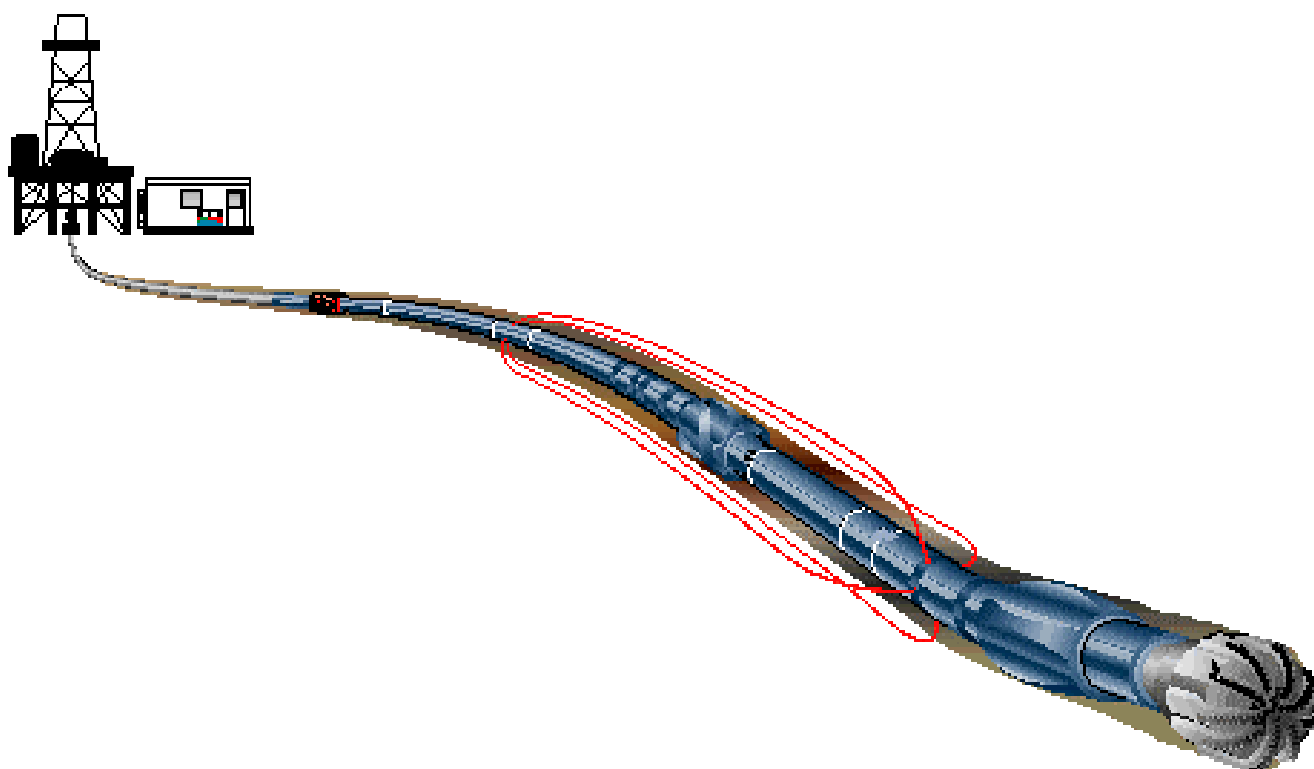




Thylacine-2

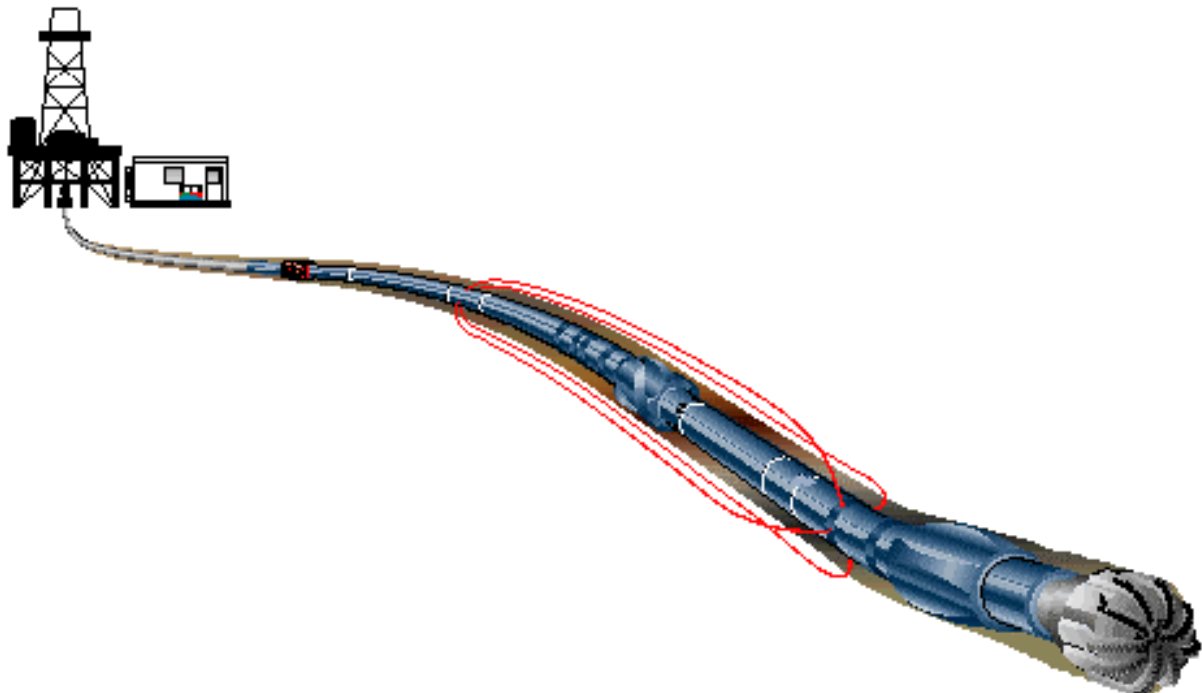
MWD – LWD End of Well Report



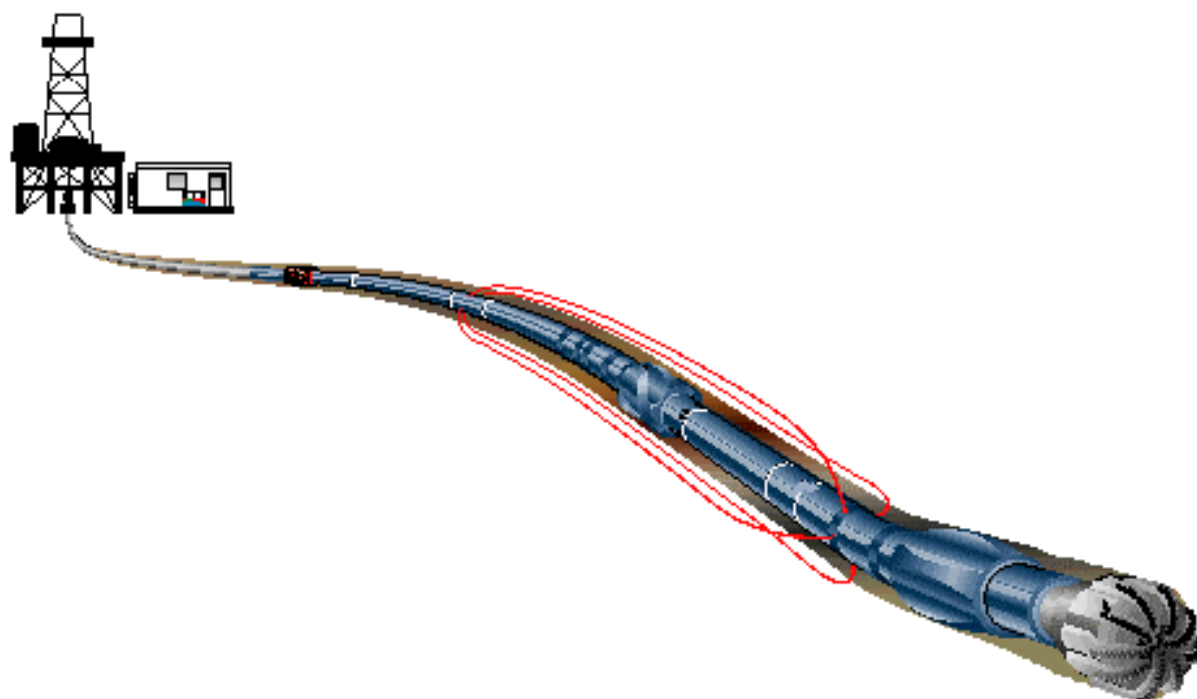
End of Well Report for Thylacine-2

Contents

- Logging Overview
- General Information
- Geomagnetic and Survey Reference Criteria
- Survey Report
- Motor Run Summary
- MWD / LWD Bit Run Summary
- Failure Reports



Logging Overview



Logging Overview

12 ¼ in. Section (Run 1, 557 to 2109 m):

Schlumberger Drilling and Measurements provided MWD and LWD services with the PowerPulse and CDR tools in the 12 ¼" section of Thylacine-2. The PowerPulse was installed with an MVC cartridge and an IWOB sensor. These provided real-time vibration and DWOB/DTOR data to the client, data that was utilized to optimize the drilling program. The data indicated that low level lateral shocks were present throughout most of the section, and that axial shocks were minor and of little consequence. However, severe torsional vibrations were also detected periodically in the section, and were of concern between 1325m and 1408m. During this section the drilling parameters were adjusted, easing the impact of the shocks on the BHA. It was also considered that the aggressive nature of the PDC bit, and the heave of the rig at this time contributed to the severe nature of the vibration, and therefore it was impossible to eliminate completely.

The 12 ¼" section was rotary drilled in a single run, and logged utilizing CDR and PowerPulse. The following formation evaluation data was provided in real-time:

- ☐ CDR 2MHz Phase Shift Resistivity
- ☐ CDR 2MHz Attenuation Resistivity
- ☐ CDR Gamma Ray
- ☐ MWD Directional Surveys
- ☐ MWD 4-axis vibration analysis
- ☐ MWD downhole WOB and torque

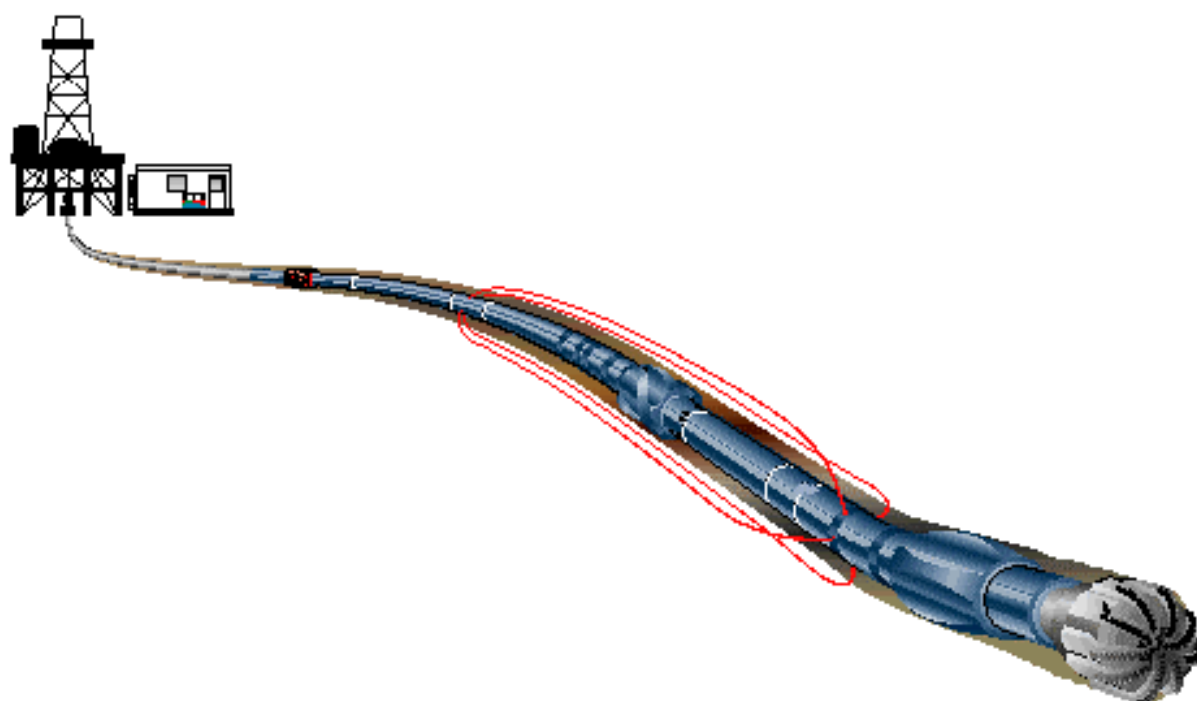
The following recorded mode formation evaluation measurements were provided once the LWD tools were on surface and the memory data retrieved:

- ☐ CDR 2MHz Phase Shift Resistivity
- ☐ CDR 2MHz Attenuation Resistivity
- ☐ CDR Gamma Ray

Run	Hole Size (in.)	Service	Start Depth (m)	Stop Depth (m)
1	12 ¼	PowerPulse / CDR / MVC / IWOB	557	2109

The MWD and LWD tools performed well throughout the 12 ¼" section, and no problems were encountered. Shocks throughout the run were minimal, with the exception of the torsional vibration, and of no consequence to the MWD and LWD tools. Real-time data between 794m – 822m and 827m – 831m was lost while the depth tracking system was changed from the draw-works encoder to the geolograph. Recorded mode data for this section was retrieved from the tool and processed without incident.

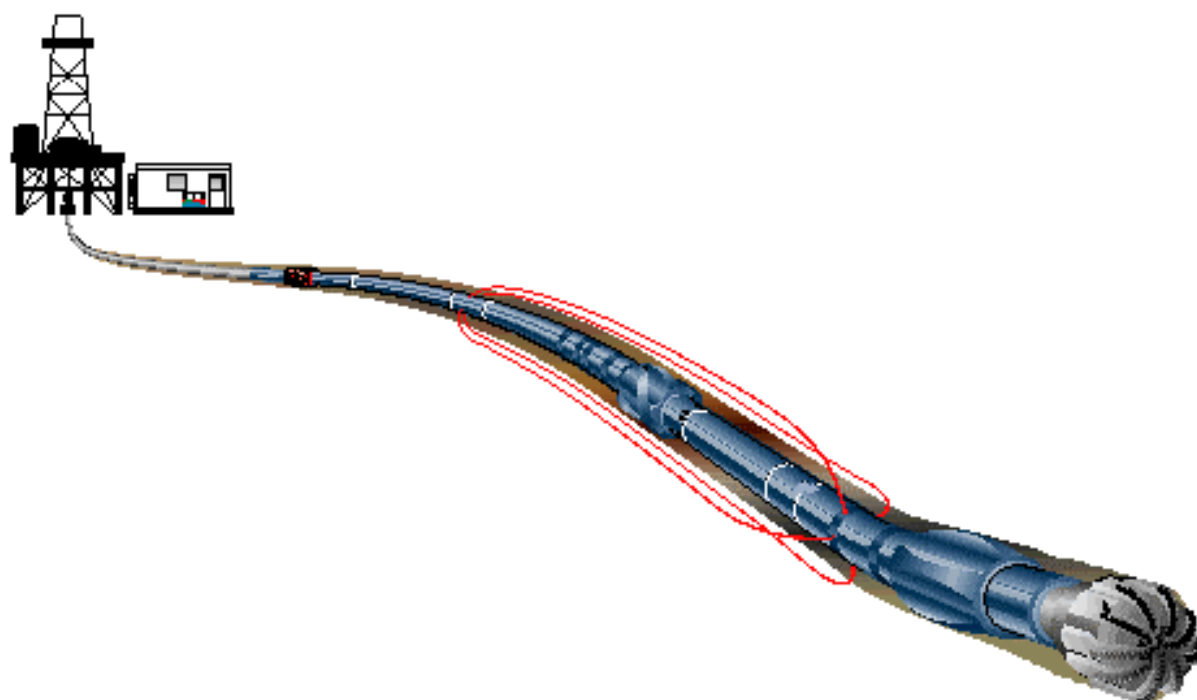
General Information



General Information

Well Name:	Thylacine-2	
Rig:	Diamond Offshore Ocean Bounty	
Field:	Exploration / Permit T/30P	
Location:	Otway Basin, Offshore Victoria	
Country:	Australia	
Cell Members:	Lee Muskett	MWD / LWD Engineer
	Ozren Radicevic	MWD / LWD Engineer
	Blaine Hanson	Directional Driller
Town Contacts:	Ike Nitis	Location Manager - Australia
	Go Ching Lian	Engineer In Charge – Karratha
	William Alanmanou	Engineer In Charge – Sale
Company Representatives:	Murray Jackson	
	Josie Trethewie	

Geomagnetic and Survey Reference Criteria



Geomagnetic and Survey Reference Criteria

Geomagnetic Data

Magnetic Model:	BGGM version 2000
Magnetic Date:	28-August-2001
Magnetic Field Strength:	1224.35 HCNT
Magnetic Declination:	11.05 degrees
Magnetic Dip:	-70.39 degrees

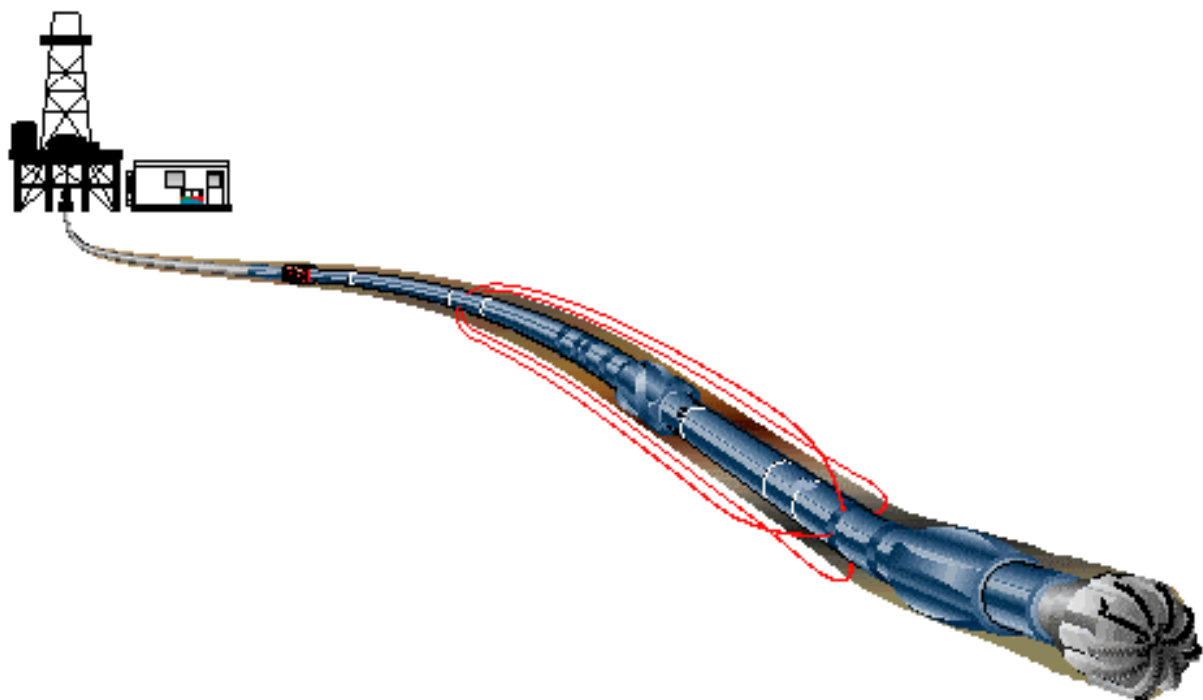
Survey Reference Criteria

Reference G:	1000.12 mgal
Reference H:	1224.35 HCNT
Reference Dip:	-70.39 degrees
G value Tolerance:	2.50 mgal
H value Tolerance:	6.00 HCNT
Dip Tolerance:	0.45 degrees

Survey Corrections Applied

Reference North:	Grid North
Magnetic Declination:	11.05 degrees
Grid Convergence:	-1.17 degrees
Total Azimuth Correction:	12.22 degrees
Vertical Section Azimuth:	0.00 degrees

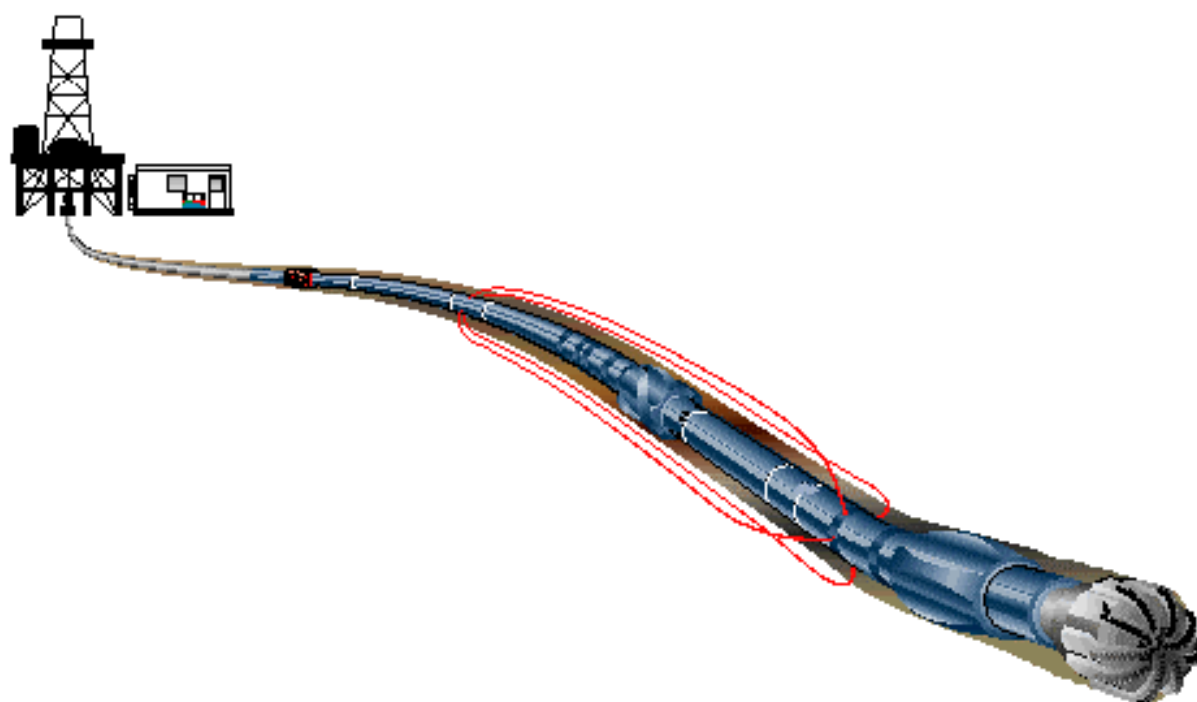
Survey Report



Survey Report

Seq #	Measured depth (m)	Incl angle (deg)	Azimuth angle (deg)	Course length (m)	TVD depth (m)	Vertical section (m)	Displ +N/S- (m)	Displ +E/W- (m)	Total displ (m)	At Azim (deg)	DLS (deg/ 10m)	Srvy tool type	Tool qual type
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIP	-
2	126.00	0.00	0.00	126.00	126.00	0.00	0.00	0.00	0.00	0.00	0.00	MWD	-
3	595.50	0.59	190.42	469.50	595.49	-2.38	-2.38	-0.44	2.42	190.42	0.01	MWD	6-axis
4	684.37	0.51	189.27	88.87	684.36	-3.22	-3.22	-0.58	3.27	190.28	0.01	MWD	6-axis
5	739.73	0.41	177.78	55.36	739.72	-3.66	-3.66	-0.62	3.71	189.55	0.02	MWD	6-axis
6	860.59	0.55	136.09	120.86	860.57	-4.51	-4.51	-0.20	4.51	182.50	0.03	MWD	6-axis
7	1093.36	0.27	141.66	232.77	1093.34	-5.74	-5.74	0.92	5.82	170.92	0.01	MWD	6-axis
8	1209.46	0.50	75.88	116.10	1209.43	-5.83	-5.83	1.58	6.04	164.85	0.04	MWD	6-axis
9	1384.16	0.64	113.39	174.70	1384.13	-6.04	-6.04	3.21	6.84	151.97	0.02	MWD	6-axis
10	1499.15	0.61	112.19	114.99	1499.11	-6.52	-6.52	4.37	7.85	146.18	0.00	MWD	6-axis
11	1528.39	0.59	99.50	29.24	1528.35	-6.61	-6.61	4.66	8.09	144.78	0.05	MWD	6-axis
12	1557.20	0.63	94.58	28.81	1557.16	-6.64	-6.64	4.97	8.29	143.21	0.02	MWD	6-axis
13	1702.37	0.89	105.20	145.17	1702.31	-7.00	-7.00	6.85	9.80	135.63	0.02	MWD	6-axis
14	1963.05	1.36	50.96	260.68	1962.95	-5.58	-5.58	11.21	12.52	116.49	0.04	MWD	6-axis
15	2082.91	1.02	4.82	119.86	2082.78	-3.63	-3.63	12.40	12.92	106.30	0.08	MWD	6-axis
16	2109.00	1.02	4.82	26.09	2108.87	-3.16	-3.16	12.44	12.84	104.26	0.00	MWD	proj

Motor Run Summary





DOWN-HOLE MOTOR RUN REPORT

Ft, Mt

Motor Size : 9 5/8"

Serial No : 2099

Run No : 1

BHA No: 3

Mt

Company	Woodside Energy Ltd 152-158 St Georges Tce. Perth, WA 6000	Well	GWA 19	Slot	7	Field	Goodwyn A
Operator	Diamond Offshore	Location	Otway Basin	Country	Australia		
		Engineer	Blaine Hanson	Date	2-Sep-01		

Bit Size	Make	Type	IADC	Jets	Jets	Jets	Jets	TFA
12 1/4"	HC	HC605	M322	5 x 14				0.752
IADC CUTTING STRUCTURE								
Inner Row	Outer Row	Dull Char'	Location	Brq/Seals	Gauge	Others	Reason for Trip	
1	2	WT	S	X	1/16	NO	TD	

Motor Made By	Size	Model / Type	Rotor/Stator	Serial No	Hsq Stab OD	° Bent Hsq	° Bent Sub	
Anadrill	9 5/8"	A962GT	7:8	2099	12 1/8"	0	N/A	
Type	1 = Straight; 2 = Steerable; 3 = Double Bend		Stator Ser N°	Rotor Ser N°	Drig Cmt. Wash/Ream		10.8	
1			Drig Hrs	33.60	Circ Hrs	6.00	Total Motor Circ Hrs	50.40

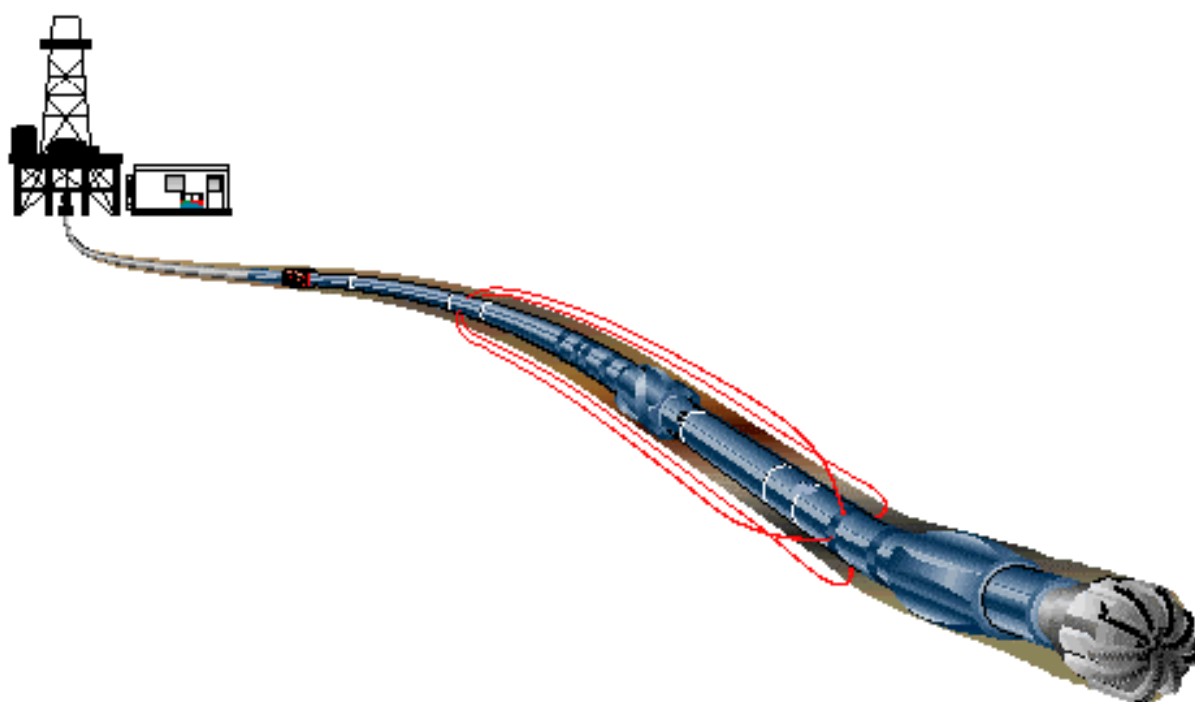
Purpose of Run Performance motor run for the 12 1/4" hole section. Hole section target ROP objective 1550m in 47 hrs = 32.98m/hr. Actual section 1552m drilled in 33.6 hrs = 46.19 m/hr. Note that section 17.7 of the Woodside "DOG" does not apply to Schlumberger motors. The A962GT had sufficient power at 350 pressure differential (+/- 24k wob) to stall the TDS at 20,000 ft lbs. Held 50 m/hr run average up to 2043m, here drilling mechanics changed. ROP dropped to +/- 22m/hr

BHA PDC Bit 12 1/4" Mud Motor 12 1/8" X/O Str R/Rmr 12 1/4" CDR8 In-Line Stab 12 1/8" PP MWD 8" NM DC Str R/Rmr 12 3/16" 8 x 8" DC 8" Jar 2 x 8" DC X/O 15 x 5" HWDP 5" DP to surface	Surveys	MD IN	557.00	Inclin	0.54	Azim	190.42	
		MD OUT	2109.00	Inclin	1.02	Azim	4.82	
	Flow Rate	Off Bttm PSI	On Bttm PSI	RPM	WOB			
	gal/min				LBS			
	1150 - 880	3900	4100	100 - 150	10 - 22			
	Mud Type	Aquadrill	Mud Wt	1.28	SG	Mud Grad'	0.066	Vis
	PV	20	Filtrate	3.50	% Solids	8.20	Aniline Pt	n/a
	YP	45	% Oil	0	% Sand	0.50	Circ Temp	57 F
	Depth In	557	Depth Out	2109	Inter'l Drld	1552		
	Date In	30-Aug-01	Date Out	2-Sep-01	ROP	46.19		
	Time In	19:45	Time Out	20:30	Time BRT	72.75	Hrs	

FAILURE?	No	Slide Mts	0	Previous Hrs	120.00	Cumulative Hrs	170.40
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Remarks / Failure Report. 1/ Well done to the Schlumberger motor mechanics in the workshop and Diamond Offshore drillers. 2/ UBH Stabilizer was service broken before being laid out. 3/ Tough drilling conditions due to rig heave, stong motor with aggressive bit. Could stall the TDS at 20,000 ft lbs & not stall the motor.	Did Motor Stall No No Slide Rty 0 0	Bearing Play In 0.5 mm Out 2.0 mm Condition Very Good
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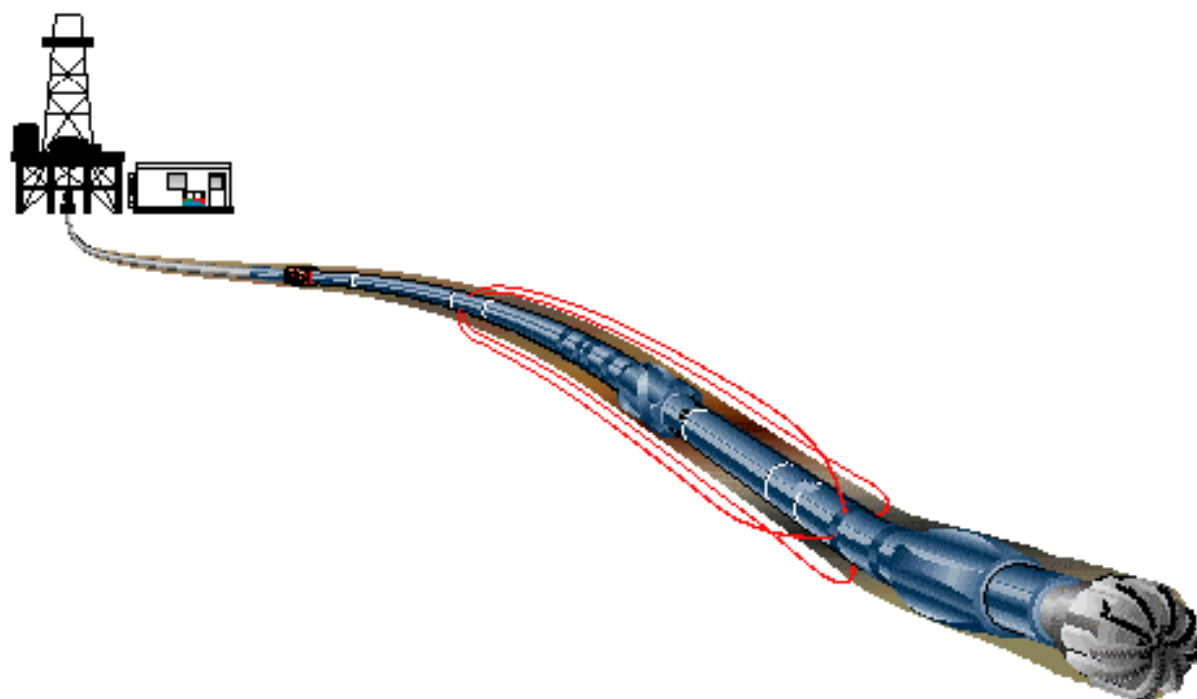
MWD / LWD Bit Run Summary



MVC data indicated a very smooth run through the section, with only occasional torsional vibrations and tool shocks.

DATE	TIME	DEPTH	COMMENTS						BHA DESCRIPTION					
30-Aug-01	16:45	Surface	Make-up BHA.						ITEM	LENGTH	OD	ID	CONN	
	16:45	Surface	Unable to initialize CDR, no comms. Programming cable changed and communication successful.						PDC	0.37	12.25	-	6 5/8 Reg	
									Motor	10.25	9.63	-	7 5/8 Reg	
	17:35	Surface	CDR initialized. Config. GR / RES 2MHz 6secs.						X/O	0.35	9.56	3	6 5/8 Reg	
			150.6 hrs of memory.						Roll.Reamer	2.07	12.25	3	6 5/8 Reg	
	17:45	Surface	Tools BRT.						CDR 8	6.86	8.25	-	6 5/8 FH	
	19:25	Surface	SHT at 760gpm - OK. RIH.						ILS	1.46	12.13	-	6 5/8 FH	
31-Aug-01	10:00	504m	Testing BOP's.						MWD	8.40	8.25	-	6 5/8 Reg	
	01:30	524m	Tag cement.						NMDC	9.08	8	2.81	6 5/8 Reg	
	04:00	557M	Drilling new formation.						Roll.Reamer	2.08	12.25	3	6 5/8 Reg	
	04:40	560m	FIT.						8x8" DC	74.54	8.25	2.75	6 5/8 Reg	
	05:43	560m	Drilling ahead.						Jars	9.70	8	-	6 5/8 Reg	
	11:00	795m	Problems encountered during the transition from Draw-works encoder to Geolograph.						2x8" DC	18.31	8	2.81	6 5/8 Reg	
			Air regulator on new Geolograph is unable to control the air flow. This made it difficult to control and RT data was lost between 794-822m and 827-831m.						X/O	1.09	8	2.86	6 5/8 Reg	
									15xHWDP	138.59	8	2.86	6 5/8 Reg	
	21:45	1275m	Drilling ahead, zero to low shocks on tools.											
			Very low BHA vibration.											
	23:20	1324m	High torsional vibration, but not associated with any lateral, axial or tool shocks. The DD was informed of the situation and reduced the rpm and WOB, this improved the situation.											
01-Sep-01	20:30	1973m	Flow line blocked.											
	20:55	1973m	Drilling ahead.											
	22:45	2031m	Flow line blocked.											
	23:00	2031m	Drilling ahead.											
	23:15	2043m	Erratic DTOR and severe torsional vibrations.											
	03:35	2109m	12 1/4" section TD. Circulate 2.5 x bottoms up POOH to 1464m, wiper trip back to bottom, POOH.											
	20:30	Surface	Tools ART.											
	21:30	Surface	CDR memory downloaded on pipedeck.											
			Rmc: 0.171, Rmf: 0.064, Rm: 0.072.											
									TOTAL LENGTH					
										283.15				
DATE	FIELD ENGR	PRESENT DEPTH	AVERAGE ROP	AVERAGE S.P. PRS.	DESURGER CHG. (PSI)		TUR RPM AT GPM		AVERAGE ROTARY (RPM)		SHOCK LOG			
		(m)	(m/hr)	(PSI)	#1	#2			Surface	Motor	LWD	MWD	MAX SHOCK	TDH
31-Aug-01	OR	634	100	3700	800	800	3320	1000	100	200	0	0	0	83
	LM	1272	110	3733	800	800	3632	1073	110	230	0	0	12	95
01-Sep-01	LM	1353	25	3759	800	800	3632	1047	120	248	0	0	0	95
	OR	1688	25	3900	800	800	3242	950	130	240	0	0	0	107
	LM	1937	70	3865	800	800	3007	900	150	210	0	0	0	109
02-Sep-01	LM	2107	21	3935	800	800	3085	881	150	220	0	0	8	118
TIME	AVG/MAX DWOB (K lbs)	AVG/MAX SWOB (K lbs)	AVG/MAX DTOR (K lbs)	AVG/MAX STOR (K lbs)	FRIC	DRAW UP/ DOWN	MUD WEIGHT (SG)	MUD VIS (SEC)	Rm OHM/M @ TEMP oC	SIGNAL STRENGTH SPT1 (psi) SPT2 (psi)		NOISE MARGIN		
21:40	15.0	13.0	5.3	4.0	-	-	1.10	55	-	24	24	98%		
21:42	6.5	20.0	6.1	4.0	-	-	1.15	57	-	22	24	97%		
00:12	16.0	30.0	6.2	2.7	-	-	1.21	63	-	18	22	94%		
13:00	3.0	10.0	4.0	8.0	-	-	1.25	59	-	14	12	97%		
19:14	8.5	20.0	7.1	11.1	-	-	1.26	72	-	15	13	96%		
03:27	5.5	21	4.2	4.9	-	-	1.26	66	0.072@	13	12	96%		

Failure Reports



	FAILURE REPORT	
Schlumberger	Anadrill	

FR No. : 1

Company : Woodside Energy Ltd.	Rig : Ocean Bounty	Failure date : 30-8-2001
Well : Thylacine-2	District : AWA	Job No. : AWA-18-01
Cell Mgr. : Lee Muskett	Service : MWD/MVC/CDR	Run No. : 1
EQUIPMENT & SERIAL No. : CDR Personality Adapter		

FAILURE DESCRIPTION & SYMPTOMS (Include software version if applicable)
<p>Both CDR tools were programmed during the previous day. The equipment used for the operation included the CDR personality adapter, TSIM cable, and TSIM.</p> <p>Prior to picking up BHA the CDR was again connected to the IDEAL system, however, communication with the tool was not achieved.</p>
Failure Group : Failure Category : Completed by : Lee Muskett Date : 30-8-01

REMEDIAL ACTION ATTEMPTED ON LOCATION
<p>Several attempts were initially made to establish communication with the tool, this was not successful. All of the connections were checked, cleaned and re-established. Further attempts to communicate were made, but all proved to be unsuccessful. In an attempt to troubleshoot the problem the back-up CDR was plugged into, this also proved to be unsuccessful which suggested that the problem was associated with the cables or TSIM, and probably not the CDR. Therefore, a back-up cable was installed and communication made with the CDR. The CDR was initialized on the pipedeck and the BHA assembled. Later examination of the TSIM and TSIM cable proved that they were in good working order, therefore, the problem was associated with the personality adapter.</p>
Completed by : Lee Muskett Date : 30-8-01

FAILURE ANALYSIS (For completion during R&M repair)
Failure Category : Completed by : Date :

ACTION FOLLOW UP (For completion by FSM / DTM)
Completed by : Date :

Always Distribute with BRS and/or BHA Summary : CELL File (Fax to town) R&M (R&M Diagnosis ➡⬆ Maintenance file) R&M (R&M Diagnosis ➡⬆ CELL) FSM (Action plan ➡⬆ UNIT)	CHECK LIST: Anadrill Management notified? <input type="checkbox"/> Equipment marked RONG ? <input type="checkbox"/> Full function test after repair ? <input type="checkbox"/> History card filled in ? <input type="checkbox"/> This FR returned to CELL ? <input type="checkbox"/> Any calibration data to attach ? <input type="checkbox"/>
NOTE: Failure reports must also be sent in with failed equipment.	

	FAILURE REPORT	
Schlumberger	Anadrill	

FR No. : 2

Company : Woodside Energy Ltd.	Rig : Ocean Bounty	Failure date : 31-8-2001
Well : Thylacine-2	District : AWA	Job No. : AWA-01-18
Cell Mgr. : Lee Muskett	Service : MWD/MVC/CDR	Run No. : 1

EQUIPMENT & SERIAL No. : Geolograph Air Pressure Regulator

FAILURE DESCRIPTION & SYMPTOMS (Include software version if applicable)				
<p>After installing the cable on the geolograph cable drum and connecting it to the rig top drive, the air pressure was increased in order that adequate tension was exerted on the line to achieve accurate depth tracking. It was instantly noticed that the movement of the cable and the internal workings were erratic, and that the air pressure was uncontrollable by adjusting the regulator. If this situation had been allowed to remain it would have resulted in inaccurate depth tracking, and premature wear of the cable and air motor.</p>				
<table style="width: 100%;"> <tr> <td style="width: 25%;">Failure Group :</td> <td style="width: 25%;">Failure Category :</td> <td style="width: 25%;">Completed by : Lee Muskett</td> <td style="width: 25%;">Date : 31-8-01</td> </tr> </table>	Failure Group :	Failure Category :	Completed by : Lee Muskett	Date : 31-8-01
Failure Group :	Failure Category :	Completed by : Lee Muskett	Date : 31-8-01	

REMEDIAL ACTION ATTEMPTED ON LOCATION			
<p>In an attempt to ease the movement of the cable, all moving parts and grease nipples were lubricated, this helped to a point but it was still not satisfactory in regard to depth tracking. It was then decided to reduce the air pressure by adjusting the main valve. This proved to be difficult and time consuming as the valve was unable to control the air flow as accurately as was required. Unfortunately, the air motor would stop retrieving the cable intermittently if the flow was slightly too low, regardless that when it was working there was a reasonable amount of tension on the cable. Furthermore, with too greater air flow the geolograph seemed to struggle, increasing the wear on the motor and the cable. At that point it was concluded that we had to achieve accurate depth tracking and the main valve was adjusted accordingly regardless of premature wear to the geolograph.</p>			
<table style="width: 100%;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;">Completed by : Lee Muskett</td> <td style="width: 25%;">Date : 31-8-01</td> </tr> </table>		Completed by : Lee Muskett	Date : 31-8-01
	Completed by : Lee Muskett	Date : 31-8-01	

FAILURE ANALYSIS (For completion during R&M repair)			
<table style="width: 100%;"> <tr> <td style="width: 25%;">Failure Category :</td> <td style="width: 25%;">Completed by :</td> <td style="width: 25%;">Date :</td> </tr> </table>	Failure Category :	Completed by :	Date :
Failure Category :	Completed by :	Date :	

ACTION FOLLOW UP (For completion by FSM / DTM)		
<table style="width: 100%;"> <tr> <td style="width: 25%;">Completed by :</td> <td style="width: 25%;">Date :</td> </tr> </table>	Completed by :	Date :
Completed by :	Date :	

<p>Always Distribute with BRS and/or BHA Summary :</p> <p>CELL File (Fax to town)</p> <p>R&M (R&M Diagnosis ➡ Maintenance file)</p> <p>R&M (R&M Diagnosis ➡ CELL)</p> <p>FSM (Action plan ➡ UNIT)</p> <p>NOTE: Failure reports must also be sent in with failed equipment.</p>	<p>CHECK LIST:</p> <p>Anadrill Management notified? <input type="checkbox"/></p> <p>Equipment marked RONG ? <input type="checkbox"/></p> <p>Full function test after repair ? <input type="checkbox"/></p> <p>History card filled in ? <input type="checkbox"/></p> <p>This FR returned to CELL ? <input type="checkbox"/></p> <p>Any calibration data to attach ? <input type="checkbox"/></p>
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