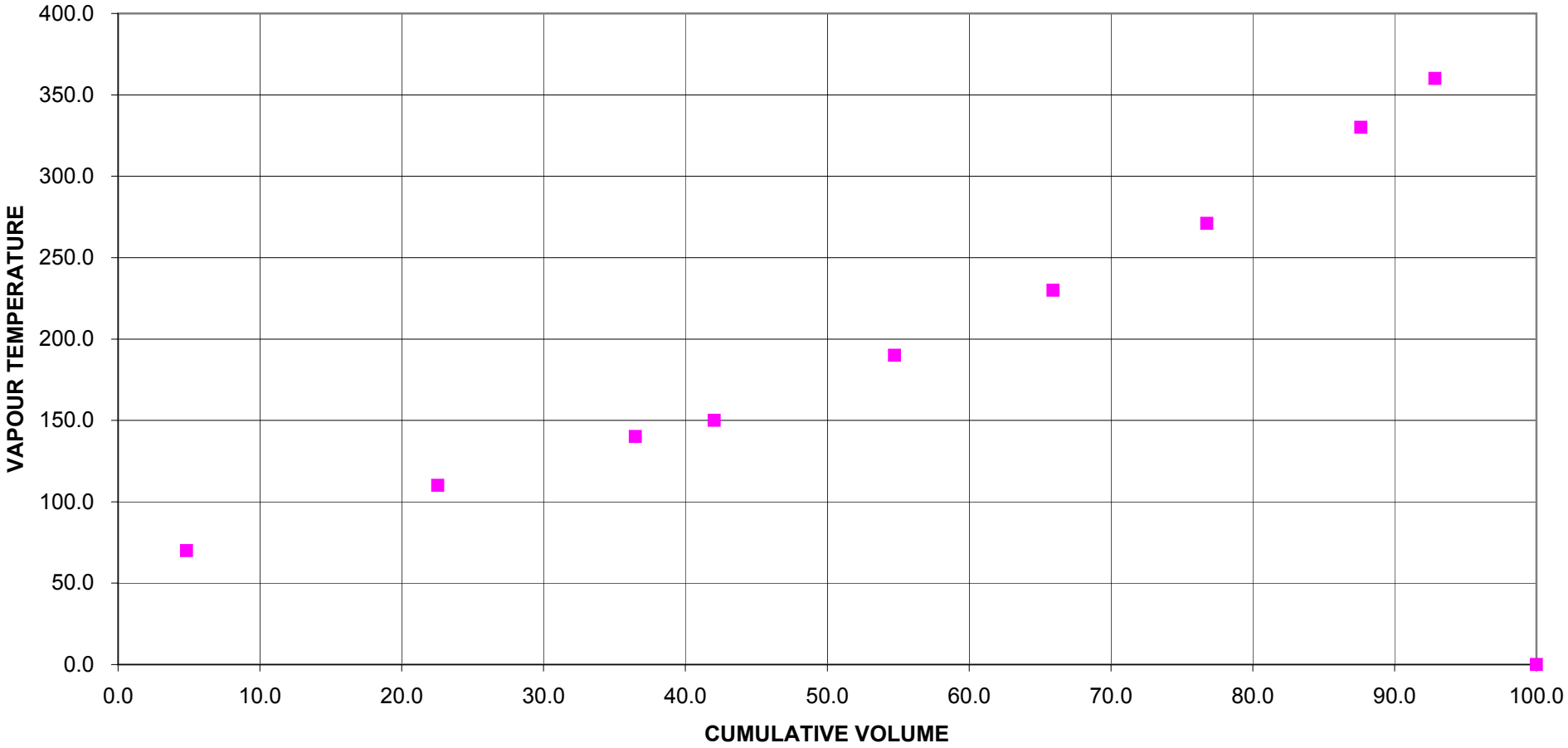
Approved Signatory _____

Mohammad Massoumi

Accreditation No: 2013

Date 10-Sep-04

TRUE BOILING POINT CURVE CRUDE OIL
Upstream Origin Energy Condensate Yolla #4 from 2973



PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD07987

Sample: Yolla #4 Condensate Sample
From 2973 Sand

Method		Description	Units	Cut C5-70°C 2973
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.6688
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	°C	-
IP156	ASTM D1319	Fluorescent Indicator Absorption Aromatics	% vol	-
IP15	ASTM D97	Pour Point	°C	-
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.6689
IP216		Total Contaminant	mg/L	-
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	80.04

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 10-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD07987

CUT C5 – 70°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	4.59
Kinematic Viscosity @ 25°C	cSt	0.441

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD07987

Sample: Yolla #4 Condensate Sample
From 2973 Sand

Method		Description	Units	Cut 70-150°C 2973
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.7818
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	°C	-
IP156	ASTM D1319	Fluorescent Indicator Absorption Aromatics	% vol	-
IP15	ASTM D97	Pour Point	°C	-
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.7821
IP216		Total Contaminant	mg/L	-
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	49.42

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 10-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD07987

CUT 70 – 150°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	4.02
Kinematic Viscosity @ 25°C	cSt	0.683

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD07987

Sample: Yolla #4 Condensate Sample
From 2973 Sand

Method		Description	Units	Cut C5-190°C 2973
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.7826
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	°C	-
IP156	ASTM D1319	Fluorescent Indicator Absorption Aromatics	% vol	-
IP15	ASTM D97	Pour Point	°C	-
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.7829
IP216		Total Contaminant	mg/L	-
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	49.24

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 10-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD07987

CUT C5 – 190°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	4.42
Kinematic Viscosity @ 25°C	cSt	0.706

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD07987

Sample: Yolla #4 Condensate Sample
From 2973 Sand

Method		Description	Units	Cut 140-230°C 2973
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.8196
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP16	ASTM D2386	Freezing Point	°C	-60.0
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C	cSt	-
IP15	ASTM D97	Pour Point	°C	-
	ASTM D2386	Smoke Point	mm	19
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.8200
IP216		Total Contaminant	mg/L	-
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	41.06

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 10-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD07987

CUT 140 – 230°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	9.36
Kinematic Viscosity at 25°C	cSt	1.109

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD07987

Sample: Yolla #4 Condensate Sample
From 2973 Sand

Method		Description		Units	Cut 190-230°C 2973
IP2	ASTM D611	Aniline Point		°C	-
IP143		Asphaltenes		% wt	-
IP364	ASTM D976	Calculated Cetane Index			-
IP219	ASTM D2500	Cloud Point		°C	-
IP17		Colour by Lovibond Tintometer			-
IP274	ASTM D2624	Conductivity of Fuels		pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue		% wt	-
IP154	ASTM D130	Copper Corrosion			-
IP365	ASTM D4052	Density @ 15°C		g/mL	0.8340
IP21		Diesel Index			-
	ASTM D5185	Trace Elements			
			Silver	mg/L	-
			Aluminium	mg/L	-
			Boron	mg/L	-
			Barium	mg/L	-
			Calcium	mg/L	-
			Cadmium	mg/L	-
			Chromium	mg/L	-
			Copper	mg/L	-
			Iron	mg/L	-
			Magnesium	mg/L	-
			Manganese	mg/L	-
			Molybdenum	mg/L	-
			Sodium	mg/L	-
			Nickel	mg/L	-
			Phosphorus	mg/L	-
			Lead	mg/L	-
			Silicon	mg/L	-
			Tin	mg/L	-
			Titanium	mg/L	-
			Vanadium	mg/L	-
			Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C		cSt	-
IP16	ASTM D2386	Freezing Point		°C	-19.0
IP71	ASTM D445	Kinematic Viscosity @ 40°C		cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C		cSt	-
IP15	ASTM D97	Pour Point		°C	-
	ASTM D2386	Smoke Point		mm	16
IP365	ASTM D4052	Specific Gravity @ 60/60°F			0.8344
IP354	ASTM D3242	Total Acidity in Aviation Fuel		mgKOH/g	-
IP216		Total Contaminant		mg/L	-
	ASTM D2270	Viscosity Index			-
IP289	ASTM D1094	Water Reaction	Interface Rating		-
	ASTM D4007	Total Water And Sediment		%vol	-
	ASTM D4007	Water And Sediment(Tube 1)		mL	-
	ASTM D4007	Water And Sediment(Tube 2)		mL	-
IP160/96	ASTM D1298	API Gravity		degrees	38.08

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 10-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD07987

CUT 190 - 230°C

TEST	UNIT	RESULT
Kinematic Viscosity @ 25°C	cSt	1.667
Total Sulphur	mg/kg	20.49

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD07987

Sample: Yolla #4 Condensate Sample
From 2973 Sand

Method		Description	Units	Cut 230-330°C 2973
IP2	ASTM D611	Aniline Point	°C	60.2
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		43.0
IP219	ASTM D2500	Cloud Point	°C	-5
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	0.15
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.8683
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	3.018
IP16	ASTM D2386	Freezing Point	°C	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C	cSt	-
IP15	ASTM D97	Pour Point	°C	-
	ASTM D2386	Smoke Point	mm	-
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.8688
	ASTM D5185	Total Sulphur	mg/kg	522
IP216		Total Contaminant	mg/L	-
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	31.37

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 10-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD07987

Sample: Yolla #4 Condensate Sample
From 2973 Sand

Method		Description	Units	Cut 230-360°C 2973
IP2	ASTM D611	Aniline Point	°C	66.8
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		46.1
IP219	ASTM D2500	Cloud Point	°C	8
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	0.16
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.8654
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	3.499
IP16	ASTM D2386	Freezing Point	°C	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C	cSt	-
IP15	ASTM D97	Pour Point	°C	-
	ASTM D2386	Smoke Point	mm	-
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.8659
	ASTM D5185	Total Sulphur	mg/kg	631
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	31.91

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 10-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD07987

Sample: Yolla #4 Condensate Sample
From 2973 Sand

Method		Description	Units	Cut 360°C+ 2973
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	0.10
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.8452
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	<1
		Aluminium	mg/L	3
		Boron	mg/L	1
		Barium	mg/L	<1
		Calcium	mg/L	<1
		Cadmium	mg/L	<1
		Chromium	mg/L	<1
		Copper	mg/L	1
		Iron	mg/L	2
		Magnesium	mg/L	<1
		Manganese	mg/L	<1
		Molybdenum	mg/L	<1
		Sodium	mg/L	3
		Nickel	mg/L	<1
		Phosphorus	mg/L	4
		Lead	mg/L	<1
		Silicon	mg/L	34
		Tin	mg/L	<1
		Titanium	mg/L	<1
		Vanadium	mg/L	<1
		Zinc	mg/L	<1
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP16	ASTM D2386	Freezing Point	°C	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C	cSt	-
IP15	ASTM D97	Pour Point	°C	48
	ASTM D2386	Smoke Point	mm	-
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.8456
	ASTM D5185	Total Sulphur	mg/kg	198
	ASTM D2270	Viscosity Index		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	35.84

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 10-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD07987

CUT 360°C+

TEST	UNIT	RESULT
Kinematic Viscosity @ 50°C	cSt	11.57

Report No: 04PEAD07987

METHODS

TEST	METHODS
True Boiling Point	ASTM D2892
Density-API Gravity	ASTM D4052
Kinematic Viscosity	ASTM D445
Sulphur Content	ASTM D5453, 5185
Trace Elements	ASTM D5185
PONA	GC (gas chromatography)
Smoke Point	ASTM D1322
Freezing Point	ASTM D2386
Conradson Carbon Residue	ASTM D189
Pour Point	ASTM D97
Cloud Point	ASTM D2500
Calculated Cetane Index	ASTM D976
Mercury	AAS
Aniline Point	ASTM D611
Methanol	FTIR
Lead	IP224
Arsenic	UOP296
Acid Number	ASTM D974
Hydrogen Sulphide	ASTM D3227
Mercaptans	ASTM D3227

APPENDIX

PETROLEUM SERVICES LIQUID ANALYSIS Method GL-02-01

Client: Upstream Origin Energy Resources Ltd (Bass Gas) Report # 04PEAD07987

Sample: YOLLA-4 COND SAMPLE
FROM 2973 SAND

Boiling Point Range (Deg.C)	Component	Weight%	Mol%
-88.6	ETHANE	0.01	0.06
-42.1	PROPANE	0.11	0.34
-11.7	I-BUTANE	0.14	0.33
-0.5	N-BUTANE	0.38	0.90
27.9	I-PENTANE	0.60	1.15
36.1	N-PENTANE	0.80	1.52
36.1-68.9	HEXANE, C-6	2.89	4.62
80.0	BENZENE	1.28	2.26
80.7	CYCLOHEXANE	1.22	2.01
68.9-98.3	HEPTANE,C-7	5.73	7.88
100.9	METHYLCYCLOHEXANE	4.97	6.98
110.6	TOLUENE	5.20	7.78
98.3-125.6	OCTANE, C-8	7.08	8.54
136.1-144.4	ETHYLBZ+XYLENES	8.51	11.07
125.6-150.6	C-9	6.17	6.64
150.6-173.9	C-10	9.69	9.38
173.9-196.1	C-11	5.86	5.16
196.1-215.0	C-12	4.71	3.81
215.0-235.0	C-13	5.30	3.96
235.0-252.2	C-14	3.78	2.63
252.2-270.6	C-15	4.30	2.79
270.6-287.8	C-16	2.98	1.81
287.8-302.8	C-17	2.02	1.16
302.8-317.2	C-18	2.64	1.43
317.2-330.0	C-19	1.64	0.84
330.0-344.4	C-20	1.39	0.68
344.4-357.2	C-21	1.42	0.66
357.2-369.4	C-22	1.38	0.61
369.4-380.0	C-23	1.38	0.59
380.0-391.1	C-24	1.31	0.53
391.1-401.7	C-25	1.25	0.49
401.7-412.2	C-26	1.06	0.40
412.2-422.2	C-27	0.99	0.36
>422.2	C-28+	1.81	0.63
	Total	100.00	100.00
	(0.00 = LESS THAN 0.01%)		

The above boiling point ranges refer to the normal paraffin hydrocarbon boiling in that range. Aromatics, branched hydrocarbons, naphthenes and olefins may have higher or lower carbon numbers but are grouped and reported according to their boiling points.

Average molecular weight of C-8 plus fraction (calc) = 152 g/mol

This report relates specifically to the sample submitted for analysis.

Approved Signatory
Accreditation No: 2013
Date 09-Sep-04

Report: 04PEAD07987
Sample : YOLLA #4 From Condensate 2973 Sand, Cut 70-150

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	0.007	0.010	0.012
3	n C 4	0.009	0.012	0.016
4	22 DMC 3	0.032	0.040	0.045
5	i C 5	0.038	0.048	0.054
6	n C 5	0.056	0.070	0.080
7	22 DMC 4	0.009	0.011	0.011
8	CYC 5	0.020	0.021	0.030
9	23 DMC 4	0.090	0.106	0.107
10	2 MC 5	0.463	0.548	0.549
11	3 MC 5	0.400	0.465	0.474
12	n C 6	2.191	2.566	2.599
13	22 DMC 5	0.106	0.122	0.108
14	M CYC 5	1.775	1.834	2.157
15	24 DMC 5	0.217	0.249	0.221
16	223 TMC 4	0.043	0.048	0.044
17	BZ	2.570	2.262	3.364
18	33 DMC 5	0.075	0.083	0.076
19	CYC 6	2.990	2.971	3.633
20	2 MC 6	1.542	1.758	1.574
21	23 DMC 5	0.395	0.440	0.403
22	11 DMCYC 5	0.339	0.347	0.353
23	3 MC 6	1.472	1.660	1.503
24	t 13 DMCYC 5	0.732	0.765	0.762
25	c 13 DMCYC 5	0.793	0.824	0.826
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	1.077	1.128	1.122
28	n C7	5.585	6.319	5.699
29	MCYC 6	12.565	12.633	13.086
30	22 DMC 6	0.257	0.286	0.230
31	ECYC 5	0.226	0.228	0.235
32	25 DMC 6	0.544	0.607	0.487
33	24 DMC 6	0.298	0.330	0.267
34	tc 124 TMCYC 5	0.309	0.314	0.282
35	234 TMC 5	0.086	0.093	0.077
36	tc 123 TMCYC 5	0.239	0.240	0.218
37	233 TMC 5	-	-	-
38	TOL	13.979	12.473	15.517
39	23 DMC 6	0.206	0.223	0.184
40	2 M 3 EC 5	0.036	0.039	0.032
41	2 MC 7	1.730	1.917	1.549
42	4 MC 7	0.515	0.565	0.461
43	34 DMC 6	0.102	0.109	0.091
44	tt 124 TMCYC 5	-	-	-
45	3 MC 7	1.373	1.503	1.229
46	1 M 2 E CYC 5	2.857	2.952	2.604

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	1.339	1.358	1.220
48	C 8-N	0.361	0.359	0.329
49	C 8-P	-	-	-
50	C 8-N	0.131	0.130	0.119
51	C 8-N	0.122	0.121	0.111
52	c 1 M 3 ECYC 6	0.156	0.159	0.126
53	C 8-P	0.041	0.044	0.036
54	t 12 DMCYC 6	1.082	1.051	0.986
55	n C 8	6.271	6.905	5.614
56	C 8-N	0.842	0.837	0.768
57	unk	0.047	0.048	0.042
58	C 9-P	0.088	0.095	0.070
59	unk	0.023	0.022	0.021
60	C 9-P	0.169	0.182	0.135
61	C 9-P	0.605	0.651	0.483
62	n C 3 CYC 5	1.757	1.751	1.601
63	N	0.011	0.011	0.010
64	113 TMCYC 6	0.486	0.482	0.393
65	C 9-P	0.321	0.345	0.256
66	C 9-P	0.111	0.119	0.088
67	N	0.016	0.016	0.014
68	N	0.018	0.018	0.016
69	N	0.041	0.040	0.037
70	E BZ	1.350	1.205	1.301
71	114 TMCYC 6	0.271	0.272	0.220
72	unk	0.025	0.024	0.021
73	unk	-	-	-
74	m+p XYL	15.031	13.545	14.478
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	0.454	0.488	0.362
79	2 MC 8	0.799	0.870	0.637
80	C 9-P	-	-	-
81	3 MC 8	0.763	0.819	0.609
82	N	0.124	0.125	0.113
83	o XYL	2.471	2.171	2.380
84	unk	-	-	-
85	unk	0.093	0.091	0.080
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	0.429	0.416	0.348
88	c 1 M 4 ECYC 6	0.199	0.197	0.161
89	N	-	-	-
90	N	0.097	0.096	0.079
91	N	-	-	-
92	n C9	3.270	3.525	2.607
93	1 M 1 ECYC 6	0.178	0.175	0.145
94	C 9-N	0.061	0.060	0.049
95	i PBZ	0.029	0.026	0.025
96	C 10-P	0.011	0.012	0.008
97	C 9-N	0.059	0.058	0.048
98	C 9-N	0.190	0.186	0.154
99	C 10-P	-	-	-
100	C 10-P	0.059	0.062	0.042
101	unk	0.050	0.049	0.039

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	0.034	0.036	0.024
103	s BCYC 5	0.253	0.248	0.205
104	C 10-P	-	-	-
105	C 10-P	-	-	-
106	3 MC 9	0.122	0.129	0.088
107	C 10-P	0.025	0.026	0.018
108	unk	-	-	-
109	unk	0.020	0.020	0.015
110	n PBZ	-	-	-
111	N	0.043	0.042	0.031
112	unk	0.104	0.101	0.079
113	unk	0.014	0.013	0.010
114	m E TOL	0.009	0.008	0.008
115	p E TOL	-	-	-
116	135 TM BZ	0.316	0.283	0.269
117	N	0.151	0.147	0.110
118	C 10-N	0.011	0.011	0.008
119	C 10-P	0.190	0.199	0.136
120	2 MC 9	0.020	0.022	0.015
121	o E TOL	0.020	0.018	0.017
122	C 10-P	-	-	-
123	36 DMC 8	0.059	0.062	0.042
124	N	-	-	-
125	C 10-N	-	-	-
126	124 TM BZ	0.154	0.136	0.131
127	C 10-N	-	-	-
128	N	-	-	-
129	C 10-N	-	-	-
130	N	-	-	-
131	N	-	-	-
132	N	-	-	-
133	C 10-P	-	-	-
134	n C 10	0.059	0.062	0.042
135	unk	-	-	-
136	unk	-	-	-
137	123 TM BZ	-	-	-
138	unk	-	-	-
139	unk	-	-	-
140	unk	-	-	-
141	unk	-	-	-
142	C 10-A	-	-	-
143	C 10-N	-	-	-
144	C 11-P	-	-	-
145	unk	-	-	-
146	C 10-N	-	-	-
147	unk	-	-	-
148	unk	-	-	-
149	C 10-A	-	-	-
150	C 10-A	-	-	-
151	C 10-A	-	-	-
152	unk	-	-	-
153	C 10-A	-	-	-
154	unk	-	-	-
155	unk	-	-	-
156	unk	-	-	-

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	-	-	-
159	C 11-P	-	-	-
160	C 11-P	-	-	-
161	C 11-P	-	-	-
162	C 10-A	-	-	-
163	C 11-P	-	-	-
164	C 10-A	-	-	-
165	unk	-	-	-
166	unk	-	-	-
167	unk	-	-	-
168	C 10-A	-	-	-
169	n C 11	-	-	-
170	unk	-	-	-
171	C 10-A	-	-	-
172	unk	-	-	-
173	C 10-A	-	-	-
174	unk	-	-	-
175	unk	-	-	-
176	unk	-	-	-
177	unk	-	-	-
178	unk	-	-	-
179	C 12-P	-	-	-
180	unk	-	-	-
181	unk	-	-	-
182	unk	-	-	-
183	unk	-	-	-
184	C 11-A	-	-	-
185	unk	-	-	-
186	C 12-P	-	-	-
187	C 11-A	-	-	-
188	unk	-	-	-
189	n C 12	-	-	-

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	31.347	34.884	29.494
Naphthenes	32.349	32.622	32.709
Aromatics	35.929	32.127	37.490
Unknowns	0.375	0.367	0.307
Olefins	<0.1	<0.1	<0.1
Average molecular weight	103.69	Denisty @ 15°C	0.782

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
BZ = benzene; TOL = toluene; XYL = xylene; unk = unknown.
PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

Report: 04PEAD07987
Sample : YOLLA-4 #4 From Condensate 2973 Sand, Cut C5-190

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	0.007	0.009	0.012
3	n C 4	0.016	0.021	0.028
4	22 DMC 3	0.111	0.139	0.163
5	i C 5	0.835	1.038	1.230
6	n C 5	1.265	1.558	1.862
7	22 DMC 4	0.073	0.087	0.090
8	CYC 5	0.197	0.204	0.299
9	23 DMC 4	0.257	0.299	0.317
10	2 MC 5	1.234	1.456	1.521
11	3 MC 5	0.760	0.882	0.937
12	n C 6	2.565	2.995	3.162
13	22 DMC 5	0.080	0.091	0.085
14	M CYC 5	1.624	1.673	2.050
15	24 DMC 5	0.160	0.183	0.169
16	223 TMC 4	0.031	0.035	0.033
17	BZ	2.238	1.963	3.043
18	33 DMC 5	0.053	0.059	0.056
19	CYC 6	2.178	2.156	2.749
20	2 MC 6	1.083	1.231	1.148
21	23 DMC 5	0.279	0.310	0.296
22	11 DMCYC 5	0.239	0.244	0.259
23	3 MC 6	1.035	1.163	1.097
24	t 13 DMCYC 5	0.514	0.536	0.556
25	c 13 DMCYC 5	0.556	0.576	0.602
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	0.755	0.788	0.817
28	n C7	3.906	4.404	4.140
29	MCYC 6	8.778	8.795	9.496
30	22 DMC 6	0.179	0.199	0.167
31	ECYC 5	-	-	-
32	25 DMC 6	0.536	0.596	0.499
33	24 DMC 6	0.208	0.230	0.194
34	tc 124 TMCYC 5	0.217	0.219	0.206
35	234 TMC 5	0.058	0.062	0.054
36	tc 123 TMCYC 5	0.166	0.166	0.157
37	233 TMC 5	-	-	-
38	TOL	9.748	8.669	11.237
39	23 DMC 6	0.144	0.156	0.134
40	2 M 3 EC 5	0.029	0.031	0.027
41	2 MC 7	1.203	1.329	1.119
42	4 MC 7	0.359	0.393	0.334
43	34 DMC 6	0.071	0.076	0.066
44	tt 124 TMCYC 5	-	-	-
45	3 MC 7	0.955	1.041	0.888
46	1 M 2 E CYC 5	1.994	2.053	1.888

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	0.935	0.945	0.885
48	C 8-N	0.253	0.250	0.239
49	C 8-P	-	-	-
50	C 8-N	0.091	0.090	0.086
51	C 8-N	0.084	0.083	0.080
52	c 1 M 3 ECYC 6	0.109	0.110	0.091
53	C 8-P	0.029	0.031	0.027
54	t 12 DMCYC 6	0.760	0.736	0.719
55	n C 8	4.373	4.799	4.067
56	C 8-N	0.589	0.584	0.558
57	unk	0.033	0.034	0.030
58	C 9-P	0.062	0.067	0.051
59	unk	0.016	0.015	0.015
60	C 9-P	0.122	0.131	0.101
61	C 9-P	0.439	0.471	0.363
62	n C 3 CYC 5	1.283	1.274	1.214
63	N	0.009	0.009	0.008
64	113 TMCYC 6	0.354	0.350	0.298
65	C 9-P	0.248	0.266	0.206
66	C 9-P	0.086	0.093	0.072
67	N	0.013	0.013	0.013
68	N	0.013	0.013	0.013
69	N	0.031	0.030	0.029
70	E BZ	1.015	0.902	1.015
71	114 TMCYC 6	0.237	0.237	0.199
72	unk	0.022	0.022	0.020
73	unk	-	-	-
74	m+p XYL	11.926	10.710	11.934
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	0.377	0.403	0.312
79	2 MC 8	0.676	0.733	0.560
80	C 9-P	-	-	-
81	3 MC 8	0.669	0.716	0.554
82	N	0.117	0.118	0.111
83	o XYL	2.271	1.989	2.272
84	unk	-	-	-
85	unk	0.100	0.097	0.090
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	0.512	0.495	0.431
88	c 1 M 4 ECYC 6	0.253	0.250	0.213
89	N	-	-	-
90	N	0.109	0.107	0.091
91	N	-	-	-
92	n C9	4.099	4.403	3.394
93	1 M 1 ECYC 6	0.281	0.275	0.237
94	C 9-N	0.095	0.093	0.080
95	i PBZ	0.047	0.042	0.041
96	C 10-P	0.022	0.023	0.017
97	C 9-N	0.124	0.121	0.104
98	C 9-N	0.343	0.336	0.289
99	C 10-P	0.011	0.012	0.008
100	C 10-P	0.146	0.155	0.109
101	unk	0.117	0.114	0.096

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	0.113	0.120	0.084
103	s BCYC 5	0.631	0.617	0.531
104	C 10-P	-	-	-
105	C 10-P	-	-	-
106	3 MC 9	0.405	0.429	0.303
107	C 10-P	0.086	0.091	0.065
108	unk	-	-	-
109	unk	0.051	0.049	0.040
110	n PBZ	0.084	0.075	0.074
111	N	0.128	0.124	0.097
112	unk	0.366	0.354	0.289
113	unk	0.053	0.051	0.042
114	m E TOL	0.042	0.038	0.037
115	p E TOL	0.035	0.032	0.031
116	135 TM BZ	1.438	1.281	1.271
117	N	0.844	0.815	0.639
118	C 10-N	0.062	0.060	0.047
119	C 10-P	2.036	2.125	1.520
120	2 MC 9	0.254	0.268	0.189
121	o E TOL	0.254	0.222	0.224
122	C 10-P	0.053	0.056	0.040
123	36 DMC 8	0.636	0.673	0.475
124	N	0.124	0.120	0.094
125	C 10-N	0.080	0.077	0.060
126	124 TM BZ	3.126	2.752	2.763
127	C 10-N	-	-	-
128	N	0.168	0.163	0.128
129	C 10-N	0.111	0.107	0.084
130	N	0.018	0.017	0.013
131	N	-	-	-
132	N	-	-	-
133	C 10-P	-	-	-
134	n C 10	3.405	3.603	2.542
135	unk	0.102	0.097	0.081
136	unk	0.104	0.099	0.082
137	123 TM BZ	0.233	0.201	0.206
138	unk	0.673	0.646	0.516
139	unk	0.148	0.142	0.114
140	unk	-	-	-
141	unk	-	-	-
142	C 10-A	0.078	0.070	0.061
143	C 10-N	0.397	0.383	0.300
144	C 11-P	0.215	0.224	0.146
145	unk	-	-	-
146	C 10-N	0.354	0.342	0.268
147	unk	-	-	-
148	unk	0.115	0.109	0.087
149	C 10-A	0.069	0.062	0.054
150	C 10-A	0.366	0.328	0.289
151	C 10-A	0.018	0.016	0.014
152	unk	0.177	-	-
153	C 10-A	0.390	0.350	0.309
154	unk	0.049	0.047	0.036
155	unk	0.049	0.047	0.036
156	unk	0.126	0.122	0.093

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	0.155	0.139	0.123
159	C 11-P	0.157	0.164	0.107
160	C 11-P	0.160	0.166	0.108
161	C 11-P	0.020	0.021	0.014
162	C 10-A	0.078	0.070	0.061
163	C 11-P	0.128	0.134	0.087
164	C 10-A	0.075	0.068	0.060
165	unk	0.044	0.043	0.032
166	unk	0.022	0.021	0.016
167	unk	0.058	0.056	0.042
168	C 10-A	0.033	0.030	0.026
169	n C 11	0.483	0.504	0.328
170	unk	-	-	-
171	C 10-A	-	-	-
172	unk	-	-	-
173	C 10-A	0.053	0.048	0.042
174	unk	0.044	0.043	0.031
175	unk	0.029	0.028	0.020
176	unk	-	-	-
177	unk	-	-	-
178	unk	-	-	-
179	C 12-P	-	-	-
180	unk	-	-	-
181	unk	-	-	-
182	unk	-	-	-
183	unk	-	-	-
184	C 11-A	-	-	-
185	unk	-	-	-
186	C 12-P	-	-	-
187	C 11-A	-	-	-
188	unk	-	-	-
189	n C 12	-	-	-

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	37.001	40.954	35.677
Naphthenes	26.731	26.756	27.328
Aromatics	33.769	30.055	35.187
Unknowns	2.499	2.236	1.808
Olefins	<0.1	<0.1	<0.1
Average molecular weight	108.55	Density @ 15°C	0.7826

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
BZ = benzene; TOL = toluene; XYL = xylene; unk = unknown.
PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

Report: 04PEAD07987
Sample : YOLLA #4 From Condensate 2973 Sand, Cut 140-230°C

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	-	-	-
3	n C 4	-	-	-
4	22 DMC 3	-	-	-
5	i C 5	-	-	-
6	n C 5	-	-	-
7	22 DMC 4	-	-	-
8	CYC 5	-	-	-
9	23 DMC 4	-	-	-
10	2 MC 5	-	-	-
11	3 MC 5	-	-	-
12	n C 6	-	-	-
13	22 DMC 5	-	-	-
14	M CYC 5	-	-	-
15	24 DMC 5	-	-	-
16	223 TMC 4	-	-	-
17	BZ	-	-	-
18	33 DMC 5	-	-	-
19	CYC 6	-	-	-
20	2 MC 6	-	-	-
21	23 DMC 5	-	-	-
22	11 DMCYC 5	-	-	-
23	3 MC 6	-	-	-
24	t 13 DMCYC 5	-	-	-
25	c 13 DMCYC 5	-	-	-
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	-	-	-
28	n C7	-	-	-
29	MCYC 6	0.034	0.035	0.046
30	22 DMC 6	-	-	-
31	ECYC 5	-	-	-
32	25 DMC 6	-	-	-
33	24 DMC 6	-	-	-
34	tc 124 TMCYC 5	-	-	-
35	234 TMC 5	-	-	-
36	tc 123 TMCYC 5	-	-	-
37	233 TMC 5	-	-	-
38	TOL	0.105	0.095	0.150
39	23 DMC 6	-	-	-
40	2 M 3 EC 5	-	-	-
41	2 MC 7	0.031	0.035	0.036
42	4 MC 7	-	-	-
43	34 DMC 6	-	-	-
44	tt 124 TMCYC 5	-	-	-
45	3 MC 7	0.034	0.038	0.039
46	1 M 2 E CYC 5	0.170	0.178	0.199

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	0.082	0.085	0.096
48	C 8-N	0.023	0.023	0.027
49	C 8-P	-	-	-
50	C 8-N	-	-	-
51	C 8-N	-	-	-
52	c 1 M 3 ECYC 6	-	-	-
53	C 8-P	-	-	-
54	t 12 DMCYC 6	0.130	0.129	0.153
55	n C 8	0.565	0.634	0.652
56	C 8-N	0.107	0.109	0.126
57	unk	-	-	-
58	C 9-P	0.023	0.025	0.023
59	unk	-	-	-
60	C 9-P	0.051	0.056	0.052
61	C 9-P	0.223	0.245	0.229
62	n C 3 CYC 5	0.698	0.708	0.820
63	N	-	-	-
64	113 TMCYC 6	0.201	0.203	0.209
65	C 9-P	0.195	0.214	0.200
66	C 9-P	0.073	0.081	0.076
67	N	-	-	-
68	N	-	-	-
69	N	-	-	-
70	E BZ	0.690	0.627	0.856
71	114 TMCYC 6	0.291	0.298	0.304
72	unk	0.025	0.026	0.028
73	unk	0.136	0.136	0.149
74	m+p XYL	11.064	10.155	13.732
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	0.421	0.461	0.433
79	2 MC 8	0.814	0.902	0.836
80	C 9-P	-	-	-
81	3 MC 8	0.865	0.946	0.889
82	N	0.161	0.165	0.189
83	o XYL	3.120	2.793	3.873
84	unk	-	-	-
85	unk	0.161	0.161	0.180
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	0.899	0.888	0.938
88	c 1 M 4 ECYC 6	0.455	0.460	0.475
89	N	-	-	-
90	N	0.184	0.186	0.192
91	N	-	-	-
92	n C9	7.528	8.266	7.736
93	1 M 1 ECYC 6	0.548	0.548	0.572
94	C 9-N	0.187	0.186	0.195
95	i PBZ	0.288	0.265	0.316
96	C 10-P	0.042	0.046	0.039
97	C 9-N	0.260	0.260	0.271
98	C 9-N	0.687	0.686	0.717
99	C 10-P	0.023	0.024	0.021
100	C 10-P	0.311	0.336	0.288
101	unk	0.243	0.242	0.247

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	0.252	0.272	0.233
103	s BCYC 5	1.325	1.324	1.384
104	C 10-P	-	-	-
105	C 10-P	-	-	-
106	3 MC 9	0.876	0.947	0.812
107	C 10-P	0.178	0.193	0.165
108	unk	-	-	-
109	unk	-	-	-
110	n PBZ	0.294	0.269	0.322
111	N	0.274	0.270	0.258
112	unk	0.791	0.783	0.777
113	unk	0.110	0.109	0.108
114	m E TOL	0.088	0.080	0.096
115	p E TOL	0.073	0.067	0.081
116	135 TM BZ	3.191	2.905	3.498
117	N	1.874	1.849	1.761
118	C 10-N	0.122	0.120	0.114
119	C 10-P	4.589	4.895	4.251
120	2 MC 9	0.575	0.622	0.533
121	o E TOL	0.575	0.514	0.631
122	C 10-P	0.113	0.122	0.105
123	36 DMC 8	1.433	1.549	1.327
124	N	0.274	0.270	0.258
125	C 10-N	0.175	0.173	0.165
126	124 TM BZ	7.209	6.486	7.905
127	C 10-N	-	-	-
128	N	0.379	0.374	0.356
129	C 10-N	0.246	0.243	0.231
130	N	0.065	0.064	0.061
131	N	-	-	-
132	N	-	-	-
133	C 10-P	-	-	-
134	n C 10	8.308	8.984	7.696
135	unk	0.198	0.193	0.194
136	unk	0.240	0.234	0.236
137	123 TM BZ	0.574	0.505	0.629
138	unk	1.628	1.596	1.547
139	unk	0.362	0.355	0.344
140	unk	0.034	0.033	0.032
141	unk	-	-	-
142	C 10-A	0.192	0.176	0.189
143	C 10-N	1.003	0.990	0.943
144	C 11-P	0.551	0.588	0.465
145	unk	-	-	-
146	C 10-N	0.961	0.948	0.903
147	unk	-	-	-
148	unk	0.294	0.283	0.276
149	C 10-A	-	-	-
150	C 10-A	1.026	0.942	1.007
151	C 10-A	0.048	0.044	0.047
152	unk	-	-	-
153	C 10-A	1.238	1.136	1.216
154	unk	0.158	0.156	0.145
155	unk	0.153	0.151	0.140
156	unk	0.447	0.441	0.410

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	0.588	0.540	0.577
159	C 11-P	0.486	0.518	0.410
160	C 11-P	0.746	0.796	0.629
161	C 11-P	0.079	0.084	0.067
162	C 10-A	0.469	0.431	0.461
163	C 11-P	0.483	0.515	0.407
164	C 10-A	0.283	0.259	0.278
165	unk	0.266	0.262	0.241
166	unk	0.090	0.089	0.082
167	unk	0.359	0.354	0.326
168	C 10-A	0.203	0.187	0.200
169	n C 11	7.226	7.708	6.093
170	unk	-	-	-
171	C 10-A	0.203	0.187	0.200
172	unk	0.195	0.192	0.177
173	C 10-A	0.613	0.563	0.602
174	unk	0.695	0.682	0.602
175	unk	-	-	-
176	unk	0.554	0.543	0.479
177	unk	0.432	0.424	0.374
178	unk	0.317	0.310	0.274
179	C 12-P	0.565	0.595	0.437
180	unk	0.294	0.289	0.253
181	unk	0.223	0.219	0.192
182	unk	0.514	0.505	0.443
183	unk	0.249	0.244	0.214
184	C 11-A	0.345	0.316	0.307
185	unk	0.534	0.525	0.460
186	C 12-P	0.407	0.428	0.315
187	C 11-A	2.295	2.106	2.041
188	unk	0.322	0.317	0.278
189	n C 12	5.324	5.603	4.121

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	43.391	46.728	39.615
Naphthenes	11.813	11.771	11.963
Aromatics	34.772	31.647	39.214
Unknowns	10.024	9.854	9.208
Olefins	<0.1	<0.1	<0.1
Average molecular weight	133.15	Density @ 15°C	0.8196

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
BZ = benzene; TOL = toluene; XYL = xylene; unk = unknown.
PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

Report: 04PEAD07987
Sample : YOLLA #4 From Condensate 2973 Sand, Cut 190-230°C

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	-	-	-
3	n C 4	-	-	-
4	22 DMC 3	-	-	-
5	i C 5	-	-	-
6	n C 5	-	-	-
7	22 DMC 4	-	-	-
8	CYC 5	-	-	-
9	23 DMC 4	-	-	-
10	2 MC 5	-	-	-
11	3 MC 5	-	-	-
12	n C 6	-	-	-
13	22 DMC 5	-	-	-
14	M CYC 5	-	-	-
15	24 DMC 5	-	-	-
16	223 TMC 4	-	-	-
17	BZ	-	-	-
18	33 DMC 5	-	-	-
19	CYC 6	-	-	-
20	2 MC 6	-	-	-
21	23 DMC 5	-	-	-
22	11 DMCYC 5	-	-	-
23	3 MC 6	-	-	-
24	t 13 DMCYC 5	-	-	-
25	c 13 DMCYC 5	-	-	-
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	-	-	-
28	n C7	-	-	-
29	MCYC 6	-	-	-
30	22 DMC 6	-	-	-
31	ECYC 5	-	-	-
32	25 DMC 6	-	-	-
33	24 DMC 6	-	-	-
34	tc 124 TMCYC 5	-	-	-
35	234 TMC 5	-	-	-
36	tc 123 TMCYC 5	-	-	-
37	233 TMC 5	-	-	-
38	TOL	-	-	-
39	23 DMC 6	-	-	-
40	2 M 3 EC 5	-	-	-
41	2 MC 7	-	-	-
42	4 MC 7	-	-	-
43	34 DMC 6	-	-	-
44	tt 124 TMCYC 5	-	-	-
45	3 MC 7	-	-	-
46	1 M 2 E CYC 5	-	-	-

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	-	-	-
48	C 8-N	-	-	-
49	C 8-P	-	-	-
50	C 8-N	-	-	-
51	C 8-N	-	-	-
52	c 1 M 3 ECYC 6	-	-	-
53	C 8-P	-	-	-
54	t 12 DMCYC 6	-	-	-
55	n C 8	-	-	-
56	C 8-N	-	-	-
57	unk	-	-	-
58	C 9-P	-	-	-
59	unk	-	-	-
60	C 9-P	-	-	-
61	C 9-P	-	-	-
62	n C 3 CYC 5	-	-	-
63	N	-	-	-
64	113 TMCYC 6	-	-	-
65	C 9-P	-	-	-
66	C 9-P	-	-	-
67	N	-	-	-
68	N	-	-	-
69	N	-	-	-
70	E BZ	-	-	-
71	114 TMCYC 6	-	-	-
72	unk	-	-	-
73	unk	-	-	-
74	m+p XYL	-	-	-
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	-	-	-
79	2 MC 8	-	-	-
80	C 9-P	-	-	-
81	3 MC 8	-	-	-
82	N	-	-	-
83	o XYL	-	-	-
84	unk	-	-	-
85	unk	-	-	-
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	-	-	-
88	c 1 M 4 ECYC 6	-	-	-
89	N	-	-	-
90	N	-	-	-
91	N	-	-	-
92	n C9	0.023	0.025	0.028
93	1 M 1 ECYC 6	-	-	-
94	C 9-N	-	-	-
95	i PBZ	-	-	-
96	C 10-P	-	-	-
97	C 9-N	-	-	-
98	C 9-N	-	-	-
99	C 10-P	-	-	-
100	C 10-P	-	-	-
101	unk	-	-	-

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	-	-	-
103	s BCYC 5	-	-	-
104	C 10-P	-	-	-
105	C 10-P	-	-	-
106	3 MC 9	-	-	-
107	C 10-P	-	-	-
108	unk	-	-	-
109	unk	-	-	-
110	n PBZ	-	-	-
111	N	-	-	-
112	unk	-	-	-
113	unk	-	-	-
114	m E TOL	-	-	-
115	p E TOL	-	-	-
116	135 TM BZ	0.058	0.052	0.074
117	N	0.046	0.045	0.051
118	C 10-N	-	-	-
119	C 10-P	0.177	0.186	0.192
120	2 MC 9	0.035	0.037	0.037
121	o E TOL	0.035	0.031	0.044
122	C 10-P	-	-	-
123	36 DMC 8	0.081	0.086	0.087
124	N	-	-	-
125	C 10-N	-	-	-
126	124 TM BZ	0.758	0.673	0.971
127	C 10-N	-	-	-
128	N	0.065	0.064	0.072
129	C 10-N	-	-	-
130	N	-	-	-
131	N	-	-	-
132	N	-	-	-
133	C 10-P	-	-	-
134	n C 10	2.420	2.581	2.620
135	unk	0.038	0.037	0.044
136	unk	0.050	0.048	0.057
137	123 TM BZ	0.158	0.137	0.202
138	unk	0.508	0.491	0.564
139	unk	0.142	0.138	0.158
140	unk	-	-	-
141	unk	-	-	-
142	C 10-A	0.112	0.101	0.128
143	C 10-N	0.696	0.678	0.765
144	C 11-P	0.242	0.255	0.239
145	unk	-	-	-
146	C 10-N	0.692	0.674	0.760
147	unk	-	-	-
148	unk	0.173	0.164	0.190
149	C 10-A	-	-	-
150	C 10-A	0.846	0.766	0.971
151	C 10-A	0.050	0.045	0.057
152	unk	-	-	-
153	C 10-A	1.462	1.324	1.678
154	unk	0.204	0.198	0.219
155	unk	0.196	0.191	0.210
156	unk	0.673	0.655	0.722

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	0.900	0.815	1.033
159	C 11-P	0.596	0.627	0.588
160	C 11-P	1.558	1.639	1.535
161	C 11-P	0.154	0.162	0.152
162	C 10-A	1.235	1.118	1.417
163	C 11-P	0.750	0.789	0.739
164	C 10-A	0.485	0.439	0.556
165	unk	0.715	0.696	0.759
166	unk	0.265	0.258	0.281
167	unk	0.992	0.966	1.053
168	C 10-A	0.542	0.491	0.623
169	n C 11	25.096	26.410	24.734
170	unk	0.654	0.637	0.694
171	C 10-A	0.662	0.599	0.760
172	unk	0.489	0.476	0.518
173	C 10-A	2.027	1.836	2.327
174	unk	2.531	2.449	2.561
175	unk	-	-	-
176	unk	2.035	1.969	2.059
177	unk	1.577	1.526	1.596
178	unk	1.446	1.399	1.464
179	C 12-P	1.946	2.021	1.761
180	unk	1.281	1.242	1.290
181	unk	0.858	0.832	0.864
182	unk	2.058	1.995	2.073
183	unk	1.050	1.018	1.058
184	C 11-A	1.473	1.334	1.532
185	unk	2.350	2.278	2.368
186	C 12-P	1.785	1.853	1.615
187	C 11-A	9.609	8.701	9.989
188	unk	1.081	1.048	1.089
189	n C 12	21.857	22.695	19.772

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	56.720	59.367	54.099
Naphthenes	1.500	1.460	1.648
Aromatics	20.411	18.462	22.362
Unknowns	21.369	20.711	21.891
Olefins	<0.1	<0.1	<0.1
Average molecular weight	156.12	Density @ 15°C	0.8305

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
BZ = benzene; TOL = toluene; XYL = xylene; unk = unknown.
PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

23 September 2004

Upstream Origin Energy
Bass Gas Plant
GPO Box 2576
Adelaide
SA 5001

Attention: Joe Parvar

REPORT 04PEAD08860

CLIENT REFERENCE:

WELL NAME/RE: Yolla #4 From 2755 Sand

MATERIAL: Condensate

WORK REQUIRED: Crude oil assay

AUTHOR'S NAME: Mohammad Massoumi

Please direct technical enquiries regarding this work, to the signatory below, under whose supervision the work was carried out. This report relates specifically to the sample or samples submitted for testing.

Diane Cass
Operations Manager
Petroleum Services

dc.rn

\\jupiter\Petroleum\Secretary\petroleum\Docs-03\04pead08860.doc

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CRUDE OIL ASSAY

Yolla #4 Condensate from 2755 Sand

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PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD08860

Sample: Yolla #4 Condensate Sample
From 2755 Sand

Method		Description	Units	Condensate 2755
IP2	ASTM D611	Aniline Point	℃	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D250	Cloud Point	℃	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D262	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D405	Density @ 15°C	g/mL	0.7866
IP21		Diesel Index		-
	ASTM D518	Trace Elements		
		Silver	mg/kg	<1
		Aluminium	mg/kg	<1
		Boron	mg/kg	<1
		Barium	mg/kg	<1
		Calcium	mg/kg	<1
		Cadmium	mg/kg	<1
		Chromium	mg/kg	<1
		Copper	mg/kg	<1
		Iron	mg/kg	<1
		Magnesium	mg/kg	<1
		Manganese	mg/kg	<1
		Molybdenum	mg/kg	<1
		Sodium	mg/kg	<1
		Nickel	mg/kg	<1
		Phosphorus	mg/kg	1
		Lead	mg/kg	<1
		Silicon	mg/kg	<1
		Tin	mg/kg	<1
		Titanium	mg/kg	<1
		Vanadium	mg/kg	<1
		Zinc	mg/kg	<1
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	℃	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	℃	-
IP156	ASTM D131	Fluorescent Indicator Absorption Aromati	% vol	-
IP15	ASTM D97	Pour Point	℃	-
IP365	ASTM D405	Specific Gravity @ 60/60°F		0.7870
IP216		Total Contaminant	mg/L	-
	ASTM D227	Viscosity Index		-
IP289	ASTM D109	Water Reaction Interface Rating		-
	ASTM D400	Total Water And Sediment	%vol	-
	ASTM D400	Water And Sediment(Tube 1)	mL	-
	ASTM D400	Water And Sediment(Tube 2)	mL	-
IP160/9	ASTM D129	API Gravity	degrees	48.30

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 9-Dec-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD08860

CONDENSATE SAMPLE

TEST	UNIT	RESULT
Total Sulphur	mg/kg	108.43
Mercury	mg/kg	0.04
Kinematic Viscosity @ 25°C	cSt	1.241
Hydrogen Sulphide	mg/kg	<1
Mercaptans	mg/kg	1
Arsenic	ppb	<5
Lead	ppb	<20
Acid Number	mgKOH/g	0.025
Methanol	% wt	<1

TABLE 1

ASTM D2892 DISTILLATION AND DENSITIES : CONDENSATE YOLLA #4 FROM 2755 (Upstream Origin Energy) Report # 04PEAD08860

Temp (deg F)	Temp (deg C)	Density at 15 °C	Cumulative Weight (%)	Cumulative Volume (%)	Mid Volume (%)	Specific Gravity (60/60 °F)	API Gravity
LPG	LPG	0.6040	2.3	3.1	1.5	0.6042	102.7
158.0	70.0	0.6476	6.2	7.7	5.4	0.6478	86.9
212.0	100.0	0.7360	21.5	24.0	15.9	0.7362	60.7
248.0	120.0	0.7812	34.7	37.4	30.7	0.7814	49.6
284.0	140.0	0.7891	43.8	46.4	41.9	0.7893	47.8
302.0	150.0	0.7979	48.3	50.9	48.7	0.7982	45.8
338.0	170.0	0.7974	55.9	58.3	54.6	0.7977	45.9
374.0	190.0	0.7977	60.9	63.3	60.8	0.7980	45.8
446.0	230.0	0.8211	72.2	74.1	68.7	0.8215	40.7
504.5	262.5	0.8509	81.8	83.0	78.5	0.8513	34.7
626.0	330.0	0.8344	93.1	93.7	88.3	0.8348	38.0
626+	330+	0.8503	99.9	100.0	96.8	0.8507	34.8

This report relates specifically to the sample tested.

Approved Signatory _____

Mohammad Massoumi

Accreditation No: 2013

Date 17-Sep-04

TABLE 2

ASTM D2892 DISTILLATION AND DENSITIES
CONDENSATE YOLLA #4 FROM 2755 (Upstream Origin Energy)
Report # 04PEAD08860

Temp (deg F)	Temp (deg C)	Weight (%)	Volume (%)
LPG	LPG	2.3	3.1
158.0	70.0	3.9	4.7
212.0	100.0	15.3	16.3
248.0	120.0	13.2	13.3
284.0	140.0	9.0	9.0
302.0	150.0	4.6	4.5
338.0	170.0	7.5	7.4
374.0	190.0	5.0	5.0
446.0	230.0	11.3	10.8
504.5	262.5	9.6	8.9
626.0	330.0	11.3	10.7
626+	330+	6.8	6.3

This report relates specifically to the sample tested.

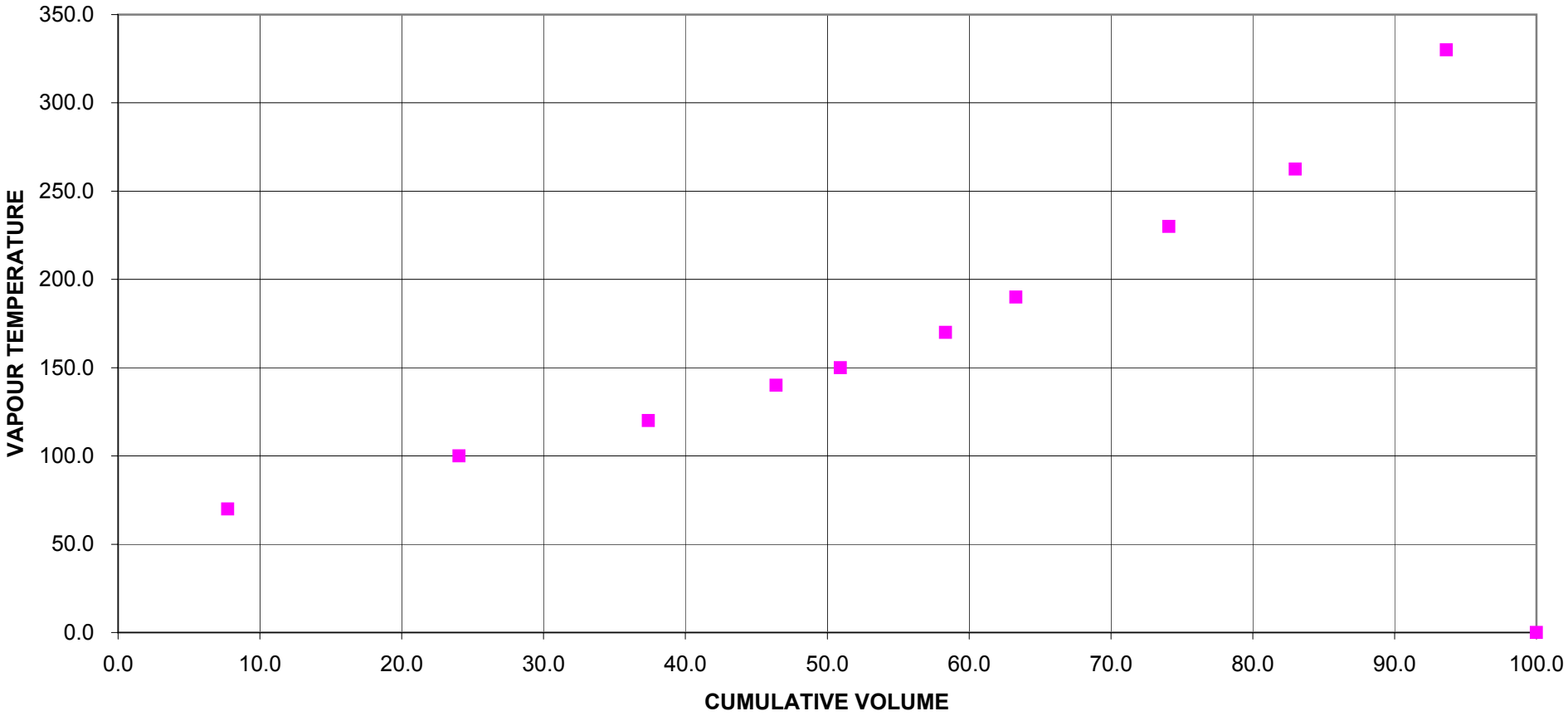
Approved Signatory _____

Mohammad Massoumi

Accreditation No: 2013

Date 17-Sep-04

TRUE BOILING POINT CURVE CRUDE OIL
Upstream Origin Energy Condensate Yolla #4 from 2755



PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD08860

Sample: Yolla #4 Condensate Sample
From 2755 Sand

Method		Description	Units	Cut C5-70°C 2755
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D250	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D262	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D405	Density @ 15°C	g/mL	0.6476
IP21		Diesel Index		-
	ASTM D518	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	°C	-
IP156	ASTM D131	Fluorescent Indicator Absorption Aromati	% vol	-
IP15	ASTM D97	Pour Point	°C	-
IP365	ASTM D405	Specific Gravity @ 60/60°F		0.6476
IP216		Total Contaminant	mg/L	-
	ASTM D227	Viscosity Index		-
IP289	ASTM D109	Water Reaction Interface Rating		-
	ASTM D400	Total Water And Sediment	%vol	-
	ASTM D400	Water And Sediment(Tube 1)	mL	-
	ASTM D400	Water And Sediment(Tube 2)	mL	-
IP160/9	ASTM D129	API Gravity	degrees	87.00

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 17-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD08860

CUT C5 – 70°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	4.40
Kinematic Viscosity @ 25°C	cSt	0.386

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD08860

Sample: Yolla #4 Condensate Sample
From 2755 Sand

Method		Description	Units	Cut 70-150°C 2755
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.7675
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	°C	-
IP156	ASTM D1319	Fluorescent Indicator Absorption Aromatics	% vol	-
IP15	ASTM D97	Pour Point	°C	-
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.7678
IP216		Total Contaminant	mg/L	-
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	52.79

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 17-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD08860

CUT 70 – 150°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	4.25
Kinematic Viscosity @ 25°C	cSt	0.628

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD08860

Sample: Yolla #4 Condensate Sample
From 2755 Sand

Method		Description	Units	Cut C5-190°C 2755
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.7664
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	°C	-
IP156	ASTM D1319	Fluorescent Indicator Absorption Aromatics	% vol	-
IP15	ASTM D97	Pour Point	°C	-
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.7667
IP216		Total Contaminant	mg/L	-
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	53.06

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 17-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD08860

CUT C5 – 190°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	5.27
Kinematic Viscosity @ 25°C	cSt	0.664

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD08860

Sample: Yolla #4 Condensate Sample
From 2755 Sand

Method		Description	Units	Cut 140-230°C 2755
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.8069
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP16	ASTM D2386	Freezing Point	°C	-57.5
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C	cSt	-
IP15	ASTM D97	Pour Point	°C	-
	ASTM D2386	Smoke Point	mm	19
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.8073
IP216		Total Contaminant	mg/L	-
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	43.78

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 17-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD08860

CUT 140 – 230°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	21.34
Kinematic Viscosity at 25°C	cSt	1.157

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD08860

Sample: Yolla #4 Condensate Sample
From 2755 Sand

Method		Description		Units	Cut 190-230°C 2755
IP2	ASTM D611	Aniline Point		°C	-
IP143		Asphaltenes		% wt	-
IP364	ASTM D976	Calculated Cetane Index			-
IP219	ASTM D2500	Cloud Point		°C	-
IP17		Colour by Lovibond Tintometer			-
IP274	ASTM D2624	Conductivity of Fuels		pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue		% wt	-
IP154	ASTM D130	Copper Corrosion			-
IP365	ASTM D4052	Density @ 15°C		g/mL	0.8211
IP21		Diesel Index			-
	ASTM D5185	Trace Elements			
			Silver	mg/L	-
			Aluminium	mg/L	-
			Boron	mg/L	-
			Barium	mg/L	-
			Calcium	mg/L	-
			Cadmium	mg/L	-
			Chromium	mg/L	-
			Copper	mg/L	-
			Iron	mg/L	-
			Magnesium	mg/L	-
			Manganese	mg/L	-
			Molybdenum	mg/L	-
			Sodium	mg/L	-
			Nickel	mg/L	-
			Phosphorus	mg/L	-
			Lead	mg/L	-
			Silicon	mg/L	-
			Tin	mg/L	-
			Titanium	mg/L	-
			Vanadium	mg/L	-
			Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C		cSt	-
IP16	ASTM D2386	Freezing Point		°C	-34.5
IP71	ASTM D445	Kinematic Viscosity @ 40°C		cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C		cSt	-
IP15	ASTM D97	Pour Point		°C	-
	ASTM D2386	Smoke Point		mm	17
IP365	ASTM D4052	Specific Gravity @ 60/60°F			0.8215
IP354	ASTM D3242	Total Acidity in Aviation Fuel		mgKOH/g	-
IP216		Total Contaminant		mg/L	-
	ASTM D2270	Viscosity Index			-
IP289	ASTM D1094	Water Reaction	Interface Rating		-
	ASTM D4007	Total Water And Sediment		%vol	-
	ASTM D4007	Water And Sediment(Tube 1)		mL	-
	ASTM D4007	Water And Sediment(Tube 2)		mL	-
IP160/96	ASTM D1298	API Gravity		degrees	40.75

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 17-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD08860

CUT 190 - 230°C

TEST	UNIT	RESULT
Kinematic Viscosity @ 25°C	cSt	1.831
Total Sulphur	mg/kg	41.87

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD08860

Sample: Yolla #4 Condensate Sample
From 2755 Sand

Method		Description	Units	Cut 230-330°C 2755
IP2	ASTM D611	Aniline Point	°C	73.4
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		52.3
IP219	ASTM D2500	Cloud Point	°C	0
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	0.07
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.8415
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	3.131
IP16	ASTM D2386	Freezing Point	°C	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C	cSt	-
IP15	ASTM D97	Pour Point	°C	-
	ASTM D2386	Smoke Point	mm	-
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.8419
	ASTM D5185	Total Sulphur	mg/kg	331
IP216		Total Contaminant	mg/L	-
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	36.57

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 17-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD08860

Sample: Yolla #4 Condensate Sample
From 2755 Sand

Method		Description	Units	Cut 330°C+ 2755
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson Carbon Residue	% wt	0.10
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.8503
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	<1
		Aluminium	mg/L	7
		Boron	mg/L	1
		Barium	mg/L	<1
		Calcium	mg/L	19
		Cadmium	mg/L	<1
		Chromium	mg/L	<1
		Copper	mg/L	<1
		Iron	mg/L	3
		Magnesium	mg/L	<1
		Manganese	mg/L	<1
		Molybdenum	mg/L	<1
		Sodium	mg/L	<1
		Nickel	mg/L	<1
		Phosphorus	mg/L	6
		Lead	mg/L	<1
		Silicon	mg/L	225
		Tin	mg/L	<1
		Titanium	mg/L	<1
		Vanadium	mg/L	<1
		Zinc	mg/L	<1
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP16	ASTM D2386	Freezing Point	°C	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C	cSt	-
IP15	ASTM D97	Pour Point	°C	42
	ASTM D2386	Smoke Point	mm	-
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.8507
	ASTM D5185	Total Sulphur	mg/kg	151
	ASTM D2270	Viscosity Index		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	34.80

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 17-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD08860

CUT 330°C+

TEST	UNIT	RESULT
Kinematic Viscosity @ 50°C	cSt	8.496

Report No: 04PEAD08860

METHODS

TEST	METHODS
True Boiling Point	ASTM D2892
Density-API Gravity	ASTM D4052
Kinematic Viscosity	ASTM D445
Sulphur Content	ASTM D5453, 5185
Trace Elements	ASTM D5185
PONA	GC (gas chromatography)
Smoke Point	ASTM D1322
Freezing Point	ASTM D2386
Conradson Carbon Residue	ASTM D189
Pour Point	ASTM D97
Cloud Point	ASTM D2500
Calculated Cetane Index	ASTM D976
Mercury	AAS
Aniline Point	ASTM D611
Hydrogen Sulphide	ASTM D3227
Mercaptans	ASTM D3227
Arsenic	UOP296
Lead	IP224
Acid Number	ASTM D974
Methanol	FTIR

APPENDIX

PETROLEUM SERVICES LIQUID ANALYSIS Method GL-02-01

Client: Upstream Origin Energy Resources Ltd (Bass Gas) Report # 04PEAD08860

Sample: YOLLA-4 COND SAMPLE
FROM 2755 SAND

Boiling Point Range (Deg.C)	Component	Weight%	Mol%
-88.6	ETHANE	0.09	0.39
-42.1	PROPANE	0.49	1.43
-11.7	I-BUTANE	0.43	0.94
-0.5	N-BUTANE	1.15	2.52
27.9	I-PENTANE	1.30	2.31
36.1	N-PENTANE	1.74	3.07
36.1-68.9	HEXANE, C-6	4.69	6.93
80.0	BENZENE	1.20	1.95
80.7	CYCLOHEXANE	1.77	2.69
68.9-98.3	HEPTANE,C-7	7.32	9.29
100.9	METHYLCYCLOHEXANE	5.64	7.33
110.6	TOLUENE	4.98	6.89
98.3-125.6	OCTANE, C-8	7.40	8.26
136.1-144.4	ETHYLBZ+XYLENES	7.24	8.69
125.6-150.6	C-9	5.94	5.91
150.6-173.9	C-10	8.40	7.52
173.9-196.1	C-11	5.26	4.29
196.1-215.0	C-12	4.18	3.13
215.0-235.0	C-13	4.68	3.24
235.0-252.2	C-14	3.55	2.28
252.2-270.6	C-15	4.04	2.42
270.6-287.8	C-16	2.85	1.60
287.8-302.8	C-17	2.14	1.14
302.8-317.2	C-18	2.78	1.40
317.2-330.0	C-19	1.70	0.81
330.0-344.4	C-20	1.40	0.63
344.4-357.2	C-21	1.37	0.59
357.2-369.4	C-22	1.31	0.54
369.4-380.0	C-23	1.24	0.49
380.0-391.1	C-24	1.03	0.39
391.1-401.7	C-25	0.89	0.32
401.7-412.2	C-26	0.67	0.23
412.2-422.2	C-27	0.52	0.18
>422.2	C-28+	0.61	0.20
	Total	100.00	100.00
	(0.00 = LESS THAN 0.01%)		

The above boiling point ranges refer to the normal paraffin hydrocarbon boiling in that range. Aromatics, branched hydrocarbons, naphthenes and olefins may have higher or lower carbon numbers but are grouped and reported according to their boiling points.

Average molecular weight of C-8 plus fraction (calc) = 149 g/mol

This report relates specifically to the sample submitted for analysis.

Approved Signatory
Accreditation No: 2013
Date 01-Sep-04

Report: 04PEAD8860
Sample : YOLLA #4 From Condensate 2755 Sand, Cut 70-150

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	-	-	-
3	n C 4	0.011	0.015	0.019
4	22 DMC 3	0.054	0.067	0.075
5	i C 5	0.157	0.195	0.218
6	n C 5	0.373	0.457	0.517
7	22 DMC 4	0.052	0.061	0.060
8	CYC 5	-	-	-
9	23 DMC 4	0.461	0.534	0.534
10	2 MC 5	1.633	1.915	1.892
11	3 MC 5	1.075	1.240	1.246
12	n C 6	4.260	4.944	4.936
13	22 DMC 5	0.130	0.148	0.130
14	M CYC 5	2.614	2.675	3.101
15	24 DMC 5	0.252	0.287	0.251
16	223 TMC 4	0.045	0.050	0.045
17	BZ	2.377	2.073	3.039
18	33 DMC 5	0.079	0.087	0.078
19	CYC 6	3.725	3.666	4.420
20	2 MC 6	1.635	1.846	1.629
21	23 DMC 5	0.461	0.508	0.459
22	11 DMCYC 5	0.351	0.356	0.357
23	3 MC 6	1.543	1.724	1.538
24	t 13 DMCYC 5	0.756	0.783	0.769
25	c 13 DMCYC 5	0.812	0.836	0.826
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	1.122	1.164	1.141
28	n C7	5.875	6.585	5.855
29	MCYC 6	12.169	12.118	12.375
30	22 DMC 6	0.268	0.295	0.234
31	ECYC 5	-	-	-
32	25 DMC 6	0.738	0.815	0.645
33	24 DMC 6	0.270	0.296	0.236
34	tc 124 TMCYC 5	0.396	0.398	0.352
35	234 TMC 5	-	-	-
36	tc 123 TMCYC 5	0.252	0.251	0.224
37	233 TMC 5	0.011	0.012	0.010
38	TOL	17.304	15.294	18.753
39	23 DMC 6	0.189	0.203	0.165
40	2 M 3 EC 5	0.112	0.120	0.098
41	2 MC 7	1.570	1.723	1.372
42	4 MC 7	0.443	0.482	0.387
43	34 DMC 6	0.094	0.101	0.083
44	tt 124 TMCYC 5	-	-	-
45	3 MC 7	1.143	1.239	0.999
46	1 M 2 E CYC 5	2.560	2.620	2.278

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	1.125	1.130	1.001
48	C 8-N	0.313	0.308	0.278
49	C 8-P	-	-	-
50	C 8-N	0.130	0.128	0.116
51	C 8-N	0.119	0.117	0.106
52	c 1 M 3 ECYC 6	0.164	0.166	0.130
53	C 8-P	0.036	0.039	0.031
54	t 12 DMCYC 6	0.956	0.920	0.851
55	n C 8	5.421	5.912	4.739
56	C 8-N	0.688	0.677	0.612
57	unk	0.045	0.045	0.039
58	C 9-P	0.074	0.079	0.058
59	unk	0.020	0.019	0.018
60	C 9-P	0.135	0.144	0.105
61	C 9-P	0.558	0.595	0.434
62	n C 3 CYC 5	1.446	1.428	1.287
63	N	0.011	0.011	0.010
64	113 TMCYC 6	0.346	0.340	0.274
65	C 9-P	0.261	0.278	0.203
66	C 9-P	0.088	0.094	0.068
67	N	0.020	0.020	0.018
68	N	0.022	0.022	0.020
69	N	0.045	0.044	0.040
70	E BZ	0.996	0.881	0.937
71	114 TMCYC 6	0.207	0.206	0.164
72	unk	0.022	0.022	0.019
73	unk	-	-	-
74	m+p XYL	10.614	9.474	9.983
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	0.324	0.345	0.252
79	2 MC 8	0.612	0.660	0.476
80	C 9-P	-	-	-
81	3 MC 8	0.565	0.600	0.440
82	N	0.094	0.094	0.084
83	o XYL	1.804	1.570	1.697
84	unk	-	-	-
85	unk	0.074	0.072	0.063
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	0.353	0.339	0.279
88	c 1 M 4 ECYC 6	0.153	0.150	0.121
89	N	-	-	-
90	N	0.079	0.077	0.062
91	N	-	-	-
92	n C9	2.589	2.764	2.016
93	1 M 1 ECYC 6	0.144	0.140	0.114
94	C 9-N	0.045	0.044	0.036
95	i PBZ	0.070	0.062	0.058
96	C 10-P	0.013	0.014	0.009
97	C 9-N	0.045	0.044	0.036
98	C 9-N	0.162	0.157	0.128
99	C 10-P	-	-	-
100	C 10-P	0.047	0.050	0.033
101	unk	0.040	0.039	0.031

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	0.025	0.026	0.017
103	s BCYC 5	0.205	0.199	0.162
104	C 10-P	-	-	-
105	C 10-P	0.117	0.123	0.082
106	3 MC 9	-	-	-
107	C 10-P	0.022	0.024	0.016
108	unk	-	-	-
109	unk	0.018	0.017	0.013
110	n PBZ	-	-	-
111	N	0.061	0.058	0.043
112	unk	0.085	0.082	0.064
113	unk	0.013	0.013	0.010
114	m E TOL	0.011	0.010	0.009
115	p E TOL	-	-	-
116	135 TM BZ	0.270	0.239	0.224
117	N	0.139	0.134	0.099
118	C 10-N	0.013	0.013	0.010
119	C 10-P	0.180	0.187	0.126
120	2 MC 9	0.024	0.025	0.017
121	o E TOL	0.024	0.021	0.020
122	C 10-P	-	-	-
123	36 DMC 8	0.061	0.064	0.043
124	N	-	-	-
125	C 10-N	-	-	-
126	124 TM BZ	0.175	0.153	0.146
127	C 10-N	-	-	-
128	N	-	-	-
129	C 10-N	-	-	-
130	N	-	-	-
131	N	-	-	-
132	N	-	-	-
133	C 10-P	-	-	-
134	n C 10	0.090	0.095	0.063
135	unk	-	-	-
136	unk	-	-	-
137	123 TM BZ	-	-	-
138	unk	0.013	0.013	0.010
139	unk	-	-	-
140	unk	-	-	-
141	unk	-	-	-
142	C 10-A	-	-	-
143	C 10-N	-	-	-
144	C 11-P	-	-	-
145	unk	-	-	-
146	C 10-N	-	-	-
147	unk	-	-	-
148	unk	-	-	-
149	C 10-A	-	-	-
150	C 10-A	-	-	-
151	C 10-A	-	-	-
152	unk	-	-	-
153	C 10-A	-	-	-
154	unk	-	-	-
155	unk	-	-	-
156	unk	-	-	-

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	-	-	-
159	C 11-P	-	-	-
160	C 11-P	-	-	-
161	C 11-P	-	-	-
162	C 10-A	-	-	-
163	C 11-P	-	-	-
164	C 10-A	-	-	-
165	unk	-	-	-
166	unk	-	-	-
167	unk	-	-	-
168	C 10-A	-	-	-
169	n C 11	-	-	-
170	unk	-	-	-
171	C 10-A	-	-	-
172	unk	-	-	-
173	C 10-A	-	-	-
174	unk	-	-	-
175	unk	-	-	-
176	unk	-	-	-
177	unk	-	-	-
178	unk	-	-	-
179	C 12-P	-	-	-
180	unk	-	-	-
181	unk	-	-	-
182	unk	-	-	-
183	unk	-	-	-
184	C 11-A	-	-	-
185	unk	-	-	-
186	C 12-P	-	-	-
187	C 11-A	-	-	-
188	unk	-	-	-
189	n C 12	-	-	-

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	34.179	38.067	32.943
Naphthenes	31.843	31.833	31.924
Aromatics	33.646	29.777	34.866
Unknowns	0.333	0.323	0.267
Olefins	<0.1	<0.1	<0.1
Average molecular weight	101.37	Denisty @ 15°C	0.7675

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
BZ = benzene; TOL = toluene; XYL = xylene; unk = unknown.
PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

Report: 04PEAD8860
Sample : YOLLA #4 From Condensate 2755 Sand, Cut C5-190

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	0.005	0.007	0.009
3	n C 4	0.037	0.049	0.066
4	22 DMC 3	0.267	0.332	0.381
5	i C 5	1.489	1.830	2.122
6	n C 5	2.341	2.850	3.336
7	22 DMC 4	0.105	0.123	0.125
8	CYC 5	0.352	0.360	0.516
9	23 DMC 4	0.345	0.397	0.411
10	2 MC 5	1.826	2.131	2.179
11	3 MC 5	1.069	1.227	1.276
12	n C 6	3.684	4.254	4.397
13	22 DMC 5	0.102	0.116	0.105
14	M CYC 5	2.133	2.173	2.607
15	24 DMC 5	0.192	0.218	0.197
16	223 TMC 4	0.035	0.039	0.036
17	BZ	1.936	1.680	2.548
18	33 DMC 5	0.060	0.066	0.062
19	CYC 6	2.838	2.779	3.467
20	2 MC 6	1.214	1.364	1.246
21	23 DMC 5	0.342	0.375	0.351
22	11 DMCYC 5	0.262	0.265	0.275
23	3 MC 6	1.144	1.272	1.174
24	t 13 DMCYC 5	0.562	0.579	0.589
25	c 13 DMCYC 5	1.102	1.129	1.154
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	0.832	0.859	0.871
28	n C7	4.329	4.827	4.442
29	MCYC 6	8.968	8.886	9.392
30	22 DMC 6	0.197	0.216	0.178
31	ECYC 5	0.185	0.184	0.194
32	25 DMC 6	0.357	0.393	0.322
33	24 DMC 6	-	-	-
34	tc 124 TMCYC 5	0.075	0.075	0.069
35	234 TMC 5	-	-	-
36	tc 123 TMCYC 5	0.185	0.183	0.169
37	233 TMC 5	-	-	-
38	TOL	12.769	11.229	14.252
39	23 DMC 6	0.140	0.150	0.126
40	2 M 3 EC 5	0.037	0.040	0.034
41	2 MC 7	1.157	1.263	1.041
42	4 MC 7	0.327	0.354	0.295
43	34 DMC 6	0.070	0.074	0.063
44	tt 124 TMCYC 5	-	-	-
45	3 MC 7	0.844	0.911	0.760
46	1 M 2 E CYC 5	1.906	1.941	1.747

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	0.839	0.839	0.769
48	C 8-N	0.232	0.227	0.213
49	C 8-P	-	-	-
50	C 8-N	0.097	0.095	0.089
51	C 8-N	0.090	0.088	0.082
52	c 1 M 3 ECYC 6	0.122	0.123	0.100
53	C 8-P	0.027	0.030	0.025
54	t 12 DMCYC 6	0.719	0.689	0.659
55	n C 8	4.054	4.400	3.650
56	C 8-N	0.517	0.506	0.474
57	unk	0.035	0.035	0.031
58	C 9-P	0.057	0.061	0.046
59	unk	0.017	0.017	0.016
60	C 9-P	0.105	0.111	0.084
61	C 9-P	0.442	0.469	0.354
62	n C 3 CYC 5	1.147	1.126	1.051
63	N	0.010	0.010	0.009
64	113 TMCYC 6	0.277	0.271	0.226
65	C 9-P	0.220	0.233	0.176
66	C 9-P	0.075	0.079	0.060
67	N	0.017	0.017	0.016
68	N	0.017	0.017	0.016
69	N	-	-	-
70	E BZ	0.812	0.714	0.786
71	114 TMCYC 6	0.200	0.198	0.163
72	unk	0.020	0.019	0.017
73	unk	0.202	0.196	0.173
74	m+p XYL	8.955	7.953	8.674
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	0.295	0.312	0.236
79	2 MC 8	0.580	0.622	0.465
80	C 9-P	0.067	0.072	0.054
81	3 MC 8	0.482	0.510	0.387
82	N	0.097	0.097	0.089
83	o XYL	1.801	1.560	1.744
84	unk	-	-	-
85	unk	0.090	0.087	0.078
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	0.460	0.439	0.374
88	c 1 M 4 ECYC 6	0.215	0.210	0.175
89	N	-	-	-
90	N	0.100	0.098	0.081
91	N	-	-	-
92	n C9	3.602	3.827	2.888
93	1 M 1 ECYC 6	0.252	0.244	0.206
94	C 9-N	0.082	0.080	0.067
95	i PBZ	0.112	0.100	0.096
96	C 10-P	0.027	0.029	0.020
97	C 9-N	0.100	0.097	0.081
98	C 9-N	0.320	0.309	0.260
99	C 10-P	0.012	0.013	0.009
100	C 10-P	0.120	0.125	0.087
101	unk	0.097	0.094	0.077

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	0.087	0.091	0.063
103	s BCYC 5	0.527	0.510	0.429
104	C 10-P	-	-	-
105	C 10-P	0.170	0.178	0.123
106	3 MC 9	0.207	0.217	0.150
107	C 10-P	0.077	0.081	0.056
108	unk	-	-	-
109	unk	-	-	-
110	n PBZ	0.092	0.082	0.079
111	N	0.207	0.198	0.152
112	unk	0.280	0.268	0.214
113	unk	0.047	0.045	0.036
114	m E TOL	0.040	0.035	0.034
115	p E TOL	0.030	0.027	0.026
116	135 TM BZ	1.047	0.922	0.895
117	N	0.657	0.627	0.482
118	C 10-N	0.055	0.052	0.040
119	C 10-P	1.254	1.294	0.906
120	2 MC 9	0.214	0.223	0.154
121	o E TOL	0.214	0.185	0.183
122	C 10-P	0.040	0.042	0.029
123	36 DMC 8	0.487	0.510	0.352
124	N	0.107	0.103	0.079
125	C 10-N	0.065	0.062	0.048
126	124 TM BZ	2.188	1.905	1.872
127	C 10-N	-	-	-
128	N	0.130	0.124	0.095
129	C 10-N	0.090	0.086	0.066
130	N	-	-	-
131	N	-	-	-
132	N	-	-	-
133	C 10-P	-	-	-
134	n C 10	2.913	3.047	2.105
135	unk	0.067	0.064	0.052
136	unk	0.070	0.066	0.054
137	123 TM BZ	0.157	0.134	0.135
138	unk	0.472	0.448	0.350
139	unk	0.110	0.104	0.082
140	unk	-	-	-
141	unk	0.062	0.059	0.046
142	C 10-A	0.062	0.055	0.048
143	C 10-N	0.367	0.351	0.269
144	C 11-P	0.155	0.160	0.102
145	unk	-	-	-
146	C 10-N	0.245	0.234	0.179
147	unk	0.085	0.081	0.061
148	unk	0.087	0.081	0.064
149	C 10-A	0.047	0.042	0.036
150	C 10-A	0.235	0.209	0.180
151	C 10-A	-	-	-
152	unk	0.112	-	-
153	C 10-A	0.275	0.244	0.211
154	unk	0.037	0.036	0.027
155	unk	-	-	-
156	unk	0.105	0.100	0.075

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	0.120	0.106	0.092
159	C 11-P	0.095	0.098	0.062
160	C 11-P	0.170	0.175	0.112
161	C 11-P	0.010	0.010	0.007
162	C 10-A	0.090	0.080	0.069
163	C 11-P	0.092	0.095	0.061
164	C 10-A	0.052	0.047	0.040
165	unk	0.040	0.038	0.028
166	unk	0.020	0.019	0.014
167	unk	0.050	0.048	0.035
168	C 10-A	0.027	0.024	0.021
169	n C 11	1.009	1.042	0.664
170	unk	-	-	-
171	C 10-A	-	-	-
172	unk	-	-	-
173	C 10-A	0.060	0.053	0.046
174	unk	0.057	0.055	0.039
175	unk	-	-	-
176	unk	0.037	0.036	0.025
177	unk	-	-	-
178	unk	-	-	-
179	C 12-P	-	-	-
180	unk	-	-	-
181	unk	-	-	-
182	unk	-	-	-
183	unk	-	-	-
184	C 11-A	-	-	-
185	unk	-	-	-
186	C 12-P	-	-	-
187	C 11-A	-	-	-
188	unk	-	-	-
189	n C 12	0.047	0.048	0.029

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	38.912	43.082	38.250
Naphthenes	27.762	27.536	28.089
Aromatics	31.123	27.386	32.067
Unknowns	2.203	1.996	1.594
Olefins	<0.1	<0.1	<0.1
Average molecular weight	105.47	Denisty @ 15°C	0.7667

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
BZ = benzene; TOL = toluene; XYL = xylene; unk = unknown.
PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

Report: 04PEAD8860
Sample : YOLLA #4 From Condensate 2755 Sand, Cut 140-230

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	-	-	-
3	n C 4	-	-	-
4	22 DMC 3	0.006	0.008	0.011
5	i C 5	0.006	0.007	0.011
6	n C 5	0.009	0.011	0.016
7	22 DMC 4	-	-	-
8	CYC 5	-	-	-
9	23 DMC 4	-	-	-
10	2 MC 5	-	-	-
11	3 MC 5	-	-	-
12	n C 6	-	-	-
13	22 DMC 5	-	-	-
14	M CYC 5	-	-	-
15	24 DMC 5	-	-	-
16	223 TMC 4	-	-	-
17	BZ	-	-	-
18	33 DMC 5	-	-	-
19	CYC 6	-	-	-
20	2 MC 6	-	-	-
21	23 DMC 5	-	-	-
22	11 DMCYC 5	-	-	-
23	3 MC 6	-	-	-
24	t 13 DMCYC 5	-	-	-
25	c 13 DMCYC 5	-	-	-
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	-	-	-
28	n C7	0.029	0.034	0.039
29	MCYC 6	0.118	0.120	0.159
30	22 DMC 6	-	-	-
31	ECYC 5	-	-	-
32	25 DMC 6	-	-	-
33	24 DMC 6	-	-	-
34	tc 124 TMCYC 5	-	-	-
35	234 TMC 5	-	-	-
36	tc 123 TMCYC 5	-	-	-
37	233 TMC 5	-	-	-
38	TOL	0.412	0.374	0.594
39	23 DMC 6	-	-	-
40	2 M 3 EC 5	-	-	-
41	2 MC 7	0.094	0.106	0.109
42	4 MC 7	-	-	-
43	34 DMC 6	-	-	-
44	tt 124 TMCYC 5	0.085	0.090	0.101
45	3 MC 7	0.085	0.095	0.099
46	1 M 2 E CYC 5	0.312	0.328	0.369

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	0.138	0.143	0.164
48	C 8-N	0.038	0.039	0.045
49	C 8-P	0.018	0.020	0.021
50	C 8-N	0.015	0.015	0.017
51	C 8-N	0.015	0.015	0.017
52	c 1 M 3 ECYC 6	0.021	0.021	0.022
53	C 8-P	-	-	-
54	t 12 DMCYC 6	0.200	0.198	0.237
55	n C 8	1.008	1.128	1.170
56	C 8-N	0.150	0.152	0.178
57	unk	0.018	0.018	0.020
58	C 9-P	0.032	0.035	0.034
59	unk	-	-	-
60	C 9-P	0.065	0.071	0.067
61	C 9-P	0.324	0.355	0.335
62	n C 3 CYC 5	0.863	0.874	1.020
63	N	-	-	-
64	113 TMCYC 6	0.224	0.226	0.235
65	C 9-P	0.227	0.248	0.235
66	C 9-P	0.082	0.090	0.085
67	N	0.018	0.018	0.021
68	N	0.018	0.018	0.021
69	N	0.038	0.038	0.045
70	E BZ	0.704	0.639	0.879
71	114 TMCYC 6	0.303	0.310	0.319
72	unk	0.027	0.027	0.029
73	unk	0.259	0.260	0.286
74	m+p XYL	10.321	9.452	12.889
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	0.421	0.460	0.436
79	2 MC 8	0.878	0.971	0.908
80	C 9-P	0.088	0.097	0.091
81	3 MC 8	0.798	0.871	0.825
82	N	0.165	0.169	0.195
83	o XYL	2.935	2.621	3.665
84	unk	-	-	-
85	unk	0.186	0.185	0.208
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	0.958	0.944	1.006
88	c 1 M 4 ECYC 6	0.463	0.466	0.486
89	N	-	-	-
90	N	0.200	0.202	0.210
91	N	-	-	-
92	n C9	7.911	8.667	8.178
93	1 M 1 ECYC 6	0.586	0.585	0.616
94	C 9-N	0.192	0.191	0.201
95	i PBZ	0.259	0.237	0.286
96	C 10-P	0.068	0.073	0.063
97	C 9-N	0.247	0.247	0.260
98	C 9-N	0.766	0.764	0.805
99	C 10-P	0.029	0.032	0.027
100	C 10-P	0.301	0.324	0.280
101	unk	0.239	0.237	0.244

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	0.233	0.251	0.217
103	s BCYC 5	1.314	1.310	1.380
104	C 10-P	-	-	-
105	C 10-P	0.336	0.362	0.313
106	3 MC 9	0.934	1.008	0.870
107	C 10-P	0.197	0.213	0.184
108	unk	-	-	-
109	unk	-	-	-
110	n PBZ	0.124	0.113	0.137
111	N	0.507	0.499	0.479
112	unk	0.722	0.713	0.713
113	unk	0.115	0.113	0.113
114	m E TOL	0.097	0.088	0.107
115	p E TOL	0.074	0.067	0.081
116	135 TM BZ	2.764	2.511	3.049
117	N	1.735	1.708	1.640
118	C 10-N	0.141	0.139	0.134
119	C 10-P	3.768	4.011	3.512
120	2 MC 9	0.589	0.636	0.549
121	o E TOL	0.589	0.526	0.650
122	C 10-P	0.106	0.114	0.099
123	36 DMC 8	1.335	1.440	1.244
124	N	0.298	0.293	0.281
125	C 10-N	0.183	0.180	0.173
126	124 TM BZ	6.140	5.512	6.773
127	C 10-N	-	-	-
128	N	0.368	0.363	0.348
129	C 10-N	0.256	0.252	0.242
130	N	0.053	0.052	0.050
131	N	-	-	-
132	N	0.018	0.017	0.017
133	C 10-P	-	-	-
134	n C 10	8.600	9.279	8.014
135	unk	0.165	0.161	0.163
136	unk	0.203	0.198	0.201
137	123 TM BZ	0.477	0.420	0.527
138	unk	1.399	1.369	1.338
139	unk	0.368	0.360	0.352
140	unk	-	-	-
141	unk	-	-	-
142	C 10-A	0.186	0.170	0.183
143	C 10-N	1.137	1.120	1.075
144	C 11-P	0.495	0.527	0.420
145	unk	-	-	-
146	C 10-N	0.837	0.824	0.791
147	unk	-	-	-
148	unk	0.277	0.266	0.261
149	C 10-A	-	-	-
150	C 10-A	0.798	0.731	0.789
151	C 10-A	0.041	0.038	0.041
152	unk	0.404	-	-
153	C 10-A	0.993	0.909	0.981
154	unk	0.150	0.148	0.139
155	unk	0.138	0.136	0.128
156	unk	0.412	0.406	0.381

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	0.498	0.456	0.492
159	C 11-P	0.445	0.474	0.377
160	C 11-P	0.784	0.834	0.665
161	C 11-P	0.077	0.082	0.065
162	C 10-A	0.457	0.418	0.451
163	C 11-P	0.389	0.414	0.330
164	C 10-A	0.239	0.219	0.236
165	unk	0.247	0.244	0.226
166	unk	0.124	0.122	0.113
167	unk	0.295	0.290	0.269
168	C 10-A	0.159	0.146	0.157
169	n C 11	7.749	8.247	6.573
170	unk	-	-	-
171	C 10-A	0.200	0.183	0.198
172	unk	0.168	0.165	0.153
173	C 10-A	0.468	0.429	0.463
174	unk	0.530	0.519	0.462
175	unk	-	-	-
176	unk	0.557	0.545	0.485
177	unk	0.412	0.404	0.359
178	unk	0.510	0.499	0.444
179	C 12-P	0.489	0.514	0.381
180	unk	0.268	0.263	0.232
181	unk	0.180	0.176	0.156
182	unk	0.330	0.324	0.286
183	unk	0.253	0.248	0.220
184	C 11-A	0.330	0.302	0.295
185	unk	0.645	0.633	0.559
186	C 12-P	0.395	0.415	0.307
187	C 11-A	1.564	1.433	1.400
188	unk	0.262	0.257	0.227
189	n C 12	6.924	7.271	5.391

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	46.325	49.793	42.551
Naphthenes	12.981	12.929	13.359
Aromatics	30.830	27.994	35.323
Unknowns	9.864	9.284	8.767
Olefins	<0.1	<0.1	<0.1
Average molecular weight	133.72	Denisty @ 15°C	0.807

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
BZ = benzene; TOL = toluene; XYL = xylene; unk = unknown.
PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

Report: 04PEAD8860
Sample : YOLLA #4 From Condensate 2755 Sand, Cut 190-230

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	-	-	-
3	n C 4	-	-	-
4	22 DMC 3	-	-	-
5	i C 5	-	-	-
6	n C 5	-	-	-
7	22 DMC 4	-	-	-
8	CYC 5	-	-	-
9	23 DMC 4	-	-	-
10	2 MC 5	-	-	-
11	3 MC 5	-	-	-
12	n C 6	-	-	-
13	22 DMC 5	-	-	-
14	M CYC 5	-	-	-
15	24 DMC 5	-	-	-
16	223 TMC 4	-	-	-
17	BZ	-	-	-
18	33 DMC 5	-	-	-
19	CYC 6	-	-	-
20	2 MC 6	-	-	-
21	23 DMC 5	-	-	-
22	11 DMCYC 5	-	-	-
23	3 MC 6	-	-	-
24	t 13 DMCYC 5	-	-	-
25	c 13 DMCYC 5	-	-	-
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	-	-	-
28	n C7	-	-	-
29	MCYC 6	-	-	-
30	22 DMC 6	-	-	-
31	ECYC 5	-	-	-
32	25 DMC 6	-	-	-
33	24 DMC 6	-	-	-
34	tc 124 TMCYC 5	-	-	-
35	234 TMC 5	-	-	-
36	tc 123 TMCYC 5	-	-	-
37	233 TMC 5	-	-	-
38	TOL	0.038	0.034	0.063
39	23 DMC 6	-	-	-
40	2 M 3 EC 5	-	-	-
41	2 MC 7	-	-	-
42	4 MC 7	-	-	-
43	34 DMC 6	-	-	-
44	tt 124 TMCYC 5	-	-	-
45	3 MC 7	-	-	-
46	1 M 2 E CYC 5	-	-	-

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	-	-	-
48	C 8-N	-	-	-
49	C 8-P	-	-	-
50	C 8-N	-	-	-
51	C 8-N	-	-	-
52	c 1 M 3 ECYC 6	-	-	-
53	C 8-P	-	-	-
54	t 12 DMCYC 6	-	-	-
55	n C 8	0.028	0.031	0.038
56	C 8-N	-	-	-
57	unk	-	-	-
58	C 9-P	-	-	-
59	unk	-	-	-
60	C 9-P	-	-	-
61	C 9-P	-	-	-
62	n C 3 CYC 5	-	-	-
63	N	-	-	-
64	113 TMCYC 6	-	-	-
65	C 9-P	-	-	-
66	C 9-P	-	-	-
67	N	-	-	-
68	N	-	-	-
69	N	-	-	-
70	E BZ	-	-	-
71	114 TMCYC 6	-	-	-
72	unk	-	-	-
73	unk	-	-	-
74	m+p XYL	0.160	0.144	0.234
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	-	-	-
79	2 MC 8	-	-	-
80	C 9-P	-	-	-
81	3 MC 8	-	-	-
82	N	-	-	-
83	o XYL	0.052	0.046	0.076
84	unk	-	-	-
85	unk	-	-	-
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	0.023	0.023	0.029
88	c 1 M 4 ECYC 6	-	-	-
89	N	-	-	-
90	N	-	-	-
91	N	-	-	-
92	n C9	0.188	0.203	0.227
93	1 M 1 ECYC 6	0.023	0.023	0.029
94	C 9-N	-	-	-
95	i PBZ	-	-	-
96	C 10-P	-	-	-
97	C 9-N	-	-	-
98	C 9-N	0.033	0.032	0.040
99	C 10-P	-	-	-
100	C 10-P	-	-	-
101	unk	-	-	-

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	-	-	-
103	s BCYC 5	0.075	0.074	0.092
104	C 10-P	0.019	0.020	0.021
105	C 10-P	0.042	0.045	0.046
106	3 MC 9	-	-	-
107	C 10-P	-	-	-
108	unk	-	-	-
109	unk	-	-	-
110	n PBZ	0.038	0.034	0.049
111	N	0.052	0.050	0.057
112	unk	-	-	-
113	unk	-	-	-
114	m E TOL	-	-	-
115	p E TOL	-	-	-
116	135 TM BZ	0.207	0.185	0.267
117	N	0.169	0.164	0.187
118	C 10-N	-	-	-
119	C 10-P	0.413	0.434	0.451
120	2 MC 9	0.094	0.100	0.103
121	o E TOL	0.094	0.083	0.121
122	C 10-P	-	-	-
123	36 DMC 8	0.202	0.215	0.220
124	N	0.070	0.068	0.078
125	C 10-N	0.042	0.041	0.047
126	124 TM BZ	1.333	1.181	1.723
127	C 10-N	-	-	-
128	N	0.160	0.155	0.177
129	C 10-N	0.089	0.087	0.099
130	N	-	-	-
131	N	-	-	-
132	N	-	-	-
133	C 10-P	-	-	-
134	n C 10	3.300	3.514	3.603
135	unk	0.070	0.068	0.081
136	unk	0.084	0.081	0.098
137	123 TM BZ	0.211	0.183	0.273
138	unk	0.638	0.616	0.715
139	unk	0.221	0.213	0.247
140	unk	-	-	-
141	unk	-	-	-
142	C 10-A	0.131	0.119	0.152
143	C 10-N	0.864	0.839	0.957
144	C 11-P	0.390	0.409	0.387
145	unk	0.089	0.087	0.096
146	C 10-N	0.798	0.775	0.884
147	unk	-	-	-
148	unk	0.211	0.200	0.234
149	C 10-A	0.197	0.178	0.228
150	C 10-A	0.742	0.670	0.859
151	C 10-A	0.066	0.059	0.076
152	unk	0.427	-	-
153	C 10-A	1.108	1.001	1.282
154	unk	0.225	0.219	0.244
155	unk	0.207	0.201	0.223
156	unk	0.563	0.547	0.609

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	0.681	0.615	0.788
159	C 11-P	0.840	0.883	0.835
160	C 11-P	1.389	1.459	1.381
161	C 11-P	0.141	0.148	0.140
162	C 10-A	0.929	0.840	1.076
163	C 11-P	0.620	0.651	0.616
164	C 10-A	0.455	0.412	0.527
165	unk	0.657	0.638	0.703
166	unk	0.352	0.342	0.377
167	unk	0.732	0.711	0.783
168	C 10-A	0.394	0.356	0.456
169	n C 11	21.596	22.685	21.464
170	unk	-	-	-
171	C 10-A	0.554	0.501	0.641
172	unk	0.479	0.465	0.512
173	C 10-A	1.342	1.213	1.554
174	unk	1.629	1.573	1.662
175	unk	0.108	0.104	0.110
176	unk	1.939	1.872	1.978
177	unk	1.328	1.283	1.356
178	unk	1.901	1.836	1.940
179	C 12-P	1.765	1.829	1.610
180	unk	1.009	0.976	1.025
181	unk	0.685	0.663	0.696
182	unk	1.033	0.999	1.049
183	unk	0.850	0.822	0.863
184	C 11-A	1.347	1.218	1.412
185	unk	2.704	2.616	2.747
186	C 12-P	1.741	1.805	1.589
187	C 11-A	6.271	5.668	6.574
188	unk	1.239	1.199	1.259
189	n C 12	29.106	30.166	26.555

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	61.873	64.596	59.286
Naphthenes	2.398	2.332	2.676
Aromatics	16.348	14.740	18.431
Unknowns	19.380	18.332	19.607
Olefins	<0.1	<0.1	<0.1
Average molecular weight	157.10	Denisty @ 15°C	0.8215

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
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PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

30 September 2004

Upstream Origin Energy
Bass Gas Plant
GPO Box 2576
Adelaide
SA 5001

Attention: Joe Parvar

REPORT 04PEAD09127

CLIENT REFERENCE:

WELL NAME/RE: Yolla #4 From 2809 Sand

MATERIAL: Condensate

WORK REQUIRED: Crude oil assay

AUTHOR'S NAME: Mohammad Massoumi

Please direct technical enquiries regarding this work, to the signatory below, under whose supervision the work was carried out. This report relates specifically to the sample or samples submitted for testing.

Diane Cass
Operations Manager
Petroleum Services

dc.rn

\\jupiter\Petroleum\Secretary\petroleum\Docs-03\04pead09127.doc

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CRUDE OIL ASSAY

Yolla #4 Condensate from 2809 Sand

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PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09127

Sample: Yolla #4 Condensate Sample
From 2809 Sand

Method		Description	Units	Condensate 2809
IP2	ASTM D611	Aniline Point	℃	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D250	Cloud Point	℃	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D262	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D405	Density @ 15°C	g/mL	0.7853
IP21		Diesel Index		-
	ASTM D518	Trace Elements		
		Silver	mg/kg	<1
		Aluminium	mg/kg	<1
		Boron	mg/kg	<1
		Barium	mg/kg	<1
		Calcium	mg/kg	<1
		Cadmium	mg/kg	<1
		Chromium	mg/kg	<1
		Copper	mg/kg	<1
		Iron	mg/kg	<1
		Magnesium	mg/kg	<1
		Manganese	mg/kg	<1
		Molybdenum	mg/kg	<1
		Sodium	mg/kg	<1
		Nickel	mg/kg	<1
		Phosphorus	mg/kg	<1
		Lead	mg/kg	<1
		Silicon	mg/kg	<1
		Tin	mg/kg	<1
		Titanium	mg/kg	<1
		Vanadium	mg/kg	<1
		Zinc	mg/kg	<1
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	℃	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	℃	-
IP156	ASTM D131	Fluorescent Indicator Absorption Aromati	% vol	-
IP15	ASTM D97	Pour Point	℃	-
IP365	ASTM D405	Specific Gravity @ 60/60°F		0.7856
IP216		Total Contaminant	mg/L	-
	ASTM D227	Viscosity Index		-
IP289	ASTM D109	Water Reaction Interface Rating		-
	ASTM D400	Total Water And Sediment	%vol	-
	ASTM D400	Water And Sediment(Tube 1)	mL	-
	ASTM D400	Water And Sediment(Tube 2)	mL	-
IP160/9	ASTM D129	API Gravity	degrees	48.62

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 9-Dec-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09127

CONDENSATE SAMPLE

TEST	UNIT	RESULT
Total Sulphur	mg/kg	113.66
Mercury	mg/kg	0.05
Kinematic Viscosity @ 25°C	cSt	1.254
Hydrogen Sulphide	mg/kg	<1
Mercaptans	mg/kg	<1
Arsenic	ppb	<5
Lead	ppb	<20
Acid Number	mgKOH/g	0.045
Methanol	% wt	<1

ppb = µg/L

TABLE 1

ASTM D2892 DISTILLATION AND DENSITIES : CONDENSATE YOLLA #4 FROM 2809 (Upstream Origin Energy) Report # 04PEAD09127

Temp (deg F)	Temp (deg C)	Density at 15 °C	Cumulative Weight (%)	Cumulative Volume (%)	Mid Volume (%)	Specific Gravity (60/60 °F)	API Gravity
LPG	LPG	0.6010	2.4	3.1	1.6	0.6012	103.9
158.0	70.0	0.6621	7.9	9.7	6.4	0.6623	82.1
212.0	100.0	0.7422	21.0	23.5	16.6	0.7424	59.1
248.0	120.0	0.7764	33.6	36.2	29.9	0.7766	50.7
284.0	140.0	0.7853	42.8	45.5	40.8	0.7855	48.6
302.0	150.0	0.7967	47.8	50.4	47.9	0.7970	46.0
338.0	170.0	0.7964	54.9	57.4	53.9	0.7967	46.1
374.0	190.0	0.7971	60.5	62.9	60.1	0.7974	46.0
446.0	230.0	0.8208	71.7	73.7	68.3	0.8212	40.8
524.1	273.4	0.8494	81.1	82.3	78.0	0.8498	35.0
626.0	330.0	0.8388	93.0	93.5	87.9	0.8392	37.1
626+	330+	0.8398	100.0	100.0	96.7	0.8402	36.9

This report relates specifically to the sample tested.

Approved Signatory _____

Mohammad Massoumi

Accreditation No: 2013

Date 24-Sep-04

TABLE 2

ASTM D2892 DISTILLATION AND DENSITIES
CONDENSATE YOLLA #4 FROM 2809 (Upstream Origin Energy)
Report # 04PEAD09127

Temp (deg F)	Temp (deg C)	Weight (%)	Volume (%)
LPG	LPG	2.4	3.1
158.0	70.0	5.5	6.6
212.0	100.0	13.1	13.8
248.0	120.0	12.6	12.7
284.0	140.0	9.2	9.2
302.0	150.0	5.0	5.0
338.0	170.0	7.1	7.0
374.0	190.0	5.6	5.5
446.0	230.0	11.3	10.8
524.1	273.4	9.3	8.6
626.0	330.0	12.0	11.2
626+	330+	7.0	6.5

This report relates specifically to the sample tested.

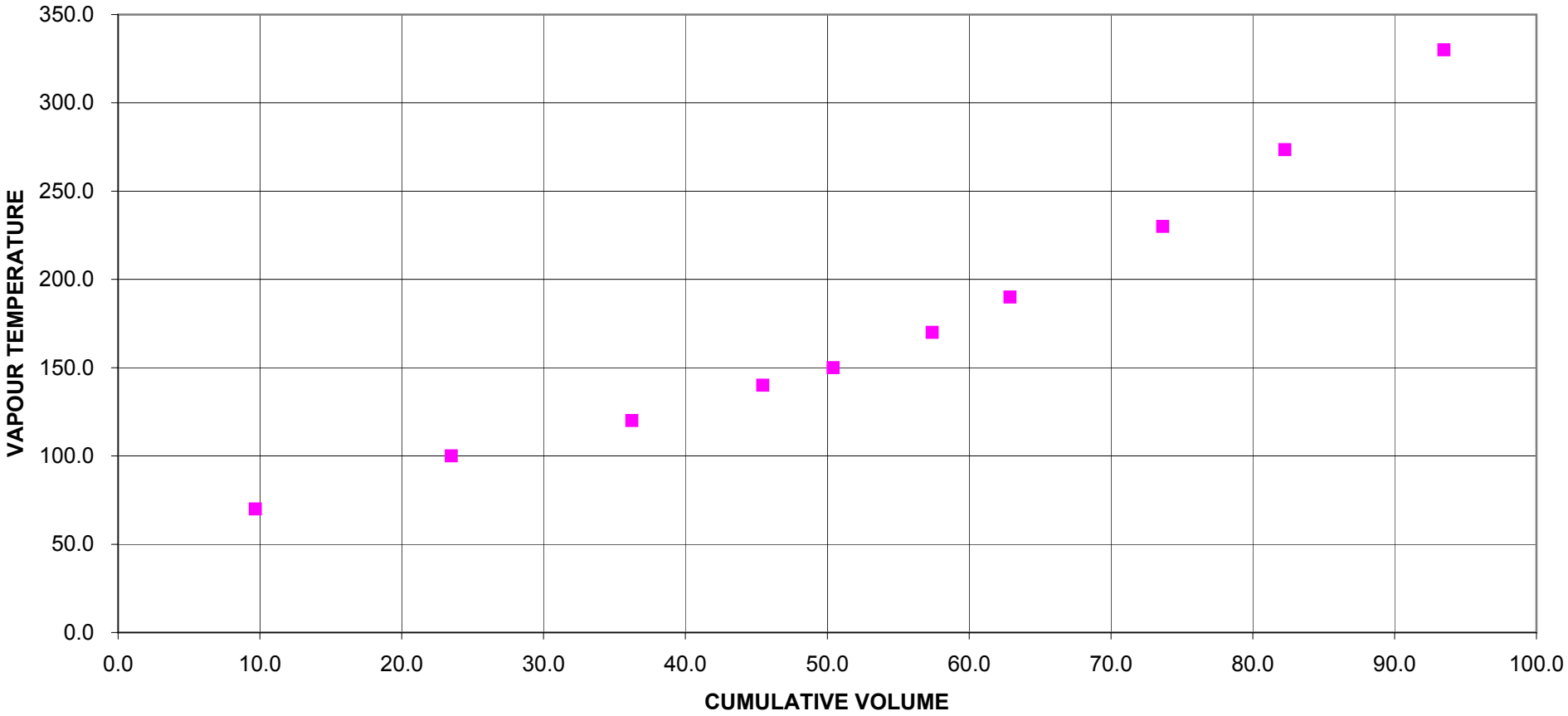
Approved Signatory _____

Mohammad Massoumi

Accreditation No: 2013

Date 24-Sep-04

TRUE BOILING POINT CURVE CRUDE OIL
Upstream Origin Energy Condensate Yolla #4 from 2809



PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09127

Sample: Yolla #4 Condensate Sample
From 2809 Sand

Method		Description	Units	Cut C5-70°C 2809
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D250	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D262	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D405	Density @ 15°C	g/mL	0.6621
IP21		Diesel Index		
	ASTM D518	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	°C	-
IP156	ASTM D131	Fluorescent Indicator Absorption Aromati	% vol	-
IP15	ASTM D97	Pour Point	°C	-
IP365	ASTM D405	Specific Gravity @ 60/60°F		0.6622
IP216		Total Contaminant	mg/L	-
	ASTM D227	Viscosity Index		-
IP289	ASTM D109	Water Reaction Interface Rating		-
	ASTM D400	Total Water And Sediment	%vol	-
	ASTM D400	Water And Sediment(Tube 1)	mL	-
	ASTM D400	Water And Sediment(Tube 2)	mL	-
IP160/9	ASTM D129	API Gravity	degrees	82.18

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 23-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09127

CUT C5 – 70°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	5.83
Kinematic Viscosity @ 25°C	cSt	0.410

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09127

Sample: Yolla #4 Condensate Sample
From 2809 Sand

Method		Description	Units	Cut 70-150°C 2809
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.7691
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	°C	-
IP156	ASTM D1319	Fluorescent Indicator Absorption Aromatics	% vol	-
IP15	ASTM D97	Pour Point	°C	-
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.7694
IP216		Total Contaminant	mg/L	-
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	52.41

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 24-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09127

CUT 70 – 150°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	3.97
Kinematic Viscosity @ 25°C	cSt	0.675

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09127

Sample: Yolla #4 Condensate Sample
From 2809 Sand

Method		Description	Units	Cut C5-190°C 2809
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.7637
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	°C	-
IP156	ASTM D1319	Fluorescent Indicator Absorption Aromatics	% vol	-
IP15	ASTM D97	Pour Point	°C	-
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.7640
IP216		Total Contaminant	mg/L	-
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	53.71

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 24-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09127

CUT C5 – 190°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	5.90
Kinematic Viscosity @ 25°C	cSt	0.687

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09127

Sample: Yolla #4 Condensate Sample
From 2809 Sand

Method		Description	Units	Cut 140-230°C 2809
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.8056
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP16	ASTM D2386	Freezing Point	°C	-58.0
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C	cSt	-
IP15	ASTM D97	Pour Point	°C	-
	ASTM D2386	Smoke Point	mm	20
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.8060
IP216		Total Contaminant	mg/L	-
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	44.06

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 24-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09127

CUT 140 – 230°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	17.35
Kinematic Viscosity at 25°C	cSt	1.203

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09127

Sample: Yolla #4 Condensate Sample
From 2809 Sand

Method		Description	Units	Cut 190-230°C 2809
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.8208
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP16	ASTM D2386	Freezing Point	°C	-38.0
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C	cSt	-
IP15	ASTM D97	Pour Point	°C	-
	ASTM D2386	Smoke Point	mm	18
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.8212
IP354	ASTM D3242	Total Acidity in Aviation Fuel	mgKOH/g	-
IP216		Total Contaminant	mg/L	-
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	40.81

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 24-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09127

CUT 190 - 230°C

TEST	UNIT	RESULT
Kinematic Viscosity @ 25°C	cSt	1.737
Total Sulphur	mg/kg	37.66

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09127

Sample: Yolla #4 Condensate Sample
From 2809 Sand

Method		Description	Units	Cut 230-330°C 2809
IP2	ASTM D611	Aniline Point	°C	73.4
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		50.9
IP219	ASTM D2500	Cloud Point	°C	3
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	0.10
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.8433
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	3.200
IP16	ASTM D2386	Freezing Point	°C	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C	cSt	-
IP15	ASTM D97	Pour Point	°C	-
	ASTM D2386	Smoke Point	mm	-
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.8437
	ASTM D5185	Total Sulphur	mg/kg	-
IP216		Total Contaminant	mg/L	-
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	36.21

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 24-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09127

CUT 230-330°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	370.95

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09127

Sample: Yolla #4 Condensate Sample
From 2809 Sand

Method		Description	Units	Cut 330°C+ 2809
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson Carbon Residue	% wt	0.13
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.8398
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/L	<1
		Aluminium	mg/L	15
		Boron	mg/L	<1
		Barium	mg/L	<1
		Calcium	mg/L	26
		Cadmium	mg/L	<1
		Chromium	mg/L	<1
		Copper	mg/L	1
		Iron	mg/L	3
		Magnesium	mg/L	1
		Manganese	mg/L	<1
		Molybdenum	mg/L	<1
		Sodium	mg/L	2
		Nickel	mg/L	1
		Phosphorus	mg/L	72
		Lead	mg/L	<1
		Silicon	mg/L	155
		Tin	mg/L	1
		Titanium	mg/L	<1
		Vanadium	mg/L	1
		Zinc	mg/L	<1
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP16	ASTM D2386	Freezing Point	°C	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C	cSt	-
IP15	ASTM D97	Pour Point	°C	45
	ASTM D2386	Smoke Point	mm	-
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.8402
	ASTM D5185	Total Sulphur	mg/kg	-
	ASTM D2270	Viscosity Index		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/96	ASTM D1298	API Gravity	degrees	36.91

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 24-Sep-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09127

CUT 330°C+

TEST	UNIT	RESULT
Kinematic Viscosity @ 50°C	cSt	9.936
Total sulphur	mg/kg	200

Report No: 04PEAD09127

METHODS

TEST	METHODS
True Boiling Point	ASTM D2892
Density-API Gravity	ASTM D4052
Kinematic Viscosity	ASTM D445
Sulphur Content	ASTM D5453, IP336
Trace Elements	ASTM D5185
PONA	GC (gas chromatography)
Smoke Point	ASTM D1322
Freezing Point	ASTM D2386
Conradson Carbon Residue	ASTM D189
Pour Point	ASTM D97
Cloud Point	ASTM D2500
Calculated Cetane Index	ASTM D976
Mercury	AAS
Aniline Point	ASTM D611
Hydrogen Sulphide	ASTM D3227
Mercaptans	ASTM D3227
Arsenic	UOP296
Lead	IP224
Acid Number	ASTM D974
Methanol	FTIR

APPENDIX

PETROLEUM SERVICES LIQUID ANALYSIS Method GL-02-01

Client: Upstream Origin Energy Resources Ltd (Bass Gas) Report # 04PEAD09127

Sample: YOLLA-4 COND SAMPLE
FROM 2809 SAND

Boiling Point Range (Deg.C)	Component	Weight%	Mol%
-88.6	ETHANE	0.10	0.41
-42.1	PROPANE	0.53	1.53
-11.7	I-BUTANE	0.45	0.97
-0.5	N-BUTANE	1.22	2.65
27.9	I-PENTANE	1.33	2.34
36.1	N-PENTANE	1.82	3.19
36.1-68.9	HEXANE, C-6	4.78	7.03
80.0	BENZENE	1.04	1.68
80.7	CYCLOHEXANE	1.90	2.86
68.9-98.3	HEPTANE,C-7	7.49	9.46
100.9	METHYLCYCLOHEXANE	6.03	7.78
110.6	TOLUENE	4.58	6.29
98.3-125.6	OCTANE, C-8	7.68	8.52
136.1-144.4	ETHYLBZ+XYLENES	6.87	8.20
125.6-150.6	C-9	6.19	6.12
150.6-173.9	C-10	8.53	7.59
173.9-196.1	C-11	5.40	4.38
196.1-215.0	C-12	4.29	3.19
215.0-235.0	C-13	4.70	3.23
235.0-252.2	C-14	3.53	2.26
252.2-270.6	C-15	3.89	2.32
270.6-287.8	C-16	2.74	1.53
287.8-302.8	C-17	2.00	1.06
302.8-317.2	C-18	2.52	1.26
317.2-330.0	C-19	1.53	0.72
330.0-344.4	C-20	1.26	0.56
344.4-357.2	C-21	1.21	0.52
357.2-369.4	C-22	1.14	0.47
369.4-380.0	C-23	1.10	0.43
380.0-391.1	C-24	0.95	0.36
391.1-401.7	C-25	0.89	0.32
401.7-412.2	C-26	0.72	0.25
412.2-422.2	C-27	0.63	0.21
>422.2	C-28+	0.96	0.31
	Total	100.00	100.00
	(0.00 = LESS THAN 0.01%)		

The above boiling point ranges refer to the normal paraffin hydrocarbon boiling in that range. Aromatics, branched hydrocarbons, naphthenes and olefins may have higher or lower carbon numbers but are grouped and reported according to their boiling points.

Average molecular weight of C-8 plus fraction (calc) = 148 g/mol

This report relates specifically to the sample submitted for analysis.

Approved Signatory
Accreditation No: 2013
Date 01-Sep-04

Report: 04PEAD09127
Sample : YOLLA #4 From Condensate 2809 Sand, Cut 70-150

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	0.005	0.007	0.009
3	n C 4	0.010	0.014	0.018
4	22 DMC 3	0.036	0.045	0.050
5	i C 5	0.059	0.073	0.083
6	n C 5	0.123	0.151	0.172
7	22 DMC 4	0.018	0.021	0.021
8	CYC 5	0.072	0.074	0.103
9	23 DMC 4	0.149	0.172	0.174
10	2 MC 5	0.879	1.032	1.031
11	3 MC 5	0.666	0.769	0.781
12	n C 6	3.324	3.860	3.897
13	22 DMC 5	0.126	0.143	0.127
14	M CYC 5	2.358	2.415	2.831
15	24 DMC 5	0.246	0.280	0.248
16	223 TMC 4	0.041	0.046	0.041
17	BZ	1.768	1.543	2.287
18	33 DMC 5	0.079	0.088	0.080
19	CYC 6	3.970	3.910	4.766
20	2 MC 6	1.694	1.914	1.708
21	23 DMC 5	0.464	0.512	0.468
22	11 DMCYC 5	0.374	0.380	0.385
23	3 MC 6	1.599	1.788	1.613
24	t 13 DMCYC 5	0.823	0.852	0.846
25	c 13 DMCYC 5	0.879	0.906	0.905
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	1.222	1.269	1.258
28	n C7	6.314	7.082	6.367
29	MCYC 6	13.674	13.628	14.072
30	22 DMC 6	0.297	0.328	0.263
31	ECYC 5	0.256	0.256	0.264
32	25 DMC 6	0.538	0.595	0.476
33	24 DMC 6	0.282	0.310	0.249
34	tc 124 TMCYC 5	0.356	0.358	0.321
35	234 TMC 5	0.079	0.085	0.070
36	tc 123 TMCYC 5	0.277	0.276	0.249
37	233 TMC 5	-	-	-
38	TOL	15.499	13.709	16.991
39	23 DMC 6	0.195	0.210	0.172
40	2 M 3 EC 5	0.049	0.052	0.043
41	2 MC 7	1.650	1.813	1.460
42	4 MC 7	0.464	0.505	0.410
43	34 DMC 6	0.097	0.104	0.086
44	tt 124 TMCYC 5	-	-	-
45	3 MC 7	1.202	1.304	1.063
46	1 M 2 E CYC 5	2.929	3.000	2.638

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	1.289	1.296	1.161
48	C 8-N	0.346	0.341	0.312
49	C 8-P	-	-	-
50	C 8-N	0.141	0.139	0.127
51	C 8-N	0.131	0.129	0.118
52	c 1 M 3 ECYC 6	0.177	0.179	0.142
53	C 8-P	0.044	0.047	0.039
54	t 12 DMCYC 6	1.097	1.056	0.988
55	n C 8	5.886	6.425	5.207
56	C 8-N	0.792	0.780	0.713
57	unk	0.046	0.046	0.040
58	C 9-P	0.079	0.085	0.063
59	unk	0.023	0.022	0.021
60	C 9-P	0.146	0.156	0.115
61	C 9-P	0.597	0.637	0.470
62	n C 3 CYC 5	1.686	1.666	1.518
63	N	0.013	0.013	0.012
64	113 TMCYC 6	0.374	0.368	0.299
65	C 9-P	0.290	0.309	0.228
66	C 9-P	0.097	0.104	0.077
67	N	0.021	0.020	0.018
68	N	0.023	0.022	0.021
69	N	-	-	-
70	E BZ	1.035	0.916	0.985
71	114 TMCYC 6	0.241	0.240	0.193
72	unk	0.023	0.023	0.019
73	unk	0.210	0.205	0.177
74	m+p XYL	10.617	9.484	10.104
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	0.349	0.371	0.275
79	2 MC 8	0.664	0.716	0.523
80	C 9-P	-	-	-
81	3 MC 8	0.610	0.649	0.480
82	N	0.108	0.107	0.097
83	o XYL	1.878	1.636	1.788
84	unk	-	-	-
85	unk	0.082	0.080	0.070
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	0.418	0.402	0.334
88	c 1 M 4 ECYC 6	0.182	0.179	0.146
89	N	-	-	-
90	N	0.090	0.088	0.072
91	N	-	-	-
92	n C9	2.898	3.097	2.283
93	1 M 1 ECYC 6	0.169	0.164	0.135
94	C 9-N	0.054	0.052	0.043
95	i PBZ	0.023	0.021	0.019
96	C 10-P	0.013	0.013	0.009
97	C 9-N	0.049	0.047	0.039
98	C 9-N	0.187	0.182	0.150
99	C 10-P	-	-	-
100	C 10-P	0.049	0.051	0.035
101	unk	0.044	0.042	0.034

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	0.026	0.027	0.018
103	s BCYC 5	0.236	0.229	0.189
104	C 10-P	-	-	-
105	C 10-P	0.038	0.040	0.027
106	3 MC 9	0.085	0.089	0.060
107	C 10-P	0.023	0.024	0.016
108	unk	-	-	-
109	unk	0.015	0.015	0.012
110	n PBZ	-	-	-
111	N	0.056	0.054	0.041
112	unk	0.090	0.086	0.068
113	unk	0.013	0.012	0.010
114	m E TOL	-	-	-
115	p E TOL	-	-	-
116	135 TM BZ	0.279	0.248	0.235
117	N	0.141	0.135	0.102
118	C 10-N	0.015	0.015	0.011
119	C 10-P	0.177	0.184	0.126
120	2 MC 9	0.023	0.024	0.016
121	o E TOL	0.023	0.020	0.019
122	C 10-P	-	-	-
123	36 DMC 8	0.062	0.065	0.044
124	N	-	-	-
125	C 10-N	-	-	-
126	124 TM BZ	0.167	0.146	0.140
127	C 10-N	-	-	-
128	N	-	-	-
129	C 10-N	-	-	-
130	N	-	-	-
131	N	-	-	-
132	N	-	-	-
133	C 10-P	-	-	-
134	n C 10	0.087	0.092	0.062
135	unk	-	-	-
136	unk	-	-	-
137	123 TM BZ	-	-	-
138	unk	0.013	0.012	0.009
139	unk	-	-	-
140	unk	-	-	-
141	unk	-	-	-
142	C 10-A	-	-	-
143	C 10-N	-	-	-
144	C 11-P	-	-	-
145	unk	-	-	-
146	C 10-N	-	-	-
147	unk	-	-	-
148	unk	-	-	-
149	C 10-A	-	-	-
150	C 10-A	-	-	-
151	C 10-A	-	-	-
152	unk	-	-	-
153	C 10-A	-	-	-
154	unk	-	-	-
155	unk	-	-	-
156	unk	-	-	-

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	-	-	-
159	C 11-P	-	-	-
160	C 11-P	-	-	-
161	C 11-P	-	-	-
162	C 10-A	-	-	-
163	C 11-P	-	-	-
164	C 10-A	-	-	-
165	unk	-	-	-
166	unk	-	-	-
167	unk	-	-	-
168	C 10-A	-	-	-
169	n C 11	-	-	-
170	unk	-	-	-
171	C 10-A	-	-	-
172	unk	-	-	-
173	C 10-A	-	-	-
174	unk	-	-	-
175	unk	-	-	-
176	unk	-	-	-
177	unk	-	-	-
178	unk	-	-	-
179	C 12-P	-	-	-
180	unk	-	-	-
181	unk	-	-	-
182	unk	-	-	-
183	unk	-	-	-
184	C 11-A	-	-	-
185	unk	-	-	-
186	C 12-P	-	-	-
187	C 11-A	-	-	-
188	unk	-	-	-
189	n C 12	-	-	-

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	32.928	36.506	31.353
Naphthenes	35.224	35.228	35.619
Aromatics	31.290	27.722	32.568
Unknowns	0.559	0.543	0.460
Olefins	<0.1	<0.1	<0.1
Average molecular weight	102.45	Denisty @ 15°C	0.7691

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
BZ = benzene; TOL = toluene; XYL = xylene; unk = unknown.
PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

Report: 04PEAD09127
Sample : YOLLA #4 From Condensate 2809 Sand, Cut C5-190

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	0.013	0.018	0.023
3	n C 4	0.053	0.070	0.095
4	22 DMC 3	0.311	0.385	0.446
5	i C 5	1.389	1.703	1.994
6	n C 5	2.300	2.791	3.302
7	22 DMC 4	0.100	0.117	0.120
8	CYC 5	0.366	0.373	0.540
9	23 DMC 4	0.326	0.374	0.391
10	2 MC 5	1.796	2.089	2.158
11	3 MC 5	1.049	1.200	1.261
12	n C 6	3.715	4.276	4.465
13	22 DMC 5	0.098	0.110	0.101
14	M CYC 5	2.204	2.238	2.713
15	24 DMC 5	0.187	0.212	0.194
16	223 TMC 4	0.032	0.035	0.033
17	BZ	1.636	1.415	2.169
18	33 DMC 5	0.057	0.063	0.059
19	CYC 6	3.002	2.930	3.695
20	2 MC 6	1.196	1.339	1.236
21	23 DMC 5	0.330	0.361	0.341
22	11 DMCYC 5	0.266	0.267	0.281
23	3 MC 6	1.123	1.245	1.161
24	t 13 DMCYC 5	0.579	0.594	0.610
25	c 13 DMCYC 5	0.617	0.630	0.651
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	0.857	0.882	0.904
28	n C7	4.415	4.908	4.563
29	MCYC 6	9.554	9.436	10.077
30	22 DMC 6	0.209	0.228	0.189
31	ECYC 5	0.151	0.150	0.159
32	25 DMC 6	0.406	0.445	0.368
33	24 DMC 6	0.198	0.215	0.179
34	tc 124 TMCYC 5	0.243	0.242	0.224
35	234 TMC 5	0.062	0.065	0.056
36	tc 123 TMCYC 5	0.194	0.191	0.179
37	233 TMC 5	-	-	-
38	TOL	10.873	9.531	12.222
39	23 DMC 6	0.138	0.148	0.125
40	2 M 3 EC 5	0.034	0.036	0.031
41	2 MC 7	1.162	1.265	1.053
42	4 MC 7	0.326	0.351	0.295
43	34 DMC 6	0.068	0.072	0.062
44	tt 124 TMCYC 5	-	-	-
45	3 MC 7	0.847	0.910	0.768
46	1 M 2 E CYC 5	2.075	2.106	1.915

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	0.913	0.910	0.842
48	C 8-N	0.247	0.241	0.228
49	C 8-P	-	-	-
50	C 8-N	0.100	0.098	0.092
51	C 8-N	0.094	0.091	0.086
52	c 1 M 3 ECYC 6	0.128	0.128	0.105
53	C 8-P	0.032	0.034	0.029
54	t 12 DMCYC 6	0.785	0.749	0.725
55	n C 8	4.194	4.536	3.802
56	C 8-N	0.568	0.554	0.524
57	unk	0.034	0.034	0.030
58	C 9-P	0.060	0.063	0.048
59	unk	0.017	0.016	0.016
60	C 9-P	0.109	0.115	0.088
61	C 9-P	0.447	0.472	0.361
62	n C 3 CYC 5	1.264	1.237	1.166
63	N	0.009	0.008	0.008
64	113 TMCYC 6	0.283	0.276	0.232
65	C 9-P	0.230	0.243	0.186
66	C 9-P	0.079	0.083	0.064
67	N	0.017	0.017	0.016
68	N	0.017	0.016	0.016
69	N	0.038	0.037	0.035
70	E BZ	0.794	0.696	0.774
71	114 TMCYC 6	0.219	0.216	0.180
72	unk	0.021	0.021	0.018
73	unk	0.183	0.177	0.158
74	m+p XYL	8.541	7.561	8.331
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	0.302	0.319	0.244
79	2 MC 8	0.589	0.630	0.476
80	C 9-P	0.055	0.058	0.045
81	3 MC 8	0.504	0.532	0.407
82	N	0.106	0.105	0.098
83	o XYL	1.736	1.499	1.694
84	unk	-	-	-
85	unk	0.096	0.092	0.084
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	0.509	0.485	0.417
88	c 1 M 4 ECYC 6	0.238	0.232	0.196
89	N	-	-	-
90	N	0.106	0.104	0.087
91	N	-	-	-
92	n C9	3.777	3.999	3.050
93	1 M 1 ECYC 6	0.279	0.269	0.229
94	C 9-N	0.089	0.086	0.073
95	i PBZ	0.043	0.038	0.037
96	C 10-P	0.028	0.029	0.020
97	C 9-N	0.106	0.103	0.087
98	C 9-N	0.349	0.336	0.286
99	C 10-P	0.013	0.013	0.009
100	C 10-P	0.126	0.131	0.091
101	unk	0.104	0.100	0.083

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	0.091	0.095	0.067
103	s BCYC 5	0.583	0.562	0.478
104	C 10-P	-	-	-
105	C 10-P	0.115	0.120	0.084
106	3 MC 9	0.277	0.288	0.201
107	C 10-P	0.085	0.089	0.062
108	unk	-	-	-
109	unk	-	-	-
110	n PBZ	0.057	0.051	0.049
111	N	0.168	0.160	0.124
112	unk	0.289	0.276	0.223
113	unk	0.049	0.047	0.038
114	m E TOL	0.043	0.037	0.037
115	p E TOL	0.032	0.028	0.027
116	135 TM BZ	1.045	0.918	0.900
117	N	0.668	0.636	0.493
118	C 10-N	0.070	0.067	0.052
119	C 10-P	1.240	1.276	0.903
120	2 MC 9	0.229	0.239	0.166
121	o E TOL	0.229	0.197	0.197
122	C 10-P	0.045	0.047	0.033
123	36 DMC 8	0.506	0.528	0.369
124	N	0.119	0.113	0.088
125	C 10-N	0.072	0.069	0.053
126	124 TM BZ	2.219	1.926	1.912
127	C 10-N	-	-	-
128	N	0.147	0.140	0.108
129	C 10-N	0.106	0.101	0.079
130	N	-	-	-
131	N	-	-	-
132	N	-	-	-
133	C 10-P	-	-	-
134	n C 10	3.145	3.280	2.289
135	unk	0.070	0.066	0.054
136	unk	0.074	0.070	0.057
137	123 TM BZ	0.170	0.145	0.147
138	unk	0.485	0.459	0.362
139	unk	0.119	0.113	0.089
140	unk	-	-	-
141	unk	-	-	-
142	C 10-A	0.070	0.062	0.054
143	C 10-N	0.374	0.356	0.276
144	C 11-P	0.172	0.177	0.114
145	unk	-	-	-
146	C 10-N	0.281	0.267	0.207
147	unk	-	-	-
148	unk	0.094	0.087	0.069
149	C 10-A	0.055	0.049	0.043
150	C 10-A	0.255	0.226	0.197
151	C 10-A	0.015	0.013	0.011
152	unk	0.123	-	-
153	C 10-A	0.292	0.258	0.225
154	unk	0.045	0.043	0.032
155	unk	0.043	0.040	0.031
156	unk	0.117	0.111	0.084

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	0.136	0.121	0.105
159	C 11-P	0.117	0.120	0.078
160	C 11-P	0.194	0.199	0.128
161	C 11-P	0.023	0.024	0.016
162	C 10-A	0.104	0.092	0.080
163	C 11-P	0.102	0.105	0.068
164	C 10-A	0.062	0.055	0.048
165	unk	0.047	0.045	0.033
166	unk	0.023	0.022	0.017
167	unk	0.055	0.053	0.039
168	C 10-A	0.032	0.028	0.025
169	n C 11	1.153	1.186	0.764
170	unk	-	-	-
171	C 10-A	0.034	0.030	0.026
172	unk	0.028	0.026	0.020
173	C 10-A	0.068	0.060	0.053
174	unk	0.066	0.062	0.045
175	unk	0.047	0.044	0.032
176	unk	-	-	-
177	unk	0.028	0.026	0.019
178	unk	-	-	-
179	C 12-P	-	-	-
180	unk	-	-	-
181	unk	-	-	-
182	unk	-	-	-
183	unk	-	-	-
184	C 11-A	-	-	-
185	unk	-	-	-
186	C 12-P	-	-	-
187	C 11-A	-	-	-
188	unk	-	-	-
189	n C 12	0.064	0.065	0.039

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	40.041	44.127	39.370
Naphthenes	29.161	28.809	29.634
Aromatics	28.541	25.034	29.363
Unknowns	2.258	2.030	1.633
Olefins	<0.1	<0.1	<0.1
Average molecular weight	106.27	Denisty @ 15°C	0.7637

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
BZ = benzene; TOL = toluene; XYL = xylene; unk = unknown.
PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

Report: 04PEAD09127
Sample : YOLLA #4 From Condensate 2809 Sand, Cut 140-230

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	-	-	-
3	n C 4	-	-	-
4	22 DMC 3	-	-	0.005
5	i C 5	0.006	0.007	0.010
6	n C 5	0.009	0.011	0.016
7	22 DMC 4	-	-	-
8	CYC 5	-	-	-
9	23 DMC 4	-	-	-
10	2 MC 5	-	-	-
11	3 MC 5	-	-	-
12	n C 6	0.009	0.010	0.013
13	22 DMC 5	-	-	-
14	M CYC 5	-	-	-
15	24 DMC 5	-	-	-
16	223 TMC 4	-	-	-
17	BZ	-	-	-
18	33 DMC 5	-	-	-
19	CYC 6	0.011	0.011	0.018
20	2 MC 6	-	-	-
21	23 DMC 5	-	-	-
22	11 DMCYC 5	-	-	-
23	3 MC 6	-	-	-
24	t 13 DMCYC 5	-	-	-
25	c 13 DMCYC 5	-	-	-
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	-	-	-
28	n C7	0.026	0.029	0.034
29	MCYC 6	0.097	0.098	0.130
30	22 DMC 6	-	-	-
31	ECYC 5	-	-	-
32	25 DMC 6	-	-	-
33	24 DMC 6	-	-	-
34	tc 124 TMCYC 5	-	-	-
35	234 TMC 5	-	-	-
36	tc 123 TMCYC 5	-	-	-
37	233 TMC 5	-	-	-
38	TOL	0.253	0.228	0.363
39	23 DMC 6	-	-	-
40	2 M 3 EC 5	-	-	-
41	2 MC 7	0.080	0.089	0.092
42	4 MC 7	-	-	-
43	34 DMC 6	-	-	-
44	tt 124 TMCYC 5	-	-	-
45	3 MC 7	0.074	0.082	0.086
46	1 M 2 E CYC 5	0.321	0.335	0.379

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	0.142	0.146	0.168
48	C 8-N	0.040	0.040	0.047
49	C 8-P	-	-	-
50	C 8-N	0.014	0.014	0.017
51	C 8-N	0.017	0.017	0.020
52	c 1 M 3 ECYC 6	0.023	0.023	0.024
53	C 8-P	-	-	-
54	t 12 DMCYC 6	0.219	0.215	0.258
55	n C 8	1.026	1.142	1.188
56	C 8-N	0.168	0.168	0.198
57	unk	0.017	0.017	0.019
58	C 9-P	0.034	0.037	0.035
59	unk	-	-	-
60	C 9-P	0.068	0.074	0.070
61	C 9-P	0.341	0.371	0.352
62	n C 3 CYC 5	0.918	0.924	1.082
63	N	-	-	-
64	113 TMCYC 6	0.239	0.239	0.250
65	C 9-P	0.247	0.269	0.255
66	C 9-P	0.091	0.099	0.094
67	N	0.017	0.017	0.020
68	N	0.017	0.017	0.020
69	N	0.040	0.039	0.047
70	E BZ	0.696	0.628	0.868
71	114 TMCYC 6	0.338	0.343	0.354
72	unk	0.028	0.028	0.031
73	unk	0.253	0.252	0.278
74	m+p XYL	9.990	9.097	12.456
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	0.438	0.475	0.452
79	2 MC 8	0.921	1.013	0.950
80	C 9-P	0.102	0.111	0.106
81	3 MC 8	0.819	0.888	0.844
82	N	0.182	0.185	0.214
83	o XYL	2.859	2.539	3.563
84	unk	-	-	-
85	unk	0.193	0.191	0.216
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	1.069	1.048	1.120
88	c 1 M 4 ECYC 6	0.514	0.516	0.539
89	N	-	-	-
90	N	0.213	0.214	0.223
91	N	-	-	-
92	n C9	8.288	9.028	8.549
93	1 M 1 ECYC 6	0.642	0.637	0.673
94	C 9-N	0.207	0.206	0.217
95	i PBZ	0.097	0.088	0.106
96	C 10-P	0.264	0.284	0.246
97	C 9-N	0.256	0.254	0.268
98	C 9-N	0.821	0.814	0.861
99	C 10-P	0.028	0.030	0.026
100	C 10-P	0.307	0.329	0.285
101	unk	0.250	0.247	0.255

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	0.239	0.256	0.222
103	s BCYC 5	1.424	1.411	1.492
104	C 10-P	-	-	-
105	C 10-P	0.472	0.506	0.439
106	3 MC 9	0.517	0.555	0.481
107	C 10-P	0.199	0.213	0.185
108	unk	-	-	-
109	unk	-	-	-
110	n PBZ	0.281	0.255	0.310
111	N	0.443	0.434	0.418
112	unk	0.728	0.714	0.717
113	unk	0.119	0.117	0.118
114	m E TOL	0.102	0.093	0.113
115	p E TOL	0.077	0.070	0.084
116	135 TM BZ	2.697	2.437	2.969
117	N	1.714	1.678	1.617
118	C 10-N	0.168	0.164	0.158
119	C 10-P	3.917	4.144	3.642
120	2 MC 9	0.608	0.652	0.566
121	o E TOL	0.608	0.540	0.669
122	C 10-P	0.111	0.119	0.103
123	36 DMC 8	1.336	1.433	1.242
124	N	0.318	0.312	0.300
125	C 10-N	0.193	0.189	0.182
126	124 TM BZ	6.023	5.375	6.629
127	C 10-N	-	-	-
128	N	0.401	0.392	0.378
129	C 10-N	0.284	0.278	0.268
130	N	0.057	0.056	0.054
131	N	-	-	-
132	N	0.017	0.017	0.016
133	C 10-P	-	-	-
134	n C 10	8.930	9.579	8.304
135	unk	0.153	0.149	0.151
136	unk	0.207	0.201	0.204
137	123 TM BZ	0.489	0.427	0.538
138	unk	1.381	1.343	1.318
139	unk	0.372	0.362	0.355
140	unk	-	-	-
141	unk	-	-	-
142	C 10-A	0.196	0.179	0.193
143	C 10-N	1.151	1.127	1.086
144	C 11-P	0.520	0.550	0.440
145	unk	-	-	-
146	C 10-N	0.907	0.887	0.855
147	unk	-	-	-
148	unk	0.284	0.271	0.268
149	C 10-A	-	-	-
150	C 10-A	0.824	0.750	0.813
151	C 10-A	0.051	0.047	0.050
152	unk	-	-	-
153	C 10-A	1.003	0.914	0.989
154	unk	-	-	-
155	unk	0.151	0.147	0.139
156	unk	0.426	0.417	0.393

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	0.517	0.471	0.510
159	C 11-P	-	-	-
160	C 11-P	0.821	0.869	0.695
161	C 11-P	0.080	0.084	0.067
162	C 10-A	0.378	0.344	0.373
163	C 11-P	0.398	0.421	0.337
164	C 10-A	0.253	0.230	0.249
165	unk	0.276	0.270	0.251
166	unk	0.136	0.134	0.124
167	unk	0.298	0.292	0.272
168	C 10-A	0.165	0.150	0.163
169	n C 11	8.026	8.493	6.793
170	unk	-	-	-
171	C 10-A	0.210	0.192	0.207
172	unk	0.173	0.170	0.158
173	C 10-A	-	-	-
174	unk	0.537	0.523	0.467
175	unk	-	-	-
176	unk	0.605	0.589	0.526
177	unk	0.406	0.395	0.353
178	unk	0.549	0.534	0.477
179	C 12-P	0.517	0.540	0.402
180	unk	0.259	0.252	0.224
181	unk	0.176	0.172	0.152
182	unk	0.367	0.357	0.317
183	unk	0.259	0.252	0.224
184	C 11-A	0.333	0.303	0.297
185	unk	0.654	0.637	0.566
186	C 12-P	0.395	0.412	0.307
187	C 11-A	1.504	1.369	1.342
188	unk	0.284	0.277	0.246
189	n C 12	6.980	7.288	5.423

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	47.246	50.499	43.356
Naphthenes	13.603	13.466	13.971
Aromatics	29.607	26.724	33.854
Unknowns	9.544	9.311	8.819
Olefins	<0.1	<0.1	<0.1
Average molecular weight	133.92	Denisty @ 15°C	0.8056

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
BZ = benzene; TOL = toluene; XYL = xylene; unk = unknown.
PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

Report: 04PEAD09127
Sample : YOLLA #4 From Condensate 2809 Sand, Cut 190-230

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	-	-	-
3	n C 4	-	-	-
4	22 DMC 3	-	-	-
5	i C 5	-	-	-
6	n C 5	-	-	-
7	22 DMC 4	-	-	-
8	CYC 5	-	-	-
9	23 DMC 4	-	-	-
10	2 MC 5	-	-	-
11	3 MC 5	-	-	-
12	n C 6	-	-	-
13	22 DMC 5	-	-	-
14	M CYC 5	-	-	-
15	24 DMC 5	-	-	-
16	223 TMC 4	-	-	-
17	BZ	-	-	-
18	33 DMC 5	-	-	-
19	CYC 6	-	-	-
20	2 MC 6	-	-	-
21	23 DMC 5	-	-	-
22	11 DMCYC 5	-	-	-
23	3 MC 6	-	-	-
24	t 13 DMCYC 5	-	-	-
25	c 13 DMCYC 5	-	-	-
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	-	-	-
28	n C7	-	-	-
29	MCYC 6	-	-	-
30	22 DMC 6	-	-	-
31	ECYC 5	-	-	-
32	25 DMC 6	-	-	-
33	24 DMC 6	-	-	-
34	tc 124 TMCYC 5	-	-	-
35	234 TMC 5	-	-	-
36	tc 123 TMCYC 5	-	-	-
37	233 TMC 5	-	-	-
38	TOL	0.027	0.024	0.046
39	23 DMC 6	-	-	-
40	2 M 3 EC 5	-	-	-
41	2 MC 7	-	-	-
42	4 MC 7	-	-	-
43	34 DMC 6	-	-	-
44	tt 124 TMCYC 5	-	-	-
45	3 MC 7	-	-	-
46	1 M 2 E CYC 5	-	-	-

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	-	-	-
48	C 8-N	-	-	-
49	C 8-P	-	-	-
50	C 8-N	-	-	-
51	C 8-N	-	-	-
52	c 1 M 3 ECYC 6	-	-	-
53	C 8-P	-	-	-
54	t 12 DMCYC 6	-	-	-
55	n C 8	0.023	0.025	0.031
56	C 8-N	-	-	-
57	unk	-	-	-
58	C 9-P	-	-	-
59	unk	-	-	-
60	C 9-P	-	-	-
61	C 9-P	-	-	-
62	n C 3 CYC 5	-	-	-
63	N	-	-	-
64	113 TMCYC 6	-	-	-
65	C 9-P	-	-	-
66	C 9-P	-	-	-
67	N	-	-	-
68	N	-	-	-
69	N	-	-	-
70	E BZ	-	-	-
71	114 TMCYC 6	-	-	-
72	unk	-	-	-
73	unk	0.096	0.094	0.125
74	m+p XYL	0.032	0.029	0.047
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	-	-	-
79	2 MC 8	-	-	-
80	C 9-P	-	-	-
81	3 MC 8	-	-	-
82	N	-	-	-
83	o XYL	-	-	-
84	unk	-	-	-
85	unk	-	-	-
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	0.027	0.027	0.034
88	c 1 M 4 ECYC 6	-	-	-
89	N	-	-	-
90	N	-	-	-
91	N	-	-	-
92	n C9	0.164	0.177	0.200
93	1 M 1 ECYC 6	0.018	0.018	0.023
94	C 9-N	-	-	-
95	i PBZ	-	-	-
96	C 10-P	-	-	-
97	C 9-N	-	-	-
98	C 9-N	-	-	-
99	C 10-P	-	-	-
100	C 10-P	-	-	-
101	unk	-	-	-

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	-	-	-
103	s BCYC 5	0.064	0.063	0.079
104	C 10-P	-	-	-
105	C 10-P	-	-	-
106	3 MC 9	0.050	0.053	0.055
107	C 10-P	-	-	-
108	unk	-	-	-
109	unk	-	-	-
110	n PBZ	-	-	-
111	N	0.027	0.027	0.031
112	unk	0.041	0.040	0.048
113	unk	-	-	-
114	m E TOL	-	-	-
115	p E TOL	-	-	-
116	135 TM BZ	0.164	0.147	0.214
117	N	0.132	0.128	0.147
118	C 10-N	-	-	-
119	C 10-P	0.320	0.335	0.351
120	2 MC 9	0.080	0.085	0.088
121	o E TOL	0.080	0.070	0.104
122	C 10-P	-	-	-
123	36 DMC 8	0.164	0.175	0.180
124	N	0.064	0.062	0.071
125	C 10-N	-	-	-
126	124 TM BZ	1.109	0.980	1.442
127	C 10-N	-	-	-
128	N	0.146	0.142	0.163
129	C 10-N	-	-	-
130	N	-	-	-
131	N	-	-	-
132	N	-	-	-
133	C 10-P	-	-	-
134	n C 10	3.081	3.272	3.383
135	unk	0.059	0.057	0.069
136	unk	0.073	0.070	0.085
137	123 TM BZ	0.192	0.166	0.249
138	unk	0.575	0.554	0.648
139	unk	0.205	0.198	0.231
140	unk	-	-	-
141	unk	-	-	-
142	C 10-A	0.132	0.119	0.154
143	C 10-N	0.826	0.801	0.920
144	C 11-P	0.383	0.402	0.383
145	unk	-	-	-
146	C 10-N	0.831	0.805	0.925
147	unk	-	-	-
148	unk	0.215	0.203	0.239
149	C 10-A	0.205	0.185	0.239
150	C 10-A	0.730	0.658	0.850
151	C 10-A	0.068	0.062	0.080
152	unk	0.424	-	-
153	C 10-A	1.068	0.963	1.243
154	unk	0.237	0.230	0.258
155	unk	0.215	0.208	0.233
156	unk	0.571	0.553	0.621

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	-	-	-
159	C 11-P	1.666	1.745	1.665
160	C 11-P	1.406	1.473	1.405
161	C 11-P	0.141	0.148	0.141
162	C 10-A	0.539	0.486	0.627
163	C 11-P	0.612	0.641	0.611
164	C 10-A	0.475	0.428	0.553
165	unk	0.717	0.694	0.771
166	unk	0.383	0.372	0.412
167	unk	0.730	0.708	0.785
168	C 10-A	0.402	0.362	0.468
169	n C 11	21.891	22.934	21.879
170	unk	-	-	-
171	C 10-A	-	-	-
172	unk	0.484	0.469	0.520
173	C 10-A	1.369	1.234	1.594
174	unk	1.629	1.569	1.672
175	unk	-	-	-
176	unk	2.122	2.044	2.178
177	unk	1.328	1.279	1.363
178	unk	2.068	1.991	2.122
179	C 12-P	1.885	1.949	1.729
180	unk	0.968	0.934	0.989
181	unk	0.676	0.652	0.690
182	unk	1.420	1.370	1.450
183	unk	1.054	1.018	1.077
184	C 11-A	1.383	1.247	1.458
185	unk	2.780	2.683	2.840
186	C 12-P	1.780	1.840	1.633
187	C 11-A	6.093	5.493	6.424
188	unk	1.356	1.308	1.385
189	n C 12	29.723	30.725	27.270

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	63.369	65.978	61.004
Naphthenes	2.136	2.071	2.393
Aromatics	14.070	12.654	15.792
Unknowns	20.425	19.297	20.811
Olefins	<0.1	<0.1	<0.1
Average molecular weight	158.12	Denisty @ 15°C	0.8208

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
BZ = benzene; TOL = toluene; XYL = xylene; unk = unknown.
PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

28 October 2004

Upstream Origin Energy
Bass Gas Plant
GPO Box 2576
Adelaide
SA 5001

Attention: Joe Parvar

REPORT 04PEAD09357

CLIENT REFERENCE:

WELL NAME/RE: Yolla 4, from 2458

MATERIAL: Crude Oil

WORK REQUIRED: Crude oil assay

AUTHOR'S NAME: Mohammad Massoumi

Please direct technical enquiries regarding this work, to the signatory below, under whose supervision the work was carried out. This report relates specifically to the sample or samples submitted for testing.

Diane Cass
Operations Manager
Petroleum Services

dc.rn

\\jupiter\Petroleum\Secretary\petroleum\Docs-03\04pead09357.doc

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CRUDE OIL ASSAY

Yolla 4, from 2458

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PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09357

Sample: Crude Oil
Yolla 4, from 2458

Method		Description	Units	Crude Oil
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson Carbon Residue	% wt	0.84
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.8373
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/kg	<1
		Aluminium	mg/kg	2
		Boron	mg/kg	<1
		Barium	mg/kg	<1
		Calcium	mg/kg	2
		Chromium	mg/kg	<1
		Copper	mg/kg	<1
		Iron	mg/kg	2
		Magnesium	mg/kg	2
		Manganese	mg/kg	<1
		Molybdenum	mg/kg	<1
		Sodium	mg/kg	92
		Nickel	mg/kg	<1
		Phosphorus	mg/kg	5
		Lead	mg/kg	<1
		Silicon	mg/kg	7
		Tin	mg/kg	<1
		Titanium	mg/kg	<1
		Vanadium	mg/kg	<1
		Zinc	mg/kg	<1
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	°C	-
IP156	ASTM D1319	Fluorescent Indicator Absorption Aromatics	% vol	-
IP15	ASTM D97	Pour Point	°C	36
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.8377
IP216		Total Contaminant	mg/L	-
	ASTM D2270	Viscosity Index		-
IP289	ASTM D1094	Water Reaction Interface Rating		-
	ASTM D1796	Total Water And Sediment	%vol	0.60
	ASTM D1796	Water And Sediment (Tube 1)	mL	0.30
	ASTM D1796	Water And Sediment (Tube 2)	mL	0.30
IP160/9(	ASTM D1298	API Gravity	degrees	37.41

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 28-Oct-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09357

CRUDE OIL SAMPLE

TEST	UNIT	RESULT
Total Sulphur	% wt	0.05
Ash	%wt	0.030
Wax Content	% wt	45.7
Mercury	mg/kg	0.12
Kinematic Viscosity @ 50°C	cSt	6.360
Acid Number	mg KOH/g	0.15
Hydrogen Sulphide	mg/kg	<1
Mercaptans	mg/kg	208
Methanol	%wt	<1

TABLE 1

ASTM D2892 DISTILLATION AND DENSITIES :
Crude Oil (Yolla 4, from 2458)
Report # 04PEAD09357

Temp (deg F)	Temp (deg C)	Density at 15 °C	Cumulative Weight (%)	Cumulative Volume (%)	Mid Volume (%)	Specific Gravity (60/60 °F)	API Gravity
LPG	LPG	0.6070	0.5	0.7	0.4	0.6072	101.5
158.0	70.0	0.6832	1.2	1.6	1.2	0.6834	75.6
212.0	100.0	0.7662	5.1	5.8	3.7	0.7664	53.1
284.0	140.0	0.7910	9.6	10.6	8.2	0.7912	47.3
302.0	150.0	0.7947	11.2	12.2	11.4	0.7949	46.5
374.0	190.0	0.8000	15.7	17.0	14.6	0.8003	45.3
446.0	230.0	0.8216	19.8	21.2	19.1	0.8219	40.7
491.0	255.0	0.8420	26.1	27.4	24.3	0.8423	36.5
545.0	285.0	0.8400	33.1	34.4	30.9	0.8404	36.9
584.6	307.0	0.8335	39.9	41.2	37.8	0.8339	38.2
626.0	330.0	0.8356	45.5	46.8	44.0	0.8360	37.8
680.0	360.0	0.8324	54.9	56.3	51.5	0.8328	38.4
680+	360+	0.8594	99.9	100.1	78.2	0.8598	33.1

This report relates specifically to the sample tested.

Approved Signatory _____

Mohammad Massoumi

Accreditation No: 2013

Date 28-Oct-04

TABLE 2

ASTM D2892 DISTILLATION AND DENSITIES
Crude Oil (Yolla 4, from 2458)
Report # 04PEAD09357

Temp (deg F)	Temp (deg C)	Weight (%)	Volume (%)
LPG	LPG	0.5	0.7
158.0	70.0	0.7	0.9
212.0	100.0	3.8	4.2
284.0	140.0	4.5	4.8
302.0	150.0	1.6	1.7
374.0	190.0	4.6	4.8
446.0	230.0	4.1	4.1
491.0	255.0	6.3	6.3
545.0	285.0	7.0	7.0
584.6	307.0	6.8	6.8
626.0	330.0	5.6	5.6
680.0	360.0	9.4	9.5
680+	360+	45.0	43.8

This report relates specifically to the sample tested.

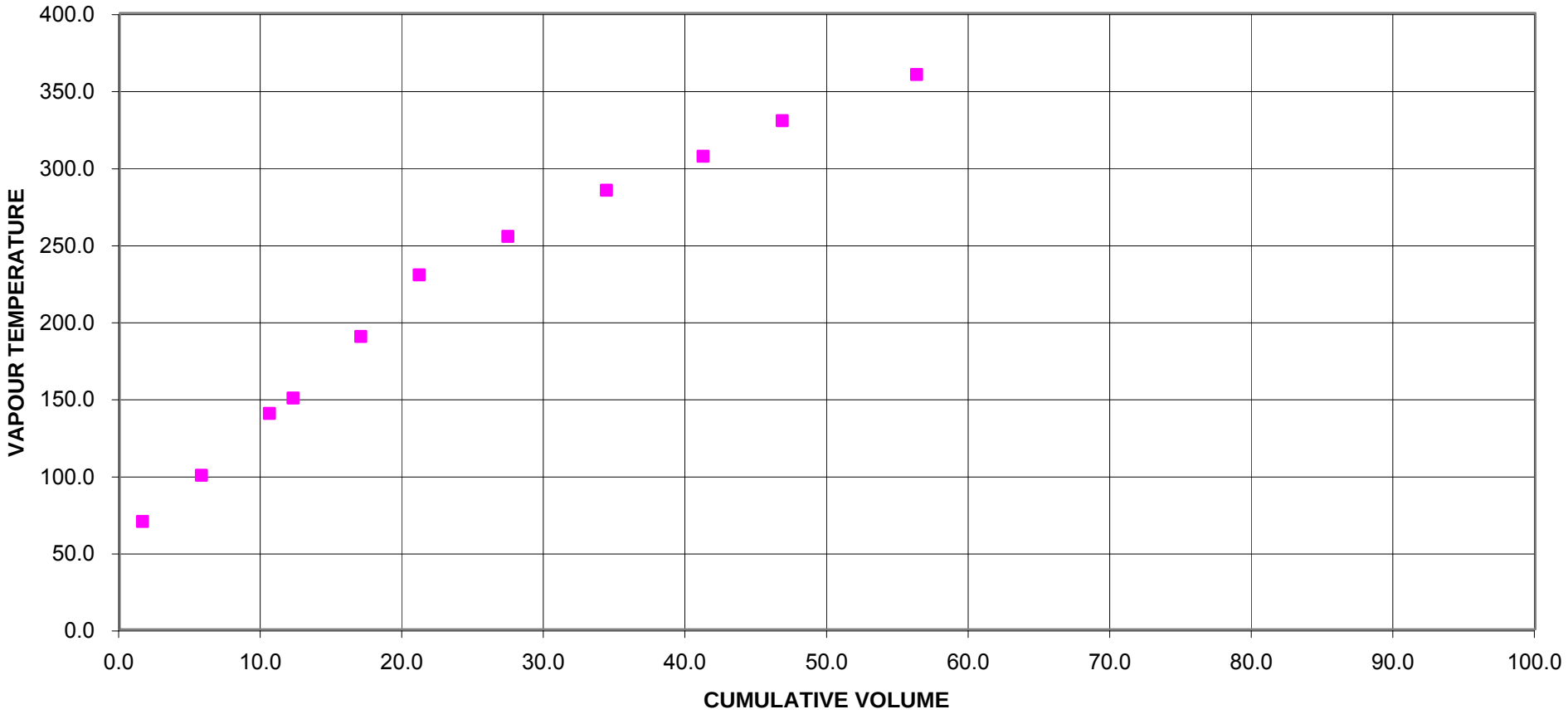
Approved Signatory _____

Mohammad Massoumi

Accreditation No: 2013

Date 28-Oct-04

TRUE BOILING POINT CURVE CRUDE OIL
Yolla 4, from 2458



PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09357

Sample: Crude Oil
Yolla 4, from 2458

Method		Description	Units	Cut C5-70°C
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D250	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D262	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D405	Density @ 15°C	g/mL	0.6832
IP21		Diesel Index		
	ASTM D518	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	°C	-
IP156	ASTM D131	Fluorescent Indicator Absorption Aromati	% vol	-
IP15	ASTM D97	Pour Point	°C	-
IP365	ASTM D405	Specific Gravity @ 60/60°F		0.6833
IP216		Total Contaminant	mg/L	-
	ASTM D227	Viscosity Index		-
IP289	ASTM D109	Water Reaction Interface Rating		-
	ASTM D400	Total Water And Sediment	%vol	-
	ASTM D400	Water And Sediment(Tube 1)	mL	-
	ASTM D400	Water And Sediment(Tube 2)	mL	-
IP160/9	ASTM D129	API Gravity	degrees	75.58

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 28-Oct-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09357

CUT C5 – 70°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	8.12
Kinematic Viscosity @ 25°C	cSt	0.448

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09357

Sample: Crude Oil
Yolla 4, from 2458

Method		Description	Units	Cut 70-150°C
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D250	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D262	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D405	Density @ 15°C	g/mL	0.7819
IP21		Diesel Index		
	ASTM D518	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	°C	-
IP156	ASTM D131	Fluorescent Indicator Absorption Aromati	% vol	-
IP15	ASTM D97	Pour Point	°C	-
IP365	ASTM D405	Specific Gravity @ 60/60°F		0.7822
IP216		Total Contaminant	mg/L	-
	ASTM D227	Viscosity Index		-
IP289	ASTM D109	Water Reaction Interface Rating		-
	ASTM D400	Total Water And Sediment	%vol	-
	ASTM D400	Water And Sediment(Tube 1)	mL	-
	ASTM D400	Water And Sediment(Tube 2)	mL	-
IP160/9	ASTM D129	API Gravity	degrees	49.40

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 28-Oct-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09357

CUT 70 – 150°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	7.62
Kinematic Viscosity @ 25°C	cSt	0.697

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09357

Sample: Crude Oil
Yolla 4, from 2458

Method		Description	Units	Cut C5-190°C
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D250	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D262	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D405	Density @ 15°C	g/mL	0.7830
IP21		Diesel Index		
	ASTM D518	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP34	ASTM D93	Flash Point Pensky Martens Closed Cup	°C	-
IP156	ASTM D131	Fluorescent Indicator Absorption Aromati	% vol	-
IP15	ASTM D97	Pour Point	°C	-
IP365	ASTM D405	Specific Gravity @ 60/60°F		0.7833
IP216		Total Contaminant	mg/L	-
	ASTM D227	Viscosity Index		-
IP289	ASTM D109	Water Reaction Interface Rating		-
	ASTM D400	Total Water And Sediment	%vol	-
	ASTM D400	Water And Sediment(Tube 1)	mL	-
	ASTM D400	Water And Sediment(Tube 2)	mL	-
IP160/9	ASTM D129	API Gravity	degrees	49.15

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 28-Oct-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09357

CUT C5 – 190°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	9.76
Kinematic Viscosity @ 25°C	cSt	0.779

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09357

Sample: Crude Oil
Yolla 4, from 2458

Method		Description	Units	Cut 140-190°C
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D250	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D262	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D405	Density @ 15°C	g/mL	0.8001
IP21		Diesel Index		
	ASTM D518	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP16	ASTM D238	Freezing Point	°C	-73.5
	ASTM D132	Smoke Point	mm	21
IP15	ASTM D97	Pour Point	°C	-
IP365	ASTM D405	Specific Gravity @ 60/60°F		0.8005
IP216		Total Contaminant	mg/L	-
	ASTM D227	Viscosity Index		-
IP289	ASTM D109	Water Reaction	Interface Rating	-
	ASTM D400	Total Water And Sediment	%vol	-
	ASTM D400	Water And Sediment(Tube 1)	mL	-
	ASTM D400	Water And Sediment(Tube 2)	mL	-
IP160/9	ASTM D129	API Gravity	degrees	45.26

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 28-Oct-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09357

CUT 140 – 190°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	20.63
Kinematic Viscosity @ 25°C	cSt	0.999

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09357

Sample: Crude Oil
Yolla 4, from 2458

Method		Description	Units	Cut 140-230°C
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D250	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D262	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D405	Density @ 15°C	g/mL	0.8087
IP21		Diesel Index		
	ASTM D518	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP16	ASTM D238	Freezing Point	°C	-53
	ASTM D132	Smoke Point	mm	19.5
IP15	ASTM D97	Pour Point	°C	-
IP365	ASTM D405	Specific Gravity @ 60/60°F		0.8091
IP216		Total Contaminant	mg/L	-
	ASTM D227	Viscosity Index		-
IP289	ASTM D109	Water Reaction Interface Rating		-
	ASTM D400	Total Water And Sediment	%vol	-
	ASTM D400	Water And Sediment(Tube 1)	mL	-
	ASTM D400	Water And Sediment(Tube 2)	mL	-
IP160/9	ASTM D129	API Gravity	degrees	43.39

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 28-Oct-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09357

CUT 140 - 230°C

TEST	UNIT	RESULT
Kinematic Viscosity @ 25°C	cSt	1.292

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09357

Sample: Crude Oil
Yolla 4, from 2458

Method		Description	Units	Cut 190-230°C
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D250	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D262	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D405	Density @ 15°C	g/mL	0.8216
IP21		Diesel Index		
	ASTM D518	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP131	ASTM D381	Existent Gum by Evaporation	mg/100mL	-
IP170		Flash Point Abel Closed Cup	°C	-
IP16	ASTM D238	Freezing Point	°C	-38.5
	ASTM D132	Smoke Point	mm	18
IP15	ASTM D97	Pour Point	°C	-
IP365	ASTM D405	Specific Gravity @ 60/60°F		0.8220
IP216		Total Contaminant	mg/L	-
	ASTM D227	Viscosity Index		-
IP289	ASTM D109	Water Reaction	Interface Rating	-
	ASTM D400	Total Water And Sediment	%vol	-
	ASTM D400	Water And Sediment(Tube 1)	mL	-
	ASTM D400	Water And Sediment(Tube 2)	mL	-
IP160/9	ASTM D129	API Gravity	degrees	40.64

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 28-Oct-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09357

CUT 190 – 230°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	101.99
Kinematic Viscosity @ 25°C	cSt	1.902

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09357

Sample: Crude Oil
Yolla 4, from 2458

Method		Description	Units	Cut 230-330°C
IP2	ASTM D611	Aniline Point	°C	77.2
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		54.5
IP219	ASTM D250	Cloud Point	°C	7
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D262	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	0.07
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D405	Density @ 15°C	g/mL	0.8377
IP21		Diesel Index		-
	ASTM D518	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	3.705
IP16	ASTM D238	Freezing Point	°C	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C	cSt	-
IP15	ASTM D97	Pour Point	°C	-
	ASTM D238	Smoke Point	mm	-
IP365	ASTM D405	Specific Gravity @ 60/60°F		0.8381
	ASTM D518	Total Sulphur	mg/kg	-
IP216		Total Contaminant	mg/L	-
	ASTM D227	Viscosity Index		-
IP289	ASTM D109	Water Reaction Interface Rating		-
	ASTM D400	Total Water And Sediment	%vol	-
	ASTM D400	Water And Sediment(Tube 1)	mL	-
	ASTM D400	Water And Sediment(Tube 2)	mL	-
IP160/9	ASTM D129	API Gravity	degrees	37.33

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 28-Oct-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09357

CUT 230 – 330°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	428.20

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09357

Sample: Crude Oil
Yolla 4, from 2458

Method		Description	Units	Cut 230-360°C
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D250	Cloud Point	°C	20
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D262	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson C Residue on 10% Dis Residue	% wt	-
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D405	Density @ 15°C	g/mL	0.8360
IP21		Diesel Index		-
	ASTM D518	Trace Elements		
		Silver	mg/L	-
		Aluminium	mg/L	-
		Boron	mg/L	-
		Barium	mg/L	-
		Calcium	mg/L	-
		Cadmium	mg/L	-
		Chromium	mg/L	-
		Copper	mg/L	-
		Iron	mg/L	-
		Magnesium	mg/L	-
		Manganese	mg/L	-
		Molybdenum	mg/L	-
		Sodium	mg/L	-
		Nickel	mg/L	-
		Phosphorus	mg/L	-
		Lead	mg/L	-
		Silicon	mg/L	-
		Tin	mg/L	-
		Titanium	mg/L	-
		Vanadium	mg/L	-
		Zinc	mg/L	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	4.711
IP16	ASTM D238	Freezing Point	°C	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C	cSt	-
IP15	ASTM D97	Pour Point	°C	-
	ASTM D238	Smoke Point	mm	-
IP365	ASTM D405	Specific Gravity @ 60/60°F		0.8364
	ASTM D518	Total Sulphur	mg/kg	-
IP216		Total Contaminant	mg/L	-
	ASTM D227	Viscosity Index		-
IP289	ASTM D109	Water Reaction	Interface Rating	-
	ASTM D400	Total Water And Sediment	%vol	-
	ASTM D400	Water And Sediment(Tube 1)	mL	-
	ASTM D400	Water And Sediment(Tube 2)	mL	-
IP160/9	ASTM D129	API Gravity	degrees	37.68

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 28-Oct-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09357

CUT 230 – 360°C

TEST	UNIT	RESULT
Total Sulphur	mg/kg	432.67

PHYSICAL PROPERTIES

Client: Upstream Origin Energy Report: 04PEAD09357

Sample: Crude Oil
Yolla 4, from 2458

Method		Description	Units	Cut 360°C+
IP2	ASTM D611	Aniline Point	°C	-
IP143		Asphaltenes	% wt	-
IP364	ASTM D976	Calculated Cetane Index		-
IP219	ASTM D2500	Cloud Point	°C	-
IP17		Colour by Lovibond Tintometer		-
IP274	ASTM D2624	Conductivity of Fuels	pS/m	-
IP13	ASTM D189	Conradson Carbon Residue	% wt	1.76
IP154	ASTM D130	Copper Corrosion		-
IP365	ASTM D4052	Density @ 15°C	g/mL	0.8594
IP21		Diesel Index		-
	ASTM D5185	Trace Elements		
		Silver	mg/kg	<1
		Aluminium	mg/kg	2
		Boron	mg/kg	<1
		Barium	mg/kg	<1
		Calcium	mg/kg	4
		Cadmium	mg/kg	<1
		Chromium	mg/kg	<1
		Copper	mg/kg	<1
		Iron	mg/kg	2
		Magnesium	mg/kg	1
		Manganese	mg/kg	<1
		Molybdenum	mg/kg	<1
		Sodium	mg/kg	41
		Nickel	mg/kg	<1
		Phosphorus	mg/kg	4
		Lead	mg/kg	<1
		Silicon	mg/kg	15
		Tin	mg/kg	<1
		Titanium	mg/kg	<1
		Vanadium	mg/kg	<1
		Zinc	mg/kg	<1
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP16	ASTM D2386	Freezing Point	°C	-
IP71	ASTM D445	Kinematic Viscosity @ 40°C	cSt	-
IP71	ASTM D445	Kinematic Viscosity @ 100°C	cSt	-
IP15	ASTM D97	Pour Point	°C	51
	ASTM D2386	Smoke Point	mm	-
IP365	ASTM D4052	Specific Gravity @ 60/60°F		0.8599
	ASTM D5185	Total Sulphur	mg/kg	-
	ASTM D2270	Viscosity Index		-
	ASTM D4007	Total Water And Sediment	%vol	-
	ASTM D4007	Water And Sediment(Tube 1)	mL	-
	ASTM D4007	Water And Sediment(Tube 2)	mL	-
IP160/9(	ASTM D1298	API Gravity	degrees	33.05

- = not determined

Approved Signatory: _____
Mohammad Massoumi

Date: 28-Oct-04 Accreditation No: 2013

This report relates specifically to the sample submitted for testing.

Report No: 04PEAD09357

CUT 360°C+

TEST	UNIT	RESULT
Total Sulphur	%wt	0.10
Kinematic Viscosity @ 60°C	cSt	17.02
Ash Content	%wt	0.03

Report No: 04PEAD09357

METHODS

TEST	METHODS
True Boiling Point	ASTM D2892
Density-API Gravity	ASTM D4052
Kinematic Viscosity	ASTM D445
Sulphur Content	ASTM D5453, IP336
Trace Elements	ASTM D5185
PONA	GC (gas chromatography)
Smoke Point	ASTM D1322
Freezing Point	ASTM D2386
Conradson Carbon Residue	ASTM D189
Pour Point	ASTM D97
Cloud Point	ASTM D2500
Calculated Cetane Index	ASTM D976
Mercury	AAS
Aniline Point	ASTM D611
Wax Content	UOP 46
Water and Sediment	ASTM D1796
Ash Content	ASTM D482
Hydrogen Sulphide	ASTM D3227
Mercaptans	ASTM D3227
Acid Number	ASTM D664
Methanol	FTIR

APPENDIX

PETROLEUM SERVICES LIQUID ANALYSIS Method GL-02-01

Client: Upstream Origin Energy Resources Ltd (Bass Gas) Report # 04PEAD09357

Sample: YOLLA-4
2458 CRUDE OIL

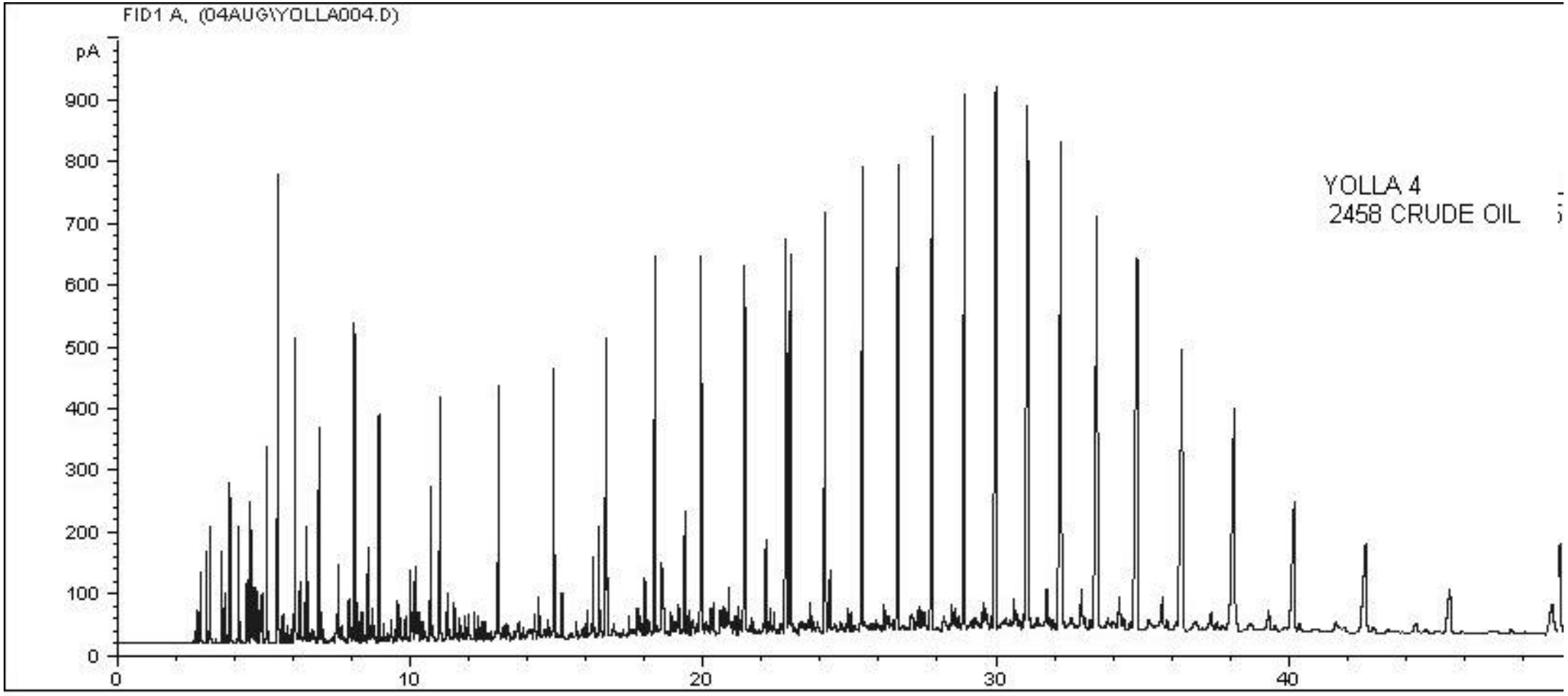
Boiling Point Range (Deg.C)	Component	Weight%	Mol%
-88.6	ETHANE	0.02	0.14
-42.1	PROPANE	0.08	0.37
-11.7	I-BUTANE	0.07	0.25
-0.5	N-BUTANE	0.18	0.64
27.9	I-PENTANE	0.24	0.69
36.1	N-PENTANE	0.31	0.89
36.1-68.9	HEXANE, C-6	1.03	2.46
80.0	BENZENE	0.23	0.61
80.7	CYCLOHEXANE	0.49	1.20
68.9-98.3	HEPTANE,C-7	2.05	4.21
100.9	METHYLCYCLOHEXANE	1.86	3.91
110.6	TOLUENE	1.16	2.60
98.3-125.6	OCTANE, C-8	2.69	4.85
136.1-144.4	ETHYLBZ+XYLENES	2.45	4.75
125.6-150.6	C-9	2.59	4.16
150.6-173.9	C-10	4.18	6.06
173.9-196.1	C-11	3.16	4.16
196.1-215.0	C-12	2.92	3.53
215.0-235.0	C-13	3.91	4.37
235.0-252.2	C-14	3.69	3.83
252.2-270.6	C-15	5.07	4.92
270.6-287.8	C-16	4.30	3.91
287.8-302.8	C-17	3.95	3.38
302.8-317.2	C-18	6.14	4.97
317.2-330.0	C-19	4.42	3.39
330.0-344.4	C-20	4.43	3.23
344.4-357.2	C-21	4.84	3.36
357.2-369.4	C-22	5.00	3.32
369.4-380.0	C-23	5.48	3.48
380.0-391.1	C-24	0.97	0.59
391.1-401.7	C-25	0.98	0.57
401.7-412.2	C-26	0.94	0.53
412.2-422.2	C-27	5.54	3.00
>422.2	C-28+	14.63	7.67
	Total	100.00	100.00
	(0.00 = LESS THAN 0.01%)		

The above boiling point ranges refer to the normal paraffin hydrocarbon boiling in that range. Aromatics, branched hydrocarbons, naphthenes and olefins may have higher or lower carbon numbers but are grouped and reported according to their boiling points.

Average molecular weight of C-8 plus fraction (calc) = 222 g/mol

This report relates specifically to the sample submitted for analysis.

Approved Signatory
Accreditation No: 2013
Date 01-Sep-04


FID1 A, (04AUG\YOLLA004.D)
pA
900
800
700
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500
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200
100
0
0
10
20
30
40
YOLLA 4
2458 CRUDE OIL

Report: 04PEAD09357
Sample : YOLLA #4 From Crude Oil 2Sand 2458, Cut 70-150°C

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	-	0.005	0.007
3	n C 4	0.010	0.013	0.018
4	22 DMC 3	0.051	0.065	0.073
5	i C 5	0.156	0.196	0.222
6	n C 5	0.231	0.288	0.331
7	22 DMC 4	0.014	0.017	0.017
8	CYC 5	0.072	0.075	0.106
9	23 DMC 4	0.085	0.100	0.101
10	2 MC 5	0.493	0.588	0.589
11	3 MC 5	0.347	0.407	0.415
12	n C 6	1.468	1.733	1.755
13	22 DMC 5	0.060	0.070	0.062
14	M CYC 5	1.356	1.413	1.661
15	24 DMC 5	0.129	0.149	0.133
16	223 TMC 4	0.023	0.026	0.024
17	BZ	0.839	0.744	1.107
18	33 DMC 5	0.048	0.054	0.049
19	CYC 6	2.455	2.458	3.007
20	2 MC 6	1.113	1.278	1.144
21	23 DMC 5	0.365	0.409	0.375
22	11 DMCYC 5	0.258	0.266	0.270
23	3 MC 6	1.122	1.275	1.154
24	t 13 DMCYC 5	0.680	0.717	0.714
25	c 13 DMCYC 5	0.728	0.763	0.764
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	1.044	1.102	1.096
28	n C7	4.396	5.013	4.522
29	MCYC 6	11.141	11.287	11.696
30	22 DMC 6	0.305	0.342	0.275
31	ECYC 5	-	-	-
32	25 DMC 6	0.688	0.774	0.621
33	24 DMC 6	0.220	0.245	0.198
34	tc 124 TMCYC 5	0.389	0.397	0.357
35	234 TMC 5	0.066	0.072	0.060
36	tc 123 TMCYC 5	0.332	0.336	0.305
37	233 TMC 5	0.017	0.018	0.015
38	TOL	22.001	19.782	24.608
39	23 DMC 6	0.178	0.195	0.161
40	2 M 3 EC 5	0.070	0.076	0.063
41	2 MC 7	1.459	1.629	1.317
42	4 MC 7	0.391	0.432	0.353
43	34 DMC 6	0.095	0.103	0.086
44	tt 124 TMCYC 5	-	-	-
45	3 MC 7	1.025	1.130	0.925
46	1 M 2 E CYC 5	2.903	3.023	2.667

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	1.230	1.257	1.130
48	C 8-N	0.327	0.327	0.300
49	C 8-P	-	-	-
50	C 8-N	0.181	0.181	0.166
51	C 8-N	0.167	0.167	0.153
52	c 1 M 3 ECYC 6	0.251	0.257	0.205
53	C 8-P	0.042	0.047	0.038
54	t 12 DMCYC 6	1.196	1.171	1.099
55	n C 8	5.167	5.733	4.662
56	C 8-N	0.771	0.772	0.708
57	unk	0.064	0.065	0.056
58	C 9-P	0.072	0.078	0.058
59	unk	0.034	0.033	0.032
60	C 9-P	0.137	0.149	0.110
61	C 9-P	0.652	0.707	0.524
62	n C 3 CYC 5	1.903	1.911	1.748
63	N	0.020	0.020	0.019
64	113 TMCYC 6	0.347	0.347	0.283
65	C 9-P	0.378	0.410	0.304
66	C 9-P	0.123	0.133	0.099
67	N	0.042	0.042	0.039
68	N	0.044	0.044	0.041
69	N	0.084	0.084	0.078
70	E BZ	1.204	1.083	1.169
71	114 TMCYC 6	0.308	0.312	0.252
72	unk	0.033	0.032	0.028
73	unk	0.340	0.338	0.292
74	m+p XYL	10.448	9.487	10.143
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	0.354	0.383	0.284
79	2 MC 8	0.735	0.806	0.591
80	C 9-P	0.072	0.078	0.058
81	3 MC 8	0.627	0.678	0.504
82	N	0.155	0.158	0.143
83	o XYL	2.247	1.990	2.181
84	unk	-	-	-
85	unk	0.150	0.148	0.131
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	0.629	0.614	0.513
88	c 1 M 4 ECYC 6	0.288	0.288	0.236
89	N	-	-	-
90	N	0.154	0.154	0.126
91	N	-	-	-
92	n C9	3.969	4.311	3.189
93	1 M 1 ECYC 6	0.307	0.304	0.251
94	C 9-N	0.092	0.091	0.075
95	i PBZ	0.042	0.038	0.036
96	C 10-P	0.032	0.034	0.023
97	C 9-N	0.084	0.084	0.069
98	C 9-N	0.415	0.410	0.339
99	C 10-P	0.015	0.016	0.011
100	C 10-P	0.092	0.099	0.067
101	unk	0.096	0.094	0.076

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	0.050	0.054	0.036
103	s BCYC 5	0.505	0.499	0.412
104	C 10-P	-	-	-
105	C 10-P	-	-	-
106	3 MC 9	0.307	0.328	0.222
107	C 10-P	0.065	0.069	0.047
108	unk	-	-	-
109	unk	-	-	-
110	n PBZ	0.040	0.036	0.034
111	N	0.211	0.206	0.155
112	unk	0.211	0.206	0.162
113	unk	0.039	0.038	0.030
114	m E TOL	0.033	0.030	0.029
115	p E TOL	0.015	0.014	0.013
116	135 TM BZ	0.688	0.620	0.590
117	N	0.389	0.380	0.286
118	C 10-N	0.038	0.037	0.028
119	C 10-P	0.554	0.584	0.401
120	2 MC 9	0.089	0.095	0.064
121	o E TOL	0.089	0.078	0.076
122	C 10-P	0.017	0.018	0.012
123	36 DMC 8	0.229	0.245	0.166
124	N	0.044	0.043	0.032
125	C 10-N	-	-	-
126	124 TM BZ	0.671	0.597	0.576
127	C 10-N	-	-	-
128	N	0.031	0.031	0.023
129	C 10-N	-	-	-
130	N	-	-	-
131	N	-	-	-
132	N	-	-	-
133	C 10-P	-	-	-
134	n C 10	0.515	0.550	0.373
135	unk	0.012	0.012	0.009
136	unk	0.013	0.012	0.01
137	123 TM BZ	0.027	0.023	0.023
138	unk	0.084	0.082	0.063
139	unk	0.015	0.015	0.011
140	unk	-	-	-
141	unk	-	-	-
142	C 10-A	-	-	-
143	C 10-N	0.031	0.030	0.023
144	C 11-P	-	-	-
145	unk	-	-	-
146	C 10-N	0.015	0.015	0.011
147	unk	-	-	-
148	unk	0.014	0.013	0.010
149	C 10-A	-	-	-
150	C 10-A	0.014	0.013	0.011
151	C 10-A	-	-	-
152	unk	-	-	-
153	C 10-A	-	-	-
154	unk	-	-	-
155	unk	-	-	-
156	unk	-	-	-

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	-	-	-
159	C 11-P	-	-	-
160	C 11-P	-	-	-
161	C 11-P	-	-	-
162	C 10-A	-	-	-
163	C 11-P	-	-	-
164	C 10-A	-	-	-
165	unk	-	-	-
166	unk	-	-	-
167	unk	-	-	-
168	C 10-A	-	-	-
169	n C 11	-	-	-
170	unk	-	-	-
171	C 10-A	-	-	-
172	unk	-	-	-
173	C 10-A	-	-	-
174	unk	-	-	-
175	unk	-	-	-
176	unk	-	-	-
177	unk	-	-	-
178	unk	-	-	-
179	C 12-P	-	-	-
180	unk	-	-	-
181	unk	-	-	-
182	unk	-	-	-
183	unk	-	-	-
184	C 11-A	-	-	-
185	unk	-	-	-
186	C 12-P	-	-	-
187	C 11-A	-	-	-
188	unk	-	-	-
189	n C 12	-	-	-

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	28.918	32.306	26.908
Naphthenes	31.619	32.071	31.586
Aromatics	38.359	34.536	40.596
Unknowns	1.104	1.088	0.910
Olefins	<0.1	<0.1	<0.1
Average molecular weight	104.61	Denisty @ 15°C	0.7819

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
BZ = benzene; TOL = toluene; XYL = xylene; unk = unknown.
PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

Report: 04PEAD09357
Sample : YOLLA #4 From Crude Oil, Sand 2458, Cut C5 -190°C

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	-	-	0.006
3	n C 4	0.009	0.013	0.018
4	22 DMC 3	0.052	0.066	0.079
5	i C 5	0.473	0.593	0.720
6	n C 5	0.770	0.956	1.173
7	22 DMC 4	0.036	0.044	0.046
8	CYC 5	0.191	0.199	0.300
9	23 DMC 4	0.155	0.182	0.198
10	2 MC 5	0.924	1.099	1.177
11	3 MC 5	0.563	0.658	0.718
12	n C 6	1.884	2.217	2.401
13	22 DMC 5	0.051	0.058	0.055
14	M CYC 5	1.443	1.497	1.883
15	24 DMC 5	0.106	0.122	0.116
16	223 TMC 4	0.019	0.021	0.021
17	BZ	0.865	0.765	1.217
18	33 DMC 5	0.035	0.039	0.038
19	CYC 6	1.928	1.924	2.517
20	2 MC 6	0.762	0.873	0.836
21	23 DMC 5	0.252	0.281	0.276
22	11 DMCYC 5	0.179	0.184	0.200
23	3 MC 6	0.759	0.860	0.832
24	t 13 DMCYC 5	0.462	0.485	0.517
25	c 13 DMCYC 5	0.492	0.514	0.550
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	0.706	0.742	0.789
28	n C7	2.920	3.318	3.201
29	MCYC 6	7.389	7.461	8.266
30	22 DMC 6	0.202	0.226	0.195
31	ECYC 5	-	-	-
32	25 DMC 6	0.457	0.512	0.440
33	24 DMC 6	0.147	0.164	0.141
34	tc 124 TMCYC 5	0.304	0.309	0.297
35	234 TMC 5	-	-	-
36	tc 123 TMCYC 5	0.221	0.223	0.217
37	233 TMC 5	0.011	0.012	0.011
38	TOL	14.582	13.067	17.379
39	23 DMC 6	0.119	0.129	0.114
40	2 M 3 EC 5	0.046	0.050	0.044
41	2 MC 7	0.976	1.086	0.939
42	4 MC 7	0.261	0.288	0.251
43	34 DMC 6	0.065	0.070	0.062
44	tt 124 TMCYC 5	-	-	-
45	3 MC 7	0.687	0.755	0.660
46	1 M 2 E CYC 5	1.950	2.024	1.909

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	0.826	0.841	0.808
48	C 8-N	0.220	0.219	0.215
49	C 8-P	-	-	-
50	C 8-N	0.122	0.122	0.119
51	C 8-N	0.112	0.112	0.110
52	c 1 M 3 ECYC 6	0.169	0.173	0.147
53	C 8-P	0.028	0.031	0.027
54	t 12 DMCYC 6	0.811	0.792	0.794
55	n C 8	3.494	3.864	3.360
56	C 8-N	0.524	0.522	0.512
57	unk	0.044	0.045	0.042
58	C 9-P	0.051	0.055	0.043
59	unk	0.024	0.023	0.024
60	C 9-P	0.096	0.104	0.083
61	C 9-P	0.462	0.499	0.396
62	n C 3 CYC 5	1.340	1.341	1.311
63	N	0.014	0.014	0.014
64	113 TMCYC 6	0.247	0.246	0.215
65	C 9-P	0.278	0.301	0.238
66	C 9-P	0.092	0.099	0.079
67	N	0.030	0.030	0.029
68	N	0.033	0.033	0.033
69	N	0.063	0.062	0.062
70	E BZ	0.862	0.772	0.892
71	114 TMCYC 6	0.247	0.249	0.215
72	unk	0.025	0.025	0.023
73	unk	0.296	0.293	0.270
74	m+p XYL	7.708	6.976	7.975
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	0.277	0.299	0.237
79	2 MC 8	0.581	0.635	0.497
80	C 9-P	0.073	0.079	0.062
81	3 MC 8	0.492	0.530	0.421
82	N	0.133	0.134	0.130
83	o XYL	1.832	1.617	1.895
84	unk	-	-	-
85	unk	0.138	0.135	0.128
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	0.612	0.596	0.533
88	c 1 M 4 ECYC 6	0.293	0.292	0.255
89	N	-	-	-
90	N	0.144	0.144	0.125
91	N	-	-	-
92	n C9	3.932	4.257	3.368
93	1 M 1 ECYC 6	0.361	0.355	0.314
94	C 9-N	0.109	0.108	0.095
95	i PBZ	0.051	0.046	0.046
96	C 10-P	0.041	0.044	0.032
97	C 9-N	0.112	0.111	0.098
98	C 9-N	0.527	0.519	0.458
99	C 10-P	0.021	0.022	0.016
100	C 10-P	0.131	0.140	0.101
101	unk	0.138	0.135	0.117

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	0.109	0.116	0.084
103	s BCYC 5	0.731	0.720	0.636
104	C 10-P	0.120	0.128	0.093
105	C 10-P	0.394	0.420	0.304
106	3 MC 9	0.394	0.420	0.304
107	C 10-P	0.114	0.121	0.088
108	unk	-	-	-
109	unk	0.057	0.056	0.047
110	n PBZ	0.082	0.074	0.075
111	N	0.337	0.328	0.264
112	unk	0.361	0.352	0.295
113	unk	0.073	0.071	0.060
114	m E TOL	0.070	0.063	0.064
115	p E TOL	0.046	0.041	0.042
116	135 TM BZ	1.277	1.146	1.167
117	N	0.823	0.800	0.644
118	C 10-N	0.085	0.083	0.067
119	C 10-P	1.813	1.907	1.400
120	2 MC 9	0.293	0.312	0.226
121	o E TOL	0.293	0.258	0.267
122	C 10-P	0.055	0.059	0.043
123	36 DMC 8	0.680	0.725	0.525
124	N	0.202	0.197	0.159
125	C 10-N	0.115	0.112	0.090
126	124 TM BZ	2.844	2.523	2.599
127	C 10-N	-	-	-
128	N	0.212	0.206	0.166
129	C 10-N	0.160	0.155	0.125
130	N	0.024	0.023	0.019
131	N	0.011	0.011	0.009
132	N	0.013	0.012	0.010
133	C 10-P	-	-	-
134	n C 10	4.193	4.471	3.237
135	unk	0.090	0.087	0.074
136	unk	0.112	0.108	0.092
137	123 TM BZ	0.261	0.227	0.239
138	unk	0.750	0.725	0.594
139	unk	0.220	0.213	0.174
140	unk	-	-	-
141	unk	-	-	-
142	C 10-A	0.092	0.083	0.075
143	C 10-N	0.622	0.605	0.487
144	C 11-P	0.269	0.283	0.189
145	unk	-	-	-
146	C 10-N	0.446	0.434	0.349
147	unk	0.446	0.434	0.341
148	unk	0.144	0.137	0.113
149	C 10-A	0.092	0.083	0.075
150	C 10-A	0.403	0.365	0.330
151	C 10-A	0.025	0.023	0.021
152	unk	0.199	-	-
153	C 10-A	0.498	0.451	0.408
154	unk	0.087	0.085	0.067
155	unk	0.082	0.080	0.063
156	unk	0.188	0.183	0.144

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	0.228	0.206	0.186
159	C 11-P	0.266	0.279	0.187
160	C 11-P	0.367	0.386	0.258
161	C 11-P	0.043	0.045	0.030
162	C 10-A	0.191	0.173	0.157
163	C 11-P	0.210	0.221	0.148
164	C 10-A	0.136	0.123	0.111
165	unk	0.130	0.126	0.098
166	unk	0.068	0.066	0.051
167	unk	0.141	0.137	0.106
168	C 10-A	0.079	0.072	0.065
169	n C 11	2.879	3.028	2.023
170	unk	-	-	-
171	C 10-A	0.109	0.099	0.089
172	unk	0.085	0.083	0.065
173	C 10-A	0.196	0.178	0.161
174	unk	0.214	0.206	0.154
175	unk	-	-	-
176	unk	0.223	0.216	0.161
177	unk	0.155	0.150	0.112
178	unk	0.212	0.205	0.153
179	C 12-P	0.174	0.181	0.112
180	unk	0.104	0.101	0.075
181	unk	0.085	0.083	0.061
182	unk	0.084	0.081	0.060
183	unk	0.062	0.060	0.044
184	C 11-A	0.074	0.067	0.055
185	unk	0.096	0.093	0.069
186	C 12-P	0.066	0.069	0.043
187	C 11-A	0.326	0.295	0.242
188	unk	0.044	0.043	0.032
189	n C 12	0.272	0.282	0.175

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	35.506	39.108	33.197
Naphthenes	26.094	26.264	27.062
Aromatics	33.222	29.792	35.832
Unknowns	5.177	4.835	3.909
Olefins	<0.1	<0.1	<0.1
Average molecular weight	112.07	Denisty @ 15°C	0.7830

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
BZ = benzene; TOL = toluene; XYL = xylene; unk = unknown.
PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

Report: 04PEAD09357
Sample : YOLLA #4 From Crude Oil, Sand 2458, Cut 140 -190°C

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	-	-	-
3	n C 4	-	-	-
4	22 DMC 3	0.015	0.019	0.027
5	i C 5	0.020	0.025	0.036
6	n C 5	0.022	0.028	0.040
7	22 DMC 4	-	-	-
8	CYC 5	-	-	-
9	23 DMC 4	-	-	-
10	2 MC 5	0.015	0.018	0.023
11	3 MC 5	0.007	0.009	0.011
12	n C 6	0.024	0.029	0.038
13	22 DMC 5	-	-	-
14	M CYC 5	0.017	0.018	0.027
15	24 DMC 5	-	-	-
16	223 TMC 4	-	-	-
17	BZ	0.010	0.009	0.017
18	33 DMC 5	-	-	-
19	CYC 6	0.020	0.020	0.031
20	2 MC 6	-	-	-
21	23 DMC 5	-	-	-
22	11 DMCYC 5	-	-	-
23	3 MC 6	-	-	-
24	t 13 DMCYC 5	-	-	-
25	c 13 DMCYC 5	-	-	-
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	-	-	-
28	n C7	0.034	0.039	0.045
29	MCYC 6	0.130	0.132	0.175
30	22 DMC 6	-	-	-
31	ECYC 5	-	-	-
32	25 DMC 6	-	-	-
33	24 DMC 6	-	-	-
34	tc 124 TMCYC 5	-	-	-
35	234 TMC 5	-	-	-
36	tc 123 TMCYC 5	-	-	-
37	233 TMC 5	-	-	-
38	TOL	0.518	0.470	0.747
39	23 DMC 6	-	-	-
40	2 M 3 EC 5	-	-	-
41	2 MC 7	0.066	0.074	0.077
42	4 MC 7	0.017	0.019	0.020
43	34 DMC 6	-	-	-
44	tt 124 TMCYC 5	-	-	-
45	3 MC 7	0.054	0.060	0.063
46	1 M 2 E CYC 5	0.245	0.256	0.289

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	0.103	0.106	0.122
48	C 8-N	0.029	0.030	0.035
49	C 8-P	-	-	-
50	C 8-N	0.017	0.017	0.020
51	C 8-N	0.015	0.015	0.017
52	c 1 M 3 ECYC 6	0.022	0.023	0.023
53	C 8-P	-	-	-
54	t 12 DMCYC 6	0.169	0.166	0.200
55	n C 8	0.629	0.702	0.730
56	C 8-N	0.113	0.113	0.133
57	unk	0.017	0.018	0.020
58	C 9-P	0.022	0.024	0.023
59	unk	-	-	-
60	C 9-P	0.044	0.048	0.046
61	C 9-P	0.259	0.283	0.268
62	n C 3 CYC 5	0.721	0.730	0.853
63	N	0.010	0.010	0.012
64	113 TMCYC 6	0.154	0.155	0.162
65	C 9-P	0.240	0.262	0.248
66	C 9-P	0.083	0.091	0.086
67	N	0.024	0.025	0.029
68	N	0.027	0.027	0.032
69	N	0.054	0.054	0.064
70	E BZ	0.592	0.536	0.740
71	114 TMCYC 6	0.330	0.337	0.347
72	unk	0.029	0.029	0.032
73	unk	0.303	0.303	0.335
74	m+p XYL	7.264	6.643	9.082
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	0.323	0.352	0.334
79	2 MC 8	0.788	0.870	0.815
80	C 9-P	-	-	-
81	3 MC 8	0.805	0.877	0.833
82	N	0.205	0.210	0.243
83	o XYL	2.634	2.349	3.294
84	unk	-	-	-
85	unk	0.249	0.248	0.280
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	1.203	1.185	1.265
88	c 1 M 4 ECYC 6	0.597	0.601	0.628
89	N	-	-	-
90	N	0.274	0.276	0.288
91	N	-	-	-
92	n C9	8.059	8.817	8.341
93	1 M 1 ECYC 6	-	-	-
94	C 9-N	0.245	0.243	0.257
95	i PBZ	0.113	0.103	0.124
96	C 10-P	0.093	0.100	0.087
97	C 9-N	0.264	0.263	0.278
98	C 9-N	1.211	1.205	1.273
99	C 10-P	0.049	0.053	0.046
100	C 10-P	0.315	0.340	0.294
101	unk	0.328	0.325	0.336

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	0.281	0.303	0.262
103	s BCYC 5	1.754	1.746	1.844
104	C 10-P	-	-	-
105	C 10-P	-	-	-
106	3 MC 9	1.272	1.370	1.187
107	C 10-P	0.276	0.298	0.258
108	unk	0.015	0.014	0.015
109	unk	-	-	-
110	n PBZ	0.352	0.321	0.389
111	N	0.841	0.827	0.796
112	unk	0.890	0.878	0.880
113	unk	0.179	0.176	0.177
114	m E TOL	0.174	0.158	0.192
115	p E TOL	0.108	0.098	0.119
116	135 TM BZ	-	-	-
117	N	3.233	3.179	3.060
118	C 10-N	2.098	2.063	1.986
119	C 10-P	4.666	4.960	4.354
120	2 MC 9	0.753	0.812	0.703
121	o E TOL	0.753	0.672	0.832
122	C 10-P	0.139	0.150	0.130
123	36 DMC 8	1.754	1.889	1.636
124	N	0.521	0.512	0.493
125	C 10-N	0.286	0.281	0.271
126	124 TM BZ	7.415	6.647	8.190
127	C 10-N	0.548	0.539	0.518
128	N	-	-	-
129	C 10-N	0.413	0.406	0.391
130	N	0.120	0.118	0.113
131	N	-	-	-
132	N	-	-	-
133	C 10-P	-	-	-
134	n C 10	11.196	12.063	10.443
135	unk	-	-	-
136	unk	0.291	0.283	0.288
137	123 TM BZ	0.682	0.599	0.754
138	unk	1.939	1.894	1.857
139	unk	0.563	0.549	0.539
140	unk	-	-	-
141	unk	-	-	-
142	C 10-A	-	-	-
143	C 10-N	1.622	1.594	1.535
144	C 11-P	0.692	0.736	0.588
145	unk	0.093	0.091	0.086
146	C 10-N	1.157	1.137	1.095
147	unk	0.367	0.361	0.339
148	unk	-	-	-
149	C 10-A	-	-	-
150	C 10-A	1.049	0.960	1.038
151	C 10-A	-	-	-
152	unk	0.516	-	-
153	C 10-A	1.296	1.185	1.282
154	unk	0.223	0.219	0.206
155	unk	0.205	0.202	0.190
156	unk	0.474	0.466	0.439

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	0.607	0.555	0.600
159	C 11-P	0.680	0.723	0.577
160	C 11-P	0.951	1.011	0.808
161	C 11-P	0.105	0.112	0.089
162	C 10-A	0.521	0.476	0.515
163	C 11-P	0.504	0.535	0.428
164	C 10-A	0.345	0.315	0.341
165	unk	0.325	0.320	0.297
166	unk	0.166	0.164	0.152
167	unk	0.355	0.349	0.324
168	C 10-A	0.198	0.181	0.196
169	n C 11	7.530	8.004	6.395
170	unk	-	-	-
171	C 10-A	0.249	0.228	0.247
172	unk	0.205	0.202	0.188
173	C 10-A	0.489	0.447	0.484
174	unk	0.545	0.533	0.476
175	unk	-	-	-
176	unk	0.563	0.550	0.490
177	unk	0.382	0.373	0.333
178	unk	0.536	0.523	0.467
179	C 12-P	0.435	0.457	0.339
180	unk	0.249	0.244	0.217
181	unk	0.117	0.115	0.102
182	unk	0.191	0.187	0.166
183	unk	0.142	0.139	0.123
184	C 11-A	0.166	0.152	0.149
185	unk	0.225	0.220	0.195
186	C 12-P	0.149	0.156	0.116
187	C 11-A	0.827	0.756	0.740
188	unk	0.103	0.101	0.089
189	n C 12	0.695	0.728	0.541

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	44.062	47.445	41.385
Naphthenes	18.790	18.619	18.905
Aromatics	26.362	23.860	30.072
Unknowns	10.786	10.076	9.638
Olefins	<0.1	<0.1	<0.1
Average molecular weight	133.04	Denisty @ 15°C	0.8001

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
BZ = benzene; TOL = toluene; XYL = xylene; unk = unknown.
PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

Report: 04PEAD09357
Sample : YOLLA #4 From Crude Oil, Sand 2458, Cut 190 -230°C

Components were separated on a Hewlett-Packard PONA column and quantified using a flame ionisation detector. Area counts were used directly to compute weight percentages. Components were identified by retention time comparison with a reference oil derived by pooling oils from several basins. Components in the reference oil were identified by computerised GC-MS and by comparison with published retention time data.

	Component	Weight%	Liquid vol %	Mole %
1	C 3	-	-	-
2	i C 4	-	-	-
3	n C 4	-	-	-
4	22 DMC 3	-	-	-
5	i C 5	-	-	-
6	n C 5	-	-	-
7	22 DMC 4	-	-	-
8	CYC 5	-	-	-
9	23 DMC 4	-	-	-
10	2 MC 5	-	-	-
11	3 MC 5	-	-	-
12	n C 6	-	-	-
13	22 DMC 5	-	-	-
14	M CYC 5	-	-	-
15	24 DMC 5	-	-	-
16	223 TMC 4	-	-	-
17	BZ	-	-	-
18	33 DMC 5	-	-	-
19	CYC 6	-	-	-
20	2 MC 6	-	-	-
21	23 DMC 5	-	-	-
22	11 DMCYC 5	-	-	-
23	3 MC 6	-	-	-
24	t 13 DMCYC 5	-	-	-
25	c 13 DMCYC 5	-	-	-
26	3 EC 5	-	-	-
27	t 12 DMCYC 5	-	-	-
28	n C7	-	-	-
29	MCYC 6	-	-	-
30	22 DMC 6	-	-	-
31	ECYC 5	-	-	-
32	25 DMC 6	-	-	-
33	24 DMC 6	-	-	-
34	tc 124 TMCYC 5	-	-	-
35	234 TMC 5	-	-	-
36	tc 123 TMCYC 5	-	-	-
37	233 TMC 5	-	-	-
38	TOL	-	-	-
39	23 DMC 6	-	-	-
40	2 M 3 EC 5	-	-	-
41	2 MC 7	-	-	-
42	4 MC 7	-	-	-
43	34 DMC 6	-	-	-
44	tt 124 TMCYC 5	-	-	-
45	3 MC 7	-	-	-
46	1 M 2 E CYC 5	-	-	-

Component		Weight%	Liquid vol %	Mole %
47	t 14 DMCYC 6	-	-	-
48	C 8-N	-	-	-
49	C 8-P	-	-	-
50	C 8-N	-	-	-
51	C 8-N	-	-	-
52	c 1 M 3 ECYC 6	-	-	-
53	C 8-P	-	-	-
54	t 12 DMCYC 6	-	-	-
55	n C 8	-	-	-
56	C 8-N	-	-	-
57	unk	-	-	-
58	C 9-P	-	-	-
59	unk	-	-	-
60	C 9-P	-	-	-
61	C 9-P	-	-	-
62	n C 3 CYC 5	-	-	-
63	N	-	-	-
64	113 TMCYC 6	-	-	-
65	C 9-P	-	-	-
66	C 9-P	-	-	-
67	N	-	-	-
68	N	-	-	-
69	N	-	-	-
70	E BZ	-	-	-
71	114 TMCYC 6	-	-	-
72	unk	-	-	-
73	unk	-	-	-
74	m+p XYL	-	-	-
75	C 9-P	-	-	-
76	23 DMC 7	-	-	-
77	C 9-P	-	-	-
78	4 MC 8	-	-	-
79	2 MC 8	-	-	-
80	C 9-P	-	-	-
81	3 MC 8	-	-	-
82	N	-	-	-
83	o XYL	-	-	-
84	unk	-	-	-
85	unk	-	-	-
86	1 M 2 PCYC 5	-	-	-
87	t 1 M 4 ECYC 6	-	-	-
88	c 1 M 4 ECYC 6	-	-	-
89	N	-	-	-
90	N	-	-	-
91	N	-	-	-
92	n C9	0.051	0.055	0.063
93	1 M 1 ECYC 6	-	-	-
94	C 9-N	-	-	-
95	i PBZ	-	-	-
96	C 10-P	-	-	-
97	C 9-N	-	-	-
98	C 9-N	-	-	-
99	C 10-P	-	-	-
100	C 10-P	-	-	-
101	unk	-	-	-

Component		Weight%	Liquid vol %	Mole %
102	C 10-P	-	-	-
103	s BCYC 5	-	-	-
104	C 10-P	-	-	-
105	C 10-P	-	-	-
106	3 MC 9	-	-	-
107	C 10-P	-	-	-
108	unk	-	-	-
109	unk	-	-	-
110	n PBZ	-	-	-
111	N	-	-	-
112	unk	-	-	-
113	unk	-	-	-
114	m E TOL	-	-	-
115	p E TOL	-	-	-
116	135 TM BZ	0.040	0.035	0.053
117	N	0.040	0.038	0.045
118	C 10-N	-	-	-
119	C 10-P	0.028	0.030	0.032
120	2 MC 9	0.023	0.024	0.025
121	o E TOL	0.023	0.020	0.030
122	C 10-P	-	-	-
123	36 DMC 8	0.046	0.048	0.051
124	N	-	-	-
125	C 10-N	-	-	-
126	124 TM BZ	0.347	0.305	0.459
127	C 10-N	-	-	-
128	N	-	-	-
129	C 10-N	-	-	-
130	N	-	-	-
131	N	-	-	-
132	N	-	-	-
133	C 10-P	-	-	-
134	n C 10	1.337	1.414	1.494
135	unk	-	-	-
136	unk	0.040	0.038	0.047
137	123 TM BZ	0.102	0.088	0.135
138	unk	0.296	0.284	0.339
139	unk	0.131	0.125	0.15
140	unk	-	-	-
141	unk	-	-	-
142	C 10-A	0.074	0.066	0.088
143	C 10-N	0.569	0.549	0.645
144	C 11-P	0.245	0.255	0.249
145	unk	-	-	-
146	C 10-N	0.529	0.511	0.600
147	unk	-	-	-
148	unk	0.148	0.139	0.167
149	C 10-A	0.137	0.123	0.162
150	C 10-A	0.461	0.414	0.546
151	C 10-A	0.046	0.041	0.054
152	unk	0.273	-	-
153	C 10-A	0.756	0.679	0.896
154	unk	0.171	0.165	0.189
155	unk	-	-	-
156	unk	0.387	0.373	0.428

Component		Weight%	Liquid vol %	Mole %
157	unk	-	-	-
158	C 10-A	0.466	0.419	0.553
159	C 11-P	0.694	0.724	0.706
160	C 11-P	1.052	1.098	1.070
161	C 11-P	0.097	0.101	0.098
162	C 10-A	0.671	0.603	0.795
163	C 11-P	0.518	0.540	0.526
164	C 10-A	0.370	0.332	0.438
165	unk	0.557	0.538	0.610
166	unk	0.296	0.285	0.324
167	unk	0.574	0.554	0.629
168	C 10-A	0.313	0.281	0.371
169	n C 11	18.241	19.033	18.554
170	unk	-	-	-
171	C 10-A	0.478	0.429	0.566
172	unk	0.438	0.423	0.479
173	C 10-A	1.092	0.980	1.294
174	unk	1.416	1.358	1.479
175	unk	-	-	-
176	unk	1.837	1.762	1.919
177	unk	1.325	1.271	1.384
178	unk	2.093	2.008	2.186
179	C 12-P	1.826	1.880	1.705
180	unk	1.160	1.115	1.206
181	unk	0.722	0.694	0.751
182	unk	0.984	0.946	1.023
183	unk	1.274	1.225	1.325
184	C 11-A	1.644	1.476	1.764
185	unk	3.623	3.482	3.767
186	C 12-P	2.241	2.307	2.092
187	C 11-A	4.960	4.453	5.321
188	unk	2.002	1.924	2.082
189	n C 12	40.737	41.938	38.036

The symbol - signifies < 0.005%

The percentages of the component types are as follows:-

	Weight%	Liquid vol%	Mol %
Paraffins	67.135	69.447	64.701
Naphthenes	1.138	1.098	1.290
Aromatics	11.979	10.744	13.525
Unknowns	19.749	18.711	20.484
Olefins	<0.1	<0.1	<0.1
Average molecular weight	161.39	Denisty @ 15°C	0.8216

Unknown components are not used in average molecular weight and specific gravity calculations. Samples with a high proportion of unknowns may therefore have unreliable calculated molecular weights and specific gravities. Weight percents of unknown components are converted to volume% and mole% and used in calculation of molecular weight and density assuming the average properties of the PNA components of closest boiling range.

ABBREVIATIONS: D = di; T = tri; M = methyl; E = ethyl; P = propyl; B = butyl; CYC = cyclo
BZ = benzene; TOL = toluene; XYL = xylene; unk = unknown.
PREFIXES: i = iso; n = normal; s = secondary; o = ortho; m = meta; p = para; c = cis; t = trans.
SUFFIXES: A = aromatic; N = naphthene; P = paraffin.

APPENDIX 20: PRODUCTION TESTING REPORTS

(A) Surface Data – Schlumberger Report

Schlumberger

WELL TESTING REPORT

INDEX

Company	:	Origin Energy Resources Limited
Field / Well / Zone	:	Yolla / Yolla-4 / Test #1
Country	:	Australia
Test date	:	30-Sep-03 to 15-Oct-03
Report number	:	2004-07
Region / Distr / base	:	MEA / APG / AUF

Company representative	:	A. Wenk
Schlumberger representative	:	G. Mullins

INDEX

1 WELL AND MEASUREMENT INFORMATION

2 SEQUENCE OF EVENTS

3 MAIN RESULTS including SUMMARY OF RESULTS

4 SURFACE DATA ACQUISITION PLOTS

- Wellhead Pressure And Temperature Plot
- Separator Measurement Plot
- Rates Plots

5 OIL COMPUTATIONS RESULTS

6 GAS COMPUTATIONS RESULTS

7 ANNEXES

- QC Sheet
- Flow meter Calibration
- STAN Sensor Calibration
- Surface Equipment Layout
- Ensco 102 Equipment Layout
- Piping And Instrumentation Diagram

Schlumberger

WELL TESTING REPORT

WELL AND MEASUREMENT INFORMATION

Company	:	Origin Energy Resources Limited
Field / Well / Zone	:	Yolla / Yolla-4 / Test #1
Country	:	Australia
Test date	:	30-Sep-03 to 15-Oct-03
Report number	:	2004-07
Region / Distr / base	:	MEA / APG / AUF

Company representative	:	A. Wenk
Schlumberger representative	:	G. Mullins

WELL INFORMATION

GENERAL INFORMATION

Service / Client Ref.	:	Well Testing Surface Package
Company	:	Origin Energy Resources Limited
Field / Well / Zone	:	Yolla / Yolla-4 / Test #1
Country	:	Australia
Test type	:	Production Platform Clean up
Rig/Installation	:	Ensco 102 / Jackup

OPERATION DATA

Test Date	:	28 Jul 2004 to 8 Aug 2004
Report Number	:	2004-07
Region / District / Base	:	MEA / APG / AUF
Co. Representative	:	A. Wenk
Schlumberger Representative	:	G. Mullins
Unit system	:	US Oilfield

WELL DATA

Drill Floor Elevation	:	43.88 m LAT
Water Depth	:	81m
Total Depth	:	3232 m MDRT
Well type	:	Production
Fluid type	:	Gas
Minimum restriction	:	3.456"

FORMATION DATA

Formation / lithology	:	
Oil gravity	:	
Gas gravity (Air=1)	:	

MUD PROPERTIES

Type	:	KCL Brine
Weight / SG	:	9.0 ppg / 1.10
Cushion type / Weight / SG	:	Diesel / 6.8 lb-ft / 0.825
Cushion Length	:	3391m (91 bbls) to surface

WELL INFORMATION

DEPTH INFORMATION

Depth unit	:	Meter (m)
Depth reference	:	Measuring Depth from Rotary Table
	:	

DOWNHOLE EQUIPMENT

Surface Test Tree	:	10 kpsi 3-1/16" WOM Flowhead

WELL HEAD EQUIPMENT

Casing pressure gauge	:	Electronic strain gauge, 10K STPS-C Delta control. S/n 24985
Tubing pressure gauge	:	Electronic strain gauge, 10K STPS-C Delta control. S/n 24978
Temperature gauge	:	Platinium resistor, STTS-B Frode Pedersen & Co
Downstream pressure gauge	:	Electronic strain gauge, 10K STPS-C Delta control. S/n 24979
Choke Manifold type	:	WOM 3" 10 k psi fixed and adjustable chokes.
Flowline type	:	60 ft 10 kpsi 3" Coflexip Hose

SEPARATOR

Capacity	:	1440 psig WP, 22000 b/d, 60 MMscf/d
Gas meter type	:	Senior Daniel Orifice Meter
I.D. of meter tube	:	5.761"
Low Gas Meter	:	Not used.
Gas line pressure gauge	:	Electronic strain gauge, 1.5k Sensotec. S/n 923449
Differential pressure gauge	:	Electronic strain gauge, Honeywell ST3000. (0-400"wc). S/n 3884010
Gas line temperature gauge	:	Platinium resistor, STTS-B Frode Pedersen & Co
Gas sampling point	:	Top of gas outlet of separator
Gravitometer type	:	Ranarex
Oil / Condensate line temperature gauge	:	Platinium resistor, STTS-B Frode Pedersen & Co
Oil / Condensate rate meter	:	Electronic pulse transmitter Model 308 (2 "Floco)
Oil / Condensate rate meter	:	Electronic pulse transmitter # (3" Rotron)
Oil / Condensate sampling point	:	Separator oil sight glass
Gravitometer type	:	Glass sg Hydrometer
Water rate meter	:	2" Floco meter

OTHER EQUIPMENT

Tank type / capacity	:	Singal-Compartment Surge tank 80 bbls. (0.086 bbl/cm)
Pump type / capacity	:	Electric Centrifugal Pump 5000 bbls/d.
Burner type	:	3-Header Mud Burner
Burner capacity	:	9,000 bbls/d

Schlumberger

WELL TESTING REPORT

SEQUENCE OF EVENTS

Company	:	Origin Energy Resources Limited
Field / Well / Zone	:	Yolla / Yolla-4 / Test #1
Country	:	Australia
Test date	:	30-Sep-03 to 15-Oct-03
Report number	:	2004-07
Region / Distr / base	:	MEA / APG / AUF

Company representative	:	A. Wenk
Schlumberger representative	:	G. Mullins

SEQUENCE OF EVENTS

Date/Time	Events
28-Jul-04	
01:00	Install FCH to Riser and connect kill line.
02:45	Flush Riser and FCH with water.
02:55	Hold JSA meeting on rig floor.
03:05	Close Kill valve and Lock open Kill line check valve.
03:15	Pressure test Kill valve to 500/5000 psi.
03:30	Bleed off test pressure, repair leak at the pumping line.
04:15	Resume pressure testing.
04:20	Function test ESD, Closing time 3-5 seconds from all stations.
04:45	Finish pressure testing, close Swab valve and open Kill valve.
04:50	Pressure test FCH, Riser and Production Tree against HE-3 plug to 500/5000 psi.
05:25	Finish pressure testing.
05:35	Connect Coflexip Flow line to FCH and Choke manifold.
07:30	Confirm FCH Swab, Master valves closed, Kill, Flow valves opened.
07:59	Start flushing surface test equipment to burner with water.
08:12	Start pressure testing surface equipment against burner to 1000 psi.
08:18	Bleed off test pressure, repair leaks.
08:41	Resume pressure testing.
09:07	No leak visually, bleed off test pressure.
09:19	Close Gas and Oil divider, pressure test to 1000 psi.
09:36	No leak visually, bleed off test pressure.
09:40	Pressure test Separator inlet to 1000 psi.
09:55	Test good, bleed off pressure.
10:00	Pressure test Separator vessel to 1000 psi.
10:17	Test good, bleed off pressure.
10:24	Pressure test Heat Exchanger inlet to 1000 psi.
10:40	Test good, bleed off pressure.
10:45	Pressure test Choke manifold downstream valves to 4000 psi.
11:01	Test good, bleed off pressure.
11:04	Pressure test Choke manifold upstream valves to 4000 psi.
11:20	Test good, bleed off pressure.
11:25	Pressure test SSV to 4000 psi.
11:41	Test good, bleed off pressure.
11:54	Commence pumping water through Separator to Surge tank to obtain Meter factor.
12:41	Finish Taking Meter factor at 0.5, 1.0, 1.5 bbl/min rates. Cal Sheet in Annex
12:45	Rig up Halliburton
14:00	Pressure test Slickline lubricator 4000 psi.
14:15	Cross-check Differential pressure sensor with electronic manometer.
14:27	Inflow test Kill line check valve.
14:32	Close Master valve and inflow test.
14:38	Open Master valve and bleed down surface pressure.
14:42	Run in hole to pull HE-3 plug
15:10	Pull out of hole with HE-3 plug.
15:15	Close Master valve and change out Slickline tool.
15:25	Install lubricator with 3.688" SSD Shifting tool.
15:37	Pressure test Lubricator to 4000 psi.
15:45	Test good, bleed off pressure.
15:55	Open Master valve, run in hole with Shifting tool.

SEQUENCE OF EVENTS

Date/Time	Events
28-Jul-04	
16:36	Open SSD at 2809 sand.
16:43	Open SSD at 2755 sand.
16:46	Pull out of hole with Shifting tool.
17:11	Close Master valve, bleed off Lubricator pressure.
17:17	Open Master valve, run in hole with 3.688" SSD Shifting tool.
17:43	Open SSD at 2458 sand.
17:46	Pull out of hole with Shifting tool.
18:15	Slickline at surface.
18:40	Close Master valve on FCH and Production tree Swab valve.
18:52	Bleed down Lubricator through Choke manifold.
19:00	Change out Slickline toolstring to 3.813" shifting tool for SSD.
19:15	Open FCH Master valve and Swab valve.
19:40	Well open on 12/64" adjustable choke flowing to Surge tank.
19:41	Increase adjustable choke to 16/64"
19:44	Increase adjustable choke to 20/64"
19:56	Increase adjustable choke to 24/64"
20:14	Shut in well at Choke manifold.
20:15	9 bbls cushion return to tank, rate of 316 bbl/d.
22:30	Run in hole to with 3.813" SSD EO shifting tool.
23:00	Close SSD's at 2980, 2921and 2832 m MDRT Slickline depth.
23:45	Tool at surface.
23:50	Close FCH Master valve and Swab valves.
29-Jul-04	
00:01	Change out tool string to 2.18" drift.
00:50	Open FCH Master valve and Swab valves.
01:00	Run in hole with drift.
01:35	Tool at surface.
01:40	Close FCH Master valve and Swab valves.
01:45	Change out tool string to Halliburton
01:55	Open FCH Master valve and Swab valves.
02:15	Run in hole with gauges for static gradient survey.
05:38	Slickline at surface, close Master and Swab valves.
05:40	Change out to run 3.813" SSD Shifting tool.
07:30	Rig down Slickline equipment without running Shifting tool.
09:00	Commence rigging up Wireline BOP and Lubricator.
11:18	Open Swab valve, pressure test Lubricator, Wireline correlation tool to 4000 psi.
11:40	Good test, bleed off pressure.
11:42	Close Swab valve, break off Lubricator.
12:00	Lower toolstring to connect 6m 2-1/8" 6spf PJ Enerjets guns
12:50	Re-stab Lubricator, test quick union connection.
13:00	Open Master and Swab valves on FCH.
13:05	Commence running in hole with perforation guns.
14:34	Bleed off surface pressure. Commencing Depth correlation.
15:30	Fire perforation guns. Choke manifold opened on 24/64" adjustable choke to Surge tank.
15:31	Perforated zone 3149 to 3155 m MDRT. - 2973 Sand
15:51	Divert flow to Portside burner.
16:37	Divert flow to STB burner.

SEQUENCE OF EVENTS

Date/Time	Events
29-Jul-04	
17:07	Gas at surface.
17:13	Divert flow through Gas flare.
17:15	Shut in well at the Choke manifold.
17:25	Start pulling out spent guns.
18:55	Guns at surface
18:56	Close Master valve on FCH.
19:00	Lubricator bled down through choke manifold.
19:03	Close Swab on FCH.
19:05	Lay out spent guns. All shots fired
20:15	Rig up 6m 2-1/8" 6spf PJ Enerjets guns into lubricator.
20:42	Pressure test lubricator.
20:50	Open Master valve at FCH.
20:51	Open Swab valve at FCH.
21:00	Run in hole with toolstring 2-1/8" 6spf PJ Enerjets.
22:53	Open well on 20/64" adjustable choke to gas flare.
22:55	Increase adjustable choke to 24/64".
23:08	Decrease adjustable choke to 20/64"
23:30	Start correlating depth with GR/CCL/CBL/VDL/USIT.
23:33	Commence pumping methanol at the choke manifold.
30-Jul-04	
00:07	Fire perforation guns. Perforate 3151.5 - 3157.5m MDRT.
00:17	Shut in well at the Choke manifold.
00:18	Stop pumping methanol.
00:31	Start pulling out spent guns.
02:00	Guns at surface. All shots fired
02:10	Close Master valve on FCH.
02:17	Lubricator bled down through choke manifold.
02:23	Close Swab valve on FCH.
02:24	Close Choke manifold
02:25	Rig down Wireline BOP and lubricator.
04:00	Rig up Slickline BOP and lubricator.
05:32	Rig up Halliburton
05:39	Open Kill and Swab valves, pressure test Slickline lubricator to 4000 psi.
06:10	Bleed off test pressure.
06:17	Close Kill, Swab valves and open Master valve.
06:23	Open Swab valve and run in hole to set Halliburton
06:50	Slickline power pack shut down, stop running in hole.
07:30	Continue running in hole.
07:50	Set Pressure gauges at the 3.688" RN nipple in Tail pipe.
08:26	Slickline toolstring at surface, close Production tree Swab valve and FCH Master valve.
08:30	Start Methanol injection 0.4 l/min at the Choke manifold..
08:30	Bleed off surface pressure.
08:34	Close FCH Swab valve and break off Slickline Lubricator.
08:40	Make up Lubricator with GR pulling tool.
09:00	Hold pre-flow JSA meeting and going through Check list.
09:29	Open Production tree Swab valve and FCH Master valve.
09:34	Open well on 8/64" adjustable choke to STB gas flare. (Test 2973 Sand)

SEQUENCE OF EVENTS

Date/Time	Events
30-Jul-04	
09:36	Slowly increase adjustable choke to 24/64".
09:43	Increase adjustable choke to 28/64".
09:53	Increase adjustable choke to 32/64".
10:00	Increase Methanol pump rate to 0.6 l/min.
10:14	Increase adjustable choke to 40/64".
10:17	Brine at surface.
11:22	Increase adjustable choke to 44/64".
11:40	Divert flow through 44/64" fixed choke.
11:45	Reduce Methanol injection rate to 0.4 l/min
12:08	Divert flow through separator.
12:15	Stop Methanol injection.
13:03	Lower 3.75 " orifice plate. Start gas measurement.
14:52	Dump water from separator vessel.
15:00	Stop dumping water, 0.8 bbls dumped.
15:45	Divert Condensate flow to Tank for calculating Combined Meter/Shrinkage Factor.
16:11	Divert Condensate flow back to burner. Combined MF = 0.815 at 25 degC.
16:34	By-pass Separator.
16:39	By-pass Heat exchanger.
16:41	Divert flow through 44/64" adjustable choke and gradually increasing.
16:44	Well flowing on 52/64" adjustable choke.
16:52	Well flowing on 54/64" adjustable choke.
17:06	Well flowing on 56/64" adjustable choke.
17:22	Shut in well at the Choke manifold.
17:32	Close Swab valve Production tree.
17:37	Open Swab valve on FCH.
17:38	Open Swab valve on Production tree.
17:40	Run in hole with Slickline GR pulling tool to retrieved gauges.
18:40	Gauges at surface.
18:43	Close Swab valve Production tree.
18:45	Close Master valve on FCH.
18:47	Bleed down lubricator through choke manifold.
18:50	Close Choke manifold.
18:51	Close Swab valve on FCH.
19:02	Disconnect lubricator retrieved gauges
19:05	Change Slickline toolstring to 3.668" shifting tool.
19:09	Stab back lubricator to FCH.
19:12	Open Master valve on FCH.
19:15	Open Swab valve on FCH.
19:29	Open Swab valve on Production tree.
19:31	Run in hole with Slickline to open SSD on 2809 sand.
20:24	Slickline at surface.
20:25	Close Swab valve Production tree.
20:27	Close Master valve on FCH.
20:32	Bleed down lubricator through Choke manifold.
20:33	Close Choke manifold.
20:37	Disconnect lubricator to change out toolstring.
20:40	Re-set SSD shifting tool.

SEQUENCE OF EVENTS

Date/Time	Events
31-Jul-04	
02:50	Close Swab valve on FCH.
03:00	Reset 3.688" shifting tool for closing SSD.
03:13	Open Master valve on FCH.
03:14	Open Swab valve on production tree.
03:21	Start pumping methanol.
03:22	Open well on 20/64" adjustable choke to flare.
03:24	Increased adjustable choke to 24/64".
03:27	Increased adjustable choke to 28/64".
03:30	Increased adjustable choke to 32/64".
03:34	Increased adjustable choke to36/64".
03:36	Increased adjustable choke to 40/64".
03:40	Increased adjustable choke to 42/64".
03:42	Increased adjustable choke to 44/64".
03:55	BSW 13% total 0.15% solids.
04:05	Stop pumping methanol.
04:23	BSW 30% total 0.1% solids.
04:29	BSW 30% total 0.1% solids.
04:30	Bypass steam exchanger.
04:45	BSW 25% total 0.1% solids.
05:00	BSW 20% total 0.1% solids.
05:08	Shut in well at the Choke manifold.
05:20	Close Swab valve on Production tree.
05:28	Open Swab valve on FCH.
05:33	Open Swab valve on Production tree.
05:37	Run in hole with 3.688" shifting tool to close SSD on 2755 Sand.
07:10	Close Master valve on FCH and Production Swab valve.
07:15	Bleed down lubricator and close FCH Swab valve.
07:20	Change out to run 3.815" shifting tool.
07:26	Open Master valve on FCH for servicing.
07:56	Open Swab valve on the Production tree.
08:05	Open Swab valve on the FCH.
08:08	Run in hole with 3.815" shifting tool to open SSD on 2458 Sand.
09:08	Close Master valve on FCH and Production Swab valve.
09:15	Bleed down lubricator and close FCH Swab valve.
09:17	Re-set 3.815" shifting tool.
10:00	Open Production tree Swab valve and Master valve on FCH.
10:05	Open well on 20/64" adjustable choke to STB gas flare.
10:06	Increase adjustable choke to 24/64"
10:08	Increase adjustable choke to 28/64"
10:10	Increase adjustable choke to 32/64"
10:11	Increase adjustable choke to 36/64"
10:13	Increase adjustable choke to 40/64"
10:14	Increase adjustable choke to 44/64"
10:45	BSW = 26 % water; 74 % condensate.
10:50	BSW = 23 % water; 77 % condensate.
10:51	Increase adjustable choke to 46/64"
11:10	BSW = 30 % water; 70 % condensate.
11:22	Shut in well at the Choke manifold.
11:36	Open Swab valve on the FCH.
11:39	Run in hole to close SSD on 2458 Sand.
12:36	Close Master valve on FCH and Production Swab valve.
12:39	Bleed down lubricator and close FCH Swab valve.

SEQUENCE OF EVENTS

Date/Time	Events
31-Jul-04	
12:45	Change out to run 3.688" Plug.
12:51	Open Master valve on FCH.
12:55	Open FCH Swab valve.
13:02	Open Production tree Swab valve, run in hole to set plug at the RN nipple.
13:55	Attempt to pass R nipple.
14:20	Fail to pass, pull out of hole.
14:40	Close Swab valve on Production tree and Master valve on FCH
14:45	Bleed down lubricator and close FCH Swab valve.
14:50	Plug left in R nipple, connect Pulling tool to Slickline.
14:55	Open FCH Master valve and Swab valve.
14:58	Open Production Swab valve.
15:00	Run in hole to recover plug that was accidentally set in R nipple.
15:30	Latch on the plug, start jarring.
17:00	Slickline unlatch, start pulling out of hole.
17:22	Close Master valve on FCH and Production Swab valve.
17:25	Bleed down lubricator and close FCH Swab valve.
17:30	Break off Lubricator, only Pulling tool at surface.
18:00	Slip and cut some Slickline wire and build new head.
19:28	Slickline at surface, to change out pulling tool to equalizing tool
19:30	Close Swab valve on Production tree and Master valve on FCH
19:32	Bleed down lubricator and close FCH Swab valve.
19:39	Change out pulling tool
19:45	Stab on lubricator to FCH. Open Master valve on FCH
19:48	Open Swab valve on FCH.
19:55	Open Production Swab valve.
19:56	Run in hole with equalizing tool
20:00	Tag plug with equalizing tool.
20:20	Equalize across plug
20:25	Pull out of hole
20:46	Slickline at surface
20:48	Close Swab valve on Production tree and Master valve on FCH
20:51	Bleed down lubricator and close FCH Swab valve.
20:53	Change Slickline toolstring to pulling tool for plug
21:00	Stab on lubricator to FCH. Open Master valve on FCH
21:05	Open Swab valve on FCH.
21:08	Open Production Swab valve.
21:10	Run in hole with pulling tool
21:30	Latch onto plug
21:41	Pull out of hole
22:08	Slickline at surface
22:10	Close Swab valve on Production tree and Master valve on FCH
22:12	Bleed down lubricator and close FCH Swab valve.
22:15	No plug at surface. Change out shear pin from brass to steel
22:43	Stab on lubricator to FCH. Open Master valve on FCH
22:45	Open Swab valve on FCH.
22:49	Open Production Swab valve.
22:50	Run in hole with pulling tool

SEQUENCE OF EVENTS

Date/Time	Events
01-Aug-04	
01-Aug-04	
00:49	Slickline at Surface with plug.
00:51	Close Swab valve on Production tree and Master valve on FCH
00:56	Bleed down lubricator and close FCH Swab valve.
01:09	Plug at surface
01:12	Redress plug
02:45	Stab on lubricator to FCH. Open Master valve on FCH
02:47	Open Swab valve on FCH.
02:55	Open Production Swab valve.
03:00	Run in hole with plug
04:25	Pull of plug which is in R nipple
04:31	Pull out of hole
04:59	Slickline at Surface
05:01	Close Swab valve on Production tree and Master valve on FCH
05:03	Bleed down lubricator and close FCH Swab valve.
05:05	Change out toolstring to GR pulling tool
05:13	Stab on lubricator to FCH. Open Master valve on FCH
05:14	Open Swab valve on FCH.
05:20	Open Production Swab valve.
05:24	Run in hole with plug.
06:00	retrieved Plug from R nipple.
06:10	Pass through R nipple before pull out of hole.
07:00	Stop pulling out of hole, Stuffing box ice-up.
08:00	Rig up to inject methanol into Slickline lubricator.
10:15	Resume pulling out of hole.
10:24	Close FCH Master valve and Production Swab valve.
10:28	Bleed off surface pressure.
10:33	Close FCH Swab valve, break off lubricator, redress Stuffing box.
11:30	Fill above Master valve with 70 liters 60/40 Glycol water.
12:10	Make up Lubricator with plug.
12:12	Close Flow valve and SSV.
12:15	Open FCH Swab valve and Kill valve.
12:17	Pressure test Lubricator to 4000 psi.
12:29	Open Flow valve and SSV.
12:31	Bleed off surface pressure.
12:36	Close FCH Kill valve, open FCH Master valve and Production Swab valve.
12:39	Run in hole with Plug.
13:20	Set Plug at the RN nipple and pull out of hole.
13:40	Setting toolstring at surface. Close FCH Swab valve.
13:47	Bleed down tubing pressure by 1000 psi to inflow test Plug.
14:17	Test good, Close FCH Master valve.
14:19	Open FCH Swab valve and close Production Swab valve.
14:23	Bleed down lubricator and close FCH Swab valve.
14:30	Change out toolstring to 3.688" SSD shifting tool.
14:35	Stab on lubricator to FCH. Open FCH Master valve.
14:38	Open FCH Swab valve.
14:41	Open Production Swab valve. Run in hole to open SSD at the 2755 Sand.

SEQUENCE OF EVENTS

Date/Time	Events
01-Aug-04	
15:08	Open SSD at the 2755 Sand. Slickline depth 2921m
15:15	Pull out of hole with 3.688" shifting tool.
15:30	Start injecting methanol 0.25 l/min at the choke manifold.
15:42	Slickline at surface, close FCH Master valve.
15:45	Bleed off surface pressure. Close FCH Swab valve.
16:00	Change out toolstring to pressure gauge.
16:07	Open FCH Master valve.
16:09	Open FCH Swab valve to test Lubricator.
16:14	Close Master valve, bleed off surface pressure to fix leak.
16:23	Open Master valve and test lubricator.
16:32	Open well on 16/64" adjustable choke to STB gas flare. (2755 SAND - Clean-up)
16:34	Increase adjustable choke to 20/64".
16:35	Increase adjustable choke to 24/64". Increase methanol injection to 0.4 l/min.
16:37	Increase adjustable choke to 28/64".
16:46	Increase adjustable choke to 32/64".
16:50	Increase adjustable choke to 36/64".
16:55	Increase adjustable choke to 40/64".
17:30	BSW = 6 % water; 94% Condensate; Trace of sediment.
17:40	BSW = 20% water; 80% Condensate; Trace of sediment.
17:45	Shut in well at the Choke manifold.
17:46	Run in hole to set Halliburton pressure gauge by 3.
18:50	Slickline at surface
18:56	Close Production Swab valve and FCH Master valve.
18:58	Bleed down lubricator and close FCH Swab valve.
19:00	Change Slickline toolstring pulling tool for Halliburton gauges
19:06	Stab on lubricator to FCH. Open Master valve on FCH
19:24	Start injecting methanol 0.25 l/min at the choke manifold.
19:25	Open well on 24/64" adjustable choke to STB gas flare. (2755 SAND - Test)
19:29	Increase adjustable choke to 28/64".
19:32	Increase adjustable choke to 32/64".
19:35	Increase adjustable choke to 36/64".
19:38	Increase adjustable choke to 40/64".
19:41	Increase adjustable choke to 44/64".
19:44	Increase adjustable choke to 46/64".
19:52	BSW = 7% water; 93% Condensate; Trace of sediment.
19:55	Liquid slugs at surface
19:56	Stop pumping methanol
20:00	BSW = 7% water; 93% Condensate; Trace of sediment.
20:17	Increase adjustable choke to 48/64".
20:18	BSW = 35% water; 65% Condensate; Trace of sediment.
20:28	Bypass steam exchanger
20:30	BSW = 20% water; 80% Condensate; Trace of sediment.
20:35	Increase adjustable choke to 52/64".
20:55	Increase adjustable choke to 56/64".
21:04	BSW = 30% water; 70% Condensate; Trace of sediment.
21:05	Increase adjustable choke to 58/64".
21:14	Decrease adjustable choke to 48/64"

SEQUENCE OF EVENTS

Date/Time	Events
01-Aug-04	
21:26	Divert flow to fixed choke 48/64"
21:36	Divert flow to adjustable choke 48/64"
21:37	Increase adjustable choke to 52/64".
21:42	Divert flow to fixed choke 52/64"
21:55	Divert flow to separator
22:00	BSW = 17% water; 83% Condensate; Trace of sediment.
22:24	Lower 3.75" orifice plate
02-Aug-04	
00:01	BSW = 14% water;86% Condensate; Trace of sediment.
01:26	Shut in well at choke manifold
01:40	Close Swab valve on production tree
01:47	Open Swab valve on FCH.
01:58	Open Swab valve on production tree
01:59	Run in hole with Slickline to close SSD on 2755 sand
02:59	Close Swab valve on production tree and Master valve on FCH
03:02	Slickline at surface
03:07	Bleed down lubricator through choke manifold.
03:14	Change out toolstring to 3.813" shifting tool for opening SSD
03:24	Stab on lubricator to FCH. Open Master valve on FCH
03:26	Open Swab valve on FCH.
03:31	Open Production Swab valve.
03:37	Run in hole with 3.813" shifting tool to open SSD at 2458 sand
04:02	Open SSD at 2458 sand
04:10	Pull out of hole with Slickline
04:34	Slickline at surface
04:36	Close Swab valve on production tree and Master valve on FCH
04:38	Bleed down lubricator through choke manifold.
04:40	Change out toolstring to 3.813" shifting tool for closing SSD
04:53	Open Master valve on FCH
04:55	Open Swab valve on Production tree
04:57	Start injecting methanol 0.25 l/min at the choke manifold.
05:04	Open well on 24/64" adjustable choke to STB gas flare. (2458 SAND - Test)
05:06	Increase adjustable choke to 28/64".
05:08	Increase adjustable choke to 32/64".
05:12	Increase adjustable choke to 36/64".
05:15	Increase adjustable choke to 40/64".
05:20	BSW = 3.5% water;96.5% Condensate; Trace of sediment.
05:30	Stop pumping methanol
05:31	BSW = 4.5% water;95.5% Condensate; Trace of sediment.
06:00	BSW = 1.0% water;99% Condensate; Trace of sediment.
06:11	Oil at surface. 28% wax; pour point 40 degC; H2S 40 ppm - from PetroLab
07:15	Re-position Temperature sensor
07:30	Re-position Temperature sensor
09:12	Shut in well at choke manifold.
09:13	Close FCH Master valve and open Choke manifold.
09:15	Flush Surface line to burner with diesel.
09:23	Switch diesel flow to Surge tank.

SEQUENCE OF EVENTS

Date/Time	Events
02-Aug-04	
09:36	Stop pumping diesel, flush surface line with water.
09:40	Close Choke Manifold.
09:43	Open Master valve on FCH.
09:45	Run in hole with 3.688" shifting tool to open 2809 Sand.
10:35	Slickline at surface, close FCH Swab valve.
10:45	Open well on 16/64" adjustable choke to STB burner. (2458 SAND and 2809 SAND - Clean up)
10:46	Increase adjustable choke to 20/64".
10:47	Increase adjustable choke to 24/64". Divert flow to gas flare.
10:49	Increase adjustable choke to 28/64".
10:50	Increase adjustable choke to 32/64".
10:52	Increase adjustable choke to 36/64".
10:54	Increase adjustable choke to 40/64".
10:56	Increase adjustable choke to 44/64".
10:59	Increase adjustable choke to 48/64".
11:26	Reduce adjustable choke to 32/64".
11:39	Shut in well at the Choke manifold.
11:43	Close FCH Master valve and open Choke manifold.
11:45	Change out Slickline toolstring to close 3.813" SSD at the 2458 Sand.
11:55	Close Choke manifold and open FCH Master valve to test lubricator.
12:00	Run in hole with the 3.813 shifting tool.
12:25	Start pulling out of hole.
12:53	Slickline on surface. Close FCH Swab valve. Start 0.4 l/min methanol injection.
13:00	Open well on 16/64" adjustable choke to STB gas flare. (2809 SAND - Test)
13:01	Increase adjustable choke to 20/64".
13:02	Increase adjustable choke to 24/64".
13:03	Increase adjustable choke to 28/64".
13:05	Increase adjustable choke to 32/64".
13:07	Increase adjustable choke to 36/64".
13:10	Increase adjustable choke to 40/64".
13:13	Increase adjustable choke to 44/64".
15:11	Shut in well at the Choke manifold.
15:22	Close FCH Master valve and open Swab valve.
15:23	Bleed off surface pressure, close FCH Swab valve.
15:25	Change Toolstring to open SSD on the 2755 Sand and check SSD at the 2809 Sand.
15:33	Open FCH Master valve and Swab valve.
15:35	Run in hole with the 3.688" shifting tool
15:59	Slickline check on SSD at the 2809 Sand. Sudden increase in tubing pressure.
16:05	Pull out of hole with Slickline.
16:17	Slickline fail to pull pass 2940m.
18:52	Close Slickline BOP.
19:05	Bleed down lubricator
19:25	Connect Go Devil to Slickline wire
20:58	Open Slickline BOP to drop Go Devil, attempt to cut the wire.
23:30	Close Slickline BOP.
03-Aug-04	
09:50	Shut down STAN Data Acquisition.
10:04	Re-start Data Acquisition.

SEQUENCE OF EVENTS

Date/Time	Events
03-Aug-04	
14:30	Break off lubricator, install Go Devil and two centralizes to Slickline.
15:00	Make up Lubricator with Go Devil/Cutter and two centralizes.
15:35	Open BOP to release Go Devil, attempt to cut the wire.
16:00	Commence jarring to break the wire.
17:00	Stop Jarring, fail to break wire.
17:35	Start 0.4 l/min methanol injection at the Choke manifold.
17:40	Open well on 12/64" adjustable choke to Portside gas flare.
17:50	Divert flow to Portside Burner.
17:54	Increase adjustable choke to 16/64".
18:06	Increase adjustable choke to 20/64".
18:08	Fully open gas manifold to flare
18:25	Increase adjustable choke to 24/64".
18:48	Increase adjustable choke to 28/64".
20:49	Shut in well at choke manifold
20:51	Stop pumping methanol
20:55	Commence jarring to break the wire.
21:53	Stop Jarring, fail to break wire.
22:07	Start 0.4 l/min methanol injection at the Choke manifold.
22:08	Open well on 16/64" adjustable choke to Portside gas flare.
22:11	Increase adjustable choke to 20/64".
22:15	Increase adjustable choke to 24/64".
22:20	Commence jarring to break the wire.
22:48	Stop Jarring, fail to break wire.
22:51	Shut in well at choke manifold
22:52	Stop pumping methanol
22:55	Close Slickline BOP's
23:10	Bleed down lubricator
23:35	Break off lubricator, cut wire just above BOP, make new rope socket.
23:46	Stab back lubricator to BOP's
04-Aug-04	
00:01	Open Slickline BOP
00:02	Run in hole with the blind box.
01:24	Toolstring stop at 2915m MDRT
01:32	Pull out of hole
02:35	Slickline at surface
02:39	Close Master valve on FCH
02:43	Bleed down Lubricator via choke manifold
02:44	Close Swab valve on FCH
02:45	Close choke manifold
02:47	Break off lubricator. Change out toolstring to 5.9" Bowen wire finder
03:05	Stab Back lubricator. Open Swab valve on FCH
03:07	Open Master valve on FCH
03:20	Run in hole with wire finder
03:54	Slickline at surface. No wire retrieved.
03:55	Close Slickline BOP
03:57	Bleed down Lubricator via needle vales
04:32	Break off lubricator. Change out toolstring to 4.5" Bowen wire finder

SEQUENCE OF EVENTS

Date/Time	Events
04-Aug-04	
05:08	Open Slickline BOP
05:15	Run in hole with 4.5" wire finder
06:38	Slickline at surface. Close FCH Master valve and Production Swab valve.
06:45	Bleed off surface pressure.
06:47	Break off lubricator. No wire retrieved.
07:00	Change out toolstring to wire catcher.
07:02	Open FCH Master valve and Production Swab valve.
07:05	Run in hole with the wire catcher.
07:37	Slickline on surface with wire.
08:00	Hold JSA on rig floor.
08:10	Close Slickline BOP. Bleed off lubricator.
08:15	Break off lubricator, recover some twisted wire, 3 wires across the closed BOP.
08:30	Secure the three wires to the gauge cutter.
09:00	Make up Lubricator and open BOP.
09:13	Pull up Slickline and close BOP.
09:15	Bleed off lubricator.
09:30	Break off lubricator, recover some twisted wire, 16 wires across the closed BOP.
09:35	Secure the wires to the gauge cutter.
09:41	Make up Lubricator and open BOP.
09:45	Pull up Slickline and close BOP.
09:59	Attempt to bleed off lubricator.
10:35	Stop bleeding off lubricator pressure.
10:40	Increase BOP ram pressure and bleed off lubricator pressure.
11:00	Break off lubricator, recover some twisted wire, one wires across the closed BOP.
11:10	Secure the wire to the rope socket.
11:20	Make up Lubricator and open BOP.
11:30	Pull up Slickline and close BOP.
11:38	Bleed off lubricator. One wire across the closed BOP.
11:45	Commence removing top three lubricator section and joint the two wires outside Stuffing box.
13:34	Complete rigging up to splice wire.
14:00	Open Slickline BOP, commence pulling wire out of hole.
14:15	Unable to pull more than a few meter, Close Slickline BOP
14:43	Bleed off lubricator.
14:56	Open Slickline BOP, rig up injection line.
15:24	Start injecting glycol into lubricator.
15:45	Still unable to pull out, stop glycol injection.
15:46	Close Slickline BOP, bleed off pressure.
16:02	Disconnect Stuffing box to find twisted wire.
16:06	Re-connect back Stuffing box.
16:30	Open Slickline BOP.
16:36	Leak at the quick union connection between BOP and lubricator. Close Slickline BOP.
16:40	Close Production tree Swab valve to cut wire.
16:45	Bleed off pressure and close FCH Master valve.
16:55	Open Slickline BOP, break off lubricator, recover some twisted wire.
17:00	Commence rigging up Lubricator to the original configuration.
18:00	Changing out Slickline BOP ram elements and pressure test.
05-Aug-04	

SEQUENCE OF EVENTS

Date/Time	Events
05-Aug-04	
08:00	Finish servicing Slickline BOP.
08:24	Rig up Slickline BOP onto FCH.
08:28	Fill Slickline BOP with 15 gal 60/40 Glycol water.
09:10	Rig up Lubricator with wire catcher prong onto BOP.
09:28	Open FCH Swab valve and close FCH Flow valve to pressure test Lubricator.
09:35	Leak at the Lubricator connection, Open Flow valve to bleed off.
09:40	Change lubricator o-ring.
09:45	Close FCH Flow valve.
10:15	Pressure test lubricator to 4000 psi.
10:25	Test good, open Flow valve, bleed off test pressure.
10:35	Open Production Swab valve.
10:38	Open FCH Master valve.
10:42	Slickline run in hole to retrieved wire.
11:20	Latch on wire, pull out of hole.
11:40	Slickline at surface, close BOP and bleed off lubricator pressure.
12:05	Break off lubricator, recover some twisted wire.
12:10	Secure the wire to the gauge cutter.
12:15	Make up Lubricator and open BOP.
12:30	Pull up Slickline and close BOP.
12:42	Bleed off lubricator.
12:45	Break off lubricator, recover some twisted wire. Single wire across BOP.
12:50	Secure the wire to the gauge cutter.
12:56	Make up Lubricator and open BOP.
13:10	Pull up Slickline and close BOP.
13:17	Bleed off lubricator.
13:27	Break off lubricator, re-configure to one Lubricator section to splice wire.
14:50	Open BOP
15:00	Start to splice / recover wire while maintain pump pressure at the Stuffing box.
17:04	Wire out of Stuffing box, close FCH Swab valve, approximately 2700m returned to drum.
17:05	Close FCH Master valve and open Swab valve, bleed off surface pressure.
17:10	Close FCH Swab valve and Choke manifold.
17:20	Re-configure Lubricator and toolstring for other fishing operation.
18:00	Connect empty drum to Slickline unit to spool spent wire.
18:25	Commence spooling
19:00	Finish spooling
19:05	Rig up Slickline to run back in hole with new rope socket
20:45	Open Swab valve on FCH
20:46	Pressure test lubricator to 4000 psi via cement unit
21:11	Bleed off lubricator through choke manifold
21:13	Close choke manifold
21:15	Open Master valve on FCH
21:24	Run in hole with 3.22" LIB
22:08	Depth of LIB 2915m MDRT. Pull out of hole
22:38	Slickline at surface
22:40	Close Swab valve on production tree
22:42	Close FCH Master valve. Bleed down lubricator via choke manifold
22:50	Close Swab valve on FCH

SEQUENCE OF EVENTS

Date/Time	Events
05-Aug-04	
22:53	Open lubricator. LIB impression of rope socket head
22:55	Change out Slickline toolstring to 2.5" RJ pulling tool
22:56	Stab back Slickline lubricator
23:00	Open Swab valve on FCH
23:03	Open Master valve on FCH
23:07	Open Swab valve on production tree
23:11	Run in hole with 2.5" RJ pulling tool
23:42	Pull out of hole
06-Aug-04	
00:12	Slickline at surface
00:13	Close Swab valve on production tree
00:16	Close FCH Master valve. Bleed down lubricator via choke manifold
00:35	Close Swab valve on FCH
00:37	Open lubricator , retrieved Go devil
00:40	Change out Slickline toolstring to LIB 3.22"
00:47	Open Swab and Master valve on FCH
00:52	Open Swab valve on production tree
00:53	Run in hole with 3.22" LIB
01:08	Depth of LIB 2916.5m MDRT. Pull out of hole
01:24	Slickline at surface
01:25	Close Swab valve on production tree and Master valve on FCH
01:26	Bleed down lubricator via choke manifold
01:35	Close Swab valve on FCH
01:37	Open lubricator , LIB impression of a fishing neck
01:38	Change out Slickline toolstring to 2.5" RJ pulling tool
01:39	Stab back lubricator.
01:42	Open Swab and Master valve on FCH
01:43	Closed Master valve on FCH
01:44	Bleed down lubricator via choke manifold due to leak below Slickline BOP's
01:47	Close Swab valve on FCH
01:51	Change out o-ring on Slickline BOP's
02:00	Open Kill wing valve on FCH
02:05	Pressure test of Lubricator to 4000 psi from cement unit
02:06	Open Swab valve on FCH
02:24	Test good. Bleed down lubricator via choke manifold
02:27	Close Kill wing valve on FCH
02:29	Open Master valve on FCH
02:34	Open Swab valve on production tree
02:40	Run in hole with 2.5" RJ pulling tool
02:55	Slickline at fish 2917.5m MDRT
03:00	Pull out of hole
03:23	Slickline at surface
03:26	Close Swab valve on production tree
03:28	Close FCH Master valve. Bleed down lubricator via choke manifold
03:34	Close Swab valve on FCH
03:36	Open lubricator, retrieved Go devil
03:44	Change out Slickline toolstring to 3.22" LIB

SEQUENCE OF EVENTS

Date/Time	Events
06-Aug-04	
17:53	Slickline on surface, stop glycol injection.
17:55	Close Production tree Swab and Master valves.
18:04	Break off Lubricator inspect LIB
18:06	Change out Slickline toolstring closing for SSD 3.688"
18:10	Close choke manifold
18:16	Stab back lubricator.
18:18	Open Swab valve on FCH
18:21	Open Master valve on FCH
18:22	Open Swab valve on production tree
18:26	Run in hole with Slickline
19:00	Slickline at SSD at 2809 sand
19:32	Pull out of hole
19:35	Commence injecting glycol at lubricator
20:00	Slickline on surface, stop glycol injection.
20:01	Close Swab valve on FCH
20:10	Held JSA on rig floor for flaring operation
20:29	Check line up to Port boom
20:40	Commence injecting Methanol
20:41	Open well on 16/64" adjustable choke to Port gas flare. (2809 SAND - Test)
20:44	Increase adjustable choke to 20/64"
20:50	Increase adjustable choke to 24/64"
20:55	Increase adjustable choke to 28/64"
21:00	Increase adjustable choke to 32/64"
21:01	BSW = 0% water;100% Condensate; Trace of sediment.
21:05	Increase adjustable choke to 36/64"
21:10	Increase adjustable choke to 40/64"
21:15	Increase adjustable choke to 44/64"
21:20	Increase adjustable choke to 46/64"
21:25	Bypass steam exchanger
21:27	Stop injecting Methanol
21:35	Increase adjustable choke to 48/64"
21:40	BSW = 40% water;60% Condensate; Trace of sediment.
22:00	BSW = 25% water;75% Condensate; Trace of sediment.
22:15	Increase adjustable choke to 50/64"
22:25	Increase adjustable choke to 52/64"
22:30	BSW = 49% water;41% Condensate; Trace of sediment.
22:45	BSW = 26% water;74% Condensate; Trace of sediment.
23:01	Increase adjustable choke to 54/64"
23:15	BSW = 30% water;70% Condensate; Trace of sediment.
23:25	BSW = 40% water;60% Condensate; Trace of sediment.
23:32	Decrease adjustable choke to 48/64"
23:33	Increase adjustable choke to 54/64"
23:45	BSW = 50% water;50% Condensate; Trace of sediment.
07-Aug-04	BSW = 75% water;25% Condensate; Trace of sediment.
00:05	BSW = 20% water;80% Condensate; Trace of sediment.
00:12	BSW = 25% water;75% Condensate; Trace of sediment.
00:15	BSW = 25% water;75% Condensate; Trace of sediment.

SEQUENCE OF EVENTS

Date/Time	Events
07-Aug-04	
00:20	BSW = 20% water;80% Condensate; Trace of sediment.
00:23	BSW = 19% water;81% Condensate; Trace of sediment.
00:27	BSW = 24% water;76% Condensate
00:30	BSW = 25% water;75% Condensate; Trace of sediment.
00:35	BSW = 20% water;80% Condensate; Trace of sediment.
00:40	BSW = 16% water;84% Condensate; Trace of sediment.
00:41	Decrease adjustable choke to 48/64"
00:44	Divert flow to 48/64" fixed choke
00:45	BSW = 25% water;75% Condensate; Trace of sediment.
00:47	Divert flow to 48/64" adjustable choke
01:00	Divert flow to 52/64" fixed choke
01:01	BSW = 25% water;75% Condensate; Trace of sediment.
01:15	BSW = 14% water;86% Condensate; Trace of sediment.
01:20	Divert flow through separator
01:32	Lower 4.25" orifice plate
02:02	Dump .75 bbl water from separator
02:20	Divert Condensate flow to Tank for calculating Combined Meter/Shrinkage Factor.
02:32	Divert Condensate flow back to burner. Combined MF = 0.875 at 20 degC.
02:35	Dump 1.16 bbl water from separator
02:55	Dump .97 bbl water from separator
03:20	Dump .75 bbl water from separator
04:03	Dump 1.34 bbl water from separator
04:24	Shut in well at choke manifold
04:37	Close Swab valve on production tree
04:40	Close Master valve on FCH
04:41	Bleed down Slickline lubricator via choke manifold
04:43	Close choke manifold
04:56	Open Swab valve on production tree
05:00	Crack Swab valve on FCH. Bleed off pressure through choke manifold
05:05	Close Swab valve on production tree
05:07	Close Swab valve on FCH
05:08	Break off Lubricator, change out toolstring to gauge pulling tool
05:15	Stab back lubricator.
05:16	Open Swab valve on FCH
05:17	Open Master valve on FCH
05:22	Open on Swab valve on production tree
05:27	Run in hole with Slickline
06:13	Pull out of hole with gauge, start injecting glycol water to Lubricator.
06:21	Open Swab valve on FCH
06:45	Slickline on surface, stop glycol injection.
06:48	Close Production tree Swab and FCH Master valves.
06:52	Bleed off surface pressure to STB gas flare.
07:00	Break off Lubricator, retrieved gauges..
07:05	Make up Lubricator with 3.688 SSD shifting tool toolstring.
07:09	Open production tree Swab valves and FCH Master valve.
07:15	Run in hole to close SSD at 2809 Sand.
09:33	Slickline at surface, close production tree Swab valve.

SEQUENCE OF EVENTS

Date/Time	Events
07-Aug-04	
09:38	Close FCH Master valve and bleed off surface pressure.
09:42	Close FCH Swab valve, break off lubricator to find shifting tool pin sheared.
09:54	Make up lubricator with SSD shifting tool.
09:58	Open FCH Swab and Master valve.
10:00	Open production tree Swab valve.
10:04	Run in hole with shifting tool.
10:30	Start pulling out of hole.
11:02	Close FCH Master valve.
11:12	Bleed off Surface pressure.
11:16	Remove Slickline tool and make up Lubricator.
11:21	Close FCH Swab valve and open Master valve.
11:30	Commence bleeding off Tubing pressure through separator to gas flare.
12:42	Shut in at the choke manifold, observe well.
13:00	Close FCH Master valve.
13:03	Bleed off surface pressure.
13:07	Break off lubricator, rig up toolstring to set plug.
13:10	Make up lubricator, open FCH swab valve.
13:17	Open FCH Master valve , run in hole to set plug.
14:01	Pull out of hole
14:04	Commence glycol injection
14:17	Slickline at surface
14:18	Stop injecting glycol
14:20	Close Master valve on FCH
14:21	Bleed off surface pressure to STB gas flare.
14:25	Close Swab valve on FCH
14:26	Break off Lubricator, check plug.
15:00	Change toolstring added knuckle joint. Stab back lubricator
15:05	Open Swab and Master valve's on FCH
15:08	Run in hole to set plug at 2594 m MDRT
15:45	Pull out of hole. Commence injection glycol
16:00	Slickline at surface. Stop glycol injection
16:04	Close Master valve on FCH
16:05	Bleed off surface pressure to STB gas flare.
16:09	Close Swab valve on FCH
16:11	Break off Lubricator, Good indication plug is set.
16:14	Open Master valve on FCH
16:25	Open well on 16/64" adjustable choke to Port gas flare. Bleed down well
17:21	Shut in well at choke manifold
17:46	Close Master valve on FCH
17:47	Break off Lubricator, change out string to plug pulling tool
17:48	Close Swab valve on FCH and choke manifold
18:16	Stab back lubricator
18:17	Open Swab and Master valves on FCH
18:25	Run in hole
18:45	Stab into plug. Equalizing across plug
19:55	Pull out of hole. Commence injection glycol
20:18	Slickline at surface. Stop glycol injection

SEQUENCE OF EVENTS

Date/Time	Events
07-Aug-04	
20:20	Close Master valve on FCH
20:23	Bleed off surface pressure to STB gas flare.
20:27	Close Swab valve on FCH and choke manifold
20:41	Break off Lubricator, change out shear pins on plug pulling tool
20:42	Stab back lubricator
20:43	Open Swab and Master valves on FCH
20:50	Run in hole with Slickline
21:10	Commence jarring on plug
21:15	Pull out of hole. Commence injection glycol
21:40	Slickline at surface. Stop glycol injection
21:41	Close Master valve on FCH
21:44	Bleed off surface pressure to STB gas flare.
21:45	Close Swab valve on FCH and choke manifold
21:47	Break off Lubricator, change out toolstring to wire brush
21:49	Stab back lubricator
21:53	Open Swab and Master valves on FCH
22:00	Run in hole with Slickline
22:27	Commence working on brushing nipples
23:00	Pull out of hole. Commence injection glycol
23:15	Slickline at surface. Stop glycol injection
23:16	Close Master valve on FCH
23:17	Bleed off surface pressure to STB gas flare.
23:20	Close Swab valve on FCH and choke manifold
23:26	Break off Lubricator, change out toolstring to set plug
23:40	Stab back lubricator
23:48	Open Swab and Master valves on FCH
23:55	Run in hole with Slickline
08-Aug-04	
00:20	Commence jarring on plug
00:35	Pull out of hole. Commence injection glycol
01:00	Slickline at surface. Stop glycol injection
01:06	Close Swab valve on FCH
01:14	Open well on 16/64" adjustable choke to Port gas flare. Bleed down well
01:41	Shut in well at choke manifold
02:13	Open Swab valve on FCH
02:18	Open well on 16/64" adjustable choke to Port gas flare. Bleed down well
03:07	Shut in well at choke manifold
03:42	Open well on 16/64" adjustable choke to Port gas flare. Bleed down well
04:16	Shut in well at choke manifold
04:25	STAN turn off

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WELL TESTING REPORT

MAIN RESULTS

Company	:	Origin Energy Resources Limited
Field / Well / Zone	:	Yolla / Yolla-4 / Test #1
Country	:	Australia
Test date	:	30-Sep-03 to 15-Oct-03
Report number	:	2004-07
Region / Distr / base	:	MEA / APG / AUF

Company representative	:	A. Wenk
Schlumberger representative	:	G. Mullins

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	MAIN RESULTS	1

Test Interval : 2458 - 2755 - 2809 - 2973 Sands

FP#	Operation	Duration Time	Choke Size		Bottomhole Conditions		Wellhead Conditions		Cond Rate	Water Rate	Gas Rate	CGR	Cond API	Gas s.g.	BSW	CO2	H2S
			size	Type	Press	Temp.	Press	Temp.									
		hrs	64th		psiG	degC	psiA	degC	stbd	bwpd	MMscfd	bbl/Mscf	API60	Air=1	%	%	ppm
1	2458,2755,2809 sands	0.57	24	adjustable			18	9									
		19.27					21	14									
	Perforate 2973 sand	1.72	24	adjustable			2628	29									
		5.67					2737	12									
	Perforate 2973 sand	1.40	20	adjustable			2616	19									
		9.28					2679	9									
	2973 sand	7.12	44	fixed			2825	61	289	97	27	11	44	0.820	25	18	40
	2973 sand	0.67	56	adjustable			2542	63									
		3.57					3328	15									
	2809, 2973 sands	0.88	43	adjustable			3040	49									
		5.57					3259	8									
	2755, 2973 sands	1.63	44	adjustable			3097	50									
		5.08					1433	12									
	2458, 2973	1.28	46	adjustable			2842	50									
		29.17					3180	5									
	2755 sand Clean up	1.22	40	adjustable			2840	36									
		1.67					3105	12									
	2755 sand test	6.02	52	fixed			2787	61	599	90	32	19	49	0.856	13	20	35

Remarks :
* Values are taken at end of each flow period or the nearest available value where applicable.

Test Interval : 2458 - 2755 - 2809 - 2973 Sands

FP#	Operation	Duration Time	Choke Size		Bottomhole Conditions		Wellhead Conditions		Cond Rate	Water Rate	Gas Rate	CGR	Cond API	Gas s.g.	BSW	CO2	H2S
			size	Type	Press	Temp.	Press	Temp.									
		hrs	64th		psiG	degC	psiA	degC	stbd	bwpd	MMscfd	bbl/Mscf	API60	Air=1	%	%	ppm
1		3.63	0				3021	8									
	2458 sand clean up	4.13	40	adjustable			1599	59									
		1.55	0				2495	17									
	2458 , 2809 sand test	0.90	32	adjustable			1689	51									
		1.35	0				2654	27									
	2809 sand test	2.18	44	adjustable			882	46									
		26.48	0				3185	12									
	2809 sand SL in hole	3.15	28	adjustable			2978	41									
		1.32	0				3094	25									
	2809 sand SL in hole	0.72	24	adjustable			2941	35									
		69.83	0				3129	10									
	2809 sand	7.72	52	fixed			2860	77	764	105	32	24	49	0.852	12	19	32

Remarks :
* Values are taken at end of each flow period or the nearest available value where applicable.

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 1 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
28-Jul-04																						
28-Jul-04																						
07:30				21	9	19		Confirm FCH Swab, Master valves closed, Kill, Flow valves opened.															
07:59				70	9	52		Start flushing surface test equipment to burner with water.															
08:00				72	9	61																	
08:10				15	9	14																	
08:12				897	9	503		Start pressure testing surface equipment against burner to 1000 psi.															
08:15				1019	10	1016																	
08:18				163	10	543		Bleed off test pressure, repair leaks.															
08:20				50	10	20																	
08:30				50	10	16																	
08:40				12	10	18																	
08:41				68	11	17		Resume pressure testing.															
08:45				1029	10	16																	
08:50				1049	11	1044																	
08:55				988	12	981																	
09:00				935	12	930																	
09:05				890	11	885																	
09:07				617	11	756		No leak visually, bleed off test pressure.															
09:10				44	12	43																	
09:15				44	11	43																	
09:19				1064	11	866		Close Gas and Oil divider, pressure test to 1000 psi.															
09:20				1046	11	1030																	
09:25				992	10	987																	
09:30				935	11	931																	
09:35				876	11	872																	

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 2 2004-07

	Flowing Condition											Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
28-Jul-04																						
09:36				42	11	43		No leak visually, bleed off test pressure.														
09:40				1030	12	917		Pressure test Separator inlet to 1000 psi.														
09:45				1027	13	1020																
09:50				1021	12	1014																
09:55				864	12	935		Test good, bleed off pressure.														
10:00				63	12	46		Pressure test Separator vessel to 1000 psi.														
10:05				1000	12	993																
10:10				991	12	984																
10:15				985	12	979																
10:17				897	12	933		Test good, bleed off pressure.														
10:20				12	12	13																
10:24				88	12	77		Pressure test Heat Exchanger inlet to 1000 psi.														
10:25				1157	12	873																
10:30				1121	13	1116																
10:35				1113	13	1105																
10:40				1052	13	1070		Test good, bleed off pressure.														
10:45				2821	13	13		Pressure test Choke manifold downstream valves to 4000 psi.														
10:50				4032	13	12																
10:55				4009	13	12																
11:00				3997	13	12																
11:01				1056	13	13		Test good, bleed off pressure.														
11:04				3220	13	13		Pressure test Choke manifold upstream valves to 4000 psi.														
11:05				4027	13	13																
11:10				4020	14	12																
11:15				4026	14	12																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 3 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
28-Jul-04																						
11:20				81	14	12		Test good, bleed off pressure.														
11:25				295	14	12		Pressure test SSV to 4000 psi.														
11:25				295	14	12																
11:30				4029	14	12																
11:35				4026	14	12																
11:40				4006	14	12																
11:41				3873	14	12		Test good, bleed off pressure.														
11:45				12	15	14																
11:54				20	15	20		Commence pumping water through Separator to Surge tank to obtain Meter factor.														
12:00				24	14	25																
12:15				39	14	36																
12:30				24	14	26																
12:41				12	14	14		Finish Taking Meter factor at 0.5, 1.0, 1.5 bbl/min rates. Cal Sheet in Annex														
12:45				12	14	14		Rig up Halliburton														
13:00				12	14	14																
13:15				12	14	14																
13:30				12	14	13																
13:45				12	14	13																
14:00				43	14	14		Pressure test Slickline lubricator 4000 psi.														
14:15				3978	14	13		Cross-check Differential pressure sensor with electronic manometer.														
14:27				4007	13	13		Inflow test Kill line check valve.														
14:30				3234	13	14																
14:32				3220	13	14		Close Master valve and inflow test.														
14:38				2696	13	14		Open Master valve and bleed down surface pressure.														
14:42				340	13	14		Run in hole to pull HE-3 plug														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 4 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
28-Jul-04																						
14:45				312	13	14																
15:00				279	12	14																
15:10				21	12	18		Pull out of hole with HE-3 plug.														
15:15				27	12	17		Close Master valve and change out Slickline tool.														
15:25				18	12	18		Install lubricator with 3.688" SSD Shifting tool.														
15:30				20	12	18																
15:37				3940	12	17		Pressure test Lubricator to 4000 psi.														
15:45				758	12	18		Test good, bleed off pressure.														
15:55				24	12	17		Open Master valve, run in hole with Shifting tool.														
16:00				24	12	17																
16:15				24	11	17																
16:30				24	11	17																
16:35				24	11	17																
16:36				26	11	16		Open SSD at 2809 sand.														
16:37				25	11	17																
16:38				26	11	16																
16:39				27	11	17																
16:40				27	11	17																
16:41				27	11	17																
16:42				27	11	16																
16:43				36	11	17		Open SSD at 2755 sand.														
16:44				45	11	17																
16:45				50	11	17																
16:46				54	11	17		Pull out of hole with Shifting tool.														
16:47				60	11	17																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 5 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
28-Jul-04																						
16:48				63	11	17																
16:49				60	11	17																
16:50				60	11	17																
16:55				56	11	17																
17:00				52	11	16																
17:11				19	11	19		Close Master valve, bleed off Lubricator pressure.														
17:15				21	11	13																
17:17				24	11	13		Open Master valve, run in hole with 3.688" SSD Shifting tool.														
17:30				24	11	13																
17:43				30	11	13		Open SSD at 2458 sand.														
17:44				55	11	14																
17:45				129	11	14																
17:46				235	10	13		Pull out of hole with Shifting tool.														
17:47				339	10	14																
17:48				427	10	13																
17:49				496	10	14																
17:50				544	10	13																
18:00				628	10	13																
18:15				631	10	14		Slickline at surface.														
18:15				631	10	14																
18:30				631	10	14																
18:40				631	10	14		Close Master valve on FCH and Production tree Swab valve.														
18:45				631	10	14																
18:52				62	10	19		Bleed down Lubricator through Choke manifold.														
19:00				21	10	13		Change out Slickline toolstring to 3.813" shifting tool for SSD.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 6 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
28-Jul-04																						
19:12				21	10	13																
19:15				21	10	13		Open FCH Master valve and Swab valve.														
19:16				478	10	13																
19:17				557	10	13																
19:18				588	10	13																
19:19				607	10	13																
19:20				616	10	13																
19:25				627	10	14																
19:40	12			626	10	14		Well open on 12/64" adjustable choke flowing to Surge tank.														
19:41	16			625	10	14		Increase adjustable choke to 16/64"														
19:42	16			543	10	17																
19:43	16			507	10	17																
19:44	20			502	10	17		Increase adjustable choke to 20/64"														
19:45	20			270	10	15																
19:46	20			182	10	15																
19:47	20			122	10	17																
19:48	20			99	10	19																
19:49	20			89	10	17																
19:50	20			86	10	17																
19:51	20			80	10	16																
19:52	20			77	10	17																
19:53	20			74	10	17																
19:54	20			74	10	17																
19:55	20			71	10	17																
19:56	24			71	10	17		Increase adjustable choke to 24/64"														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 7 2004-07

	Flowing Condition											Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
28-Jul-04																						
19:57	24			48	10	17																
19:58	24			33	10	17																
19:59	24			30	10	16																
20:00	24			30	10	16																
20:05	24			24	9	11																
20:10	24			18	9	11																
20:14				15	10	14		Shut in well at Choke manifold.														
20:14				15	10	14																
20:15				13	10	14		9 bbls cushion return to tank, rate of 316 bbl/d.														
20:16				13	10	14																
20:17				12	10	13																
20:18				13	10	13																
20:19				12	10	12																
20:20				12	10	13																
20:25				13	10	12																
20:30				12	10	12																
20:45				11	10	12																
21:00				13	10	11																
21:15				11	10	11																
21:30				11	10	11																
21:45				10	10	11																
22:00				10	9	11																
22:30				18	9	11		Run in hole to with 3.813" SSD EO shifting tool.														
22:45				18	9	11																
23:00				18	9	11		Close SSD's at 2980, 2921and 2832 m MDRT Slickline depth.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 8 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
28-Jul-04																						
23:15				18	9	10																
23:30				27	9	11																
23:45				24	9	11		Tool at surface.														
23:50				24	9	11		Close FCH Master valve and Swab valves.														
29-Jul-04																						
00:00				24	9	11																
00:01				24	9	11		Change out tool string to 2.18" drift.														
00:50				24	9	10		Open FCH Master valve and Swab valves.														
01:00				24	9	11		Run in hole with drift.														
01:15				24	9	10																
01:30				24	9	11																
01:35				24	9	11		Tool at surface.														
01:40				24	9	11		Close FCH Master valve and Swab valves.														
01:45				24	9	11		Change out tool string to Halliburton														
01:55				24	9	11		Open FCH Master valve and Swab valves.														
02:00				24	9	11																
02:15				24	9	11		Run in hole with gauges for static gradient survey.														
02:30				24	8	11																
03:00				24	8	11																
03:30				24	8	11																
04:00				24	8	11																
04:30				24	9	11																
05:00				24	9	11																
05:38				24	9	11		Slickline at surface, close Master and Swab valves.														
05:40				24	9	11		Change out to run 3.813" SSD Shifting tool.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 9 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
29-Jul-04																						
06:00				24	9	11																
06:30				24	9	11																
07:00				24	9	11																
07:30				24	9	11		Rig down Slickline equipment without running Shifting tool.															
08:00				24	10	11																
08:30				24	10	11																
09:00				24	11	11		Commence rigging up Wireline BOP and Lubricator.															
09:30				24	10	11																
10:00				24	10	11																
10:30				24	11	11																
11:00				24	12	11																
11:18				246	13	11		Open Swab valve, pressure test Lubricator, Wireline correlation tool to 4000 psi.															
11:30				3985	13	11																
11:40				1079	14	11		Good test, bleed off pressure.															
11:42				15	14	14		Close Swab valve, break off Lubricator.															
12:00				15	14	14		Lower toolstring to connect 6m 2-1/8" 6spf PJ Enerjets guns															
12:30				15	14	14																
12:50				15	15	13		Re-stab Lubricator, test quick union connection.															
13:00				15	15	13		Open Master and Swab valves on FCH.															
13:05				21	15	13		Commence running in hole with perforation guns.															
13:15				27	15	13																
13:30				38	15	12																
13:45				71	15	12																
14:00				151	14	13																
14:15				213	14	13																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 10 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
29-Jul-04																						
14:30				257	14	12																
14:34				243	14	15		Bleed off surface pressure. Commencing Depth correlation.														
14:45				21	14	20																
15:00				21	14	20																
15:15				21	14	19																
15:20				21	14	20																
15:25				21	14	19																
15:30	24			39	14	20		Fire perforation guns. Choke manifold opened on 24/64" adjustable choke to Surge tank.														
15:31	24			478	14	111		Perforated zone 3149 to 3155 m MDRT. - 2973 Sand														
15:32	24			490	14	132																
15:33	24			501	14	134																
15:34	24			514	14	137																
15:35	24			527	13	141		Diesel returned 7.3 bbls to Surge tank. 2102 bbl/d														
15:36	24			540	13	143																
15:37	24			555	13	148																
15:38	24			575	13	154																
15:39	24			602	13	160																
15:40	24			635	13	169		Diesel returned 15.2 bbls to Surge tank. 2281 bbl/d														
15:41	24			670	13	178																
15:42	24			707	13	189																
15:43	24			747	13	199																
15:44	24			790	14	207																
15:45	24			834	14	217																
15:46	24			876	14	222																
15:47	24			915	15	228		Diesel returned 27.0 bbls to Surge tank. 2425 bbl/d														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 11 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
29-Jul-04																						
15:48	24			948	15	238																
15:49	24			969	16	244																
15:50	24			988	16	250		Diesel returned 32.8 bbls to Surge tank. 2788 bbl/d														
15:51	24			1003	17	83		Divert flow to Portside burner.														
15:55	24			1069	18	120																
16:00	24			1156	20	121																
16:05	24			1246	21	132																
16:10	24			1333	22	140																
16:15	24			1417	23	146																
16:20	24			1505	24	151																
16:25	24			1601	24	160																
16:30	24			1706	25	169																
16:37	24			1855	26	166		Divert flow to STB burner.														
16:45	24			2034	27	159																
17:00	24			2389	29	199																
17:07	24			2554	30	503		Gas at surface.														
17:13	24			2628	29	299		Divert flow through Gas flare.														
17:15				2660	29	22		Shut in well at the Choke manifold.														
17:16				2690	28	17																
17:17				2713	28	17																
17:18				2731	28	17																
17:19				2742	28	14																
17:20				2751	28	14																
17:21				2755	27	14																
17:22				2761	27	14																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 12 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
29-Jul-04																						
17:23				2764	27	14																
17:24				2764	27	14																
17:25				2764	27	14		Start pulling out spent guns.														
17:30				2764	26	14																
17:45				2758	25	14																
18:00				2755	23	17																
18:15				2755	22	17																
18:30				2755	20	17																
18:45				2758	19	17																
18:55				2761	18	17		Guns at surface														
18:56				2755	18	17		Close Master valve on FCH.														
19:00				1820	18	56		Lubricator bled down through choke manifold.														
19:00				1820	18	56																
19:03				15	17	17		Close Swab on FCH.														
19:05				15	15	17		Lay out spent guns. All shots fired														
19:15				15	12	17																
19:30				15	12	17																
19:45				16	12	16																
20:00				15	12	16																
20:15				15	11	17		Rig up 6m 2-1/8" 6spf PJ Enerjets guns into lubricator.														
20:30				15	11	17																
20:42				15	11	17		Pressure test lubricator.														
20:45				15	11	17																
20:50				1868	11	17		Open Master valve at FCH.														
20:51				1944	11	16		Open Swab valve at FCH.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 13 2004-07

Time	Flowing Condition											Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
29-Jul-04																						
21:00				2737	14	16		Run in hole with toolstring 2-1/8" 6spf PJ Enerjets.														
21:30				2734	13	17																
22:00				2737	13	17																
22:30				2737	12	16																
22:45				2738	12	16																
22:50				2737	12	17																
22:52				2738	12	17																
22:53	20			2732	12	112		Open well on 20/64" adjustable choke to gas flare.														
22:54	20			2726	12	38																
22:55	24			2716	12	102		Increase adjustable choke to 24/64".														
22:56	24			2669	12	298																
22:57	24			2631	12	215																
22:58	24			2597	12	209																
22:59	24			2564	12	199																
22:59	24			2564	12	199																
23:00	24			2534	12	192																
23:05	24			2413	13	180																
23:08	20			2363	13	172		Decrease adjustable choke to 20/64"														
23:09	20			2360	13	104																
23:10	20			2360	14	95																
23:11	20			2363	14	94																
23:12	20			2366	14	94																
23:13	20			2369	14	95																
23:14	20			2375	14	99																
23:15	20			2381	14	99																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 14 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
29-Jul-04																						
23:20	20			2440	15	104																
23:25	20			2529	15	106																
23:30	20			2593	16	105		Start correlating depth with GR/CCL/CBL/VDL/USIT.														
23:33	20			2617	17	108		Commence pumping methanol at the choke manifold.														
23:45	20			2566	17	196																
30-Jul-04																						
00:00	20			2535	18	191																
00:05	20			2535	19	192																
00:06	20			2534	19	191																
00:07	20			2542	19	192		Fire perforation guns. Perforate 3151.5 - 3157.5m MDRT.														
00:08	20			2567	19	192																
00:09	20			2583	19	195																
00:10	20			2592	19	194																
00:11	20			2599	19	195																
00:12	20			2604	19	197																
00:13	20			2610	19	197																
00:14	20			2613	19	197																
00:15	20			2613	19	197																
00:16	20			2616	19	197																
00:17				2627	19	144		Shut in well at the Choke manifold.														
00:18				2661	19	16		Stop pumping methanol.														
00:19				2682	19	16																
00:20				2694	20	16																
00:21				2703	20	16																
00:22				2707	20	16																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 15 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
30-Jul-04																						
00:23				2709	20	16																
00:24				2710	20	16																
00:25				2713	20	16																
00:30				2714	19	16																
00:31				2713	19	16		Start pulling out spent guns.														
00:35				2712	19	16																
00:40				2709	19	16																
00:45				2708	18	15																
01:00				2711	17	16																
01:15				2717	16	16																
01:30				2723	15	16																
01:45				2728	15	16																
02:00				2732	14	16		Guns at surface. All shots fired														
02:10				2735	14	16		Close Master valve on FCH.														
02:17				2717	13	16		Lubricator bled down through choke manifold.														
02:23				17	10	16		Close Swab valve on FCH.														
02:24				17	9	16		Close Choke manifold														
02:25				18	8	16		Rig down Wireline BOP and lubricator.														
02:30				18	6	16																
03:00				18	8	16																
03:30				21	9	16																
04:00				21	9	16		Rig up Slickline BOP and lubricator.														
04:30				21	10	16																
05:00				21	10	16																
05:30				21	10	17																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 16 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
30-Jul-04																						
05:32				21	10	17		Rig up Halliburton														
05:39				18	11	16		Open Kill and Swab valves, pressure test Slickline lubricator to 4000 psi.														
06:00				3999	11	16																
06:10				3887	11	16		Bleed off test pressure.														
06:15				18	11	19																
06:17				40	11	17		Close Kill, Swab valves and open Master valve.														
06:20				1527	11	17																
06:21				1550	11	17																
06:22				2698	11	17																
06:23				2714	11	17		Open Swab valve and run in hole to set Halliburton														
06:25				2714	11	16																
06:30				2714	12	16																
06:45				2711	13	16																
07:00				2711	13	17																
07:15				2708	13	17																
07:30				2705	12	17																
07:45				2705	12	17																
07:50				2705	12	17		Set Pressure gauges at the 3.688" RN nipple in Tail pipe.														
08:00				2704	12	17																
08:15				2702	12	17																
08:26				2699	12	16		Slickline toolstring at surface, close Production tree Swab valve and FCH Master valve.														
08:30				1552	12	104		Start Methanol injection 0.4 l/min at the Choke manifold..														
08:34				21	10	17		Close FCH Swab valve and break off Slickline Lubricator.														
08:40				30	6	17		Make up Lubricator with GR pulling tool.														
08:45				33	6	17																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 17 2004-07

Time	Flowing Condition											Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
30-Jul-04																						
09:00				42	7	17																
09:15				48	8	17																
09:29				168	9	17		Open Production tree Swab valve and FCH Master valve.															
09:30				2679	9	17																
09:34	8			2679	10	51		Open well on 8/64" adjustable choke via heat exc to STB gas flare. (Test 2973 Sand)														
09:35	8			2644	10	256																
09:36	24			2588	10	348		Slowly increase adjustable choke to 24/64".														
09:37	24			2537	11	331																
09:38	24			2491	11	322																
09:39	24			2447	11	317																
09:40	24			2407	11	309																
09:41	24			2371	11	302																
09:42	24			2337	11	296																
09:43	28			2306	12	289		Increase adjustable choke to 28/64".														
09:44	28			2266	12	394																
09:45	28			2228	12	385																
09:46	28			2197	12	373																
09:47	28			2171	13	364																
09:48	28			2152	13	358																
09:49	28			2141	13	353																
09:50	28			2144	14	352																
09:53	32			2200	15	449		Increase adjustable choke to 32/64".														
09:54	32			2211	15	453																
09:55	32			2221	16	453																
09:56	32			2231	16	453																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 18 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
30-Jul-04																						
09:57	32			2239	17	454																
09:58	32			2245	17	456																
09:59	32			2250	18	456																
10:00	32			2253	18	456		Increase Methanol pump rate to 0.6 l/min.														
10:05	32			2256	20	461																
10:10	32			2265	22	464																
10:13	32			2271	22	467																
10:14	40			2233	23	664		Increase adjustable choke to 40/64".														
10:15	40			2187	23	686																
10:16	40			2154	23	675																
10:17	40			2183	23	580		Brine at surface.														
10:18	40			2285	24	579																
10:19	40			2378	25	565																
10:20	40			2469	27	574																
10:25	40			2784	35	881																
10:30	40			2779	37	909																
10:35	40			2741	36	867																
10:40	40			2740	35	814		BSW = 0.2 % sediment														
10:45	40			2752	36	802																
10:50	40			2769	36	774																
10:55	40			2789	37	785																
11:00	40			2801	37	787																
11:05	40			2810	38	800																
11:10	40			2819	38	783																
11:15	40			2828	39	787																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 19 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
30-Jul-04																						
11:20	40			2846	39	780																
11:22	44			2802	39	993		Increase adjustable choke to 44/64".														
11:25	44			2749	40	956																
11:30	44			2736	40	919																
11:35	44			2743	41	921																
11:40	44			2755	42	974		Divert flow through 44/64" fixed choke.														
11:45	44			2690	43	1035		Reduce Methanol injection rate to 0.4 l/min														
11:50	44			2684	43	1032																
11:55	44			2687	44	1032																
12:00	44			2693	45	1035																
12:08	44			2705	46	1024		Divert flow through separator.														
12:15	44			2713	47	1174		40	29	24		Stop Methanol injection.										
12:30	44			2725	48	1088		496	31	27												
12:45	44			2740	50	1091		497	34	30												
13:00	44			2752	52	1094		497	36	31												
13:03	44			2754	52	1093		Lower 3.75 " orifice plate. Start gas measurement.														
13:15	44			2763	53	1094		494	38	33						0.825	18.0	60		27.38		
13:30	44			2772	55	1094		495	40	34						0.825	18.0	60		27.27		
13:45	44			2781	55	1097		495	43	35	30.0				44.01	0.825	18.0	60	280	27.19	121	10
14:00	44			2787	56	1097		496	44	38	25.0				44.01	0.825	18.0	60	332	27.11	112	12
14:15	44			2793	57	1097		496	45	38	25.0				44.01	0.825	18.0	60	322	27.12	108	12
14:30	44			2799	58	1097		496	46	39	25.0				44.01	0.820	18.0	60	336	27.08	113	12
14:45	44			2804	58	1100		497	48	40	25.0				44.01	0.820	18.0	60	314	27.24	106	12
14:52	44			2805	59	1100		Dump water from separator vessel.														
15:00	44			2807	59	1100		Stop dumping water, 0.8 bbls dumped.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 20 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
30-Jul-04																						
15:00	44			2807	59	1100		498	49	39	24.0				44.01	0.820	18.0	40	271	27.22	86	10
15:15	44			2813	60	1101		498	50	42	24.0				44.01	0.820	18.0	40	230	27.17	73	8
15:30	44			2816	59	1100		499	50	42	24.0				44.01	0.820	18.0	40	304	27.19	97	11
15:45	44			2816	59	1103		Divert Condensate flow to Tank for calculating Combined Meter/Shrinkage Factor.														
15:45	44			2816	59	1103		499	51	43	24.0				44.01	0.820	18.0	40	300	27.14	96	11
16:00	44			2819	60	1103		501	52	44	25.0				44.01	0.820	18.0	40	293	27.21	99	11
16:11	44			2823	61	1103		Divert Condensate flow back to burner. Combined MF = 0.815 at 25 degC.														
16:15	44			2823	61	1103		501	53	44	25.0				44.01	0.820	18.0	40	290	27.16	98	11
16:30	44			2825	61	1105		501	53	44	25.0				44.01	0.820	18.0	40	289	27.11	97	11
16:34	44			2825	61	1054		By-pass Separator.														
16:39	44			2825	61	810		By-pass Heat exchanger.														
16:40	44			2826	61	810																
16:41	44			2826	61	808		Divert flow through 44/64" adjustable choke and gradually increasing.														
16:42	44			2832	61	753																
16:43	48			2822	61	827																
16:44	52			2784	61	949		Well flowing on 52/64" adjustable choke.														
16:45	52			2743	61	1003																
16:46	52			2717	61	989																
16:47	52			2698	61	980																
16:48	52			2684	61	974																
16:49	52			2674	61	970																
16:50	52			2667	61	967																
16:52	54			2634	61	1032		Well flowing on 54/64" adjustable choke.														
16:55	54			2606	61	1020																
17:00	54			2595	62	1014																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 21 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
30-Jul-04																						
17:05	54			2595	62	1013																
17:06	56			2586	62	1041		Well flowing on 56/64" adjustable choke.														
17:07	56			2571	62	1078																
17:08	56			2561	62	1074																
17:09	56			2554	62	1070																
17:10	56			2548	62	1067																
17:11	56			2546	63	1064																
17:12	56			2542	63	1064																
17:13	56			2542	63	1064																
17:14	56			2542	63	1062																
17:15	56			2542	63	1061																
17:20	56			2542	63	1059																
17:21	56			2542	63	1058																
17:22				2703	63	292		Shut in well at the Choke manifold.														
17:23				2918	63	19																
17:24				3081	64	18																
17:25				3200	63	18																
17:26				3282	63	18																
17:27				3336	63	18																
17:28				3368	63	18																
17:29				3388	63	18																
17:30				3398	63	18																
17:31				3379	62	18																
17:32				3338	62	18		Close Swab valve Production tree.														
17:32				3338	62	18																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 22 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
30-Jul-04																						
17:33				3302	61	18																
17:34				3220	61	18																
17:35				2350	60	18																
17:37				2319	59	18		Open Swab valve on FCH.														
17:38				3195	59	18		Open Swab valve on Production tree.														
17:40				3406	57	18		Run in hole with Slickline GR pulling tool to retrieved gauges.														
17:45				3406	55	18																
17:50				3403	53	18																
17:55				3403	51	17																
18:00				3402	48	17																
18:05				3403	46	17																
18:10				3406	44	18																
18:15				3403	43	17																
18:20				3402	41	17																
18:25				3400	39	17																
18:30				3397	38	17																
18:40				3394	36	17		Gauges at surface.														
18:43				3394	35	17		Close Swab valve Production tree.														
18:45				3352	34	17		Close Master valve on FCH.														
18:45				3352	34	17																
18:47				3339	34	17		Bleed down lubricator through choke manifold.														
18:50				18	32	17		Close Choke manifold.														
18:51				18	31	17		Close Swab valve on FCH.														
19:00				21	22	17																
19:02				21	21	17		Disconnect lubricator retrieved gauges														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 23 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
30-Jul-04																						
19:05				21	21	17		Change Slickline toolstring to 3.668" shifting tool.														
19:09				21	20	17		Stab back lubricator to FCH.														
19:12				21	20	17		Open Master valve on FCH.														
19:15				2223	21	17		Open Swab valve on FCH.														
19:15				2223	21	17																
19:29				1785	23	17		Open Swab valve on Production tree.														
19:30				3358	23	17																
19:31				3368	23	17		Run in hole with Slickline to open SSD on 2809 sand.														
19:45				3374	24	17																
20:00				3371	23	17																
20:15				3338	21	17																
20:24				3333	21	17		Slickline at surface.														
20:25				3333	21	17		Close Swab valve Production tree.														
20:27				3278	21	17		Close Master valve on FCH.														
20:30				3274	20	17																
20:32				2071	20	68		Bleed down lubricator through Choke manifold.														
20:33				31	20	53		Close Choke manifold.														
20:37				18	14	17		Disconnect lubricator to change out toolstring.														
20:40				21	12	17		Re-set SSD shifting tool.														
20:43				21	10	17		Stab back lubricator to FCH.														
20:45				2177	10	17		Open Master valve on FCH.														
20:46				3318	11	17		Open Swab valve on Production tree.														
20:54				3328	15	17																
20:55	20			3321	15	90		Open well on 20/64" adjustable choke to flare.														
20:56	20			3290	15	289																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 24 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
30-Jul-04																						
20:57	20			3275	16	281																
20:58	24			3269	16	277		Increase adjustable choke to 24/64".														
20:59	24			3248	17	385																
21:00	24			3234	18	384																
21:01	24			3225	18	384																
21:02	32			3218	19	400		Increase adjustable choke to 28/64".														
21:03	32			3201	20	506																
21:04	32			3195	21	500		Increase adjustable choke to 32/64".														
21:05	32			3178	22	622																
21:06	32			3170	23	626																
21:07	36			3168	24	623		Increase adjustable choke to 36/64".														
21:08	36			3143	25	763																
21:09	36			3134	26	762																
21:10	40			3131	27	762		Increased adjustable choke to 40/64"														
21:11	40			3102	29	912																
21:12	40			3087	30	911																
21:13	44			3082	31	910		Increase adjustable choke to 44/64".														
21:14	44			3049	32	1080																
21:15	43			3034	33	1078		Decrease adjustable choke to 43/64".														
21:16	43			3034	34	1037																
21:17	43			3036	35	1033																
21:18	43			3034	36	1031																
21:19	43			3035	37	1031																
21:20	43			3032	38	1040		Flare out.														
21:21	43			3023	39	1066																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 25 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
30-Jul-04																						
21:22	43			3021	40	1066																
21:23	43			3019	40	1066																
21:24	43			3016	41	1064																
21:25	43			3013	42	1064																
21:30	43			3012	44	1061		BSW 35% total 34% water 1 % solids														
21:35	43			3024	46	1075																
21:40	43			3036	48	1066																
21:45	43			3040	49	1063																
21:48				3138	50	441		Shut in well at the Choke manifold due to flare out.														
21:49				3236	50	20																
21:50				3253	50	18																
21:51				3256	50	17																
21:52				3259	50	17																
21:53				3259	50	17																
21:54				3260	50	17																
21:55				3261	50	17																
22:00				3170	48	17																
22:03				3115	47	17		Close Master valve on FCH.														
22:05				3085	46	17		Open Choke manifold, bleed down pressure for diesel transfer to surge tank.														
22:10				18	41	17		Held JSA for diesel transfer to surge tank.														
22:15				21	37	17																
22:30				15	32	17																
22:45				12	25	11																
22:47				42	22	33		Commence pumping 60 bbls diesel.														
23:00				159	16	152																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 26 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
30-Jul-04																						
23:05				162	15	155		Close Swab valve on Production tree.														
23:15				162	14	157																
23:17				29	14	70		Stop pumping diesel.														
23:20				19	14	16		Flush lines with drill water 5 bbls.														
23:33				6	15	6		Open Master valve on FCH.														
23:45				2437	15	6																
23:55				3271	15	7		Open Swab valve on Production tree.														
23:56				3271	15	6		Run in hole with 3.688" shifting tool to close SSD on 2809 sand.														
31-Jul-04																						
00:00				3268	15	6																
00:05				3268	15	6																
00:15				3262	15	6																
00:30				3267	14	7																
00:45				3271	14	8																
01:00				3268	14	8		Slickline at surface.														
01:00				3268	14	8																
01:03				3268	14	8		Close Swab valve on Production tree.														
01:06				3212	14	8		Close master valve on FCH.														
01:07				2832	14	13		Bleed down lubricator through choke manifold.														
01:09				149	14	83		Close choke manifold.														
01:10				18	13	17		Close Swab valve on FCH.														
01:11				17	13	17		Reset 3.688" shifting tool for opening SSD.														
01:15				18	10	17																
01:22				21	9	17		Open master valve on FCH.														
01:27				2118	9	17		Open Swab valve on FCH.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 27 2004-07

Time	Flowing Condition											Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
31-Jul-04																						
01:30				1675	10	17																
01:33				1696	10	17		Open Swab valve on Production tree.														
01:38				3268	11	17		Run in hole with 3.688" shifting tool to open SSD on 2755 sand.														
01:45				3268	12	17																
02:00				3265	13	17																
02:12				3271	13	17		SSD opened.														
02:15				3285	13	17																
02:30				3279	13	17																
02:41				3267	13	17		Slickline at surface.														
02:43				3264	13	17		Close Swab valve on Production tree.														
02:44				3242	13	17		Close Master valve on FCH.														
02:45				3241	13	17																
02:46				2635	13	50		Bleed down lubricator through choke manifold.														
02:47				554	13	177		Close choke manifold.														
02:50				101	11	17		Close Swab valve on FCH.														
03:00				18	6	17		Reset 3.688" shifting tool for closing SSD.														
03:13				1931	6	17		Open Master valve on FCH.														
03:14				2075	6	17		Open Swab valve on production tree.														
03:15				2520	6	17																
03:20				3259	8	17																
03:21				3259	9	17		Start pumping methanol.														
03:22	20			3258	9	22		Open well on 20/64" adjustable choke to flare.														
03:23	20			3233	10	181																
03:24	24			3223	10	175		Increased adjustable choke to 24/64".														
03:25	24			3216	10	176																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 28 2004-07

Time	Flowing Condition											Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
31-Jul-04																						
03:26	24			3195	11	251																
03:27	28			3181	12	263		Increased adjustable choke to 28/64".														
03:28	28			3155	12	338																
03:29	28			3131	13	344																
03:30	32			3115	14	349		Increased adjustable choke to 32/64".														
03:31	32			3091	14	461																
03:32	32			3088	15	467																
03:33	32			3091	16	467																
03:34	36			3084	18	527		Increased adjustable choke to36/64".														
03:35	36			3076	19	592																
03:36	36			3079	20	585		Increased adjustable choke to 40/64".														
03:37	36			3081	22	577																
03:38	36			3082	23	569																
03:39	36			3085	24	566																
03:40	40			3067	26	669		Increased adjustable choke to 42/64".														
03:41	40			3059	27	692																
03:42	44			3056	28	690		Increased adjustable choke to 44/64".														
03:42	44			3056	28	690																
03:43	44			3045	29	746																
03:44	44			3041	30	755																
03:45	44			3038	31	756																
03:55	44			3050	38	860		BSW 13% total 0.15% solids.														
04:00	44			3053	41	829																
04:05	44			3061	43	833		Stop pumping methanol.														
04:15	44			3071	45	832																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 29 2004-07

	Flowing Condition											Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
31-Jul-04																						
04:23	44			3079	47	832		BSW 30% total 0.1% solids.														
04:29	44			3085	48	832		BSW 30% total 0.1% solids.														
04:30	44			3085	48	832		Bypass steam exchanger.														
04:35	44			3088	49	826																
04:40	44			3094	50	811																
04:45	44			3097	50	806																
05:00	44			3105	53	805																
05:08				3109	53	799		Shut in well at the Choke manifold.														
05:09				3265	53	23																
05:10				3289	53	18																
05:11				3294	53	18																
05:12				3294	53	18																
05:13				3294	53	18																
05:14				3294	53	17																
05:15				3294	53	17																
05:20				3254	52	17		Close Swab valve on Production tree.														
05:28				2197	49	17		Open Swab valve on FCH.														
05:30				2184	48	17																
05:33				2164	46	17		Open Swab valve on Production tree.														
05:37				3333	45	17		Run in hole with 3.688" shifting tool to close SSD on 2755 Sand.														
05:45				3333	42	17																
06:00				3324	39	17																
06:15				3362	35	17																
06:30				3362	32	17																
06:45				3358	29	17																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 30 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
31-Jul-04																						
07:00				3356	28	17																
07:10				3300	26	17		Close Master valve on FCH and Production Swab valve.														
07:15				24	23	49		Bleed down lubricator and close FCH Swab valve.														
07:20				21	13	17		Change out to run 3.815" shifting tool.														
07:26				90	8	17		Open Master valve on FCH for servicing.														
07:30				98	7	17																
07:45				53	8	17																
07:56				735	9	16		Open Swab valve on the Production tree.														
08:00				3339	11	16																
08:05				3341	15	17		Open Swab valve on the FCH.														
08:08				3339	16	16		Run in hole with 3.815" shifting tool to open SSD on 2458 Sand.														
08:15				3342	17	17																
08:30				3338	17	17																
08:45				3297	17	16																
09:00				3303	17	17																
09:08				3294	17	17		Close Master valve on FCH and Production Swab valve.														
09:15				1299	16	80		Bleed down lubricator and close FCH Swab valve.														
09:17				18	15	16		Re-set 3.815" shifting tool.														
09:30				21	8	14																
09:45				21	9	14																
10:00				1433	12	14		Open Production tree Swab valve and Master valve on FCH.														
10:05	20			3291	13	76		Open well on 20/64" adjustable choke to STB gas flare.														
10:06	24			3270	14	242		Increase adjustable choke to 24/64"														
10:07	24			3241	14	390																
10:08	28			3209	15	503		Increase adjustable choke to 28/64"														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 31 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
31-Jul-04																						
10:09	28			3182	15	523																
10:10	32			3144	16	648		Increase adjustable choke to 32/64"														
10:11	36			3103	16	712		Increase adjustable choke to 36/64"														
10:12	36			3064	17	759																
10:13	40			3013	18	885		Increase adjustable choke to 40/64"														
10:14	44			2973	20	908		Increase adjustable choke to 44/64"														
10:15	44			2921	21	1051																
10:16	44			2889	23	1037																
10:17	44			2869	24	1019																
10:18	44			2855	26	1017																
10:19	44			2845	27	1009																
10:20	44			2839	29	1018																
10:21	44			2833	30	1024																
10:22	44			2830	31	1024																
10:23	44			2830	32	1023																
10:24	44			2830	33	1014																
10:25	44			2830	34	1015																
10:30	44			2828	38	994																
10:35	44			2831	40	994																
10:40	44			2851	42	1011																
10:45	44			2863	44	1005		BSW = 26 % water; 74 % condensate.														
10:50	44			2863	46	999		BSW = 23 % water; 77 % condensate.														
10:51	46			2863	46	997		Increase adjustable choke to 46/64"														
10:55	46			2840	47	1067																
11:00	46			2833	47	1061																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 32 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
31-Jul-04																						
11:05	46			2834	48	1061																
11:10	46			2835	49	1061		BSW = 30 % water; 70 % condensate.														
11:10	46			2835	49	1061																
11:15	46			2839	50	1064																
11:20	46			2842	50	1058																
11:22				3016	50	23		Shut in well at the Choke manifold.														
11:23				3136	50	16																
11:24				3210	50	14																
11:25				3255	50	14																
11:26				3282	50	14																
11:27				3299	50	14																
11:28				3311	50	14																
11:29				3320	50	14																
11:30				3325	49	14																
11:35				3332	48	14																
11:36				3326	48	14		Open Swab valve on the FCH.														
11:39				3334	47	14		Run in hole to close SSD on 2458 Sand.														
11:40				3335	46	14																
11:45				3340	45	14																
11:50				3355	43	14																
11:55				3355	42	14																
12:00				3361	41	14																
12:15				3387	37	14																
12:30				3380	34	14																
12:36				3364	33	14		Close Master valve on FCH and Production Swab valve.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 33 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
31-Jul-04																						
12:39				1967	33	108		Bleed down lubricator and close FCH Swab valve.														
12:45				15	25	14		Change out to run 3.688" Plug.														
12:51				18	21	14		Open Master valve on FCH.														
12:55				2222	21	14		Open FCH Swab valve.														
13:00				1808	22	14																
13:02				3359	23	14		Open Production tree Swab valve, run in hole to set plug at the RN nipple.														
13:15				3370	25	14																
13:30				3367	25	14																
13:45				3364	24	14																
13:55				3361	24	14		Attempt to pass R nipple.														
14:00				3361	24	14																
14:20				3359	23	14		Fail to pass, pull out of hole.														
14:30				3358	23	14																
14:40				3324	22	14		Close Swab valve on Production tree and Master valve on FCH														
14:45				18	21	16		Bleed down lubricator and close FCH Swab valve.														
14:50				15	15	14		Plug left in R nipple, connect Pulling tool to Slickline.														
14:55				636	11	28		Open FCH Master valve and Swab valve.														
14:58				554	5	14		Open Production Swab valve.														
15:00				3317	3	14		Run in hole to recover plug that was accidentally set in R nipple.														
15:30				3349	10	14		Latch on the plug, start jarring.														
16:00				3343	13	14																
16:30				3343	13	14																
17:00				3341	13	14		Slickline unlatch, start pulling out of hole.														
17:22				3320	13	14		Close Master valve on FCH and Production Swab valve.														
17:25				1465	13	109		Bleed down lubricator and close FCH Swab valve.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 34 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
31-Jul-04																						
17:30				18	13	14		Break off Lubricator, only Pulling tool at surface.														
18:00				15	6	14		Slip and cut some Slickline wire and build new head.														
18:15				3323	11	14		Run in hole.														
19:00				3331	13	14																
19:15				3330	12	14																
19:28				3330	12	14		Slickline at surface, to change out pulling tool to equalizing tool														
19:30				3329	12	14		Close Swab valve on Production tree and Master valve on FCH														
19:32				3309	12	14		Bleed down lubricator and close FCH Swab valve.														
19:39				18	5	14		Change out pulling tool														
19:45				21	3	14		Stab on lubricator to FCH. Open Master valve on FCH														
19:48				218	3	14		Open Swab valve on FCH.														
19:55				1721	6	14		Open Production Swab valve.														
19:56				3288	6	14		Run in hole with equalizing tool														
20:00				3324	8	14		Tag plug with equalizing tool.														
20:15				3324	11	14																
20:20				3326	11	14		Equalize across plug														
20:25				3329	11	14		Pull out of hole														
20:30				3329	11	14																
20:45				3327	11	14																
20:46				3326	11	14		Slickline at surface														
20:48				3297	11	14		Close Swab valve on Production tree and Master valve on FCH														
20:51				18	10	14		Bleed down lubricator and close FCH Swab valve.														
20:53				21	7	14		Change Slickline toolstring to pulling tool for plug														
21:00				22	2	14		Stab on lubricator to FCH. Open Master valve on FCH														
21:05				2113	2	14		Open Swab valve on FCH.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 35 2004-07

Time	Flowing Condition											Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
31-Jul-04																						
21:08				1698	4	14		Open Production Swab valve.														
21:10				3297	5	14		Run in hole with pulling tool														
21:15				3321	8	14																
21:30				3323	11	14		Latch onto plug														
21:41				3326	11	14		Pull out of hole														
21:45				3323	11	14																
22:00				3323	11	14																
22:08				3323	11	13		Slickline at surface														
22:10				3318	11	14		Close Swab valve on Production tree and Master valve on FCH														
22:12				26	11	22		Bleed down lubricator and close FCH Swab valve.														
22:15				18	7	14		No plug at surface. Change out shear pin from brass to steel														
22:30				24	2	14																
22:43				24	4	14		Stab on lubricator to FCH. Open Master valve on FCH														
22:45				2107	5	14		Open Swab valve on FCH.														
22:49				1703	7	14		Open Production Swab valve.														
22:50				2678	7	14		Run in hole with pulling tool														
23:00				3321	11	14																
23:30				3324	11	14																
01-Aug-04																						
00:00				3322	11	13																
00:30				3320	11	14																
00:49				3322	11	14		Slickline at Surface with plug.														
00:51				3323	11	13		Close Swab valve on Production tree and Master valve on FCH														
00:56				1014	11	140		Bleed down lubricator and close FCH Swab valve.														
01:00				80	7	14																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 36 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
01-Aug-04																						
01:12				18	3	14		Redress plug														
01:30				24	5	14																
02:00				27	8	14																
02:30				30	9	14																
02:45				33	10	14		Stab on lubricator to FCH. Open Master valve on FCH														
02:47				24	10	14		Open Swab valve on FCH.														
02:48				71	10	14																
02:55				1775	11	14		Open Production Swab valve.														
03:00				3315	12	14		Run in hole with plug														
03:30				3315	13	14																
04:00				3315	12	13																
04:25				3314	11	13		Pull of plug which is in R nipple														
04:30				3315	11	13																
04:31				3315	11	14		Pull out of hole														
04:59				3312	11	13		Slickline at Surface														
05:00				3312	11	14																
05:01				3312	11	13		Close Swab valve on Production tree and Master valve on FCH														
05:03				3309	11	14		Bleed down lubricator and close FCH Swab valve.														
05:05				437	11	91		Change out toolstring to GR pulling tool														
05:10				21	5	13																
05:13				21	3	14		Stab on lubricator to FCH. Open Master valve on FCH														
05:14				21	3	14		Open Swab valve on FCH.														
05:15				1588	2	13																
05:20				1743	3	14		Open Production Swab valve.														
05:24				3303	5	13		Run in hole with plug.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 37 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
01-Aug-04																						
05:30				3303	8	14																
06:00				3312	10	14		retrieved Plug from R nipple.														
06:10				3312	10	14		Pass through R nipple before pull out of hole.														
07:00				3312	10	13		Stop pulling out of hole, Stuffing box ice-up.														
08:00				3309	10	14		Rig up to inject methanol into Slickline lubricator.														
09:00				3309	11	14																
10:00				3306	11	13																
10:15				3306	11	14		Resume pulling out of hole.														
10:24				3306	11	14		Close FCH Master valve and Production Swab valve.														
10:28				3248	11	13		Bleed off surface pressure.														
10:33				18	8	13		Close FCH Swab valve, break off lubricator, redress Stuffing box.														
11:00				30	5	14																
11:30				39	8	14		Fill above Master valve with 70 liters 60/40 Glycol water.														
12:00				45	10	14																
12:10				45	10	14		Make up Lubricator with plug.														
12:12				45	10	14		Close Flow valve and SSV.														
12:15				45	11	14		Open FCH Swab valve and Kill valve.														
12:17				45	11	14		Pressure test Lubricator to 4000 psi.														
12:29				1415	11	13		Open Flow valve and SSV.														
12:31				54	11	105		Bleed off surface pressure.														
12:36				3171	11	14		Close FCH Kill valve, open FCH Master valve and Production Swab valve.														
12:39				3302	11	14		Run in hole with Plug.														
13:00				3302	13	14																
13:20				3305	13	14		Set Plug at the RN nipple and pull out of hole.														
13:40				3302	12	13		Setting toolstring at surface. Close FCH Swab valve.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 38 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
01-Aug-04																						
13:47				3289	12	134		Bleed down tubing pressure by 1000 psi to inflow test Plug.														
13:50				3115	12	336																
13:55				2688	12	464																
14:00				2386	15	14																
14:05				2397	17	14																
14:10				2409	17	14																
14:15				2418	17	13																
14:17				2424	17	13		Test good, Close FCH Master valve.														
14:19				2790	16	13		Open FCH Swab valve and close Production Swab valve.														
14:23				474	16	154		Bleed down lubricator and close FCH Swab valve.														
14:30				21	7	14		Change out toolstring to 3.688" SSD shifting tool.														
14:35				32	5	13		Stab on lubricator to FCH. Open FCH Master valve.														
14:38				1795	5	13		Open FCH Swab valve.														
14:41				2137	6	13		Open Production Swab valve. Run in hole to open SSD at the 2755 Sand.														
14:45				2463	7	14																
15:00				2492	10	14																
15:08				2514	11	13		Open SSD at the 2755 Sand. Slickline depth 2921m														
15:15				3144	11	13		Pull out of hole with 3.688" shifting tool.														
15:30				3185	11	13		Start injecting methanol 0.25 l/min at the choke manifold.														
15:42				3182	11	14		Slickline at surface, close FCH Master valve.														
15:45				1519	11	129		Bleed off surface pressure. Close FCH Swab valve.														
16:00				21	2	13		Change out toolstring to pressure gauge.														
16:07				234	3	13		Open FCH Master valve.														
16:09				2575	4	13		Open FCH Swab valve to test Lubricator.														
16:10				2401	4	13																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 39 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
01-Aug-04																						
16:14				2145	7	28		Close Master valve, bleed off surface pressure to fix leak.														
16:15				386	8	167																
16:23				1066	3	14		Open Master valve and test lubricator.														
16:30				3180	5	13																
16:32	16			3171	6	151		Open well on 16/64" adjustable choke to STB gas flare. (2755 SAND Clean-up)														
16:33	16			3168	7	152																
16:34	20			3154	7	275		Increase adjustable choke to 20/64".														
16:35	24			3141	8	348		Increase adjustable choke to 24/64". Increase methanol injection to 0.4 l/min.														
16:36	24			3125	9	397																
16:37	28			3102	10	489		Increase adjustable choke to 28/64".														
16:38	28			3080	10	499																
16:40	28			3064	12	462																
16:42	28			3059	14	454																
16:44	28			3056	15	453																
16:46	32			3049	17	477		Increase adjustable choke to 32/64".														
16:47	32			3025	18	584																
16:48	32			3012	19	590																
16:49	32			3004	20	593																
16:50	36			2998	20	598		Increase adjustable choke to 36/64".														
16:51	36			2969	21	726																
16:52	36			2950	22	720																
16:53	36			2937	22	712																
16:54	36			2929	23	708																
16:55	40			2908	23	776		Increase adjustable choke to 40/64".														
16:56	40			2879	24	843																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 40 2004-07

	Flowing Condition											Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
00-Jan-00																						
16:57	40			2861	25	849																
16:58	40			2848	25	862																
16:59	40			2837	26	850																
17:00	40			2828	26	846																
17:01	40			2822	27	845																
17:02	40			2816	27	835																
17:03	40			2814	27	832																
17:04	40			2811	28	831																
17:05	40			2808	28	834																
17:10	40			2811	30	858																
17:15	40			2814	31	840																
17:20	40			2823	32	841																
17:25	40			2829	32	832																
17:30	40			2832	34	909		BSW = 6 % water; 94% Condensate; Trace of sediment.															
17:35	40			2837	35	904																
17:40	40			2840	36	928		BSW = 20% water; 80% Condensate; Trace of sediment.															
17:45				2896	36	598		Shut in well at the Choke manifold.															
17:46				3023	37	17		Run in hole to set Halliburton pressure gauge by 3.															
17:47				3098	37	17																
17:48				3135	37	14																
17:49				3149	37	14																
17:50				3153	37	14																
17:51				3156	37	14																
17:52				3153	37	14																
17:53				3153	37	14																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 41 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
01-Aug-04																						
17:56				3150	36	14																
17:57				3149	35	14																
17:58				3150	35	13																
17:59				3147	35	13																
18:00				3147	34	14																
18:05				3146	33	14																
18:50				3117	20	14		Slickline at surface														
18:56				3099	19	13		Close Production Swab valve and FCH Master valve.														
18:58				435	18	53		Bleed down lubricator and close FCH Swab valve.														
19:00				18	16	14		Change Slickline toolstring pulling tool for Halliburton gauges														
19:06				21	10	14		Stab on lubricator to FCH. Open Master valve on FCH														
19:15				3105	12	14																
19:23				3103	13	14																
19:24				3103	14	13		Start injecting methanol 0.25 l/min at the choke manifold.														
19:25	24			3102	14	14		Open well on 24/64" adjustable choke to STB gas flare. (2755 SAND - Test)														
19:27	24			3061	14	392																
19:28	24			3055	14	382																
19:29	28			3052	15	374		Increase adjustable choke to 28/64".														
19:30	28			3042	16	489																
19:31	28			3038	17	478																
19:32	32			3024	18	537		Increase adjustable choke to 32/64".														
19:33	32			3006	19	587																
19:34	32			2997	20	582																
19:35	36			2975	21	693		Increase adjustable choke to 36/64".														
19:36	36			2955	22	712																

Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 42 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
01-Aug-04																						
19:37	36			2943	23	707																
19:38	40			2921	23	789		Increase adjustable choke to 40/64".														
19:40	40			2884	25	827																
19:41	44			2872	26	833		Increase adjustable choke to 44/64".														
19:42	44			2836	27	975																
19:43	44			2817	28	972																
19:44	46			2800	28	989		Increase adjustable choke to 46/64".														
19:45	46			2774	29	1046																
19:46	46			2758	30	1052																
19:47	46			2747	30	1050																
19:48	46			2740	31	1049																
19:49	46			2734	32	1048																
19:50	46			2731	32	1042																
19:52	46			2725	33	1037		BSW = 7% water; 93% Condensate; Trace of sediment.														
19:55	46			2733	34	1029		Liquid slugs at surface														
19:56	46			2751	35	1051		Stop pumping methanol														
20:00	46			2752	36	1027		BSW = 7% water; 93% Condensate; Trace of sediment.														
20:05	46			2766	38	1043																
20:10	46			2775	39	1034																
20:15	46			2781	40	1031																
20:17	48			2778	40	1046		Increase adjustable choke to 48/64".														
20:18	48			2769	40	1080		BSW = 35% water; 65% Condensate; Trace of sediment.														
20:20	48			2763	41	1072																
20:25	48			2760	42	1074																
20:28	48			2763	42	999		Bypass steam exchanger														

Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 43 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
01-Aug-04																						
20:30	48			2766	43	824		BSW = 20% water; 80% Condensate; Trace of sediment.														
20:30	48			2766	43	824																
20:35	52			2755	43	892		Increase adjustable choke to 52/64".														
20:35	52			2755	43	892																
20:40	52			2690	44	951																
20:45	52			2686	45	947																
20:50	52			2690	46	952																
20:55	56			2683	47	1004		Increase adjustable choke to 56/64".														
20:56	56			2662	47	1059																
20:57	56			2646	47	1060																
20:58	56			2635	47	1057																
20:59	56			2628	47	1050																
21:00	56			2622	48	1045																
21:01	56			2619	48	1042																
21:02	56			2616	48	1039																
21:03	56			2616	48	1037																
21:04	56			2613	48	1037		BSW = 30% water; 70% Condensate; Trace of sediment.														
21:05	58			2616	48	1037		Increase adjustable choke to 58/64".														
21:06	58			2601	48	1092																
21:07	58			2593	49	1088																
21:08	58			2590	49	1085																
21:09	58			2587	49	1084																
21:10	58			2586	49	1081																
21:11	58			2587	49	1080																
21:12	58			2587	50	1078																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 44 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
01-Aug-04																						
21:13	58			2589	50	1076																
21:14	48			2605	50	1029		Decrease adjustable choke to 48/64"														
21:15	48			2632	50	966																
21:16	48			2665	50	920																
21:17	48			2715	50	818																
21:18	48			2748	51	824																
21:19	48			2771	51	830																
21:20	48			2786	51	837																
21:26	48			2822	51	858		Divert flow to fixed choke 48/64"														
21:36	48			2825	52	849		Divert flow to adjustable choke 48/64"														
21:37	52			2807	52	912		Increase adjustable choke to 52/64".														
21:42	52			2771	52	936		Divert flow to fixed choke 52/64"														
21:45	52			2752	53	954																
21:55	52			2749	54	951		Divert flow to separator														
22:00	52			2749	54	957		BSW = 17% water; 83% Condensate; Trace of sediment.														
22:00	52			2749	54	957		416	28	18												
22:15	52			2755	55	990		498	34	30												
22:24	52			2759	56	993		Lower 3.75" orifice plate														
22:30	52			2761	56	999		497	36	31						0.846				32.48		
22:45	52			2766	57	999		498	37	34	27.0				49.12	0.846	20	35	784	32.29	293	24
23:00	52			2769	57	1002		498	38	35	27.0				49.12	0.846	20	35	393	32.29	147	12
23:15	52			2772	58	1002		496	39	36	12.0				49.12	0.846	20	35	679	32.35	93	21
23:30	52			2775	59	1005		495	40	36	12.0				49.12	0.846	20	35	682	32.25	94	21
23:45	52			2778	59	1008		496	41	37	12.0				49.12	0.846	20	35	669	32.32	92	21
02-Aug-04	52			2778	60	1008		497	42	38	14.0				48.55	0.846	20	35	623	32.34	102	19

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 45 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
02-Aug-04																						
00:01	52			2778	60	1008		BSW = 14% water;86% Condensate; Trace of sediment.														
00:15	52			2782	60	1011		497	43	38	14.0				48.55	0.846	20	35	643	32.23	106	20
00:30	52			2784	60	1012		497	43	39	16.0				48.55	0.856	20	35	639	32.13	123	20
00:45	52			2784	60	1014		495	44	39	16.0				48.55	0.856	20	35	641	31.94	123	20
01:00	52			2787	61	1013		495	44	39	16.0				48.55	0.856	20	35	621	32.10	119	19
01:15	52			2787	61	1016		496	44	39	13.0				48.55	0.856	20	35	599	32.23	90	19
01:26				2790	61	1016		Shut in well at choke manifold														
01:27				2919	61	551																
01:28				3099	62	110																
01:29				3195	61	28																
01:30				3232	61	18																
01:31				3241	61	17																
01:32				3243	61	16																
01:33				3243	61	16																
01:34				3243	60	13																
01:35				3240	60	14																
01:40				3228	56	14		Close Swab valve on production tree														
01:47				2955	50	14		Open Swab valve on FCH.														
01:55				2058	43	14																
01:58				3232	41	13		Open Swab valve on production tree														
01:59				3232	41	14		Run in hole with Slickline to close SSD on 2755 sand														
02:00				3229	40	14																
02:05				3226	38	14																
02:10				3223	36	14																
02:15				3220	33	14																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 46 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
02-Aug-04																						
02:20				3214	31	14																
02:25				3214	29	14																
02:30				3208	28	13																
02:35				3208	26	14																
02:40				3208	25	14																
02:45				3205	24	14																
02:50				3202	22	14																
02:55				3200	21	14																
02:59				3199	21	14		Close Swab valve on production tree and Master valve on FCH															
03:00				3184	21	14																
03:02				3146	20	14		Slickline at surface														
03:07				3120	19	14		Bleed down lubricator through choke manifold.														
03:09				832	19	62																
03:14				18	14	13		Change out toolstring to 3.813" shifting tool for opening SSD														
03:15				16	14	14																
03:24				18	11	14		Stab on lubricator to FCH. Open Master valve on FCH														
03:26				18	11	14		Open Swab valve on FCH.														
03:30				1690	11	14																
03:31				2949	11	14		Open Production Swab valve.														
03:37				3176	14	13		Run in hole with 3.813" shifting tool to open SSD at 2458 sand														
03:45				3182	15	14																
04:00				3176	15	14																
04:15				3049	14	14																
04:30				3042	13	14																
04:34				3025	13	13		Slickline at surface														

Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 47 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
02-Aug-04																						
04:36				2987	13	14		Close Swab valve on production tree and Master valve on FCH														
04:38				2984	13	13		Bleed down lubricator through choke manifold.														
04:40				278	13	117		Change out toolstring to 3.813" shifting tool for closing SSD														
04:45				18	7	14																
04:53				1938	4	13		Open Master valve on FCH														
04:55				2080	5	14		Open Swab valve on Production tree														
04:57				3020	6	13		Start injecting methanol 0.25 l/min at the choke manifold.														
05:00				3021	8	13																
05:01				3022	9	13																
05:02				3022	9	13																
05:03				3021	10	17																
05:04	24			2970	10	393		Open well on 24/64" adjustable choke to STB gas flare. (2458 SAND - Clean up)														
05:05	24			2927	10	369																
05:06	28			2884	11	396		Increase adjustable choke to 28/64".														
05:06	28			2884	11	396																
05:07	28			2832	12	456																
05:08	32			2783	14	433		Increase adjustable choke to 32/64".														
05:09	32			2732	15	465																
05:10	32			2675	16	514																
05:11	32			2629	17	498																
05:12	36			2594	19	489		Increase adjustable choke to 36/64".														
05:13	36			2550	20	594																
05:14	36			2509	22	593																
05:15	40			2472	23	585		Increase adjustable choke to 40/64".														
05:16	40			2426	23	585																

Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 48 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
02-Aug-04																						
05:17	40			2381	25	694																
05:18	40			2343	27	678																
05:19	40			2310	28	668																
05:20	40			2281	29	661		BSW = 3.5% water;96.5% Condensate; Trace of sediment.															
05:21	40			2252	30	654																
05:22	40			2226	31	647																
05:23	40			2201	32	640																
05:24	40			2178	32	634																
05:25	40			2155	32	629																
05:26	40			2134	33	629																
05:27	40			2112	34	616																
05:28	40			2091	34	610																
05:29	40			2071	35	602																
05:30	40			2052	35	595		Stop pumping methanol														
05:31	40			2033	36	590		BSW = 4.5% water;95.5% Condensate; Trace of sediment.														
05:35	40			1959	37	569																
05:40	40			1858	38	539																
05:45	40			1741	38	498																
06:00	40			1415	38	414		BSW = 1.0% water;99% Condensate; Trace of sediment.														
06:11	40			1286	38	398		Oil at surface. 28% wax; pour point 40 degC; H2S 40 ppm - from PetroLab														
06:15	40			1336	39	720																
06:20	40			1422	41	627																
06:25	40			1452	43	585																
06:30	40			1469	44	590																
06:35	40			1488	45	596																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 49 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
02-Aug-04																						
06:40	40			1499	45	599																
06:45	40			1507	45	602																
06:50	40			1522	45	608																
06:55	40			1531	46	921																
07:00	40			1537	46	764																
07:05	40			1552	46	682																
07:10	40			1563	46	686																
07:15	40			1570	50	688		Re-position Temperature sensor.														
07:20	40			1572	51	690																
07:25	40			1575	51	693																
07:30	40			1578	51	693		Re-position Temperature sensor.														
07:35	40			1581	54	693																
07:40	40			1584	56	694																
07:45	40			1587	56	696																
07:50	40			1590	57	697																
07:55	40			1593	57	699																
08:00	40			1593	57	699																
08:05	40			1596	57	701																
08:10	40			1599	57	702																
08:15	40			1602	57	702																
08:30	40			1608	57	705																
08:45	40			1613	58	708																
09:00	40			1598	58	993																
09:10	40			1599	59	992																
09:11	40			1599	59	993																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 50 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
02-Aug-04																						
09:12				1647	59	217		Shut in well at choke manifold.														
09:13				295	59	181		Close FCH Master valve and open Choke manifold.														
09:14				40	58	40																
09:15				85	57	43		Flush Surface line to burner with diesel.														
09:16				157	54	57																
09:17				213	48	64																
09:18				204	43	71																
09:19				203	38	72																
09:20				184	35	53																
09:23				286	27	184		Switch diesel flow to Surge tank.														
09:25				289	24	184																
09:30				286	19	181																
09:35				286	17	178																
09:36				196	17	100		Stop pumping diesel, flush surface line with water.														
09:40				15	16	11		Close Choke Manifold.														
09:43				131	16	6		Open Master valve on FCH.														
09:44				2273	16	6																
09:45				2311	16	7		Run in hole with 3.688" shifting tool to open 2809 Sand.														
09:46				2317	16	7																
09:47				2323	16	7																
09:48				2327	16	8																
09:49				2333	16	8																
09:50				2339	16	8																
09:51				2342	16	8																
09:52				2348	16	8																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 51 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
02-Aug-04																						
09:53				2351	16	8																
09:54				2353	16	8																
09:55				2358	16	8																
09:56				2362	16	8																
09:57				2365	16	8																
09:58				2368	16	8																
09:59				2371	16	8																
10:00				2374	16	11																
10:05				2389	16	12																
10:10				2415	16	14																
10:15				2441	16	14																
10:20				2457	16	17																
10:25				2465	16	17																
10:30				2468	16	18																
10:35				2483	17	19		Slickline at surface, close FCH Swab valve.														
10:40				2495	17	20																
10:45	16			2494	17	32		Open well on 16/64" adjustable choke to STB burner. (2458 SAND and 2809 SAND - Clean up)														
10:46	20			2487	17	311		Increase adjustable choke to 20/64".														
10:47	24			2460	17	395		Increase adjustable choke to 24/64". Divert flow to gas flare.														
10:48	24			2420	18	350																
10:49	28			2395	20	286		Increase adjustable choke to 28/64".														
10:50	32			2368	22	408		Increase adjustable choke to 32/64".														
10:51	32			2317	23	505																
10:52	36			2262	25	508		Increase adjustable choke to 36/64".														
10:53	35			2197	27	586																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 52 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
02-Aug-04																						
10:54	40			2140	28	563		Increase adjustable choke to 40/64".														
10:55	40			2072	30	654																
10:56	44			2018	32	645		Increase adjustable choke to 44/64".														
10:57	44			1965	34	739																
10:58	44			1930	35	733																
10:59	48			1884	37	798		Increase adjustable choke to 48/64".														
11:00	48			1853	39	843																
11:01	48			1824	40	827																
11:02	48			1790	42	801																
11:03	48			1781	43	803																
11:04	48			1778	44	799																
11:05	48			1781	45	808																
11:06	48			1778	47	807																
11:07	48			1772	47	800																
11:08	48			1761	48	792																
11:09	48			1751	49	786																
11:10	48			1740	50	779																
11:11	48			1737	50	777																
11:12	48			1740	51	785																
11:13	48			1743	51	785																
11:14	48			1746	52	785																
11:15	48			1734	52	792																
11:16	48			1712	53	765																
11:17	48			1699	53	756																
11:18	48			1694	53	758																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 53 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
02-Aug-04																						
11:19	48			1695	53	754																
11:20	48			1690	53	759																
11:21	48			1679	53	747																
11:22	48			1667	54	739																
11:23	48			1645	54	733																
11:24	48			1622	54	710																
11:25	48			1598	54	703																
11:26	32			1589	54	613		Reduce adjustable choke to 32/64".														
11:27	32			1612	54	329																
11:28	32			1629	54	330																
11:29	32			1643	54	333																
11:30	32			1655	53	336																
11:31	32			1665	53	339																
11:32	32			1672	53	340																
11:33	32			1678	52	342																
11:34	32			1683	52	342																
11:35	32			1686	52	344																
11:36	32			1689	51	345																
11:37	32			1689	51	345																
11:38	32			1689	51	345																
11:39				1693	51	317		Shut in well at the Choke manifold.														
11:40				1749	50	15																
11:41				1786	50	14																
11:42				1757	50	15																
11:43				330	50	134		Close FCH Master valve and open Choke manifold.														

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	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
02-Aug-04																						
11:44				15	47	14																
11:45				18	43	14		Change out Slickline toolstring to close 3.813" SSD at the 2458 Sand.														
11:50				21	34	14																
11:55				1760	31	14		Close Choke manifold and open FCH Master valve to test lubricator.														
12:00				2319	34	14		Run in hole with the 3.813 shifting tool.														
12:05				2367	34	14																
12:10				2388	34	14																
12:15				2403	33	14																
12:20				2412	32	14																
12:25				2479	31	14		Start pulling out of hole														
12:30				2554	30	14																
12:35				2603	30	14																
12:40				2627	29	14																
12:45				2636	28	14																
12:50				2646	27	14																
12:53				2651	27	14		Slickline on surface. Close FCH Swab valve. Start 0.4 l/min methanol injection.														
12:55				2654	27	14																
13:00	16			2653	26	91		Open well on 16/64" adjustable choke to STB gas flare. (2809 SAND - Test)														
13:01	20			2620	26	226		Increase adjustable choke to 20/64".														
13:02	24			2568	25	316		Increase adjustable choke to 24/64".														
13:03	28			2505	25	396		Increase adjustable choke to 28/64".														
13:04	28			2437	26	406																
13:05	32			2373	27	395		Increase adjustable choke to 32/64".														
13:06	32			2294	28	485																
13:07	36			2218	29	469		Increase adjustable choke to 36/64".														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 55 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
02-Aug-04																						
13:08	36			2131	30	550																
13:09	36			2081	31	526																
13:10	40			2044	33	623		Increase adjustable choke to 40/64".														
13:11	40			2018	35	657																
13:12	40			1968	36	633																
13:13	44			1918	38	619		Increase adjustable choke to 44/64".														
13:14	44			1856	39	707																
13:15	44			1798	40	685		Flowing waxy oil. API gravity = 36.5														
13:16	44			1746	41	666																
13:17	44			1693	42	648																
13:18	44			1645	42	625																
13:19	44			1606	43	602																
13:20	44			1588	44	610																
13:21	44			1573	45	602																
13:22	44			1528	45	580																
13:23	44			1493	46	579																
13:24	44			1466	46	564																
13:25	44			1462	46	561																
13:30	44			1407	48	544		Flowing waxy oil														
13:35	44			1288	49	479																
13:40	44			1252	50	472																
13:45	44			1179	49	448		Flowing waxy oil														
13:50	44			1144	49	431																
13:55	44			1107	49	418																
14:00	44			1070	48	403																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 56 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
02-Aug-04																						
14:05	44			1041	48	393																
14:10	44			1026	48	389																
14:15	44			1006	48	380		Flowing waxy oil														
14:20	44			988	48	371																
14:25	44			970	48	364																
14:30	44			952	47	357																
14:35	44			937	47	350																
14:40	44			923	47	345																
14:45	44			914	47	339																
14:50	44			902	47	336																
14:55	44			899	46	333																
15:00	44			894	46	330		Flowing waxy oil														
15:05	44			888	46	327																
15:10	44			882	46	327																
15:11				897	46	239		Shut in well at the Choke manifold.														
15:12				943	46	14																
15:13				986	46	14																
15:14				1029	46	14																
15:15				1071	46	14																
15:16				1113	46	14																
15:17				1155	46	14																
15:18				1196	45	14																
15:19				1237	45	14																
15:20				1278	45	14																
15:21				1304	45	14																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 57 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
02-Aug-04																						
15:22				1903	44	14		Close FCH Master valve and open Swab valve.														
15:23				1818	44	25		Bleed off surface pressure, close FCH Swab valve.														
15:24				118	44	141																
15:25				17	41	14		Change Toolstring to open SSD on the 2755 Sand and check SSD at the 2809 Sand.														
15:30				18	32	14																
15:33				187	30	14		Open FCH Master valve and Swab valve.														
15:35				1856	30	14		Run in hole with the 3.688" shifting tool														
15:40				2041	31	14																
15:45				2221	31	14																
15:50				2396	30	14																
15:55				2561	30	14																
15:59				2756	29	14		Slickline check on SSD at the 2809 Sand. Sudden increase in tubing pressure.														
16:00				2947	29	14																
16:01				3061	29	14																
16:02				3114	29	14																
16:03				3132	28	14																
16:04				3135	28	14																
16:05				3135	28	15		Pull out of hole with Slickline.														
16:10				3129	28	17																
16:15				3132	27	17																
16:17				3134	26	17		Slickline fail to pull pass 2940m.														
16:20				3140	26	17																
16:25				3147	25	17																
16:30				3152	24	17																
16:45				3170	22	16																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 58 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
02-Aug-04																						
17:00				3180	21	17																
17:15				3186	19	17																
17:30				3192	18	17																
17:45				3194	17	17																
18:00				3200	16	16																
18:15				3202	15	17																
18:30				3202	15	17																
18:45				3205	14	17																
18:52				3209	14	16		Close Slickline BOP.														
19:00				3208	14	17																
19:05				3211	14	17		Bleed down lubricator														
19:15				3211	14	17																
19:30				3214	14	17																
19:45				3214	13	17																
20:00				3217	13	16																
20:15				3217	13	17																
20:30				3220	13	17																
20:45				3220	13	17																
20:58				3212	13	16		Open Slickline BOP to drop Go Devil, attempt to cut the wire.														
21:00				3211	13	17																
21:15				3214	13	16																
21:30				3214	13	16																
21:45				3211	13	16																
22:00				3215	13	16																
22:15				3220	13	17																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 59 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
02-Aug-04																						
22:30				3224	13	16																
22:45				3226	12	16																
23:00				3229	12	17																
23:15				3229	12	17																
23:30				3232	12	16		Close Slickline BOP.														
23:45				3232	12	17																
03-Aug-04																						
00:00				3232	12	17																
01:00				3232	12	17																
02:00				3232	12	16																
03:00				3220	12	16																
04:00				3208	11	16																
05:00				3203	11	16																
06:00				3201	11	17																
07:00				3200	11	16																
08:00				3197	11	16																
09:00				3193	11	17																
10:00				3193	11	17																
11:00				3191	12	17																
12:00				3191	12	17																
13:00				3187	12	17																
14:00				3187	13	17																
14:30				3187	13	17		Break off lubricator, install Go Devil and two centralizes to Slickline.															
15:00				3187	13	17		Make up Lubricator with Go Devil/Cutter and two centralizes.															
15:35				3177	13	17		Open BOP to release Go Devil, attempt to cut the wire.															

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 60 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
03-Aug-04																						
16:00				3181	13	17		Commence jarring to break the wire.														
17:00				3185	12	16		Stop Jarring, fail to break wire.														
17:35				3185	12	14		Start 0.4 l/min methanol injection at the Choke manifold.														
17:40	12			3181	11	45		Open well on 12/64" adjustable choke to Portside gas flare.														
17:41	12			3173	11	46																
17:42	12			3166	11	43																
17:43	12			3159	11	43																
17:44	12			3155	11	41																
17:45	12			3150	11	40																
17:46	12			3145	11	40																
17:47	12			3141	11	40																
17:48	12			3138	11	40																
17:49	12			3135	11	40																
17:50	12			3132	11	100		Divert flow to Portside Burner.														
17:51	12			3129	11	194																
17:52	12			3129	11	103																
17:53	12			3126	11	84																
17:54	16			3113	11	319		Increase adjustable choke to 16/64".														
17:55	16			3100	11	488																
18:00	16			3088	11	450																
18:05	16			3088	11	441																
18:06	20			3073	11	749		Increase adjustable choke to 20/64".														
18:07	20			3063	12	800																
18:08	20			3056	12	971		Fully open gas manifold to flare														
18:08	20			3056	12	971		Fully open gas manifold to flare														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 61 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
03-Aug-04																						
18:09	20			3053	12	276																
18:10	20			3053	13	248																
18:11	20			3051	14	245																
18:12	20			3050	14	242																
18:13	20			3050	15	239																
18:14	20			3050	16	238																
18:15	20			3049	17	236																
18:15	20			3049	17	236																
18:20	20			3050	20	233																
18:25	24			3050	21	234		Increase adjustable choke to 24/64".														
18:26	24			3032	22	358																
18:27	24			3020	22	353																
18:28	24			3014	22	350																
18:29	24			3012	22	349																
18:30	24			3009	23	347																
18:35	24			3009	25	344																
18:40	24			3011	27	341																
18:45	24			3017	28	344																
18:48	28			3020	29	344		Increase adjustable choke to 28/64".														
18:49	28			3005	29	466																
18:50	28			2993	30	465																
18:51	28			2988	30	465																
18:52	28			2985	30	462																
18:53	28			2982	30	459																
18:54	28			2982	31	456																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 62 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
03-Aug-04																						
18:55	28			2982	31	456																
19:00	28			2985	33	453																
19:05	28			2982	34	450																
19:10	28			2978	34	450																
19:15	28			2979	35	447																
19:30	28			2976	37	447																
19:45	28			2970	38	444																
20:00	28			2976	39	450																
20:15	28			2982	40	453																
20:30	28			2981	40	447																
20:45	28			2979	41	447																
20:48	28			2978	41	447																
20:49				2979	41	447		Shut in well at choke manifold														
20:50				3026	41	32																
20:51				3072	41	14		Stop pumping methanol														
20:52				3093	41	14																
20:53				3100	41	14																
20:54				3100	41	13																
20:55				3100	41	14		Commence jarring to break the wire.														
21:00				3097	40	14																
21:15				3088	36	13																
21:30				3082	32	13																
21:45				3085	29	14																
21:53				3085	27	13		Stop Jarring, fail to break wire.														
22:00				3088	26	14																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 63 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
03-Aug-04																						
22:07				3094	25	13		Start 0.4 l/min methanol injection at the Choke manifold.														
22:08	16			3094	25	13		Open well on 16/64" adjustable choke to Portside gas flare.														
22:09	16			3087	25	85																
22:10	16			3073	25	106																
22:11	20			3062	24	110		Increase adjustable choke to 20/64".														
22:12	20			3044	24	210																
22:13	20			3025	23	180																
22:14	20			3010	23	171																
22:15	24			2995	23	169		Increase adjustable choke to 24/64".														
22:16	24			2971	23	262																
22:17	24			2944	24	266																
22:18	24			2921	24	263																
22:19	24			2904	24	258																
22:20	24			2890	25	257		Commence jarring to break the wire.														
22:25	24			2884	27	278																
22:30	24			2911	29	303																
22:35	24			2923	31	310																
22:40	24			2931	33	315																
22:45	24			2938	34	319																
22:48	24			2938	34	325		Stop Jarring, fail to break wire.														
22:50	24			2941	35	330																
22:51				2987	35	14		Shut in well at choke manifold														
22:52				3020	35	14		Stop pumping methanol														
22:53				3041	35	14																
22:54				3051	35	13																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 64 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
03-Aug-04																						
22:55				3059	35	14		Close Slickline BOP's														
22:56				3061	35	14																
22:57				3062	35	14																
22:58				3062	34	14																
22:59				3061	34	14																
23:00				3061	34	14																
23:10				3059	32	13		Bleed down lubricator														
23:15				3056	31	13																
23:30				3052	28	13																
23:35				3052	27	13		Break off lubricator, cut wire just above BOP, make new rope socket.														
23:45				3055	25	13																
23:46				3056	25	14		Stab back lubricator to BOP's														
04-Aug-04				3056	23	14																
00:01				3059	23	14		Open Slickline BOP														
00:02				3059	22	13		Run in hole with the blind box.														
00:15				3062	21	14																
00:30				3070	19	14																
00:45				3085	18	14																
01:00				3106	17	14																
01:15				3129	16	14																
01:24				3138	16	13		Toolstring stop at 2915m MDRT														
01:30				3141	15	13																
01:32				3144	15	13		Pull out of hole														
01:45				3153	15	13																
02:00				3167	14	13																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 65 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
04-Aug-04																						
02:15				3176	14	14																
02:30				3188	14	14																
02:35				3182	13	14		Slickline at surface														
02:39				3179	13	13		Close Master valve on FCH														
02:43				1255	13	168		Bleed down Lubricator via choke manifold														
02:44				21	11	31		Close Swab valve on FCH														
02:45				18	8	14		Close choke manifold														
02:45				18	8	14																
02:47				21	4	14		Break off lubricator. Change out toolstring to 5.9" Bowen wire finder														
03:00				30	1	13																
03:05				24	2	13		Stab Back lubricator. Open Swab valve on FCH														
03:07				194	2	13		Open Master valve on FCH														
03:15				3166	9	14																
03:20				3170	10	14		Run in hole with wire finder														
03:30				3177	11	13																
03:45				3176	11	13																
03:54				3176	11	13		Slickline at surface. No wire retrieved.														
03:55				3176	11	14		Close Slickline BOP														
03:57				3176	11	14		Bleed down Lubricator via needle vales														
04:00				3176	11	13																
04:15				3176	11	13																
04:30				3176	11	13																
04:32				3174	11	13		Break off lubricator. Change out toolstring to 4.5" Bowen wire finder														
04:45				3173	11	13																
05:00				3173	11	13																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 66 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
04-Aug-04																						
05:08				3164	11	13		Open Slickline BOP														
05:15				3167	11	14		Run in hole with 4.5" wire finder														
05:30				3170	11	13																
05:45				3170	11	13																
06:00				3168	11	13																
06:15				3167	11	14																
06:30				3167	11	13																
06:38				3164	11	14		Slickline at surface. Close FCH Master valve and Production Swab valve.														
06:45				2932	11	29		Bleed off surface pressure.														
06:47				18	8	14		Break off lubricator. No wire retrieved.														
07:00				15	-2	14		Change out toolstring to wire catcher.														
07:02				1427	-1	14		Open FCH Master valve and Production Swab valve.														
07:05				3141	1	14		Run in hole with the wire catcher.														
07:15				3158	7	13																
07:30				3161	8	13																
07:37				3161	9	14		Slickline on surface with wire.														
07:45				3161	9	14																
08:00				3161	9	14		Hold JSA on rig floor.														
08:10				3161	10	13		Close Slickline BOP. Bleed off lubricator.														
08:15				3161	10	13		Break off lubricator, recover some twisted wire, 3 wires across the closed BOP.														
08:30				3158	10	14		Secure the three wires to the gauge cutter.														
08:45				3153	10	13																
09:00				3155	11	13		Make up Lubricator and open BOP.														
09:13				3155	11	13		Pull up Slickline and close BOP.														
09:15				3155	11	13		Bleed off lubricator.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 67 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
04-Aug-04																						
09:30				3161	11	13		Break off lubricator, recover some twisted wire, 16 wires across the closed BOP.															
09:35				3161	11	14		Secure the wires to the gauge cutter.															
09:41				3157	11	14		Make up Lubricator and open BOP.															
09:45				3156	11	13		Pull up Slickline and close BOP.															
09:59				3164	11	14		Attempt to bleed off lubricator.															
10:00				3164	11	14																	
10:10				3161	11	13																	
10:20				3155	11	14																	
10:30				3146	11	14																	
10:35				3149	11	13		Stop bleeding off lubricator pressure.															
10:40				3158	11	14		Increase BOP ram pressure and bleed off lubricator pressure.															
10:50				3163	12	14																	
11:00				3166	12	14		Break off lubricator, recover some twisted wire, one wires across the closed BOP.															
11:10				3166	13	13		Secure the wire to the rope socket.															
11:20				3157	13	13		Make up Lubricator and open BOP.															
11:30				3163	14	13		Pull up Slickline and close BOP.															
11:38				3163	14	12		Bleed off lubricator. One wire across the closed BOP.															
11:45				3163	14	13		Commence removing top three lubricator section and joint the two wires outside Stuffing box.															
12:00				3160	15	12																	
13:00				3157	15	13																	
13:34				3154	15	12		Complete rigging up to splice wire.															
14:00				3155	14	11		Open Slickline BOP, commence pulling wire out of hole.															
14:15				3155	14	12		Unable to pull more than a few meter, Close Slickline BOP															
14:30				3155	14	12																	
14:43				3155	13	12		Bleed off lubricator.															

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 68 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
04-Aug-04																						
14:56				3152	13	12		Open Slickline BOP, rig up injection line.														
15:00				3155	13	12																
15:24				3155	13	12		Start injecting glycol into lubricator.														
15:30				3155	13	12																
15:45				3152	13	12		Still unable to pull out, stop glycol injection.														
15:46				3152	13	12		Close Slickline BOP, bleed off pressure.														
16:00				3152	12	12																
16:02				3152	12	12		Disconnect Stuffing box to find twisted wire.														
16:06				3152	12	12		Re-connect back Stuffing box.														
16:30				3152	12	13		Open Slickline BOP.														
16:36				3152	12	12		Leak at the quick union connection between BOP and lubricator. Close Slickline BOP.														
16:40				3152	12	12		Close Production tree Swab valve to cut wire.														
16:45				3149	12	12		Bleed off pressure and close FCH Master valve.														
16:55				17	-3	13		Open Slickline BOP, break off lubricator, recover some twisted wire.														
17:00				16	-4	12		Commence rigging up Lubricator to the original configuration.														
17:30				15	3	13																
18:00				18	7	12		Changing out Slickline BOP ram elements and pressure test.														
19:00				18	9	12																
20:00				18	10	12																
21:00				19	11	12																
22:00				18	11	12																
23:00				18	11	12																
05-Aug-04				18	10	12																
01:00				18	10	13																
02:00				18	10	13																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 69 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
05-Aug-04																						
03:00				18	10	13																
04:00				18	10	12																
05:00				18	10	12																
06:00				19	10	13																
07:00				18	10	12																
08:00				18	10	13		Finish servicing Slickline BOP.														
08:24				18	10	13		Rig up Slickline BOP onto FCH.														
08:28				18	10	13		Fill Slickline BOP with 15 gal 60/40 Glycol water.														
09:00				18	11	13																
09:10				18	11	13		Rig up Lubricator with wire catcher prong onto BOP.														
09:28				18	12	13		Open FCH Swab valve and close FCH Flow valve to pressure test Lubricator.														
09:35				18	12	13		Leak at the Lubricator connection, Open Flow valve to bleed off.														
09:40				30	12	13		Change lubricator o-ring.														
09:45				18	11	14		Close FCH Flow valve.														
10:00				18	11	13																
10:15				18	11	13		Pressure test lubricator to 4000 psi.														
10:25				18	11	13		Test good, open Flow valve, bleed off test pressure.														
10:35				21	11	14		Open Production Swab valve.														
10:38				1016	12	14		Open FCH Master valve.														
10:42				3123	12	14		Slickline run in hole to retrieved wire.														
11:00				3128	12	14																
11:20				3128	13	14		Latch on wire, pull out of hole.														
11:40				3128	14	14		Slickline at surface, close BOP and bleed off lubricator pressure.														
12:00				3128	14	14																
12:05				3129	14	14		Break off lubricator, recover some twisted wire.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 70 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
05-Aug-04																						
12:10				3129	14	14		Secure the wire to the gauge cutter.														
12:15				3129	14	14		Make up Lubricator and open BOP.														
12:30				3130	14	14		Pull up Slickline and close BOP.														
12:42				3135	14	14		Bleed off lubricator.														
12:45				3135	14	14		Break off lubricator, recover some twisted wire. Single wire across BOP.														
12:50				3135	14	14		Secure the wire to the gauge cutter.														
12:56				3135	14	14		Make up Lubricator and open BOP.														
13:00				3129	14	14																
13:10				3132	14	14		Pull up Slickline and close BOP.														
13:17				3134	14	14		Bleed off lubricator.														
13:27				3134	14	14		Break off lubricator, re-configure to one Lubricator section to splice wire.														
14:00				3134	13	14																
14:50				3129	12	14		Open BOP														
15:00				3132	12	14		Start to splice / recover wire while maintain pump pressure at the Stuffing box.														
16:00				3132	11	14																
17:00				3133	11	14																
17:04				3132	11	14		Wire out of Stuffing box, close FCH Swab valve, approximately 2700m returned to drum.														
17:05				3131	11	14		Close FCH Master valve and open Swab valve, bleed off surface pressure.														
17:10				19	7	13		Close FCH Swab valve and Choke manifold.														
17:20				19	5	12		Re-configure Lubricator and toolstring for other fishing operation.														
18:00				21	7	13		Connect empty drum to Slickline unit to spool spent wire.														
18:25				21	8	13		Commence spooling														
19:00				21	9	13		Finish spooling														
19:05				21	9	13		Rig up Slickline to run back in hole with new rope socket														
20:00				24	9	13																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 71 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
05-Aug-04																						
20:45				60	9	13		Open Swab valve on FCH														
20:46				49	9	13		Pressure test lubricator to 4000 psi via cement unit														
21:00				4027	10	13																
21:05				4012	10	13																
21:10				4001	10	12																
21:11				155	10	14		Bleed off lubricator through choke manifold														
21:13				18	10	13		Close choke manifold														
21:15				989	10	13		Open Master valve on FCH														
21:20				3121	10	13																
21:24				3124	10	13		Run in hole with 3.22" LIB														
21:25				3127	10	13																
22:00				3127	10	13																
22:08				3127	10	13		Depth of LIB 2915m MDRT. Pull out of hole														
22:15				3126	10	13																
22:30				3126	10	13																
22:38				3126	10	13		Slickline at surface														
22:40				3126	10	13		Close Swab valve on production tree														
22:42				3124	10	13		Close FCH Master valve. Bleed down lubricator via choke manifold														
22:45				1278	10	42																
22:50				91	4	15		Close Swab valve on FCH														
22:53				18	3	12		Open lubricator. LIB impression of rope socket head														
22:55				21	2	12		Change out Slickline toolstring to 2.5" RJ pulling tool														
23:00				21	2	12		Open Swab valve on FCH														
23:03				1644	2	12		Open Master valve on FCH														
23:07				1681	3	12		Open Swab valve on production tree														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 72 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
05-Aug-04																						
23:10				3112	3	12																
23:11				3115	3	12		Run in hole with 2.5" RJ pulling tool														
23:15				3120	4	13																
23:30				3126	4	13																
06-Aug-04				3126	5	12																
00:12				3126	6	12		Slickline at surface														
00:13				3126	6	12		Close Swab valve on production tree														
00:15				3105	6	13																
00:16				3070	6	13		Close FCH Master valve. Bleed down lubricator via choke manifold														
00:37				18	3	12		Open lubricator , retrieved Go devil														
00:40				21	2	13		Change out Slickline toolstring to LIB 3.22"														
00:47				21	2	13		Open Swab and Master valve on FCH														
00:52				1626	3	13		Open Swab valve on production tree														
00:53				2925	3	13		Run in hole with 3.22" LIB														
01:00				3120	6	12																
01:08				3123	7	12		Depth of LIB 2916.5m MDRT. Pull out of hole														
01:15				3126	7	12																
01:24				3123	7	12		Slickline at surface														
01:25				3123	7	12		Close Swab valve on production tree and Master valve on FCH														
01:26				3073	7	12		Bleed down lubricator via choke manifold														
01:30				1760	7	20																
01:35				20	3	13		Close Swab valve on FCH														
01:37				18	2	12		Open lubricator , LIB impression of a fishing neck														
01:38				18	1	12		Change out Slickline toolstring to 2.5" RJ pulling tool														
01:39				21	0	12		Stab back lubricator.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 73 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
06-Aug-04																						
01:42				201	0	12		Open Swab and Master valve on FCH														
01:43				793	0	12		Closed Master valve on FCH														
01:44				794	0	12		Bleed down lubricator via choke manifold due to leak below Slickline BOP's														
01:47				23	0	23		Close Swab valve on FCH														
01:51				18	0	12		Change out o-ring on Slickline BOP's														
02:00				21	0	12		Open Kill wing valve on FCH														
02:06				219	1	11		Open Swab valve on FCH														
02:10				519	3	12																
02:10				519	3	12		Pressure test of Lubricator to 4000 psi from cement unit														
02:15				4042	4	12																
02:24				4006	6	12		Test good. Bleed down lubricator via choke manifold														
02:29				18	7	13		Open Master valve on FCH														
02:34				1576	8	13		Open Swab valve on production tree														
02:40				3117	8	13		Run in hole with 2.5" RJ pulling tool														
02:45				3120	8	13																
02:55				3125	8	13		Slickline at fish 2917.5m MDRT														
03:00				3123	8	12		Pull out of hole														
03:15				3123	8	12																
03:23				3123	8	12		Slickline at surface														
03:25				3123	8	12																
03:26				3053	8	12		Close Swab valve on production tree														
03:28				3046	9	12		Close FCH Master valve. Bleed down lubricator via choke manifold														
03:30				1524	8	23																
03:34				18	5	13		Close Swab valve on FCH														
03:36				18	4	12		Open lubricator, retrieved Go devil														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 74 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
06-Aug-04																						
03:44				27	3	12		Change out Slickline toolstring to 3.22" LIB														
03:45				27	3	12																
03:47				30	3	12		Stab back lubricator.														
03:48				24	3	12		Open Swab and Master valve on FCH														
03:54				1637	4	12		Open Swab valve on production tree														
03:55				3085	4	12																
03:57				3112	5	12		Run in hole with 3.22" LIB														
04:00				3117	6	12																
04:30				3123	8	12																
04:50				3123	8	12		Slickline at fish 2920m MDRT														
04:51				3123	8	12		Pull out of hole														
05:00				3123	8	12																
05:25				3123	9	11		Slickline at surface, Close production Swab valve.														
05:29				3070	9	11		Close FCH Master valve. Bleed down lubricator via choke manifold														
05:30				2134	9	36																
05:35				572	6	19																
05:39				21	3	12		Close Swab valve on FCH														
05:40				18	3	12																
05:41				18	3	12		Open lubricator, inspect LIB shows fishing neck														
05:44				18	2	12		Close choke manifold														
06:00				18	2	12																
06:30				33	5	11																
06:45				36	6	13		Make up Lubricator with RB Pulling tool.														
07:00				39	7	13																
07:09				1433	7	12		Open FCH Swab and Master valve.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 75 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
06-Aug-04																						
07:12				2016	8	12		Open Production tree Swab valve.														
07:13				3103	8	11		Run in hole with fishing toolstring.														
07:30				3120	10	12																
07:50				3120	10	12		Latch onto the fish, push down to loose.														
08:00				3122	10	12																
08:13				3123	10	12		Pull out of hole with fish, start injecting glycol water to Lubricator.														
08:30				3120	10	12																
09:00				3120	10	12																
09:22				3120	11	13		Slickline on surface, stop glycol injection.														
09:24				3120	11	12		Close Production tree Swab and Master valves.														
09:30				3117	11	12																
09:32				2890	11	30		Bleed off surface pressure to Portside gas flare.														
09:47				18	0	12		Break off Lubricator, retrieved SSD shifting tool toolstring.														
09:50				18	-1	12		Close FCH Master and Swab valves.														
10:00				18	0	12																
10:30				21	5	12																
11:00				24	8	11		Make up Lubricator with wire catcher toolstring.														
11:30				3122	14	12																
12:00				3128	15	11																
12:30				3127	16	12		Slickline on surface, stop glycol injection.														
12:36				3125	16	11		Close Production tree Swab and Master valves.														
12:51				2556	16	23		Bleed off surface pressure to Portside gas flare.														
13:00				2624	16	11																
13:15				15	3	11		Break off Lubricator, retrieved no wire.														
13:20				15	2	11		Close FCH Master valve. Make up Lubricator with the same toolstring.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 76 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
06-Aug-04																						
13:25				15	2	11		Open production tree Master and Swab valves.														
13:30				15	3	11																
13:31				44	3	11		Open FCH Master valve. Run in hole with the fishing toolstring.														
14:00				3122	11	11																
15:00				3128	12	12		Close Production tree Swab and Master valves.														
15:03				2641	12	43		Bleed off surface pressure to Portside gas flare.														
15:16				20	5	12		Break off Lubricator, retrieved some wire.														
15:20				17	2	12		Close FCH Master valve.														
15:55				15	4	12		Make up Lubricator with 3.22" LIB toolstring.														
16:00				15	5	11																
16:05				16	6	12		Open production tree Master and Swab valves.														
16:12				1026	6	12		Open FCH Master valve.														
16:13				837	7	13		Close FCH Master valve and bleed off surface pressure to fix leak at the lubricator.														
16:34				232	7	12		After change out leaking o-ring, Open FCH Master valve.														
16:40				3120	10	12		Run in hole with the LIB toolstring.														
17:00				3126	12	12																
17:25				3129	11	12		Slickline pull out of hole, start injecting glycol to Lubricator.														
17:53				3129	11	12		Slickline on surface, stop glycol injection.														
17:55				3129	11	12		Close Production tree Swab and Master valves.														
17:59				3126	11	11																
18:00				2982	11	17																
18:04				18	6	12		Break off Lubricator inspect LIB														
18:06				17	3	11		Change out Slickline toolstring closing for SSD 3.688"														
18:10				16	0	11																
18:16				18	-1	12		Stab back lubricator.														

Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 77 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
06-Aug-04																						
18:18				18	0	11		Open Swab valve on FCH														
18:21				1626	1	11		Open Master valve on FCH														
18:22				1638	2	11		Open Swab valve on production tree														
18:26				3117	5	11		Run in hole with Slickline														
19:00				3130	9	12		Slickline at SSD at 2809 sand														
19:01				3130	9	12																
19:02				3130	9	12																
19:03				3131	9	12																
19:04				3131	9	11																
19:05				3130	10	11																
19:06				3131	10	11																
19:07				3130	10	12																
19:08				3131	10	12																
19:09				3131	9	12																
19:10				3130	9	12																
19:11				3128	9	12																
19:12				3128	10	12																
19:13				3129	10	12																
19:14				3130	10	12																
19:15				3131	10	12																
19:32				3129	10	12		Pull out of hole														
19:35				3129	10	12		Commence injecting glycol at lubricator														
19:45				3129	10	12																
20:00				3129	10	12		Slickline on surface, stop glycol injection.														
20:00				3129	10	12																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 78 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
06-Aug-04																						
20:01				3127	10	12		Close Swab valve on FCH														
20:10				3126	10	12		Held JSA on rig floor for flaring operation														
20:29				3127	10	12																
20:39				3129	10	12																
20:40				3129	10	12		Commence injecting Methanol														
20:41	16			3129	10	15		Open well on 16/64" adjustable choke to Port gas flare. (2809 SAND - Test)														
20:42	16			3107	10	162																
20:43	16			3094	10	149																
20:44	20			3091	10	146		Increase adjustable choke to 20/64"														
20:45	20			3084	10	166																
20:46	20			3064	10	279																
20:47	20			3049	11	275																
20:48	20			3044	11	271																
20:49	20			3038	11	268																
20:50	24			3038	11	267		Increase adjustable choke to 24/64"														
20:51	24			3020	11	386																
20:52	24			3008	11	380																
20:53	24			3002	12	370																
20:54	24			3001	12	362																
20:55	28			3000	13	357		Increase adjustable choke to 28/64"														
20:56	28			2983	13	477																
20:57	28			2971	14	474																
20:58	28			2967	15	470																
20:59	28			2964	16	466																
21:00	32			2963	17	466		Increase adjustable choke to 32/64"														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 79 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
06-Aug-04																						
21:01	32			2941	18	592		BSW = 0% water;100% Condensate; Trace of sediment.														
21:02	32			2931	19	586																
21:03	32			2929	19	582																
21:04	32			2929	20	579																
21:05	36			2929	21	579		Increase adjustable choke to 36/64"														
21:06	36			2911	22	712																
21:07	36			2898	22	717																
21:08	36			2894	23	720																
21:09	36			2893	24	722																
21:10	40			2894	24	725		Increase adjustable choke to 40/64"														
21:11	40			2873	25	866																
21:12	40			2861	25	870																
21:13	40			2855	26	870																
21:14	40			2849	27	866																
21:15	44			2842	27	869		Increase adjustable choke to 44/64"														
21:20	46			2755	29	1030		Increase adjustable choke to 46/64"														
21:25	46			2721	31	1086		Bypass steam exchanger														
21:27	46			2725	32	995		Stop injecting Methanol														
21:35	48			2754	35	896		Increase adjustable choke to 48/64"														
21:40	48			2729	37	943		BSW = 40% water;60% Condensate; Trace of sediment.														
21:45	48			2737	39	955																
21:50	48			2749	40	936																
21:55	48			2757	42	957																
22:00	48			2767	43	1023		BSW = 25% water;75% Condensate; Trace of sediment.														
22:05	48			2772	44	1013																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 80 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
00-Jan-00																						
22:10	48			2781	45	989																
22:15	50			2787	46	969		Increase adjustable choke to 50/64"														
22:20	50			2755	47	987																
22:25	52			2748	49	1002		Increase adjustable choke to 52/64"														
22:30	52			2726	50	1041		BSW = 49% water;41% Condensate; Trace of sediment.														
22:35	52			2728	51	1034																
22:40	52			2737	52	1031																
22:45	52			2743	53	1034		BSW = 26% water;74% Condensate; Trace of sediment.														
22:50	52			2749	55	1034																
22:55	52			2752	56	1034																
23:00	52			2755	56	1034																
23:01	54			2758	57	1034		Increase adjustable choke to 54/64"														
23:02	54			2742	57	1088																
23:03	54			2732	57	1103																
23:04	54			2726	57	1099																
23:05	54			2722	57	1098																
23:10	54			2717	58	1096																
23:15	54			2723	60	1096		BSW = 30% water;70% Condensate; Trace of sediment.														
23:20	54			2725	60	1097																
23:25	54			2728	61	1099		BSW = 40% water;60% Condensate; Trace of sediment.														
23:30	54			2731	62	1099																

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Origin Energy Resources Limited
Yolla / Yolla-4 / Test #1

WELL TESTING DATA SHEET

Main Data 81
2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
06-Aug-04																						
23:32	48			2731	63	1099		Decrease adjustable choke to 48/64"														
23:33	54			2777	63	920		Increase adjustable choke to 54/64"														
23:35	54			2761	63	1113																
23:40	54			2737	64	1105																
23:45	54			2737	65	1105		BSW = 50% water;50% Condensate; Trace of sediment.														
07-Aug-04	54			2746	67	1107		BSW = 75% water;25% Condensate; Trace of sediment.														
00:05	54			2748	67	1108		BSW = 20% water;80% Condensate; Trace of sediment.														
00:12	54			2749	68	1108		BSW = 25% water;75% Condensate; Trace of sediment.														
00:15	54			2749	68	1108		BSW = 25% water;75% Condensate; Trace of sediment.														
00:20	54			2752	69	1108		BSW = 20% water;80% Condensate; Trace of sediment.														
00:23	54			2753	69	1108		BSW = 19% water;81% Condensate; Trace of sediment.														
00:27	54			2751	69	1110		BSW = 24% water;76% Condensate														
00:30	54			2756	69	1111		BSW = 25% water;75% Condensate; Trace of sediment.														
00:35	54			2756	70	1111		BSW = 20% water;80% Condensate; Trace of sediment.														
00:40	54			2759	70	1111		BSW = 16% water;84% Condensate; Trace of sediment.														
00:41	48			2775	71	1058		Decrease adjustable choke to 48/64"														
00:44	48			2867	71	885		Divert flow to 48/64" fixed choke														
00:47	48			2890	71	899		Divert flow to 48/64" adjustable choke														
01:00	52			2880	71	936		Divert flow to 52/64" fixed choke														
01:01	52			2854	71	1026		BSW = 25% water;75% Condensate; Trace of sediment.														
01:10	52			2825	71	1017																
01:15	52			2825	71	1017		BSW = 14% water;86% Condensate; Trace of sediment.														
01:20	52			2825	72	1017																
01:25	52			2828	72	1016																
01:30	52			2828	72	1014																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 82 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
07-Aug-04																						
01:32	52			2828	72	1016		Lower 4.25" orifice plate														
01:35	52			2828	72	1017																
01:40	52			2831	72	1017																
01:45	52			2831	73	1018		474	42	37	14.0				49.52	0.854	19	30	749	32.00	123	23
02:00	52			2834	73	1020		472	43	39	14.0				49.52	0.854	19	30	1061	32.05	174	33
02:02	52			2834	73	1020		Dump .75 bbl water from separator														
02:15	52			2837	74	1020		471	45	40	14.0				49.52	0.854	19	30	708	31.98	116	22
02:20	52			2837	74	1026		Divert Condensate flow to Tank for calculating Combined Meter/Shrinkage Factor.														
02:30	52			2840	74	1028		487	45	41	11.0				48.86	0.854	19	30	808	32.09	100	25
02:32	52			2840	74	1029		Divert Condensate flow back to burner. Combined MF = 0.875 at 20 degC.														
02:35	52			2842	74	1026		Dump 1.16 bbl water from separator														
02:45	52			2843	74	1027		481	45	42	11.0				48.86	0.854	19	32	826	32.06	103	26
02:55	52			2846	75	1028		Dump .97 bbl water from separator														
03:00	52			2846	75	1025		471	45	42	11.0				49.37	0.852	19	32	751	32.01	93	23
03:15	52			2849	75	1038		504	47	43	11.0				49.37	0.852	19	32	821	32.32	102	25
03:20	52			2852	75	1042		Dump .75 bbl water from separator														
03:30	52			2851	76	1043		511	47	44	12.0				49.37	0.852	19	32	768	32.14	105	24
03:45	52			2854	76	1045		516	48	44	12.0				49.31	0.852	19	32	764	32.34	105	24
04:00	52			2858	76	1046		513	49	45	12.0				49.31	0.852	19	32	855	31.98	117	27
04:03	52			2858	76	1046		Dump 1.34 bbl water from separator														
04:15	52			2860	77	1045		506	49	44	12.0				49.31	0.852	19	32	764	32.04	105	24
04:24				2861	77	1049		Shut in well at choke manifold														
04:25				2929	77	855																
04:26				3126	77	18																
04:27				3204	77	15																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 83 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
07-Aug-04																						
04:28				3224	77	14																
04:29				3226	77	14																
04:30				3229	77	14																
04:31				3226	76	14																
04:32				3226	76	14																
04:33				3226	76	14																
04:34				3226	75	18																
04:35				3226	75	15																
04:36				3223	74	14																
04:37				3223	73	14		Close Swab valve on production tree														
04:40				3113	71	14		Close Master valve on FCH														
04:40				3113	71	14		Close Master valve on FCH														
04:41				3097	70	14		Bleed down Slickline lubricator via choke manifold														
04:42				1659	70	52																
04:43				26	68	18		Close choke manifold														
04:56				24	53	14		Open Swab valve on production tree														
05:00				24	52	14		Crack Swab valve on FCH. Bleed off pressure through choke manifold														
05:05				435	50	31		Close Swab valve on production tree														
05:06				105	48	15																
05:07				18	46	14		Close Swab valve on FCH														
05:08				17	44	14		Break off Lubricator, change out toolstring to gauge pulling tool														
05:10				16	41	14																
05:15				17	38	14		Stab back lubricator.														
05:16				18	38	13		Open Swab valve on FCH														
05:17				23	37	14		Open Master valve on FCH														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 84 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
07-Aug-04																						
05:18				1361	37	14																
05:22				2248	37	14		Open on Swab valve on production tree														
05:25				3214	38	14																
05:27				3217	39	14		Run in hole with Slickline														
05:30				3222	39	13																
05:45				3220	36	13																
06:00				3211	32	14																
06:13				3208	29	13		Pull out of hole with gauge, start injecting glycol water to Lubricator.														
06:30				3205	26	13																
06:45				3203	24	13		Slickline on surface, stop glycol injection.														
06:48				3129	24	13		Close Production tree Swab and FCH Master valves.														
06:52				1998	23	51		Bleed off surface pressure to STB gas flare.														
07:00				17	14	13		Break off Lubricator, retrieved gauges..														
07:05				19	11	13		Make up Lubricator with 3.688 SSD shifting tool toolstring.														
07:09				1700	12	13		Open production tree Swab valves and FCH Master valve.														
07:15								Run in hole to close SSD at 2809 Sand.														
08:00				3182	15	13																
08:30				3196	14	14																
09:00				3229	14	13																
09:30				3273	14	13																
09:33				3270	14	13		Slickline at surface, close production tree Swab valve.														
09:38				2262	14	36		Close FCH Master valve and bleed off surface pressure.														
09:42				17	8	13		Close FCH Swab valve, break off lubricator to find shifting tool pin sheared.														
09:54				21	2	13		Make up lubricator with SSD shifting tool.														
09:58				18	3	13		Open FCH Swab and Master valve.														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 85 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
07-Aug-04																						
10:00				1588	4	13		Open production tree Swab valve.														
10:04				3246	7	13		Run in hole with shifting tool.														
10:30				3264	13	13		Start pulling out of hole.														
11:00				3263	14	13																
11:02				3263	14	14		Close FCH Master valve.														
11:12				974	14	186		Bleed off Surface pressure.														
11:16				18	6	14		Remove Slickline tool and make up Lubricator.														
11:21				2928	2	13		Close FCH Swab valve and open Master valve.														
11:30				3209	11	429		Commence bleeding off Tubing pressure through separator to gas flare.														
11:35				2503	18	888																
11:40				1967	29	860																
11:45				1464	35	1015																
11:50				1026	38	897																
11:55				688	39	642																
12:00				512	40	475																
12:05				423	40	390																
12:10				380	40	349																
12:15				362	40	331																
12:20				356	40	325																
12:25				350	40	321																
12:30				342	41	311																
12:35				342	40	310																
12:40				345	40	313																
12:42				350	40	316		Shut in at the choke manifold, observe well.														
12:45				516	41	14																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 86 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
07-Aug-04																						
12:50				745	40	14																
13:00				1178	38	14		Close FCH Master valve.														
13:03				1244	38	14		Bleed off surface pressure.														
13:05				18	36	14																
13:07				18	35	14		Break off lubricator, rig up toolstring to set plug.														
13:10				18	33	14		Make up lubricator, open FCH swab valve.														
13:15				18	32	14																
13:17				596	31	14		Open FCH Master valve , run in hole to set plug.														
13:30				2297	32	14																
13:45				2769	30	14																
14:00				3116	27	13																
14:01				3134	27	13		Pull out of hole														
14:04				3179	26	14		Commence glycol injection														
14:15				3270	25	13																
14:17				3276	24	13		Slickline at surface														
14:18				3277	24	13		Stop injecting glycol														
14:20				3276	24	13		Close Master valve on FCH														
14:21				3265	24	13		Bleed off surface pressure to STB gas flare.														
14:25				18	20	14		Close Swab valve on FCH														
14:26				18	17	13		Break off Lubricator, check plug.														
14:30				18	10	13																
14:45				24	9	13																
15:00				25	10	14		Change toolstring added knuckle joint. Stab back lubricator														
15:00				25	10	14																
15:05				3224	11	13		Open Swab and Master valve's on FCH														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 87 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
07-Aug-04																						
15:08				3235	15	13		Run in hole to set plug at 2594 m MDRT														
15:15				3243	18	13																
15:30				3244	17	13																
15:45				3241	17	13		Pull out of hole. Commence injection glycol														
16:00				3241	16	14		Slickline at surface. Stop glycol injection														
16:04				3238	16	14		Close Master valve on FCH														
16:05				3235	16	15		Bleed off surface pressure to STB gas flare.														
16:09				18	10	14		Close Swab valve on FCH														
16:11				18	7	14		Break off Lubricator, Good indication plug is set.														
16:14				18	4	14		Open Master valve on FCH														
16:15				18	3	14																
16:25				3238	10	14		Open well on 16/64" adjustable choke to Port gas flare. Bleed down well														
16:30				2827	13	945																
16:45				930	34	850																
17:00				314	35	289																
17:15				245	34	222																
17:21				239	34	219		Shut in well at choke manifold														
17:30				553	34	14																
17:45				982	31	13																
17:46				637	30	24		Close Master valve on FCH														
17:47				18	30	14		Break off Lubricator, change out string to plug pulling tool														
17:48				18	30	14		Close Swab valve on FCH and choke manifold														
18:00				18	25	13																
18:15				439	23	14																
18:16				436	23	14		Stab back lubricator														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 88 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
07-Aug-04																						
18:17				436	23	13		Open Swab and Master valves on FCH														
18:25				2109	24	14		Run in hole														
18:30				2229	23	14																
18:45				2572	22	13		Stab into plug. Equalizing across plug														
18:45				2572	22	13																
19:00				2833	20	13																
19:15				3041	18	14																
19:30				3179	17	12																
19:45				3231	16	13																
19:55				3232	16	12		Pull out of hole. Commence injection glycol														
19:55				3232	16	12																
20:00				3229	15	13																
20:15				3229	15	13																
20:18				3229	15	13		Slickline at surface. Stop glycol injection														
20:20				3226	14	13		Close Master valve on FCH														
20:23				1768	14	86		Bleed off surface pressure to STB gas flare.														
20:27				18	8	12		Close Swab valve on FCH and choke manifold														
20:30				16	5	12																
20:41				18	3	13		Break off Lubricator, change out shear pins on plug pulling tool														
20:42				18	3	12		Stab back lubricator														
20:43				18	3	13		Open Swab and Master valves on FCH														
20:45				219	3	12																
20:50				3214	7	12		Run in hole with Slickline														
21:00				3226	11	13																
21:10				3223	12	12		Commence jarring on plug														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 89 2004-07

Time	Flowing Condition										Fluid Properties								Production Rate			Ratio
	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
07-Aug-04																						
21:15				3222	12	12		Pull out of hole. Commence injection glycol														
21:15				3222	12	12																
21:30				3214	12	13																
21:40				3205	12	13		Slickline at surface. Stop glycol injection														
21:41				3202	12	12		Close Master valve on FCH														
21:44				18	8	13		Bleed off surface pressure to STB gas flare.														
21:45				18	6	13		Close Swab valve on FCH and choke manifold														
21:45				18	6	13																
21:47				18	4	12		Break off Lubricator, change out toolstring to wire brush														
21:49				18	2	12		Stab back lubricator														
21:53				18	0	12		Open Swab and Master valves on FCH														
22:00				3164	5	12		Run in hole with Slickline														
22:00				3164	5	12																
22:15				3164	9	12																
22:27				3164	10	12		Commence working on brushing nipples														
22:30				3164	10	12																
22:45				3164	10	12																
23:00				3164	10	12		Pull out of hole. Commence injection glycol														
23:00				3164	10	12																
23:15				3164	10	12		Slickline at surface. Stop glycol injection														
23:15				3164	10	12																
23:16				3164	10	12		Close Master valve on FCH														
23:17				3161	10	12		Bleed off surface pressure to STB gas flare.														
23:20				21	8	21		Close Swab valve on FCH and choke manifold														
23:26				21	0	12		Break off Lubricator, change out toolstring to set plug														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 90 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
07-Aug-04																						
23:30				24	-1	13																
23:40				24	0	13		Stab back lubricator														
23:45				27	0	12																
23:48				72	1	13		Open Swab and Master valves on FCH														
23:55				3146	5	13		Run in hole with Slickline														
08-Aug-04				3155	8	12																
00:15				3161	9	13																
00:20				3161	9	13		Commence jarring on plug														
00:30				3161	9	14																
00:35				3160	9	13		Pull out of hole. Commence injection glycol														
00:45				3158	9	13																
01:00				3157	9	13																
01:15				3131	10	221																
01:30				2493	14	268																
01:41				2027	20	194		Shut in well at choke manifold														
01:42				2029	21	13																
01:43				2029	21	13																
01:44				2029	22	14																
01:45				2027	22	13																
01:46				2026	22	14																
01:47				2026	22	13																
01:48				2026	22	13																
01:49				2026	22	13																
01:50				2026	22	13																
01:51				2026	22	13																

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 91 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
08-Aug-04																						
01:52				2026	22	13																
01:53				2026	22	13																
01:54				2026	21	13																
01:55				2026	21	13																
01:56				2023	21	13																
01:57				2023	21	13																
01:58				2022	21	14																
01:59				2023	21	14																
02:00				2022	20	14																
02:05				2023	20	13																
02:10				2020	19	13																
02:13				2020	19	13		Open Swab valve on FCH														
02:15				2022	18	13																
02:18				1961	18	331		Open well on 16/64" adjustable choke to Port gas flare. Bleed down well														
02:20				1882	18	307																
02:25				1674	19	334																
02:30				1443	22	359																
02:35				1199	24	368																
02:40				962	25	347																
02:45				727	26	294																
02:50				523	26	242																
02:55				348	25	193																
03:00				204	25	145																
03:05				116	25	79																
03:07				101	25	36		Shut in well at choke manifold														

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	WELL TESTING DATA SHEET	Main Data 92 2004-07

	Flowing Condition										Fluid Properties								Production Rate			Ratio
Time	Choke Size	Bottomhole		Wellhead				Separator			BSW				Cond. Gravity	Gas Gravity	CO2	H2S	Cond.	Gas	Water	CGR
				WHP	WHT	WHDCP	Casing	Sep.	Gas	Oil												
		Press	Temp	Press	Temp	Press	Press	Press	Temp	Temp												
hr:min	64 ths	psiA	degC	psiA	degC	psiA	psiA	psiA	degC	degC	%				API60	air=1	%	ppm	stbd	MMscfd	bwpd	bbl/MM
08-Aug-04																						
03:10				101	25	13																
03:15				104	24	13																
03:20				104	24	13																
03:25				104	23	13																
03:30				105	23	13																
03:35				107	22	13																
03:40				107	21	13																
03:42				107	21	13		Open well on 16/64" adjustable choke to Port gas flare. Bleed down well															
03:45				87	21																	
03:50				42	19																	
03:55				21	19																	
04:00				16																		
04:05				15																		
04:10				15																		
04:15				15																		
04:16				15				Shut in well at choke manifold														
04:20				17																		
04:25								STAN turn off														
04:25																						

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WELL TESTING REPORT

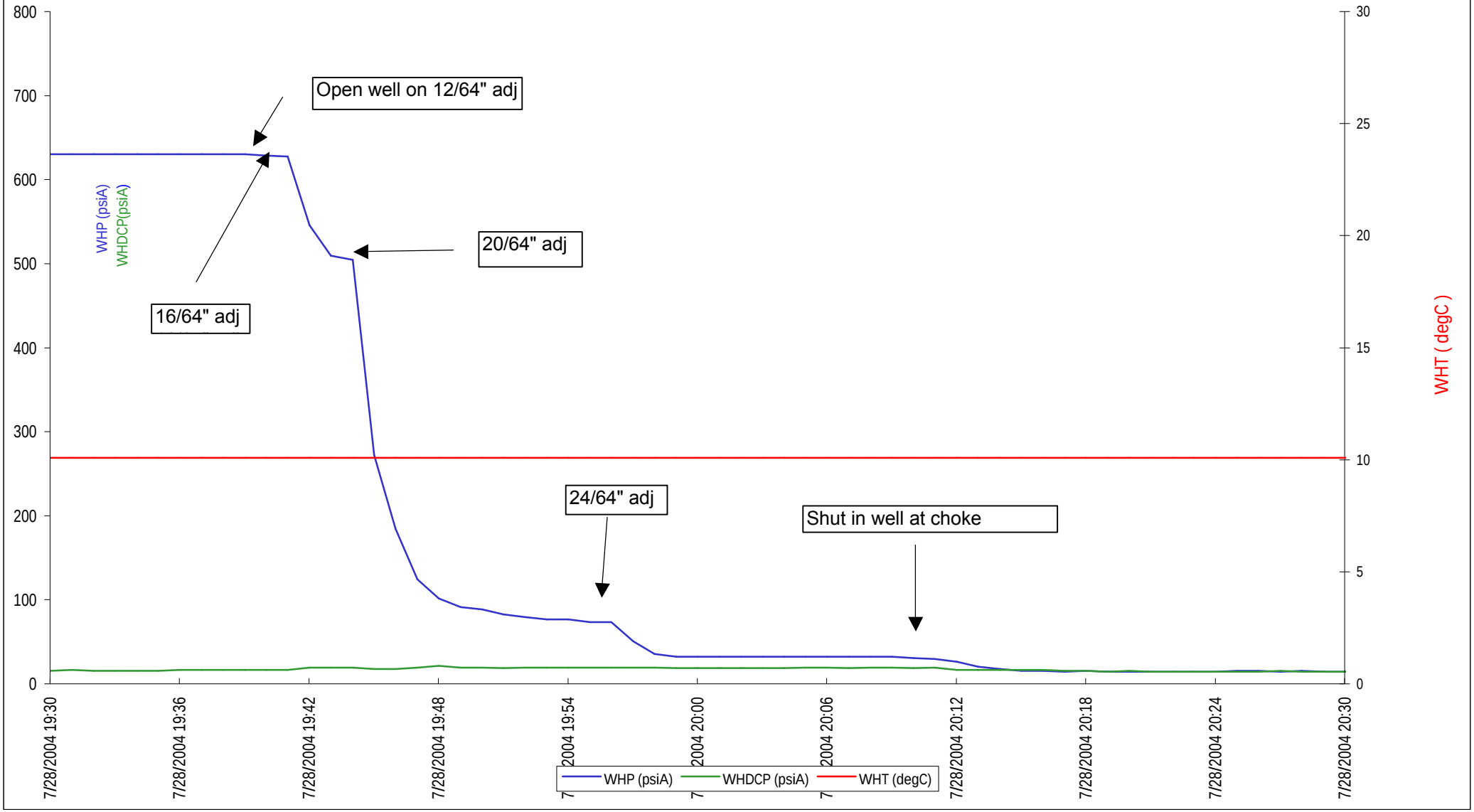
SURFACE DATA ACQUISITION PLOTS

Company	:	Origin Energy Resources Limited
Field / Well / Zone	:	Yolla / Yolla-4 / Test #1
Country	:	Australia
Test date	:	30-Sep-03 to 15-Oct-03
Report number	:	2004-07
Region / Distr / base	:	MEA / APG / AUF

Company representative	:	A. Wenk
Schlumberger representative	:	G. Mullins

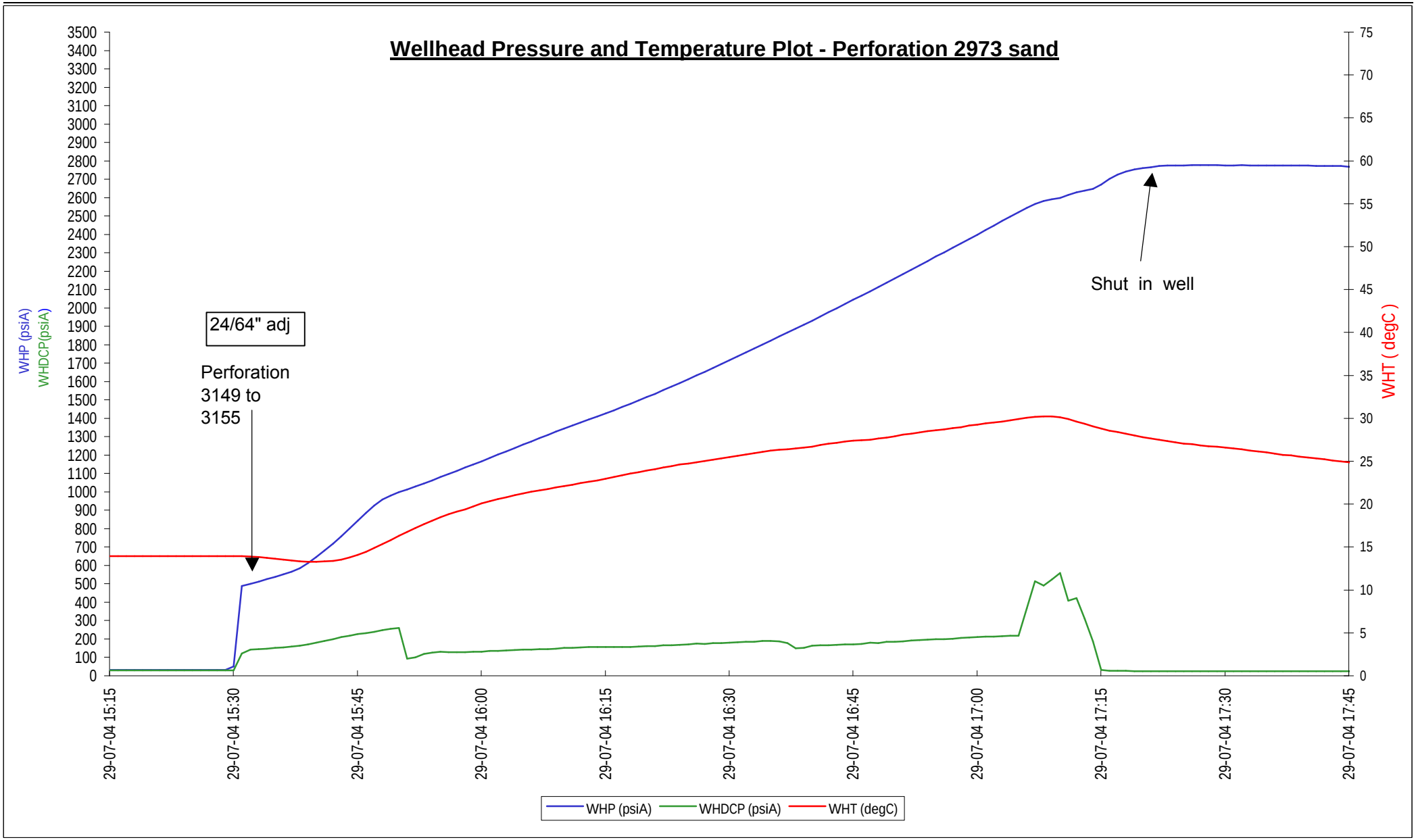
From Date Time : 28-Jul-04 19:30 To Date Time : 28-Jul-04 20:30

Wellhead Pressure and Temperature Plot - Initial Flow And Build-Up Period



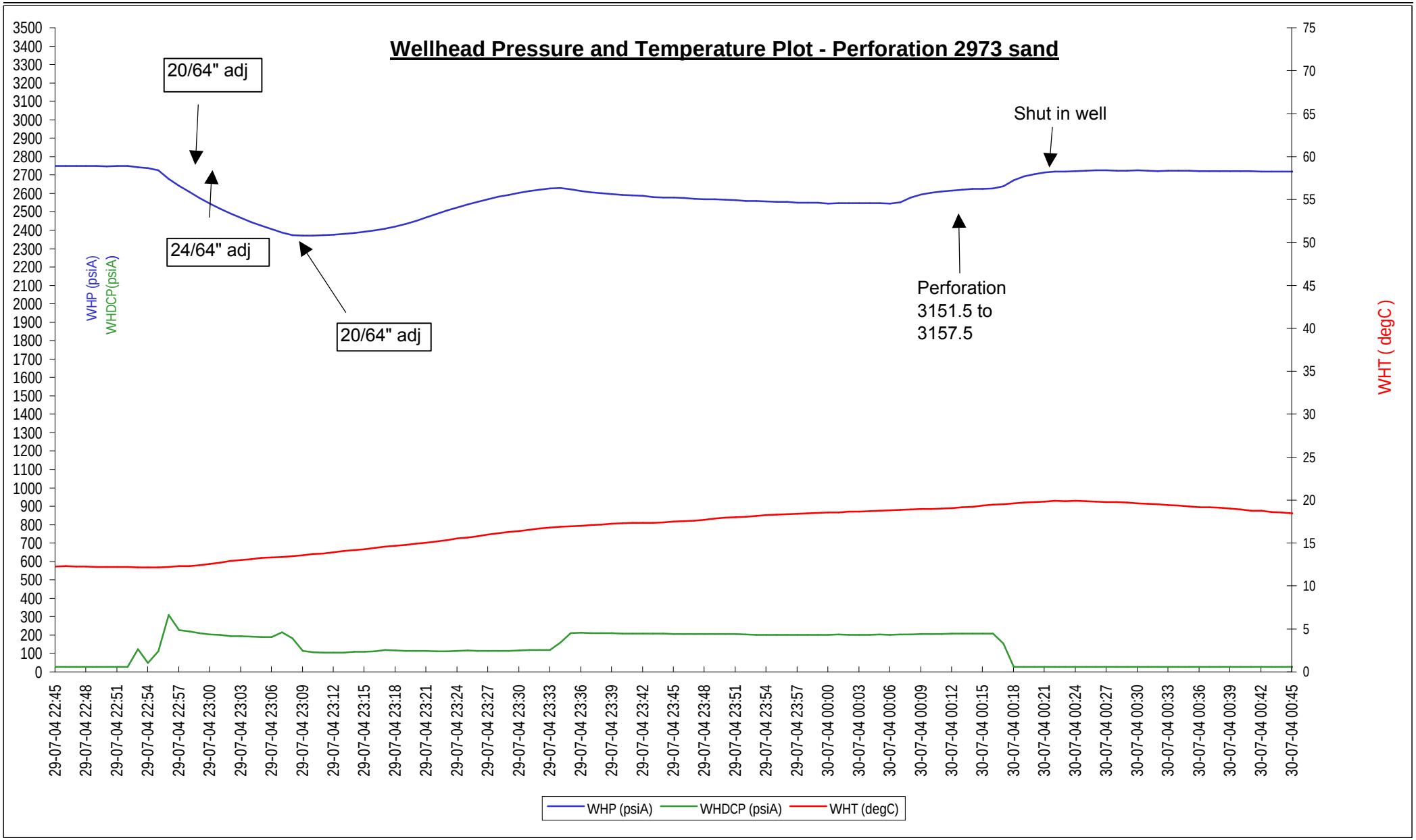
Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Wellhead Pressure and Temperature Plot	Wellhead 2 2004-12

From Date Time : 29-Jul-04 15:15 To Date Time : 29-Jul-04 17:45



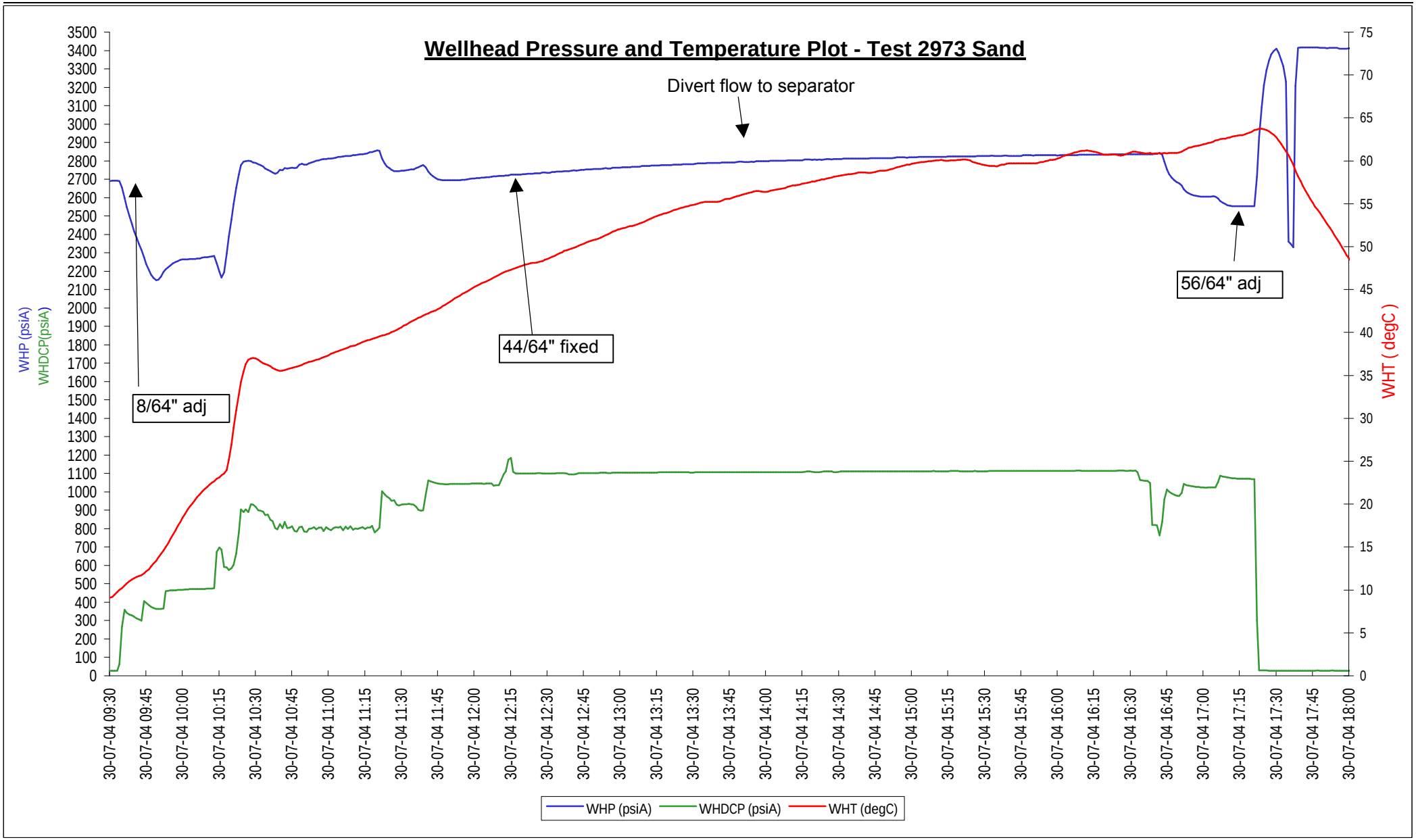
Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Wellhead Pressure and Temperature Plot	Wellhead 3 2004-12

From Date Time : 29-Jul-04 22:45 To Date Time : 30-Jul-04 00:45



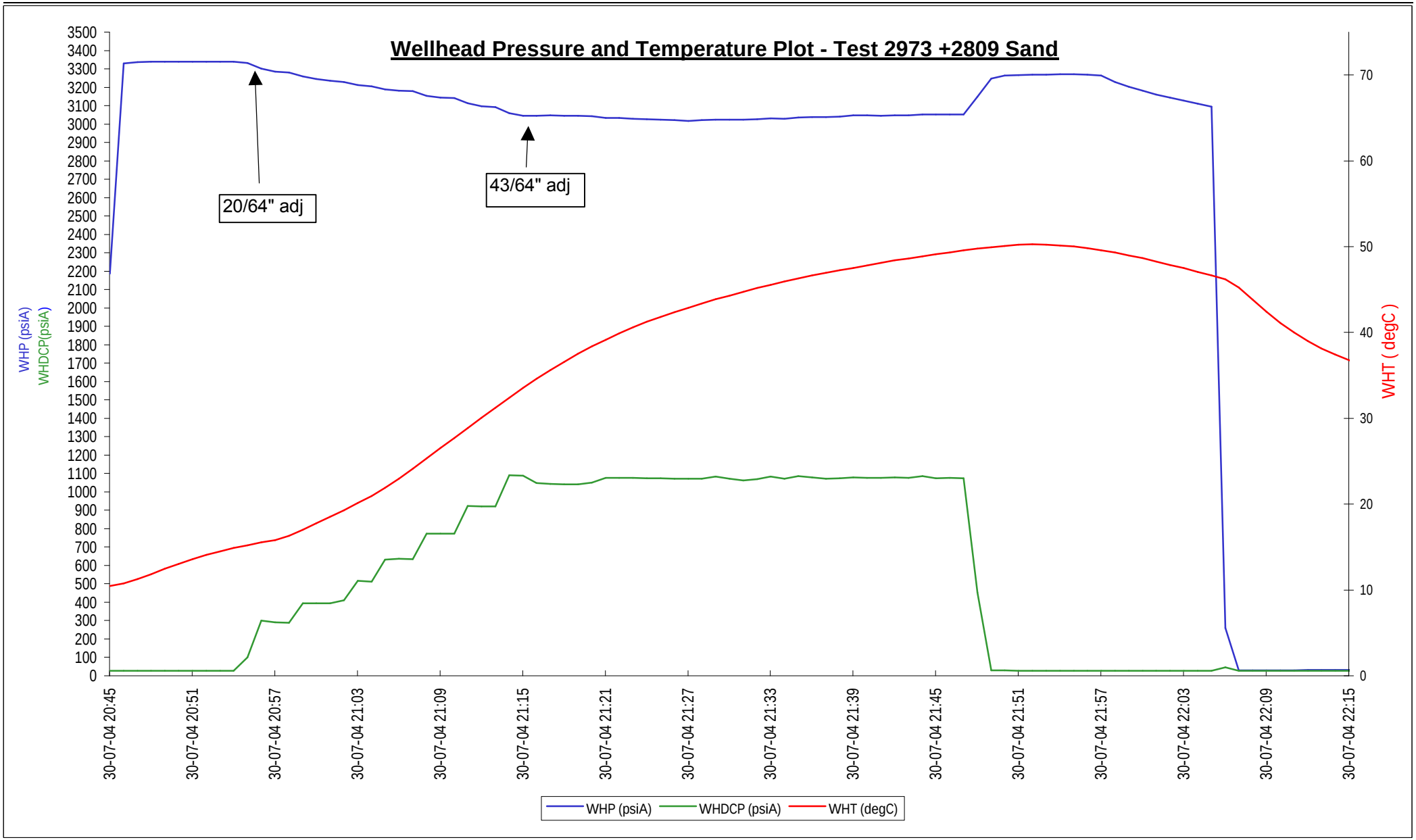
Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Wellhead Pressure and Temperature Plot	Wellhead 4 2004-12

From Date Time : 30-Jul-04 09:30 To Date Time : 30-Jul-04 18:00



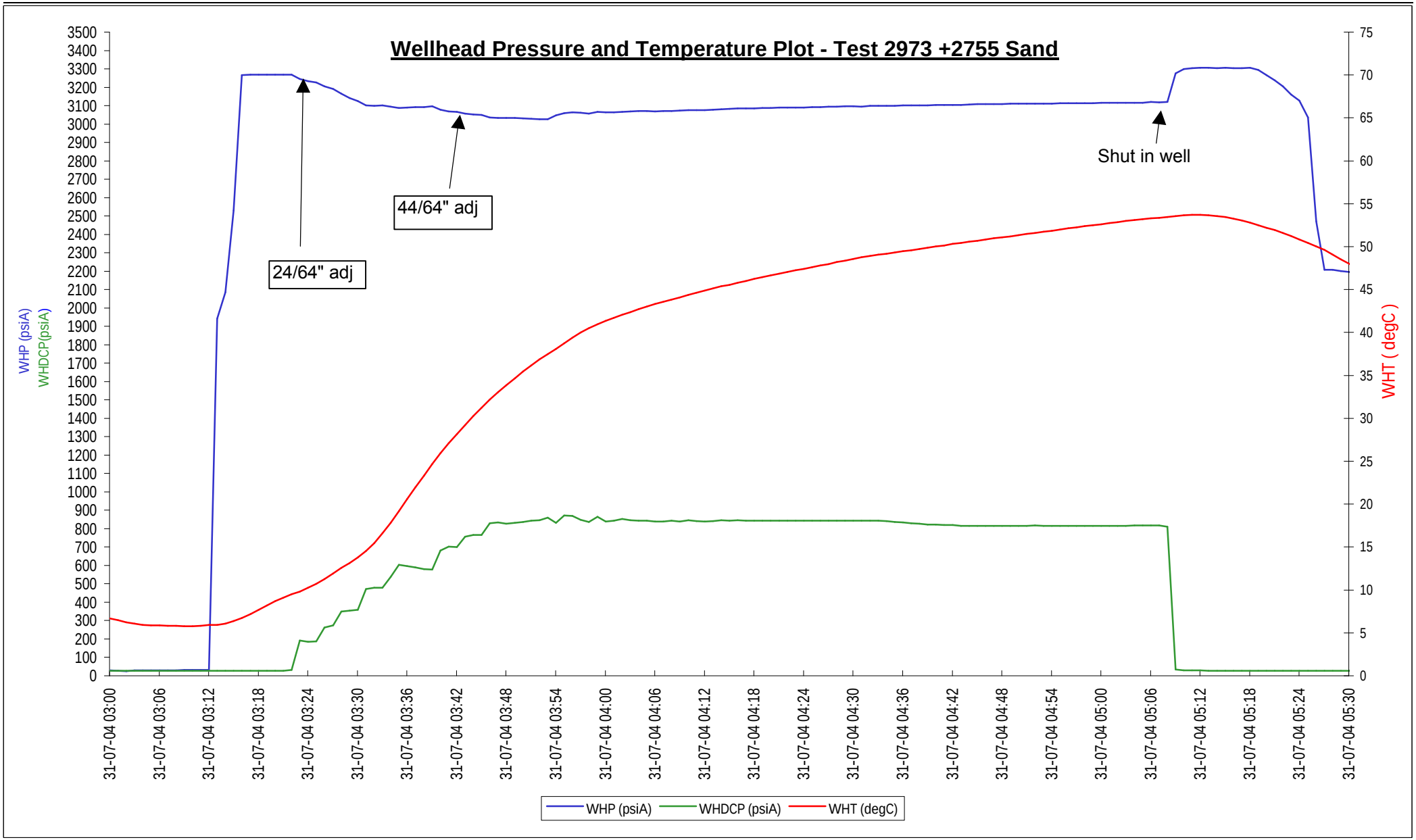
Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Wellhead Pressure and Temperature Plot	Wellhead 5 2004-12

From Date Time : 30-Jul-04 20:45 To Date Time : 30-Jul-04 22:15



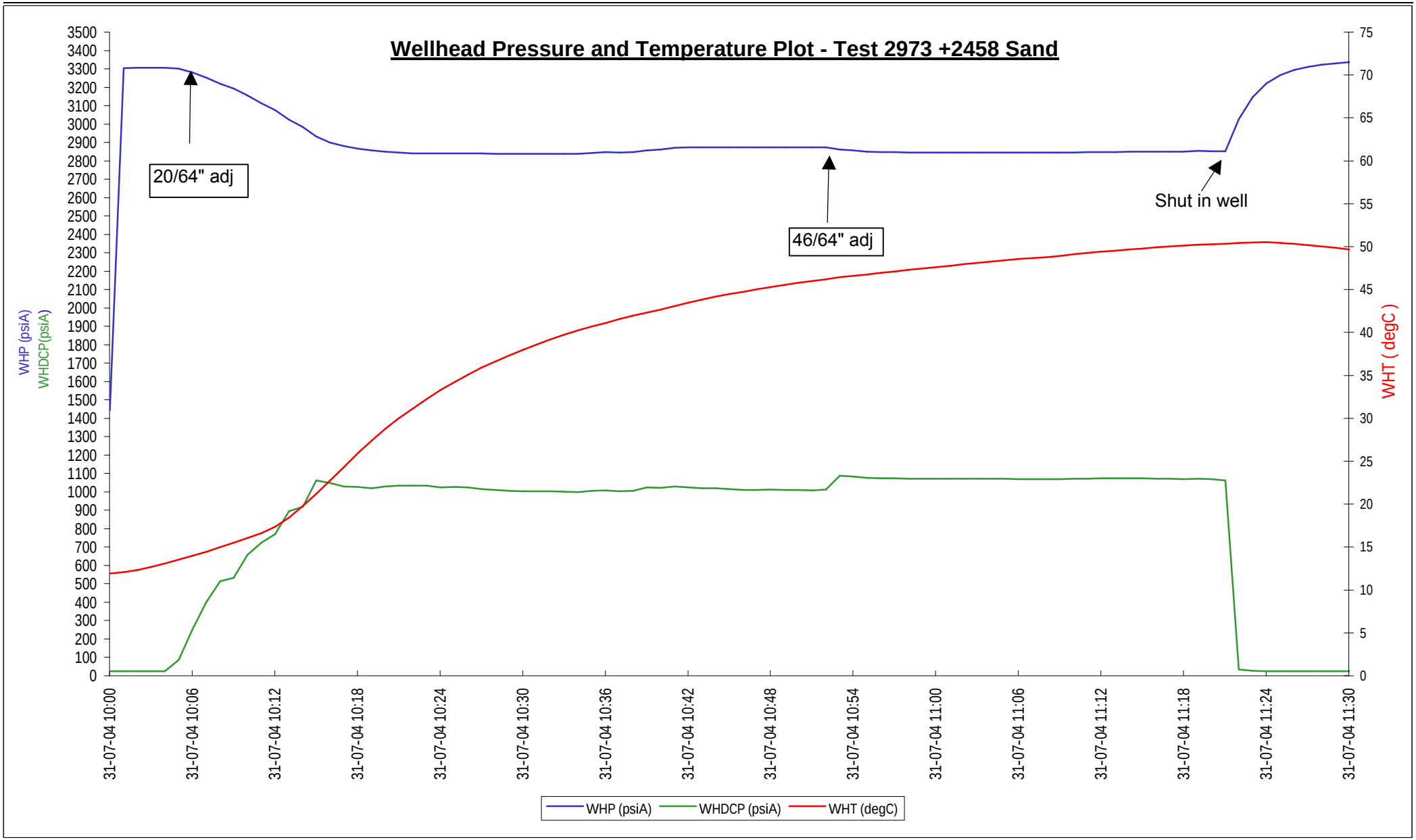
Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Wellhead Pressure and Temperature Plot	Wellhead 6 2004-12

From Date Time : 31-Jul-04 03:00 To Date Time : 31-Jul-04 05:30

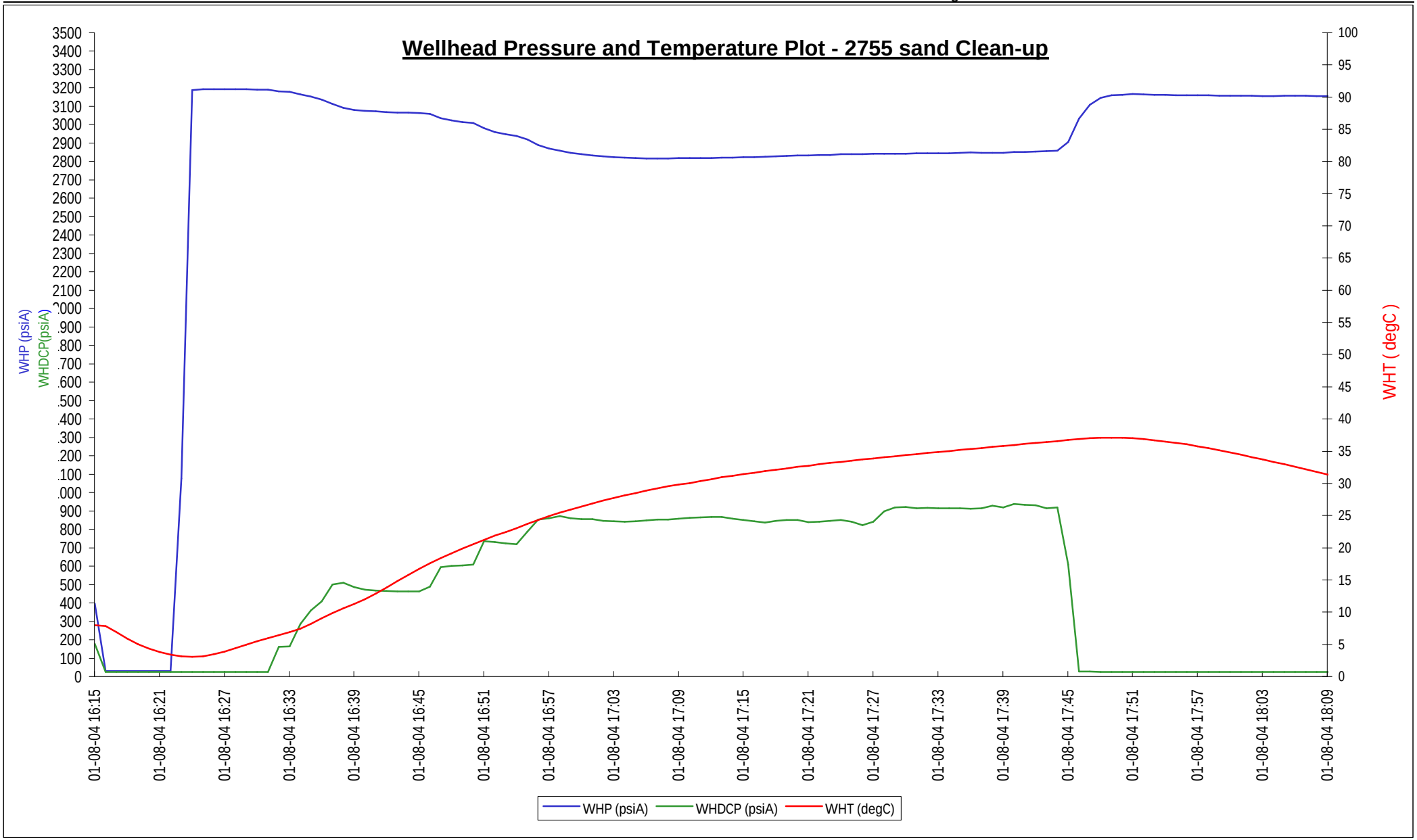


Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Wellhead Pressure and Temperature Plot	Wellhead 7 2004-12

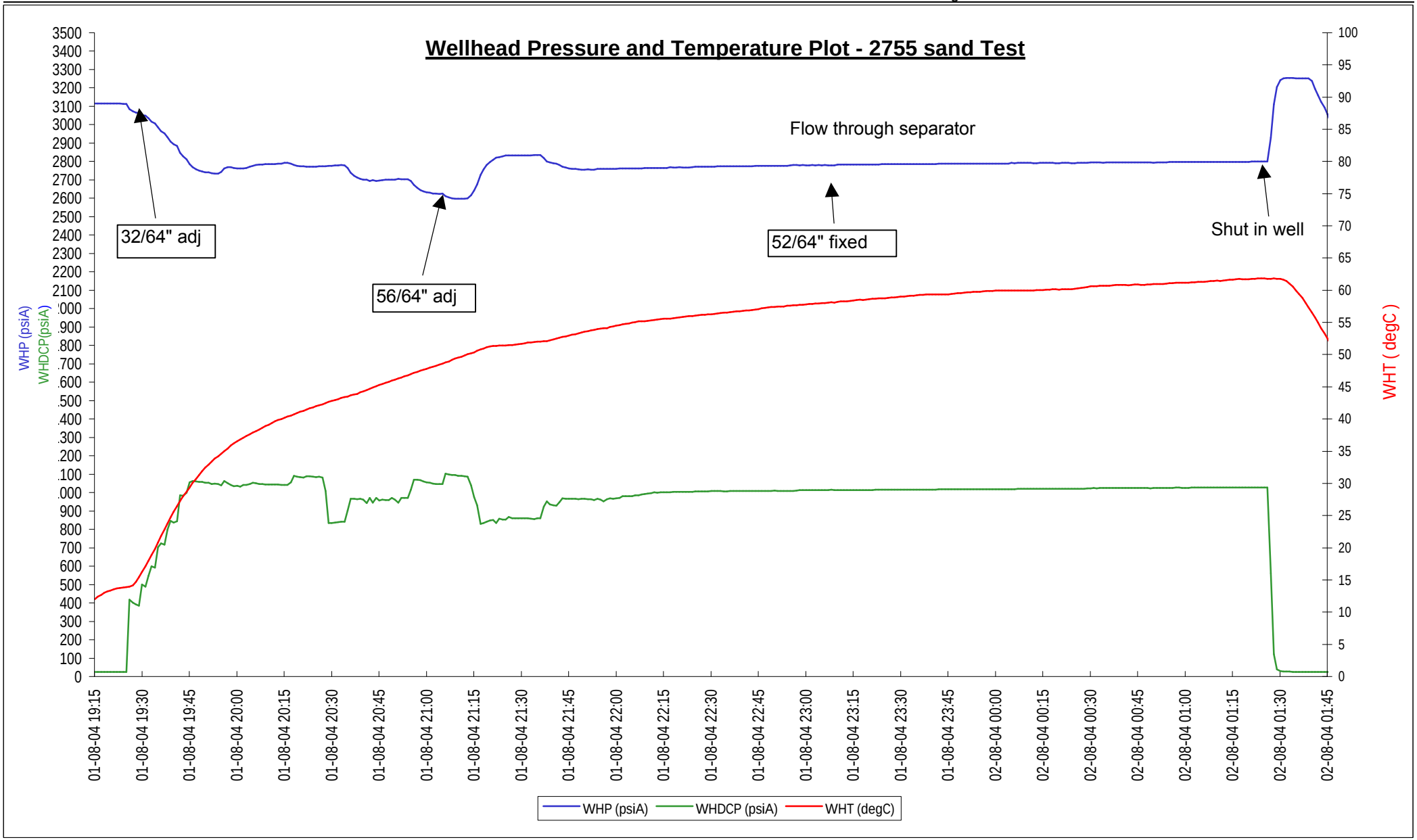
From Date Time : 31-Jul-04 10:00 To Date Time : 31-Jul-04 11:30



From Date Time : 01-Aug-04 16:15 To Date Time : 01-Aug-04 18:09

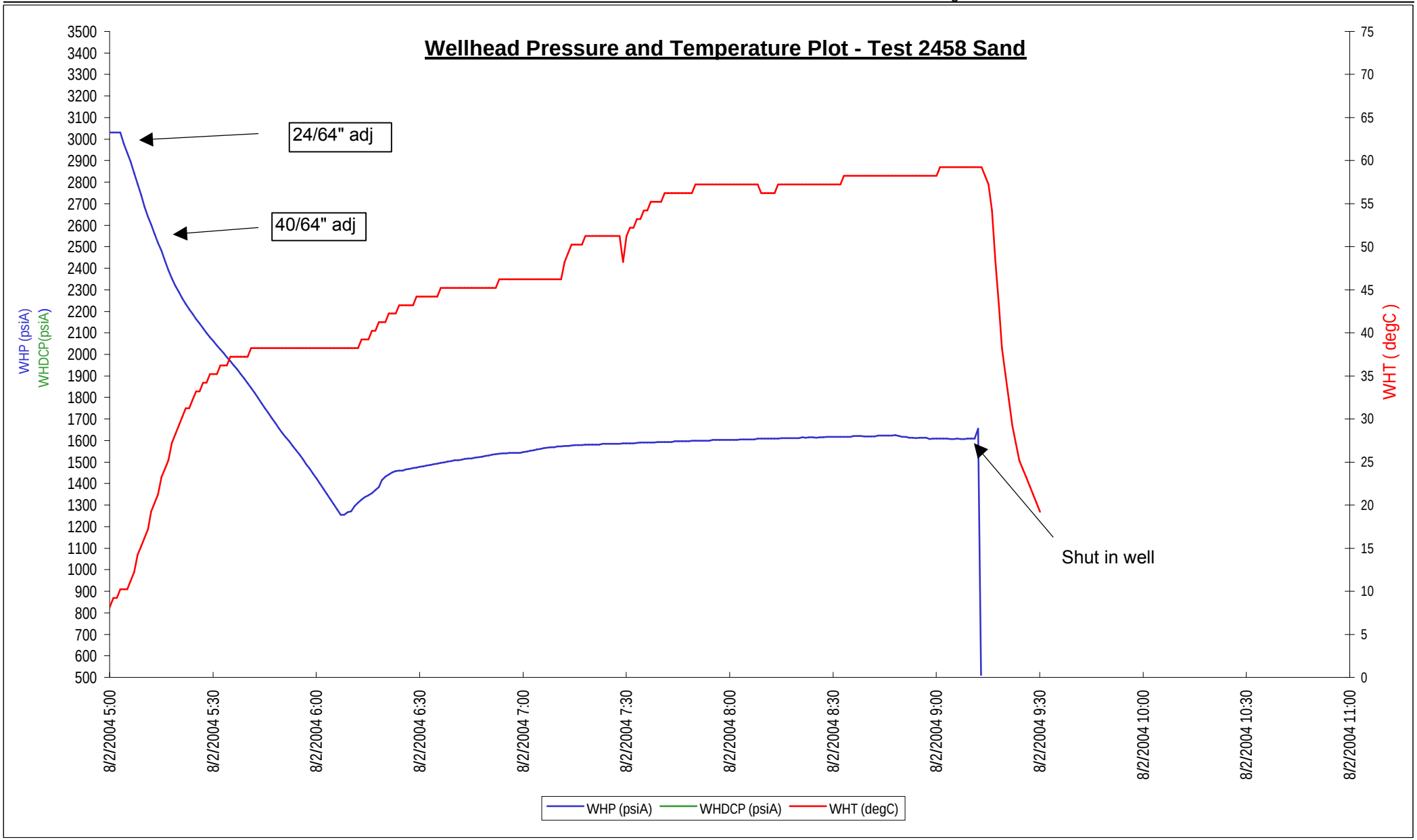


From Date Time : 01-Aug-04 19:15 To Date Time : 02-Aug-04 01:45



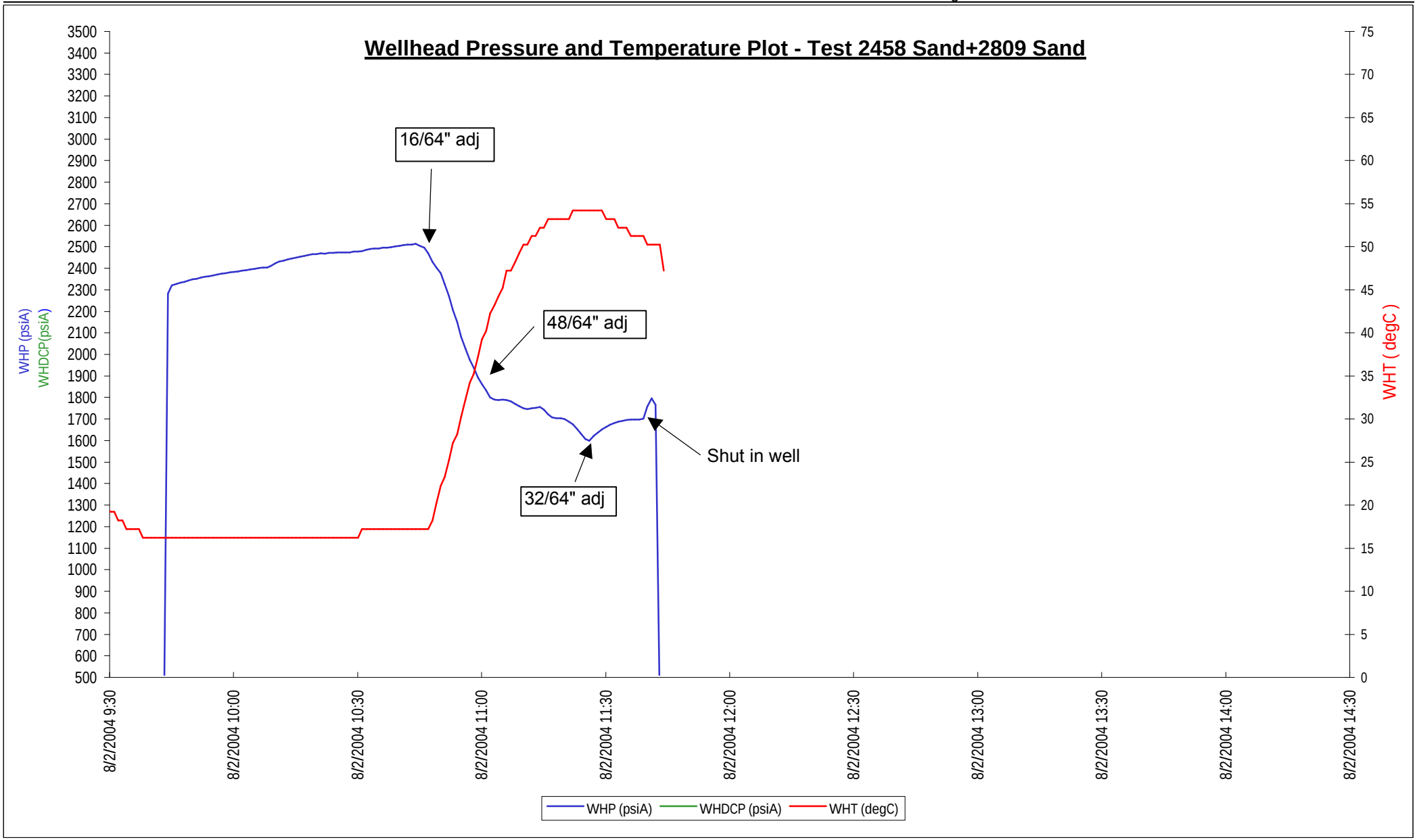
Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Wellhead Pressure and Temperature Plot	Wellhead 10 2004-12

From Date Time : 02-Aug-04 05:00 To Date Time : 02-Aug-04 11:00



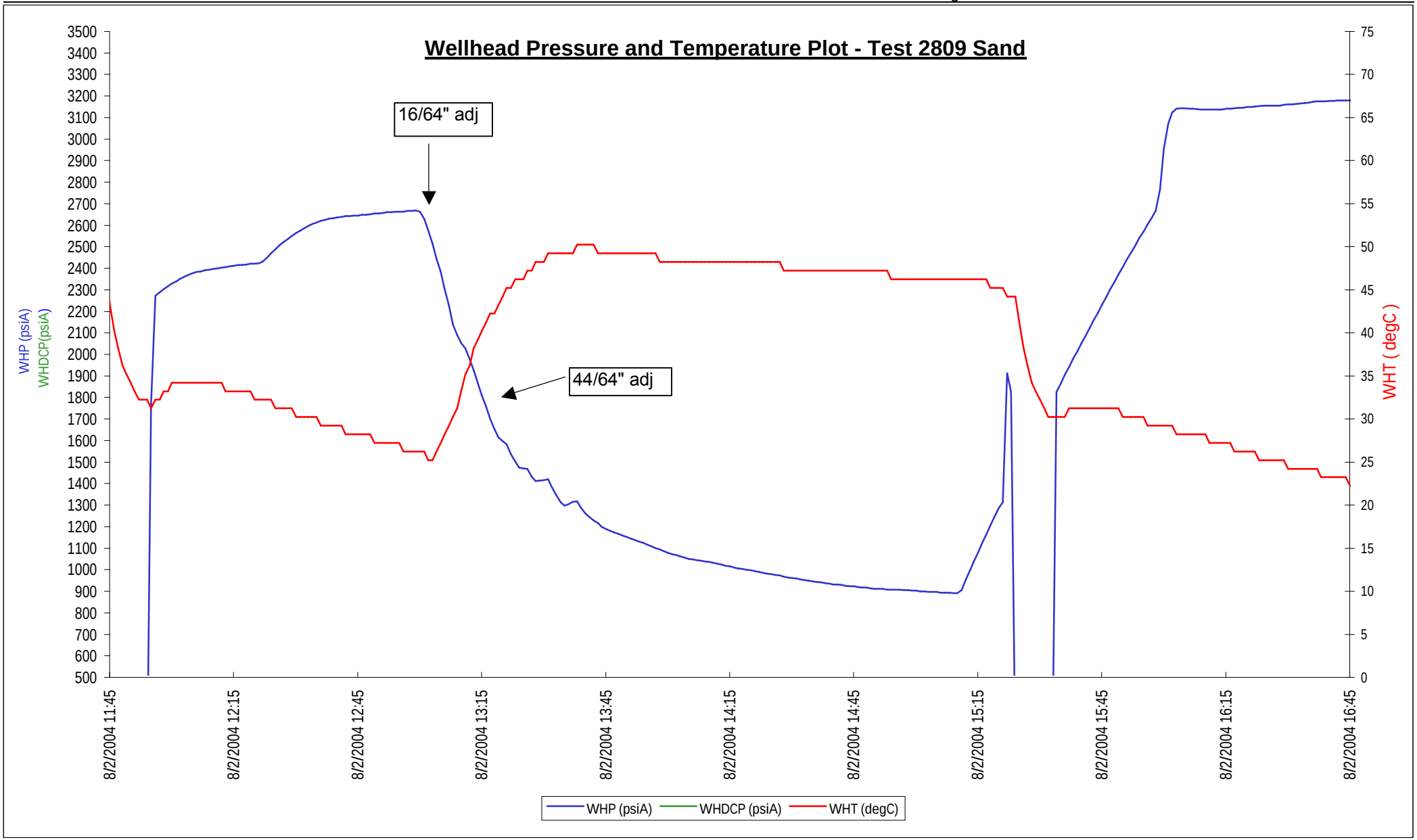
Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Wellhead Pressure and Temperature Plot	Wellhead 11 2004-12

From Date Time : 02-Aug-04 09:30 To Date Time : 02-Aug-04 14:30



Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Wellhead Pressure and Temperature Plot	Wellhead 12 2004-12

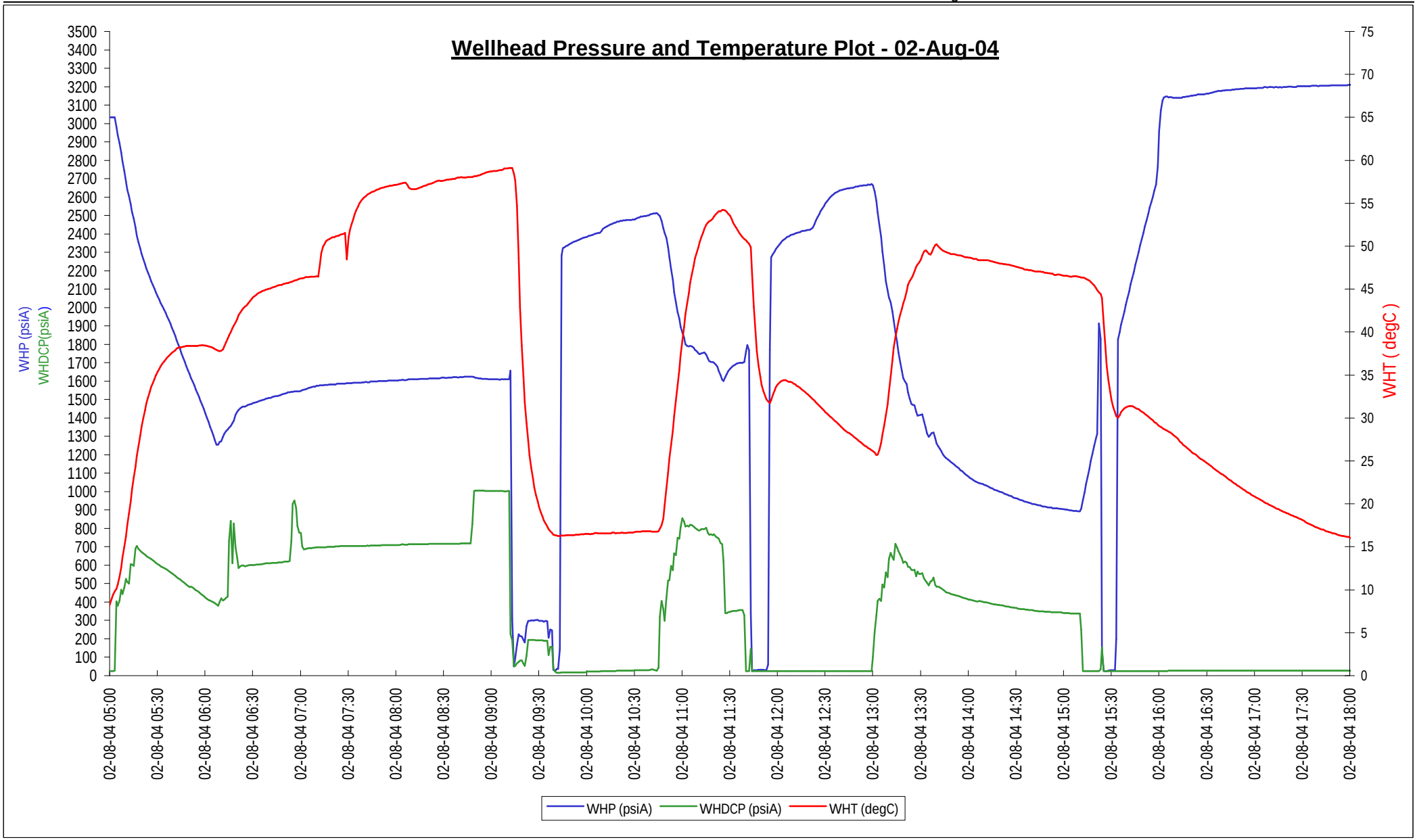
From Date Time : 02-Aug-04 11:45 To Date Time : 02-Aug-04 16:45



Wellhead Pressure and Temperature Plot

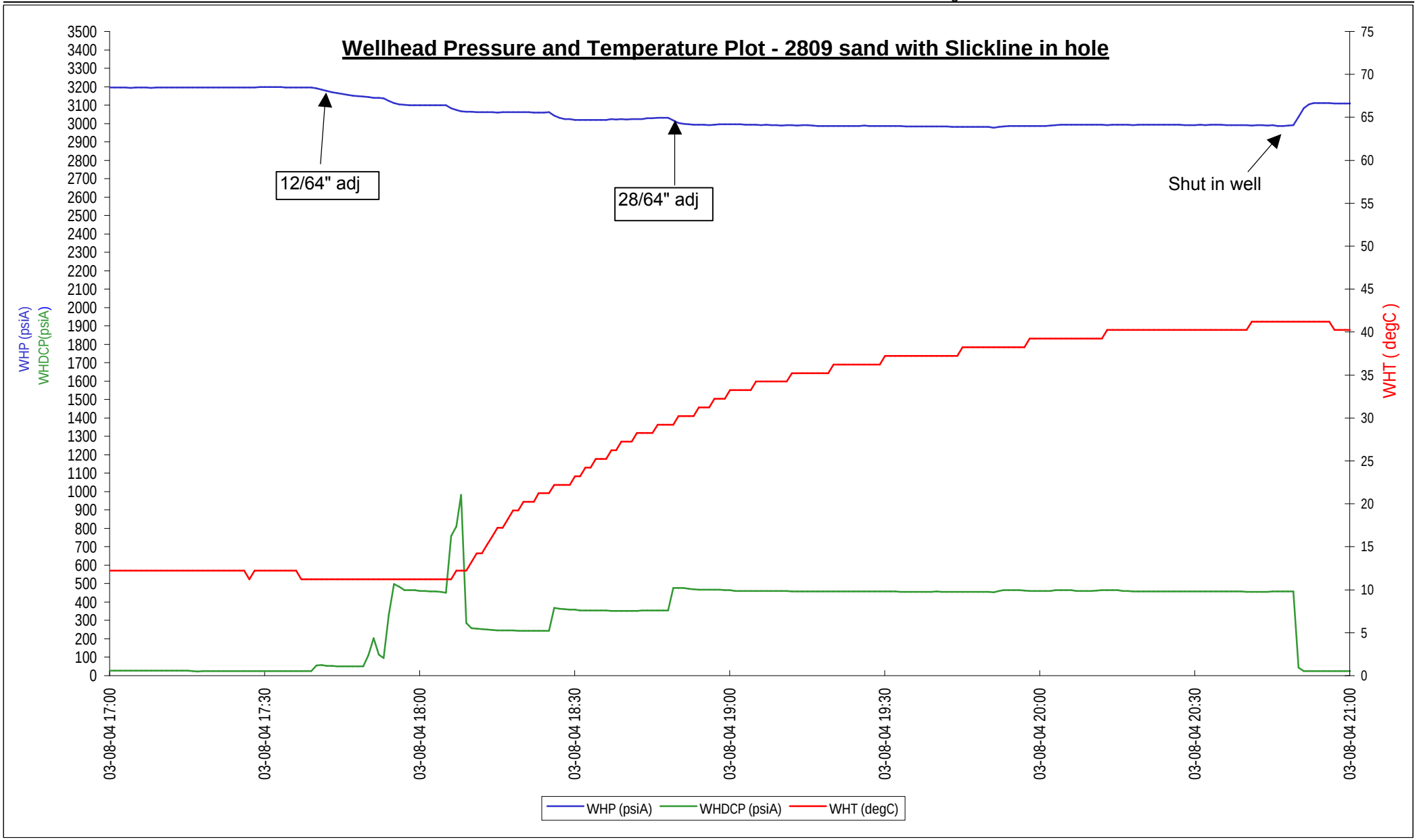
Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Wellhead Pressure and Temperature Plot	Wellhead 13 2004-12

From Date Time : 02-Aug-04 05:00 To Date Time : 02-Aug-04 18:00



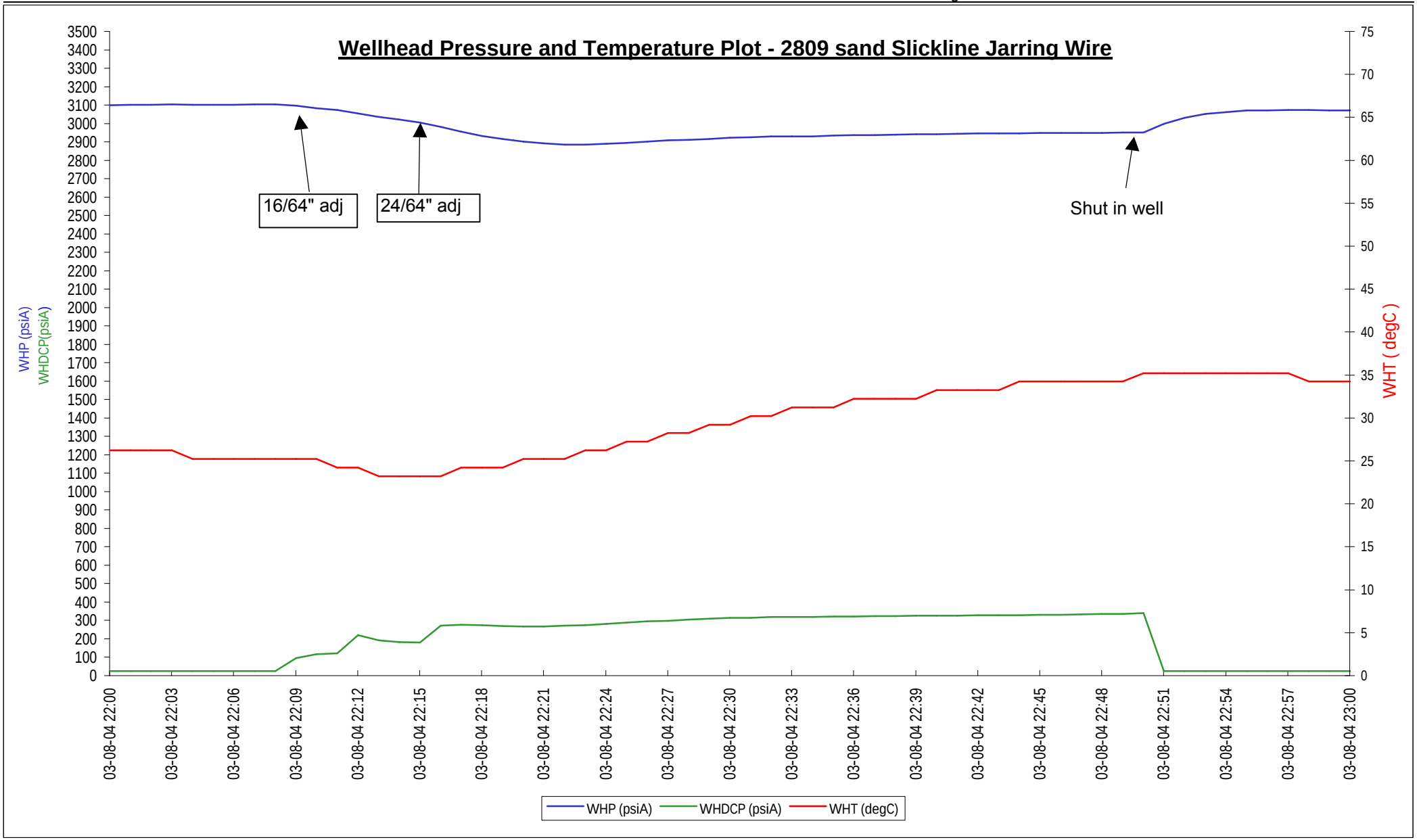
Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Wellhead Pressure and Temperature Plot	Wellhead 14 2004-12

From Date Time : 03-Aug-04 17:00 To Date Time : 03-Aug-04 21:00



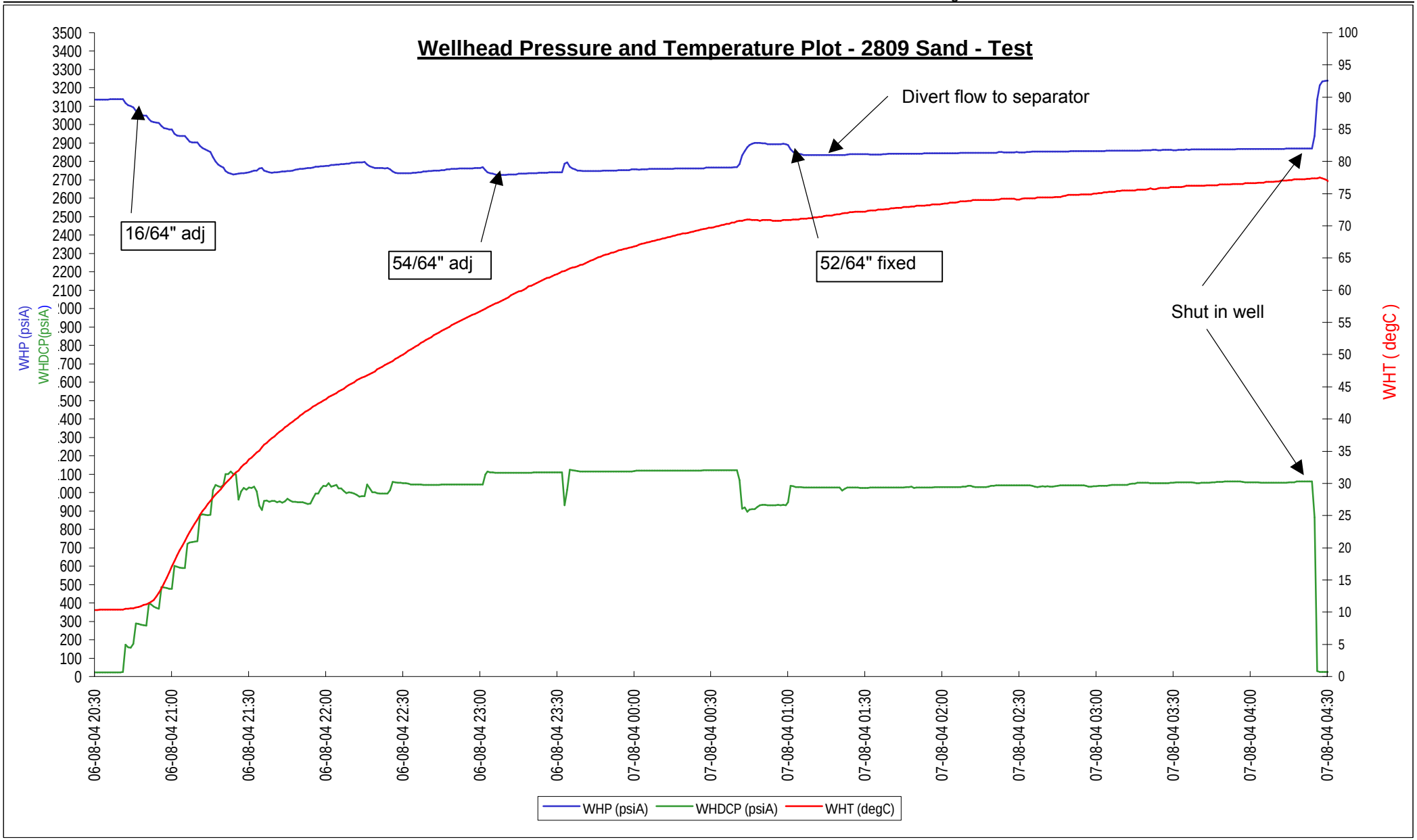
Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Wellhead Pressure and Temperature Plot	Wellhead 15 2004-12

From Date Time : 03-Aug-04 22:00 To Date Time : 03-Aug-04 23:00



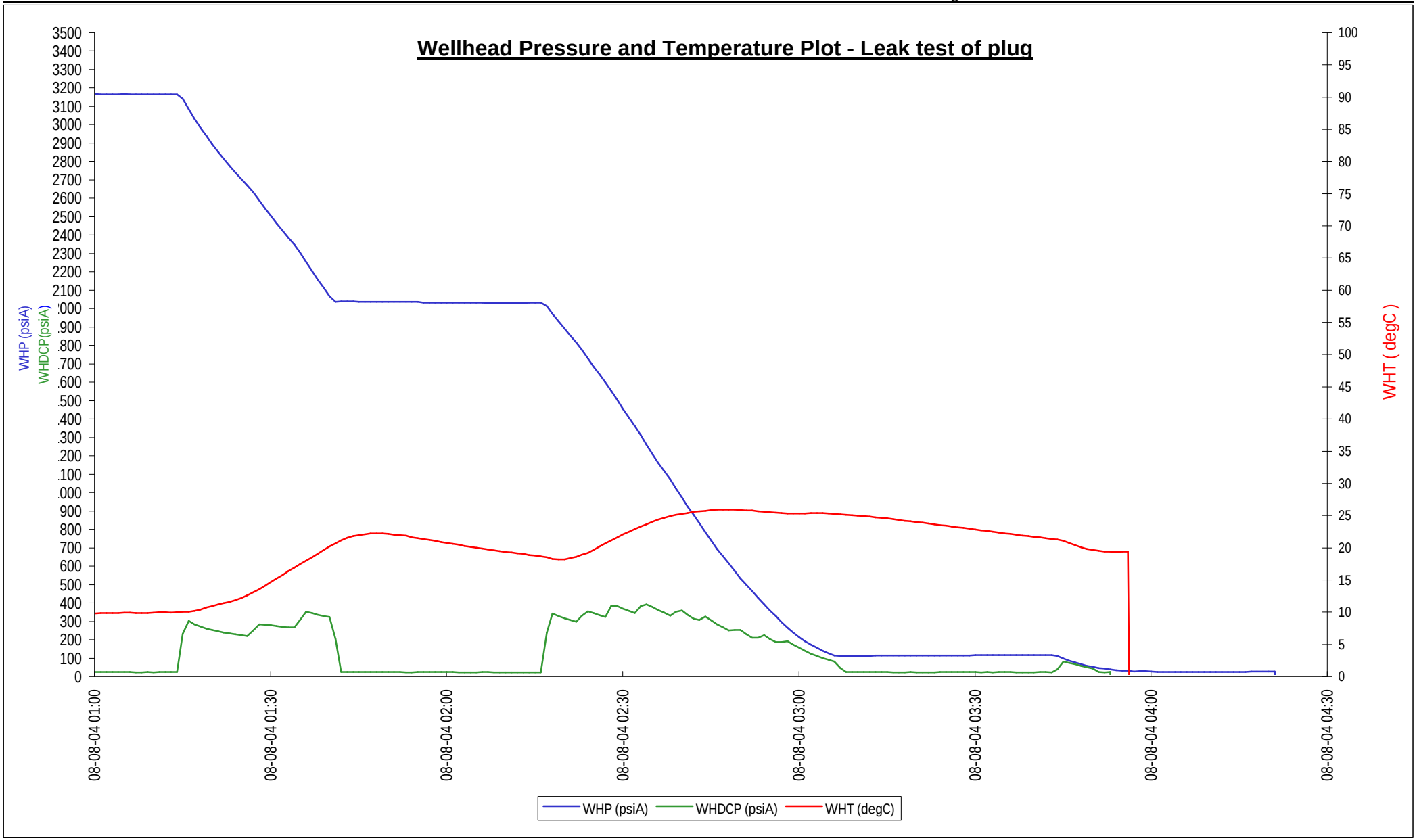
Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Wellhead Pressure and Temperature Plot	Wellhead 16 2004-12

From Date Time : 06-Aug-04 20:30 To Date Time : 07-Aug-04 04:30



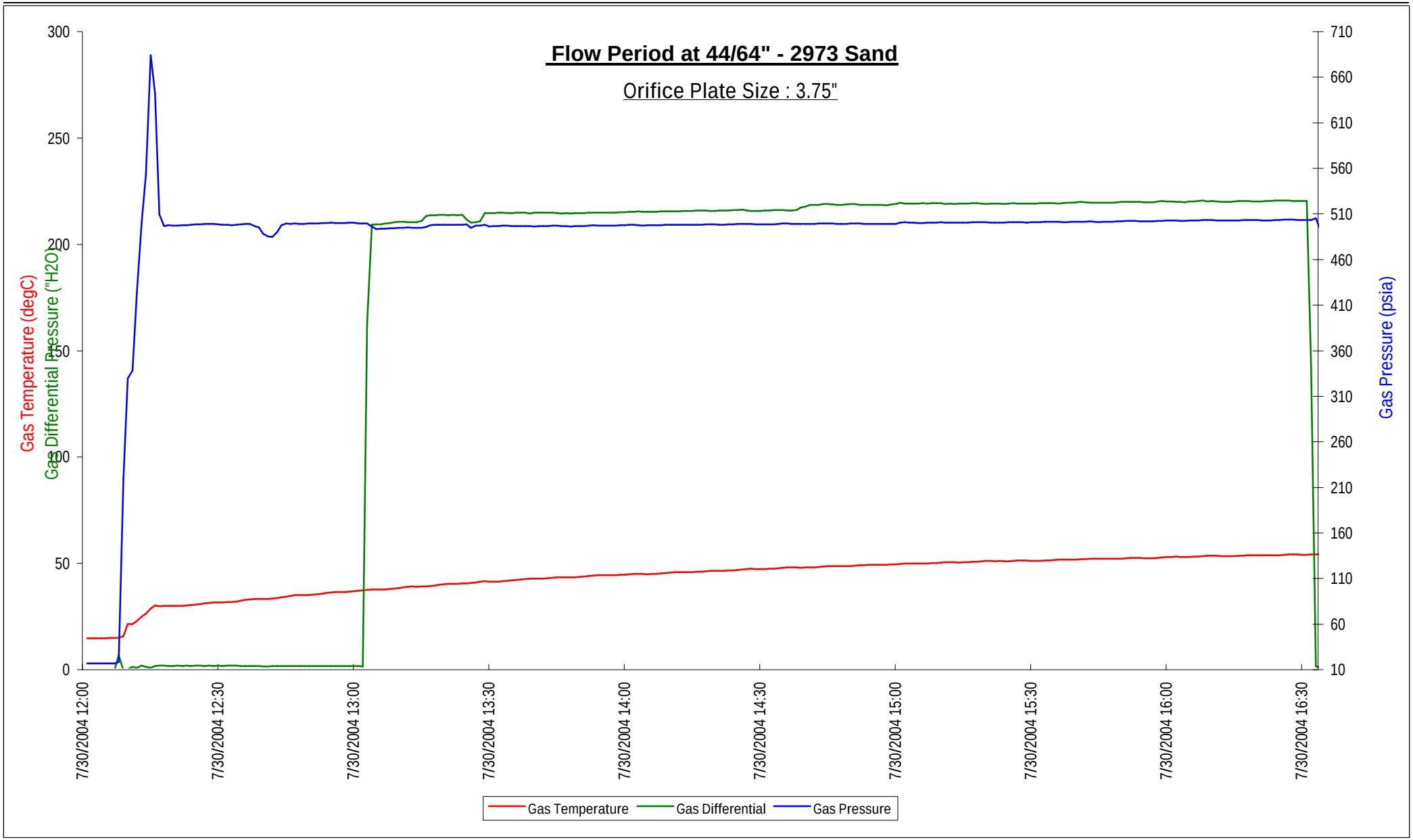
Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Wellhead Pressure and Temperature Plot	Wellhead 17 2004-12

From Date Time : 08-Aug-04 01:00 To Date Time : 08-Aug-04 04:30



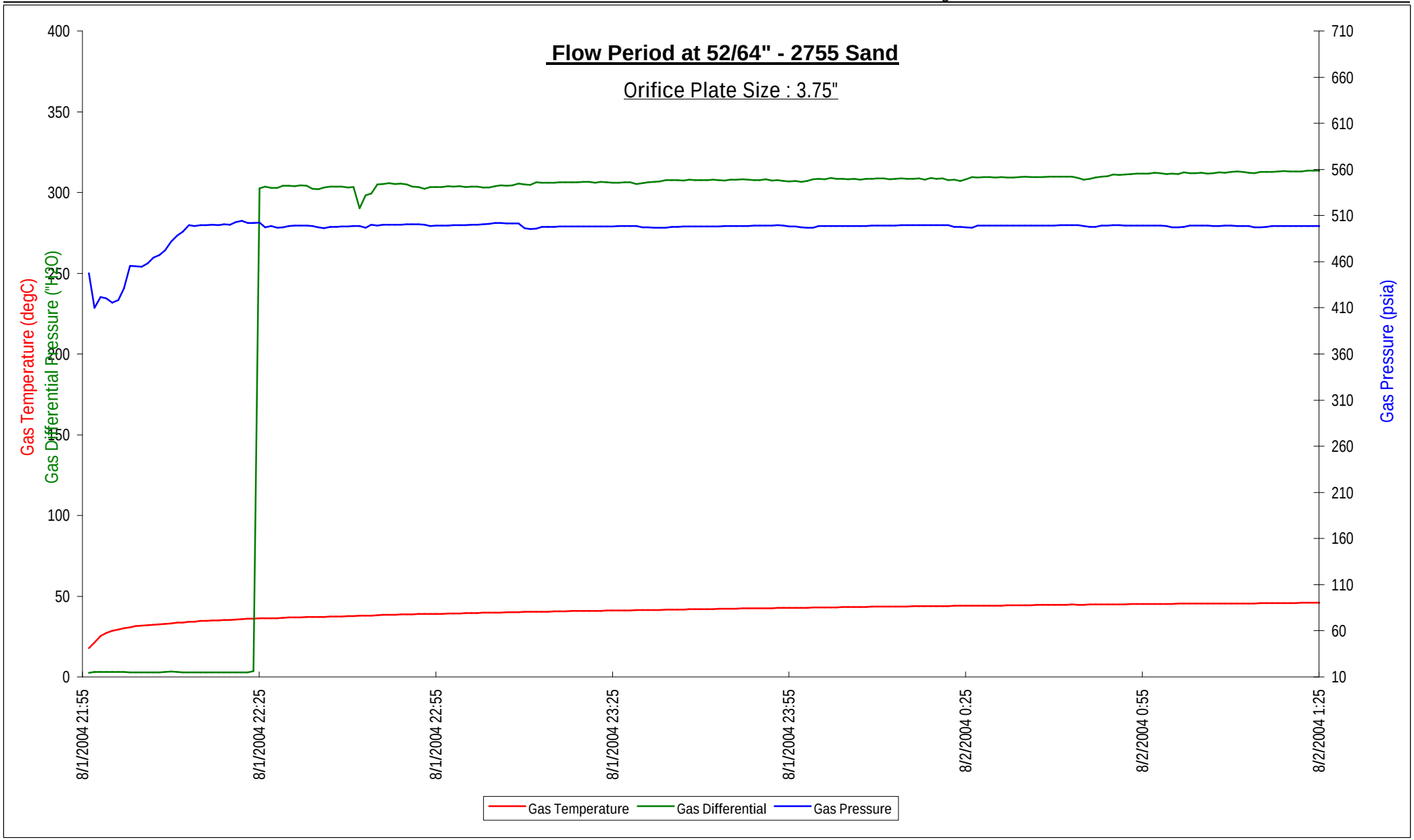
Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Separator Plot	Gas 1 2004-12

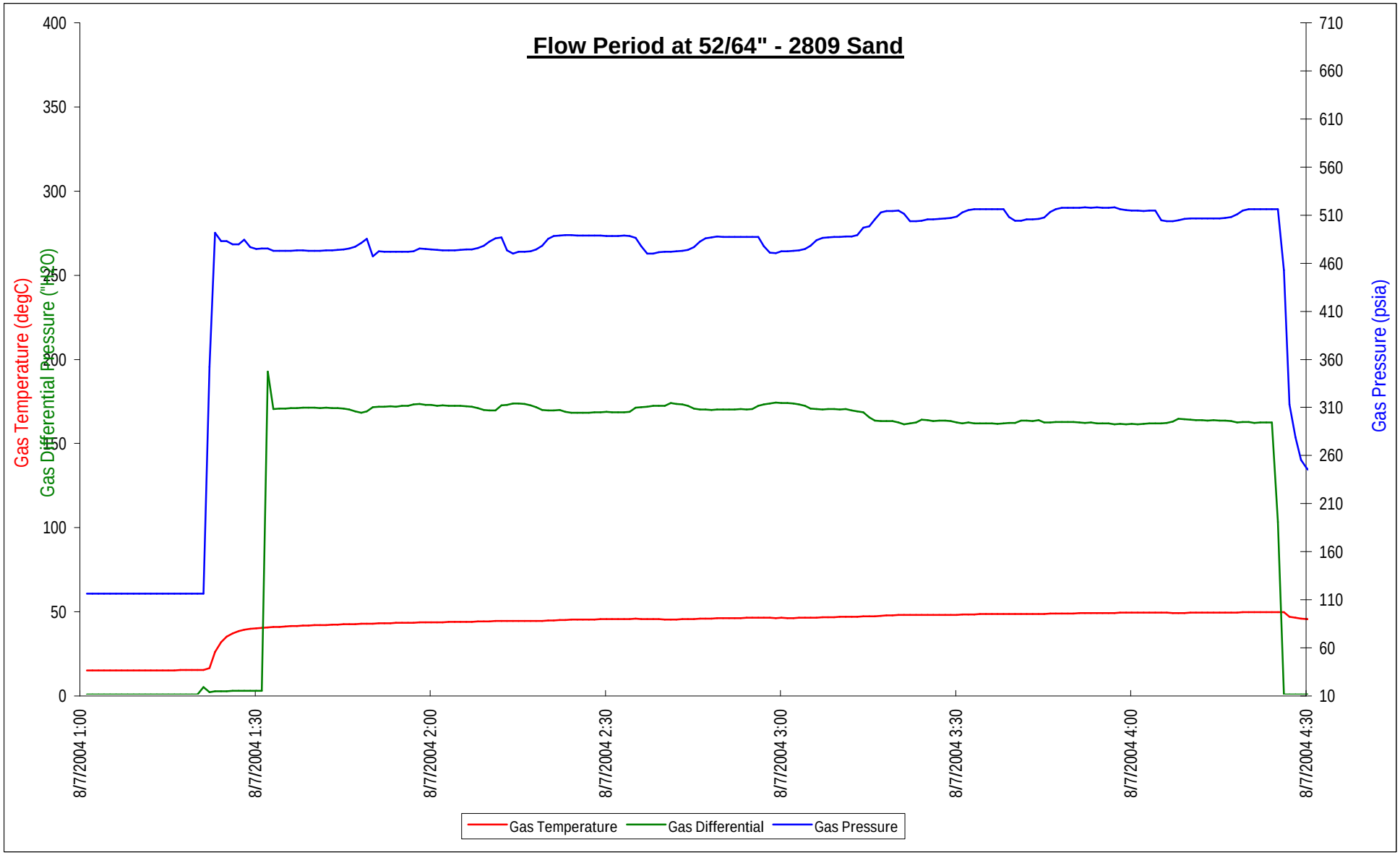
From Date Time : 30-Jul-04 12:00 To Date Time : 30-Jul-04 16:33



Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Separator Plot	Gas 2 2004-12

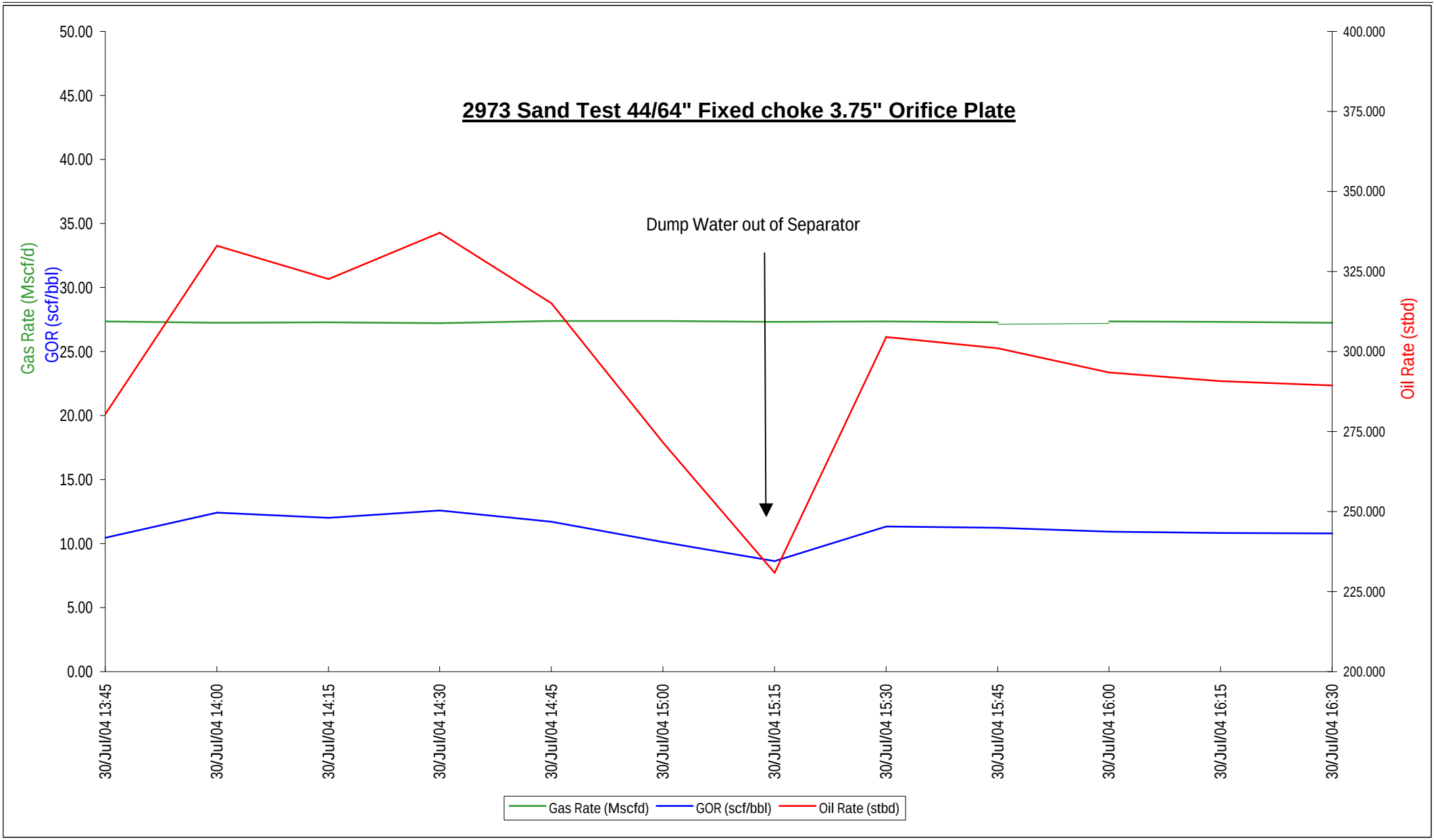
From Date Time : 01-Aug-04 21:55 To Date Time : 02-Aug-04 01:25




Flow Period at 52/64" - 2809 Sand
Gas Temperature (degC)
Gas Differential Pressure ("H2O)
Gas Pressure (psia)
400
350
300
250
200
150
100
50
0
710
660
610
560
510
460
410
360
310
260
210
160
110
60
10
8/7/2004 1:00
8/7/2004 1:30
8/7/2004 2:00
8/7/2004 2:30
8/7/2004 3:00
8/7/2004 3:30
8/7/2004 4:00
8/7/2004 4:30
Gas Temperature
Gas Differential
Gas Pressure

Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Flow Rate Plot	Flow Rate 1 2004-12

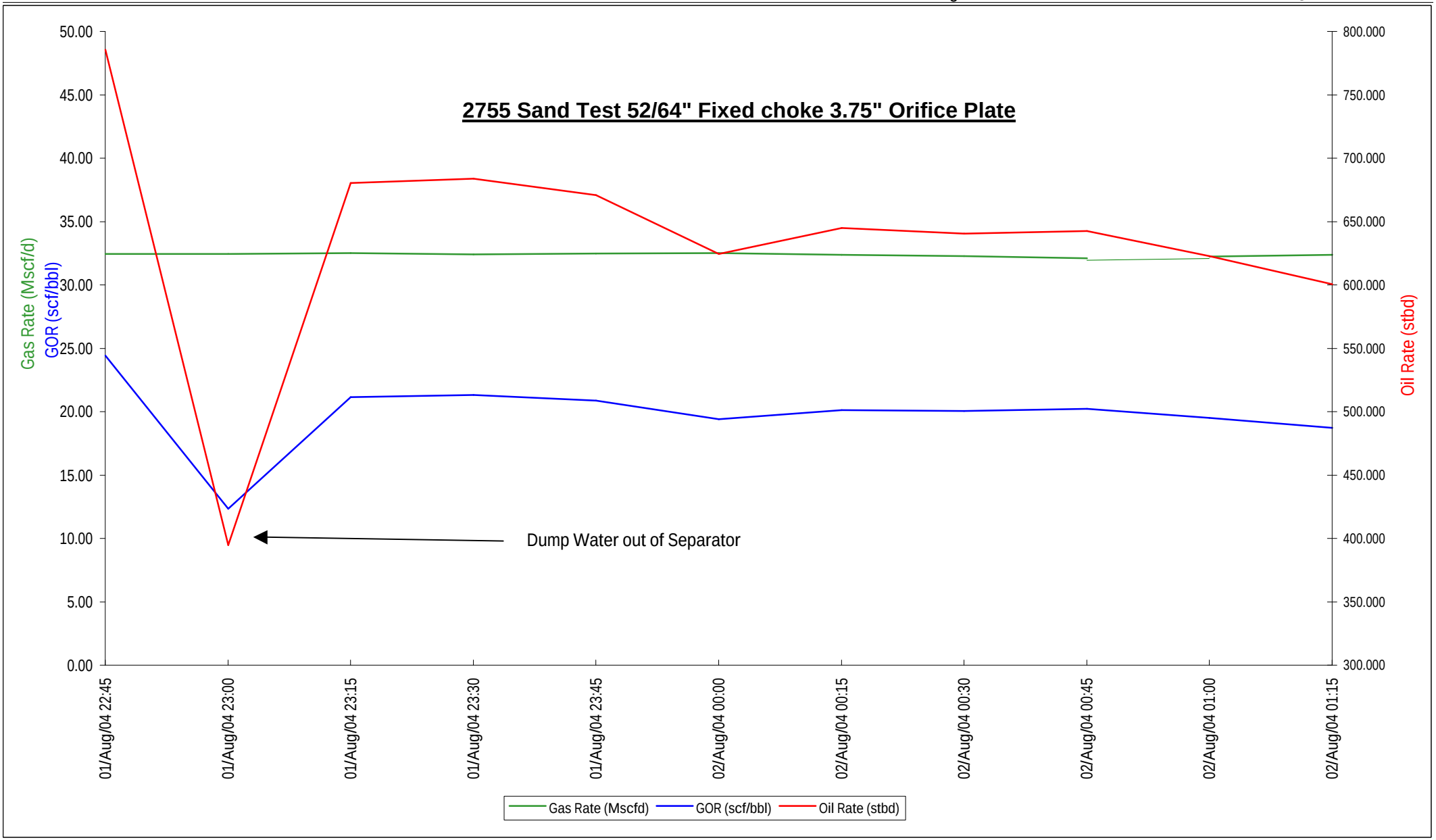
From Date Time : 30-Jul-04 13:45 To Date Time : 30-Jul-04 16:30



Separator Plot

Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Flow Rate Plot	Flow Rate 2 2004-12

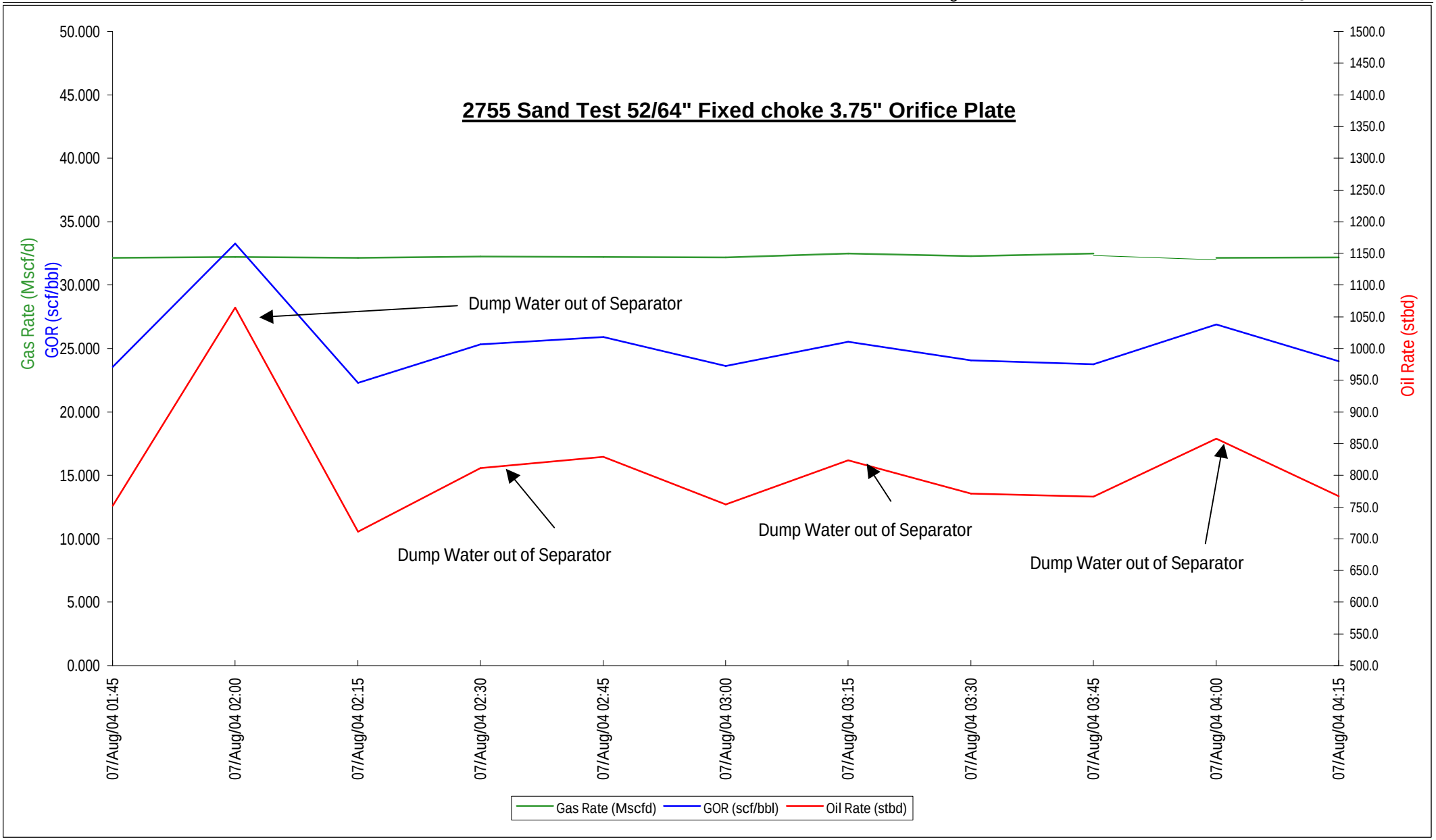
From Date Time : 01-Aug-04 22:45 To Date Time : 02-Aug-04 01:15



Separator Plot

Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Flow Rate Plot	Flow Rate 2 2004-12

From Date Time : 07-Aug-04 01:45 To Date Time : 07-Aug-04 04:15



Separator Plot

Schlumberger

WELL TESTING REPORT

OIL COMPUTATION RESULTS

Company	:	Origin Energy Resources Limited
Field / Well / Zone	:	Yolla / Yolla-4 / Test #1
Country	:	Australia
Test date	:	30-Sep-03 to 15-Oct-03
Report number	:	2004-07
Region / Distr / base	:	MEA / APG / AUF

Company representative	:	A. Wenk
Schlumberger representative	:	G. Mullins

Liquid Production Rate Measurement

I) MEASUREMENT WITH A TANK.

Vo = V x K x (1 - BSW/100) (This method was not used)

Vo : Net oil volume at 60 degF and atmospheric pressure
V : Gross oil/condensate volume measured by tank gauging
K : Volume correction factor to be applied between the tank temperature during gauging measurement and 60 degF
BSW : Basic sediment and water

II) MEASUREMENT WITH A METER (This method was not used)

Shrinkage factor is estimated from KATZ Data, it was cross-checked with factor obtained from Shrinkage Tester.

Vo = Vs x f x (1 - Shr) x K x (1 - BSW/100) (This method was not used)

Vo : Net oil volume at 60 degF and atmospheric pressure
Vs : Gross oil/condensate volume measured by meter under separator conditions
f : Meter correction factor = $\frac{\text{Volume measured in tank}}{\text{Volume measured by meter}}$
Shr : Percentage of oil/condensate volume reduction between separator and tank conditions, reported to oil/condensate volume at separator conditions*
K : Volume correction factor to be applied between the final temperature during shrinkage measurement and 60 degF*
BSW : Basic sediment and water (taken at the oil/condensate separator outlet - if running in 3 phase)
: Basic sediment and water (taken at the oil/condensate separator inlet or upstream - if running in 2 phase)

* NOTE: In the calculation Shr is adjusted back to 60 degF, therefore K =1 (or not used)

Shrinkage factor is measured with a tank. (This method was used)

Vo = Vs x (1 - SHR') x K x (1 - BSW/100)

Vwater = Vs x CMF x BSW/100

Vo, Vs, K and BSW : Same as measured with a tester
(1 - SHR') : Shrinkage factor including meter correction factor obtained from tank.

BSW : Basic sediment and water (taken at the oil/condensate separator outlet - if running in 3 phase)
: Basic sediment and water (taken at the oil/condensate separator inlet or upstream - if running in 2 phase)
* BSW from upstream of separator was used for the calculation.

Water Rate and cumulative calculation (This method was not used)

*Water rate and cumulative are determined from BSW readings applied to the gross rate times Combined Meter Factor.

Schlumberger

Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	CONDENSATE CALCULATION SHEET METER	CONDENSATE 1 2004-07

Date - Time		Meter		(1-Shr')			(1-Shr)	Tank	Condensate Gravity					Net STO	Nets STO	Cumul. STO	Water	Cumul.
Time	Interval	Reading	Vs	Factor	BSW	V'o	Factor	Temp.	Gravity	Temp.	Gravity	Gravity	K	Vol (Vo)	Prod. Rate	Production	Rate	H2O Prod.
	mins	bbl	bbl		%	bbl		degC	SG/API	degC	Sg60	API60		bbl	bbl/d	bbl	bbl/d	bbl
00-Jan-00																		
30-Jul-04						(TEST 2973 SAND)												
12:08		Pass flow through Separator on 48/64" fixed choke												(Cumul. Vol. since passing through separator)		0		0
13:40	92	29.11	Initial Meter Reading												Estimated	17.9		7.7
13:45	5	30.83	1.72	0.815	30	0.98	1	25	0.803	20	0.806	44.01	0.9904	0.97	279.9	18.9	121	8.2
14:00	15	36.55	5.72	0.815	25	3.50	1	25	0.803	20	0.806	44.01	0.9904	3.46	332.4	22.3	112	9.3
14:15	15	42.09	5.54	0.815	25	3.39	1	25	0.803	20	0.806	44.01	0.9904	3.35	322.0	25.7	108	10.5
14:30	15	47.88	5.79	0.815	25	3.54	1	25	0.803	20	0.806	44.01	0.9904	3.51	336.5	29.2	113	11.6
14:45	15	53.29	5.41	0.815	25	3.31	1	25	0.803	20	0.806	44.01	0.9904	3.28	314.4	32.5	106	12.7
15:00	15	57.09	4.60	0.815	24	2.85	1	25	0.803	20	0.806	44.01	0.9904	2.82	270.9	35.3	86	13.6
15:15	15	61.00	3.91	0.815	24	2.42	1	25	0.803	20	0.806	44.01	0.9904	2.40	230.3	37.7	73	14.4
15:30	15	66.16	5.16	0.815	24	3.20	1	25	0.803	20	0.806	44.01	0.9904	3.17	303.9	40.8	97	15.4
15:45	15	71.26	5.10	0.815	24	3.16	1	25	0.803	20	0.806	44.01	0.9904	3.13	300.3	44.0	96	16.4
16:00	15	76.30	5.04	0.815	25	3.08	1	25	0.803	20	0.806	44.01	0.9904	3.05	292.9	47.0	99	17.4
16:15	15	81.29	4.99	0.815	25	3.05	1	25	0.803	20	0.806	44.01	0.9904	3.02	290.1	50.0	98	18.5
16:30	15	86.26	4.97	0.815	25	3.04	1	25	0.803	20	0.806	44.01	0.9904	3.01	288.7	53.0	97	19.5
16:34	4	By-pass separator.																
01-Aug-04						(TEST 2755 SAND)												
21:42		Pass flow through Separator on 52/64" fixed choke												(Cumul. Vol. since passing through separator)		0.0		0.0
22:31	49	86.96	Initial Meter Reading												Estimated	16.0		6.0
22:35	4	88.47	2.21	0.815	27	1.31	1	24	0.782	18	0.783	49.12	0.9909	1.30	469.0	17.3	175	6.4
22:45	10	97.62	9.24	0.815	27	5.49	1	24	0.782	18	0.783	49.12	0.9909	5.44	784.0	22.7	293	8.5
23:00	15	103.97	6.95	0.815	27	4.13	1	24	0.782	18	0.783	49.12	0.9909	4.10	393.3	26.8	147	10.0

Liquid Computation Results

Schlumberger

Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	CONDENSATE CALCULATION SHEET METER	CONDENSATE 2 2004-07

Date - Time		Meter		(1-Shr')			(1-Shr)	Tank	Condensate Gravity					Net STO	Nets STO	Cumul. STO	Water	Cumul.
Time	Interval	Reading	Vs	Factor	BSW	V'o	Factor	Temp.	Gravity	Temp.	Gravity	Gravity	K	Vol (Vo)	Prod. Rate	Production	Rate	H2O Prod.
	mins	bbl	bbl		%	bbl		degC	SG/API	degC	Sg60	API60		bbl	bbl/d	bbl	bbl/d	bbl
01-Aug-04																		
23:15	15	113.92	9.95	0.815	12	7.14	1	24	0.782	18	0.783	49.12	0.9909	7.07	678.8	33.9	93	11.0
23:30	15	123.92	10.00	0.815	12	7.17	1	24	0.782	18	0.783	49.12	0.9909	7.11	682.2	41.0	94	12.0
23:45	15	133.73	9.81	0.815	12	7.04	1	24	0.782	18	0.783	49.12	0.9909	6.97	669.3	48.0	92	12.9
02-Aug-04	15	143.07	9.34	0.815	14	6.55	1	24	0.783	20	0.786	48.55	0.9909	6.49	622.8	54.4	102	14.0
0:15	15	152.72	9.65	0.815	14	6.76	1	24	0.783	20	0.786	48.55	0.9909	6.70	643.4	61.1	106	15.1
0:30	15	162.53	9.81	0.815	16	6.72	1	24	0.783	20	0.786	48.55	0.9909	6.66	638.9	67.8	123	16.4
0:45	15	172.37	9.84	0.815	16	6.74	1	24	0.783	20	0.786	48.55	0.9909	6.68	640.8	74.5	123	17.6
1:00	15	181.91	9.54	0.815	16	6.53	1	24	0.783	20	0.786	48.55	0.9909	6.47	621.3	80.9	119	18.9
1:15	15	190.79	8.88	0.815	13	6.30	1	24	0.783	20	0.786	48.55	0.9909	6.24	599.0	87.2	90	19.8
1:26		Shut in well at choke manifold																
									(TEST 2809 SAND)									
07-Aug-04																		
1:20	80	Pass flow through Separator on 52/64" fixed choke																
1:30	10	199.69	Initial Meter Reading															
1:45	15	210.11	10.4	0.875	14	7.8	1	20	0.781	17	0.782	49.52	0.9952	7.8	749.1	7.8	123	1.3
2:00	15	224.12	14.8	0.875	14	11.1	1	20	0.781	17	0.782	49.52	0.9952	11.1	1061.1	18.9	174	3.1
2:15	15	233.97	9.8	0.875	14	7.4	1	20	0.781	17	0.782	49.52	0.9952	7.4	708.1	26.2	116	4.3
2:30	15	243.67	10.9	0.875	11	8.5	1	20	0.778	25	0.785	48.86	0.9952	8.4	808.0	34.6	100	5.3
2:45	15	253.80	11.1	0.875	11	8.6	1	20	0.778	25	0.785	48.86	0.9952	8.6	825.9	43.3	103	6.4
3:00	15	263.89	10.1	0.875	11	7.9	1	20	0.782	16	0.782	49.37	0.9952	7.8	750.7	51.1	93	7.4
3:15	15	274.17	11.0	0.875	11	8.6	1	20	0.782	16	0.782	49.37	0.9952	8.5	820.6	59.6	102	8.4
3:30	15	284.61	10.4	0.875	12	8.0	1	20	0.782	16	0.782	49.37	0.9952	8.0	768.0	67.6	105	9.5
3:45	15	294.99	10.4	0.875	12	8.0	1	20	0.779	21	0.783	49.31	0.9952	8.0	763.6	75.6	105	10.6
4:00	15	305.18	11.6	0.875	12	8.9	1	20	0.779	21	0.783	49.31	0.9952	8.9	854.7	84.5	117	11.8

Liquid Computation Results

Schlumberger

Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	CONDENSATE CALCULATION SHEET METER	CONDENSATE 3 2004-07

Date - Time		Meter		(1-Shr')			(1-Shr)	Tank	Condensate Gravity					Net STO	Nets STO	Cumul. STO	Water	Cumul.
Time	Interval	Reading	Vs	Factor	BSW	V'o	Factor	Temp.	Gravity	Temp.	Gravity	Gravity	K	Vol (Vo)	Prod. Rate	Production	Rate	H2O Prod.
	mins	bbl	bbl		%	bbl		degC	SG/API	degC	Sg60	API60		bbl	bbl/d	bbl	bbl/d	bbl
07-Aug-04																		
4:15	15	315.56	10.4	0.875	12	8.0	1	20	0.779	21	0.783	49.31	0.9952	8.0	763.8	92.4	105	12.9
4:24	9	Shut in well at choke manifold																

Liquid Computation Results

Schlumberger

WELL TESTING REPORT

GAS COMPUTATION RESULTS

Company	:	Origin Energy Resources Limited
Field / Well / Zone	:	Yolla / Yolla-4 / Test #1
Country	:	Australia
Test date	:	30-Sep-03 to 15-Oct-03
Report number	:	2004-07
Region / Distr / base	:	MEA / APG / AUF

Company representative	:	A. Wenk
Schlumberger representative	:	G. Mullins

Gas Production Rate Measurement by Orifice Meter

Reference is made to the rules and coefficients given in AGA gas measurement Committee Report No. 3 for orifice metering.

I) EQUATIONS

$$Q = C \sqrt{Hw \times Pf}$$

Q : Production rate at reference conditions
C : Orifice flow coefficient*
Hw : Differential pressure in inches of water
Pf : Flowing pressure in psiA

$$C = Fu \times Fb \times Fg \times Y \times Ftf \times Fpv$$

Fu : Unit conversion factor in desired reference conditions
Fb : Basic orifice factor (Q in Cu. ft/day)
Fg : Specific gravity factor
Y : Expansion factor
Ftf : Flowing temperature factor
Fpv : Supercompressibilty factor (estimated)

*C is computed with 6 decimal points and could differ slightly from hand calculator results

Remarks
Fm : Manometer factor is equal one since only bellows type meter are used.
Fr : Reynolds factor is considered to be one.

TABLE of Fu FACTOR

UNITS	REFERENCE CONDITIONS			
	60 degF 14.73 psia	0 degC 760 mm Hg*	15 degC 760 mm Hg*	15 degC 750 mm Hg*
Cu. ft/hr	1	0.9483	1.0004	1.0137
Cu. ft/D	24	22.76	24.009	24.329
m3/hr	0.02832	0.02685	0.02833	0.0287
m3/D	0.6796	0.6445	0.6799	0.6889

** mercury at 32 F*

II) METER DATA

ID of meter tube : 5.761"

III) SUPERCOMPRESSIBILITY FACTOR Fpv

The coefficient is calculated from AGA NX 19 manual for natural gas free of air, CO2 and H2S. The method used to correct Fpv for CO2 and H2S is based on Wichert and Aziz data (Hydrocarbon Processing - May 1972).
Pressure and Specific gravity are adjusted according to percentages.

Schlumberger

Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	GAS CALCULATION SHEET	GAS 2004-07

Pipe Dia. 5.761

Date - Time		Flowing	Pf	Hw	SQRT	Orifice	Gas	CO2	H2S	Fb	Fg	Y2	Ftf	Fpv	C	Gas Prod.	Cumulative
Time	Interval	Temp.	Absolute		(Pf x Hw)	Diameter	Gravity									Rate : Q	Production
	mins	degC	psiA	" of H2O		Inches	Air=1	%	ppm							MMscfd	MMscf
30-Jul-04																	
30-Jul-04					(TEST 2973 SAND)												
12:08		Pass flow through Separator on 44/64" fixed choke						Note C02 and H2S readings supplied by PetroLab									0.000
13:03	55	Lower 3.75 " orifice plate.						CO 2 & H2S not included in the computation.									1.030
13:05	2	37	491	208	319.57	3.750	0.825	18	60	3172.09	1.1010	1.0021	0.9648	1.0410	84359	26.959	1.067
13:15	10	38	494	214	325.14	3.750	0.825	18	60	3172.09	1.1010	1.0021	0.9633	1.0408	84210	27.380	1.257
13:30	15	40	494	214	325.14	3.750	0.825	18	60	3172.09	1.1010	1.0021	0.9602	1.0398	83865	27.268	1.541
13:45	15	42	495	214	325.47	3.750	0.825	18	60	3172.09	1.1010	1.0021	0.9572	1.0390	83531	27.187	1.824
14:00	15	44	496	214	325.80	3.750	0.825	18	60	3172.09	1.1010	1.0021	0.9541	1.0382	83202	27.107	2.107
14:15	15	45	496	215	326.56	3.750	0.825	18	60	3172.09	1.1010	1.0021	0.9526	1.0377	83037	27.117	2.389
14:30	15	47	496	215	326.56	3.750	0.820	18	60	3172.09	1.1043	1.0021	0.9497	1.0363	82918	27.078	2.671
14:45	15	48	497	218	329.16	3.750	0.820	18	60	3172.09	1.1043	1.0022	0.9482	1.0360	82765	27.243	2.955
15:00	15	49	498	218	329.49	3.750	0.820	18	40	3172.09	1.1043	1.0022	0.9467	1.0357	82609	27.219	3.239
15:15	15	50	498	218	329.49	3.750	0.820	18	40	3172.09	1.1043	1.0022	0.9452	1.0353	82450	27.166	3.522
15:30	15	50	499	218	329.78	3.750	0.820	18	40	3172.09	1.1043	1.0022	0.9452	1.0353	82454	27.192	3.805
15:45	15	51	499	218	329.78	3.750	0.820	18	40	3172.09	1.1043	1.0022	0.9438	1.0350	82297	27.140	4.088
16:00	15	52	501	219	331.24	3.750	0.820	18	40	3172.09	1.1043	1.0022	0.9423	1.0347	82151	27.212	4.371
16:15	15	53	501	219	331.22	3.750	0.820	18	40	3172.09	1.1043	1.0022	0.9409	1.0343	81993	27.158	4.654
16:30	15	54	501	219	331.22	3.750	0.820	18	40	3172.09	1.1043	1.0022	0.9394	1.0339	81838	27.107	4.936
16:34	4	By-pass separator.															
01-Aug-04					(TEST 2755 SAND)												
21:42		Pass flow through Separator on 52/64" fixed choke															0.000
22:24	42	Lower 3.75 " orifice plate.						Note C02 and H2S readings supplied by PetroLab									0.947
22:30	6	36	497	303	388.06	3.750	0.846	19.5	35	3172.09	1.0872	1.0030	0.9664	1.0432	83699	32.480	1.083
22:45	15	38	497	302	387.42	3.750	0.846	19.5	35	3172.09	1.0872	1.0030	0.9633	1.0422	83348	32.291	1.419

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Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	GAS CALCULATION SHEET	GAS 2004-07

Pipe Dia. 5.761

Date - Time		Flowing	Pf	Hw	SQRT	Orifice	Gas	CO2	H2S	Fb	Fg	Y2	Ftf	Fpv	C	Gas Prod.	Cumulative
Time	Interval	Temp.	Absolute		(Pf x Hw)	Diameter	Gravity									Rate : Q	Production
	mins	degC	psiA	" of H2O		Inches	Air=1	%	ppm							MMscfd	MMscf
01-Aug-04																	
23:00	15	38	497	302	387.42	3.750	0.846	19.5	35	3172.09	1.0872	1.0030	0.9633	1.0422	83348	32.291	1.755
23:15	15	39	496	305	388.95	3.750	0.846	19.5	35	3172.09	1.0872	1.0031	0.9617	1.0416	83171	32.349	2.092
23:30	15	40	495	305	388.56	3.750	0.846	19.5	35	3172.09	1.0872	1.0031	0.9602	1.0411	82992	32.247	2.428
23:45	15	41	496	307	390.22	3.750	0.846	19.5	35	3172.09	1.0872	1.0031	0.9587	1.0407	82830	32.322	2.765
02-Aug-04	15	42	497	308	391.25	3.750	0.846	19.5	35	3172.09	1.0872	1.0031	0.9572	1.0403	82669	32.344	3.102
0:15	15	43	497	307	390.61	3.750	0.846	19.5	35	3172.09	1.0872	1.0031	0.9556	1.0398	82500	32.226	3.438
0:30	15	43	497	308	391.25	3.750	0.856	19.5	35	3172.09	1.0808	1.0031	0.9556	1.0410	82112	32.126	3.772
0:45	15	44	495	307	389.83	3.750	0.856	19.5	35	3172.09	1.0808	1.0031	0.9541	1.0404	81931	31.939	4.105
1:00	15	44	495	310	391.73	3.750	0.856	19.5	35	3172.09	1.0808	1.0031	0.9541	1.0404	81934	32.096	4.439
1:15	15	44	496	312	393.39	3.750	0.856	19.5	35	3172.09	1.0808	1.0031	0.9541	1.0405	81942	32.235	4.775
1:26	11	Shut in well at choke manifold.															
07-Aug-04					(TEST 2809 SAND)												
1:20		Pass flow through Separator on 52/64" fixed choke															
1:32	12	Lower 4.25 " orifice plate.						Note C02 and H2S readings supplied by PetroLab									0.000
1:35	3	40	471	170	282.97	4.250	0.854	18.5	30	4354.76	1.0821	1.0014	0.9602	1.0407	113171	32.024	0.067
1:45	10	42	474	170	283.87	4.250	0.854	18.5	30	4354.76	1.0821	1.0014	0.9572	1.0400	112739	32.003	0.289
2:00	15	43	472	172	284.93	4.250	0.854	18.5	30	4354.76	1.0821	1.0014	0.9556	1.0394	112494	32.053	0.623
2:15	15	45	471	173	285.45	4.250	0.854	18.5	30	4354.76	1.0821	1.0014	0.9526	1.0384	112035	31.981	0.956
2:30	15	45	487	168	286.03	4.250	0.854	18.5	30	4354.76	1.0821	1.0013	0.9526	1.0398	112179	32.087	1.290
2:45	15	45	481	170	285.95	4.250	0.854	18.5	32	4354.76	1.0821	1.0013	0.9526	1.0393	112125	32.063	1.624
3:00	15	45	471	173	285.45	4.250	0.852	18.5	32	4354.76	1.0834	1.0014	0.9526	1.0382	112143	32.011	1.958
3:15	15	47	504	165	288.37	4.250	0.852	18.5	32	4354.76	1.0834	1.0012	0.9502	1.0404	112078	32.320	2.294
3:30	15	47	511	161	286.83	4.250	0.852	18.5	32	4354.76	1.0834	1.0012	0.9497	1.0408	112048	32.139	2.629
3:45	15	48	516	162	289.12	4.250	0.852	18.5	32	4354.76	1.0834	1.0012	0.9482	1.0408	111869	32.344	2.966
4:00	15	49	513	160	286.50	4.250	0.852	18.5	32	4354.76	1.0834	1.0012	0.9467	1.0400	111617	31.978	3.299
4:15	15	49	506	163	287.19	4.250	0.852	18.5	32	4354.76	1.0834	1.0012	0.9467	1.0394	111559	32.039	3.633
4:24	9	Shut in well at choke manifold.															

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WELL TESTING REPORT

ANNEXES

Company	:	Origin Energy Resources Limited
Field / Well / Zone	:	Yolla / Yolla-4 / Test #1
Country	:	Australia
Test date	:	30-Sep-03 to 15-Oct-03
Report number	:	2004-07
Region / Distr / base	:	MEA / APG / AUF

Company representative	:	A. Wenk
Schlumberger representative	:	G. Mullins

Quality Check

1. All electronic pressure sensors check against a dead weight tester before the job.
2. Barton chart recorder is checked against a digital mamometer and the STAN system
3. Fluid meter's are Calibrated against surge tank.
4. All flow rate calculation's are checked against the DART software, an external excel spreadsheet calculation and manual calculations using API charts.
5. Electronic sensor's are continuously checked against pressure gauges, a dead weight tester and alcohol thermometers during the job.

Carry over effect in the separator

The separator is set up to give 'no' carry over. This is done by the operators on site and is usually done by checking a drain valve on the bottom of the gas meter for liquids whilst setting up. This is the easiest place to sample for liquid being carried over in the gas stream. Obviously depending on the rates and temperatures you can experience drop out in the gas stream due to condensation but this is the only real way you can trim the separator on-line. Always more of an issue on oil wells where you have a high liquid level. For gas wells the liquid level is low so carry over is not common.

The Schlumberger standard separator is good for rates up to 60MMscf/day. The flow rates from this job was well within the operating envelope of the vessel.

As a further check a liquids a KO drum can be installed in the gas line before going out to flare.

Operating temperatures during the job would not incur flashing off of liquids and condensing of gas vapours inside the vessel would have been to expectations.

Schlumberger	Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Meter 1 2004-12

METER / SHRINKAGE CALIBRATION INFORMATION SHEET With Water

No	Date / Time	Choke Size "/64	Meter Reading bbl	Tank Reading cm	Tank Factor	Meter Factor **	Final Temp. degC	Media
1	Oil Floco - 1.0 bbl/min 28-Jul-04							
		n/a	773.1	7				
		n/a	778.1	35	0.176	0.986	n/a	water
	Total		5	4.93				
2	Oil Floco - 0.5 bbl/min 28-Jul-04							
		n/a	780.5	35				
		n/a	785.5	65	0.176	1.056	n/a	water
	Total		5	5.28				
3	Oil Rotron - 1.5 bbl/min 28-Jul-04							
		n/a	3582.5	65				
		n/a	3588	98.5	0.176	1.072	n/a	water
	Total		5.5	5.90				

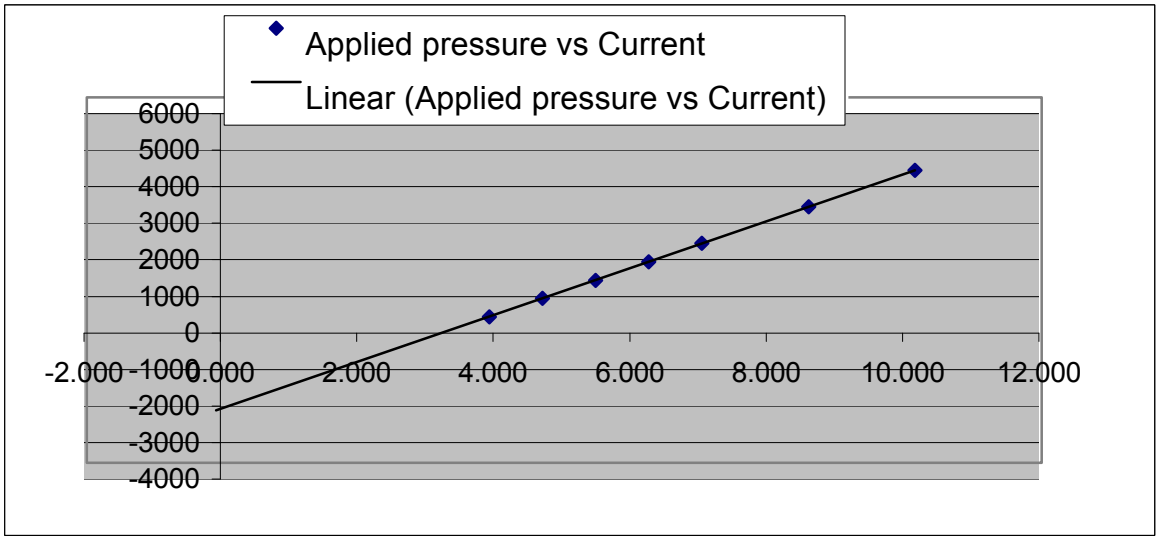
STAN SENSOR CALIBRATION

STAF-800 Channel A1

Sensor Type : Delta Control STPS-C
Sensor Serial No : 21491
Calibartion Date : 26-Jul-04

Measure Name: WHP

Item	Current	Applied Pressure	Applied Pressure	Different (Current)	Different (pressure)	SLOPE C1	SLOPE C1 (Mean value)	INTERCEPT C0	Measured Pressure
	mA	psi	psiA						psiA
1	3.898	0	15						15
2	4.678	500	515	0.780	500	641.02564			516
3	5.457	1000	1015	0.779	500	641.84852			1015
4	6.239	1500	1515	0.782	500	639.38619	**640.85**	**-2498.02**	1515
5	7.021	2000	2015	0.782	500	639.38619			2017
6	8.581	3000	3015	1.560	1000	641.02564			2517
7	10.138	4000	4015	1.557	1000	642.26076			3017
8									
9									
10									
11									
12									
13									
14									
15									
13									



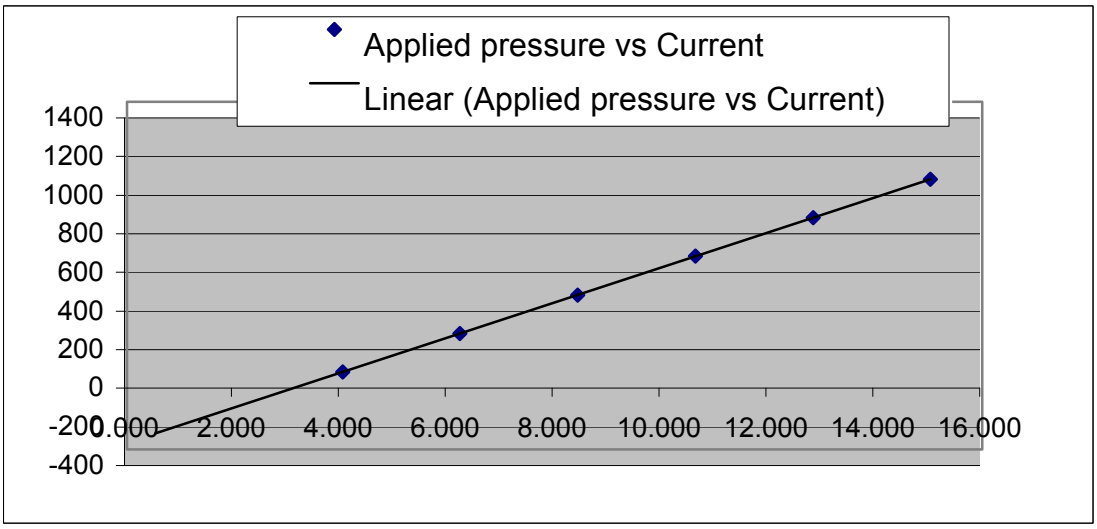
STAN SENSOR CALIBRATION STPS-A

STAF-819 Channel B1

Sensor Type : Sensotec 1.5K
Sensor Serial N : 923449
Calibartion Date : 26/7/04

Measure Name: GASP

Item	Current	Applied Pressure	Applied Pressure	Different (Current)	Different (pressure)	SLOPE C1	SLOPE C1 (Mean value)	INTERCEPT C0	Measured Pressure
	mA	psi	psiA						psiA
1	4.030	0	15						15
2	6.232	200	215	2.202	200	90.82652			215
3	8.433	400	415	2.201	200	90.86779	**90.86660**	**-351.2**	416
4	10.635	600	615	2.202	200	90.82652			616
5	12.835	800	815	2.200	200	90.90909			816
6	15.035	1000	1015	2.200	200	90.90909			1016
7									
8									
9									
10									
11									
12									
13									
14									
15									
13									

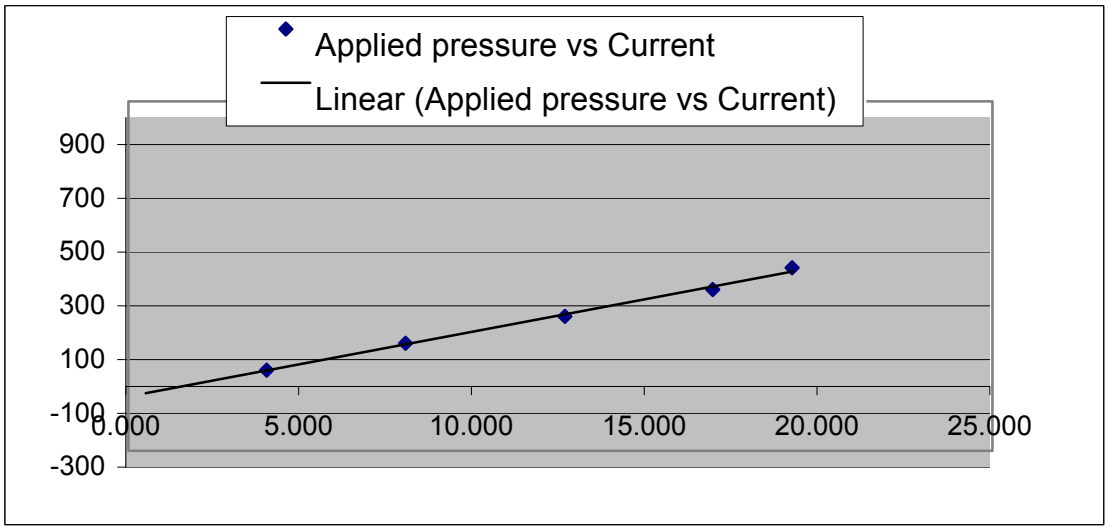


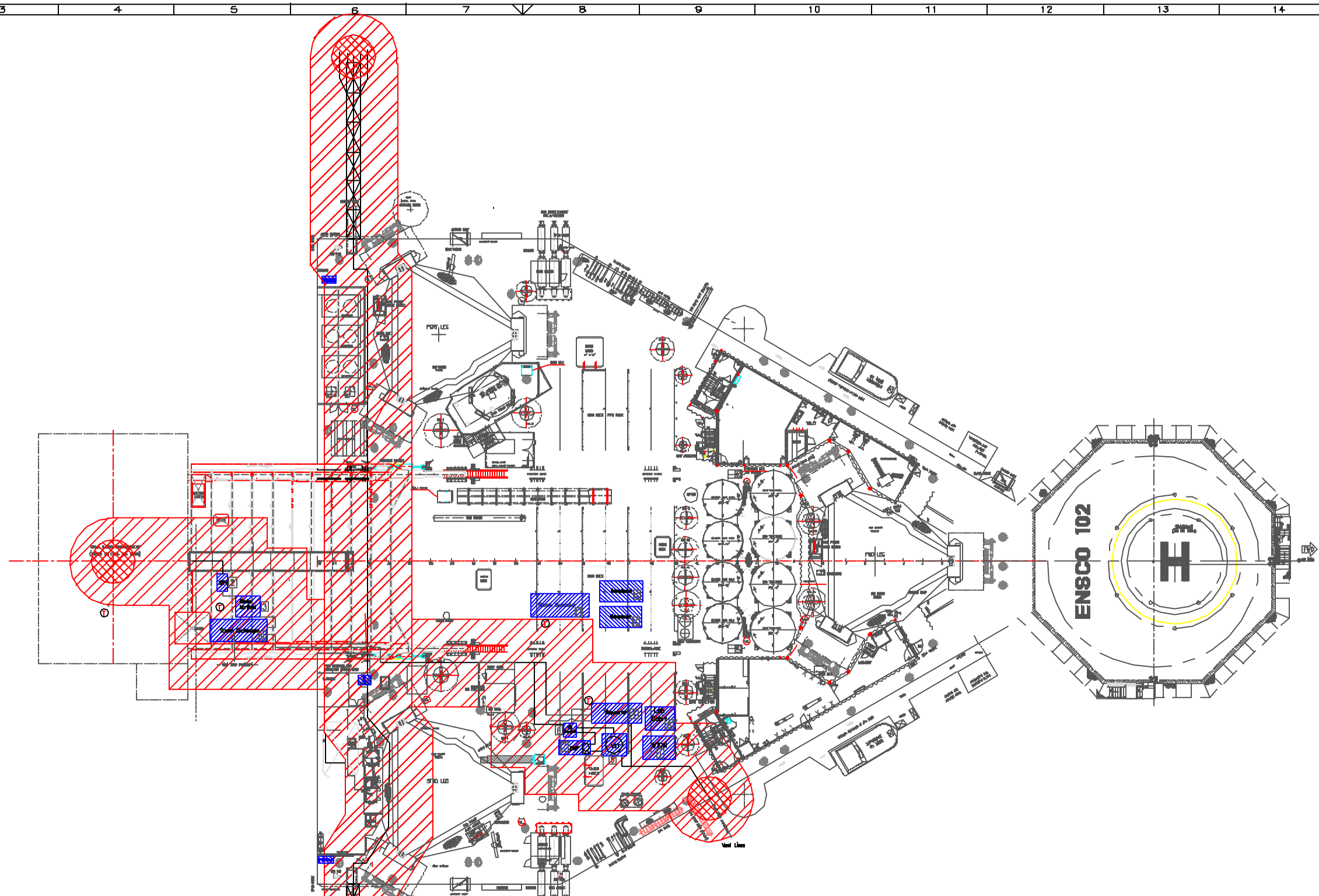
STAN SENSOR CALIBRATION differential pressure

Sensor Type : Honey STAF-819 Channel B2
Sensor Serial Nc : 3884010 (0-400" H2O) STD-930
Calibartion Date : 26/7/04

Measure Name: GASDP

Item	Current	Applied DP	Diff Pressure	Different (Current)	Different (pressure)	SLOPE C1	SLOPE C1 (Mean value)	INTERCEPT C0	Measured DP
	mA	"water	"water		"water				"water
1	3.999	0	0						0
2	8.010	100	100	4.011	100	24.93144	**24.26142**	**-97.0**	100
3	12.630	200	200	4.620	100	21.64502			200
4	16.910	300	300	4.280	100	23.36449			300
5	19.202	380	380	2.292	80	34.90401			381
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									





ITEM	DESCRIPTION	T(°F)	P(psi)	WT(kg)	L(m)	W(m)	H(m)
1	Well Test Workshop	—	—	15000	4.57	2.43	2.4
2	ESD Shut Down Valve	250	10K	350	1.1	1.0	1.18
3	Choke Manifold	250	10K	3380	2.57	2.24	0.70
4	Separator	212	1.4K	16500	5.705	2.19	2.28
5	Surge Tank	212	0.05K	17200	2.40	2.40	6.00
6	Oil Manifold	250	1.4K	500	2.05	0.7	0.4
7	Transfer Pump	200	0.4K	3500	3.5	1.7	3.0
8	Lab Cabin	—	—	12000	5.0	2.4	2.7
9	Steam Exchanger	350	10K	12000	6.0	2.3	2.8
10	Compressor	—	0.15K	6000	3	2.2	1.8
11	Steam Generator	—	0.15K	16000	6.0	2.4	2.9
T	ESD Button						

* is wet weights

0′ 10′ 20′ 30′ 40′ 50′ 60′ 70′ FEET
0m 10m 15m 20m METRES

ZONE 1
ZONE 2
T ESD STATION

Zone 0
A place in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist is present continuously or for long periods or frequently.

Zone 1
A place in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist is likely to occur in normal operation occasionally.

Zone 2
A place in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

REV.	DATE	DESCRIPTION	DRN.	CHK.	APR.
1	07-07-04	Well Test Equipment	KD	XX	XX
0	26-06-04	DRAFT FOR COMMENT	KD	LB	DD

CONFIDENTIAL AND TRADE SECRET - DO NOT DISCLOSE, USE OR REPRODUCE WITHOUT PRIOR WRITTEN APPROVAL FROM SCHLUMBERGER

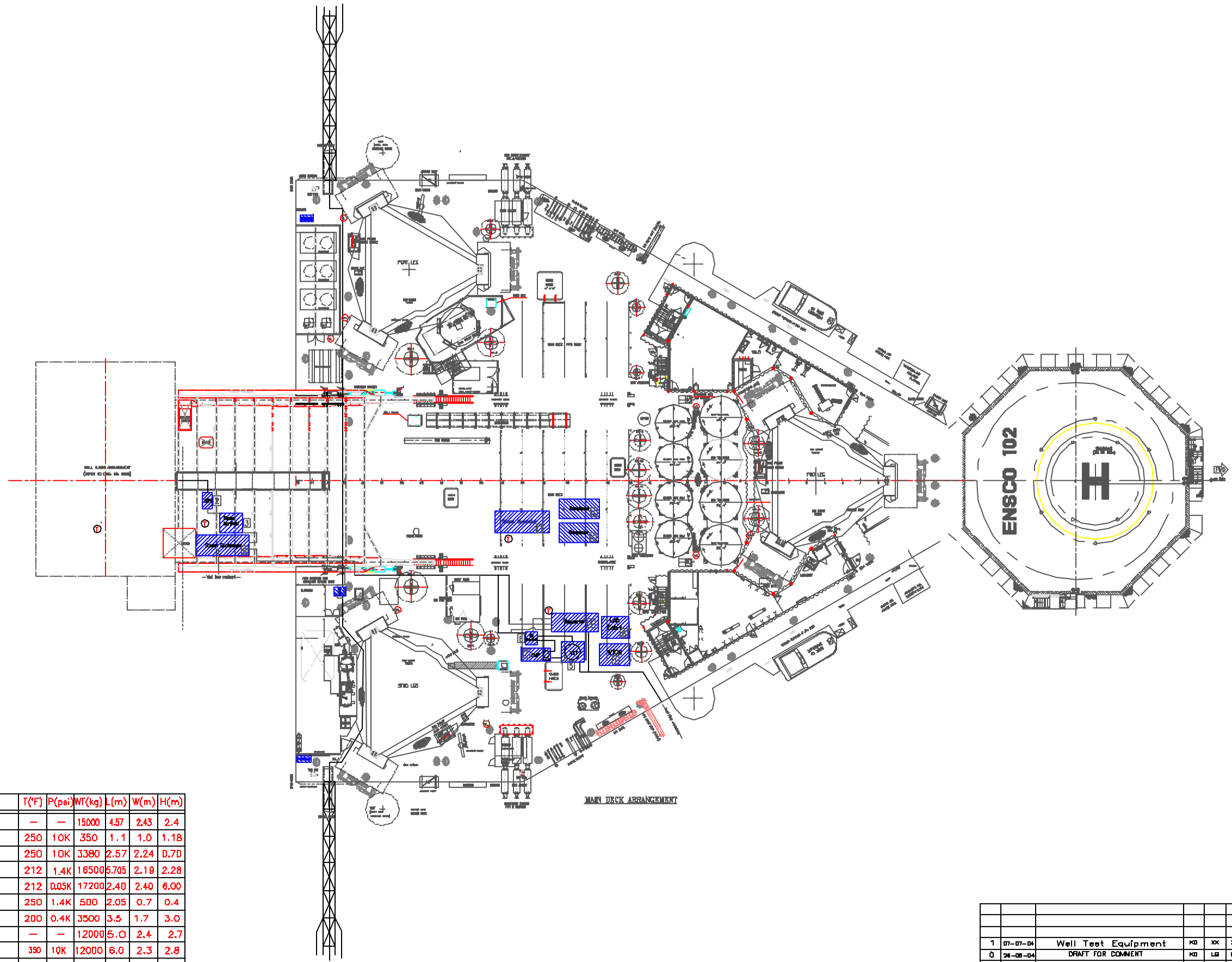
Schlumberger Oilfield Australia
Level 5, 256 St Georges Tce, Perth W.A. Australia

DRN.	KD	25-06-04
DES.		
DRG.	XXXX	XXXX
APP.	XXXX	XXXX

LAYOUT & HAZARDOUS AREA DRAWING

ORIGIN – YOLLA 3 & 4

SCALE	JOB No.	DRG No.	REV.	SHT	OF
NTS	2004-007	2004-007 L1	1	1	1



ITEM	DESCRIPTION	T(°F)	P(psi)	WT(kg)	L(m)	W(m)	H(m)
1	Well Test Workshop	—	—	15000	4.57	2.43	2.4
2	ESD Shut Down Valve	250	10K	350	1.1	1.0	1.18
3	Choke Manifold	250	10K	3380	2.57	2.24	0.70
4	Separator	212	1.4K	16500	5.705	2.19	2.28
5	Surge Tank	212	0.05K	17200	2.40	2.40	6.00
6	Oil Manifold	250	1.4K	500	2.05	0.7	0.4
7	Transfer Pump	200	0.4K	3500	3.5	1.7	3.0
8	Lab Cabin	—	—	12000	5.0	2.4	2.7
9	Steam Exchanger	350	10K	12000	6.0	2.3	2.8
10	Compressor	—	0.15K	6000	3	2.2	1.8
11	Steam Generator	—	0.15K	16000	6.0	2.4	2.9
Ⓔ	ESD Button						

* is wet weights

0' 10' 20' 30' 40' 50' 60' 70' FEET
0m 10m 15m 20m METRES

REV.	DATE	DESCRIPTION	DRN.	CHK.	APR.
1	07-07-04	Well Test Equipment	KD	XX	XX
0	26-05-04	DRAFT FOR COMMENT	KD	LB	DD

CONFIDENTIAL AND TRADE SECRET – DO NOT DISCLOSE, USE OR REPRODUCE WITHOUT PRIOR WRITTEN APPROVAL FROM SCHLUMBERGER

Schlumberger Oilfield Australia
Level 5, 256 St Georges Tce, Perth W.A. Australia

DRN.	KD	25-05-04
DES.		
DWG.	XXXX	XXXX
APP.	XXXX	XXXX

LAYOUT & HAZARDOUS AREA DRAWING

ORIGIN – YOLLA 3 & 4

SCALE	JOB No.	DWG No.	REV.	SHT. OF
NTS	2004-007	2004-007 L1	1	1 OF 1

FSV1
FSV1 HAS THE ABILITY TO BE LOCKED OPEN

F001
6 3/8" FLOWHEAD
NOMINAL SIZE – 6"
DESIGN PRESSURE – 5Kpsi
DESIGN TEMPERATURE – 250 'F
DESIGN SERVICE – H2S

HOSE
3" ODFLEXIP HOSE
NOMINAL SIZE – 3"
DESIGN PRESSURE – 10Kpsi & 7.5Kpsi
DESIGN TEMPERATURE – 250 'F
DESIGN SERVICE – H2S

V001
ESD VALVE
NOMINAL SIZE – 3"
DESIGN PRESSURE – 10Kpsi
DESIGN TEMPERATURE – 250 'F
DESIGN SERVICE – H2S

A001
CHOKE MANIFOLD
NOMINAL SIZE – 3"
DESIGN PRESSURE – 10K x 7.5Kpsi
DESIGN TEMPERATURE – 250 'F
DESIGN SERVICE – H2S

D001
STEAM EXCHANGER
NOMINAL SIZE – 3"
DESIGN PRESSURE – 5K x 5Kpsi
DESIGN TEMPERATURE – 350'F
HEATING CAPACITY – 4.5MM BTU/HR
DESIGN SERVICE – H2S

DX02
HORIZONTAL SEPARATOR
NOMINAL SIZE – 42" x 10'
DESIGN PRESSURE – 1440psi
DESIGN TEMPERATURE – 250'F
DESIGN SERVICE – H2S

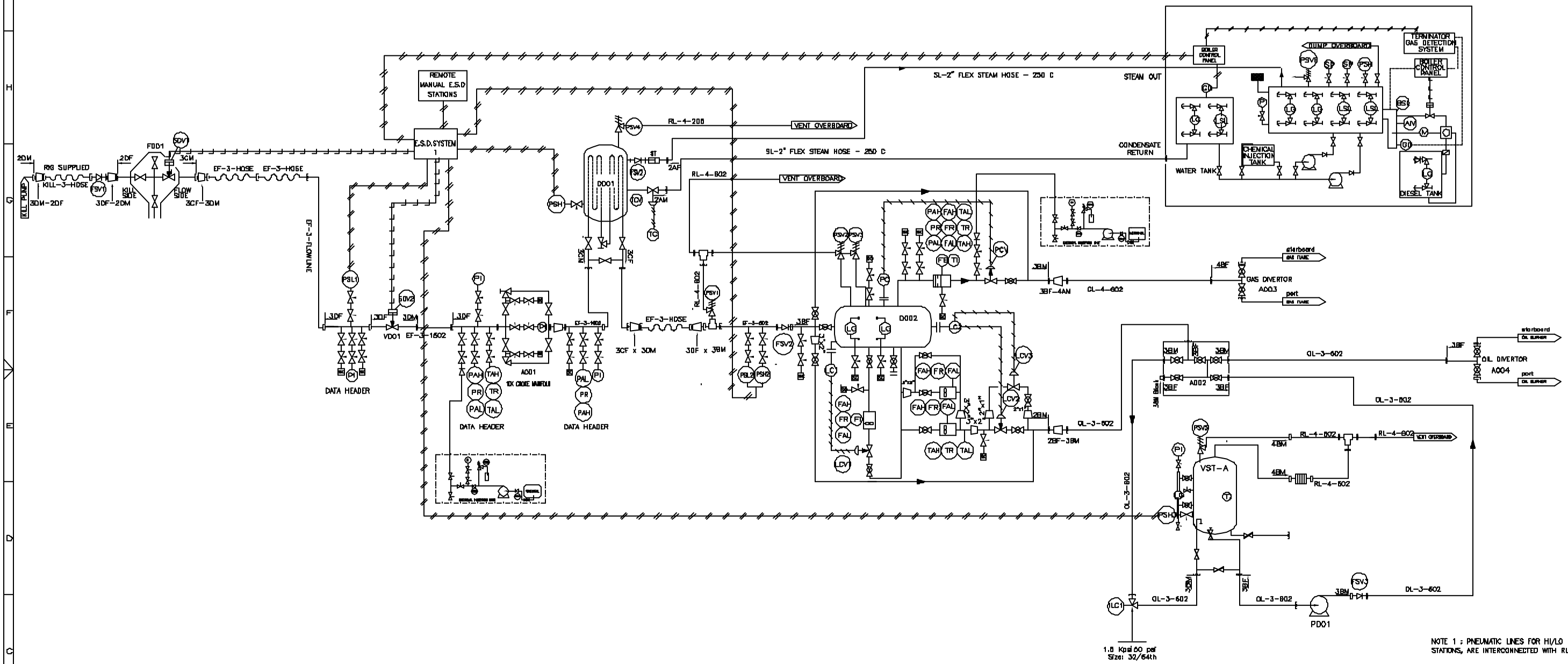
A002
OIL MANIFOLD
NOMINAL SIZE – 3"
DESIGN PRESSURE – 1,440psi
DESIGN TEMPERATURE – 250 'F
DESIGN SERVICE – H2S

VST–A
SURGE TANK
CAPACITY – 500bbl
DESIGN PRESSURE – 50psi
DESIGN TEMPERATURE – 32'F / 200'F
DESIGN SERVICE – H2S

P001
TRANSFER PUMP
TYPE – POSITIVE DISPLACEMENT
OUTLET PRESSURE – 900psi (MAX)
CAPACITY – 8000 bbl/day (MAX)
DESIGN SERVICE – H2S

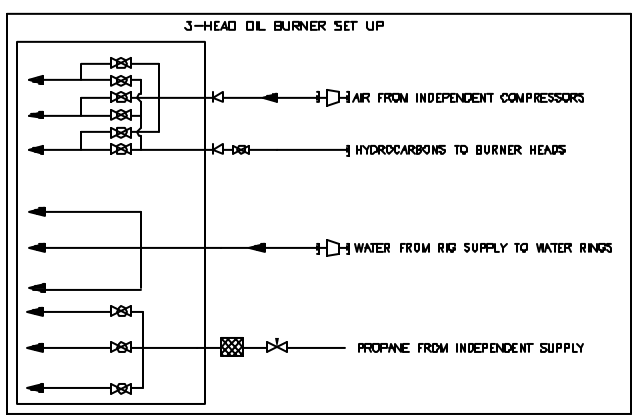
A003
GAS MANIFOLD
NOMINAL SIZE – 4"
DESIGN PRESSURE – 1,440psi
DESIGN TEMPERATURE – 250 'F
DESIGN SERVICE – H2S

A004
OIL MANIFOLD
NOMINAL SIZE – 3"
DESIGN PRESSURE – 1,440psi
DESIGN TEMPERATURE – 250 'F
DESIGN SERVICE – H2S



NOTE 1 : PNEUMATIC LINES FOR HI/LO PILOTS AND ESD STATIONS, ARE INTERCONNECTED WITH RUBBER TUBING.

NOTE 2 : SDV1 AND SDV2 ARE FAILSAFE CLOSE



SET POINTS	psi
PSV1	1260
PSV2	1260
PSV3	1260
PSV4	235
PSV5	50
PSL1	200
PSL1	200
PSL2	200
PSH1	200
PSH2	1150
PSH3	45

INSTRUMENTATION NOTATION LEGEND

PSV	PRESSURE SAFETY VALVE	LAL	LEVEL ALARM LOW
PSE	RUPTURE DISK	TCV	TEMP. CONTROLLED VALVE
FSV	FLOW SAFETY VALVE	LCV	LEVEL CONTROLLED VALVE
SDV	SHUTDOWN VALVE	FR	PRESSURE RECORDER
PSH	HIGH PRESSURE PILOT	PAH	PRESSURE ALARM HIGH
PSL	LOW PRESSURE PILOT	PAL	PRESSURE ALARM LOW
GD	GAS DETECTOR	TR	TEMPERATURE RECORDER
PI	PRESSURE INDICATOR	TAH	TEMPERATURE ALARM HIGH
TI	TEMPERATURE INDICATOR	TAL	TEMPERATURE ALARM LOW
PC	PRESSURE CONTROLLER	FR	FLOW RECORDER
TC	TEMPERATURE CONTROLLER	FAH	FLOW ALARM HIGH
LC	LEVEL CONTROLLER	FAL	FLOW ALARM LOW
LC	LEVEL GAUGE	FE	ORIFICE METER
SC	SAMPLE POINT	FI	ROTARY METER
LSH	LEVEL SAFETY HIGH	ST	STEAM TRAP
LSL	LEVEL SAFETY LOW	LO	VALVE LOCKED OPEN
LAH	LEVEL ALARM HIGH	LC	VALVE LOCKED CLOSED

PROCESS SYMBOL LEGEND

UNDEFINED VALVE	RUPTURE DISK
BALL VALVE	MIXED CHOKE
NEEDLE VALVE	ADJUSTABLE CHOKE
BUTTERFLY VALVE	CROSSOVER
FLOW SAFETY VALVE	FLANGE CONNECTION
SHUTDOWN VALVE	VECO CONNECTION
FLOW CONTROL VALVE	TEE PIECE
PRESSURE RELIEF VALVE	ORIFICE METER
FLAME ARRESTOR	ROTARY DISP. METER
	PUMPING DEVICE

CONTROL LINE LEGEND

- ELECTRICAL LINE
- PNEUMATIC LINE
- HYDRAULIC LINE

REV.	DATE	DESCRIPTION	DRN.	CHK.	APR.
1	96-07-04	Well Test Equipment	ED	DB	DS
0	96-06-04	DRAFT FOR COMMENT	ED	LM	DS

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Schlumberger Oilfield Australia
Level 5, 256 St Georges Tce, Perth WA, Australia

PIPING & INSTRUMENTATION

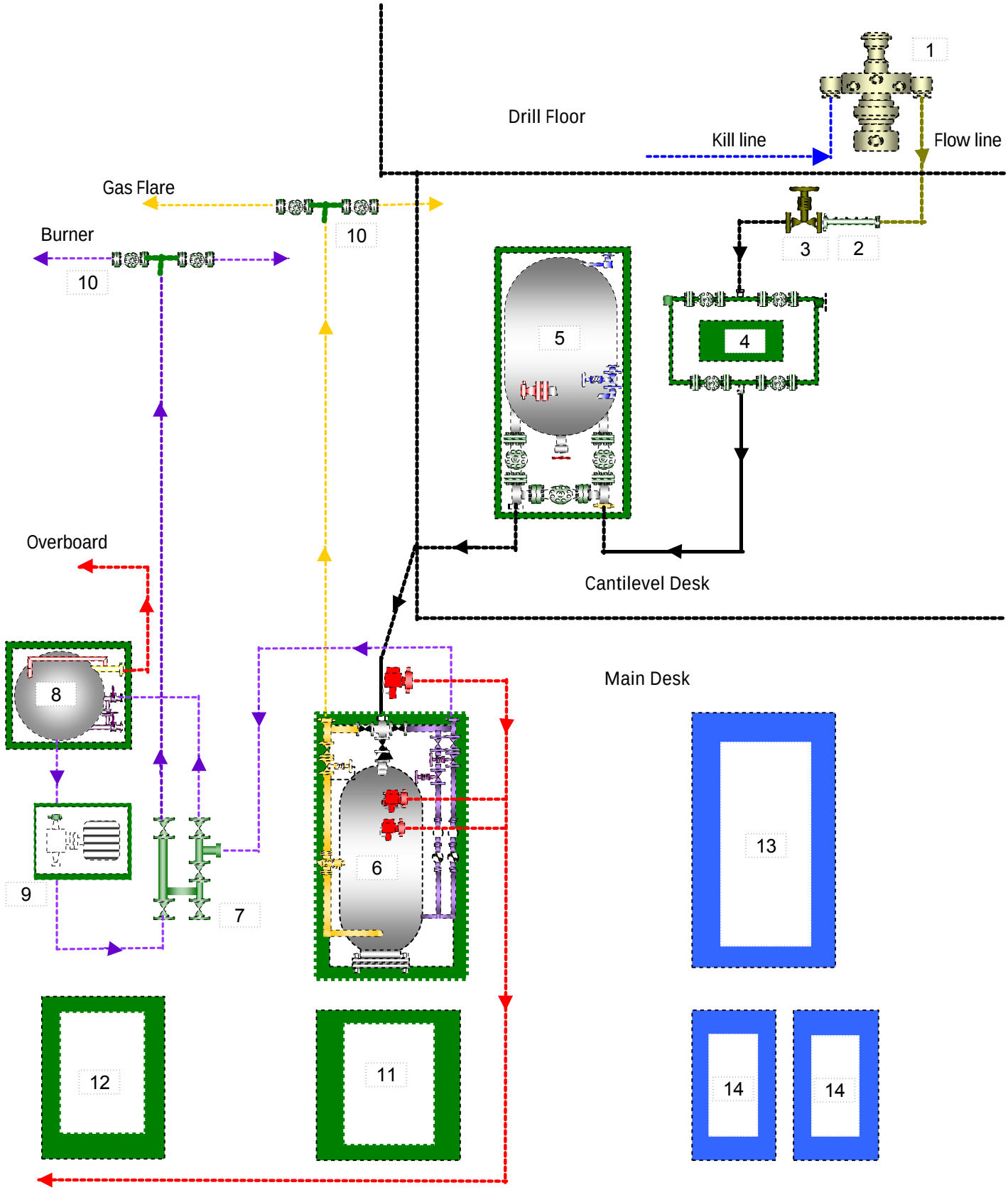
ORIGIN – YOLLA 3 &4 ENSCO 102

DRN.	Rodgers	26-06-96
CHK.	Rodgers	26-07-96
APP.	Dibble	04-07-96
APP.	Dibble	06-07-96

SCALE: NTS | DRG. NO. 2004-007 | REV. NO. P1 | SHEET 1 OF 1

Schlumberger

Origin Energy Resources Limited Yolla / Yolla-4 / Test #1	Surface Lay-out 1 2004-12



Item no	Equipment Description	Item no	Equipment Description
1	Flow Cotrol Head	8	Surge Tank
2	Data Header	9	Transfer Pump
3	Surface Safety Valve	10	Divider Manifold
4	Choke Mainfold	11	Lab Cabin / Office
5	Heat Exchanger	12	Welltest Workshop
6	1400 psi Separator	13	Steam Generator
7	5-way Oil Manifold	14	900 scf/min Air Compressor

(B) Subsurface Data – Halliburton Report

Origin Energy

Well Name: Yolla 4
Test Type: Gradient Survey
Date of Survey: 29th July 2004

MEMORY GAUGE REPORT

Prepared For: Andrew Wenk
Date: 29th July 2004

David Whelan
Completion Products & Services
Halliburton Australia Pty Ltd

HALLIBURTON

Halliburton Australia Pty Ltd

MEMORY GAUGE GRADIENT PRESSURE
AND TEMPERATURE SURVEY

MEMORY GAUGE TICKET NO:	35409
DATE:	***29th July 2004***
HALLIBURTON CAMP:	Cheltenham, Victoria
HALLIBURTON OPERATOR:	David Whelan
WITNESS:	N/A
COMPANY:	Origin
DRILLING CONTRACTOR:	Ensco
LEASE NAME:	YOLLA
WELL NO:	YOLLA-4
TEST TYPE:	Gradient Survey
TEST NO:	1
TESTED ZONE:	3149.0m MDKB - 500.0m MDKB
FIELD AREA:	Bass Strait
STATE:	Victoria
COUNTRY:	Australia

NOTICE: THIS REPORT IS BASED ON SOUND ENGINEERING PRACTICES, BUT BECAUSE OF VARIABLE WELL CONDITIONS AND OTHER INFORMATION WHICH MUST BE RELIED UPON HALLIBURTON MAKES NO WARRANTY, EXPRESS OR IMPLIED AS TO THE ACCURACY OF THE DATA OR OF ANY CALCULATIONS OR OPINIONS EXPRESSED HEREIN. YOU AGREE THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER DUE TO NEGLIGENCE OR OTHERWISE ARISING OUT OF OR IN CONNECTION WITH SUCH DATA, CALCULATIONS OR OPINIONS.

HALLIBURTON

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SECTION 1

TEST SUMMARY & JOB INFORMATION

WELL DATA

Well Details

Well Name	Yolla - 4	
Field	Yolla	
Platfrom	Yolla A	
Derrick Floor Elevation	81	m AMSL
Top Bottom Flange	27.07	m MDRT

Completion

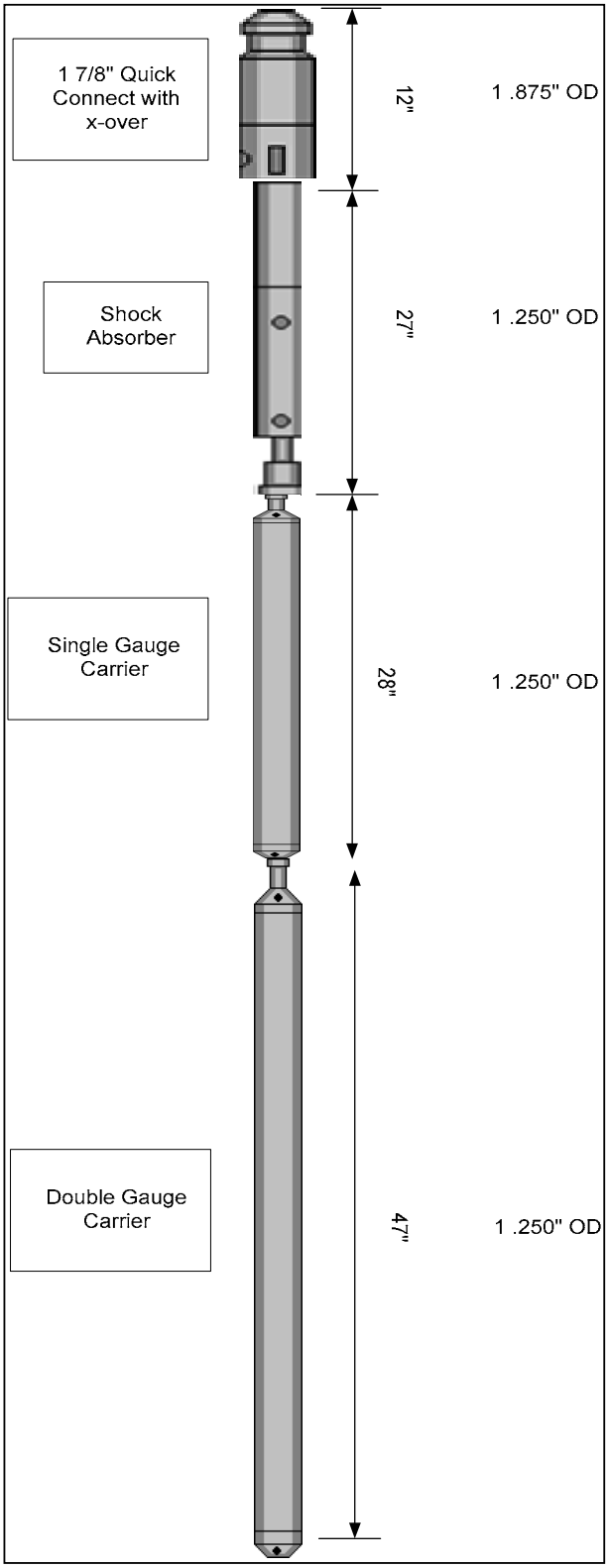
Measured m (MDRT)	**Description**
27.07	Tubing Hanger
169.09	TRSV
2521.39	5 1/2" PBR
2593.75	4 1/2" Halliburton SSD x 3.813" RD
2596.99	6 5/8" AHR Packer
2832.49	4 1/2" Halliburton SSD x 3.813" RD
2835.73	6 5/8" AHR Packer
2920.57	4 1/2" Halliburton SSD x 3.688" RD
2923.80	6 5/8" AHR Packer
2979.57	4 1/2" Halliburton SSD x 3.688" RD
2983.10	6 5/8" MWR Packer
2990.46	4 1/2" Halliburton SSD x 3.688" RD
2997.38	4 1/2" Halliburton 3.688" RN Nipple
2999.95	EOT

SURVEY EVENTS

Client	:Origin Energy	**Operator**	:David Whelan
Field	:Yolla	**Survey Date**	:29th July 2004
Platform	:Yolla A	**Well**	:Yolla - 4

Event	Time	Description
1	0:54:22	Start top gauge 15031
2	0:58:51	Start bottom gauge 15025
3	1:45:48	Stab lubricator
4	1:59:42	Open well
5	2:11:46	Rih with gauges
6	3:18:56	On depth 3149 MDKB
7	3:29:15	POOH
8	3:41:33	On depth 2709 MDKB
9	3:51:50	POOH
10	3:59:24	On depth 2381 MDKB
11	4:09:19	POOH
12	4:16:26	On depth 2051 MDKB
13	4:26:45	POOH
14	4:35:54	On depth 1503 MDKB
15	4:46:13	POOH
16	4:54:56	On depth 1000 MDKB
17	5:04:29	POOH
18	5:12:25	On depth 500 MDKB
19	5:22:20	POOH
20	5:31:50	Out of hole
21	5:42:58	Shut in well and depressure
22	6:10:52	Stop top gauge
23	6:12:02	Stop Bottom gauge

STATIC SURVEY TOOL STRING



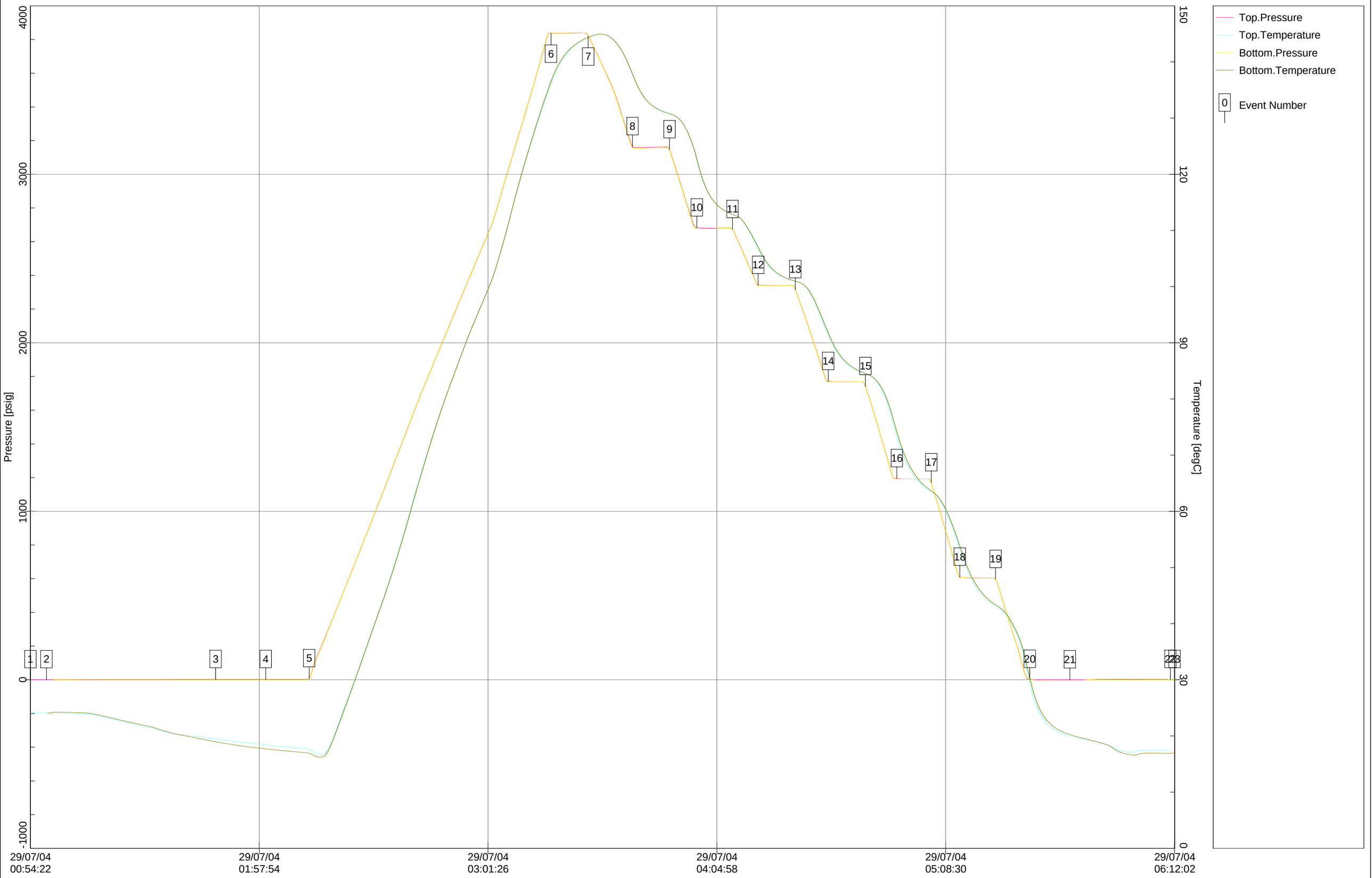
HALLIBURTON

SECTION 2

PLOTS

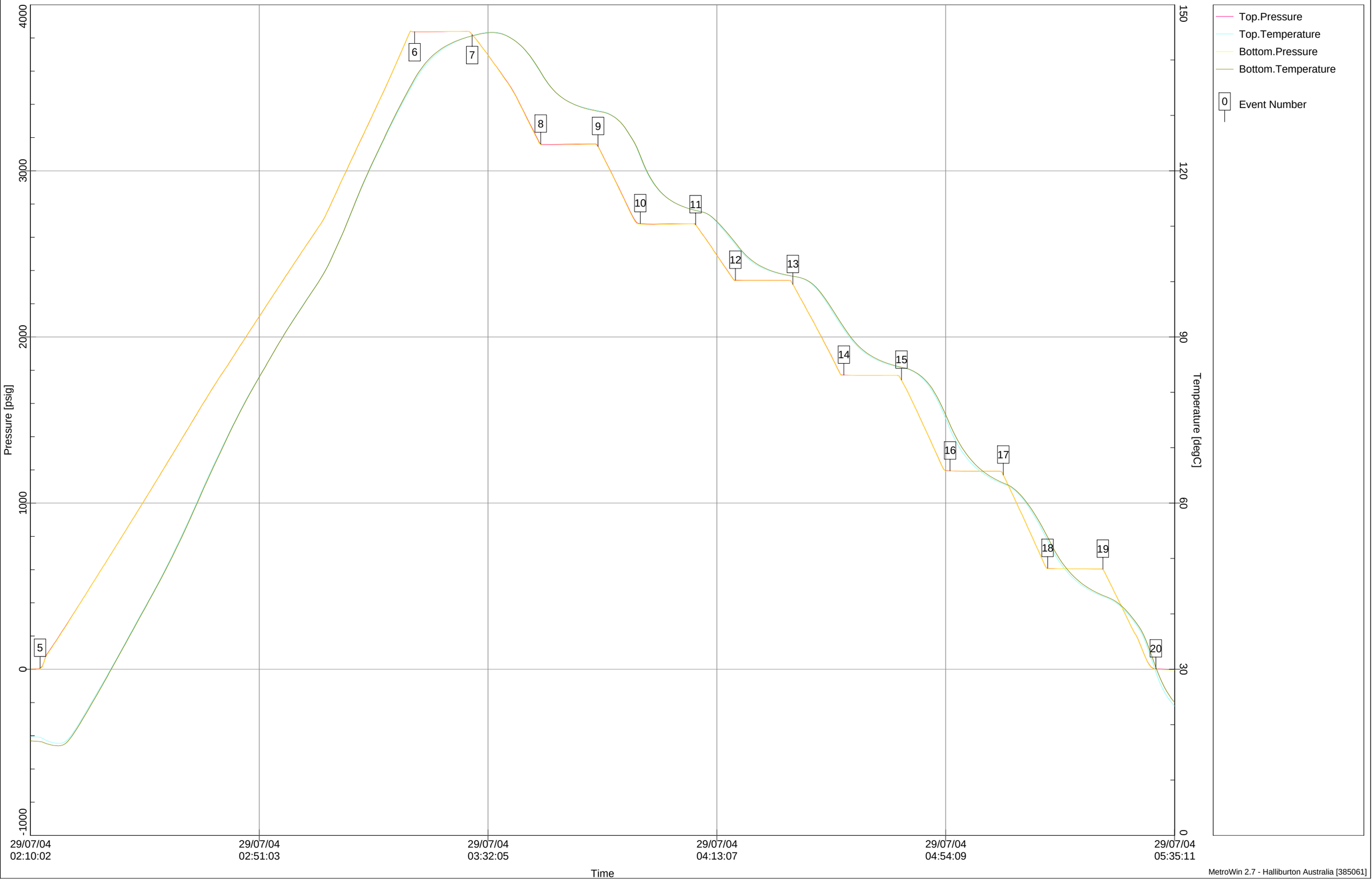
Data File Name : Gradient survey 2.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Operator :David Whelan
Whole Survey



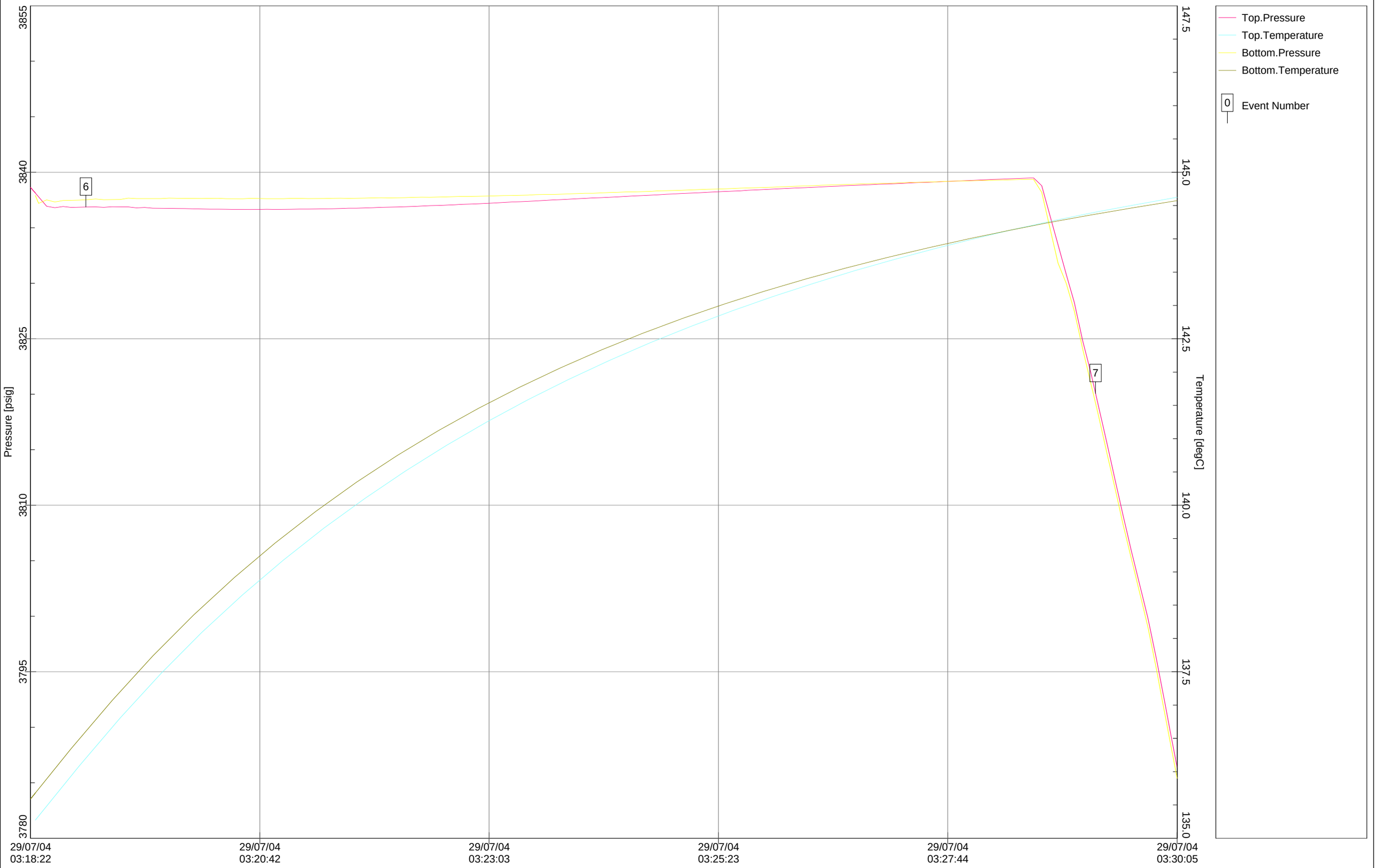
Data File Name : Gradient survey 2.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Operator :David Whelan
Survey Plot
Events 5 to 20



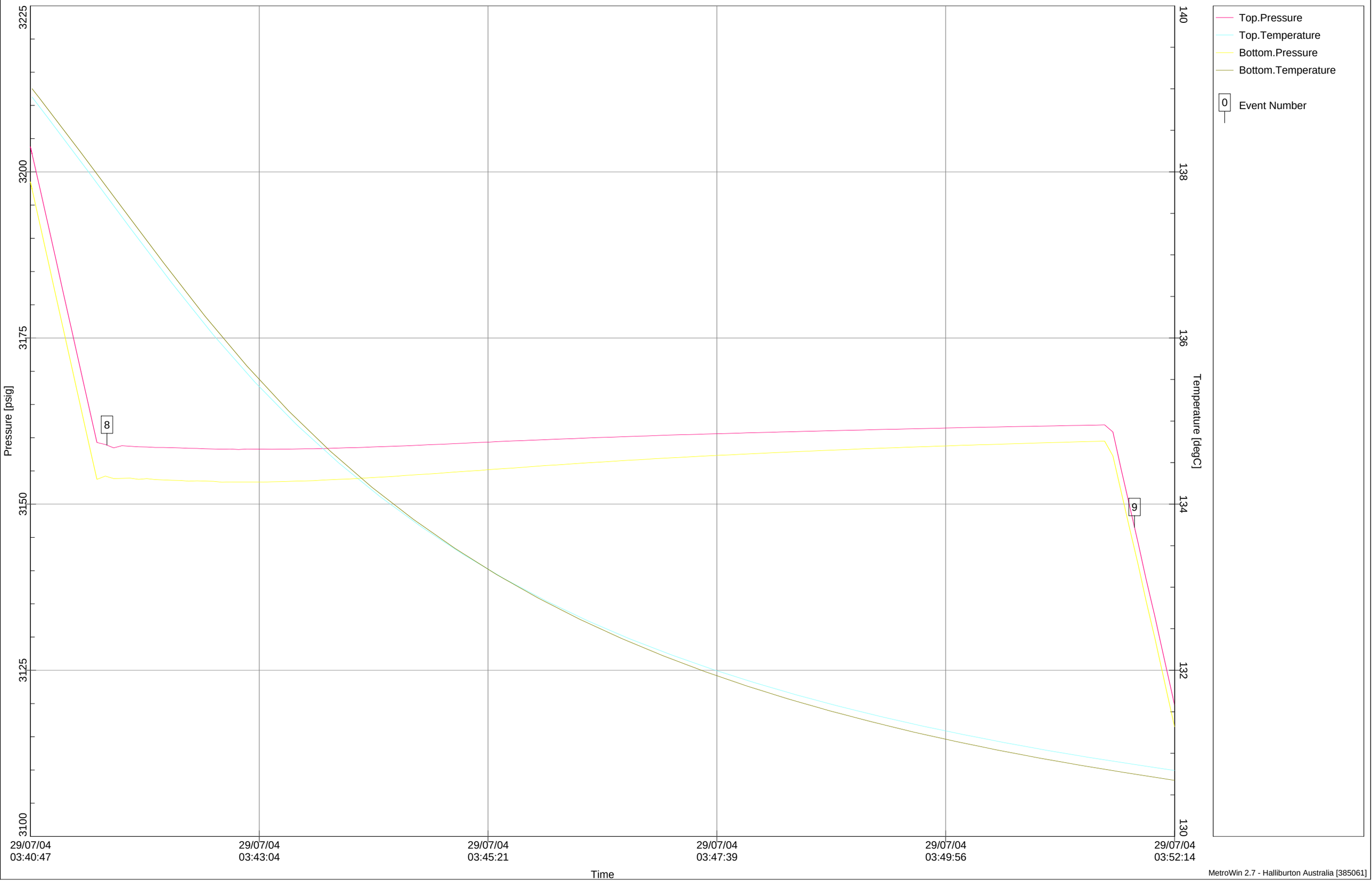
Data File Name : Gradient survey 2.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Operator :David Whelan
First gradient stop 3149 m MDKB
Event 6 to 7



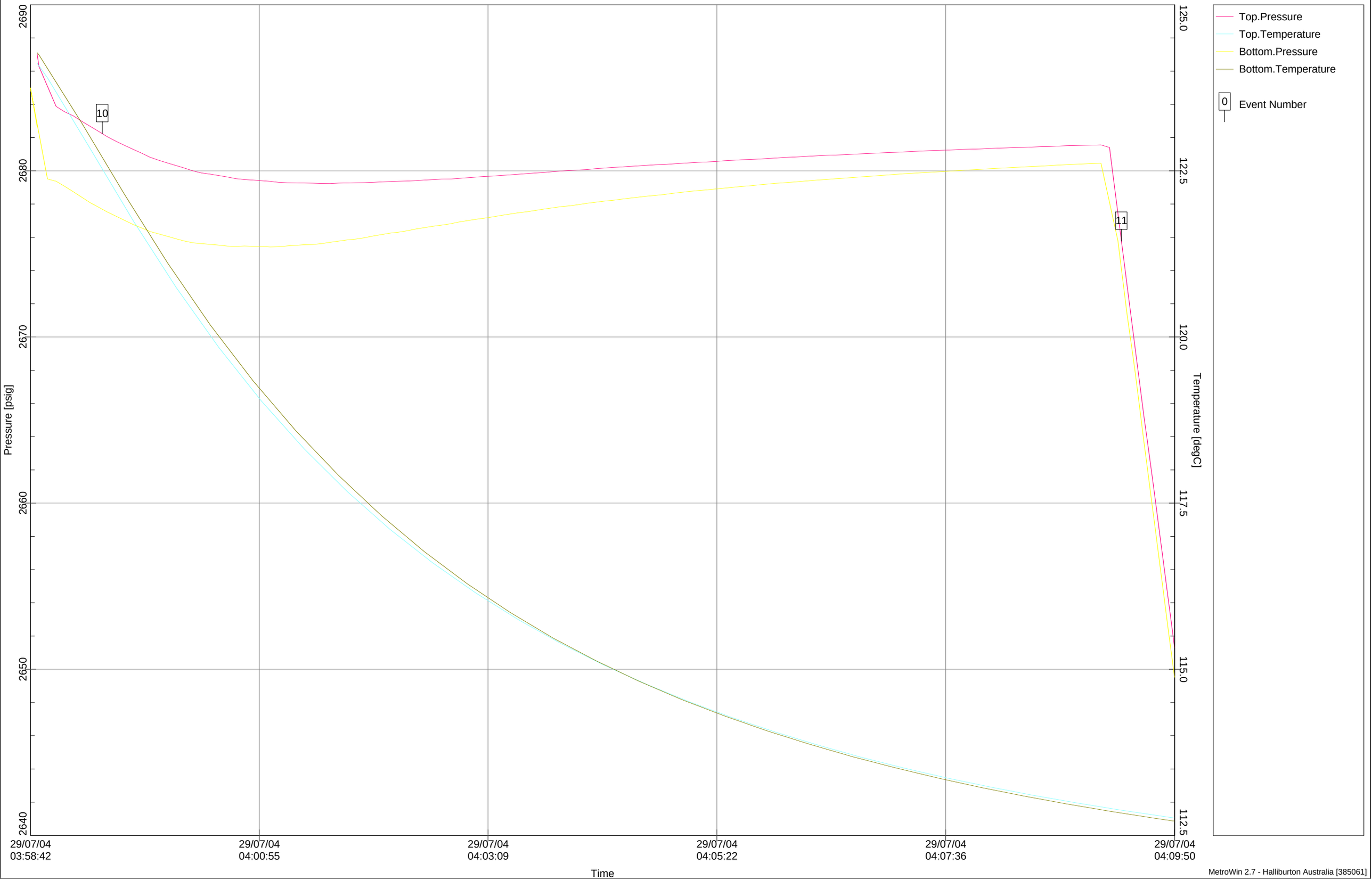
Data File Name : Gradient survey 2.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Operator :David Whelan
Second gradient stop 2709 m MDKB
Event 8 to 9



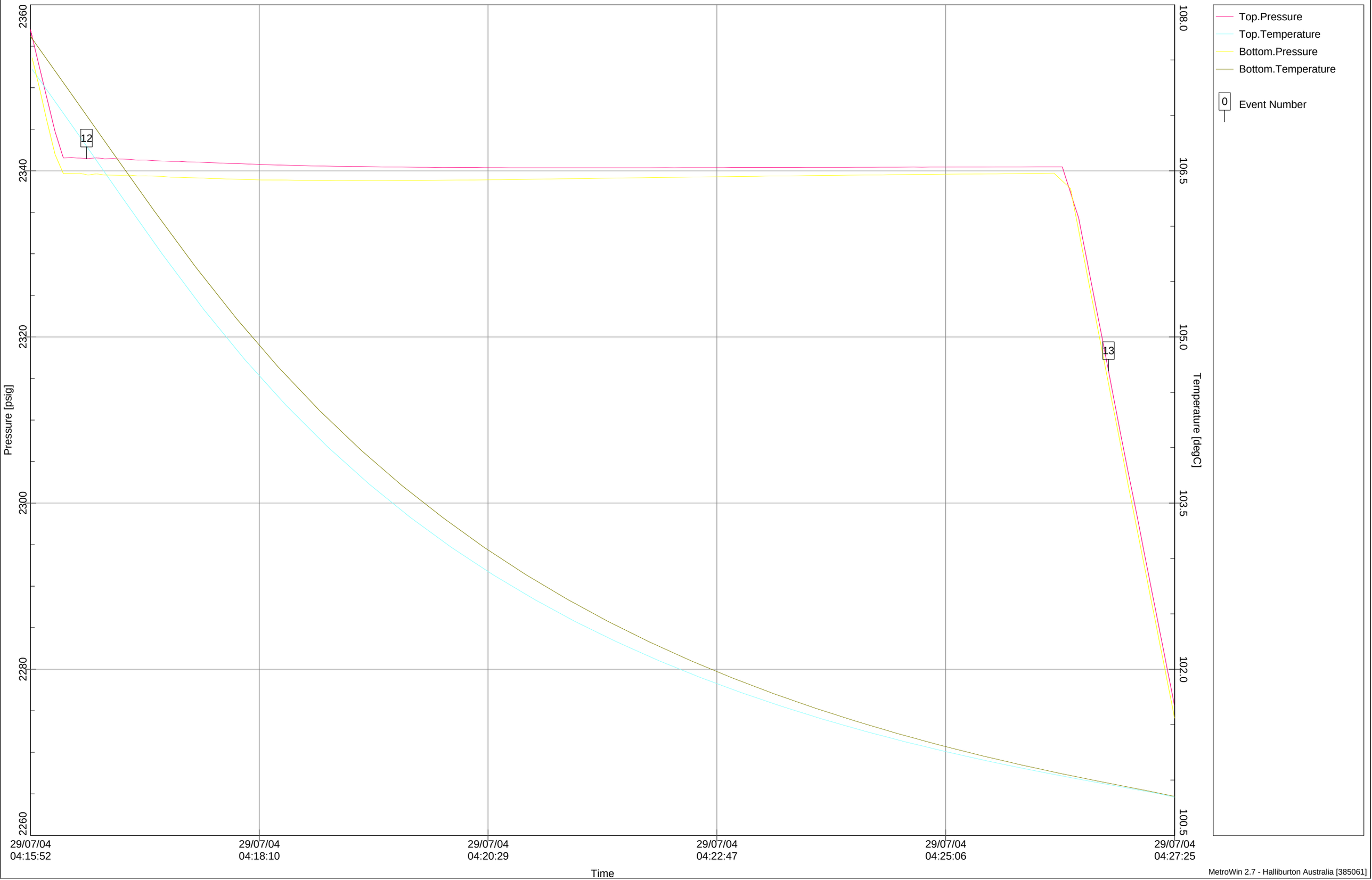
Data File Name : Gradient survey 2.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Operator :David Whelan
Third gradient stop 2381 m MDKB
Event 10 to 11



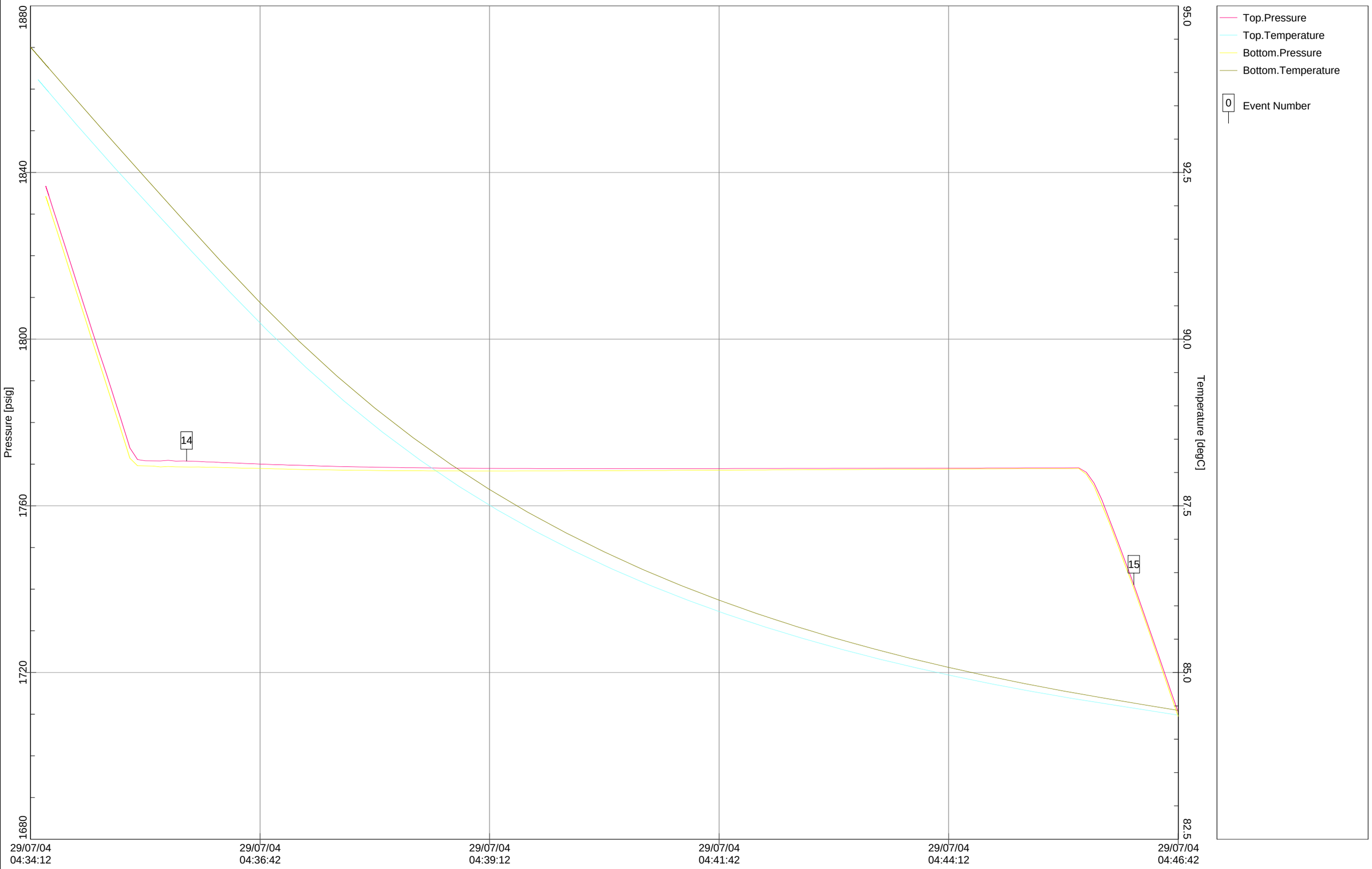
Data File Name : Gradient survey 2.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Operator :David Whelan
Fourth gradient stop 2051 m MDKB
Event 12 to 13



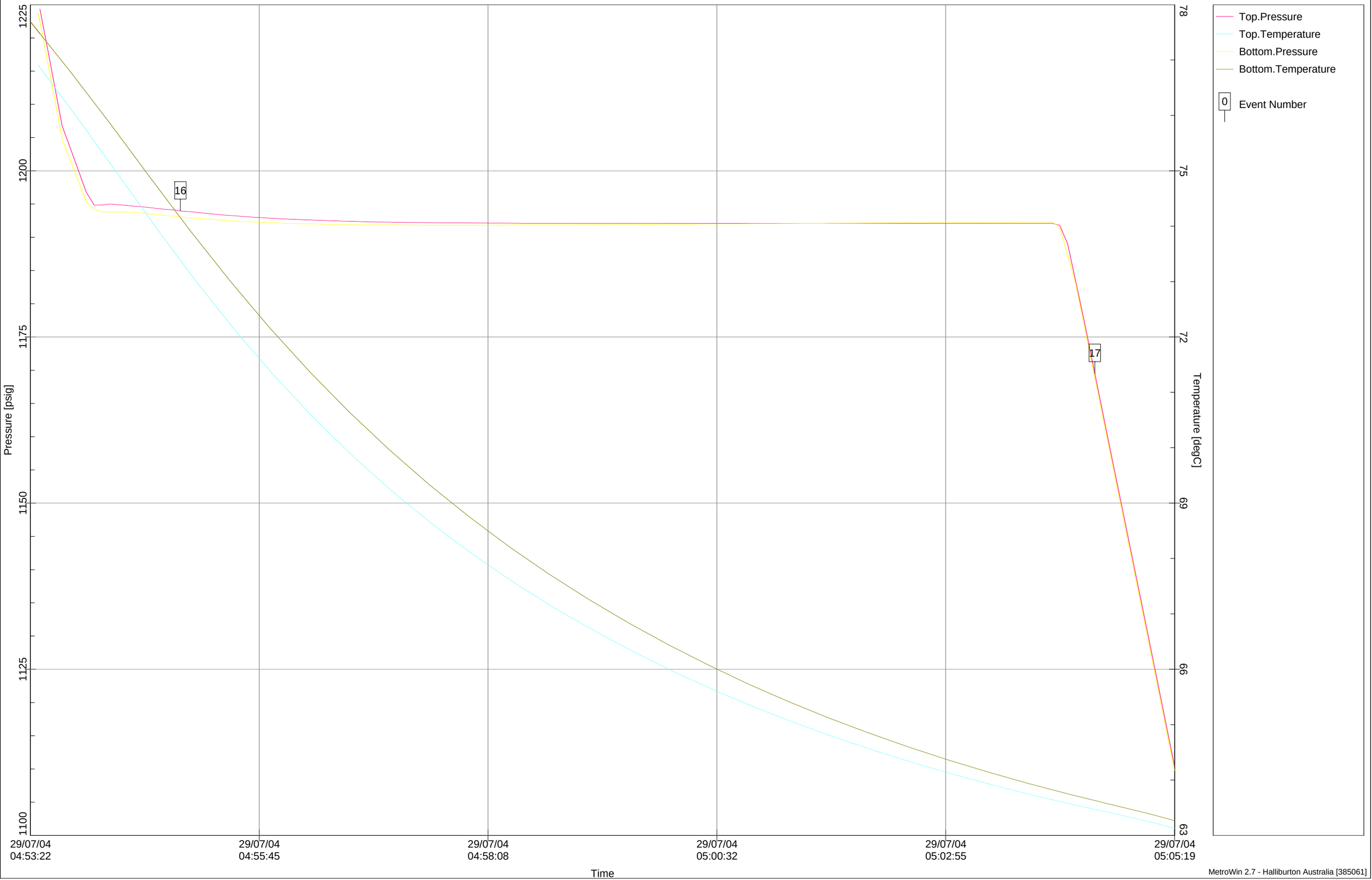
Data File Name : Gradient survey 2.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Operator :David Whelan
Fifth gradient stop 1503 m MDKB
Event 14 to 15



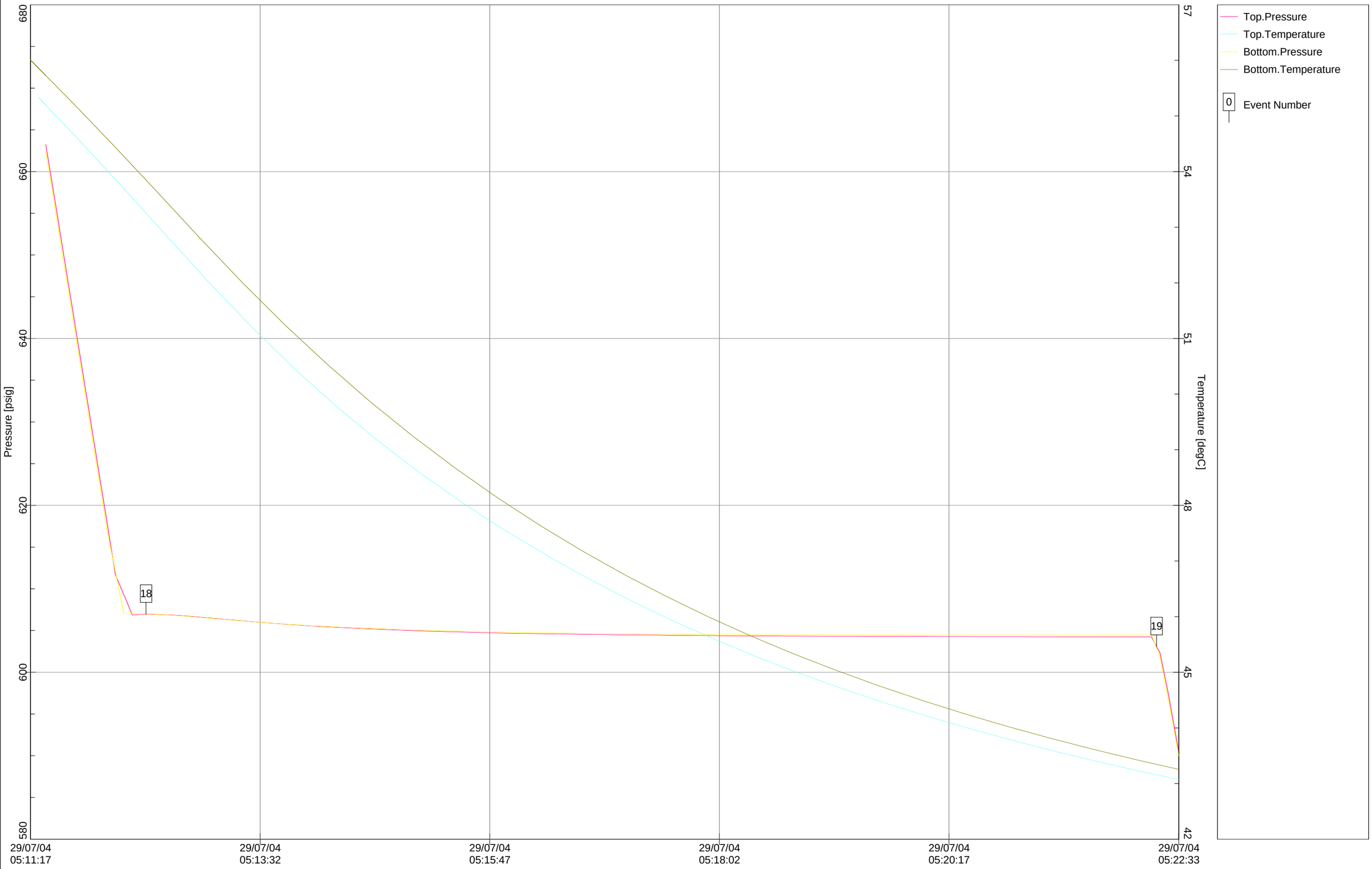
Data File Name : Gradient survey 2.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Operator :David Whelan
Sixth gradient stop 1000 m MDKB
Event 16 to 17

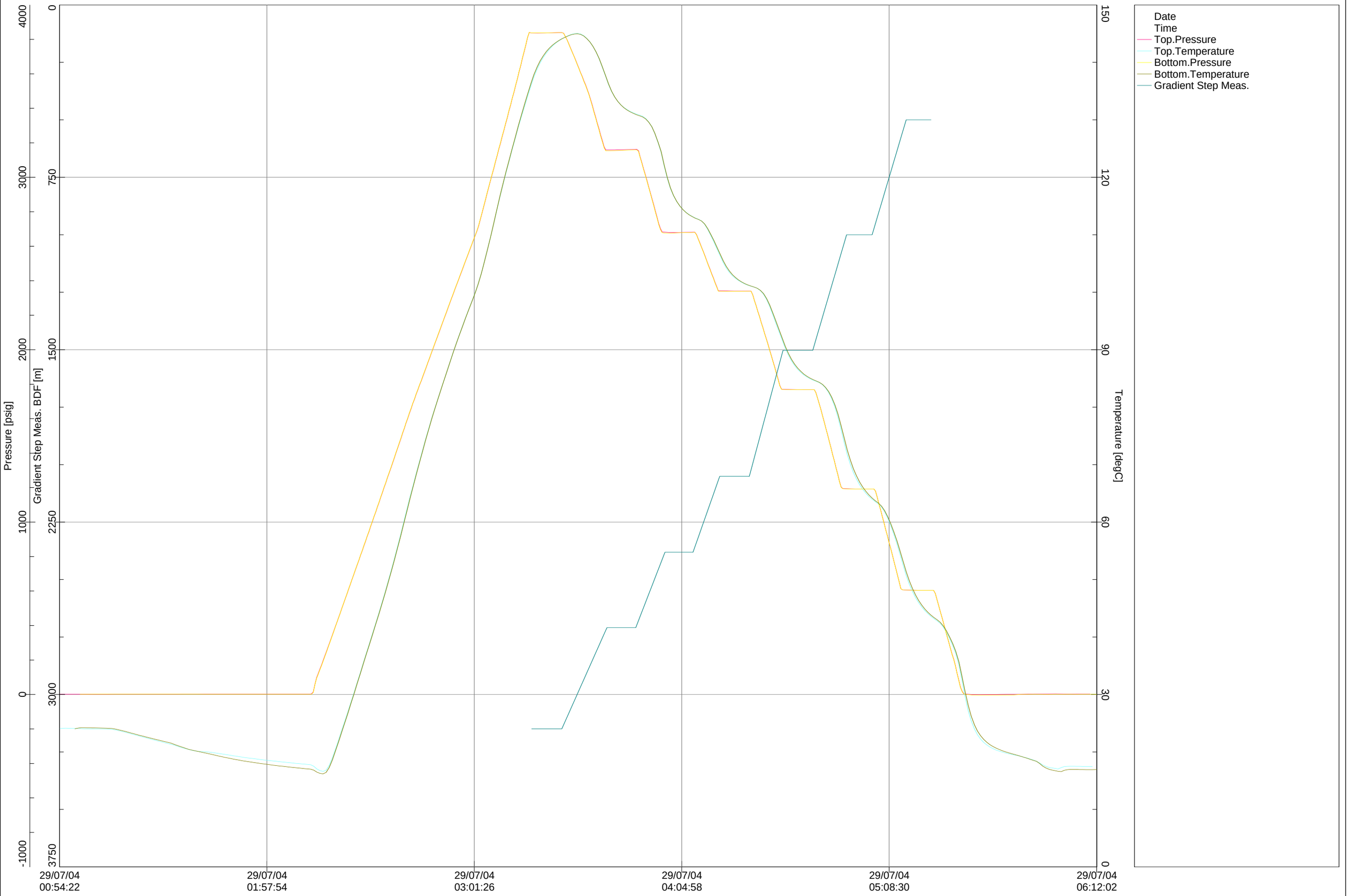


Data File Name : Gradient survey 2.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Operator :David Whelan
Seventh gradient stop 500 m MDKB
Event 18 to 19



Control Plot



SECTION 3

DATA

SURVEY DATA

Client	:Origin Energy	Operator	:David Whelan
Field	:Yolla	Date	:29th July 2004
Platform	:Yolla A		
Well	:Yolla - 4		

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
1	0:54:22	1.26	24.07			Start top gauge 15031
	0:54:22	1.26	24.07			
2	0:58:51	1.3	24.09			Start bottom gauge 15025
	0:59:22	1.31	24.08	1.59	24.07	
	1:04:22	1.41	24.03	1.53	24.2	
	1:09:22	1.42	23.98	1.65	24.12	
	1:14:22	1.62	23.46	1.79	23.59	
	1:19:22	1.67	22.69	1.85	22.83	
	1:24:22	1.79	21.94	1.87	22.12	
	1:29:22	1.85	21.23	1.97	21.36	
	1:34:22	2.4	20.38	1.55	20.4	
	1:39:22	2.22	20.02	1.52	19.79	
	1:44:22	2.2	19.63	1.34	19.14	
3	1:45:48	2.2	19.5	1.31	18.97	Stab lubricator
	1:49:16	2.19	19.2	1.25	18.59	
	1:49:46	2.2	19.15	1.23	18.54	
	1:50:16	2.2	19.11	1.23	18.5	
	1:50:46	2.2	19.07	1.23	18.45	
	1:51:16	2.21	19.03	1.22	18.4	
	1:51:46	2.21	19	1.21	18.35	
	1:52:16	2.22	18.96	1.21	18.31	
	1:52:46	2.23	18.92	1.21	18.26	
	1:53:16	2.23	18.88	1.2	18.22	
	1:53:46	2.24	18.85	1.2	18.18	
	1:54:16	2.25	18.81	1.2	18.13	
	1:54:46	2.25	18.77	1.2	18.09	
	1:55:16	2.26	18.74	1.2	18.05	
	1:55:46	2.27	18.7	1.19	18.01	
	1:56:16	2.27	18.67	1.19	17.97	
	1:56:46	2.28	18.63	1.19	17.93	
	1:57:16	2.29	18.6	1.19	17.89	
	1:57:46	2.3	18.57	1.19	17.86	
	1:58:16	2.31	18.53	1.19	17.82	
	1:58:46	2.31	18.5	1.19	17.78	
	1:59:16	2.32	18.47	1.18	17.75	
4	1:59:42	2.32	18.44	1.16	17.71	Open well

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	1:59:46	2.32	18.44	1.17	17.71	
	2:00:16	2.32	18.4	1.17	17.67	
	2:00:46	2.33	18.37	1.17	17.64	
	2:01:16	2.34	18.34	1.17	17.61	
	2:01:46	2.35	18.31	1.17	17.57	
	2:02:16	2.36	18.28	1.17	17.54	
	2:02:46	2.37	18.25	1.17	17.51	
	2:03:16	2.38	18.22	1.17	17.47	
	2:03:46	2.39	18.19	1.18	17.44	
	2:04:16	2.39	18.16	1.17	17.41	
	2:04:46	2.4	18.13	1.17	17.38	
	2:05:16	2.41	18.11	1.17	17.35	
	2:05:46	2.42	18.08	1.17	17.32	
	2:06:16	2.43	18.05	1.17	17.29	
	2:06:46	2.44	18.02	1.17	17.26	
	2:07:16	2.45	17.99	1.18	17.23	
	2:07:46	2.46	17.97	1.17	17.2	
	2:08:16	2.47	17.94	1.18	17.17	
	2:08:46	2.47	17.91	1.18	17.14	
	2:09:16	2.48	17.88	1.18	17.11	
	2:09:46	2.49	17.86	1.18	17.09	
	2:10:16	2.5	17.83	1.18	17.06	
	2:10:46	2.51	17.8	1.18	17.03	
	2:11:00	2.52	17.79	1.19	17.02	
5	2:11:46	6.78	17.74	4.15	16.96	Rih with gauges
	2:12:00	11.01	17.64	7.75	16.92	
	2:13:00	90.06	17.12	86.73	16.55	
	2:14:00	139.42	16.79	136.03	16.3	
	2:15:00	189.6	16.62	186.32	16.19	
	2:16:00	241.77	16.79	238.69	16.41	
	2:17:00	294.08	17.63	291.74	17.28	
	2:18:00	346.68	19	345.14	18.68	
	2:19:00	400.17	20.6	399.25	20.3	
	2:20:00	452.98	22.29	452.52	22	
	2:21:00	506.98	24.01	506.94	23.73	
	2:22:00	560	25.74	560.26	25.47	
	2:23:00	614.06	27.48	614.53	27.24	
	2:24:00	667.31	29.24	668	29.03	
	2:25:00	721.37	31.02	722.22	30.84	
	2:26:00	775.17	32.82	776.21	32.66	
	2:27:00	829.08	34.65	830.18	34.48	
	2:28:00	883.27	36.49	884.6	36.32	
	2:29:00	937.13	38.33	938.5	38.17	
	2:30:00	991.9	40.17	993.37	39.99	
	2:31:00	1045.9	41.98	1047.52	41.81	
	2:32:00	1100.86	43.81	1102.5	43.63	
	2:33:00	1155.73	45.69	1157.45	45.49	
	2:34:00	1210.61	47.61	1212.38	47.41	
	2:35:00	1266.06	49.6	1267.91	49.38	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	2:36:00	1321.21	51.66	1323.04	51.43	
	2:37:00	1376.91	53.77	1378.75	53.52	
	2:38:00	1432.55	55.92	1434.39	55.66	
	2:39:00	1488.54	58.14	1490.36	57.86	
	2:40:00	1544.22	60.42	1546.09	60.12	
	2:41:00	1599.92	62.73	1601.58	62.41	
	2:42:00	1654.17	64.92	1655.95	64.64	
	2:43:00	1707.73	67.08	1709.39	66.82	
	2:44:00	1760.09	69.19	1761.73	68.97	
	2:45:00	1809.86	71.29	1811.51	71.1	
	2:46:00	1861.25	73.37	1862.98	73.19	
	2:47:00	1913.69	75.37	1915.44	75.22	
	2:48:00	1965.88	77.31	1967.45	77.17	
	2:49:00	2017.06	79.17	2018.9	79.06	
	2:50:00	2068.54	80.95	2070.05	80.87	
	2:51:00	2119.6	82.68	2121.42	82.63	
	2:52:00	2171.01	84.41	2172.68	84.36	
	2:53:00	2222.35	86.13	2224.18	86.1	
	2:54:00	2273.82	87.87	2275.51	87.84	
	2:55:00	2324.56	89.58	2325.94	89.54	
	2:56:00	2375.75	91.23	2377.23	91.18	
	2:57:00	2426.34	92.82	2428.08	92.76	
	2:58:00	2476.44	94.37	2478.02	94.3	
	2:59:00	2526.66	95.89	2528.16	95.83	
	3:00:00	2577.17	97.41	2578.88	97.34	
	3:01:00	2626.77	98.9	2628.04	98.84	
	3:02:00	2675.94	100.46	2677.52	100.41	
	3:03:00	2734.3	102.15	2736.4	102.12	
	3:04:00	2806.5	104.21	2808.42	104.15	
	3:05:00	2879	106.46	2881.17	106.41	
	3:06:00	2952.24	108.65	2953.99	108.64	
	3:07:00	3023.93	111.02	3026.15	111.06	
	3:08:00	3095.17	113.49	3097.62	113.58	
	3:09:00	3167.48	115.92	3169.9	116.04	
	3:10:00	3237.66	118.24	3239.95	118.39	
	3:11:00	3308.17	120.47	3310.57	120.65	
	3:12:00	3380.81	122.63	3382.76	122.8	
	3:13:00	3452.3	124.74	3454.43	124.92	
	3:14:00	3524.26	126.82	3526.23	127.02	
	3:15:00	3599.59	128.87	3601.22	129.1	
	3:16:00	3675.62	130.81	3677.8	131.11	
	3:17:00	3751.71	132.69	3753.34	133.05	
	3:18:00	3831.6	134.51	3833.19	134.91	
	3:18:05	3838.21	134.66	3839.67	135.06	
	3:18:10	3841.06	134.82	3841.89	135.22	
	3:18:15	3840.96	134.97	3841.11	135.37	
	3:18:20	3839.51	135.12	3839.68	135.53	
	3:18:25	3838.13	135.27	3837.9	135.68	
	3:18:30	3837.28	135.42	3837.39	135.83	
	3:18:35	3836.86	135.58	3837.4	135.98	
	3:18:40	3836.87	135.73	3837.4	136.13	
	3:18:45	3836.86	135.88	3837.44	136.29	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	3:18:50	3836.83	136.03	3837.47	136.43	
	3:18:55	3836.85	136.17	3837.52	136.58	
6	3:18:56	3836.86	136.2	3837.52	136.61	On depth 3149 MDKB
	3:19:00	3836.87	136.32	3837.57	136.72	
	3:19:05	3836.86	136.46	3837.55	136.86	
	3:19:10	3836.87	136.6	3837.5	137.01	
	3:19:15	3836.86	136.75	3837.52	137.15	
	3:19:20	3836.86	136.89	3837.62	137.28	
	3:19:25	3836.82	137.02	3837.64	137.41	
	3:19:30	3836.81	137.15	3837.62	137.55	
	3:19:35	3836.78	137.29	3837.59	137.68	
	3:19:40	3836.73	137.42	3837.6	137.81	
	3:19:45	3836.73	137.55	3837.65	137.93	
	3:19:50	3836.74	137.67	3837.66	138.06	
	3:19:55	3836.73	137.79	3837.65	138.18	
	3:20:00	3836.71	137.92	3837.61	138.3	
	3:20:05	3836.67	138.04	3837.61	138.42	
	3:20:10	3836.66	138.16	3837.64	138.53	
	3:20:15	3836.68	138.27	3837.65	138.64	
	3:20:20	3836.67	138.38	3837.63	138.76	
	3:20:25	3836.66	138.5	3837.58	138.87	
	3:20:30	3836.63	138.61	3837.59	138.98	
	3:20:35	3836.64	138.72	3837.63	139.08	
	3:20:40	3836.66	138.82	3837.64	139.18	
	3:20:45	3836.66	138.93	3837.62	139.29	
	3:20:50	3836.66	139.03	3837.59	139.39	
	3:20:55	3836.64	139.14	3837.6	139.49	
	3:21:00	3836.65	139.23	3837.63	139.59	
	3:21:05	3836.67	139.33	3837.64	139.68	
	3:21:10	3836.68	139.43	3837.63	139.78	
	3:21:15	3836.69	139.52	3837.61	139.87	
	3:21:20	3836.68	139.62	3837.62	139.96	
	3:21:25	3836.69	139.71	3837.65	140.05	
	3:21:30	3836.73	139.8	3837.66	140.14	
	3:21:35	3836.75	139.89	3837.65	140.22	
	3:21:40	3836.77	139.98	3837.63	140.31	
	3:21:45	3836.76	140.07	3837.65	140.4	
	3:21:50	3836.79	140.15	3837.68	140.48	
	3:21:55	3836.83	140.24	3837.7	140.56	
	3:22:00	3836.85	140.32	3837.69	140.64	
	3:22:05	3836.86	140.4	3837.68	140.72	
	3:22:10	3836.87	140.48	3837.7	140.79	
	3:22:15	3836.9	140.56	3837.73	140.87	
	3:22:20	3836.94	140.64	3837.75	140.94	
	3:22:25	3836.97	140.71	3837.75	141.02	
	3:22:30	3837	140.79	3837.74	141.09	
	3:22:35	3837.01	140.87	3837.77	141.16	
	3:22:40	3837.04	140.94	3837.79	141.23	
	3:22:45	3837.1	141.01	3837.82	141.3	
	3:22:50	3837.13	141.08	3837.82	141.36	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	3:22:55	3837.16	141.15	3837.82	141.43	
	3:23:00	3837.17	141.23	3837.84	141.5	
	3:23:05	3837.21	141.29	3837.87	141.56	
	3:23:10	3837.26	141.36	3837.89	141.62	
	3:23:15	3837.31	141.43	3837.9	141.69	
	3:23:20	3837.34	141.49	3837.9	141.75	
	3:23:25	3837.35	141.56	3837.92	141.81	
	3:23:30	3837.4	141.62	3837.97	141.87	
	3:23:35	3837.45	141.68	3837.99	141.92	
	3:23:40	3837.48	141.74	3838	141.98	
	3:23:45	3837.52	141.81	3838	142.04	
	3:23:50	3837.54	141.87	3838.03	142.1	
	3:23:55	3837.58	141.93	3838.07	142.15	
	3:24:00	3837.63	141.98	3838.1	142.2	
	3:24:05	3837.67	142.04	3838.11	142.26	
	3:24:10	3837.7	142.1	3838.11	142.31	
	3:24:15	3837.72	142.15	3838.15	142.36	
	3:24:20	3837.76	142.21	3838.18	142.41	
	3:24:25	3837.81	142.26	3838.21	142.46	
	3:24:30	3837.85	142.31	3838.23	142.51	
	3:24:35	3837.88	142.37	3838.23	142.56	
	3:24:40	3837.91	142.42	3838.26	142.61	
	3:24:45	3837.95	142.47	3838.3	142.65	
	3:24:50	3838	142.52	3838.33	142.7	
	3:24:55	3838.04	142.57	3838.35	142.74	
	3:25:00	3838.08	142.62	3838.36	142.79	
	3:25:05	3838.1	142.67	3838.39	142.83	
	3:25:10	3838.13	142.71	3838.42	142.87	
	3:25:15	3838.17	142.76	3838.46	142.92	
	3:25:20	3838.21	142.81	3838.47	142.96	
	3:25:25	3838.25	142.85	3838.49	143	
	3:25:30	3838.27	142.9	3838.52	143.04	
	3:25:35	3838.31	142.94	3838.56	143.08	
	3:25:40	3838.36	142.99	3838.58	143.12	
	3:25:45	3838.4	143.03	3838.6	143.16	
	3:25:50	3838.43	143.07	3838.62	143.2	
	3:25:55	3838.46	143.11	3838.64	143.24	
	3:26:00	3838.5	143.16	3838.68	143.27	
	3:26:05	3838.54	143.2	3838.71	143.31	
	3:26:10	3838.57	143.24	3838.73	143.34	
	3:26:15	3838.61	143.28	3838.75	143.38	
	3:26:20	3838.63	143.32	3838.77	143.41	
	3:26:25	3838.66	143.35	3838.81	143.45	
	3:26:30	3838.7	143.39	3838.84	143.48	
	3:26:35	3838.74	143.43	3838.87	143.52	
	3:26:40	3838.77	143.47	3838.88	143.55	
	3:26:45	3838.8	143.5	3838.91	143.58	
	3:26:50	3838.83	143.54	3838.94	143.61	
	3:26:55	3838.87	143.57	3838.96	143.64	
	3:27:00	3838.9	143.61	3838.98	143.67	
	3:27:05	3838.93	143.64	3838.99	143.71	
	3:27:10	3838.95	143.68	3839.01	143.74	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	3:27:15	3838.98	143.71	3839.05	143.76	
	3:27:20	3839.02	143.75	3839.07	143.79	
	3:27:25	3839.06	143.78	3839.1	143.82	
	3:27:30	3839.09	143.81	3839.11	143.85	
	3:27:35	3839.11	143.84	3839.13	143.88	
	3:27:40	3839.15	143.88	3839.16	143.91	
	3:27:45	3839.18	143.91	3839.19	143.93	
	3:27:50	3839.21	143.94	3839.21	143.96	
	3:27:55	3839.25	143.97	3839.21	143.99	
	3:28:00	3839.27	144	3839.23	144.01	
	3:28:05	3839.3	144.03	3839.26	144.04	
	3:28:10	3839.34	144.06	3839.27	144.07	
	3:28:15	3839.37	144.09	3839.29	144.09	
	3:28:20	3839.4	144.11	3839.31	144.12	
	3:28:25	3839.42	144.14	3839.33	144.14	
	3:28:30	3839.45	144.17	3839.35	144.17	
	3:28:35	3839.49	144.2	3839.36	144.19	
	3:28:40	3839.07	144.22	3838.66	144.21	
	3:28:45	3837.19	144.25	3836.28	144.24	
	3:28:50	3834.52	144.28	3833.1	144.26	
	3:28:55	3831.86	144.3	3830.72	144.28	
	3:29:00	3829.27	144.33	3828.48	144.31	
	3:29:05	3826.24	144.35	3825.48	144.33	
	3:29:10	3823.15	144.38	3822.28	144.35	
7	3:29:15	3820.06	144.4	3819.19	144.37	POOH
	3:29:15	3820.06	144.4	3819.19	144.37	
	3:29:20	3816.86	144.42	3815.98	144.39	
	3:29:25	3813.58	144.45	3812.75	144.41	
	3:29:30	3810.31	144.47	3809.49	144.43	
	3:29:35	3807.12	144.49	3806.36	144.46	
	3:29:40	3804.07	144.52	3803.33	144.48	
	3:29:45	3801.1	144.54	3800.3	144.5	
	3:29:50	3797.8	144.56	3796.92	144.52	
	3:29:55	3794.09	144.58	3793.11	144.53	
	3:30:00	3790.23	144.6	3789.23	144.55	
	3:30:05	3786.39	144.62	3785.4	144.57	
	3:30:10	3782.58	144.65	3781.55	144.59	
	3:30:15	3778.74	144.67	3777.72	144.61	
	3:30:20	3774.95	144.69	3773.88	144.63	
	3:30:25	3771.16	144.71	3770.09	144.65	
	3:30:30	3767.41	144.73	3766.35	144.67	
	3:30:35	3763.7	144.75	3762.62	144.69	
	3:30:40	3759.98	144.77	3758.87	144.7	
	3:30:45	3756.27	144.79	3755.13	144.72	
	3:30:50	3752.54	144.8	3751.36	144.74	
	3:30:55	3748.76	144.82	3747.57	144.75	
	3:31:00	3744.97	144.84	3743.78	144.77	
	3:31:05	3741.2	144.86	3739.98	144.79	
	3:31:10	3737.44	144.87	3736.21	144.8	
	3:31:15	3733.73	144.89	3732.51	144.82	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	3:31:20	3730.08	144.91	3728.86	144.83	
	3:31:25	3726.5	144.92	3725.23	144.84	
	3:31:30	3722.94	144.94	3721.61	144.86	
	3:31:35	3719.37	144.95	3718.05	144.87	
	3:31:40	3715.77	144.96	3714.45	144.88	
	3:31:45	3712.14	144.98	3710.81	144.89	
	3:31:50	3708.53	144.99	3707.13	144.9	
	3:31:55	3704.95	145	3703.55	144.91	
	3:32:00	3701.14	145.01	3699.7	144.92	
	3:32:05	3697.18	145.01	3695.64	144.93	
	3:32:10	3693.2	145.02	3691.65	144.94	
	3:32:15	3689.22	145.03	3687.67	144.94	
	3:32:20	3685.3	145.04	3683.74	144.95	
	3:32:25	3681.38	145.04	3679.79	144.95	
	3:32:30	3677.46	145.04	3675.81	144.96	
	3:32:35	3673.51	145.05	3671.85	144.96	
	3:32:40	3669.55	145.05	3667.88	144.96	
	3:32:45	3665.59	145.05	3663.89	144.96	
	3:32:50	3661.66	145.05	3659.92	144.96	
	3:32:55	3657.71	145.05	3655.94	144.96	
	3:33:00	3653.75	145.05	3651.98	144.96	
	3:33:05	3649.81	145.05	3648.07	144.95	
	3:33:10	3645.94	145.04	3644.16	144.95	
	3:33:15	3642.06	145.03	3640.24	144.95	
	3:33:20	3638.17	145.03	3636.33	144.94	
	3:33:25	3634.29	145.02	3632.48	144.93	
	3:33:30	3630.43	145.01	3628.61	144.92	
	3:33:35	3626.59	145	3624.74	144.91	
	3:33:40	3622.79	144.99	3620.87	144.9	
	3:33:45	3618.94	144.98	3617.01	144.89	
	3:33:50	3615.09	144.97	3613.21	144.88	
	3:33:55	3611.3	144.95	3609.17	144.87	
	3:34:00	3607.39	144.93	3605.43	144.85	
	3:34:05	3603.61	144.92	3601.5	144.83	
	3:34:10	3599.87	144.9	3597.45	144.82	
	3:34:15	3595.98	144.88	3593.58	144.8	
	3:34:20	3592.1	144.86	3589.62	144.78	
	3:34:25	3588.12	144.83	3585.57	144.76	
	3:34:30	3584.15	144.81	3581.38	144.73	
	3:34:35	3580.12	144.78	3577.22	144.71	
	3:34:40	3576.05	144.76	3573.2	144.69	
	3:34:45	3572.08	144.73	3569.28	144.66	
	3:34:50	3568.12	144.69	3565.27	144.63	
	3:34:55	3564.15	144.66	3561.24	144.6	
	3:35:00	3560.18	144.63	3557.23	144.57	
	3:35:05	3556.22	144.59	3553.25	144.53	
	3:35:10	3552.29	144.56	3549.33	144.5	
	3:35:15	3548.4	144.51	3545.44	144.46	
	3:35:20	3544.53	144.47	3541.55	144.42	
	3:35:25	3540.6	144.43	3537.63	144.39	
	3:35:30	3536.64	144.39	3533.75	144.35	
	3:35:35	3532.75	144.35	3529.87	144.3	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	3:35:40	3528.89	144.3	3525.98	144.26	
	3:35:45	3524.97	144.26	3522.07	144.22	
	3:35:50	3520.95	144.21	3517.95	144.17	
	3:35:55	3516.69	144.16	3513.72	144.13	
	3:36:00	3512.31	144.11	3509.37	144.08	
	3:36:05	3508.05	144.06	3505.09	144.03	
	3:36:10	3503.66	144.01	3500.67	143.98	
	3:36:15	3499.01	143.96	3495.89	143.93	
	3:36:20	3494.18	143.91	3491.01	143.88	
	3:36:25	3489.34	143.85	3486.17	143.83	
	3:36:30	3484.49	143.79	3481.38	143.77	
	3:36:35	3479.67	143.74	3476.6	143.72	
	3:36:40	3474.85	143.68	3471.69	143.66	
	3:36:45	3470	143.62	3466.73	143.61	
	3:36:50	3465.18	143.56	3461.84	143.55	
	3:36:55	3460.34	143.5	3456.92	143.49	
	3:37:00	3455.53	143.44	3451.8	143.43	
	3:37:05	3450.17	143.37	3446.34	143.37	
	3:37:10	3444.52	143.31	3440.76	143.31	
	3:37:15	3439	143.24	3435.32	143.24	
	3:37:20	3433.45	143.17	3429.72	143.17	
	3:37:25	3427.87	143.1	3423.98	143.11	
	3:37:30	3422.36	143.03	3418.37	143.04	
	3:37:35	3416.83	142.96	3412.91	142.97	
	3:37:40	3411.31	142.88	3407.43	142.89	
	3:37:45	3405.87	142.81	3401.94	142.82	
	3:37:50	3400.44	142.73	3396.36	142.74	
	3:37:55	3394.85	142.65	3390.71	142.67	
	3:38:00	3389.16	142.57	3385.12	142.59	
	3:38:05	3383.54	142.49	3379.58	142.5	
	3:38:10	3378.03	142.4	3373.88	142.42	
	3:38:15	3372.46	142.31	3368.21	142.34	
	3:38:20	3366.79	142.23	3362.55	142.25	
	3:38:25	3361.1	142.14	3356.91	142.17	
	3:38:30	3355.47	142.05	3351.2	142.08	
	3:38:35	3349.85	141.96	3345.53	141.99	
	3:38:40	3344.23	141.86	3339.95	141.89	
	3:38:45	3338.59	141.77	3334.25	141.8	
	3:38:50	3333.04	141.67	3328.51	141.71	
	3:38:55	3327.58	141.57	3323.01	141.61	
	3:39:00	3322.1	141.47	3317.49	141.51	
	3:39:05	3316.62	141.37	3311.93	141.41	
	3:39:10	3311.13	141.26	3306.4	141.31	
	3:39:15	3305.56	141.16	3300.91	141.21	
	3:39:20	3299.99	141.05	3295.36	141.1	
	3:39:25	3294.54	140.94	3289.76	140.99	
	3:39:30	3288.92	140.83	3284.1	140.89	
	3:39:35	3283.34	140.71	3278.41	140.78	
	3:39:40	3277.75	140.6	3272.82	140.66	
	3:39:45	3272.12	140.48	3267.23	140.55	
	3:39:50	3266.6	140.36	3261.71	140.43	
	3:39:55	3260.98	140.24	3256.02	140.32	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	3:40:00	3255.38	140.12	3250.28	140.2	
	3:40:05	3249.83	140	3244.68	140.08	
	3:40:10	3244.28	139.88	3239.2	139.96	
	3:40:15	3238.79	139.75	3233.69	139.83	
	3:40:20	3233.39	139.62	3228.2	139.71	
	3:40:25	3227.94	139.5	3222.74	139.59	
	3:40:30	3222.44	139.37	3217.28	139.46	
	3:40:35	3216.97	139.24	3211.82	139.33	
	3:40:40	3211.61	139.11	3206.26	139.21	
	3:40:45	3206.06	138.98	3200.71	139.08	
	3:40:50	3200.51	138.85	3195.15	138.95	
	3:40:55	3194.97	138.72	3189.57	138.82	
	3:41:00	3189.4	138.58	3183.93	138.69	
	3:41:05	3183.79	138.45	3178.33	138.56	
	3:41:10	3178.22	138.32	3172.73	138.43	
	3:41:15	3172.63	138.18	3167.11	138.29	
	3:41:20	3167.04	138.05	3161.49	138.16	
	3:41:25	3161.5	137.92	3155.94	138.03	
	3:41:30	3159.1	137.78	3154.03	137.89	
8	3:41:33	3158.87	137.7	3154.15	137.81	On depth 2709 MDKB
	3:41:35	3158.68	137.65	3154	137.76	
	3:41:40	3158.66	137.51	3153.87	137.63	
	3:41:45	3158.75	137.38	3153.9	137.49	
	3:41:50	3158.67	137.24	3153.8	137.36	
	3:41:55	3158.62	137.11	3153.8	137.23	
	3:42:00	3158.56	136.98	3153.75	137.09	
	3:42:05	3158.53	136.85	3153.69	136.96	
	3:42:10	3158.53	136.71	3153.63	136.83	
	3:42:15	3158.48	136.59	3153.57	136.7	
	3:42:20	3158.42	136.46	3153.5	136.57	
	3:42:25	3158.38	136.33	3153.48	136.44	
	3:42:30	3158.35	136.21	3153.51	136.31	
	3:42:35	3158.34	136.08	3153.46	136.19	
	3:42:40	3158.3	135.97	3153.35	136.07	
	3:42:45	3158.28	135.85	3153.33	135.95	
	3:42:50	3158.26	135.74	3153.34	135.83	
	3:42:55	3158.26	135.62	3153.36	135.71	
	3:43:00	3158.32	135.51	3153.36	135.6	
	3:43:05	3158.3	135.4	3153.33	135.49	
	3:43:10	3158.26	135.3	3153.34	135.38	
	3:43:15	3158.26	135.2	3153.38	135.28	
	3:43:20	3158.28	135.1	3153.45	135.17	
	3:43:25	3158.33	134.99	3153.48	135.07	
	3:43:30	3158.34	134.9	3153.48	134.97	
	3:43:35	3158.33	134.81	3153.52	134.87	
	3:43:40	3158.35	134.72	3153.58	134.77	
	3:43:45	3158.39	134.63	3153.68	134.68	
	3:43:50	3158.46	134.53	3153.73	134.59	
	3:43:55	3158.49	134.45	3153.75	134.5	
	3:44:00	3158.5	134.37	3153.81	134.41	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	3:44:05	3158.53	134.29	3153.9	134.33	
	3:44:10	3158.58	134.2	3154	134.24	
	3:44:15	3158.66	134.12	3154.06	134.16	
	3:44:20	3158.69	134.05	3154.11	134.08	
	3:44:25	3158.72	133.97	3154.18	134	
	3:44:30	3158.76	133.9	3154.28	133.93	
	3:44:35	3158.82	133.83	3154.39	133.85	
	3:44:40	3158.9	133.75	3154.47	133.77	
	3:44:45	3158.94	133.68	3154.52	133.7	
	3:44:50	3158.98	133.62	3154.6	133.63	
	3:44:55	3159.03	133.55	3154.7	133.56	
	3:45:00	3159.09	133.49	3154.82	133.5	
	3:45:05	3159.17	133.42	3154.9	133.43	
	3:45:10	3159.22	133.36	3154.96	133.37	
	3:45:15	3159.26	133.3	3155.05	133.3	
	3:45:20	3159.31	133.24	3155.15	133.24	
	3:45:25	3159.38	133.18	3155.27	133.18	
	3:45:30	3159.45	133.12	3155.35	133.12	
	3:45:35	3159.5	133.07	3155.42	133.06	
	3:45:40	3159.54	133.01	3155.5	133.01	
	3:45:45	3159.59	132.96	3155.59	132.95	
	3:45:50	3159.64	132.91	3155.71	132.89	
	3:45:55	3159.72	132.85	3155.79	132.84	
	3:46:00	3159.76	132.8	3155.86	132.79	
	3:46:05	3159.8	132.76	3155.94	132.74	
	3:46:10	3159.84	132.71	3156.03	132.68	
	3:46:15	3159.9	132.66	3156.13	132.63	
	3:46:20	3159.96	132.61	3156.21	132.59	
	3:46:25	3160.01	132.57	3156.27	132.54	
	3:46:30	3160.04	132.52	3156.35	132.49	
	3:46:35	3160.08	132.48	3156.43	132.45	
	3:46:40	3160.12	132.44	3156.52	132.4	
	3:46:45	3160.19	132.4	3156.59	132.36	
	3:46:50	3160.23	132.35	3156.65	132.32	
	3:46:55	3160.26	132.32	3156.72	132.27	
	3:47:00	3160.3	132.28	3156.8	132.23	
	3:47:05	3160.34	132.24	3156.89	132.19	
	3:47:10	3160.4	132.2	3156.95	132.15	
	3:47:15	3160.43	132.16	3157.01	132.11	
	3:47:20	3160.46	132.13	3157.08	132.08	
	3:47:25	3160.49	132.09	3157.15	132.04	
	3:47:30	3160.53	132.06	3157.22	132	
	3:47:35	3160.58	132.02	3157.29	131.96	
	3:47:40	3160.61	131.99	3157.35	131.93	
	3:47:45	3160.64	131.96	3157.4	131.9	
	3:47:50	3160.67	131.93	3157.47	131.86	
	3:47:55	3160.71	131.89	3157.54	131.83	
	3:48:00	3160.75	131.86	3157.6	131.79	
	3:48:05	3160.79	131.83	3157.65	131.76	
	3:48:10	3160.81	131.8	3157.7	131.73	
	3:48:15	3160.84	131.77	3157.77	131.7	
	3:48:20	3160.88	131.75	3157.83	131.67	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	3:48:25	3160.92	131.72	3157.88	131.64	
	3:48:30	3160.95	131.69	3157.93	131.61	
	3:48:35	3160.97	131.66	3157.99	131.58	
	3:48:40	3161.01	131.63	3158.04	131.55	
	3:48:45	3161.04	131.61	3158.1	131.52	
	3:48:50	3161.08	131.58	3158.15	131.5	
	3:48:55	3161.11	131.56	3158.2	131.47	
	3:49:00	3161.13	131.53	3158.24	131.44	
	3:49:05	3161.16	131.51	3158.3	131.42	
	3:49:10	3161.19	131.48	3158.35	131.39	
	3:49:15	3161.23	131.46	3158.4	131.37	
	3:49:20	3161.26	131.43	3158.44	131.34	
	3:49:25	3161.28	131.41	3158.49	131.32	
	3:49:30	3161.3	131.39	3158.54	131.29	
	3:49:35	3161.33	131.36	3158.59	131.27	
	3:49:40	3161.37	131.34	3158.63	131.25	
	3:49:45	3161.4	131.32	3158.66	131.22	
	3:49:50	3161.42	131.3	3158.71	131.2	
	3:49:55	3161.45	131.28	3158.75	131.18	
	3:50:00	3161.47	131.26	3158.8	131.16	
	3:50:05	3161.5	131.24	3158.85	131.13	
	3:50:10	3161.53	131.21	3158.88	131.11	
	3:50:15	3161.56	131.2	3158.92	131.09	
	3:50:20	3161.58	131.18	3158.96	131.07	
	3:50:25	3161.6	131.16	3159	131.05	
	3:50:30	3161.63	131.14	3159.04	131.03	
	3:50:35	3161.65	131.12	3159.08	131.01	
	3:50:40	3161.68	131.1	3159.11	130.99	
	3:50:45	3161.71	131.08	3159.15	130.97	
	3:50:50	3161.73	131.06	3159.19	130.95	
	3:50:55	3161.75	131.05	3159.23	130.94	
	3:51:00	3161.78	131.03	3159.26	130.92	
	3:51:05	3161.8	131.01	3159.3	130.9	
	3:51:10	3161.82	130.99	3159.33	130.88	
	3:51:15	3161.85	130.98	3159.38	130.87	
	3:51:20	3161.88	130.96	3159.41	130.85	
	3:51:25	3161.89	130.94	3159.44	130.83	
	3:51:30	3161.91	130.93	3159.47	130.82	
	3:51:35	3161.28	130.91	3158.15	130.8	
	3:51:40	3157.46	130.9	3153.99	130.78	
	3:51:45	3151.94	130.88	3148.53	130.77	
9	3:51:50	3146.49	130.87	3143.18	130.75	POOH
	3:51:50	3146.49	130.87	3143.18	130.75	
	3:51:55	3140.92	130.85	3137.66	130.73	
	3:52:00	3135.46	130.84	3132.18	130.72	
	3:52:05	3129.89	130.82	3126.66	130.7	
	3:52:10	3124.24	130.81	3121.03	130.69	
	3:52:15	3118.65	130.79	3115.38	130.67	
	3:52:20	3113.1	130.77	3109.76	130.66	
	3:52:25	3107.44	130.76	3104.17	130.64	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	3:52:30	3101.78	130.74	3098.54	130.63	
	3:52:35	3096.17	130.72	3092.9	130.61	
	3:52:40	3090.6	130.7	3087.28	130.59	
	3:52:45	3085	130.68	3081.71	130.57	
	3:52:50	3079.4	130.66	3076.13	130.55	
	3:52:55	3073.87	130.64	3070.59	130.53	
	3:53:00	3068.34	130.62	3065.14	130.51	
	3:53:05	3062.82	130.59	3059.63	130.49	
	3:53:10	3057.44	130.57	3054.18	130.46	
	3:53:15	3052.02	130.54	3048.8	130.44	
	3:53:20	3046.57	130.51	3043.33	130.41	
	3:53:25	3041.04	130.48	3037.85	130.38	
	3:53:30	3035.49	130.45	3032.25	130.35	
	3:53:35	3029.94	130.41	3026.7	130.32	
	3:53:40	3024.32	130.37	3021.03	130.29	
	3:53:45	3018.72	130.34	3015.34	130.26	
	3:53:50	3013.1	130.3	3009.79	130.22	
	3:53:55	3007.48	130.26	3004.21	130.18	
	3:54:00	3001.73	130.21	2998.57	130.14	
	3:54:05	2996.04	130.16	2992.87	130.1	
	3:54:10	2990.46	130.12	2987.22	130.05	
	3:54:15	2984.85	130.07	2981.66	130.01	
	3:54:20	2979.25	130.02	2976	129.96	
	3:54:25	2973.68	129.96	2970.43	129.91	
	3:54:30	2968.09	129.91	2964.8	129.85	
	3:54:35	2962.48	129.85	2959.1	129.8	
	3:54:40	2956.79	129.8	2953.5	129.75	
	3:54:45	2951.1	129.74	2947.77	129.69	
	3:54:50	2945.45	129.67	2942.03	129.63	
	3:54:55	2939.7	129.61	2936.27	129.57	
	3:55:00	2933.96	129.54	2930.46	129.51	
	3:55:05	2928.18	129.48	2924.7	129.44	
	3:55:10	2922.4	129.4	2918.93	129.37	
	3:55:15	2916.67	129.33	2913.16	129.3	
	3:55:20	2910.87	129.26	2907.33	129.23	
	3:55:25	2905.07	129.18	2901.46	129.17	
	3:55:30	2899.35	129.11	2895.66	129.09	
	3:55:35	2893.7	129.03	2889.98	129.01	
	3:55:40	2888.07	128.94	2884.35	128.93	
	3:55:45	2882.46	128.86	2878.75	128.85	
	3:55:50	2876.81	128.78	2873.09	128.78	
	3:55:55	2871.12	128.69	2867.44	128.69	
	3:56:00	2865.53	128.6	2861.73	128.6	
	3:56:05	2859.88	128.5	2855.99	128.51	
	3:56:10	2854.19	128.4	2850.23	128.41	
	3:56:15	2848.48	128.3	2844.35	128.32	
	3:56:20	2842.64	128.2	2838.52	128.22	
	3:56:25	2836.82	128.08	2832.71	128.11	
	3:56:30	2831.04	127.97	2826.86	128	
	3:56:35	2825.23	127.85	2820.99	127.89	
	3:56:40	2819.36	127.73	2815.07	127.78	
	3:56:45	2813.5	127.61	2809.2	127.66	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	3:56:50	2807.71	127.48	2803.33	127.54	
	3:56:55	2801.95	127.35	2797.44	127.41	
	3:57:00	2796.21	127.22	2791.65	127.29	
	3:57:05	2790.41	127.09	2785.78	127.16	
	3:57:10	2784.55	126.96	2779.87	127.03	
	3:57:15	2778.7	126.82	2773.96	126.9	
	3:57:20	2772.8	126.69	2767.99	126.77	
	3:57:25	2766.86	126.55	2762.01	126.63	
	3:57:30	2760.91	126.41	2756.02	126.5	
	3:57:35	2754.96	126.28	2750.03	126.36	
	3:57:40	2749	126.14	2744.04	126.23	
	3:57:45	2743.06	126	2738.07	126.09	
	3:57:50	2737.15	125.86	2732.13	125.95	
	3:57:55	2731.33	125.72	2726.44	125.82	
	3:58:00	2725.9	125.58	2720.93	125.68	
	3:58:05	2720.7	125.44	2715.69	125.54	
	3:58:10	2715.79	125.3	2710.8	125.4	
	3:58:15	2711.28	125.16	2706.26	125.26	
	3:58:20	2707.14	125.01	2701.99	125.12	
	3:58:25	2703.01	124.87	2697.95	124.97	
	3:58:30	2698.98	124.7	2693.96	124.8	
	3:58:35	2695.28	124.52	2690.28	124.64	
	3:58:40	2691.56	124.34	2686.56	124.48	
	3:58:45	2687.79	124.16	2683.25	124.31	
	3:58:50	2685.5	123.97	2680.54	124.12	
	3:58:55	2684.32	123.77	2679.43	123.92	
	3:59:00	2683.69	123.56	2679.19	123.71	
	3:59:05	2683.41	123.34	2678.87	123.51	
	3:59:10	2683.11	123.13	2678.52	123.3	
	3:59:15	2682.8	122.91	2678.2	123.09	
	3:59:20	2682.49	122.7	2677.91	122.88	
10	3:59:24	2682.24	122.53	2677.69	122.7	On depth 2381 MDKB
	3:59:25	2682.18	122.49	2677.64	122.66	
	3:59:30	2681.89	122.27	2677.37	122.45	
	3:59:35	2681.63	122.05	2677.15	122.23	
	3:59:40	2681.43	121.84	2676.89	122.02	
	3:59:45	2681.18	121.63	2676.64	121.82	
	3:59:50	2680.92	121.43	2676.43	121.61	
	3:59:55	2680.71	121.23	2676.26	121.41	
	4:00:00	2680.54	121.03	2676.16	121.2	
	4:00:05	2680.43	120.83	2676	121.01	
	4:00:10	2680.26	120.64	2675.83	120.82	
	4:00:15	2680.06	120.46	2675.71	120.63	
	4:00:20	2679.92	120.28	2675.64	120.44	
	4:00:25	2679.83	120.1	2675.65	120.26	
	4:00:30	2679.79	119.91	2675.58	120.08	
	4:00:35	2679.69	119.75	2675.49	119.91	
	4:00:40	2679.57	119.58	2675.46	119.74	
	4:00:45	2679.5	119.42	2675.47	119.58	
	4:00:50	2679.46	119.26	2675.51	119.41	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	4:00:55	2679.46	119.1	2675.48	119.25	
	4:01:00	2679.41	118.95	2675.43	119.1	
	4:01:05	2679.33	118.8	2675.42	118.95	
	4:01:10	2679.29	118.66	2675.46	118.8	
	4:01:15	2679.28	118.51	2675.54	118.65	
	4:01:20	2679.3	118.37	2675.56	118.51	
	4:01:25	2679.29	118.24	2675.56	118.37	
	4:01:30	2679.24	118.11	2675.6	118.24	
	4:01:35	2679.23	117.98	2675.67	118.1	
	4:01:40	2679.25	117.85	2675.78	117.97	
	4:01:45	2679.3	117.72	2675.84	117.84	
	4:01:50	2679.3	117.61	2675.87	117.72	
	4:01:55	2679.28	117.49	2675.94	117.6	
	4:02:00	2679.29	117.38	2676.03	117.48	
	4:02:05	2679.32	117.26	2676.16	117.36	
	4:02:10	2679.37	117.15	2676.24	117.25	
	4:02:15	2679.38	117.04	2676.29	117.14	
	4:02:20	2679.38	116.94	2676.36	117.03	
	4:02:25	2679.4	116.84	2676.46	116.92	
	4:02:30	2679.43	116.74	2676.57	116.81	
	4:02:35	2679.48	116.64	2676.65	116.71	
	4:02:40	2679.5	116.54	2676.71	116.62	
	4:02:45	2679.51	116.45	2676.78	116.52	
	4:02:50	2679.53	116.36	2676.87	116.42	
	4:02:55	2679.57	116.27	2676.99	116.33	
	4:03:00	2679.62	116.18	2677.06	116.24	
	4:03:05	2679.66	116.1	2677.12	116.15	
	4:03:10	2679.67	116.02	2677.2	116.06	
	4:03:15	2679.71	115.94	2677.28	115.98	
	4:03:20	2679.74	115.86	2677.38	115.89	
	4:03:25	2679.8	115.78	2677.46	115.81	
	4:03:30	2679.83	115.7	2677.51	115.73	
	4:03:35	2679.86	115.63	2677.59	115.66	
	4:03:40	2679.89	115.56	2677.67	115.58	
	4:03:45	2679.94	115.49	2677.76	115.5	
	4:03:50	2679.99	115.41	2677.83	115.43	
	4:03:55	2680.02	115.35	2677.87	115.36	
	4:04:00	2680.04	115.28	2677.94	115.3	
	4:04:05	2680.07	115.22	2678.01	115.23	
	4:04:10	2680.11	115.15	2678.1	115.16	
	4:04:15	2680.16	115.09	2678.16	115.09	
	4:04:20	2680.2	115.03	2678.21	115.03	
	4:04:25	2680.22	114.97	2678.26	114.97	
	4:04:30	2680.25	114.91	2678.33	114.91	
	4:04:35	2680.28	114.85	2678.41	114.85	
	4:04:40	2680.33	114.79	2678.46	114.79	
	4:04:45	2680.36	114.74	2678.51	114.74	
	4:04:50	2680.38	114.69	2678.56	114.68	
	4:04:55	2680.4	114.64	2678.62	114.63	
	4:05:00	2680.44	114.58	2678.69	114.57	
	4:05:05	2680.48	114.53	2678.75	114.52	
	4:05:10	2680.51	114.48	2678.79	114.47	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	4:05:15	2680.52	114.43	2678.84	114.42	
	4:05:20	2680.55	114.39	2678.88	114.37	
	4:05:25	2680.59	114.34	2678.95	114.32	
	4:05:30	2680.63	114.29	2679	114.27	
	4:05:35	2680.65	114.25	2679.04	114.23	
	4:05:40	2680.67	114.2	2679.08	114.18	
	4:05:45	2680.69	114.16	2679.13	114.14	
	4:05:50	2680.73	114.12	2679.19	114.09	
	4:05:55	2680.76	114.07	2679.23	114.05	
	4:06:00	2680.79	114.03	2679.26	114.01	
	4:06:05	2680.81	113.99	2679.31	113.97	
	4:06:10	2680.84	113.95	2679.35	113.93	
	4:06:15	2680.87	113.91	2679.39	113.89	
	4:06:20	2680.9	113.87	2679.43	113.85	
	4:06:25	2680.93	113.84	2679.47	113.81	
	4:06:30	2680.94	113.8	2679.51	113.77	
	4:06:35	2680.96	113.76	2679.55	113.74	
	4:06:40	2680.99	113.73	2679.59	113.7	
	4:06:45	2681.02	113.69	2679.63	113.67	
	4:06:50	2681.04	113.66	2679.66	113.63	
	4:06:55	2681.06	113.63	2679.69	113.6	
	4:07:00	2681.08	113.59	2679.73	113.56	
	4:07:05	2681.11	113.56	2679.78	113.53	
	4:07:10	2681.14	113.53	2679.81	113.5	
	4:07:15	2681.16	113.5	2679.84	113.47	
	4:07:20	2681.18	113.47	2679.87	113.44	
	4:07:25	2681.2	113.44	2679.91	113.41	
	4:07:30	2681.22	113.41	2679.94	113.38	
	4:07:35	2681.24	113.38	2679.97	113.35	
	4:07:40	2681.26	113.35	2679.99	113.32	
	4:07:45	2681.28	113.32	2680.03	113.29	
	4:07:50	2681.3	113.3	2680.05	113.26	
	4:07:55	2681.31	113.27	2680.08	113.23	
	4:08:00	2681.34	113.24	2680.11	113.21	
	4:08:05	2681.36	113.22	2680.14	113.18	
	4:08:10	2681.38	113.19	2680.17	113.15	
	4:08:15	2681.39	113.17	2680.2	113.13	
	4:08:20	2681.4	113.14	2680.23	113.1	
	4:08:25	2681.43	113.12	2680.25	113.08	
	4:08:30	2681.45	113.09	2680.27	113.06	
	4:08:35	2681.46	113.07	2680.3	113.03	
	4:08:40	2681.48	113.05	2680.33	113.01	
	4:08:45	2681.5	113.02	2680.37	112.98	
	4:08:50	2681.52	113	2680.39	112.96	
	4:08:55	2681.53	112.98	2680.41	112.94	
	4:09:00	2681.54	112.96	2680.43	112.92	
	4:09:05	2681.55	112.94	2680.45	112.9	
	4:09:10	2681.47	112.92	2679.06	112.87	
	4:09:15	2678.99	112.9	2676.71	112.85	
11	4:09:19	2675.76	112.88	2674.1	112.84	POOH

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	4:09:20	2674.96	112.88	2673.26	112.83	
	4:09:25	2670.95	112.86	2669.38	112.81	
	4:09:30	2666.93	112.84	2665.44	112.79	
	4:09:35	2663.08	112.82	2661.4	112.77	
	4:09:40	2659.22	112.8	2657.43	112.75	
	4:09:45	2655.27	112.78	2653.44	112.73	
	4:09:50	2651.3	112.76	2649.52	112.72	
	4:09:55	2647.21	112.74	2645.53	112.7	
	4:10:00	2643.23	112.72	2641.51	112.68	
	4:10:05	2639.26	112.71	2637.54	112.66	
	4:10:10	2635.21	112.68	2633.53	112.64	
	4:10:15	2631.32	112.66	2629.53	112.62	
	4:10:20	2627.36	112.64	2625.63	112.6	
	4:10:25	2623.28	112.62	2621.64	112.58	
	4:10:30	2619.3	112.6	2617.58	112.56	
	4:10:35	2615.41	112.58	2613.67	112.54	
	4:10:40	2611.51	112.55	2609.78	112.51	
	4:10:45	2607.6	112.52	2605.82	112.49	
	4:10:50	2603.68	112.49	2601.94	112.47	
	4:10:55	2599.82	112.47	2598.17	112.44	
	4:11:00	2596.06	112.43	2594.31	112.4	
	4:11:05	2592.24	112.39	2590.36	112.37	
	4:11:10	2588.47	112.35	2586.47	112.34	
	4:11:15	2584.55	112.31	2582.54	112.31	
	4:11:20	2580.55	112.27	2578.61	112.27	
	4:11:25	2576.65	112.22	2574.73	112.22	
	4:11:30	2572.57	112.17	2570.84	112.18	
	4:11:35	2568.61	112.11	2566.78	112.13	
	4:11:40	2564.74	112.06	2562.65	112.09	
	4:11:45	2560.74	112	2558.63	112.03	
	4:11:50	2556.74	111.94	2554.85	111.98	
	4:11:55	2552.6	111.87	2551.04	111.92	
	4:12:00	2548.57	111.8	2546.83	111.86	
	4:12:05	2544.6	111.73	2542.64	111.8	
	4:12:10	2540.37	111.66	2538.65	111.73	
	4:12:15	2536.03	111.59	2534.25	111.66	
	4:12:20	2531.89	111.51	2529.96	111.59	
	4:12:25	2527.22	111.43	2525.07	111.52	
	4:12:30	2522.28	111.35	2520.3	111.45	
	4:12:35	2517.82	111.28	2516.02	111.38	
	4:12:40	2513.65	111.19	2511.82	111.3	
	4:12:45	2509.65	111.11	2507.76	111.22	
	4:12:50	2505.72	111.02	2503.71	111.14	
	4:12:55	2501.74	110.94	2499.6	111.06	
	4:13:00	2497.68	110.85	2495.48	110.98	
	4:13:05	2493.59	110.76	2491.51	110.89	
	4:13:10	2489.48	110.67	2487.4	110.81	
	4:13:15	2485.42	110.58	2483.26	110.72	
	4:13:20	2481.29	110.48	2479.17	110.64	
	4:13:25	2477.1	110.39	2475.07	110.55	
	4:13:30	2472.96	110.3	2471.06	110.46	
	4:13:35	2468.93	110.2	2466.78	110.37	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	4:13:40	2464.99	110.1	2462.58	110.29	
	4:13:45	2460.87	110.01	2458.54	110.2	
	4:13:50	2456.72	109.91	2454.46	110.11	
	4:13:55	2452.64	109.81	2450.33	110.01	
	4:14:00	2448.54	109.71	2446.24	109.92	
	4:14:05	2444.5	109.61	2442.17	109.83	
	4:14:10	2440.56	109.51	2438.14	109.74	
	4:14:15	2436.56	109.41	2434.19	109.64	
	4:14:20	2432.51	109.31	2430.12	109.55	
	4:14:25	2428.5	109.21	2425.91	109.45	
	4:14:30	2424.35	109.11	2421.89	109.36	
	4:14:35	2420.21	109.01	2417.86	109.26	
	4:14:40	2416.11	108.9	2413.74	109.16	
	4:14:45	2411.99	108.8	2409.62	109.07	
	4:14:50	2407.84	108.7	2405.28	108.97	
	4:14:55	2403.84	108.6	2401.05	108.87	
	4:15:00	2399.81	108.5	2397.01	108.77	
	4:15:05	2395.65	108.39	2393.02	108.67	
	4:15:10	2391.45	108.29	2388.82	108.57	
	4:15:15	2387.31	108.19	2384.61	108.47	
	4:15:20	2383.22	108.09	2380.57	108.37	
	4:15:25	2379	107.99	2376.48	108.27	
	4:15:30	2374.89	107.89	2372.32	108.17	
	4:15:35	2370.91	107.79	2368.22	108.07	
	4:15:40	2366.86	107.68	2364.26	107.96	
	4:15:45	2362.72	107.58	2360.17	107.86	
	4:15:50	2358.61	107.48	2356.04	107.76	
	4:15:55	2354.51	107.38	2351.98	107.65	
	4:16:00	2350.39	107.27	2347.74	107.55	
	4:16:05	2346.31	107.17	2343.57	107.44	
	4:16:10	2342.81	107.06	2340.59	107.34	
	4:16:15	2341.58	106.96	2339.69	107.23	
	4:16:20	2341.55	106.85	2339.7	107.13	
	4:16:25	2341.49	106.74	2339.58	107.02	
12	4:16:26	2341.48	106.72	2339.54	107	On depth 2051 MDKB
	4:16:30	2341.53	106.64	2339.57	106.92	
	4:16:35	2341.49	106.53	2339.55	106.81	
	4:16:40	2341.46	106.42	2339.48	106.71	
	4:16:45	2341.45	106.32	2339.47	106.6	
	4:16:50	2341.39	106.21	2339.47	106.5	
	4:16:55	2341.33	106.11	2339.42	106.39	
	4:17:00	2341.3	106	2339.39	106.29	
	4:17:05	2341.25	105.89	2339.39	106.18	
	4:17:10	2341.21	105.79	2339.35	106.08	
	4:17:15	2341.17	105.69	2339.28	105.98	
	4:17:20	2341.15	105.59	2339.23	105.88	
	4:17:25	2341.11	105.49	2339.21	105.78	
	4:17:30	2341.07	105.39	2339.19	105.67	
	4:17:35	2341.05	105.29	2339.15	105.58	
	4:17:40	2341.01	105.19	2339.09	105.48	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	4:17:45	2340.96	105.1	2339.06	105.39	
	4:17:50	2340.91	105.01	2339.04	105.3	
	4:17:55	2340.88	104.92	2339.02	105.2	
	4:18:00	2340.86	104.83	2338.99	105.11	
	4:18:05	2340.82	104.74	2338.95	105.02	
	4:18:10	2340.77	104.66	2338.92	104.94	
	4:18:15	2340.73	104.58	2338.91	104.85	
	4:18:20	2340.71	104.5	2338.92	104.77	
	4:18:25	2340.7	104.41	2338.9	104.68	
	4:18:30	2340.67	104.34	2338.87	104.61	
	4:18:35	2340.63	104.26	2338.85	104.53	
	4:18:40	2340.61	104.19	2338.85	104.45	
	4:18:45	2340.59	104.11	2338.86	104.37	
	4:18:50	2340.58	104.04	2338.85	104.3	
	4:18:55	2340.56	103.97	2338.82	104.22	
	4:19:00	2340.54	103.9	2338.82	104.15	
	4:19:05	2340.52	103.84	2338.82	104.08	
	4:19:10	2340.51	103.77	2338.84	104.01	
	4:19:15	2340.51	103.7	2338.83	103.94	
	4:19:20	2340.49	103.64	2338.82	103.88	
	4:19:25	2340.47	103.58	2338.82	103.81	
	4:19:30	2340.45	103.52	2338.83	103.75	
	4:19:35	2340.45	103.46	2338.84	103.69	
	4:19:40	2340.45	103.4	2338.84	103.62	
	4:19:45	2340.43	103.34	2338.83	103.57	
	4:19:50	2340.43	103.29	2338.85	103.51	
	4:19:55	2340.41	103.23	2338.86	103.45	
	4:20:00	2340.41	103.18	2338.88	103.39	
	4:20:05	2340.41	103.12	2338.88	103.33	
	4:20:10	2340.41	103.07	2338.88	103.28	
	4:20:15	2340.4	103.02	2338.89	103.23	
	4:20:20	2340.39	102.97	2338.9	103.17	
	4:20:25	2340.38	102.92	2338.92	103.12	
	4:20:30	2340.38	102.87	2338.93	103.07	
	4:20:35	2340.38	102.83	2338.94	103.02	
	4:20:40	2340.38	102.78	2338.95	102.97	
	4:20:45	2340.37	102.74	2338.97	102.92	
	4:20:50	2340.36	102.7	2338.99	102.88	
	4:20:55	2340.37	102.65	2338.99	102.83	
	4:21:00	2340.37	102.61	2339	102.79	
	4:21:05	2340.36	102.57	2339.02	102.74	
	4:21:10	2340.36	102.53	2339.03	102.7	
	4:21:15	2340.37	102.49	2339.05	102.65	
	4:21:20	2340.37	102.45	2339.06	102.61	
	4:21:25	2340.37	102.41	2339.07	102.57	
	4:21:30	2340.37	102.37	2339.08	102.53	
	4:21:35	2340.36	102.34	2339.1	102.49	
	4:21:40	2340.37	102.3	2339.12	102.45	
	4:21:45	2340.37	102.26	2339.13	102.41	
	4:21:50	2340.37	102.23	2339.14	102.37	
	4:21:55	2340.37	102.2	2339.15	102.34	
	4:22:00	2340.37	102.16	2339.17	102.3	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	4:22:05	2340.37	102.13	2339.18	102.26	
	4:22:10	2340.37	102.1	2339.2	102.23	
	4:22:15	2340.38	102.06	2339.21	102.19	
	4:22:20	2340.37	102.03	2339.22	102.16	
	4:22:25	2340.37	102	2339.23	102.12	
	4:22:30	2340.38	101.97	2339.25	102.09	
	4:22:35	2340.38	101.94	2339.26	102.06	
	4:22:40	2340.38	101.91	2339.27	102.03	
	4:22:45	2340.38	101.89	2339.28	102	
	4:22:50	2340.38	101.86	2339.29	101.97	
	4:22:55	2340.38	101.83	2339.31	101.94	
	4:23:00	2340.39	101.8	2339.32	101.91	
	4:23:05	2340.39	101.78	2339.33	101.88	
	4:23:10	2340.39	101.75	2339.34	101.85	
	4:23:15	2340.39	101.73	2339.35	101.82	
	4:23:20	2340.4	101.7	2339.37	101.79	
	4:23:25	2340.4	101.68	2339.38	101.77	
	4:23:30	2340.41	101.65	2339.39	101.74	
	4:23:35	2340.41	101.63	2339.4	101.71	
	4:23:40	2340.41	101.61	2339.41	101.69	
	4:23:45	2340.41	101.58	2339.42	101.66	
	4:23:50	2340.41	101.56	2339.43	101.64	
	4:23:55	2340.41	101.54	2339.44	101.61	
	4:24:00	2340.42	101.52	2339.45	101.59	
	4:24:05	2340.41	101.49	2339.46	101.56	
	4:24:10	2340.42	101.47	2339.48	101.54	
	4:24:15	2340.42	101.45	2339.49	101.52	
	4:24:20	2340.42	101.43	2339.5	101.5	
	4:24:25	2340.43	101.41	2339.5	101.47	
	4:24:30	2340.43	101.39	2339.52	101.45	
	4:24:35	2340.43	101.37	2339.53	101.43	
	4:24:40	2340.44	101.35	2339.54	101.41	
	4:24:45	2340.45	101.33	2339.55	101.39	
	4:24:50	2340.44	101.32	2339.55	101.37	
	4:24:55	2340.44	101.3	2339.56	101.35	
	4:25:00	2340.45	101.28	2339.57	101.33	
	4:25:05	2340.45	101.26	2339.58	101.31	
	4:25:10	2340.45	101.24	2339.59	101.29	
	4:25:15	2340.46	101.23	2339.6	101.27	
	4:25:20	2340.46	101.21	2339.61	101.25	
	4:25:25	2340.46	101.19	2339.62	101.23	
	4:25:30	2340.47	101.18	2339.64	101.21	
	4:25:35	2340.47	101.16	2339.64	101.2	
	4:25:40	2340.47	101.15	2339.65	101.18	
	4:25:45	2340.47	101.13	2339.65	101.16	
	4:25:50	2340.47	101.12	2339.66	101.14	
	4:25:55	2340.47	101.1	2339.68	101.13	
	4:26:00	2340.48	101.08	2339.68	101.11	
	4:26:05	2340.48	101.07	2339.69	101.1	
	4:26:10	2340.48	101.06	2339.7	101.08	
	4:26:15	2340.49	101.04	2339.15	101.06	
	4:26:20	2338.63	101.03	2338.23	101.05	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	4:26:25	2335.53	101.01	2334.82	101.03	
	4:26:30	2331.2	101	2329.66	101.02	
	4:26:35	2326.09	100.99	2324.55	101	
	4:26:40	2321.03	100.97	2319.48	100.99	
13	4:26:45	2315.91	100.96	2314.38	100.97	POOH
	4:26:45	2315.91	100.96	2314.38	100.97	
	4:26:50	2310.75	100.95	2309.37	100.96	
	4:26:55	2305.69	100.93	2304.24	100.94	
	4:27:00	2300.72	100.92	2299.12	100.93	
	4:27:05	2295.69	100.91	2294.12	100.91	
	4:27:10	2290.64	100.89	2289.16	100.9	
	4:27:15	2285.63	100.88	2284.17	100.88	
	4:27:20	2280.64	100.86	2279.18	100.87	
	4:27:25	2275.61	100.85	2274.12	100.85	
	4:27:30	2270.64	100.83	2268.97	100.84	
	4:27:35	2265.65	100.81	2263.82	100.82	
	4:27:40	2260.62	100.8	2258.86	100.8	
	4:27:45	2255.53	100.78	2253.89	100.78	
	4:27:50	2250.38	100.76	2248.89	100.77	
	4:27:55	2245.16	100.74	2243.78	100.75	
	4:28:00	2240.04	100.72	2238.59	100.73	
	4:28:05	2235.01	100.69	2233.45	100.7	
	4:28:10	2229.99	100.66	2228.27	100.68	
	4:28:15	2224.9	100.64	2223.14	100.66	
	4:28:20	2219.84	100.61	2218.1	100.63	
	4:28:25	2214.77	100.58	2213.12	100.6	
	4:28:30	2209.64	100.55	2208.05	100.57	
	4:28:35	2204.67	100.52	2202.99	100.54	
	4:28:40	2199.61	100.48	2197.99	100.51	
	4:28:45	2194.45	100.45	2192.87	100.48	
	4:28:50	2189.35	100.41	2187.7	100.45	
	4:28:55	2184.31	100.37	2182.57	100.41	
	4:29:00	2179.24	100.33	2177.53	100.37	
	4:29:05	2174.12	100.28	2172.47	100.34	
	4:29:10	2168.99	100.24	2167.3	100.3	
	4:29:15	2163.8	100.19	2162.11	100.26	
	4:29:20	2158.6	100.14	2157.01	100.21	
	4:29:25	2153.38	100.09	2151.83	100.16	
	4:29:30	2148.31	100.03	2146.61	100.12	
	4:29:35	2143.2	99.98	2141.46	100.07	
	4:29:40	2138.05	99.92	2136.36	100.02	
	4:29:45	2132.96	99.86	2131.26	99.96	
	4:29:50	2127.94	99.8	2126.16	99.9	
	4:29:55	2122.84	99.73	2121.07	99.85	
	4:30:00	2117.77	99.67	2115.96	99.79	
	4:30:05	2112.68	99.61	2110.87	99.73	
	4:30:10	2107.55	99.53	2105.81	99.66	
	4:30:15	2102.44	99.46	2100.68	99.59	
	4:30:20	2097.29	99.39	2095.59	99.52	
	4:30:25	2092.08	99.31	2090.37	99.45	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	4:30:30	2086.8	99.24	2085.07	99.38	
	4:30:35	2081.53	99.16	2079.79	99.3	
	4:30:40	2076.33	99.07	2074.45	99.22	
	4:30:45	2071.08	98.98	2069.23	99.14	
	4:30:50	2065.75	98.9	2064.01	99.06	
	4:30:55	2060.43	98.81	2058.72	98.97	
	4:31:00	2055.12	98.72	2053.37	98.88	
	4:31:05	2049.82	98.62	2048.04	98.79	
	4:31:10	2044.48	98.52	2042.7	98.7	
	4:31:15	2039.11	98.42	2037.29	98.61	
	4:31:20	2033.81	98.33	2031.88	98.51	
	4:31:25	2028.58	98.22	2026.56	98.41	
	4:31:30	2023.33	98.11	2021.29	98.31	
	4:31:35	2018.08	98	2016.04	98.21	
	4:31:40	2012.73	97.89	2010.71	98.11	
	4:31:45	2007.38	97.78	2005.33	98.01	
	4:31:50	2002.11	97.67	1999.98	97.9	
	4:31:55	1996.76	97.55	1994.58	97.79	
	4:32:00	1991.36	97.43	1989.23	97.68	
	4:32:05	1985.91	97.31	1983.84	97.57	
	4:32:10	1980.53	97.19	1978.42	97.45	
	4:32:15	1975.23	97.06	1973.03	97.33	
	4:32:20	1969.88	96.94	1967.63	97.22	
	4:32:25	1964.55	96.81	1962.25	97.1	
	4:32:30	1959.18	96.68	1956.88	96.98	
	4:32:35	1953.79	96.56	1951.49	96.86	
	4:32:40	1948.41	96.43	1946.15	96.74	
	4:32:45	1943.06	96.3	1940.91	96.61	
	4:32:50	1937.8	96.17	1935.62	96.49	
	4:32:55	1932.53	96.04	1930.24	96.37	
	4:33:00	1927.2	95.91	1924.84	96.24	
	4:33:05	1921.84	95.78	1919.47	96.11	
	4:33:10	1916.42	95.65	1914.08	95.99	
	4:33:15	1911.01	95.52	1908.62	95.86	
	4:33:20	1905.54	95.39	1903.13	95.73	
	4:33:25	1900.04	95.26	1897.67	95.61	
	4:33:30	1894.57	95.13	1892.16	95.48	
	4:33:35	1889.08	95	1886.65	95.35	
	4:33:40	1883.52	94.87	1881.1	95.22	
	4:33:45	1877.92	94.73	1875.54	95.09	
	4:33:50	1872.37	94.6	1870.01	94.96	
	4:33:55	1866.84	94.47	1864.5	94.83	
	4:34:00	1861.32	94.34	1858.99	94.7	
	4:34:05	1855.78	94.21	1853.44	94.56	
	4:34:10	1850.26	94.08	1847.84	94.43	
	4:34:15	1844.65	93.94	1842.23	94.3	
	4:34:20	1838.98	93.81	1836.55	94.17	
	4:34:25	1833.28	93.68	1830.87	94.04	
	4:34:30	1827.59	93.54	1825.21	93.9	
	4:34:35	1821.87	93.41	1819.49	93.77	
	4:34:40	1816.14	93.27	1813.72	93.64	
	4:34:45	1810.39	93.14	1808.07	93.51	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	4:34:50	1804.68	93.01	1802.37	93.38	
	4:34:55	1799.01	92.88	1796.66	93.25	
	4:35:00	1793.4	92.75	1790.97	93.12	
	4:35:05	1787.75	92.62	1785.25	92.99	
	4:35:10	1782.03	92.5	1779.52	92.86	
	4:35:15	1776.25	92.37	1773.75	92.73	
	4:35:20	1772.23	92.25	1770.34	92.6	
	4:35:25	1770.93	92.12	1769.59	92.47	
	4:35:30	1770.79	92	1769.56	92.34	
	4:35:35	1770.78	91.87	1769.41	92.22	
	4:35:40	1770.87	91.75	1769.4	92.09	
	4:35:45	1770.81	91.62	1769.39	91.96	
	4:35:50	1770.76	91.5	1769.35	91.83	
14	4:35:54	1770.75	91.4	1769.33	91.73	On depth 1503 MDKB
	4:35:55	1770.74	91.38	1769.33	91.71	
	4:36:00	1770.68	91.25	1769.32	91.58	
	4:36:05	1770.59	91.13	1769.28	91.46	
	4:36:10	1770.53	91.01	1769.25	91.33	
	4:36:15	1770.44	90.89	1769.23	91.2	
	4:36:20	1770.35	90.76	1769.17	91.08	
	4:36:25	1770.28	90.64	1769.13	90.96	
	4:36:30	1770.21	90.53	1769.06	90.84	
	4:36:35	1770.14	90.41	1769.04	90.72	
	4:36:40	1770.07	90.29	1769.02	90.6	
	4:36:45	1769.99	90.17	1768.96	90.48	
	4:36:50	1769.92	90.06	1768.89	90.37	
	4:36:55	1769.86	89.95	1768.84	90.25	
	4:37:00	1769.8	89.84	1768.81	90.14	
	4:37:05	1769.74	89.73	1768.78	90.02	
	4:37:10	1769.7	89.62	1768.74	89.92	
	4:37:15	1769.64	89.52	1768.7	89.81	
	4:37:20	1769.57	89.42	1768.66	89.7	
	4:37:25	1769.52	89.31	1768.63	89.6	
	4:37:30	1769.48	89.21	1768.62	89.49	
	4:37:35	1769.44	89.11	1768.59	89.39	
	4:37:40	1769.4	89.02	1768.56	89.3	
	4:37:45	1769.36	88.92	1768.53	89.2	
	4:37:50	1769.32	88.83	1768.51	89.1	
	4:37:55	1769.29	88.74	1768.51	89.01	
	4:38:00	1769.26	88.64	1768.49	88.91	
	4:38:05	1769.23	88.56	1768.47	88.82	
	4:38:10	1769.2	88.47	1768.45	88.74	
	4:38:15	1769.18	88.39	1768.44	88.65	
	4:38:20	1769.15	88.3	1768.44	88.56	
	4:38:25	1769.14	88.22	1768.43	88.47	
	4:38:30	1769.12	88.13	1768.41	88.39	
	4:38:35	1769.09	88.06	1768.4	88.31	
	4:38:40	1769.07	87.98	1768.4	88.23	
	4:38:45	1769.06	87.9	1768.41	88.15	
	4:38:50	1769.05	87.82	1768.4	88.07	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	4:38:55	1769.04	87.75	1768.39	88	
	4:39:00	1769.02	87.68	1768.39	87.92	
	4:39:05	1769	87.61	1768.39	87.85	
	4:39:10	1769	87.54	1768.39	87.77	
	4:39:15	1768.99	87.47	1768.39	87.7	
	4:39:20	1768.98	87.4	1768.39	87.64	
	4:39:25	1768.97	87.34	1768.39	87.57	
	4:39:30	1768.96	87.27	1768.39	87.5	
	4:39:35	1768.96	87.21	1768.4	87.43	
	4:39:40	1768.96	87.14	1768.4	87.37	
	4:39:45	1768.95	87.08	1768.4	87.31	
	4:39:50	1768.94	87.02	1768.4	87.24	
	4:39:55	1768.93	86.96	1768.41	87.18	
	4:40:00	1768.93	86.91	1768.42	87.12	
	4:40:05	1768.93	86.85	1768.42	87.06	
	4:40:10	1768.93	86.79	1768.42	87	
	4:40:15	1768.93	86.74	1768.43	86.95	
	4:40:20	1768.92	86.68	1768.44	86.89	
	4:40:25	1768.92	86.63	1768.45	86.83	
	4:40:30	1768.93	86.57	1768.46	86.78	
	4:40:35	1768.93	86.52	1768.46	86.73	
	4:40:40	1768.92	86.47	1768.46	86.67	
	4:40:45	1768.92	86.43	1768.48	86.62	
	4:40:50	1768.93	86.38	1768.49	86.57	
	4:40:55	1768.93	86.33	1768.49	86.52	
	4:41:00	1768.94	86.28	1768.5	86.47	
	4:41:05	1768.93	86.23	1768.5	86.42	
	4:41:10	1768.93	86.19	1768.51	86.37	
	4:41:15	1768.93	86.14	1768.53	86.33	
	4:41:20	1768.94	86.1	1768.53	86.28	
	4:41:25	1768.94	86.06	1768.54	86.24	
	4:41:30	1768.94	86.01	1768.55	86.19	
	4:41:35	1768.94	85.97	1768.56	86.15	
	4:41:40	1768.94	85.93	1768.57	86.1	
	4:41:45	1768.95	85.89	1768.58	86.06	
	4:41:50	1768.95	85.85	1768.58	86.02	
	4:41:55	1768.95	85.81	1768.59	85.98	
	4:42:00	1768.96	85.78	1768.6	85.94	
	4:42:05	1768.96	85.74	1768.62	85.9	
	4:42:10	1768.97	85.7	1768.62	85.86	
	4:42:15	1768.97	85.66	1768.63	85.82	
	4:42:20	1768.97	85.63	1768.64	85.78	
	4:42:25	1768.97	85.59	1768.65	85.75	
	4:42:30	1768.98	85.56	1768.66	85.71	
	4:42:35	1768.99	85.52	1768.67	85.67	
	4:42:40	1768.99	85.49	1768.68	85.64	
	4:42:45	1768.99	85.46	1768.68	85.6	
	4:42:50	1768.99	85.43	1768.69	85.57	
	4:42:55	1769	85.39	1768.71	85.54	
	4:43:00	1769	85.36	1768.71	85.5	
	4:43:05	1769.01	85.33	1768.72	85.47	
	4:43:10	1769.01	85.3	1768.73	85.44	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	4:43:15	1769.01	85.27	1768.74	85.41	
	4:43:20	1769.02	85.24	1768.75	85.37	
	4:43:25	1769.02	85.21	1768.76	85.34	
	4:43:30	1769.03	85.18	1768.76	85.31	
	4:43:35	1769.02	85.16	1768.77	85.29	
	4:43:40	1769.03	85.13	1768.78	85.26	
	4:43:45	1769.04	85.1	1768.79	85.23	
	4:43:50	1769.04	85.08	1768.8	85.2	
	4:43:55	1769.04	85.05	1768.8	85.17	
	4:44:00	1769.04	85.02	1768.81	85.14	
	4:44:05	1769.05	85	1768.82	85.12	
	4:44:10	1769.05	84.97	1768.83	85.09	
	4:44:15	1769.06	84.95	1768.84	85.06	
	4:44:20	1769.06	84.92	1768.84	85.04	
	4:44:25	1769.07	84.9	1768.85	85.01	
	4:44:30	1769.06	84.88	1768.85	84.99	
	4:44:35	1769.07	84.85	1768.87	84.96	
	4:44:40	1769.08	84.83	1768.88	84.94	
	4:44:45	1769.08	84.81	1768.88	84.91	
	4:44:50	1769.08	84.79	1768.89	84.89	
	4:44:55	1769.09	84.77	1768.9	84.87	
	4:45:00	1769.09	84.74	1768.91	84.84	
	4:45:05	1769.1	84.72	1768.92	84.82	
	4:45:10	1769.1	84.7	1768.92	84.8	
	4:45:15	1769.1	84.68	1768.93	84.78	
	4:45:20	1769.1	84.66	1768.93	84.75	
	4:45:25	1769.11	84.64	1768.94	84.73	
	4:45:30	1769.12	84.62	1768.95	84.71	
	4:45:35	1769.12	84.6	1768.95	84.69	
	4:45:40	1768.48	84.58	1768.1	84.67	
	4:45:45	1766.5	84.57	1765.85	84.65	
	4:45:50	1763.13	84.55	1762.1	84.63	
	4:45:55	1758.68	84.53	1757.7	84.61	
	4:46:00	1753.86	84.51	1753.02	84.59	
	4:46:05	1749	84.49	1748.09	84.57	
	4:46:10	1744.07	84.48	1743.18	84.55	
15	4:46:13	1741.06	84.47	1740.2	84.54	POOH
	4:46:15	1739	84.46	1738.12	84.54	
	4:46:20	1733.77	84.44	1732.93	84.52	
	4:46:25	1728.47	84.42	1727.63	84.5	
	4:46:30	1723.2	84.41	1722.28	84.48	
	4:46:35	1717.86	84.39	1716.91	84.46	
	4:46:40	1712.55	84.37	1711.59	84.44	
	4:46:45	1707.26	84.35	1706.33	84.42	
	4:46:50	1701.95	84.33	1701.09	84.4	
	4:46:55	1696.7	84.31	1695.84	84.38	
	4:47:00	1691.42	84.29	1690.56	84.36	
	4:47:05	1686.06	84.26	1685.18	84.34	
	4:47:10	1680.67	84.24	1679.74	84.31	
	4:47:15	1675.27	84.22	1674.36	84.29	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	4:47:20	1669.9	84.19	1668.97	84.26	
	4:47:25	1664.21	84.16	1663.23	84.23	
	4:47:30	1658.38	84.14	1657.37	84.21	
	4:47:35	1652.57	84.11	1651.57	84.18	
	4:47:40	1646.76	84.08	1645.78	84.15	
	4:47:45	1640.99	84.04	1639.99	84.11	
	4:47:50	1635.18	84.01	1634.18	84.08	
	4:47:55	1629.3	83.97	1628.3	84.05	
	4:48:00	1623.41	83.94	1622.43	84.01	
	4:48:05	1617.53	83.9	1616.54	83.97	
	4:48:10	1611.66	83.85	1610.6	83.93	
	4:48:15	1605.73	83.81	1604.65	83.89	
	4:48:20	1599.75	83.77	1598.74	83.85	
	4:48:25	1593.83	83.73	1592.87	83.81	
	4:48:30	1587.96	83.68	1586.98	83.76	
	4:48:35	1582.07	83.63	1581.07	83.71	
	4:48:40	1576.16	83.57	1575.12	83.67	
	4:48:45	1570.17	83.52	1569.11	83.62	
	4:48:50	1564.15	83.47	1563.11	83.57	
	4:48:55	1558.17	83.41	1557.11	83.51	
	4:49:00	1552.21	83.35	1551.15	83.46	
	4:49:05	1546.22	83.29	1545.17	83.4	
	4:49:10	1540.22	83.23	1539.17	83.35	
	4:49:15	1534.24	83.17	1533.18	83.29	
	4:49:20	1528.29	83.11	1527.23	83.22	
	4:49:25	1522.33	83.04	1521.24	83.16	
	4:49:30	1516.33	82.97	1515.22	83.1	
	4:49:35	1510.28	82.9	1509.17	83.04	
	4:49:40	1504.22	82.83	1503.11	82.97	
	4:49:45	1498.16	82.75	1497.03	82.9	
	4:49:50	1492.13	82.67	1491.02	82.83	
	4:49:55	1486.14	82.59	1484.96	82.76	
	4:50:00	1480.13	82.51	1478.9	82.69	
	4:50:05	1474.09	82.43	1472.9	82.61	
	4:50:10	1468.05	82.35	1466.88	82.53	
	4:50:15	1462.01	82.26	1460.83	82.45	
	4:50:20	1455.95	82.16	1454.73	82.37	
	4:50:25	1449.84	82.07	1448.6	82.29	
	4:50:30	1443.72	81.98	1442.46	82.2	
	4:50:35	1437.62	81.89	1436.35	82.11	
	4:50:40	1431.53	81.78	1430.25	82.02	
	4:50:45	1425.45	81.68	1424.16	81.93	
	4:50:50	1419.39	81.58	1418.05	81.84	
	4:50:55	1413.31	81.48	1411.96	81.74	
	4:51:00	1407.24	81.37	1405.89	81.64	
	4:51:05	1401.2	81.25	1399.83	81.54	
	4:51:10	1395.14	81.13	1393.72	81.43	
	4:51:15	1389.03	81.02	1387.59	81.33	
	4:51:20	1382.91	80.9	1381.47	81.22	
	4:51:25	1376.79	80.78	1375.34	81.1	
	4:51:30	1370.69	80.65	1369.19	80.98	
	4:51:35	1364.54	80.51	1363.02	80.87	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	4:51:40	1358.36	80.38	1356.82	80.75	
	4:51:45	1352.18	80.25	1350.64	80.62	
	4:51:50	1346.03	80.11	1344.48	80.49	
	4:51:55	1339.9	79.97	1338.31	80.36	
	4:52:00	1333.74	79.82	1332.13	80.23	
	4:52:05	1327.56	79.68	1325.91	80.1	
	4:52:10	1321.33	79.53	1319.7	79.96	
	4:52:15	1315.09	79.38	1313.46	79.82	
	4:52:20	1308.86	79.22	1307.2	79.67	
	4:52:25	1302.64	79.06	1300.94	79.53	
	4:52:30	1296.41	78.9	1294.7	79.38	
	4:52:35	1290.21	78.74	1288.48	79.23	
	4:52:40	1284.03	78.57	1282.28	79.07	
	4:52:45	1277.84	78.4	1276.07	78.92	
	4:52:50	1271.63	78.23	1269.85	78.76	
	4:52:55	1265.41	78.06	1263.63	78.6	
	4:53:00	1259.22	77.89	1257.42	78.44	
	4:53:05	1253.05	77.71	1251.24	78.27	
	4:53:10	1246.85	77.53	1245.01	78.1	
	4:53:15	1240.62	77.34	1238.76	77.93	
	4:53:20	1234.37	77.16	1232.49	77.76	
	4:53:25	1228.1	76.98	1226.21	77.59	
	4:53:30	1221.83	76.79	1219.92	77.41	
	4:53:35	1215.54	76.59	1213.61	77.23	
	4:53:40	1209.24	76.4	1207.28	77.05	
	4:53:45	1204.78	76.21	1202.89	76.87	
	4:53:50	1201.47	76.02	1199.8	76.68	
	4:53:55	1198.13	75.82	1196.62	76.49	
	4:54:00	1195.62	75.62	1194.66	76.3	
	4:54:05	1194.85	75.42	1194	76.12	
	4:54:10	1194.94	75.22	1193.83	75.93	
	4:54:15	1194.95	75.02	1193.8	75.74	
	4:54:20	1194.85	74.82	1193.8	75.54	
	4:54:25	1194.73	74.61	1193.74	75.35	
	4:54:30	1194.62	74.41	1193.65	75.15	
	4:54:35	1194.51	74.21	1193.56	74.96	
	4:54:40	1194.38	74.01	1193.46	74.77	
	4:54:45	1194.25	73.81	1193.31	74.58	
	4:54:50	1194.15	73.62	1193.21	74.39	
	4:54:55	1194.01	73.43	1193.09	74.19	
16	4:54:56	1193.97	73.39	1193.06	74.16	On depth 1000 MDKB
	4:55:00	1193.89	73.23	1192.98	74	
	4:55:05	1193.79	73.04	1192.88	73.82	
	4:55:10	1193.66	72.85	1192.77	73.64	
	4:55:15	1193.53	72.67	1192.69	73.45	
	4:55:20	1193.41	72.49	1192.6	73.27	
	4:55:25	1193.31	72.31	1192.53	73.09	
	4:55:30	1193.23	72.13	1192.46	72.91	
	4:55:35	1193.15	71.96	1192.39	72.74	
	4:55:40	1193.05	71.79	1192.32	72.57	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	4:55:45	1192.98	71.63	1192.27	72.4	
	4:55:50	1192.91	71.46	1192.23	72.23	
	4:55:55	1192.84	71.3	1192.18	72.07	
	4:56:00	1192.78	71.14	1192.12	71.91	
	4:56:05	1192.73	70.99	1192.09	71.75	
	4:56:10	1192.68	70.83	1192.06	71.6	
	4:56:15	1192.63	70.68	1192.03	71.44	
	4:56:20	1192.59	70.53	1192.01	71.29	
	4:56:25	1192.55	70.38	1191.97	71.14	
	4:56:30	1192.49	70.24	1191.95	70.99	
	4:56:35	1192.45	70.1	1191.93	70.85	
	4:56:40	1192.42	69.97	1191.92	70.7	
	4:56:45	1192.39	69.83	1191.89	70.56	
	4:56:50	1192.35	69.69	1191.88	70.42	
	4:56:55	1192.32	69.57	1191.86	70.29	
	4:57:00	1192.29	69.44	1191.85	70.15	
	4:57:05	1192.28	69.31	1191.86	70.02	
	4:57:10	1192.27	69.18	1191.85	69.89	
	4:57:15	1192.24	69.06	1191.84	69.76	
	4:57:20	1192.23	68.95	1191.83	69.64	
	4:57:25	1192.21	68.83	1191.82	69.51	
	4:57:30	1192.2	68.72	1191.83	69.38	
	4:57:35	1192.19	68.6	1191.83	69.26	
	4:57:40	1192.19	68.49	1191.82	69.15	
	4:57:45	1192.17	68.38	1191.82	69.03	
	4:57:50	1192.17	68.28	1191.82	68.92	
	4:57:55	1192.16	68.17	1191.83	68.8	
	4:58:00	1192.16	68.06	1191.83	68.69	
	4:58:05	1192.15	67.96	1191.82	68.58	
	4:58:10	1192.14	67.86	1191.83	68.47	
	4:58:15	1192.13	67.77	1191.84	68.37	
	4:58:20	1192.13	67.67	1191.84	68.26	
	4:58:25	1192.12	67.57	1191.85	68.16	
	4:58:30	1192.12	67.48	1191.85	68.06	
	4:58:35	1192.11	67.39	1191.85	67.96	
	4:58:40	1192.11	67.3	1191.86	67.86	
	4:58:45	1192.11	67.21	1191.87	67.76	
	4:58:50	1192.11	67.12	1191.87	67.67	
	4:58:55	1192.1	67.03	1191.88	67.57	
	4:59:00	1192.1	66.95	1191.88	67.48	
	4:59:05	1192.1	66.87	1191.89	67.39	
	4:59:10	1192.1	66.78	1191.9	67.3	
	4:59:15	1192.1	66.7	1191.91	67.21	
	4:59:20	1192.1	66.62	1191.91	67.12	
	4:59:25	1192.1	66.55	1191.92	67.04	
	4:59:30	1192.1	66.47	1191.93	66.95	
	4:59:35	1192.1	66.39	1191.94	66.87	
	4:59:40	1192.1	66.32	1191.94	66.79	
	4:59:45	1192.1	66.24	1191.94	66.71	
	4:59:50	1192.1	66.17	1191.95	66.63	
	4:59:55	1192.1	66.1	1191.96	66.55	
	5:00:00	1192.1	66.03	1191.97	66.47	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	5:00:05	1192.1	65.96	1191.97	66.4	
	5:00:10	1192.1	65.89	1191.98	66.32	
	5:00:15	1192.1	65.83	1191.99	66.25	
	5:00:20	1192.1	65.76	1191.99	66.18	
	5:00:25	1192.09	65.7	1192.01	66.1	
	5:00:30	1192.09	65.63	1192.01	66.03	
	5:00:35	1192.1	65.57	1192.02	65.97	
	5:00:40	1192.1	65.51	1192.02	65.9	
	5:00:45	1192.09	65.45	1192.03	65.83	
	5:00:50	1192.09	65.39	1192.05	65.76	
	5:00:55	1192.1	65.33	1192.05	65.7	
	5:01:00	1192.09	65.27	1192.05	65.63	
	5:01:05	1192.1	65.21	1192.06	65.57	
	5:01:10	1192.1	65.16	1192.07	65.51	
	5:01:15	1192.1	65.1	1192.08	65.44	
	5:01:20	1192.1	65.05	1192.09	65.38	
	5:01:25	1192.1	64.99	1192.09	65.32	
	5:01:30	1192.1	64.94	1192.09	65.27	
	5:01:35	1192.09	64.89	1192.1	65.21	
	5:01:40	1192.1	64.84	1192.11	65.15	
	5:01:45	1192.1	64.78	1192.12	65.09	
	5:01:50	1192.1	64.73	1192.12	65.04	
	5:01:55	1192.1	64.69	1192.13	64.98	
	5:02:00	1192.1	64.64	1192.14	64.93	
	5:02:05	1192.1	64.59	1192.15	64.88	
	5:02:10	1192.1	64.54	1192.15	64.82	
	5:02:15	1192.1	64.5	1192.15	64.77	
	5:02:20	1192.1	64.45	1192.16	64.72	
	5:02:25	1192.1	64.41	1192.17	64.67	
	5:02:30	1192.11	64.36	1192.18	64.62	
	5:02:35	1192.11	64.32	1192.19	64.57	
	5:02:40	1192.11	64.27	1192.19	64.52	
	5:02:45	1192.1	64.23	1192.19	64.48	
	5:02:50	1192.1	64.19	1192.2	64.43	
	5:02:55	1192.1	64.15	1192.21	64.38	
	5:03:00	1192.1	64.11	1192.21	64.34	
	5:03:05	1192.1	64.07	1192.22	64.29	
	5:03:10	1192.11	64.03	1192.22	64.25	
	5:03:15	1192.11	63.99	1192.23	64.21	
	5:03:20	1192.11	63.95	1192.23	64.16	
	5:03:25	1192.11	63.91	1192.24	64.12	
	5:03:30	1192.11	63.87	1192.25	64.08	
	5:03:35	1192.11	63.84	1192.25	64.04	
	5:03:40	1192.11	63.8	1192.26	64	
	5:03:45	1192.1	63.77	1192.27	63.96	
	5:03:50	1192.11	63.73	1192.27	63.92	
	5:03:55	1192.1	63.7	1192.28	63.88	
	5:04:00	1192.1	63.66	1192.28	63.84	
	5:04:05	1191.93	63.63	1191.89	63.81	
	5:04:10	1190.15	63.6	1189.07	63.77	
	5:04:15	1185.68	63.56	1184.8	63.73	
	5:04:20	1180.1	63.53	1179.54	63.69	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	5:04:25	1174.29	63.5	1173.61	63.66	
17	5:04:29	1169.53	63.47	1168.86	63.63	POOH
	5:04:30	1168.35	63.47	1167.67	63.62	
	5:04:35	1162.43	63.43	1161.76	63.59	
	5:04:40	1156.55	63.4	1155.88	63.55	
	5:04:45	1150.69	63.37	1149.99	63.52	
	5:04:50	1144.8	63.34	1144.11	63.48	
	5:04:55	1138.88	63.3	1138.2	63.45	
	5:05:00	1132.98	63.27	1132.28	63.41	
	5:05:05	1127.07	63.24	1126.37	63.38	
	5:05:10	1121.15	63.2	1120.45	63.34	
	5:05:15	1115.21	63.16	1114.52	63.3	
	5:05:20	1109.27	63.12	1108.57	63.26	
	5:05:25	1103.33	63.08	1102.63	63.22	
	5:05:30	1097.4	63.04	1096.69	63.18	
	5:05:35	1091.48	62.99	1090.78	63.13	
	5:05:40	1085.58	62.94	1084.89	63.08	
	5:05:45	1079.71	62.89	1079.02	63.04	
	5:05:50	1073.86	62.84	1073.15	62.99	
	5:05:55	1067.97	62.79	1067.27	62.94	
	5:06:00	1062.05	62.73	1061.36	62.88	
	5:06:05	1056.11	62.67	1055.43	62.82	
	5:06:10	1050.18	62.61	1049.51	62.76	
	5:06:15	1044.25	62.55	1043.55	62.71	
	5:06:20	1038.28	62.49	1037.59	62.64	
	5:06:25	1032.31	62.42	1031.6	62.58	
	5:06:30	1026.31	62.35	1025.59	62.51	
	5:06:35	1020.29	62.28	1019.59	62.44	
	5:06:40	1014.29	62.21	1013.6	62.38	
	5:06:45	1008.31	62.13	1007.61	62.3	
	5:06:50	1002.33	62.05	1001.63	62.23	
	5:06:55	996.36	61.97	995.64	62.15	
	5:07:00	990.39	61.89	989.65	62.07	
	5:07:05	984.42	61.81	983.67	62	
	5:07:10	978.43	61.72	977.71	61.91	
	5:07:15	972.45	61.63	971.72	61.83	
	5:07:20	966.45	61.54	965.7	61.74	
	5:07:25	960.42	61.45	959.66	61.65	
	5:07:30	954.38	61.35	953.61	61.57	
	5:07:35	948.33	61.26	947.58	61.48	
	5:07:40	942.28	61.16	941.52	61.38	
	5:07:45	936.19	61.06	935.44	61.29	
	5:07:50	930.11	60.95	929.35	61.19	
	5:07:55	924.04	60.85	923.27	61.09	
	5:08:00	917.97	60.75	917.21	60.99	
	5:08:05	911.9	60.64	911.14	60.89	
	5:08:10	905.83	60.52	905.05	60.79	
	5:08:15	899.73	60.41	898.95	60.68	
	5:08:20	893.61	60.3	892.84	60.58	
	5:08:25	887.46	60.19	886.71	60.47	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	5:08:30	881.31	60.07	880.56	60.36	
	5:08:35	875.16	59.95	874.4	60.25	
	5:08:40	869.03	59.83	868.24	60.14	
	5:08:45	862.89	59.71	862.09	60.03	
	5:08:50	856.74	59.59	855.95	59.91	
	5:08:55	850.6	59.47	849.82	59.79	
	5:09:00	844.48	59.35	843.7	59.68	
	5:09:05	838.37	59.22	837.57	59.56	
	5:09:10	832.24	59.1	831.43	59.44	
	5:09:15	826.09	58.97	825.29	59.32	
	5:09:20	819.93	58.84	819.13	59.2	
	5:09:25	813.75	58.71	812.96	59.07	
	5:09:30	807.57	58.58	806.78	58.95	
	5:09:35	801.39	58.45	800.58	58.83	
	5:09:40	795.2	58.31	794.37	58.7	
	5:09:45	788.99	58.18	788.16	58.57	
	5:09:50	782.78	58.04	781.98	58.44	
	5:09:55	776.57	57.9	775.78	58.31	
	5:10:00	770.4	57.77	769.57	58.18	
	5:10:05	764.21	57.63	763.4	58.05	
	5:10:10	757.99	57.49	757.16	57.91	
	5:10:15	751.78	57.34	750.96	57.78	
	5:10:20	745.53	57.2	744.73	57.64	
	5:10:25	739.31	57.05	738.5	57.51	
	5:10:30	733.11	56.91	732.31	57.37	
	5:10:35	726.9	56.76	726.08	57.22	
	5:10:40	720.68	56.61	719.82	57.08	
	5:10:45	714.41	56.46	713.55	56.94	
	5:10:50	708.14	56.31	707.29	56.8	
	5:10:55	701.87	56.16	701.03	56.65	
	5:11:00	695.59	56.01	694.78	56.51	
	5:11:05	689.36	55.86	688.54	56.36	
	5:11:10	683.16	55.7	682.3	56.21	
	5:11:15	676.92	55.54	676.07	56.06	
	5:11:20	670.7	55.39	669.84	55.91	
	5:11:25	664.49	55.23	663.64	55.76	
	5:11:30	658.24	55.07	657.38	55.6	
	5:11:35	652.01	54.91	651.08	55.45	
	5:11:40	645.73	54.75	644.8	55.29	
	5:11:45	639.44	54.59	638.54	55.14	
	5:11:50	633.17	54.42	632.29	54.98	
	5:11:55	626.87	54.26	625.98	54.82	
	5:12:00	620.56	54.09	619.63	54.66	
	5:12:05	614.24	53.92	614.08	54.5	
	5:12:10	610.25	53.76	609.07	54.34	
	5:12:15	607.82	53.59	607.1	54.18	
	5:12:20	606.91	53.42	607.04	54.01	
18	5:12:25	606.97	53.25	607	53.85	On depth 500 MDKB
	5:12:25	606.97	53.25	607	53.85	
	5:12:30	606.95	53.09	606.97	53.69	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	5:12:35	606.91	52.92	606.91	53.52	
	5:12:40	606.86	52.75	606.84	53.36	
	5:12:45	606.8	52.58	606.77	53.19	
	5:12:50	606.73	52.41	606.7	53.03	
	5:12:55	606.65	52.25	606.61	52.86	
	5:13:00	606.56	52.08	606.52	52.7	
	5:13:05	606.47	51.92	606.44	52.54	
	5:13:10	606.38	51.76	606.35	52.38	
	5:13:15	606.29	51.6	606.27	52.22	
	5:13:20	606.2	51.44	606.19	52.06	
	5:13:25	606.12	51.28	606.12	51.91	
	5:13:30	606.03	51.12	606.03	51.76	
	5:13:35	605.95	50.97	605.95	51.6	
	5:13:40	605.87	50.83	605.88	51.45	
	5:13:45	605.8	50.68	605.81	51.3	
	5:13:50	605.73	50.53	605.75	51.15	
	5:13:55	605.66	50.39	605.68	51.01	
	5:14:00	605.59	50.25	605.62	50.87	
	5:14:05	605.53	50.11	605.56	50.73	
	5:14:10	605.47	49.98	605.51	50.58	
	5:14:15	605.42	49.84	605.46	50.45	
	5:14:20	605.37	49.71	605.41	50.32	
	5:14:25	605.32	49.58	605.36	50.18	
	5:14:30	605.27	49.46	605.31	50.05	
	5:14:35	605.22	49.33	605.27	49.92	
	5:14:40	605.18	49.2	605.23	49.79	
	5:14:45	605.13	49.08	605.19	49.67	
	5:14:50	605.09	48.97	605.15	49.54	
	5:14:55	605.05	48.85	605.12	49.42	
	5:15:00	605.01	48.73	605.09	49.3	
	5:15:05	604.97	48.62	605.07	49.18	
	5:15:10	604.94	48.51	605.04	49.06	
	5:15:15	604.91	48.4	605.01	48.95	
	5:15:20	604.88	48.29	604.99	48.83	
	5:15:25	604.85	48.18	604.96	48.72	
	5:15:30	604.82	48.08	604.94	48.61	
	5:15:35	604.79	47.97	604.91	48.5	
	5:15:40	604.77	47.88	604.89	48.39	
	5:15:45	604.74	47.78	604.87	48.29	
	5:15:50	604.72	47.68	604.85	48.18	
	5:15:55	604.7	47.58	604.82	48.08	
	5:16:00	604.68	47.48	604.8	47.98	
	5:16:05	604.66	47.39	604.79	47.88	
	5:16:10	604.65	47.3	604.77	47.78	
	5:16:15	604.63	47.21	604.75	47.68	
	5:16:20	604.62	47.12	604.73	47.59	
	5:16:25	604.6	47.03	604.72	47.49	
	5:16:30	604.59	46.95	604.7	47.4	
	5:16:35	604.58	46.86	604.69	47.31	
	5:16:40	604.56	46.78	604.67	47.22	
	5:16:45	604.54	46.69	604.66	47.13	
	5:16:50	604.53	46.61	604.65	47.04	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	5:16:55	604.52	46.53	604.64	46.96	
	5:17:00	604.51	46.46	604.63	46.87	
	5:17:05	604.5	46.38	604.62	46.79	
	5:17:10	604.49	46.3	604.61	46.7	
	5:17:15	604.47	46.22	604.6	46.62	
	5:17:20	604.46	46.15	604.59	46.54	
	5:17:25	604.46	46.08	604.58	46.47	
	5:17:30	604.45	46	604.57	46.39	
	5:17:35	604.43	45.93	604.56	46.31	
	5:17:40	604.42	45.86	604.56	46.24	
	5:17:45	604.42	45.79	604.55	46.16	
	5:17:50	604.41	45.73	604.54	46.09	
	5:17:55	604.4	45.66	604.53	46.01	
	5:18:00	604.39	45.59	604.53	45.94	
	5:18:05	604.38	45.53	604.52	45.88	
	5:18:10	604.38	45.46	604.52	45.81	
	5:18:15	604.37	45.4	604.51	45.74	
	5:18:20	604.36	45.34	604.51	45.67	
	5:18:25	604.36	45.27	604.5	45.6	
	5:18:30	604.35	45.21	604.5	45.54	
	5:18:35	604.35	45.16	604.49	45.48	
	5:18:40	604.35	45.1	604.48	45.41	
	5:18:45	604.34	45.04	604.49	45.35	
	5:18:50	604.33	44.98	604.48	45.29	
	5:18:55	604.33	44.92	604.48	45.23	
	5:19:00	604.32	44.87	604.48	45.17	
	5:19:05	604.32	44.82	604.47	45.11	
	5:19:10	604.32	44.76	604.47	45.05	
	5:19:15	604.32	44.71	604.47	45	
	5:19:20	604.32	44.66	604.47	44.94	
	5:19:25	604.31	44.6	604.47	44.89	
	5:19:30	604.31	44.55	604.47	44.83	
	5:19:35	604.31	44.5	604.46	44.77	
	5:19:40	604.3	44.45	604.46	44.72	
	5:19:45	604.3	44.4	604.47	44.67	
	5:19:50	604.3	44.36	604.46	44.62	
	5:19:55	604.3	44.31	604.46	44.57	
	5:20:00	604.3	44.26	604.46	44.52	
	5:20:05	604.29	44.21	604.46	44.47	
	5:20:10	604.29	44.17	604.46	44.42	
	5:20:15	604.29	44.12	604.46	44.37	
	5:20:20	604.28	44.08	604.46	44.32	
	5:20:25	604.28	44.03	604.46	44.27	
	5:20:30	604.28	43.99	604.46	44.23	
	5:20:35	604.27	43.95	604.46	44.18	
	5:20:40	604.27	43.9	604.46	44.14	
	5:20:45	604.27	43.86	604.46	44.09	
	5:20:50	604.27	43.82	604.46	44.05	
	5:20:55	604.26	43.78	604.46	44	
	5:21:00	604.27	43.74	604.46	43.96	
	5:21:05	604.27	43.7	604.46	43.92	
	5:21:10	604.26	43.66	604.46	43.88	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	5:21:15	604.26	43.62	604.46	43.84	
	5:21:20	604.26	43.58	604.46	43.79	
	5:21:25	604.25	43.54	604.47	43.76	
	5:21:30	604.25	43.51	604.47	43.72	
	5:21:35	604.25	43.47	604.46	43.68	
	5:21:40	604.25	43.43	604.47	43.64	
	5:21:45	604.25	43.4	604.47	43.6	
	5:21:50	604.25	43.36	604.47	43.56	
	5:21:55	604.24	43.33	604.47	43.53	
	5:22:00	604.24	43.29	604.47	43.49	
	5:22:05	604.24	43.26	604.47	43.45	
	5:22:10	604.24	43.22	604.47	43.42	
	5:22:15	604.24	43.19	604.46	43.38	
19	5:22:20	603.08	43.16	602.91	43.35	POOH
	5:22:20	603.08	43.16	602.91	43.35	
	5:22:25	599.37	43.13	598.79	43.31	
	5:22:30	593.98	43.09	593.36	43.28	
	5:22:35	588.3	43.06	587.75	43.24	
	5:22:40	582.65	43.03	582.13	43.21	
	5:22:45	577.03	43	576.5	43.18	
	5:22:50	571.44	42.97	570.87	43.15	
	5:22:55	565.81	42.94	565.2	43.11	
	5:23:00	560.15	42.9	559.51	43.08	
	5:23:05	554.48	42.87	553.82	43.05	
	5:23:10	548.79	42.84	548.15	43.01	
	5:23:15	543.12	42.81	542.52	42.98	
	5:23:20	537.46	42.77	536.89	42.95	
	5:23:25	531.82	42.74	531.24	42.91	
	5:23:30	526.19	42.7	525.61	42.87	
	5:23:35	520.57	42.66	519.99	42.83	
	5:23:40	514.95	42.62	514.37	42.8	
	5:23:45	509.32	42.58	508.72	42.76	
	5:23:50	503.7	42.54	503.06	42.72	
	5:23:55	498.08	42.5	497.43	42.67	
	5:24:00	492.42	42.45	491.84	42.63	
	5:24:05	486.77	42.4	486.2	42.59	
	5:24:10	481.11	42.36	480.55	42.54	
	5:24:15	475.46	42.31	474.91	42.49	
	5:24:20	469.8	42.26	469.24	42.44	
	5:24:25	464.13	42.2	463.57	42.39	
	5:24:30	458.43	42.15	457.85	42.34	
	5:24:35	452.72	42.09	452.14	42.29	
	5:24:40	447.01	42.04	446.44	42.23	
	5:24:45	441.3	41.98	440.69	42.17	
	5:24:50	435.58	41.91	434.96	42.11	
	5:24:55	429.87	41.85	429.26	42.05	
	5:25:00	424.17	41.79	423.59	41.99	
	5:25:05	418.48	41.72	417.91	41.93	
	5:25:10	412.78	41.65	412.2	41.86	
	5:25:15	407.07	41.58	406.48	41.79	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	5:25:20	401.32	41.51	400.72	41.72	
	5:25:25	395.55	41.44	394.95	41.66	
	5:25:30	389.79	41.37	389.19	41.58	
	5:25:35	384.05	41.29	383.44	41.51	
	5:25:40	378.31	41.21	377.66	41.43	
	5:25:45	372.55	41.13	371.88	41.36	
	5:25:50	366.81	41.05	366.13	41.28	
	5:25:55	361.08	40.97	360.4	41.2	
	5:26:00	355.35	40.88	354.68	41.12	
	5:26:05	349.6	40.8	348.94	41.04	
	5:26:10	343.85	40.71	343.19	40.96	
	5:26:15	338.11	40.62	337.43	40.87	
	5:26:20	332.35	40.54	331.69	40.79	
	5:26:25	326.58	40.45	325.9	40.7	
	5:26:30	320.82	40.35	320.11	40.61	
	5:26:35	315.05	40.26	314.32	40.52	
	5:26:40	309.28	40.17	308.53	40.44	
	5:26:45	303.5	40.07	302.72	40.34	
	5:26:50	297.7	39.98	296.9	40.25	
	5:26:55	291.9	39.88	291.07	40.15	
	5:27:00	286.1	39.78	285.26	40.06	
	5:27:05	280.28	39.68	279.42	39.96	
	5:27:10	274.43	39.57	273.56	39.87	
	5:27:15	268.57	39.47	267.7	39.76	
	5:27:20	262.68	39.36	261.8	39.66	
	5:27:25	256.8	39.26	255.91	39.56	
	5:27:30	251.1	39.15	250.23	39.46	
	5:27:35	245.49	39.05	244.66	39.36	
	5:27:40	239.85	38.94	238.97	39.25	
	5:27:45	234.03	38.83	233.07	39.15	
	5:27:50	228.29	38.72	227.41	39.04	
	5:27:55	223.12	38.6	222.43	38.93	
	5:28:00	218.56	38.49	217.76	38.83	
	5:28:05	214.23	38.38	213.39	38.71	
	5:28:10	210.05	38.26	209.28	38.6	
	5:28:15	205.97	38.14	205.19	38.49	
	5:28:20	201.79	38.03	200.47	38.38	
	5:28:25	196.51	37.91	195.34	38.26	
	5:28:30	190.52	37.78	189.48	38.14	
	5:28:35	184.07	37.66	182.81	38.02	
	5:28:40	177.27	37.53	175.97	37.9	
	5:28:45	170.43	37.4	169.13	37.78	
	5:28:50	163.62	37.27	162.26	37.66	
	5:28:55	156.79	37.13	155.41	37.52	
	5:29:00	149.96	36.99	148.58	37.39	
	5:29:05	143.16	36.84	141.76	37.26	
	5:29:10	136.36	36.7	134.94	37.12	
	5:29:15	129.57	36.55	128.09	36.97	
	5:29:20	122.77	36.39	121.24	36.81	
	5:29:25	115.94	36.21	114.39	36.65	
	5:29:30	109.13	36.03	107.58	36.49	
	5:29:35	102.38	35.85	100.78	36.33	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	5:29:40	95.6	35.67	93.95	36.15	
	5:29:45	88.76	35.48	87.06	35.96	
	5:29:50	81.85	35.26	80.07	35.77	
	5:29:55	74.89	35.05	73.09	35.58	
	5:30:00	68.15	34.84	66.53	35.38	
	5:30:05	61.89	34.63	60.22	35.18	
	5:30:10	55.84	34.4	53.95	34.96	
	5:30:15	49.86	34.17	47.96	34.74	
	5:30:20	44.63	33.94	42.79	34.52	
	5:30:25	39.99	33.7	38.16	34.3	
	5:30:30	35.56	33.47	33.6	34.08	
	5:30:35	31.19	33.23	29.11	33.84	
	5:30:40	26.96	32.99	24.83	33.61	
	5:30:45	22.92	32.75	20.75	33.38	
	5:30:50	19.22	32.5	17.1	33.15	
	5:30:55	15.98	32.26	13.69	32.91	
	5:31:00	12.9	32.02	10.54	32.68	
	5:31:05	10.18	31.77	7.85	32.44	
	5:31:10	7.97	31.52	5.61	32.21	
	5:31:15	6.33	31.28	4.08	31.97	
	5:31:20	5.5	31.03	2.92	31.74	
	5:31:25	5.02	30.78	2.56	31.5	
	5:31:30	4.45	30.52	2.27	31.27	
	5:31:35	3.72	30.26	1.74	31.03	
	5:31:40	3.17	30	1.36	30.8	
	5:31:45	2.84	29.75	1.04	30.57	
20	5:31:50	2.58	29.5	0.72	30.35	Out of hole
	5:31:50	2.58	29.5	0.72	30.35	
	5:31:55	2.49	29.26	0.55	30.12	
	5:32:00	2.37	29.03	0.37	29.9	
	5:32:05	2.12	28.79	0.09	29.67	
	5:32:10	1.91	28.56	-0.2	29.46	
	5:32:15	1.75	28.34	-0.44	29.25	
	5:32:20	1.66	28.13	-0.58	29.04	
	5:32:25	1.52	27.92	-0.83	28.83	
	5:32:30	1.31	27.72	-1.07	28.62	
	5:32:35	1.17	27.51	-1.23	28.42	
	5:32:40	1.11	27.32	-1.36	28.23	
	5:32:45	1.02	27.14	-1.52	28.04	
	5:32:50	0.92	26.96	-1.71	27.86	
	5:32:55	0.84	26.78	-1.9	27.67	
	5:33:00	0.69	26.6	-2.09	27.49	
	5:33:05	0.51	26.43	-2.21	27.32	
	5:33:10	0.47	26.27	-2.27	27.15	
	5:33:15	0.5	26.12	-2.29	26.98	
	5:33:20	0.49	25.96	-2.41	26.82	
	5:33:25	0.38	25.8	-2.6	26.66	
	5:33:30	0.25	25.66	-2.67	26.51	
	5:33:35	0.25	25.52	-2.63	26.36	
	5:33:40	0.16	25.38	-2.75	26.21	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	5:33:45	0.08	25.24	-2.88	26.06	
	5:33:50	-0.01	25.11	-2.91	25.92	
	5:33:55	-0.13	24.98	-3	25.79	
	5:34:00	-0.18	24.86	-3.07	25.65	
	5:34:05	-0.17	24.74	-3.07	25.52	
	5:34:10	-0.45	24.62	-3.2	25.39	
	5:34:15	-0.64	24.5	-3.41	25.27	
	5:34:20	-0.63	24.38	-3.47	25.15	
	5:34:25	-0.58	24.27	-3.45	25.03	
	5:34:30	-0.54	24.17	-3.44	24.91	
	5:34:35	-0.5	24.06	-3.44	24.8	
	5:34:40	-0.5	23.95	-3.41	24.69	
	5:34:45	-0.51	23.85	-3.47	24.58	
	5:34:50	-0.68	23.76	-3.65	24.48	
	5:34:55	-0.82	23.66	-3.72	24.38	
	5:35:00	-0.77	23.57	-3.67	24.27	
	5:35:05	-0.7	23.47	-3.58	24.18	
	5:35:10	-0.63	23.39	-3.57	24.08	
	5:35:15	-0.58	23.31	-3.59	23.99	
	5:35:20	-0.56	23.22	-3.6	23.9	
	5:35:25	-0.52	23.14	-3.6	23.81	
	5:35:30	-0.51	23.06	-3.59	23.72	
	5:35:35	-0.49	22.98	-3.56	23.64	
	5:35:40	-0.53	22.91	-3.59	23.56	
	5:35:45	-0.54	22.84	-3.57	23.48	
	5:35:50	-0.53	22.77	-3.54	23.4	
	5:35:55	-0.53	22.7	-3.53	23.32	
	5:36:00	-0.54	22.63	-3.53	23.25	
	5:36:05	-0.56	22.56	-3.54	23.18	
	5:36:10	-0.73	22.5	-3.68	23.1	
	5:36:15	-0.78	22.43	-3.76	23.03	
	5:36:20	-0.75	22.37	-3.73	22.96	
	5:36:25	-0.73	22.31	-3.69	22.9	
	5:36:30	-0.69	22.25	-3.68	22.83	
	5:36:35	-0.67	22.19	-3.69	22.77	
	5:36:40	-0.63	22.13	-3.68	22.71	
	5:36:45	-0.59	22.08	-3.66	22.64	
	5:36:50	-0.57	22.02	-3.65	22.59	
	5:36:55	-0.6	21.97	-3.66	22.53	
	5:37:00	-0.6	21.92	-3.66	22.47	
	5:37:05	-0.6	21.87	-3.68	22.41	
	5:37:10	-0.59	21.82	-3.69	22.36	
	5:37:15	-0.57	21.77	-3.67	22.31	
	5:37:20	-0.53	21.73	-3.65	22.26	
	5:37:25	-0.48	21.68	-3.61	22.21	
	5:37:30	-0.45	21.64	-3.58	22.15	
	5:37:35	-0.44	21.59	-3.56	22.11	
	5:37:40	-0.43	21.55	-3.55	22.06	
	5:37:45	-0.42	21.51	-3.53	22.01	
	5:37:50	-0.41	21.47	-3.52	21.97	
	5:37:55	-0.41	21.43	-3.55	21.92	
	5:38:00	-0.45	21.39	-3.59	21.88	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	5:38:05	-0.51	21.35	-3.6	21.83	
	5:38:10	-0.52	21.31	-3.57	21.79	
	5:38:15	-0.48	21.28	-3.54	21.75	
	5:38:20	-0.45	21.24	-3.53	21.71	
	5:38:25	-0.43	21.2	-3.51	21.67	
	5:38:30	-0.4	21.17	-3.48	21.63	
	5:38:35	-0.39	21.14	-3.48	21.59	
	5:38:40	-0.39	21.1	-3.5	21.56	
	5:38:45	-0.4	21.07	-3.5	21.52	
	5:38:50	-0.4	21.04	-3.48	21.48	
	5:38:55	-0.38	21.01	-3.49	21.45	
	5:39:00	-0.35	20.98	-3.47	21.41	
	5:39:05	-0.35	20.95	-3.46	21.38	
	5:39:10	-0.39	20.92	-3.48	21.34	
	5:39:15	-0.41	20.89	-3.5	21.31	
	5:39:20	-0.4	20.86	-3.5	21.28	
	5:39:25	-0.38	20.83	-3.5	21.25	
	5:39:30	-0.36	20.81	-3.48	21.22	
	5:39:35	-0.33	20.78	-3.46	21.19	
	5:39:40	-0.3	20.75	-3.44	21.16	
	5:39:45	-0.27	20.73	-3.42	21.13	
	5:39:50	-0.26	20.7	-3.4	21.1	
	5:39:55	-0.25	20.68	-3.39	21.07	
	5:40:00	-0.24	20.65	-3.41	21.04	
	5:40:05	-0.25	20.63	-3.44	21.01	
	5:40:10	-0.26	20.61	-3.44	20.99	
	5:40:15	-0.27	20.58	-3.43	20.96	
	5:40:20	-0.25	20.56	-3.42	20.93	
	5:40:25	-0.24	20.54	-3.4	20.91	
	5:40:30	-0.21	20.52	-3.39	20.88	
	5:40:35	-0.18	20.5	-3.35	20.85	
	5:40:40	-0.14	20.48	-3.31	20.83	
	5:40:45	-0.11	20.45	-3.3	20.81	
	5:40:50	-0.14	20.43	-3.32	20.78	
	5:40:55	-0.16	20.41	-3.35	20.76	
	5:41:00	-0.16	20.39	-3.37	20.73	
	5:41:05	-0.16	20.37	-3.36	20.71	
	5:41:10	-0.15	20.36	-3.34	20.69	
	5:41:15	-0.13	20.34	-3.34	20.66	
	5:41:20	-0.12	20.32	-3.33	20.64	
	5:41:25	-0.12	20.3	-3.33	20.62	
	5:41:30	-0.09	20.28	-3.3	20.6	
	5:41:35	-0.06	20.27	-3.28	20.58	
	5:41:40	-0.06	20.25	-3.27	20.56	
	5:41:45	-0.05	20.23	-3.26	20.54	
	5:41:50	-0.02	20.21	-3.26	20.51	
	5:41:55	-0.02	20.2	-3.26	20.49	
	5:42:00	-0.01	20.18	-3.25	20.47	
	5:42:05	0	20.16	-3.25	20.45	
	5:42:10	-0.02	20.15	-3.27	20.43	
	5:42:15	-0.03	20.13	-3.26	20.42	
	5:42:20	-0.02	20.12	-3.24	20.4	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	5:42:25	-0.01	20.1	-3.23	20.38	
	5:42:30	0	20.09	-3.24	20.36	
	5:42:35	0.01	20.07	-3.25	20.34	
	5:42:40	0.01	20.06	-3.23	20.32	
	5:42:45	0.02	20.04	-3.23	20.3	
	5:42:50	0.03	20.03	-3.23	20.28	
	5:42:55	0.04	20.02	-3.23	20.27	
21	5:42:58	0.04	20.01	-3.23	20.26	Shut in well and depressure
	5:43:00	0.04	20	-3.23	20.25	
	5:48:00	0.79	19.33	0.75	19.38	
	5:53:00	2.98	18.54	0.94	18.49	
	5:58:00	3.77	17.28	1.5	16.91	
	6:03:00	2.67	17.5	1.13	16.92	
	6:08:00	2.71	17.48	1.01	16.93	
22	6:10:52	2.18	17.47	1.06	16.92	Stop top gauge
23	6:12:02			0.51	16.93	Stop Bottom gauge

PRESSURE GRADIENT DATA

Client	:Origin Energy	Operator	:David Whelan
Field	:Yolla	Date	:29th July 2004
Platform	:Yolla	DF Elevation	:81 m AMSL
Well	:Yolla 4	Tubing Flange	:27.07m MDRT

Description	**Depth Stop Type**	**Meas.Depth** m BDF	**TV Depth** m AMSL	**Pressure** psig	**Pressure Gradient** psig/m
Survey Point #1	static	3149	3014	3837.65	
					1.637
Survey Point #2	static	2709	2600	3159.915	
					1.5989
Survey Point #3	static	2381	2300	2680.255	
					1.1323
Survey Point #4	static	2051	2000	2340.567	
					1.1427
Survey Point #5	static	1503	1500	1769.2	
					1.1539
Survey Point #6	static	1000	1000	1192.234	
					1.1752
Survey Point #7	static	500	500	604.619	

HALLIBURTON

Origin Energy

Well Name: Yolla 4
Test Type: Flowing Survey 2973 Sands
Date of Survey: 30th July 2004

MEMORY GAUGE REPORT

Prepared For: Andrew Wenk
Date: 30th July 2004

David Whelan
Completion Products & Services
Halliburton Australia Pty Ltd

HALLIBURTON

Halliburton Australia Pty Ltd

MEMORY GAUGE FLOWING PRESSURE AND
TEMPERATURE SURVEY

MEMORY GAUGE TICKET NO:	35409
DATE:	30-Jul-04
HALLIBURTON CAMP:	Cheltenham, Victoria
HALLIBURTON OPERATOR:	David Whelan
WITNESS:	N/A
COMPANY:	Origin
DRILLING CONTRACTOR:	Ensco
LEASE NAME:	YOLLA
WELL NO:	YOLLA-4
TEST TYPE:	Flowing Survey
TEST NO:	1
TESTED ZONE:	2973 Sands
FIELD AREA:	Bass Strait
STATE:	Victoria
COUNTRY:	Australia

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HALLIBURTON

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Events 14 to 15	2.06
Events 15 to 18	2.07
Events 18 to 21	2.08
Events 21 to 23	2.09
Events 23 to 26	2.10
SECTION 3: DATA	**3.00**
Pressure & Temperature Data	3.01

SECTION 1

TEST SUMMARY & JOB INFORMATION

WELL DATA

Well Details

Well Name	Yolla - 4	
Field	Yolla	
Platfrom	Yolla A	
Derrick Floor Elevation	81	m AMSL
Top Bottom Flange	27.07	m MDRT

Completion

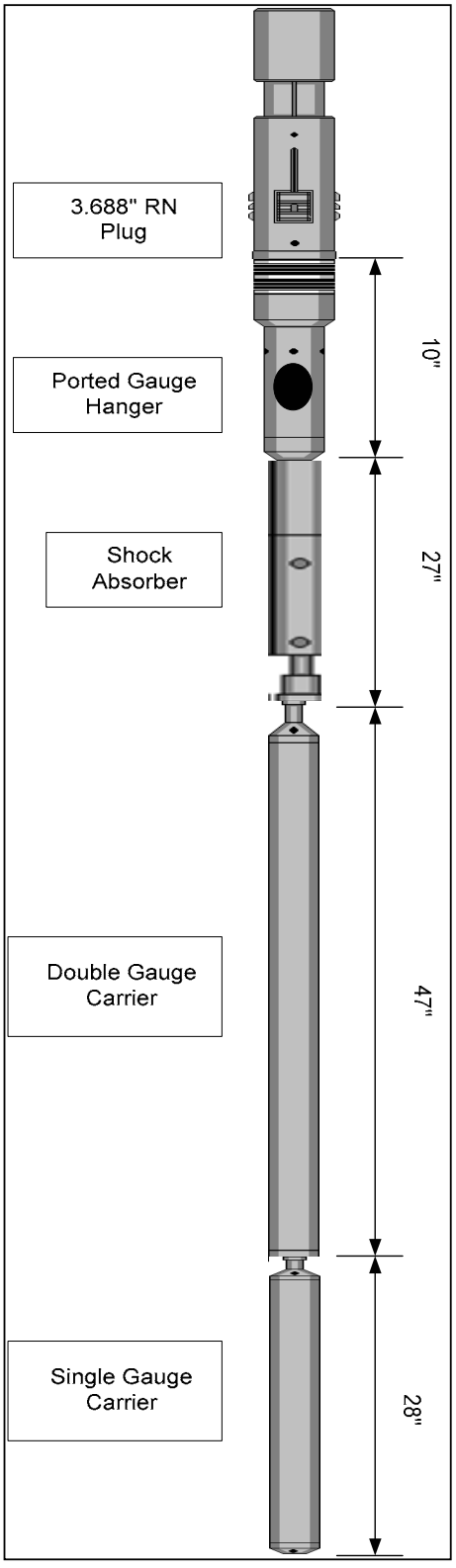
Measured m (MDRT)	**Description**
27.07	Tubing Hanger
169.09	TRSV
2521.39	5 1/2" PBR
2593.75	4 1/2" Halliburton SSD x 3.813" RD
2596.99	6 5/8" AHR Packer
2832.49	4 1/2" Halliburton SSD x 3.813" RD
2835.73	6 5/8" AHR Packer
2920.57	4 1/2" Halliburton SSD x 3.688" RD
2923.80	6 5/8" AHR Packer
2979.57	4 1/2" Halliburton SSD x 3.688" RD
2983.10	6 5/8" MWR Packer
2990.46	4 1/2" Halliburton SSD x 3.688" RD
2997.38	4 1/2" Halliburton 3.688" RN Nipple
2999.95	EOT

SURVEY EVENTS

Client	:Origin Energy	**Operator**	:David Whelan
Field	:Yolla	**Survey Date**	:30th July 2004
Platform	:Yolla A	**Well**	:Yolla - 4

Event	Time	Description
1	5:10:24	Start top gauge
2	5:13:31	Start bottom gauge
3	5:31:56	Make up gauges and stab lubricator
4	5:39:01	Open kill and swab valves, pressure test lubricator to 4000 psi
5	6:10:01	Bleed off pressure test
6	6:17:01	Close kill, swab valves and open master valve
7	6:23:01	Open swab valve and run in hole with gauges
8	7:50:03	Set gauges at 2999 m MDKB thp 2705 psia
9	9:34:01	Open well 8/64" choke THP 2705 psia
10	9:36:01	Increase choke to 24/64" THP 2588 psia
11	9:43:01	Increase choke to 28/64" THP 2306 psia
12	9:53:01	Increase choke to 32/64" THP 2200 psia
13	10:14:01	Increase choke to 40/64" THP 2233 psia
14	11:22:01	Increase choke to 44/64" THP 2802 psia
15	12:08:01	Divert flow through seperator THP 2704 psia
16	16:41:01	Slowly increase choke setting to 52/64" THP 2826 psia
17	16:44:01	Well flowing on 52/64" THP 2784 psia
18	16:52:01	Well flowing on 54/64" THP 2634 psia
19	17:06:01	Well flowing on 56/64" THP 2586 psia
20	17:22:01	Shut in well at choke manifold THP 2703 psia
21	18:02:01	Latch gauges and pull out of hole
22	18:34:40	Out of hole with gauges
23	18:43:21	Shut in well
24	18:47:24	Depressure lubricator
25	19:28:29	Stop bottom gauge
26	19:32:31	Stop top gauge

STATIC SURVEY TOOL STRING



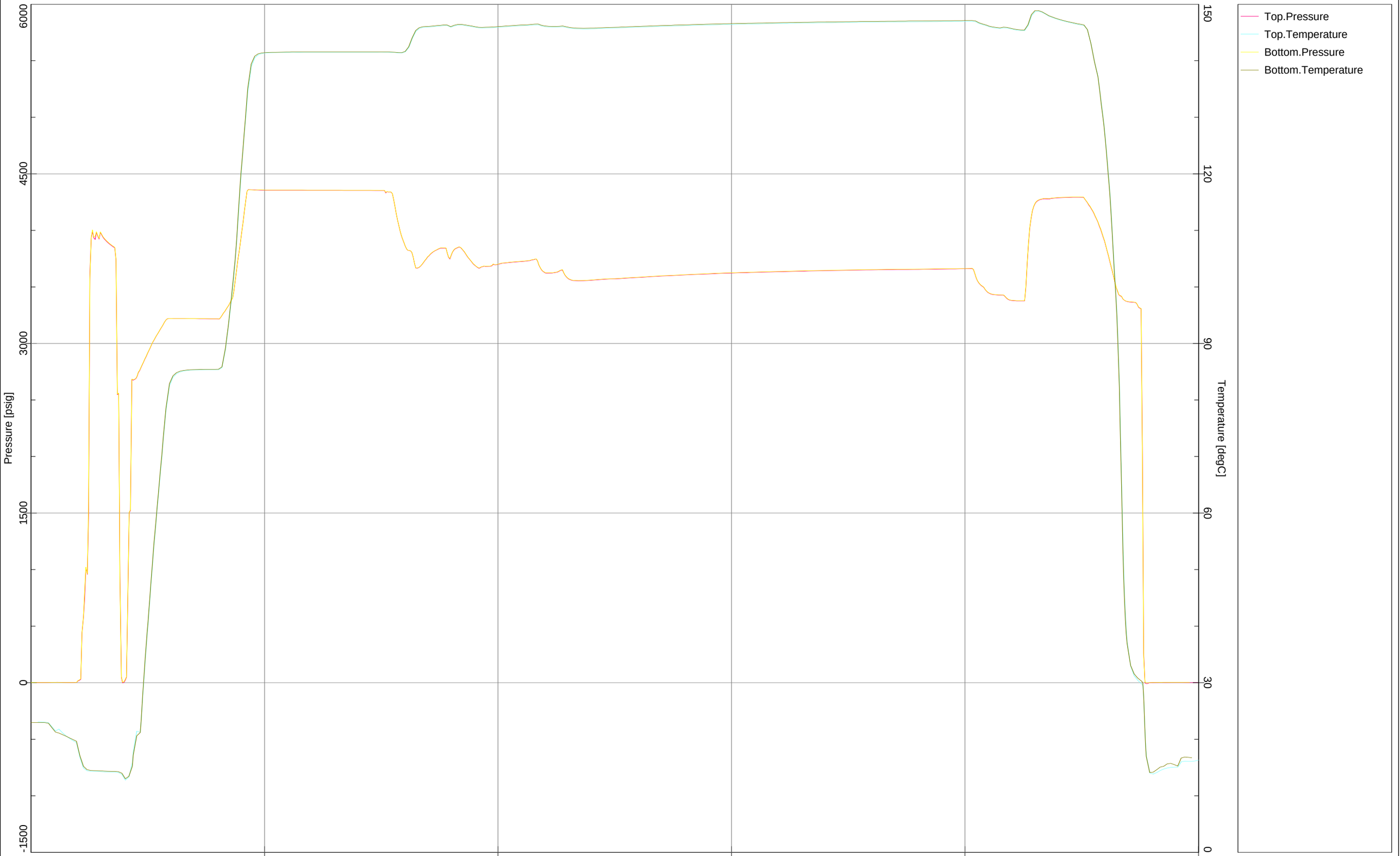
HALLIBURTON

SECTION 2

PLOTS

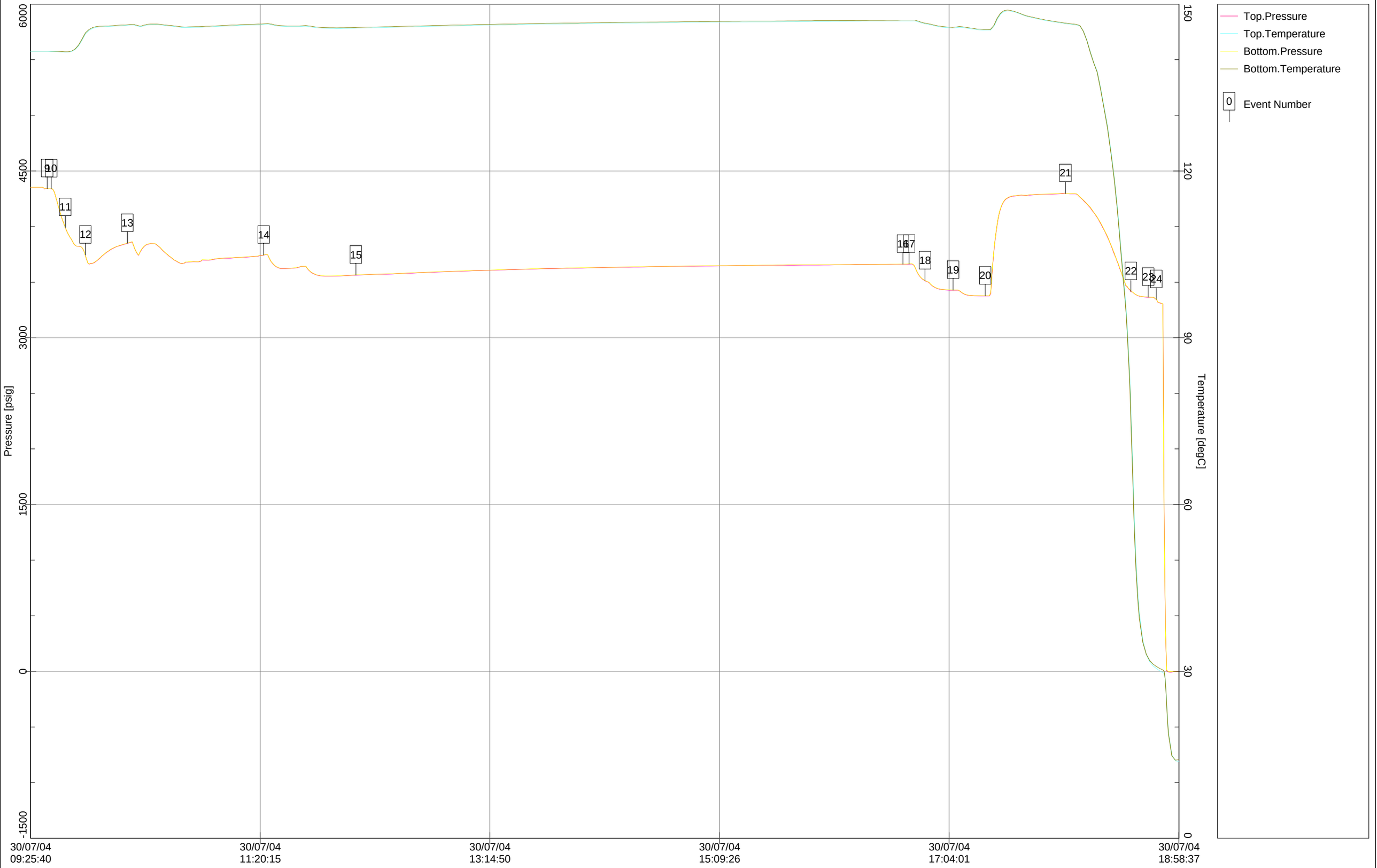
Data File Name : Time changed pseudo.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Zone :2973 Sands
Operator :David Whelan
Entire test period



Data File Name : Time changed pseudo.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Zone :2973 Sands
Operator :David Whelan
test period

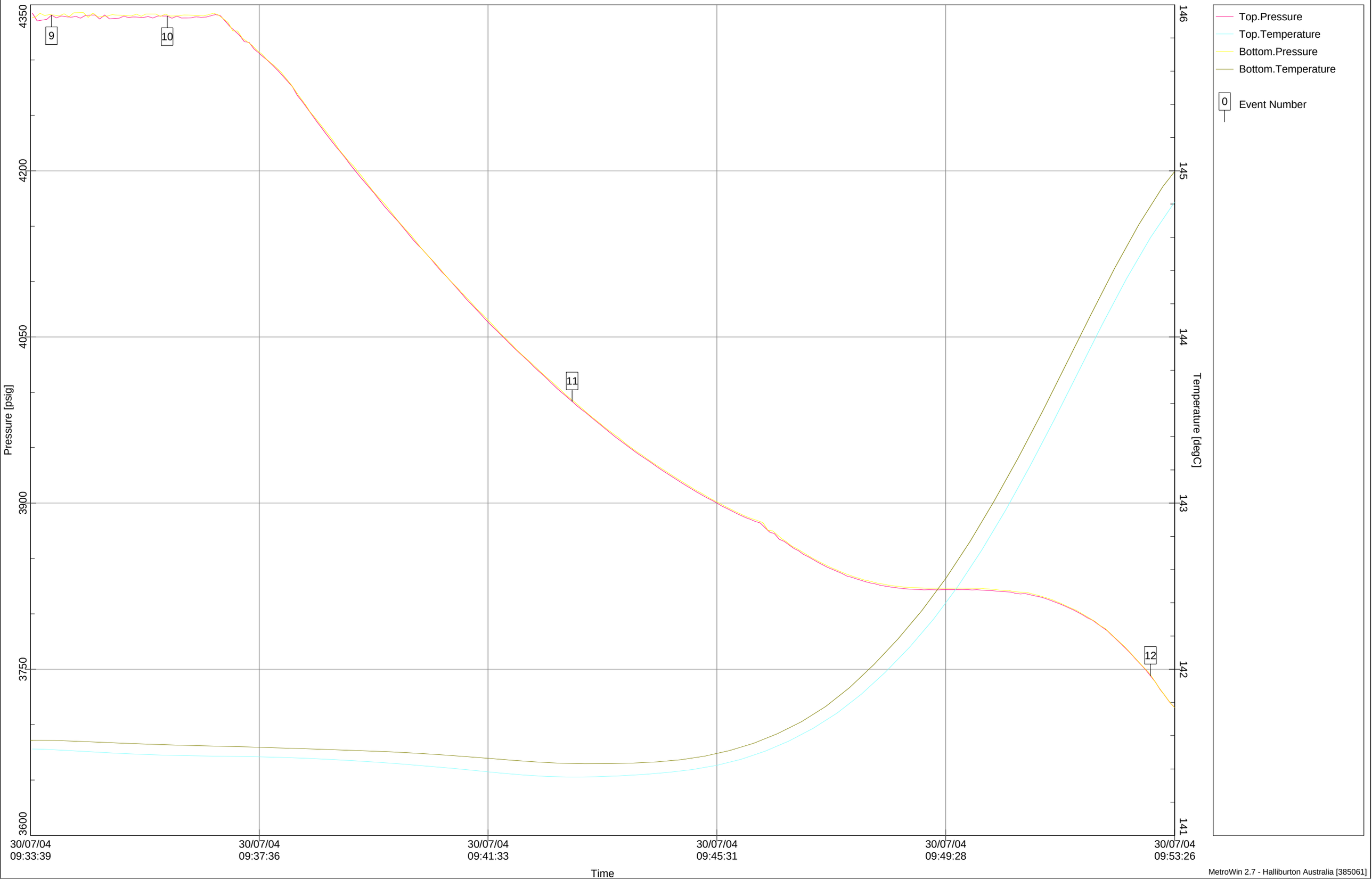


Data File Name : Time changed pseudo.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Zone :2973 Sands
Operator :David Whelan
Events 7 to 9

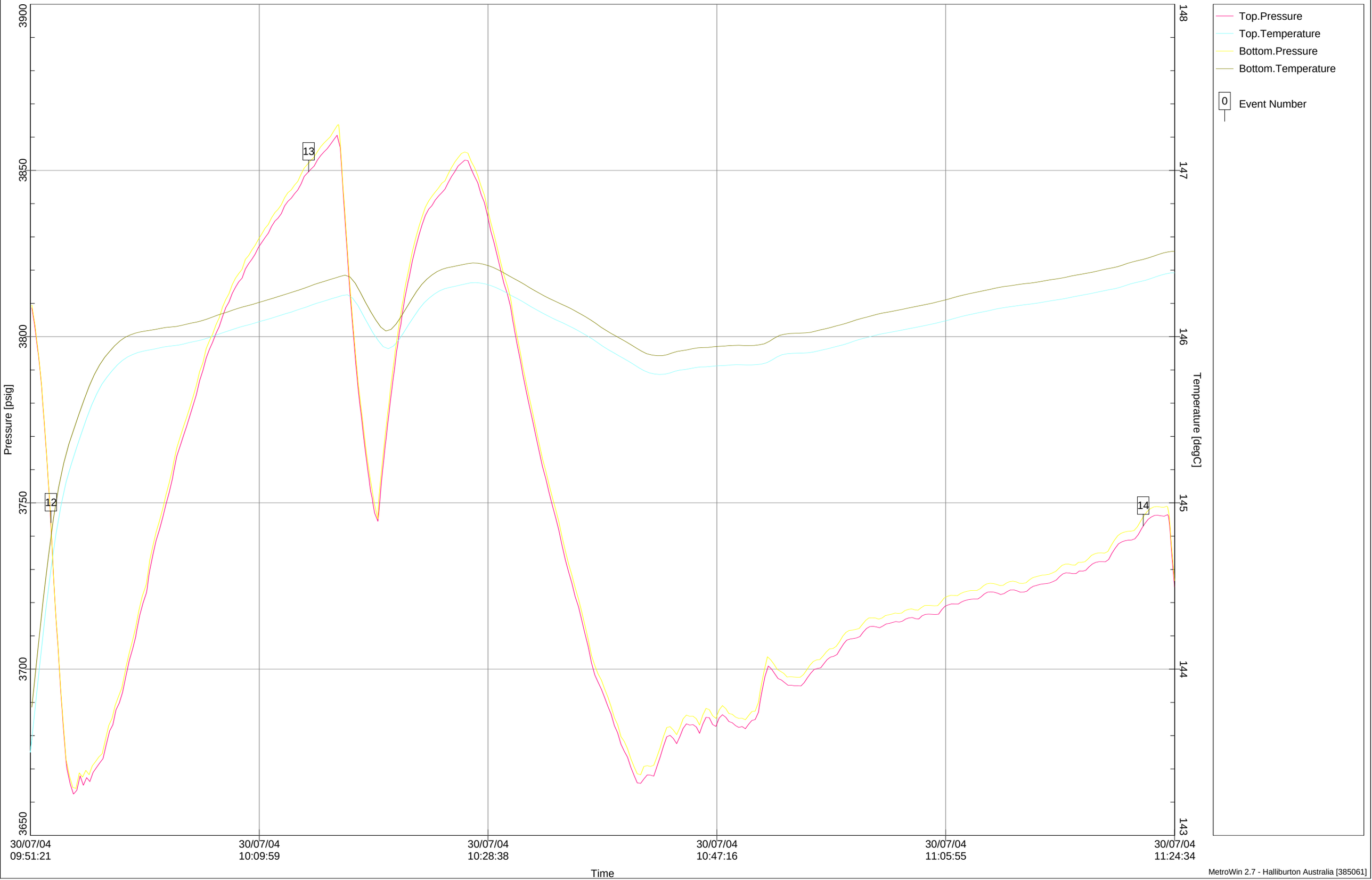
Data File Name : Time changed pseudo.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Zone :2973 Sands
Operator :David Whelan
Events 9 to 12



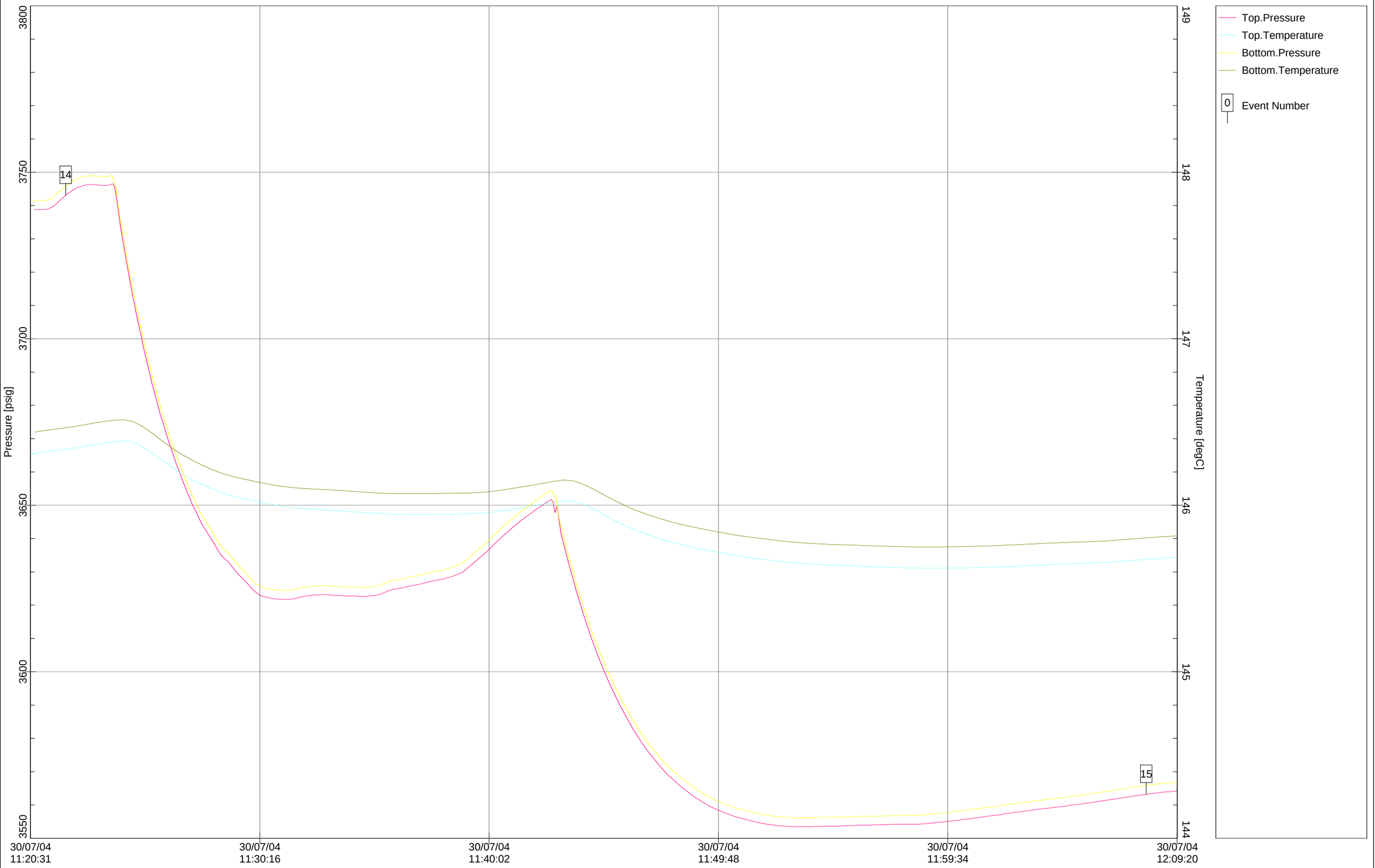
Data File Name : Time changed pseudo.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Zone :2973 Sands
Operator :David Whelan
Events 12 to 14



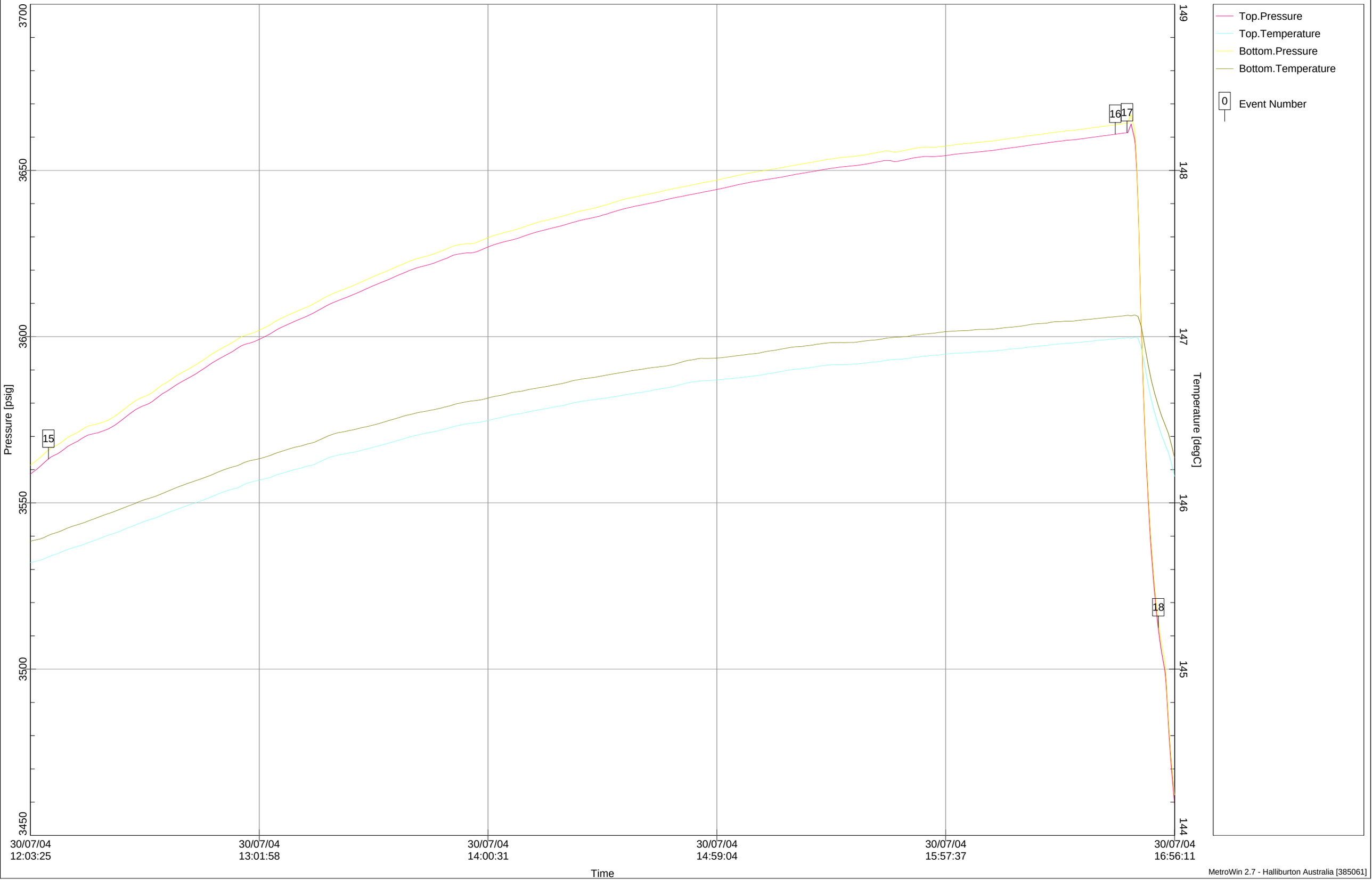
Data File Name : Time changed pseudo.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Zone :2973 Sands
Operator :David Whelan
Events 14 to 15



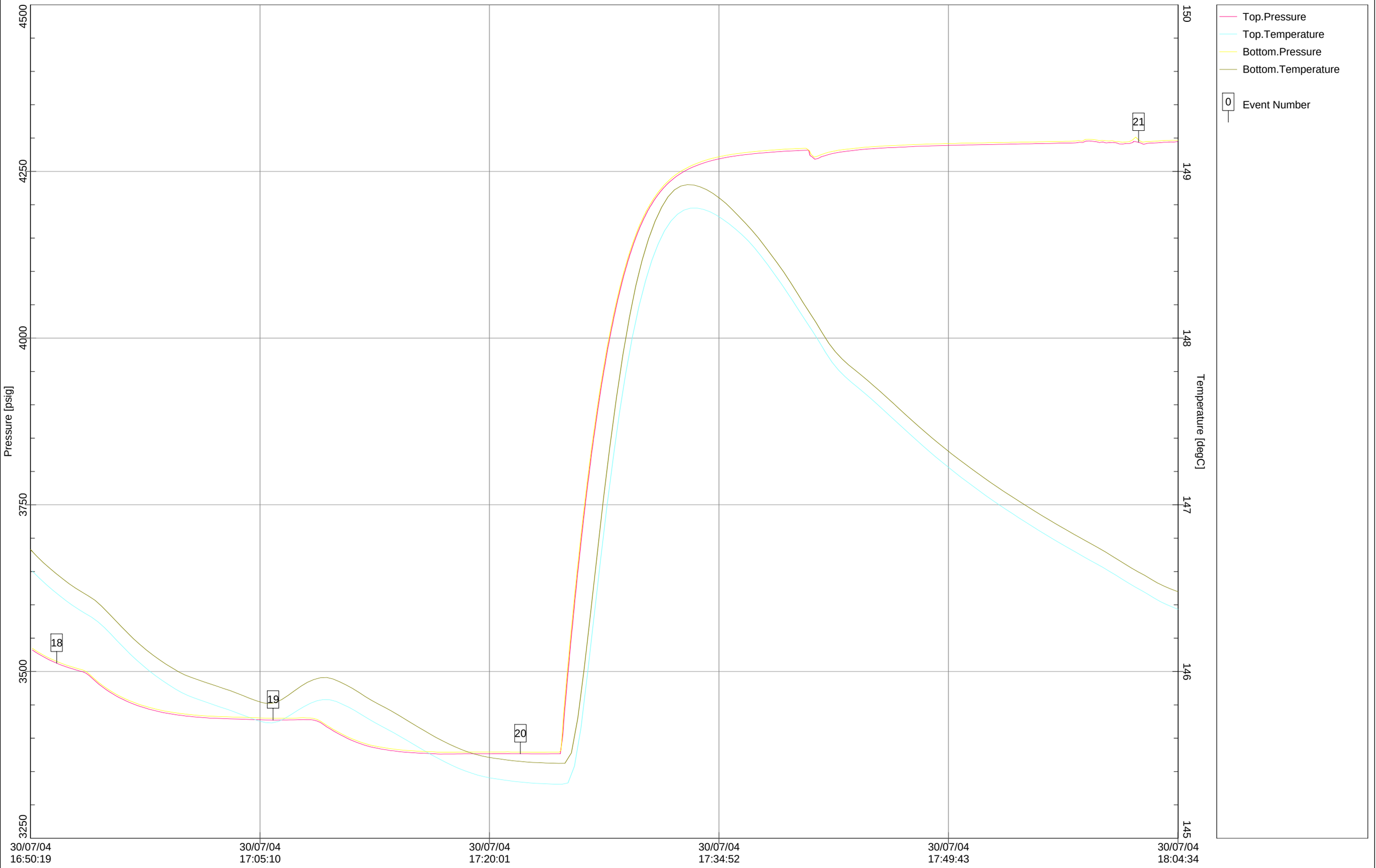
Data File Name : Time changed pseudo.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Zone :2973 Sands
Operator :David Whelan
Events 15 to 18



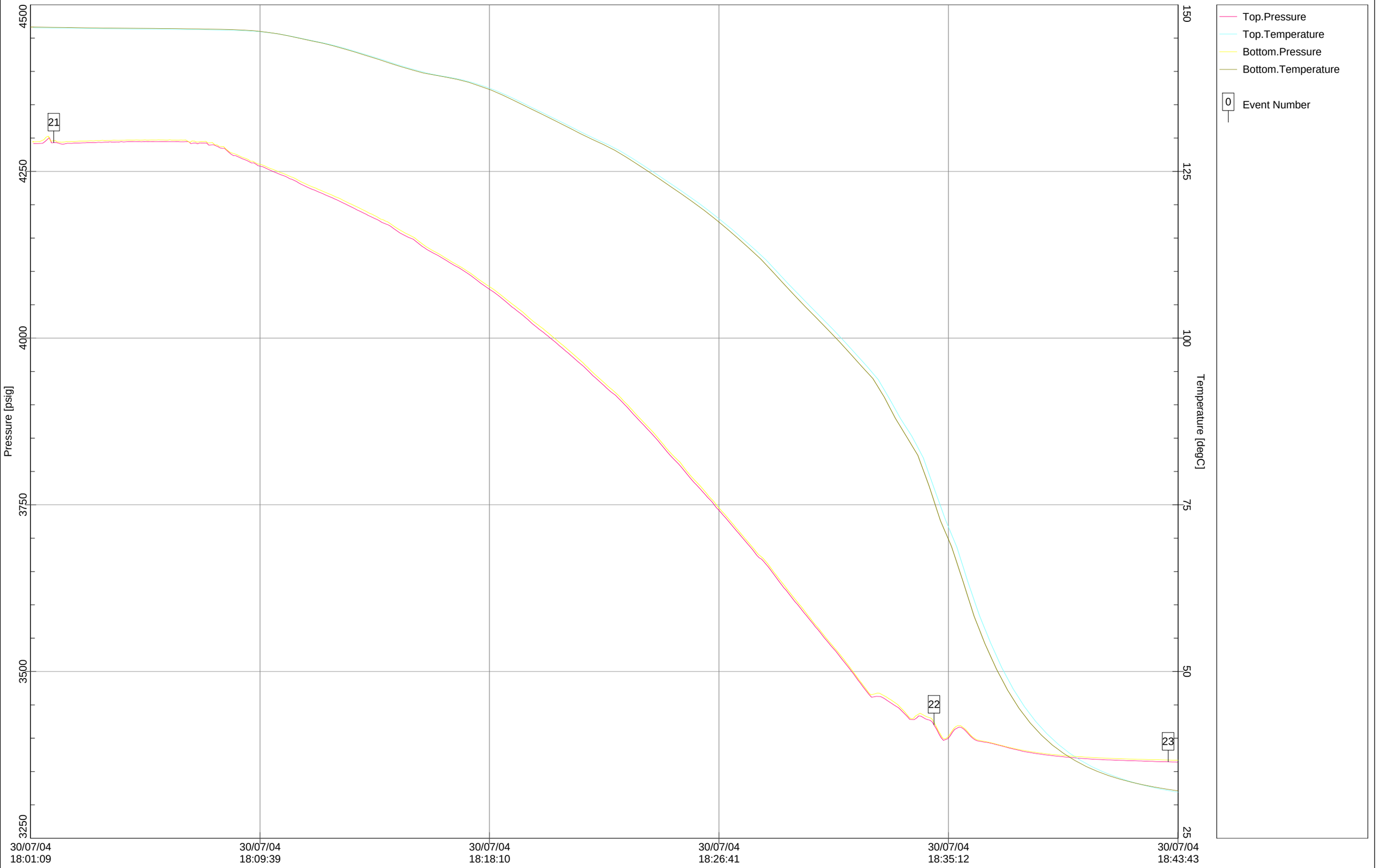
Data File Name : Time changed pseudo.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Zone :2973 Sands
Operator :David Whelan
Events 18 to 21



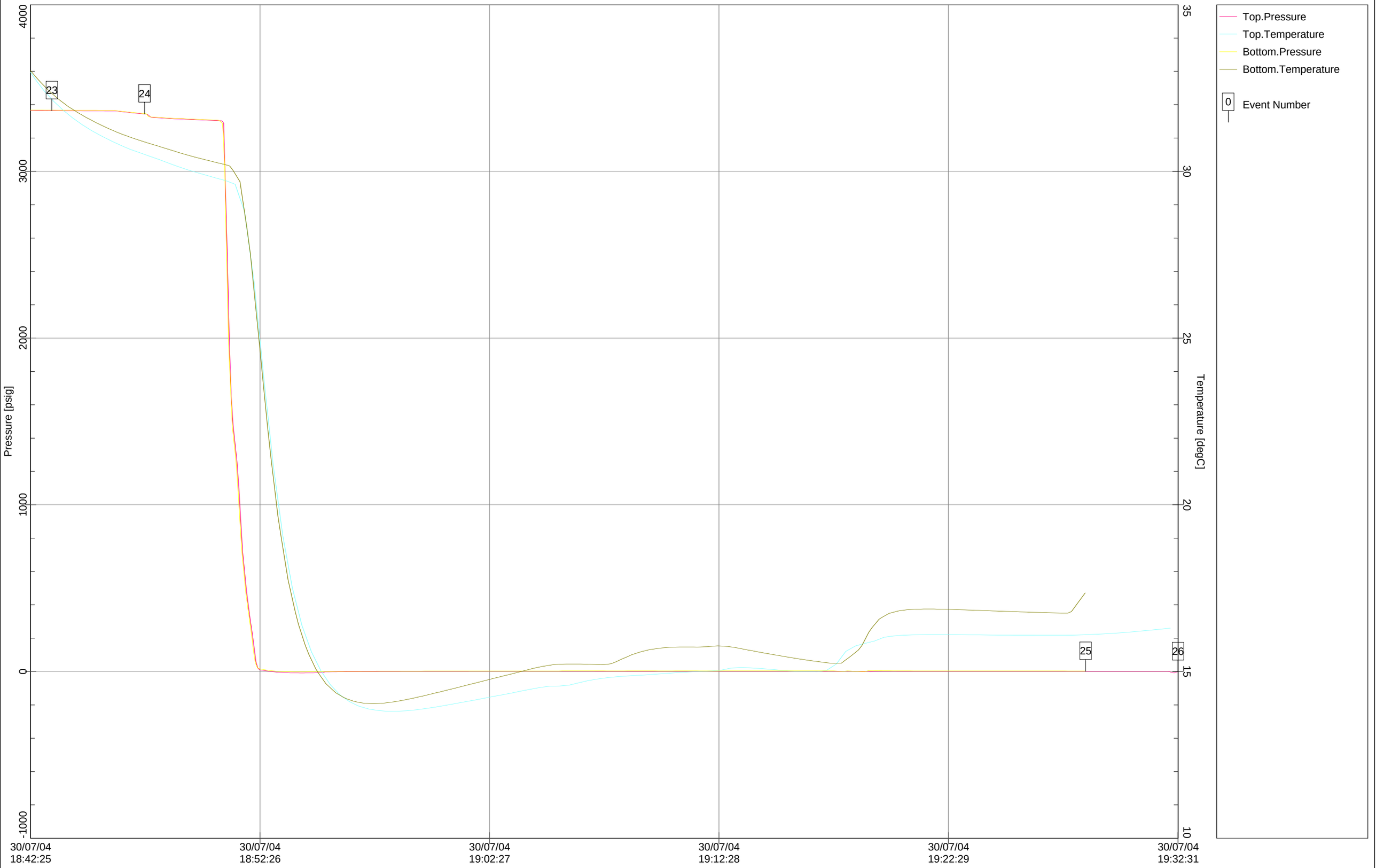
Data File Name : Time changed pseudo.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Zone :2973 Sands
Operator :David Whelan
Events 21 to 23



Data File Name : Time changed pseudo.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin Energy
Field :Yolla
Well :Yolla 4
Zone :2973 Sands
Operator :David Whelan
Events 23 to 26



SECTION 3

DATA

SURVEY DATA

Client	:Origin Energy	Operator	:David Whelan
Field	:Yolla	Date	:30th July 2004
Platform	:Yolla A		
Well	:Yolla - 4		

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
1	5:10:24	2.27	22.95			Start top gauge
	5:10:24	2.27	22.95			
2	5:13:31	2.59	23.08	2.2	22.96	Start bottom gauge
	5:15:24	2.5	23.09	2.27	22.96	
	5:20:24	2.47	23.04	2.27	22.96	
	5:25:24	2.88	22.37	2.96	22.21	
	5:30:24	3.17	21.94	2.74	21.16	
3	5:31:56	2.73	21.58	2.6	20.99	Make up gauges and stab lubricator
	5:35:24	2.58	20.78	2.38	20.65	
4	5:39:01	2.69	20.13	2.72	20.24	Open kill and swab valves, pressure test to 4000 psi
	5:40:24	2.43	19.91	2.38	20.07	
	5:45:24	14.78	18.76	18.49	19.16	
	5:50:24	1100.93	14.63	1103.12	14.85	
	5:55:24	3882.65	14.35	3887.49	14.49	
	6:00:24	3930.66	14.31	3935.91	14.44	
	6:05:24	3912.3	14.23	3917.73	14.37	
5	6:10:01	3864.1	14.19	3869.6	14.33	Bleed off pressure test
	6:10:24	3860.71	14.19	3866.21	14.33	
	6:11:24	3852.16	14.19	3857.65	14.33	
	6:12:24	3844.15	14.19	3849.66	14.32	
	6:13:24	3570.93	14.19	3745.24	14.32	
	6:14:24	2551.72	14.14	2557.13	14.27	
	6:15:24	2455.68	14.13	2562.36	14.27	
	6:16:24	509.91	14.11	498.57	14.25	
6	6:17:01	59.97	14.05	66.64	14.2	Close kill, swab valves and open master valve
	6:17:24	11.81	13.9	18.37	14.09	
	6:18:24	-3.49	13.26	3.16	13.48	
	6:19:24	10.28	12.9	17	13.11	
	6:20:24	29.9	12.79	36.52	13.01	
	6:21:24	51.09	12.85	57.45	13.08	
	6:22:24	1456.35	13.11	1463.19	13.31	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
7	6:23:01	1505.71	13.55	1511.8	13.59	Open swab valve and run in hole with gauges
	6:23:24	1516.27	13.88	1521.87	13.78	
	6:24:24	1644.47	14.66	1652.88	14.26	
	6:25:24	2673.66	16.04	2679.16	15.48	
	6:26:24	2678.61	19.12	2682.88	18.48	
	6:27:24	2683.51	21.08	2687.26	20.35	
	6:28:24	2702.1	21.54	2705.07	20.7	
	6:29:24	2730.76	20.54	2734.52	19.89	
	6:30:24	2755.62	19.97	2758.97	19.59	
	6:31:24	2780.63	22.05	2783.72	22.18	
	6:32:24	2805.83	25.55	2808.55	25.99	
	6:33:24	2832.82	29.18	2835.23	29.73	
	6:34:24	2859.19	32.59	2861.37	33.18	
	6:35:24	2885.39	35.84	2887.33	36.43	
	6:36:24	2911.07	38.96	2912.72	39.54	
	6:37:24	2936.13	42.11	2937.75	42.7	
	6:38:24	2961.81	45.34	2963.3	45.93	
	6:39:24	2987.9	48.51	2989.34	49.06	
	6:40:24	3012.93	51.57	3014.08	52.1	
	6:41:24	3033.96	54.61	3035.06	55.12	
	6:42:24	3054.6	57.46	3055.67	57.96	
	6:43:24	3075	60.19	3075.98	60.67	
	6:44:24	3095.22	62.86	3096.13	63.32	
	6:45:24	3115.28	65.53	3116.11	65.99	
	6:46:24	3135.08	68.24	3135.82	68.72	
	6:47:24	3154.95	71.05	3155.68	71.54	
	6:48:24	3175.12	73.8	3175.84	74.29	
	6:49:24	3194.86	76.35	3195.51	76.85	
	6:50:24	3213.4	78.74	3214.05	79.22	
	6:51:24	3218.91	80.87	3219.3	81.32	
	6:52:24	3220.22	82.24	3220.69	82.65	
	6:53:24	3220.55	83.09	3221.2	83.42	
	6:54:24	3220.68	83.66	3221.4	83.94	
	6:55:24	3220.76	84.07	3221.56	84.3	
	6:56:24	3220.78	84.36	3221.64	84.56	
	6:57:24	3220.75	84.58	3221.65	84.76	
	6:58:24	3220.71	84.74	3221.6	84.9	
	6:59:24	3220.65	84.86	3221.58	85.01	
	7:00:24	3220.57	84.96	3221.52	85.09	
	7:01:24	3220.49	85.03	3221.44	85.15	
	7:02:24	3220.39	85.09	3221.36	85.21	
	7:03:24	3220.3	85.14	3221.28	85.25	
	7:04:24	3220.21	85.18	3221.2	85.28	
	7:05:24	3220.11	85.21	3221.1	85.31	
	7:06:24	3220.01	85.23	3221.01	85.33	
	7:07:24	3219.91	85.25	3220.92	85.34	
	7:08:24	3219.79	85.27	3220.83	85.36	
	7:09:24	3219.69	85.28	3220.71	85.37	
	7:10:24	3219.58	85.29	3220.61	85.38	
	7:11:24	3219.48	85.3	3220.51	85.39	
	7:12:24	3219.38	85.31	3220.42	85.4	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	7:13:24	3219.26	85.32	3220.32	85.4	
	7:14:24	3219.16	85.33	3220.21	85.41	
	7:15:24	3219.06	85.33	3220.11	85.41	
	7:16:24	3218.95	85.34	3220.02	85.42	
	7:17:24	3218.85	85.34	3219.91	85.42	
	7:18:24	3218.74	85.35	3219.81	85.42	
	7:19:24	3218.63	85.35	3219.7	85.42	
	7:20:24	3218.52	85.35	3219.59	85.43	
	7:21:24	3218.41	85.35	3219.49	85.43	
	7:22:24	3218.29	85.35	3219.38	85.43	
	7:23:24	3218.17	85.36	3219.27	85.43	
	7:24:24	3218.05	85.36	3219.14	85.43	
	7:25:24	3217.93	85.36	3219.03	85.43	
	7:26:24	3217.81	85.36	3218.9	85.44	
	7:27:24	3217.69	85.36	3218.79	85.44	
	7:28:24	3217.57	85.36	3218.67	85.44	
	7:29:24	3217.43	85.37	3218.53	85.44	
	7:30:24	3229.46	85.38	3230.68	85.46	
	7:31:24	3247.1	85.69	3248.23	85.83	
	7:32:24	3265.89	86.58	3266.85	86.8	
	7:33:24	3281.76	87.93	3282.72	88.24	
	7:34:24	3300.19	89.52	3300.94	89.88	
	7:35:24	3318.52	91.39	3318.83	91.84	
	7:36:24	3337.86	93.38	3338.5	93.86	
	7:37:24	3359.99	95.47	3360.36	96	
	7:38:24	3382.93	97.65	3383.41	98.21	
	7:39:24	3406.41	99.96	3406.5	100.53	
	7:40:24	3478.5	102.38	3479.25	102.97	
	7:41:24	3569.84	105.05	3570.25	105.66	
	7:42:24	3667.05	108.26	3666.71	108.95	
	7:43:24	3755.83	111.96	3755.65	112.74	
	7:44:24	3841.39	115.77	3839.77	116.47	
	7:45:24	3929.36	119.31	3927.87	119.83	
	7:46:24	4019.82	122.49	4018.48	122.91	
	7:47:24	4114.03	125.45	4113.38	125.87	
	7:48:24	4208.09	128.34	4207.35	128.83	
	7:49:24	4301.32	131.26	4301.58	131.81	
8	7:50:03	4359.91	133.12	4358.03	133.75	Set gauges at 2999 m MDKB thp 2705 psia
	7:50:24	4360.27	134.16	4356.87	134.8	
	7:51:24	4360.97	136.63	4359.04	137.21	
	7:52:24	4359.86	138.2	4359.43	138.71	
	7:53:24	4358.98	139.25	4359.22	139.68	
	7:54:24	4357.64	139.96	4357.84	140.32	
	7:55:24	4357.35	140.43	4354.45	140.73	
	7:56:24	4356.68	140.75	4357.73	141	
	7:57:24	4355.66	140.95	4357.77	141.16	
	7:58:24	4351.06	141.09	4351.26	141.25	
	7:59:24	4349.45	141.19	4350.66	141.32	
	8:00:24	4351.07	141.26	4352.28	141.37	
	8:01:24	4351.88	141.3	4353.02	141.4	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	8:02:24	4349.95	141.34	4352.79	141.43	
	8:03:24	4355.82	141.36	4356.68	141.45	
	8:04:24	4355.66	141.38	4357.38	141.46	
	8:05:24	4355.39	141.4	4357.14	141.47	
	8:06:24	4355.41	141.41	4357.16	141.48	
	8:07:24	4355.44	141.42	4357.2	141.49	
	8:08:24	4355.46	141.42	4357.27	141.49	
	8:09:24	4355.51	141.43	4357.24	141.5	
	8:10:24	4355.51	141.43	4357.27	141.5	
	8:11:24	4355.49	141.43	4357.25	141.5	
	8:12:24	4355.59	141.44	4357.51	141.51	
	8:13:24	4355.51	141.45	4357.41	141.51	
	8:14:24	4355.52	141.45	4357.29	141.51	
	8:15:24	4355.55	141.46	4357.33	141.52	
	8:16:24	4355.58	141.46	4357.3	141.52	
	8:17:24	4355.62	141.47	4357.37	141.53	
	8:18:24	4355.64	141.48	4357.36	141.54	
	8:19:24	4355.64	141.49	4357.4	141.55	
	8:20:24	4355.59	141.49	4357.31	141.55	
	8:21:24	4355.59	141.5	4357.3	141.55	
	8:22:24	4355.66	141.5	4357.39	141.56	
	8:23:24	4355.59	141.5	4357.34	141.56	
	8:24:24	4355.39	141.51	4357.14	141.56	
	8:25:24	4355.35	141.5	4357.08	141.56	
	8:26:24	4355.26	141.5	4357.02	141.56	
	8:27:24	4355.2	141.5	4356.94	141.56	
	8:28:24	4355.12	141.5	4356.85	141.56	
	8:29:24	4355.05	141.5	4356.84	141.56	
	8:30:24	4355.04	141.5	4356.79	141.56	
	8:31:24	4354.98	141.5	4356.75	141.56	
	8:32:24	4354.92	141.51	4356.7	141.56	
	8:33:24	4354.91	141.51	4356.66	141.56	
	8:34:24	4354.87	141.51	4356.64	141.56	
	8:35:24	4354.84	141.51	4356.6	141.56	
	8:36:24	4354.8	141.5	4356.6	141.56	
	8:37:24	4354.8	141.51	4356.55	141.56	
	8:38:24	4354.78	141.51	4356.53	141.56	
	8:39:24	4354.73	141.51	4356.5	141.56	
	8:40:24	4354.71	141.51	4356.45	141.56	
	8:41:24	4354.69	141.51	4356.45	141.57	
	8:42:24	4354.66	141.51	4356.41	141.57	
	8:43:24	4354.64	141.51	4356.39	141.57	
	8:44:24	4354.6	141.51	4356.38	141.57	
	8:45:24	4354.57	141.51	4356.34	141.57	
	8:46:24	4354.52	141.51	4356.27	141.57	
	8:47:24	4354.52	141.51	4356.26	141.57	
	8:48:24	4354.48	141.51	4356.2	141.57	
	8:49:24	4354.47	141.51	4356.19	141.57	
	8:50:24	4354.43	141.51	4356.16	141.57	
	8:51:24	4354.38	141.51	4356.13	141.57	
	8:52:24	4354.34	141.51	4356.1	141.57	
	8:53:24	4354.32	141.51	4356.05	141.57	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	8:54:24	4354.28	141.51	4356.03	141.57	
	8:55:24	4354.24	141.51	4356	141.57	
	8:56:24	4354.22	141.51	4355.95	141.57	
	8:57:24	4354.17	141.51	4355.91	141.57	
	8:58:24	4354.11	141.51	4355.88	141.57	
	8:59:24	4354.07	141.51	4355.84	141.57	
	9:00:24	4354.04	141.51	4355.78	141.57	
	9:01:24	4354.02	141.51	4355.74	141.57	
	9:02:24	4353.98	141.51	4355.72	141.57	
	9:03:24	4353.95	141.51	4355.69	141.57	
	9:04:24	4353.88	141.51	4355.65	141.57	
	9:05:24	4353.84	141.51	4355.61	141.57	
	9:06:24	4353.82	141.51	4355.55	141.57	
	9:07:24	4353.77	141.51	4355.52	141.57	
	9:08:24	4353.73	141.51	4355.47	141.57	
	9:09:24	4353.68	141.51	4355.44	141.57	
	9:10:24	4353.63	141.51	4355.35	141.57	
	9:11:24	4353.59	141.51	4355.32	141.57	
	9:12:24	4353.55	141.51	4355.3	141.56	
	9:13:24	4353.52	141.51	4355.24	141.56	
	9:14:24	4353.46	141.51	4355.2	141.56	
	9:15:24	4353.44	141.51	4355.17	141.56	
	9:16:24	4353.37	141.51	4355.1	141.56	
	9:17:24	4353.32	141.51	4355.06	141.56	
	9:18:24	4353.28	141.51	4355.02	141.56	
	9:19:24	4353.24	141.51	4354.98	141.56	
	9:20:24	4353.19	141.51	4354.93	141.56	
	9:21:24	4353.13	141.51	4354.9	141.56	
	9:22:24	4353.08	141.51	4354.81	141.56	
	9:23:24	4353.03	141.52	4354.76	141.56	
	9:24:24	4353	141.52	4354.71	141.56	
	9:25:24	4352.94	141.52	4354.67	141.57	
	9:26:24	4352.91	141.52	4354.65	141.57	
	9:27:24	4352.85	141.52	4354.57	141.57	
	9:28:24	4352.44	141.52	4354.2	141.57	
	9:29:24	4352.3	141.52	4353.76	141.57	
	9:30:24	4352.4	141.52	4354.27	141.57	
	9:31:24	4352.34	141.52	4353.99	141.57	
	9:32:24	4336.15	141.52	4338.37	141.57	
	9:33:24	4343.48	141.52	4336.82	141.57	
9	9:34:01	4340.55	141.52	4340.97	141.57	Open well 8/64" choke THP 2705 psia
	9:34:24	4339.17	141.51	4342.68	141.57	
	9:35:24	4338.72	141.49	4339.88	141.55	
10	9:36:01	4339.73	141.48	4340.78	141.55	Increase choke to 24/64" THP 2588 psia
	9:36:24	4338.1	141.48	4340.5	141.54	
	9:37:24	4316.2	141.47	4316.55	141.53	
	9:38:24	4259.17	141.46	4260.27	141.52	
	9:39:24	4191.64	141.45	4193.71	141.51	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	9:40:24	4130.52	141.42	4130.76	141.49	
	9:41:24	4072.7	141.39	4073.82	141.47	
	9:42:24	4020.99	141.36	4022.06	141.44	
11	9:43:01	3991.8	141.35	3993.1	141.43	Increase choke to 28/64" THP 2306 psia
	9:43:24	3975.35	141.35	3976.15	141.43	
	9:44:24	3935.98	141.37	3936.86	141.44	
	9:45:24	3903.45	141.41	3904.39	141.48	
	9:46:24	3875.51	141.51	3875.67	141.59	
	9:47:24	3842.92	141.69	3844.2	141.78	
	9:48:24	3825.39	141.97	3826.94	142.09	
	9:49:24	3821.85	142.36	3823.27	142.51	
	9:50:24	3820.29	142.89	3821.57	143.07	
	9:51:24	3810.08	143.53	3810.96	143.73	
	9:52:24	3778.27	144.22	3778.69	144.42	
12	9:53:01	3744.02	144.6	3744.88	144.79	Increase choke to 32/64" THP 2200 psia
	9:53:24	3717.47	144.8	3717.27	144.98	
	9:54:24	3668.34	145.16	3669.47	145.33	
	9:55:24	3667.89	145.39	3670.11	145.55	
	9:56:24	3668.58	145.6	3670.92	145.74	
	9:57:24	3674.8	145.74	3677.4	145.88	
	9:58:24	3688.38	145.83	3690.73	145.96	
	9:59:24	3702.56	145.88	3704.86	146.01	
	10:00:24	3718.41	145.91	3721.11	146.03	
	10:01:24	3735.49	145.92	3738.28	146.04	
	10:02:24	3749.55	145.94	3752.4	146.06	
	10:03:24	3765.3	145.95	3767.89	146.06	
	10:04:24	3776.85	145.97	3779.41	146.08	
	10:05:24	3789.75	145.98	3792.13	146.1	
	10:06:24	3800.21	146.01	3803.17	146.12	
	10:07:24	3809.6	146.03	3812.13	146.15	
	10:08:24	3816.9	146.06	3819.18	146.17	
	10:09:24	3823.32	146.08	3826.1	146.19	
	10:10:24	3829.29	146.1	3831.98	146.22	
	10:11:24	3835.29	146.12	3837.76	146.24	
	10:12:24	3840.95	146.14	3843.49	146.26	
	10:13:24	3845.9	146.17	3848.83	146.28	
13	10:14:01	3849.65	146.18	3852.21	146.3	Increase choke to 40/64" THP 2233 psia
	10:14:24	3851.05	146.19	3853.81	146.31	
	10:15:24	3856.17	146.22	3858.74	146.33	
	10:16:24	3861.03	146.24	3863.73	146.36	
	10:17:24	3812.96	146.24	3814.86	146.36	
	10:18:24	3773.23	146.14	3775.4	146.24	
	10:19:24	3746.96	146.01	3749.39	146.11	
	10:20:24	3771.69	145.93	3774.87	146.04	
	10:21:24	3801.03	145.98	3803.85	146.1	
	10:22:24	3821.69	146.1	3824.42	146.22	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	10:23:24	3834.86	146.2	3837.5	146.33	
	10:24:24	3840.96	146.26	3843.59	146.39	
	10:25:24	3846.38	146.29	3848.99	146.42	
	10:26:24	3851.74	146.31	3854.43	146.43	
	10:27:24	3849.31	146.32	3851.67	146.44	
	10:28:24	3839.4	146.32	3842.09	146.43	
	10:29:24	3824.16	146.29	3826.69	146.4	
	10:30:24	3810.37	146.25	3812.82	146.36	
	10:31:24	3790.21	146.21	3792.59	146.32	
	10:32:24	3772.49	146.17	3774.89	146.28	
	10:33:24	3756.26	146.13	3758.74	146.24	
	10:34:24	3741.77	146.09	3744.33	146.2	
	10:35:24	3726.7	146.06	3729.2	146.17	
	10:36:24	3712.71	146.02	3715.02	146.13	
	10:37:24	3697.96	145.97	3700.49	146.08	
	10:38:24	3688.79	145.92	3691.6	146.03	
	10:39:24	3678.19	145.88	3680.48	145.99	
	10:40:24	3669.11	145.84	3671.48	145.95	
	10:41:24	3667.77	145.79	3670.84	145.9	
	10:42:24	3670.71	145.77	3673.58	145.89	
	10:43:24	3680.23	145.78	3682.97	145.9	
	10:44:24	3680.87	145.8	3683.55	145.92	
	10:45:24	3683.51	145.81	3686.15	145.93	
	10:46:24	3685.52	145.82	3688.22	145.93	
	10:47:24	3684.78	145.82	3687.25	145.94	
	10:48:24	3683.8	145.83	3686.25	145.95	
	10:49:24	3682.56	145.83	3685.06	145.95	
	10:50:24	3684.86	145.83	3687.39	145.95	
	10:51:24	3700.78	145.85	3703.74	145.97	
	10:52:24	3696.89	145.89	3699.44	146.01	
	10:53:24	3695.18	145.9	3697.84	146.02	
	10:54:24	3695.97	145.9	3698.6	146.02	
	10:55:24	3700.22	145.91	3702.79	146.03	
	10:56:24	3703.31	145.93	3705.96	146.05	
	10:57:24	3706.47	145.95	3709.15	146.07	
	10:58:24	3709.21	145.97	3711.81	146.09	
	10:59:24	3712	145.99	3714.67	146.12	
	11:00:24	3712.53	146.01	3715.07	146.14	
	11:01:24	3713.74	146.03	3716.33	146.15	
	11:02:24	3714.44	146.04	3717.11	146.16	
	11:03:24	3715.25	146.05	3717.86	146.18	
	11:04:24	3716.54	146.07	3719.16	146.19	
	11:05:24	3716.68	146.09	3719.32	146.21	
	11:06:24	3719.61	146.11	3722.22	146.23	
	11:07:24	3720.55	146.12	3723.14	146.25	
	11:08:24	3721.07	146.14	3723.68	146.27	
	11:09:24	3723.17	146.16	3725.77	146.28	
	11:10:24	3722.46	146.17	3725.07	146.3	
	11:11:24	3723.85	146.18	3726.47	146.31	
	11:12:24	3723.23	146.19	3725.92	146.32	
	11:13:24	3725.23	146.2	3727.84	146.33	
	11:14:24	3725.94	146.21	3728.58	146.34	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	11:15:24	3728.53	146.23	3731.23	146.35	
	11:16:24	3728.66	146.24	3731.29	146.37	
	11:17:24	3729.89	146.25	3732.62	146.38	
	11:18:24	3732.32	146.27	3734.99	146.4	
	11:19:24	3734.38	146.28	3737.13	146.41	
	11:20:24	3738.49	146.3	3741.14	146.43	
	11:21:24	3739.42	146.33	3742.1	146.45	
14	11:22:01	3743.08	146.34	3745.82	146.46	Increase choke to 44/64" THP 2802 psia
	11:22:24	3745	146.34	3747.69	146.47	
	11:23:24	3746.16	146.37	3748.78	146.5	
	11:24:24	3731.62	146.38	3733.42	146.51	
	11:25:24	3695.3	146.34	3697.47	146.46	
	11:26:24	3669.27	146.24	3671.63	146.36	
	11:27:24	3650.46	146.16	3653.11	146.27	
	11:28:24	3637.74	146.09	3640.34	146.21	
	11:29:24	3629.08	146.05	3631.73	146.16	
	11:30:24	3622.7	146.02	3625.41	146.13	
	11:31:24	3621.75	145.99	3624.48	146.11	
	11:32:24	3622.9	145.98	3625.63	146.1	
	11:33:24	3623.02	145.97	3625.73	146.09	
	11:34:24	3622.69	145.96	3625.39	146.08	
	11:35:24	3623.26	145.95	3625.98	146.07	
	11:36:24	3625.28	145.94	3627.96	146.07	
	11:37:24	3626.85	145.94	3629.57	146.07	
	11:38:24	3628.47	145.95	3631.2	146.07	
	11:39:24	3632.79	145.95	3635.58	146.08	
	11:40:24	3639.23	145.96	3642	146.09	
	11:41:24	3645.39	145.98	3648.13	146.11	
	11:42:24	3650.44	146.01	3653.16	146.13	
	11:43:24	3633.38	146.03	3635.51	146.15	
	11:44:24	3610.11	145.98	3612.45	146.1	
	11:45:24	3593.06	145.91	3595.56	146.03	
	11:46:24	3580.29	145.84	3582.82	145.96	
	11:47:24	3570.99	145.8	3573.62	145.92	
	11:48:24	3564.47	145.76	3567.09	145.88	
	11:49:24	3559.76	145.73	3562.42	145.85	
	11:50:24	3556.77	145.7	3559.43	145.82	
	11:51:24	3554.91	145.68	3557.57	145.8	
	11:52:24	3553.78	145.66	3556.44	145.79	
	11:53:24	3553.46	145.65	3556.15	145.77	
	11:54:24	3553.6	145.64	3556.24	145.77	
	11:55:24	3553.8	145.64	3556.47	145.76	
	11:56:24	3553.99	145.63	3556.64	145.76	
	11:57:24	3554.19	145.63	3556.84	145.75	
	11:58:24	3554.3	145.62	3556.96	145.75	
	11:59:24	3554.95	145.62	3557.62	145.75	
	12:00:24	3555.81	145.62	3558.47	145.75	
	12:01:24	3556.73	145.63	3559.38	145.76	
	12:02:24	3557.74	145.63	3560.38	145.76	
	12:03:24	3558.66	145.64	3561.33	145.77	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	12:04:24	3559.52	145.65	3562.18	145.78	
	12:05:24	3560.44	145.65	3563.08	145.78	
	12:06:24	3561.5	145.66	3564.18	145.79	
	12:07:24	3562.56	145.67	3565.25	145.8	
15	12:08:01	3563.21	145.67	3565.87	145.8	Divert flow through seperator THP 2704 psia
	12:08:24	3563.57	145.68	3566.23	145.81	
	12:09:24	3564.22	145.69	3566.87	145.82	
	12:10:24	3564.77	145.69	3567.44	145.82	
	12:11:24	3565.59	145.7	3568.26	145.83	
	12:12:24	3566.46	145.71	3569.12	145.84	
	12:13:24	3567.29	145.72	3569.96	145.85	
	12:14:24	3567.91	145.73	3570.57	145.86	
	12:15:24	3568.48	145.74	3571.13	145.87	
	12:16:24	3569.25	145.74	3571.91	145.88	
	12:17:24	3569.97	145.75	3572.63	145.88	
	12:18:24	3570.48	145.76	3573.14	145.89	
	12:19:24	3570.77	145.77	3573.41	145.9	
	12:20:24	3571.01	145.78	3573.68	145.91	
	12:21:24	3571.37	145.79	3574.04	145.92	
	12:22:24	3571.8	145.8	3574.44	145.93	
	12:23:24	3572.25	145.81	3574.92	145.94	
	12:24:24	3572.93	145.81	3575.56	145.94	
	12:25:24	3573.66	145.82	3576.34	145.95	
	12:26:24	3574.58	145.83	3577.26	145.96	
	12:27:24	3575.45	145.84	3578.14	145.97	
	12:28:24	3576.42	145.85	3579.1	145.98	
	12:29:24	3577.26	145.86	3579.93	145.99	
	12:30:24	3578.1	145.87	3580.77	146	
	12:31:24	3578.71	145.88	3581.38	146.01	
	12:32:24	3579.21	145.89	3581.91	146.02	
	12:33:24	3579.71	145.9	3582.38	146.03	
	12:34:24	3580.33	145.9	3583	146.03	
	12:35:24	3581.19	145.91	3583.87	146.04	
	12:36:24	3582.12	145.92	3584.78	146.05	
	12:37:24	3582.99	145.93	3585.66	146.06	
	12:38:24	3583.6	145.94	3586.26	146.07	
	12:39:24	3584.42	145.95	3587.11	146.08	
	12:40:24	3585.21	145.96	3587.91	146.09	
	12:41:24	3585.95	145.97	3588.64	146.1	
	12:42:24	3586.62	145.97	3589.32	146.11	
	12:43:24	3587.25	145.98	3589.94	146.11	
	12:44:24	3587.88	145.99	3590.58	146.12	
	12:45:24	3588.53	146	3591.24	146.13	
	12:46:24	3589.33	146.01	3592.04	146.14	
	12:47:24	3590.07	146.01	3592.76	146.15	
	12:48:24	3590.87	146.02	3593.57	146.16	
	12:49:24	3591.69	146.03	3594.38	146.16	
	12:50:24	3592.43	146.04	3595.13	146.17	
	12:51:24	3593.11	146.05	3595.81	146.18	
	12:52:24	3593.77	146.06	3596.46	146.19	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	12:53:24	3594.41	146.07	3597.11	146.2	
	12:54:24	3595.06	146.08	3597.76	146.21	
	12:55:24	3595.71	146.08	3598.43	146.22	
	12:56:24	3596.52	146.09	3599.24	146.22	
	12:57:24	3597.23	146.1	3599.92	146.23	
	12:58:24	3597.75	146.11	3600.46	146.25	
	12:59:24	3597.98	146.12	3600.68	146.25	
	13:00:24	3598.35	146.13	3601.07	146.26	
	13:01:24	3598.88	146.13	3601.58	146.26	
	13:02:24	3599.44	146.14	3602.18	146.27	
	13:03:24	3599.96	146.14	3602.71	146.27	
	13:04:24	3600.55	146.15	3603.27	146.28	
	13:05:24	3601.29	146.16	3604	146.29	
	13:06:24	3602.01	146.17	3604.74	146.3	
	13:07:24	3602.67	146.18	3605.39	146.31	
	13:08:24	3603.23	146.18	3605.91	146.32	
	13:09:24	3603.74	146.19	3606.47	146.32	
	13:10:24	3604.27	146.2	3606.99	146.33	
	13:11:24	3604.77	146.2	3607.5	146.34	
	13:12:24	3605.27	146.21	3608	146.34	
	13:13:24	3605.78	146.21	3608.5	146.35	
	13:14:24	3606.25	146.22	3608.98	146.35	
	13:15:24	3606.82	146.23	3609.54	146.36	
	13:16:24	3607.43	146.23	3610.16	146.37	
	13:17:24	3608.09	146.25	3610.83	146.38	
	13:18:24	3608.77	146.26	3611.5	146.39	
	13:19:24	3609.42	146.27	3612.15	146.4	
	13:20:24	3609.98	146.28	3612.72	146.41	
	13:21:24	3610.51	146.28	3613.24	146.42	
	13:22:24	3610.93	146.29	3613.71	146.42	
	13:23:24	3611.39	146.29	3614.13	146.43	
	13:24:24	3611.82	146.3	3614.55	146.43	
	13:25:24	3612.3	146.3	3615.03	146.44	
	13:26:24	3612.82	146.31	3615.57	146.44	
	13:27:24	3613.33	146.31	3616.07	146.45	
	13:28:24	3613.84	146.32	3616.58	146.45	
	13:29:24	3614.4	146.32	3617.15	146.46	
	13:30:24	3614.92	146.33	3617.64	146.46	
	13:31:24	3615.39	146.34	3618.14	146.47	
	13:32:24	3615.89	146.34	3618.64	146.48	
	13:33:24	3616.37	146.35	3619.12	146.48	
	13:34:24	3616.86	146.36	3619.6	146.49	
	13:35:24	3617.34	146.36	3620.08	146.5	
	13:36:24	3617.86	146.37	3620.6	146.5	
	13:37:24	3618.39	146.38	3621.12	146.51	
	13:38:24	3618.91	146.38	3621.65	146.52	
	13:39:24	3619.41	146.39	3622.17	146.53	
	13:40:24	3619.88	146.4	3622.66	146.53	
	13:41:24	3620.31	146.4	3623.06	146.54	
	13:42:24	3620.72	146.41	3623.46	146.54	
	13:43:24	3621.03	146.41	3623.8	146.55	
	13:44:24	3621.34	146.42	3624.11	146.55	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	13:45:24	3621.65	146.42	3624.4	146.56	
	13:46:24	3621.98	146.43	3624.75	146.56	
	13:47:24	3622.44	146.43	3625.19	146.56	
	13:48:24	3622.85	146.44	3625.64	146.57	
	13:49:24	3623.35	146.44	3626.11	146.58	
	13:50:24	3623.75	146.45	3626.49	146.58	
	13:51:24	3624.41	146.46	3627.19	146.59	
	13:52:24	3624.72	146.46	3627.49	146.6	
	13:53:24	3624.93	146.47	3627.69	146.6	
	13:54:24	3625.1	146.47	3627.83	146.61	
	13:55:24	3625.23	146.48	3628	146.61	
	13:56:24	3625.22	146.48	3627.97	146.61	
	13:57:24	3625.46	146.48	3628.23	146.62	
	13:58:24	3625.91	146.49	3628.7	146.62	
	13:59:24	3626.42	146.49	3629.18	146.62	
	14:00:24	3626.9	146.5	3629.68	146.63	
	14:01:24	3627.38	146.5	3630.15	146.64	
	14:02:24	3627.76	146.51	3630.55	146.64	
	14:03:24	3628.5	146.51	3630.9	146.65	
	14:04:24	3628.44	146.52	3631.2	146.65	
	14:05:24	3628.73	146.52	3631.5	146.66	
	14:06:24	3629.04	146.53	3631.82	146.66	
	14:07:24	3629.32	146.53	3632.1	146.67	
	14:08:24	3629.68	146.54	3632.47	146.67	
	14:09:24	3630.09	146.54	3632.87	146.67	
	14:10:24	3630.48	146.55	3633.24	146.68	
	14:11:24	3630.91	146.55	3633.68	146.68	
	14:12:24	3631.29	146.56	3634.08	146.69	
	14:13:24	3631.64	146.56	3634.44	146.69	
	14:14:24	3631.91	146.56	3634.7	146.7	
	14:15:24	3632.17	146.57	3634.98	146.7	
	14:16:24	3632.49	146.57	3635.3	146.7	
	14:17:24	3632.78	146.58	3635.59	146.71	
	14:18:24	3633.07	146.58	3635.87	146.71	
	14:19:24	3633.39	146.58	3636.18	146.72	
	14:20:24	3633.71	146.59	3636.5	146.72	
	14:21:24	3634.06	146.6	3636.85	146.73	
	14:22:24	3634.4	146.6	3637.18	146.74	
	14:23:24	3634.72	146.61	3637.51	146.74	
	14:24:24	3635.03	146.61	3637.82	146.74	
	14:25:24	3635.29	146.61	3638.08	146.75	
	14:26:24	3635.53	146.62	3638.32	146.75	
	14:27:24	3635.77	146.62	3638.57	146.75	
	14:28:24	3636.06	146.62	3638.86	146.76	
	14:29:24	3636.4	146.63	3639.2	146.76	
	14:30:24	3636.71	146.63	3639.51	146.77	
	14:31:24	3637.09	146.63	3639.87	146.77	
	14:32:24	3637.46	146.64	3640.25	146.78	
	14:33:24	3637.8	146.64	3640.62	146.78	
	14:34:24	3638.18	146.64	3641	146.78	
	14:35:24	3638.5	146.65	3641.34	146.79	
	14:36:24	3638.79	146.65	3641.59	146.79	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	14:37:24	3639.04	146.66	3641.83	146.8	
	14:38:24	3639.28	146.66	3642.09	146.8	
	14:39:24	3639.5	146.66	3642.32	146.8	
	14:40:24	3639.73	146.67	3642.53	146.81	
	14:41:24	3639.99	146.67	3642.8	146.81	
	14:42:24	3640.23	146.68	3643.03	146.81	
	14:43:24	3640.5	146.68	3643.3	146.82	
	14:44:24	3640.75	146.69	3643.58	146.82	
	14:45:24	3641	146.69	3643.82	146.82	
	14:46:24	3641.27	146.69	3644.08	146.83	
	14:47:24	3641.54	146.7	3644.35	146.83	
	14:48:24	3641.79	146.7	3644.61	146.84	
	14:49:24	3642.04	146.71	3644.86	146.84	
	14:50:24	3642.27	146.72	3645.08	146.85	
	14:51:24	3642.53	146.72	3645.35	146.86	
	14:52:24	3642.72	146.73	3645.53	146.86	
	14:53:24	3642.94	146.73	3645.75	146.86	
	14:54:24	3643.2	146.73	3646.03	146.87	
	14:55:24	3643.41	146.74	3646.24	146.87	
	14:56:24	3643.66	146.74	3646.46	146.87	
	14:57:24	3643.88	146.74	3646.7	146.87	
	14:58:24	3644.1	146.74	3646.89	146.87	
	14:59:24	3644.34	146.74	3647.18	146.87	
	15:00:24	3644.59	146.74	3647.43	146.87	
	15:01:24	3644.87	146.74	3647.7	146.88	
	15:02:24	3645.13	146.75	3647.97	146.88	
	15:03:24	3645.4	146.75	3648.24	146.88	
	15:04:24	3645.66	146.75	3648.49	146.89	
	15:05:24	3645.9	146.75	3648.71	146.89	
	15:06:24	3646.13	146.76	3648.94	146.89	
	15:07:24	3646.39	146.76	3649.19	146.89	
	15:08:24	3646.55	146.76	3649.36	146.9	
	15:09:24	3646.76	146.77	3649.56	146.9	
	15:10:24	3646.96	146.77	3649.78	146.9	
	15:11:24	3647.17	146.77	3649.99	146.91	
	15:12:24	3647.38	146.78	3650.19	146.91	
	15:13:24	3647.57	146.78	3650.37	146.92	
	15:14:24	3647.74	146.79	3650.54	146.92	
	15:15:24	3647.96	146.79	3650.77	146.92	
	15:16:24	3648.14	146.79	3650.95	146.93	
	15:17:24	3648.37	146.8	3651.19	146.93	
	15:18:24	3648.59	146.8	3651.42	146.94	
	15:19:24	3648.84	146.8	3651.66	146.94	
	15:20:24	3649.03	146.81	3651.85	146.94	
	15:21:24	3649.21	146.81	3652.04	146.94	
	15:22:24	3649.43	146.81	3652.27	146.95	
	15:23:24	3649.62	146.82	3652.45	146.95	
	15:24:24	3649.83	146.82	3652.68	146.95	
	15:25:24	3650.04	146.82	3652.86	146.96	
	15:26:24	3650.26	146.83	3653.1	146.96	
	15:27:24	3650.45	146.83	3653.29	146.96	
	15:28:24	3650.63	146.83	3653.48	146.96	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	15:29:24	3650.81	146.83	3653.65	146.96	
	15:30:24	3650.97	146.83	3653.82	146.96	
	15:31:24	3651.09	146.83	3653.92	146.96	
	15:32:24	3651.21	146.83	3654.03	146.96	
	15:33:24	3651.32	146.83	3654.16	146.97	
	15:34:24	3651.43	146.83	3654.28	146.97	
	15:35:24	3651.59	146.84	3654.44	146.97	
	15:36:24	3651.75	146.84	3654.59	146.97	
	15:37:24	3651.94	146.84	3654.77	146.98	
	15:38:24	3652.19	146.85	3655.01	146.98	
	15:39:24	3652.39	146.85	3655.2	146.98	
	15:40:24	3652.6	146.85	3655.42	146.98	
	15:41:24	3652.8	146.85	3655.64	146.99	
	15:42:24	3653.03	146.86	3655.86	146.99	
	15:43:24	3652.98	146.86	3655.8	146.99	
	15:44:24	3652.63	146.86	3655.47	147	
	15:45:24	3652.77	146.86	3655.6	147	
	15:46:24	3652.96	146.87	3655.81	147	
	15:47:24	3653.24	146.87	3656.09	147	
	15:48:24	3653.48	146.87	3656.33	147	
	15:49:24	3653.75	146.87	3656.6	147.01	
	15:50:24	3653.93	146.88	3656.78	147.01	
	15:51:24	3654.08	146.88	3656.93	147.01	
	15:52:24	3654.24	146.88	3657.08	147.02	
	15:53:24	3654.14	146.89	3657.02	147.02	
	15:54:24	3654.16	146.89	3657	147.02	
	15:55:24	3654.21	146.89	3657.06	147.02	
	15:56:24	3654.3	146.89	3657.15	147.03	
	15:57:24	3654.41	146.89	3657.26	147.03	
	15:58:24	3654.56	146.9	3657.41	147.03	
	15:59:24	3654.78	146.9	3657.62	147.03	
	16:00:24	3654.91	146.9	3657.76	147.03	
	16:01:24	3655.06	146.9	3657.89	147.03	
	16:02:24	3655.14	146.9	3658	147.04	
	16:03:24	3655.26	146.9	3658.11	147.04	
	16:04:24	3655.34	146.91	3658.21	147.04	
	16:05:24	3655.47	146.91	3658.34	147.04	
	16:06:24	3655.6	146.91	3658.45	147.04	
	16:07:24	3655.72	146.91	3658.58	147.04	
	16:08:24	3655.87	146.91	3658.72	147.04	
	16:09:24	3655.97	146.91	3658.83	147.05	
	16:10:24	3656.12	146.92	3658.98	147.05	
	16:11:24	3656.3	146.92	3659.16	147.05	
	16:12:24	3656.47	146.92	3659.34	147.05	
	16:13:24	3656.65	146.92	3659.49	147.06	
	16:14:24	3656.81	146.93	3659.67	147.06	
	16:15:24	3656.96	146.93	3659.84	147.06	
	16:16:24	3657.12	146.93	3659.97	147.06	
	16:17:24	3657.29	146.93	3660.15	147.06	
	16:18:24	3657.46	146.94	3660.31	147.07	
	16:19:24	3657.63	146.94	3660.48	147.07	
	16:20:24	3657.74	146.94	3660.59	147.08	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	16:21:24	3657.89	146.94	3660.73	147.08	
	16:22:24	3658.05	146.94	3660.89	147.08	
	16:23:24	3658.23	146.95	3661.04	147.08	
	16:24:24	3658.43	146.95	3661.28	147.09	
	16:25:24	3658.6	146.95	3661.45	147.09	
	16:26:24	3658.74	146.96	3661.59	147.09	
	16:27:24	3658.86	146.96	3661.72	147.09	
	16:28:24	3658.99	146.96	3661.86	147.09	
	16:29:24	3659.14	146.96	3661.98	147.09	
	16:30:24	3659.21	146.96	3662.07	147.09	
	16:31:24	3659.34	146.97	3662.22	147.1	
	16:32:24	3659.5	146.97	3662.36	147.1	
	16:33:24	3659.66	146.97	3662.51	147.1	
	16:34:24	3659.84	146.97	3662.7	147.1	
	16:35:24	3659.98	146.97	3662.85	147.11	
	16:36:24	3660.12	146.98	3662.99	147.11	
	16:37:24	3660.29	146.98	3663.14	147.11	
	16:38:24	3660.45	146.98	3663.3	147.11	
	16:39:24	3660.6	146.98	3663.46	147.12	
	16:40:24	3660.79	146.98	3663.65	147.12	
16	16:41:01	3660.86	146.99	3663.73	147.12	Slowly increase choke setting to 52/64" THP 2826 psia
	16:41:24	3660.93	146.99	3663.79	147.12	
	16:42:24	3661.09	146.99	3663.96	147.12	
	16:43:24	3661.28	146.99	3664.13	147.13	
17	16:44:01	3661.39	146.99	3664.25	147.13	Well flowing on 52/64" THP 2784 psia
	16:44:24	3654.99	146.99	3653.67	147.13	
	16:45:24	3662.43	146.99	3665.08	147.12	
	16:46:24	3652.88	147	3655.02	147.13	
	16:47:24	3615.57	146.96	3617.02	147.09	
	16:48:24	3578.37	146.85	3580.43	146.97	
	16:49:24	3552.07	146.72	3554.39	146.83	
	16:50:24	3532.94	146.61	3535.45	146.72	
	16:51:24	3519.08	146.52	3521.69	146.63	
18	16:52:01	3512.46	146.47	3515.18	146.58	Well flowing on 54/64" THP 2634 psia
	16:52:24	3508.97	146.44	3511.7	146.56	
	16:53:24	3501.59	146.37	3504.35	146.49	
	16:54:24	3487.95	146.32	3490.14	146.43	
	16:55:24	3469.97	146.24	3472.43	146.35	
	16:56:24	3457.04	146.14	3459.65	146.25	
	16:57:24	3447.78	146.05	3450.49	146.16	
	16:58:24	3441.15	145.98	3443.89	146.09	
	16:59:24	3436.46	145.91	3439.21	146.03	
	17:00:24	3433.24	145.86	3436.02	145.98	
	17:01:24	3431.04	145.83	3433.79	145.94	
	17:02:24	3429.83	145.79	3432.6	145.91	
	17:03:24	3429.07	145.76	3431.83	145.88	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	17:04:24	3428.26	145.73	3431	145.84	
	17:05:24	3427.52	145.7	3430.26	145.81	
19	17:06:01	3427.24	145.69	3429.94	145.81	Well flowing on 56/64" THP 2586 psia
	17:06:24	3427.29	145.7	3429.99	145.82	
	17:07:24	3427.59	145.75	3430.25	145.88	
	17:08:24	3427.85	145.81	3430.53	145.94	
	17:09:24	3418.47	145.83	3420.59	145.96	
	17:10:24	3404.86	145.81	3407.2	145.94	
	17:11:24	3394.08	145.76	3396.57	145.88	
	17:12:24	3386.47	145.7	3389.24	145.83	
	17:13:24	3382.33	145.65	3385.05	145.78	
	17:14:24	3379.45	145.6	3382.22	145.72	
	17:15:24	3377.78	145.55	3380.54	145.67	
	17:16:24	3376.89	145.49	3379.65	145.61	
	17:17:24	3376.38	145.45	3379.13	145.56	
	17:18:24	3376.63	145.41	3379.34	145.53	
	17:19:24	3376.68	145.38	3379.41	145.5	
	17:20:24	3376.75	145.36	3379.47	145.48	
	17:21:24	3376.71	145.34	3379.36	145.47	
20	17:22:01	3376.66	145.34	3379.33	145.46	Shut in well at choke manifold THP 2703 psia
	17:22:24	3376.63	145.33	3379.29	145.46	
	17:23:24	3376.54	145.33	3379.21	145.45	
	17:24:24	3376.65	145.32	3379.31	145.45	
	17:25:24	3572.38	145.4	3583.46	145.55	
	17:26:24	3785.44	146.02	3794.11	146.22	
	17:27:24	3948.13	146.82	3954.53	147.04	
	17:28:24	4065.28	147.53	4070.5	147.75	
	17:29:24	4145.28	148.07	4149.42	148.27	
	17:30:24	4196.54	148.43	4200.06	148.62	
	17:31:24	4228.06	148.65	4231.37	148.82	
	17:32:24	4247.03	148.76	4250.13	148.91	
	17:33:24	4258.56	148.78	4261.7	148.91	
	17:34:24	4266.21	148.75	4269.35	148.87	
	17:35:24	4271.21	148.69	4274.38	148.8	
	17:36:24	4274.65	148.62	4277.73	148.71	
	17:37:24	4277.15	148.51	4280.23	148.6	
	17:38:24	4279	148.39	4282.11	148.48	
	17:39:24	4280.53	148.26	4283.65	148.35	
	17:40:24	4281.59	148.11	4284.7	148.2	
	17:41:24	4270.4	147.97	4273.81	148.05	
	17:42:24	4277.65	147.83	4280.89	147.92	
	17:43:24	4280.97	147.74	4284.02	147.83	
	17:44:24	4283.44	147.66	4286.39	147.75	
	17:45:24	4285.01	147.58	4287.94	147.67	
	17:46:24	4286.14	147.49	4289.04	147.59	
	17:47:24	4287.21	147.41	4290.1	147.5	
	17:48:24	4288.15	147.33	4290.99	147.42	
	17:49:24	4288.75	147.25	4291.58	147.34	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	17:50:24	4289.33	147.17	4292.17	147.27	
	17:51:24	4289.81	147.11	4292.61	147.2	
	17:52:24	4290.27	147.04	4293.05	147.14	
	17:53:24	4290.78	146.98	4293.44	147.07	
	17:54:24	4291.18	146.91	4293.89	147.01	
	17:55:24	4291.61	146.86	4294.27	146.96	
	17:56:24	4292	146.8	4294.67	146.9	
	17:57:24	4292.47	146.75	4295.13	146.85	
	17:58:24	4293.43	146.69	4295.8	146.79	
	17:59:24	4293.86	146.64	4296.08	146.74	
	18:00:24	4293.97	146.59	4296.82	146.69	
	18:01:24	4291.86	146.53	4294.51	146.63	
21	18:02:01	4293.05	146.5	4296.16	146.6	Latch gauges and pull out of hole
	18:02:24	4291.14	146.48	4294.14	146.58	
	18:03:24	4293.25	146.42	4295.91	146.52	
	18:04:24	4294.1	146.38	4296.57	146.48	
	18:05:24	4294.84	146.34	4297.48	146.45	
	18:06:24	4294.53	146.3	4297.05	146.41	
	18:07:24	4292.26	146.26	4294.39	146.36	
	18:08:24	4282.84	146.19	4283.62	146.29	
	18:09:24	4262.86	146.02	4265.19	146.1	
	18:10:24	4245.71	145.57	4248.71	145.57	
	18:11:24	4226.66	144.78	4230.47	144.73	
	18:12:24	4209.38	143.9	4213.17	143.82	
	18:13:24	4189.78	142.75	4194.03	142.63	
	18:14:24	4170.1	141.49	4174.29	141.34	
	18:15:24	4146.66	140.25	4150.39	140.13	
	18:16:24	4120.75	139.33	4123.88	139.25	
	18:17:24	4096.19	138.49	4099.13	138.37	
	18:18:24	4066.94	137.14	4071.05	136.91	
	18:19:24	4034.8	135.28	4039.47	135.01	
	18:20:24	4001.24	133.3	4006.21	133.03	
	18:21:24	3966.95	131.27	3971.8	130.98	
	18:22:24	3929.81	129.33	3934.23	129.04	
	18:23:24	3891.14	127.14	3895.42	126.75	
	18:24:24	3847.46	124.51	3851.58	124.09	
	18:25:24	3801.26	121.78	3805.54	121.34	
	18:26:24	3755.75	118.82	3759.11	118.34	
	18:27:24	3708.21	115.51	3711.85	114.95	
	18:28:24	3662.72	111.87	3666.42	111.18	
	18:29:24	3610.46	107.57	3614.14	106.82	
	18:30:24	3560.82	103.45	3564.11	102.64	
	18:31:24	3511.13	99.24	3513.95	98.38	
	18:32:24	3461.88	94.73	3465.62	93.93	
	18:33:24	3443.82	88.14	3447.07	86.89	
	18:34:24	3428.38	80.59	3432.12	78.77	
22	18:34:40	3420.08	77.55	3423.94	75.57	Out of hole with gauges
	18:35:24	3411.5	69.75	3414.53	67.7	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	18:36:24	3395.04	57.93	3396.36	55.8	
	18:37:24	3385.97	48.95	3386.6	47.19	
	18:38:24	3377.3	42.72	3378.95	41.57	
	18:39:24	3372.39	38.69	3374.24	37.94	
	18:40:24	3369.11	36.02	3371.47	35.61	
	18:41:24	3367.09	34.24	3369.56	34.08	
	18:42:24	3365.74	33	3368.22	33.04	
23	18:43:21	3364.59	32.16	3367.38	32.34	Shut in well
	18:43:24	3364.54	32.13	3367.33	32.31	
	18:44:24	3363.77	31.53	3366.51	31.8	
	18:45:24	3363.12	31.11	3365.97	31.42	
	18:46:24	3358.22	30.77	3360.4	31.12	
24	18:47:24	3344.35	30.51	3346.73	30.88	Depressure lubricator
	18:47:24	3344.35	30.51	3346.73	30.88	
	18:48:24	3318.03	30.26	3320.46	30.67	
	18:49:24	3311.41	30.02	3314.08	30.47	
	18:50:24	3305.55	29.82	3308.25	30.29	
	18:50:31	3304.84	29.8	3307.63	30.27	
	18:55:31	-1.76	14.6	0.46	14.5	
	19:00:31	1.64	13.98	2.98	14.43	
	19:05:31	2.2	14.57	3.88	15.22	
	19:10:31	1.93	14.96	4.08	15.73	
	19:15:31	2.12	15.02	4.24	15.43	
	19:20:31	1.7	16.09	4.19	16.84	
	19:25:31	1.68	16.09	3.67	16.79	
25	19:28:29	1.66	16.1	2.93	17.38	Stop bottom gauge
	19:30:31	1.72	16.19			
26	19:32:31	-1.64	16.33			Stop top gauge

Origin Energy

Well Name: Yolla 4
Test Type: Flowing Survey
Date of Survey: 1st to 7th August 2004

MEMORY GAUGE REPORT

Prepared For: Andrew Wenk
Date: 22nd August 2004

David Whelan
Completion Products & Services
Halliburton Australia Pty Ltd

HALLIBURTON

Halliburton Australia Pty Ltd

MEMORY GAUGE FLOWING PRESSURE AND
TEMPERATURE SURVEY

MEMORY GAUGE TICKET NO:	35409
DATE:	1st - 7th August 2004
HALLIBURTON CAMP:	Cheltenham, Victoria
HALLIBURTON OPERATOR:	David Whelan
WITNESS:	N/A
COMPANY:	Origin
DRILLING CONTRACTOR:	Ensco
LEASE NAME:	YOLLA
WELL NO:	YOLLA-4
TEST TYPE:	Flowing Survey
TEST NO:	1
TESTED ZONE:	All
FIELD AREA:	Bass Strait
STATE:	Victoria
COUNTRY:	Australia

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HALLIBURTON

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SECTION 1

TEST SUMMARY & JOB INFORMATION

WELL DATA

Well Details

Well Name	Yolla - 4	
Field	Yolla	
Platfrom	Yolla A	
Derrick Floor Elevation	81	m AMSL
Top Bottom Flange	27.07	m MDRT

Completion

Measured m (MDRT)	**Description**
27.07	Tubing Hanger
169.09	TRSV
2521.39	5 1/2" PBR
2593.75	4 1/2" Halliburton SSD x 3.813" RD
2596.99	6 5/8" AHR Packer
2832.49	4 1/2" Halliburton SSD x 3.813" RD
2835.73	6 5/8" AHR Packer
2920.57	4 1/2" Halliburton SSD x 3.688" RD
2923.80	6 5/8" AHR Packer
2979.57	4 1/2" Halliburton SSD x 3.688" RD
2983.10	6 5/8" MWR Packer
2990.46	4 1/2" Halliburton SSD x 3.688" RD
2997.38	4 1/2" Halliburton 3.688" RN Nipple
2999.95	EOT

SURVEY EVENTS

Client	:Origin Energy	**Operator**	:David Whelan
Field	:Yolla	**Survey Date**	:1st - 7th August 2004
Platfor	:Yolla A	**Well**	:Yolla - 4

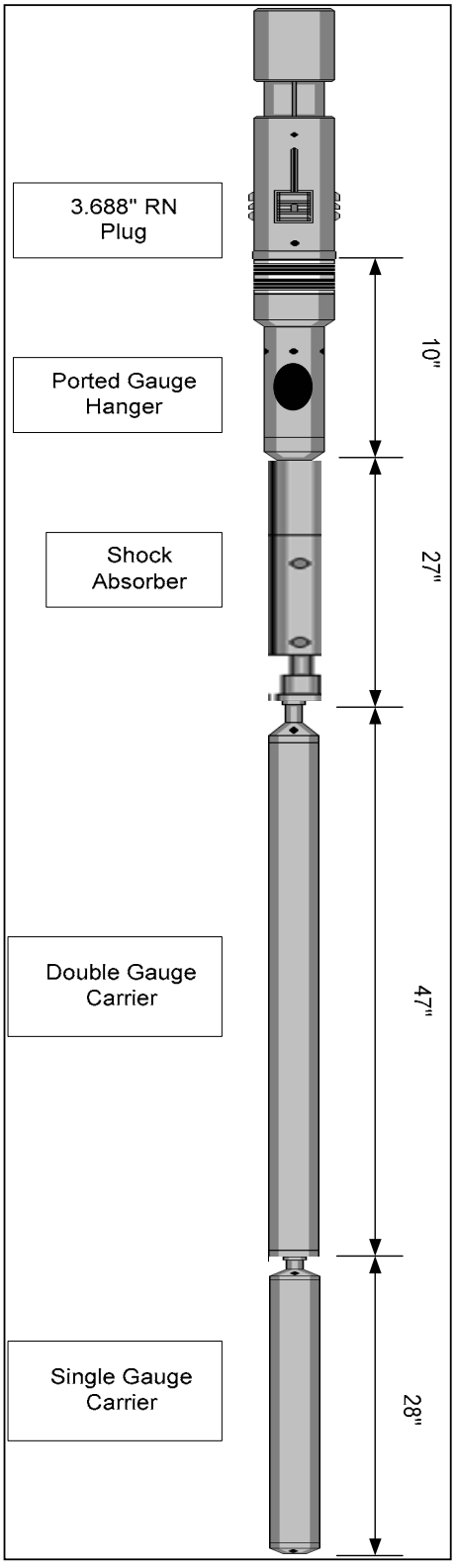
Event	Time	Description
1	15:03:39	Start top gauge
2	15:06:44	Start bottom gauge
3	15:59:59	Add gauges to tool string and stab lubricator
4	16:06:44	Open well
5	16:13:49	Shut well and depressure lubricator repair leak in lubricator
6	16:22:18	Open well gauges in lubricator
7	16:32:00	Open well on 16/64 choke 2755 sands Clean up
8	16:34:00	Increase choke to 20/64
9	16:35:00	Increase choke to 24/64
10	16:37:00	Increase choke to 28/64
11	16:46:00	Increase choke to 32/64
12	16:50:00	Increase choke to 36/64
13	16:55:00	Increase choke to 40/64
14	17:45:00	Shut in well at choke manifold Run in hole with gauges
15	18:20:54	Gauges set on depth at 2990 mdkb slickline pull out of hole
16	18:50:00	Slickline out of hole shut in well depressure and change tools
17	19:25:00	Open well on 24/64 choke THP 3102 psia
18	19:29:00	Increase choke to 28/64 THP 3052 psia
19	19:32:00	Increase choke to 32/64 THP 3024 psia
20	19:35:00	Increase choke to 36/64 THP 2975 psia
21	19:38:00	Increase choke to 40/64 THP 2921 psia
22	19:41:00	Increase choke to 44/64 THP 2872 psia
23	19:44:00	Increase choke to 46/64 THP 2800 psia
24	19:55:00	Liquid slugs at surface
25	20:17:00	Increase choke to 48/64 THP 2778 psia
26	20:35:00	Increase choke to 52/64 THP 2755 psia
27	21:05:00	Increase choke to 58/64 THP 2616 psia
28	21:14:00	Decrease choke to 48/64 THP 2605 psia
29	21:37:00	Increase choke to 52/64 THP 2807 psia
30	1:26:00	Shut in well at choke manifold
31	1:59:00	Slickline rih and close SSD on 2755 sands THP 3232 psia
32	3:37:00	Slickline rih and open SSD at 2548 sands THP 3176 psia
33	5:04:00	Open well on 24/64 choke flow well to clean up (2458 sands)
34	5:06:00	Increase choke to 28/64 THP 2884 psia
35	5:08:00	Increase choke to 32/64 THP 2783 psia
36	5:12:00	Increase choke to 36/64 THP 2594 psia

37	5:15:00	Increase choke to 40/64 THP 2472 psia
38	9:13:00	Close FCH master valve and open choke manifold
39	9:45:00	Rih slickline and open SSD 2809 sands THP 2311 psia
40	10:45:00	Open well on 16/64 choke flow well (2458 and 2809 sands open)
41	10:46:00	Increase choke to 20/64 THP 2487 psia
42	10:47:00	Increase choke to 24/64 THP 2460 psia
43	10:49:00	Increase choke to 28/64 THP 2395 psia
44	10:50:00	Increase choke to 32/64 THP 2368 psia
45	10:52:00	Increase choke to 36/64 THP 2268 psia
46	10:54:00	Increase choke to 40/64 THP 2140 psia
47	10:56:00	Increase choke to 44/64 THP 1884 psia
48	10:59:00	Increase choke to 48/64 THP 2140 psia
49	11:26:00	Reduce choke to 32/64 THP 1598 psia
50	11:39:00	Shut in well at choke manifold THP 1693 psia
51	12:00:00	Slickline rih and close SSD 2458 sands
52	13:00:00	Open well on 16/64 choke (2809 sands - Test) THP 2653 psia
53	13:01:00	Increase choke to 20/64 THP 2620 psia
54	13:02:00	Increase choke to 24/64 THP 2568 psia
55	13:03:00	Increase choke to 28/64 THP 2505 psia
56	13:05:00	Increase choke to 32/64 THP 2373 psia
57	13:07:00	Increase choke to 36/64 THP 2218 psia
58	13:10:00	Increase choke to 40/64 THP 2044 psia
59	13:13:00	Increase choke to 44/64 THP 1918 psia
60	13:50:00	Flowing waxy oil
61	15:00:00	Flowing waxy oil
62	15:11:00	Shut in well at choke manifold
63	15:35:00	Rih with slickline confirm SSD at 2809 sands open
64	15:59:00	Sudden increase in THP on opening of sleeve THP 2759 psia
65	16:05:00	POOH with slickline unable to pass 2940 mdkb THP 3135 psia
66	18:52:00	Close slickline BOP begin fishing operations
67	17:40:00	Open well on 12/64 choke attempt to dislodge fish THP 3181 psia
68	17:54:00	Increase choke to 16/64 THP 3113 psia
69	18:06:00	Increase choke to 20/64 THP 3073 psia
70	18:08:00	Fully open gas manifold to flare
71	18:25:00	Increase choke to 24/64 THP 3050 psia
72	18:48:00	Increase choke to 28/64 THP 3020 psia
73	20:49:00	Shut in well at choke manifold
74	20:55:40	Slickline attempting jar wire from fish
75	21:53:00	Stop jarring
76	22:08:00	Open well on 16/64 choke attempt to dislodge fish THP 3094 psia
77	22:11:00	Increase choke to 20/64 THP 3062 psia
78	22:15:00	Increase choke to 24/64 THP 2995 psia
79	22:20:00	Continue to jar on wire while flowing well
80	22:48:00	Stop jarring

81	22:51:00	Shut in well at choke manifold continue with fishing operations
82	22:55:00	Close slickline BOP
83	23:53:00	Equalise slickline BOP
84	0:10:00	Run in hole with blind box cut wire at 2915 mdkb thp 3062 psia
85	2:39:00	Close Master valve
86	3:07:00	Open master valve
87	3:20:00	Run in hole with wire finder THP 3170 psia
88	3:55:00	Close slickline BOP
89	5:08:00	Open slickline BOP
90	5:15:00	Run in hole with wire finder THP 3167 psia
91	6:38:00	Close master valve
92	7:02:00	Open master valve slickline run in hole with scratcher
93	8:10:00	Close slickline BOP wire at surface
94	8:45:00	Equalise and open BOP wire at surface
95	9:13:00	Close slickline BOP wire at surface
96	9:41:00	Equalise and open BOP wire at surface
97	11:30:00	Close BOP back feed wire through lub and stuffing box
98	14:00:00	Equalise and open BOP commence pulling wire from hole
99	14:15:00	Unable to pull more than few meters from hole close slickline BOP
100	14:56:00	Equalise and open BOP rig up glycol injection line
101	15:46:00	Still unable to move wire close BOP
102	16:00:00	Lift stuffing box ball of wire found
103	16:15:00	Function BOP small amount of gas passing seals
104	16:30:00	Completion supervisor cut wire with swab valve on tree
105	17:00:00	Shut down and redress BOP
106	10:31:00	Continue fishing operations after BOP redress
107	10:38:00	Open master valve run in hole and retrieve wire THP 3122 psia
108	11:40:00	Wire to surface close slickline BOP THP 3128 psia
109	12:15:00	Equalise and open BOP
110	12:30:00	Pull up on slickline and close BOP
111	13:27:00	Reconfigure lubricator to allow retrieval of wire from hole
112	14:50:00	Equalise and open slickline BOP THP 3129 psia
113	15:00:00	Recover wire from hole THP 3132 psia
114	17:04:00	Wire recovered from well shut in swab valve
115	17:20:00	Reconfigure lubricator and remove spooled wire from slickline unit
116	20:15:00	Open master valve
117	21:24:00	Run in hole with 3.22 LIB THP 3123 psia
118	22:40:00	Close swab valve on production tree
119	23:07:00	Open swab valve on production tree
120	23:11:00	Run in hole with 2.5 RJ pulling tool THP 3114 psia
121	0:13:00	Out of hole with top GO Devil close swab valve on production tree
122	0:52:00	Open swab valve on production tree RIH with 3.22 LIB THP 3123 psia
123	1:25:00	Open swab valve on production tree
124	1:42:00	Open well leak at lubricator close well

125	2:34:00	Open swab valve on production tree
126	2:40:00	Run in hole with 2.5 RB pulling tool THP 3117 psia
127	3:26:00	Out of hole with bottom GO Devil close swab valve on production tree
128	3:54:00	Open swab valve on production tree
129	3:57:00	Run in hole with 3.22 LIB THP 3111 psia
130	5:26:00	Out of hole with Slickline close swab valve on production tree
131	7:12:00	Open swab valve on production tree THP 3120 psia
132	7:13:00	Run in hole with pulling tool latch fish and work free pull out of hole
133	9:24:04	Out of hole close in swab valve on production tree
134	11:30:00	Open well and run in hole with wire spear
135	12:36:00	Close swab valve on production tree THP 3124 psia
136	13:31:00	Open well and run in hole with 4 prong spear THP 3127 psia
137	15:00:00	Out of hole close production tree swab valve approx 20 mtrs wire
138	16:12:00	Open master valve leak in lubricator close master valve
139	16:34:00	Open well and run in hole with 3.22 LIB
140	17:55:00	Out of hole with slickline shut in swab valve on production tree
141	18:22:04	Open swab valve on production tree RIH to open SSD 2809 sands
142	20:01:04	Close swab valve on production tree
143	20:41:00	Open well on 16/64 choke (TEST 2809 SANDS)
144	20:44:00	Increase choke to 20/64 THP 3090 psia
145	20:50:00	Increase choke to 24/64 THP 3037 psia
146	20:55:00	Increase choke to 28/64 THP 2999 psia
147	21:00:00	Increase choke to 32/64 THP 2962 psia
148	21:05:00	Increase choke to 36/64 THP 2928 psia
149	21:10:00	Increase choke to 40/64 THP 2893 psia
150	21:15:00	Increase choke to 44/64 THP 2841 psia
151	21:20:00	Increase choke to 46/64 THP 2755 psia
152	21:35:00	Increase choke to 48/64 THP 2753 psia
153	22:15:00	Increase choke to 50/64 THP 2787 psia
154	22:25:00	Increase choke to 52/64 THP 2747 psia
155	23:01:00	Increase choke to 54/64 THP 2757 psia
156	23:32:04	Decrease choke to 48/64 THP 2731 psia
157	23:33:00	Increase choke to 54/64 THP 2777 psia
158	0:41:00	Decrease choke to 48/64 THP 2774 psia
159	0:47:00	Divert flow to 48/64 adjustable choke THP 2880 psia
160	1:00:00	Divert flow to 52/64 fixed choke
161	4:24:00	Shut in well at choke manifold

SURVEY TOOL STRING



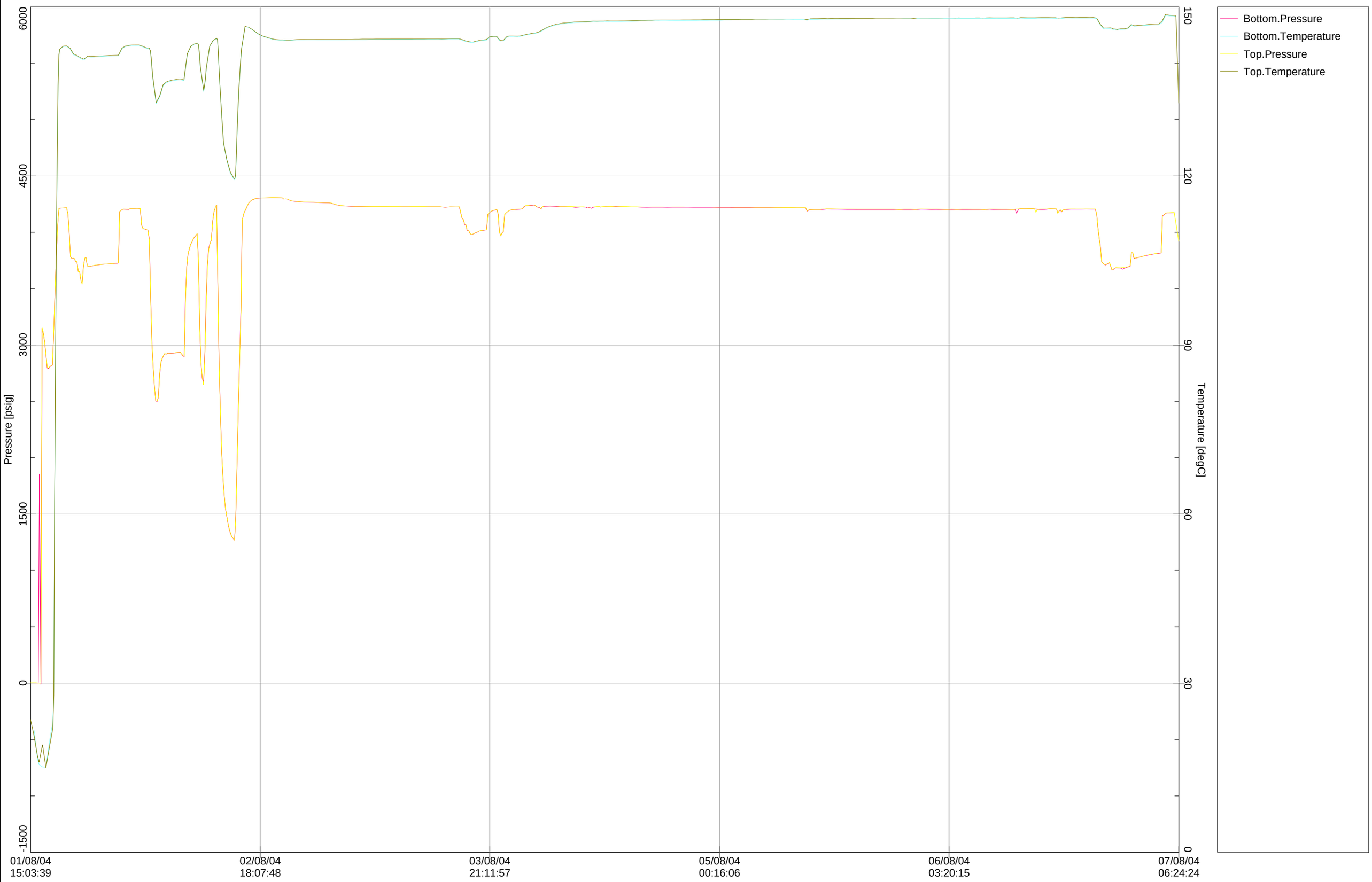
HALLIBURTON

SECTION 2

PLOTS

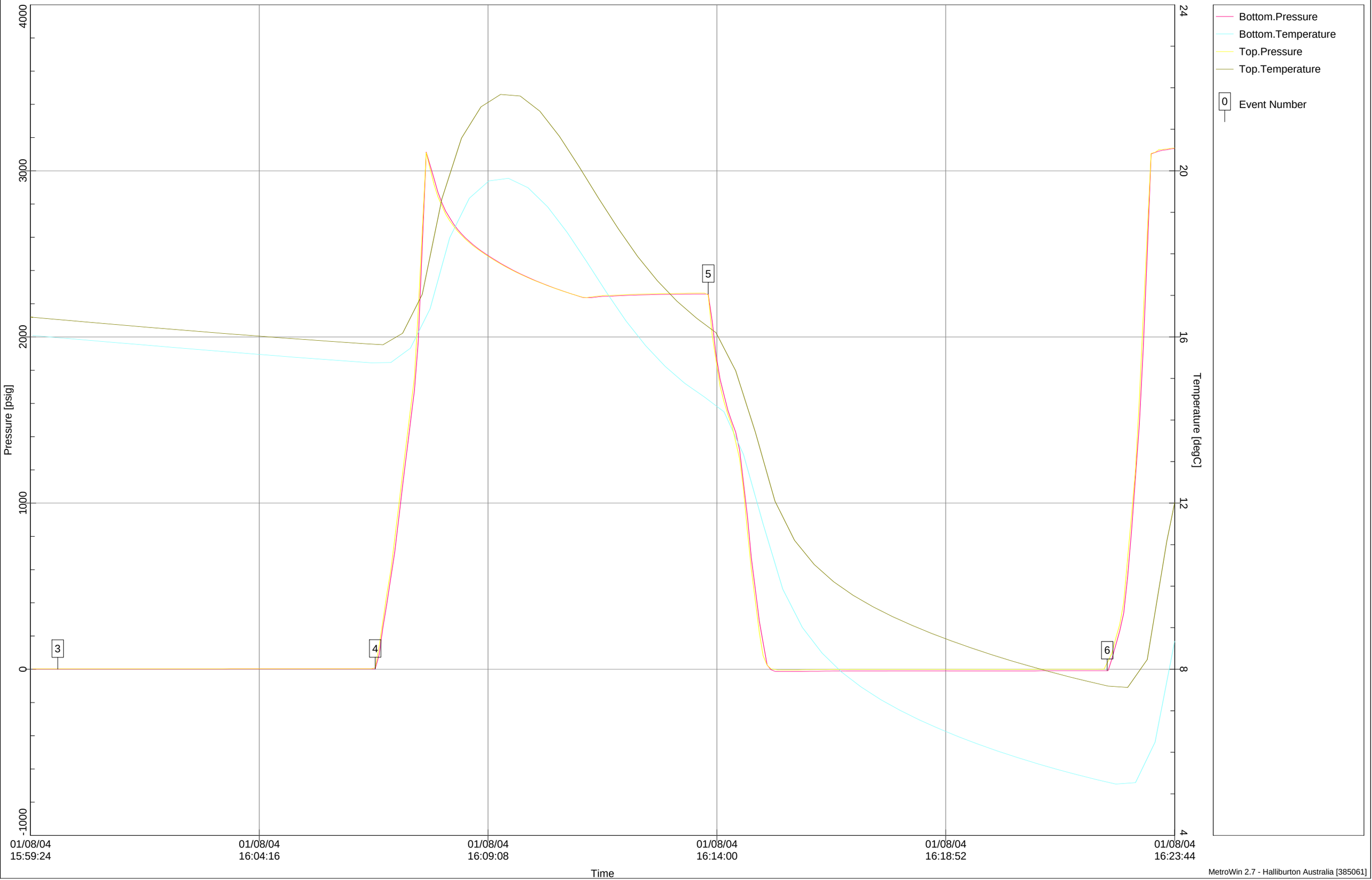
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Entire test period
Operator :David Whelan



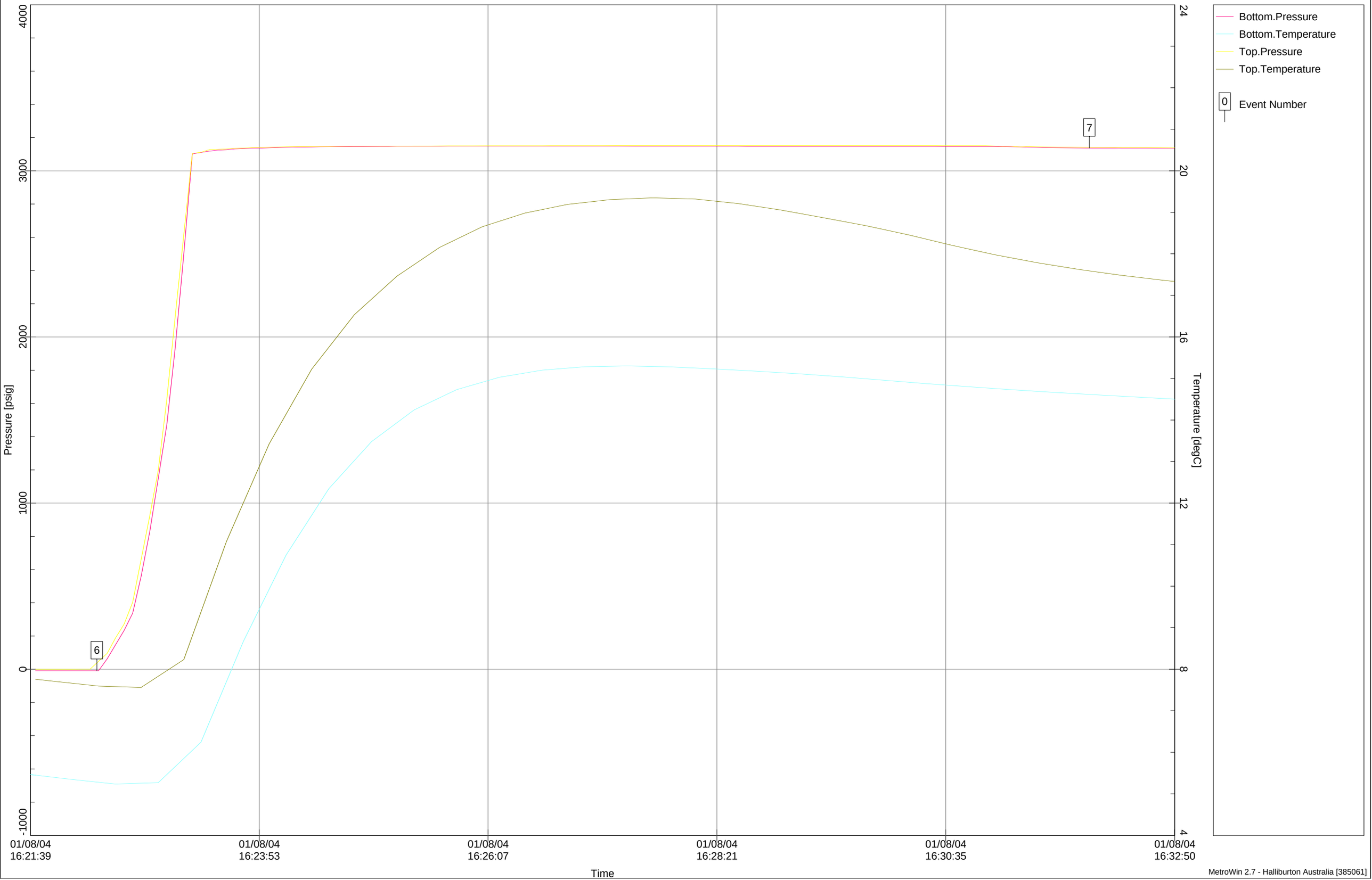
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 3 to 6



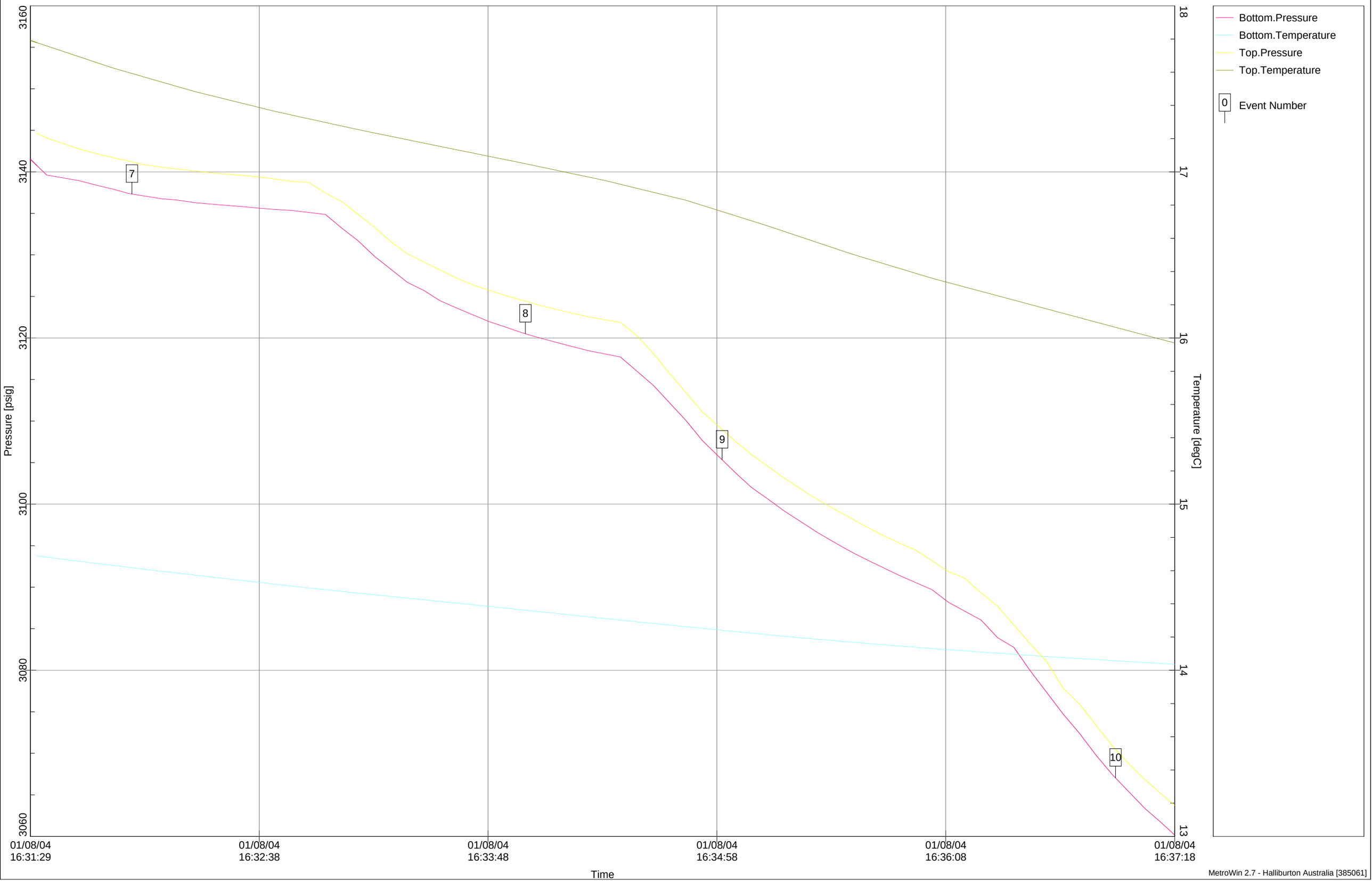
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 6 to 7



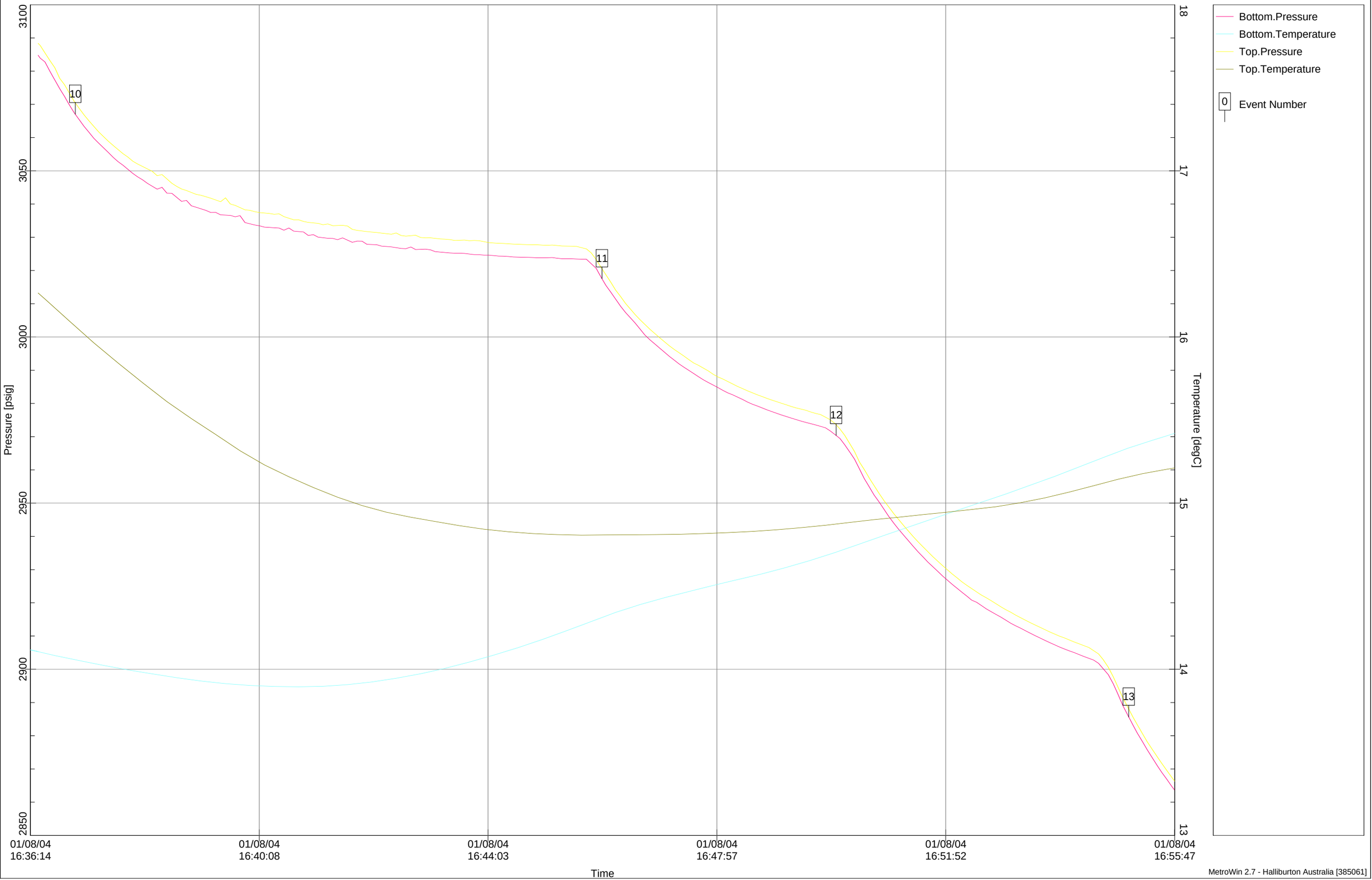
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 7 to 10



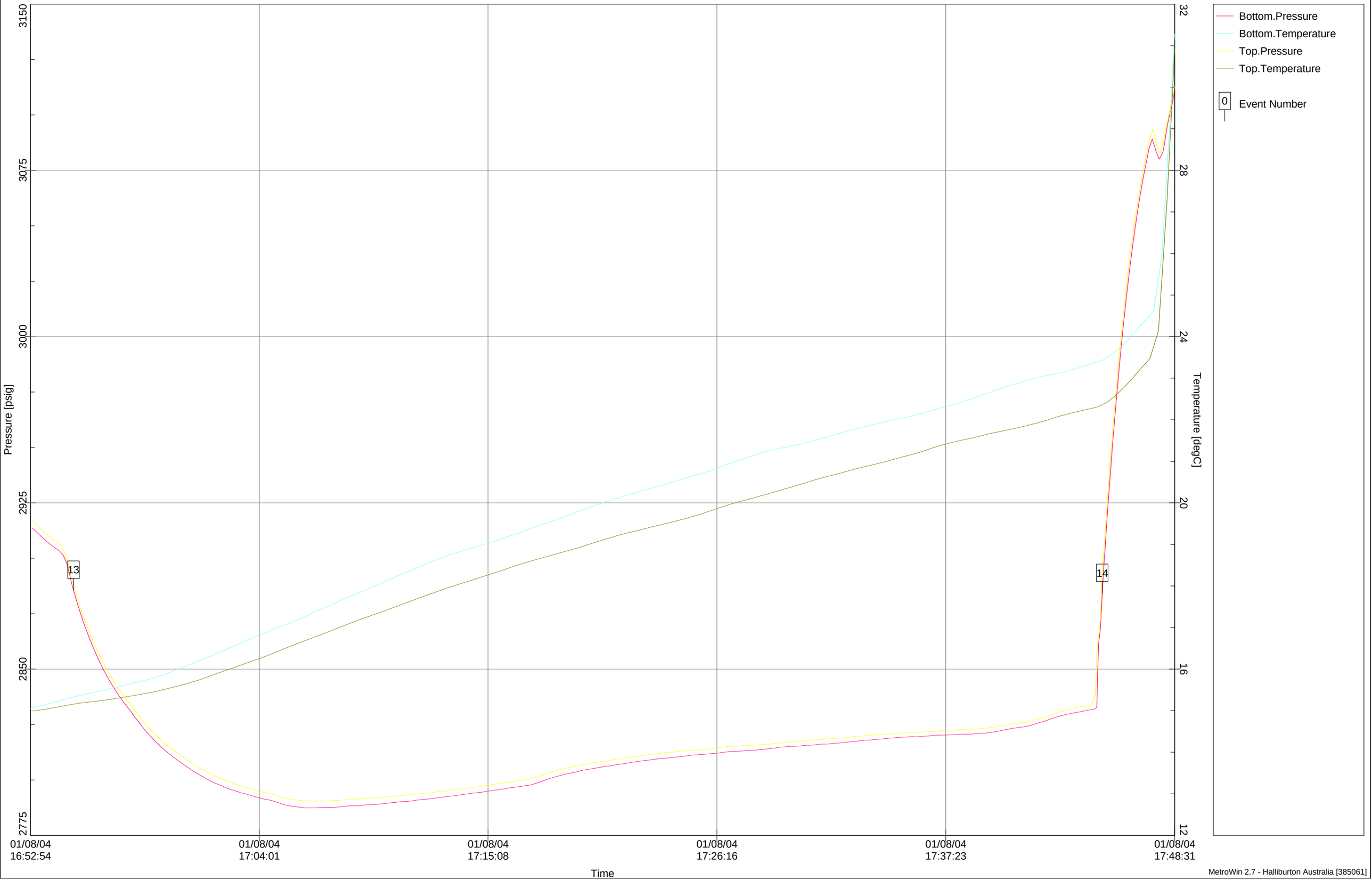
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 10 to 13



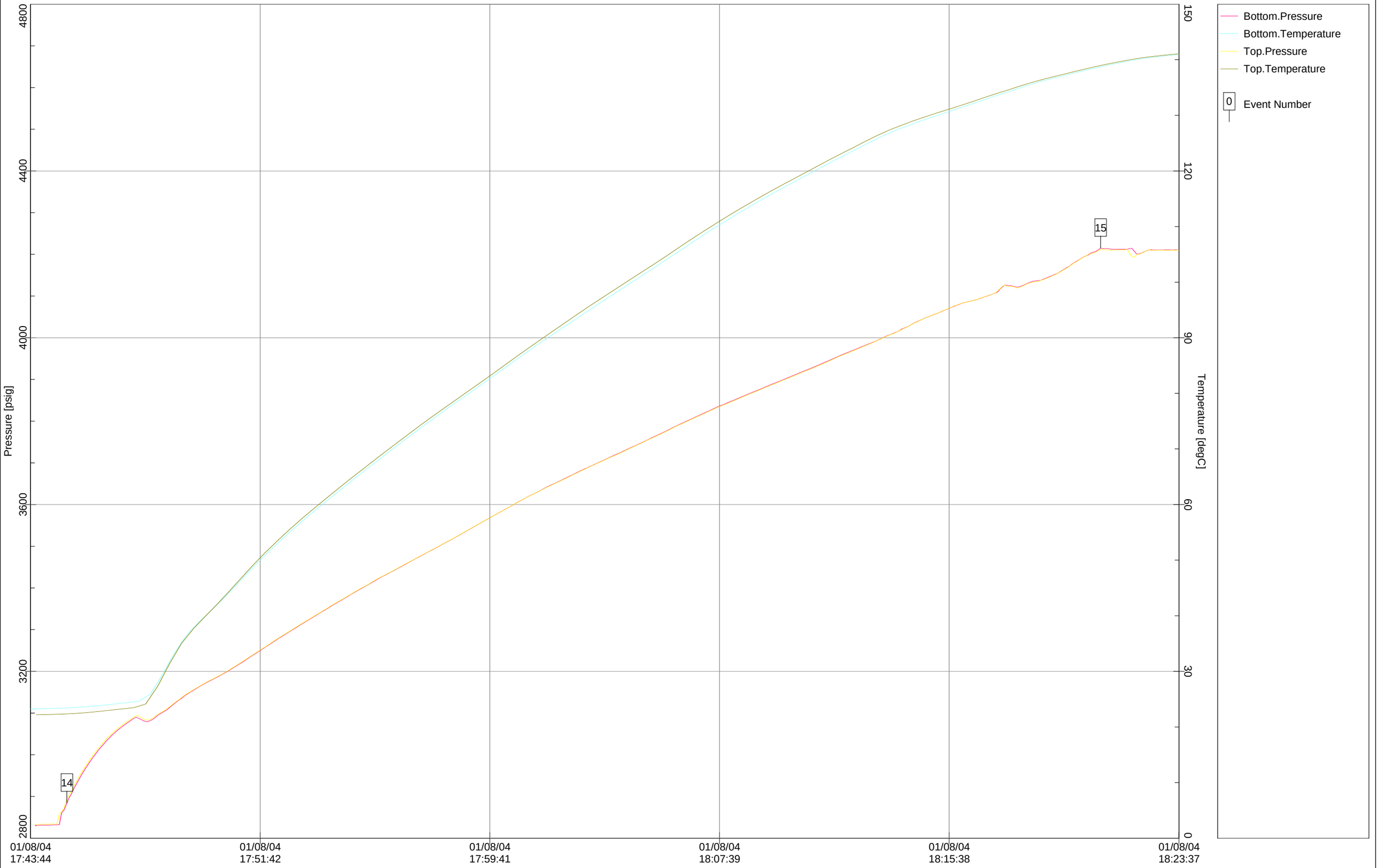
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 13 to 14



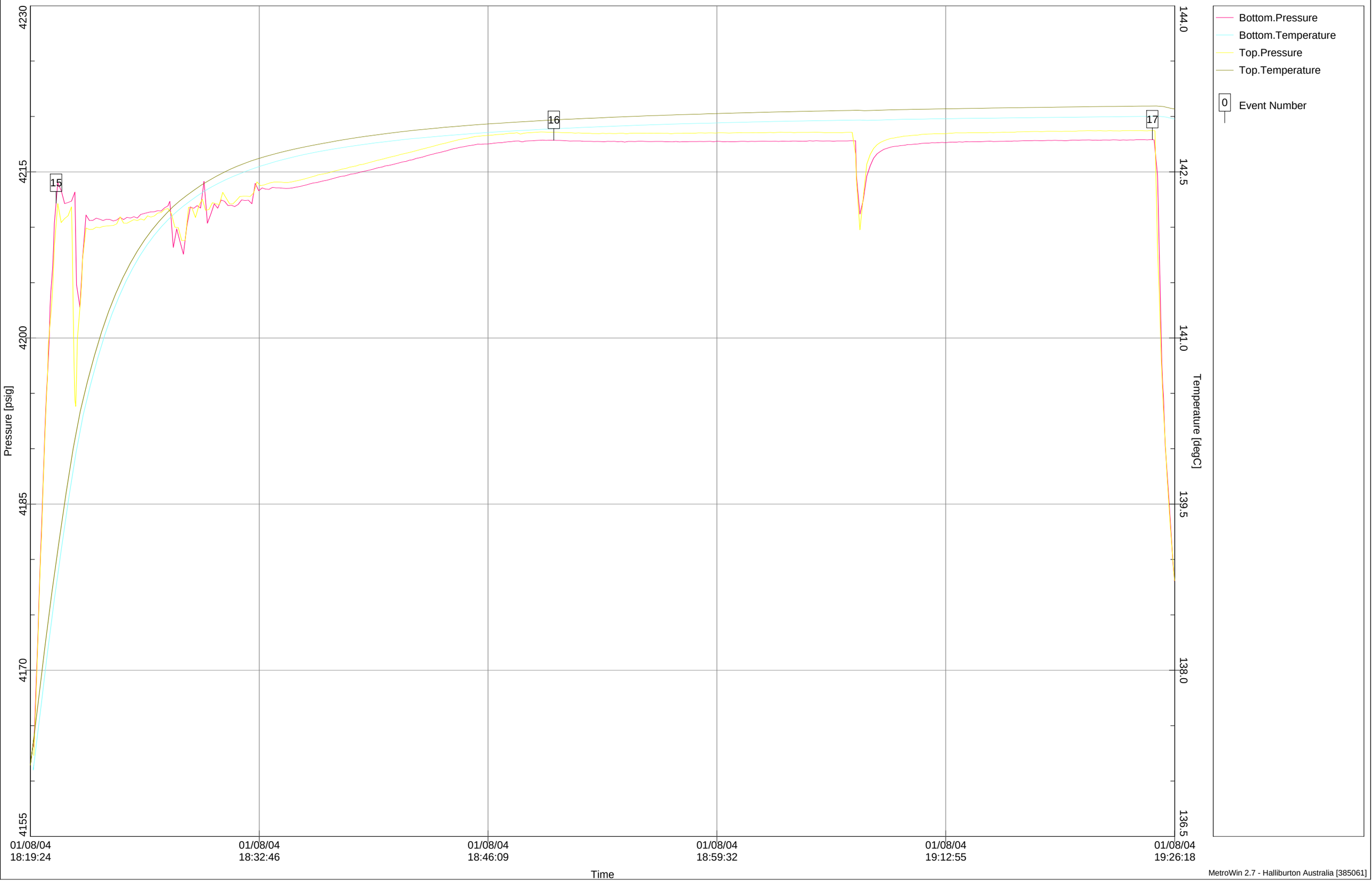
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 14 to 15



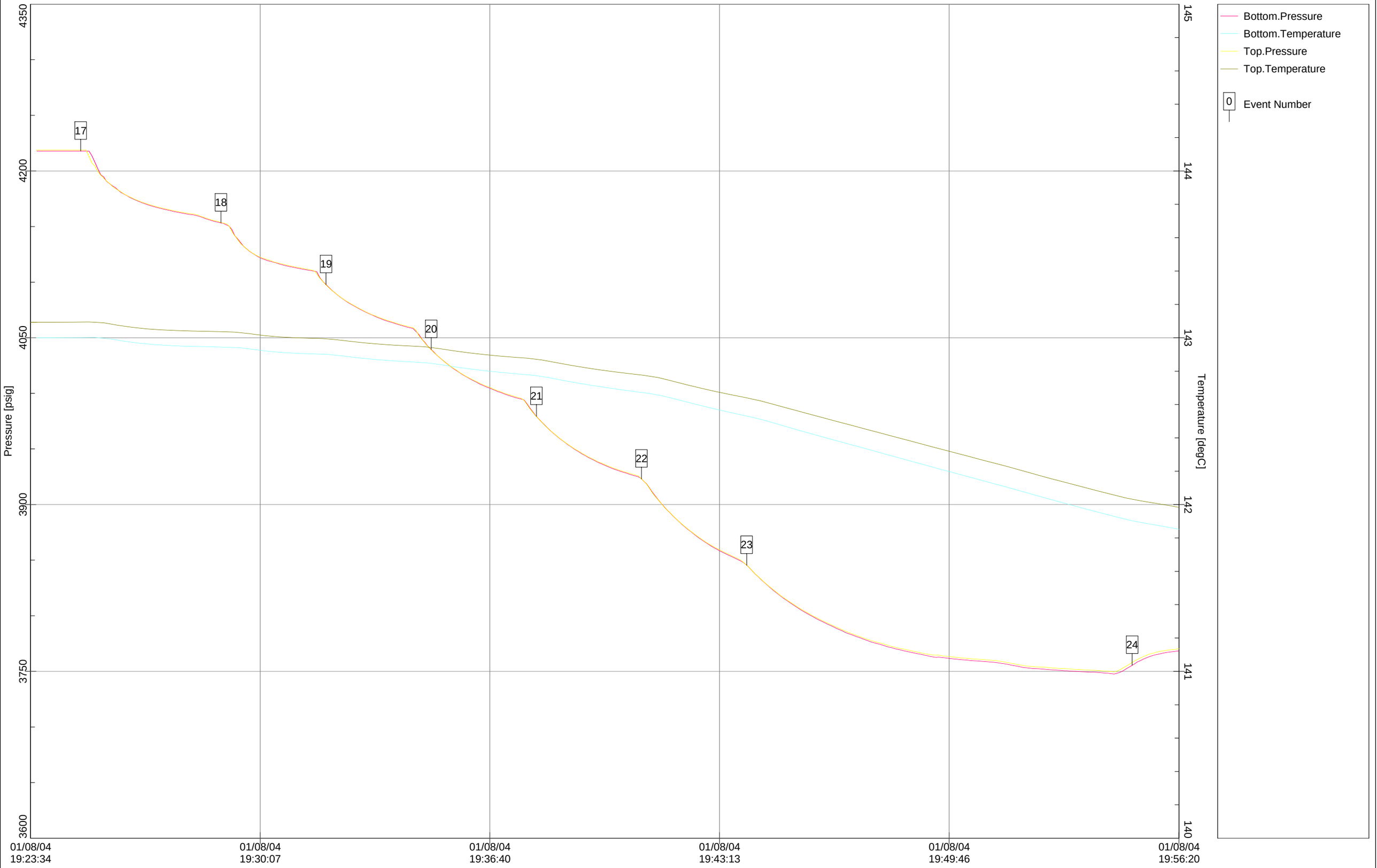
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 15 to 17



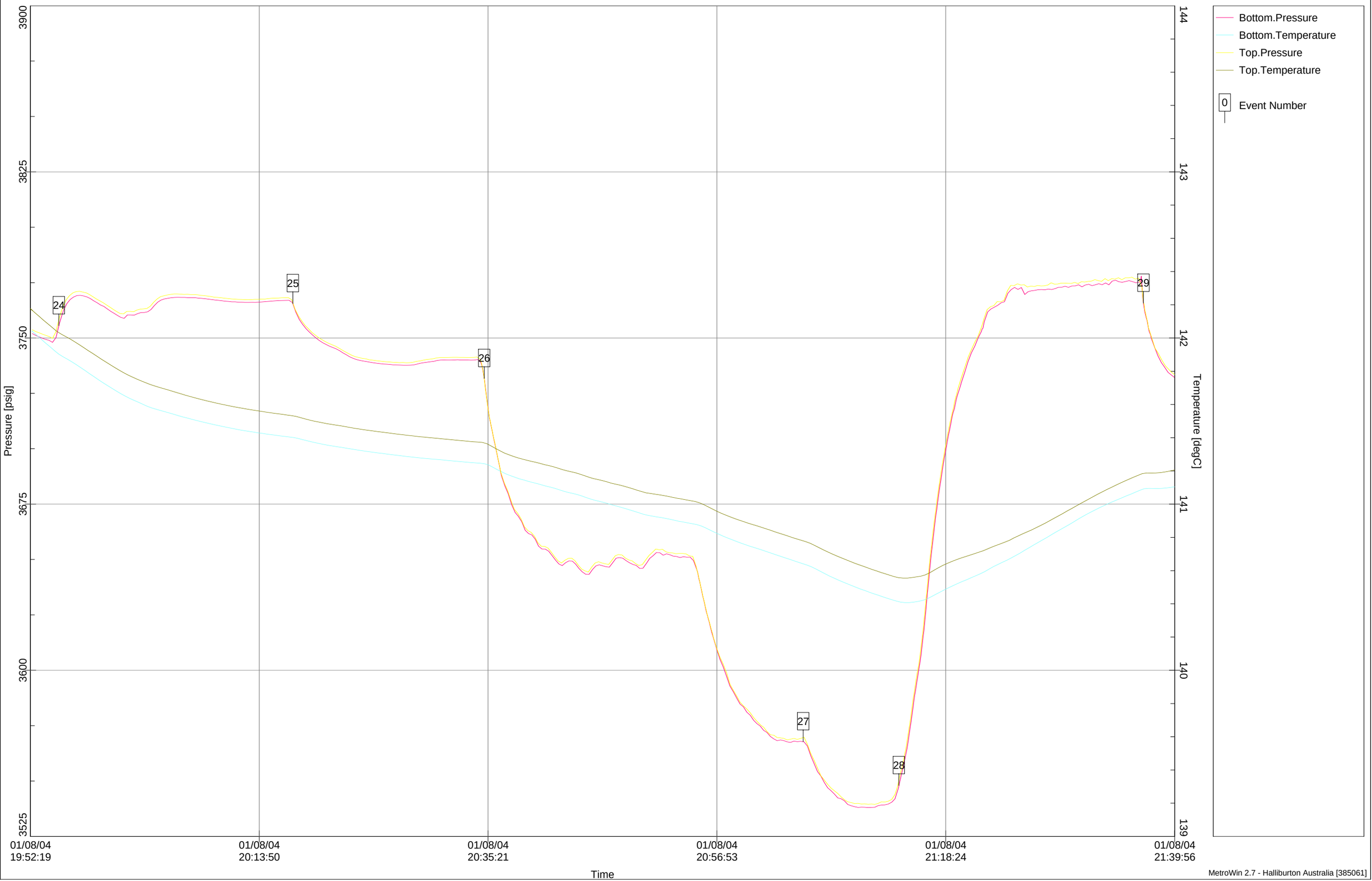
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 17 to 24



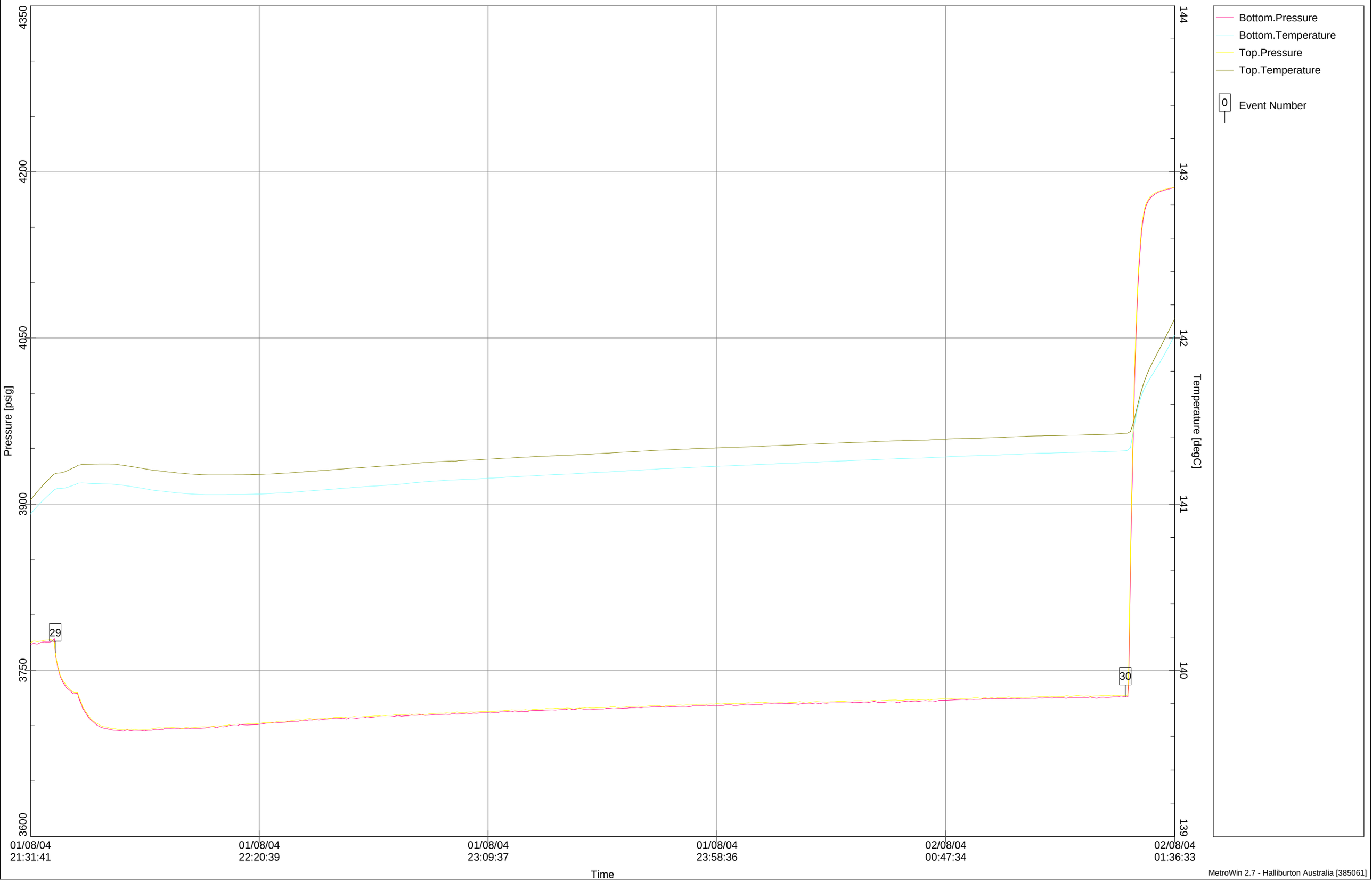
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 24 to 29



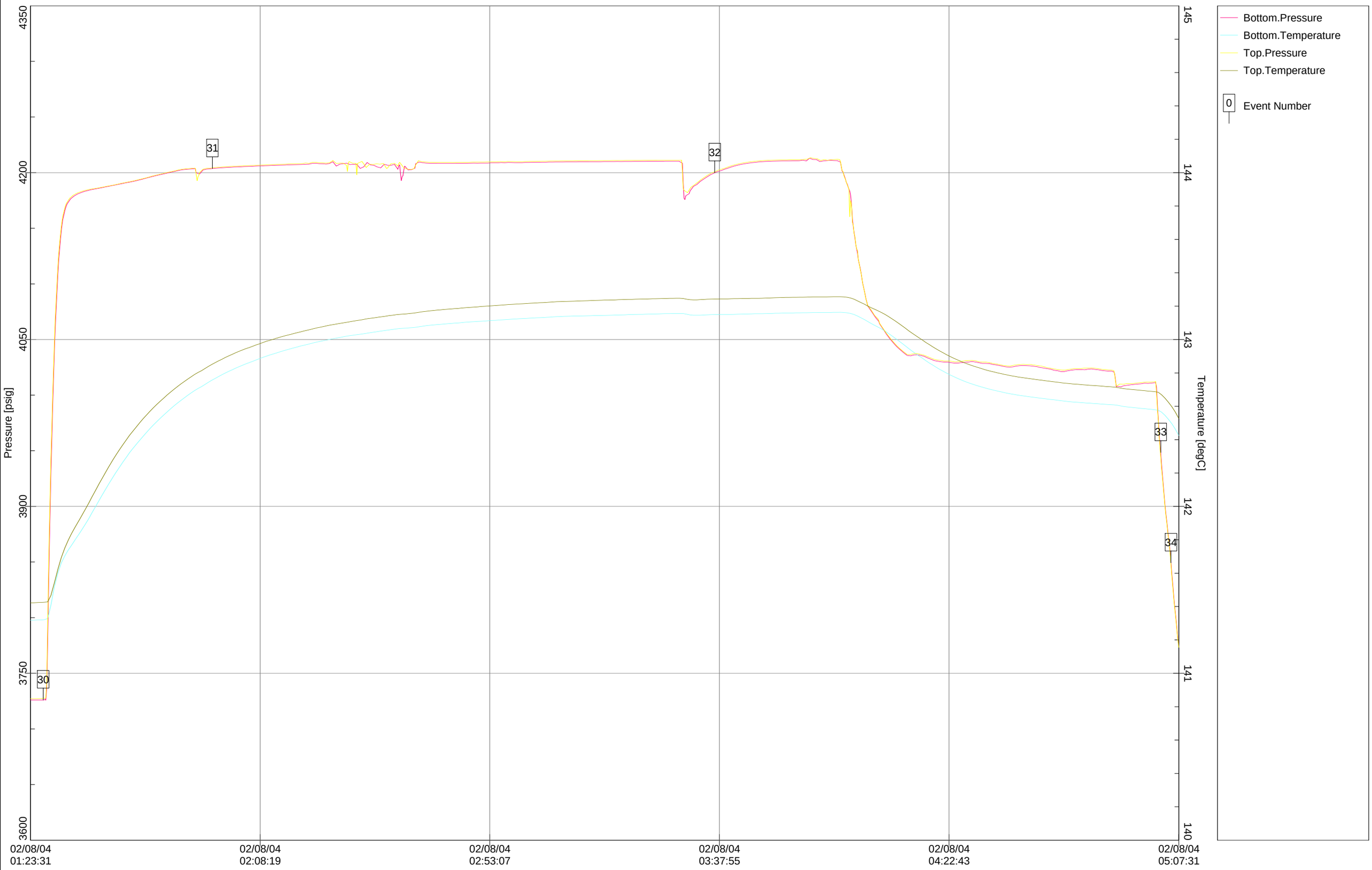
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 29 to 30



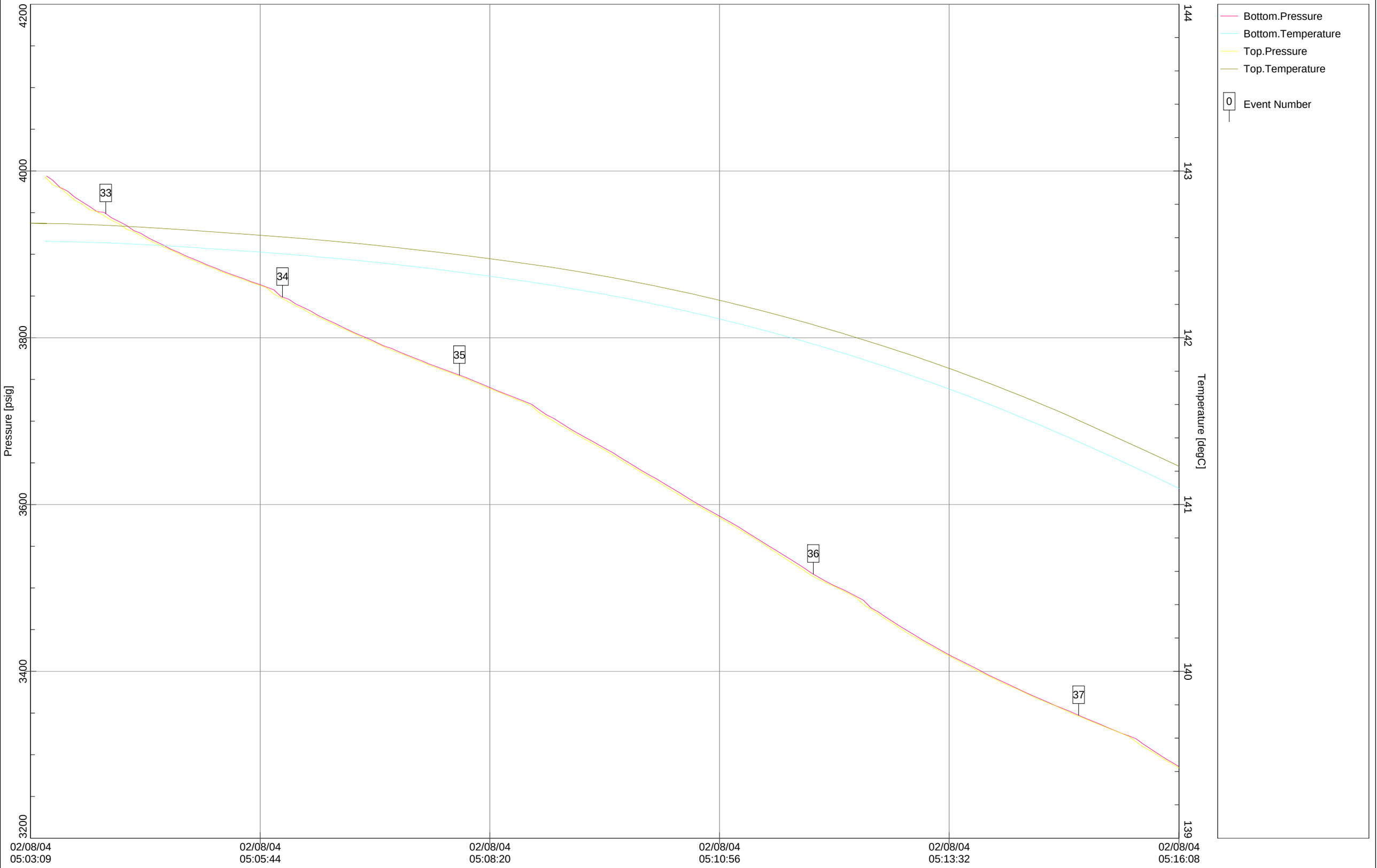
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2548 Sands Flowing Survey
Operator :David Whelan
Plot :Events 30 - 33



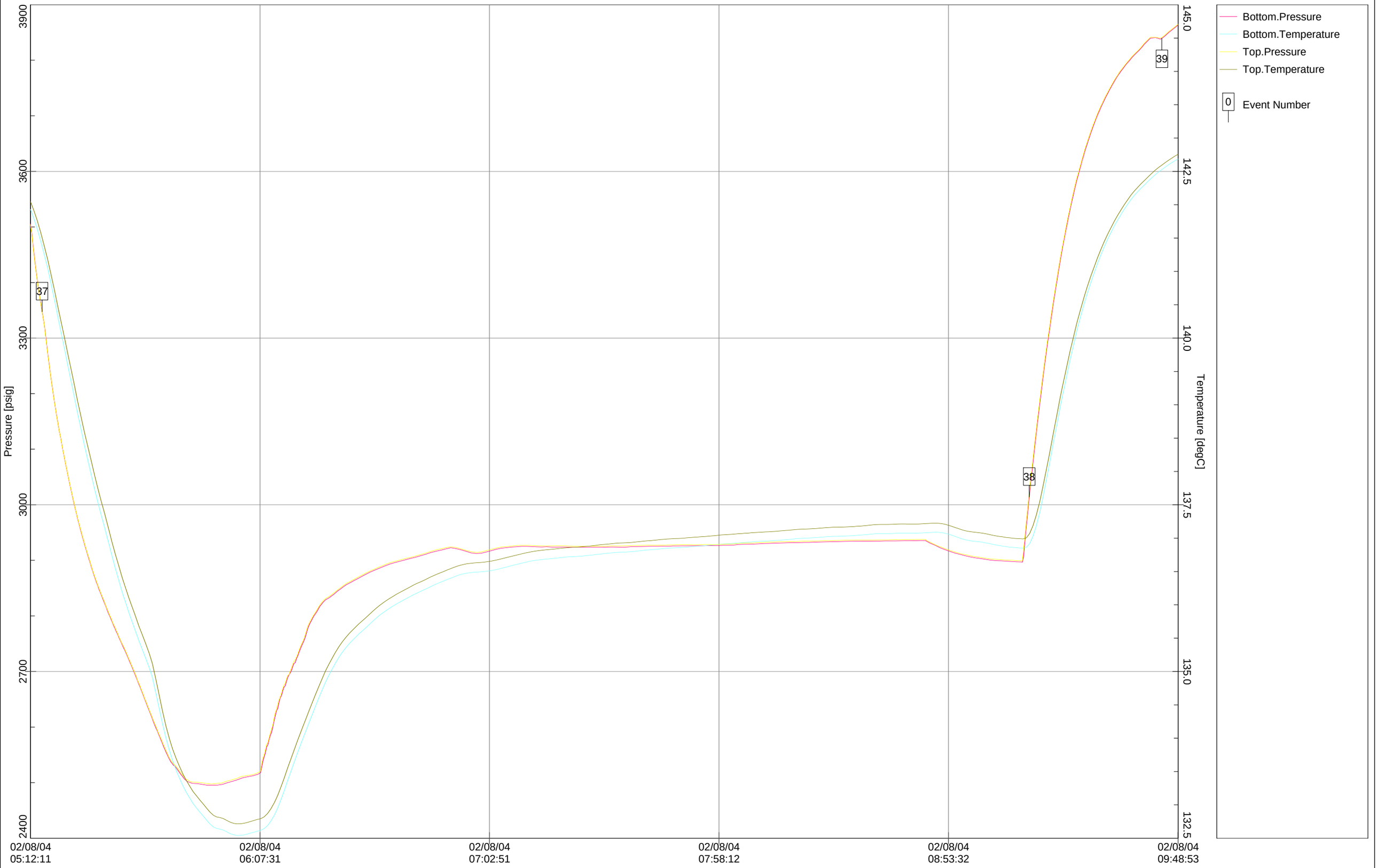
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2548 Sands Flowing Survey
Operator :David Whelan
Plot :Events 33 - 37



Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2548 Sands Flowing Survey
Operator :David Whelan
Plot :Events 37 - 39

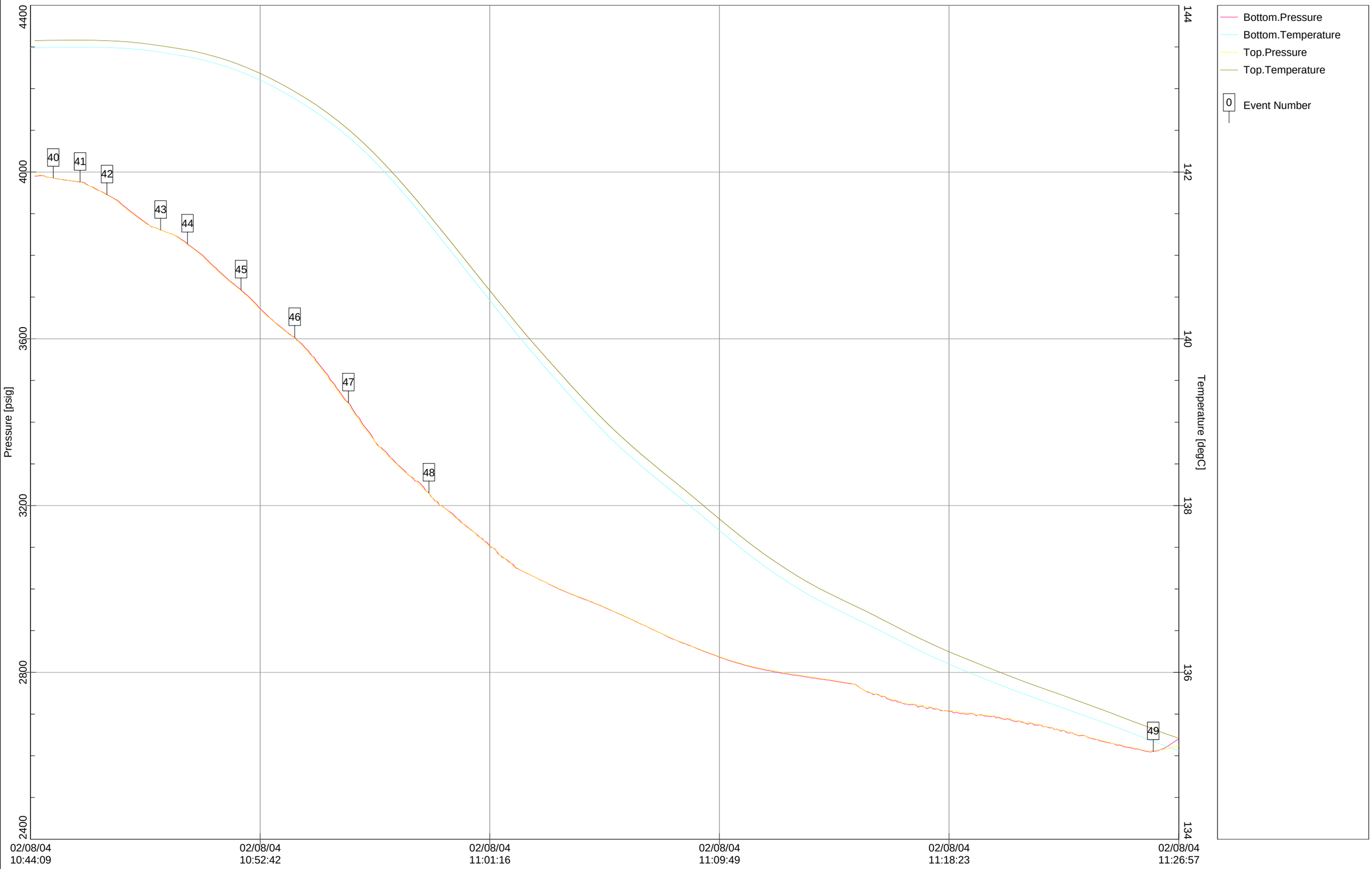


Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2548 and 2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 39 - 40

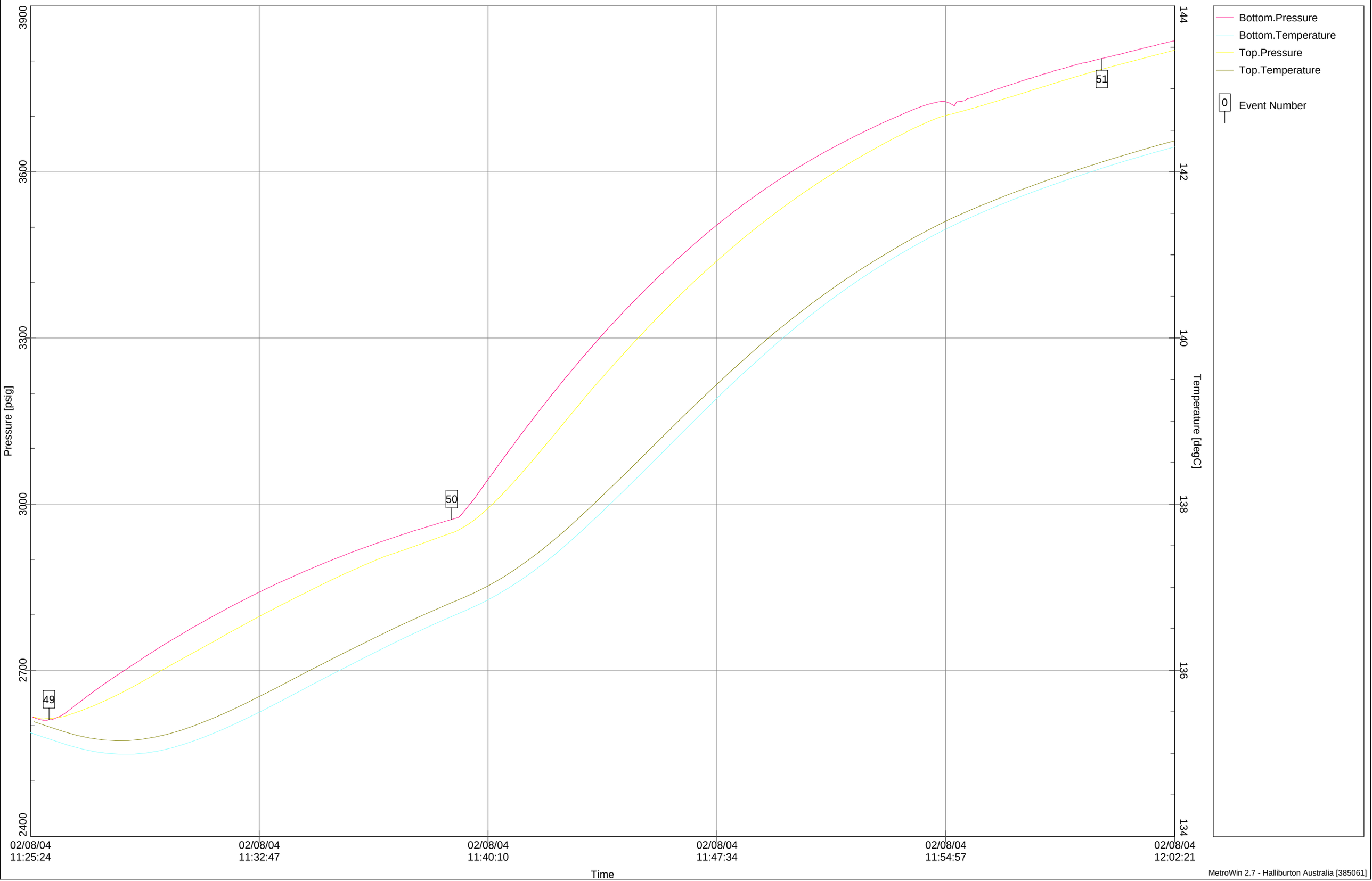
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2548 and 2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 40 - 49



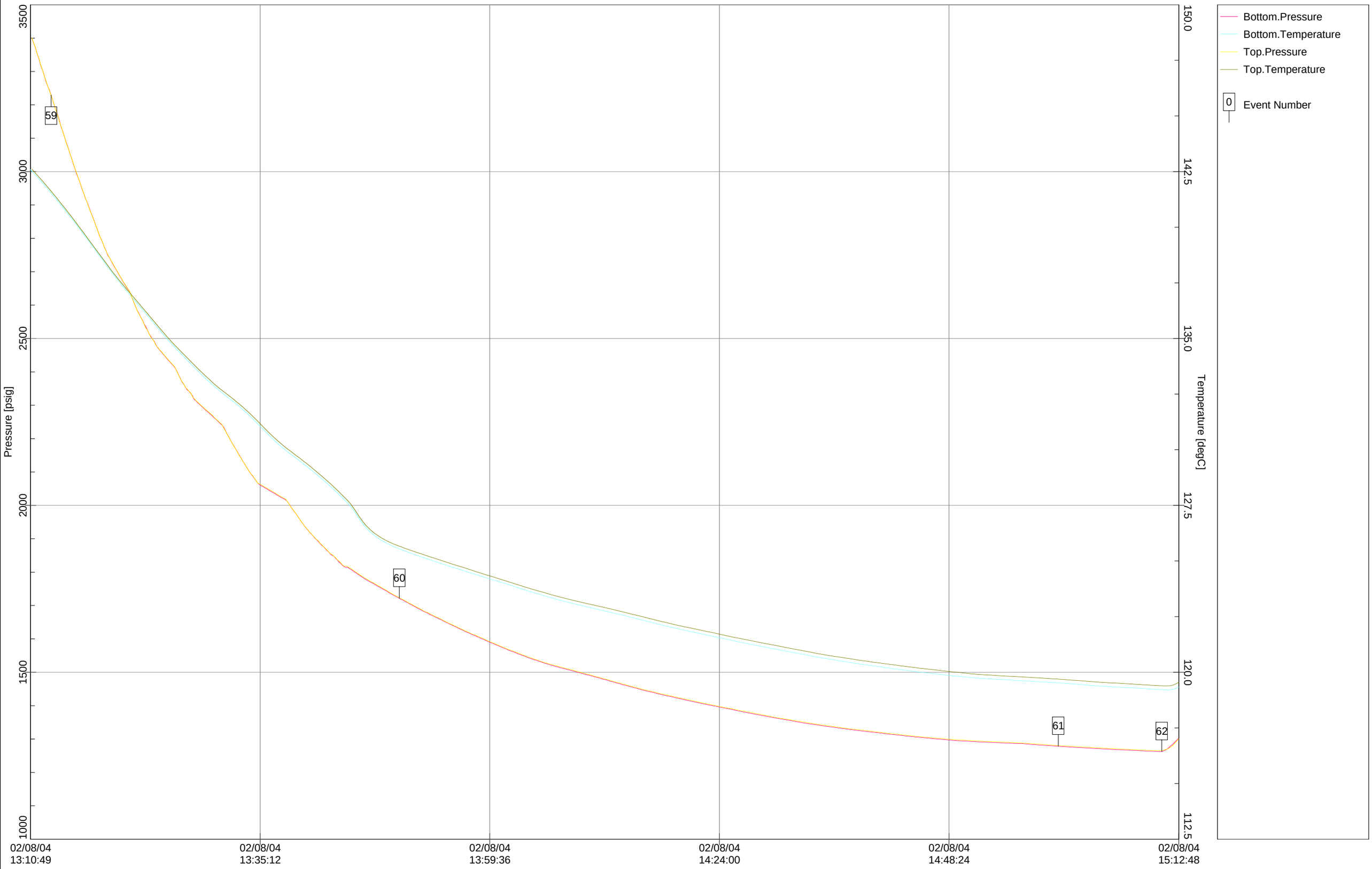
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2548 and 2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 49 - 51



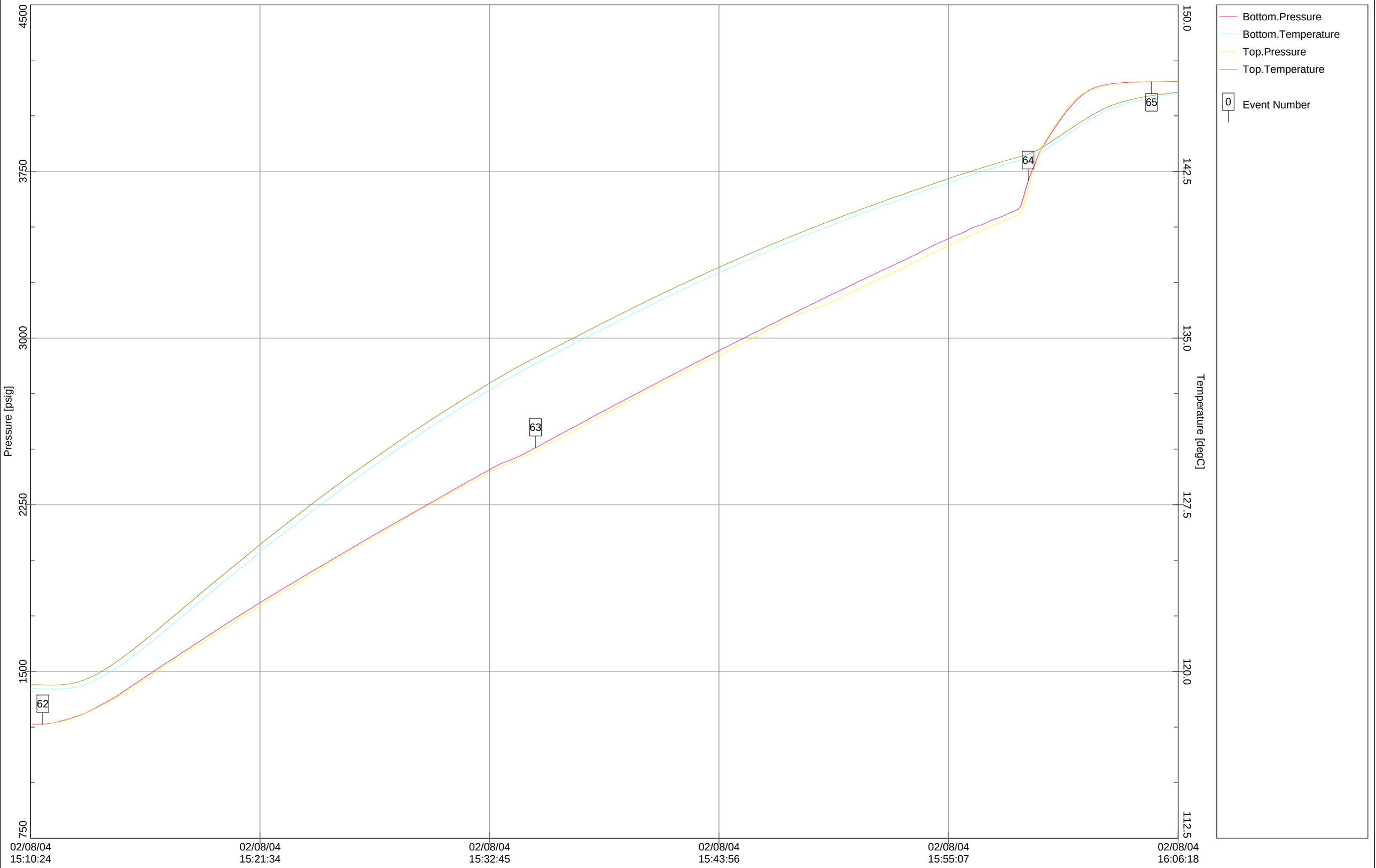
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 59 - 62



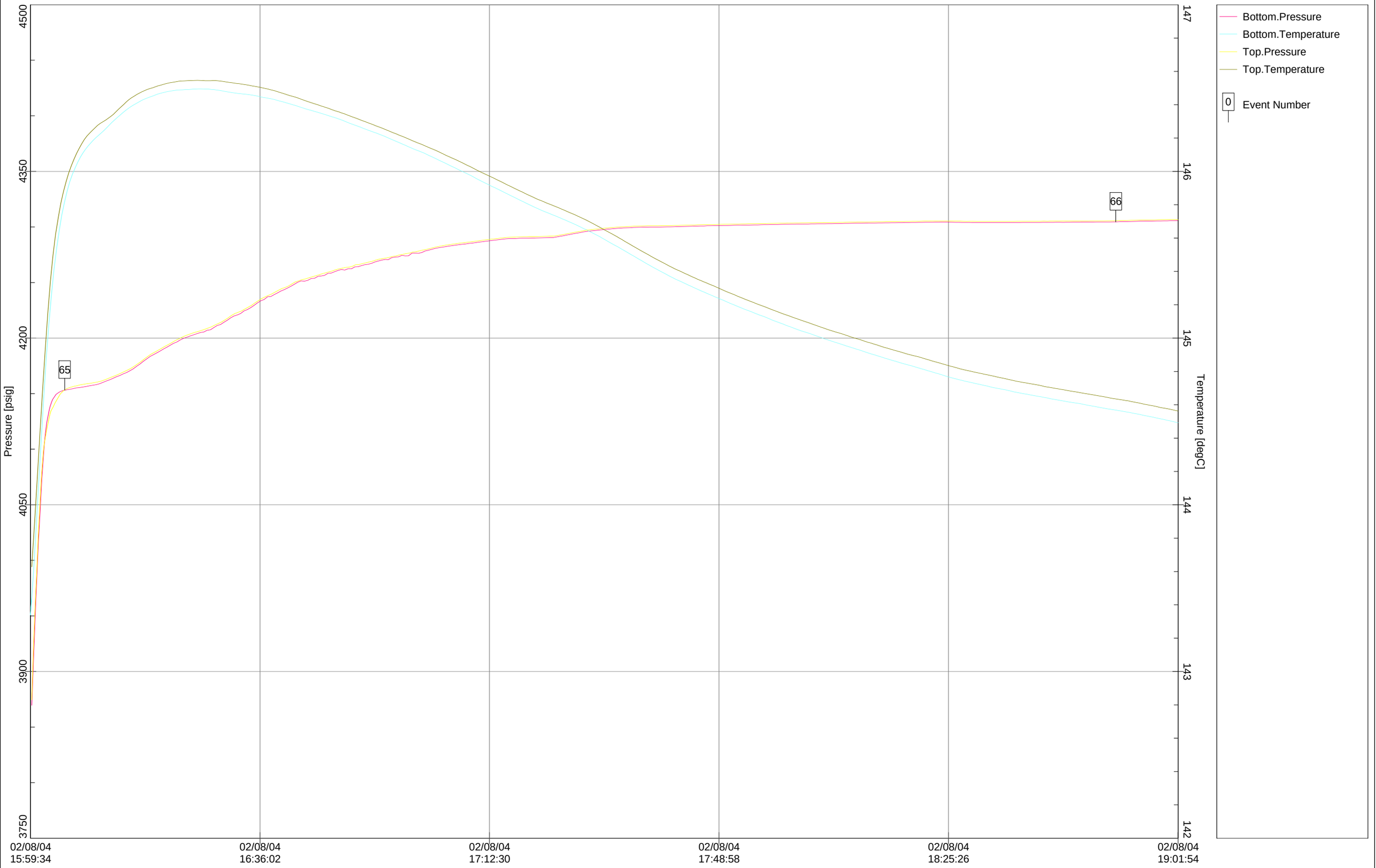
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 62 - 65



Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 65 - 66

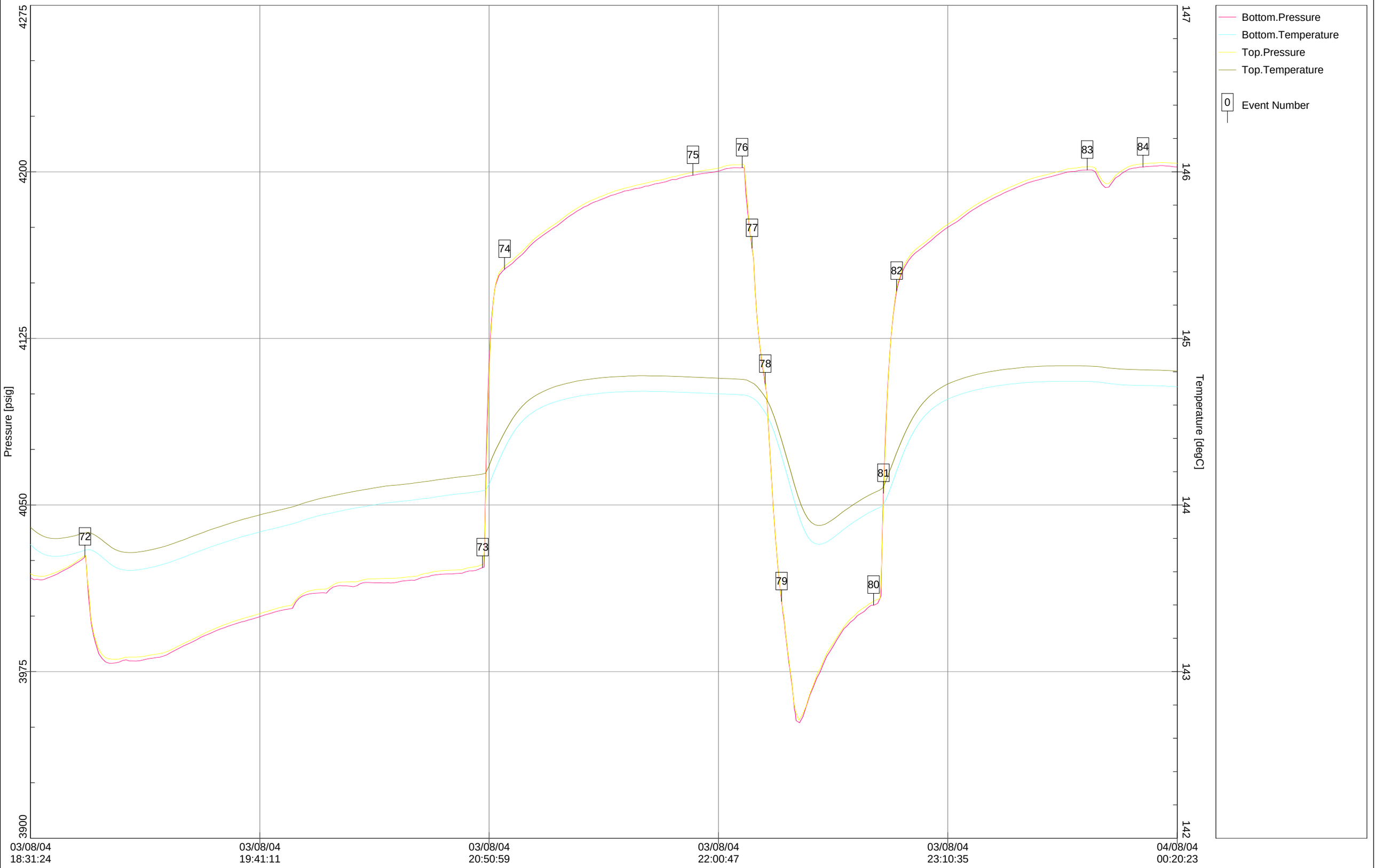


Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 66 - 72

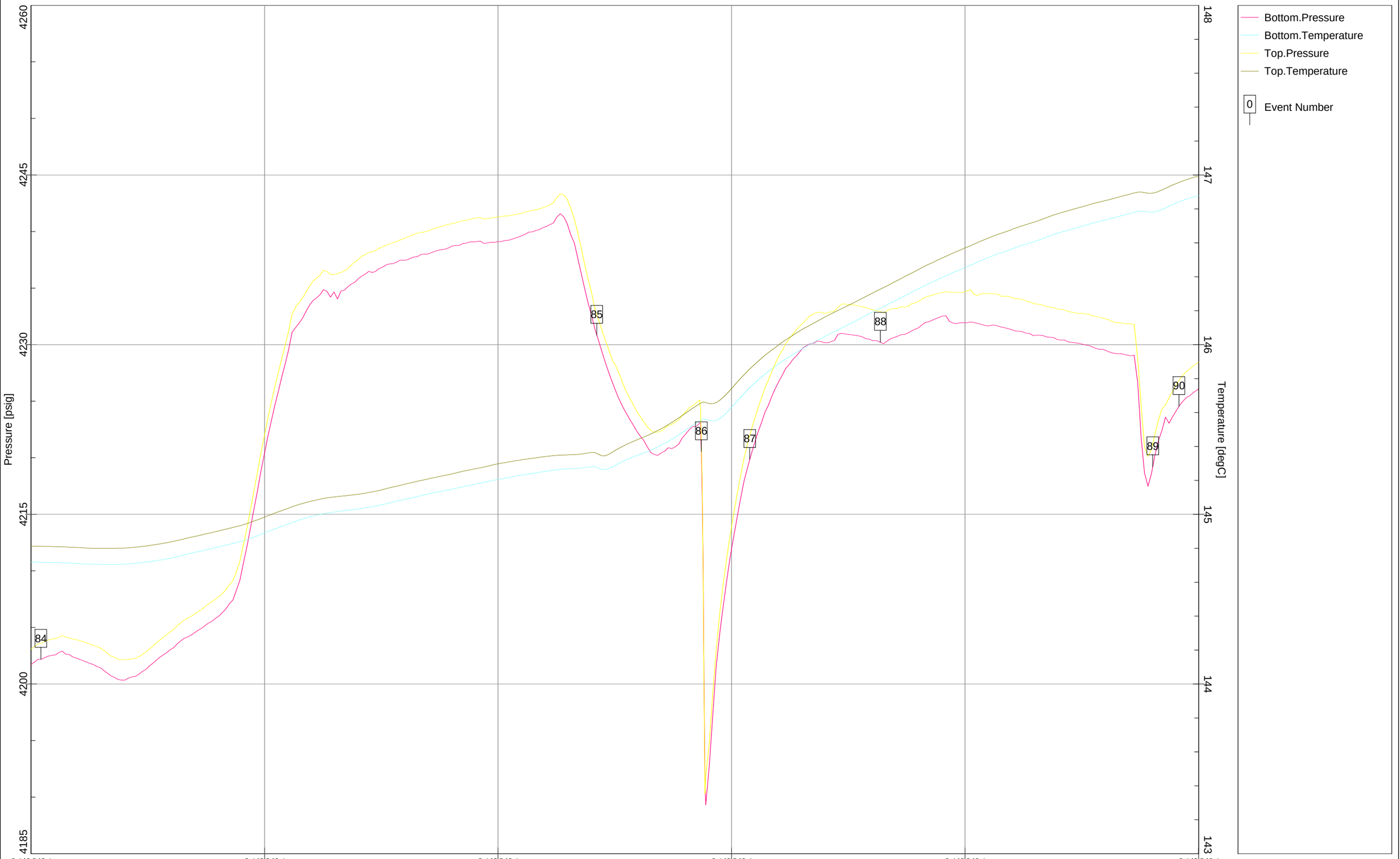
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 72 - 84



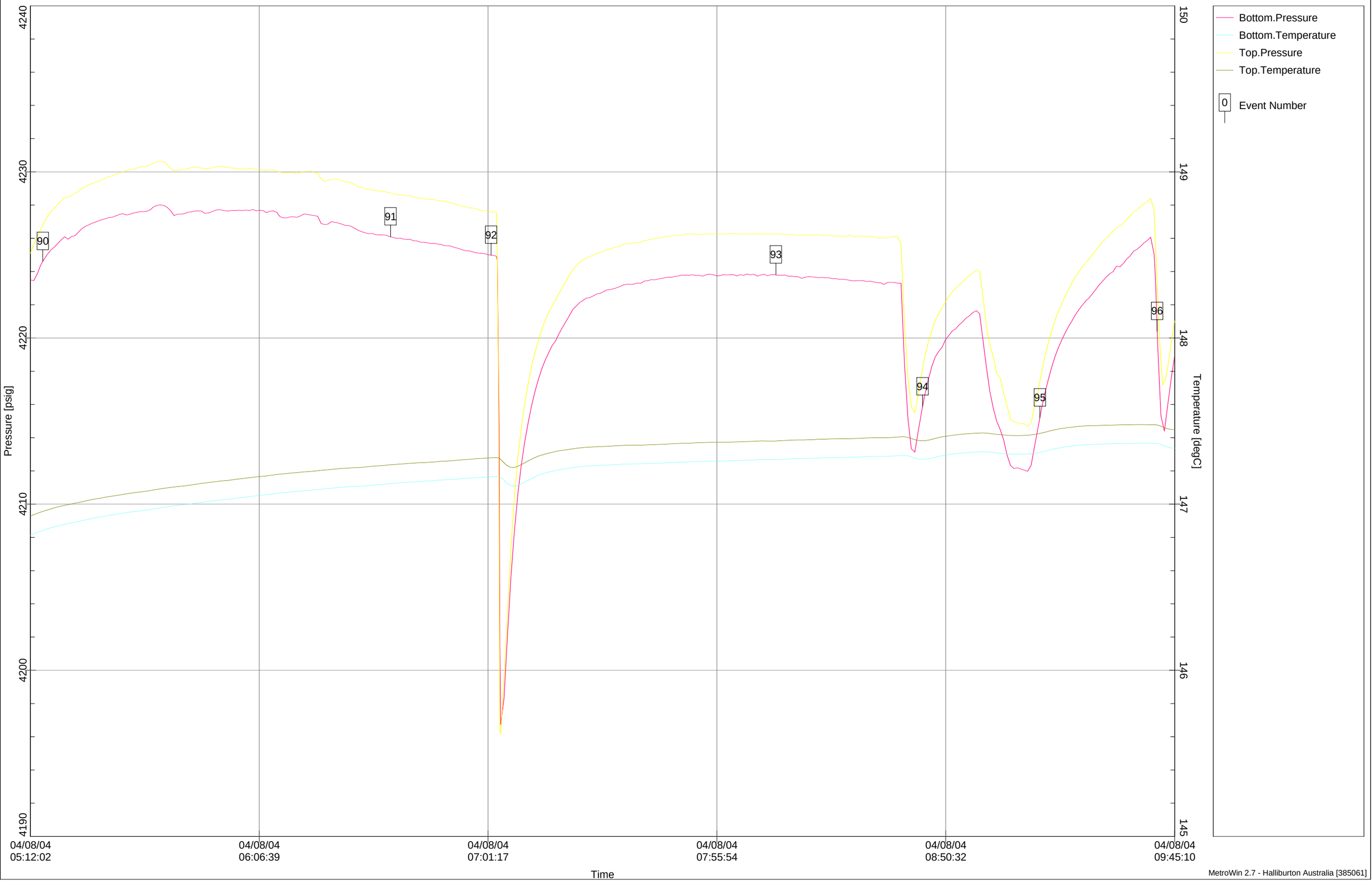
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 84 - 90



Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 90 - 96

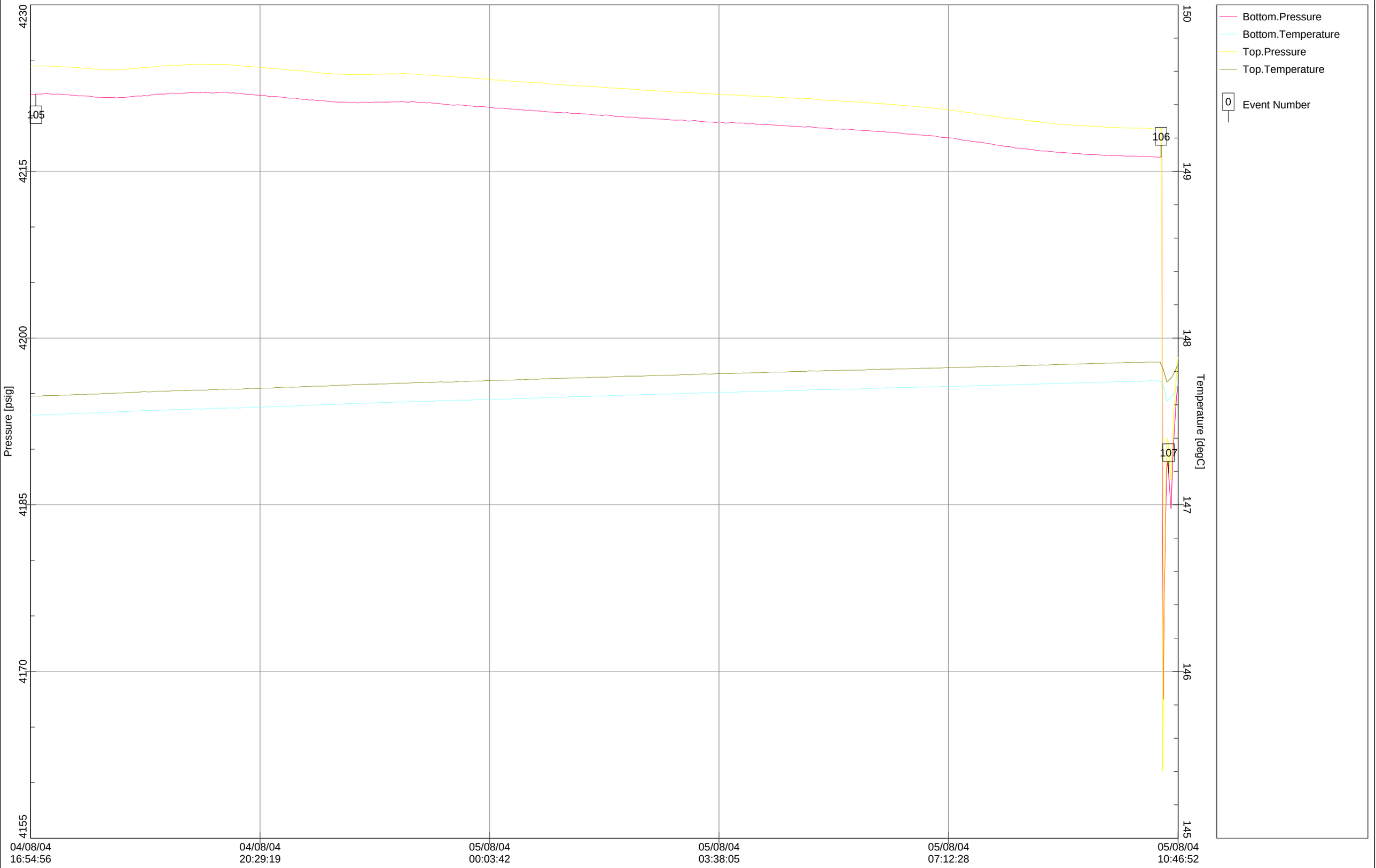


Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 96 - 105

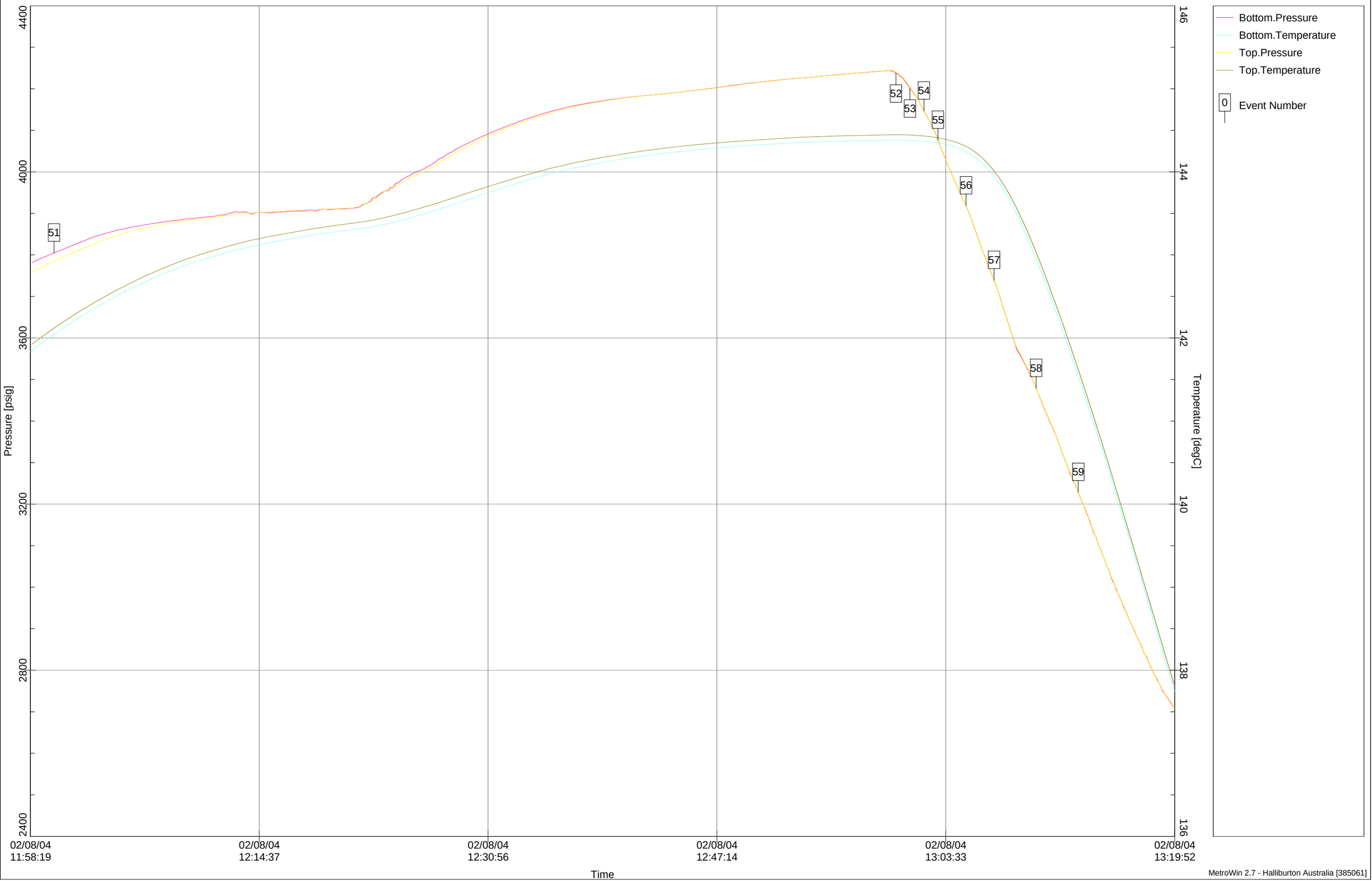
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 105 - 106



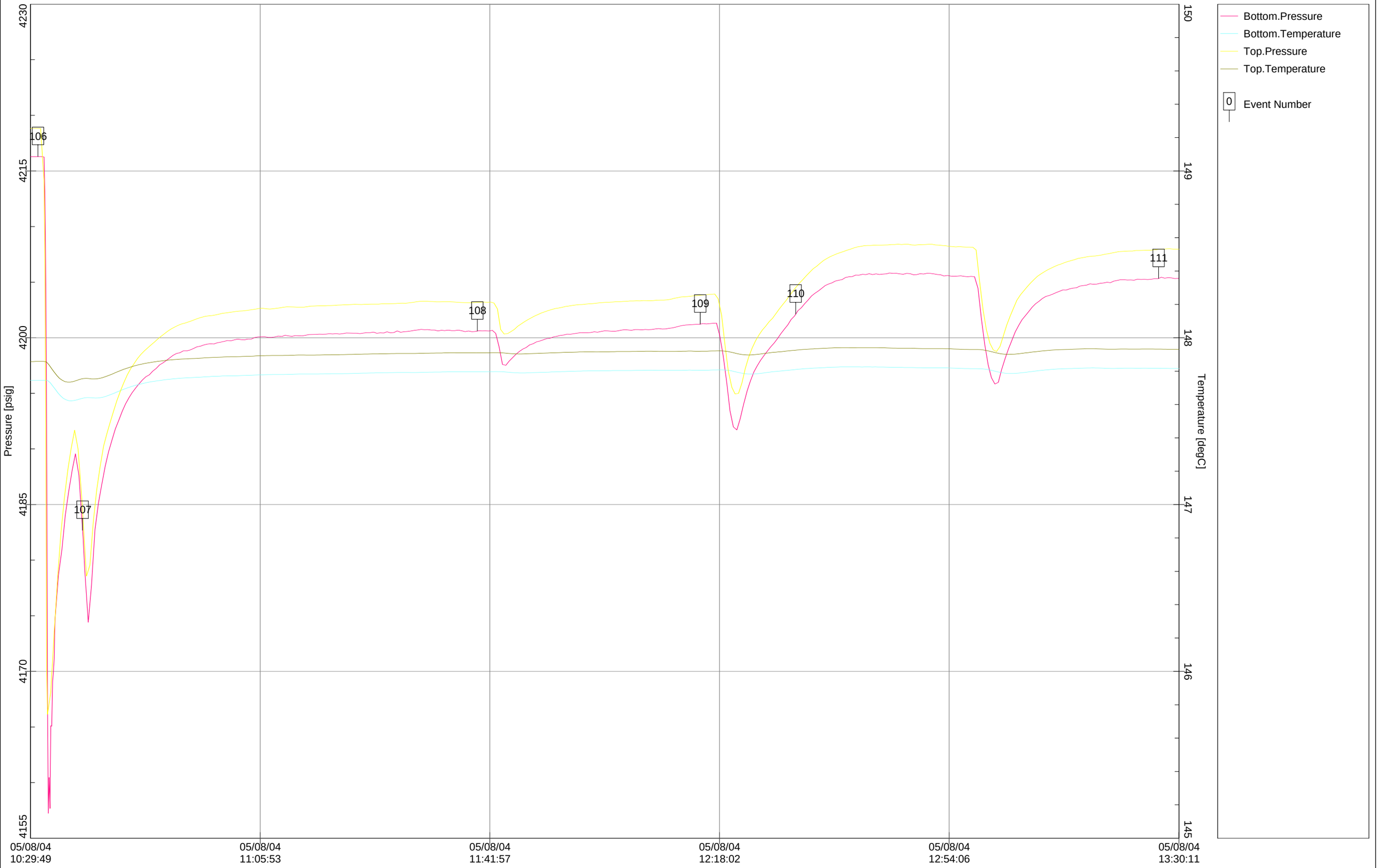
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 51 - 59



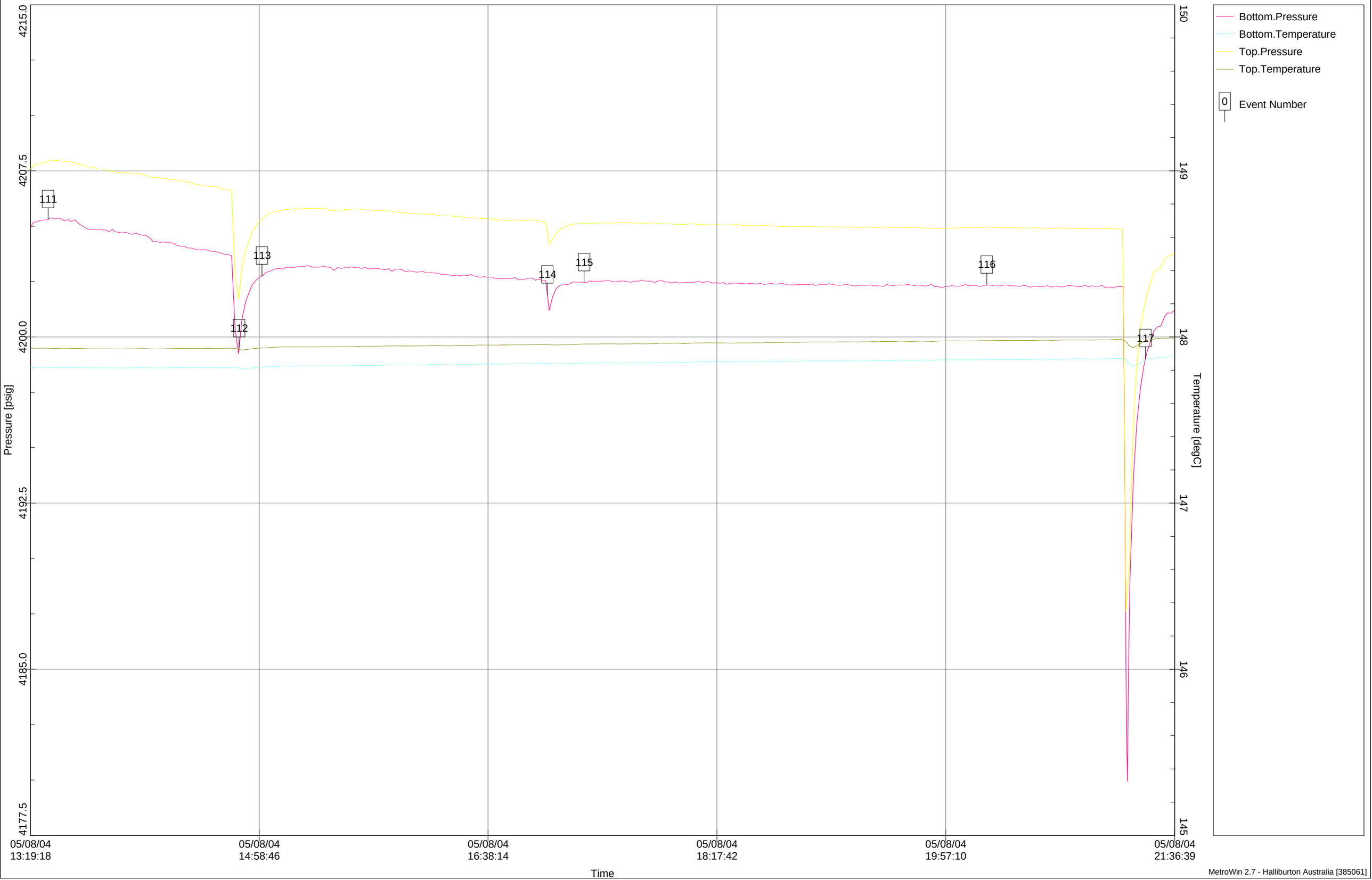
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 106 - 111



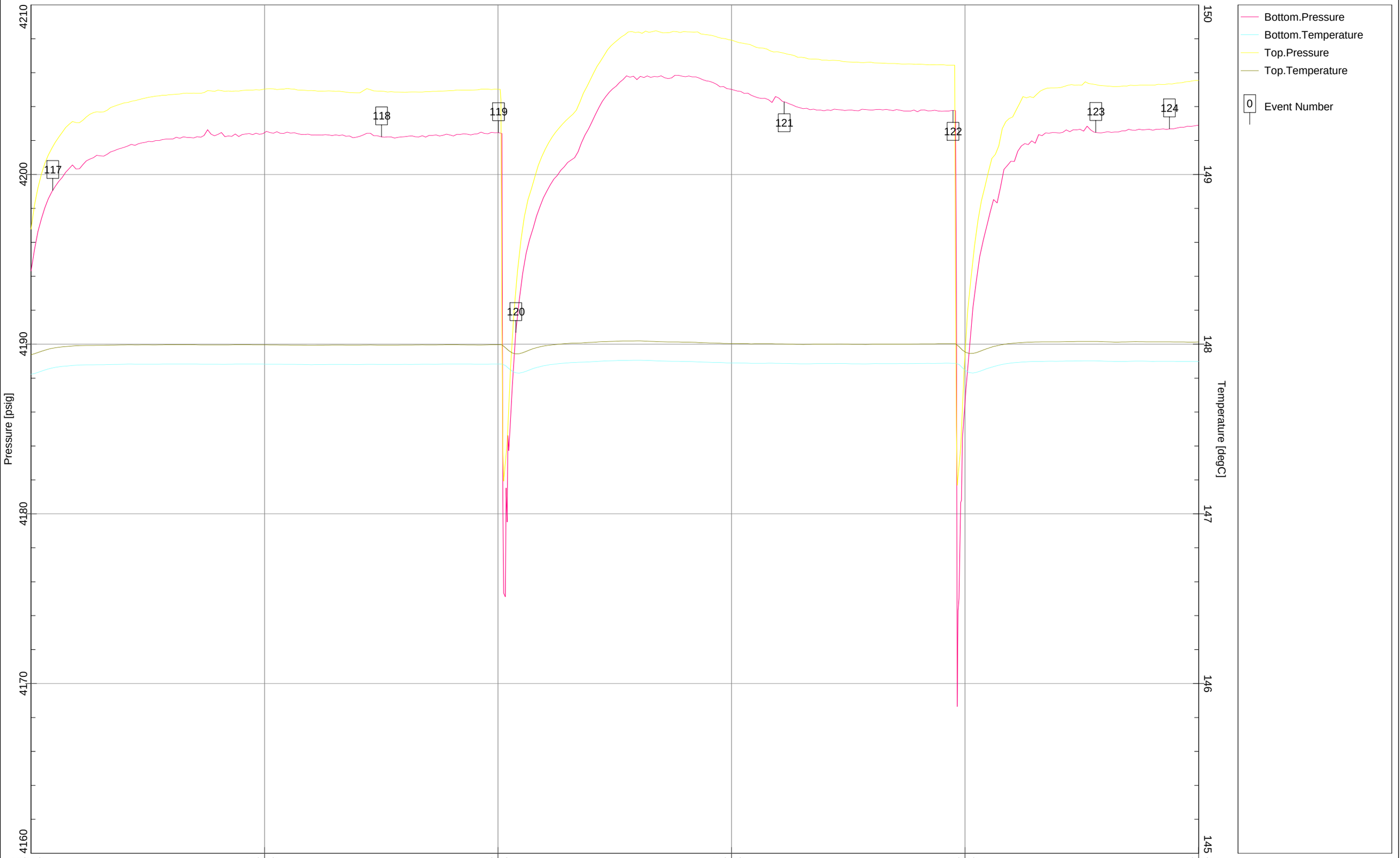
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 111 - 117



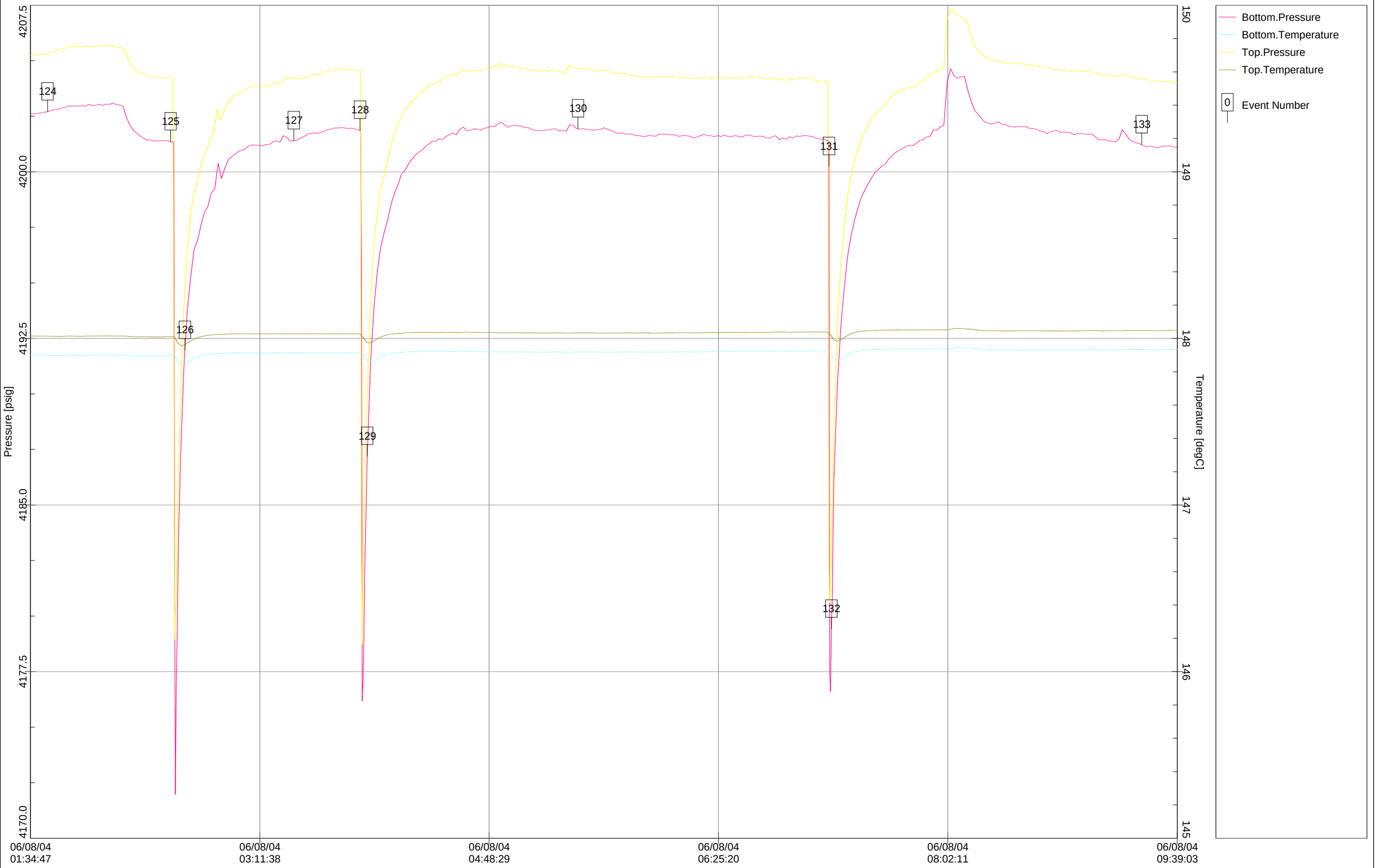
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 117 - 124



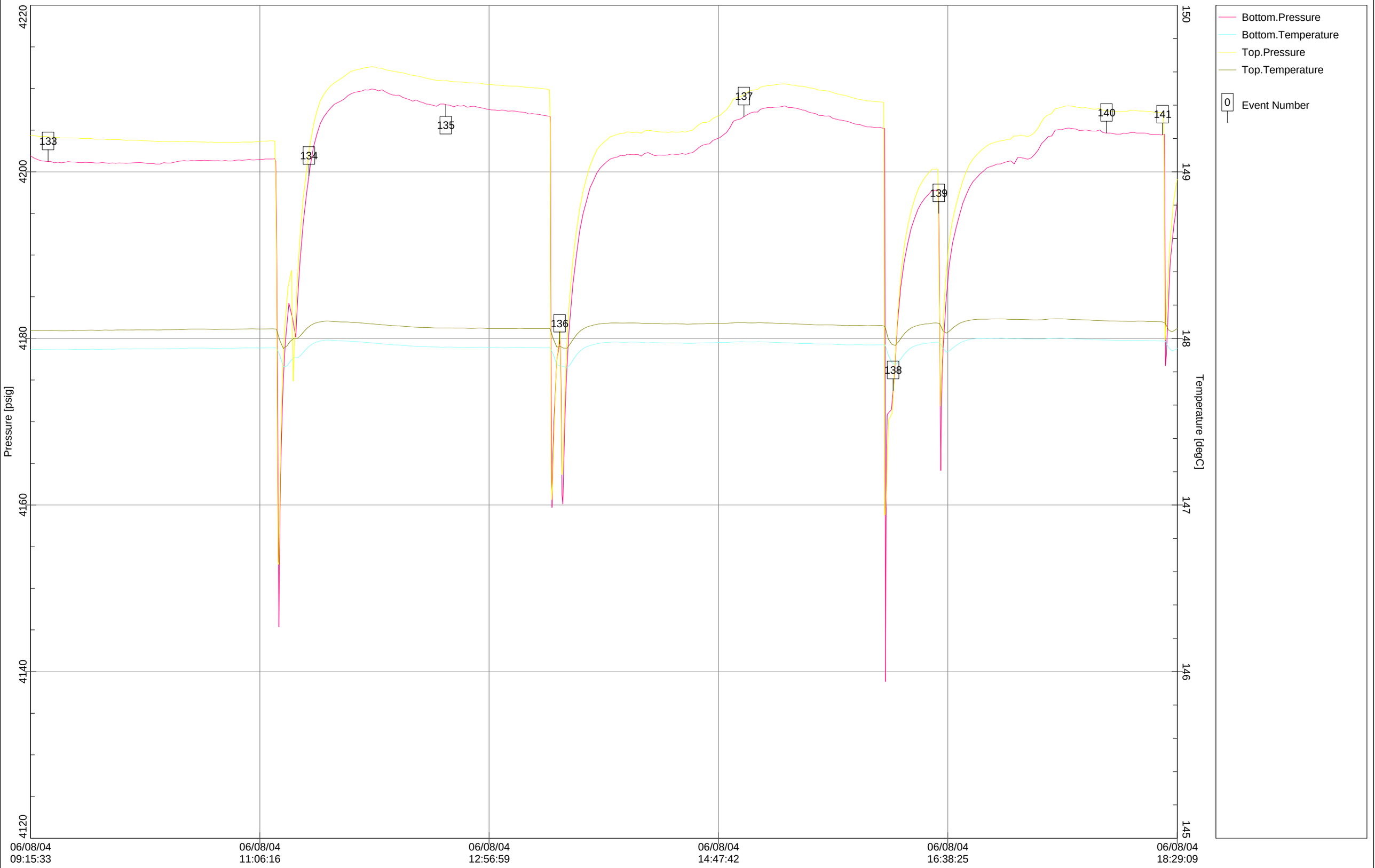
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 124 - 133



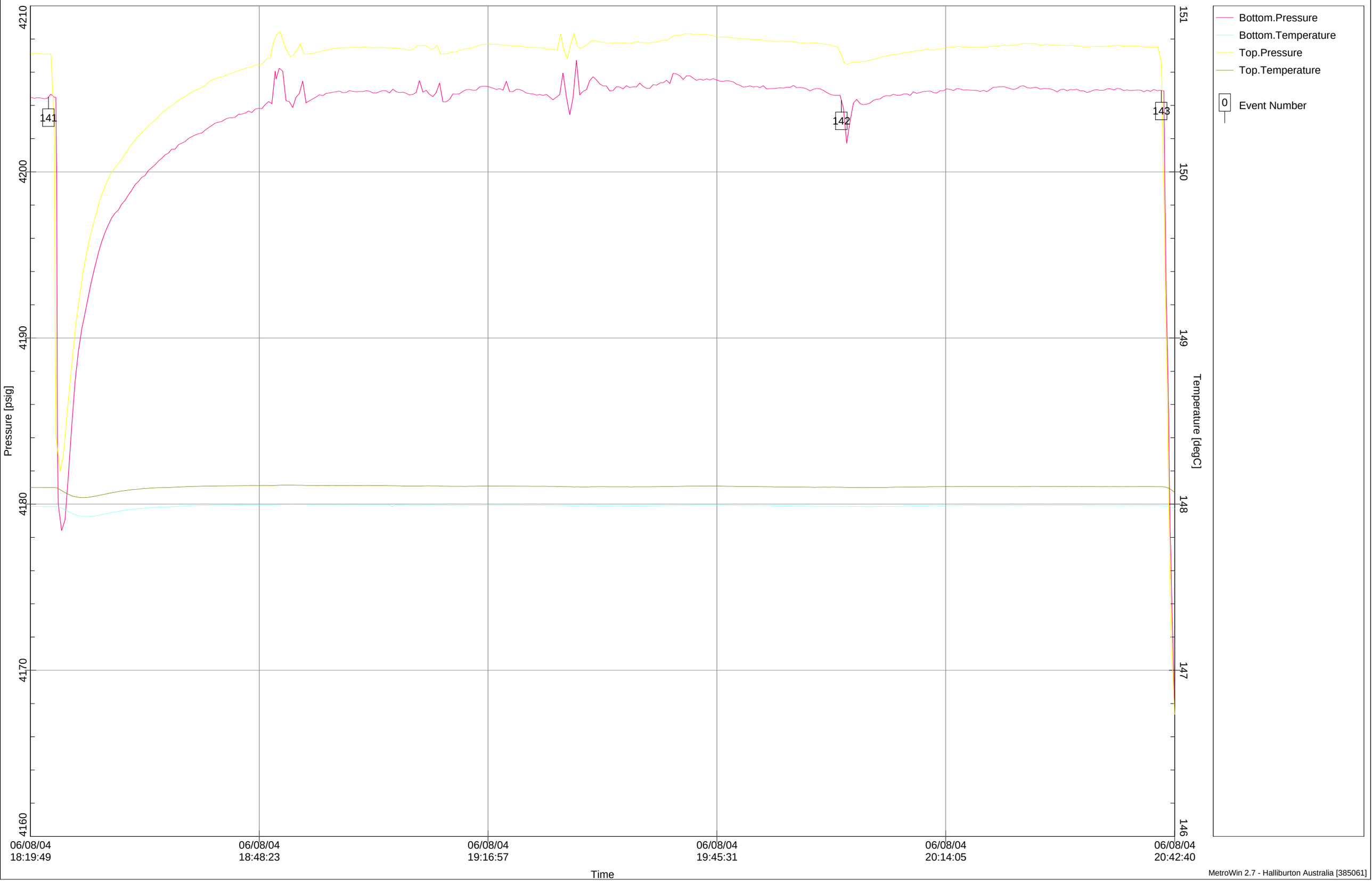
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 133 - 141



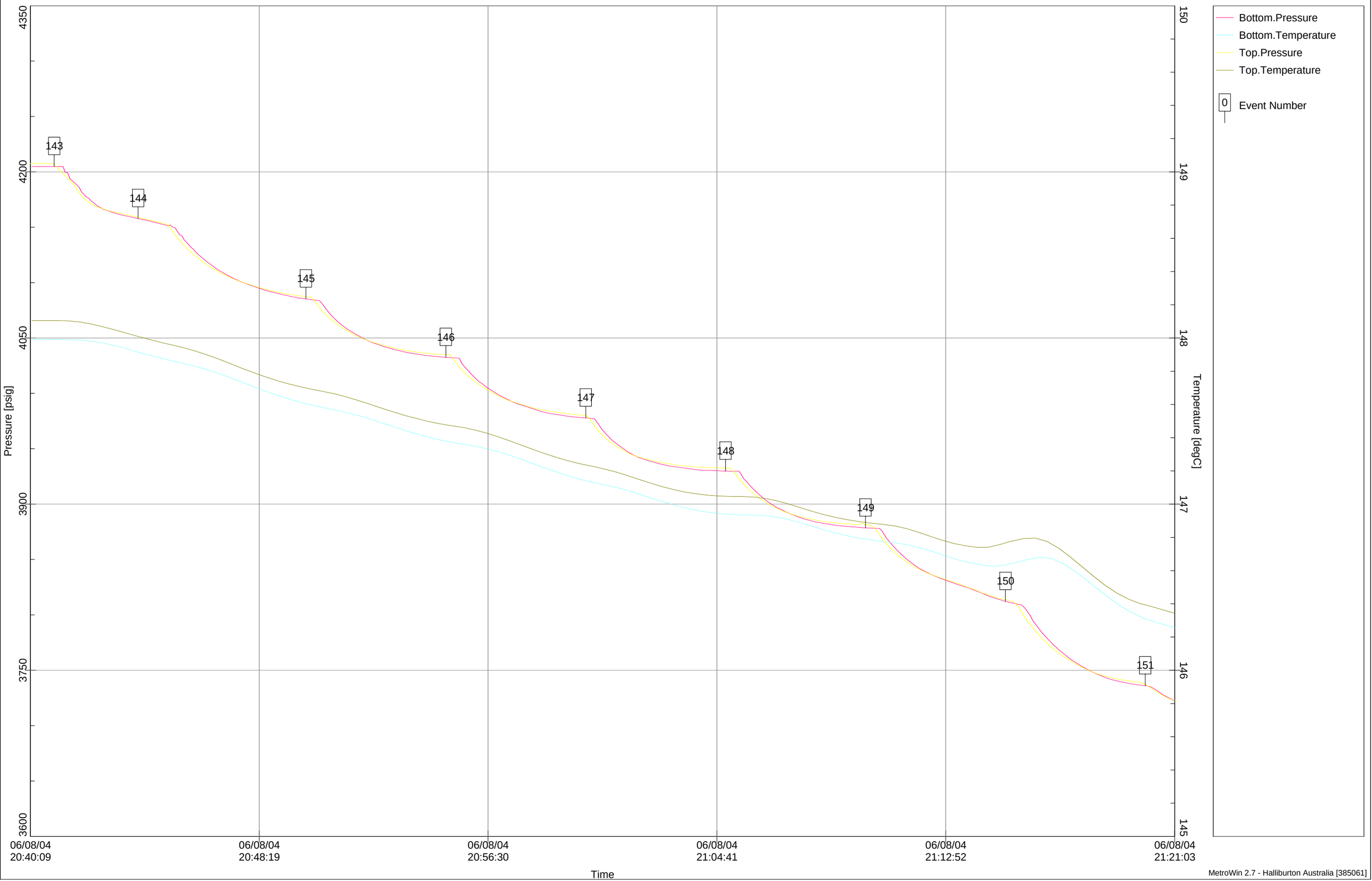
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands
Operator :David Whelan
Plot :Events 141 - 143



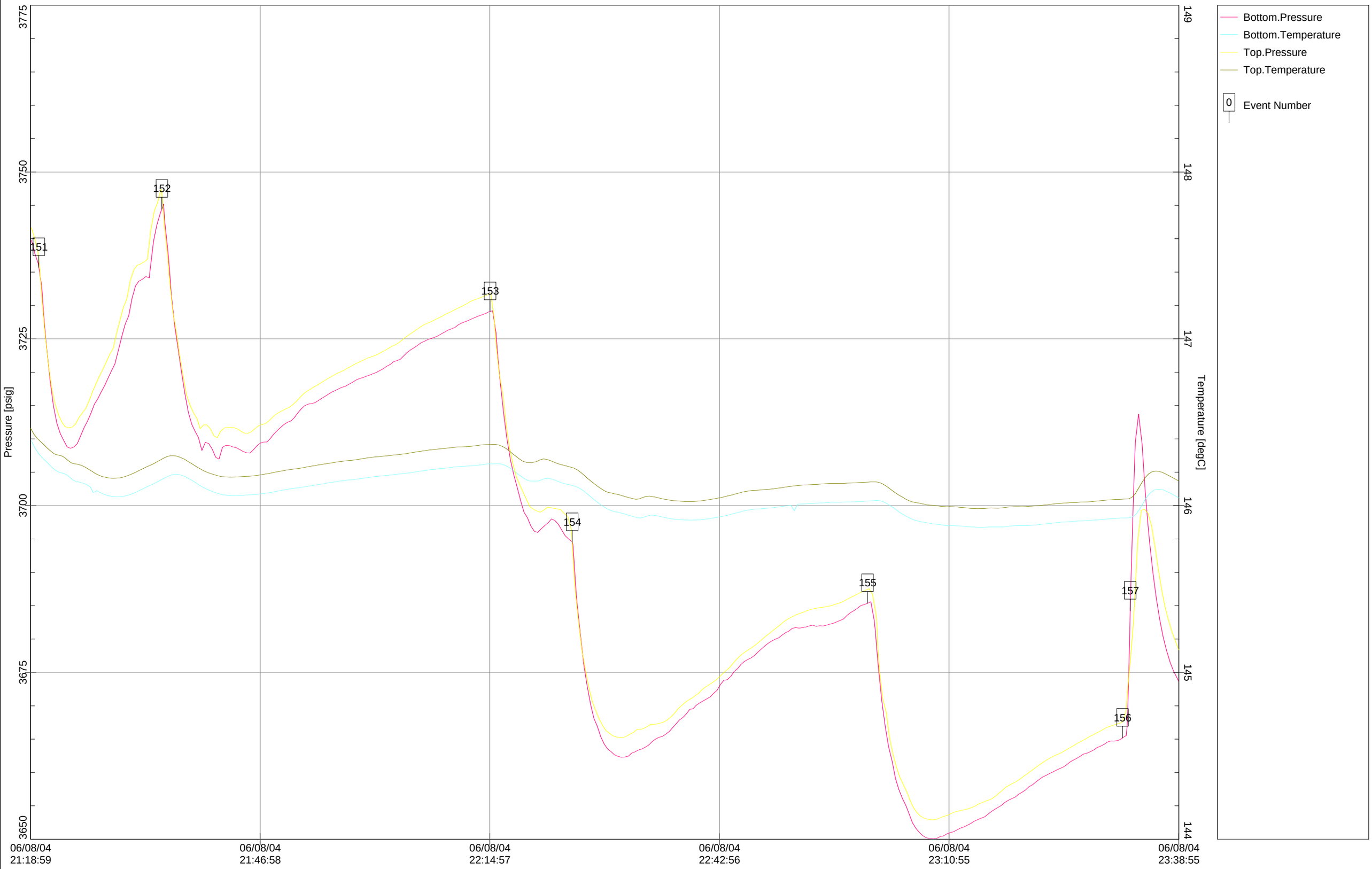
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands
Operator :David Whelan
Plot :Events 143 - 151



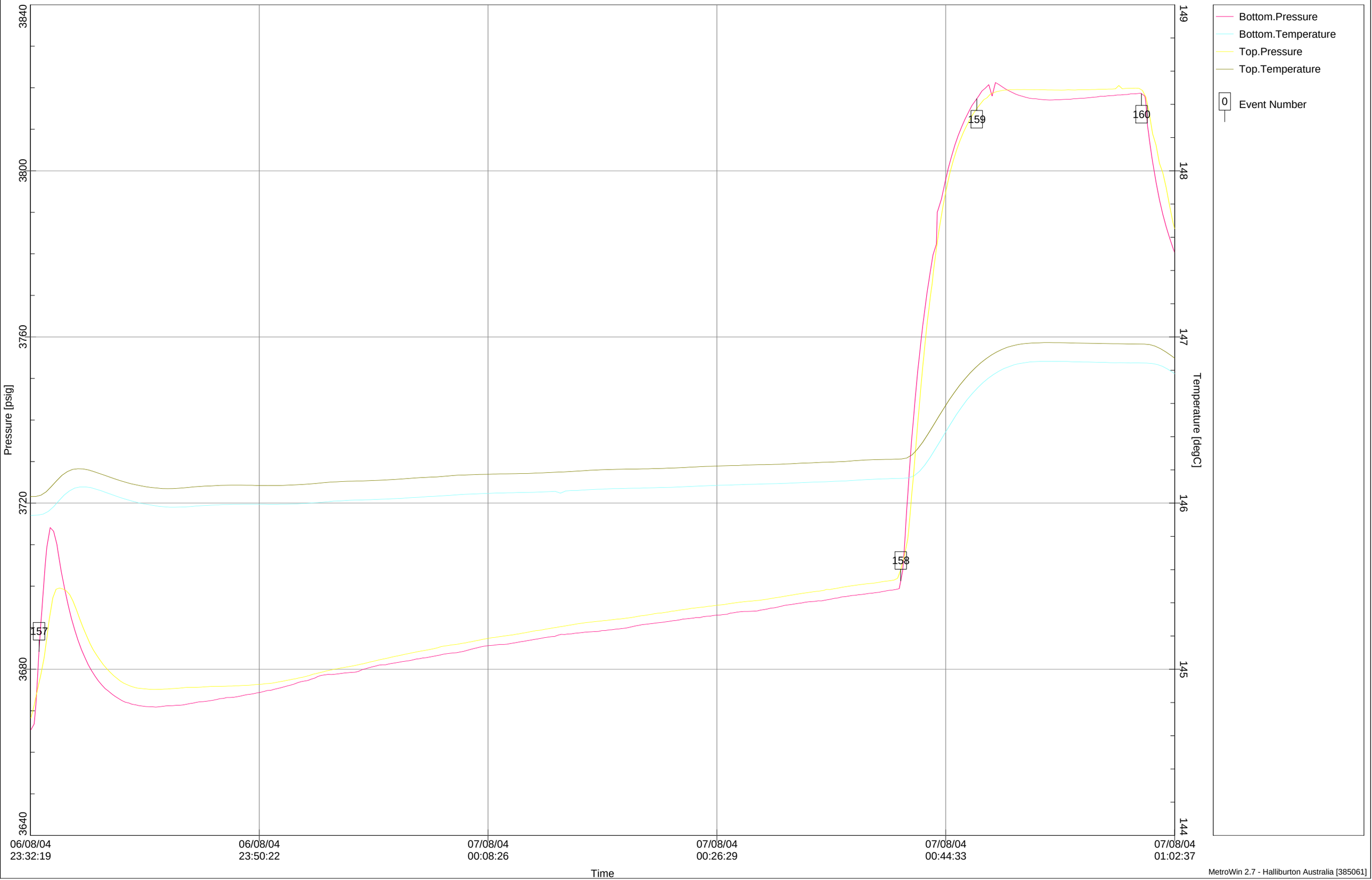
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands
Operator :David Whelan
Plot :Events 151 - 157



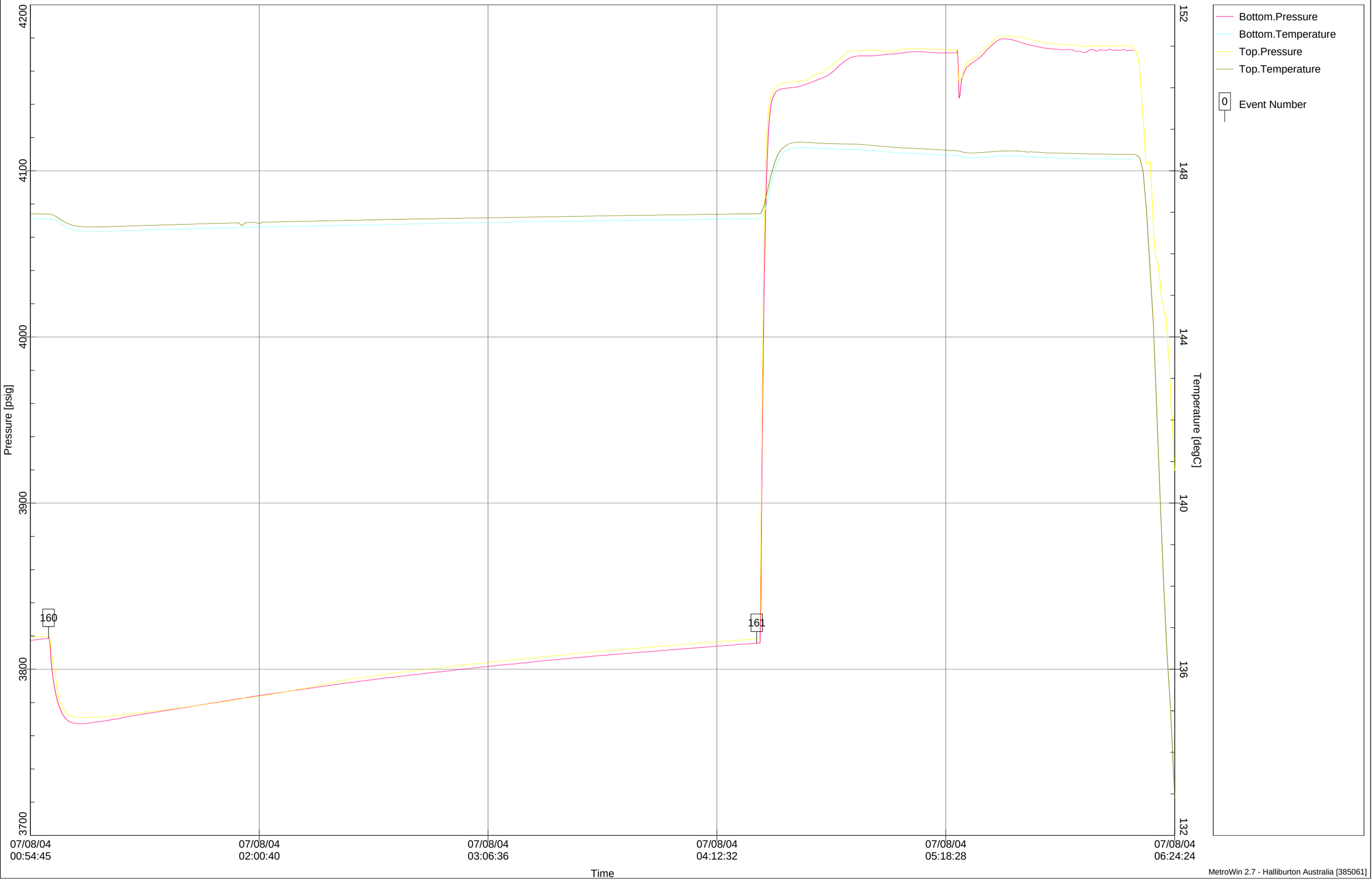
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands
Operator :David Whelan
Plot :Events 157 - 160



Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands
Operator :David Whelan
Plot :Events 160 - 161



SECTION 3

DATA

SURVEY DATA

Client	:Origin Energy	Operator	:David Whelan
Field	:Yolla	Date	:1st - 7th August 2004
Platform	:Yolla A	Zone	All Zones
Well	:Yolla - 4		

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
1-Aug	1	15:03:39	2.48	23.56			Start top gauge
1-Aug							
1-Aug		15:03:39	2.48	23.56			
1-Aug							
1-Aug	2	15:06:44	2.58	23.61	2.44	23.69	Start bottom gauge
1-Aug							
1-Aug		15:13:39	2.44	23.92	2.42	23.72	
1-Aug		15:23:39	3.06	23.23	3.1	22.22	
1-Aug		15:33:39	1.58	20.02	2.81	19.4	
1-Aug		15:43:39	1.23	18.08	2.62	18.18	
1-Aug		15:53:39	1.32	16.67	3	17.07	
1-Aug							
1-Aug	3	15:59:59	1.41	15.98	3.27	16.42	Add gauges to tool string and
1-Aug							stab lubricator
1-Aug		16:03:39	1.78	15.64	3.86	16.07	
1-Aug							
1-Aug	4	16:06:44	2.12	15.38	8.88	15.82	Open well
1-Aug							
1-Aug		16:13:39	2258.62	14.62	2263.42	16.38	
1-Aug							
1-Aug	5	16:13:49	2258.64	14.48	2253.14	16.24	Shut well and depressure lubricator
1-Aug							repair leak in lubricator
1-Aug							
1-Aug	6	16:22:18	-8.51	5.28	38.74	7.6	Open well gauges in lubricator
1-Aug							
1-Aug		16:22:49	830.97	5.26	925.62	7.7	
1-Aug		16:23:49	3136.07	9.09	3139.8	12.48	
1-Aug		16:24:49	3146.39	13.03	3148.68	16.54	
1-Aug		16:25:49	3148.2	14.73	3149.98	18.36	
1-Aug		16:26:49	3148.15	15.23	3151.02	19.15	
1-Aug		16:27:49	3147.79	15.29	3152.01	19.34	
1-Aug		16:28:49	3147.36	15.17	3152.13	19.12	
1-Aug		16:29:49	3147.16	14.99	3151.77	18.68	
1-Aug		16:30:49	3146.76	14.8	3151.22	18.12	
1-Aug		16:31:49	3138.41	14.64	3142.2	17.66	
1-Aug							
1-Aug	7	16:32:00	3137.34	14.62	3141.2	17.59	Open well on 16/64 choke
1-Aug							2755 sands Clean up
1-Aug		16:32:49	3135.35	14.51	3138.87	17.34	
1-Aug		16:33:49	3121.96	14.38	3125.74	17.09	
1-Aug							
1-Aug	8	16:34:00	3120.52	14.36	3124.44	17.05	Increase choke to 20/64
1-Aug							

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
1-Aug		16:34:49	3110.06	14.26	3113.43	16.83	
1-Aug							
1-Aug	9	16:35:00	3105.34	14.24	3109	16.76	Increase choke to 24/64
1-Aug							
1-Aug		16:35:49	3092.38	14.15	3096.27	16.45	
1-Aug		16:36:49	3072.42	14.07	3075.95	16.12	
1-Aug							
1-Aug	10	16:37:00	3067.05	14.06	3070.49	16.06	Increase choke to 28/64
1-Aug							
1-Aug		16:37:49	3051.66	14	3055.17	15.82	
1-Aug		16:38:49	3040.82	13.95	3044.54	15.55	
1-Aug		16:39:49	3036.51	13.91	3038.92	15.32	
1-Aug		16:40:49	3031.73	13.89	3035.27	15.13	
1-Aug		16:41:49	3028.87	13.91	3032.07	15	
1-Aug		16:42:49	3026.31	13.97	3030.61	14.91	
1-Aug		16:43:49	3024.78	14.05	3029.05	14.85	
1-Aug		16:44:49	3023.91	14.16	3027.76	14.82	
1-Aug		16:45:49	3022.03	14.29	3025.31	14.81	
1-Aug							
1-Aug	11	16:46:00	3017.52	14.31	3020.51	14.81	Increase choke to 32/64
1-Aug							
1-Aug		16:46:49	2999.17	14.41	3002.35	14.81	
1-Aug		16:47:49	2986.3	14.5	2989.77	14.82	
1-Aug		16:48:49	2978.07	14.58	2981.54	14.84	
1-Aug		16:49:49	2972.69	14.68	2975.89	14.87	
1-Aug							
1-Aug	12	16:50:00	2970.39	14.7	2973.62	14.87	Increase choke to 36/64
1-Aug							
1-Aug		16:50:49	2948.18	14.81	2950.81	14.91	
1-Aug		16:51:49	2928.13	14.93	2931.26	14.94	
1-Aug		16:52:49	2915.7	15.05	2918.77	14.98	
1-Aug		16:53:49	2906.73	15.17	2909.99	15.05	
1-Aug		16:54:49	2892.46	15.31	2894.58	15.14	
1-Aug							
1-Aug	13	16:55:00	2885.64	15.33	2888.05	15.16	Increase choke to 40/64
1-Aug							
1-Aug		16:55:49	2862.89	15.42	2865.59	15.21	
1-Aug		16:56:49	2843.75	15.53	2846.63	15.28	
1-Aug		16:57:49	2830.62	15.65	2833.61	15.36	
1-Aug		16:58:49	2818.97	15.78	2822.06	15.45	
1-Aug		16:59:49	2810.61	15.96	2813.79	15.56	
1-Aug		17:00:49	2804.01	16.15	2807.07	15.7	
1-Aug		17:01:49	2798.79	16.35	2802.11	15.87	
1-Aug		17:02:49	2795.27	16.56	2798.25	16.04	
1-Aug		17:03:49	2792.52	16.78	2795.6	16.22	
1-Aug		17:04:49	2790.22	16.98	2793.11	16.4	
1-Aug		17:05:49	2787.92	17.17	2790.97	16.6	
1-Aug		17:06:49	2787.5	17.4	2790.44	16.79	
1-Aug		17:07:49	2787.76	17.61	2790.82	16.98	
1-Aug		17:08:49	2788.41	17.83	2791.48	17.18	
1-Aug		17:09:49	2789.09	18.04	2792.05	17.35	
1-Aug		17:10:49	2790.14	18.25	2792.87	17.53	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
1-Aug		17:11:49	2791.1	18.47	2793.75	17.72	
1-Aug		17:12:49	2792.15	18.67	2794.8	17.89	
1-Aug		17:13:49	2793.36	18.84	2795.88	18.06	
1-Aug		17:14:49	2794.43	18.98	2797.15	18.22	
1-Aug		17:15:49	2795.9	19.13	2798.5	18.38	
1-Aug		17:16:49	2797.2	19.31	2800.05	18.54	
1-Aug		17:17:49	2799.65	19.49	2802.26	18.68	
1-Aug		17:18:49	2802.45	19.66	2805.08	18.82	
1-Aug		17:19:49	2804.5	19.85	2806.97	18.97	
1-Aug		17:20:49	2806.11	20.02	2808.49	19.12	
1-Aug		17:21:49	2807.43	20.17	2810.01	19.26	
1-Aug		17:22:49	2808.79	20.32	2811.24	19.39	
1-Aug		17:23:49	2809.88	20.46	2812.35	19.51	
1-Aug		17:24:49	2810.92	20.61	2813.21	19.63	
1-Aug		17:25:49	2811.73	20.75	2814.02	19.79	
1-Aug		17:26:49	2812.72	20.93	2815.14	19.95	
1-Aug		17:27:49	2813.29	21.1	2815.54	20.09	
1-Aug		17:28:49	2814.15	21.25	2816.23	20.23	
1-Aug		17:29:49	2815.15	21.36	2817.15	20.37	
1-Aug		17:30:49	2815.67	21.47	2817.89	20.52	
1-Aug		17:31:49	2816.32	21.61	2818.64	20.66	
1-Aug		17:32:49	2817.36	21.76	2819.44	20.79	
1-Aug		17:33:49	2818.14	21.88	2820.18	20.91	
1-Aug		17:34:49	2818.97	21.99	2820.99	21.04	
1-Aug		17:35:49	2819.51	22.1	2821.49	21.18	
1-Aug		17:36:49	2820.14	22.24	2821.96	21.33	
1-Aug		17:37:49	2820.4	22.37	2822.6	21.47	
1-Aug		17:38:49	2820.9	22.54	2822.92	21.58	
1-Aug		17:39:49	2821.77	22.71	2824.01	21.7	
1-Aug		17:40:49	2823.52	22.87	2825.55	21.8	
1-Aug		17:41:49	2825.48	23.01	2827.37	21.92	
1-Aug		17:42:49	2828.53	23.12	2830.46	22.07	
1-Aug		17:43:49	2830.61	23.24	2832.72	22.2	
1-Aug		17:44:49	2861.24	23.4	2864.2	22.32	
1-Aug							
1-Aug	14	17:45:00	2884.22	23.43	2893.57	22.36	Shut in well at choke manifold
1-Aug							Run in hole with gauges
1-Aug		17:45:00	2884.22	23.43	2893.57	22.36	
1-Aug		17:55:00	3390.11	64.74	3391	65.27	
1-Aug		18:05:00	3749.74	101.3	3749.15	101.95	
1-Aug		18:15:00	4052.65	129.62	4052.79	130.07	
1-Aug							
1-Aug	15	18:20:54	4215.14	138.75	4211.21	138.97	Gauges set on depth at 2990 mdkb
1-Aug							slickline pull out of hole
1-Aug		18:25:00	4210.82	141.52	4210.4	141.6	
1-Aug		18:35:00	4213.64	142.64	4214.21	142.71	
1-Aug		18:45:00	4217.35	142.84	4218.09	142.92	
1-Aug							
1-Aug							
1-Aug	16	18:50:00	4217.86	142.89	4218.58	142.97	Slickline out of hole shut in well
1-Aug							depressure and change tools
1-Aug		18:55:00	4217.76	142.92	4218.49	143	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
1-Aug		19:05:00	4217.8	142.96	4218.58	143.05	
1-Aug		19:15:00	4217.74	142.98	4218.54	143.07	
1-Aug							
1-Aug	17	19:25:00	4217.9	143	4218.72	143.09	Open well 24/64 choke THP 3102 psia
1-Aug							
1-Aug		19:25:00	4217.9	143	4218.72	143.09	
1-Aug		19:26:00	4184.67	142.99	4183.91	143.08	
1-Aug		19:27:00	4168.73	142.96	4169.33	143.05	
1-Aug		19:28:00	4161.48	142.95	4162.15	143.04	
1-Aug							
1-Aug	18	19:29:00	4153.3	142.94	4153.73	143.04	Increase choke to 28/64 THP 3052 psia
1-Aug							
1-Aug		19:29:00	4153.3	142.94	4153.73	143.04	
1-Aug		19:30:00	4124.02	142.93	4124.23	143.02	
1-Aug		19:31:00	4113.85	142.91	4114.51	143	
1-Aug							
1-Aug	19	19:32:00	4097.86	142.9	4097.37	142.99	Increase choke to 32/64 THP 3024 psia
1-Aug							
1-Aug		19:32:00	4097.86	142.9	4097.37	142.99	
1-Aug		19:33:00	4075.14	142.88	4075.47	142.97	
1-Aug		19:34:00	4062.5	142.86	4063.09	142.96	
1-Aug							
1-Aug	20	19:35:00	4039.51	142.85	4039.1	142.94	Increase choke to 36/64 THP 2975 psia
1-Aug							
1-Aug		19:35:00	4039.51	142.85	4039.1	142.94	
1-Aug		19:36:00	4014.96	142.82	4015.15	142.91	
1-Aug		19:37:00	4000.64	142.79	4001.17	142.89	
1-Aug							
1-Aug	21	19:38:00	3979.37	142.77	3979.12	142.87	Increase choke to 40/64 THP 2921 psia
1-Aug							
1-Aug		19:38:00	3979.37	142.77	3979.12	142.87	
1-Aug		19:39:00	3951.74	142.74	3951.9	142.83	
1-Aug		19:40:00	3934.7	142.7	3935.23	142.8	
1-Aug							
1-Aug	22	19:41:00	3923.07	142.67	3923.06	142.78	Increase choke to 44/64 THP 2872 psia
1-Aug							
1-Aug		19:41:00	3923.07	142.67	3923.06	142.78	
1-Aug		19:42:00	3886.7	142.63	3886.68	142.73	
1-Aug		19:43:00	3862.51	142.58	3863.1	142.68	
1-Aug							
1-Aug	23	19:44:00	3845.41	142.53	3845.38	142.64	Increase choke to 46/64 THP 2800 psia
1-Aug							
1-Aug		19:44:00	3845.41	142.53	3845.38	142.64	
1-Aug		19:45:00	3817.04	142.48	3817.38	142.59	
1-Aug		19:46:00	3797.23	142.42	3798.17	142.53	
1-Aug		19:47:00	3782.97	142.36	3783.87	142.47	
1-Aug		19:48:00	3772.37	142.3	3773.77	142.42	
1-Aug		19:49:00	3765.2	142.24	3766.4	142.36	
1-Aug		19:50:00	3761.01	142.19	3762.59	142.31	
1-Aug		19:51:00	3758.32	142.13	3759.96	142.25	
1-Aug		19:52:00	3753.23	142.07	3754.77	142.2	
1-Aug		19:53:00	3750.82	142.01	3752.61	142.14	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
1-Aug		19:54:00	3749.12	141.96	3750.86	142.08	
1-Aug							
1-Aug	24	19:55:00	3755.56	141.9	3758.2	142.03	Liquid slugs at surface
1-Aug							
1-Aug		19:55:00	3755.56	141.9	3758.2	142.03	
1-Aug		19:56:00	3767.16	141.87	3769.13	142	
1-Aug		19:57:00	3769.31	141.82	3771.05	141.96	
1-Aug		19:58:00	3767.72	141.78	3769.19	141.91	
1-Aug		19:59:00	3764.74	141.74	3766.27	141.87	
1-Aug		20:00:00	3761.64	141.7	3763.28	141.83	
1-Aug		20:01:00	3759.04	141.66	3760.73	141.79	
1-Aug		20:02:00	3760.33	141.63	3761.84	141.76	
1-Aug		20:03:00	3761.56	141.6	3763.16	141.74	
1-Aug		20:04:00	3764.81	141.57	3766.69	141.71	
1-Aug		20:05:00	3767.72	141.56	3769.27	141.69	
1-Aug		20:06:00	3768.36	141.54	3769.87	141.67	
1-Aug		20:07:00	3768.22	141.52	3769.71	141.65	
1-Aug		20:08:00	3768.04	141.5	3769.48	141.64	
1-Aug		20:09:00	3767.6	141.49	3768.93	141.62	
1-Aug		20:10:00	3767.02	141.47	3768.36	141.61	
1-Aug		20:11:00	3766.46	141.46	3767.71	141.59	
1-Aug		20:12:00	3766.17	141.45	3767.44	141.58	
1-Aug		20:13:00	3766.1	141.44	3767.34	141.57	
1-Aug		20:14:00	3766.29	141.43	3767.56	141.56	
1-Aug		20:15:00	3766.63	141.42	3767.95	141.55	
1-Aug		20:16:00	3766.92	141.41	3768.15	141.54	
1-Aug							
1-Aug	25	20:17:00	3765.56	141.4	3765.98	141.53	Increase choke to 48/64 THP 2778 psia
1-Aug							
1-Aug		20:17:00	3765.56	141.4	3765.98	141.53	
1-Aug		20:18:00	3755.7	141.39	3756.58	141.52	
1-Aug		20:19:00	3750.84	141.37	3751.79	141.5	
1-Aug		20:20:00	3747.48	141.36	3748.54	141.49	
1-Aug		20:21:00	3745.29	141.35	3746.35	141.48	
1-Aug		20:22:00	3742.51	141.34	3743.57	141.47	
1-Aug		20:23:00	3740.29	141.33	3741.43	141.46	
1-Aug		20:24:00	3739.28	141.32	3740.47	141.45	
1-Aug		20:25:00	3738.59	141.31	3739.71	141.44	
1-Aug		20:26:00	3738.05	141.3	3739.24	141.43	
1-Aug		20:27:00	3737.83	141.29	3738.9	141.42	
1-Aug		20:28:00	3737.7	141.29	3738.91	141.41	
1-Aug		20:29:00	3738.6	141.28	3739.77	141.41	
1-Aug		20:30:00	3739.32	141.27	3740.62	141.4	
1-Aug		20:31:00	3740.01	141.27	3741.2	141.39	
1-Aug		20:32:00	3740.06	141.26	3741.3	141.39	
1-Aug		20:33:00	3740.09	141.25	3741.29	141.38	
1-Aug		20:34:00	3740.07	141.25	3741.28	141.38	
1-Aug							
1-Aug	26	20:35:00	3731.75	141.24	3731.74	141.37	Increase choke to 52/64 THP 2755 psia
1-Aug							
1-Aug		20:35:00	3731.75	141.24	3731.74	141.37	
1-Aug		20:36:00	3702.21	141.22	3702.55	141.34	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
1-Aug		20:37:00	3682.61	141.18	3683.46	141.31	
1-Aug		20:38:00	3670.73	141.16	3671.73	141.28	
1-Aug		20:39:00	3662.14	141.14	3663.34	141.26	
1-Aug		20:40:00	3657.27	141.12	3658.08	141.25	
1-Aug		20:41:00	3654.12	141.11	3655.17	141.23	
1-Aug		20:42:00	3648.12	141.09	3649.11	141.22	
1-Aug		20:43:00	3649.42	141.07	3650.85	141.2	
1-Aug		20:44:00	3645.79	141.05	3646.88	141.18	
1-Aug		20:45:00	3644.12	141.03	3645.93	141.16	
1-Aug		20:46:00	3647.35	141.01	3648.67	141.14	
1-Aug		20:47:00	3647.85	141	3649.59	141.13	
1-Aug		20:48:00	3650.73	140.98	3651.87	141.11	
1-Aug		20:49:00	3647.6	140.96	3648.51	141.09	
1-Aug		20:50:00	3646.65	140.94	3648.18	141.07	
1-Aug		20:51:00	3652.37	140.93	3654.09	141.06	
1-Aug		20:52:00	3652.53	140.91	3653.7	141.05	
1-Aug		20:53:00	3651.67	140.9	3652.6	141.04	
1-Aug		20:54:00	3650.96	140.89	3652.56	141.03	
1-Aug		20:55:00	3645.31	140.88	3645.36	141.01	
1-Aug		20:56:00	3624.86	140.85	3624.73	140.99	
1-Aug		20:57:00	3607.3	140.82	3607.57	140.95	
1-Aug		20:58:00	3595.48	140.79	3595.59	140.93	
1-Aug		20:59:00	3585.34	140.77	3586.15	140.9	
1-Aug		21:00:00	3579.78	140.75	3580.9	140.88	
1-Aug		21:01:00	3574.58	140.73	3575.28	140.86	
1-Aug		21:02:00	3569.91	140.7	3570.69	140.84	
1-Aug		21:03:00	3568.28	140.68	3569.65	140.82	
1-Aug		21:04:00	3567.78	140.66	3568.68	140.8	
1-Aug							
1-Aug	27	21:05:00	3567.39	140.64	3569.96	140.78	Increase choke to 58/64 THP 2616 psia
1-Aug							
1-Aug		21:05:00	3567.39	140.64	3569.96	140.78	
1-Aug		21:06:00	3558.2	140.62	3559.61	140.75	
1-Aug		21:07:00	3549.26	140.58	3550.34	140.72	
1-Aug		21:08:00	3544.09	140.55	3545.12	140.69	
1-Aug		21:09:00	3540.08	140.52	3541.32	140.67	
1-Aug		21:10:00	3538.43	140.5	3539.65	140.64	
1-Aug		21:11:00	3538	140.48	3539.57	140.62	
1-Aug		21:12:00	3538.68	140.45	3540.07	140.6	
1-Aug		21:13:00	3539.64	140.43	3540.95	140.58	
1-Aug							
1-Aug	28	21:14:00	3547.98	140.41	3550.44	140.56	Decrease choke to 48/64 THP 2605 psia
1-Aug							
1-Aug		21:14:00	3547.98	140.41	3550.44	140.56	
1-Aug		21:15:00	3572.07	140.41	3574.86	140.56	
1-Aug		21:16:00	3604.1	140.42	3607.03	140.57	
1-Aug		21:17:00	3650.07	140.44	3653.35	140.59	
1-Aug		21:18:00	3687.58	140.48	3690.19	140.63	
1-Aug		21:19:00	3714.25	140.51	3715.73	140.66	
1-Aug		21:20:00	3732.22	140.54	3733.95	140.68	
1-Aug		21:21:00	3745.7	140.56	3746.84	140.7	
1-Aug		21:22:00	3756.69	140.59	3758.69	140.72	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
1-Aug		21:23:00	3763.92	140.63	3764.44	140.75	
1-Aug		21:24:00	3766.2	140.66	3768.43	140.77	
1-Aug		21:25:00	3772.56	140.69	3773.09	140.8	
1-Aug		21:26:00	3773.21	140.73	3773.72	140.83	
1-Aug		21:27:00	3771.4	140.77	3774.07	140.86	
1-Aug		21:28:00	3771.78	140.8	3773.92	140.89	
1-Aug		21:29:00	3772.89	140.84	3774.55	140.93	
1-Aug		21:30:00	3773.04	140.88	3775.02	140.96	
1-Aug		21:31:00	3773.77	140.92	3775.17	141	
1-Aug		21:32:00	3773.61	140.95	3775.64	141.04	
1-Aug		21:33:00	3774.46	140.98	3775.65	141.07	
1-Aug		21:34:00	3774.9	141.01	3776.72	141.1	
1-Aug		21:35:00	3775.34	141.04	3776.31	141.13	
1-Aug		21:36:00	3775.49	141.07	3777.36	141.16	
1-Aug							
1-Aug	29	21:37:00	3765.73	141.09	3766.08	141.18	Increase choke to 52/64 THP 2807 psia
1-Aug							
1-Aug		21:37:00	3765.73	141.09	3766.08	141.18	
1-Aug		21:38:00	3745.74	141.09	3746.86	141.19	
1-Aug		21:39:00	3736.78	141.1	3738.13	141.19	
1-Aug		21:40:00	3731.92	141.11	3733.11	141.21	
1-Aug		21:41:00	3728.69	141.12	3730.21	141.22	
1-Aug		21:42:00	3725.88	141.13	3727.14	141.24	
1-Aug		21:43:00	3715.27	141.13	3715.64	141.24	
1-Aug		21:44:00	3708.29	141.13	3709.56	141.24	
1-Aug		21:45:00	3704.09	141.12	3705.14	141.24	
1-Aug		21:46:00	3700.15	141.12	3701.92	141.24	
1-Aug		21:47:00	3699.05	141.12	3699.33	141.24	
1-Aug		21:48:00	3697.39	141.12	3698.51	141.24	
1-Aug		21:49:00	3696.67	141.12	3697.26	141.24	
1-Aug		21:50:00	3696.04	141.12	3696.99	141.24	
1-Aug		21:51:00	3695.94	141.12	3696.85	141.24	
1-Aug		21:52:00	3695.69	141.11	3696.59	141.23	
1-Aug		21:53:00	3695.96	141.11	3696.75	141.23	
1-Aug		21:54:00	3695.8	141.1	3696.42	141.22	
1-Aug		21:55:00	3695.49	141.1	3696.29	141.22	
1-Aug		21:56:00	3695.27	141.09	3696.64	141.21	
1-Aug		21:57:00	3695.78	141.09	3696.73	141.21	
1-Aug		21:58:00	3696.57	141.08	3697.18	141.2	
1-Aug		21:59:00	3696.76	141.08	3697.58	141.2	
1-Aug		22:00:00	3697.28	141.08	3698.01	141.2	
1-Aug		22:01:00	3696.9	141.07	3698.5	141.19	
1-Aug		22:02:00	3698.36	141.07	3698.43	141.19	
1-Aug		22:03:00	3697.38	141.07	3698.54	141.19	
1-Aug		22:04:00	3697.55	141.07	3698.4	141.19	
1-Aug		22:05:00	3697.53	141.06	3698.7	141.18	
1-Aug		22:06:00	3697.39	141.06	3698.38	141.18	
1-Aug		22:07:00	3697.58	141.06	3698.86	141.18	
1-Aug		22:08:00	3698.23	141.06	3698.76	141.18	
1-Aug		22:09:00	3698.18	141.06	3698.86	141.18	
1-Aug		22:10:00	3698.77	141.06	3699.67	141.18	
1-Aug		22:11:00	3698.63	141.06	3699.43	141.18	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
1-Aug		22:12:00	3698.64	141.06	3700.04	141.18	
1-Aug		22:13:00	3698.95	141.06	3700.26	141.18	
1-Aug		22:14:00	3699.46	141.06	3700.27	141.18	
1-Aug		22:15:00	3699.6	141.06	3700.81	141.18	
1-Aug		22:16:00	3699.83	141.06	3701.29	141.18	
1-Aug		22:17:00	3700.06	141.06	3701.46	141.18	
1-Aug		22:18:00	3700.7	141.06	3701.72	141.18	
1-Aug		22:19:00	3700.75	141.06	3701.42	141.18	
1-Aug		22:20:00	3701.16	141.06	3701.91	141.18	
1-Aug		22:21:00	3701.43	141.06	3702.81	141.18	
1-Aug		22:22:00	3701.72	141.06	3702.96	141.18	
1-Aug		22:23:00	3702.05	141.06	3703.69	141.18	
1-Aug		22:24:00	3702.8	141.07	3703.56	141.18	
1-Aug		22:25:00	3702.96	141.07	3703.82	141.18	
1-Aug		22:26:00	3702.65	141.07	3704.31	141.19	
1-Aug		22:27:00	3703.5	141.07	3704.39	141.19	
1-Aug		22:28:00	3703.87	141.07	3705.1	141.19	
1-Aug		22:29:00	3704.18	141.07	3705.34	141.19	
1-Aug		22:30:00	3704.58	141.08	3705.22	141.19	
1-Aug		22:31:00	3704.88	141.08	3706.24	141.2	
1-Aug		22:32:00	3705.13	141.08	3706.34	141.2	
1-Aug		22:33:00	3705.48	141.08	3706.14	141.2	
1-Aug		22:34:00	3705.11	141.09	3706.75	141.2	
1-Aug		22:35:00	3705.88	141.09	3706.99	141.2	
1-Aug		22:36:00	3706.08	141.09	3707.42	141.21	
1-Aug		22:37:00	3706.42	141.09	3707.27	141.21	
1-Aug		22:38:00	3706.41	141.09	3707.44	141.21	
1-Aug		22:39:00	3706.87	141.1	3708.18	141.21	
1-Aug		22:40:00	3707.09	141.1	3707.88	141.22	
1-Aug		22:41:00	3707.24	141.1	3708.35	141.22	
1-Aug		22:42:00	3707.1	141.1	3707.28	141.22	
1-Aug		22:43:00	3707.21	141.11	3708.24	141.22	
1-Aug		22:44:00	3707.45	141.11	3708.45	141.22	
1-Aug		22:45:00	3707.36	141.11	3709.44	141.22	
1-Aug		22:46:00	3708.76	141.11	3708.19	141.23	
1-Aug		22:47:00	3707.82	141.11	3709.52	141.23	
1-Aug		22:48:00	3707.92	141.11	3709.14	141.23	
1-Aug		22:49:00	3708.47	141.12	3709.44	141.23	
1-Aug		22:50:00	3709.11	141.12	3709.53	141.23	
1-Aug		22:51:00	3708.52	141.12	3709.81	141.24	
1-Aug		22:52:00	3709.41	141.12	3710.17	141.24	
1-Aug		22:53:00	3709.14	141.13	3710.02	141.24	
1-Aug		22:54:00	3709.33	141.13	3710.23	141.25	
1-Aug		22:55:00	3709.28	141.13	3710.77	141.25	
1-Aug		22:56:00	3709.19	141.13	3710.53	141.25	
1-Aug		22:57:00	3709.39	141.14	3710.77	141.25	
1-Aug		22:58:00	3709.74	141.14	3710.92	141.25	
1-Aug		22:59:00	3710.29	141.14	3711.27	141.26	
1-Aug		23:00:00	3710.29	141.14	3711.37	141.26	
1-Aug		23:01:00	3710.25	141.14	3712.25	141.26	
1-Aug		23:02:00	3710.72	141.15	3711.78	141.26	
1-Aug		23:03:00	3710.74	141.15	3712.33	141.26	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
1-Aug		23:04:00	3710.86	141.15	3712.08	141.26	
1-Aug		23:05:00	3711.48	141.15	3712.35	141.26	
1-Aug		23:06:00	3711.58	141.15	3712.65	141.27	
1-Aug		23:07:00	3711.23	141.15	3711.83	141.27	
1-Aug		23:08:00	3711.66	141.15	3712.73	141.27	
1-Aug		23:09:00	3711.86	141.16	3712.83	141.27	
1-Aug		23:10:00	3712.15	141.16	3712.87	141.27	
1-Aug		23:11:00	3712.03	141.16	3713.03	141.27	
1-Aug		23:12:00	3712.54	141.16	3713.82	141.27	
1-Aug		23:13:00	3713.05	141.16	3713.52	141.28	
1-Aug		23:14:00	3712.65	141.16	3713.83	141.28	
1-Aug		23:15:00	3712.86	141.16	3713.93	141.28	
1-Aug		23:16:00	3713.02	141.17	3713.79	141.28	
1-Aug		23:17:00	3713.62	141.17	3713.83	141.28	
1-Aug		23:18:00	3713.09	141.17	3714.74	141.28	
1-Aug		23:19:00	3713.72	141.17	3714.66	141.28	
1-Aug		23:20:00	3713.92	141.17	3715.2	141.29	
1-Aug		23:21:00	3713.82	141.17	3714.9	141.29	
1-Aug		23:22:00	3713.92	141.17	3715.2	141.29	
1-Aug		23:23:00	3714.8	141.18	3715.32	141.29	
1-Aug		23:24:00	3714.44	141.18	3715.28	141.29	
1-Aug		23:25:00	3714.55	141.18	3715.55	141.29	
1-Aug		23:26:00	3713.55	141.18	3714.98	141.29	
1-Aug		23:27:00	3715.49	141.18	3715.04	141.3	
1-Aug		23:28:00	3714.87	141.18	3715.84	141.3	
1-Aug		23:29:00	3714.71	141.18	3715.72	141.3	
1-Aug		23:30:00	3715.01	141.19	3715.99	141.3	
1-Aug		23:31:00	3715.12	141.19	3716.17	141.3	
1-Aug		23:32:00	3714.11	141.19	3716.21	141.3	
1-Aug		23:33:00	3715.36	141.19	3716.45	141.3	
1-Aug		23:34:00	3715.83	141.19	3716.51	141.31	
1-Aug		23:35:00	3715.56	141.19	3716.39	141.31	
1-Aug		23:36:00	3715.45	141.19	3717.09	141.31	
1-Aug		23:37:00	3715.2	141.2	3716.34	141.31	
1-Aug		23:38:00	3715.6	141.2	3717.22	141.31	
1-Aug		23:39:00	3716.06	141.2	3716.52	141.31	
1-Aug		23:40:00	3715.53	141.2	3717.72	141.31	
1-Aug		23:41:00	3716.12	141.2	3718.23	141.32	
1-Aug		23:42:00	3716.24	141.21	3717.52	141.32	
1-Aug		23:43:00	3716.47	141.21	3718.07	141.32	
1-Aug		23:44:00	3717.12	141.21	3717.9	141.32	
1-Aug		23:45:00	3717.21	141.21	3718.13	141.32	
1-Aug		23:46:00	3716.86	141.21	3718.17	141.32	
1-Aug		23:47:00	3717.31	141.21	3717.38	141.33	
1-Aug		23:48:00	3716.81	141.21	3717.68	141.33	
1-Aug		23:49:00	3717.19	141.22	3718.42	141.33	
1-Aug		23:50:00	3716.94	141.22	3718.14	141.33	
1-Aug		23:51:00	3717.45	141.22	3718.48	141.33	
1-Aug		23:52:00	3717.78	141.22	3719.02	141.33	
1-Aug		23:53:00	3717.89	141.22	3718.57	141.33	
1-Aug		23:54:00	3717.95	141.22	3719.06	141.33	
1-Aug		23:55:00	3718.05	141.22	3719.53	141.33	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
1-Aug		23:56:00	3717.84	141.22	3719.23	141.34	
1-Aug		23:57:00	3717.91	141.23	3719.33	141.34	
1-Aug		23:58:00	3718.24	141.23	3719.34	141.34	
1-Aug		23:59:00	3718.32	141.23	3719.55	141.34	
2-Aug		0:00:00	3718.45	141.23	3719.63	141.34	
2-Aug		0:01:00	3719.33	141.23	3720.2	141.34	
2-Aug		0:02:00	3718.57	141.23	3719.72	141.34	
2-Aug		0:03:00	3718.37	141.23	3720.06	141.34	
2-Aug		0:04:00	3718.76	141.23	3720.55	141.34	
2-Aug		0:05:00	3719.01	141.24	3720.14	141.34	
2-Aug		0:06:00	3719.09	141.24	3720.59	141.35	
2-Aug		0:07:00	3720.05	141.24	3720.45	141.35	
2-Aug		0:08:00	3719.48	141.24	3720.25	141.35	
2-Aug		0:09:00	3719.82	141.24	3721.05	141.35	
2-Aug		0:10:00	3719.44	141.24	3720.8	141.35	
2-Aug		0:11:00	3719.79	141.24	3720.24	141.35	
2-Aug		0:12:00	3720.09	141.24	3721.12	141.35	
2-Aug		0:13:00	3719.52	141.24	3721.06	141.35	
2-Aug		0:14:00	3720.59	141.25	3721.07	141.36	
2-Aug		0:15:00	3720.29	141.25	3721.41	141.36	
2-Aug		0:16:00	3719.96	141.25	3721.32	141.36	
2-Aug		0:17:00	3719.56	141.25	3721.22	141.36	
2-Aug		0:18:00	3720.08	141.25	3721.16	141.36	
2-Aug		0:19:00	3720	141.25	3721	141.36	
2-Aug		0:20:00	3720.38	141.25	3721.79	141.36	
2-Aug		0:21:00	3720.51	141.25	3721.48	141.36	
2-Aug		0:22:00	3720.3	141.26	3721.74	141.37	
2-Aug		0:23:00	3720.51	141.26	3721.75	141.37	
2-Aug		0:24:00	3720.24	141.26	3721.75	141.37	
2-Aug		0:25:00	3720.77	141.26	3722.1	141.37	
2-Aug		0:26:00	3720.73	141.26	3722.01	141.37	
2-Aug		0:27:00	3720.77	141.26	3722.8	141.37	
2-Aug		0:28:00	3721.74	141.26	3722.03	141.37	
2-Aug		0:29:00	3721.1	141.26	3722.15	141.37	
2-Aug		0:30:00	3720.65	141.27	3722.12	141.37	
2-Aug		0:31:00	3720.68	141.27	3722.33	141.37	
2-Aug		0:32:00	3721.81	141.27	3722.91	141.38	
2-Aug		0:33:00	3721.07	141.27	3722.89	141.38	
2-Aug		0:34:00	3721.39	141.27	3723.07	141.38	
2-Aug		0:35:00	3721.87	141.27	3722.88	141.38	
2-Aug		0:36:00	3721.9	141.27	3723.44	141.38	
2-Aug		0:37:00	3722.01	141.27	3723.04	141.38	
2-Aug		0:38:00	3722.33	141.27	3722.81	141.38	
2-Aug		0:39:00	3721.65	141.27	3723.27	141.38	
2-Aug		0:40:00	3722.13	141.28	3723.46	141.38	
2-Aug		0:41:00	3721.86	141.28	3723.55	141.38	
2-Aug		0:42:00	3722.34	141.28	3723.43	141.38	
2-Aug		0:43:00	3721.92	141.28	3723.95	141.39	
2-Aug		0:44:00	3722.21	141.28	3723.55	141.39	
2-Aug		0:45:00	3722.66	141.28	3723.66	141.39	
2-Aug		0:46:00	3722.46	141.28	3723.34	141.39	
2-Aug		0:47:00	3722.91	141.28	3724.21	141.39	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
2-Aug		0:48:00	3723.09	141.28	3723.91	141.39	
2-Aug		0:49:00	3723.1	141.29	3724.36	141.39	
2-Aug		0:50:00	3723.02	141.29	3724.31	141.39	
2-Aug		0:51:00	3723.57	141.29	3724.3	141.4	
2-Aug		0:52:00	3723.46	141.29	3724.23	141.4	
2-Aug		0:53:00	3723.81	141.29	3724.65	141.4	
2-Aug		0:54:00	3722.86	141.29	3724.8	141.4	
2-Aug		0:55:00	3723.81	141.29	3724.87	141.4	
2-Aug		0:56:00	3724.01	141.29	3725.39	141.4	
2-Aug		0:57:00	3723.88	141.29	3724.94	141.4	
2-Aug		0:58:00	3724.58	141.3	3725.06	141.4	
2-Aug		0:59:00	3724.14	141.3	3725.49	141.4	
2-Aug		1:00:00	3724.44	141.3	3725.62	141.4	
2-Aug		1:01:00	3724.45	141.3	3726.25	141.4	
2-Aug		1:02:00	3723.92	141.3	3725.4	141.41	
2-Aug		1:03:00	3723.8	141.3	3725.45	141.41	
2-Aug		1:04:00	3724.33	141.3	3725.76	141.41	
2-Aug		1:05:00	3724.42	141.3	3726.02	141.41	
2-Aug		1:06:00	3724.88	141.3	3725.8	141.41	
2-Aug		1:07:00	3724.64	141.31	3725.89	141.41	
2-Aug		1:08:00	3724.89	141.31	3726	141.41	
2-Aug		1:09:00	3725.17	141.31	3726.16	141.41	
2-Aug		1:10:00	3724.86	141.31	3726.13	141.41	
2-Aug		1:11:00	3725.24	141.31	3727.3	141.41	
2-Aug		1:12:00	3725.22	141.31	3726.93	141.41	
2-Aug		1:13:00	3725.83	141.31	3726.86	141.41	
2-Aug		1:14:00	3725.39	141.31	3726.56	141.41	
2-Aug		1:15:00	3725.04	141.31	3726.78	141.42	
2-Aug		1:16:00	3725.33	141.31	3726.67	141.42	
2-Aug		1:17:00	3725.48	141.31	3726.53	141.42	
2-Aug		1:18:00	3725.47	141.31	3726.95	141.42	
2-Aug		1:19:00	3725.47	141.31	3726.66	141.42	
2-Aug		1:20:00	3725.28	141.31	3726.99	141.42	
2-Aug		1:21:00	3725.5	141.32	3727.02	141.42	
2-Aug		1:22:00	3725.93	141.32	3726.98	141.42	
2-Aug		1:23:00	3725.67	141.32	3727.32	141.42	
2-Aug		1:24:00	3726.1	141.32	3727.04	141.42	
2-Aug		1:25:00	3726.69	141.32	3727.37	141.42	
2-Aug							
2-Aug	30	1:26:00	3725.69	141.32	3727.63	141.43	Shut in well at choke manifold
2-Aug							
2-Aug		1:35:00	4184.27	141.93	4184.9	142.03	
2-Aug		1:45:00	4193.71	142.4	4194.14	142.51	
2-Aug		1:55:00	4203.36	142.68	4203.91	142.78	
2-Aug							
2-Aug	31	1:59:00	4203.7	142.76	4204.34	142.85	Slickline rih and close SSD on 2755 sands THP 3232 psia
2-Aug		2:05:00	4205.43	142.85	4206.11	142.94	
2-Aug		2:15:00	4207.2	142.95	4207.96	143.04	
2-Aug		2:25:00	4207.92	143.02	4208.43	143.1	
2-Aug		2:35:00	4206.97	143.06	4209.42	143.15	
2-Aug		2:45:00	4208.28	143.1	4209.19	143.18	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
2-Aug		2:55:00	4208.95	143.12	4209.88	143.21	
2-Aug		3:05:00	4209.47	143.13	4210.35	143.22	
2-Aug		3:15:00	4209.87	143.14	4210.77	143.24	
2-Aug		3:25:00	4210.17	143.15	4211.06	143.24	
2-Aug		3:35:00	4194.71	143.15	4195.84	143.24	
2-Aug							
2-Aug	32	3:37:00	4199.77	143.15	4200.81	143.24	Slickline rih and open SSD at 2548
2-Aug							sands THP 3176 psia
2-Aug		3:45:00	4209.31	143.15	4210.27	143.25	
2-Aug		3:55:00	4210.77	143.16	4212.02	143.25	
2-Aug		4:05:00	4122.56	143.14	4121.78	143.23	
2-Aug		4:15:00	4034.9	142.94	4036.5	143.05	
2-Aug		4:25:00	4029.59	142.76	4030.22	142.87	
2-Aug		4:35:00	4025.4	142.67	4026.6	142.78	
2-Aug		4:45:00	4021.43	142.63	4022.58	142.74	
2-Aug		4:55:00	4019.44	142.61	4019.34	142.72	
2-Aug							
2-Aug	33	5:04:00	3948.98	142.57	3945.05	142.67	Open well on 24/64 choke flow well
2-Aug							to clean up (2458 sands)
2-Aug		5:05:00	3894.07	142.54	3892.38	142.64	
2-Aug							
2-Aug	34	5:06:00	3848.77	142.5	3846.93	142.6	Increase choke to 28/64 THP 2884 psia
2-Aug							
2-Aug		5:06:00	3848.77	142.5	3846.93	142.6	
2-Aug		5:07:00	3797.54	142.46	3795.81	142.56	
2-Aug							
2-Aug	35	5:08:00	3755.15	142.39	3753.81	142.5	Increase choke to 32/64 THP 2783 psia
2-Aug							
2-Aug		5:08:00	3755.15	142.39	3753.81	142.5	
2-Aug		5:09:00	3706.86	142.32	3703.97	142.43	
2-Aug		5:10:00	3644.74	142.22	3642.39	142.33	
2-Aug		5:11:00	3582.65	142.11	3580.43	142.22	
2-Aug							
2-Aug	36	5:12:00	3516.69	141.96	3513.77	142.08	Increase choke to 36/64 THP 2594 psia
2-Aug							
2-Aug		5:12:00	3516.69	141.96	3513.77	142.08	
2-Aug		5:13:00	3452.89	141.79	3450.23	141.91	
2-Aug		5:14:00	3394.69	141.6	3393.47	141.73	
2-Aug							
2-Aug	37	5:15:00	3347.39	141.38	3346.19	141.51	Increase choke to 40/64 THP 2472 psia
2-Aug							
2-Aug		5:15:00	3347.39	141.38	3346.19	141.51	
2-Aug		5:16:00	3294.32	141.13	3292.41	141.26	
2-Aug		5:17:00	3235.03	140.86	3234.4	141	
2-Aug		5:18:00	3184.25	140.57	3183.54	140.71	
2-Aug		5:19:00	3138.72	140.26	3138.65	140.42	
2-Aug		5:20:00	3098.28	139.96	3098.8	140.12	
2-Aug		5:21:00	3060.77	139.65	3061.03	139.82	
2-Aug		5:22:00	3024.98	139.34	3025.78	139.52	
2-Aug		5:23:00	2992.72	139.04	2993.48	139.22	
2-Aug		5:24:00	2962.17	138.74	2963.31	138.93	
2-Aug		5:25:00	2935.23	138.45	2936.1	138.65	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
2-Aug		5:26:00	2909.4	138.17	2910.7	138.38	
2-Aug		5:27:00	2884.92	137.91	2885.86	138.12	
2-Aug		5:28:00	2862.17	137.65	2863.68	137.86	
2-Aug		5:29:00	2842.43	137.41	2843.65	137.61	
2-Aug		5:30:00	2823.79	137.17	2825.15	137.39	
2-Aug		5:31:00	2804.83	136.94	2806.6	137.14	
2-Aug		5:32:00	2787.48	136.7	2788.39	136.91	
2-Aug		5:33:00	2769.97	136.47	2771.23	136.68	
2-Aug		5:34:00	2753.06	136.25	2754.35	136.47	
2-Aug		5:35:00	2736.87	136.06	2738.45	136.27	
2-Aug		5:36:00	2719.89	135.87	2721.44	136.09	
2-Aug		5:37:00	2702.34	135.69	2703.41	135.92	
2-Aug		5:38:00	2683.41	135.52	2684.33	135.74	
2-Aug		5:39:00	2665	135.35	2666.17	135.57	
2-Aug		5:40:00	2645.27	135.19	2646.55	135.41	
2-Aug		5:41:00	2625.71	135.03	2626.82	135.24	
2-Aug		5:42:00	2606.58	134.8	2608.41	135.01	
2-Aug		5:43:00	2588	134.51	2589.92	134.71	
2-Aug		5:44:00	2570.77	134.22	2572.55	134.41	
2-Aug		5:45:00	2552.84	133.97	2554.58	134.15	
2-Aug		5:46:00	2538.29	133.75	2540.2	133.93	
2-Aug		5:47:00	2529.4	133.57	2531.66	133.75	
2-Aug		5:48:00	2519.66	133.42	2521.87	133.59	
2-Aug		5:49:00	2509.6	133.28	2512.17	133.46	
2-Aug		5:50:00	2502.01	133.16	2504.31	133.34	
2-Aug		5:51:00	2498.72	133.06	2502.05	133.24	
2-Aug		5:52:00	2498.48	132.97	2501.12	133.15	
2-Aug		5:53:00	2497.82	132.9	2500.3	133.08	
2-Aug		5:54:00	2496.62	132.82	2499.35	133	
2-Aug		5:55:00	2495.32	132.75	2498.33	132.93	
2-Aug		5:56:00	2495.43	132.68	2498.45	132.86	
2-Aug		5:57:00	2495.9	132.65	2498.66	132.82	
2-Aug		5:58:00	2496.22	132.64	2499.09	132.81	
2-Aug		5:59:00	2498.61	132.61	2501.4	132.79	
2-Aug		6:00:00	2500.86	132.58	2503.8	132.75	
2-Aug		6:01:00	2502.65	132.55	2505.46	132.73	
2-Aug		6:02:00	2505.32	132.54	2508.19	132.72	
2-Aug		6:03:00	2508.15	132.54	2510.86	132.72	
2-Aug		6:04:00	2509.73	132.56	2512.49	132.73	
2-Aug		6:05:00	2511.29	132.57	2514.13	132.75	
2-Aug		6:06:00	2512.59	132.59	2515.26	132.77	
2-Aug		6:07:00	2515.12	132.61	2517.78	132.78	
2-Aug		6:08:00	2531.3	132.63	2536.05	132.8	
2-Aug		6:09:00	2560.04	132.67	2564.94	132.85	
2-Aug		6:10:00	2584.84	132.74	2589.27	132.93	
2-Aug		6:11:00	2613.78	132.85	2618	133.04	
2-Aug		6:12:00	2640.75	132.99	2644.84	133.18	
2-Aug		6:13:00	2665.06	133.15	2668.72	133.34	
2-Aug		6:14:00	2683.69	133.33	2687.67	133.52	
2-Aug		6:15:00	2700.45	133.51	2703.59	133.69	
2-Aug		6:16:00	2714.8	133.68	2720.69	133.86	
2-Aug		6:17:00	2735.73	133.85	2739.41	134.03	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
2-Aug		6:18:00	2753.52	134.01	2756.33	134.2	
2-Aug		6:19:00	2776.37	134.18	2779.93	134.36	
2-Aug		6:20:00	2792.53	134.34	2795.21	134.51	
2-Aug		6:21:00	2804.88	134.49	2807.64	134.67	
2-Aug		6:22:00	2817.93	134.65	2820.16	134.82	
2-Aug		6:23:00	2826.66	134.79	2829.19	134.96	
2-Aug		6:24:00	2831.93	134.93	2834.14	135.09	
2-Aug		6:25:00	2837.24	135.05	2839.45	135.21	
2-Aug		6:26:00	2843.29	135.16	2845.7	135.32	
2-Aug		6:27:00	2848.84	135.26	2850.9	135.41	
2-Aug		6:28:00	2854.33	135.34	2856.7	135.5	
2-Aug		6:29:00	2858.41	135.41	2860.8	135.57	
2-Aug		6:30:00	2862.96	135.48	2865.25	135.63	
2-Aug		6:31:00	2867.34	135.54	2869.36	135.69	
2-Aug		6:32:00	2871.34	135.6	2873.19	135.75	
2-Aug		6:33:00	2874.99	135.65	2877.1	135.81	
2-Aug		6:34:00	2878.81	135.71	2880.83	135.86	
2-Aug		6:35:00	2881.91	135.77	2884	135.92	
2-Aug		6:36:00	2885.25	135.83	2887.23	135.97	
2-Aug		6:37:00	2888.14	135.87	2890.29	136.02	
2-Aug		6:38:00	2891.18	135.92	2893.2	136.06	
2-Aug		6:39:00	2893.92	135.96	2896.17	136.11	
2-Aug		6:40:00	2896.1	136	2898.1	136.14	
2-Aug		6:41:00	2897.71	136.03	2900.24	136.18	
2-Aug		6:42:00	2899.84	136.07	2902.06	136.21	
2-Aug		6:43:00	2902.05	136.1	2904.05	136.24	
2-Aug		6:44:00	2903.62	136.13	2905.62	136.28	
2-Aug		6:45:00	2905.54	136.17	2907.85	136.31	
2-Aug		6:46:00	2907.92	136.2	2909.95	136.34	
2-Aug		6:47:00	2910.16	136.22	2912.14	136.37	
2-Aug		6:48:00	2912.53	136.25	2914.38	136.4	
2-Aug		6:49:00	2914.38	136.28	2916.45	136.43	
2-Aug		6:50:00	2916.54	136.31	2918.92	136.46	
2-Aug		6:51:00	2918.47	136.34	2920.52	136.48	
2-Aug		6:52:00	2920.09	136.36	2922.51	136.51	
2-Aug		6:53:00	2922.02	136.39	2923.71	136.53	
2-Aug		6:54:00	2923.06	136.41	2925.33	136.56	
2-Aug		6:55:00	2921.04	136.44	2922.88	136.58	
2-Aug		6:56:00	2919.09	136.46	2920.74	136.6	
2-Aug		6:57:00	2916.6	136.47	2918.45	136.61	
2-Aug		6:58:00	2914.59	136.48	2916.44	136.62	
2-Aug		6:59:00	2912.78	136.49	2914.56	136.63	
2-Aug		7:00:00	2911.77	136.49	2913.7	136.63	
2-Aug		7:01:00	2913.12	136.5	2915.33	136.64	
2-Aug		7:02:00	2914.97	136.5	2917.23	136.64	
2-Aug		7:03:00	2916.94	136.51	2919.29	136.65	
2-Aug		7:04:00	2919.41	136.52	2921.37	136.67	
2-Aug		7:05:00	2920.91	136.54	2923.12	136.68	
2-Aug		7:06:00	2922.5	136.55	2924.43	136.69	
2-Aug		7:07:00	2923.06	136.57	2925.22	136.71	
2-Aug		7:08:00	2923.94	136.58	2925.93	136.73	
2-Aug		7:09:00	2924.63	136.6	2926.58	136.74	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
2-Aug		7:10:00	2925.05	136.62	2927.16	136.76	
2-Aug		7:11:00	2925.29	136.63	2927.11	136.77	
2-Aug		7:12:00	2925.28	136.64	2927.24	136.78	
2-Aug		7:13:00	2925.05	136.66	2926.77	136.8	
2-Aug		7:14:00	2924.25	136.67	2926.54	136.81	
2-Aug		7:15:00	2924.33	136.68	2926.55	136.82	
2-Aug		7:16:00	2924.26	136.68	2926.2	136.82	
2-Aug		7:17:00	2924.24	136.69	2926.09	136.83	
2-Aug		7:18:00	2924.19	136.7	2926.28	136.83	
2-Aug		7:19:00	2924.12	136.7	2926.23	136.84	
2-Aug		7:20:00	2924.41	136.71	2926.16	136.85	
2-Aug		7:21:00	2924.24	136.72	2926.21	136.85	
2-Aug		7:22:00	2923.97	136.72	2925.72	136.86	
2-Aug		7:23:00	2923.7	136.72	2925.9	136.86	
2-Aug		7:24:00	2923.79	136.73	2925.52	136.87	
2-Aug		7:25:00	2923.51	136.73	2925.54	136.87	
2-Aug		7:26:00	2923.53	136.74	2925.35	136.88	
2-Aug		7:27:00	2923.51	136.74	2925.57	136.88	
2-Aug		7:28:00	2923.72	136.75	2925.61	136.89	
2-Aug		7:29:00	2923.62	136.76	2925.51	136.9	
2-Aug		7:30:00	2923.75	136.77	2925.71	136.9	
2-Aug		7:31:00	2923.94	136.77	2925.85	136.91	
2-Aug		7:32:00	2924.07	136.78	2926.22	136.92	
2-Aug		7:33:00	2924.19	136.78	2926.05	136.92	
2-Aug		7:34:00	2923.88	136.79	2926.27	136.93	
2-Aug		7:35:00	2923.74	136.79	2926.27	136.93	
2-Aug		7:36:00	2924.47	136.79	2926.25	136.93	
2-Aug		7:37:00	2924.59	136.8	2926.53	136.94	
2-Aug		7:38:00	2924.88	136.8	2926.85	136.94	
2-Aug		7:39:00	2925.13	136.81	2926.99	136.95	
2-Aug		7:40:00	2925.17	136.82	2927.06	136.96	
2-Aug		7:41:00	2925.25	136.82	2927.61	136.96	
2-Aug		7:42:00	2925.27	136.83	2927.33	136.97	
2-Aug		7:43:00	2925.39	136.83	2927.53	136.97	
2-Aug		7:44:00	2925.62	136.84	2927.38	136.98	
2-Aug		7:45:00	2925.75	136.85	2927.41	136.98	
2-Aug		7:46:00	2925.92	136.85	2927.51	136.99	
2-Aug		7:47:00	2925.96	136.85	2927.78	136.99	
2-Aug		7:48:00	2925.98	136.86	2927.97	137	
2-Aug		7:49:00	2926.13	136.86	2928.15	137	
2-Aug		7:50:00	2926.15	136.86	2927.86	137	
2-Aug		7:51:00	2926.1	136.87	2928.06	137.01	
2-Aug		7:52:00	2926.27	136.87	2928.1	137.01	
2-Aug		7:53:00	2926.35	136.88	2928.1	137.02	
2-Aug		7:54:00	2926.31	136.88	2928.28	137.02	
2-Aug		7:55:00	2926.48	136.89	2928.43	137.03	
2-Aug		7:56:00	2926.7	136.89	2928.76	137.03	
2-Aug		7:57:00	2926.69	136.9	2928.38	137.04	
2-Aug		7:58:00	2926.71	136.91	2928.65	137.04	
2-Aug		7:59:00	2927.09	136.91	2928.85	137.05	
2-Aug		8:00:00	2927.12	136.92	2929.11	137.05	
2-Aug		8:01:00	2927.47	136.92	2929.57	137.06	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
2-Aug		8:02:00	2927.69	136.92	2929.61	137.06	
2-Aug		8:03:00	2928.63	136.93	2930.69	137.07	
2-Aug		8:04:00	2928.97	136.93	2930.92	137.07	
2-Aug		8:05:00	2929.09	136.94	2931.06	137.08	
2-Aug		8:06:00	2929.06	136.94	2930.99	137.08	
2-Aug		8:07:00	2929.44	136.95	2931.78	137.09	
2-Aug		8:08:00	2929.86	136.95	2931.98	137.09	
2-Aug		8:09:00	2930.28	136.96	2932.32	137.09	
2-Aug		8:10:00	2930.55	136.96	2932.72	137.1	
2-Aug		8:11:00	2930.78	136.96	2932.61	137.1	
2-Aug		8:12:00	2931.07	136.97	2933.12	137.1	
2-Aug		8:13:00	2931.34	136.97	2933.71	137.11	
2-Aug		8:14:00	2931.51	136.98	2933.54	137.11	
2-Aug		8:15:00	2931.67	136.98	2933.73	137.12	
2-Aug		8:16:00	2931.85	136.99	2934.08	137.13	
2-Aug		8:17:00	2932.06	136.99	2934.13	137.13	
2-Aug		8:18:00	2932.27	137	2934.23	137.14	
2-Aug		8:19:00	2932.4	137	2934.19	137.14	
2-Aug		8:20:00	2932.52	137	2934.64	137.14	
2-Aug		8:21:00	2932.76	137.01	2934.85	137.14	
2-Aug		8:22:00	2933.01	137.01	2935.12	137.15	
2-Aug		8:23:00	2933.19	137.02	2935.33	137.15	
2-Aug		8:24:00	2933.27	137.02	2935.32	137.16	
2-Aug		8:25:00	2933.43	137.02	2935.66	137.16	
2-Aug		8:26:00	2933.74	137.03	2935.75	137.16	
2-Aug		8:27:00	2933.97	137.03	2936.01	137.17	
2-Aug		8:28:00	2934.08	137.03	2936.04	137.17	
2-Aug		8:29:00	2934.24	137.03	2936.22	137.17	
2-Aug		8:30:00	2934.47	137.04	2936.47	137.17	
2-Aug		8:31:00	2934.6	137.04	2936.64	137.18	
2-Aug		8:32:00	2934.58	137.04	2936.54	137.18	
2-Aug		8:33:00	2934.52	137.05	2936.35	137.19	
2-Aug		8:34:00	2934.72	137.05	2936.84	137.19	
2-Aug		8:35:00	2934.76	137.06	2936.76	137.2	
2-Aug		8:36:00	2934.81	137.07	2936.67	137.2	
2-Aug		8:37:00	2934.87	137.07	2936.83	137.21	
2-Aug		8:38:00	2934.94	137.07	2936.79	137.21	
2-Aug		8:39:00	2934.99	137.07	2936.92	137.21	
2-Aug		8:40:00	2935.08	137.07	2937.15	137.21	
2-Aug		8:41:00	2935.15	137.07	2937.28	137.21	
2-Aug		8:42:00	2935.25	137.08	2937.31	137.21	
2-Aug		8:43:00	2935.3	137.08	2937.26	137.21	
2-Aug		8:44:00	2935.41	137.08	2937.37	137.21	
2-Aug		8:45:00	2935.51	137.08	2937.84	137.21	
2-Aug		8:46:00	2935.66	137.08	2937.62	137.21	
2-Aug		8:47:00	2935.66	137.08	2937.87	137.22	
2-Aug		8:48:00	2935.77	137.08	2937.29	137.22	
2-Aug		8:49:00	2931.19	137.09	2932.68	137.22	
2-Aug		8:50:00	2928.37	137.09	2929.19	137.23	
2-Aug		8:51:00	2924.34	137.09	2925.94	137.22	
2-Aug		8:52:00	2921.41	137.08	2923.07	137.22	
2-Aug		8:53:00	2918.56	137.07	2920.17	137.2	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
2-Aug		8:54:00	2915.8	137.05	2917.71	137.18	
2-Aug		8:55:00	2913.42	137.03	2915.22	137.16	
2-Aug		8:56:00	2911.37	137.01	2913.37	137.14	
2-Aug		8:57:00	2909.4	136.99	2911.44	137.12	
2-Aug		8:58:00	2907.77	136.97	2909.76	137.11	
2-Aug		8:59:00	2905.97	136.96	2908.01	137.1	
2-Aug		9:00:00	2904.79	136.95	2906.52	137.09	
2-Aug		9:01:00	2903.5	136.95	2905.41	137.08	
2-Aug		9:02:00	2902.51	136.94	2904.54	137.07	
2-Aug		9:03:00	2901.14	136.92	2903.16	137.06	
2-Aug		9:04:00	2900.16	136.91	2902.29	137.05	
2-Aug		9:05:00	2899.69	136.9	2901.8	137.03	
2-Aug		9:06:00	2899.43	136.89	2901.61	137.02	
2-Aug		9:07:00	2898.66	136.88	2900.82	137.02	
2-Aug		9:08:00	2898.45	136.87	2900.18	137.01	
2-Aug		9:09:00	2898.03	136.86	2899.99	137	
2-Aug		9:10:00	2897.46	136.86	2899.72	136.99	
2-Aug		9:11:00	2897.15	136.85	2899.14	136.99	
2-Aug		9:12:00	2940.24	136.85	2948	136.99	
2-Aug							
2-Aug	38	9:13:00	3014.17	136.91	3021.11	137.06	Close FCH master valve and
2-Aug							open choke manifold
2-Aug		9:13:00	3014.17	136.91	3021.11	137.06	
2-Aug		9:23:00	3536.39	139.71	3539.62	139.84	
2-Aug		9:33:00	3755.45	141.62	3757.42	141.69	
2-Aug		9:43:00	3844.92	142.43	3846.05	142.5	
2-Aug							
2-Aug	39	9:45:00	3839.46	142.53	3840.98	142.6	Rih slickline and open SSD 2809 sands
2-Aug							THP 2311 psia
2-Aug		9:53:00	3880.97	142.82	3882.61	142.89	
2-Aug		10:03:00	3906.92	143.06	3908.41	143.14	
2-Aug		10:13:00	3940.02	143.22	3941.22	143.3	
2-Aug		10:23:00	3956.86	143.34	3958.43	143.42	
2-Aug		10:33:00	3971.2	143.41	3972.65	143.49	
2-Aug		10:43:00	3985.87	143.48	3987.34	143.57	
2-Aug							
2-Aug	40	10:45:00	3985.66	143.49	3985.75	143.58	Open well on 16/64 choke flow well
2-Aug							(2458 and 2809 sands open)
2-Aug	41	10:46:00	3976.13	143.5	3976.82	143.58	Increase choke to 20/64 THP 2487 psia
2-Aug							
2-Aug	42	10:47:00	3945.9	143.49	3944.62	143.58	Increase choke to 24/64 THP 2460 psia
2-Aug							
2-Aug	43	10:49:00	3860.96	143.44	3860.94	143.51	Increase choke to 28/64 THP 2395 psia
2-Aug							
2-Aug	44	10:50:00	3827.85	143.38	3825.42	143.46	Increase choke to 32/64 THP 2368 psia
2-Aug							
2-Aug	45	10:52:00	3717.51	143.2	3715.05	143.28	Increase choke to 36/64 THP 2268 psia
2-Aug							
2-Aug		10:53:00	3654.64	143.06	3652.53	143.14	
2-Aug							
2-Aug	46	10:54:00	3603.55	142.88	3600.8	142.97	Increase choke to 40/64 THP 2140 psia
2-Aug							

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
2-Aug		10:54:00	3603.55	142.88	3600.8	142.97	
2-Aug		10:55:00	3531.53	142.67	3528.14	142.76	
2-Aug							
2-Aug	47	10:56:00	3446.95	142.42	3443.14	142.51	Increase choke to 44/64 THP 1884 psia
2-Aug							
2-Aug		10:56:00	3446.95	142.42	3443.14	142.51	
2-Aug		10:57:00	3352.81	142.12	3352.81	142.21	
2-Aug		10:58:00	3289.16	141.77	3287.12	141.87	
2-Aug							
2-Aug	48	10:59:00	3230.6	141.38	3229.06	141.49	Increase choke to 48/64 THP 2140 psia
2-Aug							
2-Aug		10:59:00	3230.6	141.38	3229.06	141.49	
2-Aug		11:00:00	3173.05	140.98	3171.07	141.09	
2-Aug		11:01:00	3120.14	140.57	3118.21	140.69	
2-Aug		11:02:00	3065.12	140.17	3063.5	140.29	
2-Aug		11:03:00	3027.02	139.78	3027.32	139.91	
2-Aug		11:04:00	2995.93	139.42	2996.88	139.55	
2-Aug		11:05:00	2970.57	139.06	2971.35	139.2	
2-Aug		11:06:00	2943.1	138.74	2943.73	138.88	
2-Aug		11:07:00	2913.65	138.45	2913.98	138.59	
2-Aug		11:08:00	2882.52	138.19	2883.75	138.33	
2-Aug		11:09:00	2857.2	137.93	2858.17	138.06	
2-Aug		11:10:00	2833.12	137.66	2834.08	137.79	
2-Aug		11:11:00	2813.77	137.4	2815.34	137.54	
2-Aug		11:12:00	2800.37	137.16	2802.48	137.31	
2-Aug		11:13:00	2789.83	136.96	2792.08	137.11	
2-Aug		11:14:00	2780.47	136.79	2782.16	136.93	
2-Aug		11:15:00	2766.42	136.63	2765.69	136.78	
2-Aug		11:16:00	2741.46	136.47	2740.51	136.62	
2-Aug		11:17:00	2723.05	136.31	2725.23	136.45	
2-Aug		11:18:00	2711.47	136.16	2710.76	136.3	
2-Aug		11:19:00	2700.48	136.02	2703.14	136.17	
2-Aug		11:20:00	2694.64	135.89	2696.58	136.04	
2-Aug		11:21:00	2683.55	135.76	2683.67	135.91	
2-Aug		11:22:00	2669.72	135.65	2669.49	135.8	
2-Aug		11:23:00	2654.44	135.53	2653.8	135.68	
2-Aug		11:24:00	2636.32	135.42	2638.41	135.56	
2-Aug		11:25:00	2620.7	135.3	2622.7	135.44	
2-Aug							
2-Aug	49	11:26:00	2610.55	135.17	2613.07	135.32	Reduce choke to 32/64 THP 1598 psia
2-Aug							
2-Aug		11:26:00	2610.55	135.17	2613.07	135.32	
2-Aug		11:27:00	2643.1	135.06	2626.5	135.21	
2-Aug		11:28:00	2683.63	135	2650.2	135.16	
2-Aug		11:29:00	2720.75	135	2679.29	135.17	
2-Aug		11:30:00	2755.81	135.07	2711.4	135.25	
2-Aug		11:31:00	2788.37	135.2	2742.07	135.38	
2-Aug		11:32:00	2818.79	135.35	2773.21	135.54	
2-Aug		11:33:00	2846.84	135.54	2803.35	135.72	
2-Aug		11:34:00	2872.38	135.73	2832.04	135.92	
2-Aug		11:35:00	2896.09	135.93	2859.82	136.11	
2-Aug		11:36:00	2917.7	136.12	2885.52	136.3	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
2-Aug		11:37:00	2937.3	136.3	2908.49	136.48	
2-Aug		11:38:00	2955.29	136.48	2927.93	136.65	
2-Aug							
2-Aug	50	11:39:00	2972.31	136.65	2948.16	136.81	Shut in well at choke manifold
2-Aug							THP 1693 psia
2-Aug		11:39:00	2972.31	136.65	2948.16	136.81	
2-Aug		11:49:00	3564.19	139.77	3506.01	139.93	
2-Aug		11:59:00	3790.71	141.92	3769.13	142	
2-Aug							
2-Aug	51	12:00:00	3804.74	142.04	3785.29	142.12	Slickline rih and close SSD 2458 sands
2-Aug							
2-Aug		12:09:00	3884.76	142.85	3880.38	142.92	
2-Aug		12:19:00	3909.67	143.25	3910.58	143.33	
2-Aug		12:29:00	4060.43	143.64	4053.16	143.72	
2-Aug		12:39:00	4170.54	144.11	4169.51	144.17	
2-Aug		12:49:00	4210.99	144.31	4210.44	144.37	
2-Aug		12:59:00	4242.64	144.38	4243.04	144.44	
2-Aug							
2-Aug	52	13:00:00	4237.91	144.38	4241.73	144.45	Open well on 16/64 choke
2-Aug							(2809 sands - Test) THP 2653 psia
2-Aug		13:00:00	4237.91	144.38	4241.73	144.45	
2-Aug							
2-Aug	53	13:01:00	4201.66	144.38	4203.02	144.44	Increase choke to 20/64 THP 2620 psia
2-Aug							
2-Aug		13:01:00	4201.66	144.38	4203.02	144.44	
2-Aug							
2-Aug	54	13:02:00	4146.62	144.37	4147.08	144.43	Increase choke to 24/64 THP 2568 psia
2-Aug							
2-Aug		13:02:00	4146.62	144.37	4147.08	144.43	
2-Aug							
2-Aug	55	13:03:00	4076.32	144.35	4075.75	144.41	Increase choke to 28/64 THP 2505 psia
2-Aug							
2-Aug		13:03:00	4076.32	144.35	4075.75	144.41	
2-Aug		13:04:00	3993.66	144.31	3993.44	144.37	
2-Aug							
2-Aug	56	13:05:00	3918.59	144.24	3918.68	144.3	Increase choke to 32/64 THP 2373 psia
2-Aug							
2-Aug		13:05:00	3918.59	144.24	3918.68	144.3	
2-Aug		13:06:00	3826.98	144.13	3826.49	144.19	
2-Aug							
2-Aug	57	13:07:00	3739.09	143.95	3739.17	144.01	Increase choke to 36/64 THP 2218 psia
2-Aug							
2-Aug		13:07:00	3739.09	143.95	3739.17	144.01	
2-Aug		13:08:00	3636.2	143.69	3635.8	143.76	
2-Aug		13:09:00	3549.76	143.35	3552.19	143.42	
2-Aug							
2-Aug	58	13:10:00	3478.89	142.95	3479.73	143.03	Increase choke to 40/64 THP 2044 psia
2-Aug							
2-Aug		13:10:00	3478.89	142.95	3479.73	143.03	
2-Aug		13:11:00	3396.94	142.5	3398.02	142.59	
2-Aug		13:12:00	3311.89	142.03	3311.65	142.12	
2-Aug							

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
2-Aug	59	13:13:00	3228.87	141.54	3228.68	141.62	Increase choke to 44/64 THP 1918 psia
2-Aug							
2-Aug		13:13:00	3228.87	141.54	3228.68	141.62	
2-Aug		13:14:00	3140.49	141.03	3140.98	141.1	
2-Aug		13:15:00	3054.16	140.5	3054.58	140.57	
2-Aug		13:16:00	2971.44	139.95	2972.39	140.01	
2-Aug		13:17:00	2896.65	139.38	2894.47	139.44	
2-Aug		13:18:00	2821.09	138.81	2820.72	138.87	
2-Aug		13:19:00	2750.12	138.23	2752.82	138.3	
2-Aug		13:20:00	2702.09	137.68	2703.2	137.75	
2-Aug		13:21:00	2654.62	137.15	2656.3	137.24	
2-Aug		13:22:00	2594.33	136.66	2594.77	136.74	
2-Aug		13:23:00	2538.19	136.16	2538.15	136.25	
2-Aug		13:24:00	2490.25	135.65	2488.29	135.74	
2-Aug		13:25:00	2450.52	135.14	2451.49	135.24	
2-Aug		13:26:00	2418.52	134.67	2419.41	134.77	
2-Aug		13:27:00	2365.89	134.23	2367.35	134.33	
2-Aug		13:28:00	2330	133.8	2327.17	133.9	
2-Aug		13:29:00	2297.01	133.37	2298.28	133.48	
2-Aug		13:30:00	2271.56	132.98	2273.57	133.09	
2-Aug		13:31:00	2244.53	132.62	2246.54	132.72	
2-Aug		13:32:00	2199.23	132.29	2199.04	132.4	
2-Aug		13:33:00	2149.93	131.94	2149.54	132.06	
2-Aug		13:34:00	2104.35	131.56	2104.18	131.68	
2-Aug		13:35:00	2065.52	131.15	2065.98	131.26	
2-Aug		13:36:00	2048.21	130.72	2050.4	130.83	
2-Aug		13:37:00	2031.02	130.31	2033.44	130.43	
2-Aug		13:38:00	2015.34	129.96	2016.72	130.08	
2-Aug		13:39:00	1975.64	129.63	1975.74	129.76	
2-Aug		13:40:00	1935.86	129.31	1936.36	129.44	
2-Aug		13:41:00	1902.84	128.97	1904.16	129.09	
2-Aug		13:42:00	1875.59	128.61	1875.2	128.73	
2-Aug		13:43:00	1849.18	128.23	1849.99	128.35	
2-Aug		13:44:00	1819.81	127.82	1821.38	127.94	
2-Aug		13:45:00	1805.74	127.37	1807.82	127.47	
2-Aug		13:46:00	1786.34	126.75	1788.71	126.84	
2-Aug		13:47:00	1769.75	126.27	1771.76	126.38	
2-Aug		13:48:00	1753.62	125.96	1755.59	126.07	
2-Aug		13:49:00	1737.09	125.73	1739.21	125.84	
2-Aug							
2-Aug	60	13:50:00	1721.56	125.55	1723.17	125.67	Flowing waxy oil
2-Aug							
2-Aug		13:50:00	1721.56	125.55	1723.17	125.67	
2-Aug		13:51:00	1706.4	125.39	1708.27	125.51	
2-Aug		13:52:00	1691.12	125.24	1693.12	125.37	
2-Aug		13:53:00	1677.31	125.09	1678.86	125.23	
2-Aug		13:54:00	1663.28	124.95	1665.18	125.09	
2-Aug		13:55:00	1649.16	124.81	1650.75	124.95	
2-Aug		13:56:00	1635.73	124.68	1637.71	124.82	
2-Aug		13:57:00	1622.55	124.54	1623.83	124.68	
2-Aug		13:58:00	1610.11	124.41	1612.3	124.55	
2-Aug		13:59:00	1598.35	124.28	1599.91	124.41	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
2-Aug		14:00:00	1585.91	124.15	1587.61	124.28	
2-Aug		14:01:00	1573.84	124.02	1575.32	124.15	
2-Aug		14:02:00	1562.82	123.89	1564.73	124.02	
2-Aug		14:03:00	1551.69	123.75	1553.51	123.88	
2-Aug		14:04:00	1541.07	123.62	1543.14	123.75	
2-Aug		14:05:00	1531.55	123.49	1533.48	123.63	
2-Aug		14:06:00	1522.84	123.37	1524.78	123.51	
2-Aug		14:07:00	1515.03	123.25	1517.01	123.39	
2-Aug		14:08:00	1507.58	123.14	1509.53	123.28	
2-Aug		14:09:00	1499.94	123.03	1502.04	123.18	
2-Aug		14:10:00	1492.39	122.93	1494.43	123.08	
2-Aug		14:11:00	1484.6	122.84	1487.19	122.99	
2-Aug		14:12:00	1476.81	122.74	1479.31	122.89	
2-Aug		14:13:00	1469.12	122.64	1470.97	122.79	
2-Aug		14:14:00	1461.28	122.54	1463.49	122.69	
2-Aug		14:15:00	1453.64	122.43	1455.75	122.59	
2-Aug		14:16:00	1445.83	122.33	1448.01	122.48	
2-Aug		14:17:00	1439.47	122.22	1441.02	122.38	
2-Aug		14:18:00	1432.28	122.12	1434.82	122.27	
2-Aug		14:19:00	1426.24	122.01	1428.3	122.17	
2-Aug		14:20:00	1419.76	121.92	1421.93	122.07	
2-Aug		14:21:00	1413.33	121.83	1415.55	121.99	
2-Aug		14:22:00	1407.78	121.74	1409.55	121.9	
2-Aug		14:23:00	1401.66	121.65	1403.96	121.81	
2-Aug		14:24:00	1396.1	121.56	1398.31	121.72	
2-Aug		14:25:00	1390.27	121.46	1392.27	121.62	
2-Aug		14:26:00	1384.5	121.37	1386.71	121.54	
2-Aug		14:27:00	1379.3	121.29	1381.23	121.45	
2-Aug		14:28:00	1373.78	121.21	1375.79	121.37	
2-Aug		14:29:00	1368.06	121.12	1370.38	121.28	
2-Aug		14:30:00	1363.09	121.04	1365.07	121.2	
2-Aug		14:31:00	1358.16	120.96	1359.75	121.12	
2-Aug		14:32:00	1353.27	120.88	1355.36	121.04	
2-Aug		14:33:00	1348.64	120.8	1351.15	120.96	
2-Aug		14:34:00	1343.99	120.72	1346.44	120.88	
2-Aug		14:35:00	1339.75	120.64	1342.02	120.8	
2-Aug		14:36:00	1335.98	120.57	1338.1	120.73	
2-Aug		14:37:00	1332.34	120.5	1334.37	120.67	
2-Aug		14:38:00	1328.4	120.44	1330.93	120.6	
2-Aug		14:39:00	1324.97	120.37	1327.47	120.54	
2-Aug		14:40:00	1321.85	120.31	1323.81	120.48	
2-Aug		14:41:00	1318.25	120.25	1320.05	120.42	
2-Aug		14:42:00	1315.1	120.19	1317.59	120.36	
2-Aug		14:43:00	1311.98	120.14	1314.75	120.31	
2-Aug		14:44:00	1309.02	120.08	1311.32	120.25	
2-Aug		14:45:00	1306.2	120.03	1308.36	120.2	
2-Aug		14:46:00	1303.36	119.98	1305.62	120.15	
2-Aug		14:47:00	1300.74	119.93	1302.92	120.11	
2-Aug		14:48:00	1297.95	119.88	1300.32	120.06	
2-Aug		14:49:00	1295.86	119.84	1298.18	120.01	
2-Aug		14:50:00	1294.23	119.8	1297.06	119.97	
2-Aug		14:51:00	1292.47	119.76	1295.18	119.92	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
2-Aug		14:52:00	1291.19	119.73	1293.36	119.89	
2-Aug		14:53:00	1289.94	119.7	1292.46	119.87	
2-Aug		14:54:00	1288.9	119.67	1291.31	119.84	
2-Aug		14:55:00	1287.65	119.65	1290.01	119.82	
2-Aug		14:56:00	1286.41	119.63	1288.99	119.8	
2-Aug		14:57:00	1284.44	119.6	1286.49	119.77	
2-Aug		14:58:00	1282.37	119.58	1284.68	119.75	
2-Aug		14:59:00	1280.39	119.55	1282.88	119.72	
2-Aug							
2-Aug	61	15:00:00	1278.62	119.53	1280.7	119.69	Flowing waxy oil
2-Aug							
2-Aug		15:00:00	1278.62	119.53	1280.7	119.69	
2-Aug		15:01:00	1276.77	119.5	1279.04	119.66	
2-Aug		15:02:00	1275.12	119.46	1277.47	119.63	
2-Aug		15:03:00	1273.29	119.43	1275.69	119.6	
2-Aug		15:04:00	1271.67	119.4	1274.43	119.57	
2-Aug		15:05:00	1270.41	119.37	1272.77	119.54	
2-Aug		15:06:00	1268.84	119.35	1271.27	119.52	
2-Aug		15:07:00	1267.45	119.32	1269.93	119.49	
2-Aug		15:08:00	1266.06	119.3	1268.53	119.47	
2-Aug		15:09:00	1264.93	119.27	1267.09	119.44	
2-Aug		15:10:00	1263.66	119.25	1265.97	119.42	
2-Aug							
2-Aug	62	15:11:00	1262.35	119.22	1265.13	119.4	Shut in well at choke manifold
2-Aug							
2-Aug		15:11:00	1262.35	119.22	1265.13	119.4	
2-Aug		15:12:00	1280.65	119.22	1276.67	119.41	
2-Aug		15:13:00	1310.1	119.4	1308.53	119.62	
2-Aug		15:14:00	1358.06	119.82	1353.97	120.08	
2-Aug		15:15:00	1414.29	120.42	1405.54	120.71	
2-Aug		15:16:00	1476.26	121.12	1465.9	121.43	
2-Aug		15:17:00	1537.47	121.87	1527.37	122.2	
2-Aug		15:18:00	1597.68	122.64	1586.99	122.98	
2-Aug		15:19:00	1657.8	123.41	1644.98	123.75	
2-Aug		15:20:00	1717.68	124.18	1700.8	124.52	
2-Aug		15:21:00	1776.46	124.93	1763.78	125.27	
2-Aug		15:22:00	1833.43	125.68	1819.84	126.02	
2-Aug		15:23:00	1889.21	126.42	1873.52	126.75	
2-Aug		15:24:00	1944.4	127.13	1930.77	127.46	
2-Aug		15:25:00	1998.87	127.83	1989.53	128.16	
2-Aug		15:26:00	2053.03	128.51	2044.49	128.84	
2-Aug		15:27:00	2106.81	129.17	2094.47	129.5	
2-Aug		15:28:00	2159.63	129.82	2149.02	130.14	
2-Aug		15:29:00	2212.18	130.45	2208.47	130.77	
2-Aug		15:30:00	2264.79	131.06	2256.32	131.37	
2-Aug		15:31:00	2317.21	131.65	2310.19	131.97	
2-Aug		15:32:00	2369.23	132.23	2359.34	132.54	
2-Aug		15:33:00	2420.9	132.8	2408.57	133.1	
2-Aug		15:34:00	2459.89	133.34	2446.99	133.64	
2-Aug							
2-Aug	63	15:35:00	2506.81	133.84	2492.62	134.12	Rih with slickline confirm SSD at 2809
2-Aug							sands open also open SSD 2755 sands

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
2-Aug		15:35:00	2506.81	133.84	2492.62	134.12	
2-Aug		15:36:00	2556.6	134.32	2540.58	134.6	
2-Aug		15:37:00	2606.53	134.8	2588.32	135.07	
2-Aug		15:38:00	2656.46	135.28	2641.71	135.55	
2-Aug		15:39:00	2705.51	135.75	2691.66	136.01	
2-Aug		15:40:00	2754.15	136.21	2741.3	136.47	
2-Aug		15:41:00	2802.65	136.67	2790.23	136.93	
2-Aug		15:42:00	2850.79	137.11	2833.76	137.37	
2-Aug		15:43:00	2898.61	137.54	2886.24	137.79	
2-Aug		15:44:00	2946.11	137.97	2922.8	138.21	
2-Aug		15:45:00	2993.21	138.38	2973.92	138.62	
2-Aug		15:46:00	3039.62	138.78	3021.87	139.02	
2-Aug		15:47:00	3085.79	139.18	3070.94	139.4	
2-Aug		15:48:00	3131.43	139.56	3114.79	139.78	
2-Aug		15:49:00	3176.71	139.93	3146.19	140.14	
2-Aug		15:50:00	3221.38	140.29	3187.17	140.5	
2-Aug		15:51:00	3265.86	140.64	3232.45	140.84	
2-Aug		15:52:00	3309.65	140.98	3277.78	141.18	
2-Aug		15:53:00	3352.87	141.31	3319.96	141.5	
2-Aug		15:54:00	3399.26	141.63	3365.92	141.82	
2-Aug		15:55:00	3442.65	141.95	3410.98	142.14	
2-Aug		15:56:00	3482.33	142.26	3453.81	142.44	
2-Aug		15:57:00	3521.12	142.56	3495.03	142.73	
2-Aug		15:58:00	3559.7	142.85	3534.47	143	
2-Aug							
2-Aug	64	15:59:00	3707.73	143.12	3673.88	143.27	Sudden increase in THP noticed on
2-Aug							opening of sleeve THP 2759 psia
2-Aug		15:59:00	3707.73	143.12	3673.88	143.27	
2-Aug		16:00:00	3903.98	143.57	3913.77	143.76	
2-Aug		16:01:00	4034.55	144.21	4043.75	144.38	
2-Aug		16:02:00	4116.78	144.83	4112.68	144.97	
2-Aug		16:03:00	4143.62	145.3	4136.24	145.44	
2-Aug		16:04:00	4151.1	145.61	4147.13	145.73	
2-Aug							
2-Aug	65	16:05:00	4153.22	145.82	4153.42	145.91	Pull out of hole with slickline unable to
2-Aug							pass 2940 mdkb THP 3135 psia
2-Aug		16:05:00	4153.22	145.82	4153.42	145.91	
2-Aug		16:06:00	4154.05	145.96	4155.87	146.03	
2-Aug		16:07:00	4155.2	146.05	4157.32	146.11	
2-Aug		16:08:00	4156.06	146.12	4158.49	146.18	
2-Aug		16:09:00	4157.14	146.16	4159.34	146.23	
2-Aug		16:10:00	4158.14	146.2	4160.28	146.27	
2-Aug		16:11:00	4160.06	146.24	4161.74	146.3	
2-Aug		16:12:00	4162.2	146.27	4163.86	146.32	
2-Aug		16:13:00	4164.57	146.31	4166.13	146.35	
2-Aug		16:14:00	4167.06	146.34	4168.68	146.39	
2-Aug		16:15:00	4169.64	146.37	4171.27	146.42	
2-Aug		16:16:00	4172.88	146.4	4174.43	146.45	
2-Aug		16:17:00	4176.8	146.42	4178.35	146.47	
2-Aug		16:18:00	4181.06	146.44	4182.62	146.49	
2-Aug		16:19:00	4184.71	146.45	4186.38	146.5	
2-Aug		16:20:00	4187.9	146.47	4189.6	146.51	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
2-Aug		16:50:00	4262.57	146.29	4263.84	146.34	
2-Aug		17:20:00	4290.06	145.78	4291.41	145.84	
2-Aug		17:50:00	4301.36	145.22	4302.49	145.28	
2-Aug		18:20:00	4304.06	144.83	4305.12	144.89	
2-Aug		18:50:00	4304.49	144.58	4305.51	144.65	
2-Aug							
2-Aug	66	18:52:00	4304.61	144.57	4305.6	144.64	Close slickline BOP
2-Aug							begin fishing operations
2-Aug		19:20:00	4306.8	144.34	4307.73	144.41	
2-Aug		19:50:00	4307.15	144.14	4308.12	144.21	
2-Aug		20:20:00	4306.73	144.08	4307.65	144.16	
2-Aug		20:50:00	4293.43	144.08	4294.78	144.15	
2-Aug		21:20:00	4293.84	143.98	4294.68	144.06	
2-Aug		21:50:00	4277.74	144.04	4279.47	144.12	
2-Aug		22:20:00	4272.81	144.1	4274.41	144.18	
2-Aug		22:50:00	4270.08	144.12	4271.64	144.2	
2-Aug		23:20:00	4267.52	144.14	4268.99	144.22	
2-Aug		23:50:00	4267.14	144.15	4268.21	144.24	
3-Aug		0:20:00	4266.6	144.16	4267.72	144.24	
3-Aug		0:50:00	4263.91	144.13	4265.31	144.22	
3-Aug		1:20:00	4262.3	144.12	4263.63	144.21	
3-Aug		1:50:00	4261.01	144.11	4262.13	144.2	
3-Aug		2:20:00	4260.6	144.11	4261.83	144.2	
3-Aug		2:50:00	4249.66	144.11	4251.32	144.2	
3-Aug		3:20:00	4239.79	144.11	4241.42	144.2	
3-Aug		3:50:00	4234.33	144.12	4235.91	144.21	
3-Aug		4:20:00	4231.64	144.13	4233.18	144.23	
3-Aug		4:50:00	4229.91	144.14	4231.47	144.24	
3-Aug		5:20:00	4228.9	144.15	4230.4	144.24	
3-Aug		5:50:00	4228.4	144.16	4229.62	144.25	
3-Aug		6:20:00	4228.26	144.17	4229.44	144.26	
3-Aug		6:50:00	4228.01	144.18	4229.22	144.27	
3-Aug		7:20:00	4227.74	144.18	4228.95	144.27	
3-Aug		7:50:00	4227.48	144.18	4228.68	144.28	
3-Aug		8:20:00	4227.19	144.19	4228.4	144.28	
3-Aug		8:50:00	4227.04	144.19	4228.24	144.29	
3-Aug		9:20:00	4226.87	144.19	4228.07	144.29	
3-Aug		9:50:00	4226.75	144.2	4227.96	144.29	
3-Aug		10:20:00	4226.61	144.2	4227.82	144.3	
3-Aug		10:50:00	4226.45	144.2	4227.66	144.3	
3-Aug		11:20:00	4226.37	144.21	4227.58	144.3	
3-Aug		11:50:00	4226.54	144.21	4227.73	144.31	
3-Aug		12:20:00	4226.65	144.22	4227.86	144.31	
3-Aug		12:50:00	4226.76	144.23	4227.97	144.32	
3-Aug		13:20:00	4226.73	144.23	4227.95	144.33	
3-Aug		13:50:00	4226.58	144.23	4227.81	144.33	
3-Aug		14:20:00	4226.41	144.24	4227.63	144.33	
3-Aug		14:50:00	4226.16	144.24	4227.37	144.34	
3-Aug		15:20:00	4226.14	144.24	4227.36	144.34	
3-Aug		15:50:00	4219.76	144.23	4220.82	144.33	
3-Aug		16:20:00	4224.36	144.26	4225.69	144.35	
3-Aug		16:50:00	4224.8	144.26	4226.04	144.36	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
3-Aug		17:20:00	4224.63	144.26	4225.85	144.36	
3-Aug							
3-Aug	67	17:40:00	4221.77	144.26	4223.24	144.36	Open well on 12/64 choke attempt to
3-Aug							dislodge fish THP 3181 psia
3-Aug		17:50:00	4162.93	144.18	4164.55	144.28	
3-Aug							
3-Aug	68	17:54:00	4145.26	144.14	4145.59	144.24	Increase choke to 16/64 THP 3113 psia
3-Aug							
3-Aug	69	18:06:00	4096.56	143.97	4096.56	144.08	Increase choke to 20/64 THP 3073 psia
3-Aug							
3-Aug	70	18:08:00	4076.56	143.94	4077.81	144.04	Fully open gas manifold to flare
3-Aug							
3-Aug		18:20:00	4069.39	143.83	4070.95	143.94	
3-Aug							
3-Aug	71	18:25:00	4070.52	143.84	4071.9	143.95	Increase choke to 24/64 THP 3050 psia
3-Aug							
3-Aug	72	18:48:00	4026.64	143.73	4027.41	143.83	Increase choke to 28/64 THP 3020 psia
3-Aug							
3-Aug		18:50:00	3996.35	143.73	3997.36	143.83	
3-Aug		19:20:00	3987.98	143.7	3989.09	143.81	
3-Aug		19:50:00	4003.18	143.88	4004.71	143.98	
3-Aug		20:20:00	4014.96	144.01	4017.01	144.12	
3-Aug							
3-Aug	73	20:49:00	4021.83	144.09	4023.27	144.19	Shut in well at choke manifold
3-Aug							
3-Aug		20:50:00	4064.81	144.09	4058.23	144.19	
3-Aug							
3-Aug	74	20:55:40	4156.3	144.34	4157.58	144.43	Slickline attempting jar wire from fish
3-Aug							
3-Aug		21:20:00	4184.34	144.66	4185.65	144.75	
3-Aug		21:50:00	4197.5	144.68	4198.84	144.77	
3-Aug							
3-Aug	75	21:53:00	4198.38	144.67	4199.8	144.77	Stop jarring
3-Aug							
3-Aug	76	22:08:00	4201.96	144.66	4203.32	144.75	Open well on 16/64 choke attempt to
3-Aug							dislodge fish THP 3094 psia
3-Aug							
3-Aug	77	22:11:00	4165.49	144.64	4166.29	144.73	Increase choke to 20/64 THP 3062 psia
3-Aug							
3-Aug	78	22:15:00	4104.48	144.56	4105.4	144.65	Increase choke to 24/64 THP 2995 psia
3-Aug							
3-Aug	79	22:20:00	4006.57	144.3	4007.41	144.39	Continue to jar on wire while flowing well
3-Aug							
3-Aug		22:20:00	4006.57	144.3	4007.41	144.39	
3-Aug							
3-Aug	80	22:48:00	4005.34	143.97	4006.71	144.07	Stop jarring
3-Aug							
3-Aug		22:50:00	4006.34	143.99	4008	144.09	
3-Aug							
3-Aug	81	22:51:00	4055.27	144	4051.62	144.11	Shut in well at choke manifold continue
3-Aug							with fishing operations
3-Aug							

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
3-Aug	82	22:55:00	4146.29	144.2	4147.27	144.31	Close slickline BOP
3-Aug							
3-Aug		23:20:00	4184.56	144.7	4185.9	144.79	
3-Aug		23:50:00	4200.37	144.74	4201.85	144.84	
3-Aug							
3-Aug	83	23:53:00	4200.82	144.74	4202.25	144.83	Equalise slickline BOP
4-Aug							
4-Aug	84	0:10:00	4202.17	144.72	4203.58	144.81	Run in hole with blind box cut wire at
4-Aug							2915 mdkb thp 3062 psia
4-Aug		0:20:00	4202.19	144.71	4203.88	144.8	
4-Aug		0:50:00	4204.33	144.77	4205.95	144.86	
4-Aug		1:20:00	4232.31	144.97	4234.08	145.06	
4-Aug		1:50:00	4237.76	145.1	4239.74	145.19	
4-Aug		2:20:00	4239.83	145.24	4241.74	145.33	
4-Aug							
4-Aug	85	2:39:00	4230.83	145.28	4232.62	145.36	Close Master valve
4-Aug							
4-Aug		2:50:00	4222.21	145.35	4223.97	145.44	
4-Aug							
4-Aug	86	3:07:00	4220.85	145.56	4221.42	145.66	Open master valve
4-Aug							
4-Aug	87	3:20:00	4219.93	145.75	4222	145.86	Run in hole with wire finder
4-Aug							THP 3170 psia
4-Aug		3:20:00	4219.93	145.75	4222	145.86	
4-Aug		3:50:00	4230.69	146.16	4233.38	146.27	
4-Aug							
4-Aug	88	3:55:00	4230.24	146.22	4232.94	146.33	Close slickline BOP
4-Aug							
4-Aug		4:20:00	4231.97	146.48	4234.53	146.59	
4-Aug		4:50:00	4229.97	146.7	4232.71	146.82	
4-Aug							
4-Aug	89	5:08:00	4219.19	146.78	4221.17	146.89	Open slickline BOP
4-Aug							
4-Aug	90	5:15:00	4224.56	146.84	4226.81	146.96	Run in hole with wire finder
4-Aug							THP 3167 psia
4-Aug		5:20:00	4226.03	146.88	4228.4	146.99	
4-Aug		5:50:00	4227.57	147	4230.23	147.11	
4-Aug		6:20:00	4227.32	147.09	4229.95	147.2	
4-Aug							
4-Aug	91	6:38:00	4226.11	147.12	4228.71	147.24	Close master valve
4-Aug							
4-Aug		6:50:00	4225.64	147.15	4228.24	147.26	
4-Aug							
4-Aug	92	7:02:00	4225	147.17	4227.62	147.28	Open master valve slickline run in
4-Aug							hole with scratcher
4-Aug		7:20:00	4221.05	147.21	4223.5	147.33	
4-Aug		7:50:00	4223.8	147.26	4226.25	147.37	
4-Aug							
4-Aug	93	8:10:00	4223.79	147.27	4226.25	147.38	Close slickline BOP wire at surface
4-Aug							
4-Aug		8:20:00	4223.62	147.28	4226.22	147.39	
4-Aug							

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
4-Aug	94	8:45:00	4215.87	147.27	4218.15	147.38	Equalise and open BOP wire at surface
4-Aug							
4-Aug		8:50:00	4219.64	147.29	4221.97	147.41	
4-Aug							
4-Aug	95	9:13:00	4215.24	147.31	4217.34	147.43	Close slickline BOP wire at surface
4-Aug							
4-Aug		9:20:00	4220.75	147.35	4223	147.46	
4-Aug							
4-Aug	96	9:41:00	4220.36	147.37	4223.24	147.48	Equalise and open BOP wire at surface
4-Aug							
4-Aug		9:50:00	4224.14	147.36	4226.32	147.47	
4-Aug		10:20:00	4216.22	147.35	4218.79	147.46	
4-Aug		10:50:00	4227.43	147.43	4229.82	147.54	
4-Aug		11:20:00	4221.07	147.38	4223.29	147.49	
4-Aug							
4-Aug	97	11:30:00	4227.59	147.4	4229.98	147.51	Close BOP wire at surface back feed
4-Aug							wire through lub and stuffing box
4-Aug		11:50:00	4229.01	147.4	4231.59	147.52	
4-Aug		12:20:00	4227.26	147.4	4230.26	147.51	
4-Aug		12:50:00	4225.89	147.41	4228.9	147.53	
4-Aug		13:20:00	4224.92	147.43	4227.99	147.54	
4-Aug		13:50:00	4224.29	147.45	4227.2	147.56	
4-Aug							
4-Aug	98	14:00:00	4222.23	147.44	4224.72	147.55	Equalise and open BOP commence
4-Aug							pulling wire from hole
4-Aug							
4-Aug	99	14:15:00	4223.6	147.46	4226.16	147.58	Unable to pull more than few meters
4-Aug							from hole close slickline BOP
4-Aug		14:20:00	4223.81	147.47	4226.35	147.58	
4-Aug		14:50:00	4223.59	147.49	4226.15	147.6	
4-Aug							
4-Aug	100	14:56:00	4219.78	147.47	4222.32	147.59	Equalise and open BOP rig up glycol
4-Aug							injection line
4-Aug		15:20:00	4222.85	147.5	4225.36	147.61	
4-Aug							
4-Aug	101	15:46:00	4222.19	147.51	4224.68	147.62	Still unable to move wire close BOP
4-Aug							
4-Aug		15:50:00	4222.34	147.52	4224.89	147.63	
4-Aug							
4-Aug	102	16:00:00	4222.57	147.52	4225.08	147.63	Lift stuffing box ball of wire found
4-Aug							
4-Aug	103	16:15:00	4222.51	147.52	4225.03	147.64	Function BOP small amount of gas
4-Aug							passing seals
4-Aug		16:20:00	4222.52	147.52	4225.02	147.64	
4-Aug							
4-Aug	104	16:30:00	4220.33	147.52	4222.78	147.63	Completion supervisor cut wire with
4-Aug							swab valve on tree
4-Aug		16:50:00	4221.88	147.54	4224.37	147.65	
4-Aug							
4-Aug	105	17:00:00	4222.03	147.54	4224.49	147.65	Shut down and redress BOP
4-Aug							
4-Aug		17:20:00	4221.92	147.54	4224.43	147.66	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
4-Aug		17:50:00	4221.72	147.55	4224.25	147.66	
4-Aug		18:20:00	4221.67	147.56	4224.17	147.67	
4-Aug		18:50:00	4221.92	147.57	4224.41	147.68	
4-Aug		19:20:00	4222.07	147.57	4224.6	147.69	
4-Aug		19:50:00	4222.12	147.58	4224.61	147.69	
4-Aug		20:20:00	4221.9	147.59	4224.44	147.7	
4-Aug		20:50:00	4221.67	147.59	4224.18	147.7	
4-Aug		21:20:00	4221.41	147.6	4223.93	147.71	
4-Aug		21:50:00	4221.21	147.61	4223.73	147.72	
4-Aug		22:20:00	4221.22	147.61	4223.73	147.73	
4-Aug		22:50:00	4221.25	147.62	4223.76	147.73	
4-Aug		23:20:00	4221.02	147.62	4223.58	147.74	
4-Aug		23:50:00	4220.88	147.63	4223.37	147.74	
5-Aug		0:20:00	4220.68	147.64	4223.14	147.75	
5-Aug		0:50:00	4220.43	147.64	4222.98	147.75	
5-Aug		1:20:00	4220.21	147.65	4222.74	147.76	
5-Aug		1:50:00	4220.05	147.65	4222.56	147.77	
5-Aug		2:20:00	4219.88	147.66	4222.38	147.77	
5-Aug		2:50:00	4219.66	147.66	4222.18	147.78	
5-Aug		3:20:00	4219.49	147.67	4222.04	147.78	
5-Aug		3:50:00	4219.32	147.67	4221.88	147.79	
5-Aug		4:20:00	4219.21	147.68	4221.73	147.79	
5-Aug		4:50:00	4219.05	147.69	4221.57	147.8	
5-Aug		5:20:00	4218.82	147.69	4221.37	147.8	
5-Aug		5:50:00	4218.69	147.7	4221.25	147.81	
5-Aug		6:20:00	4218.49	147.7	4221.03	147.81	
5-Aug		6:50:00	4218.26	147.71	4220.77	147.82	
5-Aug		7:20:00	4217.91	147.71	4220.45	147.82	
5-Aug		7:50:00	4217.5	147.72	4220.03	147.83	
5-Aug		8:20:00	4217.07	147.72	4219.64	147.83	
5-Aug		8:50:00	4216.76	147.73	4219.33	147.84	
5-Aug		9:20:00	4216.57	147.73	4219.08	147.85	
5-Aug		9:50:00	4216.4	147.74	4218.93	147.85	
5-Aug		10:20:00	4216.34	147.74	4218.86	147.86	
5-Aug							
5-Aug	106	10:31:00	4216.28	147.74	4218.82	147.86	Continue fishing operations after
5-Aug							BOP redress
5-Aug							
5-Aug	107	10:38:00	4182.69	147.64	4184.2	147.75	Open master valve slickline run in hole
5-Aug							and retrieve wire THP 3122 psia
5-Aug		10:50:00	4197.53	147.74	4199.98	147.86	
5-Aug		11:20:00	4200.44	147.79	4202.99	147.9	
5-Aug							
5-Aug	108	11:40:00	4200.63	147.8	4203.19	147.91	Wire to surface close slickline BOP
5-Aug							THP 3128 psia
5-Aug		11:50:00	4199.68	147.79	4202.22	147.91	
5-Aug							
5-Aug	109	12:15:00	4201.24	147.81	4203.83	147.92	Equalise and open BOP
5-Aug							
5-Aug		12:20:00	4192.49	147.8	4195.46	147.91	
5-Aug							
5-Aug	110	12:30:00	4202.18	147.81	4204.52	147.93	Pull up on slickline and close BOP

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
5-Aug							
5-Aug		12:50:00	4205.76	147.82	4208.37	147.94	
5-Aug		13:20:00	4205.1	147.82	4207.66	147.93	
5-Aug							
5-Aug	111	13:27:00	4205.39	147.82	4207.95	147.93	Reconfigure lubricator to allow retrieval
5-Aug							of wire from hole
5-Aug		13:50:00	4204.78	147.81	4207.58	147.93	
5-Aug		14:20:00	4204.31	147.82	4207.12	147.93	
5-Aug							
5-Aug	112	14:50:00	4199.61	147.81	4201.95	147.92	Equalise and open slickline BOP
5-Aug							THP 3129 psia
5-Aug		14:50:00	4199.61	147.81	4201.95	147.92	
5-Aug							
5-Aug	113	15:00:00	4202.76	147.82	4205.31	147.93	Recover wire from hole THP 3132 psia
5-Aug							
5-Aug		15:20:00	4203.16	147.83	4205.82	147.94	
5-Aug		15:50:00	4203.12	147.83	4205.7	147.94	
5-Aug		16:20:00	4202.85	147.83	4205.46	147.95	
5-Aug		16:50:00	4202.65	147.84	4205.27	147.95	
5-Aug							
5-Aug	114	17:04:00	4202.18	147.84	4204.8	147.95	Wire recovered from well shut in swab
5-Aug							valve
5-Aug							
5-Aug	115	17:20:00	4202.53	147.84	4205.15	147.96	Reconfigure lubricator and remove
5-Aug							spooled wire from slickline unit
5-Aug		17:20:00	4202.53	147.84	4205.15	147.96	
5-Aug		17:50:00	4202.57	147.85	4205.14	147.96	
5-Aug		18:20:00	4202.44	147.85	4205.06	147.96	
5-Aug		18:50:00	4202.35	147.85	4204.97	147.97	
5-Aug		19:20:00	4202.36	147.86	4204.94	147.97	
5-Aug		19:50:00	4202.3	147.86	4204.9	147.97	
5-Aug							
5-Aug	116	20:15:00	4202.33	147.86	4204.94	147.98	Open master valve
5-Aug							
5-Aug		20:20:00	4202.31	147.86	4204.94	147.98	
5-Aug		20:50:00	4202.29	147.87	4204.91	147.98	
5-Aug		21:20:00	4195.89	147.83	4198.49	147.95	
5-Aug							
5-Aug	117	21:24:00	4199.04	147.86	4201.63	147.98	Run in hole with 3.22 LIB
5-Aug							THP 3123 psia
5-Aug		21:50:00	4202.05	147.88	4204.67	148	
5-Aug		22:20:00	4202.42	147.88	4205.03	147.99	
5-Aug							
5-Aug	118	22:40:00	4202.19	147.88	4204.91	147.99	Close swab valve on production tree
5-Aug							
5-Aug		22:50:00	4202.28	147.88	4204.85	148	
5-Aug							
5-Aug	119	23:07:00	4202.47	147.88	4205.02	148	Open swab valve on production tree
5-Aug							
5-Aug	120	23:11:00	4190.6	147.83	4193.23	147.94	Run in hole with 2.5 RJ pulling tool
5-Aug							THP 3114 psia
5-Aug		23:20:00	4199.77	147.88	4202.42	148	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
5-Aug		23:50:00	4205.77	147.9	4208.4	148.01	
5-Aug							
6-Aug	121	0:13:00	4204.2	147.89	4207.15	148	Out of hole with top GO Devil close
6-Aug							swab valve on production tree
6-Aug		0:20:00	4203.82	147.88	4206.79	148	
6-Aug		0:50:00	4203.76	147.89	4206.45	148	
6-Aug							
6-Aug	122	0:52:00	4203.82	147.89	4206.44	148	Open swab valve on production tree run
6-Aug							in hole with 3.22 LIB THP 3123 psia
6-Aug		1:20:00	4202.62	147.9	4205.28	148.02	
6-Aug							
6-Aug	123	1:25:00	4202.54	147.9	4205.29	148.02	Open swab valve on production tree
6-Aug							
6-Aug	124	1:42:00	4202.71	147.9	4205.33	148.01	Open well leak at lubricator close well
6-Aug							
6-Aug		1:50:00	4202.92	147.9	4205.58	148.01	
6-Aug		2:20:00	4201.68	147.89	4204.52	148.01	
6-Aug							
6-Aug	125	2:34:00	4201.33	147.9	4204.25	148.01	Open swab valve on production tree
6-Aug							
6-Aug	126	2:40:00	4192.11	147.85	4194.93	147.96	Run in hole with 2.5 RB pulling tool
6-Aug							THP 3117 psia
6-Aug		2:50:00	4198.54	147.9	4201.24	148.02	
6-Aug		3:20:00	4201.33	147.91	4204	148.03	
6-Aug							
6-Aug	127	3:26:00	4201.43	147.91	4204.2	148.03	Out of hole with bottom GO Devil
6-Aug							close swab valve on production tree
6-Aug		3:50:00	4201.93	147.91	4204.59	148.03	
6-Aug							
6-Aug	128	3:54:00	4201.86	147.91	4204.53	148.03	Open swab valve on production tree
6-Aug							
6-Aug	129	3:57:00	4187.19	147.87	4190.28	147.98	Run in hole with 3.22 LIB
6-Aug							THP 3111 psia
6-Aug		4:20:00	4200.97	147.92	4203.63	148.04	
6-Aug		4:50:00	4202.07	147.92	4204.73	148.04	
6-Aug		5:20:00	4201.85	147.92	4204.44	148.03	
6-Aug							
6-Aug	130	5:26:00	4201.92	147.92	4204.68	148.03	Out of hole with Slickline close swab
6-Aug							valve on production tree
6-Aug		5:50:00	4201.63	147.92	4204.33	148.03	
6-Aug		6:20:00	4201.63	147.92	4204.27	148.04	
6-Aug		6:50:00	4201.57	147.92	4204.16	148.04	
6-Aug							
6-Aug	131	7:12:00	4198.57	147.92	4182.23	148.04	Open swab valve on production tree
6-Aug							THP 3120 psia
6-Aug							
6-Aug	132	7:13:00	4178.34	147.91	4183.07	148.01	Run in hole with pulling tool latch fish
6-Aug							and work free pull out of hole
6-Aug		7:20:00	4196.29	147.9	4198.99	148.02	
6-Aug		7:50:00	4201.35	147.94	4204.03	148.05	
6-Aug		8:20:00	4202.07	147.93	4205.08	148.05	
6-Aug		8:50:00	4201.81	147.93	4204.59	148.04	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
6-Aug		9:20:00	4201.39	147.93	4204.24	148.05	
6-Aug							
6-Aug	133	9:24:04	4201.28	147.93	4204.21	148.05	Out of hole close in swab valve on
6-Aug							production tree
6-Aug		9:50:00	4201.1	147.93	4203.92	148.05	
6-Aug		10:20:00	4201.06	147.94	4203.67	148.05	
6-Aug		10:50:00	4201.35	147.94	4203.51	148.06	
6-Aug		11:20:00	4183.44	147.84	4186.32	147.97	
6-Aug							
6-Aug	134	11:30:00	4199.59	147.95	4202.39	148.07	Open well and run in hole with
6-Aug							wire spear
6-Aug		11:50:00	4209.32	147.98	4211.97	148.1	
6-Aug		12:20:00	4208.51	147.95	4211.57	148.07	
6-Aug							
6-Aug	135	12:36:00	4208.1	147.95	4210.94	148.06	Close swab valve on production tree
6-Aug							THP 3124 psia
6-Aug		12:50:00	4207.82	147.95	4210.68	148.06	
6-Aug		13:20:00	4206.84	147.94	4210.04	148.06	
6-Aug							
6-Aug	136	13:31:00	4182.47	147.83	4182.88	147.95	Open well and run in hole with 4 prong
6-Aug							spear THP 3127 psia
6-Aug		13:50:00	4200.27	147.97	4202.95	148.09	
6-Aug		14:20:00	4202.09	147.97	4204.77	148.09	
6-Aug		14:50:00	4204.43	147.98	4207.13	148.09	
6-Aug							
6-Aug	137	15:00:00	4206.58	147.98	4209.27	148.1	Out of hole close production tree swab
6-Aug							valve approx 20 mtrs wire
6-Aug		15:20:00	4207.83	147.97	4210.56	148.09	
6-Aug		15:50:00	4206.03	147.96	4209.04	148.08	
6-Aug							
6-Aug	138	16:12:00	4167.05	147.85	4172.84	147.96	Open master valve leak in lubricator
6-Aug							close master valve
6-Aug		16:20:00	4192.53	147.94	4194.6	148.06	
6-Aug							
6-Aug	139	16:34:00	4197.83	147.98	4192.48	148.09	Open well and run in hole with 3.22 LIB
6-Aug							
6-Aug		16:50:00	4198.65	148	4201.35	148.11	
6-Aug		17:20:00	4201.86	148	4204.72	148.11	
6-Aug		17:50:00	4204.9	147.99	4207.52	148.11	
6-Aug							
6-Aug	140	17:55:00	4204.66	147.99	4207.31	148.11	Out of hole with slickline shut in swab
6-Aug							valve on production tree
6-Aug		18:20:00	4204.49	147.99	4207.12	148.1	
6-Aug							
6-Aug	141	18:22:04	4204.45	147.98	4207.08	148.1	Open swab valve on production tree
6-Aug							run in hole to open SSD 2809 sands
6-Aug		18:50:00	4204.14	148	4207.7	148.11	
6-Aug		19:20:00	4204.86	147.99	4207.63	148.11	
6-Aug		19:50:00	4205.12	147.99	4207.98	148.11	
6-Aug							
6-Aug	142	20:01:04	4204.61	147.99	4207.03	148.1	Close swab valve on production tree
6-Aug							

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
6-Aug		20:20:00	4205.06	147.99	4207.54	148.11	
6-Aug							
6-Aug	143	20:41:00	4204.91	147.99	4206.99	148.11	Open well on 16/64 choke
6-Aug							(TEST 2809 SANDS)
6-Aug							
6-Aug	144	20:44:00	4157.94	147.91	4158.99	148.01	Increase choke to 20/64 THP 3090 psia
6-Aug							
6-Aug	145	20:50:00	4085.33	147.6	4087.34	147.7	Increase choke to 24/64 THP 3037 psia
6-Aug							
6-Aug		20:50:00	4085.33	147.6	4087.34	147.7	
6-Aug		20:51:00	4068	147.57	4064.39	147.66	
6-Aug		20:52:00	4050.28	147.53	4049.81	147.62	
6-Aug		20:53:00	4040.74	147.47	4041.69	147.56	
6-Aug		20:54:00	4035.35	147.42	4037.13	147.51	
6-Aug							
6-Aug	146	20:55:00	4032.57	147.38	4034.87	147.48	Increase choke to 28/64 THP 2999 psia
6-Aug							
6-Aug		20:55:00	4032.57	147.38	4034.87	147.48	
6-Aug		20:56:00	4015.12	147.35	4011.24	147.45	
6-Aug		20:57:00	3997.16	147.31	3996.4	147.4	
6-Aug		20:58:00	3987.18	147.25	3987.63	147.34	
6-Aug		20:59:00	3980.86	147.19	3982.79	147.28	
6-Aug							
6-Aug	147	21:00:00	3977.86	147.14	3979.9	147.24	Increase choke to 32/64 THP 2962 psia
6-Aug							
6-Aug		21:00:00	3977.86	147.14	3979.9	147.24	
6-Aug		21:01:00	3956.51	147.1	3953.66	147.2	
6-Aug		21:02:00	3941.23	147.06	3941.65	147.14	
6-Aug		21:03:00	3934.36	147	3936.32	147.09	
6-Aug		21:04:00	3931.03	146.96	3933.56	147.06	
6-Aug							
6-Aug	148	21:05:00	3929.85	146.94	3932.68	147.05	Increase choke to 36/64 THP 2928 psia
6-Aug							
6-Aug		21:05:00	3929.85	146.94	3932.68	147.05	
6-Aug		21:06:00	3913.48	146.93	3909.41	147.04	
6-Aug		21:07:00	3894.99	146.92	3894.24	147.01	
6-Aug		21:08:00	3885.31	146.87	3886.68	146.96	
6-Aug		21:09:00	3880.7	146.82	3882.89	146.92	
6-Aug							
6-Aug	149	21:10:00	3878.57	146.79	3881.27	146.89	Increase choke to 40/64 THP 2893 psia
6-Aug							
6-Aug		21:10:00	3878.57	146.79	3881.27	146.89	
6-Aug		21:11:00	3861.82	146.77	3857.33	146.87	
6-Aug		21:12:00	3841	146.73	3840.12	146.83	
6-Aug		21:13:00	3830.12	146.68	3830.79	146.77	
6-Aug		21:14:00	3821.24	146.64	3821.71	146.74	
6-Aug							
6-Aug	150	21:15:00	3812.24	146.63	3813.71	146.77	Increase choke to 44/64 THP 2841 psia
6-Aug							
6-Aug		21:15:00	3812.24	146.63	3813.71	146.77	
6-Aug		21:16:00	3794.3	146.67	3787.47	146.8	
6-Aug		21:17:00	3766.66	146.65	3763.74	146.72	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
6-Aug		21:18:00	3749.87	146.53	3749.68	146.59	
6-Aug		21:19:00	3740.4	146.4	3742.17	146.46	
6-Aug							
6-Aug	151	21:20:00	3736.1	146.31	3737.05	146.39	Increase choke to 46/64 THP 2755 psia
6-Aug							
6-Aug		21:20:00	3736.1	146.31	3737.05	146.39	
6-Aug		21:21:00	3722.97	146.26	3722.8	146.35	
6-Aug		21:22:00	3713.37	146.21	3715.17	146.31	
6-Aug		21:23:00	3709.82	146.19	3712.07	146.29	
6-Aug		21:24:00	3708.68	146.16	3711.78	146.26	
6-Aug		21:25:00	3710.1	146.14	3713.46	146.24	
6-Aug		21:26:00	3712.86	146.12	3715.34	146.22	
6-Aug		21:27:00	3715.59	146.09	3718.35	146.19	
6-Aug		21:28:00	3717.96	146.07	3720.93	146.17	
6-Aug		21:29:00	3720.67	146.06	3723.48	146.16	
6-Aug		21:30:00	3724.87	146.05	3728.31	146.17	
6-Aug		21:31:00	3728.6	146.06	3732.66	146.18	
6-Aug		21:32:00	3733.37	146.08	3736.03	146.21	
6-Aug		21:33:00	3734.3	146.11	3736.59	146.23	
6-Aug		21:34:00	3739.75	146.13	3743.9	146.25	
6-Aug							
6-Aug	152	21:35:00	3744.43	146.16	3746.77	146.28	Increase choke to 48/64 THP 2753 psia
6-Aug							
6-Aug		21:35:00	3744.43	146.16	3746.77	146.28	
6-Aug		21:36:00	3734.22	146.18	3732.73	146.3	
6-Aug		21:37:00	3723.47	146.19	3723.87	146.29	
6-Aug		21:38:00	3715.57	146.17	3716.63	146.27	
6-Aug		21:39:00	3711.28	146.14	3713.64	146.24	
6-Aug		21:40:00	3708.26	146.11	3712	146.21	
6-Aug		21:41:00	3708.66	146.09	3711.32	146.19	
6-Aug		21:42:00	3707.14	146.07	3710.84	146.18	
6-Aug		21:43:00	3709	146.06	3711.71	146.17	
6-Aug		21:44:00	3708.69	146.06	3711.62	146.17	
6-Aug		21:45:00	3708.03	146.06	3710.91	146.18	
6-Aug		21:46:00	3708.14	146.07	3711.17	146.18	
6-Aug		21:47:00	3709.38	146.07	3712.09	146.18	
6-Aug		21:48:00	3709.72	146.08	3712.65	146.19	
6-Aug		21:49:00	3711.19	146.09	3713.78	146.2	
6-Aug		21:50:00	3712.33	146.1	3714.46	146.21	
6-Aug		21:51:00	3712.99	146.1	3715.18	146.22	
6-Aug		21:52:00	3714.53	146.11	3716.43	146.23	
6-Aug		21:53:00	3715.25	146.12	3717.37	146.23	
6-Aug		21:54:00	3715.71	146.13	3718.12	146.24	
6-Aug		21:55:00	3716.47	146.13	3718.89	146.25	
6-Aug		21:56:00	3717.17	146.14	3719.58	146.26	
6-Aug		21:57:00	3717.77	146.15	3720.18	146.27	
6-Aug		21:58:00	3718.35	146.15	3720.85	146.27	
6-Aug		21:59:00	3718.98	146.16	3721.5	146.28	
6-Aug		22:00:00	3719.44	146.17	3722.06	146.29	
6-Aug		22:01:00	3719.88	146.17	3722.52	146.29	
6-Aug		22:02:00	3720.54	146.18	3723.16	146.3	
6-Aug		22:03:00	3721.38	146.18	3723.85	146.3	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
6-Aug		22:04:00	3721.89	146.19	3724.53	146.31	
6-Aug		22:05:00	3723.08	146.2	3725.48	146.31	
6-Aug		22:06:00	3723.89	146.2	3726.34	146.32	
6-Aug		22:07:00	3724.64	146.21	3727.1	146.33	
6-Aug		22:08:00	3725.11	146.22	3727.69	146.34	
6-Aug		22:09:00	3725.71	146.22	3728.3	146.34	
6-Aug		22:10:00	3726.38	146.23	3728.92	146.35	
6-Aug		22:11:00	3726.99	146.23	3729.56	146.35	
6-Aug		22:12:00	3727.59	146.24	3730.16	146.35	
6-Aug		22:13:00	3728.13	146.24	3730.8	146.36	
6-Aug		22:14:00	3728.63	146.25	3731.24	146.36	
6-Aug							
6-Aug	153	22:15:00	3729.13	146.25	3731.72	146.37	Increase choke to 50/64 THP 2787 psia
6-Aug							
6-Aug		22:15:00	3729.13	146.25	3731.72	146.37	
6-Aug		22:16:00	3721.59	146.25	3721.1	146.36	
6-Aug		22:17:00	3710.38	146.24	3711.52	146.34	
6-Aug		22:18:00	3704.04	146.2	3705.18	146.3	
6-Aug		22:19:00	3699.71	146.17	3702.05	146.27	
6-Aug		22:20:00	3696.88	146.15	3699.62	146.26	
6-Aug		22:21:00	3696.22	146.15	3699.08	146.27	
6-Aug		22:22:00	3697.36	146.16	3699.74	146.28	
6-Aug		22:23:00	3697.65	146.15	3699.56	146.26	
6-Aug		22:24:00	3695.73	146.13	3698.87	146.24	
6-Aug							
6-Aug	154	22:25:00	3694.48	146.12	3694.07	146.23	Increase choke to 52/64 THP 2747 psia
6-Aug							
6-Aug		22:25:00	3694.48	146.12	3694.07	146.23	
6-Aug		22:26:00	3680.68	146.1	3680.26	146.2	
6-Aug		22:27:00	3672.14	146.06	3672.95	146.16	
6-Aug		22:28:00	3667.09	146.02	3668.86	146.12	
6-Aug		22:29:00	3664.13	145.99	3666.46	146.09	
6-Aug		22:30:00	3662.84	145.97	3665.48	146.07	
6-Aug		22:31:00	3662.28	145.96	3665.23	146.06	
6-Aug		22:32:00	3662.88	145.94	3665.74	146.05	
6-Aug		22:33:00	3663.34	145.93	3666.38	146.04	
6-Aug		22:34:00	3663.79	145.94	3666.73	146.05	
6-Aug		22:35:00	3664.75	145.94	3667.21	146.05	
6-Aug		22:36:00	3665.43	145.93	3667.53	146.04	
6-Aug		22:37:00	3666.35	145.92	3668.28	146.03	
6-Aug		22:38:00	3667.76	145.92	3669.7	146.03	
6-Aug		22:39:00	3669.04	145.91	3670.73	146.02	
6-Aug		22:40:00	3669.93	145.91	3671.54	146.03	
6-Aug		22:41:00	3670.77	145.92	3672.6	146.03	
6-Aug		22:42:00	3671.54	145.92	3673.43	146.04	
6-Aug		22:43:00	3673.01	145.93	3674.41	146.05	
6-Aug		22:44:00	3674.06	145.94	3675.53	146.06	
6-Aug		22:45:00	3675.41	145.96	3676.92	146.07	
6-Aug		22:46:00	3676.63	145.97	3677.98	146.08	
6-Aug		22:47:00	3677.3	145.98	3678.84	146.09	
6-Aug		22:48:00	3678.52	145.98	3679.83	146.09	
6-Aug		22:49:00	3679.44	145.99	3680.84	146.1	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
6-Aug		22:50:00	3680.12	145.99	3681.81	146.1	
6-Aug		22:51:00	3680.95	146	3682.77	146.11	
6-Aug		22:52:00	3681.79	145.98	3683.46	146.12	
6-Aug		22:53:00	3681.75	146.01	3683.95	146.12	
6-Aug		22:54:00	3682.02	146.01	3684.42	146.13	
6-Aug		22:55:00	3681.97	146.02	3684.7	146.13	
6-Aug		22:56:00	3682.08	146.02	3684.87	146.13	
6-Aug		22:57:00	3682.48	146.02	3685.18	146.13	
6-Aug		22:58:00	3683.01	146.02	3685.64	146.13	
6-Aug		22:59:00	3684.04	146.02	3686.27	146.14	
6-Aug		23:00:00	3684.84	146.02	3686.9	146.14	
6-Aug							
6-Aug	155	23:01:00	3685.38	146.03	3687.47	146.14	Increase choke to 54/64 THP 2757 psia
6-Aug							
6-Aug		23:01:00	3685.38	146.03	3687.47	146.14	
6-Aug		23:02:00	3680.34	146.03	3683.95	146.14	
6-Aug		23:03:00	3668.06	146.02	3670.27	146.13	
6-Aug		23:04:00	3661.64	145.99	3663.3	146.09	
6-Aug		23:05:00	3656.83	145.96	3659.11	146.06	
6-Aug		23:06:00	3654.05	145.93	3656.4	146.03	
6-Aug		23:07:00	3651.42	145.91	3654.01	146.02	
6-Aug		23:08:00	3650.31	145.9	3653.1	146.01	
6-Aug		23:09:00	3650.06	145.89	3652.91	146	
6-Aug		23:10:00	3650.41	145.88	3653.29	146	
6-Aug		23:11:00	3650.91	145.88	3653.75	145.99	
6-Aug		23:12:00	3651.47	145.88	3654.19	145.99	
6-Aug		23:13:00	3652.01	145.88	3654.47	145.99	
6-Aug		23:14:00	3652.71	145.87	3654.91	145.98	
6-Aug		23:15:00	3653.24	145.87	3655.5	145.98	
6-Aug		23:16:00	3654.05	145.87	3655.98	145.99	
6-Aug		23:17:00	3654.85	145.87	3656.89	145.99	
6-Aug		23:18:00	3655.72	145.88	3657.93	145.99	
6-Aug		23:19:00	3656.34	145.88	3658.58	145.99	
6-Aug		23:20:00	3657.21	145.88	3659.41	145.99	
6-Aug		23:21:00	3658.09	145.88	3660.33	146	
6-Aug		23:22:00	3659.02	145.89	3661.2	146	
6-Aug		23:23:00	3659.75	145.89	3661.99	146.01	
6-Aug		23:24:00	3660.34	145.9	3662.61	146.01	
6-Aug		23:25:00	3660.94	145.9	3663.26	146.02	
6-Aug		23:26:00	3661.79	145.91	3663.95	146.02	
6-Aug		23:27:00	3662.58	145.91	3664.64	146.02	
6-Aug		23:28:00	3663.18	145.91	3665.36	146.02	
6-Aug		23:29:00	3663.75	145.91	3666	146.03	
6-Aug		23:30:00	3664.4	145.92	3666.68	146.03	
6-Aug		23:31:00	3664.72	145.92	3667.13	146.04	
6-Aug		23:32:00	3665.16	145.93	3667.54	146.04	
6-Aug							
6-Aug	156	23:32:04	3665.19	145.93	3667.59	146.04	Decrease choke to 48/64 THP 2731 psia
6-Aug							
6-Aug	157	23:33:00	3684.29	145.93	3676.64	146.04	Increase choke to 54/64 THP 2777 psia
6-Aug							
6-Aug		23:33:00	3684.29	145.93	3676.64	146.04	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
6-Aug		23:34:00	3714	145.97	3695.85	146.1	
6-Aug		23:35:00	3699.61	146.05	3699.2	146.18	
6-Aug		23:36:00	3687.69	146.09	3693.97	146.21	
6-Aug		23:37:00	3680.46	146.09	3686.31	146.2	
6-Aug		23:38:00	3676.06	146.07	3681.42	146.17	
6-Aug		23:39:00	3673.49	146.04	3678.2	146.15	
6-Aug		23:40:00	3671.98	146.02	3676.21	146.12	
6-Aug		23:41:00	3671.16	146	3675.4	146.1	
6-Aug		23:42:00	3670.97	145.99	3675.15	146.09	
6-Aug		23:43:00	3671.19	145.98	3675.24	146.09	
6-Aug		23:44:00	3671.31	145.98	3675.44	146.09	
6-Aug		23:45:00	3671.82	145.98	3675.65	146.1	
6-Aug		23:46:00	3672.24	145.99	3675.76	146.1	
6-Aug		23:47:00	3672.72	145.99	3675.93	146.11	
6-Aug		23:48:00	3673.16	145.99	3675.97	146.11	
6-Aug		23:49:00	3673.65	145.99	3676.1	146.11	
6-Aug		23:50:00	3674.19	145.99	3676.27	146.11	
6-Aug		23:51:00	3674.9	145.99	3676.56	146.11	
6-Aug		23:52:00	3675.48	145.99	3677	146.11	
6-Aug		23:53:00	3676.36	145.99	3677.58	146.11	
6-Aug		23:54:00	3677.18	146	3678.25	146.11	
6-Aug		23:55:00	3678.27	146	3679.08	146.12	
6-Aug		23:56:00	3678.73	146.01	3679.8	146.13	
6-Aug		23:57:00	3679.03	146.01	3680.39	146.13	
6-Aug		23:58:00	3679.34	146.02	3680.98	146.13	
6-Aug		23:59:00	3680.36	146.02	3681.65	146.13	
7-Aug		0:00:00	3681.04	146.02	3682.38	146.14	
7-Aug		0:01:00	3681.58	146.03	3683.06	146.14	
7-Aug		0:02:00	3682.01	146.03	3683.69	146.15	
7-Aug		0:03:00	3682.54	146.04	3684.31	146.15	
7-Aug		0:04:00	3683.1	146.04	3684.87	146.16	
7-Aug		0:05:00	3683.68	146.04	3685.62	146.16	
7-Aug		0:06:00	3684.03	146.05	3686.06	146.17	
7-Aug		0:07:00	3684.76	146.05	3686.57	146.17	
7-Aug		0:08:00	3685.49	146.06	3687.19	146.17	
7-Aug		0:09:00	3685.86	146.06	3687.69	146.17	
7-Aug		0:10:00	3686.07	146.06	3688.11	146.18	
7-Aug		0:11:00	3686.63	146.06	3688.6	146.18	
7-Aug		0:12:00	3687.17	146.07	3689.16	146.18	
7-Aug		0:13:00	3687.68	146.07	3689.68	146.18	
7-Aug		0:14:00	3688.24	146.06	3690.19	146.19	
7-Aug		0:15:00	3688.55	146.08	3690.71	146.19	
7-Aug		0:16:00	3688.9	146.08	3691.2	146.2	
7-Aug		0:17:00	3689.17	146.08	3691.53	146.2	
7-Aug		0:18:00	3689.51	146.09	3691.85	146.2	
7-Aug		0:19:00	3689.84	146.09	3692.18	146.2	
7-Aug		0:20:00	3690.4	146.09	3692.6	146.21	
7-Aug		0:21:00	3690.92	146.09	3693.09	146.21	
7-Aug		0:22:00	3691.22	146.09	3693.54	146.21	
7-Aug		0:23:00	3691.68	146.1	3693.98	146.21	
7-Aug		0:24:00	3692.1	146.1	3694.45	146.22	
7-Aug		0:25:00	3692.52	146.1	3694.85	146.22	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
7-Aug		0:26:00	3692.83	146.11	3695.22	146.22	
7-Aug		0:27:00	3693.18	146.11	3695.58	146.22	
7-Aug		0:28:00	3693.74	146.11	3696.04	146.23	
7-Aug		0:29:00	3693.94	146.11	3696.39	146.23	
7-Aug		0:30:00	3694.28	146.11	3696.68	146.23	
7-Aug		0:31:00	3694.79	146.12	3697.14	146.23	
7-Aug		0:32:00	3695.38	146.12	3697.66	146.24	
7-Aug		0:33:00	3695.9	146.12	3698.18	146.24	
7-Aug		0:34:00	3696.36	146.13	3698.63	146.24	
7-Aug		0:35:00	3696.61	146.13	3699.04	146.25	
7-Aug		0:36:00	3697.18	146.13	3699.51	146.25	
7-Aug		0:37:00	3697.66	146.14	3700.03	146.25	
7-Aug		0:38:00	3698.05	146.14	3700.45	146.26	
7-Aug		0:39:00	3698.48	146.14	3700.79	146.26	
7-Aug		0:40:00	3699	146.15	3701.26	146.26	
7-Aug							
7-Aug	158	0:41:00	3700.3	146.15	3703.89	146.27	Decrese choke to 48/64 THP 2774 psia
7-Aug							
7-Aug		0:41:00	3700.3	146.15	3703.89	146.27	
7-Aug		0:42:00	3740.21	146.16	3726.48	146.3	
7-Aug		0:43:00	3768.85	146.24	3760.79	146.4	
7-Aug		0:44:00	3789.88	146.36	3785.2	146.52	
7-Aug		0:45:00	3803.37	146.48	3800.82	146.64	
7-Aug		0:46:00	3811.98	146.6	3809.6	146.74	
7-Aug							
7-Aug	159	0:47:00	3817.41	146.69	3814.97	146.82	Divert flow to 48/64 adjustable choke
7-Aug							THP 2880 psia
7-Aug		0:47:00	3817.41	146.69	3814.97	146.82	
7-Aug		0:48:00	3820.36	146.76	3818.23	146.88	
7-Aug		0:49:00	3820.24	146.8	3819.32	146.93	
7-Aug		0:50:00	3818.57	146.83	3819.54	146.95	
7-Aug		0:51:00	3817.64	146.85	3819.54	146.96	
7-Aug		0:52:00	3817.2	146.85	3819.54	146.97	
7-Aug		0:53:00	3817.09	146.85	3819.47	146.97	
7-Aug		0:54:00	3817.17	146.85	3819.45	146.97	
7-Aug		0:55:00	3817.38	146.85	3819.49	146.96	
7-Aug		0:56:00	3817.6	146.85	3819.54	146.96	
7-Aug		0:57:00	3817.9	146.85	3819.63	146.96	
7-Aug		0:58:00	3818.15	146.84	3819.72	146.96	
7-Aug		0:59:00	3818.5	146.84	3819.84	146.96	
7-Aug							
7-Aug	160	1:00:00	3818.69	146.84	3819.58	146.96	Divert flow to 52/64 fixed choke
7-Aug							
7-Aug		1:00:00	3818.69	146.84	3819.58	146.96	
7-Aug		1:01:00	3799.85	146.84	3808.11	146.95	
7-Aug		1:02:00	3785.99	146.81	3795.11	146.91	
7-Aug		1:03:00	3777.78	146.76	3782.36	146.85	
7-Aug		1:04:00	3772.95	146.7	3776.75	146.8	
7-Aug		1:05:00	3770.13	146.65	3773.94	146.75	
7-Aug		1:06:00	3768.45	146.61	3772.33	146.71	
7-Aug		1:07:00	3767.67	146.58	3771.52	146.69	
7-Aug		1:08:00	3767.33	146.56	3771.22	146.67	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
7-Aug		1:09:00	3767.28	146.55	3771.06	146.66	
7-Aug		1:10:00	3767.32	146.54	3770.99	146.65	
7-Aug		1:11:00	3767.44	146.54	3771.05	146.65	
7-Aug		1:12:00	3767.7	146.54	3771.08	146.65	
7-Aug		1:13:00	3768.04	146.54	3771.13	146.65	
7-Aug		1:14:00	3768.24	146.54	3771.25	146.65	
7-Aug		1:15:00	3768.52	146.54	3771.34	146.65	
7-Aug		1:16:00	3768.86	146.54	3771.47	146.65	
7-Aug		1:17:00	3769.22	146.54	3771.66	146.66	
7-Aug		1:18:00	3769.62	146.55	3771.84	146.66	
7-Aug		1:19:00	3770.01	146.55	3772.01	146.66	
7-Aug		1:20:00	3770.18	146.55	3772.19	146.66	
7-Aug		1:21:00	3770.7	146.55	3772.45	146.67	
7-Aug		1:22:00	3771.21	146.56	3772.72	146.67	
7-Aug		1:23:00	3771.59	146.56	3773.01	146.67	
7-Aug		1:24:00	3771.93	146.56	3773.26	146.67	
7-Aug		1:25:00	3772.28	146.56	3773.49	146.68	
7-Aug		1:26:00	3772.53	146.57	3773.74	146.68	
7-Aug		1:27:00	3772.9	146.57	3774.02	146.68	
7-Aug		1:28:00	3773.25	146.57	3774.25	146.69	
7-Aug		1:29:00	3773.65	146.58	3774.5	146.69	
7-Aug		1:30:00	3773.94	146.58	3774.73	146.69	
7-Aug		1:31:00	3774.26	146.58	3775.01	146.69	
7-Aug		1:32:00	3774.52	146.58	3775.19	146.7	
7-Aug		1:33:00	3774.93	146.59	3775.52	146.7	
7-Aug		1:34:00	3775.28	146.59	3775.76	146.7	
7-Aug		1:35:00	3775.58	146.59	3776.04	146.7	
7-Aug		1:36:00	3775.95	146.59	3776.27	146.71	
7-Aug		1:37:00	3776.34	146.6	3776.54	146.71	
7-Aug		1:38:00	3776.58	146.6	3776.83	146.71	
7-Aug		1:39:00	3776.91	146.6	3777.08	146.71	
7-Aug		1:40:00	3777.25	146.6	3777.36	146.71	
7-Aug		1:41:00	3777.56	146.61	3777.63	146.72	
7-Aug		1:42:00	3777.91	146.61	3777.89	146.72	
7-Aug		1:43:00	3778.36	146.61	3778.21	146.72	
7-Aug		1:44:00	3778.67	146.61	3778.54	146.72	
7-Aug		1:45:00	3778.96	146.61	3778.84	146.73	
7-Aug		1:46:00	3779.37	146.62	3779.18	146.73	
7-Aug		1:47:00	3779.72	146.62	3779.46	146.73	
7-Aug		1:48:00	3779.98	146.62	3779.72	146.73	
7-Aug		1:49:00	3780.3	146.62	3780.06	146.74	
7-Aug		1:50:00	3780.64	146.62	3780.35	146.74	
7-Aug		1:51:00	3781.03	146.63	3780.7	146.74	
7-Aug		1:52:00	3781.35	146.63	3780.98	146.74	
7-Aug		1:53:00	3781.68	146.63	3781.36	146.74	
7-Aug		1:54:00	3782.03	146.63	3781.68	146.75	
7-Aug		1:55:00	3782.33	146.63	3781.95	146.75	
7-Aug		1:56:00	3782.68	146.63	3782.71	146.71	
7-Aug		1:57:00	3783.03	146.64	3782.63	146.75	
7-Aug		1:58:00	3783.3	146.64	3782.96	146.75	
7-Aug		1:59:00	3783.67	146.64	3783.28	146.76	
7-Aug		2:00:00	3783.98	146.64	3783.62	146.76	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
7-Aug		2:01:00	3784.34	146.65	3783.99	146.76	
7-Aug		2:02:00	3784.61	146.65	3784.25	146.76	
7-Aug		2:03:00	3784.96	146.65	3784.55	146.76	
7-Aug		2:04:00	3785.2	146.65	3784.9	146.76	
7-Aug		2:05:00	3785.52	146.65	3785.26	146.77	
7-Aug		2:06:00	3785.83	146.65	3785.65	146.77	
7-Aug		2:07:00	3786.18	146.66	3785.99	146.77	
7-Aug		2:08:00	3786.47	146.66	3786.4	146.78	
7-Aug		2:09:00	3786.74	146.66	3786.78	146.78	
7-Aug		2:10:00	3787.07	146.66	3787.13	146.78	
7-Aug		2:11:00	3787.38	146.66	3787.48	146.78	
7-Aug		2:12:00	3787.63	146.66	3788.07	146.78	
7-Aug		2:13:00	3787.89	146.67	3788.15	146.78	
7-Aug		2:14:00	3788.2	146.67	3788.52	146.79	
7-Aug		2:15:00	3788.55	146.67	3788.96	146.79	
7-Aug		2:16:00	3788.83	146.67	3789.38	146.79	
7-Aug		2:17:00	3789.13	146.67	3789.85	146.79	
7-Aug		2:18:00	3789.55	146.67	3790.32	146.79	
7-Aug		2:19:00	3789.66	146.68	3790.82	146.79	
7-Aug		2:20:00	3790.03	146.68	3791.29	146.8	
7-Aug		2:21:00	3790.33	146.68	3791.7	146.8	
7-Aug		2:22:00	3790.67	146.68	3792.1	146.8	
7-Aug		2:23:00	3790.97	146.68	3792.49	146.8	
7-Aug		2:24:00	3791.21	146.68	3792.92	146.8	
7-Aug		2:25:00	3791.54	146.69	3793.32	146.81	
7-Aug		2:26:00	3791.77	146.69	3793.65	146.81	
7-Aug		2:27:00	3791.99	146.69	3793.98	146.81	
7-Aug		2:28:00	3792.29	146.69	3794.31	146.81	
7-Aug		2:29:00	3792.54	146.69	3794.65	146.81	
7-Aug		2:30:00	3792.88	146.7	3795.03	146.81	
7-Aug		2:31:00	3793.07	146.7	3795.26	146.82	
7-Aug		2:32:00	3793.39	146.7	3795.56	146.82	
7-Aug		2:33:00	3793.65	146.7	3795.89	146.82	
7-Aug		2:34:00	3793.89	146.7	3796.17	146.82	
7-Aug		2:35:00	3794.19	146.7	3796.46	146.82	
7-Aug		2:36:00	3794.55	146.71	3796.78	146.82	
7-Aug		2:37:00	3794.71	146.71	3797.03	146.83	
7-Aug		2:38:00	3794.94	146.71	3797.28	146.83	
7-Aug		2:39:00	3795.14	146.71	3797.57	146.83	
7-Aug		2:40:00	3795.35	146.71	3797.8	146.83	
7-Aug		2:41:00	3795.65	146.71	3798.02	146.83	
7-Aug		2:42:00	3795.94	146.72	3798.3	146.83	
7-Aug		2:43:00	3796.24	146.72	3798.6	146.84	
7-Aug		2:44:00	3796.42	146.72	3798.86	146.84	
7-Aug		2:45:00	3796.64	146.72	3799.06	146.84	
7-Aug		2:46:00	3796.87	146.72	3799.35	146.84	
7-Aug		2:47:00	3797.09	146.72	3799.55	146.84	
7-Aug		2:48:00	3797.37	146.73	3799.83	146.84	
7-Aug		2:49:00	3797.62	146.73	3800.05	146.85	
7-Aug		2:50:00	3797.91	146.73	3800.28	146.85	
7-Aug		2:51:00	3798.15	146.73	3800.56	146.85	
7-Aug		2:52:00	3798.36	146.73	3800.8	146.85	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
7-Aug		2:53:00	3798.61	146.73	3801.01	146.85	
7-Aug		2:54:00	3798.81	146.74	3801.26	146.85	
7-Aug		2:55:00	3799	146.74	3801.47	146.85	
7-Aug		2:56:00	3799.29	146.74	3801.73	146.86	
7-Aug		2:57:00	3799.57	146.74	3801.96	146.86	
7-Aug		2:58:00	3799.77	146.74	3802.19	146.86	
7-Aug		2:59:00	3800.02	146.74	3802.43	146.86	
7-Aug		3:00:00	3800.26	146.74	3802.66	146.86	
7-Aug		3:01:00	3800.47	146.75	3802.92	146.86	
7-Aug		3:02:00	3800.74	146.75	3803.12	146.86	
7-Aug		3:03:00	3800.94	146.75	3803.35	146.87	
7-Aug		3:04:00	3801.15	146.75	3803.55	146.87	
7-Aug		3:05:00	3801.36	146.75	3803.78	146.87	
7-Aug		3:06:00	3801.55	146.75	3804.03	146.87	
7-Aug		3:07:00	3801.76	146.76	3804.26	146.87	
7-Aug		3:08:00	3802.01	146.76	3804.44	146.87	
7-Aug		3:09:00	3802.26	146.76	3804.67	146.87	
7-Aug		3:10:00	3802.42	146.76	3804.88	146.87	
7-Aug		3:11:00	3802.62	146.76	3805.13	146.88	
7-Aug		3:12:00	3802.88	146.76	3805.33	146.88	
7-Aug		3:13:00	3803.03	146.76	3805.54	146.88	
7-Aug		3:14:00	3803.21	146.76	3805.75	146.88	
7-Aug		3:15:00	3803.45	146.77	3805.93	146.88	
7-Aug		3:16:00	3803.69	146.77	3806.19	146.88	
7-Aug		3:17:00	3803.86	146.77	3806.35	146.88	
7-Aug		3:18:00	3804.01	146.77	3806.52	146.89	
7-Aug		3:19:00	3804.34	146.77	3806.76	146.89	
7-Aug		3:20:00	3804.58	146.77	3807.03	146.89	
7-Aug		3:21:00	3804.74	146.78	3807.17	146.89	
7-Aug		3:22:00	3804.96	146.78	3807.38	146.89	
7-Aug		3:23:00	3805.16	146.78	3807.85	146.89	
7-Aug		3:24:00	3805.38	146.78	3807.83	146.89	
7-Aug		3:25:00	3805.58	146.78	3808.03	146.9	
7-Aug		3:26:00	3805.77	146.78	3808.25	146.9	
7-Aug		3:27:00	3805.93	146.78	3808.41	146.9	
7-Aug		3:28:00	3806.22	146.78	3808.61	146.9	
7-Aug		3:29:00	3806.4	146.78	3808.8	146.9	
7-Aug		3:30:00	3806.56	146.79	3809.03	146.9	
7-Aug		3:31:00	3806.72	146.79	3809.23	146.9	
7-Aug		3:32:00	3806.94	146.79	3809.41	146.91	
7-Aug		3:33:00	3807.25	146.78	3809.61	146.91	
7-Aug		3:34:00	3807.32	146.79	3809.8	146.91	
7-Aug		3:35:00	3807.49	146.79	3810	146.91	
7-Aug		3:36:00	3807.73	146.79	3810.5	146.91	
7-Aug		3:37:00	3807.9	146.8	3810.39	146.91	
7-Aug		3:38:00	3808.11	146.8	3810.61	146.91	
7-Aug		3:39:00	3808.28	146.8	3810.8	146.92	
7-Aug		3:40:00	3808.29	146.8	3810.92	146.92	
7-Aug		3:41:00	3808.55	146.8	3811.11	146.92	
7-Aug		3:42:00	3808.8	146.8	3811.31	146.92	
7-Aug		3:43:00	3809.05	146.8	3811.53	146.92	
7-Aug		3:44:00	3809.14	146.8	3811.68	146.92	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
7-Aug		3:45:00	3809.33	146.81	3811.9	146.92	
7-Aug		3:46:00	3809.52	146.81	3812.09	146.92	
7-Aug		3:47:00	3809.69	146.81	3812.22	146.92	
7-Aug		3:48:00	3809.86	146.81	3812.43	146.93	
7-Aug		3:49:00	3809.98	146.81	3812.62	146.93	
7-Aug		3:50:00	3810.25	146.81	3812.82	146.93	
7-Aug		3:51:00	3810.39	146.81	3812.97	146.93	
7-Aug		3:52:00	3810.45	146.81	3813.1	146.93	
7-Aug		3:53:00	3810.64	146.81	3813.27	146.93	
7-Aug		3:54:00	3810.8	146.82	3813.45	146.93	
7-Aug		3:55:00	3810.98	146.82	3813.65	146.93	
7-Aug		3:56:00	3811.16	146.82	3813.79	146.94	
7-Aug		3:57:00	3811.37	146.82	3813.99	146.94	
7-Aug		3:58:00	3811.46	146.82	3814.13	146.94	
7-Aug		3:59:00	3811.68	146.82	3814.26	146.94	
7-Aug		4:00:00	3811.85	146.82	3814.49	146.94	
7-Aug		4:01:00	3812.01	146.82	3814.57	146.94	
7-Aug		4:02:00	3812.16	146.82	3814.76	146.94	
7-Aug		4:03:00	3812.34	146.82	3815	146.94	
7-Aug		4:04:00	3812.52	146.82	3815.13	146.94	
7-Aug		4:05:00	3812.66	146.83	3815.28	146.94	
7-Aug		4:06:00	3812.82	146.83	3815.46	146.95	
7-Aug		4:07:00	3813	146.83	3815.6	146.95	
7-Aug		4:08:00	3813.15	146.83	3815.76	146.95	
7-Aug		4:09:00	3813.32	146.83	3815.93	146.95	
7-Aug		4:10:00	3813.41	146.83	3816.12	146.95	
7-Aug		4:11:00	3813.67	146.83	3816.32	146.95	
7-Aug		4:12:00	3813.83	146.83	3816.43	146.95	
7-Aug		4:13:00	3813.97	146.83	3816.63	146.95	
7-Aug		4:14:00	3814.09	146.84	3816.77	146.95	
7-Aug		4:15:00	3814.28	146.84	3816.95	146.96	
7-Aug		4:16:00	3814.4	146.84	3817.1	146.96	
7-Aug		4:17:00	3814.52	146.84	3817.21	146.96	
7-Aug		4:18:00	3814.86	146.84	3817.39	146.96	
7-Aug		4:19:00	3815.02	146.84	3817.57	146.96	
7-Aug		4:20:00	3815.14	146.84	3817.72	146.96	
7-Aug		4:21:00	3815.29	146.84	3817.91	146.96	
7-Aug		4:22:00	3815.41	146.84	3818.02	146.96	
7-Aug		4:23:00	3815.56	146.85	3818.21	146.96	
7-Aug							
7-Aug	161	4:24:00	3815.63	146.85	3818.33	146.96	Shut in well at choke manifold
7-Aug							
7-Aug		4:24:00	3815.63	146.85	3818.33	146.96	
7-Aug		4:34:00	4150.01	148.54	4153.46	148.67	
7-Aug		4:44:00	4156.95	148.53	4160.85	148.66	
7-Aug		4:54:00	4169.17	148.51	4172.2	148.63	
7-Aug		5:04:00	4170.5	148.44	4172.11	148.57	
7-Aug		5:14:00	4171.29	148.4	4173.23	148.52	
7-Aug		5:24:00	4160.8	148.32	4163.11	148.44	
7-Aug		5:34:00	4179.1	148.35	4180.69	148.47	
7-Aug		5:44:00	4175.05	148.33	4178.33	148.45	
7-Aug		5:54:00	4173.16	148.3	4175.92	148.42	

	Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
7-Aug		6:04:00	4172.5	148.29	4175.13	148.4	
7-Aug		6:14:00	4166.32	148.35			
7-Aug		6:24:00	3937.16	133.7			

Origin Energy

Well Name: Yolla 4
Test Type: Flowing Survey 2755 Sands
Date of Survey: 1st & 2nd August 2004

MEMORY GAUGE REPORT

Prepared For: Andrew Wenk
Date: 22nd August 2004

David Whelan
Completion Products & Services
Halliburton Australia Pty Ltd

HALLIBURTON

Halliburton Australia Pty Ltd

MEMORY GAUGE FLOWING PRESSURE AND
TEMPERATURE SURVEY

MEMORY GAUGE TICKET NO:	35409
DATE:	1st - 2nd August 2004
HALLIBURTON CAMP:	Cheltenham, Victoria
HALLIBURTON OPERATOR:	David Whelan
WITNESS:	N/A
COMPANY:	Origin
DRILLING CONTRACTOR:	Ensco
LEASE NAME:	YOLLA
WELL NO:	YOLLA-4
TEST TYPE:	Flowing Survey
TEST NO:	1
TESTED ZONE:	2755 Sands
FIELD AREA:	Bass Strait
STATE:	Victoria
COUNTRY:	Australia

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HALLIBURTON

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SECTION 1

TEST SUMMARY & JOB INFORMATION

WELL DATA

Well Details

Well Name	Yolla - 4	
Field	Yolla	
Platfrom	Yolla A	
Derrick Floor Elevation	81	m AMSL
Top Bottom Flange	27.07	m MDRT

Completion

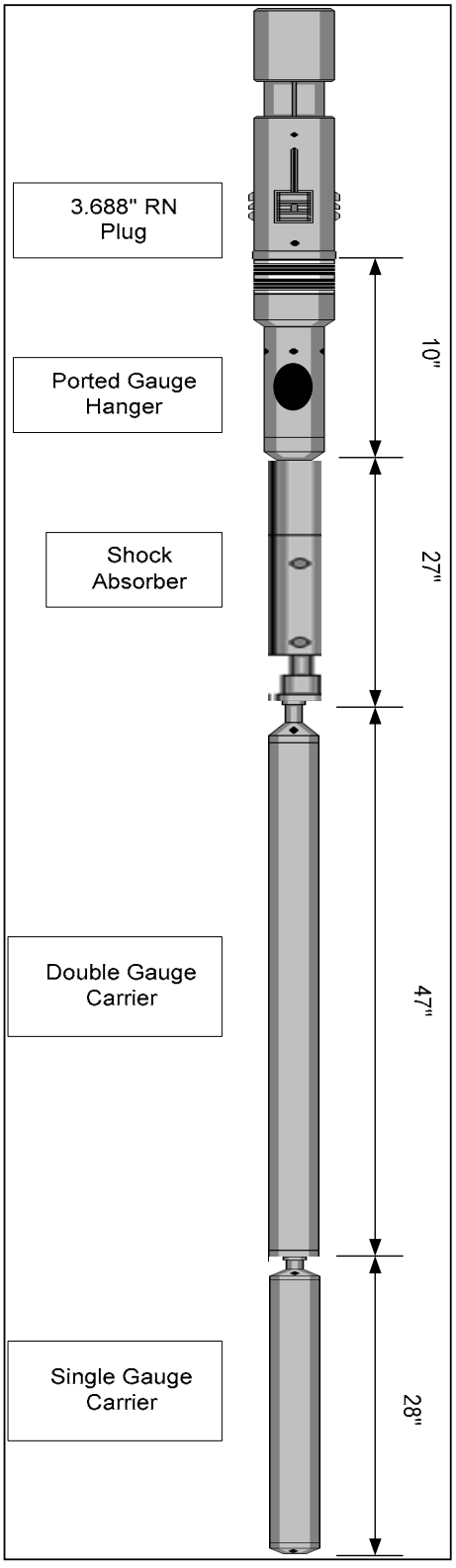
Measured m (MDRT)	**Description**
27.07	Tubing Hanger
169.09	TRSV
2521.39	5 1/2" PBR
2593.75	4 1/2" Halliburton SSD x 3.813" RD
2596.99	6 5/8" AHR Packer
2832.49	4 1/2" Halliburton SSD x 3.813" RD
2835.73	6 5/8" AHR Packer
2920.57	4 1/2" Halliburton SSD x 3.688" RD
2923.80	6 5/8" AHR Packer
2979.57	4 1/2" Halliburton SSD x 3.688" RD
2983.10	6 5/8" MWR Packer
2990.46	4 1/2" Halliburton SSD x 3.688" RD
2997.38	4 1/2" Halliburton 3.688" RN Nipple
2999.95	EOT

SURVEY EVENTS

Client	:Origin Energy	**Operator**	:David Whelan
Field	:Yolla	**Survey Date**	:1st - 2nd August 2004
Platfor	:Yolla A	**Well**	:Yolla - 4

Event	Time	Description
1	15:03:39	Start top gauge
2	15:06:44	Start bottom gauge
3	15:59:59	Add gauges to tool string and stab lubricator
4	16:06:44	Open well
5	16:13:49	Shut well and depressure lubricator repair leak in lubricator
6	16:22:18	Open well gauges in lubricator
7	16:32:00	Open well on 16/64 choke 2755 sands Clean up
8	16:34:00	Increase choke to 20/64
9	16:35:00	Increase choke to 24/64
10	16:37:00	Increase choke to 28/64
11	16:46:00	Increase choke to 32/64
12	16:50:00	Increase choke to 36/64
13	16:55:00	Increase choke to 40/64
14	17:45:00	Shut in well at choke manifold Run in hole with gauges
15	18:20:54	Gauges set on depth at 2990 mdkb slickline pull out of hole
16	18:50:00	Slickline out of hole shut in well depressure and change tools
17	19:25:00	Open well on 24/64 choke THP 3102 psia
18	19:29:00	Increase choke to 28/64 THP 3052 psia
19	19:32:00	Increase choke to 32/64 THP 3024 psia
20	19:35:00	Increase choke to 36/64 THP 2975 psia
21	19:38:00	Increase choke to 40/64 THP 2921 psia
22	19:41:00	Increase choke to 44/64 THP 2872 psia
23	19:44:00	Increase choke to 46/64 THP 2800 psia
24	19:55:00	Liquid slugs at surface
25	20:17:00	Increase choke to 48/64 THP 2778 psia
26	20:35:00	Increase choke to 52/64 THP 2755 psia
27	21:05:00	Increase choke to 58/64 THP 2616 psia
28	21:14:00	Decrease choke to 48/64 THP 2605 psia
29	21:37:00	Increase choke to 52/64 THP 2807 psia
30	1:26:00	Shut in well at choke manifold

SURVEY TOOL STRING



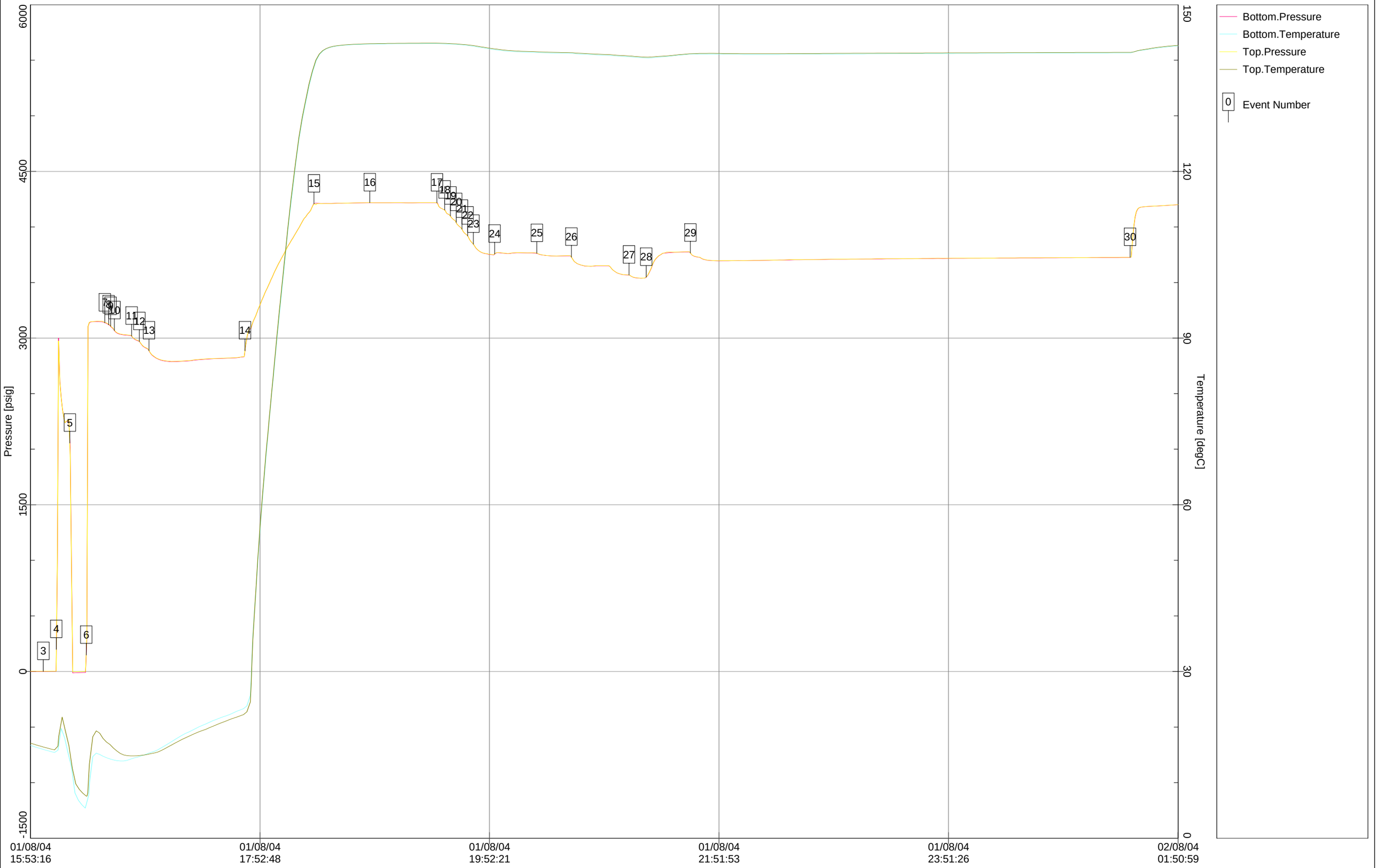
HALLIBURTON

SECTION 2

PLOTS

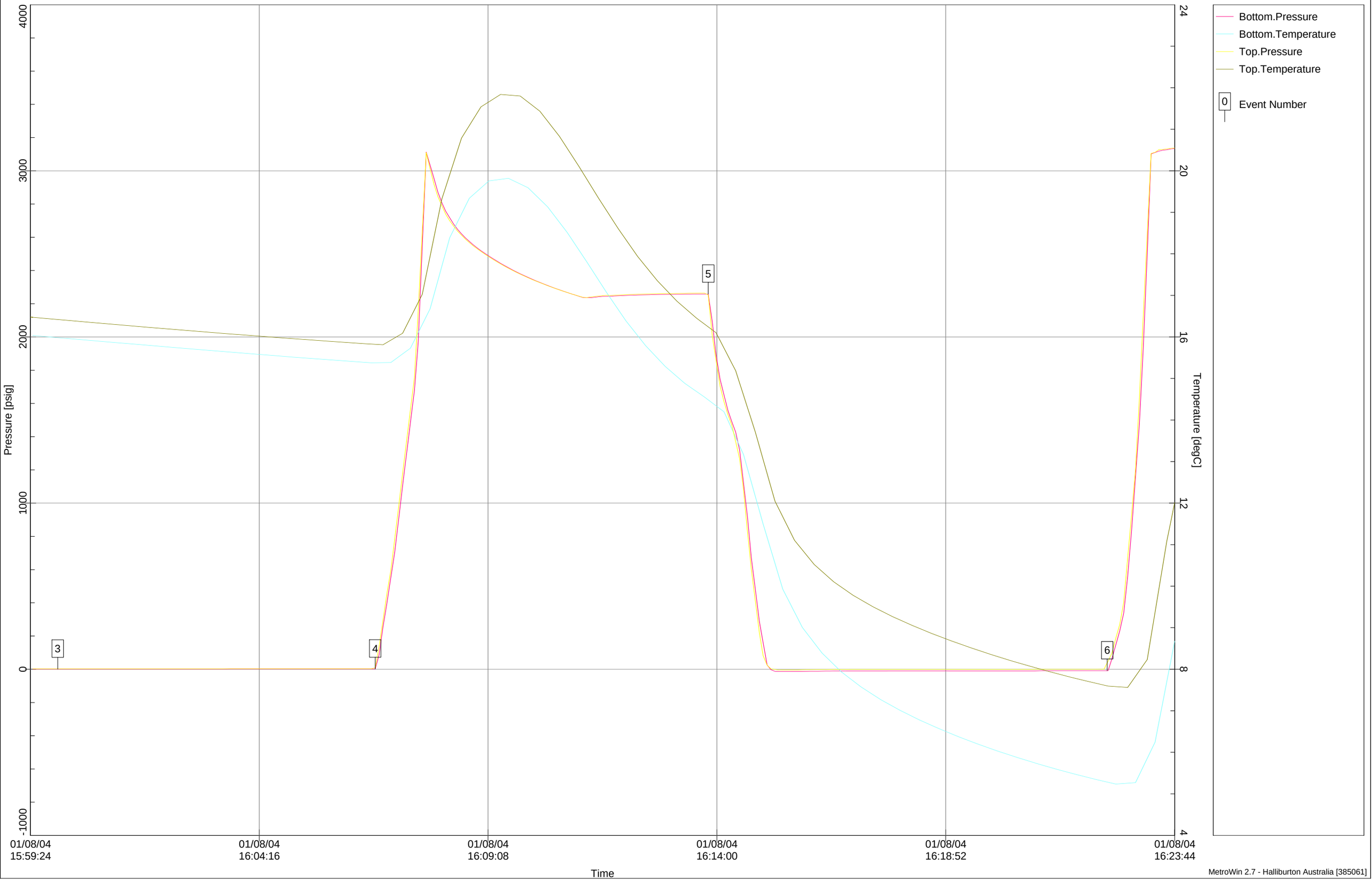
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 3 - 30



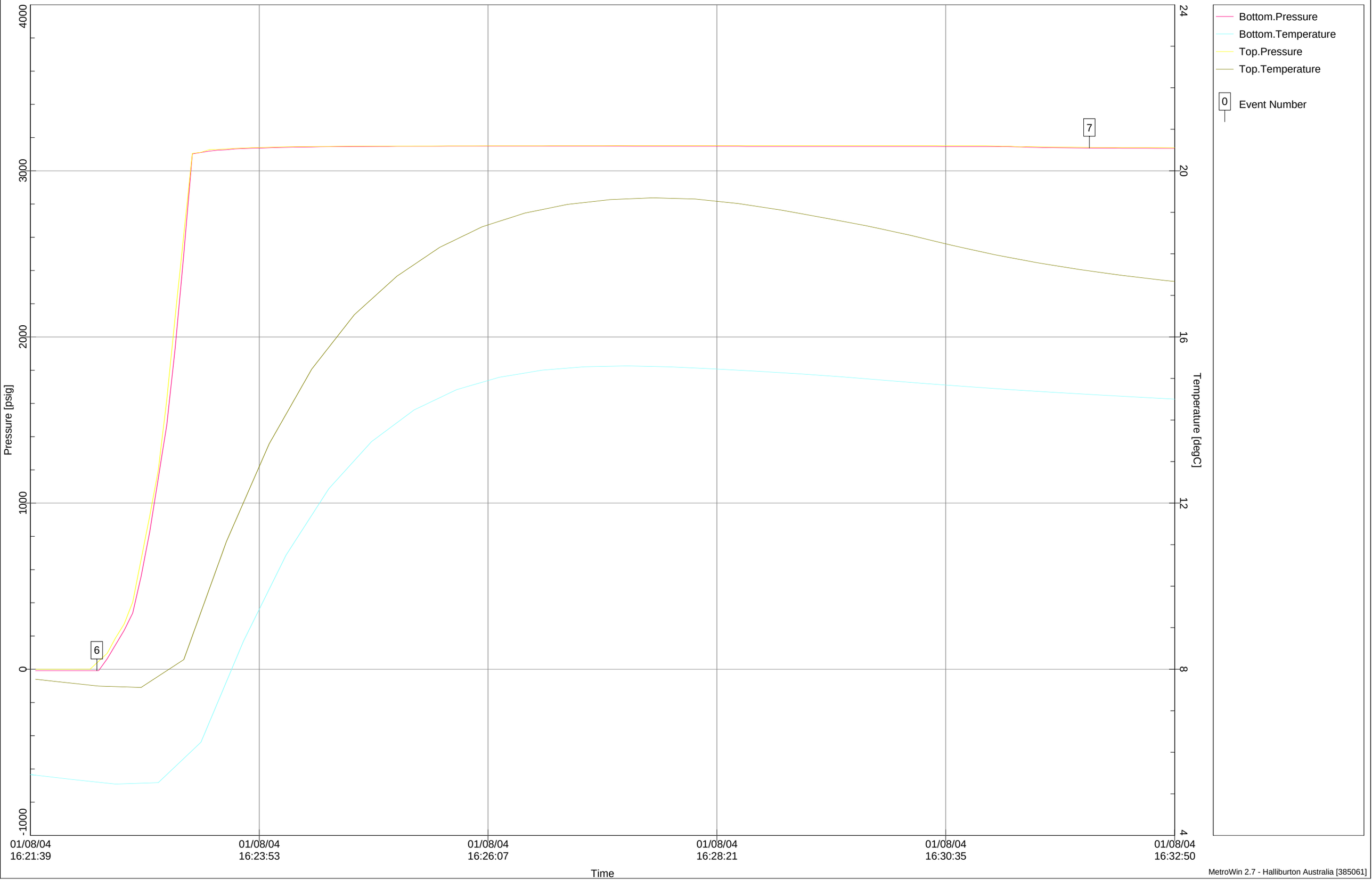
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 3 to 6



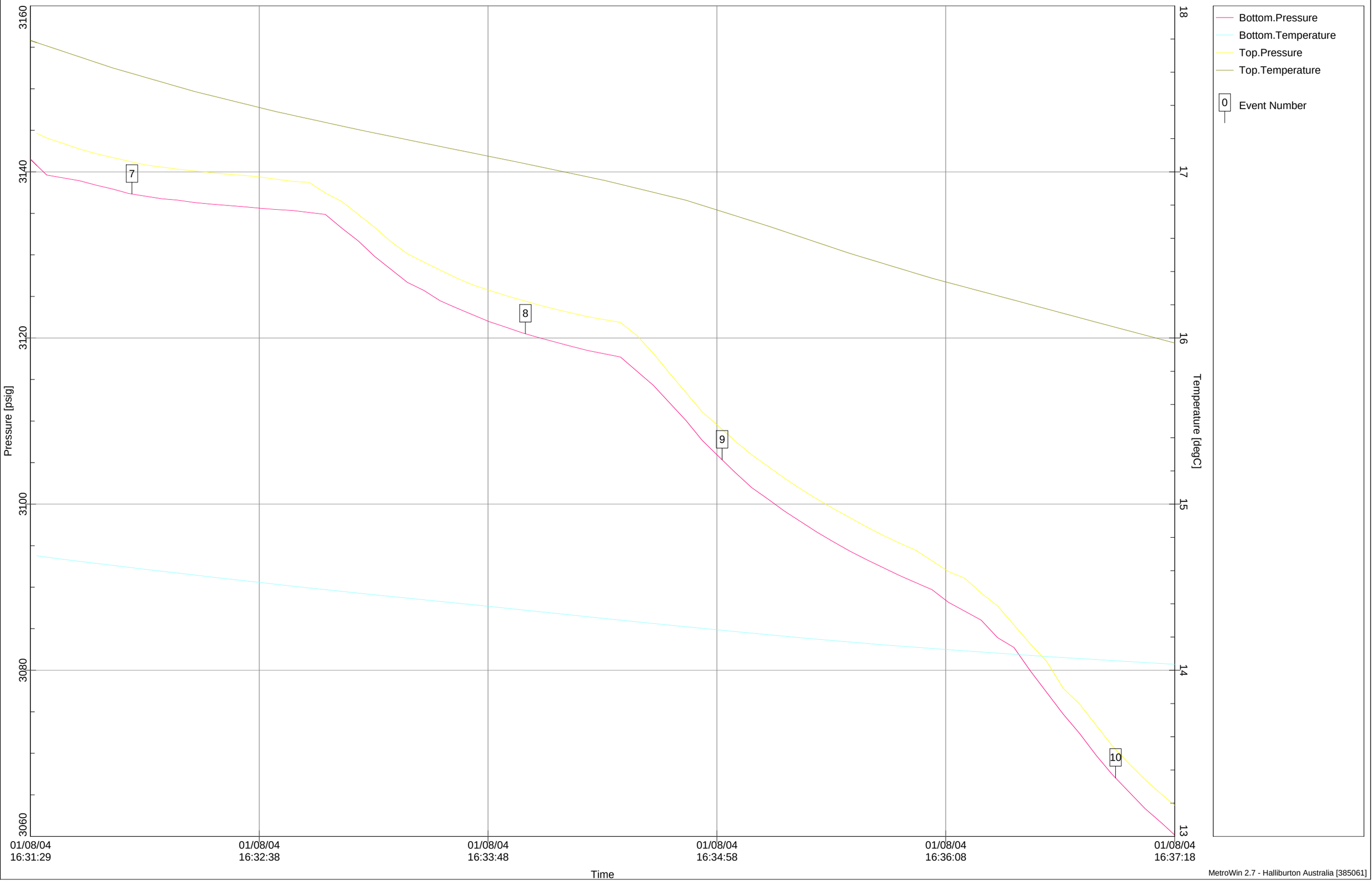
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 6 to 7



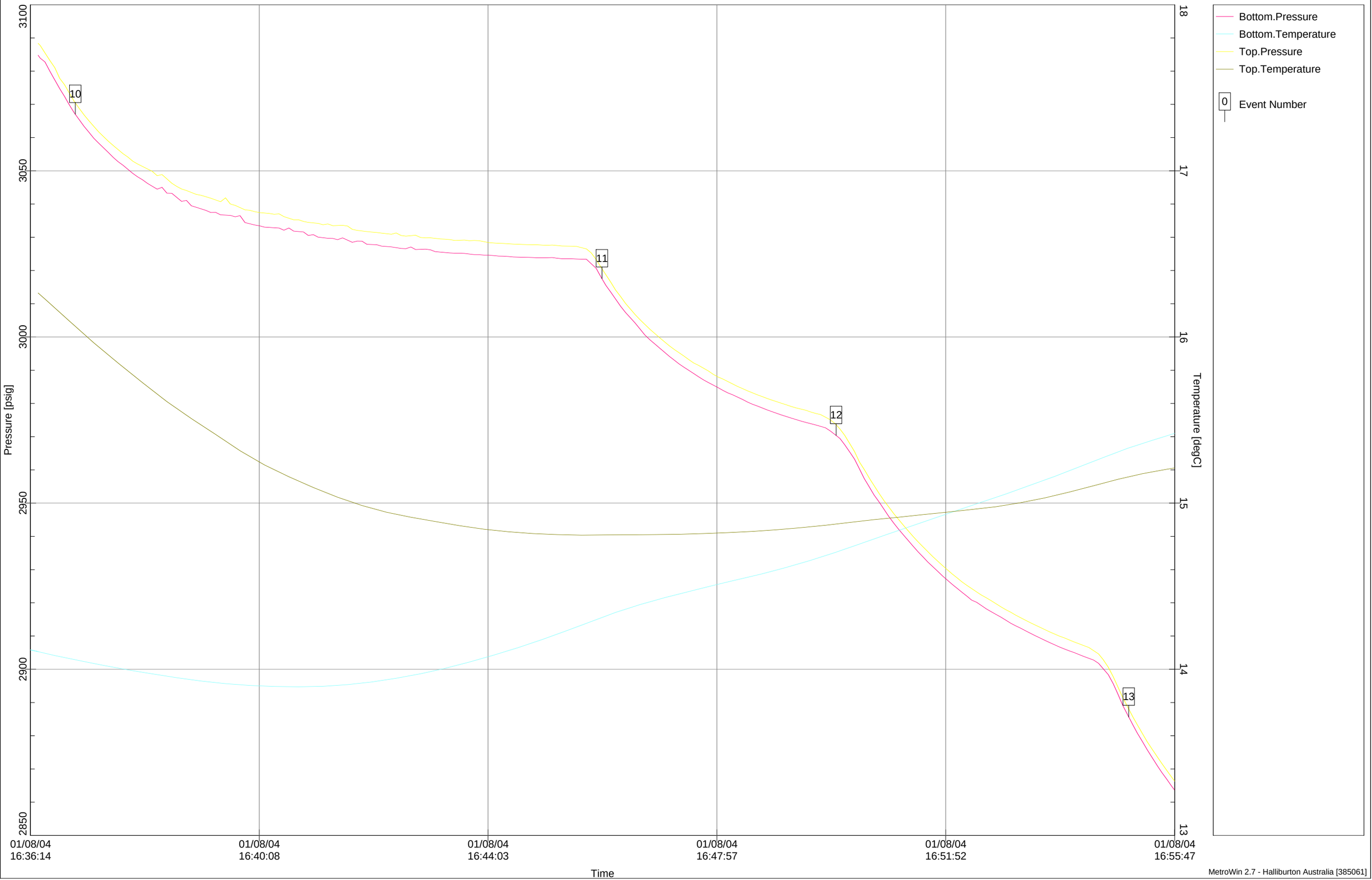
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 7 to 10



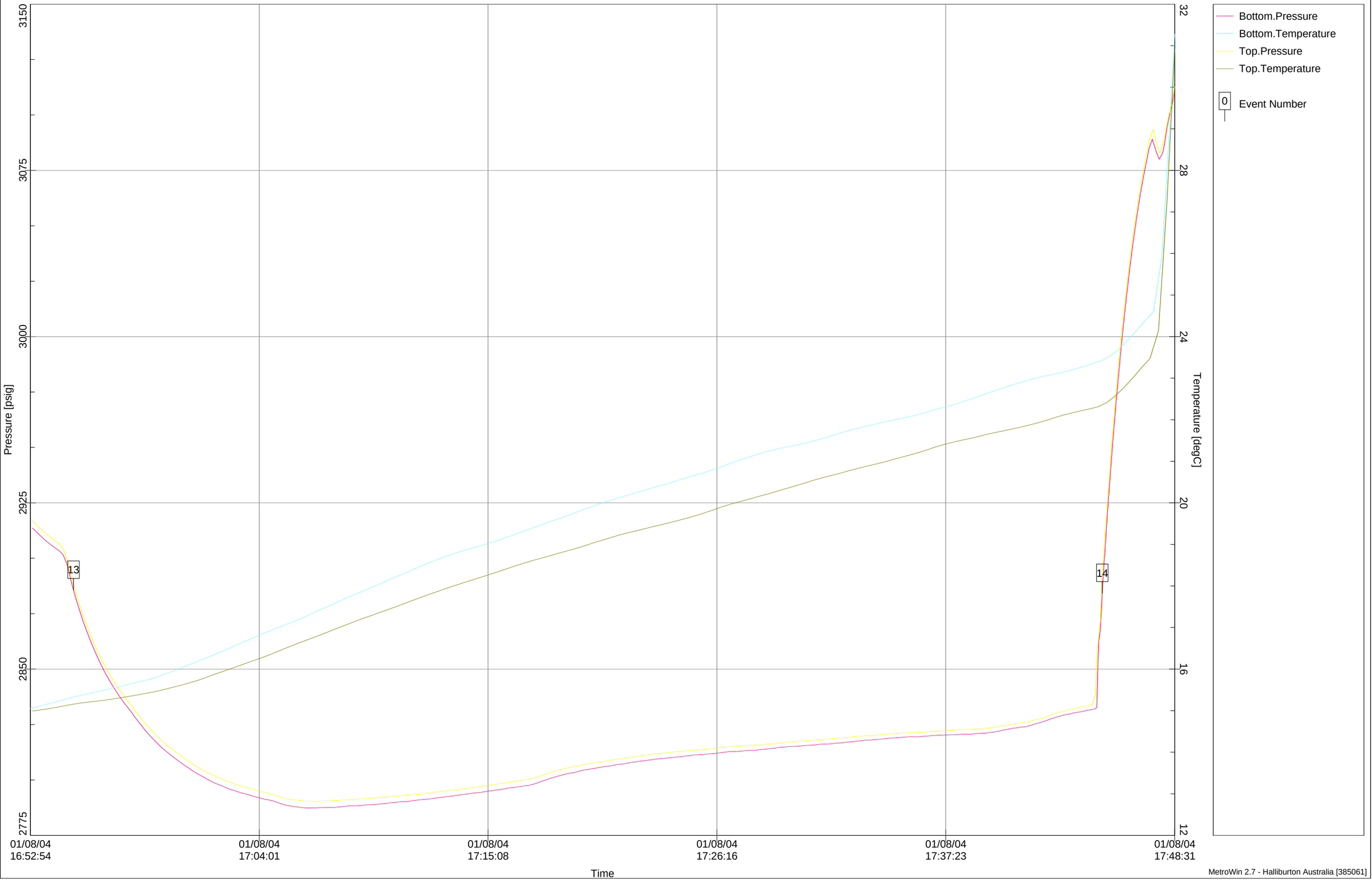
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 10 to 13



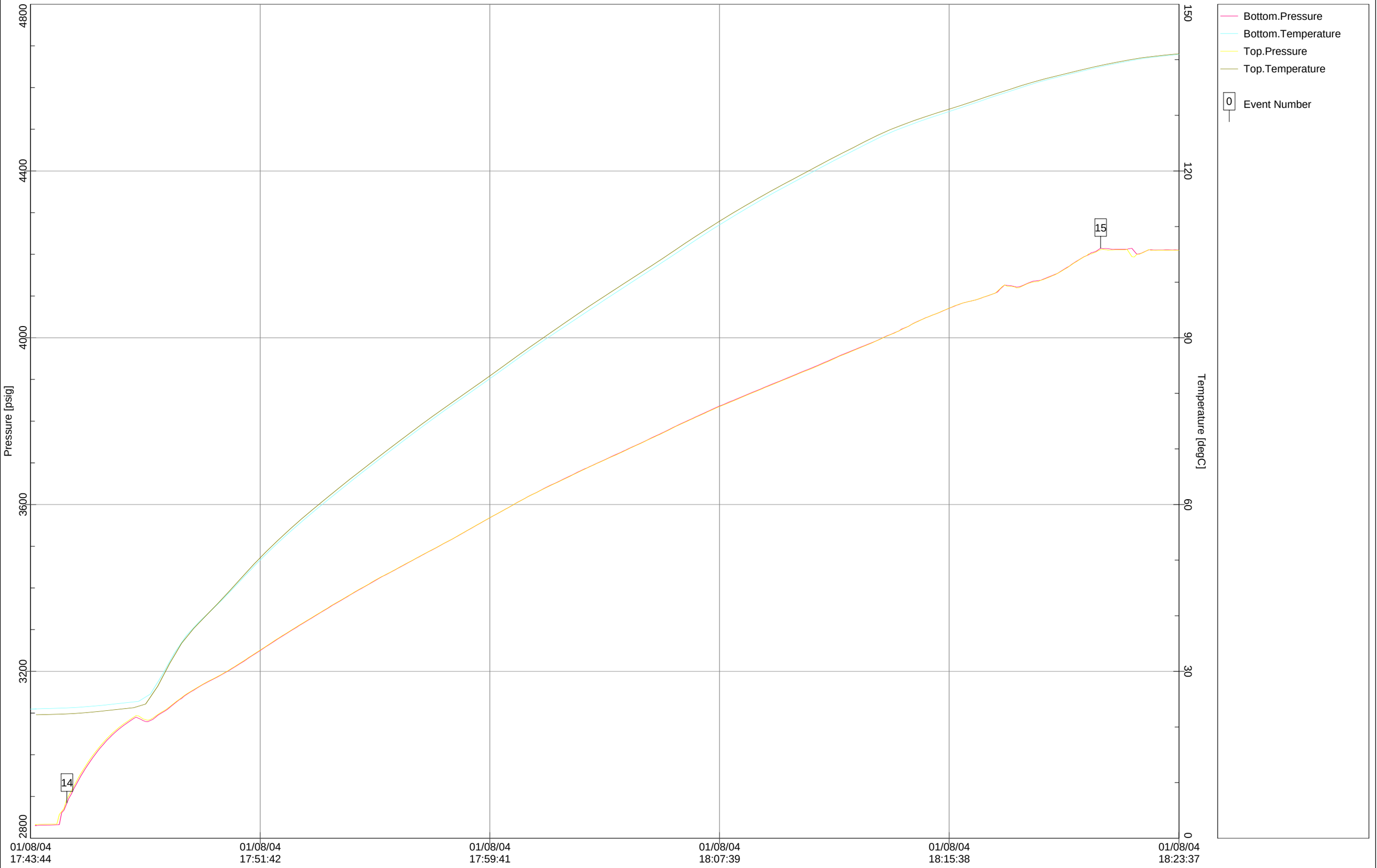
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 13 to 14



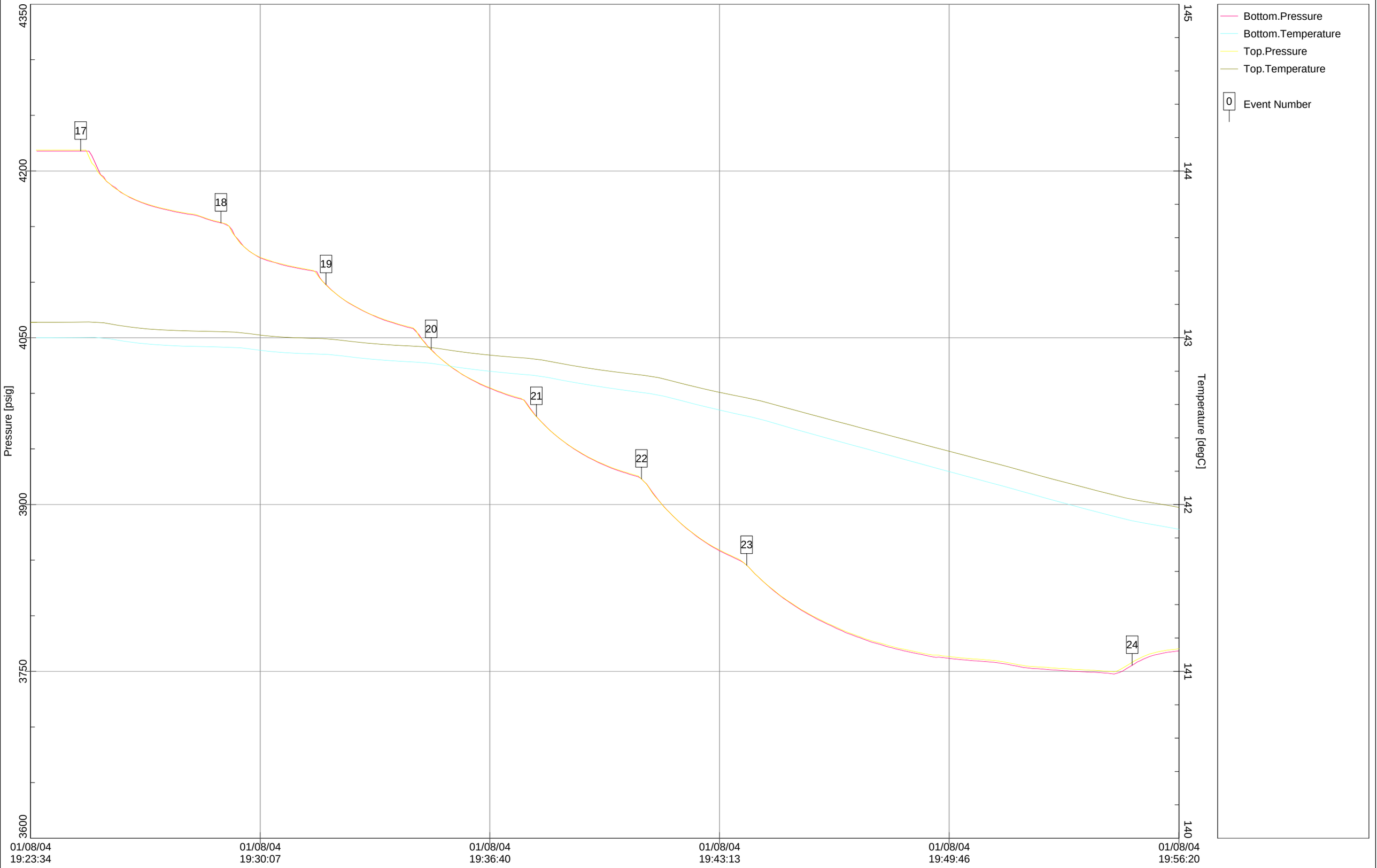
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 14 to 15



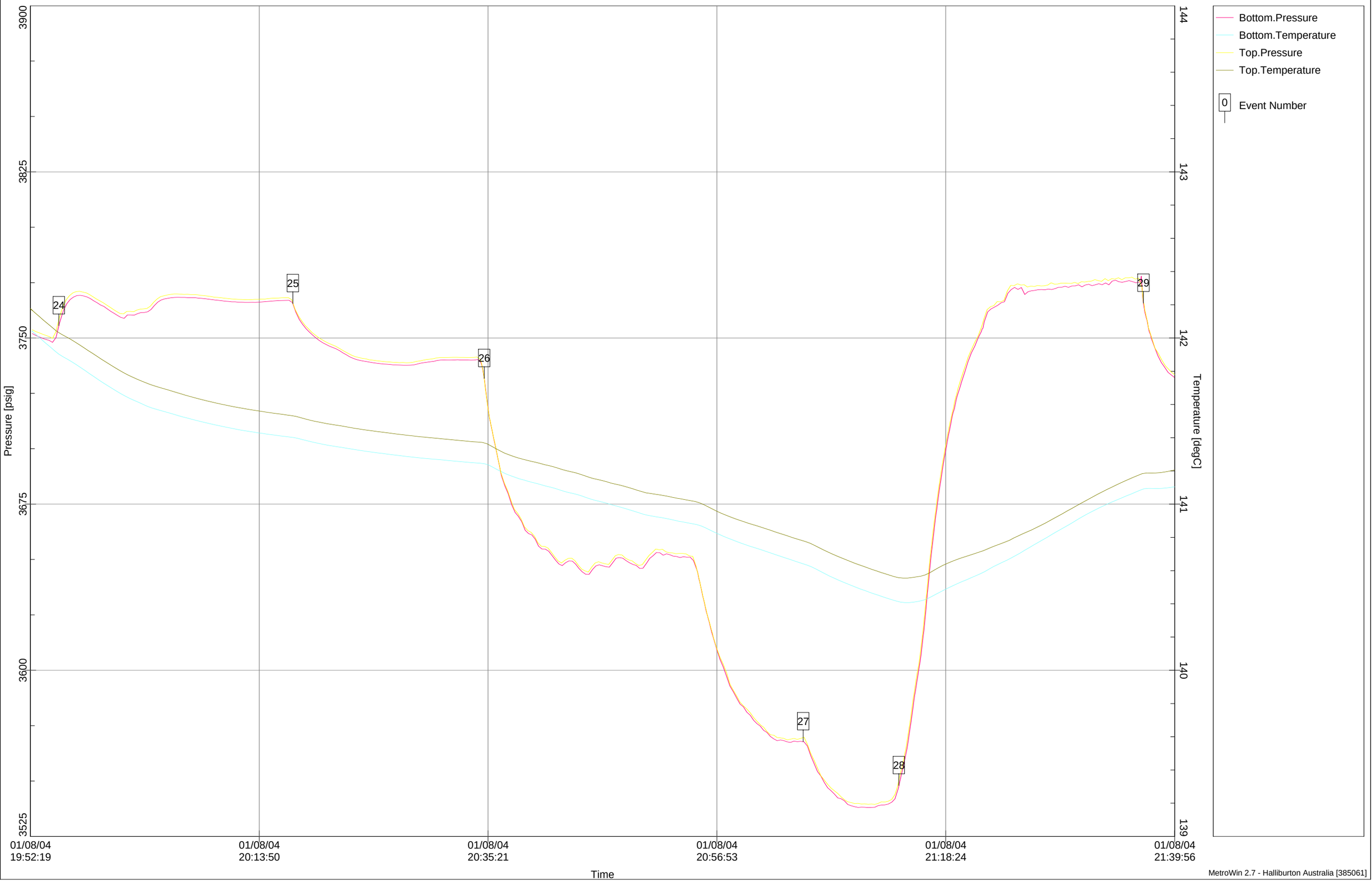
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 17 to 24



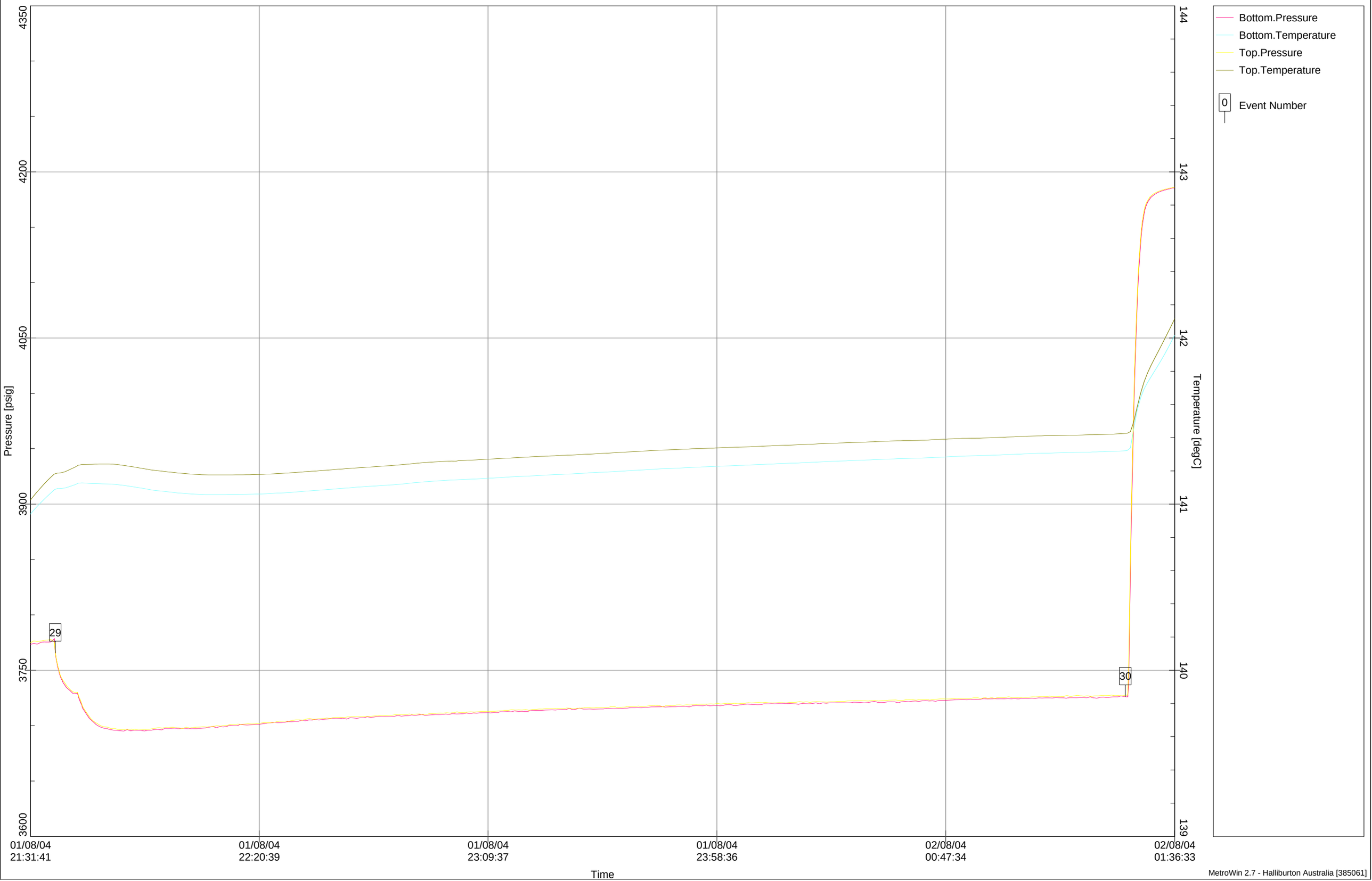
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 24 to 29



Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2755 Sands Flowing Survey
Operator :David Whelan
Plot :Events 29 to 30



SECTION 3

DATA

SURVEY DATA

Client	:Origin Energy	Operator	:David Whelan
Field	:Yolla	Date	:1st - 2nd August 2004
Platform	:Yolla A	Zone	2755 Sands
Well	:Yolla - 4		

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
1	15:03:39	2.48	23.56			Start top gauge
	15:03:39	2.48	23.56			
2	15:06:44	2.58	23.61	2.44	23.69	Start bottom gauge
	15:13:39	2.44	23.92	2.42	23.72	
	15:23:39	3.06	23.23	3.1	22.22	
	15:33:39	1.58	20.02	2.81	19.4	
	15:43:39	1.23	18.08	2.62	18.18	
	15:53:39	1.32	16.67	3	17.07	
3	15:59:59	1.41	15.98	3.27	16.42	Add gauges to tool string and stab lubricator
	16:03:39	1.78	15.64	3.86	16.07	
4	16:06:44	2.12	15.38	8.88	15.82	Open well
	16:13:39	2258.62	14.62	2263.42	16.38	
5	16:13:49	2258.64	14.48	2253.14	16.24	Shut well and depressure lubricator repair leak in lubricator
6	16:22:18	-8.51	5.28	38.74	7.6	Open well gauges in lubricator
	16:22:49	830.97	5.26	925.62	7.7	
	16:23:49	3136.07	9.09	3139.8	12.48	
	16:24:49	3146.39	13.03	3148.68	16.54	
	16:25:49	3148.2	14.73	3149.98	18.36	
	16:26:49	3148.15	15.23	3151.02	19.15	
	16:27:49	3147.79	15.29	3152.01	19.34	
	16:28:49	3147.36	15.17	3152.13	19.12	
	16:29:49	3147.16	14.99	3151.77	18.68	
	16:30:49	3146.76	14.8	3151.22	18.12	
	16:31:49	3138.41	14.64	3142.2	17.66	
7	16:32:00	3137.34	14.62	3141.2	17.59	Open well on 16/64 choke 2755 sands Clean up
	16:32:49	3135.35	14.51	3138.87	17.34	
	16:33:49	3121.96	14.38	3125.74	17.09	
8	16:34:00	3120.52	14.36	3124.44	17.05	Increase choke to 20/64

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	16:34:49	3110.06	14.26	3113.43	16.83	
9	16:35:00	3105.34	14.24	3109	16.76	Increase choke to 24/64
	16:35:49	3092.38	14.15	3096.27	16.45	
	16:36:49	3072.42	14.07	3075.95	16.12	
10	16:37:00	3067.05	14.06	3070.49	16.06	Increase choke to 28/64
	16:37:49	3051.66	14	3055.17	15.82	
	16:38:49	3040.82	13.95	3044.54	15.55	
	16:39:49	3036.51	13.91	3038.92	15.32	
	16:40:49	3031.73	13.89	3035.27	15.13	
	16:41:49	3028.87	13.91	3032.07	15	
	16:42:49	3026.31	13.97	3030.61	14.91	
	16:43:49	3024.78	14.05	3029.05	14.85	
	16:44:49	3023.91	14.16	3027.76	14.82	
	16:45:49	3022.03	14.29	3025.31	14.81	
11	16:46:00	3017.52	14.31	3020.51	14.81	Increase choke to 32/64
	16:46:49	2999.17	14.41	3002.35	14.81	
	16:47:49	2986.3	14.5	2989.77	14.82	
	16:48:49	2978.07	14.58	2981.54	14.84	
	16:49:49	2972.69	14.68	2975.89	14.87	
12	16:50:00	2970.39	14.7	2973.62	14.87	Increase choke to 36/64
	16:50:49	2948.18	14.81	2950.81	14.91	
	16:51:49	2928.13	14.93	2931.26	14.94	
	16:52:49	2915.7	15.05	2918.77	14.98	
	16:53:49	2906.73	15.17	2909.99	15.05	
	16:54:49	2892.46	15.31	2894.58	15.14	
13	16:55:00	2885.64	15.33	2888.05	15.16	Increase choke to 40/64
	16:55:49	2862.89	15.42	2865.59	15.21	
	16:56:49	2843.75	15.53	2846.63	15.28	
	16:57:49	2830.62	15.65	2833.61	15.36	
	16:58:49	2818.97	15.78	2822.06	15.45	
	16:59:49	2810.61	15.96	2813.79	15.56	
	17:00:49	2804.01	16.15	2807.07	15.7	
	17:01:49	2798.79	16.35	2802.11	15.87	
	17:02:49	2795.27	16.56	2798.25	16.04	
	17:03:49	2792.52	16.78	2795.6	16.22	
	17:04:49	2790.22	16.98	2793.11	16.4	
	17:05:49	2787.92	17.17	2790.97	16.6	
	17:06:49	2787.5	17.4	2790.44	16.79	
	17:07:49	2787.76	17.61	2790.82	16.98	
	17:08:49	2788.41	17.83	2791.48	17.18	
	17:09:49	2789.09	18.04	2792.05	17.35	
	17:10:49	2790.14	18.25	2792.87	17.53	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	17:11:49	2791.1	18.47	2793.75	17.72	
	17:12:49	2792.15	18.67	2794.8	17.89	
	17:13:49	2793.36	18.84	2795.88	18.06	
	17:14:49	2794.43	18.98	2797.15	18.22	
	17:15:49	2795.9	19.13	2798.5	18.38	
	17:16:49	2797.2	19.31	2800.05	18.54	
	17:17:49	2799.65	19.49	2802.26	18.68	
	17:18:49	2802.45	19.66	2805.08	18.82	
	17:19:49	2804.5	19.85	2806.97	18.97	
	17:20:49	2806.11	20.02	2808.49	19.12	
	17:21:49	2807.43	20.17	2810.01	19.26	
	17:22:49	2808.79	20.32	2811.24	19.39	
	17:23:49	2809.88	20.46	2812.35	19.51	
	17:24:49	2810.92	20.61	2813.21	19.63	
	17:25:49	2811.73	20.75	2814.02	19.79	
	17:26:49	2812.72	20.93	2815.14	19.95	
	17:27:49	2813.29	21.1	2815.54	20.09	
	17:28:49	2814.15	21.25	2816.23	20.23	
	17:29:49	2815.15	21.36	2817.15	20.37	
	17:30:49	2815.67	21.47	2817.89	20.52	
	17:31:49	2816.32	21.61	2818.64	20.66	
	17:32:49	2817.36	21.76	2819.44	20.79	
	17:33:49	2818.14	21.88	2820.18	20.91	
	17:34:49	2818.97	21.99	2820.99	21.04	
	17:35:49	2819.51	22.1	2821.49	21.18	
	17:36:49	2820.14	22.24	2821.96	21.33	
	17:37:49	2820.4	22.37	2822.6	21.47	
	17:38:49	2820.9	22.54	2822.92	21.58	
	17:39:49	2821.77	22.71	2824.01	21.7	
	17:40:49	2823.52	22.87	2825.55	21.8	
	17:41:49	2825.48	23.01	2827.37	21.92	
	17:42:49	2828.53	23.12	2830.46	22.07	
	17:43:49	2830.61	23.24	2832.72	22.2	
	17:44:49	2861.24	23.4	2864.2	22.32	
14	17:45:00	2884.22	23.43	2893.57	22.36	Shut in well at choke manifold Run in hole with gauges
	17:45:00	2884.22	23.43	2893.57	22.36	
	17:55:00	3390.11	64.74	3391	65.27	
	18:05:00	3749.74	101.3	3749.15	101.95	
	18:15:00	4052.65	129.62	4052.79	130.07	
15	18:20:54	4215.14	138.75	4211.21	138.97	Gauges set on depth at 2990 mdkb slickline pull out of hole
	18:25:00	4210.82	141.52	4210.4	141.6	
	18:35:00	4213.64	142.64	4214.21	142.71	
	18:45:00	4217.35	142.84	4218.09	142.92	
16	18:50:00	4217.86	142.89	4218.58	142.97	Slickline out of hole shut in well depressure and change tools
	18:55:00	4217.76	142.92	4218.49	143	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	19:05:00	4217.8	142.96	4218.58	143.05	
	19:15:00	4217.74	142.98	4218.54	143.07	
17	19:25:00	4217.9	143	4218.72	143.09	Open well 24/64 choke THP 3102 psia
	19:25:00	4217.9	143	4218.72	143.09	
	19:26:00	4184.67	142.99	4183.91	143.08	
	19:27:00	4168.73	142.96	4169.33	143.05	
	19:28:00	4161.48	142.95	4162.15	143.04	
18	19:29:00	4153.3	142.94	4153.73	143.04	Increase choke to 28/64 THP 3052 psia
	19:29:00	4153.3	142.94	4153.73	143.04	
	19:30:00	4124.02	142.93	4124.23	143.02	
	19:31:00	4113.85	142.91	4114.51	143	
19	19:32:00	4097.86	142.9	4097.37	142.99	Increase choke to 32/64 THP 3024 psia
	19:32:00	4097.86	142.9	4097.37	142.99	
	19:33:00	4075.14	142.88	4075.47	142.97	
	19:34:00	4062.5	142.86	4063.09	142.96	
20	19:35:00	4039.51	142.85	4039.1	142.94	Increase choke to 36/64 THP 2975 psia
	19:35:00	4039.51	142.85	4039.1	142.94	
	19:36:00	4014.96	142.82	4015.15	142.91	
	19:37:00	4000.64	142.79	4001.17	142.89	
21	19:38:00	3979.37	142.77	3979.12	142.87	Increase choke to 40/64 THP 2921 psia
	19:38:00	3979.37	142.77	3979.12	142.87	
	19:39:00	3951.74	142.74	3951.9	142.83	
	19:40:00	3934.7	142.7	3935.23	142.8	
22	19:41:00	3923.07	142.67	3923.06	142.78	Increase choke to 44/64 THP 2872 psia
	19:41:00	3923.07	142.67	3923.06	142.78	
	19:42:00	3886.7	142.63	3886.68	142.73	
	19:43:00	3862.51	142.58	3863.1	142.68	
23	19:44:00	3845.41	142.53	3845.38	142.64	Increase choke to 46/64 THP 2800 psia
	19:44:00	3845.41	142.53	3845.38	142.64	
	19:45:00	3817.04	142.48	3817.38	142.59	
	19:46:00	3797.23	142.42	3798.17	142.53	
	19:47:00	3782.97	142.36	3783.87	142.47	
	19:48:00	3772.37	142.3	3773.77	142.42	
	19:49:00	3765.2	142.24	3766.4	142.36	
	19:50:00	3761.01	142.19	3762.59	142.31	
	19:51:00	3758.32	142.13	3759.96	142.25	
	19:52:00	3753.23	142.07	3754.77	142.2	
	19:53:00	3750.82	142.01	3752.61	142.14	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	19:54:00	3749.12	141.96	3750.86	142.08	
24	19:55:00	3755.56	141.9	3758.2	142.03	Liquid slugs at surface
	19:55:00	3755.56	141.9	3758.2	142.03	
	19:56:00	3767.16	141.87	3769.13	142	
	19:57:00	3769.31	141.82	3771.05	141.96	
	19:58:00	3767.72	141.78	3769.19	141.91	
	19:59:00	3764.74	141.74	3766.27	141.87	
	20:00:00	3761.64	141.7	3763.28	141.83	
	20:01:00	3759.04	141.66	3760.73	141.79	
	20:02:00	3760.33	141.63	3761.84	141.76	
	20:03:00	3761.56	141.6	3763.16	141.74	
	20:04:00	3764.81	141.57	3766.69	141.71	
	20:05:00	3767.72	141.56	3769.27	141.69	
	20:06:00	3768.36	141.54	3769.87	141.67	
	20:07:00	3768.22	141.52	3769.71	141.65	
	20:08:00	3768.04	141.5	3769.48	141.64	
	20:09:00	3767.6	141.49	3768.93	141.62	
	20:10:00	3767.02	141.47	3768.36	141.61	
	20:11:00	3766.46	141.46	3767.71	141.59	
	20:12:00	3766.17	141.45	3767.44	141.58	
	20:13:00	3766.1	141.44	3767.34	141.57	
	20:14:00	3766.29	141.43	3767.56	141.56	
	20:15:00	3766.63	141.42	3767.95	141.55	
	20:16:00	3766.92	141.41	3768.15	141.54	
25	20:17:00	3765.56	141.4	3765.98	141.53	Increase choke to 48/64 THP 2778 psia
	20:17:00	3765.56	141.4	3765.98	141.53	
	20:18:00	3755.7	141.39	3756.58	141.52	
	20:19:00	3750.84	141.37	3751.79	141.5	
	20:20:00	3747.48	141.36	3748.54	141.49	
	20:21:00	3745.29	141.35	3746.35	141.48	
	20:22:00	3742.51	141.34	3743.57	141.47	
	20:23:00	3740.29	141.33	3741.43	141.46	
	20:24:00	3739.28	141.32	3740.47	141.45	
	20:25:00	3738.59	141.31	3739.71	141.44	
	20:26:00	3738.05	141.3	3739.24	141.43	
	20:27:00	3737.83	141.29	3738.9	141.42	
	20:28:00	3737.7	141.29	3738.91	141.41	
	20:29:00	3738.6	141.28	3739.77	141.41	
	20:30:00	3739.32	141.27	3740.62	141.4	
	20:31:00	3740.01	141.27	3741.2	141.39	
	20:32:00	3740.06	141.26	3741.3	141.39	
	20:33:00	3740.09	141.25	3741.29	141.38	
	20:34:00	3740.07	141.25	3741.28	141.38	
26	20:35:00	3731.75	141.24	3731.74	141.37	Increase choke to 52/64 THP 2755 psia
	20:35:00	3731.75	141.24	3731.74	141.37	
	20:36:00	3702.21	141.22	3702.55	141.34	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	20:37:00	3682.61	141.18	3683.46	141.31	
	20:38:00	3670.73	141.16	3671.73	141.28	
	20:39:00	3662.14	141.14	3663.34	141.26	
	20:40:00	3657.27	141.12	3658.08	141.25	
	20:41:00	3654.12	141.11	3655.17	141.23	
	20:42:00	3648.12	141.09	3649.11	141.22	
	20:43:00	3649.42	141.07	3650.85	141.2	
	20:44:00	3645.79	141.05	3646.88	141.18	
	20:45:00	3644.12	141.03	3645.93	141.16	
	20:46:00	3647.35	141.01	3648.67	141.14	
	20:47:00	3647.85	141	3649.59	141.13	
	20:48:00	3650.73	140.98	3651.87	141.11	
	20:49:00	3647.6	140.96	3648.51	141.09	
	20:50:00	3646.65	140.94	3648.18	141.07	
	20:51:00	3652.37	140.93	3654.09	141.06	
	20:52:00	3652.53	140.91	3653.7	141.05	
	20:53:00	3651.67	140.9	3652.6	141.04	
	20:54:00	3650.96	140.89	3652.56	141.03	
	20:55:00	3645.31	140.88	3645.36	141.01	
	20:56:00	3624.86	140.85	3624.73	140.99	
	20:57:00	3607.3	140.82	3607.57	140.95	
	20:58:00	3595.48	140.79	3595.59	140.93	
	20:59:00	3585.34	140.77	3586.15	140.9	
	21:00:00	3579.78	140.75	3580.9	140.88	
	21:01:00	3574.58	140.73	3575.28	140.86	
	21:02:00	3569.91	140.7	3570.69	140.84	
	21:03:00	3568.28	140.68	3569.65	140.82	
	21:04:00	3567.78	140.66	3568.68	140.8	
27	21:05:00	3567.39	140.64	3569.96	140.78	Increase choke to 58/64 THP 2616 psia
	21:05:00	3567.39	140.64	3569.96	140.78	
	21:06:00	3558.2	140.62	3559.61	140.75	
	21:07:00	3549.26	140.58	3550.34	140.72	
	21:08:00	3544.09	140.55	3545.12	140.69	
	21:09:00	3540.08	140.52	3541.32	140.67	
	21:10:00	3538.43	140.5	3539.65	140.64	
	21:11:00	3538	140.48	3539.57	140.62	
	21:12:00	3538.68	140.45	3540.07	140.6	
	21:13:00	3539.64	140.43	3540.95	140.58	
28	21:14:00	3547.98	140.41	3550.44	140.56	Decrease choke to 48/64 THP 2605 psia
	21:14:00	3547.98	140.41	3550.44	140.56	
	21:15:00	3572.07	140.41	3574.86	140.56	
	21:16:00	3604.1	140.42	3607.03	140.57	
	21:17:00	3650.07	140.44	3653.35	140.59	
	21:18:00	3687.58	140.48	3690.19	140.63	
	21:19:00	3714.25	140.51	3715.73	140.66	
	21:20:00	3732.22	140.54	3733.95	140.68	
	21:21:00	3745.7	140.56	3746.84	140.7	
	21:22:00	3756.69	140.59	3758.69	140.72	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	21:23:00	3763.92	140.63	3764.44	140.75	
	21:24:00	3766.2	140.66	3768.43	140.77	
	21:25:00	3772.56	140.69	3773.09	140.8	
	21:26:00	3773.21	140.73	3773.72	140.83	
	21:27:00	3771.4	140.77	3774.07	140.86	
	21:28:00	3771.78	140.8	3773.92	140.89	
	21:29:00	3772.89	140.84	3774.55	140.93	
	21:30:00	3773.04	140.88	3775.02	140.96	
	21:31:00	3773.77	140.92	3775.17	141	
	21:32:00	3773.61	140.95	3775.64	141.04	
	21:33:00	3774.46	140.98	3775.65	141.07	
	21:34:00	3774.9	141.01	3776.72	141.1	
	21:35:00	3775.34	141.04	3776.31	141.13	
	21:36:00	3775.49	141.07	3777.36	141.16	
29	21:37:00	3765.73	141.09	3766.08	141.18	Increase choke to 52/64 THP 2807 psia
	21:37:00	3765.73	141.09	3766.08	141.18	
	21:38:00	3745.74	141.09	3746.86	141.19	
	21:39:00	3736.78	141.1	3738.13	141.19	
	21:40:00	3731.92	141.11	3733.11	141.21	
	21:41:00	3728.69	141.12	3730.21	141.22	
	21:42:00	3725.88	141.13	3727.14	141.24	
	21:43:00	3715.27	141.13	3715.64	141.24	
	21:44:00	3708.29	141.13	3709.56	141.24	
	21:45:00	3704.09	141.12	3705.14	141.24	
	21:46:00	3700.15	141.12	3701.92	141.24	
	21:47:00	3699.05	141.12	3699.33	141.24	
	21:48:00	3697.39	141.12	3698.51	141.24	
	21:49:00	3696.67	141.12	3697.26	141.24	
	21:50:00	3696.04	141.12	3696.99	141.24	
	21:51:00	3695.94	141.12	3696.85	141.24	
	21:52:00	3695.69	141.11	3696.59	141.23	
	21:53:00	3695.96	141.11	3696.75	141.23	
	21:54:00	3695.8	141.1	3696.42	141.22	
	21:55:00	3695.49	141.1	3696.29	141.22	
	21:56:00	3695.27	141.09	3696.64	141.21	
	21:57:00	3695.78	141.09	3696.73	141.21	
	21:58:00	3696.57	141.08	3697.18	141.2	
	21:59:00	3696.76	141.08	3697.58	141.2	
	22:00:00	3697.28	141.08	3698.01	141.2	
	22:01:00	3696.9	141.07	3698.5	141.19	
	22:02:00	3698.36	141.07	3698.43	141.19	
	22:03:00	3697.38	141.07	3698.54	141.19	
	22:04:00	3697.55	141.07	3698.4	141.19	
	22:05:00	3697.53	141.06	3698.7	141.18	
	22:06:00	3697.39	141.06	3698.38	141.18	
	22:07:00	3697.58	141.06	3698.86	141.18	
	22:08:00	3698.23	141.06	3698.76	141.18	
	22:09:00	3698.18	141.06	3698.86	141.18	
	22:10:00	3698.77	141.06	3699.67	141.18	
	22:11:00	3698.63	141.06	3699.43	141.18	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	22:12:00	3698.64	141.06	3700.04	141.18	
	22:13:00	3698.95	141.06	3700.26	141.18	
	22:14:00	3699.46	141.06	3700.27	141.18	
	22:15:00	3699.6	141.06	3700.81	141.18	
	22:16:00	3699.83	141.06	3701.29	141.18	
	22:17:00	3700.06	141.06	3701.46	141.18	
	22:18:00	3700.7	141.06	3701.72	141.18	
	22:19:00	3700.75	141.06	3701.42	141.18	
	22:20:00	3701.16	141.06	3701.91	141.18	
	22:21:00	3701.43	141.06	3702.81	141.18	
	22:22:00	3701.72	141.06	3702.96	141.18	
	22:23:00	3702.05	141.06	3703.69	141.18	
	22:24:00	3702.8	141.07	3703.56	141.18	
	22:25:00	3702.96	141.07	3703.82	141.18	
	22:26:00	3702.65	141.07	3704.31	141.19	
	22:27:00	3703.5	141.07	3704.39	141.19	
	22:28:00	3703.87	141.07	3705.1	141.19	
	22:29:00	3704.18	141.07	3705.34	141.19	
	22:30:00	3704.58	141.08	3705.22	141.19	
	22:31:00	3704.88	141.08	3706.24	141.2	
	22:32:00	3705.13	141.08	3706.34	141.2	
	22:33:00	3705.48	141.08	3706.14	141.2	
	22:34:00	3705.11	141.09	3706.75	141.2	
	22:35:00	3705.88	141.09	3706.99	141.2	
	22:36:00	3706.08	141.09	3707.42	141.21	
	22:37:00	3706.42	141.09	3707.27	141.21	
	22:38:00	3706.41	141.09	3707.44	141.21	
	22:39:00	3706.87	141.1	3708.18	141.21	
	22:40:00	3707.09	141.1	3707.88	141.22	
	22:41:00	3707.24	141.1	3708.35	141.22	
	22:42:00	3707.1	141.1	3707.28	141.22	
	22:43:00	3707.21	141.11	3708.24	141.22	
	22:44:00	3707.45	141.11	3708.45	141.22	
	22:45:00	3707.36	141.11	3709.44	141.22	
	22:46:00	3708.76	141.11	3708.19	141.23	
	22:47:00	3707.82	141.11	3709.52	141.23	
	22:48:00	3707.92	141.11	3709.14	141.23	
	22:49:00	3708.47	141.12	3709.44	141.23	
	22:50:00	3709.11	141.12	3709.53	141.23	
	22:51:00	3708.52	141.12	3709.81	141.24	
	22:52:00	3709.41	141.12	3710.17	141.24	
	22:53:00	3709.14	141.13	3710.02	141.24	
	22:54:00	3709.33	141.13	3710.23	141.25	
	22:55:00	3709.28	141.13	3710.77	141.25	
	22:56:00	3709.19	141.13	3710.53	141.25	
	22:57:00	3709.39	141.14	3710.77	141.25	
	22:58:00	3709.74	141.14	3710.92	141.25	
	22:59:00	3710.29	141.14	3711.27	141.26	
	23:00:00	3710.29	141.14	3711.37	141.26	
	23:01:00	3710.25	141.14	3712.25	141.26	
	23:02:00	3710.72	141.15	3711.78	141.26	
	23:03:00	3710.74	141.15	3712.33	141.26	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	23:04:00	3710.86	141.15	3712.08	141.26	
	23:05:00	3711.48	141.15	3712.35	141.26	
	23:06:00	3711.58	141.15	3712.65	141.27	
	23:07:00	3711.23	141.15	3711.83	141.27	
	23:08:00	3711.66	141.15	3712.73	141.27	
	23:09:00	3711.86	141.16	3712.83	141.27	
	23:10:00	3712.15	141.16	3712.87	141.27	
	23:11:00	3712.03	141.16	3713.03	141.27	
	23:12:00	3712.54	141.16	3713.82	141.27	
	23:13:00	3713.05	141.16	3713.52	141.28	
	23:14:00	3712.65	141.16	3713.83	141.28	
	23:15:00	3712.86	141.16	3713.93	141.28	
	23:16:00	3713.02	141.17	3713.79	141.28	
	23:17:00	3713.62	141.17	3713.83	141.28	
	23:18:00	3713.09	141.17	3714.74	141.28	
	23:19:00	3713.72	141.17	3714.66	141.28	
	23:20:00	3713.92	141.17	3715.2	141.29	
	23:21:00	3713.82	141.17	3714.9	141.29	
	23:22:00	3713.92	141.17	3715.2	141.29	
	23:23:00	3714.8	141.18	3715.32	141.29	
	23:24:00	3714.44	141.18	3715.28	141.29	
	23:25:00	3714.55	141.18	3715.55	141.29	
	23:26:00	3713.55	141.18	3714.98	141.29	
	23:27:00	3715.49	141.18	3715.04	141.3	
	23:28:00	3714.87	141.18	3715.84	141.3	
	23:29:00	3714.71	141.18	3715.72	141.3	
	23:30:00	3715.01	141.19	3715.99	141.3	
	23:31:00	3715.12	141.19	3716.17	141.3	
	23:32:00	3714.11	141.19	3716.21	141.3	
	23:33:00	3715.36	141.19	3716.45	141.3	
	23:34:00	3715.83	141.19	3716.51	141.31	
	23:35:00	3715.56	141.19	3716.39	141.31	
	23:36:00	3715.45	141.19	3717.09	141.31	
	23:37:00	3715.2	141.2	3716.34	141.31	
	23:38:00	3715.6	141.2	3717.22	141.31	
	23:39:00	3716.06	141.2	3716.52	141.31	
	23:40:00	3715.53	141.2	3717.72	141.31	
	23:41:00	3716.12	141.2	3718.23	141.32	
	23:42:00	3716.24	141.21	3717.52	141.32	
	23:43:00	3716.47	141.21	3718.07	141.32	
	23:44:00	3717.12	141.21	3717.9	141.32	
	23:45:00	3717.21	141.21	3718.13	141.32	
	23:46:00	3716.86	141.21	3718.17	141.32	
	23:47:00	3717.31	141.21	3717.38	141.33	
	23:48:00	3716.81	141.21	3717.68	141.33	
	23:49:00	3717.19	141.22	3718.42	141.33	
	23:50:00	3716.94	141.22	3718.14	141.33	
	23:51:00	3717.45	141.22	3718.48	141.33	
	23:52:00	3717.78	141.22	3719.02	141.33	
	23:53:00	3717.89	141.22	3718.57	141.33	
	23:54:00	3717.95	141.22	3719.06	141.33	
	23:55:00	3718.05	141.22	3719.53	141.33	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	23:56:00	3717.84	141.22	3719.23	141.34	
	23:57:00	3717.91	141.23	3719.33	141.34	
	23:58:00	3718.24	141.23	3719.34	141.34	
	23:59:00	3718.32	141.23	3719.55	141.34	
	0:00:00	3718.45	141.23	3719.63	141.34	
	0:01:00	3719.33	141.23	3720.2	141.34	
	0:02:00	3718.57	141.23	3719.72	141.34	
	0:03:00	3718.37	141.23	3720.06	141.34	
	0:04:00	3718.76	141.23	3720.55	141.34	
	0:05:00	3719.01	141.24	3720.14	141.34	
	0:06:00	3719.09	141.24	3720.59	141.35	
	0:07:00	3720.05	141.24	3720.45	141.35	
	0:08:00	3719.48	141.24	3720.25	141.35	
	0:09:00	3719.82	141.24	3721.05	141.35	
	0:10:00	3719.44	141.24	3720.8	141.35	
	0:11:00	3719.79	141.24	3720.24	141.35	
	0:12:00	3720.09	141.24	3721.12	141.35	
	0:13:00	3719.52	141.24	3721.06	141.35	
	0:14:00	3720.59	141.25	3721.07	141.36	
	0:15:00	3720.29	141.25	3721.41	141.36	
	0:16:00	3719.96	141.25	3721.32	141.36	
	0:17:00	3719.56	141.25	3721.22	141.36	
	0:18:00	3720.08	141.25	3721.16	141.36	
	0:19:00	3720	141.25	3721	141.36	
	0:20:00	3720.38	141.25	3721.79	141.36	
	0:21:00	3720.51	141.25	3721.48	141.36	
	0:22:00	3720.3	141.26	3721.74	141.37	
	0:23:00	3720.51	141.26	3721.75	141.37	
	0:24:00	3720.24	141.26	3721.75	141.37	
	0:25:00	3720.77	141.26	3722.1	141.37	
	0:26:00	3720.73	141.26	3722.01	141.37	
	0:27:00	3720.77	141.26	3722.8	141.37	
	0:28:00	3721.74	141.26	3722.03	141.37	
	0:29:00	3721.1	141.26	3722.15	141.37	
	0:30:00	3720.65	141.27	3722.12	141.37	
	0:31:00	3720.68	141.27	3722.33	141.37	
	0:32:00	3721.81	141.27	3722.91	141.38	
	0:33:00	3721.07	141.27	3722.89	141.38	
	0:34:00	3721.39	141.27	3723.07	141.38	
	0:35:00	3721.87	141.27	3722.88	141.38	
	0:36:00	3721.9	141.27	3723.44	141.38	
	0:37:00	3722.01	141.27	3723.04	141.38	
	0:38:00	3722.33	141.27	3722.81	141.38	
	0:39:00	3721.65	141.27	3723.27	141.38	
	0:40:00	3722.13	141.28	3723.46	141.38	
	0:41:00	3721.86	141.28	3723.55	141.38	
	0:42:00	3722.34	141.28	3723.43	141.38	
	0:43:00	3721.92	141.28	3723.95	141.39	
	0:44:00	3722.21	141.28	3723.55	141.39	
	0:45:00	3722.66	141.28	3723.66	141.39	
	0:46:00	3722.46	141.28	3723.34	141.39	
	0:47:00	3722.91	141.28	3724.21	141.39	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	0:48:00	3723.09	141.28	3723.91	141.39	
	0:49:00	3723.1	141.29	3724.36	141.39	
	0:50:00	3723.02	141.29	3724.31	141.39	
	0:51:00	3723.57	141.29	3724.3	141.4	
	0:52:00	3723.46	141.29	3724.23	141.4	
	0:53:00	3723.81	141.29	3724.65	141.4	
	0:54:00	3722.86	141.29	3724.8	141.4	
	0:55:00	3723.81	141.29	3724.87	141.4	
	0:56:00	3724.01	141.29	3725.39	141.4	
	0:57:00	3723.88	141.29	3724.94	141.4	
	0:58:00	3724.58	141.3	3725.06	141.4	
	0:59:00	3724.14	141.3	3725.49	141.4	
	1:00:00	3724.44	141.3	3725.62	141.4	
	1:01:00	3724.45	141.3	3726.25	141.4	
	1:02:00	3723.92	141.3	3725.4	141.41	
	1:03:00	3723.8	141.3	3725.45	141.41	
	1:04:00	3724.33	141.3	3725.76	141.41	
	1:05:00	3724.42	141.3	3726.02	141.41	
	1:06:00	3724.88	141.3	3725.8	141.41	
	1:07:00	3724.64	141.31	3725.89	141.41	
	1:08:00	3724.89	141.31	3726	141.41	
	1:09:00	3725.17	141.31	3726.16	141.41	
	1:10:00	3724.86	141.31	3726.13	141.41	
	1:11:00	3725.24	141.31	3727.3	141.41	
	1:12:00	3725.22	141.31	3726.93	141.41	
	1:13:00	3725.83	141.31	3726.86	141.41	
	1:14:00	3725.39	141.31	3726.56	141.41	
	1:15:00	3725.04	141.31	3726.78	141.42	
	1:16:00	3725.33	141.31	3726.67	141.42	
	1:17:00	3725.48	141.31	3726.53	141.42	
	1:18:00	3725.47	141.31	3726.95	141.42	
	1:19:00	3725.47	141.31	3726.66	141.42	
	1:20:00	3725.28	141.31	3726.99	141.42	
	1:21:00	3725.5	141.32	3727.02	141.42	
	1:22:00	3725.93	141.32	3726.98	141.42	
	1:23:00	3725.67	141.32	3727.32	141.42	
	1:24:00	3726.1	141.32	3727.04	141.42	
	1:25:00	3726.69	141.32	3727.37	141.42	
30	1:26:00	3725.69	141.32	3727.63	141.43	Shut in well at choke manifold

Origin Energy

Well Name: Yolla 4
Test Type: Flowing Survey 2548 Sands
Date of Survey: 2nd August 2004

MEMORY GAUGE REPORT

Prepared For: Andrew Wenk
Date: 22nd August 2004

David Whelan
Completion Products & Services
Halliburton Australia Pty Ltd

HALLIBURTON

Halliburton Australia Pty Ltd

MEMORY GAUGE FLOWING PRESSURE AND
TEMPERATURE SURVEY

MEMORY GAUGE TICKET NO:	35409
DATE:	2nd August 2004
HALLIBURTON CAMP:	Cheltenham, Victoria
HALLIBURTON OPERATOR:	David Whelan
WITNESS:	N/A
COMPANY:	Origin
DRILLING CONTRACTOR:	Ensco
LEASE NAME:	YOLLA
WELL NO:	YOLLA-4
TEST TYPE:	Flowing Survey
TEST NO:	2
TESTED ZONE:	2458 Sands
FIELD AREA:	Bass Strait
STATE:	Victoria
COUNTRY:	Australia

NOTICE: THIS REPORT IS BASED ON SOUND ENGINEERING PRACTICES, BUT BECAUSE OF VARIABLE WELL CONDITIONS AND OTHER INFORMATION WHICH MUST BE RELIED UPON HALLIBURTON MAKES NO WARRANTY, EXPRESS OR IMPLIED AS TO THE ACCURACY OF THE DATA OR OF ANY CALCULATIONS OR OPINIONS EXPRESSED HEREIN. YOU AGREE THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER DUE TO NEGLIGENCE OR OTHERWISE ARISING OUT OF OR IN CONNECTION WITH SUCH DATA, CALCULATIONS OR OPINIONS.

HALLIBURTON

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SECTION 1

TEST SUMMARY & JOB INFORMATION

HALLIBURTON

WELL DATA

Well Details

Well Name	Yolla - 4	
Field	Yolla	
Platfrom	Yolla A	
Derrick Floor Elevation	81	m AMSL
Top Bottom Flange	27.07	m MDRT

Completion

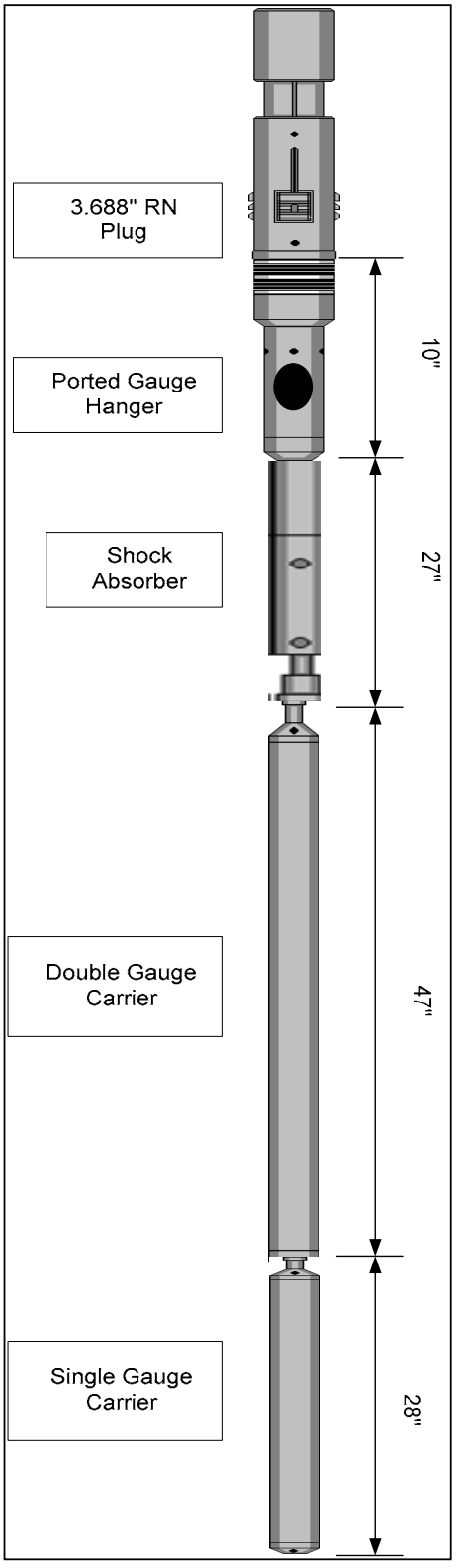
Measured m (MDRT)	**Description**
27.07	Tubing Hanger
169.09	TRSV
2521.39	5 1/2" PBR
2593.75	4 1/2" Halliburton SSD x 3.813" RD
2596.99	6 5/8" AHR Packer
2832.49	4 1/2" Halliburton SSD x 3.813" RD
2835.73	6 5/8" AHR Packer
2920.57	4 1/2" Halliburton SSD x 3.688" RD
2923.80	6 5/8" AHR Packer
2979.57	4 1/2" Halliburton SSD x 3.688" RD
2983.10	6 5/8" MWR Packer
2990.46	4 1/2" Halliburton SSD x 3.688" RD
2997.38	4 1/2" Halliburton 3.688" RN Nipple
2999.95	EOT

SURVEY EVENTS

Client	:Origin Energy	**Operator**	:David Whelan
Field	:Yolla	**Survey Date**	:2nd August 2004
Platfor	:Yolla A	**Well**	:Yolla - 4

Event	Time	Description
30	1:26:00	Shut in well at choke manifold
31	1:59:00	Slickline rih and close SSD on 2755 sands THP 3232 psia
32	3:37:00	Slickline rih and open SSD at 2548 sands THP 3176 psia
33	5:04:00	Open well on 24/64 choke flow well to clean up (2458 sands)
34	5:06:00	Increase choke to 28/64 THP 2884 psia
35	5:08:00	Increase choke to 32/64 THP 2783 psia
36	5:12:00	Increase choke to 36/64 THP 2594 psia
37	5:15:00	Increase choke to 40/64 THP 2472 psia
38	9:13:00	Close FCH master valve and open choke manifold
39	9:45:00	Rih slickline and open SSD 2809 sands THP 2311 psia

SURVEY TOOL STRING



HALLIBURTON

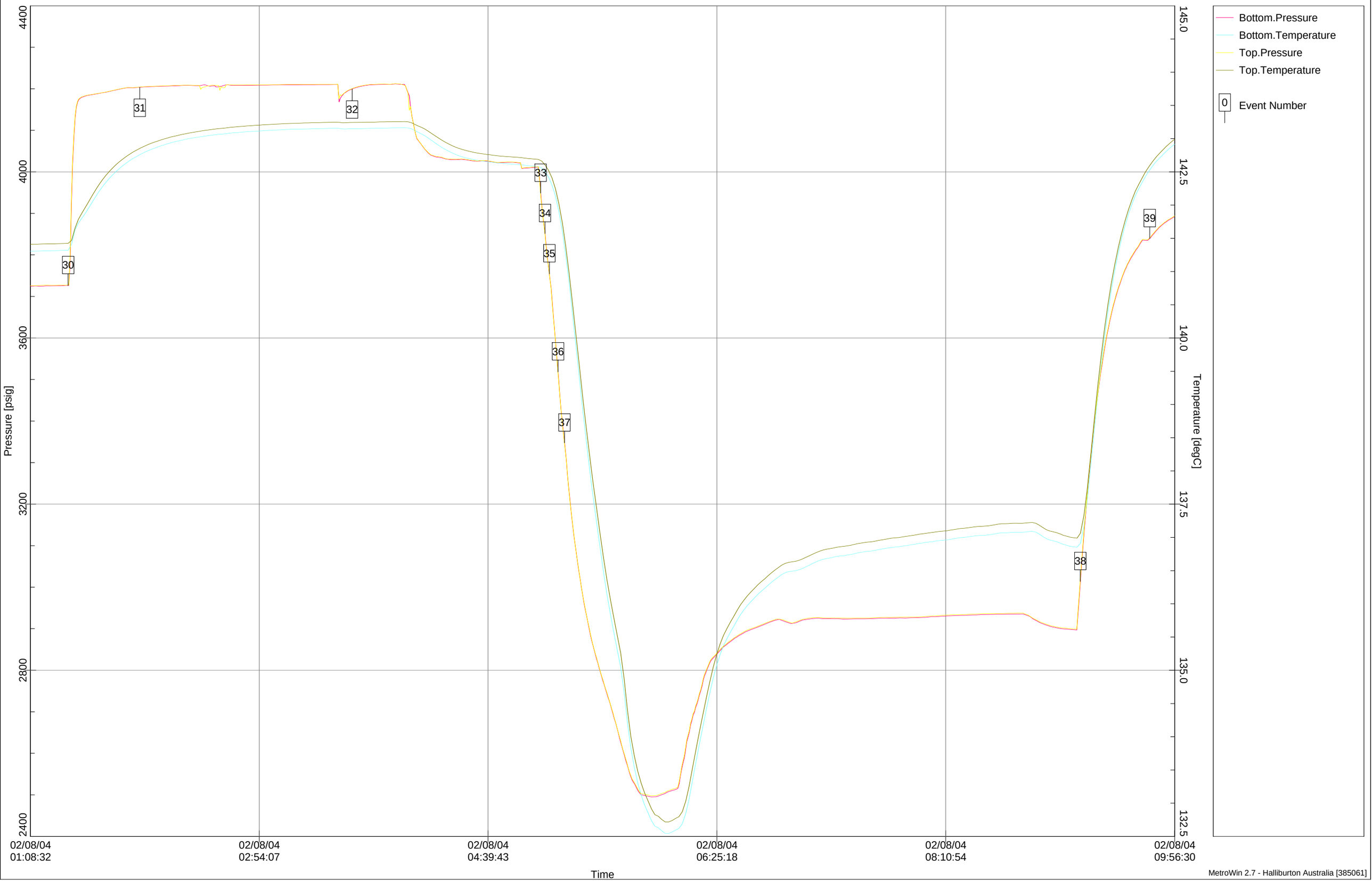
SECTION 2

PLOTS

SECTION 3

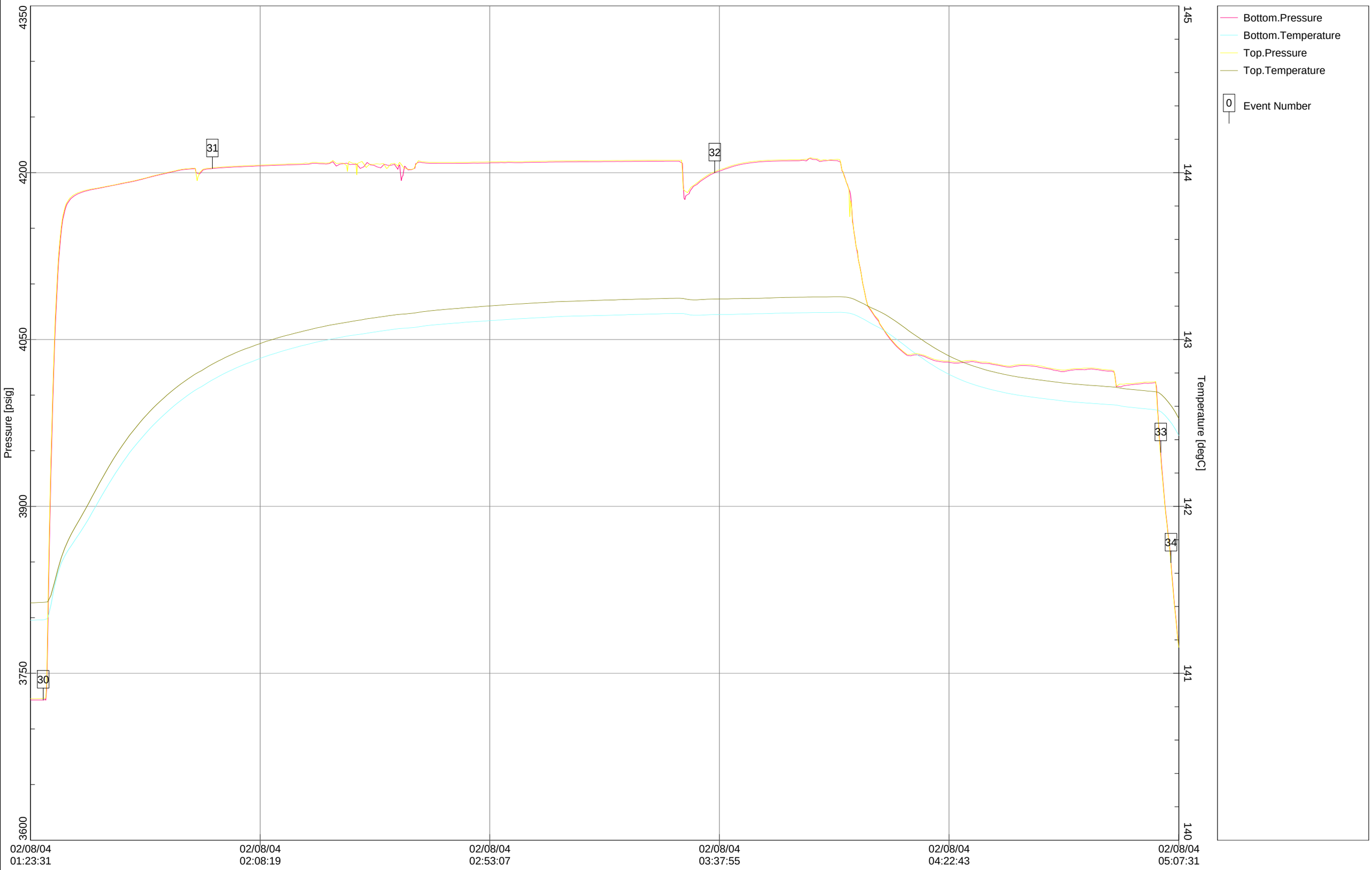
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2548 Sands Flowing Survey
Operator :David Whelan
Plot :Events 30 - 39



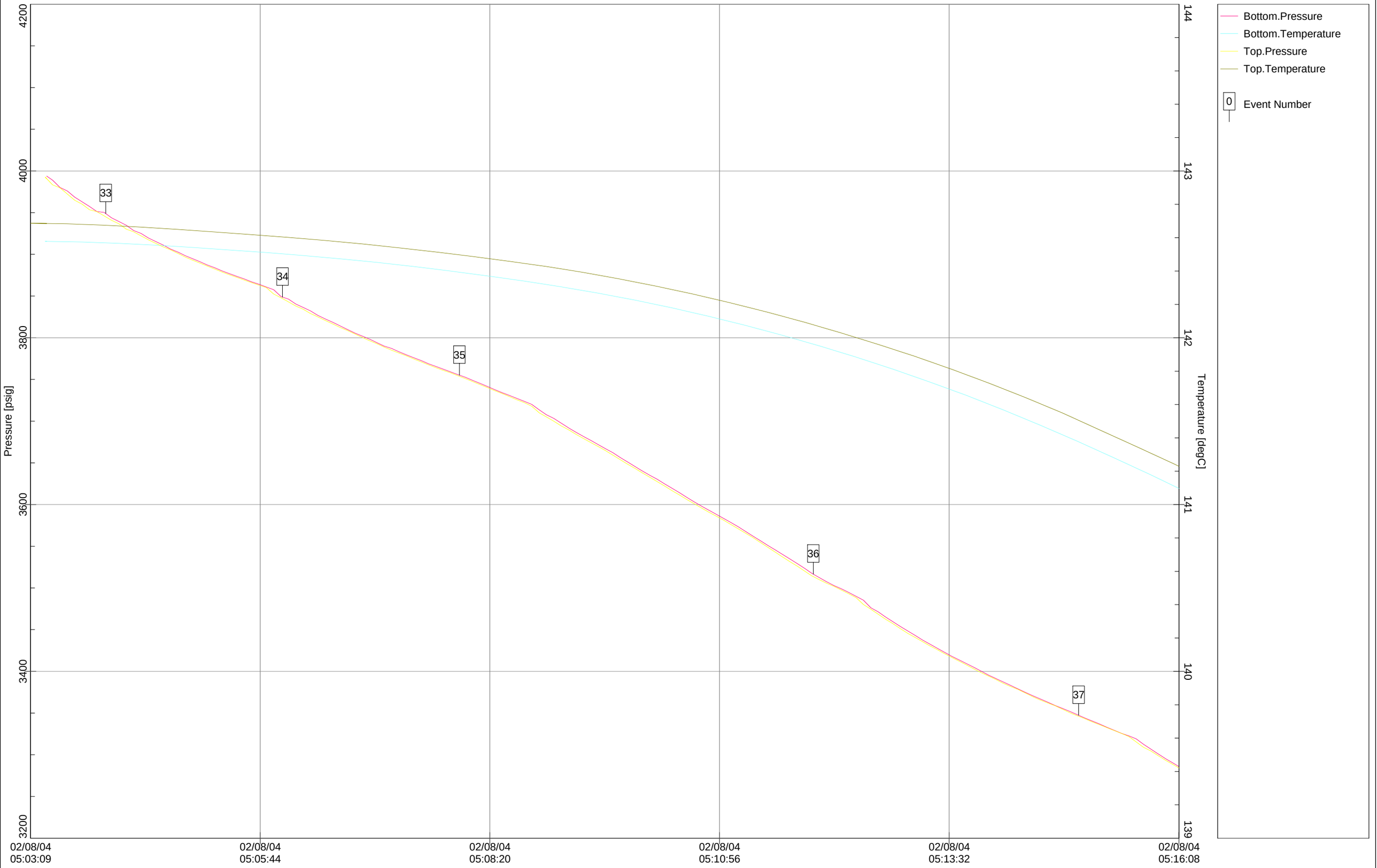
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2548 Sands Flowing Survey
Operator :David Whelan
Plot :Events 30 - 33



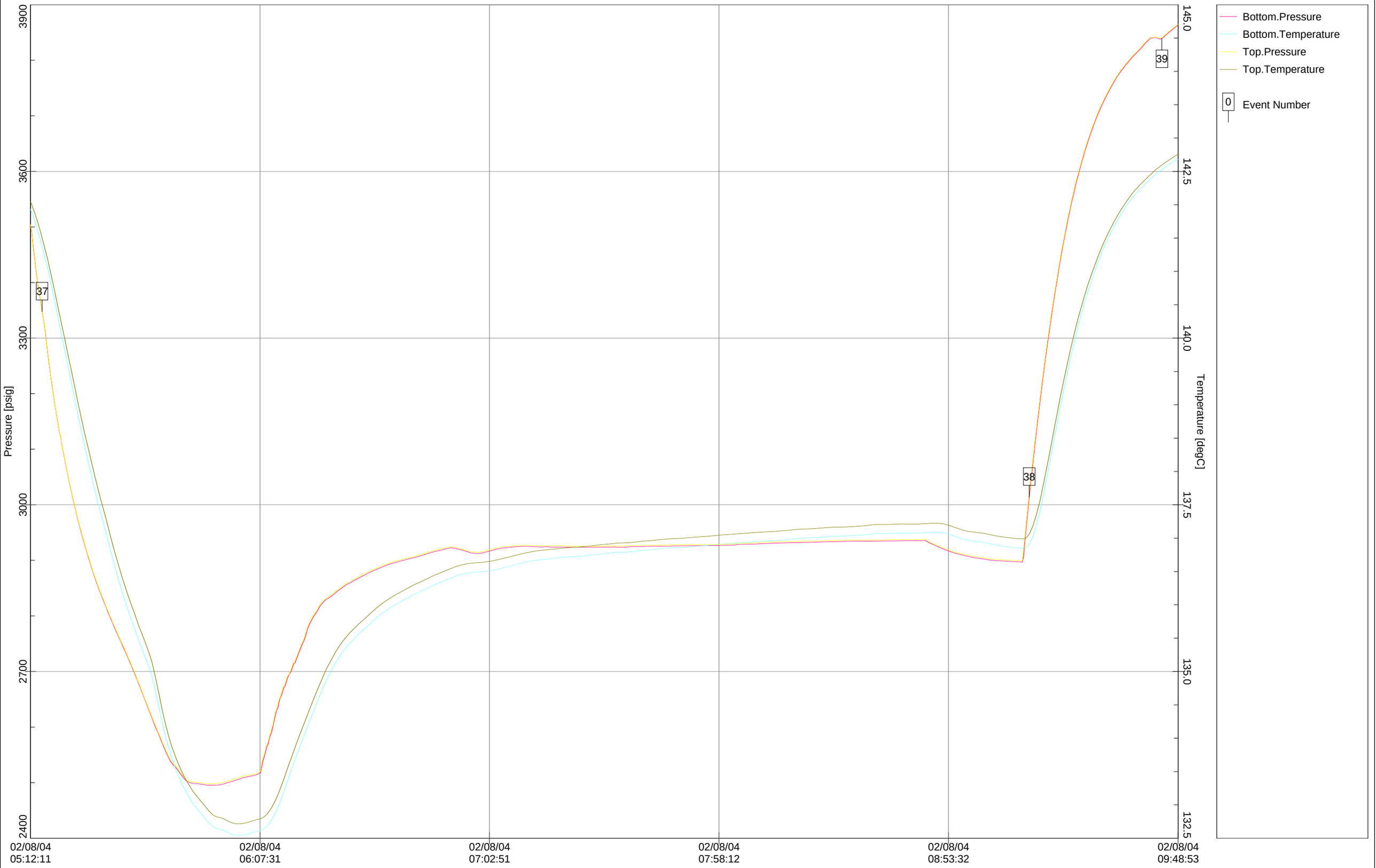
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2548 Sands Flowing Survey
Operator :David Whelan
Plot :Events 33 - 37



Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2548 Sands Flowing Survey
Operator :David Whelan
Plot :Events 37 - 39



DATA

SURVEY DATA

Client	:Origin Energy	Operator	:David Whelan
Field	:Yolla	Date	:2nd August 2004
Platform	:Yolla A	Zone	2458 Sands
Well	:Yolla - 4		

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
30	1:26:00	3725.69	141.32	3727.63	141.43	Shut in well at choke manifold
	1:35:00	4184.27	141.93	4184.9	142.03	
	1:45:00	4193.71	142.4	4194.14	142.51	
	1:55:00	4203.36	142.68	4203.91	142.78	
31	1:59:00	4203.7	142.76	4204.34	142.85	Slickline rih and close SSD on 2755 sands THP 3232 psia
	2:05:00	4205.43	142.85	4206.11	142.94	
	2:15:00	4207.2	142.95	4207.96	143.04	
	2:25:00	4207.92	143.02	4208.43	143.1	
	2:35:00	4206.97	143.06	4209.42	143.15	
	2:45:00	4208.28	143.1	4209.19	143.18	
	2:55:00	4208.95	143.12	4209.88	143.21	
	3:05:00	4209.47	143.13	4210.35	143.22	
	3:15:00	4209.87	143.14	4210.77	143.24	
	3:25:00	4210.17	143.15	4211.06	143.24	
	3:35:00	4194.71	143.15	4195.84	143.24	
32	3:37:00	4199.77	143.15	4200.81	143.24	Slickline rih and open SSD at 2548 sands THP 3176 psia
	3:45:00	4209.31	143.15	4210.27	143.25	
	3:55:00	4210.77	143.16	4212.02	143.25	
	4:05:00	4122.56	143.14	4121.78	143.23	
	4:15:00	4034.9	142.94	4036.5	143.05	
	4:25:00	4029.59	142.76	4030.22	142.87	
	4:35:00	4025.4	142.67	4026.6	142.78	
	4:45:00	4021.43	142.63	4022.58	142.74	
	4:55:00	4019.44	142.61	4019.34	142.72	
33	5:04:00	3948.98	142.57	3945.05	142.67	Open well on 24/64 choke flow well to clean up (2458 sands)
	5:05:00	3894.07	142.54	3892.38	142.64	
34	5:06:00	3848.77	142.5	3846.93	142.6	Increase choke to 28/64 THP 2884 psia
	5:06:00	3848.77	142.5	3846.93	142.6	
	5:07:00	3797.54	142.46	3795.81	142.56	
35	5:08:00	3755.15	142.39	3753.81	142.5	Increase choke to 32/64 THP 2783 psia
	5:08:00	3755.15	142.39	3753.81	142.5	
	5:09:00	3706.86	142.32	3703.97	142.43	
	5:10:00	3644.74	142.22	3642.39	142.33	
	5:11:00	3582.65	142.11	3580.43	142.22	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
36	5:12:00	3516.69	141.96	3513.77	142.08	Increase choke to 36/64 THP 2594 psia
	5:12:00	3516.69	141.96	3513.77	142.08	
	5:13:00	3452.89	141.79	3450.23	141.91	
	5:14:00	3394.69	141.6	3393.47	141.73	
37	5:15:00	3347.39	141.38	3346.19	141.51	Increase choke to 40/64 THP 2472 psia
	5:15:00	3347.39	141.38	3346.19	141.51	
	5:16:00	3294.32	141.13	3292.41	141.26	
	5:17:00	3235.03	140.86	3234.4	141	
	5:18:00	3184.25	140.57	3183.54	140.71	
	5:19:00	3138.72	140.26	3138.65	140.42	
	5:20:00	3098.28	139.96	3098.8	140.12	
	5:21:00	3060.77	139.65	3061.03	139.82	
	5:22:00	3024.98	139.34	3025.78	139.52	
	5:23:00	2992.72	139.04	2993.48	139.22	
	5:24:00	2962.17	138.74	2963.31	138.93	
	5:25:00	2935.23	138.45	2936.1	138.65	
	5:26:00	2909.4	138.17	2910.7	138.38	
	5:27:00	2884.92	137.91	2885.86	138.12	
	5:28:00	2862.17	137.65	2863.68	137.86	
	5:29:00	2842.43	137.41	2843.65	137.61	
	5:30:00	2823.79	137.17	2825.15	137.39	
	5:31:00	2804.83	136.94	2806.6	137.14	
	5:32:00	2787.48	136.7	2788.39	136.91	
	5:33:00	2769.97	136.47	2771.23	136.68	
	5:34:00	2753.06	136.25	2754.35	136.47	
	5:35:00	2736.87	136.06	2738.45	136.27	
	5:36:00	2719.89	135.87	2721.44	136.09	
	5:37:00	2702.34	135.69	2703.41	135.92	
	5:38:00	2683.41	135.52	2684.33	135.74	
	5:39:00	2665	135.35	2666.17	135.57	
	5:40:00	2645.27	135.19	2646.55	135.41	
	5:41:00	2625.71	135.03	2626.82	135.24	
	5:42:00	2606.58	134.8	2608.41	135.01	
	5:43:00	2588	134.51	2589.92	134.71	
	5:44:00	2570.77	134.22	2572.55	134.41	
	5:45:00	2552.84	133.97	2554.58	134.15	
	5:46:00	2538.29	133.75	2540.2	133.93	
	5:47:00	2529.4	133.57	2531.66	133.75	
	5:48:00	2519.66	133.42	2521.87	133.59	
	5:49:00	2509.6	133.28	2512.17	133.46	
	5:50:00	2502.01	133.16	2504.31	133.34	
	5:51:00	2498.72	133.06	2502.05	133.24	
	5:52:00	2498.48	132.97	2501.12	133.15	
	5:53:00	2497.82	132.9	2500.3	133.08	
	5:54:00	2496.62	132.82	2499.35	133	
	5:55:00	2495.32	132.75	2498.33	132.93	
	5:56:00	2495.43	132.68	2498.45	132.86	
	5:57:00	2495.9	132.65	2498.66	132.82	
	5:58:00	2496.22	132.64	2499.09	132.81	
	5:59:00	2498.61	132.61	2501.4	132.79	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	6:00:00	2500.86	132.58	2503.8	132.75	
	6:01:00	2502.65	132.55	2505.46	132.73	
	6:02:00	2505.32	132.54	2508.19	132.72	
	6:03:00	2508.15	132.54	2510.86	132.72	
	6:04:00	2509.73	132.56	2512.49	132.73	
	6:05:00	2511.29	132.57	2514.13	132.75	
	6:06:00	2512.59	132.59	2515.26	132.77	
	6:07:00	2515.12	132.61	2517.78	132.78	
	6:08:00	2531.3	132.63	2536.05	132.8	
	6:09:00	2560.04	132.67	2564.94	132.85	
	6:10:00	2584.84	132.74	2589.27	132.93	
	6:11:00	2613.78	132.85	2618	133.04	
	6:12:00	2640.75	132.99	2644.84	133.18	
	6:13:00	2665.06	133.15	2668.72	133.34	
	6:14:00	2683.69	133.33	2687.67	133.52	
	6:15:00	2700.45	133.51	2703.59	133.69	
	6:16:00	2714.8	133.68	2720.69	133.86	
	6:17:00	2735.73	133.85	2739.41	134.03	
	6:18:00	2753.52	134.01	2756.33	134.2	
	6:19:00	2776.37	134.18	2779.93	134.36	
	6:20:00	2792.53	134.34	2795.21	134.51	
	6:21:00	2804.88	134.49	2807.64	134.67	
	6:22:00	2817.93	134.65	2820.16	134.82	
	6:23:00	2826.66	134.79	2829.19	134.96	
	6:24:00	2831.93	134.93	2834.14	135.09	
	6:25:00	2837.24	135.05	2839.45	135.21	
	6:26:00	2843.29	135.16	2845.7	135.32	
	6:27:00	2848.84	135.26	2850.9	135.41	
	6:28:00	2854.33	135.34	2856.7	135.5	
	6:29:00	2858.41	135.41	2860.8	135.57	
	6:30:00	2862.96	135.48	2865.25	135.63	
	6:31:00	2867.34	135.54	2869.36	135.69	
	6:32:00	2871.34	135.6	2873.19	135.75	
	6:33:00	2874.99	135.65	2877.1	135.81	
	6:34:00	2878.81	135.71	2880.83	135.86	
	6:35:00	2881.91	135.77	2884	135.92	
	6:36:00	2885.25	135.83	2887.23	135.97	
	6:37:00	2888.14	135.87	2890.29	136.02	
	6:38:00	2891.18	135.92	2893.2	136.06	
	6:39:00	2893.92	135.96	2896.17	136.11	
	6:40:00	2896.1	136	2898.1	136.14	
	6:41:00	2897.71	136.03	2900.24	136.18	
	6:42:00	2899.84	136.07	2902.06	136.21	
	6:43:00	2902.05	136.1	2904.05	136.24	
	6:44:00	2903.62	136.13	2905.62	136.28	
	6:45:00	2905.54	136.17	2907.85	136.31	
	6:46:00	2907.92	136.2	2909.95	136.34	
	6:47:00	2910.16	136.22	2912.14	136.37	
	6:48:00	2912.53	136.25	2914.38	136.4	
	6:49:00	2914.38	136.28	2916.45	136.43	
	6:50:00	2916.54	136.31	2918.92	136.46	
	6:51:00	2918.47	136.34	2920.52	136.48	
	6:52:00	2920.09	136.36	2922.51	136.51	
	6:53:00	2922.02	136.39	2923.71	136.53	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	6:54:00	2923.06	136.41	2925.33	136.56	
	6:55:00	2921.04	136.44	2922.88	136.58	
	6:56:00	2919.09	136.46	2920.74	136.6	
	6:57:00	2916.6	136.47	2918.45	136.61	
	6:58:00	2914.59	136.48	2916.44	136.62	
	6:59:00	2912.78	136.49	2914.56	136.63	
	7:00:00	2911.77	136.49	2913.7	136.63	
	7:01:00	2913.12	136.5	2915.33	136.64	
	7:02:00	2914.97	136.5	2917.23	136.64	
	7:03:00	2916.94	136.51	2919.29	136.65	
	7:04:00	2919.41	136.52	2921.37	136.67	
	7:05:00	2920.91	136.54	2923.12	136.68	
	7:06:00	2922.5	136.55	2924.43	136.69	
	7:07:00	2923.06	136.57	2925.22	136.71	
	7:08:00	2923.94	136.58	2925.93	136.73	
	7:09:00	2924.63	136.6	2926.58	136.74	
	7:10:00	2925.05	136.62	2927.16	136.76	
	7:11:00	2925.29	136.63	2927.11	136.77	
	7:12:00	2925.28	136.64	2927.24	136.78	
	7:13:00	2925.05	136.66	2926.77	136.8	
	7:14:00	2924.25	136.67	2926.54	136.81	
	7:15:00	2924.33	136.68	2926.55	136.82	
	7:16:00	2924.26	136.68	2926.2	136.82	
	7:17:00	2924.24	136.69	2926.09	136.83	
	7:18:00	2924.19	136.7	2926.28	136.83	
	7:19:00	2924.12	136.7	2926.23	136.84	
	7:20:00	2924.41	136.71	2926.16	136.85	
	7:21:00	2924.24	136.72	2926.21	136.85	
	7:22:00	2923.97	136.72	2925.72	136.86	
	7:23:00	2923.7	136.72	2925.9	136.86	
	7:24:00	2923.79	136.73	2925.52	136.87	
	7:25:00	2923.51	136.73	2925.54	136.87	
	7:26:00	2923.53	136.74	2925.35	136.88	
	7:27:00	2923.51	136.74	2925.57	136.88	
	7:28:00	2923.72	136.75	2925.61	136.89	
	7:29:00	2923.62	136.76	2925.51	136.9	
	7:30:00	2923.75	136.77	2925.71	136.9	
	7:31:00	2923.94	136.77	2925.85	136.91	
	7:32:00	2924.07	136.78	2926.22	136.92	
	7:33:00	2924.19	136.78	2926.05	136.92	
	7:34:00	2923.88	136.79	2926.27	136.93	
	7:35:00	2923.74	136.79	2926.27	136.93	
	7:36:00	2924.47	136.79	2926.25	136.93	
	7:37:00	2924.59	136.8	2926.53	136.94	
	7:38:00	2924.88	136.8	2926.85	136.94	
	7:39:00	2925.13	136.81	2926.99	136.95	
	7:40:00	2925.17	136.82	2927.06	136.96	
	7:41:00	2925.25	136.82	2927.61	136.96	
	7:42:00	2925.27	136.83	2927.33	136.97	
	7:43:00	2925.39	136.83	2927.53	136.97	
	7:44:00	2925.62	136.84	2927.38	136.98	
	7:45:00	2925.75	136.85	2927.41	136.98	
	7:46:00	2925.92	136.85	2927.51	136.99	
	7:47:00	2925.96	136.85	2927.78	136.99	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	7:48:00	2925.98	136.86	2927.97	137	
	7:49:00	2926.13	136.86	2928.15	137	
	7:50:00	2926.15	136.86	2927.86	137	
	7:51:00	2926.1	136.87	2928.06	137.01	
	7:52:00	2926.27	136.87	2928.1	137.01	
	7:53:00	2926.35	136.88	2928.1	137.02	
	7:54:00	2926.31	136.88	2928.28	137.02	
	7:55:00	2926.48	136.89	2928.43	137.03	
	7:56:00	2926.7	136.89	2928.76	137.03	
	7:57:00	2926.69	136.9	2928.38	137.04	
	7:58:00	2926.71	136.91	2928.65	137.04	
	7:59:00	2927.09	136.91	2928.85	137.05	
	8:00:00	2927.12	136.92	2929.11	137.05	
	8:01:00	2927.47	136.92	2929.57	137.06	
	8:02:00	2927.69	136.92	2929.61	137.06	
	8:03:00	2928.63	136.93	2930.69	137.07	
	8:04:00	2928.97	136.93	2930.92	137.07	
	8:05:00	2929.09	136.94	2931.06	137.08	
	8:06:00	2929.06	136.94	2930.99	137.08	
	8:07:00	2929.44	136.95	2931.78	137.09	
	8:08:00	2929.86	136.95	2931.98	137.09	
	8:09:00	2930.28	136.96	2932.32	137.09	
	8:10:00	2930.55	136.96	2932.72	137.1	
	8:11:00	2930.78	136.96	2932.61	137.1	
	8:12:00	2931.07	136.97	2933.12	137.1	
	8:13:00	2931.34	136.97	2933.71	137.11	
	8:14:00	2931.51	136.98	2933.54	137.11	
	8:15:00	2931.67	136.98	2933.73	137.12	
	8:16:00	2931.85	136.99	2934.08	137.13	
	8:17:00	2932.06	136.99	2934.13	137.13	
	8:18:00	2932.27	137	2934.23	137.14	
	8:19:00	2932.4	137	2934.19	137.14	
	8:20:00	2932.52	137	2934.64	137.14	
	8:21:00	2932.76	137.01	2934.85	137.14	
	8:22:00	2933.01	137.01	2935.12	137.15	
	8:23:00	2933.19	137.02	2935.33	137.15	
	8:24:00	2933.27	137.02	2935.32	137.16	
	8:25:00	2933.43	137.02	2935.66	137.16	
	8:26:00	2933.74	137.03	2935.75	137.16	
	8:27:00	2933.97	137.03	2936.01	137.17	
	8:28:00	2934.08	137.03	2936.04	137.17	
	8:29:00	2934.24	137.03	2936.22	137.17	
	8:30:00	2934.47	137.04	2936.47	137.17	
	8:31:00	2934.6	137.04	2936.64	137.18	
	8:32:00	2934.58	137.04	2936.54	137.18	
	8:33:00	2934.52	137.05	2936.35	137.19	
	8:34:00	2934.72	137.05	2936.84	137.19	
	8:35:00	2934.76	137.06	2936.76	137.2	
	8:36:00	2934.81	137.07	2936.67	137.2	
	8:37:00	2934.87	137.07	2936.83	137.21	
	8:38:00	2934.94	137.07	2936.79	137.21	
	8:39:00	2934.99	137.07	2936.92	137.21	
	8:40:00	2935.08	137.07	2937.15	137.21	
	8:41:00	2935.15	137.07	2937.28	137.21	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	8:42:00	2935.25	137.08	2937.31	137.21	
	8:43:00	2935.3	137.08	2937.26	137.21	
	8:44:00	2935.41	137.08	2937.37	137.21	
	8:45:00	2935.51	137.08	2937.84	137.21	
	8:46:00	2935.66	137.08	2937.62	137.21	
	8:47:00	2935.66	137.08	2937.87	137.22	
	8:48:00	2935.77	137.08	2937.29	137.22	
	8:49:00	2931.19	137.09	2932.68	137.22	
	8:50:00	2928.37	137.09	2929.19	137.23	
	8:51:00	2924.34	137.09	2925.94	137.22	
	8:52:00	2921.41	137.08	2923.07	137.22	
	8:53:00	2918.56	137.07	2920.17	137.2	
	8:54:00	2915.8	137.05	2917.71	137.18	
	8:55:00	2913.42	137.03	2915.22	137.16	
	8:56:00	2911.37	137.01	2913.37	137.14	
	8:57:00	2909.4	136.99	2911.44	137.12	
	8:58:00	2907.77	136.97	2909.76	137.11	
	8:59:00	2905.97	136.96	2908.01	137.1	
	9:00:00	2904.79	136.95	2906.52	137.09	
	9:01:00	2903.5	136.95	2905.41	137.08	
	9:02:00	2902.51	136.94	2904.54	137.07	
	9:03:00	2901.14	136.92	2903.16	137.06	
	9:04:00	2900.16	136.91	2902.29	137.05	
	9:05:00	2899.69	136.9	2901.8	137.03	
	9:06:00	2899.43	136.89	2901.61	137.02	
	9:07:00	2898.66	136.88	2900.82	137.02	
	9:08:00	2898.45	136.87	2900.18	137.01	
	9:09:00	2898.03	136.86	2899.99	137	
	9:10:00	2897.46	136.86	2899.72	136.99	
	9:11:00	2897.15	136.85	2899.14	136.99	
	9:12:00	2940.24	136.85	2948	136.99	
38	9:13:00	3014.17	136.91	3021.11	137.06	Close FCH master valve and open choke manifold
	9:13:00	3014.17	136.91	3021.11	137.06	
	9:23:00	3536.39	139.71	3539.62	139.84	
	9:33:00	3755.45	141.62	3757.42	141.69	
	9:43:00	3844.92	142.43	3846.05	142.5	
39	9:45:00	3839.46	142.53	3840.98	142.6	Rih slickline and open SSD 2809 sands THP 2311 psia

Origin Energy

Well Name: Yolla 4
Test Type: Flowing Survey 2548 and 2809 Sands
Date of Survey: 2nd August 2004

MEMORY GAUGE REPORT

Prepared For: Andrew Wenk
Date: 22nd August 2004

David Whelan
Completion Products & Services
Halliburton Australia Pty Ltd

HALLIBURTON

Halliburton Australia Pty Ltd

MEMORY GAUGE FLOWING PRESSURE AND
TEMPERATURE SURVEY

MEMORY GAUGE TICKET NO:	35409
DATE:	2nd August 2004
HALLIBURTON CAMP:	Cheltenham, Victoria
HALLIBURTON OPERATOR:	David Whelan
WITNESS:	N/A
COMPANY:	Origin
DRILLING CONTRACTOR:	Ensco
LEASE NAME:	YOLLA
WELL NO:	YOLLA-4
TEST TYPE:	Flowing Survey
TEST NO:	3
TESTED ZONE:	2458 and 2809 Sands
FIELD AREA:	Bass Strait
STATE:	Victoria
COUNTRY:	Australia

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HALLIBURTON

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SECTION 1

TEST SUMMARY & JOB INFORMATION

WELL DATA

Well Details

Well Name	Yolla - 4	
Field	Yolla	
Platfrom	Yolla A	
Derrick Floor Elevation	81	m AMSL
Top Bottom Flange	27.07	m MDRT

Completion

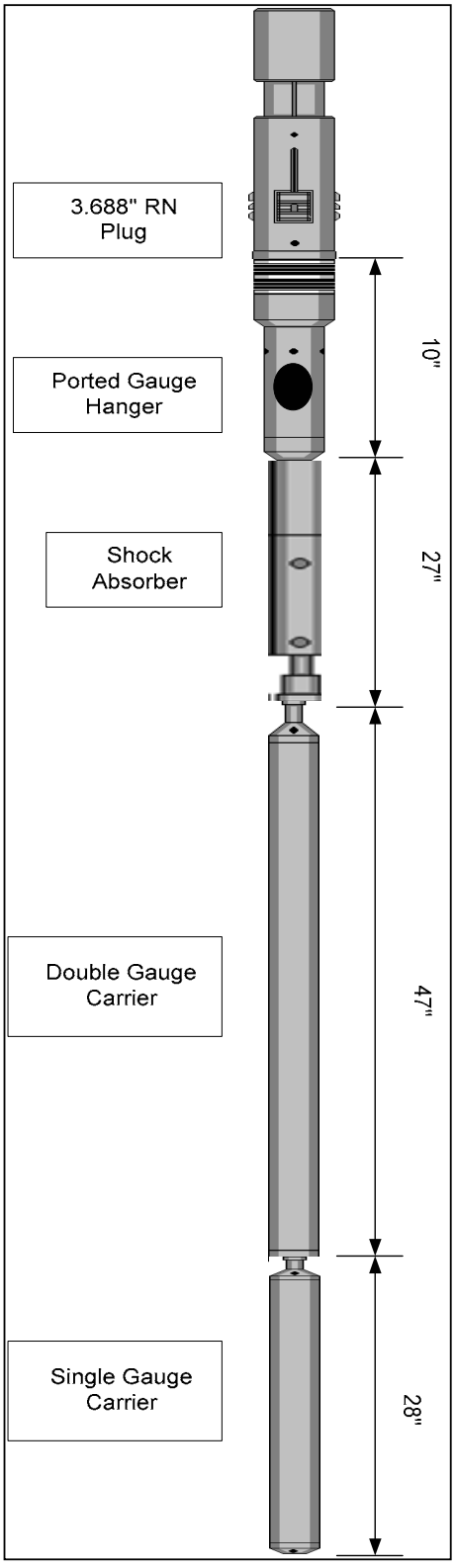
Measured m (MDRT)	**Description**
27.07	Tubing Hanger
169.09	TRSV
2521.39	5 1/2" PBR
2593.75	4 1/2" Halliburton SSD x 3.813" RD
2596.99	6 5/8" AHR Packer
2832.49	4 1/2" Halliburton SSD x 3.813" RD
2835.73	6 5/8" AHR Packer
2920.57	4 1/2" Halliburton SSD x 3.688" RD
2923.80	6 5/8" AHR Packer
2979.57	4 1/2" Halliburton SSD x 3.688" RD
2983.10	6 5/8" MWR Packer
2990.46	4 1/2" Halliburton SSD x 3.688" RD
2997.38	4 1/2" Halliburton 3.688" RN Nipple
2999.95	EOT

SURVEY EVENTS

Client	:Origin Energy	**Operator**	:David Whelan
Field	:Yolla	**Survey Date**	:2nd August 2004
Platfor	:Yolla A	**Well**	:Yolla - 4

Event	Time	Description
39	9:45:00	Rih slickline and open SSD 2809 sands THP 2311 psia
40	10:45:00	Open well on 16/64 choke flow well (2458 and 2809 sands open)
41	10:46:00	Increase choke to 20/64 THP 2487 psia
42	10:47:00	Increase choke to 24/64 THP 2460 psia
43	10:49:00	Increase choke to 28/64 THP 2395 psia
44	10:50:00	Increase choke to 32/64 THP 2368 psia
45	10:52:00	Increase choke to 36/64 THP 2268 psia
46	10:54:00	Increase choke to 40/64 THP 2140 psia
47	10:56:00	Increase choke to 44/64 THP 1884 psia
48	10:59:00	Increase choke to 48/64 THP 2140 psia
49	11:26:00	Reduce choke to 32/64 THP 1598 psia
50	11:39:00	Shut in well at choke manifold THP 1693 psia
51	12:00:00	Slickline rih and close SSD 2458 sands

SURVEY TOOL STRING



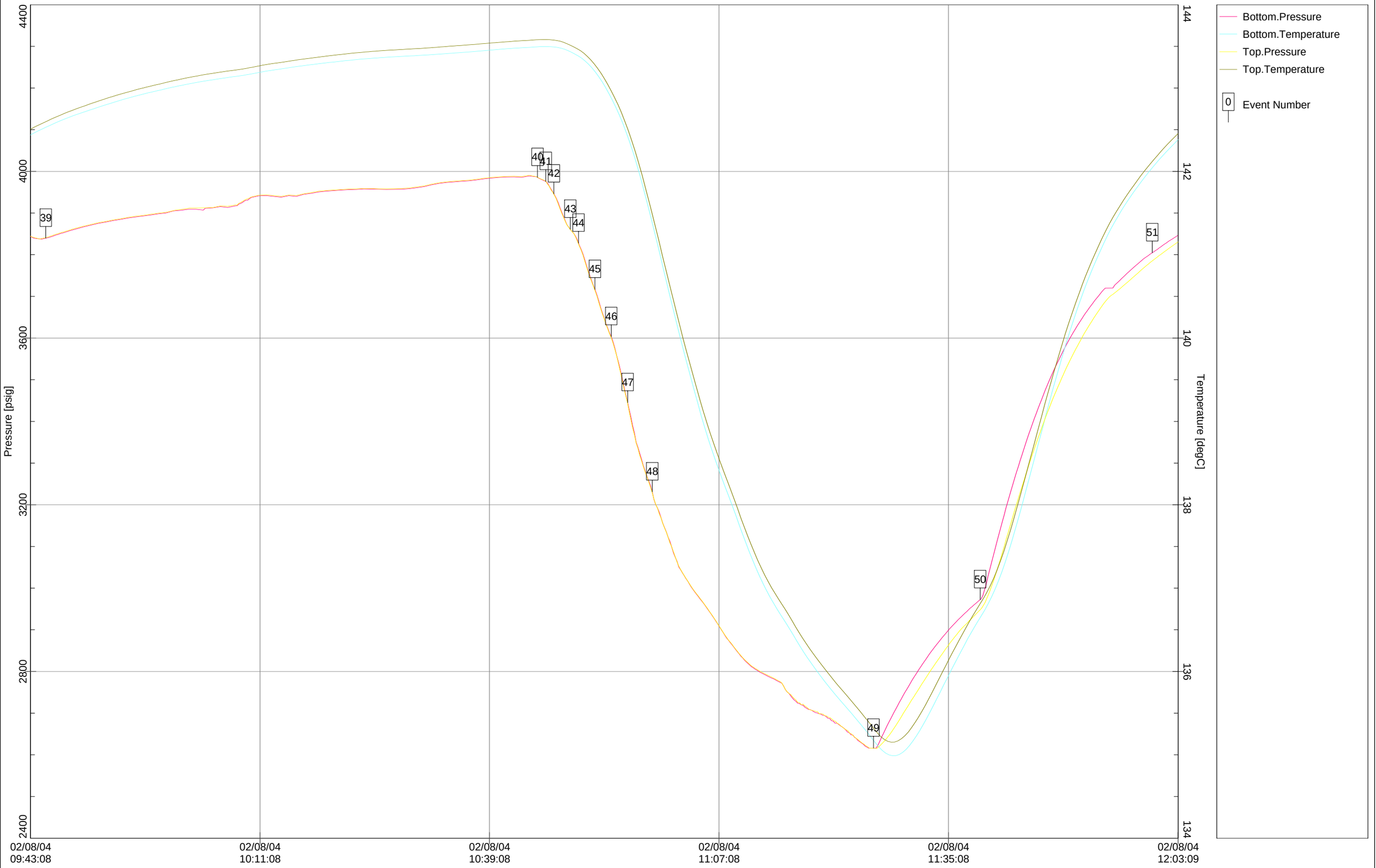
HALLIBURTON

SECTION 2

PLOTS

Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2548 and 2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 39 - 51

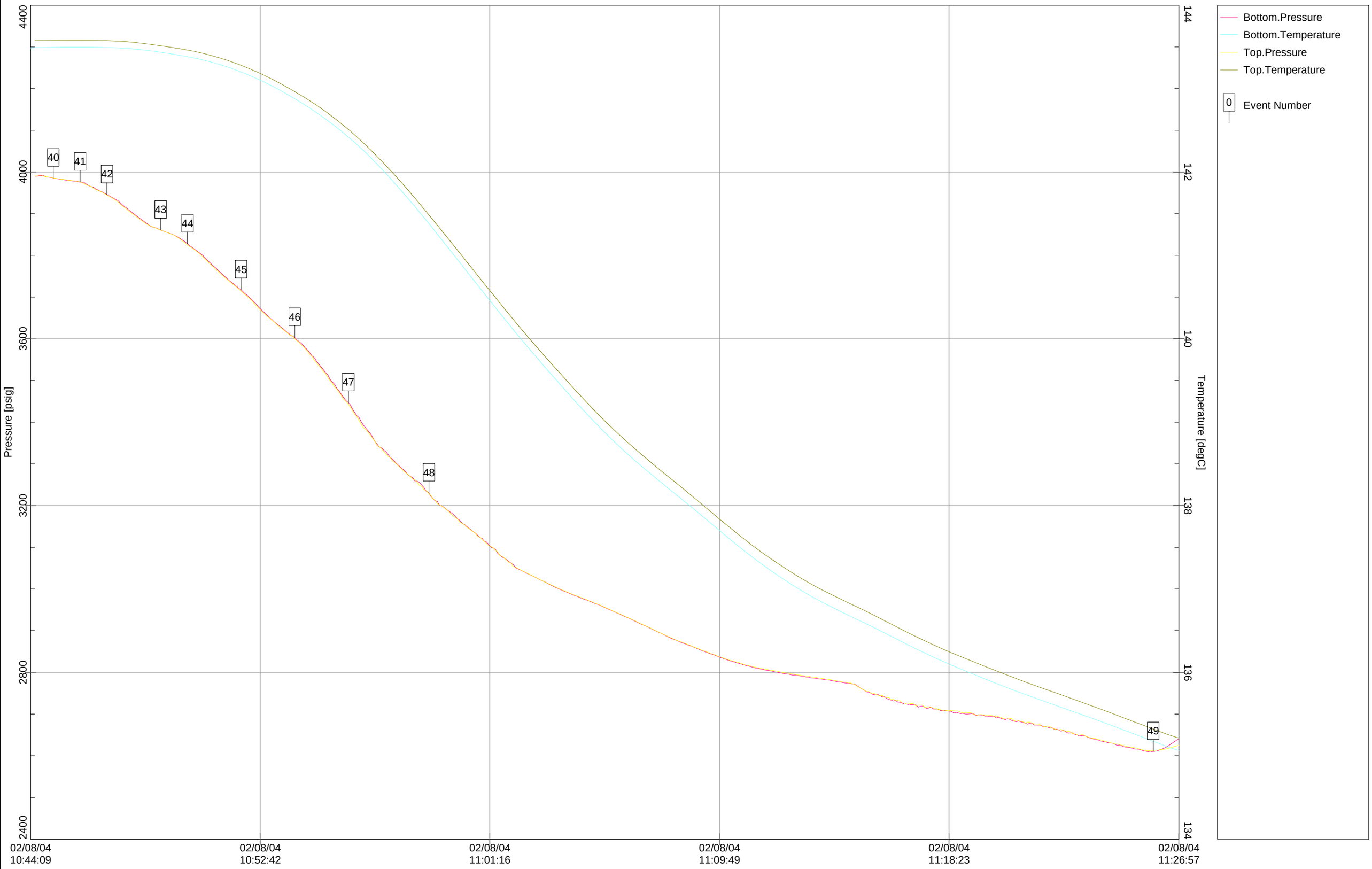


Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2548 and 2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 39 - 40

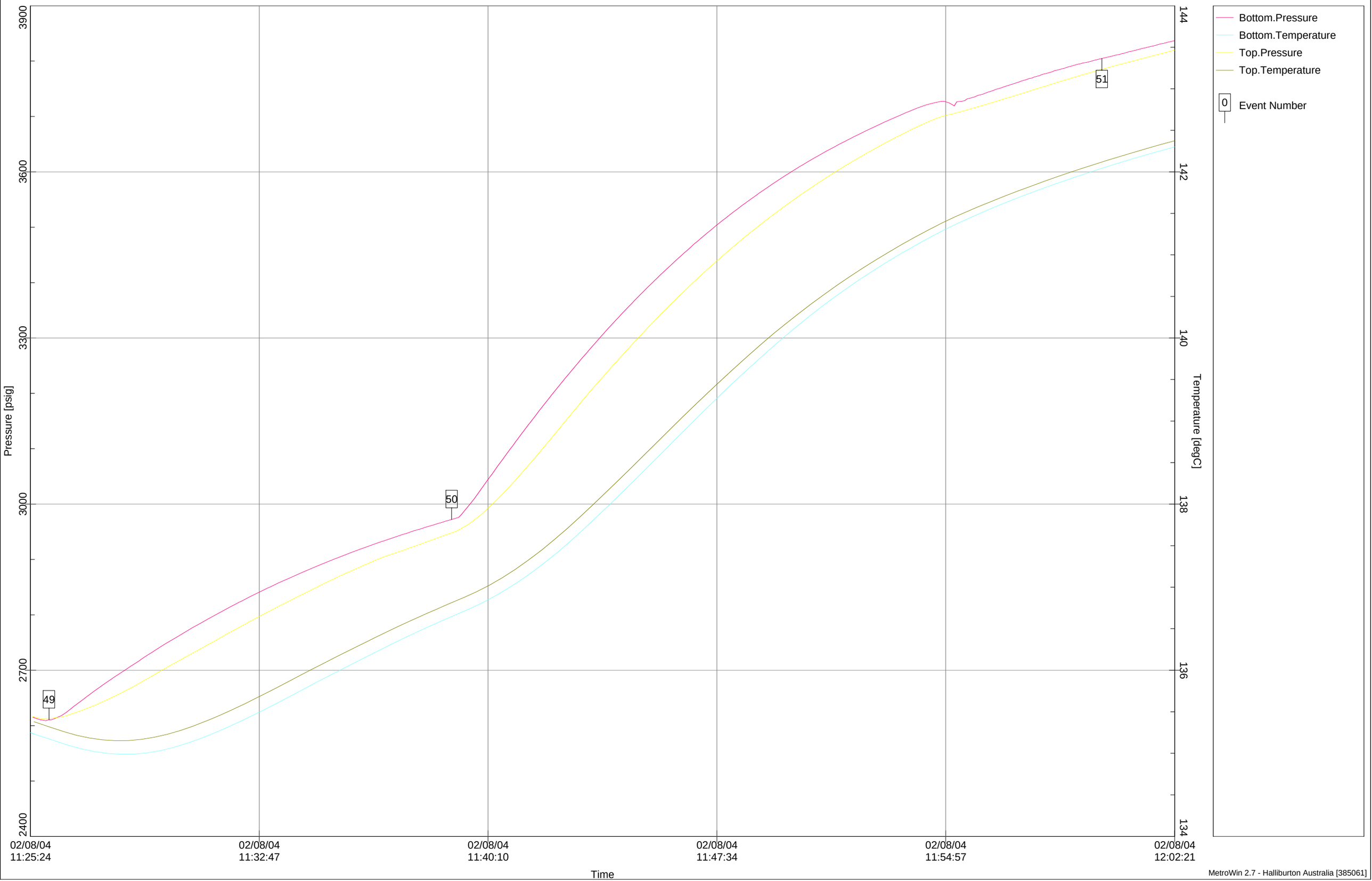
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2548 and 2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 40 - 49



Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2548 and 2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 49 - 51



SECTION 3

DATA

SURVEY DATA

Client	:Origin Energy	Operator	:David Whelan
Field	:Yolla	Date	:2nd August 2004
Platform	:Yolla A	Zone	2458 and 2809 Sands
Well	:Yolla - 4		

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
39	9:45:00	3839.46	142.53	3840.98	142.6	Rih slickline and open SSD 2809 sands THP 2311 psia
	9:53:00	3880.97	142.82	3882.61	142.89	
	10:03:00	3906.92	143.06	3908.41	143.14	
	10:13:00	3940.02	143.22	3941.22	143.3	
	10:23:00	3956.86	143.34	3958.43	143.42	
	10:33:00	3971.2	143.41	3972.65	143.49	
	10:43:00	3985.87	143.48	3987.34	143.57	
40	10:45:00	3985.66	143.49	3985.75	143.58	Open well on 16/64 choke flow well (2458 and 2809 sands open)
41	10:46:00	3976.13	143.5	3976.82	143.58	Increase choke to 20/64 THP 2487 psia
42	10:47:00	3945.9	143.49	3944.62	143.58	Increase choke to 24/64 THP 2460 psia
43	10:49:00	3860.96	143.44	3860.94	143.51	Increase choke to 28/64 THP 2395 psia
44	10:50:00	3827.85	143.38	3825.42	143.46	Increase choke to 32/64 THP 2368 psia
45	10:52:00	3717.51	143.2	3715.05	143.28	Increase choke to 36/64 THP 2268 psia
	10:53:00	3654.64	143.06	3652.53	143.14	
46	10:54:00	3603.55	142.88	3600.8	142.97	Increase choke to 40/64 THP 2140 psia
	10:54:00	3603.55	142.88	3600.8	142.97	
	10:55:00	3531.53	142.67	3528.14	142.76	
47	10:56:00	3446.95	142.42	3443.14	142.51	Increase choke to 44/64 THP 1884 psia
	10:56:00	3446.95	142.42	3443.14	142.51	
	10:57:00	3352.81	142.12	3352.81	142.21	
	10:58:00	3289.16	141.77	3287.12	141.87	
48	10:59:00	3230.6	141.38	3229.06	141.49	Increase choke to 48/64 THP 2140 psia
	10:59:00	3230.6	141.38	3229.06	141.49	
	11:00:00	3173.05	140.98	3171.07	141.09	
	11:01:00	3120.14	140.57	3118.21	140.69	
	11:02:00	3065.12	140.17	3063.5	140.29	
	11:03:00	3027.02	139.78	3027.32	139.91	
	11:04:00	2995.93	139.42	2996.88	139.55	
	11:05:00	2970.57	139.06	2971.35	139.2	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	11:06:00	2943.1	138.74	2943.73	138.88	
	11:07:00	2913.65	138.45	2913.98	138.59	
	11:08:00	2882.52	138.19	2883.75	138.33	
	11:09:00	2857.2	137.93	2858.17	138.06	
	11:10:00	2833.12	137.66	2834.08	137.79	
	11:11:00	2813.77	137.4	2815.34	137.54	
	11:12:00	2800.37	137.16	2802.48	137.31	
	11:13:00	2789.83	136.96	2792.08	137.11	
	11:14:00	2780.47	136.79	2782.16	136.93	
	11:15:00	2766.42	136.63	2765.69	136.78	
	11:16:00	2741.46	136.47	2740.51	136.62	
	11:17:00	2723.05	136.31	2725.23	136.45	
	11:18:00	2711.47	136.16	2710.76	136.3	
	11:19:00	2700.48	136.02	2703.14	136.17	
	11:20:00	2694.64	135.89	2696.58	136.04	
	11:21:00	2683.55	135.76	2683.67	135.91	
	11:22:00	2669.72	135.65	2669.49	135.8	
	11:23:00	2654.44	135.53	2653.8	135.68	
	11:24:00	2636.32	135.42	2638.41	135.56	
	11:25:00	2620.7	135.3	2622.7	135.44	
49	11:26:00	2610.55	135.17	2613.07	135.32	Reduce choke to 32/64 THP 1598 psia
	11:26:00	2610.55	135.17	2613.07	135.32	
	11:27:00	2643.1	135.06	2626.5	135.21	
	11:28:00	2683.63	135	2650.2	135.16	
	11:29:00	2720.75	135	2679.29	135.17	
	11:30:00	2755.81	135.07	2711.4	135.25	
	11:31:00	2788.37	135.2	2742.07	135.38	
	11:32:00	2818.79	135.35	2773.21	135.54	
	11:33:00	2846.84	135.54	2803.35	135.72	
	11:34:00	2872.38	135.73	2832.04	135.92	
	11:35:00	2896.09	135.93	2859.82	136.11	
	11:36:00	2917.7	136.12	2885.52	136.3	
	11:37:00	2937.3	136.3	2908.49	136.48	
	11:38:00	2955.29	136.48	2927.93	136.65	
50	11:39:00	2972.31	136.65	2948.16	136.81	Shut in well at choke manifold THP 1693 psia
	11:39:00	2972.31	136.65	2948.16	136.81	
	11:49:00	3564.19	139.77	3506.01	139.93	
	11:59:00	3790.71	141.92	3769.13	142	
51	12:00:00	3804.74	142.04	3785.29	142.12	Slickline rih and close SSD 2458 sands

Origin Energy

Well Name: Yolla 4
Test Type: Flowing Survey 2809 Sands
Date of Survey: 2nd August 2004

MEMORY GAUGE REPORT

Prepared For: Andrew Wenk
Date: 22nd August 2004

David Whelan
Completion Products & Services
Halliburton Australia Pty Ltd

HALLIBURTON

Halliburton Australia Pty Ltd

MEMORY GAUGE FLOWING PRESSURE AND
TEMPERATURE SURVEY

MEMORY GAUGE TICKET NO:	35409
DATE:	2nd August 2004
HALLIBURTON CAMP:	Cheltenham, Victoria
HALLIBURTON OPERATOR:	David Whelan
WITNESS:	N/A
COMPANY:	Origin
DRILLING CONTRACTOR:	Ensco
LEASE NAME:	YOLLA
WELL NO:	YOLLA-4
TEST TYPE:	Flowing Survey
TEST NO:	4
TESTED ZONE:	2809 Sands
FIELD AREA:	Bass Strait
STATE:	Victoria
COUNTRY:	Australia

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HALLIBURTON

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SECTION 1

TEST SUMMARY & JOB INFORMATION

WELL DATA

Well Details

Well Name	Yolla - 4	
Field	Yolla	
Platfrom	Yolla A	
Derrick Floor Elevation	81	m AMSL
Top Bottom Flange	27.07	m MDRT

Completion

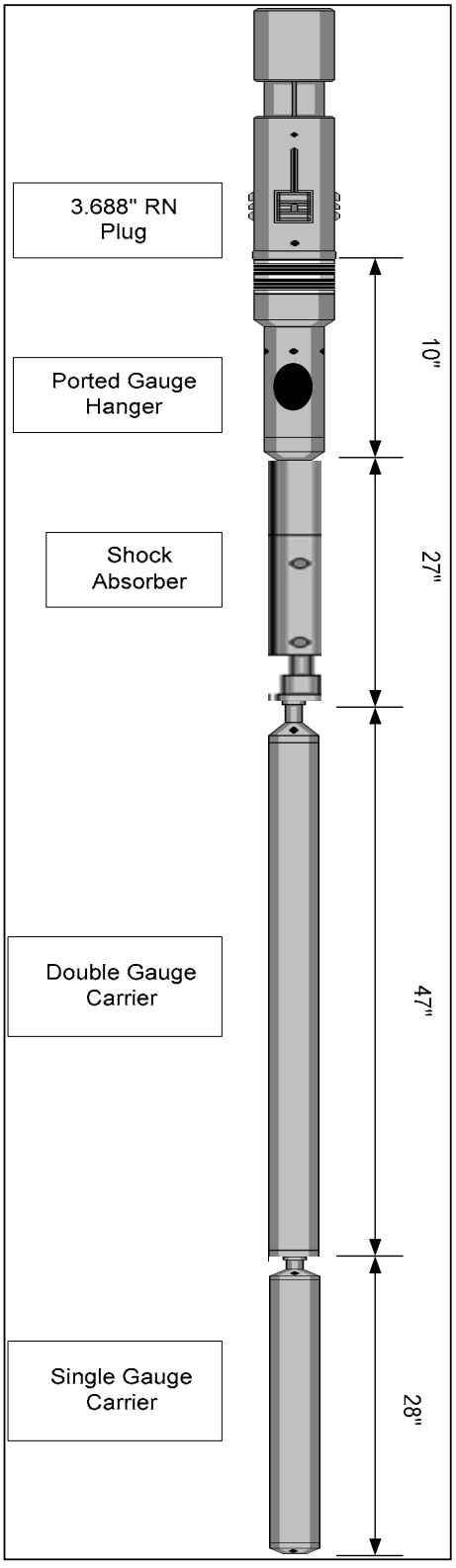
Measured m (MDRT)	**Description**
27.07	Tubing Hanger
169.09	TRSV
2521.39	5 1/2" PBR
2593.75	4 1/2" Halliburton SSD x 3.813" RD
2596.99	6 5/8" AHR Packer
2832.49	4 1/2" Halliburton SSD x 3.813" RD
2835.73	6 5/8" AHR Packer
2920.57	4 1/2" Halliburton SSD x 3.688" RD
2923.80	6 5/8" AHR Packer
2979.57	4 1/2" Halliburton SSD x 3.688" RD
2983.10	6 5/8" MWR Packer
2990.46	4 1/2" Halliburton SSD x 3.688" RD
2997.38	4 1/2" Halliburton 3.688" RN Nipple
2999.95	EOT

SURVEY EVENTS

Client	:Origin Energy	**Operator**	:David Whelan
Field	:Yolla	**Survey Date**	:2nd August 2004
Platfor	:Yolla A	**Well**	:Yolla - 4

Event	Time	Description
51	12:00:00	Slickline rih and close SSD 2458 sands
52	13:00:00	Open well on 16/64 choke (2809 sands - Test) THP 2653 psia
53	13:01:00	Increase choke to 20/64 THP 2620 psia
54	13:02:00	Increase choke to 24/64 THP 2568 psia
55	13:03:00	Increase choke to 28/64 THP 2505 psia
56	13:05:00	Increase choke to 32/64 THP 2373 psia
57	13:07:00	Increase choke to 36/64 THP 2218 psia
58	13:10:00	Increase choke to 40/64 THP 2044 psia
59	13:13:00	Increase choke to 44/64 THP 1918 psia
60	13:50:00	Flowing waxy oil
61	15:00:00	Flowing waxy oil
62	15:11:00	Shut in well at choke manifold
63	15:35:00	Rih with slickline confirm SSD at 2809 sands open
64	15:59:00	Sudden increase in THP on opening of sleeve THP 2759 psia
65	16:05:00	POOH with slickline unable to pass 2940 mdkb THP 3135 psia
66	18:52:00	Close slickline BOP begin fishing operations

SURVEY TOOL STRING



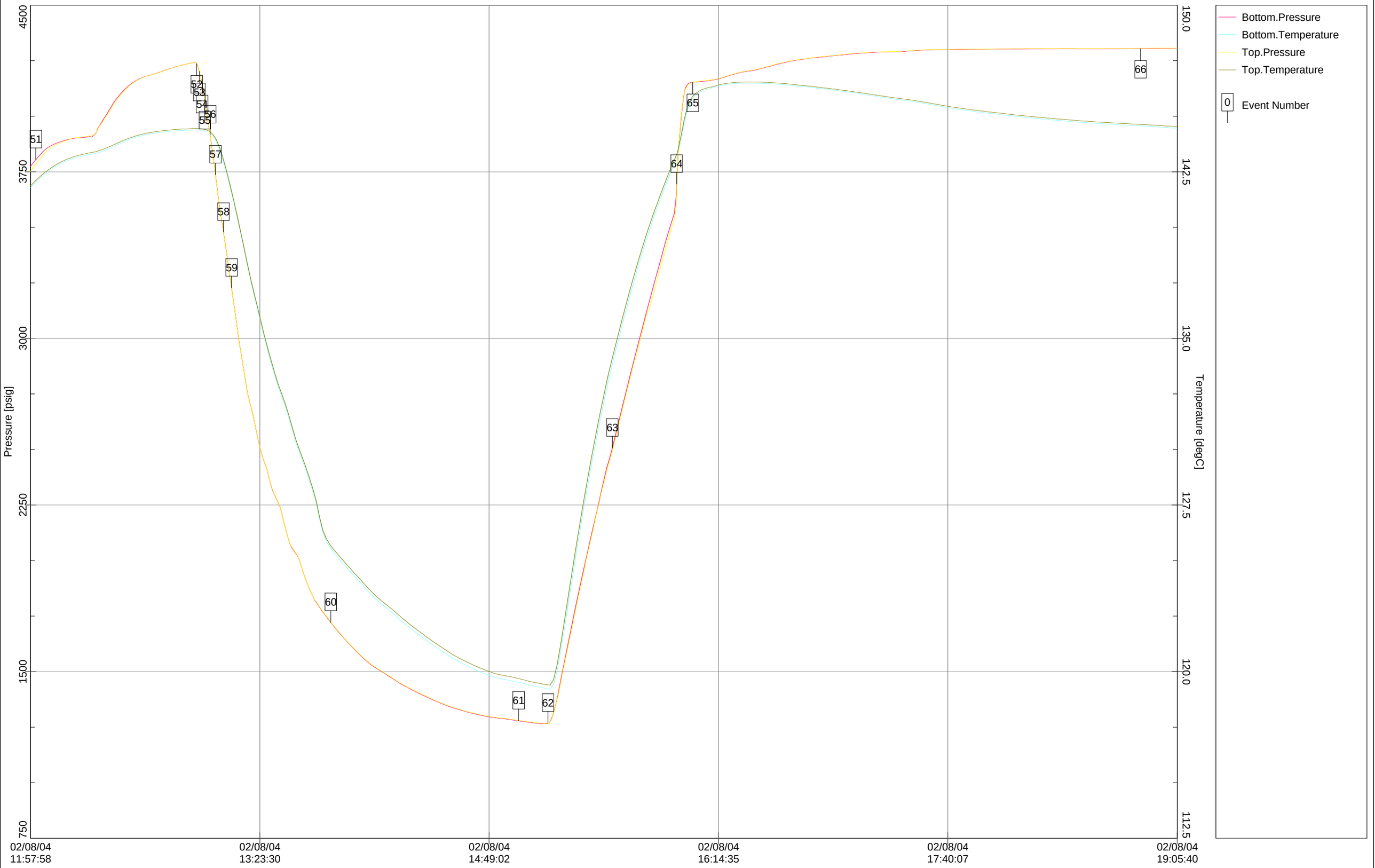
HALLIBURTON

SECTION 2

PLOTS

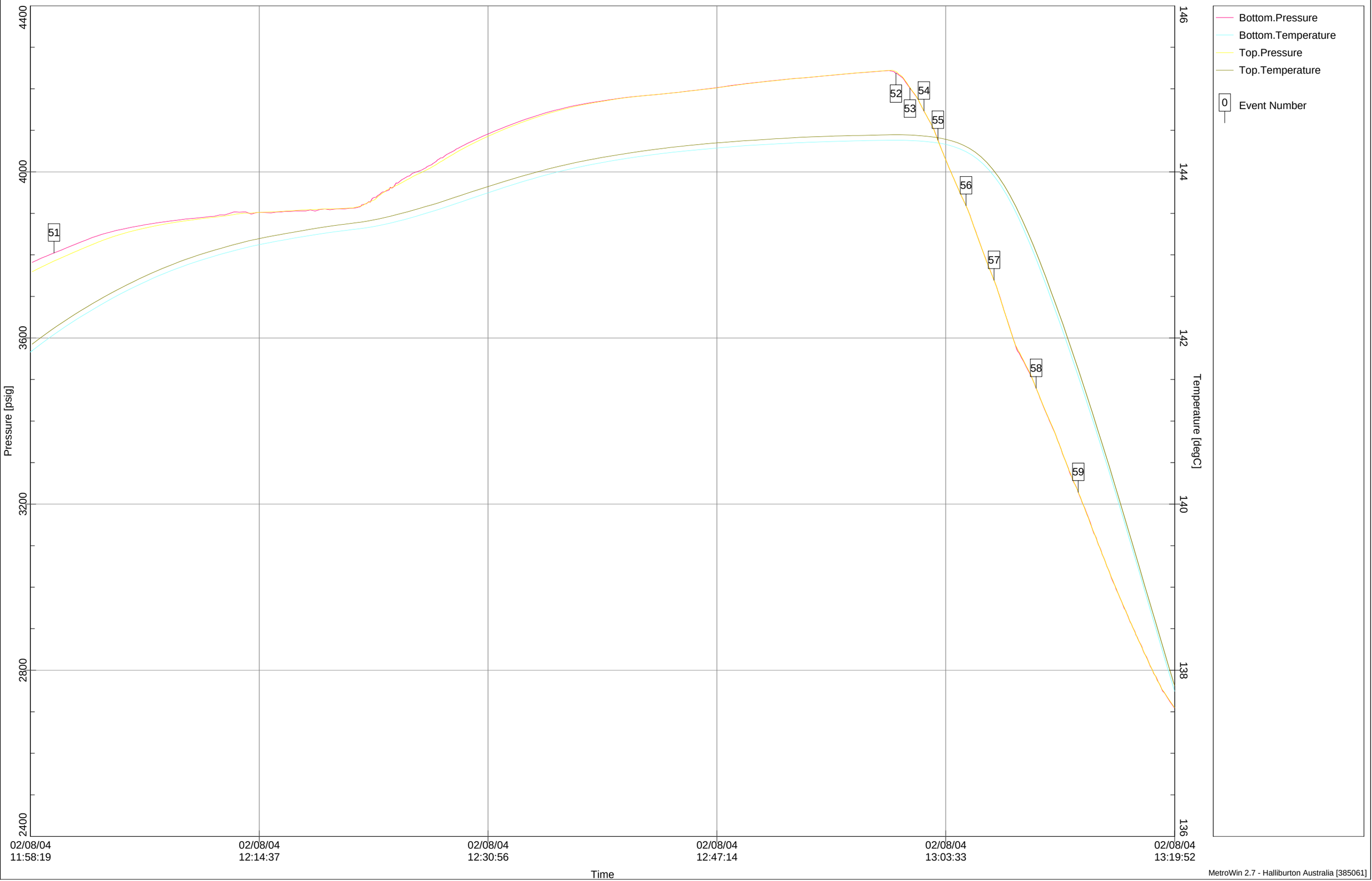
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 51 - 66



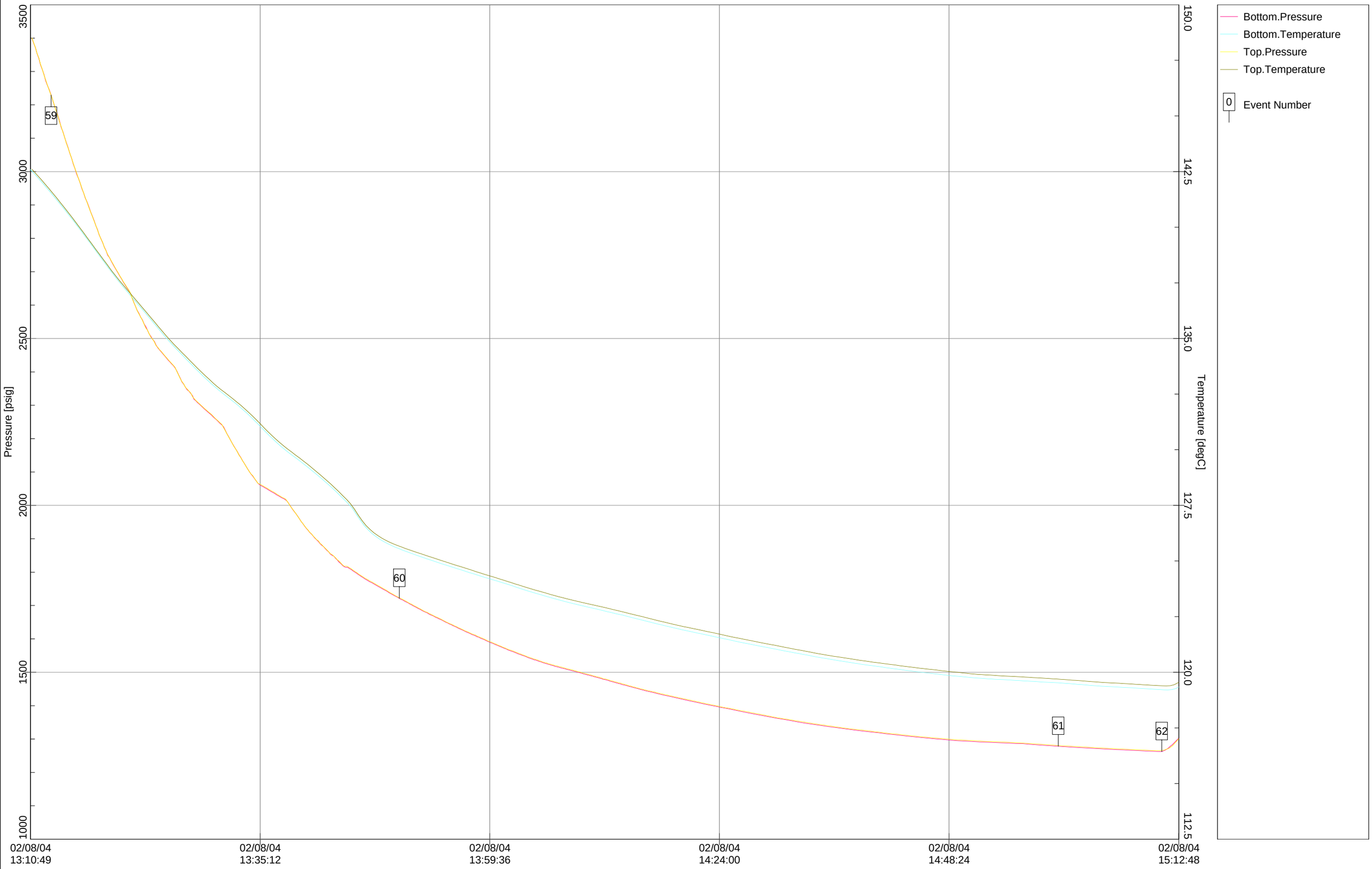
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 51 - 59



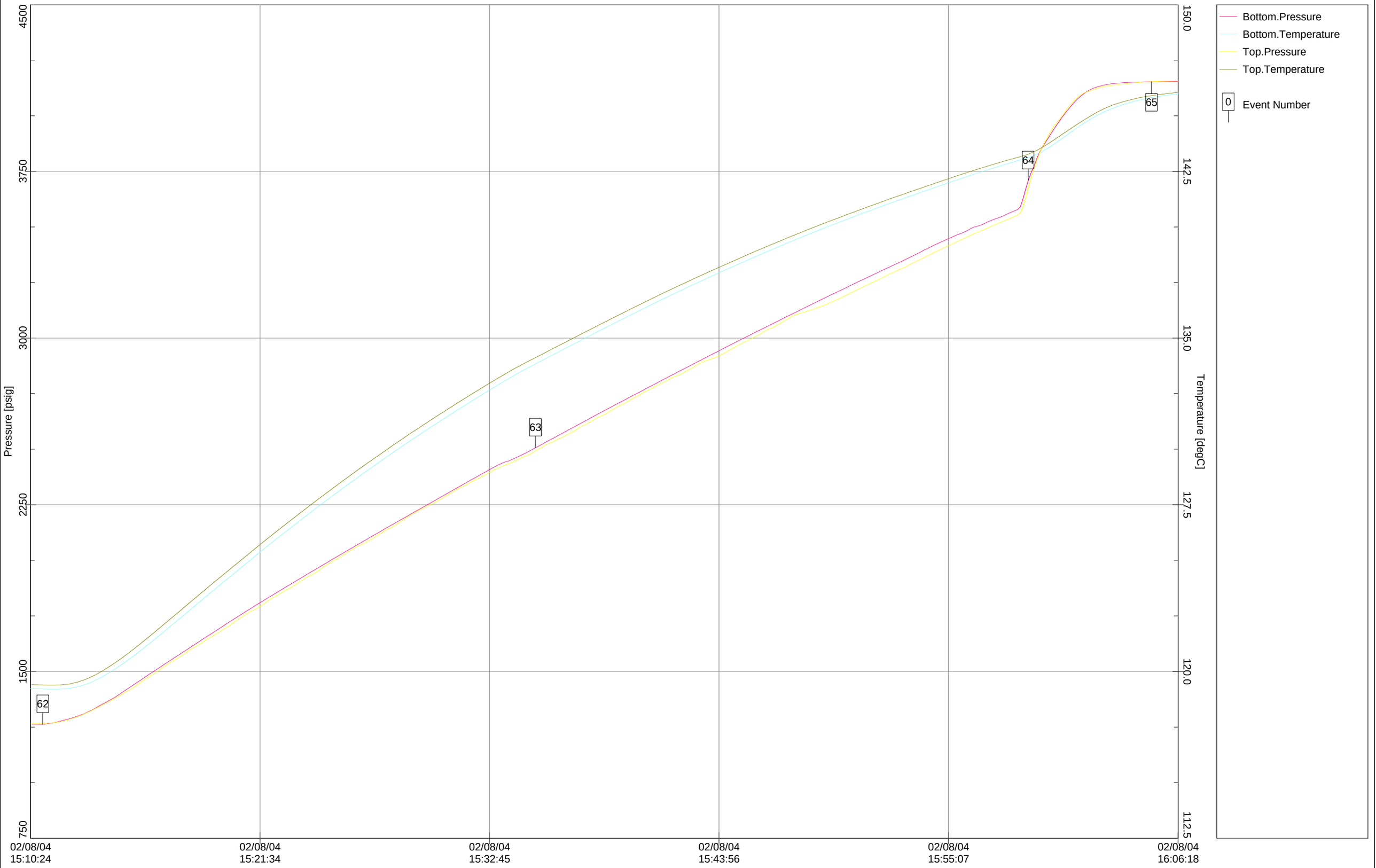
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 59 - 62



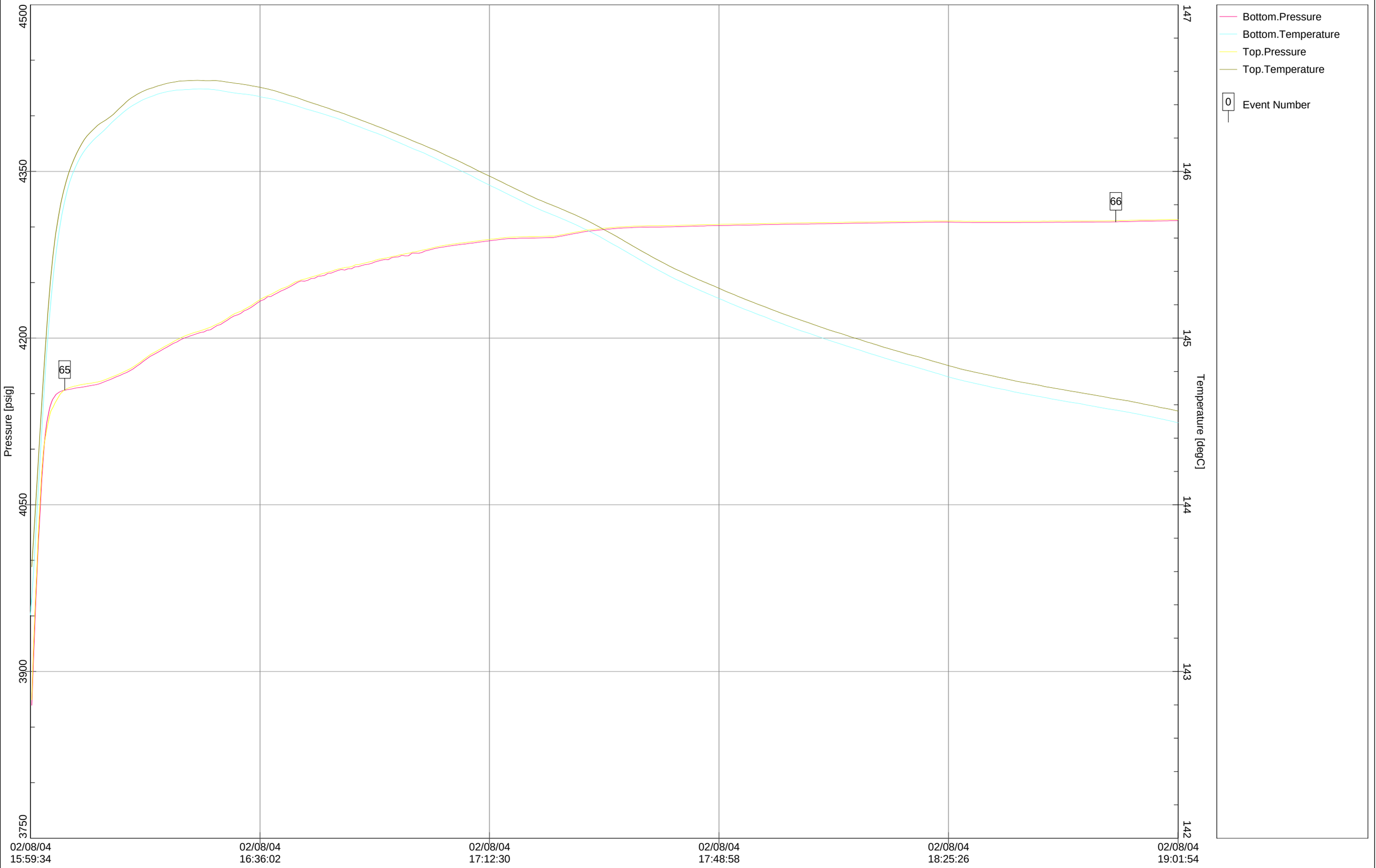
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 62 - 65



Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands Flowing Survey
Operator :David Whelan
Plot :Events 65 - 66



SECTION 3

DATA

SURVEY DATA

Client	:Origin Energy	Operator	:David Whelan
Field	:Yolla	Date	:2nd August 2004
Platform	:Yolla A	Zone	2809 Sands
Well	:Yolla - 4		

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
51	12:00:00	3804.74	142.04	3785.29	142.12	Slickline rih and close SSD 2458 sands
	12:09:00	3884.76	142.85	3880.38	142.92	
	12:19:00	3909.67	143.25	3910.58	143.33	
	12:29:00	4060.43	143.64	4053.16	143.72	
	12:39:00	4170.54	144.11	4169.51	144.17	
	12:49:00	4210.99	144.31	4210.44	144.37	
	12:59:00	4242.64	144.38	4243.04	144.44	
52	13:00:00	4237.91	144.38	4241.73	144.45	Open well on 16/64 choke (2809 sands - Test) THP 2653 psia
	13:00:00	4237.91	144.38	4241.73	144.45	
53	13:01:00	4201.66	144.38	4203.02	144.44	Increase choke to 20/64 THP 2620 psia
	13:01:00	4201.66	144.38	4203.02	144.44	
54	13:02:00	4146.62	144.37	4147.08	144.43	Increase choke to 24/64 THP 2568 psia
	13:02:00	4146.62	144.37	4147.08	144.43	
55	13:03:00	4076.32	144.35	4075.75	144.41	Increase choke to 28/64 THP 2505 psia
	13:03:00	4076.32	144.35	4075.75	144.41	
	13:04:00	3993.66	144.31	3993.44	144.37	
56	13:05:00	3918.59	144.24	3918.68	144.3	Increase choke to 32/64 THP 2373 psia
	13:05:00	3918.59	144.24	3918.68	144.3	
	13:06:00	3826.98	144.13	3826.49	144.19	
57	13:07:00	3739.09	143.95	3739.17	144.01	Increase choke to 36/64 THP 2218 psia
	13:07:00	3739.09	143.95	3739.17	144.01	
	13:08:00	3636.2	143.69	3635.8	143.76	
	13:09:00	3549.76	143.35	3552.19	143.42	
58	13:10:00	3478.89	142.95	3479.73	143.03	Increase choke to 40/64 THP 2044 psia
	13:10:00	3478.89	142.95	3479.73	143.03	
	13:11:00	3396.94	142.5	3398.02	142.59	
	13:12:00	3311.89	142.03	3311.65	142.12	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
59	13:13:00	3228.87	141.54	3228.68	141.62	Increase choke to 44/64 THP 1918 psia
	13:13:00	3228.87	141.54	3228.68	141.62	
	13:14:00	3140.49	141.03	3140.98	141.1	
	13:15:00	3054.16	140.5	3054.58	140.57	
	13:16:00	2971.44	139.95	2972.39	140.01	
	13:17:00	2896.65	139.38	2894.47	139.44	
	13:18:00	2821.09	138.81	2820.72	138.87	
	13:19:00	2750.12	138.23	2752.82	138.3	
	13:20:00	2702.09	137.68	2703.2	137.75	
	13:21:00	2654.62	137.15	2656.3	137.24	
	13:22:00	2594.33	136.66	2594.77	136.74	
	13:23:00	2538.19	136.16	2538.15	136.25	
	13:24:00	2490.25	135.65	2488.29	135.74	
	13:25:00	2450.52	135.14	2451.49	135.24	
	13:26:00	2418.52	134.67	2419.41	134.77	
	13:27:00	2365.89	134.23	2367.35	134.33	
	13:28:00	2330	133.8	2327.17	133.9	
	13:29:00	2297.01	133.37	2298.28	133.48	
	13:30:00	2271.56	132.98	2273.57	133.09	
	13:31:00	2244.53	132.62	2246.54	132.72	
	13:32:00	2199.23	132.29	2199.04	132.4	
	13:33:00	2149.93	131.94	2149.54	132.06	
	13:34:00	2104.35	131.56	2104.18	131.68	
	13:35:00	2065.52	131.15	2065.98	131.26	
	13:36:00	2048.21	130.72	2050.4	130.83	
	13:37:00	2031.02	130.31	2033.44	130.43	
	13:38:00	2015.34	129.96	2016.72	130.08	
	13:39:00	1975.64	129.63	1975.74	129.76	
	13:40:00	1935.86	129.31	1936.36	129.44	
	13:41:00	1902.84	128.97	1904.16	129.09	
	13:42:00	1875.59	128.61	1875.2	128.73	
	13:43:00	1849.18	128.23	1849.99	128.35	
	13:44:00	1819.81	127.82	1821.38	127.94	
	13:45:00	1805.74	127.37	1807.82	127.47	
	13:46:00	1786.34	126.75	1788.71	126.84	
	13:47:00	1769.75	126.27	1771.76	126.38	
	13:48:00	1753.62	125.96	1755.59	126.07	
	13:49:00	1737.09	125.73	1739.21	125.84	
60	13:50:00	1721.56	125.55	1723.17	125.67	Flowing waxy oil
	13:50:00	1721.56	125.55	1723.17	125.67	
	13:51:00	1706.4	125.39	1708.27	125.51	
	13:52:00	1691.12	125.24	1693.12	125.37	
	13:53:00	1677.31	125.09	1678.86	125.23	
	13:54:00	1663.28	124.95	1665.18	125.09	
	13:55:00	1649.16	124.81	1650.75	124.95	
	13:56:00	1635.73	124.68	1637.71	124.82	
	13:57:00	1622.55	124.54	1623.83	124.68	
	13:58:00	1610.11	124.41	1612.3	124.55	
	13:59:00	1598.35	124.28	1599.91	124.41	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	14:00:00	1585.91	124.15	1587.61	124.28	
	14:01:00	1573.84	124.02	1575.32	124.15	
	14:02:00	1562.82	123.89	1564.73	124.02	
	14:03:00	1551.69	123.75	1553.51	123.88	
	14:04:00	1541.07	123.62	1543.14	123.75	
	14:05:00	1531.55	123.49	1533.48	123.63	
	14:06:00	1522.84	123.37	1524.78	123.51	
	14:07:00	1515.03	123.25	1517.01	123.39	
	14:08:00	1507.58	123.14	1509.53	123.28	
	14:09:00	1499.94	123.03	1502.04	123.18	
	14:10:00	1492.39	122.93	1494.43	123.08	
	14:11:00	1484.6	122.84	1487.19	122.99	
	14:12:00	1476.81	122.74	1479.31	122.89	
	14:13:00	1469.12	122.64	1470.97	122.79	
	14:14:00	1461.28	122.54	1463.49	122.69	
	14:15:00	1453.64	122.43	1455.75	122.59	
	14:16:00	1445.83	122.33	1448.01	122.48	
	14:17:00	1439.47	122.22	1441.02	122.38	
	14:18:00	1432.28	122.12	1434.82	122.27	
	14:19:00	1426.24	122.01	1428.3	122.17	
	14:20:00	1419.76	121.92	1421.93	122.07	
	14:21:00	1413.33	121.83	1415.55	121.99	
	14:22:00	1407.78	121.74	1409.55	121.9	
	14:23:00	1401.66	121.65	1403.96	121.81	
	14:24:00	1396.1	121.56	1398.31	121.72	
	14:25:00	1390.27	121.46	1392.27	121.62	
	14:26:00	1384.5	121.37	1386.71	121.54	
	14:27:00	1379.3	121.29	1381.23	121.45	
	14:28:00	1373.78	121.21	1375.79	121.37	
	14:29:00	1368.06	121.12	1370.38	121.28	
	14:30:00	1363.09	121.04	1365.07	121.2	
	14:31:00	1358.16	120.96	1359.75	121.12	
	14:32:00	1353.27	120.88	1355.36	121.04	
	14:33:00	1348.64	120.8	1351.15	120.96	
	14:34:00	1343.99	120.72	1346.44	120.88	
	14:35:00	1339.75	120.64	1342.02	120.8	
	14:36:00	1335.98	120.57	1338.1	120.73	
	14:37:00	1332.34	120.5	1334.37	120.67	
	14:38:00	1328.4	120.44	1330.93	120.6	
	14:39:00	1324.97	120.37	1327.47	120.54	
	14:40:00	1321.85	120.31	1323.81	120.48	
	14:41:00	1318.25	120.25	1320.05	120.42	
	14:42:00	1315.1	120.19	1317.59	120.36	
	14:43:00	1311.98	120.14	1314.75	120.31	
	14:44:00	1309.02	120.08	1311.32	120.25	
	14:45:00	1306.2	120.03	1308.36	120.2	
	14:46:00	1303.36	119.98	1305.62	120.15	
	14:47:00	1300.74	119.93	1302.92	120.11	
	14:48:00	1297.95	119.88	1300.32	120.06	
	14:49:00	1295.86	119.84	1298.18	120.01	
	14:50:00	1294.23	119.8	1297.06	119.97	
	14:51:00	1292.47	119.76	1295.18	119.92	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	14:52:00	1291.19	119.73	1293.36	119.89	
	14:53:00	1289.94	119.7	1292.46	119.87	
	14:54:00	1288.9	119.67	1291.31	119.84	
	14:55:00	1287.65	119.65	1290.01	119.82	
	14:56:00	1286.41	119.63	1288.99	119.8	
	14:57:00	1284.44	119.6	1286.49	119.77	
	14:58:00	1282.37	119.58	1284.68	119.75	
	14:59:00	1280.39	119.55	1282.88	119.72	
61	15:00:00	1278.62	119.53	1280.7	119.69	Flowing waxy oil
	15:00:00	1278.62	119.53	1280.7	119.69	
	15:01:00	1276.77	119.5	1279.04	119.66	
	15:02:00	1275.12	119.46	1277.47	119.63	
	15:03:00	1273.29	119.43	1275.69	119.6	
	15:04:00	1271.67	119.4	1274.43	119.57	
	15:05:00	1270.41	119.37	1272.77	119.54	
	15:06:00	1268.84	119.35	1271.27	119.52	
	15:07:00	1267.45	119.32	1269.93	119.49	
	15:08:00	1266.06	119.3	1268.53	119.47	
	15:09:00	1264.93	119.27	1267.09	119.44	
	15:10:00	1263.66	119.25	1265.97	119.42	
62	15:11:00	1262.35	119.22	1265.13	119.4	Shut in well at choke manifold
	15:11:00	1262.35	119.22	1265.13	119.4	
	15:12:00	1280.65	119.22	1276.67	119.41	
	15:13:00	1310.1	119.4	1308.53	119.62	
	15:14:00	1358.06	119.82	1353.97	120.08	
	15:15:00	1414.29	120.42	1405.54	120.71	
	15:16:00	1476.26	121.12	1465.9	121.43	
	15:17:00	1537.47	121.87	1527.37	122.2	
	15:18:00	1597.68	122.64	1586.99	122.98	
	15:19:00	1657.8	123.41	1644.98	123.75	
	15:20:00	1717.68	124.18	1700.8	124.52	
	15:21:00	1776.46	124.93	1763.78	125.27	
	15:22:00	1833.43	125.68	1819.84	126.02	
	15:23:00	1889.21	126.42	1873.52	126.75	
	15:24:00	1944.4	127.13	1930.77	127.46	
	15:25:00	1998.87	127.83	1989.53	128.16	
	15:26:00	2053.03	128.51	2044.49	128.84	
	15:27:00	2106.81	129.17	2094.47	129.5	
	15:28:00	2159.63	129.82	2149.02	130.14	
	15:29:00	2212.18	130.45	2208.47	130.77	
	15:30:00	2264.79	131.06	2256.32	131.37	
	15:31:00	2317.21	131.65	2310.19	131.97	
	15:32:00	2369.23	132.23	2359.34	132.54	
	15:33:00	2420.9	132.8	2408.57	133.1	
	15:34:00	2459.89	133.34	2446.99	133.64	
63	15:35:00	2506.81	133.84	2492.62	134.12	Rih with slickline confirm SSD at 2809 sands open also open SSD 2755 sands

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	15:35:00	2506.81	133.84	2492.62	134.12	
	15:36:00	2556.6	134.32	2540.58	134.6	
	15:37:00	2606.53	134.8	2588.32	135.07	
	15:38:00	2656.46	135.28	2641.71	135.55	
	15:39:00	2705.51	135.75	2691.66	136.01	
	15:40:00	2754.15	136.21	2741.3	136.47	
	15:41:00	2802.65	136.67	2790.23	136.93	
	15:42:00	2850.79	137.11	2833.76	137.37	
	15:43:00	2898.61	137.54	2886.24	137.79	
	15:44:00	2946.11	137.97	2922.8	138.21	
	15:45:00	2993.21	138.38	2973.92	138.62	
	15:46:00	3039.62	138.78	3021.87	139.02	
	15:47:00	3085.79	139.18	3070.94	139.4	
	15:48:00	3131.43	139.56	3114.79	139.78	
	15:49:00	3176.71	139.93	3146.19	140.14	
	15:50:00	3221.38	140.29	3187.17	140.5	
	15:51:00	3265.86	140.64	3232.45	140.84	
	15:52:00	3309.65	140.98	3277.78	141.18	
	15:53:00	3352.87	141.31	3319.96	141.5	
	15:54:00	3399.26	141.63	3365.92	141.82	
	15:55:00	3442.65	141.95	3410.98	142.14	
	15:56:00	3482.33	142.26	3453.81	142.44	
	15:57:00	3521.12	142.56	3495.03	142.73	
	15:58:00	3559.7	142.85	3534.47	143	
64	15:59:00	3707.73	143.12	3673.88	143.27	Sudden increase in THP noticed on opening of sleeve THP 2759 psia
	15:59:00	3707.73	143.12	3673.88	143.27	
	16:00:00	3903.98	143.57	3913.77	143.76	
	16:01:00	4034.55	144.21	4043.75	144.38	
	16:02:00	4116.78	144.83	4112.68	144.97	
	16:03:00	4143.62	145.3	4136.24	145.44	
	16:04:00	4151.1	145.61	4147.13	145.73	
65	16:05:00	4153.22	145.82	4153.42	145.91	Pull out of hole with slickline unable to pass 2940 mdkb THP 3135 psia
	16:05:00	4153.22	145.82	4153.42	145.91	
	16:06:00	4154.05	145.96	4155.87	146.03	
	16:07:00	4155.2	146.05	4157.32	146.11	
	16:08:00	4156.06	146.12	4158.49	146.18	
	16:09:00	4157.14	146.16	4159.34	146.23	
	16:10:00	4158.14	146.2	4160.28	146.27	
	16:11:00	4160.06	146.24	4161.74	146.3	
	16:12:00	4162.2	146.27	4163.86	146.32	
	16:13:00	4164.57	146.31	4166.13	146.35	
	16:14:00	4167.06	146.34	4168.68	146.39	
	16:15:00	4169.64	146.37	4171.27	146.42	
	16:16:00	4172.88	146.4	4174.43	146.45	
	16:17:00	4176.8	146.42	4178.35	146.47	
	16:18:00	4181.06	146.44	4182.62	146.49	
	16:19:00	4184.71	146.45	4186.38	146.5	
	16:20:00	4187.9	146.47	4189.6	146.51	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	16:50:00	4262.57	146.29	4263.84	146.34	
	17:20:00	4290.06	145.78	4291.41	145.84	
	17:50:00	4301.36	145.22	4302.49	145.28	
	18:20:00	4304.06	144.83	4305.12	144.89	
	18:50:00	4304.49	144.58	4305.51	144.65	
66	18:52:00	4304.61	144.57	4305.6	144.64	Close BOP begin fishing operations

Origin Energy

Well Name: Yolla 4
Test Type: Fishing Operations 2809 Sands
Date of Survey: 2nd – 6th August 2004

MEMORY GAUGE REPORT

Prepared For: Andrew Wenk
Date: 22nd August 2004

David Whelan
Completion Products & Services
Halliburton Australia Pty Ltd

HALLIBURTON

Halliburton Australia Pty Ltd

MEMORY GAUGE FLOWING PRESSURE AND
TEMPERATURE SURVEY

MEMORY GAUGE TICKET NO:	35409
DATE:	2nd - 6th August 2004
HALLIBURTON CAMP:	Cheltenham, Victoria
HALLIBURTON OPERATOR:	David Whelan
WITNESS:	N/A
COMPANY:	Origin
DRILLING CONTRACTOR:	Ensco
LEASE NAME:	YOLLA
WELL NO:	YOLLA-4
TEST TYPE:	Flowing Survey
TEST NO:	5
TESTED ZONE:	2809 Sands Fishing Operation
FIELD AREA:	Bass Strait
STATE:	Victoria
COUNTRY:	Australia

NOTICE: THIS REPORT IS BASED ON SOUND ENGINEERING PRACTICES, BUT BECAUSE OF VARIABLE WELL CONDITIONS AND OTHER INFORMATION WHICH MUST BE RELIED UPON HALLIBURTON MAKES NO WARRANTY, EXPRESS OR IMPLIED AS TO THE ACCURACY OF THE DATA OR OF ANY CALCULATIONS OR OPINIONS EXPRESSED HEREIN. YOU AGREE THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER DUE TO NEGLIGENCE OR OTHERWISE ARISING OUT OF OR IN CONNECTION WITH SUCH DATA, CALCULATIONS OR OPINIONS.

HALLIBURTON

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SECTION 1

TEST SUMMARY & JOB INFORMATION

WELL DATA

Well Details

Well Name	Yolla - 4	
Field	Yolla	
Platfrom	Yolla A	
Derrick Floor Elevation	81	m AMSL
Top Bottom Flange	27.07	m MDRT

Completion

Measured m (MDRT)	**Description**
27.07	Tubing Hanger
169.09	TRSV
2521.39	5 1/2" PBR
2593.75	4 1/2" Halliburton SSD x 3.813" RD
2596.99	6 5/8" AHR Packer
2832.49	4 1/2" Halliburton SSD x 3.813" RD
2835.73	6 5/8" AHR Packer
2920.57	4 1/2" Halliburton SSD x 3.688" RD
2923.80	6 5/8" AHR Packer
2979.57	4 1/2" Halliburton SSD x 3.688" RD
2983.10	6 5/8" MWR Packer
2990.46	4 1/2" Halliburton SSD x 3.688" RD
2997.38	4 1/2" Halliburton 3.688" RN Nipple
2999.95	EOT

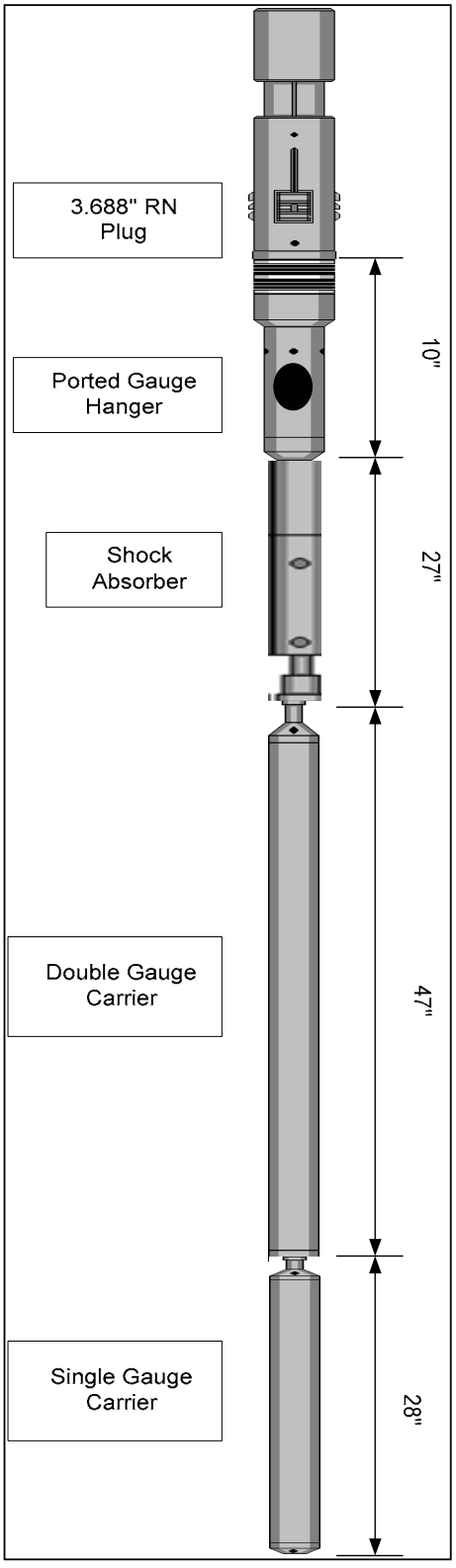
SURVEY EVENTS

Client	:Origin Energy	**Operator**	:David Whelan
Field	:Yolla	**Survey Date**	:2nd - 6th August 2004
Platfor	:Yolla A	**Well**	:Yolla - 4

Event	Time	Description
66	18:52:00	Close slickline BOP begin fishing operations
67	17:40:00	Open well on 12/64 choke attempt to dislodge fish THP 3181 psia
68	17:54:00	Increase choke to 16/64 THP 3113 psia
69	18:06:00	Increase choke to 20/64 THP 3073 psia
70	18:08:00	Fully open gas manifold to flare
71	18:25:00	Increase choke to 24/64 THP 3050 psia
72	18:48:00	Increase choke to 28/64 THP 3020 psia
73	20:49:00	Shut in well at choke manifold
74	20:55:40	Slickline attempting jar wire from fish
75	21:53:00	Stop jarring
76	22:08:00	Open well on 16/64 choke attempt to dislodge fish THP 3094 psia
77	22:11:00	Increase choke to 20/64 THP 3062 psia
78	22:15:00	Increase choke to 24/64 THP 2995 psia
79	22:20:00	Continue to jar on wire while flowing well
80	22:48:00	Stop jarring
81	22:51:00	Shut in well at choke manifold continue with fishing operations
82	22:55:00	Close slickline BOP
83	23:53:00	Equalise slickline BOP
84	0:10:00	Run in hole with blind box cut wire at 2915 mdkb thp 3062 psia
85	2:39:00	Close Master valve
86	3:07:00	Open master valve
87	3:20:00	Run in hole with wire finder THP 3170 psia
88	3:55:00	Close slickline BOP
89	5:08:00	Open slickline BOP
90	5:15:00	Run in hole with wire finder THP 3167 psia
91	6:38:00	Close master valve
92	7:02:00	Open master valve slickline run in hole with scratcher
93	8:10:00	Close slickline BOP wire at surface
94	8:45:00	Equalise and open BOP wire at surface
95	9:13:00	Close slickline BOP wire at surface
96	9:41:00	Equalise and open BOP wire at surface
97	11:30:00	Close BOP back feed wire through lub and stuffing box
98	14:00:00	Equalise and open BOP commence pulling wire from hole
99	14:15:00	Unable to pull more than few meters from hole close slickline BOP
100	14:56:00	Equalise and open BOP rig up glycol injection line

101	15:46:00	Still unable to move wire close BOP
102	16:00:00	Lift stuffing box ball of wire found
103	16:15:00	Function BOP small amount of gas passing seals
104	16:30:00	Completion supervisor cut wire with swab valve on tree
105	17:00:00	Shut down and redress BOP
106	10:31:00	Continue fishing operations after BOP redress
107	10:38:00	Open master valve run in hole and retrieve wire THP 3122 psia
108	11:40:00	Wire to surface close slickline BOP THP 3128 psia
109	12:15:00	Equalise and open BOP
110	12:30:00	Pull up on slickline and close BOP
111	13:27:00	Reconfigure lubricator to allow retrieval of wire from hole
112	14:50:00	Equalise and open slickline BOP THP 3129 psia
113	15:00:00	Recover wire from hole THP 3132 psia
114	17:04:00	Wire recovered from well shut in swab valve
115	17:20:00	Reconfigure lubricator and remove spooled wire from slickline unit
116	20:15:00	Open master valve
117	21:24:00	Run in hole with 3.22 LIB THP 3123 psia
118	22:40:00	Close swab valve on production tree
119	23:07:00	Open swab valve on production tree
120	23:11:00	Run in hole with 2.5 RJ pulling tool THP 3114 psia
121	0:13:00	Out of hole with top GO Devil close swab valve on production tree
122	0:52:00	Open swab valve on production tree RIH with 3.22 LIB THP 3123 psia
123	1:25:00	Open swab valve on production tree
124	1:42:00	Open well leak at lubricator close well
125	2:34:00	Open swab valve on production tree
126	2:40:00	Run in hole with 2.5 RB pulling tool THP 3117 psia
127	3:26:00	Out of hole with bottom GO Devil close swab valve on production tree
128	3:54:00	Open swab valve on production tree
129	3:57:00	Run in hole with 3.22 LIB THP 3111 psia
130	5:26:00	Out of hole with Slickline close swab valve on production tree
131	7:12:00	Open swab valve on production tree THP 3120 psia
132	7:13:00	Run in hole with pulling tool latch fish and work free pull out of hole
133	9:24:04	Out of hole close in swab valve on production tree
134	11:30:00	Open well and run in hole with wire spear
135	12:36:00	Close swab valve on production tree THP 3124 psia
136	13:31:00	Open well and run in hole with 4 prong spear THP 3127 psia
137	15:00:00	Out of hole close production tree swab valve approx 20 mtrs wire
138	16:12:00	Open master valve leak in lubricator close master valve
139	16:34:00	Open well and run in hole with 3.22 LIB
140	17:55:00	Out of hole with slickline shut in swab valve on production tree
141	18:22:04	Open swab valve on production tree RIH to open SSD 2809 sands

SURVEY TOOL STRING



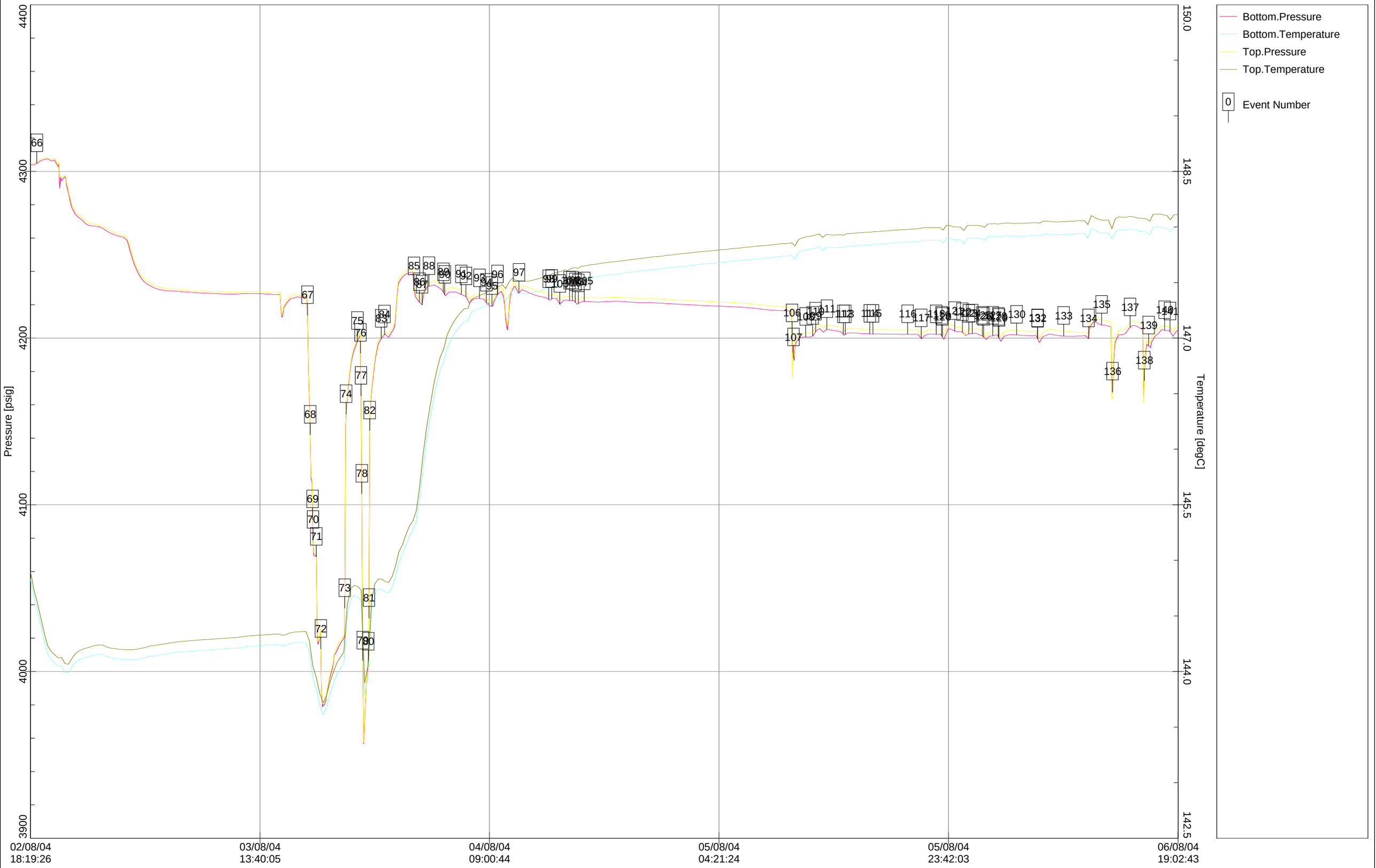
HALLIBURTON

SECTION 2

PLOTS

Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 66 - 141

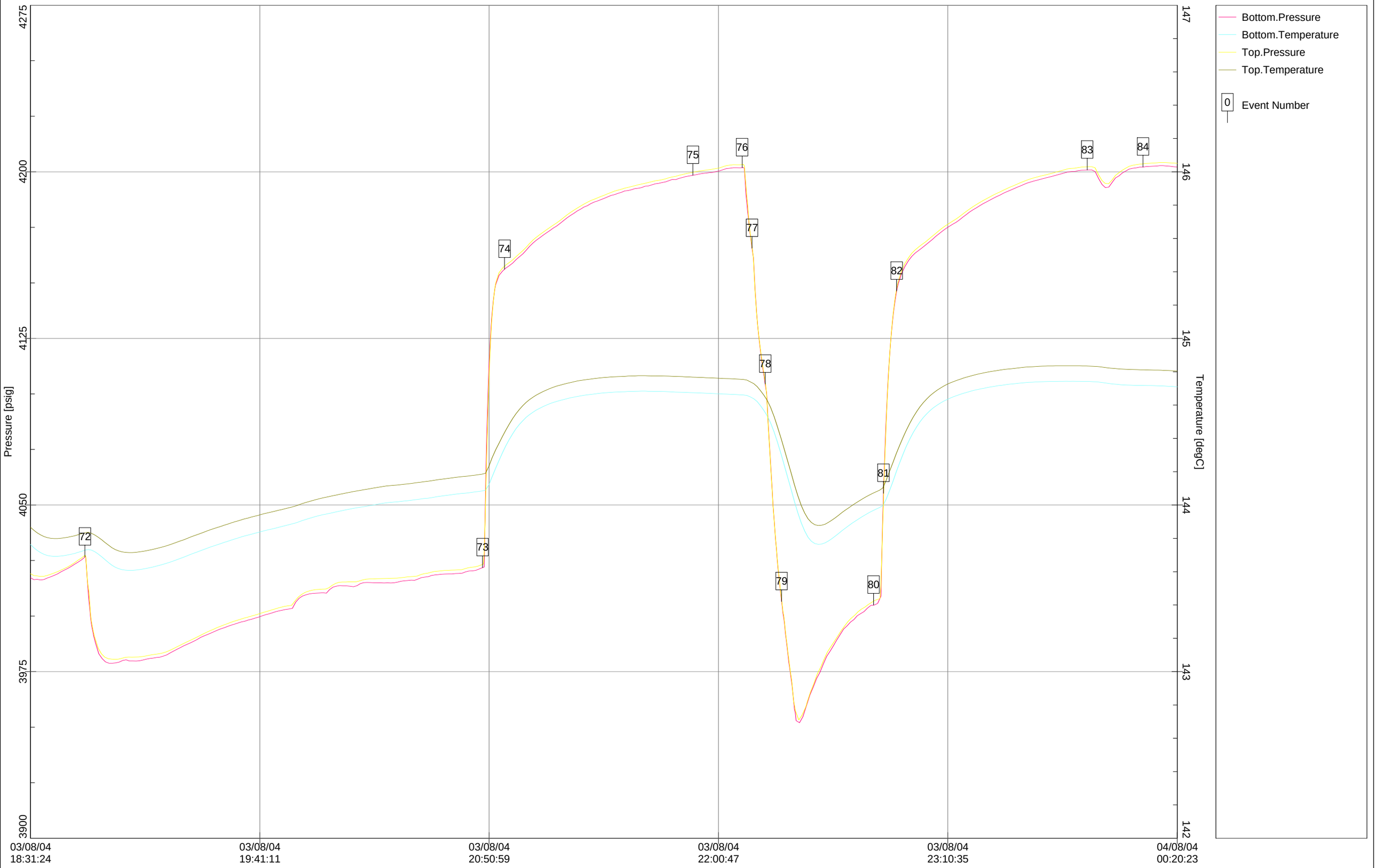


Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 66 - 72

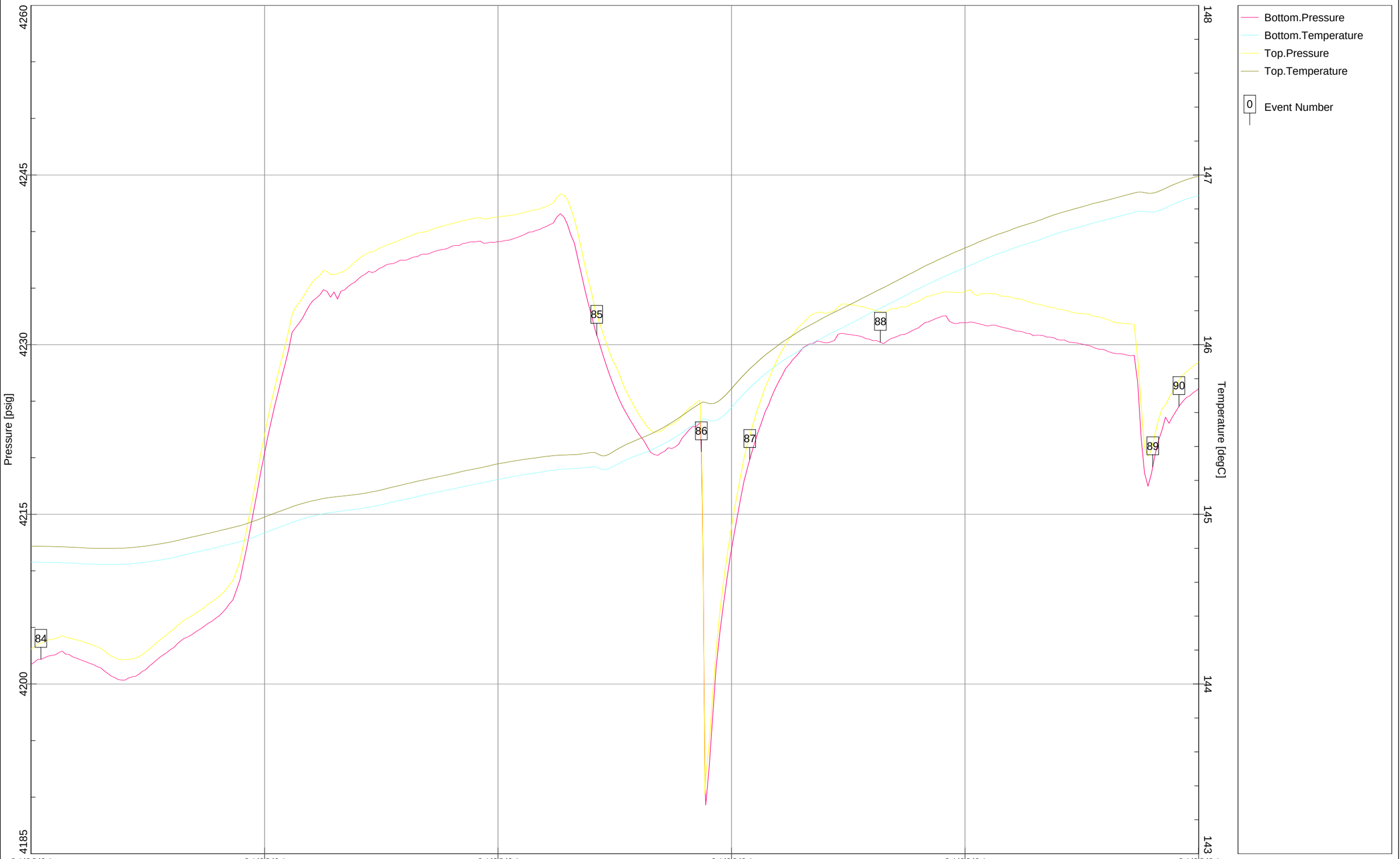
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 72 - 84



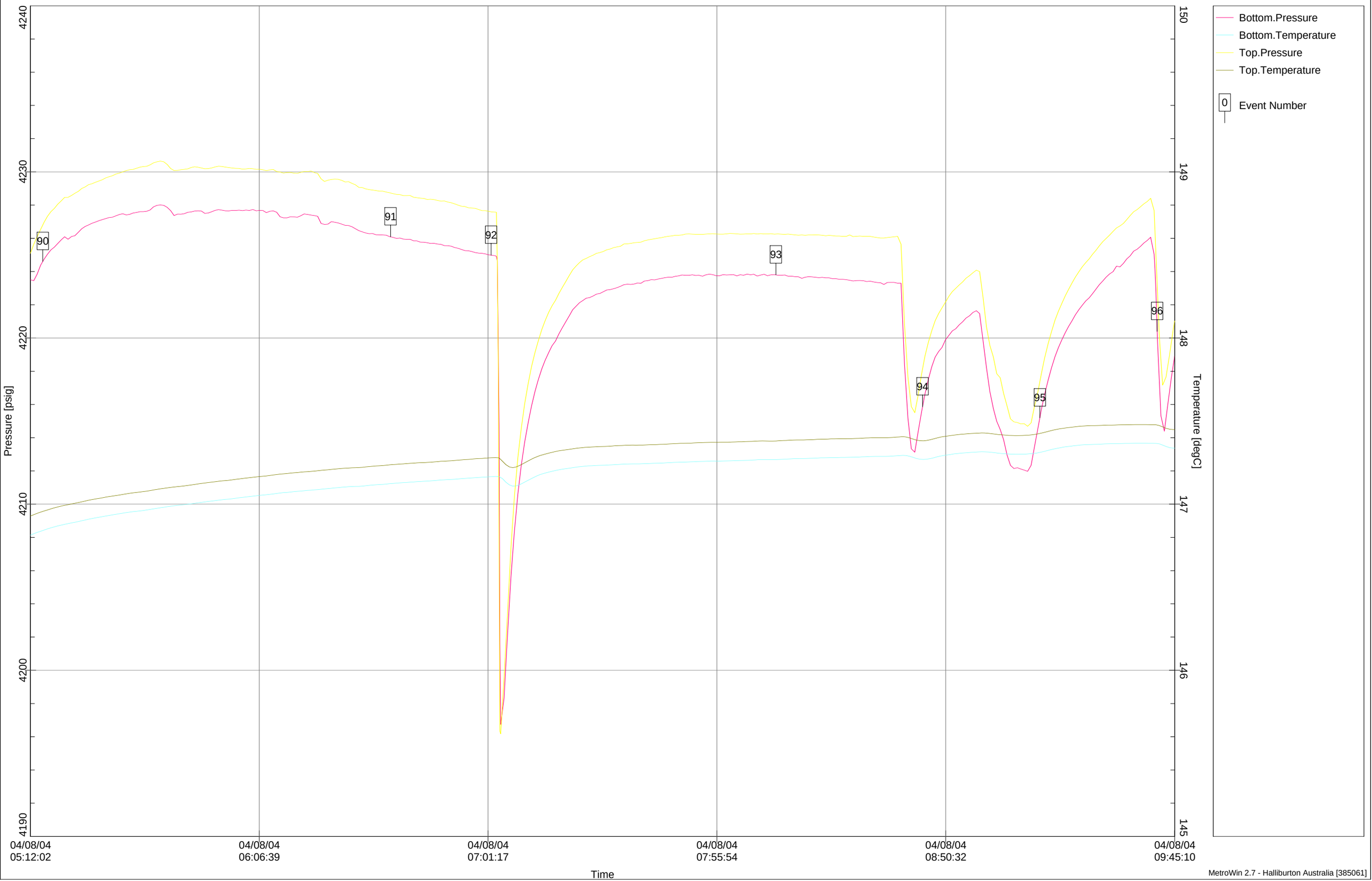
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 84 - 90



Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 90 - 96

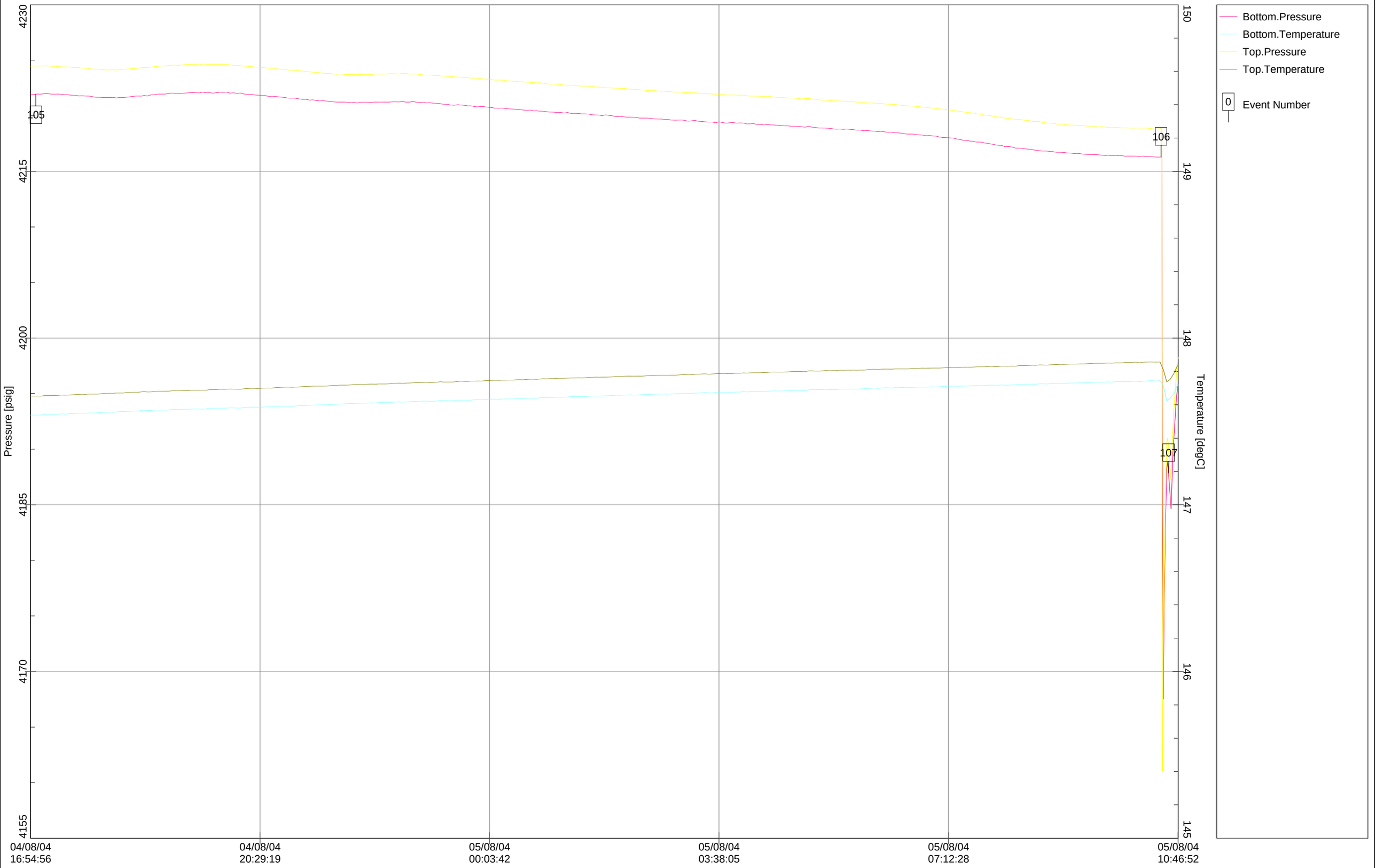


Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 96 - 105

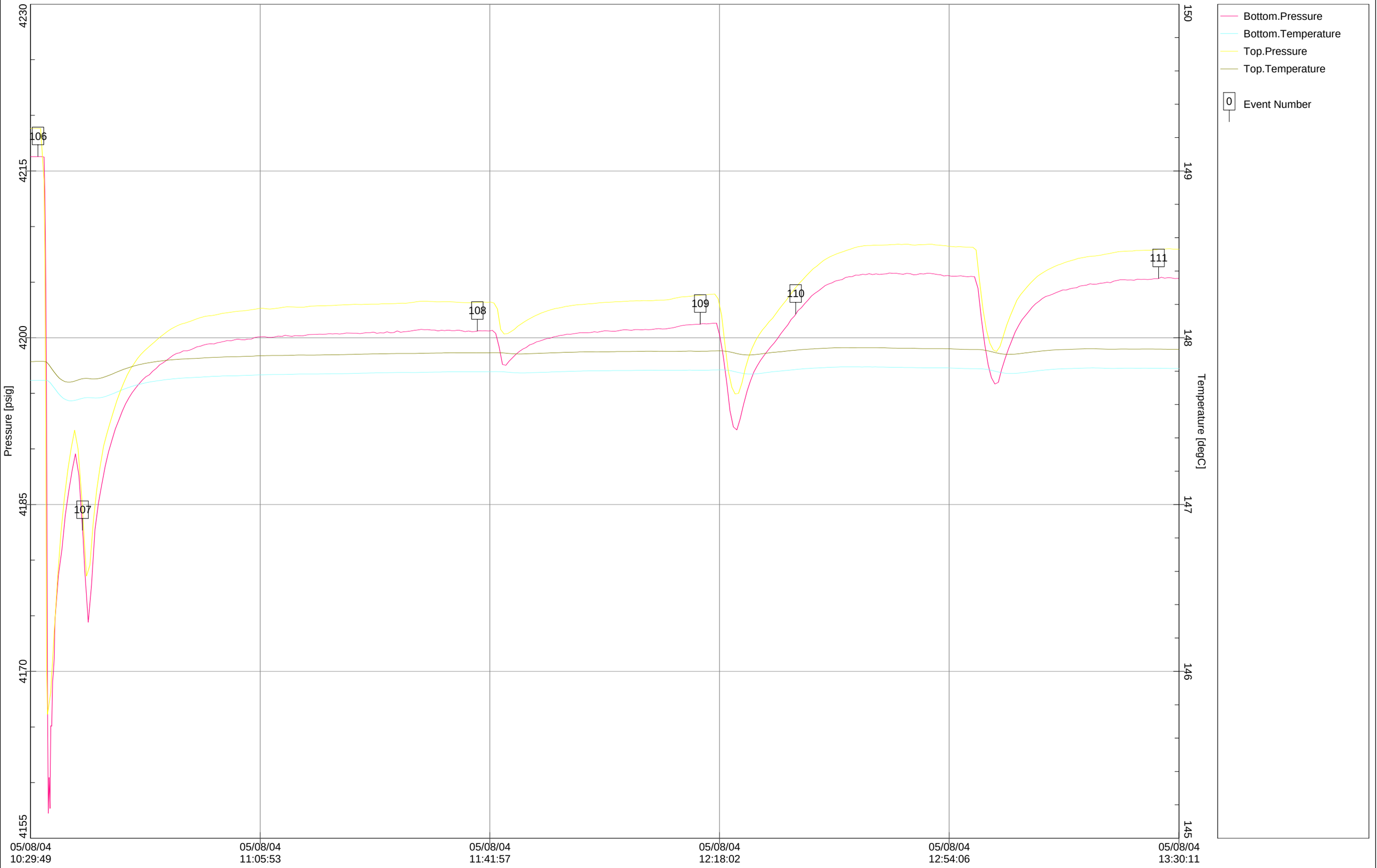
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 105 - 106



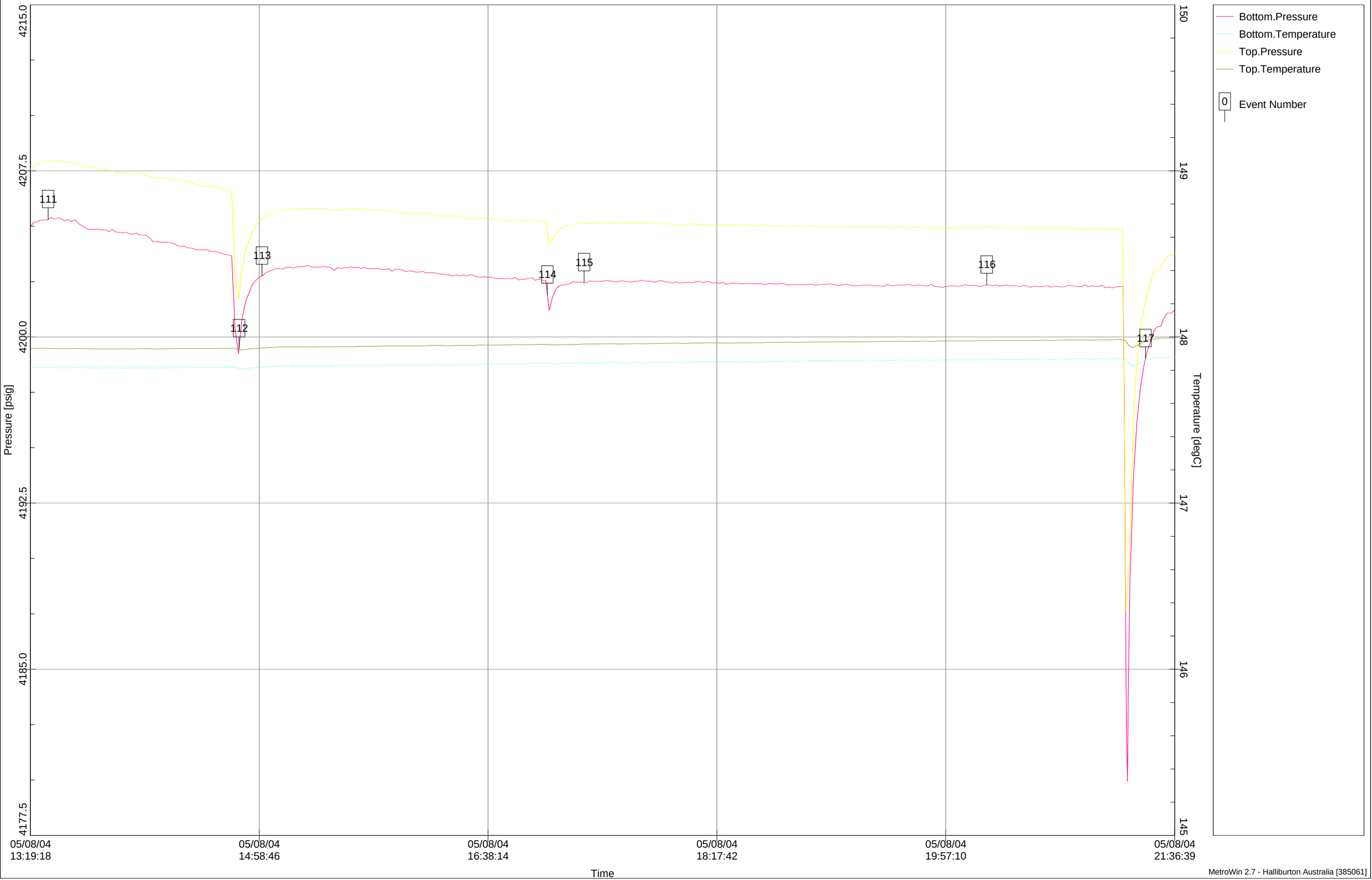
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 106 - 111



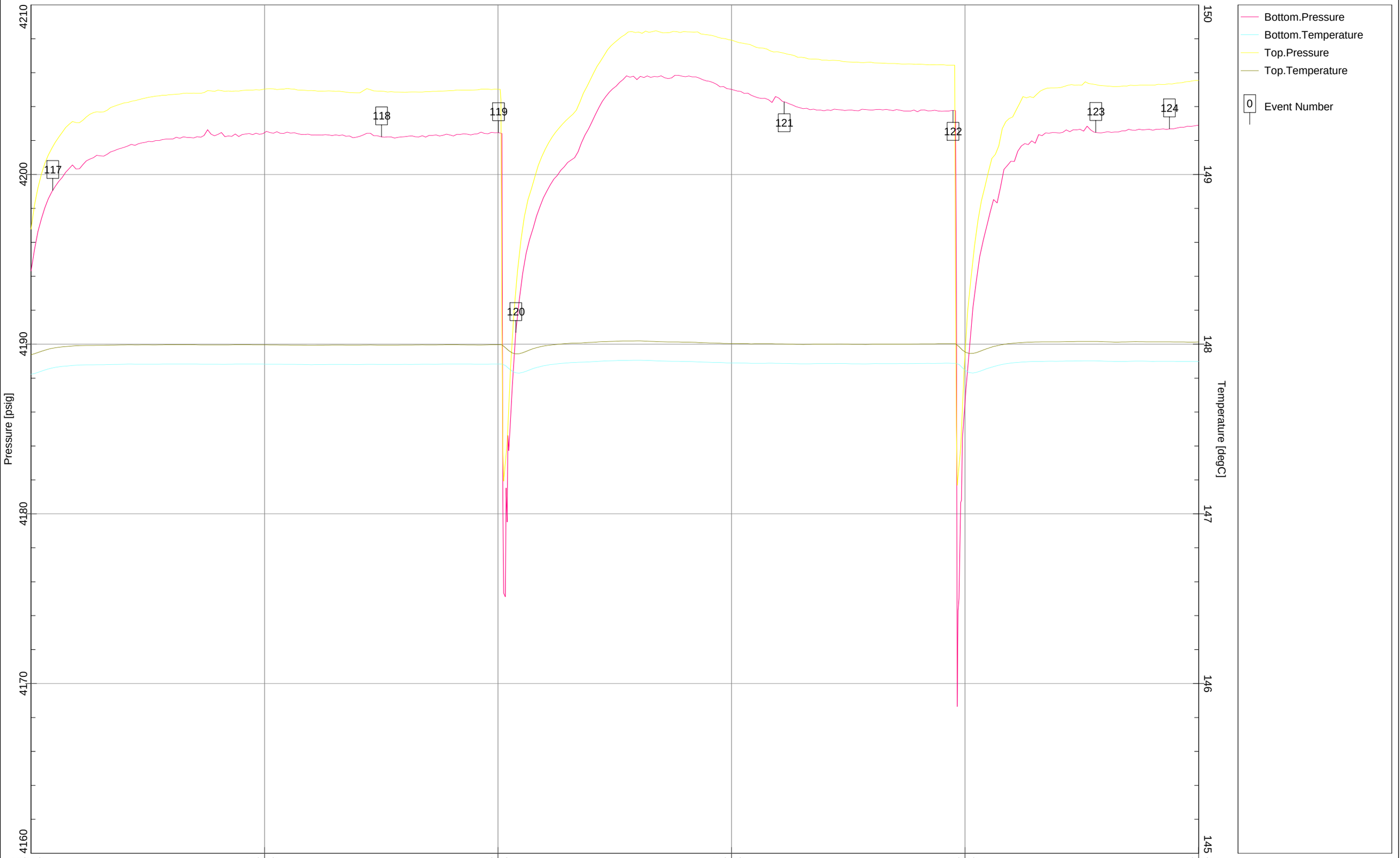
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 111 - 117



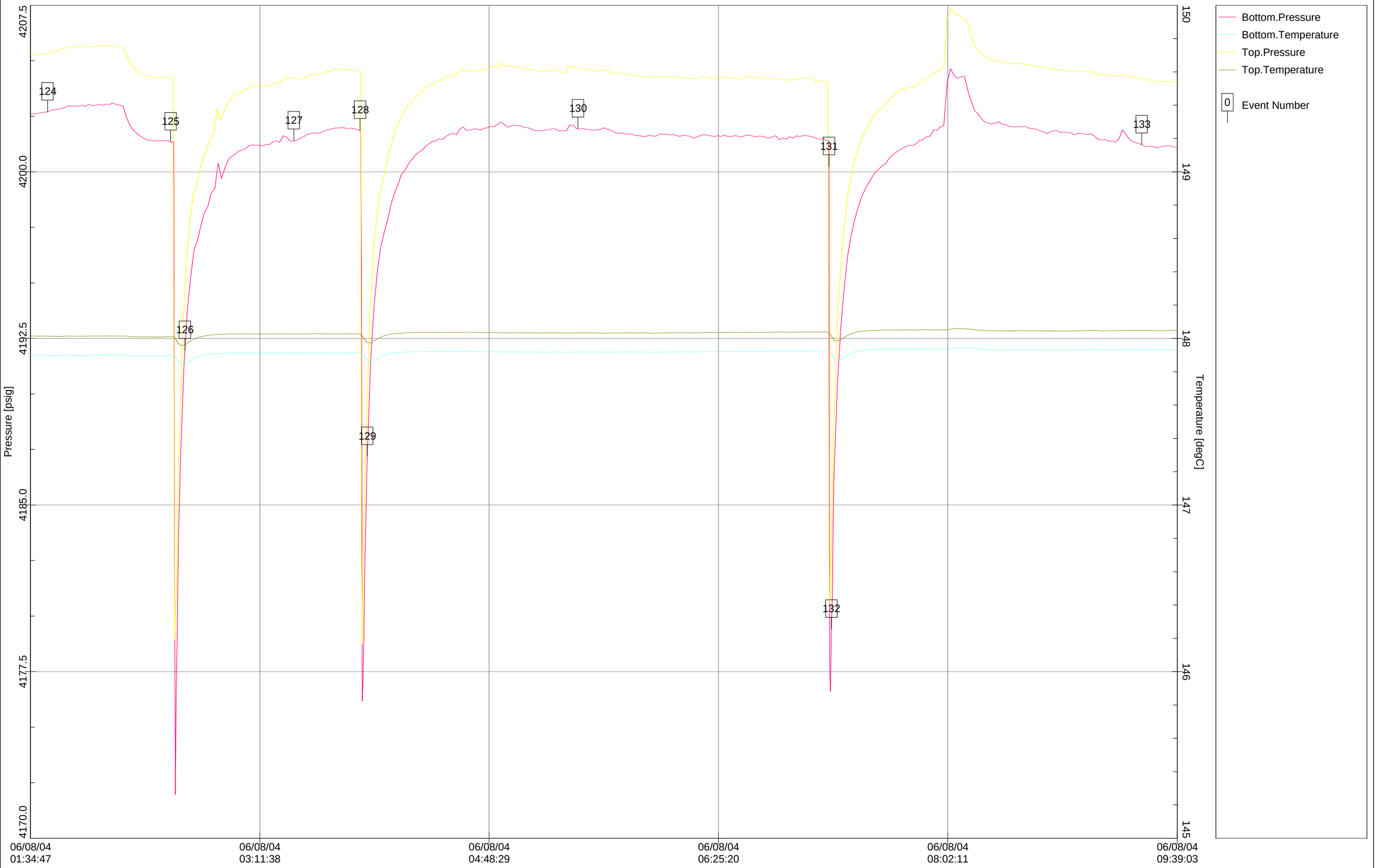
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 117 - 124



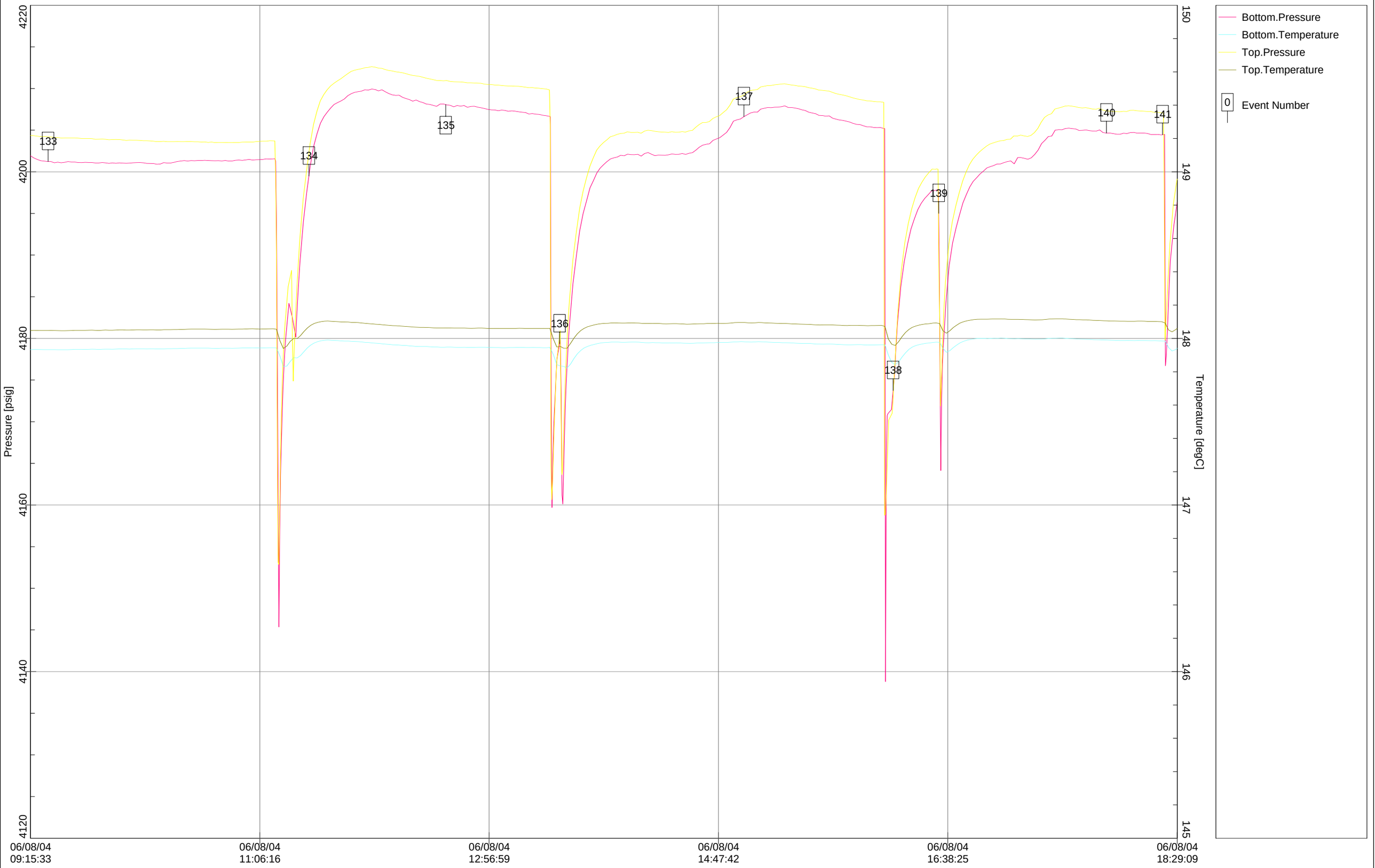
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 124 - 133



Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :Fishing Operations 2809 Sands
Operator :David Whelan
Plot :Events 133 - 141



SECTION 3

DATA

SURVEY DATA

Client	:Origin Energy	Operator	:David Whelan
Field	:Yolla	Date	:2nd to 6th August 2004
Platform	:Yolla A	Zone	2809 Sands
Well	:Yolla - 4		Fishing operations

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
66	18:52:00	4304.61	144.57	4305.6	144.64	Close slickline BOP begin fishing operations
	19:20:00	4306.8	144.34	4307.73	144.41	
	19:50:00	4307.15	144.14	4308.12	144.21	
	20:20:00	4306.73	144.08	4307.65	144.16	
	20:50:00	4293.43	144.08	4294.78	144.15	
	21:20:00	4293.84	143.98	4294.68	144.06	
	21:50:00	4277.74	144.04	4279.47	144.12	
	22:20:00	4272.81	144.1	4274.41	144.18	
	22:50:00	4270.08	144.12	4271.64	144.2	
	23:20:00	4267.52	144.14	4268.99	144.22	
	23:50:00	4267.14	144.15	4268.21	144.24	
	0:20:00	4266.6	144.16	4267.72	144.24	
	0:50:00	4263.91	144.13	4265.31	144.22	
	1:20:00	4262.3	144.12	4263.63	144.21	
	1:50:00	4261.01	144.11	4262.13	144.2	
	2:20:00	4260.6	144.11	4261.83	144.2	
	2:50:00	4249.66	144.11	4251.32	144.2	
	3:20:00	4239.79	144.11	4241.42	144.2	
	3:50:00	4234.33	144.12	4235.91	144.21	
	4:20:00	4231.64	144.13	4233.18	144.23	
	4:50:00	4229.91	144.14	4231.47	144.24	
	5:20:00	4228.9	144.15	4230.4	144.24	
	5:50:00	4228.4	144.16	4229.62	144.25	
	6:20:00	4228.26	144.17	4229.44	144.26	
	6:50:00	4228.01	144.18	4229.22	144.27	
	7:20:00	4227.74	144.18	4228.95	144.27	
	7:50:00	4227.48	144.18	4228.68	144.28	
	8:20:00	4227.19	144.19	4228.4	144.28	
	8:50:00	4227.04	144.19	4228.24	144.29	
	9:20:00	4226.87	144.19	4228.07	144.29	
	9:50:00	4226.75	144.2	4227.96	144.29	
	10:20:00	4226.61	144.2	4227.82	144.3	
	10:50:00	4226.45	144.2	4227.66	144.3	
	11:20:00	4226.37	144.21	4227.58	144.3	
	11:50:00	4226.54	144.21	4227.73	144.31	
	12:20:00	4226.65	144.22	4227.86	144.31	
	12:50:00	4226.76	144.23	4227.97	144.32	
	13:20:00	4226.73	144.23	4227.95	144.33	
	13:50:00	4226.58	144.23	4227.81	144.33	
	14:20:00	4226.41	144.24	4227.63	144.33	
	14:50:00	4226.16	144.24	4227.37	144.34	
	15:20:00	4226.14	144.24	4227.36	144.34	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	15:50:00	4219.76	144.23	4220.82	144.33	
	16:20:00	4224.36	144.26	4225.69	144.35	
	16:50:00	4224.8	144.26	4226.04	144.36	
	17:20:00	4224.63	144.26	4225.85	144.36	
67	17:40:00	4221.77	144.26	4223.24	144.36	Open well on 12/64 choke attempt to dislodge fish THP 3181 psia
	17:50:00	4162.93	144.18	4164.55	144.28	
68	17:54:00	4145.26	144.14	4145.59	144.24	Increase choke to 16/64 THP 3113 psia
69	18:06:00	4096.56	143.97	4096.56	144.08	Increase choke to 20/64 THP 3073 psia
70	18:08:00	4076.56	143.94	4077.81	144.04	Fully open gas manifold to flare
	18:20:00	4069.39	143.83	4070.95	143.94	
71	18:25:00	4070.52	143.84	4071.9	143.95	Increase choke to 24/64 THP 3050 psia
72	18:48:00	4026.64	143.73	4027.41	143.83	Increase choke to 28/64 THP 3020 psia
	18:50:00	3996.35	143.73	3997.36	143.83	
	19:20:00	3987.98	143.7	3989.09	143.81	
	19:50:00	4003.18	143.88	4004.71	143.98	
	20:20:00	4014.96	144.01	4017.01	144.12	
73	20:49:00	4021.83	144.09	4023.27	144.19	Shut in well at choke manifold
	20:50:00	4064.81	144.09	4058.23	144.19	
74	20:55:40	4156.3	144.34	4157.58	144.43	Slickline attempting jar wire from fish
	21:20:00	4184.34	144.66	4185.65	144.75	
	21:50:00	4197.5	144.68	4198.84	144.77	
75	21:53:00	4198.38	144.67	4199.8	144.77	Stop jarring
76	22:08:00	4201.96	144.66	4203.32	144.75	Open well on 16/64 choke attempt to dislodge fish THP 3094 psia
77	22:11:00	4165.49	144.64	4166.29	144.73	Increase choke to 20/64 THP 3062 psia
78	22:15:00	4104.48	144.56	4105.4	144.65	Increase choke to 24/64 THP 2995 psia
79	22:20:00	4006.57	144.3	4007.41	144.39	Continue to jar on wire while flowing well
	22:20:00	4006.57	144.3	4007.41	144.39	
80	22:48:00	4005.34	143.97	4006.71	144.07	Stop jarring
	22:50:00	4006.34	143.99	4008	144.09	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
81	22:51:00	4055.27	144	4051.62	144.11	Shut in well at choke manifold continue with fishing operations
82	22:55:00	4146.29	144.2	4147.27	144.31	Close slickline BOP
	23:20:00	4184.56	144.7	4185.9	144.79	
	23:50:00	4200.37	144.74	4201.85	144.84	
83	23:53:00	4200.82	144.74	4202.25	144.83	Equalise slickline BOP
84	0:10:00	4202.17	144.72	4203.58	144.81	Run in hole with blind box cut wire at 2915 mdkb thp 3062 psia
	0:20:00	4202.19	144.71	4203.88	144.8	
	0:50:00	4204.33	144.77	4205.95	144.86	
	1:20:00	4232.31	144.97	4234.08	145.06	
	1:50:00	4237.76	145.1	4239.74	145.19	
	2:20:00	4239.83	145.24	4241.74	145.33	
85	2:39:00	4230.83	145.28	4232.62	145.36	Close Master valve
	2:50:00	4222.21	145.35	4223.97	145.44	
86	3:07:00	4220.85	145.56	4221.42	145.66	Open master valve
87	3:20:00	4219.93	145.75	4222	145.86	Run in hole with wire finder THP 3170 psia
	3:20:00	4219.93	145.75	4222	145.86	
	3:50:00	4230.69	146.16	4233.38	146.27	
88	3:55:00	4230.24	146.22	4232.94	146.33	Close slickline BOP
	4:20:00	4231.97	146.48	4234.53	146.59	
	4:50:00	4229.97	146.7	4232.71	146.82	
89	5:08:00	4219.19	146.78	4221.17	146.89	Open slickline BOP
90	5:15:00	4224.56	146.84	4226.81	146.96	Run in hole with wire finder THP 3167 psia
	5:20:00	4226.03	146.88	4228.4	146.99	
	5:50:00	4227.57	147	4230.23	147.11	
	6:20:00	4227.32	147.09	4229.95	147.2	
91	6:38:00	4226.11	147.12	4228.71	147.24	Close master valve
	6:50:00	4225.64	147.15	4228.24	147.26	
92	7:02:00	4225	147.17	4227.62	147.28	Open master valve slickline run in hole with scratcher
	7:20:00	4221.05	147.21	4223.5	147.33	
	7:50:00	4223.8	147.26	4226.25	147.37	
93	8:10:00	4223.79	147.27	4226.25	147.38	Close slickline BOP wire at surface

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	8:20:00	4223.62	147.28	4226.22	147.39	
94	8:45:00	4215.87	147.27	4218.15	147.38	Equalise and open BOP wire at surface
	8:50:00	4219.64	147.29	4221.97	147.41	
95	9:13:00	4215.24	147.31	4217.34	147.43	Close slickline BOP wire at surface
	9:20:00	4220.75	147.35	4223	147.46	
96	9:41:00	4220.36	147.37	4223.24	147.48	Equalise and open BOP wire at surface
	9:50:00	4224.14	147.36	4226.32	147.47	
	10:20:00	4216.22	147.35	4218.79	147.46	
	10:50:00	4227.43	147.43	4229.82	147.54	
	11:20:00	4221.07	147.38	4223.29	147.49	
97	11:30:00	4227.59	147.4	4229.98	147.51	Close BOP wire at surface back feed wire through lub and stuffing box
	11:50:00	4229.01	147.4	4231.59	147.52	
	12:20:00	4227.26	147.4	4230.26	147.51	
	12:50:00	4225.89	147.41	4228.9	147.53	
	13:20:00	4224.92	147.43	4227.99	147.54	
	13:50:00	4224.29	147.45	4227.2	147.56	
98	14:00:00	4222.23	147.44	4224.72	147.55	Equalise and open BOP commence pulling wire from hole
99	14:15:00	4223.6	147.46	4226.16	147.58	Unable to pull more than few meters from hole close slickline BOP
	14:20:00	4223.81	147.47	4226.35	147.58	
	14:50:00	4223.59	147.49	4226.15	147.6	
100	14:56:00	4219.78	147.47	4222.32	147.59	Equalise and open BOP rig up glycol injection line
	15:20:00	4222.85	147.5	4225.36	147.61	
101	15:46:00	4222.19	147.51	4224.68	147.62	Still unable to move wire close BOP
	15:50:00	4222.34	147.52	4224.89	147.63	
102	16:00:00	4222.57	147.52	4225.08	147.63	Lift stuffing box ball of wire found
103	16:15:00	4222.51	147.52	4225.03	147.64	Function BOP small amount of gas passing seals
	16:20:00	4222.52	147.52	4225.02	147.64	
104	16:30:00	4220.33	147.52	4222.78	147.63	Completion supervisor cut wire with swab valve on tree
	16:50:00	4221.88	147.54	4224.37	147.65	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
105	17:00:00	4222.03	147.54	4224.49	147.65	Shut down and redress BOP
	17:20:00	4221.92	147.54	4224.43	147.66	
	17:50:00	4221.72	147.55	4224.25	147.66	
	18:20:00	4221.67	147.56	4224.17	147.67	
	18:50:00	4221.92	147.57	4224.41	147.68	
	19:20:00	4222.07	147.57	4224.6	147.69	
	19:50:00	4222.12	147.58	4224.61	147.69	
	20:20:00	4221.9	147.59	4224.44	147.7	
	20:50:00	4221.67	147.59	4224.18	147.7	
	21:20:00	4221.41	147.6	4223.93	147.71	
	21:50:00	4221.21	147.61	4223.73	147.72	
	22:20:00	4221.22	147.61	4223.73	147.73	
	22:50:00	4221.25	147.62	4223.76	147.73	
	23:20:00	4221.02	147.62	4223.58	147.74	
	23:50:00	4220.88	147.63	4223.37	147.74	
	0:20:00	4220.68	147.64	4223.14	147.75	
	0:50:00	4220.43	147.64	4222.98	147.75	
	1:20:00	4220.21	147.65	4222.74	147.76	
	1:50:00	4220.05	147.65	4222.56	147.77	
	2:20:00	4219.88	147.66	4222.38	147.77	
	2:50:00	4219.66	147.66	4222.18	147.78	
	3:20:00	4219.49	147.67	4222.04	147.78	
	3:50:00	4219.32	147.67	4221.88	147.79	
	4:20:00	4219.21	147.68	4221.73	147.79	
	4:50:00	4219.05	147.69	4221.57	147.8	
	5:20:00	4218.82	147.69	4221.37	147.8	
	5:50:00	4218.69	147.7	4221.25	147.81	
	6:20:00	4218.49	147.7	4221.03	147.81	
	6:50:00	4218.26	147.71	4220.77	147.82	
	7:20:00	4217.91	147.71	4220.45	147.82	
	7:50:00	4217.5	147.72	4220.03	147.83	
	8:20:00	4217.07	147.72	4219.64	147.83	
	8:50:00	4216.76	147.73	4219.33	147.84	
	9:20:00	4216.57	147.73	4219.08	147.85	
	9:50:00	4216.4	147.74	4218.93	147.85	
	10:20:00	4216.34	147.74	4218.86	147.86	
106	10:31:00	4216.28	147.74	4218.82	147.86	Continue fishing operations after BOP redress
107	10:38:00	4182.69	147.64	4184.2	147.75	Open master valve slickline run in hole and retrieve wire THP 3122 psia
	10:50:00	4197.53	147.74	4199.98	147.86	
	11:20:00	4200.44	147.79	4202.99	147.9	
108	11:40:00	4200.63	147.8	4203.19	147.91	Wire to surface close slickline BOP THP 3128 psia
	11:50:00	4199.68	147.79	4202.22	147.91	
109	12:15:00	4201.24	147.81	4203.83	147.92	Equalise and open BOP

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	12:20:00	4192.49	147.8	4195.46	147.91	
110	12:30:00	4202.18	147.81	4204.52	147.93	Pull up on slickline and close BOP
	12:50:00	4205.76	147.82	4208.37	147.94	
	13:20:00	4205.1	147.82	4207.66	147.93	
111	13:27:00	4205.39	147.82	4207.95	147.93	Reconfigure lubricator to allow retrieval of wire from hole
	13:50:00	4204.78	147.81	4207.58	147.93	
	14:20:00	4204.31	147.82	4207.12	147.93	
112	14:50:00	4199.61	147.81	4201.95	147.92	Equalise and open slickline BOP THP 3129 psia
	14:50:00	4199.61	147.81	4201.95	147.92	
113	15:00:00	4202.76	147.82	4205.31	147.93	Recover wire from hole THP 3132 psia
	15:20:00	4203.16	147.83	4205.82	147.94	
	15:50:00	4203.12	147.83	4205.7	147.94	
	16:20:00	4202.85	147.83	4205.46	147.95	
	16:50:00	4202.65	147.84	4205.27	147.95	
114	17:04:00	4202.18	147.84	4204.8	147.95	Wire recovered from well shut in swab valve
115	17:20:00	4202.53	147.84	4205.15	147.96	Reconfigure lubricator and remove spooled wire from slickline unit
	17:20:00	4202.53	147.84	4205.15	147.96	
	17:50:00	4202.57	147.85	4205.14	147.96	
	18:20:00	4202.44	147.85	4205.06	147.96	
	18:50:00	4202.35	147.85	4204.97	147.97	
	19:20:00	4202.36	147.86	4204.94	147.97	
	19:50:00	4202.3	147.86	4204.9	147.97	
116	20:15:00	4202.33	147.86	4204.94	147.98	Open master valve
	20:20:00	4202.31	147.86	4204.94	147.98	
	20:50:00	4202.29	147.87	4204.91	147.98	
	21:20:00	4195.89	147.83	4198.49	147.95	
117	21:24:00	4199.04	147.86	4201.63	147.98	Run in hole with 3.22 LIB THP 3123 psia
	21:50:00	4202.05	147.88	4204.67	148	
	22:20:00	4202.42	147.88	4205.03	147.99	
118	22:40:00	4202.19	147.88	4204.91	147.99	Close swab valve on production tree
	22:50:00	4202.28	147.88	4204.85	148	
119	23:07:00	4202.47	147.88	4205.02	148	Open swab valve on production tree

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
120	23:11:00	4190.6	147.83	4193.23	147.94	Run in hole with 2.5 RJ pulling tool THP 3114 psia
	23:20:00	4199.77	147.88	4202.42	148	
	23:50:00	4205.77	147.9	4208.4	148.01	
121	0:13:00	4204.2	147.89	4207.15	148	Out of hole with top GO Devil close swab valve on production tree
	0:20:00	4203.82	147.88	4206.79	148	
	0:50:00	4203.76	147.89	4206.45	148	
122	0:52:00	4203.82	147.89	4206.44	148	Open swab valve on production tree run in hole with 3.22 LIB THP 3123 psia
	1:20:00	4202.62	147.9	4205.28	148.02	
123	1:25:00	4202.54	147.9	4205.29	148.02	Open swab valve on production tree
124	1:42:00	4202.71	147.9	4205.33	148.01	Open well leak at lubricator close well
	1:50:00	4202.92	147.9	4205.58	148.01	
	2:20:00	4201.68	147.89	4204.52	148.01	
125	2:34:00	4201.33	147.9	4204.25	148.01	Open swab valve on production tree
126	2:40:00	4192.11	147.85	4194.93	147.96	Run in hole with 2.5 RB pulling tool THP 3117 psia
	2:50:00	4198.54	147.9	4201.24	148.02	
	3:20:00	4201.33	147.91	4204	148.03	
127	3:26:00	4201.43	147.91	4204.2	148.03	Out of hole with bottom GO Devil close swab valve on production tree
	3:50:00	4201.93	147.91	4204.59	148.03	
128	3:54:00	4201.86	147.91	4204.53	148.03	Open swab valve on production tree
129	3:57:00	4187.19	147.87	4190.28	147.98	Run in hole with 3.22 LIB THP 3111 psia
	4:20:00	4200.97	147.92	4203.63	148.04	
	4:50:00	4202.07	147.92	4204.73	148.04	
	5:20:00	4201.85	147.92	4204.44	148.03	
130	5:26:00	4201.92	147.92	4204.68	148.03	Out of hole with Slickline close swab valve on production tree
	5:50:00	4201.63	147.92	4204.33	148.03	
	6:20:00	4201.63	147.92	4204.27	148.04	
	6:50:00	4201.57	147.92	4204.16	148.04	
131	7:12:00	4198.57	147.92	4182.23	148.04	Open swab valve on production tree THP 3120 psia
132	7:13:00	4178.34	147.91	4183.07	148.01	Run in hole with pulling tool latch fish and work free pull out of hole
	7:20:00	4196.29	147.9	4198.99	148.02	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	7:50:00	4201.35	147.94	4204.03	148.05	
	8:20:00	4202.07	147.93	4205.08	148.05	
	8:50:00	4201.81	147.93	4204.59	148.04	
	9:20:00	4201.39	147.93	4204.24	148.05	
133	9:24:04	4201.28	147.93	4204.21	148.05	Out of hole close in swab valve on production tree
	9:50:00	4201.1	147.93	4203.92	148.05	
	10:20:00	4201.06	147.94	4203.67	148.05	
	10:50:00	4201.35	147.94	4203.51	148.06	
	11:20:00	4183.44	147.84	4186.32	147.97	
134	11:30:00	4199.59	147.95	4202.39	148.07	Open well and run in hole with wire spear
	11:50:00	4209.32	147.98	4211.97	148.1	
	12:20:00	4208.51	147.95	4211.57	148.07	
135	12:36:00	4208.1	147.95	4210.94	148.06	Close swab valve on production tree THP 3124 psia
	12:50:00	4207.82	147.95	4210.68	148.06	
	13:20:00	4206.84	147.94	4210.04	148.06	
136	13:31:00	4182.47	147.83	4182.88	147.95	Open well and run in hole with 4 prong spear THP 3127 psia
	13:50:00	4200.27	147.97	4202.95	148.09	
	14:20:00	4202.09	147.97	4204.77	148.09	
	14:50:00	4204.43	147.98	4207.13	148.09	
137	15:00:00	4206.58	147.98	4209.27	148.1	Out of hole close production tree swab valve approx 20 mtrs wire
	15:20:00	4207.83	147.97	4210.56	148.09	
	15:50:00	4206.03	147.96	4209.04	148.08	
138	16:12:00	4167.05	147.85	4172.84	147.96	Open master valve leak in lubricator close master valve
	16:20:00	4192.53	147.94	4194.6	148.06	
139	16:34:00	4197.83	147.98	4192.48	148.09	Open well and run in hole with 3.22 LIB
	16:50:00	4198.65	148	4201.35	148.11	
	17:20:00	4201.86	148	4204.72	148.11	
	17:50:00	4204.9	147.99	4207.52	148.11	
140	17:55:00	4204.66	147.99	4207.31	148.11	Out of hole with slickline shut in swab valve on production tree
	18:20:00	4204.49	147.99	4207.12	148.1	
141	18:22:04	4204.45	147.98	4207.08	148.1	Open swab valve on production tree run in hole to open SSD 2809 sands

Origin Energy

Well Name: Yolla 4
Test Type: Flowing Survey 2809 Sands
Date of Survey: 6th – 7th August 2004

MEMORY GAUGE REPORT

Prepared For: Andrew Wenk
Date: 22nd August 2004

David Whelan
Completion Products & Services
Halliburton Australia Pty Ltd

HALLIBURTON

Halliburton Australia Pty Ltd

MEMORY GAUGE FLOWING PRESSURE AND
TEMPERATURE SURVEY

MEMORY GAUGE TICKET NO:	35409
DATE:	6th - 7th August 2004
HALLIBURTON CAMP:	Cheltenham, Victoria
HALLIBURTON OPERATOR:	David Whelan
WITNESS:	N/A
COMPANY:	Origin
DRILLING CONTRACTOR:	Ensco
LEASE NAME:	YOLLA
WELL NO:	YOLLA-4
TEST TYPE:	Flowing Survey
TEST NO:	6
TESTED ZONE:	2809 Sands
FIELD AREA:	Bass Strait
STATE:	Victoria
COUNTRY:	Australia

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HALLIBURTON

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SECTION 1

TEST SUMMARY & JOB INFORMATION

WELL DATA

Well Details

Well Name	Yolla - 4	
Field	Yolla	
Platfrom	Yolla A	
Derrick Floor Elevation	81	m AMSL
Top Bottom Flange	27.07	m MDRT

Completion

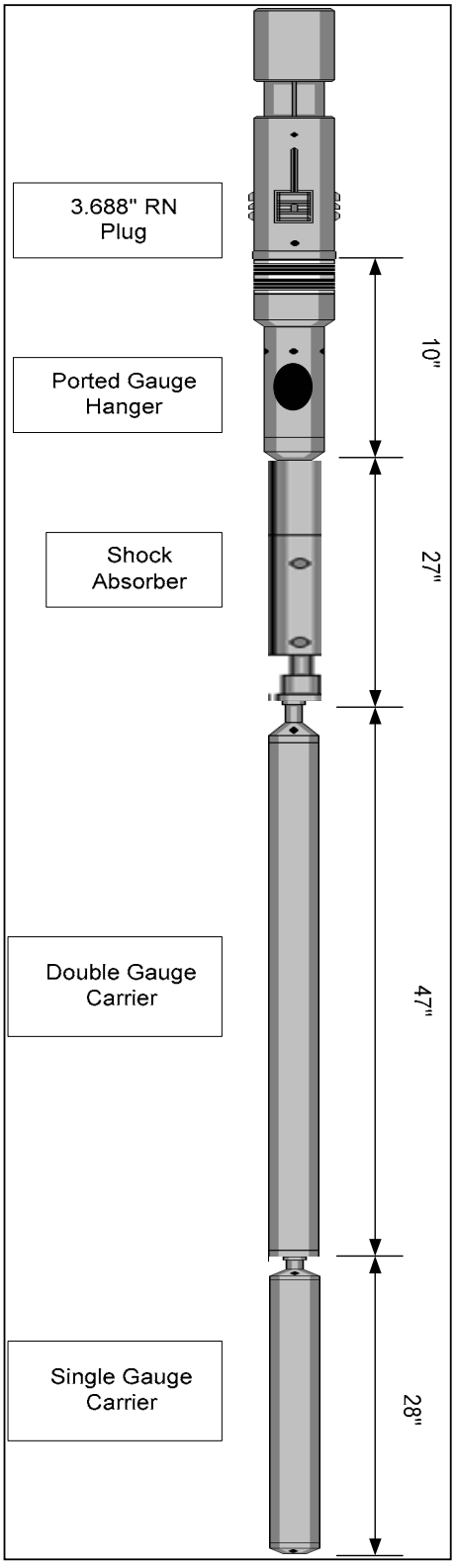
Measured m (MDRT)	**Description**
27.07	Tubing Hanger
169.09	TRSV
2521.39	5 1/2" PBR
2593.75	4 1/2" Halliburton SSD x 3.813" RD
2596.99	6 5/8" AHR Packer
2832.49	4 1/2" Halliburton SSD x 3.813" RD
2835.73	6 5/8" AHR Packer
2920.57	4 1/2" Halliburton SSD x 3.688" RD
2923.80	6 5/8" AHR Packer
2979.57	4 1/2" Halliburton SSD x 3.688" RD
2983.10	6 5/8" MWR Packer
2990.46	4 1/2" Halliburton SSD x 3.688" RD
2997.38	4 1/2" Halliburton 3.688" RN Nipple
2999.95	EOT

SURVEY EVENTS

Client	:Origin Energy	**Operator**	:David Whelan
Field	:Yolla	**Survey Date**	:6th - 7th August 2004
Platfor	:Yolla A	**Well**	:Yolla - 4

Event	Time	Description
141	18:22:04	Open swab valve on production tree RIH to open SSD 2809 sands
142	20:01:04	Close swab valve on production tree
143	20:41:00	Open well on 16/64 choke (TEST 2809 SANDS)
144	20:44:00	Increase choke to 20/64 THP 3090 psia
145	20:50:00	Increase choke to 24/64 THP 3037 psia
146	20:55:00	Increase choke to 28/64 THP 2999 psia
147	21:00:00	Increase choke to 32/64 THP 2962 psia
148	21:05:00	Increase choke to 36/64 THP 2928 psia
149	21:10:00	Increase choke to 40/64 THP 2893 psia
150	21:15:00	Increase choke to 44/64 THP 2841 psia
151	21:20:00	Increase choke to 46/64 THP 2755 psia
152	21:35:00	Increase choke to 48/64 THP 2753 psia
153	22:15:00	Increase choke to 50/64 THP 2787 psia
154	22:25:00	Increase choke to 52/64 THP 2747 psia
155	23:01:00	Increase choke to 54/64 THP 2757 psia
156	23:32:04	Decrease choke to 48/64 THP 2731 psia
157	23:33:00	Increase choke to 54/64 THP 2777 psia
158	0:41:00	Decrease choke to 48/64 THP 2774 psia
159	0:47:00	Divert flow to 48/64 adjustable choke THP 2880 psia
160	1:00:00	Divert flow to 52/64 fixed choke
161	4:24:00	Shut in well at choke manifold

SURVEY TOOL STRING



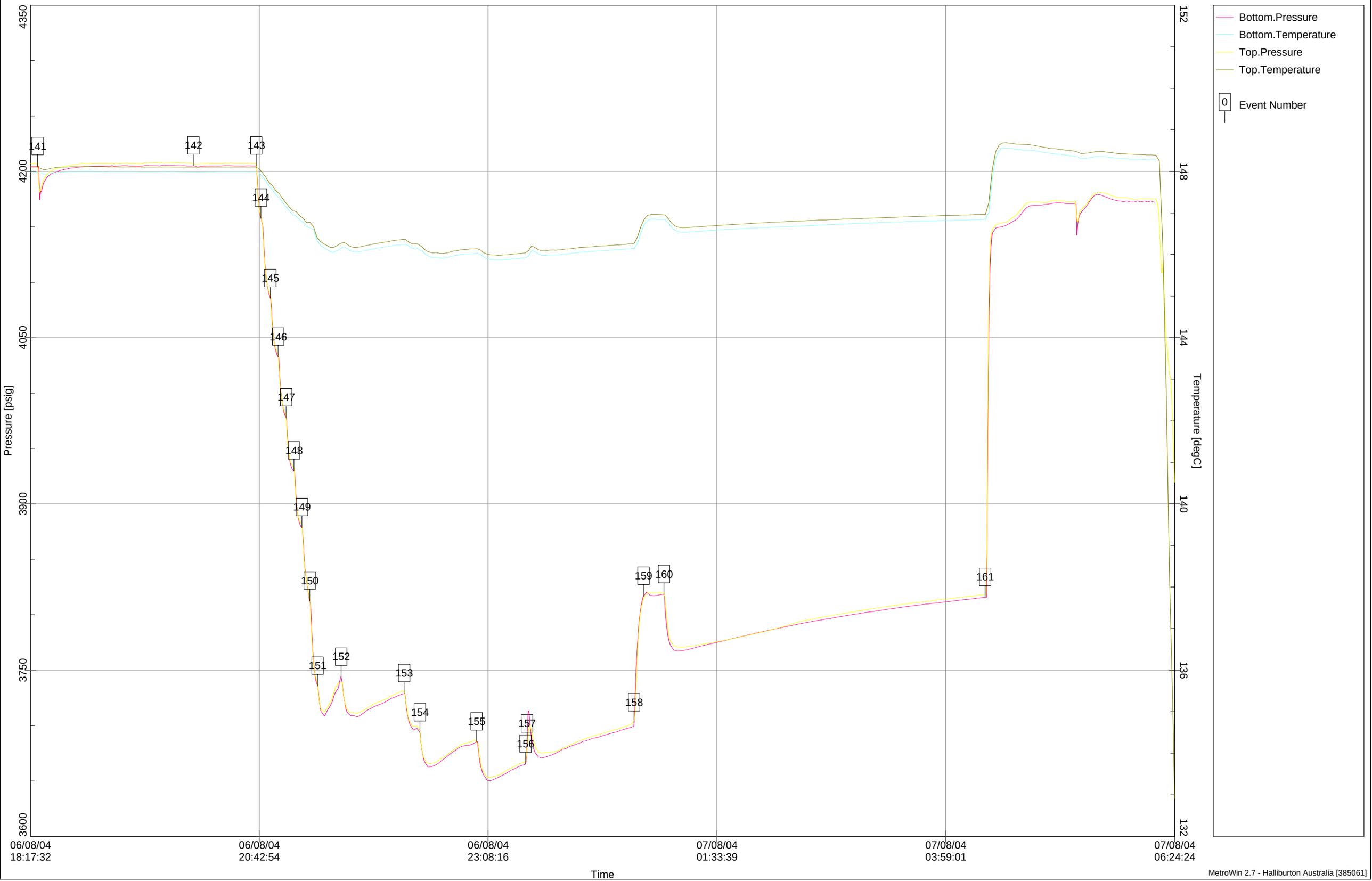
HALLIBURTON

SECTION 2

PLOTS

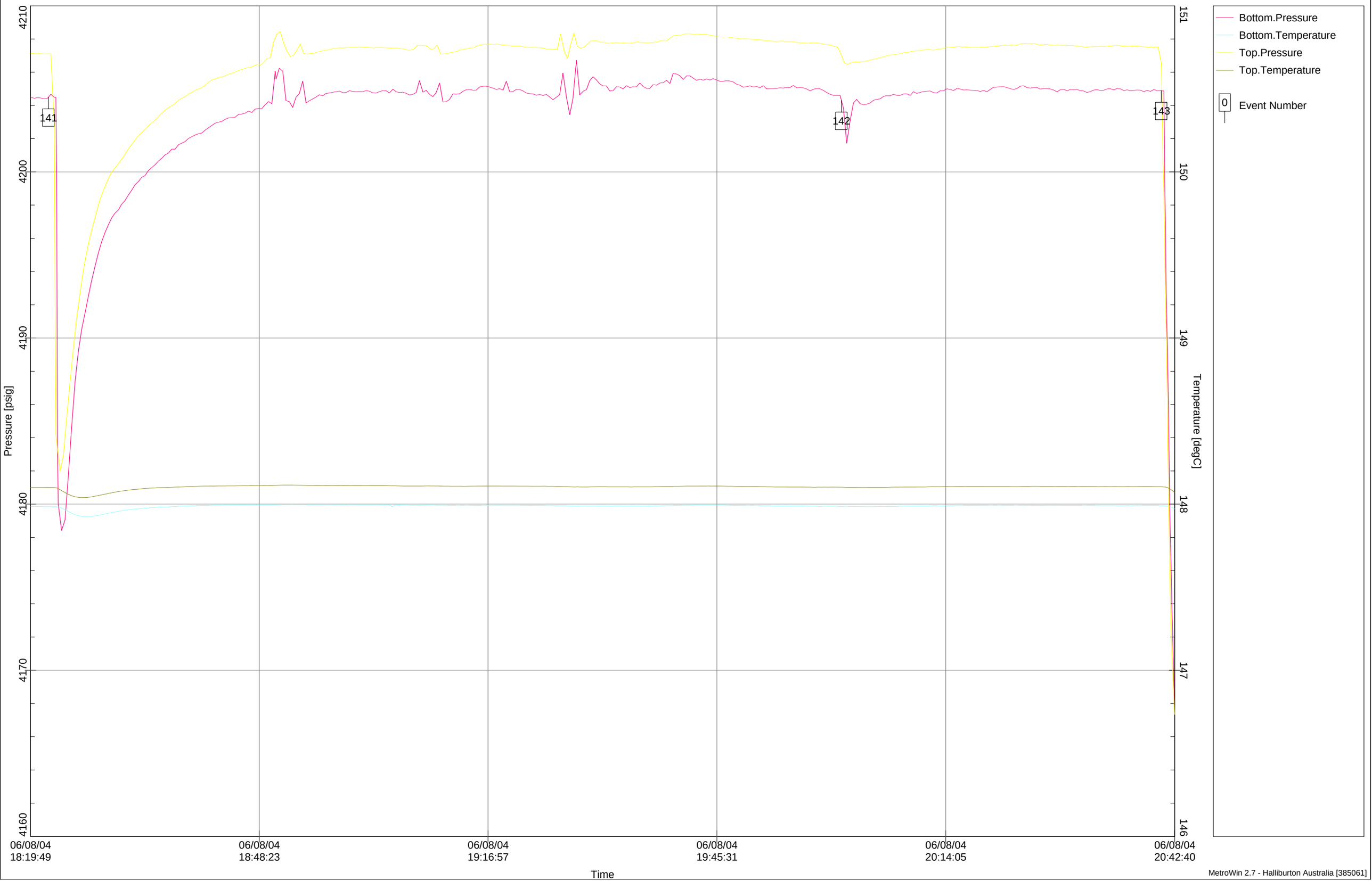
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands
Operator :David Whelan
Plot :Events 141 - 161



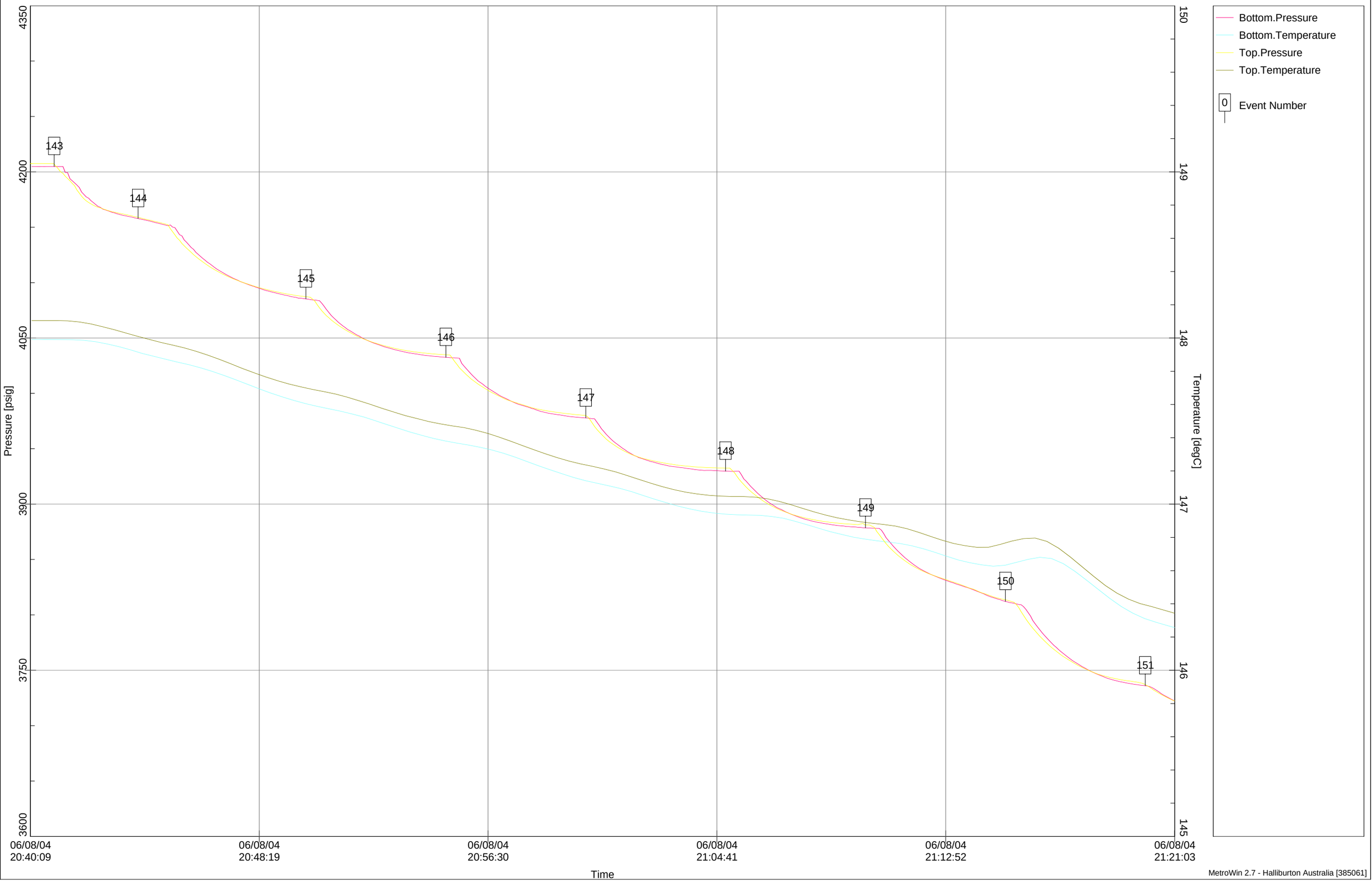
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands
Operator :David Whelan
Plot :Events 141 - 143



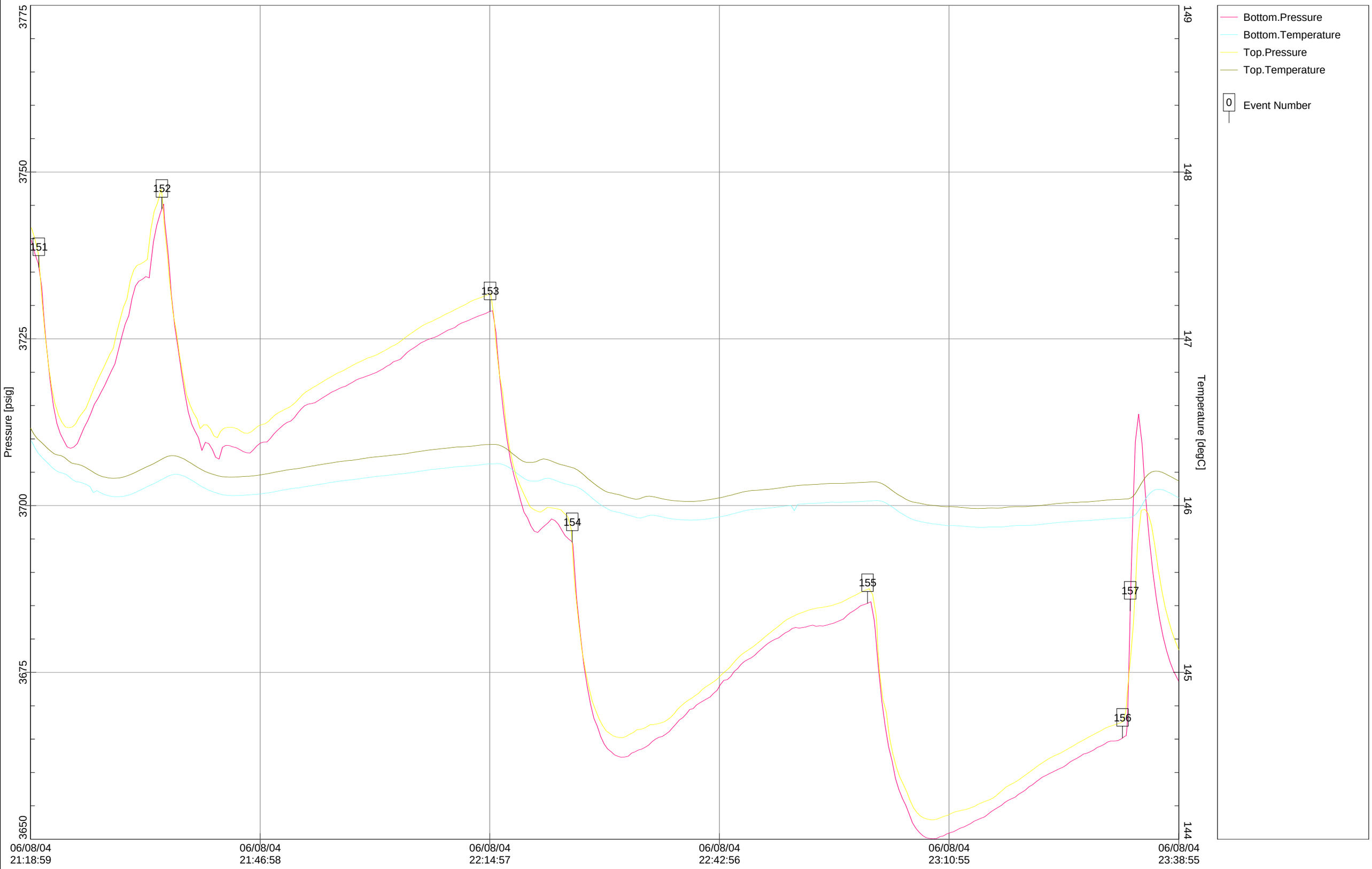
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands
Operator :David Whelan
Plot :Events 143 - 151



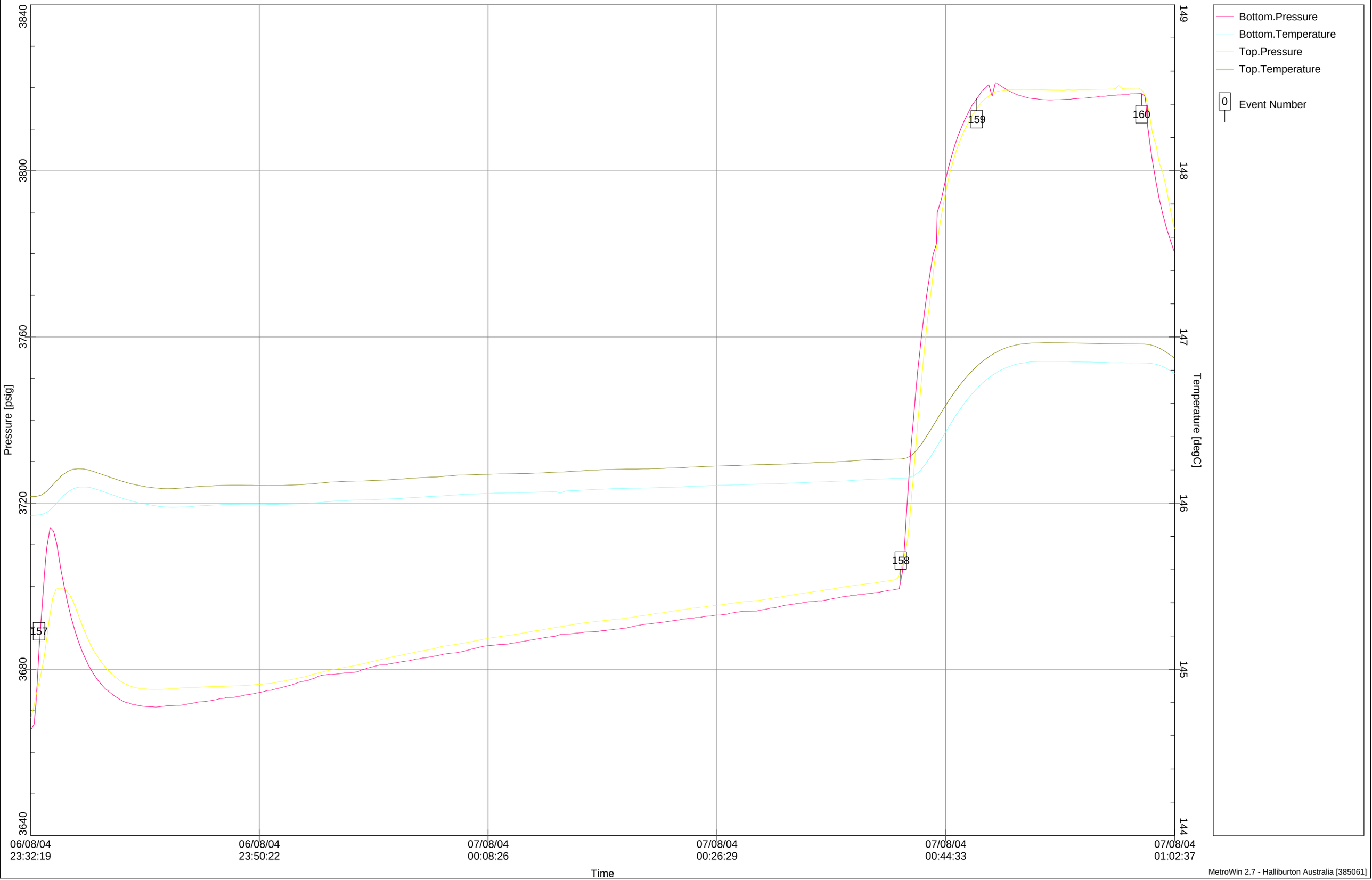
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands
Operator :David Whelan
Plot :Events 151 - 157



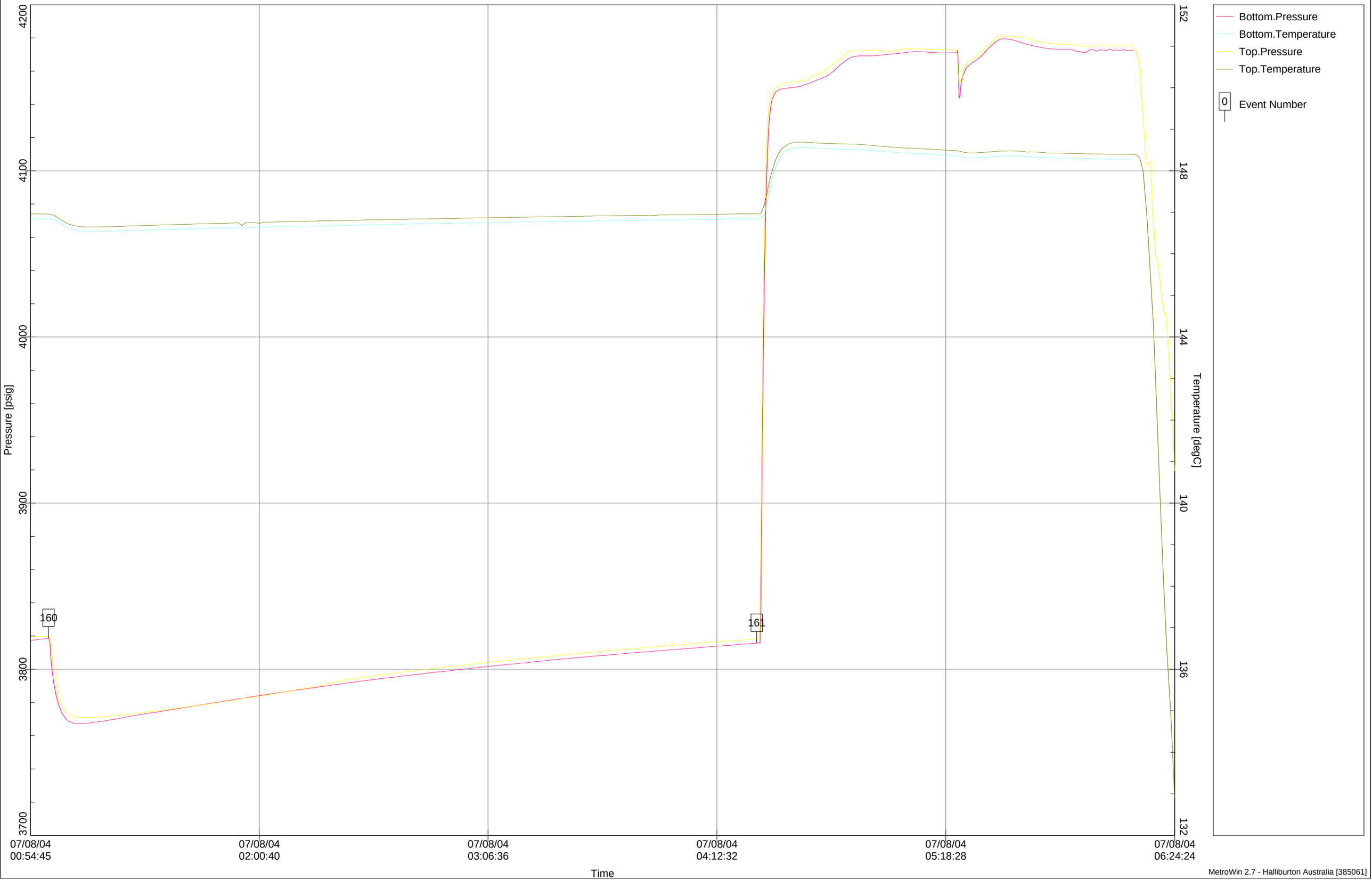
Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands
Operator :David Whelan
Plot :Events 157 - 160



Data File Name : Pseudo tool.mpt
Tool : Oil Pseudo Tool
Job 01

Client :Origin
Field :Yolla
Well :Yolla 4
Zone :2809 Sands
Operator :David Whelan
Plot :Events 160 - 161



SECTION 3

DATA

SURVEY DATA

Client	:Origin Energy	Operator	:David Whelan
Field	:Yolla	Date	:2nd to 6th August 2004
Platform	:Yolla A	Zone	2809 Sands
Well	:Yolla - 4		Fishing operations

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
141	18:22:04	4204.45	147.98	4207.08	148.1	Open swab valve on production tree run in hole to open SSD 2809 sands
	18:50:00	4204.14	148	4207.7	148.11	
	19:20:00	4204.86	147.99	4207.63	148.11	
	19:50:00	4205.12	147.99	4207.98	148.11	
142	20:01:04	4204.61	147.99	4207.03	148.1	Close swab valve on production tree
	20:20:00	4205.06	147.99	4207.54	148.11	
143	20:41:00	4204.91	147.99	4206.99	148.11	Open well on 16/64 choke (TEST 2809 SANDS)
144	20:44:00	4157.94	147.91	4158.99	148.01	Increase choke to 20/64 THP 3090 psia
145	20:50:00	4085.33	147.6	4087.34	147.7	Increase choke to 24/64 THP 3037 psia
	20:50:00	4085.33	147.6	4087.34	147.7	
	20:51:00	4068	147.57	4064.39	147.66	
	20:52:00	4050.28	147.53	4049.81	147.62	
	20:53:00	4040.74	147.47	4041.69	147.56	
	20:54:00	4035.35	147.42	4037.13	147.51	
146	20:55:00	4032.57	147.38	4034.87	147.48	Increase choke to 28/64 THP 2999 psia
	20:55:00	4032.57	147.38	4034.87	147.48	
	20:56:00	4015.12	147.35	4011.24	147.45	
	20:57:00	3997.16	147.31	3996.4	147.4	
	20:58:00	3987.18	147.25	3987.63	147.34	
	20:59:00	3980.86	147.19	3982.79	147.28	
147	21:00:00	3977.86	147.14	3979.9	147.24	Increase choke to 32/64 THP 2962 psia
	21:00:00	3977.86	147.14	3979.9	147.24	
	21:01:00	3956.51	147.1	3953.66	147.2	
	21:02:00	3941.23	147.06	3941.65	147.14	
	21:03:00	3934.36	147	3936.32	147.09	
	21:04:00	3931.03	146.96	3933.56	147.06	
148	21:05:00	3929.85	146.94	3932.68	147.05	Increase choke to 36/64 THP 2928 psia
	21:05:00	3929.85	146.94	3932.68	147.05	
	21:06:00	3913.48	146.93	3909.41	147.04	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	21:07:00	3894.99	146.92	3894.24	147.01	
	21:08:00	3885.31	146.87	3886.68	146.96	
	21:09:00	3880.7	146.82	3882.89	146.92	
149	21:10:00	3878.57	146.79	3881.27	146.89	Increase choke to 40/64 THP 2893 psia
	21:10:00	3878.57	146.79	3881.27	146.89	
	21:11:00	3861.82	146.77	3857.33	146.87	
	21:12:00	3841	146.73	3840.12	146.83	
	21:13:00	3830.12	146.68	3830.79	146.77	
	21:14:00	3821.24	146.64	3821.71	146.74	
150	21:15:00	3812.24	146.63	3813.71	146.77	Increase choke to 44/64 THP 2841 psia
	21:15:00	3812.24	146.63	3813.71	146.77	
	21:16:00	3794.3	146.67	3787.47	146.8	
	21:17:00	3766.66	146.65	3763.74	146.72	
	21:18:00	3749.87	146.53	3749.68	146.59	
	21:19:00	3740.4	146.4	3742.17	146.46	
151	21:20:00	3736.1	146.31	3737.05	146.39	Increase choke to 46/64 THP 2755 psia
	21:20:00	3736.1	146.31	3737.05	146.39	
	21:21:00	3722.97	146.26	3722.8	146.35	
	21:22:00	3713.37	146.21	3715.17	146.31	
	21:23:00	3709.82	146.19	3712.07	146.29	
	21:24:00	3708.68	146.16	3711.78	146.26	
	21:25:00	3710.1	146.14	3713.46	146.24	
	21:26:00	3712.86	146.12	3715.34	146.22	
	21:27:00	3715.59	146.09	3718.35	146.19	
	21:28:00	3717.96	146.07	3720.93	146.17	
	21:29:00	3720.67	146.06	3723.48	146.16	
	21:30:00	3724.87	146.05	3728.31	146.17	
	21:31:00	3728.6	146.06	3732.66	146.18	
	21:32:00	3733.37	146.08	3736.03	146.21	
	21:33:00	3734.3	146.11	3736.59	146.23	
	21:34:00	3739.75	146.13	3743.9	146.25	
152	21:35:00	3744.43	146.16	3746.77	146.28	Increase choke to 48/64 THP 2753 psia
	21:35:00	3744.43	146.16	3746.77	146.28	
	21:36:00	3734.22	146.18	3732.73	146.3	
	21:37:00	3723.47	146.19	3723.87	146.29	
	21:38:00	3715.57	146.17	3716.63	146.27	
	21:39:00	3711.28	146.14	3713.64	146.24	
	21:40:00	3708.26	146.11	3712	146.21	
	21:41:00	3708.66	146.09	3711.32	146.19	
	21:42:00	3707.14	146.07	3710.84	146.18	
	21:43:00	3709	146.06	3711.71	146.17	
	21:44:00	3708.69	146.06	3711.62	146.17	
	21:45:00	3708.03	146.06	3710.91	146.18	
	21:46:00	3708.14	146.07	3711.17	146.18	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	21:47:00	3709.38	146.07	3712.09	146.18	
	21:48:00	3709.72	146.08	3712.65	146.19	
	21:49:00	3711.19	146.09	3713.78	146.2	
	21:50:00	3712.33	146.1	3714.46	146.21	
	21:51:00	3712.99	146.1	3715.18	146.22	
	21:52:00	3714.53	146.11	3716.43	146.23	
	21:53:00	3715.25	146.12	3717.37	146.23	
	21:54:00	3715.71	146.13	3718.12	146.24	
	21:55:00	3716.47	146.13	3718.89	146.25	
	21:56:00	3717.17	146.14	3719.58	146.26	
	21:57:00	3717.77	146.15	3720.18	146.27	
	21:58:00	3718.35	146.15	3720.85	146.27	
	21:59:00	3718.98	146.16	3721.5	146.28	
	22:00:00	3719.44	146.17	3722.06	146.29	
	22:01:00	3719.88	146.17	3722.52	146.29	
	22:02:00	3720.54	146.18	3723.16	146.3	
	22:03:00	3721.38	146.18	3723.85	146.3	
	22:04:00	3721.89	146.19	3724.53	146.31	
	22:05:00	3723.08	146.2	3725.48	146.31	
	22:06:00	3723.89	146.2	3726.34	146.32	
	22:07:00	3724.64	146.21	3727.1	146.33	
	22:08:00	3725.11	146.22	3727.69	146.34	
	22:09:00	3725.71	146.22	3728.3	146.34	
	22:10:00	3726.38	146.23	3728.92	146.35	
	22:11:00	3726.99	146.23	3729.56	146.35	
	22:12:00	3727.59	146.24	3730.16	146.35	
	22:13:00	3728.13	146.24	3730.8	146.36	
	22:14:00	3728.63	146.25	3731.24	146.36	
153	22:15:00	3729.13	146.25	3731.72	146.37	Increase choke to 50/64 THP 2787 psia
	22:15:00	3729.13	146.25	3731.72	146.37	
	22:16:00	3721.59	146.25	3721.1	146.36	
	22:17:00	3710.38	146.24	3711.52	146.34	
	22:18:00	3704.04	146.2	3705.18	146.3	
	22:19:00	3699.71	146.17	3702.05	146.27	
	22:20:00	3696.88	146.15	3699.62	146.26	
	22:21:00	3696.22	146.15	3699.08	146.27	
	22:22:00	3697.36	146.16	3699.74	146.28	
	22:23:00	3697.65	146.15	3699.56	146.26	
	22:24:00	3695.73	146.13	3698.87	146.24	
154	22:25:00	3694.48	146.12	3694.07	146.23	Increase choke to 52/64 THP 2747 psia
	22:25:00	3694.48	146.12	3694.07	146.23	
	22:26:00	3680.68	146.1	3680.26	146.2	
	22:27:00	3672.14	146.06	3672.95	146.16	
	22:28:00	3667.09	146.02	3668.86	146.12	
	22:29:00	3664.13	145.99	3666.46	146.09	
	22:30:00	3662.84	145.97	3665.48	146.07	
	22:31:00	3662.28	145.96	3665.23	146.06	
	22:32:00	3662.88	145.94	3665.74	146.05	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	22:33:00	3663.34	145.93	3666.38	146.04	
	22:34:00	3663.79	145.94	3666.73	146.05	
	22:35:00	3664.75	145.94	3667.21	146.05	
	22:36:00	3665.43	145.93	3667.53	146.04	
	22:37:00	3666.35	145.92	3668.28	146.03	
	22:38:00	3667.76	145.92	3669.7	146.03	
	22:39:00	3669.04	145.91	3670.73	146.02	
	22:40:00	3669.93	145.91	3671.54	146.03	
	22:41:00	3670.77	145.92	3672.6	146.03	
	22:42:00	3671.54	145.92	3673.43	146.04	
	22:43:00	3673.01	145.93	3674.41	146.05	
	22:44:00	3674.06	145.94	3675.53	146.06	
	22:45:00	3675.41	145.96	3676.92	146.07	
	22:46:00	3676.63	145.97	3677.98	146.08	
	22:47:00	3677.3	145.98	3678.84	146.09	
	22:48:00	3678.52	145.98	3679.83	146.09	
	22:49:00	3679.44	145.99	3680.84	146.1	
	22:50:00	3680.12	145.99	3681.81	146.1	
	22:51:00	3680.95	146	3682.77	146.11	
	22:52:00	3681.79	145.98	3683.46	146.12	
	22:53:00	3681.75	146.01	3683.95	146.12	
	22:54:00	3682.02	146.01	3684.42	146.13	
	22:55:00	3681.97	146.02	3684.7	146.13	
	22:56:00	3682.08	146.02	3684.87	146.13	
	22:57:00	3682.48	146.02	3685.18	146.13	
	22:58:00	3683.01	146.02	3685.64	146.13	
	22:59:00	3684.04	146.02	3686.27	146.14	
	23:00:00	3684.84	146.02	3686.9	146.14	
155	23:01:00	3685.38	146.03	3687.47	146.14	Increase choke to 54/64 THP 2757 psia
	23:01:00	3685.38	146.03	3687.47	146.14	
	23:02:00	3680.34	146.03	3683.95	146.14	
	23:03:00	3668.06	146.02	3670.27	146.13	
	23:04:00	3661.64	145.99	3663.3	146.09	
	23:05:00	3656.83	145.96	3659.11	146.06	
	23:06:00	3654.05	145.93	3656.4	146.03	
	23:07:00	3651.42	145.91	3654.01	146.02	
	23:08:00	3650.31	145.9	3653.1	146.01	
	23:09:00	3650.06	145.89	3652.91	146	
	23:10:00	3650.41	145.88	3653.29	146	
	23:11:00	3650.91	145.88	3653.75	145.99	
	23:12:00	3651.47	145.88	3654.19	145.99	
	23:13:00	3652.01	145.88	3654.47	145.99	
	23:14:00	3652.71	145.87	3654.91	145.98	
	23:15:00	3653.24	145.87	3655.5	145.98	
	23:16:00	3654.05	145.87	3655.98	145.99	
	23:17:00	3654.85	145.87	3656.89	145.99	
	23:18:00	3655.72	145.88	3657.93	145.99	
	23:19:00	3656.34	145.88	3658.58	145.99	
	23:20:00	3657.21	145.88	3659.41	145.99	
	23:21:00	3658.09	145.88	3660.33	146	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	23:22:00	3659.02	145.89	3661.2	146	
	23:23:00	3659.75	145.89	3661.99	146.01	
	23:24:00	3660.34	145.9	3662.61	146.01	
	23:25:00	3660.94	145.9	3663.26	146.02	
	23:26:00	3661.79	145.91	3663.95	146.02	
	23:27:00	3662.58	145.91	3664.64	146.02	
	23:28:00	3663.18	145.91	3665.36	146.02	
	23:29:00	3663.75	145.91	3666	146.03	
	23:30:00	3664.4	145.92	3666.68	146.03	
	23:31:00	3664.72	145.92	3667.13	146.04	
	23:32:00	3665.16	145.93	3667.54	146.04	
156	23:32:04	3665.19	145.93	3667.59	146.04	Decrease choke to 48/64 THP 2731 psia
157	23:33:00	3684.29	145.93	3676.64	146.04	Increase choke to 54/64 THP 2777 psia
	23:33:00	3684.29	145.93	3676.64	146.04	
	23:34:00	3714	145.97	3695.85	146.1	
	23:35:00	3699.61	146.05	3699.2	146.18	
	23:36:00	3687.69	146.09	3693.97	146.21	
	23:37:00	3680.46	146.09	3686.31	146.2	
	23:38:00	3676.06	146.07	3681.42	146.17	
	23:39:00	3673.49	146.04	3678.2	146.15	
	23:40:00	3671.98	146.02	3676.21	146.12	
	23:41:00	3671.16	146	3675.4	146.1	
	23:42:00	3670.97	145.99	3675.15	146.09	
	23:43:00	3671.19	145.98	3675.24	146.09	
	23:44:00	3671.31	145.98	3675.44	146.09	
	23:45:00	3671.82	145.98	3675.65	146.1	
	23:46:00	3672.24	145.99	3675.76	146.1	
	23:47:00	3672.72	145.99	3675.93	146.11	
	23:48:00	3673.16	145.99	3675.97	146.11	
	23:49:00	3673.65	145.99	3676.1	146.11	
	23:50:00	3674.19	145.99	3676.27	146.11	
	23:51:00	3674.9	145.99	3676.56	146.11	
	23:52:00	3675.48	145.99	3677	146.11	
	23:53:00	3676.36	145.99	3677.58	146.11	
	23:54:00	3677.18	146	3678.25	146.11	
	23:55:00	3678.27	146	3679.08	146.12	
	23:56:00	3678.73	146.01	3679.8	146.13	
	23:57:00	3679.03	146.01	3680.39	146.13	
	23:58:00	3679.34	146.02	3680.98	146.13	
	23:59:00	3680.36	146.02	3681.65	146.13	
	0:00:00	3681.04	146.02	3682.38	146.14	
	0:01:00	3681.58	146.03	3683.06	146.14	
	0:02:00	3682.01	146.03	3683.69	146.15	
	0:03:00	3682.54	146.04	3684.31	146.15	
	0:04:00	3683.1	146.04	3684.87	146.16	
	0:05:00	3683.68	146.04	3685.62	146.16	
	0:06:00	3684.03	146.05	3686.06	146.17	
	0:07:00	3684.76	146.05	3686.57	146.17	
	0:08:00	3685.49	146.06	3687.19	146.17	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	0:09:00	3685.86	146.06	3687.69	146.17	
	0:10:00	3686.07	146.06	3688.11	146.18	
	0:11:00	3686.63	146.06	3688.6	146.18	
	0:12:00	3687.17	146.07	3689.16	146.18	
	0:13:00	3687.68	146.07	3689.68	146.18	
	0:14:00	3688.24	146.06	3690.19	146.19	
	0:15:00	3688.55	146.08	3690.71	146.19	
	0:16:00	3688.9	146.08	3691.2	146.2	
	0:17:00	3689.17	146.08	3691.53	146.2	
	0:18:00	3689.51	146.09	3691.85	146.2	
	0:19:00	3689.84	146.09	3692.18	146.2	
	0:20:00	3690.4	146.09	3692.6	146.21	
	0:21:00	3690.92	146.09	3693.09	146.21	
	0:22:00	3691.22	146.09	3693.54	146.21	
	0:23:00	3691.68	146.1	3693.98	146.21	
	0:24:00	3692.1	146.1	3694.45	146.22	
	0:25:00	3692.52	146.1	3694.85	146.22	
	0:26:00	3692.83	146.11	3695.22	146.22	
	0:27:00	3693.18	146.11	3695.58	146.22	
	0:28:00	3693.74	146.11	3696.04	146.23	
	0:29:00	3693.94	146.11	3696.39	146.23	
	0:30:00	3694.28	146.11	3696.68	146.23	
	0:31:00	3694.79	146.12	3697.14	146.23	
	0:32:00	3695.38	146.12	3697.66	146.24	
	0:33:00	3695.9	146.12	3698.18	146.24	
	0:34:00	3696.36	146.13	3698.63	146.24	
	0:35:00	3696.61	146.13	3699.04	146.25	
	0:36:00	3697.18	146.13	3699.51	146.25	
	0:37:00	3697.66	146.14	3700.03	146.25	
	0:38:00	3698.05	146.14	3700.45	146.26	
	0:39:00	3698.48	146.14	3700.79	146.26	
	0:40:00	3699	146.15	3701.26	146.26	
158	0:41:00	3700.3	146.15	3703.89	146.27	Decrese choke to 48/64 THP 2774 psia
	0:41:00	3700.3	146.15	3703.89	146.27	
	0:42:00	3740.21	146.16	3726.48	146.3	
	0:43:00	3768.85	146.24	3760.79	146.4	
	0:44:00	3789.88	146.36	3785.2	146.52	
	0:45:00	3803.37	146.48	3800.82	146.64	
	0:46:00	3811.98	146.6	3809.6	146.74	
159	0:47:00	3817.41	146.69	3814.97	146.82	Divert flow to 48/64 adjustable choke THP 2880 psia
	0:47:00	3817.41	146.69	3814.97	146.82	
	0:48:00	3820.36	146.76	3818.23	146.88	
	0:49:00	3820.24	146.8	3819.32	146.93	
	0:50:00	3818.57	146.83	3819.54	146.95	
	0:51:00	3817.64	146.85	3819.54	146.96	
	0:52:00	3817.2	146.85	3819.54	146.97	
	0:53:00	3817.09	146.85	3819.47	146.97	
	0:54:00	3817.17	146.85	3819.45	146.97	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	0:55:00	3817.38	146.85	3819.49	146.96	
	0:56:00	3817.6	146.85	3819.54	146.96	
	0:57:00	3817.9	146.85	3819.63	146.96	
	0:58:00	3818.15	146.84	3819.72	146.96	
	0:59:00	3818.5	146.84	3819.84	146.96	
160	1:00:00	3818.69	146.84	3819.58	146.96	Divert flow to 52/64 fixed choke
	1:00:00	3818.69	146.84	3819.58	146.96	
	1:01:00	3799.85	146.84	3808.11	146.95	
	1:02:00	3785.99	146.81	3795.11	146.91	
	1:03:00	3777.78	146.76	3782.36	146.85	
	1:04:00	3772.95	146.7	3776.75	146.8	
	1:05:00	3770.13	146.65	3773.94	146.75	
	1:06:00	3768.45	146.61	3772.33	146.71	
	1:07:00	3767.67	146.58	3771.52	146.69	
	1:08:00	3767.33	146.56	3771.22	146.67	
	1:09:00	3767.28	146.55	3771.06	146.66	
	1:10:00	3767.32	146.54	3770.99	146.65	
	1:11:00	3767.44	146.54	3771.05	146.65	
	1:12:00	3767.7	146.54	3771.08	146.65	
	1:13:00	3768.04	146.54	3771.13	146.65	
	1:14:00	3768.24	146.54	3771.25	146.65	
	1:15:00	3768.52	146.54	3771.34	146.65	
	1:16:00	3768.86	146.54	3771.47	146.65	
	1:17:00	3769.22	146.54	3771.66	146.66	
	1:18:00	3769.62	146.55	3771.84	146.66	
	1:19:00	3770.01	146.55	3772.01	146.66	
	1:20:00	3770.18	146.55	3772.19	146.66	
	1:21:00	3770.7	146.55	3772.45	146.67	
	1:22:00	3771.21	146.56	3772.72	146.67	
	1:23:00	3771.59	146.56	3773.01	146.67	
	1:24:00	3771.93	146.56	3773.26	146.67	
	1:25:00	3772.28	146.56	3773.49	146.68	
	1:26:00	3772.53	146.57	3773.74	146.68	
	1:27:00	3772.9	146.57	3774.02	146.68	
	1:28:00	3773.25	146.57	3774.25	146.69	
	1:29:00	3773.65	146.58	3774.5	146.69	
	1:30:00	3773.94	146.58	3774.73	146.69	
	1:31:00	3774.26	146.58	3775.01	146.69	
	1:32:00	3774.52	146.58	3775.19	146.7	
	1:33:00	3774.93	146.59	3775.52	146.7	
	1:34:00	3775.28	146.59	3775.76	146.7	
	1:35:00	3775.58	146.59	3776.04	146.7	
	1:36:00	3775.95	146.59	3776.27	146.71	
	1:37:00	3776.34	146.6	3776.54	146.71	
	1:38:00	3776.58	146.6	3776.83	146.71	
	1:39:00	3776.91	146.6	3777.08	146.71	
	1:40:00	3777.25	146.6	3777.36	146.71	
	1:41:00	3777.56	146.61	3777.63	146.72	
	1:42:00	3777.91	146.61	3777.89	146.72	
	1:43:00	3778.36	146.61	3778.21	146.72	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	1:44:00	3778.67	146.61	3778.54	146.72	
	1:45:00	3778.96	146.61	3778.84	146.73	
	1:46:00	3779.37	146.62	3779.18	146.73	
	1:47:00	3779.72	146.62	3779.46	146.73	
	1:48:00	3779.98	146.62	3779.72	146.73	
	1:49:00	3780.3	146.62	3780.06	146.74	
	1:50:00	3780.64	146.62	3780.35	146.74	
	1:51:00	3781.03	146.63	3780.7	146.74	
	1:52:00	3781.35	146.63	3780.98	146.74	
	1:53:00	3781.68	146.63	3781.36	146.74	
	1:54:00	3782.03	146.63	3781.68	146.75	
	1:55:00	3782.33	146.63	3781.95	146.75	
	1:56:00	3782.68	146.63	3782.71	146.71	
	1:57:00	3783.03	146.64	3782.63	146.75	
	1:58:00	3783.3	146.64	3782.96	146.75	
	1:59:00	3783.67	146.64	3783.28	146.76	
	2:00:00	3783.98	146.64	3783.62	146.76	
	2:01:00	3784.34	146.65	3783.99	146.76	
	2:02:00	3784.61	146.65	3784.25	146.76	
	2:03:00	3784.96	146.65	3784.55	146.76	
	2:04:00	3785.2	146.65	3784.9	146.76	
	2:05:00	3785.52	146.65	3785.26	146.77	
	2:06:00	3785.83	146.65	3785.65	146.77	
	2:07:00	3786.18	146.66	3785.99	146.77	
	2:08:00	3786.47	146.66	3786.4	146.78	
	2:09:00	3786.74	146.66	3786.78	146.78	
	2:10:00	3787.07	146.66	3787.13	146.78	
	2:11:00	3787.38	146.66	3787.48	146.78	
	2:12:00	3787.63	146.66	3788.07	146.78	
	2:13:00	3787.89	146.67	3788.15	146.78	
	2:14:00	3788.2	146.67	3788.52	146.79	
	2:15:00	3788.55	146.67	3788.96	146.79	
	2:16:00	3788.83	146.67	3789.38	146.79	
	2:17:00	3789.13	146.67	3789.85	146.79	
	2:18:00	3789.55	146.67	3790.32	146.79	
	2:19:00	3789.66	146.68	3790.82	146.79	
	2:20:00	3790.03	146.68	3791.29	146.8	
	2:21:00	3790.33	146.68	3791.7	146.8	
	2:22:00	3790.67	146.68	3792.1	146.8	
	2:23:00	3790.97	146.68	3792.49	146.8	
	2:24:00	3791.21	146.68	3792.92	146.8	
	2:25:00	3791.54	146.69	3793.32	146.81	
	2:26:00	3791.77	146.69	3793.65	146.81	
	2:27:00	3791.99	146.69	3793.98	146.81	
	2:28:00	3792.29	146.69	3794.31	146.81	
	2:29:00	3792.54	146.69	3794.65	146.81	
	2:30:00	3792.88	146.7	3795.03	146.81	
	2:31:00	3793.07	146.7	3795.26	146.82	
	2:32:00	3793.39	146.7	3795.56	146.82	
	2:33:00	3793.65	146.7	3795.89	146.82	
	2:34:00	3793.89	146.7	3796.17	146.82	
	2:35:00	3794.19	146.7	3796.46	146.82	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	2:36:00	3794.55	146.71	3796.78	146.82	
	2:37:00	3794.71	146.71	3797.03	146.83	
	2:38:00	3794.94	146.71	3797.28	146.83	
	2:39:00	3795.14	146.71	3797.57	146.83	
	2:40:00	3795.35	146.71	3797.8	146.83	
	2:41:00	3795.65	146.71	3798.02	146.83	
	2:42:00	3795.94	146.72	3798.3	146.83	
	2:43:00	3796.24	146.72	3798.6	146.84	
	2:44:00	3796.42	146.72	3798.86	146.84	
	2:45:00	3796.64	146.72	3799.06	146.84	
	2:46:00	3796.87	146.72	3799.35	146.84	
	2:47:00	3797.09	146.72	3799.55	146.84	
	2:48:00	3797.37	146.73	3799.83	146.84	
	2:49:00	3797.62	146.73	3800.05	146.85	
	2:50:00	3797.91	146.73	3800.28	146.85	
	2:51:00	3798.15	146.73	3800.56	146.85	
	2:52:00	3798.36	146.73	3800.8	146.85	
	2:53:00	3798.61	146.73	3801.01	146.85	
	2:54:00	3798.81	146.74	3801.26	146.85	
	2:55:00	3799	146.74	3801.47	146.85	
	2:56:00	3799.29	146.74	3801.73	146.86	
	2:57:00	3799.57	146.74	3801.96	146.86	
	2:58:00	3799.77	146.74	3802.19	146.86	
	2:59:00	3800.02	146.74	3802.43	146.86	
	3:00:00	3800.26	146.74	3802.66	146.86	
	3:01:00	3800.47	146.75	3802.92	146.86	
	3:02:00	3800.74	146.75	3803.12	146.86	
	3:03:00	3800.94	146.75	3803.35	146.87	
	3:04:00	3801.15	146.75	3803.55	146.87	
	3:05:00	3801.36	146.75	3803.78	146.87	
	3:06:00	3801.55	146.75	3804.03	146.87	
	3:07:00	3801.76	146.76	3804.26	146.87	
	3:08:00	3802.01	146.76	3804.44	146.87	
	3:09:00	3802.26	146.76	3804.67	146.87	
	3:10:00	3802.42	146.76	3804.88	146.87	
	3:11:00	3802.62	146.76	3805.13	146.88	
	3:12:00	3802.88	146.76	3805.33	146.88	
	3:13:00	3803.03	146.76	3805.54	146.88	
	3:14:00	3803.21	146.76	3805.75	146.88	
	3:15:00	3803.45	146.77	3805.93	146.88	
	3:16:00	3803.69	146.77	3806.19	146.88	
	3:17:00	3803.86	146.77	3806.35	146.88	
	3:18:00	3804.01	146.77	3806.52	146.89	
	3:19:00	3804.34	146.77	3806.76	146.89	
	3:20:00	3804.58	146.77	3807.03	146.89	
	3:21:00	3804.74	146.78	3807.17	146.89	
	3:22:00	3804.96	146.78	3807.38	146.89	
	3:23:00	3805.16	146.78	3807.85	146.89	
	3:24:00	3805.38	146.78	3807.83	146.89	
	3:25:00	3805.58	146.78	3808.03	146.9	
	3:26:00	3805.77	146.78	3808.25	146.9	
	3:27:00	3805.93	146.78	3808.41	146.9	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	3:28:00	3806.22	146.78	3808.61	146.9	
	3:29:00	3806.4	146.78	3808.8	146.9	
	3:30:00	3806.56	146.79	3809.03	146.9	
	3:31:00	3806.72	146.79	3809.23	146.9	
	3:32:00	3806.94	146.79	3809.41	146.91	
	3:33:00	3807.25	146.78	3809.61	146.91	
	3:34:00	3807.32	146.79	3809.8	146.91	
	3:35:00	3807.49	146.79	3810	146.91	
	3:36:00	3807.73	146.79	3810.5	146.91	
	3:37:00	3807.9	146.8	3810.39	146.91	
	3:38:00	3808.11	146.8	3810.61	146.91	
	3:39:00	3808.28	146.8	3810.8	146.92	
	3:40:00	3808.29	146.8	3810.92	146.92	
	3:41:00	3808.55	146.8	3811.11	146.92	
	3:42:00	3808.8	146.8	3811.31	146.92	
	3:43:00	3809.05	146.8	3811.53	146.92	
	3:44:00	3809.14	146.8	3811.68	146.92	
	3:45:00	3809.33	146.81	3811.9	146.92	
	3:46:00	3809.52	146.81	3812.09	146.92	
	3:47:00	3809.69	146.81	3812.22	146.92	
	3:48:00	3809.86	146.81	3812.43	146.93	
	3:49:00	3809.98	146.81	3812.62	146.93	
	3:50:00	3810.25	146.81	3812.82	146.93	
	3:51:00	3810.39	146.81	3812.97	146.93	
	3:52:00	3810.45	146.81	3813.1	146.93	
	3:53:00	3810.64	146.81	3813.27	146.93	
	3:54:00	3810.8	146.82	3813.45	146.93	
	3:55:00	3810.98	146.82	3813.65	146.93	
	3:56:00	3811.16	146.82	3813.79	146.94	
	3:57:00	3811.37	146.82	3813.99	146.94	
	3:58:00	3811.46	146.82	3814.13	146.94	
	3:59:00	3811.68	146.82	3814.26	146.94	
	4:00:00	3811.85	146.82	3814.49	146.94	
	4:01:00	3812.01	146.82	3814.57	146.94	
	4:02:00	3812.16	146.82	3814.76	146.94	
	4:03:00	3812.34	146.82	3815	146.94	
	4:04:00	3812.52	146.82	3815.13	146.94	
	4:05:00	3812.66	146.83	3815.28	146.94	
	4:06:00	3812.82	146.83	3815.46	146.95	
	4:07:00	3813	146.83	3815.6	146.95	
	4:08:00	3813.15	146.83	3815.76	146.95	
	4:09:00	3813.32	146.83	3815.93	146.95	
	4:10:00	3813.41	146.83	3816.12	146.95	
	4:11:00	3813.67	146.83	3816.32	146.95	
	4:12:00	3813.83	146.83	3816.43	146.95	
	4:13:00	3813.97	146.83	3816.63	146.95	
	4:14:00	3814.09	146.84	3816.77	146.95	
	4:15:00	3814.28	146.84	3816.95	146.96	
	4:16:00	3814.4	146.84	3817.1	146.96	
	4:17:00	3814.52	146.84	3817.21	146.96	
	4:18:00	3814.86	146.84	3817.39	146.96	
	4:19:00	3815.02	146.84	3817.57	146.96	

Event	Time	Pressure (Top Gauge) Kpa	Temp (Top Gauge) degC	Pressure (Bottom Gauge) Kpa	Temp (Bottom Gauge) degC	Description
	4:20:00	3815.14	146.84	3817.72	146.96	
	4:21:00	3815.29	146.84	3817.91	146.96	
	4:22:00	3815.41	146.84	3818.02	146.96	
	4:23:00	3815.56	146.85	3818.21	146.96	
161	4:24:00	3815.63	146.85	3818.33	146.96	Shut in well at choke manifold
	4:24:00	3815.63	146.85	3818.33	146.96	
	4:34:00	4150.01	148.54	4153.46	148.67	
	4:44:00	4156.95	148.53	4160.85	148.66	
	4:54:00	4169.17	148.51	4172.2	148.63	
	5:04:00	4170.5	148.44	4172.11	148.57	
	5:14:00	4171.29	148.4	4173.23	148.52	
	5:24:00	4160.8	148.32	4163.11	148.44	
	5:34:00	4179.1	148.35	4180.69	148.47	
	5:44:00	4175.05	148.33	4178.33	148.45	
	5:54:00	4173.16	148.3	4175.92	148.42	
	6:04:00	4172.5	148.29	4175.13	148.4	
	6:14:00	4166.32	148.35			
	6:24:00	3937.16	133.7			