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CRA EXPLORATION PTY LIMITED

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PARATTAH EL 18/82

GEOLOGY AND COAL RESOURCE ESTIMATION - YORK PLAINS AREA

OPEN FILE

Author: T W Dickson
J F Lea
T G Summons

Date: 15th November 1984

Submitted to: T W Dickson

Approved:

Copies: The Hydro-Electric Commission of Tasmania (2 copies)
Robertson Research Pty Ltd
Merz McLellan & Partners
Mineral Resources Section
CRAE - Sydney
CRAE - Canberra
CRAE - Hobart
Mines Department - Tasmania

No. 12961

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SUMMARY

A programme of diamond drilling involving 29 holes for a total of 1360 metres was undertaken in the York Plains area to outline coal reserves and provide seam quality data to allow a bid to the Hydro-Electric Commission of Tasmania to supply coal for a proposed coal fired Power Station.

The drilling has outlined an inferred in situ geological reserve in three seams of 43 million tonnes coal with an overburden of 235 million cubic metres. The in situ coal ranges from 1.7 to 7% moisture from 26-75% ash, 5.6 to 14.8% volatile matter (13.40 to 24.9% calculated on dry ash free basis) with 0.09-0.85% sulphur and 5.04 to 26.2 MJ/Kg Specific Energy. Washability data suggests that a 28% ash product can be obtained for a 56-62% recovery which would produce a coal product capable of meeting the Hydro-Electric Commission of Tasmania's specifications.

INTRODUCTION

A detailed programme of diamond drilling was undertaken in the York Plains area of EL 18/82 to outline and evaluate a potential coal resource indicated by previous exploration work and limited open hole drilling of CRA Exploration Pty Limited.

The Hydro-Electric Commission of Tasmania has indicated that part of its future power requirements would be met of two 200 MW coal fired power station units owned and operated by the Commission. In consequence, the Commission has issued calls for preliminary tenders for supply of coal for the stations indicating the first unit will be commissioned in 1991 and the second unit in 1995.

Time was of the essence and slim line 29 NQTT sized diamond drill cores were used to evaluate the deposit, to calculate reserves and provide data on in situ coal quality, washability data and details of seam continuity. To assist in correlation each hole was electrically logged and detailed ply by ply and composite proximate analysis was carried out for each seam by ACIRL laboraties in Maitland. Three holes were selected for detailed washability tests.

Ultimate analysis and full ash analysis was carried out by ACIRL on 13 (thirteen) composite samples from holes PT 10, 11, and 12. All collar positions were surveyed and levelled by Brooks, Lark and Carrick.

CONCLUSIONS

The drilling programme at York Plains has outlined an inferred in situ geological reserve within three seams of 43 million tonnes of coal capable of being won by open cut methods with an in situ overburden of 235 million cubic metres. An overburden to coal ratio of 5.5 cubic metres/tonne of coal.

The resource is held in three seams, named Seams W, V and U.

Seam W, the uppermost seam, contains 7.8 million tonnes of coal which averages (in situ coal) 5.0% moisture, 54.4% Ash, 10.1% volatile matter (air dried basis) which calculates to 24.9% volatiles on a dry ash free basis, 30.6% fixed carbon, 0.20% sulphur and a specific energy of 11.81 MJ/Kg.

Seam V contains 2 million tonnes which average (in situ coal) 3.4% moisture, 50.8% ash, 10.0% volatiles (air dried), 21.8% volatiles (dry ash free), 35.8% fixed carbon, 0.3% sulphur and 14.42 MJ/Kg specific energy.

The bulk of the reserves are contained in Seam U which contains 33.4 million tonnes coal which average (in situ coal) 3.7% moisture, 39.2% ash, 11.2% volatiles (air dried), 19.6% volatiles (dry ash free), 35.1% fixed carbon, 0.26% sulphur and 14.54 MJ/Kg specific energy.

The reserve is open to the south and additional coal occurs at Coal Mine Hill and at St Peters Dome.

Preliminary washability data suggests that a 28% ash product can be produced for a 60% recovery which would meet the specifications set out by the Hydro-Electric Commission of Tasmania.

CRA Exploration Pty Limited has also located additional coal resources in the Jericho area, 12 kms south of Oatlands, and exploration is still at a very early stage, but an additional resource of open cut coal in the order of 36 million tonnes is suggested for that area.

RECOMMENDATIONS

CRA Exploration Pty Limited should proceed with a tender for coal supply to the Hydro-Electric Commission and continue a programme of additional drilling to upgrade the status of the reserves and provide additionallarger diameter core for detailed washability tests.

1. LOCATION AND GEOGRAPHY

The York Plains coal deposit lies midway between the Township of York Plains and the prominent peak of Mt. Pleasant. It extends for approximately 2 km to the north and south of Mt. Pleasant. The country extends from open grazing land around York Plains to a series of low undulating hills with open bush grazing and occasional blue gum knolls to the north and south of Mt. Pleasant. Topography and Geology are shown in Plan TASH 2239.

York Plains is 9.0 km by road north-east of Oatlands and Mt. Pleasant a further 3 km to the north-east. Oatlands is the closest population centre lying on the main Hobart-Launceston highway and located midway between the two centres.

The main highway lies 7 km west of the centre of the deposit while the main north-south railway line passes through York Plains 3 km west of the deposit centre.

Road distances from York Plains are :-

York Plains to Hobart	-	94 km
York Plains to Conara Junction	-	58 km
York Plains to Launceston	-	115 km
York Plains to Georgetown	-	167 km

The Township of Oatlands has a population of 545 (1983 Tasmanian Year Book) - 271 males and 274 females. There were 199 occupied dwellings and 23 unoccupied. Population of the Oatlands Local Government area which includes York Plains is 2100.

The Year Book also provides the following climatic data for Oatlands.

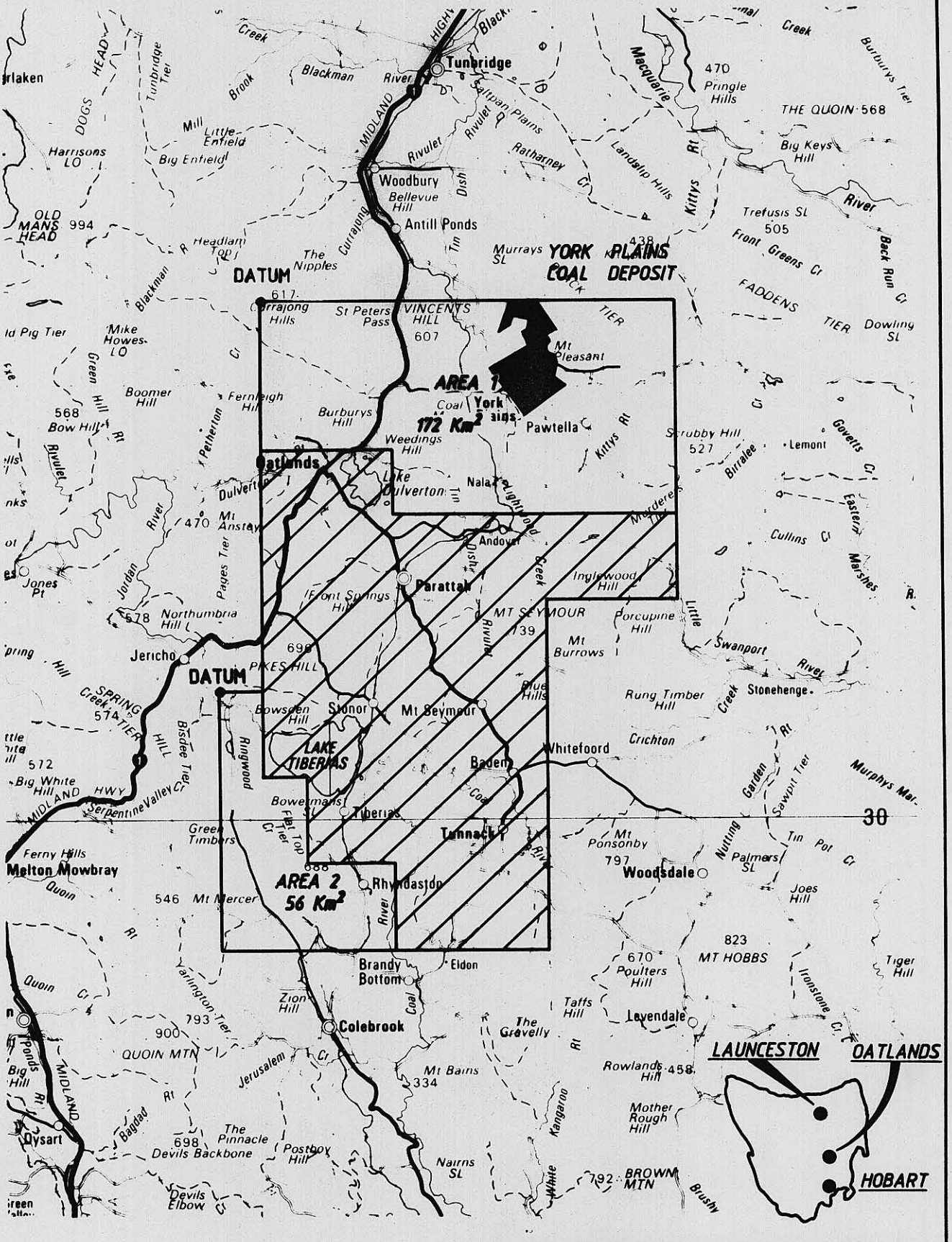
Rainfall -	1976	1977	1978	1979	1980	1981	Long Term Average
(millimetres)	543	463	529	443	434	572	565

Seasonal Temperatures

	Maximum		Minimum		Mean	
	Mean for 1981	Departure from Norm	Mean for 1981	Departure from Norm	Mean for 1981	Departure from Norm
Summer	22.6	+ 1.5	9.6	+ 1.8	16.1	+ 1.6
Autumn	16.6	+ 0.8	5.3	+ 0.3	10.9	+ 0.5
Winter	9.3	- 1.0	Na	Na	Na	Na
Spring	16.1	+ 0.7	5.3	+ 1.0	10.7	+ 0.8

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Tunbridge
Woodbury
Antill Ponds
Bellevue Hill
DATUM
617
YORK PLAINS COAL DEPOSIT
AREA 1
172 Km²
AREA 2
56 Km²
Oatlands
Lake Dulverton
Pawtella
Parattah
Andover
Jericho
DATUM
Stonor
Mt Seymour
LAKE TIBERIAS
Tunnack
Rhyndaston
Melton Mowbray
Woodsdale
Colebrook
Brandy Bottom
Eldon
Levendale
Oysart
QUOIN MTN
MT HOBBS
BROWN MTN
Whitefoord
Badem
Tiberias
Swanport
Stonehenge
Pawtella
Pringle Hills
THE QUOIN 568
Big Keys Hill
Trefusis SL
505
Front Greens Cr
FADDENS TIER
Dowling SL
Scrubby Hill
527
Lemont
Goveits Cr
Eastern Marshes
Cullins Cr
Inglewood Hill
Porcupine Hill
Mt Burrows
Rung Timber Hill
Crichton
Garden Sawpit Tier
Murphys Mar
Tin Pot Cr
Palmers SL
Joes Hill
Tiger Hill
Ironstone Cr
Mt Ponsonby
797
Nutting
Taffs Hill
The Gravelly
Rowlands Hill
458
Mother Rough Hill
Kangaroo
Mt Bains
334
Nairns SL
White
Brushy
Zion Hill
Jerusalem Cr
Varlington Tier
793
900
Postboy Hill
The Pinnacle
698
Devils Backbone
Devils Elbow
Ferny Hills
546 Mt Mercer
Quoin Cr
Big Ponds Hill
Big White Hill
572
Serpentine Valley Cr
Green Timbers
Flat Top Tier
Ringwood
Bisdee Tier
SPRING Creek TIER
574
Northumbria Hill
578
Jones Pt
Mt Anstey
470
Jordan River
Pages Tier
Petherton Cr
Dulverton
Nala
Lightwood Creek
Front Springs Hill
Inglewood Hill
Mt Seymour
139
Porcupine Hill
Mt Burrows
Swanport River
Rung Timber Hill
Stonehenge
Crichton
Whitefoord
Badem
Tiberias
Tunnack
Woodsdale
Rhyndaston
Eldon
Brandy Bottom
Colebrook
Levendale
Oysart
Mt Ponsonby
Joes Hill
Tiger Hill
MT HOBBS
823
Poulters Hill
670
Rowlands Hill
458
Mother Rough Hill
Mt Bains
334
Nairns SL
BROWN MTN
792
Taffs Hill
The Gravelly
Ironstone Cr
Kangaroo
White
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334
Nairns SL

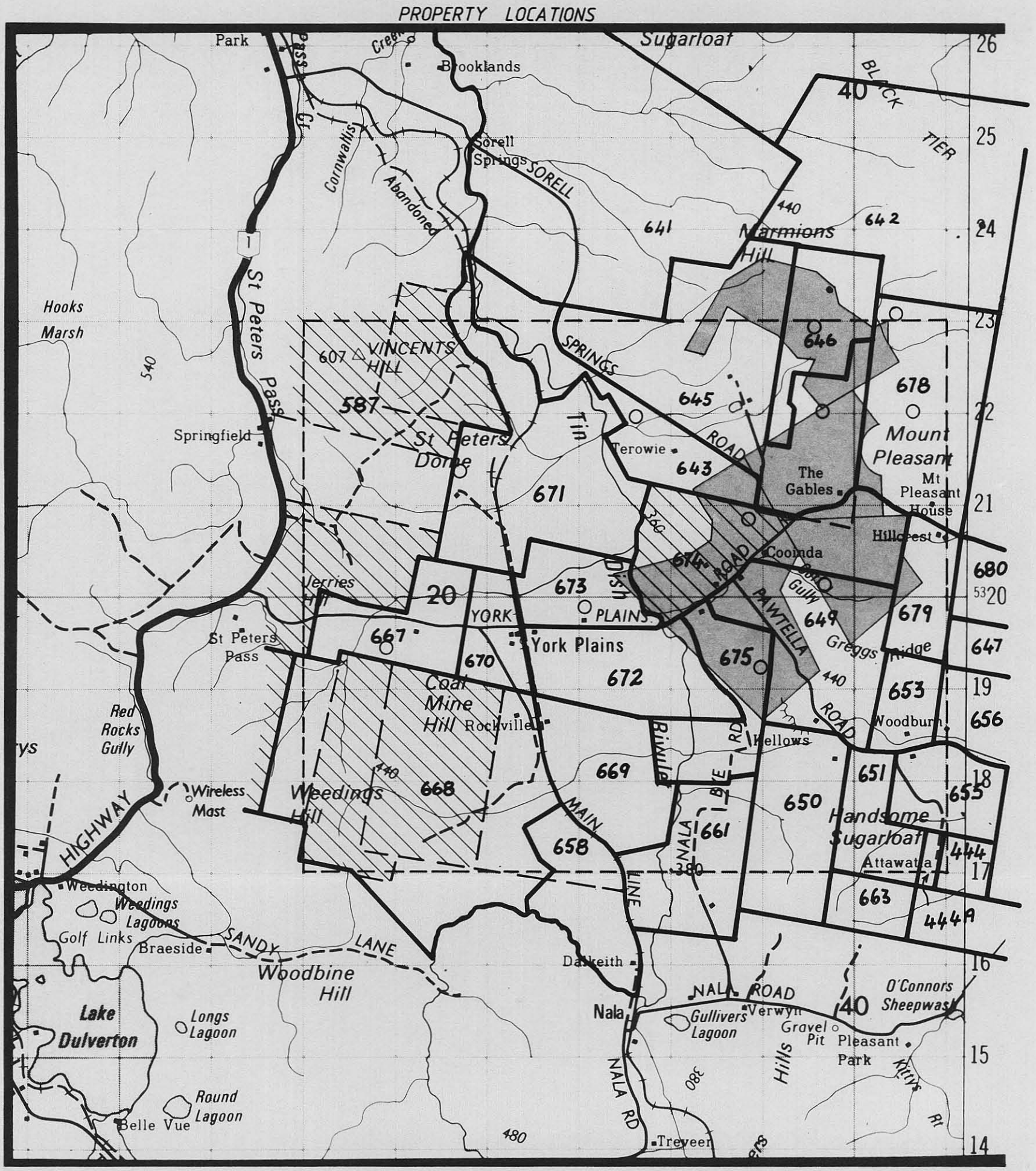
Mains power is available at Oatlands and throughout York Plains district although upgrading would be necessary for mining purposes. Mains water is available at Oatlands - York Plains and district use tank water.

The deposit is covered by an Exploration Licence EL 18/82 (PARATTAH) which was granted to CRA Exploration Pty Ltd on 23rd September 1982. The Licence was reduced to 228 km² in September 1984 and the Licence is in force until 30th September 1985. Under normal circumstances the Licence can be renewed annually until 30th September 1992.

All property titles in the York Plains area have been searched. Within the coal reserve area, only one property (Property 674, D L Burbury) has coal rights vested in the owner. In all other properties within the Coal Resource Area the coal rights are reserved to the Crown. There would therefore be no real problem in converting the Exploration Licence to Coal Mining leases. //?

YORK PLAINS AREA (1 : 50 000)

PROPERTY LOCATIONS



RESOURCE BLOCKS

REAL PROPERTY, ALL GRANTS CHECKED, COAL EXEMPTED, VESTED IN CROWN.

GENERAL LAW LOCATIONS - COAL RIGHTS TO CROWN

GENERAL LAW, DEEDS FOUND, NO MENTION OF COAL EXEMPTION.

GENERAL LAW, NO DEEDS ISSUED - COAL RIGHTS TO CROWN

LAND AQUIRED BY CLOSER SETTLEMENT BOARD ORIGINALLY GENERAL LAW, NOW REAL PROPERTY.
CLOSER SETTLEMENT BOARD OWNER IN FEE SIMPLE, COAL RIGHTS BELONG TO CROWN.

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LOT Nos REFFER TO CURRENT VALUATION CHARTS

Fig. 2.

Plan No. TASh 2250 Report No 12961

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YORK PLAINS PROPERTY OWNERS

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Valuation No.	Property Owner	Address
649	Malvern Pty.Ltd.	C/- R.T.Gregg, 'Malvern' York Plains
650	Jones, Phillip Murray	C/- Holkholm, Orford, Tas. 7272
651	Dudgeon, David James, & Janet Mary	C/- Toora, Pawtella 7205
653	Unsworth, James Donald	C/- Pawtella, 7205
656	Dudgeon, David James, & Janet Mary	C/- Toora, Pawtella, 7205
658	Dalkeith P/L.	C/- 149 Macquarie St, Hobart. 7000
661	Jones, Arthur Thomas	C/- Nara 7205.
645	York House P/L.	C/- York Plains Tas. 7206
646	Malvern P/L	C/- R.T.Gregg, 'Malvern' York Plains
667	Gregg, Donald Ross	C/- York Plains 7206.
668	Rockville P/L.	C/- York Plains 7206.
669	Gregg, Donald Ross	C/- York Plains 7206
670	Rockville P/L.	C/- York Plains 7206
671	Lester, Colin Vernon	C/- York Plains 7206
672	Barwick, Brian Mitchell	C/- York Plains 7206
674	Burbury, Donald Leslie, & Jessie Wade	C/- York Plains 7206
675	Rockville P/L	C/- York Plains 7206
678	Brown, Edith Anne & June Munro	C/- York Plains 7206
679	Barwick, Roger Louis	York Plains, 7206
680	Barwick, Louis Thomas	York Plains, 7206
643	Sorell Springs P/L & Brookland P/L	C/- H.J. & R.J. Nicholas, Antill Ponds, 7207
647	Est. of George Robert Hali	C/- R.V.Giblin C/- Connordale York Plains.
655		
663	Glen Morey P/L	Woodbury 7207
444	Unsworth, James Donald	York Plains, 7205
444A	Dudgeon, D.J. & M.J.	York Plains, 7205
673	Lester, Colin Vernon	C/- York Plains 7206
587	St.Peters Pass P/L	C/- St.Peters Pass P/L. Oatlands 7205

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270011

Valuation No.	Property Owner	Address
641	Sorell Springs P/L & Brooklands P/L	C/- H J & R J Nicholas Antill Ponds
642	Lester Colin V.	C/- Ashgrove, Andover

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2. GEOLOGY

Forsyth (1984) recognised five major fresh water units (of Triassic to late Permian age) in the Upper Parmeener Super Group in central Tasmania. These units are as follows, in order of increasing age :-

- Rg - Volcanic Lithic Arenite, Lutite and Coal Measures
- Rs - Quartz and Lithic Feldspathic Arenite, with interbedded mudstone/siltstone
- Rm - Muddy Fluvial Plain Facies
- Rp - Quartz Sandstone
- Pj - Cygnet Coal measures correlate

Coal is recorded in the Rg unit, the two youngest subunits of the Rs unit, and is in the Pj unit.

In the York Plains area, major coal seams are restricted to the Rg unit of Karnian age; this sequence averages 70% sandstone, 25% mudstone/siltstone and 5% coal.

The environment of deposition of these sediments is considered to have been fluviatile, with single channel high sinuosity rivers depositing sand in the channels, siltstone in over-bank regions, and mud in the back swamps.

Although some of the coal appears allochthonous, much of it appears to have originated in peat swamps formed over the back swamp muds. These swamps (and ? lakes) were subjected to regular flooding and burial by thick transgressive bodies of cross bedded lithic sand.

It is likely that the regular re-establishment of swamp/lacustrine conditions reflects the cyclicity of volcanism (and in turn tectonic events) in the region during the Triassic. This is exemplified by the quartz rich lithic sandstones beneath the mudstone floors, and above the lithic sandstones.

Superimposed on the regional cyclicity of coal and sand deposition were channel migrations, which eroded entire coal-mudstone assemblages (eg part of seam W).

The coal seams are characterized by sandstone roofs (with erosive contacts), and by mudstone to siltstone floors; the seams form the upper most units of typical upward-fining-sequences.

Dolerite sills were emplaced in the Jurassic and basalts extruded during Tertiary time; also present in the area are several volcanic-sediment/basement breccia pipes of presumed Tertiary age.

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The structural setting of the York Plains district is the result of several episodes of faulting, resulting in a horst and graben complex.

The earliest structural features appear to be the ENE aligned faults, (part of a large regional fault zone extending from Ouse to Bothwell to Oatlands to York Plains etc), which were transected by the NW and WE groups of faults.

All groups of faults reflect basement features, and numerous reactivations (the latest in the Tertiary), have caused the juxtaposition of varying age sedimentary rocks.

The fault bound margins to the York Plains coal deposit (in the vicinity of Mt Pleasant), have distinct air photo expression as linears, and most have been confirmed by ground magnetic traverses; other supplementary evidence for the presence of faulting has been inferred from seam correlation on cross sections.

3. DESCRIPTION OF COAL DEPOSIT

Two major seams (Seam W & Seam U) are present along with a number of less extensive seams (V seams & T seams). The coal area has fault bounded blocks and within the reserve area, the areal extent is 7 square kilometres.

Four seam intervals are recognised in descending order:-

Seam W	-	0 - 3.75 metres	(included in reserve)
Seam VA	-	0 - 0.6 metres	(included in reserve)
VB	-	0 - 1.2 metres	(included in reserve)
Seam U_1	-	0 - 2.8 metres	(included in reserve)
U_2	-	0 - 5.2 metres	(included in reserve)
U_3	-	0 - 0.33 metres	(excluded from reserve)
U_4	-	0 - 0.35 metres	(excluded from reserve)
Seam T_1	-	0 - 1.09 metres	(excluded from reserve)
T_2	-	0 - 0.55 metres	(excluded from reserve)

The extent of each individual seam is shown in Plans (TASh 2240 Seam W), (TASh 2242 Seam V) and (TASh 2043 Seam U). Seam T has not been included in any resource calculations.

The coal resource has been outlined by 29 diamond drill holes totalling 1360 metres. Hole 0-06 of Capricorn Mining has also been included (46.1 metres) and data has been obtained from the Mines Department drill hole YP2 sited at Coal Mine Hill. Hole spacing ranges from 0.5 to 1.2km. Core diameter used was NQTT (45.1 mm).

Full details of bore location, R.L. of collar, R.L. of seam roof and floor, thickness of seam and total depths of hole are given in Table 1. A bore location map is provided (TASh 2039) and graphic logs with detailed ash profiles are provided for each hole. Most holes have been geophysically logged with SIE T450 portable logger and details of gamma, high resolution density, caliper, S.P. and single point resistivity logs are shown on plans TASh 2205 to 2218.

Written bore logs for each hole are provided in Appendix 1 and all analytical data in Appendix 2.

Individual seams are mostly heavy dull coal with minor bright coal. All seams contain stone bands which range up to 0.5 metres. Individual stone bands are very continuous and several can be traced through the area - see U Seam ply correlation diagram (TASh 2236). Detailed seam section and ash profiles are provided with each graphic drill hole log. Detailed seam correlation diagrams are provided in plans TASh 2237 and 2238.

In situ coal reserves have been calculated by two separate methods:-

(1) Averaging seam thickness for each hole which occurs in each reserve block; and

(2) The polygonal method.

The resource calculated by each method agrees very closely (43.24 million tonnes averaged and 43.5 million tonnes polygonal).

Details of the resource for each seam and each resource block are given in Table 2.

Reserves have been calculated using Seams W, VA, VB, U_1 and U_2. Seams U_3 and U_4 have been excluded as being too thin (less than 0.5m) and Seams T_1 and T_2 have been excluded as being too deep at this stage.

Other parameters used in reserve calculation include:-

- Seam thickness cut off 0.5 metre
- Seam thickness includes all coal and stone bands but excludes interburden sections greater than 0.5 metres (ie internal between U_1 to U_2).
- Heat affected coal around diatreme in hole PT-23; 0.13 Km^2 area reduction for Blocks W_3, VA and U_4.
- Area around Mt Pleasant above 500 metres contour excluded
- All coal shallower than 10 metres from surface - excluded as oxidised coal.
- A one half to one Km strip has been excluded from Seam W reserves around holes 39, 37, 38, 11, 24 and 27 where it is believed a major channel has cut out Seam W.

The reserve can be classed as indicated on drill spacing and seam correlation. However further detailed quality data and limited additional drilling for washability testing is required to provide this level of confidence and the reserve is therefore classed as inferred at this stage.

Depth of cover is provided for each seam in plan form as overburden/interburden isopachs on plan TASH 2240 (Seam W), 2242 (Seam V) and 2244 (Seam U).

Total in situ overburden value has been calculated as 235 million cubic metres and is listed in Table 3.

The overburden is largely sandstone and almost every seam has an erosional sandstone roof. The sandstone is thick bedded to massive but crumbles easily and should be easily rippable.

TABLE 1

BORE HOLE LOCATION, SEAM RL AND THICKNESS

BORE HOLE NUMBER	A.M.G. SURVEY CO-ORDINATES		COLLAR LEVEL	ROOF R.L.		FLOOR R.L.		THICK-NESS	TOTAL DEPTH
	EASTING	NORTHING		SEAM		SEAM			
006	540165.7	5322050.9	471.8	W U_1 U_2	462.00 444.40 439.40	W U_1 U_2	459.60 443.00 438.40	2.40 1.40 1.00	46.10
010	538360.0	5320010.8	367.2	W U_1 U_2	359.2 334.3 329.4	W U_1 U_2	355.5 334.0 324.19	3.75 0.30 5.21	46.30
011	539101.8	5320642.2	389.75	W U_2	379.17 351.09	W U_2	379.02 348.09	0.15 3.00	52.05
012	540248.4	5321175.0	443.15	W U_2 U U_2 U_4	438.09 411.60 410.06 402.75	W U_2 U U_2 U_4	434.42 410.18 405.55 402.42	3.67 0.63 4.51 0.33	50.70
014	540779.3	5321915.2	433.05		NO COAL				50.60
015	540665.7	5322855.3	451.20		NO COAL				36.70
016	539503.1	5322766.9	449.75	U_1	430.34	U_1	427.25	2.84	51.70
017	539502.8	5322767.9	449.85	REDRILL OF 016 SEAM U					
018	539727.2	5321919.2	418.70	W U_1 U_2	405.98 387.93 383.495	W U_1 U_2	405.05 386.20 383.18	0.93 1.73 0.315	51.85
019	536204.9	5320565.4	365.70		NO COAL				50.00

TABLE 1

BORE HOLE LOCATION, SEAM RL AND THICKNESS

BORE HOLE NUMBER	A.M.G. SURVEY CO-ORDINATES		COLLAR LEVEL	ROOF R.L.		FLOOR R.L.		THICK-NESS	TOTAL DEPTH
	EASTING	NORTHING		SEAM		SEAM			
020	538848.9	5321962.15	376.95	NO	COAL				57.60
021	538017.7	5321501.9	363.50	TERTIARY DIATREME		- NO COAL			30.70
022	537068.3	5319781.5	362.90	NO	COAL				31.60
023	539016.1	5319358.4	392.20	TERTIARY DIATREME		- NO COAL			15.10
024	539596.3	5320182.5	431.85	T_1 T_2^1	399.49 386.38	T_1 T_2^1	398.97 386.08	0.52 0.30	57.10
025	538943.4	5323354.5	442.75	U_1 T	412.22 382.88	U_1 T	409.42 382.31	2.80 0.57	70.64
026	540313.5	5320509.2	482.75	* W U	461.26 441.54	W U	460.68 439.35	0.58 2.19	81.80
027	539681.8	5320177.7	442.25	U	424.20	U	421.90	2.30	24.90
028	538187.6	5323028.4	389.75	NO	COAL				29.70
029	539626.7	5323537.4	459.65	HOLE REDRILLED AS PT-030					28.70
030	539614.1	5323532.4	459.60	U_1A U_1^1B U_1^1C	448.85 447.84 445.90	U_1A U_1^1B U_1^1C	448.50 447.66 445.34	0.35 0.18 0.56	57.80
031	539875.9	5323204.2	462.55	U_1 T_1^1 T_2^1	455.87 419.05 413.75	U_1 T_1^1 T_2^1	452.19 418.15 413.27	3.68 0.90 0.43	57.70

* Detailed correlation suggests Seam W in Pt-026 could be Seam V.

TABLE 1

BORE HOLE LOCATION, SEAM RL AND THICKNESS

BORE HOLE NUMBER	A.M.G. SURVEY CO-ORDINATES		COLLAR LEVEL	ROOF R.L.		FLOOR R.L.		THICK-NESS	TOTAL DEPTH
	EASTING	NORTHING		SEAM		SEAM			
032	540157.6	5322705.3	439.75	U_1^1 U_2 T_1 T_2^1	417.45 412.75 392.42 389.55	U_1^1 U_2 T_1 T_2^1	416.40 410.95 391.33 389.00	2.05 1.80 1.09 0.55	57.70
033	535244.1	5319227.2	447.75		NO COAL	TERTIARY	DIATREME		11.50
034	535035.6	5319182.8	440.55	U_1 T_2^1	415.31 383.27	U_1 T_2^1	413.68 382.70	1.63 0.57	60.58
035	538817.2	5319340.6	378.85	W V U_2 U_2L	361.00 351.95 332.95 329.65	W V U_2 U_2L	360.33 350.87 332.20 329.25	0.67 1.08 0.75 0.40	57.00
036	538189.2	5320699.0	367.55	W V_A V_B U^B T	356.35 349.35 343.35 329.75 318.15	W V_A V_B U^B T	355.55 349.55 343.85 329.50 317.40	0.80 0.20 0.50 0.25 0.75	55.00
037	539590.4	5320994.8	400.90	U_1^1 U_2 U_3 U_4	383.90 378.35 373.10 371.05	U_1^1 U_2 U_3 U_4	382.0 375.45 372.80 370.70	1.90 2.90 0.30 0.35	44.20
0.38	538933.3	5321076.5	382.15	V_B U^B	368.95 352.75	V_B U^B	368.35 350.60	0.60 2.15	47.70
0.39	539468.2	5321402.5	401.90	U_1^1 U_2 U_3 U_4	379.05 375.00 370.05 367.60	U_1^1 U_2 U_3 U_4	378.05 371.90 369.75 367.30	1.00 3.10 0.30 0.30	54.70

TABLE 1

BORE HOLE LOCATION, SEAM RL AND THICKNESS

BORE HOLE NUMBER	A.M.G. SURVEY CO-ORDINATES		COLLAR LEVEL	ROOF R.L.		FLOOR R.L.		THICK-NESS	TOTAL DEPTH
	EASTING	NORTHING		SEAM		SEAM			
040	537563.7	5320577.7	359.65	V_B	349.30	V_B	349.00	0.30	39.70
				U_1^1	337.85	U_1^1	337.65	0.20	
				U_2^1	336.95	U_2^1	336.75	0.20	
				U_3	336.20	U_3	336.05	0.15	

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TABLE 2

PARATTAH EL 18/82

YORK PLAINS

COAL RESERVE (IN SITU)

SEAM	BLOCK	AREA (Km^2)	TONNES x 10^6	
			Averaged Seam Thickness Method	Polygonal Method
W	W_1	0.51	1.83	1.83
	W_2	0.47	0.39	0.39
	W_3	2.00	5.61	6.96
	SUB TOTAL	2.98	7.83	9.18
V	VA	0.60	1.12	1.12
	VB	0.82	0.91	0.91
	SUB TOTAL	1.42	2.03	2.03
U	U/A	1.58	6.93	6.35
	U/B	1.36	9.40	8.43
	U/C	1.27	4.30	5.32
	U/D	2.76	12.75	12.19
	SUB TOTAL	6.97	33.38	32.29
TOTAL		11.37	43.24	43.50

NB. 1. SG of coal used to calculate tonnage is 1.65 equivalent to coal with 30% ash.

2. Areas calculated by planimeter from plans TASh 2041, Seam W, TASh 2042 Seam V, & TASh 2043, Seam W

TABLE 3

CALCULATED OVERBURDEN QUANTITY

SEAM	RESOURCE BLOCK	$M^3 \times 10^6$	
W	W_1		11.90
	W_2		12.65
	W_3		39.60
		SUB TOTAL	64.15
V	VA		4.88
	VB		10.26
		SUB TOTAL	15.14
U	U/A		39.10
	U/B		24.35
	U/C		26.95
	U/D		65.80
		SUB TOTAL	156.20
		TOTAL	235.45

NB: Overburden calculated by measuring area between isopach contours on plans TASh 2040 - Seam U, TASh 2042 - Seam V and TASh 2244 - Seam U with planimeter.

Volumes calculated by multiplying by depth of lower contour boundary plus half distance between contours for triangular section between contours.

Seam dip varies from almost horizontal to 2-3 degrees. A dip of 8° has been calculated in one area adjacent to a fault.

Further evaluation of the deposit will require large diameter coring to provide larger samples to up-grade washability and seam quality data. (Larger core provides less contamination and less coal is washed out so that in general seam quality data is improved by 10-20%). In fill drilling of open hole drilling and electric logging is required to accurately define fault margins and up-grade the status of the reserve.

4. COAL SEAM DETAILS

As stated previously detailed bore core sections are provided as listed in plans accompanying the report. Cross sections are provided in Plans TASh 2220-2224. These sections include every hole which intersected coal.

Detailed seam correlation diagrams are provided in Plans TASh 2237 and 2238 while a detailed ply by ply correlation diagram is provided for Seam U in Plan TASh 2236.

In situ coal analyses are provided in Appendix 2, 3 and 4.

Coal quality data for each seam in each hole for each coal and stone ply, and less than 50% ash composites are listed in Table 4.

Variations in volatile matter, total moisture, fixed carbon, ash and specific energy are outlined on contoured plans TASh 2230-2235 inclusive.

This data is combined on a seam thickness weighted average and listed with ranges in Table 5 along with ultimate analyses, Ash Fusibility data, Forms of Sulphur and ash analysis.

Oxidised coal data from PT-030 and PT-031 was excluded from quality calculations.

Data for Coal Quality Specification is listed in Table 6.

The effects of weathering on coal quality is evident in PT-030 and 031. Heat affected coal occurs in PT-035 which is adjacent to a Tertiary diatreme intersected in PT-023.

COAL QUALITY DATA TABLE 4

BOREHOLE NO.	SEAM/ COMPOSITE	MOISTURE %	ASH %	VOLATILE MATTER %	FIXED CARBON %	SULPHUR %	SPECIFIC ENERGY (MJ/KG)	RELATIVE DENSITY	BORE CORE THICKNESS	SAMPLE NO. NB. All sample nos. from PT016 should be prefixed by 989
PT-010	SEAM W	6.0	59.2	8.5	26.3	0.09	8.90	1.95	3.70	40-51 incl.
	SEAM U_1	3.9	75.1	7.6	13.4	0.10	5.04	2.20	1.05	52-54 incl.
	SEAM U_2	5.4	50.6	10.6	33.4	0.26	13.92	1.81	5.21	55-75 incl.
	COMP W	2.2	28.9	11.1	57.8	0.13	22.74	1.64	1.0	43, 51
	COMP U_1	2.5	39.0	15.9	42.6	0.37	18.22	1.73	0.30	52
	COMP U_2	2.9	26.0	15.1	56.0	0.41	23.98	1.56	3.46	55,57,59,61, 63,65,67,69, 71,73
PT-011	SEAM U_2	5.5	48.2	12.9	33.4	0.23	14.72		3.00	76-94 incl.
	COMP U_2	3.1	31.9	15.7	49.3	0.32	21.60		2.04	76,78,80,87, 89,92,94
PT-012	SEAM W	5.4	54.8	11.1	28.7	0.22	11.80		3.85	101-127 incl.
	SEAM U_1	4.2	43.9	11.7	40.2	0.26	16.92		0.63	128-130 incl.
	SEAM U_2	3.8	41.5	11.8	42.9	0.26	17.94		4.51	134-157 incl.
	COMP W	4.2	40.0	13.4	42.4	0.32	18.28		2.31	96,101,103, 105,113,115, 117,119,121, 123,125,152 154,157
	COMP U_1	2.4	25.9	14.5	57.2	0.36	24.24		4.04	128,130,134, 136,138,140, 142,144,146, 148,150
	COMP U_2	2.7	30.0	13.1	54.2	0.48	22.76		0.33	158
PT-016	SEAM U	5.8	68.1	7.4	18.7	0.22	5.52		2.84	101-138 incl.
	COMP U	4.0	41.0	7.7	47.3	0.54	17.82		0.58	121,129,130, 132,134,135, 136,137
PT-018	SEAM W	3.5	71.6	5.6	19.3	0.11	6.24		0.93	139-150 incl.
	SEAM U_1	2.8	54.3	5.9	37.0	0.39	13.30		1.92	151-166 incl.
	SEAM U_2	3.5	54.5	6.3	35.7	0.85	12.36		0.42	167-171 incl.
	COMP W	3.7	30.1	6.8	59.4	0.28	22.06		0.125	141-143 incl.
	COMP U_1	3.1	37.6	6.3	53.0	0.58	18.90		1.35	152,153,154, 156,157,159, 161,162,163, 164,165,166
	COMP U_2	4.2	39.8	6.9	49.1	1.25	17.34		0.255	168,170

COAL QUALITY DATA TABLE 4

BOREHOLE NO.	SEAM/ COMPOSITE	MOISTURE %	ASH %	VOLATILE MATTER %	FIXED CARBON %	SULPHUR %	SPECIFIC ENERGY (MJ/KG)	RELATIVE DENSITY	BORE CORE THICKNESS	SAMPLE NO.
PT-024	SEAM T_2	0.9	58.2	9.9	31.0	0.24	14.04	1.88	0.19	200 *
PT-025	SEAM U	2.1	38.1	10.5	49.3	0.30	19.86		3.33	201-212 incl.
	COMP U	2.4	28.9	11.5	57.2	0.35	23.02		2.10	202,203,204, 206,209,210, 212
* PT-026	SEAM W	3.9	53.4	14.1	28.6	0.29	13.90		0.58	237-241 incl.
	SEAM U	7.0	53.5	12.6	26.9	0.30	12.40		2.19	213-236 incl.
	COMP W	4.0	43.1	16.7	36.2	0.35	17.82		0.45	237,239,241
	COMP U	5.0	33.3	17.3	44.4	0.55	21.32		0.97	216,219,220, 221,224,225, 226,234
PT-027	SEAM U	6.4	44.5	14.8	34.3	0.24	15.24		2.30	F/S
PT-030	SEAM U_1 A	11.0	50.2	6.6	32.2	0.29	10.94	2.00	0.35	243
	SEAM U_1 B	12.7	46.3	7.1	33.9	0.34	11.88	1.94	0.18	244
	SEAM U_1 C	11.0	61.5	6.1	21.4	0.19	6.74	2.10	0.56	245
	SEAM U_1 D	1.5	88.8	2.3	7.4	0.04	2.48	2.49	0.30	246
PT-031	SEAM U_1	8.2	75.0	6.0	10.8	0.29	3.32	2.25	3.68	247-274 incl.
	SEAM T_1	8.1	64.9	6.8	20.2	0.26	6.60	2.19	0.90	276-278 incl.
	SEAM T_2	4.6	74.3	4.3	16.8	0.24	5.30	2.32	0.43	279-281 incl.
	COMP U_1 (A)	8.5	68.4	6.7	16.4	0.40	5.54	2.16	1.17	247,249,251, 254,256,258, 260,262,264, 265
	COMP U_1 (B)	6.6	71.1	5.4	16.9	0.45	4.92	2.23	1.23	266,267,268, 270,272,273
PT-032	SEAM U_1	4.1	36.9	13.3	45.7	0.33	19.48	1.67	2.48	285-296 incl.
	SEAM U_2	2.3	50.5	12.7	34.5	0.28	14.60	1.87	0.45	297,298
	SEAM U_2	2.6	52.2	12.5	32.7	0.31	13.86	1.87	0.30	300,173
	SEAM U_2	2.0	37.1	16.1	44.8	0.42	19.16	1.71	0.78	174,177
	SEAM T_1	3.7	38.6	9.8	47.9	0.34	19.28	1.69	1.21	178-180 incl.
	SEAM T_2	4.6	39.5	10.0	45.9	0.36	18.24	1.71	0.55	182-186 incl.
	COMP U_1	3.3	28.7	15.0	53.0	0.38	22.74	1.59	2.13	287,288,289, 291,292,294, 295,296

* Detailed correlation suggests that Seam W could be Seam V.

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COAL QUALITY DATA TABLE 4

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BOREHOLE NO.	SEAM/ COMPOSITE	MOISTURE %	ASH %	VOLATILE MATTER %	FIXED CARBON %	SULPHUR %	SPECIFIC ENERGY (MJ/KG)	RELATIVE DENSITY	BORE CORE THICKNESS	SAMPLE NO.
PT-034	SEAM U_1	2.7	46.6	11.7	39.0	0.34	16.02	1.76	1.63	763-773 incl.
	SEAM T_2	2.5	49.3	10.2	38.0	0.34	15.28	1.83	0.57	774-779 incl.
	COMP U_1	2.3	27.1	13.4	57.2	0.47	23.42	1.54	1.22	764,766,769, 771,772,773
	COMP T_2	3.0	26.4	12.1	58.5	0.51	23.60	1.58	0.39	774,775,776, 779
PT-035	SEAM W	1.7	26.0	13.2	59.1	0.56	24.00	1.58	0.67	187,188,189
	SEAM V	3.2	45.7	9.7	41.4	0.32	16.38	1.78	1.30	190-194 incl.
	SEAM U_2	3.1	30.1	7.7	59.1	0.37	22.26	1.63	0.69	195,196
	SEAM U_2	3.4	65.7	5.9	25.0	0.19	9.10	2.11	0.08	198
	SEAM U_2	3.7	39.1	8.6	48.6	0.47	18.22	1.83	0.50	199
	COMP V_A	2.8	37.5	10.6	49.1	0.37	19.44	1.69	1.13	190,191,192, 194
PT-036	SEAM W	2.8	28.7	12.9	55.6	0.39	22.50	1.63	0.62	706,707
	SEAM VB	3.7	31.1	10.7	54.5	0.56	22.20	1.61	0.53	709-712 incl.
	SEAM U	4.7	52.1	8.7	34.5	0.40	13.60	1.85	0.35	713,714,715
	SEAM T_1	2.6	59.0	5.8	32.6	0.30	12.50	1.98	0.84	717-721 incl.
	SEAM T_2	3.7	71.1	5.4	19.8	0.14	7.10	2.19	0.40	722,723
	COMP VB	3.7	28.5	10.7	57.1	0.57	23.26	1.59	0.53	709-712 incl.
	COMP U	3.1	37.6	9.2	50.1	0.55	20.20	1.69	0.18	713,715
	COMP T_1	3.3	29.4	7.2	60.1	0.63	23.24	1.64	0.39	718,720,721
	COMP T_2	1.4	45.6	8.9	44.1	0.43	17.20	1.85		723
PT-037	SEAM U_1	3.8	44.6	12.2	39.4	0.22	16.06		2.20	F/S
	SEAM U_2	3.5	43.1	11.0	42.4	0.22	17.38		2.80	F/S
PT-038	SEAM VB	2.9	41.1	13.5	42.5	0.32	17.98	-	0.77	F/S
	SEAM U	2.7	46.9	10.5	39.9	0.31	16.72	-	2.13	F/S
PT-039	SEAM U_1	2.8	40.3	11.3	45.6	0.25	18.56	1.68	1.25	790-800 incl.
	SEAM U_2	4.6	45.5	8.9	41.0	0.23	16.08	1.16	3.15	
	SEAM U_3	2.6	29.8	10.0	57.6	0.39	22.88	1.61	0.29	828-830 incl.
	SEAM U_4	2.6	21.0	9.6	66.8	0.49	26.20	1.52	0.35	831-834 incl.
	COMP U_1	2.3	25.9	13.1	58.7	0.32	23.78	1.55	0.93	790,792,793, 795,800
	COMP U_2	3.1	26.6	11.2	59.1	0.34	23.70	1.57	2.35	801,802,804, 808,809,810, 812,814,816, 818,819,820, 822,823,825, 826,827

COAL QUALITY DATA TABLE 4

BOREHOLE NO.	SEAM/ COMPOSITE	MOISTURE %	ASH %	VOLATILE MATTER %	FIXED CARBON %	SULPHUR %	SPECIFIC ENERGY (MJ/KG)	RELATIVE DENSITY	BORE CORE THICKNESS	SAMPLE NO.
PT-040	SEAM VB	4.0	40.6	9.7	45.7	0.55	18.20	1.72	0.12	838
	SEAM U_2	1.9	51.5	10.2	36.4	0.31	14.42	1.87	0.07	840
	SEAM U_2	2.5	29.1	11.2	57.2	0.74	22.78	1.59	0.11	842

PARAMETER	SEAM W	SEAM V	SEAM U	SEAM T
	MEAN (RANGE)	MEAN (RANGE)	MEAN (RANGE)	MEAN (RANGE)
Total Moisture %	5.0 (1.7-6.0)	3.4 (2.9-4.0)	3.7 (2.1-7.0)	3.4 (0.9-4.6)
Ash %	54.4 (26.0-71.6)	50.8 (31.1-75.1)	39.2 (29.1-65.7)	49.4 (38.6-71.1)
Volatile Matter %	10.1 (5.6-14.1)	10.0 (7.6-13.5)	11.2 (5.9-14.8)	8.2 (5.4-10.0)
* Volatile Matter %	24.9	21.8	19.6	17.4
Fixed Carbon %	30.6 (19.3-59.1)	35.8 (13.4-54.5)	35.1 (25.0-66.8)	39.0 (19.8-47.9)
Sulphur %	0.20 (0.09-0.56)	0.30 (0.10-0.56)	0.26 (0.19-0.85)	0.30 (0.14-0.36)
Specific Energy %(MJ/Kg)	11.81 (6.24-24.00)	14.42 (5.04-22.20)	14.54 (9.1-26.2)	15.48 (7.10-19.28)
Phosphorus %	0.006 (0.005-0.008)	0.0007 -	0.006 (0.004-0.007)	
* Carbon (Organic) %	78.7 (76.8-80.3)	71.4 -	82.1 (80.3-83.9)	
* Hydrogen %	4.50 (4.24-4.75)	5.05 -	4.5 (4.33-4.59)	
* Nitrogen %	1.55 (1.52-1.57)	1.71 -	1.64 (1.52-1.72)	
* Sulphur %	0.41 (0.26-0.55)	0.14 -	0.53 (0.48-0.59)	
* Oxygen %	15.6 (14.0-17.2)	21.7 -	11.30 (9.7-12.9)	
Carbonates (CO_2) %	1.45 (1.12-1.77)	1.49 -	1.72 (1.67-1.82)	
Forms of Sulphur				
Pyritic %	0.09 (0.07-0.10)	0.07 -	0.09 (0.08-0.10)	
Sulphate %	0.01 (NIL)	0.01 -	0.01 (NIL)	
Organic %	0.07 (0.02-0.11)	0.03 -	0.17 (0.13-0.18)	
Chlorine %	0.04 (0.02-0.05)	0.01 -	0.02 (0.01-0.02)	

* Dry, Ash Free Basis

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Number of Proximate Analysis & Specific Energy Sample Points	6	5	14	5
Other Analyses	2	1	3	-

PARAMETER	SEAM W	SEAM V	SEAM U	SEAM T
	MEAN (RANGE)	MEAN (RANGE)	MEAN (RANGE)	MEAN (RANGE)
Hardgrove Grindability Index	74 (NIL)	103 -	84 (83-87)	
Ash Fusibility Temps (Reducing atmosphere)				
Deformation °C	1240 (1220-1260)	1230 -	1245 (1210-1290)	
Spherical °C	1335 (1330-1340)	1320 -	1285 (1270-1330)	
Hesiphere °C	1365 (1360-1370)	1340 -	1305 (1280-1350)	
Flow °C	1455 (1450-1460)	1430 -	1395 (1350-1460)	
Arsenic as $AS_2 O_3$ (ug/g)	1.05 (0.5-1.6)	0.6 (NIL)	1.05 (0.6-1.5)	
Acid Soluble Alkali (% Na)	0.032	0.026	0.038	
Silicon as SiO_2 %	59.3	66.7	59.6	
Aluminium as Al_2O_3 %	26.0	20.0	23.7	
Iron as Fe_2O_3	3.48	3.46	3.8	
Calcium as CaO %	4.79	3.19	6.74	
Magnesium as MgO %	3.69	2.23	2.9	
Titanium as TiO_2 %	0.77	1.18	0.82	
Sodium as Na_2O %	0.60	1.24	0.55	
Potassium as K_2O %	1.74	2.49	1.61	
Phosphorus as P_2O_5 %	0.03	0.02	0.03	
Manganese as Mn_3O_4 %	0.15	0.14	0.16	
Sulphur as SO_3 %	0.26	0.20	0.48	
Barium as BaO %	0.03	0.04	0.03	

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TABLE 6

COAL QUALITY SPECIFICATION

Coal Properties	Units	Average
Screen size	mm	minus (75mm) (max.
Proportion passing 3mm screen	%	25
Total moisture (at point of purchase)	%	10.0
Inherent moisture (air dried basis)	%	2.7
Ash at point of Purchase	%	28.0 (a.d.b.)
Volatile Matter at point of purchase (a.d.b./d.a.f)	%	14.0/ 20.20
Fixed Carbon at point of purchase (a.d.b.)	%	55.3
Sulphur - total at point of purchase	%	0.26
Sulphur - pyritic at point of purchase	%	0.09
Hardgrove Grindability Index		84
YGP Abrasion Index		N.D.
Quartz content of Mineral Matter	%	N.D.
Gross Specific Energy at point of purchase	MJ/kg	21.45
Ash Fusion Characteristics - at reducing atmosphere conditions		
Initial Deformation	°C	1245
Softening	°C	1285
Hemisphere	°C	1305
Flow	°C	1395
Fly Ash Resistivity	ohm-cm	N.D.
Ultimate analysis (dry ash free basis)		
Carbon	%	82.1
Hydrogen	%	4.5
Oxygen	%	11.3
Nitrogen	%	1.64
Sulphur	%	0.53
Phosphorus	%	0.009
Chlorine	%	0.003
Analysis of Ash Constituents		
SiO_2	%	59.6
Al_2O_3	%	23.7
Fe_2O_3	%	3.8
TiO_2	%	2.9
CaO	%	6.74
MgO	%	2.9

TABLE 6

COAL QUALITY SPECIFICATION

Coal Properties	Units	Average
Analysis of Ash Constituents (cont'd)		
Na_2O	%	0.82
K_2O	%	1.61
P_2O_5	%	0.03
Mn_3O_4	%	0.48

NB. Raw Coal Ranges are quoted in Table 5

N.A. not determined

5. COAL PREPARATION DATA

Coal washability data is provided in Appendix 4 and washability curves are shown graphically in the accompanying plans TASH 2225-2229.

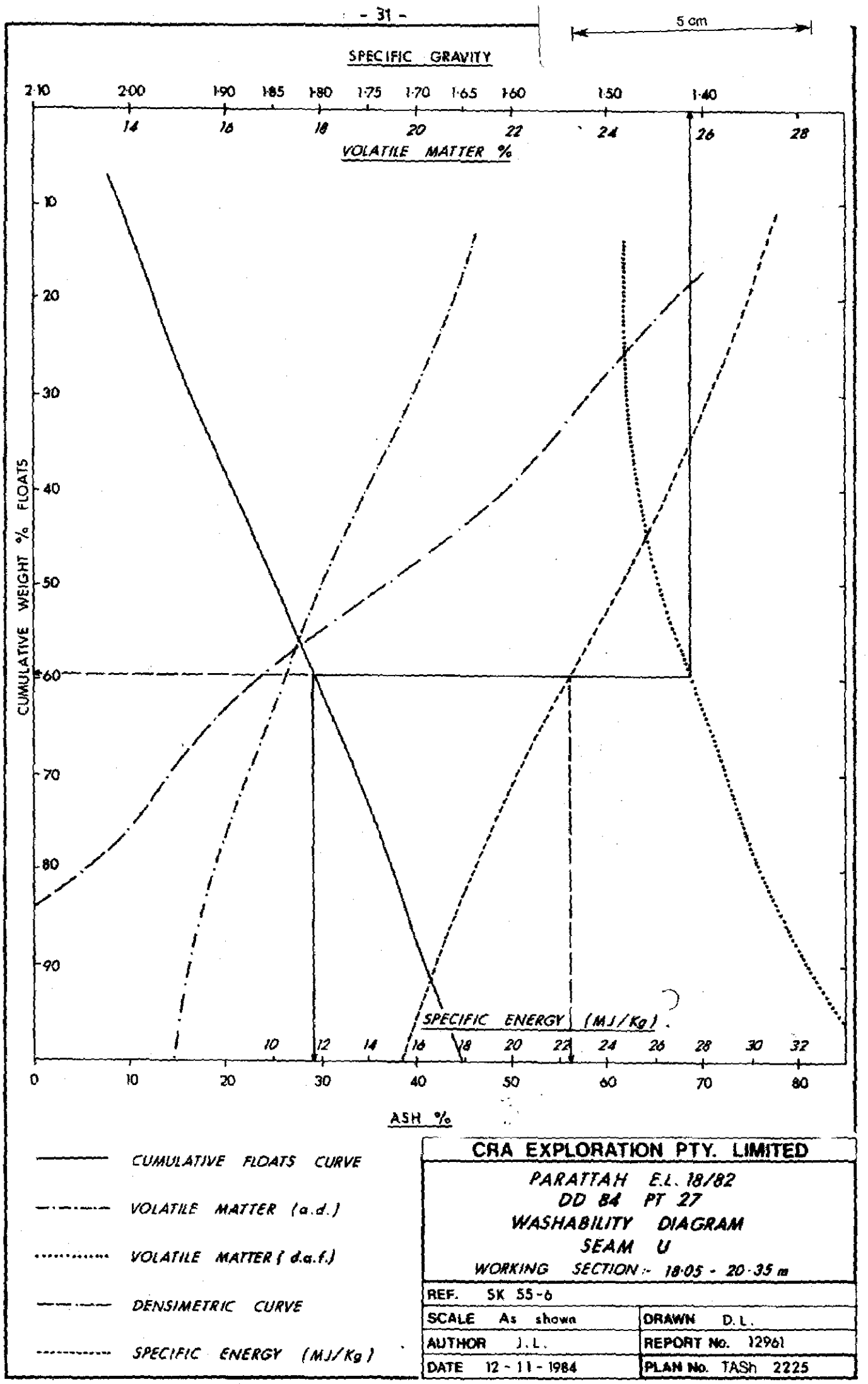
The following holes have been used:-

PT 27	Seam U	18.05 - 20.35m
PT 37	Seam U_1	16.82 - 19.07m
PT 37	Seam U_2	22.46 - 25.26m
PT 38	Seam U	29.39 - 31.52m

This data has been used to calculate the Coal Quality Specification listed in Table 6.

An interpretation on a 28% ash (a.d.b.) product is indicated on each diagram TASh 2225 - 2229.

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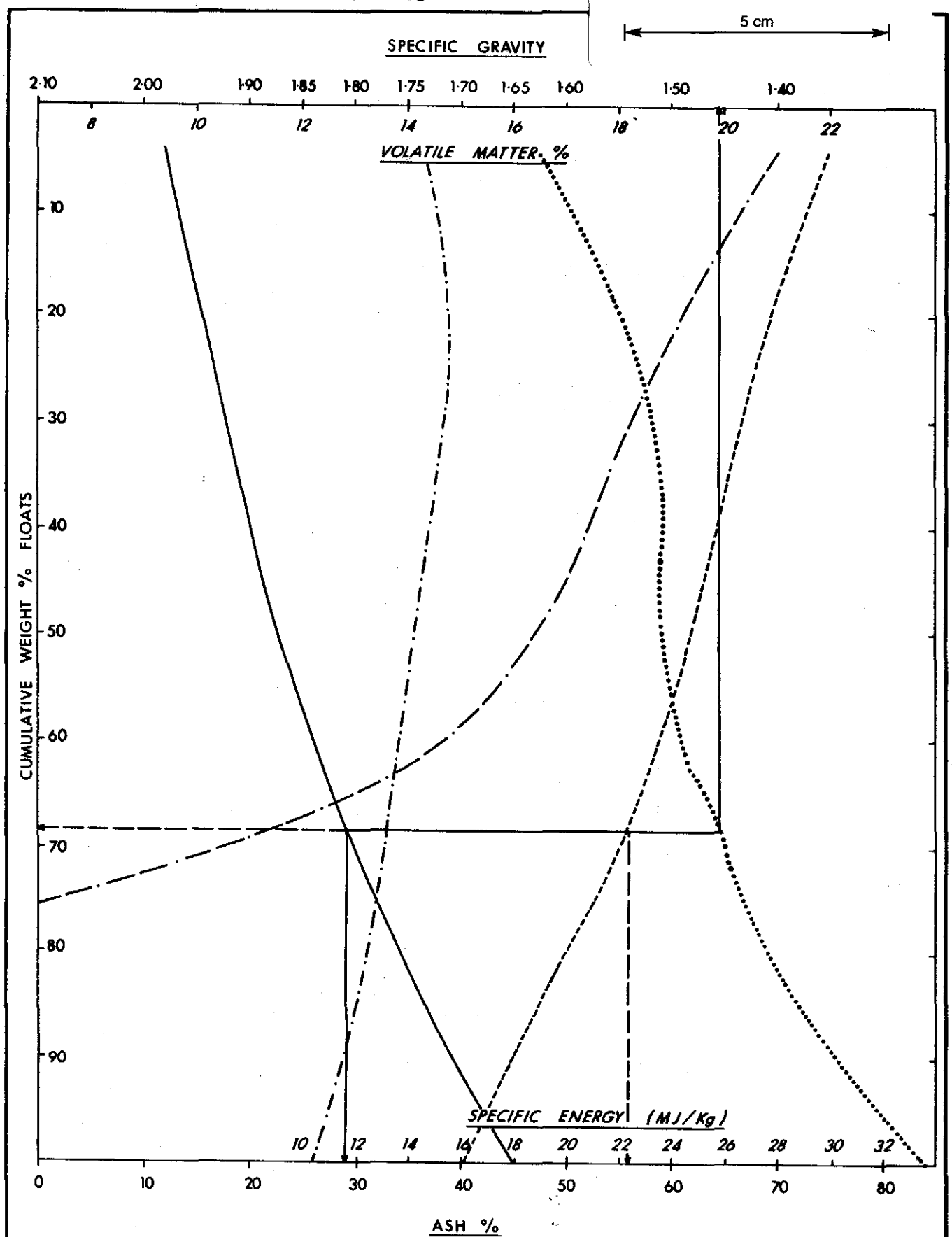
CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82
DD 84 PT 27
WASHABILITY DIAGRAM
SEAM U
WORKING SECTION :- 18·05 - 20·35 m

REF. SK 55-6	
SCALE As shown	DRAWN D. L.
AUTHOR J. L.	REPORT No. 12961
DATE 12 - 11 - 1984	PLAN No. TASh 2225

033

270034



CUMULATIVE FLOATS CURVE

VOLATILE MATTER (a.d.)

VOLATILE MATTER (d.a.f.)

DENSIMETRIC CURVE

SPECIFIC ENERGY (MJ/Kg)

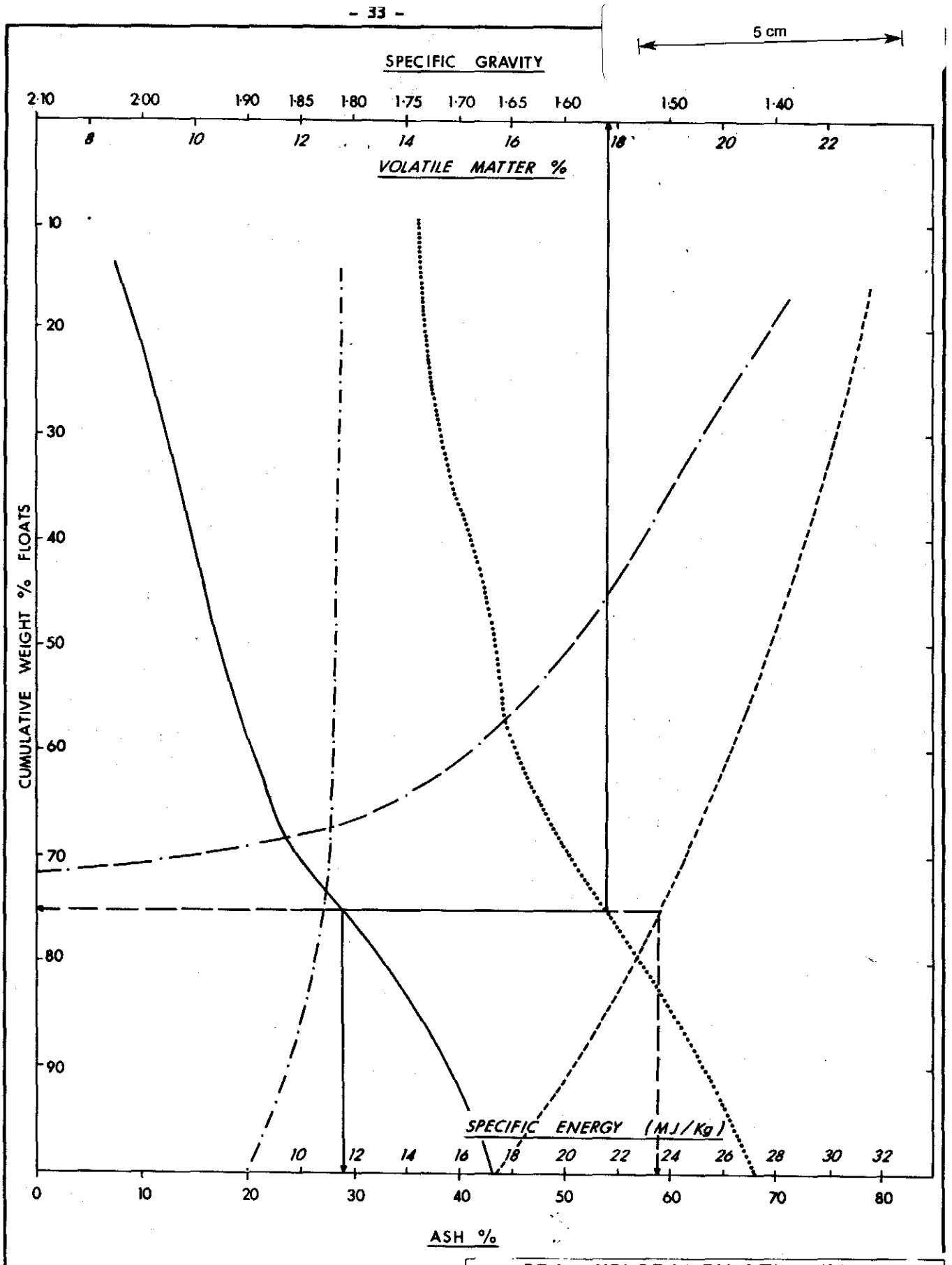
CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82
DD 84 PT 37
WASHABILITY DIAGRAM
SEAM U1
WORKING SECTION:- 16·87 - 19·07m

REF. SK 55-6	
SCALE As shown	DRAWN D. L.
AUTHOR J. L.	REPORT No. 12961
DATE 12 - 11 - 1984	PLAN No. TASh 2226

034

270035



CUMULATIVE FLOATS CURVE

VOLATILE MATTER (a.d.)

VOLATILE MATTER (d.a.f.)

DENSIMETRIC CURVE

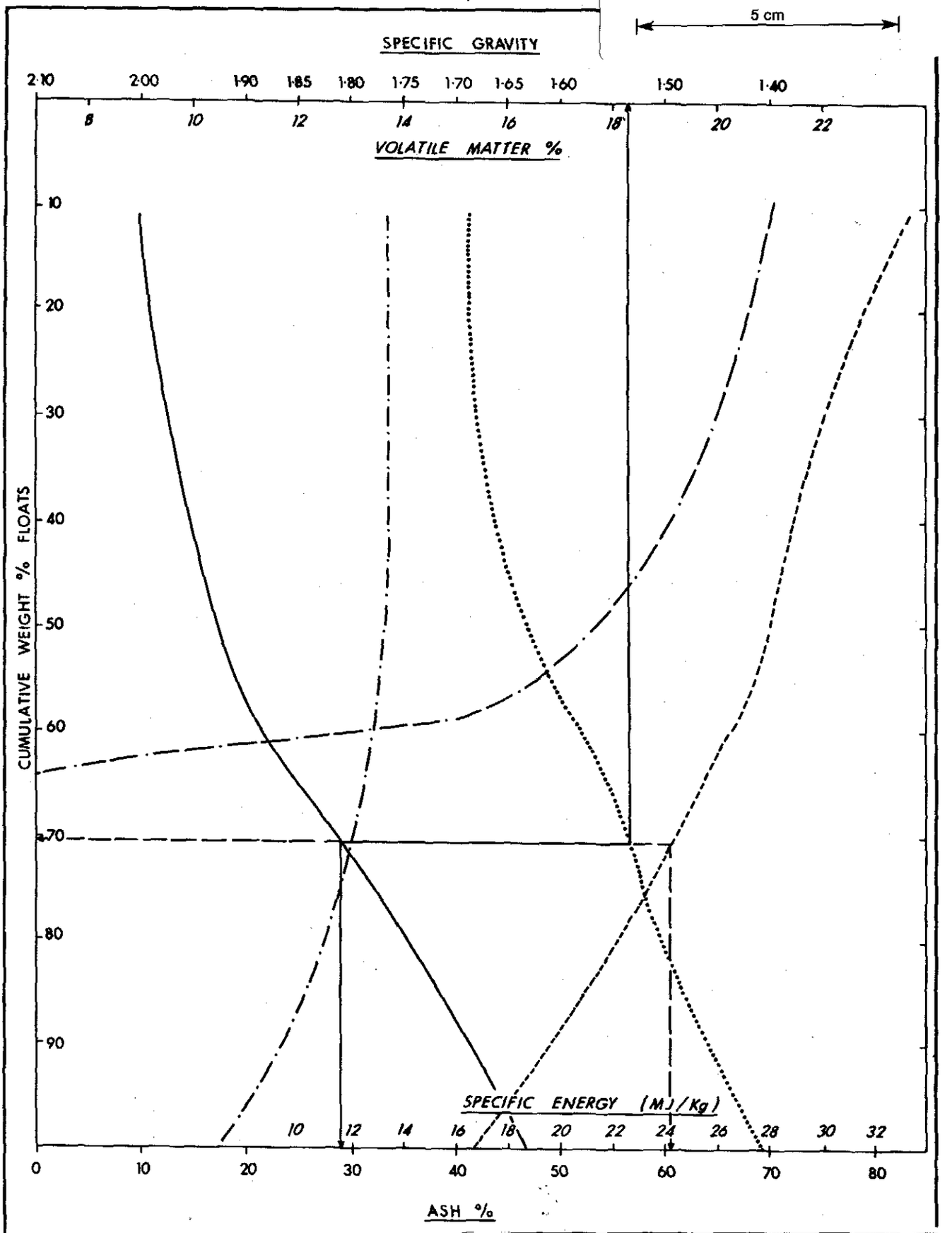
SPECIFIC ENERGY (MJ/Kg)

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82
DD 84 PT 37
WASHABILITY DIAGRAM
SEAM U2
WORKING SECTION :- 22·46 - 25·26 m

REF. SK 55-6	
SCALE As shown	DRAWN D. L.
AUTHOR J. L.	REPORT No. 12961
DATE 12 - 11 - 1984	PLAN No. TASh 2227

035
270036



CUMULATIVE FLOATS CURVE

VOLATILE MATTER (a.d.)

VOLATILE MATTER (d.a.f.)

DENSIMETRIC CURVE

SPECIFIC ENERGY (MJ/Kg)

CRA EXPLORATION PTY. LIMITED

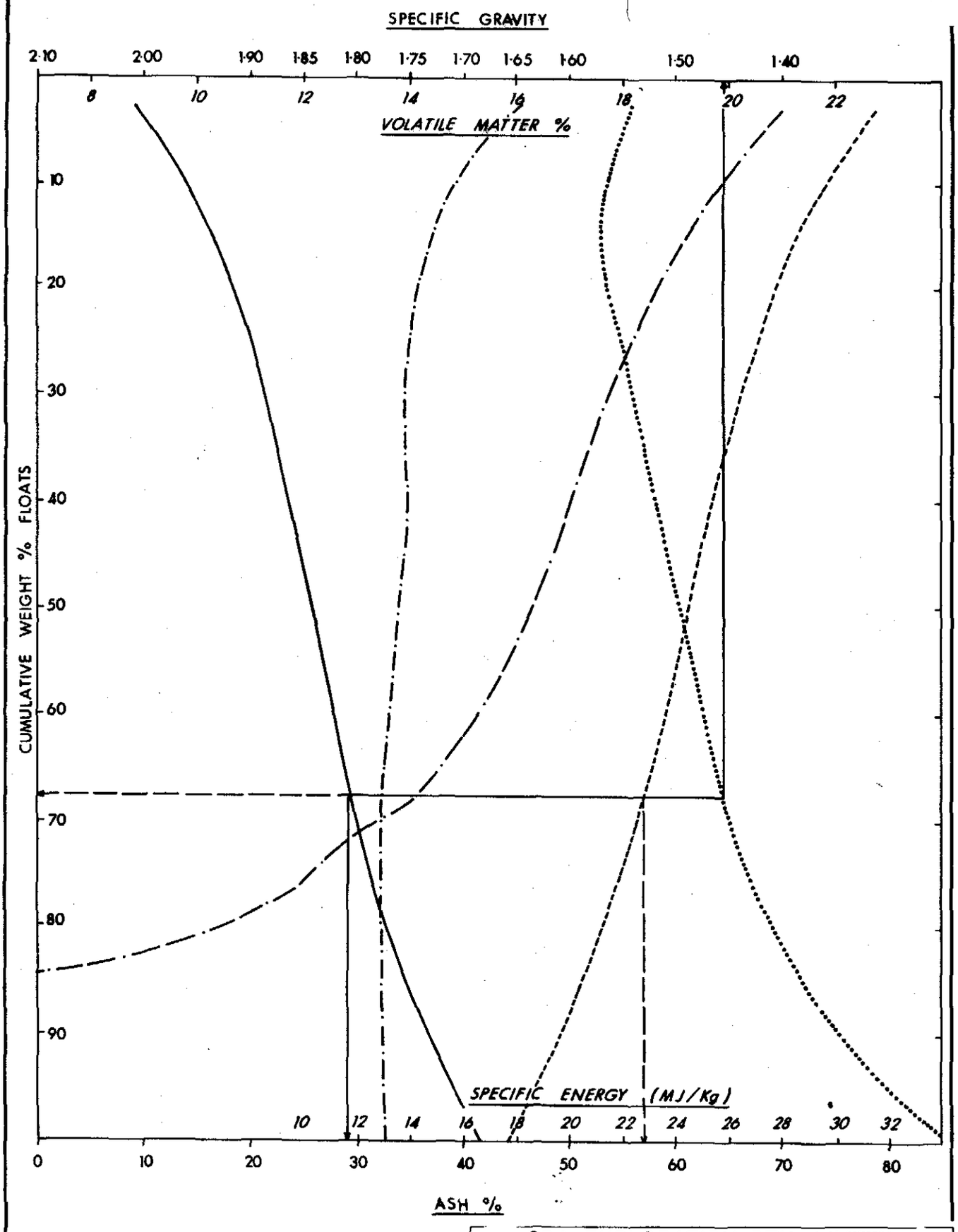
PARATTAH E.L. 18/82
DD 84 PT 38
WASHABILITY DIAGRAM
SEAM U
WORKING SECTION :- 29·39 - 31·52 m

REF. SK 55-6	
SCALE As shown	DRAWN D. L.
AUTHOR J. L.	REPORT No. 12961
DATE 12 - 11 - 1984	PLAN No. TASh 2228

036

2700037

5 cm



CUMULATIVE FLOATS CURVE

VOLATILE MATTER (a.d.)

VOLATILE MATTER (d.a.f.)

DENSIMETRIC CURVE

SPECIFIC ENERGY (MJ/Kg)

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82
DD 84 PT 38
WASHABILITY DIAGRAM
SEAM VB
WORKING SECTION :- 13·15 - 13·92 m

REF. SK 55-6	
SCALE As shown	DRAWN D. L.
AUTHOR J. L.	REPORT No. 12961
DATE 12 - 11 - 1984	PLAN No. TASh 2229

03'

270038

6. GROUND WATER - YORK PLAINS DISTRICT

Limited water bore records stored by the Department of Mines reveal the average depth of the water table to be - 20m, and that bore pump capacities range 120 to 6000 gallons/hour (0.15 to 7.6 l/sec), and average ~ 300 gallons/hour (0.40 l/sec).

All bores recorded have been completed at depths of less than 75m, and flow rates may be expected to improve marginally with deeper drilling.

On a state wide basis, the Triassic age sediments are the least prospective for ground water, being more likely to produce dry bores (ie 50% success rate) and the water when found is more likely to have a high salinity and to be present in small quantities.

The lithic sandstone host to the coal measures at York Plains cannot be expected to have any appreciable intergranular porosity, and any water present will be as a result of local fracture porosity.

The best prospects for ground water are, in general, the dolerite of Jurassic age, and basalt of Tertiary age.

038

270039

7. KEYWORDS

Coal, Sub-Bituminous, Triassic, Reserves, Drilling, Diamond, Proximate Analyses, Washability Data.

Location: Oatlands SK55-6

035

270040

8. REFERENCES

Forsyth, S.M. 1984. Exploratory Report for Oatlands 1:50 000 Geological Sheet Department of Mines, Tasmania

Summons, T.G. 1984. Parattah EL 18/82, Kempton EL 19/82 and Jericho EL 20/82. Exploration Report for the Year Ending 30th September, 1984. Vol. 1-3. CRAE Report No. 12862.

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TASh 2250	York Plains Area. Property Locations	In Text Fig. 2 page 7
TASh 2225	Parattah EL 18/82 DD84 PT27 Washability Diagram Seam U 18.05-20.35m	In Text Page 31
TASh 2226	Parattah EL 18/82 DD84 PT37 Washability Diagram Seam U 16.87-19.07m	In Text Page 32
TASh 2227	Parattah EL 18/82 DD84 PT37 Washability Diagram Seam U_2 22.46-25.26m	In Text Page 33
TASh 2228	Parattah EL 18/82 DD84 PT38 Washability Diagram Seam U 29.39-31.52	In Text Page 34
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TASh 2148	Parattah EL 18/82 DD84 PT11 Graphic log and seam section	Volume 2
TASh 2149	Parattah EL 18/82 DD84 PT12 Graphic log and seam section	Volume 2
TASh 2186	Parattah EL 18/82 DD84 PT14 Graphic log and seam section	Volume 2
TASh 2194	Parattah EL 18/82 DD84 PT15 Graphic log and seam section	Volume 2
TASh 2151	Parattah EL 18/82 DD84 PT16/17 Graphic log and seam section	Volume 2
TASh 2152	Parattah EL 18/82 DD84 PT18 Graphic log and seam section	Volume 2
TASh 2177	Parattah EL 18/82 DD84 PT19 Graphic log and seam section	Volume 2

Plan No.	Title	Location
TASh 2187	Parattah EL 18/82 DD84 PT20 Graphic log and seam section	Volume 2
TASh 2195	Parattah EL 18/82 DD84 PT21 Graphic log and seam section	Volume 2
TASh 2178	Parattah EL 18/82 DD84 PT22 Graphic log and seam section	Volume 2
TASh 2196	Parattah EL 18/82 DD84 PT23 Graphic log and seam sections	Volume 2
TASh 2188	Parattah EL 18/82 DD84 PT24 Graphic log and seam section	Volume 2
TASh 2153	Parattah EL 18/82 DD84 PT25 Graphic log and seam section	Volume 2
TASh 2179	Parattah EL 18/82 DD84 PT26 Graphic log and seam section	Volume 2
TASh 2189	Parattah EL 18/82 DD84 PT27 Graphic log and seam section	Volume 2
TASh 2197	Parattah EL 18/82 DD84 PT28 Graphic log and seam section	Volume 2
TASh 2190	Parattah EL 18/82 DD84 PT30(+29) Graphic log and seam section	Volume 2
TASh 2191	Parattah EL 18/82 DD84 PT31 Graphic log and seam section	Volume 2
TASh 2198	Parattah EL 18/82 DD84 PT32 Graphic log and seam section	Volume 2
TASh 2199	Parattah EL 18/82 DD84 PT33 Graphic log and seam section	Volume 2
TASh 2200	Parattah EL 18/82 DD84 PT34 Graphic log and seam section	Volume 2
TASh 2192	Parattah EL 18/82 DD84 PT35 Graphic log and seam section	Volume 2
TASh 2001	Parattah EL 18/82 DD84 PT36 Graphic log and seam sections	Volume 2
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Plan No.	Title	Location
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TASh 2204	Parattah EL 18/82 DD84 PT40 Graphic log and seam section	Volume 2
TASh 2180	Parattah EL 18/82 Mines Department Stratigraphic Hole Borehole YP2 Sheet 1 Graphic log and seam section	Volume 2
TASh 2181	Parattah EL 18/82 Mines Department Stratigraphic Hole Borehole YP2 Sheet 2 Graphic log and seam section	Volume 2
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TASh 2208	Parattah EL 18/82 DD84 PT20 Geophysical logs	Volume 2
TASh 2209	Parattah EL 18/82 DD84 PT25 Geophysical logs	Volume 2
TASh 2210	Parattah EL 18/82 DD84 PT30 Geophysical logs	Volume 2
TASh 2211	Parattah EL 18/82 DD84 PT31 Geophysical logs	Volume 2
TASh 2212	Parattah EL 18/82 DD84 PT32 Geophysical logs	Volume 2
TASh 2213	Parattah EL 18/82 DD84 PT34 Geophysical logs	Volume 2
TASh 2214	Parattah EL 18/82 DD84 PT35 Geophysical logs	Volume 2
TASh 2215	Parattah EL 18/82 DD84 PT36 Geophysical logs	Volume 2
TASh 2216	Parattah EL 18/82 DD84 PT37 Geophysical logs	Volume 2
TASh 2217	Parattah EL 18/82 DD84 PT38 Geophysical logs	Volume 2

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TASh 2239	York Plains EL 18/82 Geology Plan	Volume 3
TASh 2241	York Plains EL 18/82 Seam W Structure Contours on top of Seam	Volume 3
TASh 2240	York Plains EL 18/82 Seam W Overburden Isopachs	Volume 3
TASh 2242	York Plains EL 18/82 Seam VA/VB Structure Contours on top of Seam	Volume 3
TASh 2243	York Plains EL 18/82 Seam U Structure Contours on roof of Seam	Volume 3
TASh 2244	York Plains EL 18/82 Seam U Isopachs/overburden/interburden	Volume 3
TASh 2245	York Plains EL 18/82 Seam U Isopachs	Volume 3
TASh 2236	Parattah EL 18/82 York Plains Seam U Ply Correlation Diagram	Volume 3
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TASh 2220	Parattah EL 18/82 Borehole Cross Sections PT 10-12, PT21-35	Volume 3
TASh 2221	Parattah EL 18/82 Borehole Cross Sections PT35-26	Volume 3
TASh 2222	Parattah EL 18/82 Borehole Cross Sections PT 28-30, PT 20-31	Volume 3

Plan No.	Title	Location
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TASh 2224	Parattah EL 18/82 Borehole Cross Section PT 40-06	Volume 3
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TASh 2248	Parattah EL 18/82 York Plains Seam U Resource Block area and tonnage	Volume 3
TASh 2230	Parattah EL 18/82 Seam U Fixed Carbon % (air dried)	Volume 3
TASh 2231	Parattah EL 18/82 Seam U Specific Energy (air dried)	Volume 3
TASh 2232	Parattah EL 18/82 Seam U Volatile Matter % (air dried)	Volume 3
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TASh 2252	Parattah EL 18/82 DD84 PT08 Graphic log and seam section	Volume 3
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TASh 2255	Parattah EL 18/82 DD84 PT13 Graphic log and seam section	Volume 3
TASh 2256	Jericho El 20/82 DD84 JC12 Graphic log and seam section	Volume 3
TASh 2257	Jericho EL 20/82 DD84 JC13 Graphic log and seam section	Volume 3

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Plan No.	Title	Location
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APPENDIX 1

WRITTEN BORE HOLE LOGS

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270050

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 538360.0mE 5320010.8mN AZIMUTH NA DRILLERS OVERLAND COMMENCED 7.9.84 DEPTH TD 46.3m HOLE No. DD84 PT-10

RL COLLAR 367.20 INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 7.9.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACTRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	1.5	1.5	100	HQ	0-0.3: Alluvium - sandy loam (Quarternary)															
1.5	2.8	1.3	100	"	0.3-7.95: Sandstone, lithic, mg to 5m, cg 5-7.9m, CPC from	~~MW/HW~~	~~50-200mm~~													
2.8	5.9	2.1	68	NQ	6-7.9m															
5.9	7.7	1.45	80	"	7.95-8.00: Mudstone, dark grey	SW														
7.7	8.2	0.45	90	"	8.00-8.20: Coal, dull, 1% B (Dmb), with 40mm clay band,	MW		40	8.00	8.20	0.20	2.04	58.2							
8.2	8.4	0.2	100	"	oxidized															
					8.20-8.34: Mudstone, grey/buff, shaley	MW		41			0.14	2.22	81.8							
					8.34-8.60: Coal, heavy dull & carbonaceous mudstone	MW		42			0.26	2.09	76.4							
8.4	9.0	0.6	100	"	8.60-8.70: Coal, dull 3% B (Dmb), oxidized	MW		43			0.10	1.72	41.2							
					8.70-8.80: Mudstone, buff, shaley	MW		44			0.10	2.18	74.5							
9.0	9.3	0.3	100	"	8.80-9.65: Coal, dull, 2% B (Dmb), very broken and with	MW		45			0.85	1.99	61.3	Samples 40-51 inclusive:						
9.3	9.6	0.2	66	"	orange zeolite, in cleats oxidized									1.95	59.2	6.0	8.5	0.09	8.90	26.3
9.6	9.7	0.05	50	"	9.65-9.95: Mudstone, grey/buff, orange zeolite	MW		46			0.30	2.30	83.7							
9.7	10.2	0.5	100	"	9.95-10.30: Coal, heavy dull, soft, oxidized	MW		47			0.35	1.99	67.2							
					10.30-10.38: Mudstone, buff to brown	SW		48			0.08	2.32	82.9	Plies 43 and 51						
10.2	10.7	0.5	100	"	10.38-10.70: Coal, heavy dull, 5% B (Dmb), including									1.64	28.9	2.2	11.1	0.13	22.74	57.8
					50mm stone band	~~SW/P~~		49			0.32	1.93	57.1							
10.7	10.8	0.05	50	"	10.70-10.80: Mudstone, carbonaceous - ? contam. with															
					coal fragments (-hybrid sample)	~~SW/P~~		50			0.10	1.97	70.6							
10.8	11.70	0.9	100	"	10.80-11.70: Coal, dull, 10-20% B (Db), calcite in	~~F~~		~~51~~	~~10.80~~	~~11.70~~	~~0.90~~	~~1.63~~	~~27.7~~							
					cleats and joints, △ joints ≃ 50°															
					11.70-11.90: Mudstone, buff to grey, soft							(BOCO ≃ 10-80m)								
11.70	12.40	0.4	57	"	11.90-12.10: Siltstone, carbonaceous		200-800mm													
					12.10-12.40: Core loss															
12.40	12.80	0.35	87	"	12.40-12.90: Siltstone, carbonaceous		200-800mm													
12.80	13.00	0.2	100	"	12.90-13.50: Mudstone, grey/brown		200-800mm													
13.0	14.5	1.4	93	"	13.50-14.98: Siltstone, minor 1B's of mudstone		200-800mm													
14.5	16.0	1.5	100	"	14.98-19.80: Sandstone, lithic, fg, and carbonaceous		200-800mm													
16.0	18.4	2.2	92	"	from 16.3-16.5m		200-800mm													

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270051

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME PARATTAH No.

PLAN – MAP REFERENCE

CO-ORDINATES AZIMUTH NA DRILLERS OVERLAND COMMENCED 7.9.84 DEPTH TD 46.3m HOLE No. DD84 PT-10

RL COLLAR INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 7.9.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
18.4	21.4	2.95	98	NQ	19.80-20.00: Wood, both silicified and carbonized,		200-800mm													
21.4	24.4	2.95	98	"	overlying tuffaceous siltstone/fg lithic sandstone		200-800mm													
24.4	25.8	1.4	100	"	20.0-32.3: Sandstone, lithic, mg ± coaly debris															
25.8	27.4	1.2	75	"	carbonaceous mudstone CPC 29.15-29.25m		200-800mm													
27.4	29.4	2.0	100	"	grey mudstone CPC 32.0-32.3m, 29.4-30.2 --	? SW														
29.4	32.4	2.65	88	"	32.3-32.4: Mudstone, grey/green															
32.4	33.0	0.6	100	"	32.4-32.58: Crushed zone in grey mudstone (△?)															
					32.58-32.90: Mudstone, carbonaceous + dark grey															
33.0	33.3	0.2	66	"	32.90-33.20: Coal, dull, 5% B (Dmb)			52	32.90	33.20	0.30	1.73	39.0	1.73	39.0	2.5	15.9	0.37	18.22	42.6
33.3	33.45	0.15	100	"	33.20-33.40: Mudstone, carbonaceous			53			0.20	2.33	83.1	Samples 52-54 inclusive						
33.45	33.55	0.10	100	"	33.40-33.95: Siltstone, carbonaceous, banded			54	33.40	33.95	0.55	2.40	86.5	2.2	75.1	3.9	7.6	0.03	5.04	13.4
33.55	33.80	0.25	100	"	33.95-34.37: Mudstone, grey, laminated															
33.80	34.15	0.35	100	"	34.37-35.15: Siltstone, carbonaceous laminae															
34.15	35.00	0.85	100	"	35.15-35.30: Mudstone, grey, laminated															
					35.30-35.48: Crushed zone, in grey mudstone (△≈ 60°)															
35.00	36.20	1.15	96	"	35.48-36.52: Mudstone, grey/buff/dark grey															
36.20	36.30	0.10	100	"	thin coal (80% B), 35.55-35.56m															
					36.52-37.10: Siltstone, carbon. laminae															
					37.10-37.30: Crushed zone in grey mudstone (△ ≈ 40°)															
					37.70-37.50: Siltstone															
36.3	37.6	1.25	96	"	37.50-37.80: Mudstone, pale brown, broken															
					37.80-37.88: Coal, dull, < 5% B (Dmb)			55	37.80	37.88	0.08	1.68	29.8							
					37.88-37.94: Claystone, cream (kaolinitic)			56			0.06	2.25	80.3							
					37.94-37.97: Coal, heavy dull, broken (? CZ)			57			0.03	1.80	47.5							
37.6	38.8	1.13	94	"	37.97-38.20: Claystone, cream (kaolinitic)			58			0.23	2.29	83.4							
38.8	39.0	0.08	40	"	38.20-39.01: Coal, dull, 3-5% B (Dmb), shale band															
					38.32-38.33m, alternating soft (100mm) and hard (50mm)			59												
					plies, core loss of 0.07m partly from coal (?stone bands)															
					39.01-39.25: Shale, buff to brown			60			0.24	2.27	82.0							

051

270052

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3

TENEMENT NAME PARATTAH No. .....

PLAN – MAP REFERENCE .....

CO-ORDINATES ..... AZIMUTH NA DRILLERS OVERLAND COMMENCED 7.9.84 DEPTH TD 46.3m HOLE No. DD84 PT-10

RL COLLAR ..... INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 7.9.84 CASING LEFT ..... DPO No(s) .....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	
39.0	39.7	0.55	78	NQ	39.25-39.70: Coal, dull, 10% B (Dmb/Db)			61			0.45	1.51	20.6							
					39.70-39.95: Shale, buff, silty			62			0.25	2.32	84.9							
					39.95-39.99: Coal, dull, 10% B (Dmb/Db)			63	39.95	39.99	0.04	1.66	37.2							
					39.99-40.01: Shale, buff			64	39.99	40.01	0.02	2.35	83.4							
39.7	40.5	0.8	100	"	40.01-40.50: Coal, dull, ave. 10% B (Dmb/Db) increasing			(65			~~0.49~~	~~1.46~~	~~16.0~~							
					bright coal toward base			(												
					40.50-40.55: Shale, buff to dark brown			66			0.05	2.28	80.4		Samples 55-75 inclusive:					
					40.55-40.68: Coal, heavy dull, 5% B(Dmb), hard			67			0.13	1.76	46.5	1.81	50.6	5.4	10.6	0.26	13.92	33.4
					40.68-40.75: Shale, buff			68			0.07	2.31	82.3							
					40.75-40.82: Coal, dull, < 5% B (Dmb)			69			0.07	1.48	17.0							
40.5	42.7	1.85	84	"	40.82-40.84: Shale, buff to dark brown			70			0.02	2.20	76.1		Plies 55, 57, 59, 61, 63, 65					
					40.84-41.10: Coal, dull, 2% B(Dmb)			71			0.26	1.62	33.0		67, 69, 71 & 73 =					
					41.10-41.60: Shale, buff			72			0.50	2.28	80.9	1.56	26.0	2.9	15.1	0.41	23.98	56.0
					41.60-42.70: Coal, dull, 5-10% B(Dmb), 0.35m core loss			(												
					between 41.60-42.70, ≃ 2/3 broken			(73			1.10	1.56	26.8							
					42.70-42.94: Mudstone, grey, dark grey & buff			74			0.24	2.50	89.9							
42.70	43.90	1.2	100	"	42.94-43.01: Coal, dull, 1% B (Dmb)			75	42.94	43.01	0.07	2.31	83.1							
					43.01-43.25: Mudstone, dark grey to carbon															
					43.25-43.55: Siltstone															
					43.55-44.55: Sandstone, lithic, fg (? crushed zone															
					44.10-44.18m)															
					44.55-45.05: Sandstone, lithic, mg															
43.90	46.3	2.4	100	"	45.05-45.45: Sandstone, lithic, fg, variably carbonaceous															
					45.45-45.80: IB grey mudstone and laminated siltstone															
					45.80-46.30: Sandstone, lithic, mg															
					EOH 46-30m															

052

270053

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 539101.8mE 5320642.2mN AZIMUTH NA DRILLERS OVERLAND COMMENCED 10.9.84 DEPTH TD 52.60m HOLE No. DD84 PT-11

RL COLLAR 389.75 INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 10.9.84 CASING LEFT - DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	1.7	0.1	6	HQ	0-2.9: Alluvium, lithic sand, minor dolomite cobbles,															
				"	Quarternary															
2.3	2.7	0.4	100	"	2.9-3.8: Sandstone, lithic, m-cg	HW	100-200mm													
2.7	3.0	0.25	83	NQ	3.8-6.8: Sandstone, lithic, mg, 10% coaly debris	HW	100-200mm													
3.0	4.9	1.85	97	"	6.8-7.15: Sandstone, lithic, mg, 5% coaly debris	MW	100-200mm													
4.9	5.6	0.7	100	"	7.15-7.5: Sandstone, lithic, mg, minor CPC	SW	100-200mm													
5.6	5.9	0.3	100	"	7.5-8.3: Sandstone, lithic, m-cg, 10% coaly debris	SW/F	100-200mm													
5.9	7.5	1.6	100	"	8.3-8.35: Coal, dull-oxidized	HW	100-200mm													
7.5	9.3	1.8	100	"	8.35-8.43: Sandstone, lithic, mg	SW	100-200mm				BOCO	8.43m								
				"	8.43-9.57: Sandstone, lithic, m-cg	F	100-750mm													
				"	9.57-10.2: Sandstone, lithic, m-cg, 3% coal in CPC	F	100-750mm													
				"	10.2-10.58: Sandstone, lithic, mg, m-cg	F	100-750mm													
				"	10.58-10.68: Coal, dull ≃ 1% B(Dmb), broken	F	100-750mm													
				"	with roof eroded by sandstone	F	100-750mm													
9.3	12.3	3.0	100	"	10.68-10.73: Coal, dull (Dmb), hard ? silicified	F	100-750mm													
				"	10.73-11.50: Sandstone, lithic, cg, ≃ 5% coaly debris,	F	"													
12.3	15.3	3.0	100	"	and large clast of grey mudstone (CPC)	F	"													
15.3	18.3	3.0	100	"	11.50-23.50: Sandstone, lithic, mg, (cg basal 1.5m),	F	"													
18.3	21.3	2.9	97	"	carbonaceous mudstone/HDC parting 13.40-13.43, minor CPC	F	"													
				"	22.0-23.5, v. minor coaly laminae 23.50-23.63, mudstone	F	"													
				"	carbonaceous/dark grey with 2 x 15mm bands of	F	"													
				"	disseminated pyrite (≃ 70%), reduction haloe of 50mm in	F	"													
21.3	24.3	3.0	100	"	the enclosing sandstone.	F	"													
				"	23.63-25.15: Sandstone, lithic cg, coaly laminae	F	"													
				"	25.15-25.80: Sandstone, lithic, cg, 30% grey and	F	"													
				"	carbonaceous mudstone CPC	F	"													
24.3	27.3	3.0	100	"	25.80-27.57: Sandstone, lithic, fg, carb. mg laminae	F	"													
27.3	29.9	2.6	100	"	27.57-33.50: Sandstone, lithic, cg, coaly debris	F	"													
29.9	33.1	3.2	100	"	≃ 30.9- 32.2: minor CPC	F	"													
				"	33.5-33.7: Mudstone, grey	F	"													

Minor oblique joints ~ 30° - 40°

053

270054

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME PARATTAH No.

PLAN – MAP REFERENCE

CO-ORDINATES AZIMUTH NA DRILLERS OVERLAND COMMENCED 10.9.84 DEPTH TD HOLE No. DD84 PT-11

RL COLLAR INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 10.9.84 CASING LEFT – DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	EC
33.1	36.1	3.0	100	NQ	33.7-38.66: Sandstone, lithic, m-cg, CPC 35.6 to 36.1,		100-750mm													
					minor coaly/carbonaceous laminae		"													
36.1	38.9	2.7	96	"	38.66-38.84: Coal, heavy dull, ≃ 1% B (Dmb)			76	38.66	38.84	0.18	1.75	43.0							
				"	38.84-38.90: Shale, buff			77			0.06	2.33	80.7							
				"	38.90-39.07: Coal, dull, 5% B (Dmb)			78			0.17	1.62	32.4							
				"	39.07-39.12: Shale, dark brown			79			0.05	2.23	76.7							
				"	39.12-39.20: Coal, heavy dull, hard, 15% B (Db)			80			0.08	1.69	43.1							
				"	39.20-39.22: Shale, dark brown			81			0.02	2.06	69.3							
				"	39.22-39.31: Coal, heavy dull (D)			82			0.09	1.92	59.5							
				"	39.31-39.36: Shale, dark brown, + HDC			83			0.05	2.10	69.4	Samples 76-94 inclusive						
38.9	39.9	1.0	100	"	39.36-39.40: Mudstone, carb. + HDC			84			0.04	2.00	64.0	48.2	5.5	12.9	0.23	14.72	33.4	
				"	39.40-39.44: Shale, carbonaceous			85			0.04	2.05	68.1							
				"	39.44-39.51: Shale, buff			86			0.07	2.26	79.5	Plies 76, 78, 80, 87, 89, 92						
				"	39.51-39.74: Coal, dull, ≃ 20% B (Db)			87			0.23	1.60	31.9	and 98						
				"	39.74-39.90: Mudstone, cream (kaolinitic)			88			0.16	2.28	80.7	31.9	5.1	15.7	0.32	21.60	49.3	
				"	39.90-40.23: Coal, dull, 2% B (Dmb)			89			0.33	1.65	36.1							
				"	40.23-40.31: Mudstone, carbonaceous			90			0.08	2.14	73.4							
39.9	41.7	1.8	100	"	40.31-40.45: Shale, buff			91			0.14	2.17	74.4							
				"	40.45-40.70: Coal, dull, hard 15-20% B (Db)			92			0.25	1.65	28.3							
				"	40.70-40.86: Shale, buff/cream (kaolinitic)			93			0.16	2.17	81.6							
				"	40.86-41.66: Coal, dull, hard, 10% B (Dmb/Db)			94			0.80	1.54	26.7							
				"	41.66-41.70: Mudstone, carbonaceous/dark grey			95	41.66	41.70	0.04	2.24	84.1							
				"	41.70-41.83: Siltstone, laminated															
41.7	44.8	3.1	100	"	41.83-41.98: Mudstone, grey/brown															
				"	41.98-44.00: Siltstone, laminated															
				"	44.00-44.17: Sandstone, lithic, fg															
				"	44.17-44.95: Siltstone, laminated, minor coaly laminae															
				"	44.95-45.20: Sandstone, lithic, f/mg															
				"	45.20-45.50: Siltstone, laminated															
				"	45.50-45.85: Sandstone, lithic, mg															

054

270055

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3

TENEMENT NAME PARATTAH No.

PLAN – MAP REFERENCE

CO-ORDINATES AZIMUTH NA DRILLERS OVERLAND COMMENCED 10.9.84 DEPTH TD HOLE No DD84 PT-11

RL COLLAR INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 10.9.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
				NQ	45.85-46.05: Siltstone, ± fg lithic sandstone															
44.8	47.8	3.0	100	"	46.05-46.40: Mudstone, grey															
				"	46.40-47.37: Sandstone, lithic, ± siltstone															
				"	47.35-48.55: Siltstone, minor v. fg lithic, sandstone															
47.8	50.8	3.0	100	"	and laminated															
				"	48.55-52.60: Sandstone, lithic, m to cg carbonate															
50.8	52.6	1.8	100	"	concretion 50.55-50.65m, minor coaly debris 50.65-52.05m															
					EOH - 52-60m															

055

270056

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No. EL.18/82

PLAN – MAP REFERENCE

CO-ORDINATES 540248.4mE 5321175.0mN AZIMUTH NA DRILLERS OVERLAND COMMENCED 10.9.84 DEPTH TD 50-70m HOLE No. DD84 PT-12

RL COLLAR 443.15 INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 11.9.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	1.5	1.5	100	HQ	0-0.85: Alluvium, lithic sand (Quarternary)															
1.5	3.1	1.15	72	NQ	0.85-1.50: Sandstone, lithic, mg	HW														
				"	1.50-2.10: Core loss - 0.07m of coal and 0.10m oxid. sandstone recovered	HW														
				"	2.10-3.04: Sandstone, lithic, mg	M/HW														
3.1	4.8	1.7	100	"	3.04-3.10: Sandstone, lithic (? carbonate concretion)	SW														
				"	3.10-4.60: Sandstone, lithic, m to cg	MW														
				"	4.60-4.70: Mudstone, minor oxidized coal - interval very soft and broken	MW														
				"	4.70-4.80: Sandstone, lithic, m/cg with carbonaceous mudstone debris	MW														
				"	4.80-5.06: Mudstone, carbonaceous and dark brown	MW														
4.8	5.6	0.75	94	"	5.06-5.19: Coal, heavy dull, soft (D)	MW		96	5.06	5.19	0.13	1.83	47.6							
				"	5.19-5.27: Mudstone, carbonaceous	MW		97				2.04	64.0							
				"	5.27-5.34: Mudstone, buff	MW		98				2.39	83.0							
				"	5.34-5.42: Mudstone, carbonaceous	MW		99				2.10	68.6							
				"	5.42-5.60: Shale, buff	MW		100				2.41	84.0							
				"	5.60-5.88: Coal, dull, 5% B, (Dmb), minor clay pellets	MW		101				1.75	45.5							
				"	5.88-5.97: Mudstone/shale, buff			102				2.27	79.9							
				"	5.97-6.49: Coal, dull, 5% B to 6.30, 10% B from 6.3-6.49, generally hard, minor 5-10 mm carbonaceous mudstone bands, (Dmb)	SW		103				1.69	39.4							
				"	6.49-6.63: Mudstone, cream (hard)	SW		104				2.35	82.7							
				"	6.63-6.97: Coal, dull, 1% B (Dmb), hard	SW		105				1.65	33.9							
				"	6.97-7.01: Shale, buff	SW		106				2.32	81.6	Samples 101-127 inclusive						
5.6	7.9	2.25	98	"	7.01-7.09: Coal, heavy dull (D)	SW		107				1.91	57.2		54.8	5.4	11.1	0.22	11.80	28.7
				"	7.09-7.15: Mudstone, brown to carbonaceous	SW		108				2.20	74.7							
				"	7.15-7.18: Coal, heavy dull (D)	SW		109				1.99	61.8							
				"	7.18-7.20: Mudstone, carbonaceous	≃ F		110				2.24	76.5							
				-	7.20-7.27: Coal, heavy dull, 3% B (Dmb)	F		111				1.87	55.1	(BOCO ≃ 7.20 m)						

056

270057

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME PARATTAH No.

PLAN – MAP REFERENCE

CO-ORDINATES AZIMUTH NA DRILLERS OVERLAND COMMENCED 10.9.84 DEPTH TD HOLE No. DD84 PT-12

RL COLLAR INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 11.9.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
				NQ	7.27-7.30: Shale, brown			112	7.27	7.30	0.03	2.02	68.1							
				"	7.30-7.52: Coal, dull, 15-20% B (Db), broken			113				1.65	34.9							
				"	7.52-7.59: Shale, dark brown			114				2.17	75.0		Plies	96,	101,	103,	105,	113
				"	7.59-7.66: Coal, dull ≈ 2% B (Dmb), mudstone pellets			115				1.67	38.7		115,	117,	119,	121,	123 &	125
				"	7.66-7.69: Shale/claystone, cream			116				2.29	80.0							
7.90	8.45	0.5	91	"	7.69-7.74: Coal, dull, 20% B (Db), broken			117				1.66	39.9		40.0	4.2	13.4	0.32	18.28	42.4
				"	7.74-7.81: Shale, brown			118				2.20	75.2							
				"	7.81-7.85: Coal, dull (D)			119				1.69	39.3							
				"	7.85-7.90: Shale, buff to brown			120				2.30	81.5							
				"	7.90-8.06: Coal, dull, ≈ 5% B (Dmb) soft/broken			121				1.64	37.2							
				"	8.06-8.07: Shale, carbonaceous			122				1.99	65.1							
				"	8.07-8.29: Coal, dull, 10-15% B (Db), soft			123				1.63	36.2							
				"	8.29-8.45: Shale, buff			124				2.30	81.9							
				"	8.45-8.73: Coal, dull, ≈ 3% B (Dmb), hard			125				1.79	47.8							
				"	8.73-8.87: Shale, grey/brown			126				2.39	88.8							
				"	8.87-8.91: Mudstone, carbonaceous			127	8.87	8.91		2.16	75.0							
				"	8.91-9.58: Mudstone, shaley & silty, brown															
8.45	11.60	3.12	99	"	9.58-9.66: Mudstone, grey to green															
11.60	14.70	3.05	98	"	9.66-23.90: Sandstone, lithic, mg, minor															
14.70	17.80	3.1	100	"	carbonaceous debris, carbonate concretions															
17.8	20.9	3.1	100	"	from 15.22-15.28, 17.80-17.96m															
20.9	24.0	3.05	98	"	23.90-24.85: Sandstone, lithic, mg, with CPC and minor															
					coaly fragments															
				"	24.85-25.00: Mudstone, carbonaceous, with ? Neptunian															
				"	dyke of grain siltstone (? replaced by calcite),															
				"	sigmoidally folded, with green 50mm reduction halo															
24.0	27.1	3.1	100	"	25.40-26.85: Sandstone, lithic, m to cg															
				"	26.85-27.60: Sandstone, lithic, m to cg with CPC, minor															
				"	coalified wood fragments															

057

270058

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3

TENEMENT NAME PARATTAH No.

PLAN – MAP REFERENCE

CO-ORDINATES AZIMUTH NA DRILLERS OVERLAND COMMENCED 10.9.84 DEPTH TD HOLE No. RD84.PT.12

RL COLLAR INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 11.9.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A
27.10	30.20	3.07	99	NQ	27.60-31.55: Sandstone, lithic, m to cg								
				"	31.55-31.94: Coal, dull, 5% B (Dmb)			128	31.55	31.94	0.39	1.60	29.9
				"	31.94-32.04: Shale, buff to brown			129				2.32	84.4
				"	32.04-32.18: Coal, dull, < 10% B (Dmb)			130	32.04	32.18		1.67	40.1
				"	32.18-32.28: Mudstone, grey laminated								
				"	32.28-32.72: Siltstone, minor mudstone lB 's			131	32.18	32.72		2.46	91.3
30.20	33.20	3.0	100	"	Laminated v.minor (3mm) coal laminae								
				"	32.72-32.83: Mudstone, carbon/dark grey, with minor coal								
				"	laminae (3mm)			132	32.72	32.85		2.03	67.0
				"	32.83-32.85: Coal, dull, 20% B (Db)								
				"	32.85-33.09: Mudstone, brown & grey			133				2.48	91.4
33.2	33.4	0.2	100	"	33.09-33.30: Coal, dull, 1% B (Dmb)			134				1.52	22.0
				"	33.30-33.35: Coal, dull, (D) - silicified			135				2.21	79.7
				"	33.35-33.42: Coal, dull, 1% B (Dmb), sl.silicified			136				1.67	35.4
				"	33.42-33.45: Shale, buff to cream			137				2.18	81.6
				"	33.45-33.56: Coal, heavy dull, 1% B (Dmb)			138				1.78	47.7
				"	33.56-33.77: Shale, buff			139				2.30	84.5
				"	33.77-34.44: Coal, 3% B (Dmb), minor calcite in cleats								
				"	and fracture zones			140				1.53	21.9
				"	34.44-34.54: Shale, dark brown			141				2.21	82.5
				"	34.54-34.61: Coal, dull, 5% B (Dmb) brecciated with								
				"	calcite & zeolite, sl. silicified			142				1.67	38.9
				"	34.61-34.75: Shale, buff to cream			143				2.22	81.6
33.4	36.3	2.9	100	"	34.75-34.95: Coal, dull, 5% B (Dmb)			144				1.49	19.0
				"	34.95-34.97: Coal, dull (D) - silicified			145				2.24	82.5
				"	34.97-35.33: Coal, dull 5% B (Dmb)			146				1.51	22.6
				"	35.33-35.40: Shale, medium brown			147				2.35	82.5
				"	35.40-35.70: Coal, dull, 5% B (Dmb)			148				1.54	25.1
				"	35.70-35.75: Shale, buff			149				2.33	81.9
				"	35.75-36.06: Coal, dull, 3% B (Dmb)			150				1.61	31.4

Composites

RD	A	M	VM	S	SE	FC
	43.9	4.2	11.7	0.26	16.92	40.2
	41.5	3.8	11.8	0.26	17.94	42.9
	25.9	2.4	14.5	0.36	24.24	57.2

Samples 134-157 inclusive

Plies 128, 130, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154 and 157

058

270059

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 4
TENEMENT NAME ..... No. .....
PLAN – MAP REFERENCE .....

CO-ORDINATES ..... AZIMUTH NA DRILLERS OVERLAND COMMENCED 10.9.84 DEPTH TD HOLE No. DD84 PT-12
RL COLLAR ..... INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 11.9.84 CASING LEFT ..... DPO No(s) .....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
				NQ	36.06-36.08: Coal, dull (D) - silicified			151	36.06	36.08	0.02	2.29	86.4							
				"	36.08-36.67: Coal, dull, 5% B (Dmb) to 36.3m, + 50% B (Db)			152				1.48	18.8							
				"	to 36.67, calcite + zeolite															
36.3	37.6	1.3	100	"	36.67-36.79: Mudstone, grey			153				2.46	88.6							
				"	36.79-36.82: Coal, bright >90% B(b)			154				1.52	25.2							
				"	36.82-36.88: Mudstone, shaley, grey/brown			155				2.26	79.6							
				"	36.88-37.01: Mudstone, carbonaceous, minor/min coal			156				2.10	70.4							
					laminae															
37.6	38.6	1.0	100	"	37.01-37.60: Coal, dull 10% B (Dmb/Db)			157	37.01	37.60	0.59	1.57	25.9							
				"	37.60-38.50: Mudstone, grey and brown															
				"	38.50-38.53: Coal, dull, 30% B (Db)															
				"	38.53-38.60: Mudstone, grey/brown, 1 min coal ploes															
				"	38.60-38.70: Mudstone, grey/brown															
				"	38.70-40.13: Siltstone, minor mudstone lB's															
				"	40.13-40.40: Mudstone, grey, broken, faulted boundary															
				"	at 40.13m (△35°)															
				"	40.40-40.73: Coal, dull, 5% B (Dmb)			158				1.59	30.0		30.0	2.7	13.1	0.48	12.76	54.2
38.6	41.4	2.8	100	"	40.73-41.53: Mudstone, shaley, grey brown, possible															
				"	crushed zone at 41.0 (△30°)															
				"	41.53-41.60: Coal, dull, 2% B (Dmb)															
41.4	42.2	0.8	100	"	41.60-41.85: Mudstone, brown, shaley															
				"	41.85-42.75: Sandstone, lithic, mg with mudstone and															
				"	siltstone laminae + lB's															
				"	42.75-43.00: Siltstone, minor mudstone lB's															
				"	43.00-44.30: Mudstone, grey/brown, 1-2mm coal plies from															
42.2	44.5	2.25	98	"	43.45-43.55m, ? crushed zone at 43.75 (△30°); thin															
					siltstone lB's															
				"	44.30-44.90: Siltstone + fg lithic sandstone															
44.5	47.6	3.1	100	"	44.90-47.10: Sandstone, lithic f to mg, sev. siltstone															
47.6	50.7	3.1	100	"	47.10-50.70: Sandstone, lithic, mg				EOH 50-70m											

059

270060

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

[redacted] SHEET [redacted] 1 [redacted]

TENEMENT NAME YORK PLAINS No. PT 014

PLAN – MAP REFERENCE

CO-ORDINATES E 540 779.3 N 532 1915.2 AZIMUTH - DRILLERS OVERLAND COMMENCED 1.10.84 DEPTH 50.60m HOLE No. PT 014

RL COLLAR 433.05 INCLINATION 90.00 DRILL TYPE SCOUT 250 COMPLETED 2.10.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by) RD	A	Composites RD	A	M	VM	S	SE
				NQ TT	0.00-6.00 Non core, soil & weathered sandstone, buff colour														
					6.00-7.40 Sandstone, lithic, fine to medium grained, fine bedding														
					7.40-8.94 Sandstone, lithic, medium grained, fine bedding grey brown colour														
					8.94-8.96 Mudstone, dark grey, carbonaceous														
					8.96-10.40 Sandstone, orange/brown, lithic, medium grained, fine bedding														
					10.40-10.44 Mudstone, orange/brown														
					10.44-11.24 Sandstone, orange/brown, medium grained, lithic, fine bedding														
					11.24-11.59 Sandstone, light grey, lithic, med. grained														
					12.59-12.19 Sandstone, orange/brown, fine to med. grained														
					12.19-14.41 Sandstone, orange/brown, med to coarse grained														
					14.41-14.65 Sandstone, light grey, lithic, fine grained, fine bedding														
					14.65-14.89 Sandstone, orange/brown, lithic, fine grained														
					14.89-15.29 Sandstone, light grey, lithic, med grained fine bedding, plant fragments														
					15.29-15.70 Sandstone, orange/brown, lithic, medium to coarse grained, fine bedding														
					15.70-15.80 Sandstone, light grey, lithic, fine bedding, fine grained, coal wisps throughout														
					15.80-17.12 Sandstone, light orange/brown, lithic, fine to medium grained														
					17.12-17.32 Sandstone & Carb. shale, interbedded (60:40) calcite on bedding planes														
					17.32-17.52 Sandstone, light orange/brown, fine to medium grained														
					17.52-19.42 Sandstone, light grey, lithic, med. grained, fine bedding														

090

270061

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SH[redacted] No.[redacted]

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. PT 014

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by _____) RD	A	Composites RD	A	M	VM	S	SE
					19.42-20.00 Sandstone, light orange/brown, lithic, fine and medium grained														
					20.00-20.80 Sandstone, light orange/brown, pebbly														
					20.80-21.03 Mudstone, grey														
					21.03-21.53 Sandstone, orange/brown, lithic, fine to medium grained														
					21.53-24.27 Sandstone, light grey, lithic, fine to medium grained														
					24.27-25.83 Mudstone, dark grey, carbonaceous, silty base, fine bedding														
					25.83-26.13 Siltstone & Sandstone, interbedded (60:40) fine bedding														
					26.13-27.50 Sandstone, light orange/brown, lithic, fine grained, fine bedding														
					27.50-27.77 Sandstone, light grey, lithic, fine grained, fine bedding														
					27.77-28.04 Sandstone, light orange/brown, lithic, fine grained, fine bedding														
					28.04-28.78 Sandstone, light grey, lithic, medium grained														
					28.78-30.27 Sandstone, light orange/brown, quartz/lithic, medium grained, scarce coaly laminae														
					30.27-34.08 Sandstone, light grey, lithic, fine to medium grained, fine bedding														
					34.08-34.30 Sandstone, light grey, lithic, graded bedding (fining upwards), coaly wisps														
					34.30-34.31 Coal, heavy dull														
					34.31-35.75 Sandstone, light grey, lithic, medium grained														
					35.75-36.49 Sandstone, light orange/brown, lithic, med.grained														
					36.49-37.32 Sandstone, light grey, lithic, fine to med.grained														

061

270062

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

[redacted] SHEET No [redacted] 1 [redacted]

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. PT 014

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by _____) RD	A	Composites RD	A	M	VH	S	SE
					37.32-37.65 Sandstone, light orange/brown, fine to medium grained														
					37.65-37.77 Sandstone, light grey, lithic, fine grained, fine bedding														
					37.77-38.94 Sandstone, light orange/brown, fine grained, fine bedding														
					38.94-40.46 Sandstone, light grey, lithic, fine to medium grained, coaly fragments, pebbly in part														
					40.46-40.56 Pebble conglomerate, lithic														
					40.56-41.12 Sandstone, light grey, fine to coarse grained, some coaly wisps, pebbly in part														
					41.12-41.43 Conglomerate, lithic														
					41.43-50.60 Sandstone, light grey, lithic, fine & medium grained, some coaly wisps, core broken at base														
					TOTAL DEPTH - 50.60m														

062

270063

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME YORK PLAINS No.

PLAN – MAP REFERENCE

CO-ORDINATES E540665.7 N5322855.3 AZIMUTH - DRILLERS OVERLAND COMMENCED 2.10.84 DEPTH 36.70 HOLE No. PT-015

RL COLLAR 451.20 INCLINATION 90 DRILL TYPE SCOUT 250 COMPLETED 3.10.84 CASING LEFT - DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by) RD	A	Composites RD	A	M	VM	S	SE
				NQ TT	0-36.70: Dolerite - coarse grained														

063

270064

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME YORK PLAINS No.

PLAN – MAP REFERENCE

CO-ORDINATES E539503.1 N5322766.9 AZIMUTH - DRILLERS OVERLAND COMMENCED 3.10.84 DEPTH 26.25 HOLE No. PT-16

RL COLLAR 449.75 INCLINATION 90° DRILL TYPE SCOUT 250 COMPLETED 4.10.84 CASING LEFT - DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by) RD	A	Composites RD	A	M	VM	S	SE
				NQ	0-3.7 Sandstone, Dark orange/brown, medium grained lithic, coaly laminae, scarce														
					3.7-4.17 Sandstone, dark orange/brown, medium grained, lithic,														
					4.17-4.58 Sandstone, light orange/brown, medium grained														
					4.58-4.70 Sandstone, light grey, medium grained, lithic														
					4.70-4.93 Sandstone, dark orange/brown, coarse grained, lithic, mudstone pellets														
					4.93-5.33 Sandstone, dark orange/brown, medium grained, lithic														
					5.33-6.20 Sandstone, dark orange/brown, course grained, lithic, coaly laminae, scarce, core loss 5.75-6.0m														
					6.20-6.55 Sandstone, light grey, coarse grained, lithic														
					6.55-6.62 Sandstone, light orange/brown, coarse grained, lithic														
					6.62-6.7: Sandstone, light grey, coarse grained, lithic														
					6.7-7.21: Sandstone, grey, medium grained, lithic														
					7.21-7.28: Sandstone, light orange/brown, lithic														
					7.28-7.33: Sandstone, light orange/brown, lithic, coaly laminae, scarce														
					7.33-8.17: Sandstone, light grey, orange/brown, medium to coarse grained, lithic														
					8.17-8.86: Sandstone, light orange/brown, coarse grained, lithic, coaly laminae, common, coal pellets throughout														
					8.86-9.16: Sandstone, light grey, medium grained, lithic														
					9.16-9.70: Sandstone, orange/brown, medium grained, lithic														
					9.70-9.80: Sandstone, orange/brown, coarse grained, lithic														
					9.80-10.16: Sandstone, light grey, lithic, coaly laminae, scarce														

064

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

270065

SHEET No. 2

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. PT-16

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
				NQ	10.16-10.47: Sandstone, orange/brown														
					10.47-10.70: Sandstone, grey, medium grained, lithic														
					10.70-10.87: Sandstone, orange/brown, lithic														
					10.87-11.79: Sandstone, grey, coarse grained, lithic														
					11.79-11.94: Sandstone, orange/brown, lithic, coaly laminae, scarce														
					11.94-12.70: Sandstone, grey, coarse grained, lithic														
					12.70-13.72: Sandstone, orange/brown, lithic														
					13.72-13.78: Mudstone														
					13.78-13.85: Sandstone, orange/brown														
					13.85-15.70: Sandstone, grey, medium grained, lithic														
					15.70-15.86: Sandstone, grey, lithic, coaly laminae, mudstone pellets														
					15.86-16.59: Sandstone, grey, coarse grained, lithic,														
					16.59-18.20: Sandstone, grey. coarse grained, lithic, coaly laminae														
					18.20-18.68: Sandstone, coarse grained, lithic														
					18.68-18.70: Sandstone, dark grey, fine grained, carbonaceous														
					18.70-18.77: Mudstone, dark grey, carbonaceous														
					18.77-19.41: Sandstone, light grey, coarse grained, lithic														
					19.41-19.45: Coal, heavy dull			989101											
					19.45-19.51: Shale, grey			102											
					19.51-19.58: Coal, dull			103											
					19.58-19.59: Shale			104											
					19.59-19.62: Coal, dull			105											
					19.62-19.63: Carbonaceous shale			106											
					19.63-19.70: Coal, dull			107											
					19.70-19.73: Carbonaceous shale			108											
					19.73-19.785: Coal, shale (60:40)			109											
					19.785-19.885: Shale, grey			110											

065

270066

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

[redacted] No. [redacted]

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. PT-16

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
				NQ	19.885-19.910: Coal, dull, zeolite, common, on fracture planes			989111											
					19.910-19.975: Mudstone, grey, carbonaceous			112											
					19.975-20.04: Coal, dull, calcite, scarce, on fracture planes			113											
					20.04-20.10: Shale, dark grey, carbonaceous			114											
					20.10-20.125: Carbonaceous shale			115											
					20.125-20.15: Coal, dull			116											
					20.15-20.17: Carbonaceous shale, dark grey			117											
					20.17-20.215: Shale, grey			118											
					20.215-20.265: Coal, dull			119											
					20.265-20.285: Shale, grey			120											
					20.285-20.475: Coal, heavy dull			121											
					20.475-20.545: Carbonaceous mudstone, black			122											
					20.545-20.595: Coal, dull, zeolite, common on fracture planes			123											
					20.595-20.63: Coal, heavy dull			124											
					20.63-20.645: Carbonaceous mudstone, black			125											
					20.645-20.815: Mudstone, dark grey			126											
					20.815-20.825: Carbonaceous mudstone			127											
					20.825-21.075: Coal, heavy dull			128											
					21.075-21.205: Coal, heavy dull			128											
					21.205-21.37: Coal, heavy dull			129											
					21.37-21.445: Coal, dull			129											
					21.445-21.46: Coal, dull banded, calcite, common on fracture planes			130											
					21.46-21.565: Coal, dull			131											
					21.565-21.575: Coal, bright and dull			131											
					21.575-21.695: Coal, dull			131											
					21.695-21.695: Mudstone, grey,			131											
					21.695-21.745: Coal, dull			131											
					21.745-21.860: Coal, heavy dull			132											
					21.860-21.935: Coal, dull			133											

990

270067

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

T N[redacted]

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. PT-16

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
				NQ	21.935-21.965: Coal, bright and dull			989134											
					21.965-21.005: Coal, dull			135											
					21.005-21.025: Coal, dull banded			136											
					21.025-22.120: Coal, dull			137											
					22.12-22.25: Coal, heavy dull			138											
					22.25-24.24: Mudstone, carbonaceous														
					24.24-24.70: Sandstone, light grey, fine grained, lithic														
					24.70-26.25: Siltstone, carbonaceous														

067

C.R.A. EXPLORATION PTY. LIMITED

270068

DRILL CORE LOG

SHEET No. 1

TENEMENT NAME [redacted] No. [redacted]

PLAN – MAP REFERENCE

CO-ORDINATES E 539 727.2 N 532 1919.2 AZIMUTH DRILLERS OVERLAND COMMENCED 4.10.84 DEPTH 51.85 HOLE No. PT 018

RL COLLAR 418.70 INCLINATION 90° DRILL TYPE SCOUT 250 COMPLETED 5.10.84 CASING LEFT 3m HQ DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION		WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE
				NQ TT	0-4.00	No core - weathered sandstone														
					4.00-6.80	Sandstone, orange/brown	EW													
					6.80-10.25	Sandstone, medium grained	VW													
					10.25-12.72	*Sandstone, grey*	Fresh													
					12.72-12.825	Coal, heavy dull, flaky			989139				2.10	57.2						
					12.825-12.895	Coal, heavy dull			140				1.93	51.7						
					12.895-12.925	Coal, dull with calcite on fracture planes			141				1.73	36.6						
					12.925-12.980	Coal, dull			142				1.63	24.5						
					12.980-13.020	Coal, dull with calcite on fracture planes			143				1.70	32.4						
					13.020-13.080	Carbonaceous mudstone subvertical joint			144				2.32	80.3						
					13.080-13.190	Carbonaceous mudstone			144				2.32	80.3						
					13.190-13.320	Carbonaceous mudstone			145				2.33	82.9						
					13.320-13.355	Carbonaceous mudstone - broken core			146				2.44	87.6						
					13.355-13.410	Carbonaceous mudstone			147				2.35	82.8						
					13.410-13.470	Carbonaceous *siltstone*			148				2.29	78.9						
					13.470-13.600	Carbonaceous mudstone			149				2.33	81.6						
					13.600-13.650	Heavy dull coal/shale			150				2.24	75.2						
					13.650-14.30	Mudstone														
					14.30-14.46	Carbonaceous mudstone														
					14.46-14.73	Mudstone - partly carbonaceous														
					14.73-14.83	Heavy dull coal														
					14.83-15.09	Mudstone														
					15.09-15.14	Coal														
					15.14-15.26	*Carbonaceous mudstone*														
					15.26-15.85	Siltstone														
					18.85-19.42	Sandstone, fine grained														
					19.42-19.50	Siltstone														
					19.50-19.59	Sandstone														
					19.59-21.85	Siltstone														
					21.85-27.99	Siltstone, fine bedding														

068

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 2

270069

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. PT 018

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
					27.99-30.55 Sandstone, medium grained														
					30.55-30.58 Siltstone, siliceous														
					30.58-30.77 Carbonaceous mudstone, zeolite on fracture			989151				2.21	71.9						
					30.77-30.885 Coal, dull			152				1.83	34.1						
					30.885-30.950 Coal, dull, zeolite on fractures			153				1.75	28.6						
					30.950-30.990 Coal, dull			154				1.87	38.9						
					30.990-31.165 Mudstone, grey			155				2.43	91.2						
					31.165-31.465 Coal, heavy dull, calcite on fractures			156				1.87	38.5						
					31.465-31.475 Coal, fusinite			156				1.87	38.5						
					31.475-31.600 Coal, dull			156				1.87	38.5						
					31.600-31.800 Coal, dull, calcite on fractures			157				1.79	33.0						
					31.800-31.845 Mudstone, grey			158				2.43	91.1						
					31.845-31.860 Coal, dull, calcite on fractures			159				1.85	38.5						
					31.860-31.930 Siltstone, grey			160				2.47	38.5						
					31.930-31.935 Coal, dull, calcite on fractures			160				2.47	38.5						
					31.935-32.020 Siltstone, grey, sub vertical joint			160				2.47	38.5						
					32.020-32.075 Coal, dull, zeolite on fractures			161				1.84	32.2						
					32.075-32.200 Coal, heavy dull			162				1.98	48.5						
					32.200-32.210 Coal, fusinite			163				1.91	41.4						
					32.210-32.250 Coal, heavy dull			163				1.91	41.4						
					32.250-32.265 Coal, dull, calcite on fractures			164				1.81	28.8						
					32.265-32.400 Coal, heavy dull, calcite on fractures			165				1.89	39.1						
					32.400-32.465 Coal, dull with minor bright			166				1.83	36.6						
					32.465-32.500 Coal, heavy dull			166				1.83	36.6						
					32.500-33.130 Siltstone														
					33.130-33.15 Coal														
					33.15-35.15 Siltstone														
					35.15-35.205 Carbonaceous mudstone			167				2.61	93.8						
					35.205-35.385 Coal, heavy dull, calcite on fractures			168				1.90	40.5						
					35.385-35.410 Coal, fusinite			169				1.84	35.1						

690

270070

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

[redacted] SHEET No 3 [redacted]

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. PT 018

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
					35.410-35.485 Coal, heavy dull			989170				1.91	39.1						
					35.485-35.520 CO:SH = 20/80			171				2.49	80.2						
					35.520-36.00 Siltstone														
					36.00-36.160 Mudstone, partly carbonaceous														
					36.16-36.25 Coal														
					36.25-36.58 Siltstone														
					36.58-36.74 Coal														
					36.74-39.57 Siltstone														
					39.57-39.85 Sandstone, medium grained														
					39.85-51.85 Sandstone, lithic														
					TOTAL DEPTH - 51.85														

070

270071

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 536204.9mE 5320565.4mN AZIMUTH NA DRILLERS STACPOOLE COMMENCED 5.10.84 DEPTH TD 51.14m HOLE No. DD84.PT-19

RL COLLAR 365.70 INCLINATION -90° DRILL TYPE GEMCO DRIL COMPLETED 6.10.84 CASING LEFT PVC DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by) RD	A	Composites RD	A	M	VM	S	SE
0	4.6	TRICONE ROLLER DRILLED																	
4.6	6.1	1.4	93	NQ	0-4.6: Alluvium, sandy (Quarternary)														
				"	4.6-5.72: Sandstone, lithic, ± mudstone 1B's	EW													
				"	5.72-6.25: Sandstone, lithic, fg	MW													
6.1	7.64	1.54	100	"	6.25-7.40: Sandstone, lithic, fg, minor laminae of grey	(SW													
				"	mudstone	(													
				"	7.40-7.72: Sandstone, lithic - quartz rich fg	SW													
				"	7.72-7.96: As above, but ?thermally metamorphosed	F													
				"	7.96-8.15: ? Basalt dyke - diffuse upper and lower	(													
				"	boundaries	(SW													
7.64	10.64	2.97	99	"	8.15-8.34: As for 7.72-7.96m	SW													
				"	8.34-8.50: Mudstone, silty (? thermally altered)	SW						BOCO	~ 8.55m						
				"	8.50-9.84: Sandstone, lithic, minor carbon. laminae, f-mg	F													
10.64	13.64	3.0	100	"	9.84-10.70: Mudstone, grey, siltstone 1B's														
				"	10.70-13.16: 1B grey mudstone/siltstone/quartz sandstone														
				"	(fg), mudstone carbon. from 12.6 →														
				"	13.16-13.64: Siltstone, muddy, carbonaceous														
				"	13.64-14.20: Sandstone, lithic - quartz rich mg														
				"	abundant carbon. laminae, minor grey mudstone														
13.64	16.64	3.0	100	"	14.20-15.40: Sandstone, lithic, mg, with abundant														
					carbonaceous laminae														
				"	15.40-16.92: Sandstone, lithic - quartz rich f to mg,														
				"	abundant carbonaceous laminae (± coaly fragments)														
				"	16.92-17.35: 1B grey mudstone/quartz sandstone (mg)														
				"	17.36-17.57: Siltstone, muddy, carbonaceous														
				"	17.57-18.60: Sandstone, quartz, mg, minor feldspar &														
16.64	19.64	3.0	100	"	opaques, + ghosted carbon. wisps (?disrupted laminae),														
				"	v. minor coaly fragments.														
				"	18.60-20.00: Sandstone, quartz, mg, increased content of														
				"	carbonaceous wisps/laminae.														

T70

270072

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES ... AZIMUTH NA ... DRILLERS STACPOOLE ... COMMENCED 5.10.84 ... DEPTH TD 51.14m ... HOLE No. DD84 PT-19

RL COLLAR ... INCLINATION -90° ... DRILL TYPE GEMCO DRIL ... COMPLETED 6.10.84 ... CASING LEFT PVC ... DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by) RD	A	Composites RD	A	M	VM	S	SE
				NQ	(network fabric) several 5mm wide coal fragments														
19.64	22.64	3.0	100	"	20.00-21.70: Sandstone, lithic - quartz rich f to mg,														
				"	v. minor coal (Bd) fragments with orange zeolite in cleats,														
				"	and at the contact with the underlying unit														
				"	21.70-22.10: Sandstone, quartz feldspar (mg)														
				"	22.10-23.70: Sandstone, lithic - quartz rich, fg numerous														
				"	bright coal fragments with calcite + orange zeolite;														
22.64	25.64	3.0	100	"	minor CPC, green reduction haloes														
				"	23.70-24.05: Sandstone, quartz, fg														
				"	24.05-24.50: Mudstone, grey, minor siltstone	△ 5	≃ 85/90°												
				"	24.50-24.78: Sandstone, quartz, f to mg disseminated														
				"	orange zeolite (< 0.5mm)														
				"	24.78-25.57: Mudstone, grey, minor coaly debris, orange														
25.64	28.64	2.95	98	"	zeolite clots														
				"	25.57-26.37: Sandstone, quartz, mg, minor mudstone/siltstone														
				"	1B's, orange zeolite clots														
				"	26.37-28.36: Mudstone grey, siltstone 1B's, minor quartz														
28.64	31.64	3.0	100	"	ss lenses with orange zeolite														
				"	28.36-31.67: Mudstone, grey/brown, laminated														
				"	31.67-33.15: Mudstone, carbonaceous, 1B with fg quartz														
				"	sandstone, minor orange zeolite in mudstone, but abundant														
				"	in sandstone, coal "balls" (< 5mm) in mudstone														
				"	33.15-33.75: Mudstone, grey, carbonaceous, 1B's minor coal														
				"	balls and quartz sandstone														
				"	33.75-34.25: Sandstone, quartz, fg, burrowed														
31.64	34.64	2.97	99	"	34.25-34.97: Mudstone/siltstone, carbonaceous 1B with														
				"	lenses of quartz sandstone, orange zeolite, in mudstone														
				"	+? cleats of coal balls (1-5mm), bright (? cindered)														
				"	coal 34.95-34.97m - also with orange zeolite														

072

270073

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES AZIMUTH NA DRILLERS STACPOOLE COMMENCED 5.10.84 DEPTH TD 51.14m HOLE No. DD84 PT-19

RL COLLAR INCLINATION -90° DRILL TYPE GEMCO DRIL COMPLETED 6.10.84 CASING LEFT PVC DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by) RD	A	Composites RD	A	M	VM	S	SE
				NQ	34.97-36.54: Mudstone, grey, minor siltstone														
34.64	37.64	3.0	100	"	36.54-37.20: 1B mudstone/siltstone/quartz ss														
				"	37.20-37.80: Mudstone, grey														
37.64	40.64	2.98	99	"	37.80-39.30: 1B mudstone/quartz sandstones														
				"	39.30-41.10: Sandstone, quartz feldspathic, mg														
40.64	43.64	3.0	100	"	41.10-41.85: Mudstone, grey to dark grey														
				"	41.85-43.25: 1B mudstone/grey + carbonaceous with quartz														
				"	sandstone (mg)														
43.64	46.64	2.85	95	"	43.25-45.50: Sandstone, quartz-carbonaceous (fg)														
				"	45.50-51.14: Sandstone, quartz, carbonaceous	△	So @ 47m	≃ 80°											
46.84	49.64	3.0	100	"	- sparkling quartz ss with some carbonaceous mudstone														
				"	bands, - mostly carbonaceous staining of the	△	So @ 50.5m	≃ 45° (but	cross bedding)										
49.64	51.14	1.5	100	"	sandstone														
					EOH - 51.14m														

270

270074

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 538848.9mE 5321962.5mN AZIMUTH NA DRILLERS OVERLAND COMMENCED DEPTH 57.60m HOLE No. DD84 PT-20

RL COLLAR 376.95 INCLINATION -90° DRILL TYPE SCOUT 250 COMPLETED CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	2.7		PRECOLLAR																	
2.7	3.7	1.0	100	NQ	0-2.7: Alluvium															
				"	2.7-3.1: Sandstone, lithic, mg	EW														
3.7	6.7	2.95	98	"	3.1-10.8: Sandstone, lithic, m to cg	HW														
6.7	8.6	1.80	95	"	10.8-11.3: Sandstone, lithic, m to cg	MW														
8.6	11.75	3.05	97	"	11.3-11.75: Sandstone, lithic, m to cg	SW														
11.75	14.90	3.15	100	"	11.75-16.65: Sandstone, lithic, f to mg	F														
14.90	18.00	3.10	100	"	16.65-17.75: Sandstone, lithic with very fine carbonaceous															
18.00	21.10	3.0	97		mudstone laminae															
21.10	24.20	2.7	87	"	17.75-24.65: Sandstone, lithic, m to cg, broken from 21.0															
				"	24.65 (and soft)															
24.2	25.90	1.7	100	"	24.65-24.80: CPC of carbonaceous mudstone in mg lithic															
					sandstone															
				"	24.80-25.60: Sandstone, lithic, mg															
25.90	27.70	1.77	98	"	25.60-25.85: CPC of grey mudstone and coal debris in mg															
27.70	30.70	3.1	>100		lithic sandstone															
30.70	33.70	3.0	100	"	25.85-35.30: Sandstone, lithic, m to cg v. minor pyritic															
33.70	36.70	3.0	100		carbonaceous mudstone lB's, and below 34m minor carbonaceous															
					mudstone eclipses with pyrite cores															
36.70	39.20	2.10	84	"	35.30-35.75: Mudstone, grey/brown to dark grey, massive															
39.20	42.20	3.1	>100	"	35.75-54.05: Sandstone, lithic, cg to ≈ 39m, then mg,															
42.20	45.30	3.1	100		v. minor CPC, minor mudstone debris 47.87-47.95, carbonate															
45.30	48.60	3.2	97		concretions 47.0-47.32, 49.60-50.0m															
48.60	51.60	3.1	>100																	
51.60	54.50	2.2	76	"	54.05-54.15: Crushed zone in lithic sandstone															
54.50	57.60	3.1	100	"	54.15-57.60: Sandstone, lithic, m to cg, v.minor mudstone															
					laminaes.															
					EOH 57.60m															

074

270075

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

TENEMENT NAME YORK PLAINS No. .....

PLAN – MAP REFERENCE .....

CO-ORDINATES E538017.7 N5321501.9 AZIMUTH - DRILLERS OVERLAND COMMENCED 6.10.88 DEPTH 30.70 HOLE No. PT-021

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) .....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
				NQ TT	0-30.70: Tertiary Diatreme vent agglomerate														

075

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

270076

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 537068.3mE 5319781.5mN AZIMUTH NA DRILLERS STACPOOLE COMMENCED 7.10.84 DEPTH TD 31.64m HOLE No. DD84 PT-22

RL COLLAR 362.90 INCLINATION -90° DRILL TYPE GEMCO DRIL COMPLETED 8.10.84 CASING LEFT PVC DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by) RD	A	Composites RD	A	M	VM	S	SE
0	4.64	TRICONE ROLLER DRILLED																	
4.64	7.64	1.94	65	NQ	0-4.64: Alluvium (Quarternary)														
				"	4.64-6.59: Mudstone grey	SW													
				"	6.59-8.15: Sandstone, lithic - quartz rich, fg carbonaceous														
				"	to dark grey mudstone laminae	SW/F			BOCO	~ 7.0m									
				"	8.15-8.45: Sandstone, quartz weakly laminated (mg)														
7.64	10.64	3.0	100	"	8.45-8.68: Sandstone, lithic - quartz rich, fg														
				"	8.68-9.71: Mudstone, grey to dark grey, increased laminae														
				"	toward base														
				"	9.71-10.62: 1B grey mudstone/siltstone/fg quartz sandstone														
				"	10.62-11.20: Mudstone, carbonaceous, minor quartz														
10.64	13.64	2.93	98	"	sandstone lenses														
				"	11.20-12.65: Sandstone, quartz, fg, silty & carbon.														
				"	12.65-13.65: Sandstone, quartz, carbon. banding (mg)														
				"	13.65-16.00: Sandstone, quartz, carbonaceous, with														
13.64	16.64	3.0	100	"	v. minor heavy dull coal fragments														
				"	16.00-19.65: Sandstone, quartz, mg, minor quartz rich														
16.64	19.64	2.95	98	"	lithic, banded with carbonaceous debris														
					19.65-21.80: Sandstone, quartz, mg, carbon. laminae														
19.64	22.64	3.0	100	"	21.80-22.35: Sandstone, quartz, mg, carbonaceous														
22.64	25.64	2.90	97	"	22.35-27.20: Sandstone, quartz, mg, wispy carbon. debris														
				"	27.20-28.64: Core loss - dark grey silty														
25.64	28.64	2.10	70	"	mudstone recovered (2.10m)														
				"	28.64-29.10: 1B quartz sandstone/carbon. mudstone														
				"	29.10-29.65: Mudstone, grey, weakly banded														
				"	29.65-31.15: Mudstone, carbonaceous & dark grey minor														
				"	cream mudstone bands.														
28.64	31.64	2.90	97	"	31.15-31.30: Sandstone, quartz feldspathic (? cemented)														
				"	31.30-31.50: Mudstone, grey mixed with ss above (?CPC)														
				"	31.50-31.64: Mudstone, grey														
					EOH 31.64m														

076

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

270077

[redacted] SHEET No [redacted] 1 [redacted]

TENEMENT NAME YORK PLAINS [redacted] No. .....

PLAN – MAP REFERENCE .....

CO-ORDINATES E539016.1 N539596.3 AZIMUTH - DRILLERS OVERLAND COMMENCED 8.10.84 DEPTH 15.10 HOLE No. PT.023

RL COLLAR 392.20 INCLINATION 90° DRILL TYPE SCOUT 250 COMPLETED 8.10.84 CASING LEFT - DPO No(s) .....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
				NQ TT	0-30.70: Tertiary diatreme vent agglomerate														

077

270078

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 539596.3mE 5320 182.5N AZIMUTH NA DRILLERS OVERLAND COMMENCED DEPTH 57.10m HOLE No. DD84 PT-24

RL COLLAR 431.85 ASL INCLINATION -90° DRILL TYPE SCOUT 250 COMPLETED CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	3.6			TRICONE ROLLER - PRECOLLAR																
3.6	3.7	0.1	100	NQ	0- ≃ 4.0: Dolerite scree, minor clay															
3.7	6.7	0.4	13	"	≃4- ≃6.7: Sandstone, lithic, ?mg	EW														
				"	≃6.7-8.35: Core loss (0.08m of coal/mudstone	EW														
6.7	9.6	2.35	81	"	8.35-8.70: Mudstone, yellow/brown	EW														
				"	8.70-9.65: Mudstone, khaki/grey, shaley	HW														
9.6	12.6	2.95	98	"	9.65-11.30: 1B grey mudstone/siltstone/fg lithic sandstone	MW														
12.6	15.7	3.1	100	"	11.30-12.54: Sandstone, lithic, fg, minor siltstone	SW														
18.7	19.8	1.07	97	"	12.54-29.45: Sandstone, lithic, f/m/cg, coaly debris &	F														
19.8	21.7	1.75	92	"	grey mudstone 19.8-20.1, 21.75-22.0 & 23.15-25.0m								BOCO	≃ 12.54m						
21.7	24.7	3.1	(100	"																
24.7	27.7	2.9	(	"	29.45-31.70: Mudstone, grey/dark grey/brown laminated															
27.7	30.7	3.0	100	"																
30.7	31.7	1.1	> 100	"	31.70-32.17: Siltstone															
				"	32.17-32.36: Mudstone, pale brown/buff															
				"	32.36-32.45: Coal, dull (D)															
				"	32.45-32.62: Siltstone, with pale brown mudstone pellets															
				"	32.62-32.65: Coal, dull, ≃ 3% B (Dmb), fissite															
				"	32.65-32.71: Shale, buff															
				"	32.71-32.88: Coal, dull, ave. 5% B(Dmb), some core loss															
31.7	33.2	1.45	97	"	?including thin shale band															
				"	32.88-33.10: Siltstone, with mudstone laminae, grading to															
					fg lithic sandstone at base with mudstone & coal fragments															
33.2	33.5	0.1	33	"	33.10-33.20: Shale, buff, coal laminae															
33.5	36.2	0.1	4	"	33.20-33.50: Sandstone, lithic, fg, but core recovery															
36.2	39.7	1.5	43	"	only 0.1m															
				"	33.50-36.2: Core loss - only 0.10m fg lithic sandstone															
					recovered															
				"	36.2-39.2: Sandstone, lithic, f to mg with 1B of															
					siltstone, (Note- core loss also)															

078

C.R.A. EXPLORATION PTY. LIMITED

270079

DRILL CORE LOG

[redacted] T No. [redacted]

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT-24

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE	FC
				NQ	39.2-39.70: Mudstone, grey/dark grey, laminated															
39.7	42.7	2.97	99	"	39.70-45.47: Sandstone, lithic, mg, with coaly and															
					mudstone debris to 41.9m															
42.7	45.7	3.0	100	"	45.47-45.66: Coal, heavy dull, single 5mm silicified band			989200	45.47	45.66	0.19	1.88	58.2	→ 58.2	0.9	9.9	0.24	14.04	31.0
				"	45.66-45.77: Coal, silicified wood (D)			989701	45.66	45.77	0.11	2.43	83.2							
				"	45.77-45.91: Sandstone, lithic, fg- carbonate concretion															
					(+ ? silicified), minor mudstone and coal debris															
				"	45.91-46.10: Sandstone, lithic, mg ± coal fragments															
				"	46.10-46.35: Mudstone, dark grey, broken															
				"	46.35-46.39: Mudstone, pale brown		△ Sp 70°													
				"	46.39-46.44: Mudstone, carbonaceous (± HDC)															
45.7	48.7	3.0	100	"	46.44-46.90: Mudstone, pale brown/grey															
				"	46.90-47.06: Mudstone, dark grey ± carbonaceous															
				"	47.06-47.11: Mudstone, pale brown															
				"	47.11-47.82: Mudstone, dark grey ± carbonaceous															
				"	47.82-47.97: Shale, buff															
				"	47.97-48.06: Mudstone, carbonaceous			989702	47.97	48.06	0.09	2.27	82.2							
				"	48.06-48.19: Mudstone, 1B grey + dark grey															
				"	48.19-48.34: Shale, buff															
48.7	51.1	2.65	>100	"	48.34-48.40: Mudstone, grey and brown															
51.1	54.1	3.2	>100	"	48.40-57.10: Sandstone, lithic, f to mg carbonate															
54.1	57.1	2.85	95	"	concretion 51.8-52.07, 55.38-55.63, both with coal and															
		8.7			mudstone fragments															
(8.4 undrilled - 8.7 unrecovered)																				
					EOH - 57.10m															

079

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

270080

SHEET No. [redacted]

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 538 943.4 mE 5323 354.5 mN AZIMUTH NA DRILLERS STACPOOLE COMMENCED 9.10.84 DEPTH 70.64m HOLE No. DD84 PT-25

RL COLLAR 442.75 INCLINATION -90° DRILL TYPE GEMCODRIL COMPLETED 15.10.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	3.14			TRILONE ROLLER - PRECOLLAR																
3.14	7.64	3.65	81	NQ	0-3.14: Alluvium and clay (EW mudstone)	EW	NA													
				"	3.14-4.15: Core loss, only 0.15m of EW mudstone (clay) recovered	EW	?													
				"	4.15-4.65: Mudstone, grey/khaki	MW	NA													
				"	4.65-4.75: Mudstone, silty Fe or	MW	NA													
				"	4.75-6.00: Sandstone, lithic fg, weakly laminated	MW	50-300mm													
				"	6.00-6.05: Mudstone, grey/khaki	MW	NA													
7.64	10.64	2.98	99	"	6.05-10.1: Sandstone, lithic f to mg, variably laminated with mudstone to 7.15m	MW	100-800mm													
10.64	13.64	2.97	99	"	10.1-13.35: Sandstone, lithic m to cg	SW/F	100-800mm													
				"	13.35-13.62: Sandstone, lithic, mg	MW	100-800mm													
				"	13.62-14.03: Mudstone, partly disrupted (≈ CPC)	SW/	50-200mm													
				"	14.03-14.39: Mudstone, grey & broken	F	"													
				"	14.39-14.52: CPC of grey mudstone, cg, lithic, ss	SW	"													
				"	14.52-14.63: Sandstone, feldspathic lithic with carbon and coaly debris	MW	"													
13.64	16.64	2.93	98	"	14.63-14.65: Mudstone, green/grey	SW	"													
				"	14.65-14.81: Coal, dull (D), (? wood)	SW	"													
				"	14.81-14.94: CPC of grey mudstone mg, lithic, ss	SW/F	"													
				"	14.94-15.34: Mudstone, grey	F	"													
				"	15.34-15.68: Sandstone, lithic, m to cg	SW	300-1000mm													
16.64	19.64	3.0	100	"	15.68-19.77: Sandstone, lithic, cg, minor CPC from 16.6-16.8, carbonate concretion 18.52-18.67	F	"													
				"	19.77-19.96: Sandstone, lithic, cg	SW	"													
				"	19.96-20.84: CPC of grey mudstone & coal in mg lithic ss coal (D) from 19.96-20.05 (? wood) and 20.76-20.82 with 0.02m floor of carbon. mudstone with ≈ 10% Pyrite.	SW	100-200mm						BOCO ≈ 21.0m							
19.64	22.64	3.0	100	"																
22.64	25.64	2.98	99	"																
25.64	28.64	2.94	98	"	20.84-29.83: Sandstone, lithic, m to cg, carbonate concretions 22.19-22.95, and 27.11-27.23m	F	750-71000mm													

080

270081

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT-25

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
				NQ	Minor spotted texture (?chloritic aggregates) from 22.95-		(750 -														
					25.50m, 26.7 - 27.1m; minor CPC with coaly debris 29.2-29.83		1000mm														
				"	29.83 - 30.00 Mudstone, carbonaceous to dark grey, minor																
					silty mudstone interbeds																
28.64	31.64	3.0	100	"	30.00 - 30.53: mudstone, carbonaceous, with mudstone and			989201	30.00	30.53	0.53	2.29	81.2								
					coal pellets/balls (ave 1mm)																
				"	30.53 - 31.07: Coal, dull, ≈ 1% B (D)			202			0.54	1.58	32.0								
					31.07 - 31.42: Coal, dull, 5-10% B (Dmb)			203			0.35	1.53	20.8								
				"	31.42 - 31.82: Coal, dull, 2-3% B (Dmb)			204			0.58	1.50	25.0								
				"	31.82 - 32.00: Coal, dull, >10% B (Db)																
				"	32.00 - 32.02: Shale, carbonaceous/dark brown			205			0.02	2.34	82.9								
				"	32.02 - 32.21: Coal, dull, ave 15-20% B (Db)			206			0.19	1.49	23.2	Samples 989202-212 incl.							
				"	32.21 - 32.44: Mudstone, brown to dark grey										38.1	2.1	10.5	0.30	19.8	49.3	
				"	with 445mm wide bright coal bands + numerous minor (<1mm)			207			0.23	2.27	80.5								
					bands - all with calcite &/or zeolite in cleats; minor coal									Samples 989202 203 204							
					balls from 32.36 - 32.44m									206, 209, 210 + 212 =							
				"	32.44 - 32.49: Mudstone, grey			208			0.05	2.59	92.3								
				"	32.49 - 32.86: Coal, dull, <1 % B (D) zeolite			209			0.37	1.61	36.6		28.9	2.4	11.5	0.35	23.02	57.2	
31.64	34.64	2.98	100	"	32.86 - 32.96: Coal, heavy dull + soft			210			0.10	1.68	46.3								
				"	32.96 - 32.99: Mudstone, carbonaceous (+ ?HDC)			211			0.03	2.42	85.9								
				"	32.99 - 33.16: Coal, dull 10-20% B (Db)			212	32.99	33.33	0.34	1.56	25.2								
				"	33.16 - 33.33: Coal, bright 50% B (DB)																
				"	33.33 - 34.42: Mudstone, brown/dark grey several 3-5mm																
					coal bands; (32.21 - 32.44)																
				"	34.42 - 34.46: Siltstone, sandy																
				"	34.46 - 34.50: Sandstone, feldspathic lithic, fg, with																
					coal + mudstone debris																
				"	34.50 - 34.76: Sandstone, lithic, mg, with grey and																
					carbonaceous mudstone cpc																

081

270082

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT25

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
34.64	37.64	30	100	NQ	34.76 - 49.40: Sandstone, lithic m to cg, minor															
37.64	40.64	30	100	"	grey & carbonaceous mudstone debris 46.80 - 47.65m															
40.64	43.64	2.45	98	"	49.40 - 49.55 ; Mudstone, grey															
43.64	46.64	3.0	100	"	49.55 - 59.87: Sandstone, lithic, m to cg carbonates															
46.64	49.64	2.94	98	"	concretion 50.46 - 50.59, minor pyritic carbonaceous															
49.64	52.64	2.95	98	"	mudstone fragments															
52.64	55.64	2.94	98	"	59.87 - 60.19: Coal heavy dull, <1% B (D) - hard			989282	59.87	60.19	0.32	2.84	32.3	1.85	33.5	4.3	6.3	0.63	20.12	55.9
55.64	58.64	2.97	99	"	60.19 - 60.44: Coal, dull 5% B (Dmb), broken			989283	60.19	60.44	0.25	1.87	35.7							
				"	60.44 - 60.82: Mudstone, carbonaceous, minor cream															
					mudstone laminae															
				"	60.82 - 60.85: Coal, dull, 5-10% B (Dmb)															
58.64	61.64	2.97	99	"	60.85 - 61.34: Mudstone, carbonaceous, minor bright coal															
					bands.															
				"	61.34 - 61.40: Coal, dull, 10 -15% B (Db)															
				"	61.40 - 61.74: Mudstone, carbonaceous															
				"	61.74 - 62.06: Siltstone, muddy & carbonaceous															
61.64	64.64	2.85	95	"	62.06 - 62.60: Mudstone, carbonaceous/dk grey															
				"	62.60 - 64.10: 1B siltstone + quartz sandstone															
64.64	67.64	2.96	99	"	(fg) very minor grey mudstone															
				"	64.10 - 67.97: Sandstone, quartz rich lithic and quartz															
					sandstone, f to mg, with laminae of grey mudstone, + ≤10%															
					calcite in subvertical joints.															
67.64	70.64	3.0	100	"	67.97 - 70.64: Sandstone, lithic, cg, minor grey mudstone															
					fragments; faulted contact at 67.97m.															
					E.O.H. 70.64m															

082

270083

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 540 313.5mE 5320 509.2mN AZIMUTH NA DRILLERS OVERLAND COMMENCED DEPTH 81.80m HOLE No. DD84 PT-26

RL COLLAR 482.75 ASL INCLINATION -90° DRILL TYPE SCOUT 250 COMPLETED CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	ASSAY VALUES (Analysed by ACIRL) A	Composites RD	Composites A	Composites M	Composites VM	Composites S	Composites SE	Composites FC
0	3.8	TRICONE ROLLER - PRECOLLAR																		
					0-3.8: Alluvium/Colluvium															
3.8	6.8	0.8	27	NQ	3.8-9.8: Colluvium - Quarternary talus of dolerite boulders															
6.8	9.8	1.1	37		in sandy clay															
9.8	12.8	2.55	85	"	9.8-11.15: Sandstone, lithic, mg	EW														
				"	11.15-12.53: Mudstone, banded grey	HW														
				"	12.53-12.73: Sandstone, lithic, fg	MW														
				"	12.73-13.35: Sandstone, lithic, fg	SW														
12.8	15.8	2.95	98	"	13.35-13.70: Sandstone, lithic, f to mg	MW														
				"	13.70-15.38: Sandstone, lithic, f to mg	F/SW														
				"	15.38-15.76: Sandstone, lithic, f to mg	SW						BOCO	15.76m							
15.8	18.8	3.0	100	"	15.76-21.49: Sandstone, lithic, m to cg with coaly debris	(F														
					17.54-17.87m, and 19.72-20.3m	(														
				"	21.49-21.54: Coal, dull (D)			989237	21.49	21.54	0.05	1.62	35.5							
18.8	21.8	2.93	98	"	21.54-21.61: Shale, grey with 1mm coal ploes			238			0.07	2.17	76.0							
				"	21.61-21.95: Coal, dull, mixture of D and Dmb (2-3% bright)															
					very broken and core loss of ≃ 0.10m between 21.61 & 21.95m			239			0.34	1.74	46.3	53.4	3.9	14.1	0.29	13.90	28.6	
					(...? loss of soft bright coal)									Samples 989237, 239 and 241:						
				"	21.95-22.01: Mudstone, grey & shaley			240			0.06	2.37	84.2	43.1	4.0	16.7	0.35	17.82	36.2	
				"	22.01-22.07: Coal, dull, 3% bright (Dmb)			989241	22.01	22.07	0.06	1.51	26.8							
				"	22.07-22.11: Shale, dark brown															
21.8	24.8	2.95	98	"	22.11-22.65: Mudstone, grey/green, shaley															
				"	22.65-23.00: Siltstone															
				"	23.00-24.05: Mudstone, grey, fossile															
				"	24.05-24.20: Shale, carbonaceous															
				"	24.20-24.50: Mudstone, grey to dark grey															
24.8	27.8	2.90	97	"	24.50-25.50: 1B mudstone and siltstone															
				"	25.50-28.40: Mudstone, grey/dark grey															
				"	28.40-28.50: Mudstone, cream															
				"	28.50-28.92: Mudstone, carbonaceous															

083

270084

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME ..... No. .....

PLAN – MAP REFERENCE .....

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. DD84 PT-26

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) .....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
				NQ	28.92-29.40: 1B siltstone/mudstone															
27.8	30.8	3.0	100	"	29.40-30.71: Mudstone, grey to dark grey, carbonaceous															
					29.88-30.50m															
				"	30.71-31.22: Mudstone, grey/brown, silty															
				"	31.22-31.50: Siltstone, transitional to CPC in fg lithic															
					sandstone															
				"	31.50-32.40: Sandstone, lithic, f to mg															
				"	32.40-32.51: Sandstone, quartz rich lithic green															
30.8	33.8	3.0	100	"	(? tuffaceous)															
				"	32.51-32.69: Tuff-?mafic, green with ? calcite replaced															
					shards, So 75°															
				"	32.69-32.75: As for 33.40-32.51m															
33.8	36.8	3.0	100	"	32.75-38.72: Sandstone, lithic, mg															
				"	38.72 - 39.10: Siltstone, sandy															
				"	39.10 - 41.19: Sandstone, lithic, minor CPC															
				"	41.19 - 41.21: Shale,															
				"	41.21 - 41.31: Coal, heavy dull			989213	41.21	41.31	0.10	1.95	61.8							
				"	41.31 - 41.44: Coal, heavy dull (minor Dmb)			214			0.13	1.80	50.6							
				"	41.44 - 41.52: Shale, buff			215			0.08	2.14	78.4							
				"	41.52 - 41.61: Coal, 50% bright (DB) soft - loss of bright			216			0.09	1.66	41.8							
					coal															
				"	41.61 - 41.62: Shale, buff to cream			217			0.01	2.06	71.9							
				"	41.62 - 41.65: Shale, carbonaceous, minor heavy dull coal			218			0.03	2.02	69.9	Samples 989213 - 236 incl						
				"	41.65 - 41.84: Coal, dull 5% bright (Dmb)			219			0.19	1.51	28.7							
39.8	42.8	2.90	97	"	41.84 - 42.08: Coal, bright 90% bright (B)			220			0.24	1.39	13.8		53.5	7.0	12.6	0.30	12.40	26.9
				"	42.08 - 42.18: Coal dull 3% bright (Dmb)			221			0.10	1.67	41.6							
				"	42.18 - 42.20: Shale, carbonaceous			222			0.02	2.08	74.2							
				"	42.20 - 42.35: Mudstone, buff			223			0.15	2.24	78.8							
				"	42.35 - 42.40: Coal, dull (Dmb) + heavy dull			224			0.05	1.72	46.4							
				"	42.40 - 42.45: Coal, dull 5% bright (Dmb) soft			225			0.05	1.58	33.7							

084

270085

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

[redacted] T No. [redacted]3 [redacted]

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84.PT26.....

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE
				NQ	42.45 - 42.54: Coal, dull 10% (Dmb)			989226	42.45	42.54	0.09	1.56	31.6						
				"	42.54 - 42.58: Coal, heavy dull + carbonaceous Mudstone			989227	42.54	42.58	0.04	2.06	67.8						
				"	42.58 - 42.60: Mudstone, grey to cream			228			0.02	2.44	89.1						
				"	42.60 - 42.92: Coal, heavy dull			229			0.32	1.90	58.7	Samples with less than					
				"	42.92 - 42.95: Shales, carbonaceous			230			0.03	2.18	75.1	50% ash between					
				"	42.95 - 43.01: Mudstone, dark grey to carbonaceous; coal			231			0.06	2.30	80.5	989213 - 989236					
					fragments ? fault														
42.8	45.8	3.05	100	"	43.01 - 43.06: Coal, heavy dull			232			0.05	1.95	60.8		33.3	5.0	17.3	0.55	21.32	44.4
				"	43.06 - 43.09: Shale, brown to dark grey			233			0.03	2.09	72.4						
				"	43.09 - 43.25: Coal, dull (Dmb) + heavy dmb			234			0.16	1.76	47.4						
				"	43.25 - 43.29: Mudstone, shaley, dark brown			235			0.04	2.14	75.2						
				"	43.29 - 43.40: Coal, heavy dull			236	43.29	43.40	0.11	1.81	51.7						
				"	43.40 - 43.45: Shale/mudstone, cream + silty, minor														
45.8	48.8	3.05	100	"	coaly laminae, and 10% euhedral pyrite														
48.8	51.8	3.03	100	"	43.45 - 49.50: Sandstone, lithic, mg, with pyrite														
					aggregates (< 20 mm)														
51.8	54.8	3.05	100	"	49.50 - 53.60: Sandstone, lithic mg														
54.8	57.8	3.05	100	"	53.60 - 58.70: " " " with carbonaceous														
					mudstone stringers + grey mudstone balls.														
57.8	60.8	3.05	100	"	58.70 - 60.90: CPC of grey mudstone lithic sandstone,														
					minor carbonaceous stringers and thin beds														
60.8	63.8	3.0	100	"															
63.8	66.8	3.0	100	"	60.90 - 70.17: Sandstone, lithic mg														
66.8	69.8	3.0	100	"	70.17 - 71.90: Siltstone, quartzose laminated	△ So 82°													
				"	71.90 - 72.50 : Siltstone & lithic sandstone														
69.8	72.8	3.0	100	"	72.50-74.80: Sandstone, lithic, mg, with carbonaceous														
					laminae and minor CPC														
72.8	75.8	3.0	100	"	74.80-76.05: Sandstone, lithic, with grey siltstone clasts														
					(SPC)														

085

270086

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 4

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT-26

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
75.8	78.8	3.0	100	NQ	76.05-76.17: ?Mudstone, tuffaceous, grey to green															
					(? smectitic)															
				"	76.17-77.30: As for 74.8-76.05m															
78.8	81.8	3.0	100	"	77.30-77.42: As for 76.05-76.17m															
				"	77.42-81.80: Sandstone, lithic, mg															
					EOH 81.80m															

086

270087

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 539681.8mE 5320177.7mN AZIMUTH NA DRILLERS OVERLAND COMMENCED DEPTH 24.20m HOLE No. DD84 PT-27

RL COLLAR 442.25 INCLINATION -90° DRILL TYPE SCOUT 250 COMPLETED CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACTRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0			TRICONE ROLLER - PRECOLLAR																	
	6.0	2.5		NQ	0-5.5: Scree deposit of dolerite boulder in EW lithic sand (Colluvium)	(NA														
					5.5-8.9: Mudstone, brown/grey and carbonaceous - bad core loss	(EW														
					8.9-9.2: Sandstone, lithic, f/mg	HW														
					9.2-12.8: Mudstone, khaki	HW														
					12.8-13.7: 1B siltstone & grey mudstone	SW														
					13.7-13.85: 1B siltstone & fg lithic sandstone	MW														
					13.85-16.21: 1B siltstone & fg lithic sandstone	F														
					16.21-16.70: Sandstone, lithic, fg															
					16.70-17.65: Mudstone, grey, var. 5 Hy															
					17.65-17.73: Coal, dull (D), broken															
					17.73-17.74: Mudstone, grey															
					17.74-17.96: Shale, v. pale grey/green															
					17.96-18.05: Shale, brown, minor dark brown to carbonaceous 1B's															
					18.05-18.24: Coal, dull (D), soft & broken			989724	18.05	18.24	0.19	1.53								
					18.24-18.28: Shale, brown			725			0.04	1.82								
					18.28-18.50: Coal, dull & bright ≤40% B (≃ Db), but only 0.10m recovered - soft			726			0.22	1.43								
					18.50-18.80: Coal, dull (≃ Dmb), fissite but only 0.14m recovered - possible loss of soft/brittle bright coal as for 18.28-18.50			727			0.30	1.52								
					18.80-18.89: Coal, dull, 5-10%B (Dmb)			728			0.09	1.27								
					18.89-19.09: Coal, dull, 20% B (Db), soft			729			0.20	1.39								
					19.09-19.16: Shale, dark brown, minor thin coal ploes, soft 19.16-19.19: Shale, cream/buff, with ≃ 1/3 coal (D) intersected ... (? cz)			730			0.10	1.96								
					19.19-19.22: Coal, dull (D), broken			989731			0.03	1.85								

087

270088

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME PARATTAH No.

PLAN – MAP REFERENCE

CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. DD84 PT-27

RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
					19.22-19.31: Shale, cream/buff, soft			989732	19.22	19.31	0.09	2.08								
					19.31-19.86: Coal, dull, (D), & minor bright bands,			733			0.55	1.59								
					relatively hard															
					19.86-19.93: Shale, carbonaceous			734			0.07	1.95								
					19.93-19.99: Coal, dull, 3% B (Dmb)			735			0.06	1.37								
					19.99-20.03: Shale, brown, minor 1mm coal plies			736			0.04	1.93								
					20.03-20.05: Coal, dull (D), fissile			737			0.02	1.57								
					20.05-20.07: Shale, brown			738			0.02	1.96								
					20.07-20.22: Coal, dull (D), relatively hard			739			0.15	1.61								
					20.22-20.27: Shale, grey/brown			740			0.05	2.06								
					20.27-20.32: Coal, dull (D)			741			0.05	1.64								
					20.32-20.35: Coal, dull & bright, ?20-30% B (Db)			742	20.32	20.35	0.03	1.51								
					20.35-20.54: Mudstone, carbonaceous															
					20.54-22.30: Mudstone, grey															
					22.30-23.45: 1B grey mudstone & siltstone															
					23.45-23.90: Siltstone															
					23.90-24.05: Sandstone, lithic, fg															
					24.05-24.20: Siltstone															
					EOH 24.20m															

088

270089

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No.

PLAN – MAP REFERENCE

CO-ORDINATES 539 614.1mE 5322 532.4mN AZIMUTH NA DRILLERS OVERLAND COMMENCED 12.10.84 DEPTH HOLE No. DD84 PT-29/ 30

RL COLLAR 459.9 INCLINATION -90° DRILL TYPE SCOUT 250 COMPLETED 15.10.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	2.2	TRICONE ROLLER -			PRECOLLAR															
2.2	3.7	1.5	100	NQ	0-1.0m: Alluvium															
				"	1.0-3.95: Sandstone, lithic, m to cg, minor CPC	MW														
3.7	6.7	3.0	100	"	3.95-7.1: Sandstone, lithic, m to cg	MW/SW														
6.7	9.9	3.2	100	"	7.1-9.8: Sandstone, lithic, m to cg	F/SW														
				"	9.8-10.16: Sandstone, lithic, m to cg	MW														
				"	10.16-10.38: Siltstone, dark grey to carbonaceous	MW														
				"	10.38-10.53: Mudstone, uniform with grey	MW														
9.9	12.9	2.95	98	"	10.53-10.75: Mudstone/shale, carbonaceous to dark grey	MW		989242	10.53	10.75	0.22	2.39	85.5							
				"	10.75-11.10: Coal, dull (? Dmb), oxidized and broken	MW		989243	10.75	11.10	0.35	2.00	50.2	2.00	50.2	11.0	6.6	0.29	10.94	32.2
				"	11.10-11.76: Mudstone, uniform mid grey, minor laminae,	(MW														
					with Fe oxide enhancement	(														
				"	11.76-11.94: Coal, dull (? D/Dmb), oxidized	MW		989244	11.76	11.94	0.18	1.94	46.3	1.94	46.3	12.7	7.1	0.34	11.88	33.9
				"	11.94-12.00: Mudstone, dark grey	MW														
				"	12.00-12.13: Mudstone, carbonaceous and pale grey,	(MW														
					? faulted lower boundary	(														
				"	12.13-13.17: Sandstone, lithic, fg and silty	SW/F														
				"	13.17-13.62: Sandstone, lithic, f to mg	F														
				"	13.62-13.70: Mudstone, mid grey	F														
12.9	15.9	2.87	96	"	13.70-14.26: Coal, heavy dull	≈ F		(989245	13.70	14.26	0.56	2.10	61.5	2.10	61.5	11.0	6.1	0.19	6.74	21.4
				"	14.26-14.89: Mudstone, uniform mid grey, broken	F														
				"	14.89-15.12: Siltstone, inc. sand toward base															
15.9	18.9	3.0	100	"	15.12-22.50: Sandstone, lithic, mg, minor mudstone debris	(														
18.9	21.9	3.0	100	"	joined with calcite and zeolite	(														
21.9	24.9	3.0	100	"	22.50-22.83: Sandstone, lithic, mg, baked															
24.9	27.4	30	100	"	22.83-23.13: Dolerite - chilled margin															
27.9	30.9	3.0	100	"	23.13-31.0: Dolerite, fine grained															
				"	31.0-31.38: Dolerite, chilled margin															

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270090

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT-29/30

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
				NQ	31.38-31.7: Sandstone, lithic, m to cg, baked and															
30.9	33.9	3.0	100	"	? carbonaceous (as for 22.5-22.83)															
33.9	36.9	3.0	100	"	31.7-39.6: Sandstone, lithic, m to cg, with chloritic spots															
36.9	39.9	3.0	100	"	/aggregates 34.7-39.6m															
39.9	42.9	3.0	100	"	39.6-40.15: Mudstone, grey ± dark grey															
42.9	45.9	3.0	100	"	40.15-49.55: Sandstone, lithic, m to cg, with coaly &															
45.9	48.9	3.0	100	"	carbonaceous debris to - 42.5m															
48.9	51.9	2.75	92	"	49.55-49.85: Coal + mudstone - 0.20m coal lost,			989246	49.55	49.85	0.30	2.49	88.8	2.49	88.8	5	2.3	0.04	2.48	7.4
				"	49.85-50.00: CPC of grey mudstone ss															
				"	50.00-50.66: Sandstone, lithic, mg															
				"	50.66-50.96: Mudstone, grey/brown, laminated															
				"	50.96-51.00: Coal, dull (D)															
				"	51.00-52.11: Mudstone, grey/dark grey/pale brown, poorly															
51.9	54.9	3.0	100	"	laminated, coal plies from 51.34-51.37, 51.60-51.65, and															
					several other minor 5mm plies															
				"	52.4-53.75: Siltstone, muddy, pale brown, minor pink and															
					pale green colouration, broken ...? crushed zone															
54.9	57.8	2.9	100	"	53.75-57.80: Sandstone, lithic, mg, minor silty interbeds															
					and debris															
					EOH - 57.80m															

NB: PT-30 was a redrill of PT-29, with the core commencing from 9.9m; the section of this log from 0 to 9.9m was taken from hole PT-29.

090

SHEET No. 1

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

270091

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 539875.9mE 5323204.2mN AZIMUTH NA DRILLERS OVERLAND COMMENCED 15.10.84 DEPTH 57.70m HOLE No. DD84 PT-31

RL COLLAR 462.55 INCLINATION -90° DRILL TYPE SCOUT 250 COMPLETED 16.10.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES [Analysed by ACIRL] RQ	A	Composites RQ	A	M	VM	S	SE	FC
0	1.7	TRICONE ROLLER - PRECOLLAR																		
					0-0.5: Alluvium															
					0.5-1.7: Sandstone, lithic	EW														
1.7	3.7	1.9	95	NQ	1.7-5.9: Sandstone, lithic, mg, minor CPC	HW														
3.7	6.7	3.0	100	"	5.9-6.68: Sandstone, lithic, mg	HW														
				"	6.68-6.70: Coal, dull, fissile - oxidized	HW		989247	6.68	6.70	0.02	2.25	77.9							
				"	6.70-6.76: Mudstone, brown	"		248			0.06	2.32	83.5							
				"	6.76-6.82: Coal, dull - oxidized	"		249			0.06	2.13	64.1							
				"	6.82-6.97: Mudstone	"		250			0.15	2.28	84.3							
				"	6.97-7.01: Coal, dull - oxidized	"		251			0.04	2.25	79.8							
				"	7.01-7.06: Mudstone	"		252			0.05	2.26	84.1							
				"	7.06-7.10: Mudstone, ? carbonaceous	"		253			0.04	2.27	81.9							
				"	7.10-7.24: Coal, dull - oxidized	"		254			0.14	2.22	77.3							
				"	7.24-7.54: Mudstone, minor coal bands	"		255			0.30	2.29	84.5		Samples 989247 - 274 inclusive					
				"	7.54-7.58: Coal, dull - oxidized	"		256			0.04	2.09	63.4							
				"	7.58-7.61: Mudstone	"		257			0.03	2.33	80.5	2.25	75.0	8.2	6.0	0.29	3.32	10.8
				"	7.61-7.67: Coal, dull - oxidized	"		258			0.06	2.17	66.3							
6.7	9.7	3.0	100	"	7.67-7.73: Mudstone	"		259			0.06	2.35	82.0		Samples 989247, 249, 251, 254,					
				"	7.73-7.99: Coal, dull - oxidized, grey colour	"		260			0.26	2.15	64.1		256, 258, 260, 262, 264 and 265:					
				"	7.99-8.27: Mudstone, grey	"		261			0.28	2.41	85.1							
				"	8.27-8.35: Coal, dull - oxidized	"		262			0.08	2.37	82.0	2.16	68.4	8.5	6.7	0.40	5.54	16.4
				"	8.35-8.38: Mudstone	"		263			0.03	2.45	87.6							
				"	8.38-8.59: Coal dull - oxidized & soft	"		264			0.21	1.99	51.6		Samples 989266, 267, 268, 270					
				"	8.59-8.85: Coal, dull - relatively hard	"		(265			0.26	2.19	74.8		272, and 273:					
				"	and broken ... (? Dmb), orange zeolite	"		(						2.23	71.1	6.6	5.4	0.45	4.92	16.9
				"	8.85-9.10: Coal, dull, hard (≈ Dmb)	"		266			0.25	2.21	70.6							
				"	9.10-9.35: Coal, dull, hard (Db/Dmb)	"		267			0.25	2.02	51.9							
				"	9.35-9.55: Coal, dull, soft (? D/Dmb) inc. 40mm stone band	"		268			0.20	2.39	83.4							
				"	9.55-9.59: Mudstone	"		269			0.04	2.39	84.8							
				"	9.59-9.70: Coal, dull, hard/broken (? D)	"		270			0.11	2.25	72.3							
				"	9.70-9.81: Claystone	"		989271	9.70	9.81	0.11	2.41	85.6							

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270092

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT-31

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
				NQ	9.81-9.98: Coal, dull, soft (D)	HW		989272	9.81	9.98	0.17	2.32	79.0							
				"	9.98-10.23: Coal, dull, hard (D/Dmb)	"		273			0.25	2.28	73.2							
9.7	12.7	3.0	100	"	10.23-10.36: Coal, heavy dull, ± carbonaceous mudstone	MW		274			0.13	2.47	87.6							
				"	10.36-10.74: Mudstone, carbonaceous	"		989275	10.36	10.74	0.38	2.50	89.6							
				"	10.74-12.18: Mudstone, grey to dark grey, variably	"														
					laminated, minor 1.3mm coal (B) plies															
				"	12.18-14.3: Siltstone, weakly laminated	F														
				"	14.3-16.22: Sandstone, lithic, f to mg, minor coaly															
12.7	15.7	3.0	100		stringers															
				"	16.22-16.28: Coal - wood - silicified															
				"	16.28-16.68: Siltstone, plant fragments and roots															
15.7	18.7	3.0	100	"	16.68-16.75: Sandstone, lithic, mg															
				"	16.75-17.20: Mudstone, grey/pale brown, roots															
				"	17.20-18.83: CPC of grey mudstone + silicified wood															
18.7	21.7	3.0	100	"	fragments in m to cg lithic sandstone															
				"	18.83-21.85: Sandstone, lithic, f to mg															
21.7	24.7	3.0	100	"	21.85-24.90: CPC - as for 17.2-18.83m															
24.7	27.7	2.95	98	"	24.90-30.45: Sandstone, lithic, f to mg ± CPC															
27.7	30.7	3.0	100	"	30.45-30.82: Mudstone, grey with 30mm thick silicified															
30.7	33.7	3.0	100	"	wood fragments at top															
33.7	36.7	3.0	100	"	30.82-42.45: Sandstone, lithic, f to cg, weakly laminated															
36.7	39.7	3.0	100	"	to - 34m (△So 70°/72°)															
39.7	42.7	3.0	100	"	42.45-43.10: Mudstone, grey & pale brown laminated,															
					spotted (? mud pellets)															
				"	43.10-43.50: Mudstone, silty, grey/brown															
				"	43.50-43.60: Coal, dull (D)			989276	43.50	43.60	0.10	2.45	84.0	(						
42.7	45.3	2.6	100	"	43.60-43.70: Mudstone, grey			277			0.10	2.50	89.9	(2.19	64.9	8.1	6.8	0.26	6.60	20.2
				"	43.70-44.40: Coal, dull, (Dmb)			989278	43.70	44.40	0.70	2.11	57.6	(						
				"	44.40-44.60: Mudstone, dark grey															
				"	44.60-45.30: 1B grey mudstone/siltstone/fg lithic sandstone															

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270093

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT-31

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
				NQ	45.30-46.35: Sandstone, lithic, fg, minor grey mudstone															
					horizons															
45.3	48.4	3.1	100	"	46.35-47.57: 1B dark grey/carbonaceous ms/fg lithic															
					sandstone, (△ So 80/83°)															
				"	47.57-47.80: Sandstone, lithic, fg															
				"	47.80-48.80: Mudstone, dark grey silty & weakly laminated															
				"	48.80-49.00: Coal, dull, soft (Dmb)			989279	48.80	49.00	0.20	2.35	75.7							
				"	49.00-49.05: Mudstone, grey			280	49.00	49.05	0.05	2.57	93.1	2.32	74.3	4.6	4.3	0.24	5.30	16.8
				"	49.05-49.23: Coal, dull, soft (Db)			989281	49.05	49.23	0.18	2.22	66.5							
				"	49.23-49.60: Mudstone, grey															
				"	49.60-50.27: Sandstone, quartz with grey mudstone 1B's															
48.4	51.5	3.1	100	"	(△ So - 80°)															
				"	50.27-51.87: Mudstone, pale brown with coal (D) 51.03-51.06m															
				"	51.87-53.27: 1B siltstone (mottled) - pale green to brown															
51.5	54.6	3.08	99	"	mudstone (spotted) - fg feldspathic quartz sandstone -															
					mg lithic sandstone															
				"	53.27-57.7: Sandstone, lithic, mg with silicified wood															
54.6	57.7	3.0	100	"	fragments (+ ? matrix...suggestive of thermal alternation)															
					from 56.78-56.84m.															
					EOH - 57.70m															

093

270094

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 540.160E 322.700N AZIMUTH NA DRILLERS OVERLAND COMMENCED 17.10.84 DEPTH 57.00m HOLE No. DD84 PT32

RL COLLAR INCLINATION -90° DRILL TYPE SCOUT 250 COMPLETED 18.10.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
	1.5	TRICONE ROLLER - PRECOLLAR																		
5	3.6	1.75	83	NQ	0-1.5: Alluvium															
				"	1.5-4.8: Sandstone, lithic, m to cg, minor CPC	MW	30-100mm													
6	6.6	2.75	92	"	4.8-6.32: Mudstone, brown (oxide) laminated	HW	20-50mm													
				"	6.32-6.55: Siltstone	MW	)													
				"	6.55-6.73: Siltstone	SW	)50-100mm													
6	9.6	3.0	100	"	6.73-7.05: 1B Siltstone + fg quartz sandstone	MW	)													
				"	7.05-10.12: as above, very regular 1B's with ave. width	) SW	)100mm													
					5mm, 6.73-10.12m	)	)				80CO	- 10.12m								
				"	10.12-10.35: Sandstone, quartz, mg, minor carbonaceous	F	)													
6	12.6	3.0	100		mudstone debris, (? cemented within carbonates)		) 100mm													
2.6	15.6	3.0	100	"	10.35-18.15: Sandstone, lithic, mg, coaly debris 11.7-12.3,		)													
5.6	18.6	2.95	98		16.3-16.5, minor grey mudstone pellets		) 100-600mm													
				"	18.15-21.50: CPC of grey & carbonaceous mudstone in m to cg		)													
8.6	21.6	2.85	95		lithic sandstone (? some in situ beds)		)													
				"	21.50-21.99: Mudstone, grey, massive		)													
				"	21.99-22.07: Mudstone, carbonaceous, ±HDC			989284	21.99	22.07	0.08	2.19	75.0							
				"	22.07-22.15: Coal, heavy dull, brecciated, mixture of D & Dmb			285	22.07	22.15	0.08	1.85	51.5							
				"	22.15-22.24: Shale, buff			286			0.09	2.32	83.0							
				"	22.24-22.65: Coal, dull, 3% B(Dmb), rel. hard			287			0.41	1.60	29.7	Samples 989285-296						
				"	22.65-22.79: Coal, bright, 50% B (DB), v.soft			288			0.14	1.56	26.6	inclusive:						
				"	22.79-22.94: Coal, dull, 10% B (Dmb), soft			289			0.15	1.60	31.0							
1.6	24.6	2.95	98	"	22.94-23.02: Shale, dark brown			290			0.08	2.24	78.4	1.67	36.9	4.1	13.3	0.33	19.48	45.7
				"	23.02-23.18: Coal, dull, 10-15% B (Db), soft			291			0.16	1.55	26.2							
				"	23.18-23.40: Coal, dull, - 30% B(Db), soft with some core loss			292			0.22	1.57	27.9	Samples with 50% Ash between						
				"	23.40-23.50: Mudstone, grey to pale brown			293			0.10	2.27	78.0	989285 and 296:						
				"	23.50-23.80: Coal, dull (D) with 2 x 20mm buff shales			989294	23.50	23.80	0.30	1.64	34.5	1.59	28.7	3.3	15.0	0.38	22.74	53.0
				"	23.80-24.20: Coal, dull (Dmb) generally soft			295	23.80	24.20	0.40	1.59	29.1							
				"	24.20-24.55: Coal, dull, ave.20-25% B(Db), alternate soft			) 296	24.20	24.55	0.35	1.55	24.1							
					& bright (50mm)ploes with hard & dull (80-100mm) ploes			)												
					core loss in former			)												

094

270095

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. ....2.....

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT32.....

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
				NQ	24.55-24.80: Mudstone, grey & brown														
				"	24.80-25.72: Sandstone, quartz rich lithic, fg														
				"	25.72-25.74: Coal, dull (Db) 20% calcite														
				"	25.74-26.43: Sandstone, lithic, fg														
24.6	27.6	2.70	90	"	26.43-26.65: Crushed zone - local motion only, ie mudstone														
					roof still - in ploes (base - 20°)														
				"	26.65-26.91: Coal, dull (D), hard			989297	26.65	26.91	0.26	1.71	36.6	(					
				"	26.91-27.10: Coal, dull (D), soft & broken, contaminated			(						(					
					with mudstone ... 0.36m core loss 26.91-27.60m			(298			0.19	2.08	66.5	(1.87	50.5	2.3	12.7	0.28	14.60	34.5
				"	27.10-27.95: Mudstone, grey, with coal fragments throughout			(											
					the interval			(299			0.85	2.36	83.1						
				"	27.95-28.02: Coal, dull (Dmb) minor distribution .. probably			(300			0.07	1.71	38.6						
					similar 26.43-26.65.			(											
				"	28.02-28.10: Mudstone, pale brown			989172			0.08	2.12	70.0	1.87	52.2	2.6	12.5	0.31	13.86	32.7
				"	28.10-28.25: Coal, heavy dull, broken			173			0.15	1.95	58.1						
27.6	30.6	3.0	100	"	28.25-28.65: Mudstone, grey & broken			174			0.40	2.48	88.4						
				"	28.65-28.90: Coal, dull, (Dmb), some loss of bright coal			175			0.25	1.67	34.5						
					So - 60°														
				"	28.90-28.98: Shale, buff			176			0.08	2.45	86.9	1.71	37.1	2.0	16.1	0.42	19.16	44.8
				"	28.98-29.03: Coal, heavy dull, broken & dislocated			177	28.98	29.03	0.05	1.89	50.4						
				"	29.03-29.48: Mudstone, grey & broken														
				"	29.48-29.54: Coal, dull (D), broken														
				"	29.54-31.13: Mudstone, grey, minor thin coal band, all broken														
31.13	33.6	3.0	100	"	31.13-46.60: Sandstone, lithic, f to mg, generally clean														
33.6	36.6	3.0	100		minor mudstone & coaly debris from 41.10-41.15m, carbonate														
36.6	39.6	3.0	100		concretion from 44.05-44.45m														
39.6	42.6	3.0	100																
42.6	45.6	3.0	100	"	46.60-46.92: 1B dark grey mudstone/cream siltstone to														
					silty mudstone (... similar to roof of upper seam in PT25)														
				"	46.92-47.21 Mudstone rey/brown silty														

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270096

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT32

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE	
				NQ	47.21-47.33: Mudstone, carbonaceous, ±HDC			(989178	47.21	47.33	0.12	2.25	78.4	(						
45.6	48.5	2.9	100	"	47.33-47.93: Coal, dull, 10-15% B (Db) v. soft			(179			0.60	1.68	38.3	(1.69	38.6	3.7	9.8	0.34	19.28	47.9
				"	47.93-48.42: Coal, dull, 15-25% B (Db), v.soft & difficult			((180			0.49	1.56	24.8	(						
					to estimate % bright coal			((						(						
				"	48.42-48.55: Mudstone, grey to shaley, broken with			989181	48.42	48.55	0.13	2.33	87.1							
					2 x 20mm coal ploes															
				"	48.55-49.28: Mudstone, grey/brown, with coal (Db) 49.07-49.09m															
48.5	50.8	2.4	100	"	49.28-49.38: Siltstone & fg lithic sandstone															
				"	49.38-49.96: Sandstone, lithic, fg, minor mudstone &															
					carbonaceous debris															
				"	49.96-50.20: Mudstone, brown, laminated															
				"	50.20-50.40: Coal, heavy dull			989182	50.20	50.40	0.20	1.90	51.2							
				"	50.40-50.45: Coal, dull, mixed with - 1 x 10mm shale band			(183			0.05	1.72	44.1	1.71	39.5	4.6	10.0	0.36	8.24	45.9
					(ie contaminated)			(												
				"	50.45-50.54: Coal, dull, 1% B (Dmb)			184			0.09	1.67	37.4							
				"	50.54-50.60: Coal, dull, 10-15% B (Db)			185			0.06	1.54	26.3							
				"	50.60-50.75: Coal, 40-50% B (DB)			989186	50.60	50.75	0.15	1.53	25.3							
50.8	51.0	0.3	100	"	50.75-51.64: Mudstone, brown & fissile															
51.0	51.3	0.3	100	"	51.64-52.07: 1B mudstone & siltstone															
51.3	54.0	2.54	94	"	52.07-57.00: Sandstone, lithic, mg, minor laminations to															
54.0	57.0	3.0	100		52.4m															
					EOH - 57.0m															

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270097

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 535244.1mE 5319227mN AZIMUTH NA DRILLERS STACPOOLE COMMENCED 16.10.84 DEPTH 11.14m HOLE No. DD84 PT-33

RL COLLAR 447.75 INCLINATION -90° DRILL TYPE GEMCODRIL COMPLETED 17.10.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	2.25		PRECOLLAR																	
2.25	3.14	0.8	90	NQ	0-2.25: Alluvium															
3.14	6.14	3.0	100	"	2.25-11.14: Basalt, fresh grey with large (25mm) olivine															
6.14	9.14	3.0	100		phenocrysts															
9.14	11.14	1.5	75																	
					NOTE: Abandoned due to drilling problems															
					EOH - 11.14m															

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270098

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 535035.6mE 5319182.8mN AZIMUTH NA DRILLERS STAGPOOLE COMMENCED 17.10.84 DEPTH 60.58m HOLE No. DD84 PT34

RL COLLAR 440.55 INCLINATION -90° DRILL TYPE GEMCODRIL COMPLETED 19.10.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	3.0		PRECOLLAR		0-3.0: Alluvium and weathered lithic sandstone															
3.0	3.58	0.55	95	NQ	3.0-6.4: Sandstone, lithic, mg	MW														
3.58	6.58	2.90	97	"	6.4-8.0: Sandstone, lithic, mg	SW/F														
6.58	9.58	3.0	100	"	8.0-8.3: Sandstone, lithic, mg	SW														
9.58	12.58	3.0	100	"	8.3-10.80: Sandstone, lithic, mg	F														
				"	10.80-11.30: Sandstone, lithic, mg, minor carbonaceous	(														
					mudstone debris	(SW														
				"	11.30-12.25: Sandstone, lithic, minor coaly debris	MW														
				"	12.25-13.15: Sandstone, lithic, mg, minor coaly debris	SW														
				"	13.15-13.55: Sandstone, lithic, mg	MW														
				"	13.55-14.20: Sandstone, lithic, mg, carbonaceous mudstone	(														
					fragments, green reduction haloes	(MW														
12.58	15.58	2.83	94	"	14.20-14.44: Mudstone, grey/khaki	MW														
				"	14.44-14.51: Siltstone, carbonaceous, and CPC of grey	(					BCCO 14.51m									
					mudstone in lithic sandstone	(MW														
15.58	18.58	3.0	100	"	14.51-14.90: Mudstone, grey (and? CPC) core loss	(F														
18.58	21.58	3.0	100	"		(														
21.58	24.58	3.0	100	"	14.90-25.24: Sandstone, lithic, m to cg															
				"	25.24-25.32: Coal, dull, (D), minor pellets of mudstone			989763	25.24	25.32	0.08	2.29	64.7							
				"	25.32-25.45: Coal, dull, 15% B (Db)			764			0.13	1.46	16.1							
				"	25.45-25.50: Shale, carbonaceous			765			0.05	2.39	84.8							
				"	25.50-25.70: Coal, dull, 15% B (Db)			766			0.20	1.51	26.7	Full seam (Samples						
				"	25.70-25.74: Coal, >50% B (DB)			767			0.04	1.41	18.8	763 - 773 inclusive) =						
				"	25.74-25.94: Mudstone, grey			768			0.20	2.52	90.2							
				"	25.94-25.98: Coal, dull, 3% B (Dmb)			769			0.04	1.57	26.4	1.76	46.6	2.7	11.7	0.34	16.02	39.0
24.58	27.58	2.77	92	"	25.98-26.06: Shale, dark brown, minor 1-3mm coal plies,			(												
					(△ So top 50°)			(770			0.08	2.35	84.5	Samples with <50% Ash:						
				"	26.06-26.40: Coal, 5% B (Dmb) minor mudstone pellets			989771	26.06	26.40	0.34	1.53	27.1	1.54	27.1	2.3	13.4	0.47	23.42	57.2
				"	26.40-26.62: Coal, dull, 10-15%B (Db)			989772	26.40	26.62	0.22	1.52	28.7							
				"	26.62-26.87: Coal, dull, 30% B (Db)			989773	26.62	26.87	0.25	1.63	32.9							

270099

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2
TENEMENT NAME..... No. .....
PLAN – MAP REFERENCE.....
CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT34
RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
				NQ	26.87-27.30: Mudstone, pale brown, fissile (? most of the														
27.58	30.58	3.0	100	"	core loss)														
				"	*27.30-28.00: Mudstone, pale brown, silty*														
30.58	33.58	3.0	100	"	28.00-28.75: Sandstone, quartz rich lithic fg, minor														
33.58	36.58	3.0	100	"	mudstone & siltstone														
36.58	39.58	3.0	100	"	28.75-51.50: Sandstone, lithic, m to cg, generally free														
39.58	42.58	3.0	100	"	of muddy debris, minor CPC of grey mudstone 44.93-45.16m,														
42.58	45.58	3.0	"	"	carbonate concretion 42.05-42.43, faint green banding														
45.58	48.58	3.0	"	"	throughout (△75/80°) & minor green blotches (? chloritic)														
48.58	51.58	3.0	"	"															
				"	51.50-54.56: Sandstone, lithic, cg with coal, carbonaceous														
51.58	54.58	3.0	100	"	mudstone (pyritic) mid grey mudstone debris														
				"	54.56-54.58: Coal, dull (D) to 54.57, with basal section														
					bright (B)														
				"	54.58-55.02: Mudstone, grey, massive														
				"	55.02-55.04: Coal, dull, (Db)														
				"	55.04-57.28: Mudstone, grey, massive														
54.58	57.58	3.0	100	"	57.28-57.39: Coal dull (D)			989774	57.28	57.39	0.11	1.57	24.1						
				"	57.39-57.47: Coal, dull, 20% B (Db)			775			0.08	1.53	21.1	Full seam =					
				"	57.47-57.51: Coal, bright, 75% B (Bd)			776			0.04	1.55	25.9						
				"	57.51-57.58: Mudstone, carbonaceous			777			0.07	2.10	69.4	1.83	49.3	2.5	10.2	0.34	15.28	38.0
				"	57.58-57.69: Mudstone, grey			778			0.11	2.52	90.4	Coal samples:					
				"	57.69-57.85: Coal, dull (D)			989779	57.69	57.85	0.16	1.62	30.7	1.58	26.4	3.0	12.1	0.51	23.60	58.5
				"	57.85-58.43: Mudstone, grey/brown														
57.58	60.58	3.0	100	"	58.43-58.91: 1B mudstone/siltstone														
				"	58.91-59.58: Sandstone, quartz rich lithic fg ± siltstone														
				"	59.58-60.58: Sandstone, lithic, mg														
					EOH - 60.58m														

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099

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

270100

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 538817.2mE 5319340.6mN AZIMUTH NA DRILLERS OVERLAND COMMENCED DEPTH 54.60m HOLE No. DD84 PT-35

RL COLLAR 378.85 INCLINATION -90° DRILL TYPE SCOUT 250 COMPLETED CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	1.3	TRICONE COLLER -			PRECOLLAR															
				NQ	0-1.3: Alluvium															
1.3	3.6	2.3	100	"	1.3-2.3: Sandstone, lithic, m to cg, minor CPC	MW	100-300mm													
3.6	6.6	3.0	100	"	2.3-7.65: Sandstone, lithic, m to cg, minor CPC (incl.	SW	50-700													
6.6	9.6	3.0	100	"	carbonaceous ms) 5.4-5.9		ave.250mm													
9.6	12.6	3.0	100	"	7.65-10.65: Sandstone, lithic, mg	F	100-500mm													
12.6	15.6	3.0	100	"	10.65-11.80: Sandstone, lithic, mg	SW	50-300mm													
15.6	18.6	3.0	100	"	11.80-17.85: Sandstone, lithic, mg, minor carbonaceous		50-300					BOCO	11.80m							
					ms 1B's with green reduction haloes 13.4-15.0m	F	ave.150mm													
				"	17.85-17.98: Coal, dull (D), soft & broken			989187	17.85	17.98	0.13	1.72	39.5							
				"	17.98-18.43: Coal, dull, ~ 10% B (Dmb), very minor															
					mudstone/claystone pellets			188	17.98	18.43	0.45	1.56	23.0	1.58	26.0	1.7	13.2	0.56	24.00	59.1
				"	18.43-18.52: Coal, dull & bright, 30-40% B(Db)			989189	18.43	18.52	0.09	1.47	18.6							
18.6	21.6	3.0	100	"	18.52-21.05: Mudstone, brown & shaley		NA													
				"	21.05-21.35: 1B siltstone & fg lithic sandstone		100-300mm													
				"	21.35-22.15: Sandstone, lithic, fg, minor grey mudstone		"													
				"	laminae															
21.6	24.4	2.6	93	"	22.15-24.97: Sandstone, lithic, mg		"													
				"	24.97-25.42: Siltstone, dark grey to carbonaceous, muddy		50mm													
				"	25.42-25.70: Mudstone, brown		NA													
24.4	26.7	2.3	100	"	25.70-26.20: Siltstone		20													
				"	26.20-26.90: Mudstone, grey/brown															
26.7	27.6	0.9	100	"	26.90-27.25: Coal, heavy dull, buchan			989190	26.90	27.25	0.35	1.79	46.4							
				"	27.25-27.78: Coal, dull, ave. 10% B(Dmb)			191			0.53	1.61	27.7							
				"	27.78-27.98: Coal, dull, 30-40% B (Db)			192			0.20	1.57	33.8	1.78	45.7	3.2	9.7	0.32	16.38	41.
27.6	28.4	0.8	100	"	27.98-28.15: Shale, brown, several 1mm coal ploes			193			0.17	2.37	84.0	Samples 190, 191 and 194:						
				"	28.15-28.20: Mudstone, carbonaceous ± HDC			989194	28.15	28.20	0.05	2.22	73.5	1.69	37.5	2.8	10.6	0.37	19.44	49.
28.4	29.4	1.1	> 100	"	28.20-29.40: Mudstone, grey/brown, silty															

100

C.R.A. EXPLORATION PTY. LIMITED

270101

DRILL CORE LOG

SHEET No. 2

TENEMENT NAME ..... No. .....

PLAN – MAP REFERENCE .....

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. DD84 PT-35

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) .....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
29.4	30.6	0	0	NQ	29.40-30.60: Core loss - no recovery															
30.6	31.55	0.5	53	"	30.60-31.55: Core loss - only 0.5m of mudstone and															
					siltstone fragments, including coal															
31.55	32.80	1.2	96	"	31.55-32.05: 1B quartz sandstone and carbon. mudstone															
				"	32.05-32.77: Mudstone, dark grey, laminated															
32.8	33.1	0.28	93	"	32.77-33.05: Mudstone, carbonaceous (± HDC)															
33.1	36.25	3.10	98	"	33.05-33.50: Sandstone, lithic, mg, with grey mudstone 1B's															
				"	33.50-35.85: 1B grey mudstone/siltstone/fg lithic ss															
36.25	39.4	3.12	99	"	35.85-45.03: Sandstone, lithic f to mg, CPC to 36.25m															
39.4	42.5	3.08	99	"	45.03-45.42: Mudstone, grey to dark grey with coal (Dmb/Db)															
42.5	45.5	3.0	100	"	bands 45.14-45.17, 45.33-45.35, and 45.34-45.42m.															
				"	45.42-45.92: Sandstone, lithic, f to mg															
				"	45.92-46.03: Crushed zone-local-in grey/brown mudstone,															
				"	△ top 25° △ base 50°															
				"	46.03-46.45: Coal, dull, < 5% B (Dmb)			989195	46.03	46.45	0.42	1.63	29.9	(1.63	30.1	3.1	7.7	0.37	22.26	59.1
				"	46.45-46.72: Coal, dull, ≃ 30% B (Db) ...?			989196	46.45	46.72	0.27	1.62	30.5	(						
45.5	47.5	2.0	100	"	faulted basal contact (△ ≃ 50°)															
				"	46.72-46.95: Siltstone, dark grey, broken & crushed,															
					△ ≃ 20/25°.															
				"	46.95-47.10: Mudstone, carbonaceous															
				"	47.10-47.50: Crushed zone in carbonaceous mudstone															
				"	47.50-47.84: Mudstone, dark grey, variably carbonaceous,															
47.5	48.3	0.8	100	"	laminated															
				"	47.84-48.22: Mudstone, carbonaceous, ± HDC, minor 0.5-			(989197	47.84	48.22	0.38	2.37	85.1							
					1.0mm coal laminae			(												
				"	48.22-48.30: Coal, heavy dull, 1B with carbonaceous			989198	48.22	48.30	0.08	2.11	65.7	→	3.4	5.9	0.19	9.10	25.0
					mudstone, fissile															

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

270102

SHEET No. 3

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT-35

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
8 3	49.5	1.05	87	NQ	48.30-48.60: Siltstone, (Some cone loss)															
				"	48.60-49.00: Mudstone, dark grey, minor coal (Db) 48.64-															
					48.66, and other minor 1mm ploes															
				"	49.00-49.50: Coal, dull, max 5% B(Dmb) Δtop contact (?So)			989199	49.00	49.50	0.50	1.83	39.1			3.7	8.6	0.47	18.22	48.6
					≏ 50°															
9.5	50.6	1.27	>100	"	49.50-49.70: Siltstone, carbonaceous															
				"	49.70-50.3: 1B grey mudstone/siltstone/fg lithic															
0 6	54.6	1.30	>100	"	sandstone															
				"	50.3-54.60: Sandstone, lithic, f to mg															
					EOH - 54.60m															

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270103

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 538189.2mE 5320699.0mN AZIMUTH NA DRILLERS OVERLAND COMMENCED 20.10.84 DEPTH 55.50m HOLE No. DD84 PT-36

RL COLLAR 367.55 INCLINATION -90° DRILL TYPE SCOUT 250 COMPLETED 22.10.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	0.8	TRICONE ROLLER			PRECOLLAR															
					0-0.8: Alluvium															
0.8	3.5	2.7	100	NQ	0.8-4.1: Sandstone, lithic, mg	HW	20-300mm													
3.5	6.6	2.9	93	"	4.1-6.0: Mudstone, khaki to grey, banded	HW	NA													
				"	6.0-6.8: Siltstone	HW	50mm													
6.6	9.6	2.85	95	"	6.8-8.65: 1B Mudstone/siltstone/fg lithic sandstone	MW	50-100mm													
				"	8.65-9.63: Sandstone, lithic, fg	SW	100-150mm					BOCO ≈ 10.55m								
				"	9.63-10.55: Siltstone, muddy & laminated	SW/F	)													
				"	10.55-11.20: Mudstone - laminate (grey & cream)	F	) < 50mm													
				"	11.20-11.28: Mudstone, carbonaceous			989703	11.20	11.28	0.08	2.11	59.8							
				"	11.28-11.37: Coal, heavy dull			704			0.09	1.95	58.6							
9.6	12.6	2.90	97	"	11.37-11.48: Mudstone, dark grey & cream, laminated			705			0.11	2.37	82.6							
				"	11.48-11.68: Coal, dull (D)			706			0.20	1.72	38.5	1.63	28.7	2.8	12.9	0.39	22.50	55.6
				"	11.68-12.10: Coal, dull, 20% B(Db)			989707	11.68	12.10	0.42	1.58	23.6							
				"	12.10-12.60: Siltstone															
				"	12.60-13.00: Mudstone, grey															
12.6	15.6	2.80	93	"	13.00-13.40: Mudstone, dark grey with carbon. ± HDC bands															
				"	13.40-14.85: Mudstone, grey with fissite coal (D)															
					14.50-14.53m.															
				"	14.85-16.20: Sandstone, quartz rich lithic to quartzoces, fg															
				"	16.20-16.55: Mudstone, grey															
				"	16.55-17.96: Sandstone, quartz rich lithic, fg															
15.6	18.4	2.8	100	"	17.96-18.25: Mudstone, grey, var. laminated															
				"	18.25-18.38: Coal, dull (D)															
				"	18.38-18.40: Coal, dull (Dmb)															
				"	18.40-18.44: Shale, carbonaceous															
				"	18.44-18.65: Shale, grey															
				"	18.65-19.06: Siltstone															
				"	19.06-20.40: Sandstone, quartz rich lithic, fg															

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

270104

[redacted] S[redacted] No[redacted]

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT-36

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE	
8.4	21.4	3.0	100	NQ	20.40-20.83: Mudstone, grey															
				"	20.83-21.75: Mudstone, green to grey															
				"	21.75-21.78: Coal, dull (Dmb)															
				"	21.78-21.90: Mudstone, carbonaceous															
				"	21.90-22.35: Mudstone, grey															
				"	22.35-23.70: 1B grey mudstone/siltstone/fg quartz rich															
					lithic sandstone															
1.4	24.5	3.1	100	"	23.70-24.07: Mudstone - laminate, (grey & cream)															
				"	24.07-24.08: Mudstone, carbonaceous			989708	24.07	24.08	0.01	2.10	73.1							
				"	24.08-24.22: Coal, dull, 30% B (Db)			709			0.14	1.46	13.6							
				"	24.22-24.25: Shale, dark brown to carbonaceous (+ HDC)			710			0.03	2.02	64.8	1.61	31.1	3.7	10.7	0.56	22.20	54.5
				"	24.22-24.50: Coal, dull (D)			711			0.25	1.69	38.1	Samples 709, 711 and 712:						
				"	24.50-24.61: Coal, dull & bright, > 50% B (Db)			989712	24.50	24.61	0.11	1.53	21.3	1.59	28.5	3.7	10.7	0.57	23.26	57.1
				"	24.61-25.24: Mudstone, grey															
4.5	27.5	2.95	98	"	25.24-25.90: Sandstone, quartz rich lithic, fg															
				"	25.90-26.30: Siltstone															
7.5	29.7	2.2	100	"	26.30-34.45: Sandstone, lithic, f to mg															
9.7	32.8	3.05	98	"	Carbonaceous laminae, 31.58-33.27, minor pyritic															
					carbonaceous mudstone clasts.															
2.8	34.6	1.74	97	"	34.45-37.70: Sandstone - quartz, mg															
4.6	36.5	1.90	100	"	37.70-37.83: Coal, dull, (Dmb), core loss bet. 37.7 & 38m			989713	37.70	37.83	0.13	1.66	34.1							
				"	37.83-38.00: Shale/mudstone, carbonaceous and coal (Dmb)			(714			0.17	2.01	65.1	1.85	52.1	4.7	8.7	0.40	13.66	34.5
					(.... contain rated sample)			(						Samples 713 and 715:						
				"	38.00-38.05: Coal (Db) and 1B shale			989715	38.00	38.05	0.05	1.77	45.3	1.69	37.6	3.1	9.2	0.55	20.20	50.1
				"	38.05-38.10: Mudstone, carbon, laminated															
38.0	39.5	1.46	97	"	38.10-38.50: 1B siltstone & grey mudstone															
				"	38.50-38.76: Sandstone, quartz rich lithic, fg															
				"	38.76-41.10: Mudstone, strongly laminated grey/dk grey/															
					brown/carbonaceous															

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C.R.A. EXPLORATION PTY. LIMITED

270105

DRILL CORE LOG

SHEET No. [redacted]

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT-36

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE	
39.5	42.5	3.0	100	NQ	41.10-41.55: 1B siltstone & quartz rich lithic ss															
				"	41.55-42.50:, Mudstone, grey & brown															
				"	42.50-43.00: Shale, brown															
				"	43.00-43.10: Coal, ?heavy dull (D), waxy															
				"	43.10-43.14: Mudstone, carbonaceous															
42.5	45.5	3.0	100	"	43.14-44.10: 1B grey mudstone/siltstone/fg quartz rich lithic sandstone															
				"	44.10-44.67: Mudstone, grey/dark grey, laminated															
				"	44.67-45.05: Siltstone															
				"	45.05-45.80: Sandstone, quartz rich lithic															
				"	45.80-47.90: Core loss - only broken grey mudstone															
45.5	48.5	1.3	43	"	recovered (0.4m)															
				"	47.90-48.35: Sandstone, lithic and quartz rich lithic...? carbonate laminated (...? large lamination)															
				"	48.35-48.75: Sandstone, quartz rich lithic															
				"	48.75-49.00: 1B grey mudstone + siltstone															
				"	49.00-49.22: Mudstone, laminite (grey & cream)															
				"	49.22-49.28: Mudstone, carbonaceous			989716	49.22	49.28	0.06	2.41	85.5							
				"	49.28-49.46: Coal, heavy dull			717			0.18	1.89	53.0							
				"	49.46-49.51: Coal, dull, 30% B (Db)			718			0.05	1.65	29.5							
				"	49.51-49.78: Mudstone, dark grey to carbonaceous			719			0.27	2.51	90.7	1.98	59.0	2.6	5.8	0.30	12.50	32.6
48.5	51.2	2.80	> 100	"	49.78-49.93: Coal, dull (D), incl. 1 x 20mm shale band			720			0.15	1.66	31.3		Samples 718, 720 and 721:					
				"	49.93-50.12: Coal,dull,25%B(Db), orange zeolite in cleats			989721	49.93	50.12	0.19	1.63	27.5	1.64	29.4	3.3	7.2	0.63	23.24	60.1
				"	50.12-50.20: Siltstone, carbonaceous															
				"	50.20-50.95: Sandstone, quartz rich lithic & carbonaceous															
				"	50.95-52.20: 1B grey mudstone/siltstone/quartz rich lithic sandstone															
				"	52.20-52.55:			989722	52.20	52.55	0.35	2.24	74.6							
				"	52.55-52.59: Coal, bright (Bd)			(						2.19	71.1	3.7	5.4	0.14	7.10	19.8
				"	52.59-52.60: Coal, dull, (D)			(989723	52.55	52.60	0.05	1.85	45.6	Sample 713 =						
														1.85	45.6	1.4	8.9	0.43	17.20	44.1

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

270106

SHEET No. 4

TENEMENT NAME ..... No. .....

PLAN – MAP REFERENCE .....

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. DD84 PT-36

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) .....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
				NQ	52.60-52.63: Mudstone, grey														
				"	52.63-52.67: ?Sandstone, quartzo es, calcite cemented														
51.2	54.2	3.0	100	"	52.67-52.69: Mudstone, green														
				"	52.69-52.80: Tuff, mafic/intermediate (similar to mafic?														
					extrusive in PT-19)														
				"	52.80-53.11: 1B siltstone & quartz rich lithic aranite														
				"	53.11-53.95: Sandstone, quartz rich lithic, fg														
54.2	55.5	1.25	96	"	53.95-54.40: 1B Siltstone & grey mudstone														
				"	54.40-55.20: Mudstone, grey, laminated														
				"	55.20-55.50: Siltstone														
					EOH - 55.50m														

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

270107

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 539590.4mE 5320994mN AZIMUTH NA DRILLERS OVERLAND COMMENCED 23.10.84 DEPTH 44.40m HOLE No. DD84 PT-37

RL COLLAR 400.90 INCLINATION -90° DRILL TYPE SCOUT 250 COMPLETED 24.10.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	3.0			TRICONE ROLLER - PRECOLLAR																
					0-3.0: Alluvium, and ? EW mudstone															
3.0	3.6	0.4		NQ	3.0-4.4: Mudstone, iron oxide coloured	EW														
3.6	6.6	3.1	>100	"	4.4-5.2: 1B siltstone and mudstone	HW														
				"	5.2-5.35: Mudstone	HW														
				"	5.35-6.00: Sandstone, lithic, mg	HW														
				"	6.00-6.75: Sandstone, lithic, mg ± coaly debris	MW														
6.6	9.6	2.96	99	"	6.75-7.60: Sandstone, lithic, mg ± coaly debris	SW														
				"	7.60-9.28: Sandstone, lithic, mg	SW/F														
9.6	12.6	1.4	47	"	9.28-10.10: Sandstone, lithic, mg ± coaly debris	MW/SW														
				"	10.10-14.60: Sandstone, lithic, mg, carbonaceous mudstone	(F						BOCO	≃	10.1m						
12.6	15.6	2.85	95	"	debris 13.15-14.6m	(														
				"	14.60-15.88: CPC of grey mudstone in mg lithic sandstone															
				"	15.88-16.54: Sandstone, lithic, mg															
				"	16.54-16.60: Mudstone, grey to dark grey															
				"	16.60-16.74: Coal, heavy dull ± carbonaceous mudstone															
				"	16.74-16.78: Shale, dark brown															
				"	16.78-16.87: Shale, buff to grey/green															
15.6	18.6	3.0	100	"	16.87-17.18: Coal, dull (D)			989743	16.87	17.18	0.31	1.54								
				"	17.18-17.23: Shale, dark brown (cf 16.74-16.78)			(												
				"	17.23-17.35: Shale, grey/green (cf 16.78-16.87)			(744			0.17	2.22								
				"	17.35-18.60: Coal, dull (D) - v. uniform			(												
				"	18.60-18.72: Coal, dull, 30% B (Db)			(745			1.46	1.38								
				"	18.72-18.81: Coal, dull (D)			(												
				"	18.81-18.94: Shale, buff			746			0.13	2.23								
				"	18.94-18.96: Coal, dull (D)			747			0.02	1.29								
				"	18.96-19.00: Shale, dark brown			748			0.04	2.20								
				"	19.00-19.07: Coal, dull, 20% B (Db)			989749	19.00	19.07	0.07	1.42								
				"	19.07-19.16: Mudstone, grey + fissile															
				"	19.16-19.40: Sandstone, quartz, vfg, minor siltstone															

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 2

270108

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT-37

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
18.6	21.6	2.37	79	NQ	19.40-20.30: 1B Siltstone & mudstone (... ? loss of mudstone														
					from 18.6-21.6 in this interval)														
				"	20.30-20.34: Coal, dull (Dmb)														
				"	20.34-20.84: Mudstone, grey (? core loss)														
				"	20.84-20.93: Coal, dull (Dmb),1B with grey mudstone														
				"	20.93-20.97: Mudstone, carbonaceous														
				"	20.97-22.46: Mudstone, grey, massive														
				"	22.46-22.52: Coal, dull (D)			989750	22.46	22.52	0.06	1.48							
21.6	23.2	1.6	100	"	22.52-22.58: Shale, dark brown			751			0.06	2.24							
				"	22.58-22.73: Coal, dull (D)														
				"	22.73-23.18: Coal, dull (Dmb) 5-10% B with ≃ 1 x 10mm			752			0.60	1.30							
					shale band														
				"	23.18-23.22: Shale, grey and dark brown														
				"	23.22-23.27: Mudstone, grey/brown, spotted, orange zeolite			753			0.09	2.20							
					in joints														
				"	23.27-23.53: Coal, dull ≤ 10% B (Dmb), orange zeolite in			754			0.26	1.27							
					cleats														
23.2	24.3	1.03	94	"	23.53-23.77: Mudstone, pale grey, fissile with orange			755			0.24	2.31							
					zeolite in joints														
				"	23.77-23.89: Coal, dull (D)														
				"	23.89-24.22: Coal, dull 10%B (Dmb)			756			0.45	1.38							
				"	24.22-24.26: Shale, grey			757			0.04	2.19							
				"	24.26-24.38: Coal, dull, 20% B (Db), orange zeolite			758			0.12	1.41							
				"	24.38-24.43: Shale/mudstone - ? granular			759			0.05	2.24							
					(... cf 28.93-28.98m in PT-39)														
				"	24.43-24.60: Coal, dull (D)														
				"	24.60-24.69: Coal, dull 30% B (Db) orange zeolite														
24.3	25.6	1.25	96	"	24.69-24.93: Coal, dull (D)			760			0.83	1.40							
				"	24.93-25.18: Coal, dull & bright, > 50% B (Db)														
				"	25.18-25.26: Coal, dull, 25% B (Db) with calcite parallel				24.43	25.26	0.83								
					to So (bedding)														

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 3

270109

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84.PT.37...

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
				NQ	25.26-25.43: Mudstone, carbonaceous - faulted contact, B														
					coal fragments to 25-33m from minor 1mm Bd ploes and calcite														
					parallel to So to 25-43m														
				"	25.43-25.64: Mudstone, dark grey, v. minor <1mm mode coal														
					ploes														
25.6	27.4	1.74	97	"	25.64-26.03: 1B grey mudstone/siltstone														
				"	26.03-26.80: Sandstone, quartz rich lithic with mudstone 1B's														
				"	26.80-27.40: Sandstone, lithic, f to mg abundant mudstone														
					clasts, minor coal fragments and laminae														
				"	27.40-27.49: Siltstone														
				"	27.49-27.74: Coal, bright 75% B (Bd)			(989761	27.49	27.84	0.35								
				"	27.74-27.84: Coal, dull, 30% B (Db)			(											
27.4	30.4	3.0	100	"	27.84-27.96: Mudstone, grey														
				"	27.96-29.56: Sandstone, lithic, f to mg, "dirty" -														
					carbonaceous laminae														
				"	29.56-29.94: Coal, dull, 25% B (Db)			989762	29.56	29.94	0.38								
				"	29.94-30.08: Mudstone, grey, with several 2-5mm coal (Bd)														
					laminae														
				"	30.08-30.10: Coal, bright, 75% B (Bd)														
				"	30.10-31.62: Mudstone, grey massive sl. carbonaceous for														
30.4	32.2	1.74	97	"	basal 0.30m														
				"	31.62-32.06: 1B siltstone/fg quartz rich lithic sandstone														
				"	32.06-32.12: Mudstone, grey														
				"	32.12-32.22: Coal, dull (Dmb)														
				"	32.22-32.77: Mudstone, grey & silty with 1B's of very fg														
					quartz rich lithic sandstone														
				"	32.77-33.45: Sandstone, lithic, fg, with siltstone 1B's														
				"	33.45-33.46: Coal, dull (Dmb)														
				"	33.46-33.49: Mudstone, grey														
				"	33.49-33.51: Coal, dull, (Db)														

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270110

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

[redacted]EET [redacted]4 [redacted]

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT-37

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
				NQ	33.51-33.60: 1B grey mudstone/siltstone with 1mm coal plies														
				"	33.60-33.82: Mudstone, grey, silty														
32.2	36.4	4.2	100	"	33.82-34.33: 1B siltstone and quartz rich lithic sandstone														
					- fg														
				"	34.33-34.80: Mudstone, grey														
				"	34.80-35.00: Mudstone, carbonaceous														
				"	35.00-35.15: Mudstone, grey														
				"	35.15-35.30: Mudstone, carbonaceous														
				"	35.30-35.45: Mudstone, grey														
				"	35.45-35.55: Mudstone, carbonaceous														
				"	35.55-35.72: Mudstone, grey														
				"	35.72-36.50: 1B mudstone/siltstone/fg quartz rich lithic														
					sandstone														
36.4	42.4	6.0	100	"	36.50-38.30: Sandstone, lithic, variably quartz rich, fg														
42.4	44.4	1.95	97	"	38.30-44.40: Sandstone, lithic, mg to cg, faintly spotted														
					(but not chloritic)														
					EOH - 44.40m														

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270111

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 536933.3mE 5321076.5mN AZIMUTH N.A. DRILLERS OVERLAND COMMENCED DEPTH 47.70m HOLE No. DD84 PT 38

RL COLLAR 382.15 INCLINATION -90° DRILL TYPE SCOUT 250 COMPLETED CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by) RD	A	Composites RD	A	M	VM	S	SE
0	1.9	Tricone Roller -			Precollar 0 - 1.9 Alluvium														
1.9	3.7	1.8	100	NQ	1.9 - 3.1 Sandstone, lithic, mg	HW	30-100mm												
3.7	6.7	3.05	100	"	3.1 - 5.6: " " "	MW	100-300mm												
6.7	9.7	2.95	98	"	5.6 - 8.5: " " "	SW/F	300-800mm												
				"	8.5 -9.0 " " " minor mudstone,	SW	50												
					and carbonaceous debris														
9.7	10.7	0.99	99	"	9.0 - 13.15: Sandstone, lithic mg, with carbonate	F	500>1000mm							BOCO	≈ 9.0m				
10.7	12.7	2.05	100		concretion 10.22 - 10.32m														
				"	13.15 - 13.41: Coal, dull (Dmb)			989780	13.15	13.41	0.26	1.54							
				"	13.41 - 13.44: Shales, carbonaceous			781			0.03	2.29							
				"	13.44 - 13.54: Coal, dull, 3% B (Dmb)			782			0.10	1.57							
				"	13.54 - 13.58: Shale, carbonaceous			783			0.04	2.01							
				"	13.58 - 13.77: Coal, dull (D)														
				"	13.77 - 13.82: Coal Dull (D), broken with														
12.7	14.9	2.2	100	"	1 x 20mm shales band			989784	13.58	13.92	0.34	1.53							
				"	13.82 - 13.92: Coal, dull, 25% B (Db)														
				"	13.92 - 14.16: Mudstone, grey														
				"	14.16 - 14.21: Coal, dull, 30% B (Db)														
				"	14.21 - 14.85: Mudstone, grey, silty minor 1-5mm coal (B)														
				"	bands														
14.9	15.7	0.8	100	"	14.85 - 14.90: Coal, >50% (BD) broken														
				"	14.90 - 16.37: Mudstone, grey, massive														
				"	16.37 - 17.02: Sandstone, quartz rich lithic, fg ± siltstone														
15.7	18.7	3.0	100	"	17.02 - 17.54: Sandstone, lithic, fg														
				"	17.54 - 18.23: Sandstone, quartz rich lithic														
				"	18.23 - 18.65: Sandstone, lithic, fg														
				"	18.65 - 19.13: Sandstone, quartz rich lithic to lithic fg														
18.7	21.7	3.0	100	"	19.13 - 29.39: Sandstone, lithic, m to cg														
21.7	24.7	3.0	100	"	V. minor carbonaceous mudstone laminae														
24.7	27.7	3.0	100	"	29.39 - 29.45: Coal, dull 25% B (Db) fissile														

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270112

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT38

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
				NQ	29.45 - 29.50: Coal dull (D)														
				"	29.50 - 29.54: Coal, bright/brittle mixed with 1 x 20mm														
				"	shale band														
				"	29.54 - 29.69: Coal, dull 5% B (Dmb)			989785	29.39	29.87	0.48	1.37							
					minor brown mudstone pellets & bands														
				"	29.69 - 29.87: Coal, dull, ave 20% B (Db)														
27.7	3.07	2.96	99	"	29.87 - 29.94: Mudstone, carbonaceous														
				"	29.94 - 30.08: Mudstone, grey/brown			989786			0.21	2.50							
				"	30.08 - 30.15: Coal, dull (D)														
				"	30.15 - 30.37: Coal, dull <10% B (Dmb)														
				"	30.37 - 30.57: " " ≃15% B (Db)			787			0.69	1.44							
				"	30.57-30.58: Shale, dark brown														
				"	30.58-30.77: Coal, dull, 20% B (Db)														
30.7	31.1	0.35	87	"	30.77-31.10: Mudstone, grey/brown			788			0.33	2.33							
				"	31.10-31.36: Coal, dull, 5% B (Dmb)														
				"	31.36-31.42: Coal, dull to bright, 50% B (Db)														
31.1	31.5	0.5	100	"	31.42-31.45: Coal, dull (D)			989789	31.10	31.52	0.42	1.45							
				"	31.45-31.52: Coal, dull, >30% B (Db) and fissile														
				"	31.52-32.37: Mudstone, grey/brown, fissile														
31.5	33.7	1.9	86	"	32.37-32.60: Siltstone														
33.7	35.4	1.57	92	"	32.60-33.05: Sandstone, lithic to quartz rich lithic,														
35.4	38.4	3.0	100	"	v. fg, brown and silty														
38.4	41.5	3.1	100	"	33.05-47.70: Sandstone, lithic, mg to ≃ 36.15m, then cg														
41.5	44.6	3.1	100	"	and soft to ≃ 38m, and then mg to cg to EOH; carbonate														
					concretion 42.78-43.10m														
					EOH 47.7m														

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270113

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

TENEMENT NAME PARATTAH No. EL 18/82
PLAN – MAP REFERENCE

CO-ORDINATES 539468.2mE 5321402.5mN AZIMUTH NA DRILLERS OVERLAND COMMENCED 25.10.84 DEPTH 54.70m HOLE No. DD84 PT-39
RL COLLAR 401.90 INCLINATION -90° DRILL TYPE SCOUT 250 COMPLETED 26.10.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	3.0	TRICONE ROLLER			PRECOLLAR															
					0 - 3.0: Alluvium and EW lithic sandstone															
3.0	3.7	0.55	79	NQ	3.0-5.2: Sandstone, lithic (clayey sand)	EW														
3.7	6.7	2.15	72	"	5.2-7.95: Sandstone, lithic, f to mg															
6.7	9.7	2.87	96	"	7.95-9.70: Sandstone, lithic, f to mg															
9.7	12.7	2.95	98	"	9.70-22.75: Sandstone, lithic, f to mg with coaly debris															
12.7	15.7	2.90	97	"	13.8-15.4m, grey and carbonaceous mudstone debris															
15.7	18.7	3.0	100	"	17.3-19.6m															
18.7	21.7	3.0	100	"	22.75-22.80: Mudstone, carbonaceous, with dark green															
					laminae															
				"	22.80-22.83: Coal, dull, 15% B (Db)			989790	22.80	22.83	0.03	1.80	46.2							
				"	22.83-22.91: Mudstone, dark grey			791			0.08	2.50	89.1							
				"	22.91-23.31: Coal, dull (D)			792			0.40	1.55	23.7							
				"	23.31-23.49: Coal, dull (Dmb)			793			0.18	1.52	23.4							
				"	23.49-23.59: Coal, dull (D), with bands of ? HDC			794			0.10	1.83	55.3			Full seam =				
				"	23.59-23.85: Coal, dull, (Dmb)			795			0.26	1.53	27.9	1.68	40.3	2.8	11.3	0.25	18.56	45.6
21.7	24.7	3.0	100	"	23.85-23.89: Shale, dark brown			796			0.04	2.18	76.5							
				"	23.89-23.94: Coal, dull, fissile (≃ Dmb)			797			0.05	1.72	52.6	Samples 790,792,793,795 and 800 =						
				"	23.94-23.97: Coal, dull (D)			798			0.03	2.06	68.7							
				"	23.97-23.99: Shale, brown			799			0.02	2.42	86.3	1.55	25.9	2.3	13.1	0.32	23.78	58.7
				"	23.99-24.02: Coal, dull (Dmb)			)												
				"	24.02-24.05: Coal, dull (Dmb) and mudstone - local faulting			) 989800)	23.99	24.05	0.06	1.53	28.3							
					along joints															
				"	24.05-24.17: Siltstone															
				"	24.17-24.73: Sandstone, quartz, v. fg ± siltstone															
				"	24.73-24.89: Mudstone, brown, minor 1mm coal plies, and															
					10mm ply 24.88-24.89															
				"	24.89-25.28: Mudstone, brown															
				"	25.28-25.38: Mudstone, brown with several bright coal (Bd)															
					bands, ave. 2mm, orange zeolite in cleats															

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[redacted] C.[redacted] XPL[redacted]TION[redacted]. LIN[redacted]D [redacted] [redacted] TENEMENT NA[redacted]

DRILL CORE LOG

270114

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT-39

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
				NQ	25.38-25.42: Coal, bright (Bd)														
				"	25.42-25.47: As for 25.28-25.38m														
				"	25.47-25.86: Mudstone, brown v. minor bright coal (Bd)														
24.7	27.4	2.6	96		bands, orange zeolite in joints														
				"	25.86-26.67: 1B siltstone & v.fg quartz sandstone														
				"	26.67-26.90: Mudstone, grey/brown														
				"	26.90-26.97: Coal, dull (D), - fissile			989801	26.90	26.97	0.07	1.51	19.5						
				"	26.97-27.05: Coal, dull (Dmb)			802			0.08	1.52	19.7						
				"	27.05-27.09: Coal, dull (D) - silicified			803			0.04	2.14	74.1						
				"	27.09-27.16: Coal, dull (D)			804			0.07	1.71	42.7						
				"	27.16-27.20: Shale, brown			805			0.04	23.5	84.4						
				"	27.20-27.24: Coal, dull (D)			806			0.04	1.85	54.8						
				"	27.24-27.29: Shale, dark brown			807			0.37	2.37	84.9						
				"	27.29-27.51: Shale, grey/brown									Full seam (Samples 801					
				"	27.51-27.73: Coal, dull (D)			808			0.22	1.67	38.5	to 827 inclusive) =					
27.4	28.4	1.05	>100	"	27.73-27.78: Coal, dull & bright (DB)			809			0.05	1.47	16.5	1.76	45.5	4.6	8.9	0.23	16.08	41.0
				"	27.78-27.89: Coal, dull (D)			810			0.11	1.67	38.7						
				"	27.89-28.02: Shale, dark brown/carbonaceous			811			0.13	2.38	85.0	Samples with <50% Ash:					
				"	28.02-28.34: Coal, dull, (Dmb)			812			0.32	1.52	20.5	1.57	26.6	3.1	11.2	0.34	23.70	59.1
				"	28.34-28.36: Mudstone, grey (Spotted with calcite			(												
				"	28.36-28.40: Shale, grey/brown (			(813			0.14	2.39	86.7							
				"	28.40-28.48: Mudstone, grey (and zeolite			(												
				"	28.48-28.56: Coal, dull (D)			814			0.08	1.55	24.5							
				"	28.56-28.58: Coal, dull (D) - silicified			815			0.02	2.26	82.2							
				"	28.58-28.61: Coal, dull (D)			816			0.03	1.52	14.9							
28.4	30.0	1.55	97	"	28.61-28.65: Coal, dull (D) - silicified			817			0.04	2.25	80.4							
				"	28.65-28.70: Coal, dull (Dmb)			818			0.05	1.55	23.5							
				"	28.70-28.82: Coal, dull (D)			819	28.70	28.82	0.12	1.47	12.7							
				"	28.82-28.93: Coal, dull (Dmb), ? slightly silicified			989820	28.82	28.93	0.11	1.61	31.1							
				"	28.93-28.98: Mudstone ? granular, dark grey, large flakes			(821			0.05	2.34	86.9							
					of muscovite...? carbonaceous arkose															

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270115

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DDH.PT.-39

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
				NQ	28.98-29.13: Coal, dull (Db)			989822			0.15	1.51	20.5						
				"	29.13-29.29: Coal, dull (Dmb)			823			0.16	1.56	24.3						
				"	29.29-29.32: Shale, dark brown			824			0.03	2.41	85.1						
				"	29.32-29.42: Coal, dull (D)			825			0.10	1.74	43.8						
				"	29.42-29.65: Coal, dull (Dmb)			826			0.23	1.59	25.5						
				"	29.65-30.05: Coal, dull, 20% B (Db)			989827	29.65	30.05	0.40	1.54	22.9						
				"	30.05-30.38: Mudstone, dark grey with minor 1-3mm coal plies														
				"	30.38-31.40: Mudstone, brown														
				"	31.40-31.95: Mudstone - laminite, (grey/brown/cream)														
30.0	32.3	2.3	100	"	31.95-31.99: Coal, dull (D)			989828	31.95	31.99	0.04	1.67	31.7						
				"	31.99-32.13: Coal, dull, ave. 30% B (Db) orange zeolite in cleats			829			0.14	1.52	21.4	1.61	29.8	2.6	10.00	0.39	22.88	57.6
				"	32.13-32.22: Coal, dull (D)														
				"	32.22-32.24: Coal, dull to heavy dull			989830	32.13	32.24	0.11	1.70	37.9						
				"	32.24-32.67: Sandstone - quartz rich lithic, minor mudstone/ siltstone 1B's														
32.3	33.7	1.38	99	"	32.67-32.89: Mudstone, grey/cream, variously laminated														
				"	32.89-33.02: Siltstone, ± fg quartz sandstone														
				"	33.02-33.60: Mudstone, grey/brown, silty coal (B) 33.42-33.44m														
				"	33.60-34.40: 1B grey mudstone/siltstone/± quartz sandstone														
				"	34.40-34.60: Coal, dull, 25% B (Db)			989831	34.40	34.60	0.20	1.49	18.4						
				"	34.60-34.64: Coal, dull (D)			832			0.04	1.61	29.2						
				"	34.64-34.70: Coal, > 75% B (Bd)			833			0.06	1.51	18.6	1.52	21.0	2.6	9.6	0.49	26.20	66.8
				"	34.70-34.75: Coal, ≈ 50% B (DB)			989834	34.70	34.75	0.05	1.56	24.9						
				"	34.75-34.95: Mudstone, dark grey, with several 1mm coal														
33.7	36.7	3.06	>100	"	plies, and single 10mm ply 34.94-34.95m														
				"	34.95-35.97: Mudstone, grey/brown, minor 0.5mm coal plies														
				"	35.97-36.88: Sandstone, quartz rich lithic with fg sandstone 1B's ± siltstone														

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270116

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 4

TENEMENT NAME ..... No. .....

PLAN – MAP REFERENCE .....

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. DD84 PT-39

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... OPO No(s) .....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
36.7	38.4	1.74	>100	NQ	36.88-37.42: 1B siltstone, & quartz rich lithic sandstone														
38.4	39.7	1.28	98	"	37.42-39.35: Sandstone, lithic, with several siltstone 1B's														
				"	39.35-40.40: Mudstone, grey/brown														
				"	40.40-41.25: Sandstone, quartz rich lithic, and quartz														
					mudstone 1B's, sandstone has carbonaceous laminae														
39.7	42.7	3.03	>100	"															
				"	41.25-42.20: Sandstone, lithic, f to mg with minor														
42.7	45.7	3.0	100	"	siltstone and quartz rich lithic sandstone 1B's														
45.7	48.7	3.0	100	"															
48.7	51.7	3.0	100	"	42.20-54.70: Sandstone lithic mg, carbonate concretion														
51.7	54.7	3.0	100	"	51.0-51.15m, minor CPC 53.2→ EOH														
					EOH 54.70m														

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

270117

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 537550E 320570N AZIMUTH NA DRILLERS OVERLAND COMMENCED 26.10.84 DEPTH 39.70m HOLE No. DD84.PTA0

RL COLLAR INCLINATION -90° DRILL TYPE SCOUT 250 COMPLETED 29.10.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	3.0			TRICONE ROLLER - PRECOLLAR																
					0-3.0: Alluvium and weathered sandstone															
3.0	3.8	0.75	94	NQ	3.0-3.1: Sandstone, lithic, mg	SW														
				"	3.1-3.4: Sandstone, lithic, mg	MW														
				"	3.4-3.5: Sandstone, lithic, mg	SW														
3.8	6.8	3.0	100	"	3.5-6.22: Sandstone, lithic, mg	F				BOCO @ 3.5m										
6.8	8.3	1.2	80	"	6.22-8.26: Shale, carbonaceous ± fg quartz sandstone 1B's															
				"	8.26-8.61: Sandstone, quartz f to mg															
8.3	9.7	0.6	43	"	8.61-9.63: Shale, carbonaceous															
				"	9.63-9.75: Sandstone, quartz, fg															
				"	9.75-10.55: Mudstone, grey															
				"	10.55-10.58: Coal, heavy dull			989835	10.55	10.58	0.03	1.92	54.8							
				"	10.58-10.63: Shale, carbonaceous, minor coal (Bd) plies			836			0.05	2.24	76.2							
				"	10.63-10.70: Shale, brown			837			0.07	2.31	81.0	Sample 989838:						
				"	10.70-10.82: Coal, dull, 5-10% bright (Dmb)			838			0.12	1.72	40.6	1.72	40.6	4.0	9.7	0.55	18.20	45.7
9.7	12.7	2.9	97	"	10.82-10.88: Shale, carbonaceous (as for 10.58-10.63)			989839	10.82	10.88	0.06	2.20	74.1							
				"	10.88-10.99: Mudstone, grey															
				"	10.99-11.35: 1B mudstone/siltstone/fg quartz sandstone															
				"	11.35-11.75: Mudstone/siltstone															
				"	11.75-12.76: Mudstone, grey															
				"	12.76-12.86: Mudstone, carbonaceous															
				"	12.86-13.10: Mudstone, grey															
				"	13.10-13.19: Mudstone, carbonaceous															
				"	13.19-13.21: Coal, dull, 10% bright (Dmb)															
				"	13.21-13.41: Mudstone, grey															
				"	13.41-13.48: Mudstone, carbonaceous															
12.7	15.7	3.0	100	"	13.48-14.43: Mudstone, grey/brown															
				"	14.43-15.35: Shale, brown															
				"	15.35-15.45: Shale, carbonaceous															
				"	15.45-15.75: Mudstone, brown															

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

270118

SHEET No. 2

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 PT40

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE	
				NQ	15.75-16.30: 1B mudstone/siltstone/fg quartz sandstone															
				"	16.30-17.10: Sandstone, quartz, feldspathic fg, minor															
					siltstone 1B's															
15.7	18.7	3.0	100	"	17.10-17.80: Mudstone, grey, 1-3mm coal (Bd) ploes, to															
					17.25m, silty base															
				"	17.80-18.17: Sandstone, quartz, feldspathic															
				"	18.17-18.58: Sandstone, quartz rich lithic															
				"	18.58-19.18: 1B mudstone/siltstone															
				"	19.18-20.70: 1B mudstone/siltstone/quartz sandstone															
18.7	21.7	3.05	>100	"	20.70-21.70: Siltstone															
				"	21.70-21.90: Mudstone, grey, laminated															
				"	21.90-21.97: Coal, dull (D)			989840	21.90	21.97		1.87	51.5	1.87	51.5	1.9	10.2	0.31	14.42	36.4
				"	21.97-22.04: Mudstone, carbonaceous, ± heavy dull coal			841	21.97	22.04		2.13	69.5							
				"	22.04-22.85: Mudstone - laminite															
				"	22.85-22.99: Mudstone, carbonaceous, minor quartz sandstone 1B's															
				"	22.99-23.48: Siltstone, muddy															
				"	23.48-23.49: Shale, brown															
21.7	24.7	3.0	100	"	23.49-23.55: Carbonate - dense calcite (? + dolomite)															
					veins in ? original mudstone															
				"	23.55-23.66: Coal, dull, 20% bright (Db)			989842	23.55	23.66		1.59	29.1	1.59	29.1	2.5	11.2	0.74	22.78	57.2
				"	23.66-23.95: 1B siltstone/quartz sandstone															
				"	23.95-25.07: Siltstone															
				"	25.07-25.17: Sandstone, quartz, fg															
				"	25.17-25.65: Siltstone															
				"	25.65-26.28: Sandstone, quartz, fg															
24.7	27.7	3.05	>100	"	26.28-26.49: Mudstone, carbonaceous															
				"	26.49-26.55: Carbonate - as for 23.49-23.55, ...?															
					slightly siliceous															
				"	26.55-26.58: Coal, dull, 20% bright, (Db), minor orange															
					zeolite															

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

270119

SHEET No. 3

TENEMENT NAME ..... No. .....

PLAN – MAP REFERENCE .....

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. DD84 PT40

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No (s) .....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by .....) RD	A	Composites RD	A	M	VM	S	SE
				NQ	26.58-27.00: Mudstone, grey, plant fossils														
				"	27.00-27.65: Siltstone														
27.7	30.7	3.0	100	"	27.65-28.00: Mudstone, grey, v.minor 1mm coal (Bd) ploes														
				"	28.00-28.15: Siltstone														
				"	28.15-28.60: Sandstone, quartz, feldspathic														
				"	28.60-28.90: Siltstone														
				"	28.90-29.25: Mudstone, grey (as for 27.65-28.00)														
				"	29.25-29.36: Siltstone														
				"	29.36-30.08: Sandstone, quartz, fg														
				"	30.08-30.57: Mudstone, grey, minor coal plies														
				"	30.57-32.23: 1B quartz sandstone/siltstone														
30.7	33.7	3.0	100	"	32.23-32.70: Mudstone, laminite														
				"	32.70-33.0: Siltstone														
				"	33.0-33.37: 1B siltstone quartz sandstone														
				"	33.37-34.68: Sandstone, quartz, f to mg														
				"	34.68-34.84: Siltstone, laminated														
				"	34.84-35.30: *Shale, carbonaceous* (Core														
33.7	36.7	2.7	90	"	35.30-35.80: Shale, brown (loss														
				"	35.80-36.50: Sandstone, quartz, feldspathic and carbonaceous														
				"	36.50-36.70: Mudstone, carbonaceous & silty														
				"	36.70-39.70: Sandstone, quartz, feldspathic & carbonaceous														
36.7	39.7	2.98	99		wispy bands, carbonate (+ ? silica) concreted 39.38-39.65m														
					(.. of PT36)														
					EOH - 39.70m														

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270120

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

LOGGING - T G SUMMONS 28.9.84

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 536006.7E 5317950.3N AZIMUTH NA DRILLERS DEPT OF MINES COMMENCED DEPTH (135.70m) HOLE No. YP BH-2

RL COLLAR 421.65 INCLINATION -90° DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	3.7	3.05	82	HQ	0-6.8: Sandstone, lithic, mg to cg	MW	200mm													
3.7	6.7	3.0	100	"	6.8-8.0: Sandstone, lithic, cg, with CPC and coaly debris	MW	200-500mm													
6.7	9.7	3.0	100	"	8.0-9.0: Sandstone, lithic, cg	MW														
9.7	12.0	2.3	100	"	9.0-12.0: Sandstone, lithic, mg and cg	SW/F	100-800mm													
12.0	15.7	3.1	84	NQ	12.0-14.4: Sandstone, lithic, mg and cg, core loss	SW/F														
15.7	18.7	2.95	98	"	probably from 12.5-13.1m	(HW joints)					BOCO	≃ 14m								
18.7	21.7	3.0	100	"	14.4-27.7: Sandstone, lithic, mg	F														
21.7	24.7	3.0	100	"	27.7-28.15: Siltstone, grey/green, banded,															
24.7	27.7	3.0	100	"	angle to bedding - 75°		200-800mm													
27.7	30.7	2.2	73	"	28.15-31.20: Sandstone, lithic, m to cg, weakly banded,															
					angle to bedding - 65°															
				"	31.20-32.08: Core loss, 0.4m of dark grey and carbonaceous															
30.7	33.7	2.45	82		mudstone with minor coal fragments recovered															
				"	32.08-32.88: Mudstone, grey															
				"	32.88-33.08: Siltstone															
				"	33.08-33.48: Sandstone, lithic, f to mg															
				"	33.48-34.10: 1B siltstone/grey mudstone ± fg lithic															
					sandstone															
				"	34.10-34.47: Mudstone, grey															
33.7	36.7	2.95	98	"	34.47-35.17: Coal, 1% B (Dmb)			200	34.47	35.17	0.70	1.59	23.4							
				"	35.17-35.22: Coal, 30%B (Db)			201			0.05	1.52	20.6	1.58	25.4	2.8	12.3	0.37	23.94	59.9
				"	35.22-35.37: Coal, 3-5% B (Dmb)			202	35.22	35.37	0.15	1.67	34.3							
36.7	39.7	3.0	100	"	35.37-37.40: Mudstone, grey to buff, minor siltstone 1B's															
				"	37.40-40.00: Siltstone, transitional lithic ss (fg)															
				"	40.00-42.10: Sandstone, lithic, f to mg, abundant															
					mudstone debris, variably laminated with grey mudstone,															
39.7	42.7	3.0	100	"	angle to bedding 60°-70°															
42.7	45.7	3.0	100	"	42.10-63.35: Sandstone, lithic, mg, minor CPC, grey															
45.7	48.7	3.0	100	"	mudstone 1B's and bands, narrow grey mudstone 44.3-44.43m,															
48.7	51.7	3.0	100	"	thin coal 46.89-46.92m, m to cg from 46.0m to 63.35m															
51.7	54.7	2.95	98	BQ																

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270121

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME ..... No. .....

PLAN – MAP REFERENCE .....

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. YP BH-2

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) .....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
54.7	57.7	3.0	100	BQ																
57.7	60.7	2.83	94	"	63.35-64.45: Mudstone, grey/brown															
60.7	63.7	3.0	100	"	64.45-66.40: 1B grey/green mudstone/siltstone/fg lithic															
					sandstone															
63.7	66.7	3.0	100	"	66.40-70.25: Sandstone, lithic, mg, minor mudstone CPC,															
66.7	69.7	2.87	96	"	v. minor coaly debris															
				"	70.25-70.32: Mudstone, grey, laminated															
				"	70.32-70.35: Mudstone, carbonaceous															
				"	70.35-70.46: Coal, heavy dull			203	70.35	70.46	0.11	2.00	59.3							
				"	70.46-71.30: Coal, dull, 5-10% B (Dmb)			204			0.84	1.54	20.7							
69.7	72.7	2.85	95	"	71.30-71.65: Coal, bright, 30% B (Db)			205			0.35	1.47	14.1							
				"	71.65-71.71: Coal, bright, 70% B (Bd), minor red/orange															
					zeolite in cleats			206			0.06	1.47	15.8	1.60	28.5	2.5	11.7	0.49	23.14	57.3
				"	71.71-72.27: Coal, bright, 30-40% B (Db)			207			0.56	1.53	21.2	Samples with 50% Ash:						
				"	72.27-72.42: Mudstone, grey/brown (? core loss)			208			0.15	2.36	82.4	1.52	20.5	2.2	12.7	0.52	26.02	64.6
				"	72.42-72.70: Coal, bright, 30% B (Db)....core loss from			209	72.42	72.70	0.28	1.61	26.4							
72.7	75.7	2.95	98	"	base of seam															
				"	72.70-73.80: Siltstone, muddy, pale brown															
75.7	78.7	3.0	100	"	73.80-74.25: Mudstone, grey, broken															
78.7	81.7	3.0	100	"	74.25-82.40: Sandstone, lithic, fg to mg, orange zeolite															
					in joint 77.7-78.3m															
81.7	84.7	3.0	100	"	82.40-84.32: Sandstone, lithic, mg, coaly debris with															
					calcite & orange zeolite in "cleats", minor grey mudstone															
					1B 83.9-84.10, with 5mm coal ply															
				"	84.32-84.80: Mudstone, green, weakly laminated															
				"	84.80-86.03: Mudstone, grey/green, strongly laminated															
				"	86.03-86.10: Coal, heavy dull (minor Dmb)			210	86.03	86.10	0.07	1.88	50.5							
				"	86.10-86.14: Mudstone, grey			211			0.04	2.39	81.6	1.81	47.3	4.5	9.0	0.37	15.48	39.2
84.7	87.7	3.0	100	"	86.14-86.28: Coal, dull 10-15% B (Dmb/Db)			212	86.14	86.28	0.14	1.65	31.1	Sample 212 ½						
87.7	90.7	3.0	100	"	86.28-86.90: Siltstone, variably laminated									1.65	31.1	4.3	10.8	0.47	21.58	53.8

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270122

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. YP BH-2

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
90.7	93.7	3.0	100	BQ	86.90-94.4: Sandstone, lithic, fg, laminated with carbonaceous															
					material to 89.8m															
93.7	96.7	3.0	100	"	94.4-95.4: 1B carbonaceous mudstone/siltstone															
				"	95.4-98.25: Sandstone, lithic, f to mg, ± carbonaceous															
96.7	99.7	2.95	98		laminae and debris															
				"	98.25-98.95: Siltstone (broken)															
				"	98.95-100.50: Sandstone, lithic, mg (broken), minor coaly debris															
99.7	102.7	1.9	63	"	100.50-101.55: Siltstone, laminated, transitional to fg															
					lithic sandstone															
				"	101.55-102.70: Core loss															
				"	102.70-102.87: Sandstone, lithic, fg, carbonaceous laminae															
				"	102.87-103.27: Siltstone, (broken - minor crushed zone(s))															
102.7	105.7	0.8	27	"	103.27-103.50: Mudstone, grey, and carbonaceous from															
					103.48-103.50m.															
				"	103.50-105.70: Core Loss															
				"	105.70-105.88: Coal, dull, 5-10% B (Dmb) slightly faulted			(213	105.70	105.88	0.18	1.71	32.6	(1.71)	(32.6)	3.0	13.8	0.38	21.52	50.(
					base to coal seam			(												
				"	105.88-106.25: Crushed zone in siltstone-minor															
105.7	108.7	2.9	97	"	106.25-107.04: Sandstone, lithic, (broken)															
				"	107.04-111.70: Crushed zone in lithic sandstone and															
					siltstone, core varies from intervals of intense															
108.7	111.7	2.7	90		brecciation to broken, angle of upper crushed section - 45°															
					to core axis															
				"	111.70-113.25: Mudstone, grey/green - ? baked broken,															
					(crushed zone 113.15-113.25m ... 50/60° to core axis)															
111.7	114.7	2.9	97	"	113.25-113.55: Crushed zone - major - highly brecciated															
					mudstone/siltstone															
114.7	117.7	2.5	83	"	113.55-120.7: Crushed zone - margin, broken and crushed															
117.7	120.7	04	13		mudstone/siltstone/sandstone															
				"	120.7-121.7: Crushed zone - major, in carbonaceous and grey mudstone															

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270123

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 4

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. YP BH-2

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
120.7	123.7	1.8	60	BQ	121.7-124.0: Sandstone, lithic, mg, carbonaceous laminae															
123.7	126.7	3.0	100	"	broken (? crushed zone)															
				"	124.0-133.3: Mudstone, grey/green/brown ? baked, broken															
					from 131-133.2m, minor crushed zone 133.2-133.3m															
				"	133.3-135.70: Crushed zone (? marginal to major fault)															
					in grey mudstone/siltstone															
					(Logging suspended pending completion of hole)															

APPENDIX 2

ANALYTICAL DATA

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270125

ACIRL
COAL RESEARCH

Australian Coal Industry Research Laboratories Ltd.
Incorporated in NSW

KM/jr

REPORT TO : Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA 7018

REPORT ON : The Analysis of Borecore Samples from

~~DRILL HOLE DD84 PT-09~~
DRILL HOLE DD84 PT-10

PREPARED BY : Kerie Miller

REFERENCES : Telex (12.9.1984) T. Summons to J. Williams

REPORT NO : 02/2928

DATE : 20 September, 1984

Kerie Miller for
.....
J. Williams,
Manager,
Maitland Laboratory

Junction Street, Telarah, N.S.W. Telephone: (049) 32-8377, 32-8590
P.O. Box 26, Maitland, N.S.W. 2320

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INTRODUCTION

Forty-nine (49) samples from drill holes DD84-PT09 and DD84 PT-10 were delivered to ACIRL Maitland laboratory on 12 September, 1984.

Each sample was air dried, weighed, crushed to pass 4mm and prepared for preliminary analysis. Reserve samples at 4mm top size were retained from samples greater than 200g mass.

On completion of preliminary analysis, composite samples were reconstituted, on a thickness x relative density basis, for proximate analysis, total sulphur and specific energy determinations.

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FORM 11

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(INCORPORATED IN N.S.W.)
P.O. Box 83
North Ryde, N.S.W.
2113

ANALYSIS AND TESTING REPORT

Report No. 02/2928

Date 20 September, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270127

RESULTS

DRILL HOLE DD84 PT-09

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
27	10.15	10.45	0.30	0.618	1.80	40.9
28	10.45	10.55	0.10	0.218	2.44	86.8
29	10.55	10.60	0.05	0.145	2.48	90.7
30	10.60	10.71	0.11	0.282	2.46	88.6
31	14.50	14.58	0.08	0.193	2.47	88.3
32	14.58	14.65	0.07	0.174	2.29	73.3
33	14.65	14.80	0.15	0.230	2.07	56.9
34	14.80	15.30	0.50	0.534	2.02	53.1
35	34.50	35.20	0.70	0.461	2.41	84.8
36	35.20	35.53	0.33	0.282	2.38	83.5
37	35.53	36.10	0.57	0.974	2.23	71.7
38	36.10	36.40	0.30	0.647	2.02	58.1
39	36.40	36.60	0.20	0.565	2.07	63.6

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P.O. Box 93
North Ryde, N.S.W.
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ANALYSIS AND TESTING REPORT

Report No. 02/2928

Date 20 September, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270128

RESULTS (Continued)

DRILL HOLE DD84 PT-10

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
40	8.00	8.20	0.20	0.598	2.04	58.2
41	8.20	8.34	0.14	0.398	2.22	81.8
42	8.34	8.60	0.26	0.578	2.09	76.4
43	8.60	8.70	0.10	0.190	1.72	41.2
44	8.70	8.80	0.10	0.143	2.18	74.5
45	8.80	9.65	0.85	1.453	1.99	61.3
46	9.65	9.95	0.30	0.717	2.30	83.7
47	9.95	10.30	0.35	0.831	1.99	67.2
48	10.30	10.38	0.08	0.171	2.32	82.9
49	10.38	10.70	0.32	1.306	1.93	57.1
50	10.70	10.80	0.10	0.603	1.97	70.6
51	10.80	11.70	0.90	1.425	1.63	27.7
52	32.90	33.20	0.30	0.450	1.73	39.0
53	33.20	33.40	0.20	0.493	2.33	83.1
54	33.40	33.95	0.55	1.773	2.40	86.5
55	37.80	37.88	0.08	0.189	1.68	29.8
56	37.88	37.94	0.06	0.113	2.25	80.3
57	37.94	37.97	0.03	0.075	1.80	47.5

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270129

RESULTS (Continued)

DRILL HOLE DD84 PT-10

AIR DRIED BASIS

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	Relative Density	Ash %
58	37.97	38.20	0.23	0.698	2.29	83.4
59	38.20	39.01	0.81	1.255	1.57	26.2
60	39.01	39.25	0.24	0.546	2.27	82.0
61	39.25	39.70	0.45	0.649	1.51	20.6
62	39.70	39.95	0.25	0.759	2.32	84.9
63	39.95	39.99	0.04	0.094	1.66	37.2
64	39.99	40.01	0.02	0.068	2.35	83.4
65	40.01	40.50	0.49	0.829	1.46	16.0
66	40.50	40.55	0.05	0.122	2.28	80.4
67	40.55	40.68	0.13	0.300	1.76	46.5
68	40.68	40.75	0.07	0.185	2.31	82.3
69	40.75	40.82	0.07	0.124	1.48	17.0
70	40.82	40.84	0.02	0.045	2.20	76.1
71	40.84	41.10	0.26	0.278	1.62	33.0
72	41.10	41.60	0.50	0.145	2.28	80.9
73	41.60	42.70	1.10	1.684	1.56	26.8
74	42.70	42.94	0.24	0.714	2.50	89.9
75	42.94	43.01	0.07	0.169	2.31	83.1

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COAL ANALYSIS

Report No. 02/2928

Date 20 September, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270130

Sample Details	DRILL HOLE DD84 PT-09 COMPOSITE SAMPLES			
	27-30 Inclusive	31-34 Inclusive	35-39 Inclusive	27
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	4.6	5.7	5.8	5.3
Ash %	66.7	60.0	75.7	40.9
Volatile Matter %	5.7	5.3	4.4	6.3
Fixed Carbon %	23.0	29.0	14.1	47.5
Sulphur + %	0.10	0.15	0.09	0.19
Specific Energy MJ/kg	8.16	10.24	4.20	17.58
Relative Density	2.10 *	2.10 *	2.27 *	1.80
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

+ LECO High Temperature Method

* Calculated Result

Sampled by Received

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COAL ANALYSIS

Report No. 02/2928

Date 20 September, 1984

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Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270131

Sample Details	DRILL HOLE DD84 PT-10 COMPOSITE SAMPLES			
	40-51 Inclusive	52-54 Inclusive	55-75 Inclusive	43 and 51
As Received Basis				
Total Moisture %				
Air Dried Basis				
Moisture %	6.0	3.9	5.4	2.2
Ash %	59.2	75.1	50.6	28.9
Volatile Matter %	8.5	7.6	10.6	11.1
Fixed Carbon %	26.3	13.4	33.4	57.8
Sulphur + %	0.09	0.03	0.26	0.13
Specific Energy MJ/kg	8.90	5.04	13.92	22.74
Relative Density	1.95 *	2.20 *	1.81 *	1.64 *
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

Determinations carried out in Duplicate
Analysed in accordance with AS 1038
unless otherwise stated.

Sampled by ..... Received .....

+ LECO High Temperature Method

* Calculated Result

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COAL ANALYSIS

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Date 20 September, 1984

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270132

	DRILL HOLE DD84 PT-10 COMPOSITE SAMPLES			
Sample Details	52	55, 57, 59, 61, 63, 65, 67, 69, 71 and 73		
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	2.5	2.9		
Ash %	39.0	26.0		
Volatile Matter %	15.9	15.1		
Fixed Carbon %	42.6	56.0		
Sulphur + %	0.37	0.41		
Specific Energy MJ/kg	18.22	23.98		
Relative Density	1.73	1.56 *		
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

+ LECO High Temperature Method

* Calculated Result

Sampled by ..... Received .....

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270133

ACIRL
COAL RESEARCH

Australian Coal Industry Research Laboratories Ltd.
Incorporated in NSW

JW/jr

REPORT TO : Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA 7018

REPORT ON : The Analysis of Borecore Samples from

DRILL HOLE DD84 PT-11
DRILL HOLE DD84 PT-12
~~DRILL HOLE DD84 PT-13~~
~~DRILL HOLE DD84 PT-08A~~

PREPARED BY : J. Williams

REFERENCES : Telex (17.9.1984) T. Summons to J. Williams

REPORT NO : 02/2945

DATE : 4 October, 1984

J. Williams,
Manager,
Maitland Laboratory

Junction Street, Telarah, N.S.W. Telephone: (049) 32-8377, 32-8590
P.O. Box 26, Maitland, N.S.W. 2320

INTRODUCTION

One hundred and eight (108) samples from drill holes DD84 - PT11, DD84 - PT12, DD84 - PT13 and DD84 - PT08A were delivered to ACIRL Maitland laboratory on 19 September, 1984.

Each sample was air dried, weighed, crushed to pass 4mm and prepared for preliminary analysis. Reserve samples at 4mm top size were retained from samples greater than 200g mass.

On completion of preliminary analysis, composite samples were reconstituted, on a thickness x relative density basis, for proximate analysis, total sulphur and specific energy determinations.

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ANALYSIS AND TESTING REPORT

Report No. 02/2945

Date 4 October, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

RESULTS

DRILL HOLE DD84 PT-11

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
76	38.66	38.84	0.18—	0.134	1.75	43.0
77	38.84	38.90	0.06	0.150	2.33	80.7
78	38.90	39.07	0.17—	0.384	1.62	32.4
79	39.07	39.12	0.05	0.124	2.23	76.7
80	39.12	39.20	0.08—	0.144	1.69	43.1
81	39.20	39.22	0.02	0.058	2.06	69.3
82	39.22	39.31	0.09	0.167	1.92	59.5
83	39.31	39.36	0.05	0.106	2.10	69.4
84	39.36	39.40	0.04	0.105	2.00	64.0
85	39.40	39.44	0.04	0.120	2.05	68.1
86	39.44	39.51	0.07	0.166	2.26	79.5
87	39.51	39.74	0.23—	0.593	1.60	31.9
88	39.74	39.90	0.16	0.452	2.28	80.7
89	39.90	40.23	0.33—	0.679	1.65	36.1
90	40.23	40.31	0.08	0.188	2.14	73.4
91	40.31	40.45	0.14	0.354	2.17	74.4
92	40.45	40.70	0.25—	0.572	1.55	28.3
93	40.70	40.86	0.16	0.502	2.17	81.6
94	40.86	41.66	0.80—	1.776	1.54	26.7
95	41.66	41.70	0.04	0.194	2.24	84.1

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ANALYSIS AND TESTING REPORT

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270136

RESULTS (Continued)

DRILL HOLE DD84 PT-12

AIR DRIED BASIS

Sample Number	Depth (m) From	To	Thickness (m)	Mass (kg)	Relative Density	Ash %
96	5.06	5.19	0.13	0.290	1.83	47.6
97	5.19	5.27	0.08	0.170	2.04	64.0
98	5.27	5.34	0.07	0.179	2.39	83.0
99	5.34	5.42	0.08	0.206	2.10	68.6
100	5.42	5.60	0.18	0.468	2.41	84.0
101	5.60	5.88	0.28	0.619	1.75	45.5
102	5.88	5.97	0.09	0.200	2.27	79.9
103	5.97	6.49	0.52	1.036	1.69	39.4
104	6.49	6.63	0.14	0.342	2.35	82.7
105	6.63	6.97	0.34	0.567	1.65	33.9
106	6.97	7.01	0.04	0.091	2.32	81.6
107	7.01	7.09	0.08	0.178	1.91	57.2
108	7.09	7.15	0.06	0.186	2.20	74.7
109	7.15	7.18	0.03	0.075	1.99	61.8
110	7.18	7.20	0.02	0.060	2.24	76.5
111	7.20	7.27	0.07	0.127	1.87	55.1
112	7.27	7.30	0.03	0.070	2.02	68.1
113	7.30	7.52	0.22	0.433	1.65	34.9
114	7.52	7.59	0.07	0.182	2.17	75.0
115	7.59	7.66	0.07	0.165	1.67	38.7
116	7.66	7.69	0.03	0.054	2.29	80.0

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

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RESULTS (Continued)

DRILL HOLE DD84 PT-12 (Continued)

AIR DRIED BASIS

Sample Number	Depth (m) From	To	Thickness (m)	Mass (kg)	Relative Density	Ash %
117	7.69	7.74	0.05	0.123	1.66	39.9
118	7.74	7.81	0.07	0.169	2.20	75.2
119	7.81	7.85	0.04	0.097	1.69	39.3
120	7.85	7.90	0.05	0.098	2.30	81.5
121	7.90	8.06	0.16	0.272	1.64	37.2
122	8.06	8.07	0.01	0.043	1.99	65.1
123	8.07	8.29	0.22	0.536	1.63	36.2
124	8.29	8.45	0.16	0.301	2.30	81.9
125	8.45	8.73	0.28	0.660	1.79	47.8
126	8.73	8.87	0.14	0.448	2.39	88.8
127	8.87	8.91	0.04	0.147	2.16	75.0
128	31.55	31.94	0.39	0.820	1.60	29.9
129	31.94	32.04	0.10	0.301	2.32	84.4
130	32.04	32.18	0.14	0.314	1.67	40.1
131	32.18	32.72	0.54	1.838	2.46	91.3
132	32.72	32.85	0.13	0.341	2.03	67.0
133	32.85	33.09	0.24	0.830	2.48	91.4
134	33.09	33.30	0.21	0.440	1.52	22.0
135	33.30	33.35	0.05	0.157	2.21	79.7
136	33.35	33.42	0.07	0.135	1.67	35.4
137	33.42	33.45	0.03	0.083	2.18	81.6

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

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RESULTS (Continued)

DRILL HOLE DD84 PT-12 (Continued)

Sample Number	Depth (m) From	To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	Ash %
138	33.45	33.56	0.11	0.297	1.78	47.7
139	33.56	33.77	0.21	0.632	2.30	84.5
140	33.77	34.44	0.67	1.437	1.53	21.9
141	34.44	34.54	0.10	0.369	2.21	82.5
142	34.54	34.61	0.07	0.213	1.67	38.9
143	34.61	34.75	0.14	0.463	2.22	81.6
144	34.75	34.95	0.20	0.402	1.49	19.0
145	34.95	34.97	0.02	0.088	2.24	82.5
146	34.97	35.33	0.36	0.790	1.51	22.6
147	35.33	35.40	0.07	0.218	2.35	82.5
148	35.40	35.70	0.30	0.593	1.54	25.1
149	35.70	35.75	0.05	0.161	2.33	81.9
150	35.75	36.06	0.31	0.717	1.61	31.4
151	36.06	36.08	0.02	0.078	2.29	86.4
152	36.08	36.67	0.59	1.191	1.48	18.8
153	36.67	36.79	0.12	0.391	2.46	88.6
154	36.79	36.82	0.03	0.027	1.52	25.2
155	36.82	36.88	0.06	0.184	2.26	79.6
156	36.88	37.01	0.13	0.392	2.10	70.4
157	37.01	37.60	0.59	1.294	1.57	25.9
158	40.40	40.73	0.33	0.553	1.59	30.0

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COAL ANALYSIS

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

270139

Sample Details	DRILL HOLE DD84 PT-11 COMPOSITE SAMPLES			
	76 to 94 incl.	76+78+80+87+89+92+94		
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	5.5	3.1		
Ash %	48.2	31.9		
Volatile Matter %	12.9	15.7		
Fixed Carbon %	33.4	49.3		
Sulphur † %	0.23	0.32		
Chlorine %				
Phosphorus %				
Specific Energy MJ/kg.	14.72	21.60		
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

Determinations carried out in Duplicate
Analysed in accordance with AS1038 unless otherwise stated

Sampled by Received

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Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

270140

Sample Details	DRILL HOLE DD84 PT- 12 COMPOSITE SAMPLES			
	101 to 127	128 to 130	134 to 157	96+101+103+105+113+115+117+119+121+123+125
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	5.4	4.2	3.8	4.2
Ash %	54.8	43.9	41.5	40.0
Volatile Matter %	11.1	11.7	11.8	13.4
Fixed Carbon %	28.7	40.2	42.9	42.4
Sulphur † %	0.22	0.26	0.26	0.32
Chlorine %				
Phosphorus %				
Specific Energy MJ/kg.	11.80	16.92	17.94	18.28
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

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Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

270141

Sample Details	DRILL HOLE DD84 PT- 12 COMPOSITE SAMPLES			
	128+130+134+136+ 138+140+142+144+ 146+148+150+152+ 154+157	158		
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	2.4	2.7		
Ash %	25.9	30.0		
Volatile Matter %	14.5	13.1		
Fixed Carbon %	57.2	54.2		
Sulphur † %	0.36	0.48		
Chlorine %				
Phosphorus %				
Specific Energy MJ/kg.	24.24	22.76		
sh Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

Determinations carried out in Duplicate
Analysed in accordance with AS1038
unless otherwise stated

Sampled by ..... Received .....

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COAL RESEARCH

Australian Coal Industry Research Laboratories Ltd.
Incorporated in NSW

KM/jr

REPORT TO :

Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA, 7018

REPORT ON :

The Analysis of Borecore Samples from

DRILL HOLE DD84 PT-16
DRILL HOLE DD84 PT-18

PREPARED BY :

J. Williams

REFERENCES :

Telex (12.10.1984) J. Lea to J. Williams
Telex (16.10.1984) J. Williams to T. Dickson
Telex (19.10.1984) J. Williams to T. Dickson

REPORT NO :

02/3061

DATE :

23 October, 1984

J. Williams,
Manager,
Maitland Laboratory

Junction Street, Telarah, N.S.W. Telephone: (049) 32-8377, 32-8590
PO Box 26 Maitland N.S.W 2320

INTRODUCTION

Seventy-one (71) samples from drill holes DD84 PT-16 and DD84 PT-18 were delivered to ACIRL Maitland laboratory on 10 October, 1984.

Each sample was air dried, weighed, crushed to pass 4mm and prepared for preliminary analysis. Reserve samples at 4mm top size were retained from samples greater than 200g mass.

On completion of preliminary analysis, composite samples were reconstituted, on a thickness x relative density basis, for proximate analysis, total sulphur and specific energy determinations.

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ANALYSIS AND TESTING REPORT

Report No. 02/3061

Date 23 October, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

RESULTS

DRILL HOLE DD84 PT-16

Sample Number	Depth (m) From	To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	Ash %
989101	19.410	19.450	0.040	0.0766	2.00	55.5
989102	19.450	19.515	0.065	0.1854	2.46	87.2
989103	19.515	19.580	0.065	0.1159	2.35	82.3
989104	19.580	19.595	0.015	0.0370	2.39	85.7
989105	15.595	19.625	0.030	0.0896	2.24	76.7
989106	19.625	19.635	0.010	0.0262	2.37	84.8
989107	19.635	19.705	0.070	0.2010	2.14	68.3
989108	19.705	19.735	0.030	0.0787	2.34	82.5
989109	19.735	19.785	0.050	0.1737	2.22	74.5
989110	19.785	19.885	0.100	0.2484	2.34	85.4
989111	19.885	19.910	0.025	0.0588	2.26	79.6
989112	19.910	19.975	0.065	0.1375	2.34	84.7
989113	19.975	20.040	0.065	0.0922	2.10	68.7
989114	20.040	20.100	0.060	0.1081	2.19	72.9
989115	20.100	20.125	0.025	0.0948	2.12	71.2
989116	20.125	20.150	0.025	0.0534	2.07	66.1
989117	20.150	20.170	0.020	0.0758	2.34	84.2
989118	20.170	20.215	0.045	0.1337	2.31	67.9
989119	20.215	20.265	0.050	0.0975	2.07	83.1

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ANALYSIS AND TESTING REPORT

Report No. 02/3061

Date 23 October, 1984

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

RESULTS (Continued)

DRILL HOLE DD84 PT-16

Sample Number	Depth (m) From	To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	Ash %
989120	20.265	20.285	0.020	0.0843	2.31	82.4
989121	20.285	20.475	0.190	0.2893	1.86	46.2
989122	20.475	20.545	0.070	0.1281	2.18	74.8
989123	20.545	20.595	0.050	0.1351	2.37	84.1
989124	20.595	20.630	0.035	0.0547	2.25	76.4
989125	20.630	20.645	0.015	0.0768	2.36	84.5
989126	20.645	20.815	0.170	0.5283	2.35	83.3
989127	20.815	20.825	0.010	0.0602	2.35	80.6
989128	20.825	21.370	0.545	1.180	2.17	72.8
989129	21.370	21.445	0.075	0.1113	1.83	46.5
989130	21.445	21.460	0.015	0.0354	1.74	38.8
989131	21.460	21.745	0.285	0.6573	1.99	54.9
989132	21.745	21.860	0.115	0.2965	1.88	50.8
989133	21.860	21.935	0.075	0.1865	2.09	67.3
989134	21.935	21.965	0.030	0.0553	1.58	18.4
989135	21.965	22.005	0.040	0.0876	1.58	21.3
989136	22.005	22.025	0.020	0.0384	1.57	19.9
989137	22.025	22.120	0.095	0.2262	1.69	32.2
989138	22.120	22.250	0.130	0.3707	2.17	70.4

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Date 23 October, 1984

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

RESULTS (Continued)

DRILL HOLE DD84 PT-18

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
989139	12.720	12.825	0.105	0.1756	2.10	57.2
989140	12.825	12.895	0.070	0.1991	1.93	51.7
989141	12.895	12.925	0.030	0.0334	1.73	36.6
989142	12.925	12.980	0.055	0.0750	1.63	24.5
989143	12.980	13.020	0.040	0.0809	1.70	32.4
989144	13.020	13.190	0.170	0.4538	2.32	80.3
989145	13.190	13.320	0.130	0.4094	2.33	82.9
989146	13.320	13.355	0.035	0.0596	2.44	87.6
989147	13.355	13.410	0.055	0.2031	2.35	82.8
989148	13.410	13.470	0.060	0.1465	2.29	78.9
989149	13.470	13.600	0.130	0.4128	2.33	81.6
989150	13.600	13.650	0.050	0.1343	2.24	75.2
989151	30.580	30.770	0.190	0.5539	2.21	71.9
989152	30.770	30.885	0.115	0.1908	1.83	34.1
989153	30.885	30.950	0.065	0.1358	1.75	28.6
989154	30.950	30.990	0.040	0.0745	1.87	38.9
989155	30.990	31.165	0.175	0.5833	2.43	91.2
989156	31.165	31.600	0.435	0.8642	1.87	38.5
989157	31.600	31.800	0.200	0.5527	1.79	33.0

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Date 23 October, 1984

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

RESULTS (Continued)

DRILL HOLE DD84 PT-18

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
989158	31.800	31.845	0.045	0.1551	2.43	91.1
989159	31.845	31.860	0.015	0.0376	1.85	38.5
989160	31.860	32.020	0.160	0.5060	2.47	88.1
989161	32.020	32.075	0.055	0.1066	1.84	32.2
989162	32.075	32.200	0.125	0.3289	1.98	48.5
989163	32.200	32.250	0.050	0.1569	1.91	41.4
989164	32.250	32.265	0.015	0.0424	1.81	28.8
989165	32.265	32.400	0.135	0.2722	1.89	39.1
989166	32.400	32.500	0.100	0.2546	1.83	36.6
989167	35.150	35.205	0.055	0.1415	2.61	93.8
989168	35.205	35.385	0.180	0.4216	1.90	40.5
989169	35.385	35.410	0.025	0.0538	1.84	35.1
989170	35.410	35.485	0.075	0.2084	1.91	39.1
989171	35.485	35.520	0.035	0.1262	2.49	80.2

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FORM 3

COAL ANALYSIS

Report No. 02/3061

Date 23 October, 1984

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Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

Sample Details	DRILL HOLE DD84 PT-16 COMPOSITE SAMPLES			
	Sample 989101 to 989138 inclusive	Sample 989121+129 130+132+134+135+ 136+137		
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	5.8	4.0		
Ash %	68.1	41.0		
Volatile Matter %	7.4	7.7		
Fixed Carbon %	18.7	47.3		
Sulphur + %	0.22	0.54		
Specific Energy MJ/kg	5.52	17.82		
Relative Density				
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

+ LECO High Temperature Method

* Calculated Result

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

Sampled by Received

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FORM 3

COAL ANALYSIS

Report No. 02/3061

Date 23 October, 1984

AUSTRALIAN COAL INDUSTRY
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Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

Sample Details	DRILL HOLE PT-18 COMPOSITE SAMPLES			
	Sample 989139 to 989150 inclusive	Sample 989151 to 989166 inclusive	Sample 989167 to 989171 inclusive	Sample 989141 + 142 + 143
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	3.5	2.8	3.5	3.7
Ash %	71.6	54.3	54.5	30.1
Volatile Matter %	5.6	5.9	6.3	6.8
Fixed Carbon %	19.3	37.0	35.7	59.4
Sulphur + %	0.11	0.39	0.85	0.28
Specific Energy MJ/kg	6.24	13.30	12.36	22.06
Relative Density				
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

+ LECO High Temperature Method

* Calculated Result

Determinations carried out in Duplicate
Analysed in accordance with AS 1038
unless otherwise stated.

Sampled by Received

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FORM 3

COAL ANALYSIS

Report No. 02/3061

Date 23 October, 1984

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Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

Sample Details	DRILL HOLE DD84 PT-18 COMPOSITE SAMPLES			
	Sample 989152+153 +154+156+157+159+ 161+162+163+164+ 165+166	Sample 989168+ 169+170		
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	3.1	4.2		
Ash %	37.6	39.8		
Volatile Matter %	6.3	6.9		
Fixed Carbon %	53.0	49.1		
Sulphur + %	0.58	1.25		
Specific Energy MJ/kg	18.90	17.34		
Relative Density				
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

+ LECO High Temperature Method

* Calculated Result

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

Sampled by ..... Received .....

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Incorporated in NSW

JW/jr

REPORT TO : Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA, 7018

REPORT ON : The Analysis of Borecore Samples from

DRILL HOLE DD84 PT-25

PREPARED BY : J. Williams

REFERENCES : Telex (11.10.1984) T. Summons to J. Williams
Telex (22.10.1984) J. Williams to T. Dickson

REPORT NO : 02/3063

DATE : 23 October, 1984

J. Williams,
Manager,
Maitland Laboratory

INTRODUCTION

Twelve (12) samples from drill hole DD84 PT-25 were delivered to ACIRL Maitland laboratory on 16 October, 1984.

Each sample was air dried, weighed, crushed to pass 4mm and prepared for preliminary analysis. Reserve samples at 4mm top size were retained from samples greater than 200g mass.

On completion of preliminary analysis, composite samples were reconstituted, on a thickness x relative density basis, for proximate analysis, total sulphur and specific energy determinations.

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ANALYSIS AND TESTING REPORT

Report No. 02/3063

Date 23 October, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

RESULTS

DRILL HOLE DD84 PT-25

AIR DRIED BASIS

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	Relative Density	Ash %
989201	30.00	30.53	0.53	1.764	2.29	81.2
989202	30.53	31.07	0.54	1.262	1.58	32.0
989203	31.07	31.42	0.35	0.796	1.53	20.8
989204	31.42	32.00	0.58	1.265	1.50	25.0
989205	32.00	32.02	0.02	0.070	2.34	82.9
989206	32.02	32.21	0.19	0.379	1.49	23.2
989207	32.21	32.44	0.23	0.804	2.27	80.5
989208	32.44	32.49	0.05	0.187	2.59	92.3
989209	32.49	32.86	0.37	0.906	1.61	36.6
989210	32.86	32.96	0.10	0.221	1.68	46.3
989211	32.96	32.99	0.03	0.119	2.42	85.9
989212	32.99	33.33	0.34	0.735	1.56	25.2

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COAL ANALYSIS

Report No. 02/3063

Date 23 October, 1984

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Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

DRILL HOLE DD84 PT-25 COMPOSITE SAMPLES

Sample Details	Sample 989202 - 989212 inclusive	Sample 989202+203 +204+207+209+210+ 212		
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	2.1	2.4		
Ash %	38.1	28.9		
Volatile Matter %	10.5	11.5		
Fixed Carbon %	49.3	57.2		
Sulphur + %	0.30	0.35		
Specific Energy MJ/kg	19.86	23.02		
Relative Density				
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

+ LECO High Temperature Method

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

Sampled by ..... Received .....

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REPORT TO :

Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA, 7018

REPORT ON :

The Analysis of Borecore Samples from

DRILL HOLE DD84 PT-26

PREPARED BY :

J. Williams

REFERENCE :

Telex (16.10.1984) T. Summons to J. Williams
Telex (22.10.1984) J. Williams to T. Dickson
Telex (23.10.1984) J. Williams to T. Dickson

REPORT NO :

02/3078

DATE :

23 October, 1984

.....

J. Williams,
Manager,
Maitland Laboratory

Junction Street, Telarah, N.S.W. Telephone: (049) 32-8377, 32-8590

INTRODUCTION

Twenty-eight (28) samples from dill hole DD84 PT-26 were delivered to ACIRL Maitland laboratory on 17 October, 1984.

Each sample was air dried, weighed, crushed to pass 4mm and prepared for preliminary analysis. Reserve samples at 4mm top size were retained from samples greater than 200g mass.

On completion of preliminary analysis, composite samples were reconstituted, on a thickness x relative density basis, for proximate analysis, total sulphur and specific energy determinations.

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ANALYSIS AND TESTING REPORT

Report No. 02/3078

Date 23rd October, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

RESULTS

DRILL HOLE DD84 PT-26

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
989213	41.21	41.31	0.10	0.2871	1.95	61.8
989214	41.31	41.44	0.13	0.3363	1.80	50.6
989215	41.44	41.52	0.08	0.2207	2.14	78.4
989216	41.52	41.61	0.09	0.1929	1.66	41.8
989217	41.61	41.62	0.01	0.0585	2.06	71.9
989218	41.62	41.65	0.03	0.0661	2.02	69.9
989219	41.65	41.84	0.19	0.3838	1.51	28.7
989220	41.84	42.08	0.24	0.4707	1.39	13.8
989221	42.08	42.18	0.10	0.2800	1.67	41.6
989222	42.18	42.20	0.02	0.0496	2.08	74.2
989223	42.20	42.35	0.15	0.4325	2.24	78.8
989224	42.35	42.40	0.05	0.1027	1.72	46.1
989225	42.40	42.45	0.05	0.1089	1.58	33.7
989226	42.45	42.54	0.09	0.2292	1.56	31.6

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ANALYSIS AND TESTING REPORT

Report No. 02/3078

Date 23 October, 1984

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Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

RESULTS (Continued)

DRILL HOLE DD84 PT-26

AIR DRIED BASIS

Sample Number	Depth (m) From	To	Thickness (m)	Mass (kg)	Relative Density	Ash %
989227	42.54	42.58	0.04	0.0916	2.06	67.8
989228	42.58	42.60	0.02	0.0577	2.44	89.1
989229	42.60	42.92	0.32	0.7811	1.90	58.7
989230	42.92	42.95	0.03	0.0748	2.18	75.1
989231	42.95	43.01	0.06	0.1834	2.30	80.5
989232	43.01	43.06	0.05	0.1206	1.95	60.8
989233	43.06	43.09	0.03	0.0897	2.09	72.4
989234	43.09	43.25	0.16	0.4094	1.76	47.4
989235	43.25	43.29	0.04	0.1237	2.14	75.2
989236	43.29	43.40	0.11	0.2732	1.81	51.7
989237	21.49	21.54	0.05	0.0865	1.62	35.5
989238	21.54	21.61	0.07	0.1909	2.17	76.0
989239	21.61	21.95	0.34	0.5281	1.74	46.3
989240	21.95	22.01	0.06	0.2029	2.37	84.2
989241	22.01	22.07	0.06	0.0940	1.51	26.8

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

270159

FORM 3

COAL ANALYSIS

Report No. 02/3078

Date 23 October, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(INCORPORATED IN N.S.W.)
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

Sample Details	DRILL HOLE DD94 PT-26 COMPOSITE SAMPLES			
	Sample 989213 - 989236 inclusive	Sample 989237 - 989241 inclusive	Sample 989216+219 +220+221+224+225+ 226+234	Sample 989237 + 239 + 241
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	7.0	3.9	5.0	4.0
Ash %	53.5	53.4	33.3	43.1
Volatile Matter %	12.6	14.1	17.3	16.7
Fixed Carbon %	26.9	28.6	44.4	36.2
Sulphur + %	0.30	0.29	0.55	0.35
Specific Energy MJ/kg	12.40	13.90	21.32	17.82
Relative Density				
sh Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

+ LECO High Temperature Method

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

Sampled by ..... Received .....

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Maitland Laboratory

15.

270160

ACIRL
COAL RESEARCH

Australian Coal Industry Research Laboratories Ltd.
Incorporated in NSW

KM/bm

REPORT TO :

Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA 7018

REPORT ON :

The Analysis of Borecore Samples from
DRILL HOLE DD84 PT-30
DRILL HOLE DD84 PT-31

PREPARED BY :

Kerie Miller

REFERENCES :

Telex (18.10.84)
T. Summons to J. Williams

Provisional Results (24.10.84)
J. Williams to T. Dickson

Telex (26.10.84)
J. Williams to T. Dickson

REPORT NO :

02/3089

DATE :

1 November, 1984

.....
J. Williams,
Manager,
Maitland Laboratory

Junction Street, Telarah, N.S.W. Telephone: (049) 32-8377, 32-8590
P.O. Box 26, Maitland, N.S.W. 2320

270161

INTRODUCTION

Forty (40) samples from drill holes DD84 PT-30 and DD84 PT-31 were delivered to ACIRL Maitland laboratory on 18 October, 1984.

Each sample was air dried, weighed, crushed to pass 4mm and prepared for preliminary analysis. Reserve samples at 4mm top size were retained from samples greater than 200g mass.

On completion of preliminary analysis, composite samples were reconstituted, on a thickness x relative density basis, for proximate analysis, total sulphur and specific energy determinations.

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FORM 11

ANALYSIS AND TESTING REPORT

Report No. 02/3089

Date 1 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
P.O. Box 83
North Ryde, N.S.W.
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Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

RESULTS

DRILL HOLE DD84 PT-30

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
989242	10.53	10.75	0.22	0.5127	2.39	85.5
989243	10.75	11.10	0.35	0.6558	2.00	50.2
989244	11.76	11.94	0.18	0.3668	1.94	46.3
989245	13.70	14.26	0.56	1.426	2.10	61.5
989246	49.55	49.85	0.30	0.2105	2.49	88.8

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P.O. Box 93
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ANALYSIS AND TESTING REPORT

Report No. 02/3089

Date 1 November, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

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RESULTS (continued)

DRILL HOLE DD84 PT-31

AIR DRIED BASIS

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	Relative Density	Ash %
989247	6.68	6.70	0.02	0.0440	2.25	77.9
989248	6.70	6.76	0.06	0.1693	2.32	83.5
989249	6.76	6.82	0.06	0.0852	2.13	64.1
989250	6.82	6.97	0.15	0.3762	2.28	84.3
989251	6.97	7.01	0.04	0.0655	2.25	79.8
989252	7.01	7.06	0.05	0.1414	2.26	84.1
989253	7.06	7.10	0.04	0.1268	2.27	81.9
989254	7.10	7.24	0.14	0.3165	2.22	77.3
989255	7.24	7.54	0.30	0.8523	2.29	84.5
989256	7.54	7.58	0.04	0.0977	2.09	63.4
989257	7.58	7.61	0.03	0.0683	2.33	80.5
989258	7.61	7.67	0.06	0.0987	2.17	66.3
989259	7.67	7.73	0.06	0.2306	2.35	82.0
989260	7.73	7.99	0.26	0.6441	2.15	64.1
989261	7.99	8.27	0.28	0.7625	2.41	85.1
989262	8.27	8.35	0.08	0.1997	2.37	82.0
989263	8.35	8.38	0.03	0.0831	2.45	87.6
989264	8.38	8.59	0.21	0.4602	1.99	51.6
989265	8.59	8.85	0.26	0.7755	2.19	74.8

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ANALYSIS AND TESTING REPORT

Report No. 02/3089

Date 1 November, 1984

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Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

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RESULTS (continued)

DRILL HOLE DD84 PT-31

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
989266	8.85	9.10	0.25	0.7079	2.21	70.6
989267	9.10	9.35	0.25	0.6576	2.02	51.9
989268	9.35	9.55	0.20	0.6321	2.39	83.4
989269	9.55	9.59	0.04	0.0999	2.39	84.8
989270	9.59	9.70	0.11	0.3350	2.25	72.3
989271	9.70	9.81	0.11	0.3030	2.41	85.6
989272	9.81	9.98	0.17	0.4609	2.32	79.0
989273	9.98	10.23	0.25	0.7328	2.28	73.2
989274	10.23	10.36	0.13	0.3915	2.47	87.6
989275	10.36	10.74	0.38	1.229	2.50	89.6
989276	43.50	43.60	0.10	0.2215	2.45	84.0
989277	43.60	43.70	0.10	0.3182	2.50	89.9
989278	43.70	44.40	0.70	1.915	2.11	57.6
989279	49.80	50.00	0.20	0.4926	2.35	75.7
989280	50.00	50.05	0.05	0.2863	2.57	93.1
989281	50.05	50.23	0.18	0.5112	2.22	66.5

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Maitland Laboratory

FORM 3

COAL ANALYSIS

Report No. 02/3089

Date 1 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

270165

Sample Details	DRILL HOLE DD84 PT-30			
	Sample 989243	Sample 989244	Sample 989245	Sample 989246
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	11.0	12.7	11.0	1.5
Ash %	50.2	46.3	61.5	88.8
Volatile Matter %	6.6	7.1	6.1	2.3
Fixed Carbon %	32.2	33.9	21.4	7.4
Sulphur † %	0.29	0.34	0.19	0.04
Specific Energy MJ/kg	10.94	11.88	6.74	2.48
Relative Density *	2.00	1.94	2.10	2.49
	✓	✓	✓	✓
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

* NCB Analysts Handbook Method

Determinations carried out in Duplicate
Analysed in accordance with AS1038
unless otherwise stated

Sampled by ..... Received ..

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FORM 3

COAL ANALYSIS

Report No. 02/3089

Date 1 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
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P.O. Box 83
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Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270166

DRILL HOLE DD84 PT-31 COMPOSITE SAMPLES

Sample Details	Sample 989247 to 989274 inclusive	Sample 989247 + 249 + 251 + 254 + 256 + 258 + 260 + 262 + 264 + 265	Sample 989266 + 267 + 268 + 270 + 272 + 273	Sample 989276 + 277 + 278
As Received Basis				
Total Moisture %				
Air Dried Basis				
Moisture %	8.2	8.5	6.6	8.1
Ash %	75.0	68.4	71.1	64.9
Volatile Matter %	6.0	6.7	5.4	6.8
Fixed Carbon %	10.8	16.4	16.9	20.2
Sulphur † %	0.29	0.40	0.45	0.26
Specific Energy MJ/kg	3.32	5.54	4.92	6.60
Relative Density	2.25 *	2.16 *	2.23 *	2.19 *
	✓	✓	✓	✓
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

* Calculated Result

Determinations carried out in Duplicate
Analysed in accordance with AS 1038
unless otherwise stated.

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FORM 3

COAL ANALYSIS

Report No. 02/3089

Date 1 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
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P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270167

DRILL HOLE DD84 PT-31 COMPOSITE SAMPLES

Sample Details	Sample 989279 + 280 + 281			
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	4.6			
Ash %	74.3			
Volatile Matter %	4.3			
Fixed Carbon %	16.8			
Sulphur † %	0.24			
Specific Energy MJ/kg	5.30			
Relative Density	2.32 *			
	✓			
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

* Calculated Result

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

Sampled by..... Received.....

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Maitland Laboratory

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270168

ACIRL
COAL RESEARCH

Australian Coal Industry Research Laboratories Ltd.
Incorporated in NSW

KM/jr

REPORT TO : Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA 7018

REPORT ON : The Analysis of Borecore Samples from

DRILL HOLE DD84 PT-25 ✓

DRILL HOLE DD84 PT-32 ✓

DRILL HOLE DD84 PT-24 ✓

PREPARED BY : Kerie Miller

REFERENCES : Telex (22.10.1984) T. Summons to J. Williams
Telex (26.10.1984) J. Williams to T. Dickson
Telex (29.10.1984) J. Boyle to T. Dickson

REPORT NO : 02/3109

DATE : 2 November, 1984

.....
J. Williams,
Manager,
Maitland Laboratory

Junction Street, Telarah, N.S.W. Telephone: (049) 32-8377, 32-8590
P.O. Box 26 Maitland N.S.W. 2320

INTRODUCTION

Thirty-seven (37) samples from drill holes DD84 PT-25, DD84 PT-32 and DD84 PT-24 were delivered to ACIRL Maitland Laboratory on 23 October, 1984.

Each sample was air dried, weighed, crushed to pass 4mm and prepared for preliminary analysis. Reserve samples at 4mm top size were retained from samples greater than 200g mass.

On completion of preliminary analysis, composite samples were reconstituted, on a thickness x relative density basis, for proximate analysis, total sulphur and specific energy determinations.

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North Ryde, N.S.W.
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ANALYSIS AND TESTING REPORT

Report No. 02/3109

Date 2 November, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

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RESULTS

DRILL HOLE DD84 PT-25

AIR DRIED BASIS

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	Relative Density	Ash %
989282	59.87	60.19	0.32	0.6881	1.84	32.3
989283	60.19	60.44	0.25	0.5427	1.87	35.7

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

FORM 11

ANALYSIS AND TESTING REPORT

Report No. 02/3109

Date 2 November, 1984

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North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

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RESULTS (Continued)

DRILL HOLE DD84 PT-32

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
989284	21.99	22.07	0.08	0.1913	2.19	75.0
989285	22.07	22.15	0.08	0.2804	1.85	51.5
989286	22.15	22.24	0.09	0.2461	2.32	83.0
989287	22.24	22.65	0.41	0.8399	1.60	29.7
989288	22.65	22.79	0.14	0.2882	1.56	26.6
989289	22.79	22.94	0.15	0.3475	1.60	31.0
989290	22.94	23.02	0.08	0.1988	2.24	78.4
989291	23.02	23.18	0.16	0.3339	1.55	26.2
989292	23.18	23.40	0.22	0.2182	1.57	27.9
989293	23.40	23.50	0.10	0.1944	2.27	78.0
989294	23.50	23.80	0.30	0.4651	1.64	34.5
989295	23.80	24.20	0.40	0.8402	1.59	29.1
989296	24.20	24.55	0.35	0.4773	1.55	24.1
989297	26.65	26.91	0.26	0.5267	1.71	36.6
989298	26.91	27.10	0.19	0.4679	2.08	66.5
989299	27.10	27.95	0.85	1.1610	2.36	83.1

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ANALYSIS AND TESTING REPORT

Report No. 02/3109

Date 2 November, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

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RESULTS (Continued)

DRILL HOLE DD84 PT-32 (Continued)

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
989300	27.95	28.02	0.07	0.1484	1.71	38.6
989172	28.02	28.10	0.08	0.2142	2.12	70.0
989173	28.10	28.25	0.15	0.3096	1.95	58.1
989174	28.25	28.65	0.40	1.3390	2.48	88.4
989175	28.65	28.90	0.25	0.3968	1.67	34.5
989176	28.90	28.98	0.08	0.1759	2.45	86.9
989177	28.98	29.03	0.05	0.1574	1.89	50.4
989178	47.21	47.33	0.12	0.3915	2.25	78.4
989179	47.33	47.93	0.60	1.2350	1.68	38.3
989180	47.93	48.42	0.49	0.8917	1.56	24.8
989181	48.42	48.55	0.13	0.3371	2.33	82.1
989182	50.20	50.40	0.20	0.5323	1.90	51.2
989183	50.40	50.45	0.05	0.1085	1.72	44.1
989184	50.45	50.54	0.09	0.2287	1.67	37.4
989185	50.54	50.60	0.06	0.1307	1.54	26.3
989186	50.60	50.75	0.15	0.3262	1.53	25.3

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ANALYSIS AND TESTING REPORT

Report No. 02/3109

Date 2 November, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

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RESULTS (Continued)

DRILL HOLE DD84 PT-24

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
989200	45.47	45.66	0.19	0.3931	1.88	58.2
989701	45.66	45.77	0.11	0.3847	2.43	83.2
989702	47.97	48.06	0.09	0.3433	2.27	82.2

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FORM 5

COAL ANALYSIS

Report No. 02/3109

Date 2 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(INCORPORATED IN N.S.W.)
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270174

Sample Details	989282 + 989283			
	DRILL HOLE DD84 PT-25 COMPOSITE SAMPLES			
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	4.3			
Ash %	33.5			
Volatile Matter %	6.3			
Fixed Carbon %	55.9			
Sulphur † %	0.63			
Specific Energy MJ/kg	20.12			
Relative Density	1.85 *			
Ash Fusibility Temperatures	✓			
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

* Calculated Result

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

Sampled by..... Received .....

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FORM 3

COAL ANALYSIS

Report No. 02/3109

Date 2 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(INCORPORATED IN N.S.W.)
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270175

Sample Details	DRILL HOLE DD84 PT-32 COMPOSITE SAMPLES			
	989285 - 989296 inclusive	989287+288+289+ 291+292+294+295+ 296	989297 + 989298	989300 + 989173
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	4.1	3.3	2.3	2.6
Ash %	36.9	28.7	50.5	52.2
Volatile Matter %	13.3	15.0	12.7	12.5
Fixed Carbon %	45.7	53.0	34.5	32.7
Sulphur † %	0.33	0.38	0.28	0.31
Specific Energy MJ/kg	19.48	22.74	14.60	13.86
Relative Density	1.67 *	1.59 *	1.87 *	1.87 *
		✓	✓	✓
Ash Fusibility Temperatures	✓			
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

* Calculated Result

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

Sampled by ..... Received .....

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AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

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FORM 3

COAL ANALYSIS

Report No. 02/3109

Date 2 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(INCORPORATED IN N.S.W.)
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270176

Sample Details	DRILL HOLE DD84 PT-32 COMPOSITE SAMPLES			
	989175 + 989177	989178 - 989180 inclusive	989182 - 989186 inclusive	
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	2.0	3.7	4.6	
Ash %	37.1	38.6	39.5	
Volatile Matter %	16.1	9.8	10.0	
Fixed Carbon %	44.8	47.9	45.9	
Sulphur † %	0.42	0.34	0.36	
Specific Energy MJ/kg	19.16	19.28	18.24	
Relative Density	1.71 *	1.69 *	1.71 *	
	✓	✓	✓	
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

* Calculated Result

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

Sampled by..... Received ....

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2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270177

DRILL HOLE DD84 PT-24

Sample Details	Sample 989200			
s Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	0.9			
Ash %	58.2			
Volatile Matter %	9.9			
Fixed Carbon %	31.0			
Sulphur † %	0.24			
Specific Energy MJ/kg	14.04			
Relative Density	1.88			
sh Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

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Maitland Laboratory

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ACIRL
COAL RESEARCH

270178

Australian Coal Industry Research Laboratories Ltd.
Incorporated in NSW

KM/bm

REPORT TO : Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA 7018

REPORT ON : The Analysis of Borecore Samples from
DRILL HOLE DD84 PT-35
DRILL HOLE DD84 PT-36

PREPARED BY : Kerie Miller

REFERENCES :
Telex (26.10.1984)
T. Summons to J. Williams
Telex (26.10.1984)
J. Boyle to T. Dickson
Telex (31.10.1984)
J. Williams to T. Dickson
Telex (1.11.1984)
J. Boyle to T. Dickson

REPORT NO : 02/3135

DATE : 5 November, 1984

.....
J. Williams,
Manager,
Maitland Laboratory

Junction Street, Telarah, N.S.W. Telephone: (049) 32-8377, 32-8590

INTRODUCTION

Thirty-four (34) samples from drill holes DD84 PT-35 and DD84 PT-36 were delivered to ACIRL Maitland laboratory on 26 October, 1984.

Each sample was air dried, weighed, crushed to pass 4mm and prepared for preliminary analysis. Reserve samples at 4mm top size were retained from samples greater than 200g mass.

On completion of preliminary analysis, composite samples were reconstituted, on a thickness x relative density basis, for proximate analysis, total sulphur and specific energy determinations.

FORM 11

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ANALYSIS AND TESTING REPORT

Report No. 02/3135

Date 5 November, 1984

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Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270180

RESULTS

DRILL HOLE DD84 PT-35

AIR DRIED BASIS

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	Relative Density	Ash %
989187	17.85	17.98	0.13	0.1408	1.72	39.5
989188	17.98	18.43	0.45	0.8811	1.56	23.0
989189	18.43	18.52	0.09	0.1776	1.47	18.6
989190	26.90	27.25	0.35	0.6098	1.79	46.4
989191	27.25	27.78	0.53	1.0802	1.61	27.7
989192	27.78	27.98	0.20	0.4121	1.57	33.8
989193	27.98	28.15	0.17	0.4634	2.37	84.0
989194	28.15	28.20	0.05	0.1316	2.22	73.5
989195	46.03	46.45	0.42	0.8068	1.63	29.9
989196	46.45	46.72	0.27	0.4887	1.62	30.5
989197	47.84	48.22	0.38	1.2290	2.37	85.1
989198	48.22	48.30	0.08	0.3335	2.11	65.7
989199	49.00	49.50	0.50	1.1680	1.83	39.1

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

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RESULTS (Continued)

DRILL HOLE DD84 PT-36

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
989703	11.20	11.28	0.08	0.2327	2.11	69.8
989704	11.28	11.37	0.09	0.2225	1.95	58.6
989705	11.37	11.48	0.11	0.3414	2.37	82.6
989706	11.48	11.68	0.20	0.4491	1.72	38.5
989707	11.68	12.10	0.42	0.8518	1.58	23.6
989708	24.07	24.08	0.01	0.0505	2.10	73.1
989709	24.08	24.22	0.14	0.7211	1.46	13.6
989710	24.22	24.25	0.03	0.0782	2.02	64.8
989711	24.25	24.50	0.25	0.5607	1.69	38.1
989712	24.50	24.61	0.11	0.2065	1.53	21.3

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270182

RESULTS (Continued)

DRILL HOLE DD87 PT-36 (Continued)

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
989713	37.70	37.83	0.13	0.2115	1.66	34.1
989714	37.83	38.00	0.17	0.1733	2.01	65.1
989715	38.00	38.05	0.05	0.0784	1.77	45.3
989716	49.22	49.28	0.06	0.1951	2.41	85.5
989717	49.28	49.46	0.18	0.4060	1.89	53.0
989718	49.46	49.51	0.05	0.1146	1.65	29.5
989719	49.51	49.78	0.27	0.9551	2.51	90.7
989720	49.78	49.93	0.15	0.3678	1.66	31.3
989721	49.93	50.12	0.19	0.2881	1.63	27.5
989722	52.20	52.55	0.35	1.1440	2.24	74.6
989723	52.55	52.60	0.05	0.0879	1.85	45.6

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FORM 3

COAL ANALYSIS

Report No. 02/3135

Date 5 November, 1984

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Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270183

DRILL HOLE DD84 PT-35 COMPOSITE SAMPLES

Sample Details	989187 + 989188 989189	989190 - 989194 inclusive	989190 + 989191 989192 + 989194	989195 + 989196
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	1.7	3.2	2.8	3.1
Ash %	26.0	45.7	37.5	30.1
Volatile Matter %	13.2	9.7	10.6	7.7
Fixed Carbon %	59.1	41.4	49.1	59.1
Sulphur † %	0.56	0.32	0.37	0.37
Specific Energy MJ/kg	24.00	16.38	19.44	22.26
Relative Density	1.58 *	1.78 *	1.69 *	1.63 *
		✓	✓	✓
Ash Fusibility Temperatures	✓			
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

* Calculated Result

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

Sampled by ..... Received

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Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270184

DRILL HOLE DD84 PT-35

Sample Details	Sample 989198	Sample 989199		
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	3.4	3.7		
Ash %	65.7	39.1		
Volatile Matter %	5.9	8.6		
Fixed Carbon %	25.0	48.6		
Sulphur † %	0.19	0.47		
Specific Energy MJ/kg	9.10	18.22		
Relative Density	2.11	1.83		
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

* Calculated Result

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270185

DRILL HOLE DD84 PT-36 COMPOSITE SAMPLES

Sample Details	989706 + 989707	989709 - 989712 inclusive	989713 + 989714 + 989715	989717 - 989721 inclusive
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	2.8	3.7	4.7	2.6
Ash %	28.7	31.1	52.1	59.0
Volatile Matter %	12.9	10.7	8.7	5.8
Fixed Carbon %	55.6	54.5	34.5	32.6
Sulphur † %	0.39	0.56	0.40	0.30
Specific Energy MJ/kg	22.50	22.20	13.66	12.50
Relative Density	1.63 *	1.61 *	1.85 *	1.98*
	✓	✓	✓	✓
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

* Calculated Result

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Sampled by ..... Received

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FORM 3

COAL ANALYSIS

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270186

DRILL HOLE DD84 PT-36 COMPOSITE SAMPLES

Sample Details	989722 + 989723	989709 + 989711 + 989712	989713 + 989715	989718 + 989720 + 989721
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	3.7	3.7	3.1	3.3
Ash %	71.1	28.5	37.6	29.4
Volatile Matter %	5.4	10.7	9.2	7.2
Fixed Carbon %	19.8	57.1	50.1	60.1
Sulphur † %	0.14	0.57	0.55	0.63
Specific Energy MJ/kg	7.10	23.26	20.20	23.24
Relative Density	2.19 *	1.59 *	1.69 *	1.64 *
	✓	✓	✓	✓
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

* Calculated Result

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Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270187

DRILL HOLE DD84 PT-36

Sample Details	Sample 989723			
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	1.4			
Ash %	45.6			
Volatile Matter %	8.9			
Fixed Carbon %	44.1			
Sulphur † %	0.43			
Specific Energy MJ/kg	17.20			
Relative Density	1.85			
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

Sampled by..... Received

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Maitland Laboratory

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ACIRL
COAL RESEARCH

Australian Coal Industry Research Laboratories Ltd.
Incorporated in NSW

KM/jr

270188

REPORT TO : Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA 7018

REPORT ON : The Analysis of Borecore Samples from

DRILL HOLE DD84 PT-34

DRILL HOLE DD84 PT-39

PREPARED BY : Kerie Miller

REFERENCES : Telex (29.10.1984) T. Summons to J. Williams
Telex (2.11.1984) J. Boyle to T. Dickson

REPORT NO : 02/3142

DATE : 6 November, 1984

Kerie Miller for
.....
J. Williams,
Manager,
Maitland Laboratory

Junction Street, Telarah, N.S.W. Telephone: (049) 32-8377, 32-8590

INTRODUCTION

Sixty-two (62) samples from drill holes DD84 PT-34 and DD84 PT-39 were delivered to ACIRL Maitland laboratory on 30 October, 1984.

Each sample was air dried, weighed, crushed to pass 4mm and prepared for preliminary analysis. Reserve samples at 4mm top size were retained from samples greater than 200g mass.

On completion of preliminary analysis, composite samples were reconstituted, on a thickness x relative density basis, for proximate analysis, total sulphur and specific energy determinations.

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ANALYSIS AND TESTING REPORT

Report No. 02/3142

Date 6 November, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

RESULTS

DRILL HOLE DD84 PT-34

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
989763	25.24	25.32	0.08	0.2793	2.29	64.7
989764	25.32	25.45	0.13	0.2332	1.46	16.1
989765	25.45	25.50	0.05	0.0908	2.39	84.8
989766	25.50	25.70	0.20	0.4091	1.51	26.7
989767	25.70	25.74	0.04	0.0780	1.41	18.8
989768	25.74	25.94	0.20	0.4729	2.52	90.2
989769	25.94	25.98	0.04	0.0886	1.57	26.4
989770	25.98	26.06	0.08	0.2361	2.35	84.5
989771	26.06	26.40	0.34	0.6862	1.53	27.1
989772	26.40	26.62	0.22	0.4713	1.52	28.7
989773	26.62	26.87	0.25	0.5630	1.63	32.9
989774	57.28	57.39	0.11	0.2643	1.57	24.1
989775	57.39	57.47	0.08	0.1411	1.53	21.1
989776	57.47	57.51	0.04	0.0929	1.55	25.9
989777	57.51	57.58	0.07	0.2318	2.10	69.4
989778	57.58	57.69	0.11	0.3241	2.52	90.4
989779	57.69	57.85	0.16	0.3630	1.62	30.7

Kerre miller

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ANALYSIS AND TESTING REPORT

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

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RESULTS (Continued)

DRILL HOLE DD84 PT-39

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
989790	22.80	22.83	0.03	0.0822	1.80	46.2
989791	22.83	22.91	0.08	0.2963	2.50	89.1
989792	22.91	23.31	0.40	0.8221	1.55	23.7
989793	23.31	23.49	0.18	0.3403	1.52	23.4
989794	23.49	23.59	0.10	0.3064	1.83	55.3
989795	23.59	23.85	0.26	0.5213	1.53	27.9
989796	23.85	23.89	0.04	0.1153	2.18	76.5
989797	23.89	23.94	0.05	0.1049	1.72	52.6
989798	23.94	23.97	0.03	0.1093	2.06	68.7
989799	23.97	23.99	0.02	0.0480	2.42	86.3
989800	23.99	24.05	0.06	0.1336	1.53	28.3
989801	26.90	26.97	0.07	0.0922	1.51	19.5
989802	26.97	27.05	0.08	0.1510	1.52	19.7
989803	27.05	27.09	0.04	0.1335	2.14	74.1
989804	27.09	27.16	0.07	0.1699	1.71	42.7

Kerre Miller

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Maitland Laboratory

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FORM 11

ANALYSIS AND TESTING REPORT

Report No. 02/3142

Date 6 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD. (INCORPORATED IN N.S.W.)
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270192

RESULTS (Continued)

DRILL HOLE DD84 PT-39 (Continued)

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
989805	27.16	27.20	0.04	0.0692	2.35	84.4
989806	27.20	27.24	0.04	0.1287	1.85	54.8
989807	27.24	27.51	0.27	0.8334	2.37	84.9
989808	27.51	27.73	0.22	0.4634	1.67	38.5
989809	27.73	27.78	0.05	0.1305	1.47	16.5
989810	27.78	27.89	0.11	0.2232	1.67	38.7
989811	27.89	28.02	0.13	0.4163	2.38	85.0
989812	28.02	28.34	0.32	0.6236	1.52	20.5
989813	28.34	28.48	0.14	0.6317	2.39	86.7
989814	28.48	28.56	0.08	0.1545	1.55	24.5
989815	28.56	28.58	0.02	0.0502	2.26	82.2
989816	28.58	28.61	0.03	0.0462	1.52	14.9
989817	28.61	28.65	0.04	0.1694	2.25	80.4
989818	28.65	28.70	0.05	0.0850	1.55	23.5
989819	28.70	28.82	0.12	0.2036	1.47	12.7

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AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
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P.O. Box 53
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ANALYSIS AND TESTING REPORT

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270193

RESULTS (Continued)

DRILL HOLE DD84 PT-39 (Continued)

AIR DRIED BASIS

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	Relative Density	Ash %
989820	28.82	28.93	0.11	0.2421	1.61	31.1
989821	28.93	28.98	0.05	0.1490	2.34	86.9
989822	28.98	29.13	0.15	0.3271	1.51	20.5
989823	29.13	29.29	0.16	0.3404	1.56	24.3
989824	29.29	29.32	0.03	0.0876	2.41	85.1
989825	29.32	29.42	0.10	0.2070	1.74	43.8
989826	29.42	29.65	0.23	0.5378	1.59	25.5
989827	29.65	30.05	0.40	0.6717	1.54	22.9
989828	31.95	31.99	0.04	0.0688	1.67	31.7
989829	31.99	32.13	0.14	0.3151	1.52	21.4
989830	32.13	32.24	0.11	0.2524	1.70	37.9
989831	34.40	34.60	0.20	0.4198	1.49	18.4
989832	34.60	34.64	0.04	0.1104	1.61	29.2
989833	34.64	34.70	0.06	0.1164	1.51	18.6
989834	34.70	34.75	0.05	0.1282	1.56	24.9

Kerie mills

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

FORM 3

COAL ANALYSIS

Report No. 02/3142

Date 6 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(INCORPORATED IN N.S.W.)
P.O. Box 83
North Ryde, N.S.W.
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Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270194

Sample Details	DRILL HOLE DD84 PT-34 COMPOSITE SAMPLES			
	989763 – 989773 inclusive	989764+766+767+769+771+772+773	989774 – 989779 inclusive	989774+775+776+779
As Received Basis Total Moisture %				
As Dried Basis				
Moisture %	2.7	2.3	2.5	3.0
Ash %	46.6	27.1	49.3	26.4
Volatile Matter %	11.7	13.4	10.2	12.1
Fixed Carbon %	39.0	57.2	38.0	58.5
Sulphur † %	0.34	0.47	0.34	0.51
Specific Energy MJ/kg	16.02	23.42	15.28	23.60
Relative Density	1.76 *	1.54 *	1.83 *	1.58 *
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

LECO High Temperature Method

* Calculated Result

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

Sampled by ..... Received .....

THIS LABORATORY IS REGISTERED BY THE NATIONAL ASSOCIATION OF TESTING AUTHORITIES, AUSTRALIA. THE TESTS REPORTED HEREIN HAVE BEEN PERFORMED IN ACCORDANCE WITH ITS TERMS OF REGISTRATION. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL.

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FORM 3

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Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270195

DRILL HOLE DD84 PT-39 COMPOSITE SAMPLES

Sample Details	989790 - 989800 inclusive	989790+792+793+795+800	989801 - 989827 inclusive	989801+802+804+808+809+810+812+814+816+818+819+820+822+823+825+826+82
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	2.8	2.3	4.6	3.1
Ash %	40.3	25.9	45.5	26.6
Volatile Matter %	11.3	13.1	8.9	11.2
Fixed Carbon %	45.6	58.7	41.0	59.1
Sulphur † %	0.25	0.32	0.23	0.34
Specific Energy MJ/kg	18.56	23.78	16.08	23.70
Relative Density	1.68 *	1.55 *	1.76 *	1.57 *
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

* Calculated Result

Determinations carried out in Duplicate
Analysed in accordance with AS 1038
unless otherwise stated.

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Kerrie Miller

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FORM 3

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Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

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Sample Details	DRILL HOLE DD84 PT-39 COMPOSITE SAMPLES			
	989828 + 989829 + 989830	989831 + 989832 + 989833 + 989834		
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	2.6	2.6		
Ash %	29.8	21.0		
Volatile Matter %	10.0	9.6		
Fixed Carbon %	57.6	66.8		
Sulphur † %	0.39	0.49		
Specific Energy MJ/kg	22.88	26.20		
Relative Density	1.61 *	1.52 *		
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

* Calculated Result

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

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Kerrie Mullen

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ACIRL
COAL RESEARCH

Australian Coal Industry Research Laboratories Ltd.
Incorporated in NSW

270197

KM/jr

REPORT TO : Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA 7018

REPORT ON : The Analysis of Borecore Samples from

DRILL HOLE DD84 PT-40

PREPARED BY : Kerie Miller

REFERENCES : Telex (31.10.1984) T. Summons to J. Williams

REPORT NO : 02/3158

DATE : 6 November, 1984

Kerie Miller for
J. Williams,
Manager,
Maitland Laboratory

Junction Street, Telarah, N.S.W. Telephone: (049) 32-8377, 32-8590

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270198

INTRODUCTION

Eight (8) samples from drill hole DD84 PT-40 were delivered to ACIRL Maitland laboratory on 2 November, 1984.

Each sample was air dried, weighed, crushed to pass 4mm, prepared and analysed for ash percent and relative density. Reserve samples at 4mm top size were retained from samples greater than 200g mass.

Three samples were further analysed for proximate analysis, total sulphur and specific energy.

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ANALYSIS AND TESTING REPORT

Report No. 02/3158

Date 6 November, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

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RESULTS

DRILL HOLE DD84 PT-40

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
989835	10.55	10.58	0.03	0.0520	1.92	54.8
989836	10.58	10.63	0.05	0.1690	2.24	76.2
989837	10.63	10.70	0.07	0.2295	2.31	81.0
989838	10.70	10.82	0.12	0.2059	1.72	40.6
989839	10.82	10.88	0.06	0.1262	2.20	74.1
989840	21.90	21.97	0.07	0.0757	1.87	51.5
989841	21.97	22.04	0.07	0.2492	2.13	69.5
989842	23.55	23.66	0.11	0.2185	1.59	29.1

Kerre Miller

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Maitland Laboratory

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FORM 3

COAL ANALYSIS

Report No. 02/3158

Date 6 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD
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P.O. Box 83
North Ryde, N.S.W.
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Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270200

Sample Details	DRILL HOLE DD84 PT-40			
	Sample 989838	Sample 989840	Sample 989842	
As Received Basis				
Total Moisture %				
Air Dried Basis				
Moisture %	4.0	1.9	2.5	
Ash %	40.6	51.5	29.1	
Volatile Matter %	9.7	10.2	11.2	
Fixed Carbon %	45.7	36.4	57.2	
Sulphur † %	0.55	0.31	0.74	
Specific Energy MJ/kg	18.20	14.42	22.78	
Relative Density	1.72	1.87	1.59	
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

Determinations carried out in Duplicate
Analysed in accordance with AS 1038
unless otherwise stated.

Sampled by..... Received.....

NATA

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Kerr Miller

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270201

APPENDIX 3

COAL WASHABILITY RESULTS

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270202

ACIRL
COAL RESEARCH

Australian Coal Industry Research Laboratories Ltd.
Incorporated in N.S.W.

KM/jr

REPORT TO :

Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA 7018

REPORT ON :

The Analysis of Borecore Samples from

DRILL HOLE DD84 PT-27

DRILL HOLE DD84 PT-37

PREPARED BY :

Kerie Miller

REFERENCES :

Telex (26.10.1984) T. Summons to J. Williams
Telex (30.10.1984) T. Summons to J. Williams
Oral Instructions (31.10.1984) P. Tyson to J. Hunt
Telex (7.11.1984) K. Miller to T. Dickson

REPORT NO :

02/3137

DATE :

7 November, 1984

Kerie Miller for
.....
J. Williams,
Manager,
Maitland Laboratory

Junction Street, Telarah, N.S.W. Telephone: (049) 32-8377, 32-8590
P.O. Box 28, Maitland, N.S.W. 2320

INTRODUCTION

Thirty-nine (39) samples from drill holes DD84 PT-27 and DD84 PT-37 were delivered to ACIRL Maitland laboratory on 29 October, 1984.

Each sample (except samples 989761 and 989762) was air dried, weighed, apparent relative density determined and crushed to pass 11.2mm.

Nominated working sections were reconstituted by combining samples on a thickness x relative density basis and separated in organic liquids of relative density 1.40, 1.50, 1.60, 1.65, 1.70, 1.75, 1.80, 1.85, 1.90, 2.00 and 2.10.

Each relative density fraction was weighed, prepared and analysed for proximate analysis, total sulphur and specific energy.

Reserve relative density fractions at 4mm top size were retained from fractions greater than 200g mass.

Samples 989761 and 989762 were air dried, weighed, crushed to pass 4mm, prepared and analysed for proximate analysis, total sulphur, specific energy and relative density. Reserve samples at 4mm top size were retained from both samples.

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Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270204

RESULTS

DRILL HOLE DD84 PT-27

Sample Number	Depth (m) From	To	Thickness (m)	Mass (kg)	APPARENT RELATIVE DENSITY
989724	18.05	18.24	0.19	0.3190	1.53
989725	18.24	18.28	0.04	0.0818	1.82
989726	18.28	18.50	0.22	0.0605	1.43
989727	18.50	18.80	0.30	0.2774	1.52
989728	18.80	18.89	0.09	0.1436	1.27
989729	18.89	19.09	0.20	0.2922	1.39
989730	19.09	19.19	0.10	0.2187	1.96
989731	19.19	19.22	0.03	0.0472	1.85
989732	19.22	19.31	0.09	0.2470	2.08
989733	19.31	19.86	0.55	1.080	1.59
989734	19.86	19.93	0.07	0.2084	1.95
989735	19.93	19.99	0.06	0.1198	1.37
989736	19.99	20.03	0.04	0.1098	1.93
989737	20.03	20.05	0.02	0.0365	1.57
989738	20.05	20.07	0.02	0.0809	1.96
989739	20.07	20.22	0.15	0.3589	1.61
989740	20.22	20.27	0.05	0.1468	2.06
989741	20.27	20.32	0.05	0.1195	1.64
989742	20.32	20.35	0.03	0.0796	1.51

Kane Miller

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RESULTS (Continued)

DRILL HOLE DD84 PT-37

Sample Number	Depth (m) From	To	Thickness (m)	Mass (kg)	APPARENT RELATIVE DENSITY
989743	16.87	17.18	0.31	0.7181	1.54
989744	17.18	17.35	0.17	0.4780	2.22
989745	17.35	18.81	1.46	2.960	1.38
989746	18.81	18.94	0.13	0.4006	2.23
989747	18.94	18.96	0.02	0.0525	1.29
989748	18.96	19.00	0.04	0.1166	2.20
989749	19.00	19.07	0.07	0.1266	1.42
989750	22.46	22.52	0.06	0.1327	1.48
989751	22.52	22.58	0.06	0.1763	2.24
989752	22.58	23.18	0.60	1.141	1.30
989753	23.18	23.27	0.09	0.2853	2.20
989754	23.27	23.53	0.26	0.5151	1.27
989755	23.53	23.77	0.24	0.7797	2.31
989756	23.77	24.22	0.45	0.7130	1.38
989757	24.22	24.26	0.04	0.1713	2.19
989758	24.26	24.38	0.12	0.2214	1.41
989759	24.38	24.43	0.05	0.1750	2.24
989760	24.43	25.26	0.83	1.752	1.40
989761	27.49	27.84	0.35	0.6878	
989762	29.56	29.94	0.38	0.8205	

Kerie Miller

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270206

RESULTS (Continued)

DRILL HOLE DD84 PT-27

FLOAT AND SINK ANALYSIS

Working Section : 18.05m - 20.35m

Size Fraction : - 11.2mm + 0mm

Relative Density Fraction	Mass %	FRACTIONAL AIR DRIED BASIS Moisture %	Ash %	Volatile Matter %	Fixed Carbon %	Sulphur %	Specific Energy MJ/kg
F 1.40	17.0	2.0	11.8	21.0	65.2	0.50	30.26
1.40 - 1.50	11.2	3.2	21.6	18.8	56.4	0.40	25.82
1.50 - 1.60	10.7	4.0	30.8	16.0	49.2	0.31	21.80
1.60 - 1.65	4.1	4.9	38.1	15.4	41.6	0.29	18.74
1.65 - 1.70	4.3	5.3	42.6	14.6	37.5	0.25	16.62
1.70 - 1.75	3.9	6.2	46.1	13.6	34.1	0.25	15.34
1.75 - 1.80	3.8	5.8	50.2	12.8	31.2	0.22	13.64
1.80 - 1.85	3.4	7.0	54.1	12.8	26.1	0.18	11.18
1.85 - 1.90	4.3	6.3	58.0	12.7	23.0	0.17	9.52
1.90 - 2.00	12.9	8.6	61.5	11.2	18.7	0.11	7.30
2.00 - 2.10	8.1	11.2	66.0	10.6	12.2	0.09	4.12
S 2.10	16.3	11.3	73.9	11.2	3.6	0.01	1.28

Kerrie Miller

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ROSNY PARK, TAS. 7018

270207

RESULTS (Continued)

DRILL HOLE DD84 PT-27

FLOAT AND SINK ANALYSIS

Working Section : 18.05m - 20.35m

Size Fraction : - 11.2mm + 0mm

Relative Density Fraction	CUMULATIVE AIR DRIED BASIS Mass %	Moisture %	Ash %	Volatile Matter %	Fixed Carbon %	Sulphur %	Specific Energy MJ/kg
F1.40	17.0	2.0	11.8	21.0	65.2	0.50	30.26
F1.50	28.2	2.5	15.7	20.1	61.7	0.46	28.50
F1.60	38.9	2.9	19.8	19.0	58.3	0.42	26.66
F1.65	43.0	3.1	21.6	18.6	56.7	0.41	25.90
F1.70	47.3	3.3	23.5	18.3	54.9	0.39	25.06
F1.75	51.2	3.5	25.2	17.9	53.4	0.38	24.32
F1.80	55.0	3.7	26.9	17.6	51.8	0.37	23.58
F1.85	58.4	3.9	28.5	17.3	50.3	0.36	22.86
F1.90	62.7	4.0	30.5	17.0	48.5	0.35	21.94
F2.00	75.6	4.8	35.8	16.0	43.4	0.31	19.44
F2.10	83.7	5.4	38.7	15.5	40.4	0.29	17.96
Raw Coal	100.0	6.4	44.5	14.8	34.3	0.24	15.24

Kerr Miller

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P.O. Box 138,
ROSNY PARK, TAS. 7018

270208

RESULTS (Continued)

DRILL HOLE DD84 PT-37

FLOAT AND SINK ANALYSIS

Working Section : 16.87m - 19.07m

Size Fraction : - 11.2mm + 0mm

Relative Density Fraction			FRACTIONAL AIR DRIED BASIS Mass %	Moisture %	Ash %	Volatile Matter %	Fixed Carbon %	Sulphur %	Specific Energy MJ/kg
F		1.40	3.8	1.5	11.5	14.2	72.8	0.40	29.90
1.40	-	1.50	17.0	2.2	16.5	15.0	66.3	0.32	27.26
1.50	-	1.60	23.8	2.7	26.1	13.8	57.4	0.25	23.20
1.60	-	1.65	8.1	2.4	36.4	13.1	48.1	0.22	19.66
1.65	-	1.70	5.7	2.7	41.2	12.4	43.7	0.20	17.66
1.70	-	1.75	3.8	3.1	46.3	11.9	38.7	0.18	15.88
1.75	-	1.80	2.6	3.5	50.2	11.5	34.8	0.18	14.40
1.80	-	1.85	2.5	3.8	53.4	11.1	31.7	0.16	12.90
1.85	-	1.90	2.0	3.7	57.3	11.2	27.8	0.14	11.32
1.90	-	2.00	3.0	3.8	63.0	10.8	22.4	0.12	8.64
2.00	-	2.10	2.9	4.0	69.1	11.0	15.9	0.10	6.34
S		2.10	24.8	7.3	82.2	8.8	1.7	0.15	0.78

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ANALYSIS AND TESTING REPORT

Report No. 02/3137

Date 7 November, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

270209

RESULTS (Continued)

DRILL HOLE DD84 PT-37

FLOAT AND SINK ANALYSIS

Working Section : 16.87m - 19.07m

Size Fraction : - 11.2mm + 0mm

Relative Density Fraction	Mass %	Moisture %	CUMULATIVE AIR DRIED BASIS Ash %	Volatile Matter %	Fixed Carbon %	Sulphur %	Specific Energy MJ/kg
F1.40	3.8	1.5	11.5	14.2	72.8	0.40	29.90
F1.50	20.8	2.1	15.6	14.9	67.4	0.34	27.74
F1.60	44.6	2.4	21.2	14.3	62.1	0.29	25.32
F1.65	52.7	2.4	23.5	14.1	60.0	0.28	24.44
F1.70	58.4	2.4	25.3	13.9	58.4	0.27	23.78
F1.75	62.2	2.5	26.5	13.8	57.2	0.27	23.30
F1.80	64.8	2.5	27.5	13.7	56.3	0.26	22.94
F1.85	67.3	2.6	28.5	13.6	55.3	0.26	22.58
F1.90	69.3	2.6	29.3	13.6	54.5	0.26	22.24
F2.00	72.3	2.6	30.7	13.4	53.3	0.25	21.68
F2.10	75.2	2.7	32.2	13.3	51.8	0.24	21.10
Raw Coal	100.0	3.8	44.6	12.2	39.4	0.22	16.06

Kerre Miller

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270210

RESULTS (Continued)

DRILL HOLE DD84 PT-37

FLOAT AND SINK ANALYSIS

Working Section : 22.46m - 25.26m

Size Fraction : - 11.2mm + 0mm

Relative Density Fraction	Mass %	FRACTIONAL AIR DRIED BASIS Moisture %	Ash %	Volatile Matter %	Fixed Carbon %	Sulphur %	Specific Energy MJ/kg
F 1.40	18.9	1.8	9.0	12.8	76.4	0.40	31.30
1.40 - 1.50	15.4	2.1	16.6	12.8	68.5	0.36	28.08
1.50 - 1.60	16.6	2.8	27.7	12.1	57.4	0.29	23.24
1.60 - 1.65	5.5	2.3	36.6	12.3	48.8	0.25	19.78
1.65 - 1.70	5.0	2.4	41.2	11.9	44.5	0.22	18.00
1.70 - 1.75	2.6	2.7	46.8	12.0	38.5	0.20	15.58
1.75 - 1.80	2.2	2.4	50.5	13.4	33.7	0.18	14.16
1.80 - 1.85	1.4	2.9	55.5	13.0	28.6	0.16	12.00
1.85 - 1.90	1.0	3.1	59.1	11.8	26.0	0.14	10.48
1.90 - 2.00	1.7	4.1	66.0	10.6	19.3	0.11	7.42
2.00 - 2.10	0.9	4.6	68.0	10.6	16.8	0.10	6.34
S 2.10	28.8	6.4	86.0	7.4	0.2	<0.01	0.42

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ANALYSIS AND TESTING REPORT

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
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270211

RESULTS (Continued)

DRILL HOLE DD84 PT-37

FLOAT AND SINK ANALYSIS

Working Section : 22.46m - 25.26m

Size Fraction : - 11.2mm + 0mm

Relative Density Fraction	Mass %	Moisture %	CUMULATIVE AIR DRIED BASIS Ash %	Volatile Matter %	Fixed Carbon %	Sulphur %	Specific Energy MJ/kg
F1.40	18.9	1.8	9.0	12.8	76.4	0.40	31.30
F1.50	34.3	1.9	12.4	12.8	72.9	0.38	29.86
F1.60	50.9	2.2	17.4	12.6	67.8	0.35	27.70
F1.65	56.4	2.2	19.3	12.5	66.0	0.34	26.92
F1.70	61.4	2.2	21.1	12.5	64.2	0.33	26.20
F1.75	64.0	2.3	22.1	12.5	63.1	0.33	25.76
F1.80	66.2	2.3	23.0	12.5	62.2	0.32	25.38
F1.85	67.6	2.3	23.7	12.5	61.5	0.32	25.10
F1.90	68.6	2.3	24.2	12.5	61.0	0.32	24.90
F2.00	70.3	2.3	25.2	12.5	60.0	0.31	24.46
F2.10	71.2	2.4	25.8	12.4	59.4	0.31	24.24
Raw Coal	100.0	3.5	43.1	11.0	42.4	0.22	17.38

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FORM 3

COAL ANALYSIS

Report No. 02/3137

Date 7 November, 1984

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Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270212

DRILL HOLE DD84 PT-37

Sample Details	Sample 989761	Sample 989762		
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	2.4	3.1		
Ash %	23.8	29.3		
Volatile Matter %	8.9	9.0		
Fixed Carbon %	64.9	58.6		
Sulphur † %	0.37	0.33		
Specific Energy MJ/kg	25.92	22.96		
Relative Density	1.54	1.60		
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

Determinations carried out in Duplicate
Analysed in accordance with AS 1038
unless otherwise stated.

Sampled by..... Received .....

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270213

ACIRL
COAL RESEARCH

Australian Coal Industry Research Laboratories Ltd.
Incorporated in N.S.W.

KM/jr

REPORT TO : Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA 7018

REPORT ON : The Analysis of Borecore Samples from

DRILL HOLE DD84 PT-38

PREPARED BY : Kerie Miller

REFERENCES : Telex (29.10.1984) T. Summons to J. Williams
Oral Instructions (31.10.1984) P. Tyson to J. Hunt

REPORT NO : 02/3141

DATE : 7 November, 1984

Kerie Miller for
J. Williams,
Manager,
Maitland Laboratory

Junction Street, Telarah, N.S.W. Telephone: (049) 32-8377, 32-8590

INTRODUCTION

Ten (10) samples from drill hole DD84 PT-38 were delivered to ACIRL Maitland laboratory on 29 October, 1984.

Each sample was air dried, weighed, apparent relative density determined and crushed to pass 11.2mm.

Nominated working sections were reconstituted by combining samples on a thickness x relative density basis and separated in organic liquids of relative density 1.40, 1.50, 1.60, 1.65, 1.70, 1.75, 1.80, 1.85, 1.90, 2.00 and 2.10.

Each relative density fraction was weighed, prepared and analysed for proximate analysis, total sulphur and specific energy.

Reserve relative density fractions at 4mm top size were retained from fractions greater than 200g mass.

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ANALYSIS AND TESTING REPORT

Report No. 02/3141

Date 7 November, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
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270215

RESULTS

DRILL HOLE DD84 PT-38

Sample Number	Depth (m) From	To	Thickness (m)	Mass (kg)	APPARENT RELATIVE DENSITY
989780	13.15	13.41	0.26	0.5667	1.54
989781	13.41	13.44	0.03	0.0944	2.29
989782	13.44	13.54	0.10	0.2337	1.57
989783	13.54	13.58	0.04	0.0876	2.01
989784	13.58	13.92	0.34	0.7517	1.53
989785	29.39	29.87	0.48	0.9113	1.37
989786	29.87	30.08	0.21	0.6734	2.15
989787	30.08	30.77	0.69	1.5310	1.44
989788	30.77	31.10	0.33	0.9169	2.33
989789	31.10	31.52	0.42	0.9166	1.45

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ANALYSIS AND TESTING REPORT

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
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270216

RESULTS (Continued)

DRILL HOLE DD84 PT-38

FLOAT AND SINK ANALYSIS

Working Section : 13.15m - 13.92m

Size Fraction : - 11.2mm + 0mm

Relative Density Fraction			FRACTIONAL AIR DRIED BASIS						
			Mass %	Moisture %	Ash %	Volatile Matter %	Fixed Carbon %	Sulphur %	Specific Energy MJ/kg
F		1.40	2.5	1.6	9.3	16.1	73.0	0.58	31.42
1.40	-	1.50	13.1	1.8	18.4	14.0	65.8	0.44	27.60
1.50	-	1.60	25.0	2.6	27.5	13.6	56.3	0.39	23.54
1.60	-	1.65	12.5	2.9	35.4	12.9	48.8	0.34	20.56
1.65	-	1.70	9.7	3.5	40.4	12.7	43.4	0.30	18.48
1.70	-	1.75	5.7	3.2	44.0	12.5	40.3	0.29	16.42
1.75	-	1.80	3.0	3.3	47.9	13.0	35.8	0.29	15.08
1.80	-	1.85	4.4	1.9	52.4	13.5	32.2	0.27	13.66
1.85	-	1.90	3.0	1.5	55.0	13.1	30.4	0.25	13.12
1.90	-	2.00	3.9	2.3	58.6	13.0	26.1	0.23	10.96
2.00	-	2.10	1.9	2.6	66.2	14.0	17.2	0.07	7.16
S		2.10	15.3	4.5	77.3	14.0	4.2	0.16	2.50

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ANALYSIS AND TESTING REPORT

Report No. 02/3141

Date 7 November, 1984

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

270217

RESULTS (Continued)

DRILL HOLE DD84 PT-38

FLOAT AND SINK ANALYSIS

Working Section : 13.15m - 13.92m

Size Fraction : - 11.2mm + 0mm

Relative Density Fraction	CUMULATIVE AIR DRIED BASIS Mass %	Moisture %	Ash %	Volatile Matter %	Fixed Carbon %	Sulphur %	Specific Energy MJ/kg
F1.40	2.5	1.6	9.3	16.1	73.0	0.58	31.42
F1.50	15.6	1.8	16.9	14.3	67.0	0.46	28.22
F1.60	40.6	2.3	23.4	13.9	60.4	0.42	25.34
F1.65	53.1	2.4	26.3	13.7	57.6	0.40	24.22
F1.70	62.8	2.6	28.4	13.5	55.5	0.38	23.32
F1.75	68.5	2.6	29.7	13.4	54.3	0.38	22.76
F1.80	71.5	2.7	30.5	13.4	53.4	0.37	22.42
F1.85	75.9	2.6	31.8	13.4	52.2	0.37	21.92
F1.90	78.9	2.6	32.7	13.4	51.3	0.36	21.58
F2.00	82.8	2.6	33.9	13.4	50.1	0.36	21.08
F2.10	84.7	2.6	34.6	13.4	49.4	0.35	20.78
Raw Coal	100.0	2.9	41.1	13.5	42.5	0.32	17.98

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ANALYSIS AND TESTING REPORT

Report No. 02/3141

Date 7 November, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270218

RESULTS (Continued)

DRILL HOLE DD84 PT-38

FLOAT AND SINK ANALYSIS

Working Section : 29.39m - 31.52m

Size Fraction : - 11.2mm + 0mm

Relative Density Fraction	Mass %	CUMULATIVE AIR DRIED BASIS Moisture %	Ash %	Volatile Matter %	Fixed Carbon %	Sulphur %	Specific Energy MJ/kg
F1.40	10.5	1.2	9.4	13.7	75.7	0.59	31.38
F1.50	41.0	1.6	15.6	13.8	69.0	0.49	28.74
F1.60	52.9	1.9	18.4	13.5	66.2	0.46	27.52
F1.65	56.8	1.9	19.7	13.5	64.9	0.45	27.02
F1.70	58.5	2.0	20.3	13.4	64.3	0.45	26.78
F1.75	59.4	2.0	20.7	13.4	63.9	0.45	26.62
F1.80	60.1	2.0	21.0	13.4	63.6	0.44	26.48
F1.85	60.6	2.0	21.2	13.4	63.4	0.44	26.38
F1.90	61.0	2.0	21.5	13.4	63.1	0.44	26.28
F2.00	62.3	2.0	22.3	13.3	62.4	0.44	25.92
F2.10	63.4	2.0	23.1	13.3	61.6	0.43	25.60
Raw Coal	100.0	2.7	46.9	10.5	39.9	0.31	16.72

Kena Miller

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APPENDIX 4

DETAILED ANALYSIS

HOLES PT10, 11, 12

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270220

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KM/bm

REPORT TO :

Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA 7018

REPORT ON :

Detailed Composite analysis of
Borecore Samples from
DRILL HOLE DDH84 PT-10
DRILL HOLE DDH84 PT-11
DRILL HOLE DDH84 PT-12

PREPARED BY :

Kerie Miller

REFERENCES :

Telexes (8.10.1984)
T. Dickson to J. Williams
ACIRL Report No. 02/2928
ACIRL Report No. 02/2945

REPORT NO :

02/3050

DATE :

6 November, 1984

Kerie Miller for
J. Williams,
Manager,
Maitland Laboratory

Junction Street, Telarah, N.S.W. Telephone: (049) 32-8377, 32-8590

INTRODUCTION

On 8 October, 1984 Mr. T. Dickson requested by telex ACIRL Maitland laboratory carry out detailed analysis on Composite samples from the following drill holes :-

DRILL HOLE DDH84 PT-10 (refer ACIRL Report No. 02/2928)

Composites :-	Sample Numbers
1.	40-51 inclusive
2.	52-54 inclusive
3.	55-75 inclusive
4.	43 and 51
5.	52
6.	55, 57, 59, 61, 63, 65, 67, 69, 71 and 73

DRILL HOLE DDH84 PT-11 (refer ACIRL Report No. 02/2945)

Composites :-	Sample Numbers
7.	76-94 inclusive
8.	76, 78, 80, 87, 89, 92 and 94

DRILL HOLE DDH84 PT-12 (refer ACIRL Report No. 02/2945)

Composites :-	Sample Numbers
9.	101-127 inclusive
10.	128-130 inclusive
11.	134-157 inclusive
12.	96, 101, 103, 105, 113, 115, 117, 119, 121, 123 and 125
13.	128, 130, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154 and 157

ANALYSIS

Each Composite sample had been reconstituted on a thickness x relative density basis and analysed for proximate analysis, total sulphur and specific energy. (Refer ACIRL Reports Nos. 02/2928 and 02/2945)

Each Composite sample was then analysed for :-

FORMS OF SULPHUR
CRUCIBLE SWELLING NUMBER
ACID SOLUBLE ALKALI - SODIUM
ARSENIC TRIOXIDE
ULTIMATE ANALYSIS INCLUDING CARBON DIOXIDE
ASH ANALYSIS INCLUDING BARIUM OXIDE
PHOSPHORUS
CHLORINE
ASH FUSIBILITY TEMPERATURES (REDUCING AND OXIDISING ATMOSPHERE)
HARDGROVE GRINDABILITY INDEX

FORM 3

COAL ANALYSIS

Report No. 02/3050

Date 6 November, 1984

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Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

Sample Details	DRILL HOLE DD84 PT-10 COMPOSITE SAMPLES			
	40-51 Inclusive W	52-54 Inclusive W1	55-75 Inclusive W2	43 and 51 Comp W-
As Received Basis				
Total Moisture %				
Air Dried Basis				
Moisture %	6.0	3.9	5.4	2.2
Ash %	59.2	75.1	50.6	28.9
Volatile Matter %	8.5	7.6	10.6	11.1
Fixed Carbon %	26.3	13.4	33.4	57.8
Sulphur † %	0.09	0.10	0.26	0.13
Specific Energy MJ/kg	8.90	5.04	13.92	22.74
Relative Density	1.95 *	2.20 *	1.81 *	1.64 *
Crucible Swelling No.	0	0	0	0
Phosphorus %	0.008	0.007	0.007	0.008
Dry, Ash Free Basis				
Volatile Matter %	24.4	36.2	24.1	16.1
Fixed Carbon %	75.6	63.8	75.9	83.9
Specific Energy MJ/kg	25.58	24.00	31.64	33.00

† LECO High Temperature Method

* Result Calculated

Determinations carried out in Duplicate
Analysed in accordance with AS 1038
unless otherwise stated.

Sampled by.....Received.....

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FORM 3

COAL ANALYSIS

Report No. 02/3050

Date 6 November, 1984

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Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

Sample Details	DRILL HOLE DD84 PT-10 COMPOSITE SAMPLES			
	52	55, 57, 59, 61, 63, 65, 67, 69, 71 and 73		
As Received Basis				
Total Moisture %				
Air Dried Basis				
Moisture %	2.5	2.9		
Ash %	39.0	26.0		
Volatile Matter %	15.9	15.1		
Fixed Carbon %	42.6	56.0		
Sulphur + %	0.37	0.41		
Specific Energy MJ/kg	18.22	23.98		
Relative Density	1.73	1.56 *		
Crucible Swelling No.	0	0		
Phosphorus %	0.009	0.006		
Dry, Ash Free Basis				
Volatile Matter %	27.2	21.2		
Fixed Carbon %	72.8	78.8		
Specific Energy MJ/kg	31.14	33.72		

+ LECO High Temperature Method

* Result Calculated

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

Sampled by ..... Received .....

NATA

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Kerr miles

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

FORM 3

COAL ANALYSIS

Report No. 02/3050

Date 6 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(ACIRL)
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

Sample Details	DRILL HOLE DD84 PT-11 COMPOSITE SAMPLES			
	76 to 94 incl.	76+78+80+87+89+92+94		
As Received Basis				
Total Moisture %				
Air Dried Basis				
Moisture %	5.5	3.1		
Ash %	48.2	31.9		
Volatile Matter %	12.9	15.7		
Fixed Carbon %	33.4	49.3		
Sulphur † %	0.23	0.32		
Specific Energy MJ/kg	14.72	21.60		
Relative Density	1.73 *	1.60 *		
Crucible Swelling No.	0	0		
Phosphorus %	0.006	0.008		
Dry, Ash Free Basis				
Volatile Matter %	27.9	24.2		
Fixed Carbon %	72.1	75.8		
Specific Energy MJ/kg	31.80	33.24		

† LECO High Temperature Method

* Result Calculated

Determinations carried out in Duplicate
Analysed in accordance with AS1038 unless otherwise stated

Sampled by ..... Received

NATA

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Kene Miller

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

FORM 3

COAL ANALYSIS

Report No. 02/3050

Date 6 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(INCORPORATED IN N.S.W.)
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

Sample Details	DRILL HOLE DD84 PT- 12 COMPOSITE SAMPLES			
	101 to 127	128 to 130	134 to 157	96+101+103+105+ 113+115+117+119+ 121+123+125
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	5.4	4.2	3.8	4.2
Ash %	54.8	43.9	41.5	40.0
Volatile Matter %	11.1	11.7	11.8	13.4
Fixed Carbon %	28.7	40.2	42.9	42.4
Sulphur † %	0.22	0.26	0.26	0.32
Specific Energy MJ/kg	11.80	16.92	17.94	18.28
Relative Density	1.87 *	1.73 *	1.70 *	1.70 *
Crucible Swelling No.	0	0	0	0
Phosphorus %	0.005	0.004	0.005	0.007
Dry, Ash Free Basis				
Volatile Matter %	27.9	22.5	21.6	24.0
Fixed Carbon %	72.1	77.5	78.4	76.0
Specific Energy MJ/kg	29.64	32.60	32.80	32.76

† LTCO High Temperature Method

* Result Calculated

Determinations carried out in Duplicate
Analysed in accordance with AS1038 unless otherwise stated

Sampled by ..... Received

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Kerr Miller

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

270227

FORM

COAL ANALYSIS

Report No. 02/3050

Date 6 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD
(INCORPORATED IN N.S.W.)
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

Sample Details	DRILL HOLE DD84 PT- 12 COMPOSITE SAMPLES 128+130+134+136+ 138+140+142+144+ 146+148+150+152+ 154+157			
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	2.4			
Ash %	25.9			
Volatile Matter %	14.5			
Fixed Carbon %	57.2			
Sulphur † %	0.36			
Specific Energy MJ/kg	24.24			
Relative Density	1.55 *			
Crucible Swelling No.	0			
Phosphorus %	0.006			
Dry, Ash Free Basis				
Volatile Matter %	20.2			
Fixed Carbon %	79.8			
Specific Energy MJ/kg	33.80			

Determinations carried out in Duplicate
Analysed in accordance with AS1038 unless otherwise stated

† LECO High Temperature Method

* Result Calculated

Sampled by.....Received

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Karie Miller

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES
Maitland Laboratory

COAL ANALYSIS

Report No. 02/3050

Date 6 November, 1984

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(INCORPORATED IN N.S.W.)
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

DRILL HOLE DD84 PT-10 COMPOSITE SAMPLES

Sample Details	40-51 Inclusive	52-54 Inclusive	55-75 Inclusive	43 and 51
Dry, Ash Free Basis				
Carbon (organic) %	76.8	71.4	81.3	85.6
Hydrogen %	4.24	5.05	4.52	3.55
Nitrogen %	1.52	1.71	1.72	1.47
Sulphur %	0.26	0.14	0.59	0.19
Oxygen by difference %	17.2	21.7	11.9	9.2
AIR DRIED BASIS				
Carbonates (CO_2) %	1.77	1.49	1.67	3.67
Forms of Sulphur				
Pyritic * %	0.07	0.07	0.08	0.08
Sulphate * %	<0.01	<0.01	<0.01	0.01
Organic * %	0.02	0.03	0.18	0.04
Chlorine * %	0.02	0.01	0.02	0.02

Copies have been sent to

Determinations carried out in Duplicate
Analysed in accordance with AS1038

* ANALYSIS CARRIED OUT AT ROCKHAMPTON LABORATORY

Signatory ..... D. Coppo

Sampled by ..... Received .....

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Kerie Miller

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

COAL ANALYSIS

Report No. 02/3050

Date 6 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(INCORPORATED IN N.S.W.)
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

DRILL HOLE DD84 PT-10 COMPOSITE SAMPLES

Sample Details	52	55+57+59+61+63+65+67+69+71+73		
Dry, Ash Free Basis				
Carbon (organic) %	79.4	85.6		
Hydrogen %	4.08	4.20		
Nitrogen %	1.49	1.62		
Sulphur %	0.63	0.58		
Oxygen by difference %	14.4	8.0		
AIR DRIED BASIS				
Carbonates (CO_2) %	5.76	2.73		
Forms of Sulphur				
Pyritic * %	0.07	0.06		
Sulphate * %	<0.01	0.01		
Organic * %	0.30	0.34		
Chlorine * %	0.02	0.02		

Copies have been sent to

Determinations carried out in Duplicate
Analysed in accordance with AS1038

* ANALYSIS CARRIED OUT AT ROCKHAMPTON LABORATORY

Signatory ..... D. Coppo

Sampled by ..... Received .....

NATA

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Kerrie Miller

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

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270230
FORM 2

COAL ANALYSIS

Report No. 02/3050

Date 6 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(INCORPORATED IN N.S.W.)
P.O. Box 83
North Ryde. N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

DRILL HOLE DD84 PT-11 COMPOSITE SAMPLES

Sample Details	76 to 94 inclusive	76+78+80+87+89+92+94		
Dry, Ash Free Basis				
Carbon (organic) %	80.3	84.1		
Hydrogen %	4.59	4.39		
Nitrogen %	1.67	1.64		
Sulphur %	0.50	0.49		
Oxygen by difference %	12.9	9.4		
AIR DRIED BASIS				
Carbonates (CO_2) %	1.69	2.57		
Forms of Sulphur				
Pyritic * %	0.10	0.10		
Sulphate * %	<0.01	0.01		
Organic * %	0.13	0.21		
Chlorine * %	0.02	0.02		

Copies have been sent to

Determinations carried out in Duplicate
Analysed in accordance with AS1038

* ANALYSIS CARRIED OUT AT ROCKHAMPTON LABORATORY

Signatory ..... D. Coppo

Sampled by ..... Received .....

NATA

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Keine Miller
AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

270231
FORM 2

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AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
[illegible] IN N.S.W.
P.O. Box 83
North Ryde, N.S.W.
2113

COAL ANALYSIS

Report No. 02/3050
Date 6 November, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

DRILL HOLE DD84 PT-12 COMPOSITE SAMPLES

Sample Details	101 to 127	128 to 130	134 to 157	96+101+103+105+ 113+115+117+119+ 121+123+125
Dry, Ash Free Basis				
Carbon (organic) %	79.1	83.5	83.9	82.8
Hydrogen %	4.75	4.33	4.39	4.53
Nitrogen %	1.57	1.52	1.55	1.65
Sulphur %	0.55	0.50	0.48	0.57
Oxygen by difference %	14.0	10.2	9.7	10.5
AIR DRIED BASIS				
Carbonates (CO_2) %	1.12	1.68	1.82	1.67
Forms of Sulphur				
Pyritic * %	0.10	0.08	0.09	0.10
Sulphate * %	0.01	<0.01	<0.01	0.01
Organic * %	0.11	0.18	0.17	0.21
Chlorine * %	0.05	0.01	0.01	0.01

Copies have been sent to

Determinations carried out in Duplicate
Analysed in accordance with AS1038

* ANALYSIS CARRIED OUT AT ROCKHAMPTON LABORATORY

Signatory ..... D. Coppo

Sampled by ..... Received .....

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Kene miller
AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

COAL ANALYSIS

Report No. 02/3050

Date 6 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD. (A.C.I.R.L.)
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

DRILL HOLE DD84 PT -12 COMPOSITE SAMPLES

Sample Details	128+130+134+136+ 138+140+142+144+ 146+148+150+152+ 154+157			
Dry, Ash Free Basis				
Carbon (organic) %	85.5			
Hydrogen %	4.06			
Nitrogen %	1.63			
Sulphur %	0.50			
Oxygen by difference %	8.3			
AIR DRIED BASIS				
Carbonates (CO_2) %	2.85			
Forms of Sulphur				
Pyritic * %	0.09			
Sulphate * %	0.01			
Organic * %	0.26			
Chlorine * %	0.01			

Copies have been sent to

Determinations carried out in Duplicate
Analysed in accordance with AS1038

ANALYSIS CARRIED OUT AT ROCKHAMPTON LABORATORY

Signatory ..... D. Coppo

Sampled by ... Received .

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Kerr Miller

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

FORM 3

COAL ANALYSIS

Report No. 02/3050

Date 6 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD
(N.S.W.)
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

Sample Details	DRILL HOLE DD84 PT-10 COMPOSITE SAMPLES			
	40–51 Inclusive	52–54 Inclusive	55–75 Inclusive	43 and 51
Hardgrove Grindability Index *	74(44)	103(45)	**	58(51)
Ash Fusibility Temperatures	Reducing Atmosphere			
Deformation °C	1260	1230	1230	1240
Spherical °C	1340	1320	1270	1300
Hemisphere °C	1370	1340	1290	1320
Flow °C	1460	1430	1370	1390
Ash Fusibility Temperatures	Oxidising Atmosphere			
Deformation °C	1250	1240	1240	1240
Spherical °C	1360	1350	1300	1340
Hemisphere °C	1410	1390	1340	1340
Flow °C	1490	1450	1420	1410

Copies have been sent to

Determinations carried out in Duplicate
Analysed in accordance with AS1038

* Analysis carried out at Ipswich Laboratory

Signatory ..... J. Woolard

Sampled by ..... Received

** Insufficient sample for analysis

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Kerr mills

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

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2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

	DRILL HOLE DD84 PT-10 COMPOSITE SAMPLES			
Sample Details	52	55, 57, 59, 61, 63, 65, 67, 69, 71 and 73		
Hardgrove Grindability Index *	**	84(51)		
Ash Fusibility Temperatures	Reducing Atmosphere			
Deformation °C	1180	1210		
Spherical °C	1190	1280		
Hemisphere °C	1190	1290		
Flow °C	1250	1370		
Ash Fusibility Temperatures	Oxidising Atmosphere			
Deformation °C	1180	1240		
Spherical °C	1200	1300		
Hemisphere °C	1200	1300		
Flow °C	1250	1360		

Copies have been sent to

Analysis carried out at Ipswich Laboratory

Signatory ..... J. Woolard

Determinations carried out in Duplicate
Analysed in accordance with AS1038

Sampled by ..... Received .....

** Insufficient sample for analysis

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Kene miller

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

FORM 3

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(INCORPORATED IN N.S.W.)
P.O. Box 83
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2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

Sample Details	DRILL HOLE DD84 PT-11 COMPOSITE SAMPLES			
	76 to 94 incl.	76+78+80+87+89+92+94		
Hardgrove Grindability Index *	**	**		
Ash Fusibility Temperatures	Reducing Atmosphere			
Deformation °C	1290	1280		
Spherical °C	1330	1350		
Hemisphere °C	1350	1360		
Flow °C	1460	1400		
Ash Fusibility Temperatures	Oxidising Atmosphere			
Deformation °C	1290	1320		
Spherical °C	1360	1370		
Hemisphere °C	1400	1370		
Flow °C	1460	1420		

Copies have been sent to

Determinations carried out in Duplicate
Analysed in accordance with AS1038

* Analysis carried out at Ipswich Laboratory

Signatory ..... J. Woolard

Sampled by ..... Received

** Insufficient sample for analysis

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Kerre Miller

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

FORM 3

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P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

Sample Details	DRILL HOLE DD84 PT-12 COMPOSITE SAMPLES			
	101 to 127	128 to 130	134 to 157	96+101+103+105+ 113+115+117+119+ 121+123+125
Hardgrove Grindability Index *	**	87(55)	83(52)	86(56)
Ash Fusibility Temperatures	Reducing Atmosphere			
Deformation °C	1220	1210	1230	1230
Spherical °C	1330	1250	1280	1280
Hemisphere °C	1360	1280	1300	1300
Flow °C	1450	1350	1390	1380
Ash Fusibility Temperatures	Oxidising Atmosphere			
Deformation °C	1240	1230	1240	1270
Spherical °C	1350	1290	1300	1310
Hemisphere °C	1410	1310	1330	1330
Flow °C	1470	1370	1400	1380

Copies have been sent to

* Analysis carried out at Ipswich Laboratory

Signatory ..... J. Woolard

Determinations carried out in Duplicate
Analysed in accordance with AS1038

Sampled by ..... Received .....

** Insufficient sample for analysis

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Kerr Miller

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

FORM 3

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Report No. 02/3050

Date 6 November, 1984

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P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

Sample Details	128+130+134+136+138+140+142+144+146+148+150+152+154+157	DRILL HOLE DD84 PT-12 COMPOSITE SAMPLES		
rdgrove Grindability Index *	83(57)			
Ash Fusibility Temperatures	Reducing Atmosphere			
Deformation °C	1210			
Spherical °C	1250			
Hemisphere °C	1270			
Flow °C	1350			
Ash Fusibility Temperatures	Oxidising Atmosphere			
Deformation °C	1230			
Spherical °C	1290			
Hemisphere °C	1310			
Flow °C	1400			

Copies have been sent to

* Analysis carried out at Ipswich Laboratory

Signatory ..... J. Woolard

Determinations carried out in Duplicate
Analysed in accordance with AS1038

Sampled by ..... Received

** Insufficient sample for analysis

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Kene mills

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

COAL AND COKE ASH ANALYSIS REPORT

Report No. 02/3050

Date 6 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(INCORPORATED N.S.W.)
P.O. Box 88
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

Sample Details	DRILL HOLE DD84 PT-10 COMPOSITE SAMPLES			
	40-51 Inclusive	52-54 Inclusive	55-75 Inclusive	43 and 51
Silicon as SiO_2 %	58.4	66.7	61.3	47.4
Aluminium as Al_2O_3 %	26.8	20.0	23.2	22.9
Iron as Fe_2O_3 %	3.22	3.46	4.04	3.16
Calcium as CaO %	5.51	3.19	5.58	20.9
Magnesium as MgO %	3.80	2.23	3.41	2.98
Titanium as TiO_2 %	0.79	1.18	0.86	0.62
Sodium as Na_2O %	0.34	1.24	0.39	0.49
Potassium as K_2O %	1.64	2.49	1.48	1.05
Phosphorus as P_2O_5 %	0.03	0.02	0.03	0.06
Manganese as Mn_3O_4 %	0.15	0.14	0.15	0.28
Sulphur as SO_3 %	0.17	0.20	0.41	0.61
Barium as BaO %	0.03	0.04	0.03	0.03

Copies have been sent to

Determinations carried out in Duplicate
Analysed by XRF

Analysis carried out at North Ryde Laboratory

Signatory ..... P. Szewczyk

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Kerrie Miller

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

270239 FORM 7

COAL AND COKE ASH ANALYSIS REPORT

Report No. 02/3050

Date 6 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(INCORPORATED N.S.W.)
P.O. Box 88
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

Sample Details		DRILL HOLE DD84 PT-10 COMPOSITE SAMPLES			
		52	55, 57, 59, 61, 63, 65, 67, 69 71 and 73		
Silicon as SiO_2	%	51.5	52.5		
Aluminium as Al_2O_3	%	16.3	22.0		
Iron as Fe_2O_3	%	4.88	3.46		
Calcium as CaO	%	19.6	14.9		
Magnesium as MgO	%	2.81	3.22		
Titanium as TiO_2	%	0.85	0.69		
Sodium as Na_2O	%	0.24	0.35		
Potassium as K_2O	%	1.88	1.66		
Phosphorus as P_2O_5	%	0.05	0.05		
Manganese as Mn_3O_4	%	0.45	0.25		
Sulphur as SO_3	%	0.68	1.13		
Barium as BaO	%	0.03	0.04		

Copies have been sent to

Determinations carried out in Duplicate
Analysed by XRF

Analysis carried out at North Ryde Laboratory

Signatory ..... P. Szewczyk

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Kerr Miles

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

Sample Details		DRILL HOLE DD84 PT-11 COMPOSITE SAMPLES			
		76 to 94 incl.	76+78+80+87+89+92+94		
Silicon as SiO_2	%	56.1	50.9		
Aluminium as Al_2O_3	%	27.4	25.4		
Iron as Fe_2O_3	%	3.52	3.63		
Calcium as CaO	%	7.06	13.6		
Magnesium as MgO	%	2.68	2.23		
Titanium as TiO_2	%	0.76	0.72		
Sodium as Na_2O	%	0.59	1.09		
Potassium as K_2O	%	1.64	1.70		
Phosphorus as P_2O_5	%	0.03	0.06		
Manganese as Mn_3O_4	%	0.19	0.32		
Sulphur as SO_3	%	0.44	0.67		
Barium as BaO	%	0.04	0.05		

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Kerie Maitland

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Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

Sample Details	DRILL HOLE DD84 PT-12 COMPOSITE SAMPLES			
	101 to 127	128 to 130	134 to 157	96+101+103+105+113+115+117+119+121+123+125
Silicon as SiO_2 %	60.2	58.7	60.2	56.7
Aluminium as Al_2O_3 %	25.2	23.1	21.9	24.8
Iron as Fe_2O_3 %	3.74	4.69	3.53	3.71
Calcium as CaO %	4.07	6.25	7.91	6.98
Magnesium as MgO %	3.57	3.14	2.39	3.30
Titanium as TiO_2 %	0.74	0.86	0.79	0.75
Sodium as Na_2O %	0.85	0.44	0.72	1.38
Potassium as K_2O %	1.84	2.51	1.61	1.78
Phosphorus as P_2O_5 %	0.02	0.02	0.03	0.04
Manganese as Mn_3O_4 %	0.14	0.19	0.16	0.20
Sulphur as SO_3 %	0.34	0.67	0.55	0.76
Barium as BaO %	0.02	0.03	0.03	0.03

Copies have been sent to

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Analysed by XRF

Analysis carried out at North Ryde Laboratory

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Renie Miles

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Maitland Laboratory

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Report to Mr. T. Dickson,
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P.O. Box 138,
ROSNY PARK, TAS, 7018

Sample Details	128+130+134+136+138+140+142+144+146+148+150+152+154+157 DRILL HOLE DD84 PT-12 COMPOSITE SAMPLES			
Silicon as SiO_2 %	53.6			
Aluminium as Al_2O_3 %	21.3			
Iron as Fe_2O_3 %	3.68			
Calcium as CaO %	15.3			
Magnesium as MgO %	2.32			
Titanium as TiO_2 %	0.77			
Sodium as Na_2O %	6.94			
Potassium as K_2O %	1.36			
Phosphorus as P_2O_5 %	0.05			
Manganese as Mn_3O_4 %	0.24			
Sulphur as SO_3 %	0.78			
Barium as BaO %	0.03			

Copies have been sent to

Determinations carried out in Duplicate
Analysed by XRF

Analysis carried out at North Ryde Laboratory

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Kerrie Miller

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

ANALYSIS AND TESTING REPORT

Report No. 02/3050

Date 6 November, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
P.O. Box 83
North Ryde. N.S.W.
2113

Authorisation No.2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

RESULTS (Continued)

DRILL HOLE DD84 PT-10 COMPOSITE SAMPLES

Sample	Arsenic in Coal as As_2O_3 * AIR DRIED BASIS (ug/g)	Acid Soluble Alkali ** % Na
40 - 51 inclusive	0.5	0.032
52 - 54 inclusive	0.6	0.026
55 - 75 inclusive	0.3	0.038
43 and 51	0.6	0.022
52	0.7	0.019
55, 57, 59, 61, 63, 65, 67, 69, 71 and 73	0.3	0.021

DRILL HOLE DD84 PT-11 COMPOSITE SAMPLES

76 to 94 inclusive	0.5	0.094
76+78+80+87+89+92+94	1.2	0.051

* Analysis carried out at North Ryde Laboratory in duplicate using a dry oxidation/hydride generation - AAS Method. Precision of method : 0.1 ug/g.

** Analysis carried out at Ipswich Laboratory in accordance with ISO 1952 - 1976

Samples received 18.10.1984.

Kerr Miller

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

ANALYSIS AND TESTING REPORT

Report No. 02/3050

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Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

RESULTS (Continued)

DRILL HOLE DD84 PT-12 COMPOSITE SAMPLES

Sample	Arsenic in Coal as As_2O_3 * AIR DRIED BASIS (ug/g)	Acid Soluble Alkali ** % Na
101 to 127	1.6	0.166
128 to 130	1.5	0.060
134 to 157	1.3	0.060
96+101+103+105+113+ 115+117+119+121+123+ 125	1.7	0.098
128+130+134+136+138+ 140+142+144+146+148+ 150+152+154+157	1.0	0.033

* Analysis carried out at North Ryde Laboratory in duplicate using a dry oxidation/hydride generation - AAS Method. Precision of method : 0.1 ug/g.

** Analysis carried out at Ipswich Laboratory in accordance with ISO 1952 - 1976

Samples received 18.10.1984.

Kene Miller

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

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APPENDIX 5

A BRIEF REVIEW OF EXPLORATION FOR COAL

JERICHO AREA, CENTRAL TASMANIA

EL 18/82, 20/82

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BRIEF REVIEW OF EXPLORATION FOR COAL
JERICHO AREA, CENTRAL TASMANIA
EL's 18/82, 20/82

1. INTRODUCTION

During September 1984, seven cored holes totalling 202m were drilled in the vicinity of Jericho in central Tasmania.

The holes were DD84 PT-08, 08A, 09, and 13, and DD84 JC-12, 13 and 13A, as shown on the attached plan.

The object of the program was to obtain more information on the coal seams intersected during the earlier phase of open hole drilling in late 1983 (refer CRA Report No. 12862).

The following comments are based on a combination of both the recent core logs, and the wire line logs of the open holes.

2. COAL SEAM DETAILS

A total of six seams are recognized in the area, and are termed A, B, C, D, E and F; split seams can also be differentiated, namely E_1 and E_2, D_1, D_2, D_3 and D_4, and B_1 and B_2.

2.1 SEAM F

This seam has only been recognized in holes JC-12, and PT-04A and ranges from 1.00 to 1.07m in width.

Coal quality is indeterminate at present, as the seam was oxidised in JC-12. (Refer log of JC-12 for details).

2.2 SEAM E

This is a split seam, as seen in holes JC-12 and PT-04A and has a combined width range of 1.30-1.55m.

Coal quality appears reasonable with 26-33% ash, with further details given in the log of JC-12.

The seam may exist between holes PT-13 and PT-08, but this interval has not been tested.

2.3 SEAM D

This seam is probably the most continuous in the area, extending from JC-08 to PT-08; however, the central interval between PT-04A and PT-05 has been downgraded by the drilling of PT-09 and PT-13 respectively.

Four splits can be recognised in PT-08/08A (adjacent PT-06) and the good correlation of the core of PT-08/08A with both the wireline interpretation of PT-06, and that of JC-08, has facilitated the interpretation of the sedimentary and coal forming environments.

Seam D4 can be traced across the entire JC-08 - PT-08/08A interval, but seams D_3 and D_2 in holes PT-09 and PT-13, are either absent, or represented by carbonaceous mudstone with minor coal (eg D_3), or represented by siltstone, variably carbonaceous and with coal debris (eg D_2). Seam D_1 is absent in PT-13, and very thin (0.30m) in PT-09.

Coal quality has only been determined at the southern end of the area in PT-08/08A, where the ash content varies from 32-60%, and averages approximately 45% (see logs of PT-08 and PT-08A for full details).

The thinning and/or disappearance of the D seam appears to coincide with an unusually thick development of siltstone-dominated-lutite section, where seam horizons are often represented by siltstone.

2.4 SEAM C

This seam thins to the south from JC-08 (0.52m) to PT-09 (0.15m) to PT-13 (0.07m), and probably thins out close to PT-13. The seam is of inferior quality in holes PT-09 and PT-13, but an improvement in quality in conjunction with increasing width, is suggested to the north of JC-08.

2.5 SEAM B

This seam occurs in several holes (JC-06, JC-07, JC-08, PT-09 and PT-06) and attains a maximum width of $\simeq$ 1.50m in PT-09. It is split in holes PT-09 and PT-06, and severe contamination of core (broken) in PT-09 precludes quality estimation.

2.6 SEAM A

This seam occurs mainly in holes JC-06 and JC-07 and it may be present in hole PT-06; coal quality has not been tested by core sampling.

3. CORRELATION OF COAL SEAMS

Correlation of coal seams in the Jericho area was done initially from the geophysical logs (see CRA Report No. 12862) and subsequently by comparison of graphic logs.

A tuff horizon can be recognised in holes JC-08, PT-09 and PT-06, and appears to consistently separate the B and C (or D) coal seams.

The incomplete wireline log of PT-04A, and the spurious geophysical log of PT-05 have both been reconciled with the adjacent cored holes (PT-09 and PT-13), such that seams B, C, D, E and F are now seen to occur in the vicinity of PT-09/04A.

The facies variation of the enclosing Sequence 1 between JC-08 and PT-08/08A can also be reconciled with the frequency and size of seam development.

Full details are provided in the written core logs and graphic logs of the holes.

4. COAL RESOURCE

The recent phase of exploration in the area, with its resultant positive results in terms of seam confirmation and recognition, requires the previous estimates of in situ inferred coal reserves to be updated.

All the reserve estimation parameters are the same as used previously (CRA Report No. 12862), with one exception - the use of a minimum seam width of 0.50m.

Details as shown in section (TASh 2251), plan (TASh 2259) and in Table 1.

In situ inferred reserves of coal total approximately 36 $\times 10^6$ tonnes.

TABLE 1

LOCALITY	RESERVE BLOCK	PRINCIPAL DRILL HOLES	SEAM	AREA (sq. km)	AVERAGE SEAM WIDTH (m)	TONNAGE FACTOR (T/m^3)	TONNES x 10^6
JERICHO	3	JC-12, PT-04A	F	0.50	1.0	1.65	0.82
		" "	E	1.50	1.4	1.65	3.46
		JC-08, PT-09	D_1, D_2, D_3	0.75	1.4	1.65	1.73
		" "	D_4	2.00	0.8	1.65	2.64
		" "	C	0.75	0.5	1.65	0.62
		" "	B	2.00	1.0	1.65	3.30
							SUB-TOTAL 12.57
JERICHO	4	PT-04A	F	0.90	1.0	1.65	1.48
		"	E	1.50	1.3	1.65	3.22
		PT-09, PT-13	D_4	2.50	0.5	1.65	2.06
							SUB-TOTAL 6.76
JERICHO	5	PT-08, PT-08A	D_1, D_2, D_3	1.00	1.9	1.65	3.13
		PT-13, PT-08, PT-08A	D_4	2.00	0.7	1.65	2.31
		PT-06	B	1.00	0.9	1.65	1.48
							SUB-TOTAL 6.92
JERICHO	6	Water Bore	A	1.00	1.6	1.65	2.60
JERICHO	7	JC-06, JC-07	A	3.50	1.3	1.65	7.51
							TOTAL 36.36

SEAM TOTALS

F = 2.30×10^6
E = 6.68×10^6
D = 11.87×10^6
C = 0.62×10^6
B = 4.78×10^6
A = 10.11×10^6

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APPENDIX 6

DRILL HOLE LOGS AND ANALYTICAL DATA FOR E.L. 18/82, 20/82 - JERICHO AREA, CENTRAL TASMANIA

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270251

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME Parattah No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES 525750mE 5299000mN AZIMUTH NA DRILLERS Overland COMMENCED 4/9/84 DEPTH 24.3m HOLE No. DD84 PT-08

RL COLLAR 448m ASL INCLINATION -90° DRILL TYPE Warman 500 COMPLETED 4/9/84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES [Analysed by ACIRL] RD	A	Composites RD	A	M	VM	S	SE	FC
0	1.5	1.29	83	HQ	0-0.2: Alluvium, minor dolerite rubble	NA														
					0.2-0.85: Sand, quartzose (?Tertiary)	NA														
					0.85-1.25:Sandstone, lithic, f/mg	EW														
1.5	3.1	1.6	100	NQ	1.25-2.85: " " " minor	HW	100-200mm													
					coaly, and carbonaceous mudstone debris															
3.1	4.8	1.5			2.85-4.00: Sandstone, lithic, mg, CPC 2.85-3.45	MW	100mm													
					4.00-4.5: " " "	MW	250mm													
4.8	5.9	1.1	100		4.5-5.7 : " " m to cg	HW	300mm													
5.9	7.00	1.1	100		5.7-7.17: " " " minor	SW	200													
					carbonaceous mudstone		300mm													
					7.17-8.45: Sandstone, ltihic, mg CPC 7.17-7.30	F	"				BOCO ≃ 7.17m									
7.00	9.3	2.3	100		8.45-8.60: Mudstone, grey		"													
					8.60-11.23: Sandstone, lithic, fg,															
9.3	11.2	1.9	100		Coaly debris 9.65-10.15m, and 10.50-10.70m															
					11.23-11.24: Coal, dull (D)															
					11.24-11.31: Mudstone, carbonaceous															
					11.31-11.47: Mudstone, grey															
11.2	11.7	0.5	100		11.47-11.70: Mudstone, carbonaceous minor 10mm coal plies															
					11.70-11.73: Coal, dull (D)															
					11.73-11.80: Mudstone, carbonaceous, silty															
11.70	12.1	0.4	100		11.80-11.84: Coal, dull (D)															
					11.84-11.90: Mudstone, carbonaceous & dark grey															
					11.90-11.91: Coal, dull (D)															
					11.91-12.69: Mudstone, dark grey banded															
12.1	12.8	0.7	100		12.69-12.80: Mudstone, carbonaceous															
12.8	13.6	-	0		12.80-13.60: Core loss															
					13.60-13.70: Coal, heavy dull			1	13.60	13.70	0.10	1.85	49.2	1.80	48.0	4.1	13.7	0.14	14.38	34.2
13.6	14.3	0.7	100		13.70-13.85: Coal, heavy dull			2			0.15	1.77	47.0							
					13.85-14.30: Mudstone, carbonaceous			3			0.45	2.23	80.2							
					14.30-14.83: " grey			4	14.30	14.83	0.53	2.23	79.7							

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270252

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. PT-08

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES [Analysed by ACIRL] RD	A	Composites RD	A	M	VM	S	SE	FC
14.3	15.2	0.9	100	NQ	14.83-15.15: Coal, heavy dull			5	14.83	15.15	0.32	1.77	49.6							
				"	15.15-15.30: Mudstone, dark grey			6			0.15	2.12	73.5							
				"	15.30-15.38: Coal, dull (Dmb)			7			0.08	1.68	39.3							
				"	15.38-15.42: Mudstone, carbonaceous ± HDC			8			0.04	2.26	79.1							
				"	15.42-15.64: Coal, dull (Dmb)			9			0.22	1.68	36.4	Samples 5-16 inclusive =						
15.2	16.6	1.4	100	"	15.64-15.95: Mudstone, carbonaceous, silty			10			0.31	2.01	67.4							
				"	15.95-16.11: Coal, dull (Dmb)			11			0.16	1.74	42.7	1.88	56.1	6.5	11.7	0.17	10.42	25.7
				"	16.11-16.30: Claystone, buff			12			0.19	2.29	80.5							
				"	16.30-16.55: Coal, heavy dull, soft			13			0.25	1.82	49.8	Samples 5,7,9,11,13 & 15 =						
				"	16.55-16.70: Mudstone, brown/dark grey			14			0.15	2.19	75.4	1.73	43.0	5.4	13.8	0.25	16.10	37.8
16.6	17.4	0.8	100	"	16.70-17.30: Coal, dull (Dmb)			15			0.60	1.69	38.7							
				"	17.30-17.45: Mudstone, carbonaceous (± HDC)			16	17.30	17.45	0.15	2.12	72.4							
17.4	18.3	0.9	100	"	17.45-18.50: Mudstone, grey, minor coal from 18.20-18.22m.															
18.3	21.3	3.0	100	"	18.50-21.50: Mudstone, grey, laminated															
				"	21.50-23.0: 1B Mudstone and siltstone															
21.3	24.3	3.0	100	"	23.0-24.3: Siltstone, grading down to fg lithic sandstone															
					EOH - 24.30m															

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270253

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES ≃ 525750mE 5299010mN AZIMUTH NA DRILLERS OVERLAND COMMENCED 14.9.84 DEPTH 14.70m HOLE No. DD84 PT-08A

RL COLLAR ≃ 448m ASL INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 14.9.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	10.66	TRICONE ROLLER -			PRECOLLAR															
10.66	11.40	0.07	9	NQ	0-10.66: Refer log of PT-08															
				"	10.66-11.40: Core loss - only minor grey mudstone recovered	~ F				BOCO < 11.40m										
				"	11.40-11.58: Mudstone, grey to dark grey	F														
11.40	12.00	0.6	100	"	11.58-11.81: Mudstone, carbonaceous, minor HDC			170	11.58	11.81	0.23	2.35	84.4	Samples 170-183 inclusive =						
				"	11.81-12.21: Mudstone, grey and pale brown			171			0.40	2.49	92.5	73.7	5.7	8.1	0.10	5.60	14.5	
				"	12.21-12.40: Mudstone, dark grey and cream			172			0.19	2.44	89.5							
				"	12.40-12.54: Coal, heavy dull			173			0.14	1.91	55.7	Samples 173-183 inclusive =						
				"	12.54-12.75: Mudstone, grey & black, banded															
				"	12.75-13.07: Mudstone, dark grey/brown, shaley			174			0.53	2.38	86.5	66.0	4.5	9.2	0.14	7.82	20.3	
12.00	13.60	1.6	100	"	13.07-13.25: Coal, dull (D), with minor carbonaceous									Samples 175-177 inclusive =						
					mudstone interbeds			175	13.07	13.25	0.18	1.78	45.8	54.3	4.4	10.7	0.21	12.74	30.6	
				"	13.25-13.30: Claystone, cream (kaolinitic)			176			0.05	2.35	85.9							
				"	13.30-13.55: Coal, heavy dull, broken			177			0.25	1.82	51.5	Samples 175-188 inclusive						
				"	13.55-13.85: Mudstone, buff/grey/carbonaceous			178			0.30	2.19	77.1	57.4	5.1	10.8	0.17	10.58	26.7	
				"	13.85-13.99: Coal, heavy dull			179			0.14	1.92	56.9							
				"	13.99-14.03: Coal, heavy dull & shale			180			0.04	1.97	61.6	Samples 179 - 183 inclusive						
				"	14.03-14.10: Coal, dull (D)			181			0.07	1.63	31.6	48.1	4.9	13.4	0.19	14.34	33.6	
13.60	14.70	1.1	100	"	14.10-14.17: Mudstone, & siltstone, buff			182			0.07	2.12	71.6							
					to cream to 14.15m, then grey to carbonaceous									Samples 175, 181 & 183						
				"	14.17-14.51: Coal, dull (D) broken			183	14.17	14.51	0.34	1.73	39.6	41.0	4.1	15.6	0.24	17.56	39.3	
				"	14.51-14.70: Shale, dark brown															
					E.O.H. 14.70															

N.B. Correlation between holes PT-08 and PT-08A:
PT-08A: 11.58-11.81; 11.81-13.07; 13.07-13.85; 13.85-14.03; 14.03-14.51
PT-08 : 11.47-11.91; 11.91-12.69; 12.69-13.60; 13.60-13.85; 13.85-14.30

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES ≃ 525 450 E 5305 600N AZIMUTH NA DRILLERS OVERLAND COMMENCED 6.9.84 DEPTH TD 39.2m HOLE No. DD84 PT-09

RL COLLAR ≃ 410m ASL INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 6.9.84 CASING LEFT - DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES [Analysed by ACIRL] RD	A	Composites RD	A	M	VM	S	SE	FC
0	8.8	PRECOLLAR			0-7.8: Quarternary scree deposit	NA														
8.8	9.0	0.1	50	NQ	7.8-10.15: Sandstone, lithic, m-cg, dirty with carbonaceous															
9.0	9.9	0.9	100		matrix	SW/F														
				"	10.15-10.45: Coal, dull, ≃ 1% B (Dmb), broken, Fe oxide	SW		27	10.15	10.45	0.30	1.80	40.9	Samples 27-30 inclusive =						
					cleats															
				"	10.45-10.55: Mudstone, carbonaceous, buff, claystone	SW/F		28			0.10	2.44	86.8	2.10	66.7	4.6	5.7	0.10	8.16	23.0
9.9	10.6	0.7	100	"	10.55-10.60: Mudstone, carbonaceous, ± heavy dull coal			29			0.05	2.48	90.7	Sample 27 =						
				"	10.60-10.71: Mudstone, carbonaceous, ± heavy dull coal			30	10.60	10.71	0.11	2.46	88.6	1.80	40.9	5.3	6.3	0.19	17.58	47.9
				"	10.71-11.15: Mudstone, grey															
10.6	12.2	1.6	100	"	11.15-11.55: Siltstone, carbonaceous, debris															
				"	11.55-12.02: Mudstone, grey							BOCO	≃ 10.5m							
				"	12.02-12.85: Siltstone, variably laminated with															
12.2	13.3	1.1	100	"	carbonaceous mudstone and coal															
				"	12.85-13.27: Mudstone, grey															
13.3	13.5	0.2	100	"	13.27-13.57: Mudstone, carbonaceous, with coal (20%B)															
					plies 10-40mm thick															
13.5	13.7	0.2	100	"	13.57-13.65: Mudstone, grey															
				"	13.65-14.20: Siltstone, carbonaceous, minor brecciation															
				"	14.20-14.50: Mudstone, carbonaceous, & dark grey															
13.7	14.8	1.1	100	"	14.50-14.58: Mudstone, carbonaceous ± heavy dull coal			31	14.50	14.58	0.08	2.47	88.3	Samples 31-34 inclusive =						
				"	14.58-14.65: Mudstone, carbonaceous ± heavy dull coal			32	14.58	14.65	0.07	2.29	73.3	2.10	60.0	5.7	5.3	0.15	10.24	29.0
14.8	15.3	0.3	60	"	14.65-15.30: Coal, heavy dull including ≤3% B (Dmb),			33	14.65	14.80	0.15	2.07	56.9							
					broken (- see core loss)															
15.3	15.6	0.3	100	"	15.30-16.50: Mudstone, carbonaceous, & dark grey			34	14.80	15.30	0.50	2.02	53.1							
15.6	15.9	0.3	100	"	16.50-16.65: Interbedded carbonaceous mudstone & heavy															
15.9	16.5	0.6	100	"	dull coal															
16.5	17.5	1.0	100	"	16.65-17.80: Mudstone, carbonaceous & dark grey															
17.5	18.6	1.1	100	"	17.80-20.40: Siltstone, minor interbeds of grey mudstone															
18.6	21.3	2.7	100	"	20.40-25.20: Sandstone, lithic, m-cg, variably carbonaceous															
21.3	24.3	2.95	98	"	25.20-25.50: Mudstone, carbonaceous, interbedded with cg															
					carbonaceous lithic sandstone															

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

TENEMENT NAME ..... No. .....

PLAN – MAP REFERENCE .....

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. DD84 PT-09

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) .....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
				NQ	25.50-25.90: Interbedded grey mudstone & tuff tuffaceous															
					siltstone (cream and pale green ?chloritic)															
				"	25.90-28.57: Sandstone, lithic, m-cg, minor carbonaceous															
24.3	27.3	2.9	97	"	mudstone interbeds 26.25-26.35, 26.65-26.70															
27.3	29.8	2.5	100	"	28.57-30.45: Mudstone, grey, fissite, very minor thin coal															
29.8	32.95	3.05	97	"	plies 2.3mm thick															
32.95	34.40	1.45	100	"	30.45-34.50: Interbedded siltstone and fg lithic sandstone,															
					carbonaceous laminae (? flasers) throughouut															
34.40	35.5	0.35	32	"	34.50-35.50: Major core loss - approx. 0.25m of coal, and			35	34.50	?35.2	*	2.41	84.8							
					approx. 0.10m of carbonaceous mudstone recovered															
35.5	35.8	0.3	100	"	35.50-35.53: Mudstone, carbonaceous			36	?35.20	35.53	*	2.38	83.5							
35.8	36.1	0.2	66	"	35.53-36.10: Shale, carbonaceous ± heavy dull coal			37	35.53	36.10	0.57	2.23	71.7	Samples 35-39 inclusive =						
36.1	36.4	0.1	33	"	36.10-36.40: ? Interbedded coal and carbonaceous mudstone			38	36.10	36.40	0.30	2.02	58.1	2.27	75.7	5.8	4.4	0.09	4.20	14.1
					- sample recovered consists of carbonaceous mudstone matrix															
					with coal fragments embedded (major core loss)															
36.4	37.2	0.5	62	"	36.40- - 36.60: Coal and carbonaceous mudstone extremely			39	36.40	? 36.60	≈0.20	2.07	63.6							
					broken and contaminated sample, floor consists of															
37.2	37.4	0.2	100		carbonaceous siltstone/fg quartzose sandstone															
37.4	38.4	1.0	100	"	36.60-36.80: Siltstone, carbonaceous															
38.4	39.2	0.8	100	"	36.80-39.20: Sandstone, lithic, f-mg, dirty with															
					carbonaceous matrix															
					EOH - 39.20m															

* Major core loss precludes accurate estimation of in situ depths - the 35.2m value is only an estimate based on the recovered material, but may be meaningless. Similarly, analyses of samples 38 and 39 may not be true indications of the in situ coal, mudstone, etc.

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME PARATTAH No. EL 18/82

PLAN – MAP REFERENCE

CO-ORDINATES ≃ 526600mE 5301400mN AZIMUTH NA DRILLERS OVERLAND COMMENCED 11.9.84 DEPTH 24.80m HOLE No. DD84 PT-13

RL COLLAR ≃ 432m ASL INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 12.9.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	1.2	0.9	75	HQ	0-0.2: Ferricrete, pisolitic	NA														
				"	0.2-1.15: Clay, red/brown, minor pisolites	"						* Weathering status may be the combined effects								
1.2	2.7	1.3	87	"	1.15-1.55: Clay red/brown, with HW dolerite clasts	"	Tertiary					of - (i) Oxidation at time of deposition								
				"	1.55-1.90: Ferricrete, pisolitic in red clay	"						(ii) Thermal alteration by dolerite (? devolatilized)								
				"	1.90-3.1: Sandstone (? Tertiary reworking of Triassic	"														
2.7	4.5	1.7	94	"	lithic sandstone)							(iii) Lateritic weathering during the Tertiary								
4.5	6.3	1.55	86	NQ	3.1-6.85: Sandstone, lithic, m to cg	MW														
6.3	7.5	1.2	100	"	6.85-8.9: Mudstone, laminated, minor siltstone interbeds	HW														
				"	8.9-9.12: Mudstone, carbonaceous, silty	MW		159	8.90	9.12	0.22	2.37	84.4							
				"	9.12-9.16: Crushed zone in carbonaceous mudstone		Δ≃ 80°	160			0.04	2.24	76.5							
				"	9.16-9.50: Siltstone, carbonaceous	MW		161			0.34	2.44	89.7							
				"	9.50-9.80: Siltstone, carbonaceous, with small (< 2mm) carbonaceous mudstone pellets, & v.minor coal fragments	SW		162			0.30	2.41	89.2		88.1	3.4	5.9	0.01	1.26	2.6
7.5	11.7	4.2	100	"	9.80-9.92: As above, but 5 vol % coal fragments	SW		163			0.12	2.40	87.7							
				"	9.92-10.2: As above, but 10 vol % coal fragments and dislocated coal plies, with calcite	SW		164	9.92	10.2	0.28	2.41	87.3							
				"	10.2-11.15: Mudstone, silty, dark grey	F														
				"	11.15-11.88: Siltstone, laminated, minor mudstone interbeds	F														
11.7	12.1	0.3	75	"	11.88-11.90: Mudstone, carbonaceous	F								Sample 165 =						
				"	11.90-12.10: Coal, dull (D), oxidised, and contaminated with carbonaceous mudstone	MW *		165	11.90	12.10	0.20	2.06	47.8		47.8	3.3	14.8	0.10	12.78	34.1
				"	12.10-12.20: Coal, dull (D) and muddy carbonaceous siltstone, sample broken & contaminated	MW		166			0.10	2.02	54.9	Samples 165-168 inclusive =						
				"	12.20-12.35: Coal, dull (D), oxidised	MW *		167			0.15	2.18	67.3		69.7	3.4	7.7	0.02	7.10	19.2
				"	12.35-12.65: Mudstone, carbonaceous	SW/F		168	12.35	12.65	0.30	2.41	86.1							
12.1	14.8	2.35	87	"	12.65-13.10: Mudstone, dark grey	F														
				"	13.10-13.17: Coal, heavy dull & carbonaceous mudstone	MW *		169	13.10	13.17	0.07	2.35	75.4 →	75.4	2.4	7.2	0.02	5.20	15.0
				"	13.17-13.30: Crushed zone in carbonaceous mudstone (Δ75/80°)															
				"	13.30-13.70: Mudstone, grey/brown															
				"	13.70-15.30: Siltstone, laminated, minor mudstone lB's															

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. ..DD84..PT..

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES [Analysed by ACIRL							
														Composites					
												RD	A	RD	A	M	VH	S	SE
14.8	17.7	2.9	100	NQ	15.30-17.40: Mudstone, carbonaceous to grey and brown,														
					laminated														
				"	17.40-17.67: Shale, carbonaceous														
				"	17.67-18.00: Mudstone, dark grey														
17.7	18.6	0.45	50	"	18.00-18.05: Crushed zone, in grey/brown mudstone (△?)														
				"	18.05-18.75: Siltstone, pale brown to grey														
				"	18.75-18.95: Crushed zone in siltstone (△ ?)														
18.95	20.8	2.2	100	"	18.95-20.20: Mudstone, silty, pale brown/grey														
				"	20.20-21.50: Siltstone, muddy, pale brown/grey														
				"	21.50-21.65: Crushed zone in muddy siltstone (△?)														
20.8	22.4	1.5	94	"	21.65-23.00: Mudstone, pale brown to grey (... tough ..?)														
22.4	22.9	0.25	50		thermal effect of underlying dolerite)														
22.9	23.6	0.7	100	"	23.00-23.20: Crushed zone in mudstone....broken....△?														
				"	23.20-24.80: Mudstone, variably silty, tough, possible														
23.6	24.0	0.4	100		crushed zone 24.4-24.7, core very broken 21.65-EOH.														
24.0	24.8	0.8	100																
					EOH - 24.80m														

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270258

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME JERICHO No. EL 20/82

PLAN – MAP REFERENCE

CO-ORDINATES ≃ 524700mE 5308450mN AZIMUTH NA DRILLERS OVERLAND COMMENCED 5.9.84 DEPTH 33.60m HOLE No. DD84 JC-12

RL COLLAR ≃ 390m ASL INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 5.9.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	FC
0	1.5	1.3	87	HQ	0-1.6: Alluvium, minor dolerite clasts	NA														
1.5	2.8	1.15	88	"	1.6-5.05: Sandstone, lithic, mg, with coaly debris	HW	200mm													
2.8	3.7	0.45	50	NQ	3.5-4.0m, core loss in this sandstone															
3.7	5.2	1.0	67	"	5.05-5.20: Coal, dull - oxidised	HW		17	5.05	5.20	0.15	2.14	7.40							
				"	5.20-5.30: Mudstone, carbonaceous	HW		18			0.10	2.11	64.3							
5.2	5.5	0.3	100	"	5.30-5.66: Coal, dull - oxidised	HW		19			0.36	1.71	30.6	1.81	43.2	8.9	17.0	0.25	12.78	30.9
5.5	5.6	0.1	100	"	5.66-5.70: Claystone -	MW		20			0.04	2.20	79.9							
5.6	6.0	0.25	62	"	5.70-6.12: Coal, dull - oxidised	MW		21	5.70	6.12	0.42	1.68	29.4							
6.0	9.0	2.9	97	"	6.12-7.00: Mudstone, buff, silty	SW	200mm													
9.0	12.0	3.0	100	"	7.00-8.10: Siltstone, variably muddy	SW	350mm			BOCO ≃ 8.1m										
12.0	15.15	3.15	100	"	8.10-21.03: Sandstone, lithic, fg to 13.5m and then m to cg	F	200-1000mm													
15.15	16.10	0.85	89	"	21.03-21.60: Mudstone, grey, broken															
16.10	19.0	2.9	100	"	21.60-21.70: Coal, heavy dull and carbonaceous mudstone			22	21.60	21.70	0.10	2.06	66.0	1.63	32.9	4.2	11.4	0.23	20.84	51.5
19.0	21.0	2.0	100	"	21.70-22.30: Coal, dull, 5% bright (Dmb)			23	21.70	22.30	0.60	1.56	25.7							
21.0	21.7	0.7	100	"	22.30-23.45: Mudstone, grey/brown, soft with minor coal															
21.7	22.2	0.4	80		22.53-22.54m.															
22.2	24.0	1.8	100	"	23.45-23.68: Coal, dull, 5% bright (Dmb)			24	23.45	23.68	0.23	1.55	25.4							
24.0	24.7	0.5	71	"	23.68-23.70: Claystone/mudstone, brown			25			0.02	2.27	79.1							
24.7	25.4	0.65	93	"	23.70-24.00: Coal, dull, 25% bright (Db)									1.57	26.3	2.7	15.3	0.28	23.90	55.7
25.4	26.3	0.45	50	"	24.00-24.30: Coal, dull & bright, 50% bright (DB)			26	23.70	24.30	0.60	1.55	24.0							
26.3	27.0	0.7	100	"	24.30-24.80: Crushed zone in grey to pale brown mudstone															
27.0	27.7	0.35	50	"	24.8-25.4: Siltstone & v. fg lithic sandstone, broken,															
27.7	28.4	0.20	29	"	with minor cz horizons															
28.4	29.0	0.30	50	"	25.4-26.0: 1B siltstone & cream to pale grey mudstone -															
29.0	29.6	0.15	25	"	very broken															
29.6	29.65	0.05	100	"	26.0-26.7: Mudstone, pale grey, minor cz horizons															
29.65	30.0	0.35	100	"	26.7-26.9: Siltstone, broken															
30.0	30.2	0.2	100	"	26.9-31.2: Crushed zone, very broken, siltstone and															
					mudstone fragments tectonically juxtaposed, and vice versa	(△?)														

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270259

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. DD84 JC-12

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by							
														Composites					
												RD	A	RD	A	M	VM	S	SE
30.2	30.3	0.10	100	NQ	31.2-31.5: ? Tuff or tuffaceous mudstone - green/pink/crean														
30.3	30.7	0.4	100	"	banded, siliceous and chloritic (ie included in crushed														
30.7	31.10	0.10	25	"	zone)														
31.10	31.4	0.25	83	"	31.5-32.3: Crushed zone, in grey/green mudstone/siltstone														
31.4	32.3	0.45	50	"	32.3-33.6: Crushed zone in green mudstone														
32.3	33.2	0.50	55																
33.2	33.6	0.4	100																
					EOH - 33.6 (Hole abandoned due to drilling problems)														
					N.B.: The extent of porphyroclast development (and size/shape of same) suggests a major fault from 24.30 ⟶ EOH														

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME JERICHO No. EL 20

PLAN – MAP REFERENCE

CO-ORDINATES ≃ 525300mE 5307000mN AZIMUTH NA DRILLERS OVERLAND COMMENCED 12.9.84 DEPTH 30.40m HOLE No. DD84 JC 13

RL COLLAR ≃ 410m ASL INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 12.9.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES / Analysed by ACIRL RD	A	Composites RD	A	M	VM	S	SE	F
0	1.5	1.0	67	NQ	0-1.5: Alluvium with EW dolerite clasts	NA														
				"	1.5-1.75: Ferricrete	NA														
1.5	2.8	1.3	100	"	1.75-2.02: Dolerite	EW														
				"	2.02-2.48: Dolerite	MW														
				"	2.48-3.64: Dolerite, clay seam 2.48-2.50	MW														
2.8	3.9	0.85	77	"	3.64-3.80: Dolerite	MW														
				"	3.80-3.90: Dolerite & clay	EW														
				"	3.90-5.32: Dolerite (cg)	SW														
3.9	6.4	2.40	96	"	5.32-5.78: Dolerite	MW														
				"	5.78-6.40: Dolerite, cg	SW/F														
				"	6.40-8.32: Dolerite, cg	MW														
6.4	9.4	2.88	96	"	8.32-9.18: Dolerite, cg	F														
9.4	12.4	2.31	77	"	9.18-10.91: Dolerite, cg	S/MW														
12.4	15.4	3.0	100	"	10.91-22.92: Dolerite, cg	F						BOCO	≃ 10.9m							
15.4	18.4	3.0	100	"	22.92-23.12: Dolerite, mg															
18.4	21.4	3.05	> 100	"	23.12-26.79: Dolerite, cg															
21.4	24.4	3.01	> 100	"	26.79-27.27: Dolerite, mg															
				"	27.27-27.40: Dolerite, cg															
24.4	27.4	3.0	100	"	27.40-27.95: Dolerite, mg															
27.4	30.4	2.88	96	"	27.95-30.40: Dolerite, cg															
					EOH - 30.40m															

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270261

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME JERICHO No. EL 20/

PLAN – MAP REFERENCE

CO-ORDINATES ≈ 525500mE 5307100mN AZIMUTH NA DRILLERS OVERLAND COMMENCED 13.9.84 DEPTH 34.8m HOLE No. DD84JC13A

RL COLLAR ≈ 410m ASL INCLINATION -90° DRILL TYPE WARMAN 500 COMPLETED 13.9.84 CASING LEFT DPO No(s)

DEPTH From (m)	DEPTH To (m)	CORE RECOVERY m	CORE RECOVERY %	CORE SIZE	CORE DESCRIPTION	WEATH.	DEFECT SPACING	Sample No.	From (m)	To (m)	Rec (m)	ASSAY VALUES (Analysed by ACIRL) RD	A	Composites RD	A	M	VM	S	SE	F
0	2.8			TRICONE ROLLER - PRECOLLAR																
2.8	5.4	1.9	73	NQ	0-2.8: Alluvium with dolerite clasts															
5.4	6.2	0.5	62	"	2.8-6.6: Dolerite, cg	M/HW														
				"	6.6-8.2: Dolerite, cg	SW/F														
6.2	9.2	3.0	100	"	8.2-8.9: Dolerite, cg	MW														
				"	8.9-10.0: Dolerite, cg (MW on vertical joints - elsewhere	}														
9.2	10.4	1.2	100		fresh)	} F														
				"	10.0-10.4: Dolerite, cg, vertical joints	MW														
10.4	12.4	1.9	95	"	10.4-17.4: Dolerite, cg, amphibole rich (? tremolitic)	F				BOCO ≈ 10.4m										
12.4	15.4	2.9	97		similar to 2.8-10.4, minor v.coarse tremolitic zones at															
15.4	18.4	3.0	100		11.4, 12.5; ? dyke of mg dolerite from 14.9-15.15m,															
					core broken along joints (△60°) 15.4-16.7m															
18.4	21.4	3.0	100	"	17.4-22.0: Dolerite, cg with ?chlorite mottling (5-10mm)															
21.4	23.58	1.18	100	"	22.0-28.70: Dolerite, cg, with smaller chlorite aggregates															
23.58	24.40	0.84	100		and tremolitic amphibole , vertical joins 21.4-23.7m filled															
24.40	27.4	3.0	100		limonite & calcite, minor sections of fg dolerite (? dyke)															
27.4	30.4	3.0	100		from 26.17-26.25m															
30.4	32.3	1.9	100	"	28.70-31.80: Dolerite, f to mg, vertical joint 30.4-31.8m															
32.3	33.4	1.1	100																	
33.4	34.8	1.4	100	"	31.80-34.80: Dolerite, mg															
					EOH - 34.80m															

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270262

AUSTRAL COAL RESEARCH

Australian Coal Industry Research Laboratories Ltd.
Incorporated in NSW

KM/jr

REPORT TO : Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA 7018

REPORT ON : The Analysis of Borecore Samples from

~~DRILL HOLE DD84 PT-09~~
DRILL HOLE DD84 PT-10

PREPARED BY : Kerie Miller

REFERENCES : Telex (12.9.1984) T. Summons to J. Williams

REPORT NO : 02/2928

DATE : 20 September, 1984

Kerie Miller for
.....
J. Williams,
Manager,
Maitland Laboratory

Junction Street, Telarah, N.S.W. Telephone: (049) 32-8377, 32-8590
P.O. Box 26, Maitland, N.S.W. 2320

INTRODUCTION

Forty-nine (49) samples from drill holes DD84-PT09 and DD84 PT-10 were delivered to ACIRL Maitland laboratory on 12 September, 1984.

Each sample was air dried, weighed, crushed to pass 4mm and prepared for preliminary analysis. Reserve samples at 4mm top size were retained from samples greater than 200g mass.

On completion of preliminary analysis, composite samples were reconstituted, on a thickness x relative density basis, for proximate analysis, total sulphur and specific energy determinations.

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ANALYSIS AND TESTING REPORT

Report No. 02/2928

Date 20 September, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(INCORPORATED IN N.S.W.)
P.O Box 93
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270264

RESULTS

DRILL HOLE DD84 PT-09

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
27	10.15	10.45	0.30	0.618	1.80	40.9
28	10.45	10.55	0.10	0.218	2.44	86.8
29	10.55	10.60	0.05	0.145	2.48	90.7
30	10.60	10.71	0.11	0.282	2.46	88.6
31	14.50	14.58	0.08	0.193	2.47	88.3
32	14.58	14.65	0.07	0.174	2.29	73.3
33	14.65	14.80	0.15	0.230	2.07	56.9
34	14.80	15.30	0.50	0.534	2.02	53.1
35	34.50	35.20	0.70	0.461	2.41	84.8
36	35.20	35.53	0.33	0.282	2.38	83.5
37	35.53	36.10	0.57	0.974	2.23	71.7
38	36.10	36.40	0.30	0.647	2.02	58.1
39	36.40	36.60	0.20	0.565	2.07	63.6

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Maitland Laboratory

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FORM 3

COAL ANALYSIS

Report No. 02/2928

Date 20 September, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(INCORPORATED IN N.S.W.)
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270265

Sample Details	DRILL HOLE DD84 PT-09 COMPOSITE SAMPLES			
	27-30 Inclusive	31-34 Inclusive	35-39 Inclusive	27
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	4.6	5.7	5.8	5.3
Ash %	66.7	60.0	75.7	40.9
Volatile Matter %	5.7	5.3	4.4	6.3
Fixed Carbon %	23.0	29.0	14.1	47.5
Sulphur + %	0.10	0.15	0.09	0.19
Specific Energy MJ/kg	8.16	10.24	4.20	17.58
Relative Density	2.10 *	2.10 *	2.27 *	1.80
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

\+ LECO High Temperature Method

* Calculated Result

Sampled by..... Received .....

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Maitland Laboratory

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270266

ACIRL
COAL RESEARCH

Australian Coal Industry Research Laboratories Ltd.
Incorporated in NSW

JW/jr

REPORT TO : Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA 7018

REPORT ON : The Analysis of Borecore Samples from

DRILL HOLE DD84 PT-11
DRILL HOLE DD84 PT-12
~~DRILL HOLE DD84 PT-13~~
~~DRILL HOLE DD84 PT-08A~~

PREPARED BY : J. Williams

REFERENCES : Telex (17.9.1984) T. Summons to J. Williams

REPORT NO : 02/2945

DATE : 4 October, 1984

J. Williams,
Manager,
Maitland Laboratory

Junction Street, Telarah, N.S.W. Telephone: (049) 32-8377, 32-8590
P.O. Box 26, Maitland, N.S.W. 2320

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FORM 11

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P.O. Box 93
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ANALYSIS AND TESTING REPORT

Report No. 02/2945

Date 4 October, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270267

RESULTS (Continued)

DRILL HOLE DD84 PT-13

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
159	8.90	9.12	0.22	0.510	2.37	84.4
160	9.12	9.16	0.04	0.095	2.24	76.5
161	9.16	9.50	0.34	0.828	2.44	89.7
162	9.50	9.80	0.30	1.052	2.41	89.2
163	9.80	9.92	0.12	0.346	2.40	87.7
164	9.92	10.20	0.28	0.669	2.41	87.3
165	11.90	12.10	0.20	0.234	2.06	47.8
166	12.10	12.20	0.10	0.138	2.02	54.9
167	12.20	12.35	0.15	0.257	2.18	67.3
168	12.35	12.65	0.30	0.423	2.41	86.1
169	13.10	13.17	0.07	0.122	2.35	75.4

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P.O. Box 93
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ANALYSIS AND TESTING REPORT

Report No. 02/2945

Date 4 October, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270268

RESULTS (Continued)

DRILL HOLE DD84 PT-08A

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AIR DRIED BASIS Relative Density	AIR DRIED BASIS Ash %
170	11.58	11.81	0.23	0.553	2.35	84.4
171	11.81	12.21	0.40	1.335	2.49	92.5
172	12.21	12.40	0.19	0.521	2.44	89.5
173	12.40	12.54	0.14	0.348	1.91	55.7
174	12.54	13.07	0.53	1.640	2.38	86.5
175	13.07	13.25	0.18	0.401	1.78	45.8
176	13.25	13.30	0.05	0.175	2.35	85.9
177	13.30	13.55	0.25	0.621	1.82	51.5
178	13.55	13.85	0.30	0.644	2.19	77.1
179	13.85	13.99	0.14	0.360	1.92	56.9
180	13.99	14.03	0.04	0.055	1.97	61.6
181	14.03	14.10	0.07	0.133	1.63	31.6
182	14.10	14.17	0.07	0.249	2.12	71.6
183	14.17	14.51	0.34	0.720	1.73	39.6

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Maitland Laboratory

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FORM 3

COAL ANALYSIS

Report No. 02/2945

Date 4 October, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(INCORPORATED IN N.S.W.)
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

270269

Sample Details	DRILL HOLE DD84 PT- 13 COMPOSITE SAMPLES			
	159 to 164	165 to 168	169	165
As Received Basis - Total Moisture %				
Air Dried Basis				
Moisture %	3.4	3.4	2.4	3.3
Ash %	88.1	69.7	75.4	47.8
Volatile Matter %	5.9	7.7	7.2	14.8
Fixed Carbon %	2.6	19.2	15.0	34.1
Sulphur † %	0.01	0.02	0.02	0.10
Chlorine %				
Phosphorus %				
Specific Energy MJ/kg.	1.26	7.10	5.20	12.78
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

Determinations carried out in Duplicate
Analysed in accordance with AS1038
unless otherwise stated

Sampled by..... Received

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AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

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FORM 3

COAL ANALYSIS

Report No. 02/2945

Date 4 October, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
INCORPORATED IN N.S.W.
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS, 7018

270270

Sample Details	DRILL HOLE DD84 PT-08A COMPOSITE SAMPLES			
	170 to 183 incl	173 to 183 incl	175 to 183 incl	175 to 177
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	3.7	4.5	5.1	4.4
Ash %	73.7	66.0	57.4	54.3
Volatile Matter %	8.1	9.2	10.8	10.7
Fixed Carbon %	14.5	20.3	26.7	30.6
Sulphur † %	0.10	0.14	0.17	0.21
Chlorine %				
Phosphorus %				
Specific Energy MJ/kg.	5.60	7.82	10.58	12.74
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

Determinations carried out in Duplicate
Analysed in accordance with AS1038
unless otherwise stated

Sampled by Received

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Maitland Laboratory

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FORM 3

COAL ANALYSIS

Report No. 02/2945

Date 4 October, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
(INCORPORATED IN N.S.W.)
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270271

Sample Details	DRILL HOLE DD84 PT-08A COMPOSITE SAMPLES			
	179 to 183	175 + 181 + 183		
As Received Basis Total Moisture %				
Air Dried Basis				
Moisture %	4.9	4.1		
Ash %	48.1	41.0		
Volatile Matter %	13.4	15.6		
Fixed Carbon %	33.6	39.3		
Sulphur † %	0.19	0.24		
Chlorine %				
Phosphorus %				
Specific Energy MJ/kg.	14.34	17.58		
Ash Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

Determinations carried out in Duplicate
Analysed in accordance with AS1038 unless otherwise stated

Sampled by..... Received .....

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Maitland Laboratory

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270272

ACIRL
COAL RESEARCH

Australian Coal Industry Research Laboratories Ltd.
Incorporated in NSW

JW/jr

REPORT TO : Mr. T. Dickson,
Chief Geologist,
CRA Exploration Pty. Limited,
P.O. Box 138,
ROSNY PARK, TASMANIA 7018

REPORT ON : The Analysis of Borecore Samples from

DRILL HOLE DD84 PT-08
DRILL HOLE DD84 JC-12

PREPARED BY : J. Williams and K. Miller

REFERENCES : Interim report sent 8.9.1984 to T. Summons, I. Johnson, P. Tyson copy to T. Dickson

Telex (6.9.1984) T. Summons to J. Williams
Telex (6.9.1984) J. Williams to P. Matusek/T. Summons
Telex (6.9.1984) P. Matusek to J. Williams

REPORT NO : 02/2093

DATE : 10 September, 1984

.....
J. Williams,
Manager,
Maitland Laboratory

Junction Street, Telarah, N.S.W. Telephone (049) 32-8377, 32-8590
P.O. Box 26, Maitland, N.S.W. 2320

INTRODUCTION

Twenty six (26) samples from drill holes DD84 PT-08 and DD84 JC-12 were delivered to the airport at Maitland on September 6, 1984 and collected by ACIRL personnel.

Each sample was air dried, weighed, crushed to pass 4mm and prepared for preliminary analysis. Reserve samples at 4mm top size were retained from samples greater than 200g mass.

On completion of preliminary analysis, composite samples were reconstituted, on a thickness x relative density basis, for proximate analysis, total sulphur and specific energy determinations.

Analysis was completed September 7, 1984 and results despatched by courier September 8, 1984 at 10.00 a.m.

Due to the non arrival of the reports in Tasmania by late Sunday, September 9, 1984, results were given to Mr. Summons orally, by telephone, that day.

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FORM 11

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
P.O. Box 83
North Ryde. N.S.W.
2113

ANALYSIS AND TESTING REPORT

Report No. 02/2903

Date 10 September, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270274

Copy to : Mr. T. Summons, Mr. P. Tyson, Mr. I. Johnson

RESULTS

DRILL HOLE DD84 PT-08

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AS ANALYSED BASIS Relative Density	AS ANALYSED BASIS Ash %
1	13.60	13.70	0.10	0.199	1.85	49.2
2	13.70	13.85	0.15	0.294	1.77	47.0
3	13.85	14.30	0.45	0.823	2.23	80.2
4	14.30	14.83	0.53	1.358	2.23	79.7
5	14.83	15.15	0.32	0.530	1.77	49.6
6	15.15	15.30	0.15	0.458	2.12	73.5
7	15.30	15.38	0.08	0.227	1.68	39.3
8	15.38	15.42	0.04	0.083	2.26	79.1
9	15.42	15.64	0.22	0.390	1.68	36.4
10	15.64	15.95	0.31	0.822	2.01	67.4
11	15.95	16.11	0.16	0.280	1.74	42.7
12	16.11	16.30	0.19	0.534	2.29	80.5
13	16.30	16.55	0.25	0.551	1.82	49.8
14	16.55	16.70	0.15	0.293	2.19	75.4
15	16.70	17.30	0.60	1.134	1.69	38.7
16	17.30	17.45	0.15	0.257	2.12	72.4

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AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
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2113

ANALYSIS AND TESTING REPORT

Report No. 02/2903

Date 10 September, 1984

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270275

Copy to : Mr. T. Summons, Mr. P. Tyson, Mr. I. Johnson

RESULTS (continued)

DRILL HOLE DD84 JC-12

Sample Number	Depth (m) From	Depth (m) To	Thickness (m)	Mass (kg)	AS ANALYSED BASIS Relative Density	AS ANALYSED BASIS Ash %
17	5.05	5.20	0.15	0.156	2.14	74.0
18	5.20	5.30	0.10	0.110	2.11	64.3
19	5.30	5.66	0.36	0.508	1.71	30.6
20	5.66	5.70	0.04	0.048	2.20	79.9
21	5.70	6.12	0.42	0.423	1.68	29.4
22	21.60	21.70	0.10	0.108	2.06	66.0
23	21.70	22.30	0.60	1.013	1.56	25.7
24	23.45	23.68	0.23	0.532	1.55	25.4
25	23.68	23.70	0.02	0.045	2.27	79.1
26	23.70	24.30	0.60	0.766	1.55	24.0

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FORM 3

COAL ANALYSIS

Report No. 02/2903

Date 10 September, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
P.O. Box 83
North Ryde, N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270276

Copy to : Mr. T. Summons, Mr. P. Tyson, Mr. I. Johnson

Sample Details	DRILL HOLE DD84 PT-08 COMPOSITE SAMPLES			
	1 and 2	5 to 16 incl.	5, 7, 9, 11, 13 and 15	
As Received Basis Total Moisture %				
As Analysed Basis				
Moisture %	4.1	6.5	5.4	
Ash %	48.0	56.1	43.0	
Volatile Matter %	13.7	11.7	13.8	
Fixed Carbon %	34.2	25.7	37.8	
Sulphur † %	0.14	0.17	0.25	
Specific Energy MJ/kg	14.38	10.42	16.10	
Relative Density	1.80 *	1.88 *	1.73 *	
Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

* Calculated Result

Determinations carried out in Duplicate
Analysed in accordance with AS 1038
unless otherwise stated.

Sampled by ..... Received

THIS LABORATORY IS REGISTERED BY THE NATIONAL ASSOCIATION OF TESTING AUTHORITIES, AUSTRALIA. THE TESTS REPORTED HEREIN HAVE BEEN PERFORMED IN ACCORDANCE WITH ITS TERMS OF REGISTRATION. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL.

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

276

FORM 3

COAL ANALYSIS

Report No. 02/2903

Date 10 September, 1984

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
P.O. Box 83
North Ryde. N.S.W.
2113

Authorisation No. 2387TA

Client CRA Exploration Pty. Limited

Report to Mr. T. Dickson,
Chief Geologist,
P.O. Box 138,
ROSNY PARK, TAS. 7018

270277

Copy to : Mr. T. Summons, Mr. P. Tyson, Mr. I. Johnson

Sample Details	DRILL HOLE DD84 JC-12 COMPOSITE SAMPLES			
	17 to 21 incl.	22 and 23	24 to 26 incl.	
As Received Basis Total Moisture %				
As Analysed Basis				
Moisture %	8.9	4.2	2.7	
Ash %	43.2	32.9	26.3	
Volatile Matter %	17.0	11.4	15.3	
Fixed Carbon %	30.9	51.5	55.7	
Sulphur † %	0.25	0.23	0.28	
Specific Energy MJ/kg	12.78	20.84	23.90	
Relative Density	1.81 *	1.63 *	1.57 *	
Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

* Calculated Result

Determinations carried out in Duplicate
Analysed in accordance with AS 1038 unless otherwise stated.

Sampled by ..... Received

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AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
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277

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Report to Mr. T. Dickson,
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P.O. Box 138,
ROSNY PARK, TAS. 7018

270278

Copy to : Mr. T. Summons, Mr. P. Tyson, Mr. I. Johnson

DRILL HOLE DD84 JC-12 COMPOSITE SAMPLES

Sample Details	19 and 21	23	24 and 26	
As Received Basis Total Moisture %				
As Analysed Basis				
Moisture %	10.0	4.3	2.8	
Ash %	29.8	25.7	24.5	
Volatile Matter %	19.8	12.6	15.2	
Fixed Carbon %	40.4	57.4	57.5	
Sulphur † %	0.33	0.27	0.30	
Specific Energy MJ/kg	16.68	23.44	24.66	
Relative Density	1.69 *	1.56	1.55 *	
Fusibility Temperatures				
Deformation °C				
Spherical °C				
Hemisphere °C				
Flow °C				

† LECO High Temperature Method

* Calculated Result

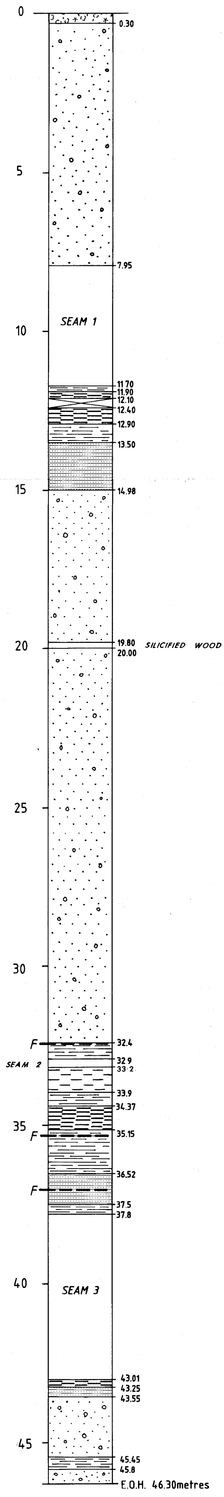
Determinations carried out in Duplicate
Analysed in accordance with AS 1038
unless otherwise stated.

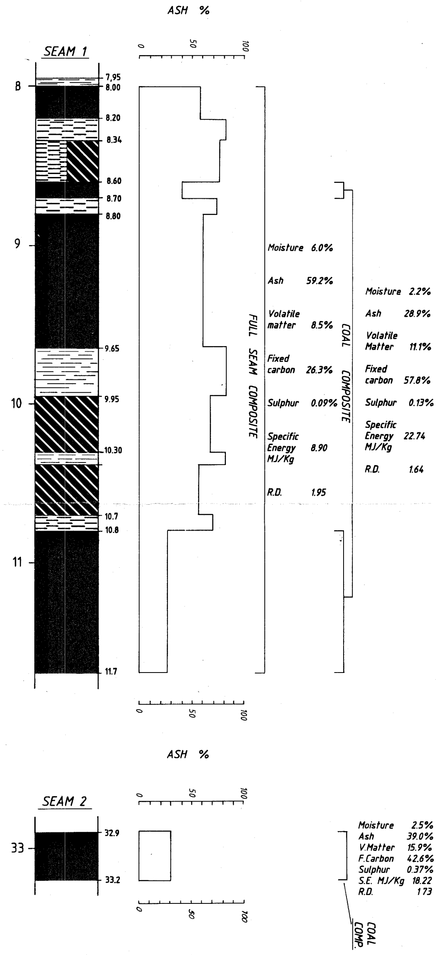
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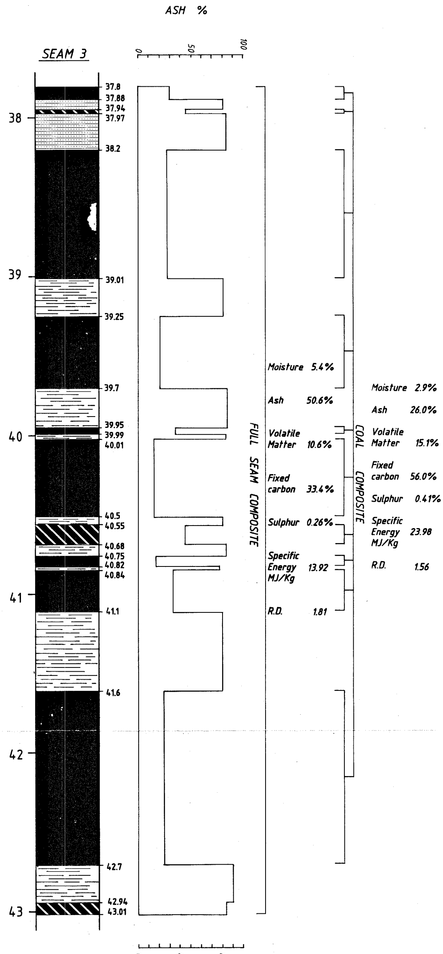
THIS LABORATORY IS REGISTERED BY THE NATIONAL ASSOCIATION OF TESTING AUTHORITIES, AUSTRALIA. THE TESTS REPORTED HEREIN HAVE BEEN PERFORMED IN ACCORDANCE WITH ITS TERMS OF REGISTRATION. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL.

AUSTRALIAN COAL INDUSTRY RESEARCH LABORATORIES LTD.
Maitland Laboratory

DD 84 PT 10







LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; MUDSTONE; TUFF; SILTSTONE; LITHIC; SUB LITHIC; QUARTZ; SANDSTONE

JURASSIC — DOLERITE

270279

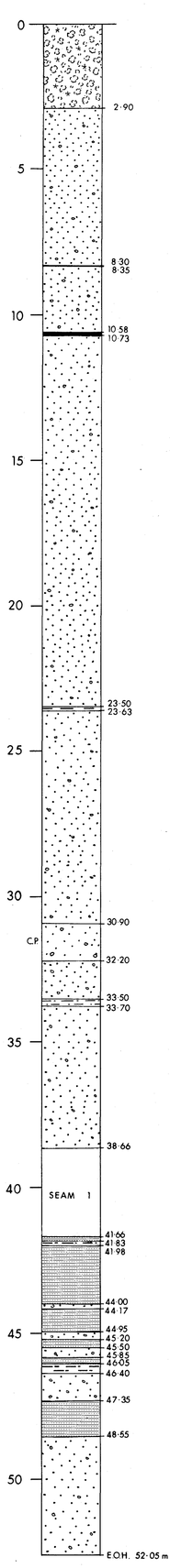
5 cm

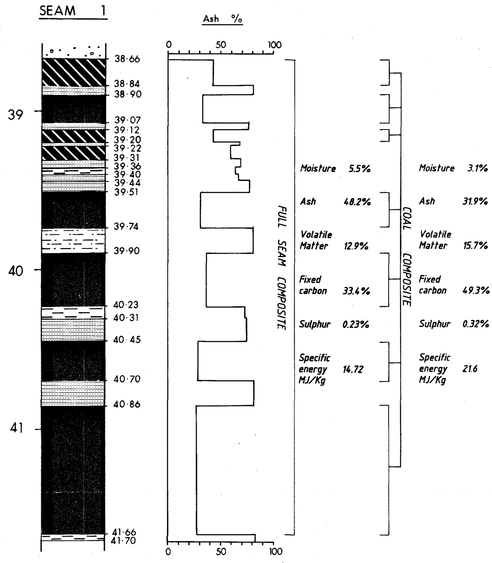
CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82
DD 84 PT 10
GRAPHIC LOG & SEAM SECTIONS 001

REF.	SK55 - 6	84-2294 vol 2/3.	
SCALE	As Shown	DRAWN	R.T.
AUTHOR	T. G. S.	REPORT No.	12961
DATE	9 - 10 - 1984	PLAN No. TASh	2147

DD 84 PT 11





LEGEND

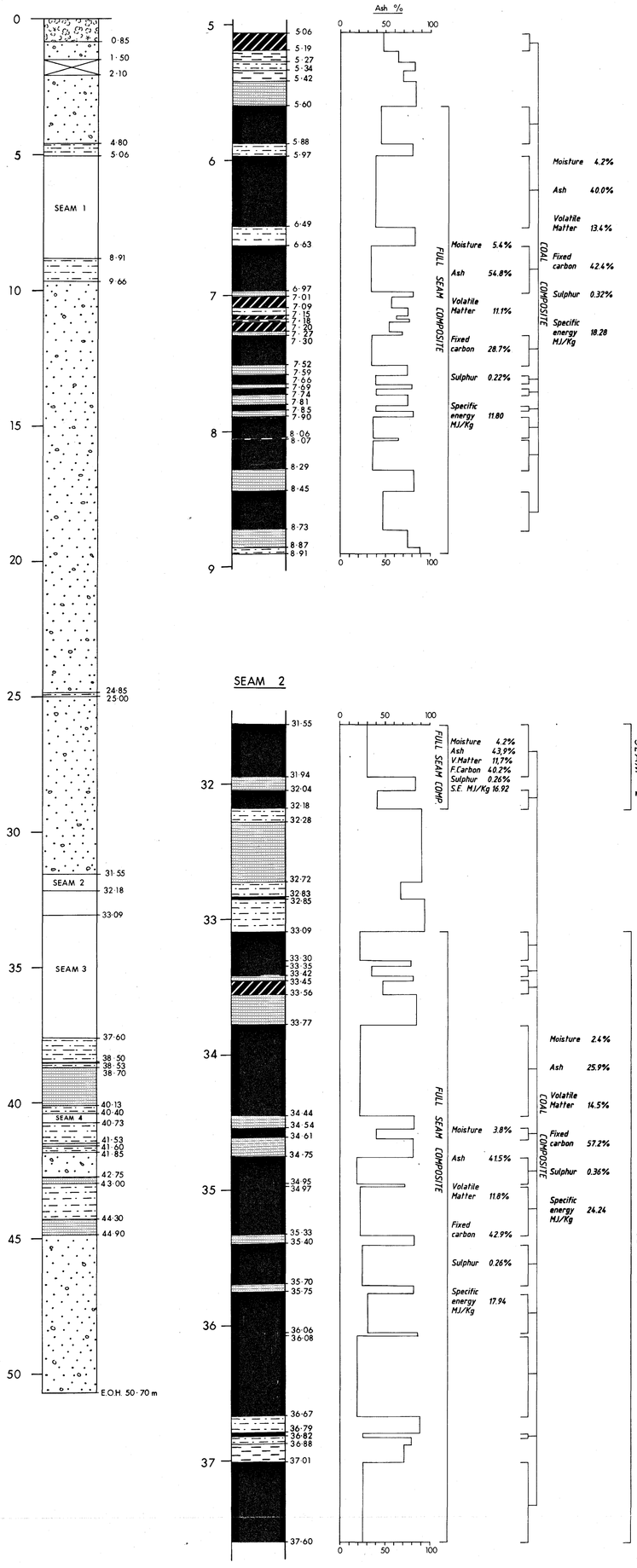
- QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)
- TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT
- TRIASSIC — COAL; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; MUDSTONE; TUFF; SILTSTONE; SANDSTONE (LITHIC; SUB LITHIC; QUARTZ)
- JURASSIC — DOLERITE

270280

5 cm

CRA EXPLORATION PTY. LIMITED		
PARATTAH E.L. 18/82 DD 84 PT 11 GRAPHIC LOG & SEAM SECTIONS		002
REF. SK55 - 3	84-2294 Vol 2/2	
SCALE AS SHOWN	DRAWN D.L.	
AUTHOR T.G.S.	REPORT No. 12961	
DATE 9 - 10 - 1984	PLAN No. TASh 2148	

DD 84 PT 12



LEGEND

- QUATERNARY: CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)
- TERTIARY: LIGNITE; CLAYS; SAND / SANDSTONE; BASALT
- TRIASSIC: COAL; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; MUDSTONE; TUFF; SILTSTONE; LITHIC; SUB LITHIC; QUARTZ (SANDSTONE)
- JURASSIC: DOLERITE

27028S1

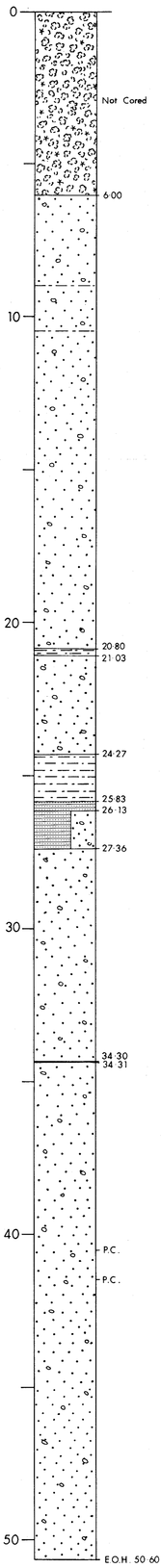
5 cm

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82
DD 84 PT 12
GRAPHIC LOG & SEAM SECTIONS
003

REF.	SK55 - 6	84-229L VOL 2/3.	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	9 - 10 - 1984	PLAN No.	TASh 2149

DD 84 PT 14



LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

COAL > 90 % brightness
COAL 60 - 90 % brightness
COAL 40 - 60 % brightness
COAL 10 - 40 % brightness
COAL 1 - 10 % brightness
COAL < 1 % brightness
HEAVY DULL COAL
CARBONACEOUS MUDSTONE
CARBONACEOUS SHALE
CARBONACEOUS SILTSTONE
MUDSTONE
TUFF
SILTSTONE SHALE
LITHIC
SUB LITHIC
QUARTZ
SANDSTONE

TRIASSIC

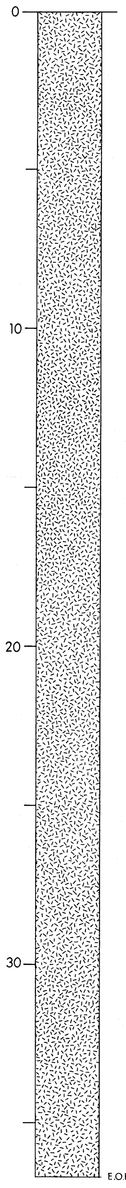
JURASSIC — DOLERITE

270282

5 cm

CRA EXPLORATION PTY. LIMITED			
PARATTAH E.L. 18/82 DD 84 PT 14 GRAPHIC LOG & SEAM SECTIONS			004
REF.	SK55 - 6	84-2294 vol 2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S	REPORT No.	12961
DATE	31 - 10 - 1984	PLAN No. TASh	2186

DD 84 PT 15



LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL > 90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE / SHALE; LITHIC; SUB LITHIC; QUARTZ — SANDSTONE

JURASSIC — DOLERITE

270283

5 cm

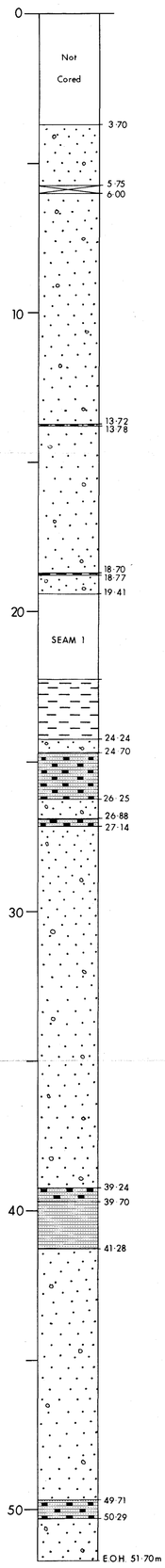
CRA EXPLORATION PTY. LIMITED

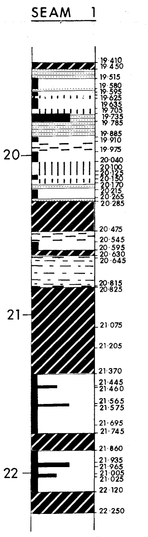
PARATTAH E.L. 18/82
DD 84 PT 15
GRAPHIC LOG & SEAM SECTIONS

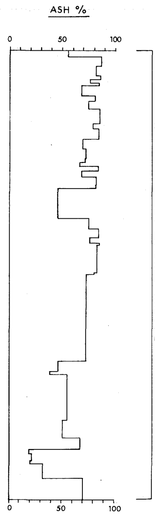
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REF.	SK55 - 6	84-229-L vol 2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	9 - 11 - 1984	PLAN No. TASh	2194

DD 84 PT 16







LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL > 90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE; LITHIC; SUB LITHIC; QUARTZ — SANDSTONE

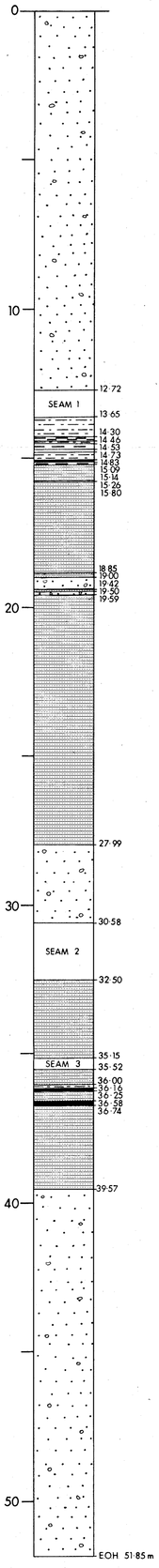
JURASSIC — DOLERITE

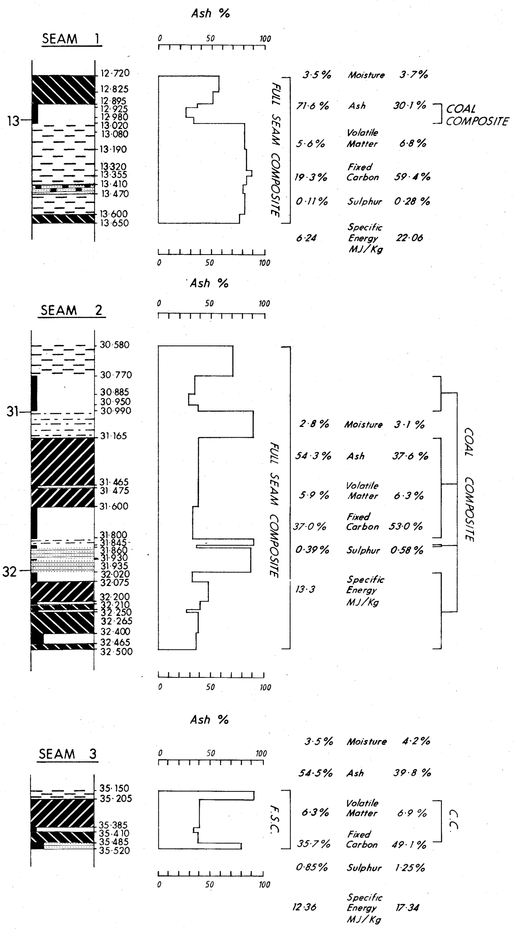
270284

5 cm

CRA EXPLORATION PTY. LIMITED		
PARATTAH E.L. 18/82 DD 84 PT 16 GRAPHIC LOG & SEAM SECTIONS		006
REF. SK55 - 6	84-2294 vol 2/3	
SCALE AS SHOWN	DRAWN D.L.	
AUTHOR J.L.	REPORT No. 12961	
DATE 16 - 10 - 1984	PLAN No. TASh 2151	

DD 84 PT 18





LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL > 90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE; LITHIC; SUB LITHIC; QUARTZ — SANDSTONE

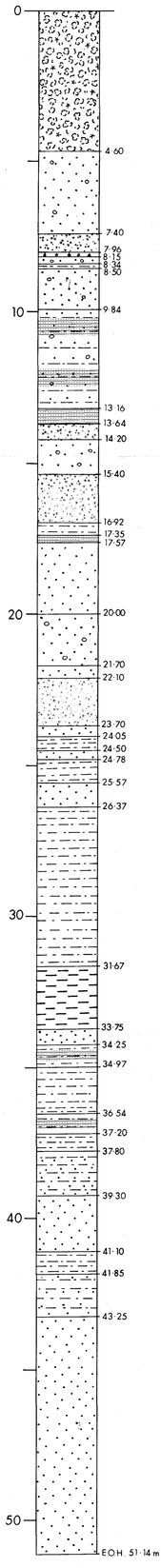
JURASSIC — DOLERITE

270285

5 cm

CRA EXPLORATION PTY. LIMITED			
PARATTAH E.L. 18/82 DD 84 PT 18 . GRAPHIC LOG & SEAM SECTIONS			007
REF.	SK55 - 6	84-2294 vol 2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	J. L.	REPORT No.	12961
DATE	16 - 10 - 1984	PLAN No. TASh	2152

DD 84 PT 19



LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL > 90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE / SHALE; LITHIC; SUB LITHIC; QUARTZ — SANDSTONE

JURASSIC — DOLERITE

270286

5 cm

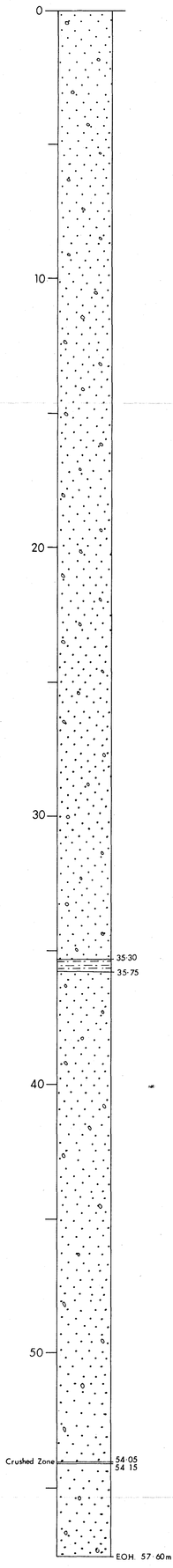
CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82
DD 84 PT 19
GRAPHIC LOG & SEAM SECTIONS

008

REF.	SK55 - 6	84-2294 VOL 3/2	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	19 - 10 - 1994	PLAN No. TASh	2177

DD 84 PT 20



LEGEND

QUATERNARY — (CLAYS, SAND & GRAVEL (INCLUDING DOLERITE))

TERTIARY — IGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL > 90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE SHALE; LITHIC; SUB LITHIC; QUARTZ — SANDSTONE

JURASSIC — DOLERITE

270287

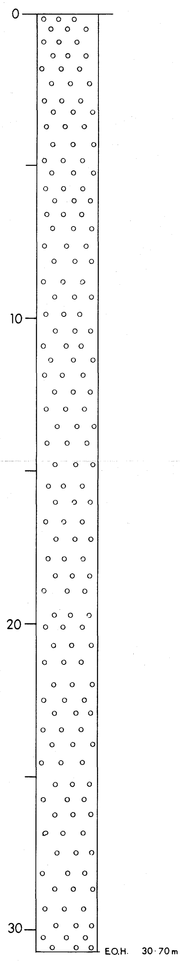
5 cm

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82
DD 84 PT 20
GRAPHIC LOG & SEAM SECTIONS
009

REF.	SK55 - 6 82-229Z VOL 2/2		
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	31 - 10 - 1984	PLAN No. TASh	2187

DD 84 PT 21



LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL > 90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE / SHALE; LITHIC; SUB-LITHIC; QUARTZ — SANDSTONE

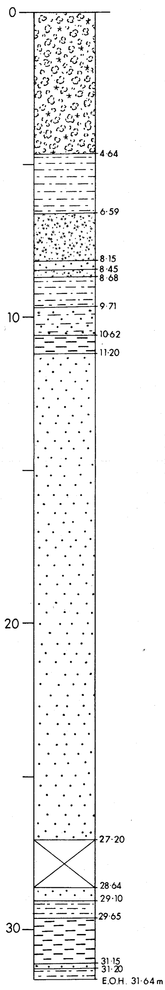
JURASSIC — DOLERITE

270288

5 cm

CRA EXPLORATION PTY. LIMITED			
PARATTAH E.L. 18/82 DD 84 PT 21 GRAPHIC LOG & SEAM SECTIONS			010
REF.	SK55 - 6	84-2254 VOL 2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	9 - 11 - 1984	PLAN No.	TASh 2195

DD 84 PT 22



LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL > 90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE/SHALE; LITHIC; SUB LITHIC; QUARTZ — SANDSTONE

JURASSIC — DOLERITE

270289

5 cm

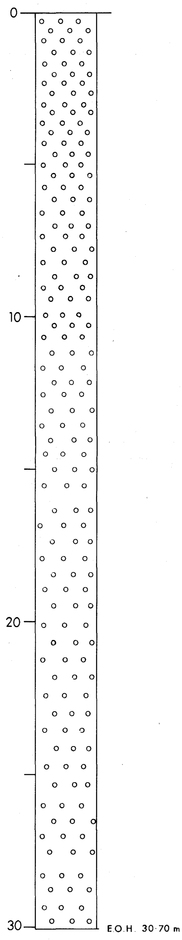
CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82
DD 84 PT 22
GRAPHIC LOG & SEAM SECTIONS

011

REF.	SK55 - 6	RL-2294 VOL 2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	19 - 10 - 1984	PLAN No. TASh	2178

DD 84 PT 23



LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL >90 % brightness; COAL 80 % brightness; COAL 60 % brightness; COAL 40 % brightness; COAL 10 % brightness; COAL < 7 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE / SHALE; LITHIC; SUB LITHIC / SANDSTONE; QUARTZ

JURASSIC — DOLERITE

270290

5 cm

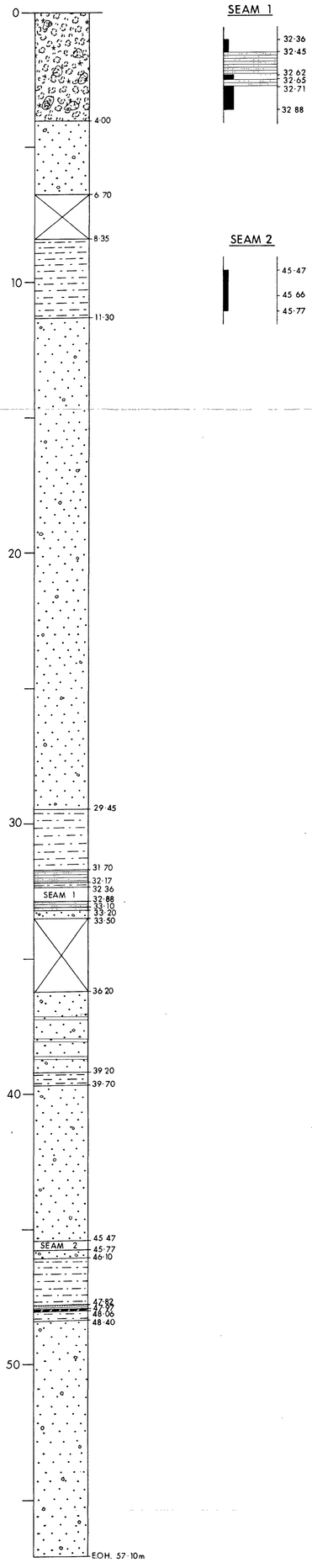
CRA EXPLORATION PTY. LIMITED

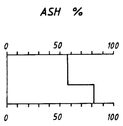
PARATTAH E.L. 18/82
DD 84 PT 23
GRAPHIC LOG & SEAM SECTIONS

012

REF.	SK55 - 6	84-2294 vol 2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	9 - 11 - 1984	PLAN No. TASh	2196

DD 84 PT 24





0·9%	Moisture
58.2%	Ash
9.9%	Volatile Matter
31.0%	Fixed Carbon
0.24%	Sulphur
14.04	Specific Energy MJ/Kg

LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL > 90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE SHALE; LITHIC; SUB LITHIC; QUARTZ — SANDSTONE

JURASSIC — DOLERITE

270291

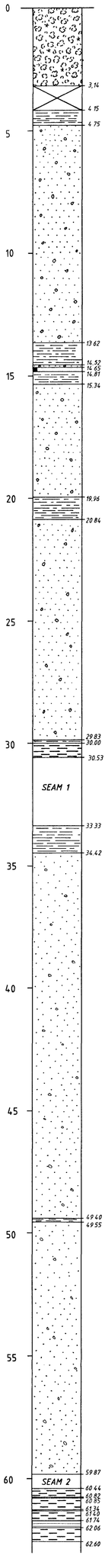
5 cm

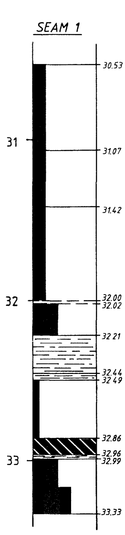
CRA EXPLORATION PTY. LIMITED

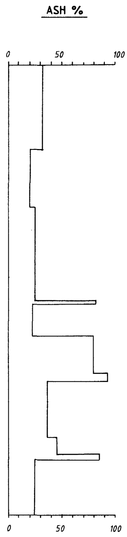
PARATTAH E.L. 18/82
DD 84 PT 24
GRAPHIC LOG & SEAM SECTIONS 013

REF.	SK55 - 6	SL-2284 vol 2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	31 - 10 - 1984	PLAN No. TASh	2188

DD 84 PT 25



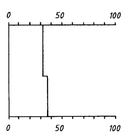




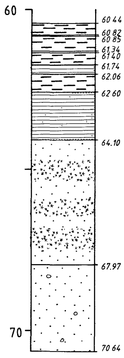
2.1%	Moisture	2.4%
38.1%	Ash	28.9%
10.5%	Volatile Matter	11.5%
49.3%	Fixed Carbon	57.2%
0.30%	Sulphur	0.35%
19.86	Specific Energy MJ/Kg	23.02

COAL COMPOSITE





4.3%	Moisture
33.5%	Ash
6.3%	Volatile Matter
55.9%	Fixed Carbon
0.63%	Sulphur
20.12	Specific Energy MJ/Kg



LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL > 90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE; LITHIC SUB LITHIC QUARTZ — SANDSTONE

JURASSIC — DOLERITE

270292

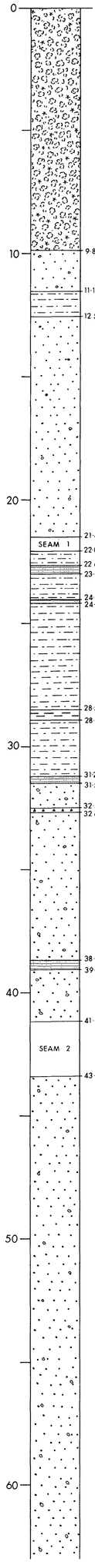
5 cm

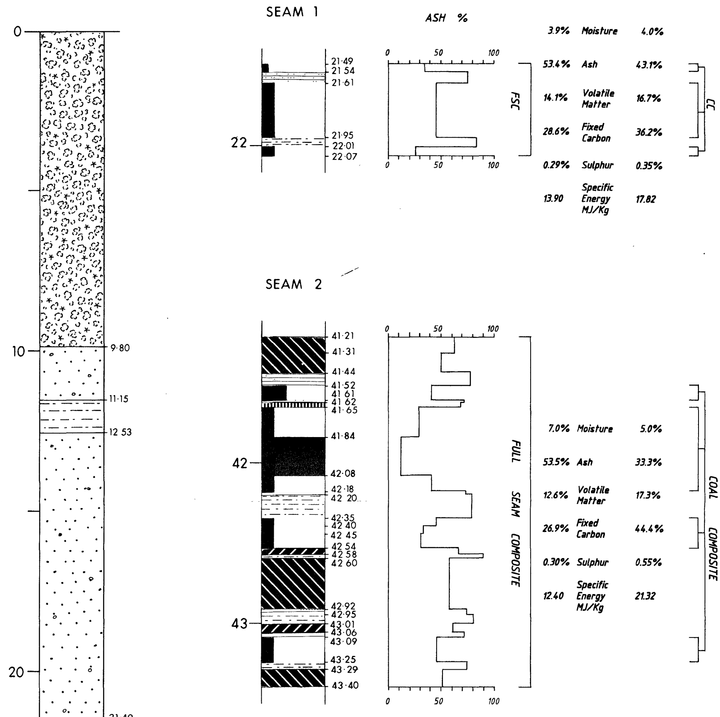
CRA EXPLORATION PTY. LIMITED

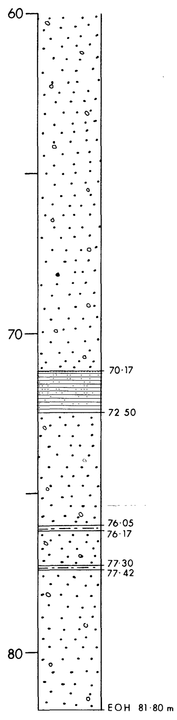
PARATTAH E.L. 18/82
DD 84 PT 25
GRAPHIC LOG & SEAM SECTIONS
014

REF.	SK55 - 6	84-2254 vol 2/3	
SCALE	AS SHOWN	DRAWN	R.T.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	16 - 10 - 1984	PLAN No.	TASh 2153

DD 84 PT 26







LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL >90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE / SHALE; LITHIC; SUB LITHIC - SANDSTONE; QUARTZ

JURASSIC — DOLERITE

270293

5 cm

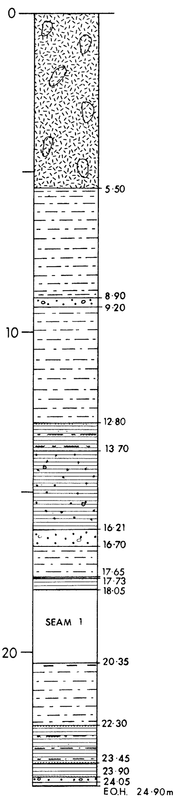
CRA EXPLORATION PTY. LIMITED

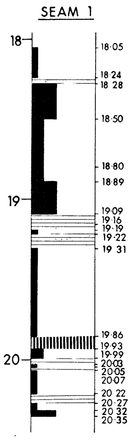
PARATTAH E.L. 18/82
DD 84 PT 26
GRAPHIC LOG & SEAM SECTIONS

015

REF.	SK55 - 6 BL-2294 vol 2/3		
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	19 - 10 - 1984	PLAN No. TASh	2179

DD 84 PT 27





LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL > 90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE/SHALE; LITHIC; SUB LITHIC; QUARTZ — SANDSTONE

JURASSIC — DOLERITE

270294

5 cm

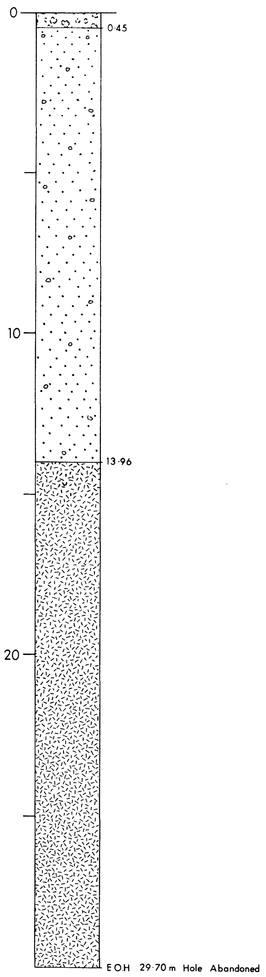
CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82
DD 84 PT 27
GRAPHIC LOG & SEAM SECTIONS

016

REF.	SK55 - 6	84/234 vol 3/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	31 - 10 - 1984	PLAN No. TASh	2189

DD 84 PT 28



LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL >90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE/SHALE; LITHIC; SUB LITHIC; QUARTZ — SANDSTONE

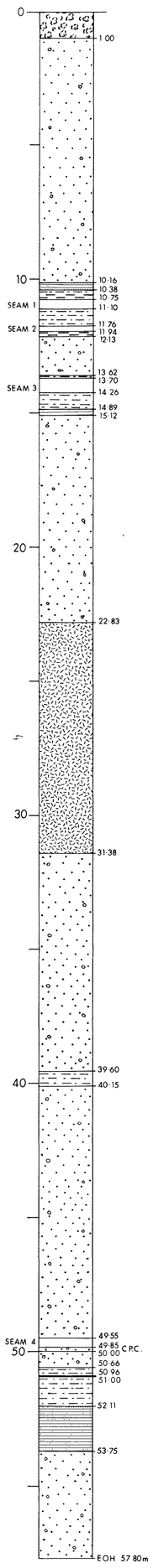
JURASSIC — DOLERITE

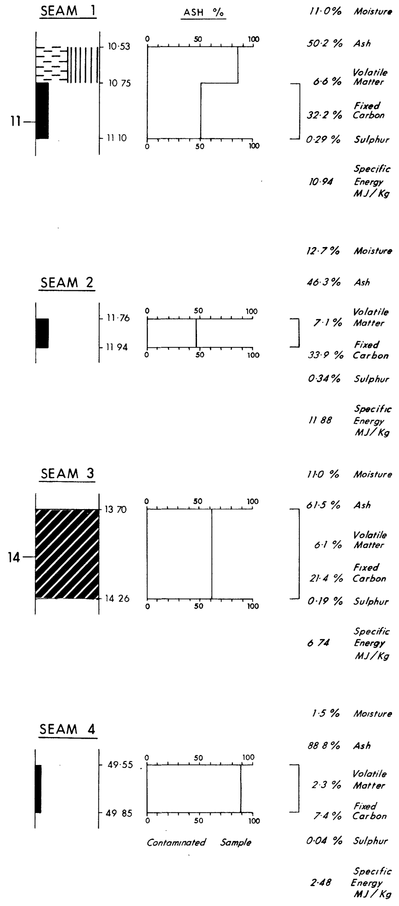
270295

5 cm

CRA EXPLORATION PTY. LIMITED			
PARATTAH E.L. 18/82 DD 84 PT 28 GRAPHIC LOG & SEAM SECTIONS			017
REF.	SK55 - 6 84-229 vol 2/3		
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	9 - 11 - 1984	PLAN No. TASh	2197

DD 84 PT 30





LEGEND

QUATERNARY
- CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY
- LIGNITE
- CLAYS
- SAND / SANDSTONE
- BASALT

TRIASSIC
- COAL > 90 % brightness
- COAL 60 - 90 % brightness
- COAL 40 - 60 % brightness
- COAL 10 - 40 % brightness
- COAL 1 - 10 % brightness
- COAL < 1 % brightness
- HEAVY DULL COAL
- CARBONACEOUS MUDSTONE
- CARBONACEOUS SHALE
- CARBONACEOUS SILTSTONE
- MUDSTONE
- TUFF
- SILTSTONE SHALE
- SANDSTONE: LITHIC, SUB LITHIC, QUARTZ

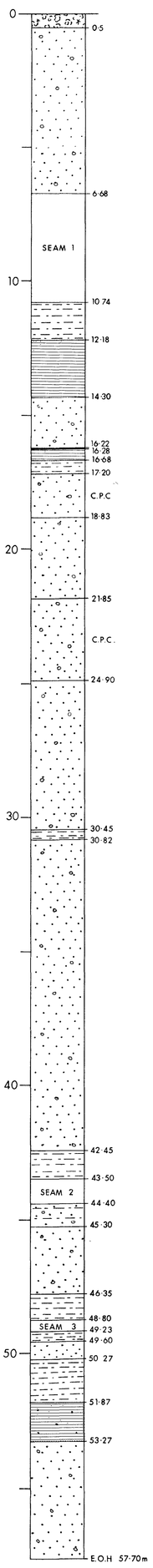
JURASSIC
- DOLERITE

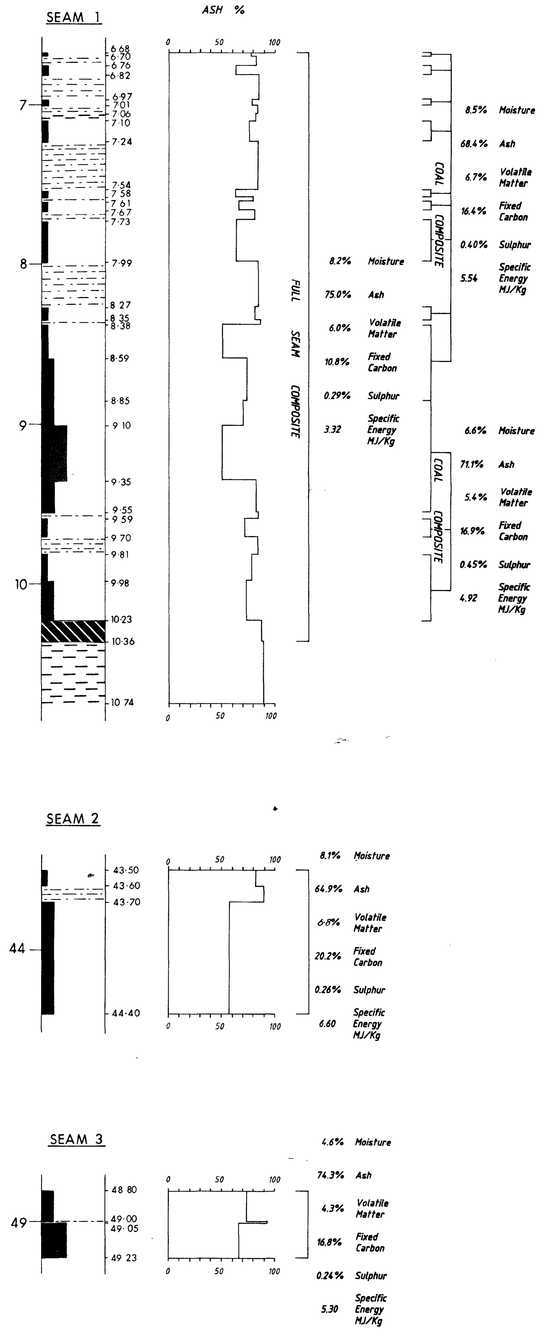
270296

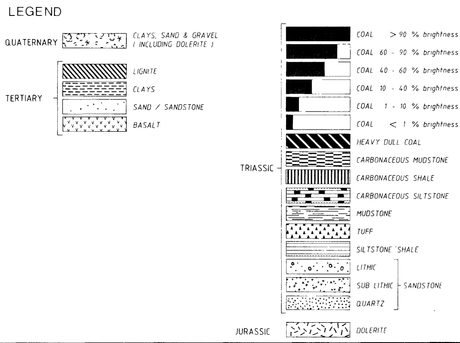
5 cm

CRA EXPLORATION PTY. LIMITED		
PARATTAH E.L. 18/82 DD 84 PT 30 GRAPHIC LOG & SEAM SECTIONS		018
REF.	SK55 - 6	84-2296 vol 2/3
SCALE	AS SHOWN	DRAWN D.L.
AUTHOR	T.G.S.	REPORT No. 12961
DATE	31 - 10 - 1984	PLAN No. TASh 2190

DD 84 PT 31







270297

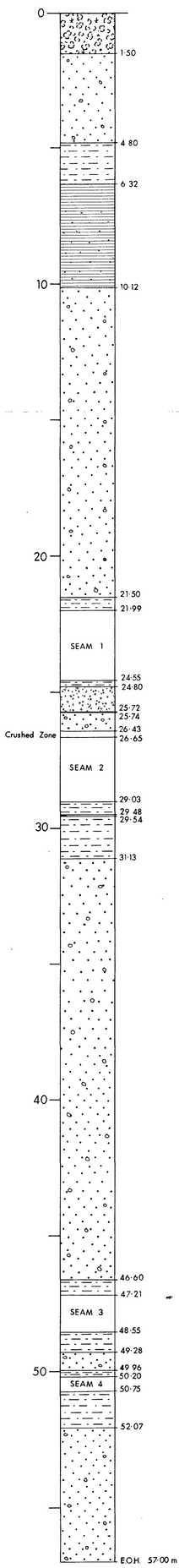
5 cm

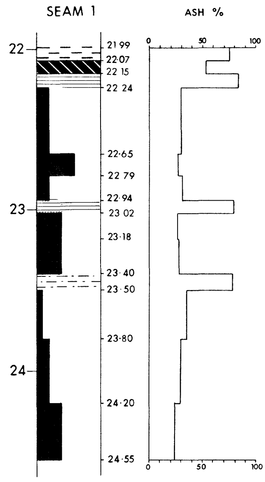
CRA EXPLORATION PTY. LIMITED

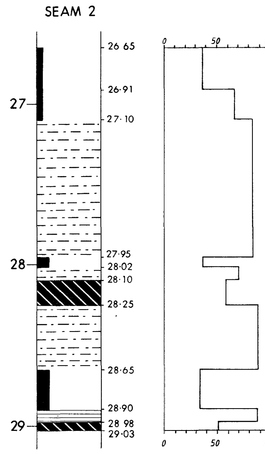
PARATTAH E.L. 18/82
DD 84 PT 31
GRAPHIC LOG & SEAM SECTIONS 019

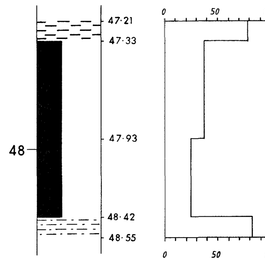
REF.	SK55 - 6	82-229-4 vol 2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	31 - 10 - 1984	PLAN No. TASh	2191

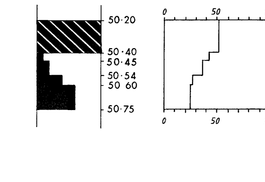
DD 84 PT 32



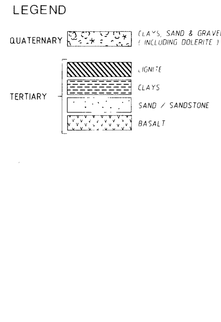








LEGEND

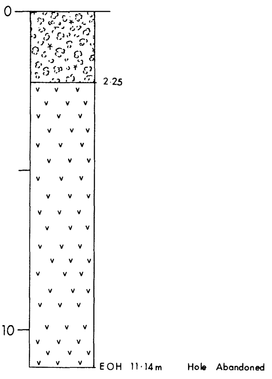


270298

5 cm

CRA EXPLORATION PTY. LIMITED			
PARATTAH E.L. 18/82 DD 84 PT 32 GRAPHIC LOG & SEAM SECTIONS			020
REF.	SK55 - 6	84-2254	0123
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	9 - 11 - 1984	PLAN No. TASh	2198

DD 84 PT 33



LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL > 90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE / SHALE; SANDSTONE (LITHIC; SUB LITHIC; QUARTZ)

JURASSIC — DOLERITE

270299

5 cm

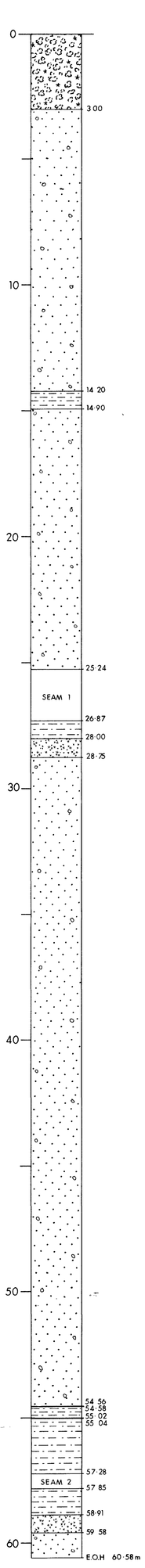
CRA EXPLORATION PTY. LIMITED

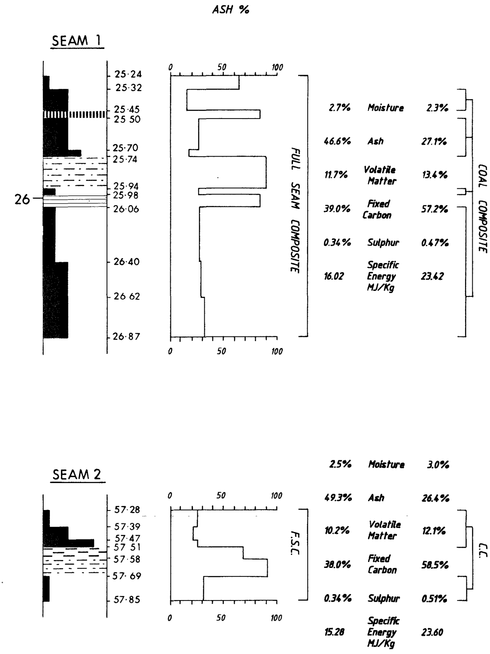
PARATTAH E.L. 18/82
DD 84 PT 33
GRAPHIC LOG &
SEAM SECTIONS

021

REF.	SK55 - 6	SL-2294 vol 2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	9 - 11 - 1984	PLAN No. TASh	2199

DD 84 PT 34





LEGEND

QUATERNARY — (CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL >90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE/SHALE; SANDSTONE (LITHIC; SUB LITHIC; QUARTZ)

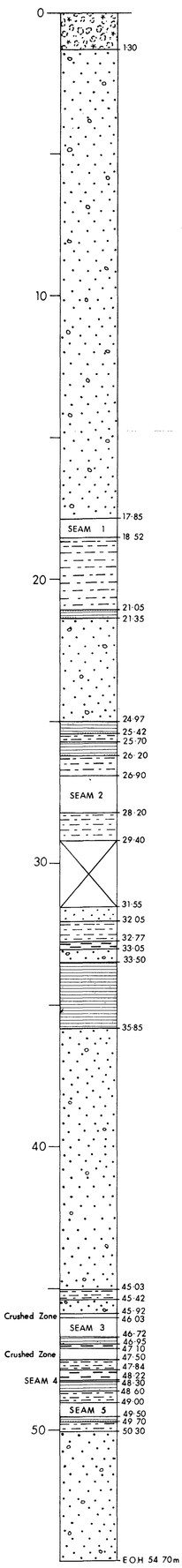
JURASSIC — DOLERITE

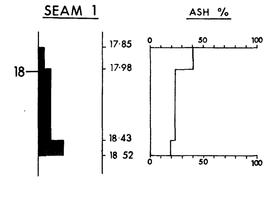
270300

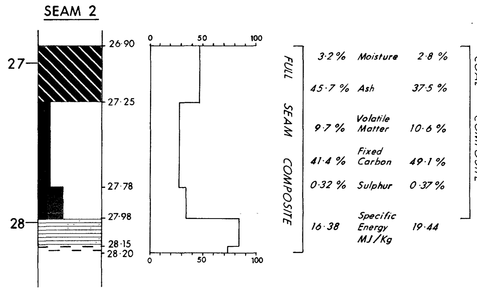
5 cm

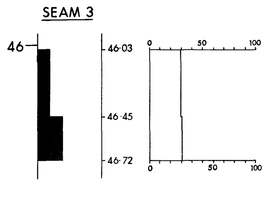
CRA EXPLORATION PTY. LIMITED			
PARATTAH E.L. 18/82 DD 84 PT 34 GRAPHIC LOG & SEAM SECTIONS			022
REF.	SK55 - 6	BL-2294, 10/2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	9 - 11 - 1984	PLAN No. TASh	2200

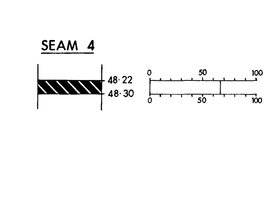
DD 84 PT 35

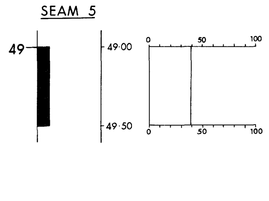












LEGEND

QUATERNARY

TERTIARY

TRIASSIC

MUDSTONE

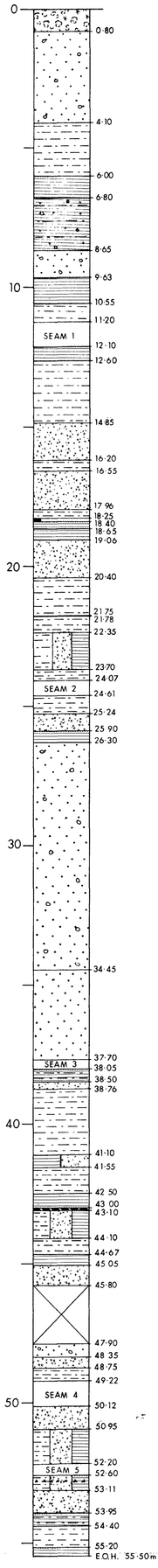
TUFF

270301

5 cm

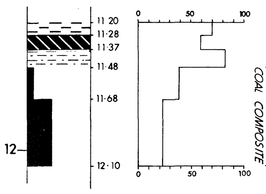
CRA EXPLORATION PTY. LIMITED	
PARATTAH E.L. 18/82 DD 84 PT 35 GRAPHIC LOG & SEAM SECTIONS	023
REF. SK55 - 6	84-2294 VOL 2/3
SCALE AS SHOWN	DRAWN D.L.
AUTHOR T. G. S.	REPORT No. 12961
DATE 30 - 10 - 1984	PLAN No. TASh 2192

DD 84 PT 36



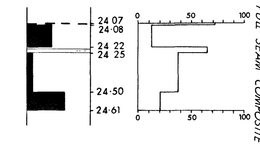
SEAM 1

ASH %



2·8 %	Moisture
28·7 %	Ash
12·9 %	Volatile Matter
55·6 %	Fixed Carbon
0·39 %	Sulphur
22·50	Specific Energy MJ/Kg

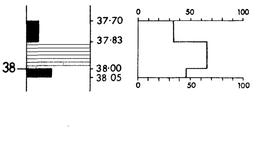
SEAM 2



3·7 %	Moisture	3·7 %
31·1 %	Ash	28·5 %
10·7 %	Volatile Matter	10·7 %
54·5 %	Fixed Carbon	57·1 %
0·56 %	Sulphur	0·57 %
22·20	Specific Energy MJ/Kg	23·26

COAL COMPOSITE

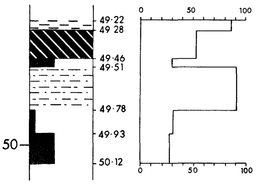
SEAM 3



4·7 %	Moisture	3·1 %
52·1 %	Ash	37·6 %
8·7 %	Volatile Matter	9·2 %
34·5 %	Fixed Carbon	50·1 %
0·40 %	Sulphur	0·55 %
13·66	Specific Energy MJ/Kg	20·20

COAL COMPOSITE

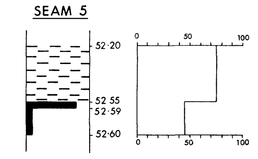
SEAM 4



2·6 %	Moisture	3·3 %
59·0 %	Ash	29·4 %
5·8 %	Volatile Matter	7·2 %
32·6 %	Fixed Carbon	60·1 %
0·30 %	Sulphur	0·63 %
12·50	Specific Energy MJ/Kg	23·24

COAL COMPOSITE

SEAM 5



3·7 %	Moisture	1·4 %
71·1 %	Ash	45·6 %
5·4 %	Volatile Matter	8·9 %
19·8 %	Fixed Carbon	44·1 %
0·14 %	Sulphur	0·43 %
7·10	Specific Energy MJ/Kg	17·20

COAL COMPOSITE

LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — IGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL >90 % brightness; COAL 60 - 90 % brightness; AL 40 - 60 % brightness; AL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE/SHALE; LITHIC; SUB LITHIC; QUARTZ — SANDSTONE

JURASSIC — DOLERITE

270302

5 cm

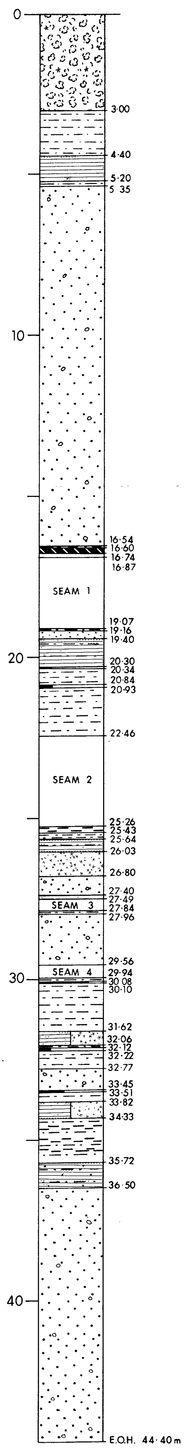
CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82
DD 84 PT 36
GRAPHIC LOG & SEAM SECTIONS

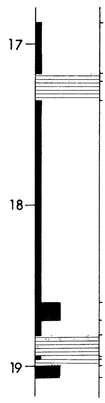
024

REF.	SK55 - 6	BL-2204 VOL 2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	9 - 11 - 1984	PLAN No. TASh	2001

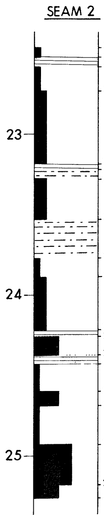
DD 84 PT 37



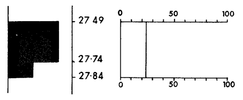
SEAM 1



SEAM 2

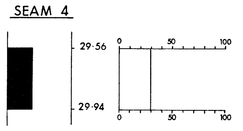


SEAM 3



2·4 % Moisture
23·8 % Ash
8·9 % Volatile Matter
64·9 % Fixed Carbon
0·37 % Sulphur
25·92 Specific Energy MJ/Kg

SEAM 4



2·4 % Moisture
29·3 % Ash
9·0 % Volatile Matter
58·6 % Fixed Carbon
0·33 % Sulphur
22·96 Specific Energy MJ/Kg

LEGEND

QUATERNARY
- CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY
- LIGNITE
- CLAYS
- SAND / SANDSTONE
- BASALT

TRIASSIC
- COAL > 90 % brightness
- COAL 60 - 90 % brightness
- COAL 40 - 60 % brightness
- COAL 10 - 40 % brightness
- COAL 1 - 10 % brightness
- COAL < 1 % brightness
- HEAVY DULL COAL
- CARBONACEOUS MUDSTONE
- CARBONACEOUS SHALE
- CARBONACEOUS SILTSTONE
- MUDSTONE
- TUFF
- SILTSTONE/SHALE
- LITHIC
- SUB LITHIC — SANDSTONE
- QUARTZ

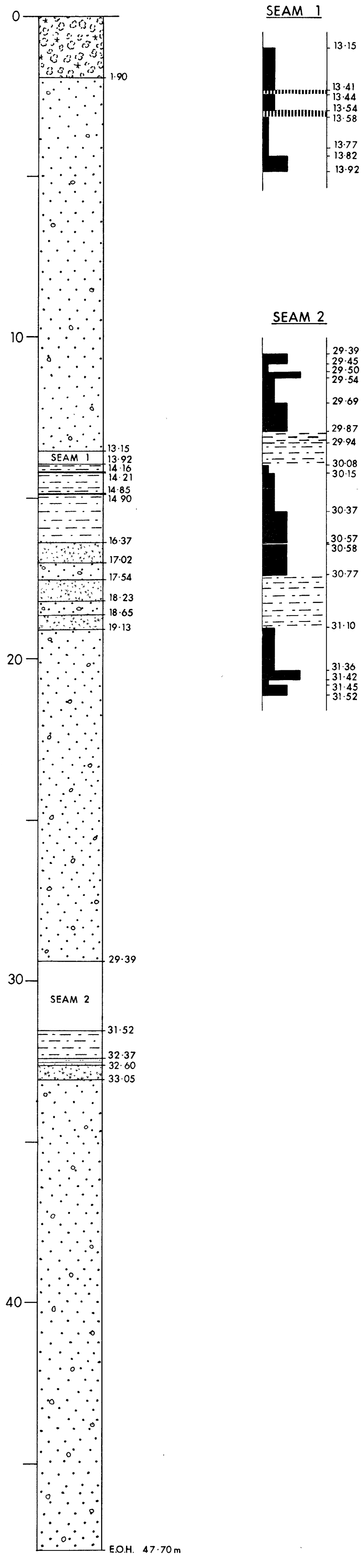
JURASSIC
- DOLERITE

270303

5 cm

CRA EXPLORATION PTY. LIMITED			
PARATTAH E.L. 18/82 DD 84 PT 37 GRAPHIC LOG & SEAM SECTIONS			025
REF.	SKSS - 6	R-2296 vol 2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	9 - 11 - 1984	PLAN No. TASh	2202

DD 84 PT 38



LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL > 90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE/SHALE; LITHIC; SUB LITHIC; QUARTZ — SANDSTONE

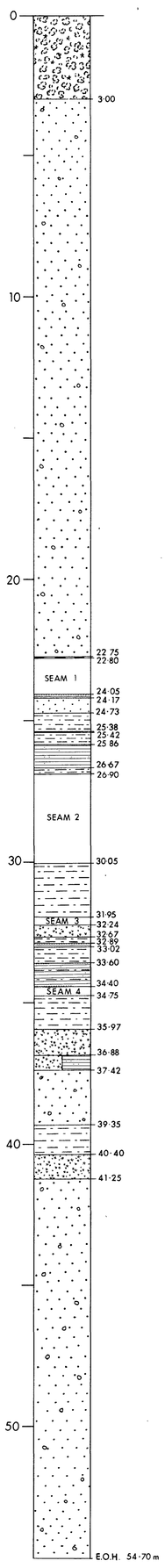
JURASSIC — DOLERITE

27,0304

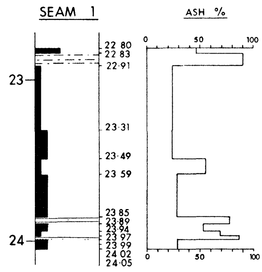
5 cm

CRA EXPLORATION PTY. LIMITED		
PARATTAH E.L. 18/82 DD 84 PT 38 GRAPHIC LOG & SEAM SECTIONS		026
REF. SK55 - 6	84-2284 VOL 2/3	
SCALE AS SHOWN	DRAWN D.L.	
AUTHOR T.G.S.	REPORT No. 12961	
DATE 31 - 10 - 1984	PLAN No. TASh 2193	

DD 84 PT 39

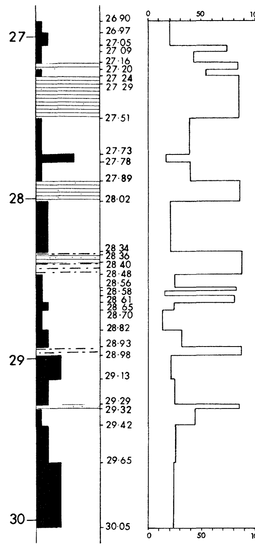


SEAM 1



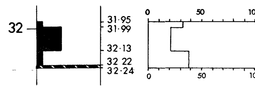
2·8 %	Moisture	2·3 %	COAL COMPOSITE
40·3 %	Ash	25·9 %	
11·3 %	Volatile Matter	13·1 %	
45·6 %	Fixed Carbon	58·7 %	
0·25 %	Sulphur	0·32 %	
18·56	Specific Energy MJ/Kg	23·78	

SEAM 2



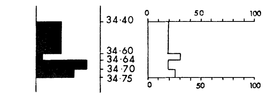
4·6 %	Moisture	3·1 %	COAL COMPOSITE
45·5 %	Ash	26·6 %	
8·9 %	Volatile Matter	11·2 %	
41·0 %	Fixed Carbon	59·1 %	
0·23 %	Sulphur	0·34 %	
16·08	Specific Energy MJ/Kg	23·70	

SEAM 3



2·6 %	Moisture	
29·8 %	Ash	
100 %	Volatile Matter	
57·6 %	Fixed Carbon	
0·39 %	Sulphur	
22·88	Specific Energy MJ/Kg	

SEAM 4



2·6 %	Moisture	
21·0 %	Ash	
9·6 %	Volatile Matter	
66·8 %	Fixed Carbon	
0·49 %	Sulphur	
26·20	Specific Energy MJ/Kg	

LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL >90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE/SHALE; LITHIC; SUB LITHIC; QUARTZ — SANDSTONE

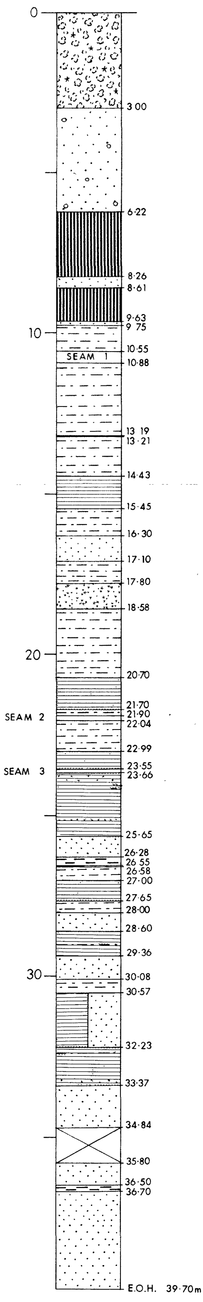
JURASSIC — DOLERITE

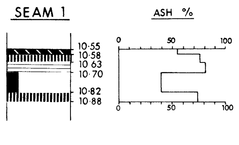
270305

5 cm

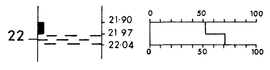
CRA EXPLORATION PTY. LIMITED			
PARATTAH E.L. 18/82 DD 84 PT 39 GRAPHIC LOG & SEAM SECTIONS			027
REF.	SKSS - 6	R. 22914 vol 2/3	
SCALE	AS SHOWN	DRAWN D.L.	
AUTHOR	T.G.S.	REPORT No. 12961	
DATE	9 - 11 - 1984	PLAN No. TASh 2203	

DD 84 PT 40

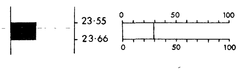




4·0 % Moisture
40·6 % Ash
9·7 % Volatile Matter
45·7 % Fixed Carbon
0·55 % Sulphur
18·20 Specific Energy MJ/Kg



1·9 % Moisture
51·5 % Ash
10·2 % Volatile Matter
36·4 % Carbon
0·31 % Sulphur
14·42 Specific Energy MJ/Kg



2·5 % Moisture
29·1 % Ash
11·2 % Volatile Matter
57·2 % Carbon
0·74 % Sulphur
22·78 Specific Energy MJ/Kg

LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL, INCLUDING SOIL PROFILE
TERTIARY — SILT
CLAYS
SAND / SANDSTONE
BASALT

COAL > 95 % brightness
COAL 60 - 95 % brightness
COAL 40 - 60 % brightness
COAL 10 - 40 % brightness
COAL 1 - 10 % brightness
COAL < 1 % brightness
HEAVY DULL COAL
CARBONACEOUS MUDSTONE
TRIASSIC — CARBONACEOUS SHALE
CARBONACEOUS SILTSTONE
MUDSTONE
TUFF
SILTSTONE SHALE
LITHIC
SUB LITHIC — SANDSTONE
QUARTZ
JURASSIC — DOLERITE

270306

5 cm

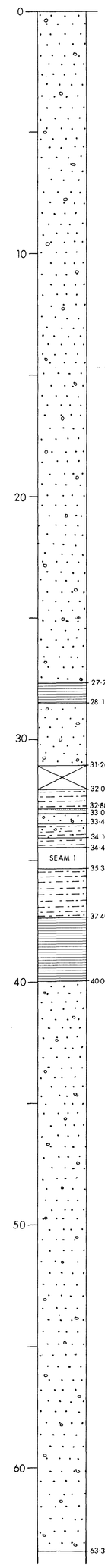
CRA EXPLORATION PTY. LIMITED

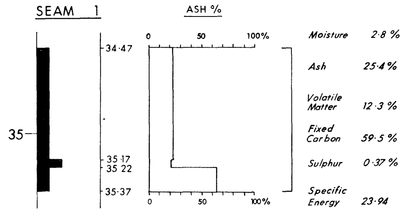
PARATTAH E.L. 18/82
DD 84 PT 40
GRAPHIC LOG & SEAM SECTIONS

028

REF.	SK55 - 6	84-22-SL4 vol 2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	9 - 11 - 1984	PLAN No. TASh	2204

MINES DEPT. BOREHOLE YP 2 (0 - 60m)





LEGEND

QUATERNARY — (CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL >90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE / SHALE; LITHIC; SUB LITHIC SANDSTONE; QUARTZ

JURASSIC — DOLERITE

270307

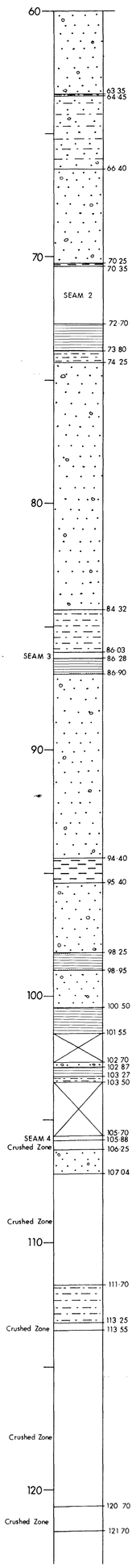
5 cm

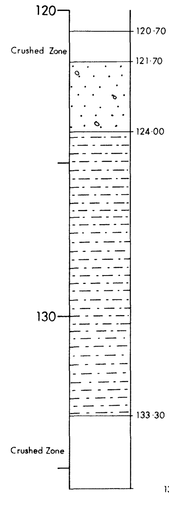
CRA EXPLORATION PTY. LIMITED

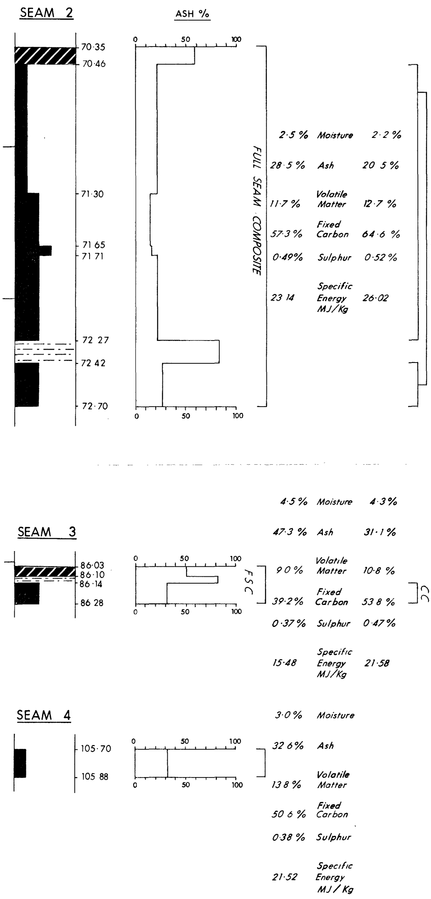
PARATTAH E.L. 18/82 029
MINES DEPT. STRATIGRAPHIC HOLE
BOREHOLE YP 2 (Sheet 1)
GRAPHIC LOG & SEAM SECTIONS

REF.	SK55 - 6	8L-2294, v01 2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	19 - 10 - 1984	PLAN No. TASh	2180

MINES DEPT. BOREHOLE YP 2 (60m to 135.7m)







LEGEND

QUATERNARY — GRAVEL, SAND & GRAVEL, ALLUVIAL SOILS

TERTIARY — BASALT; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC

JURASSIC

270308

5 cm

CRA EXPLORATION PTY. LIMITED

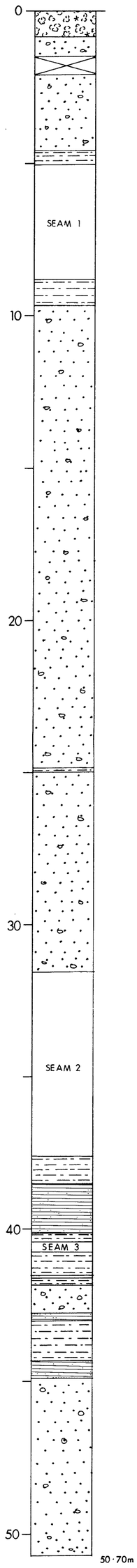
PARATTAH E.L. 18/82 030

MINES DEPT. STRATIGRAPHIC HOLE BOREHOLE YP 2 (Sheet 2)

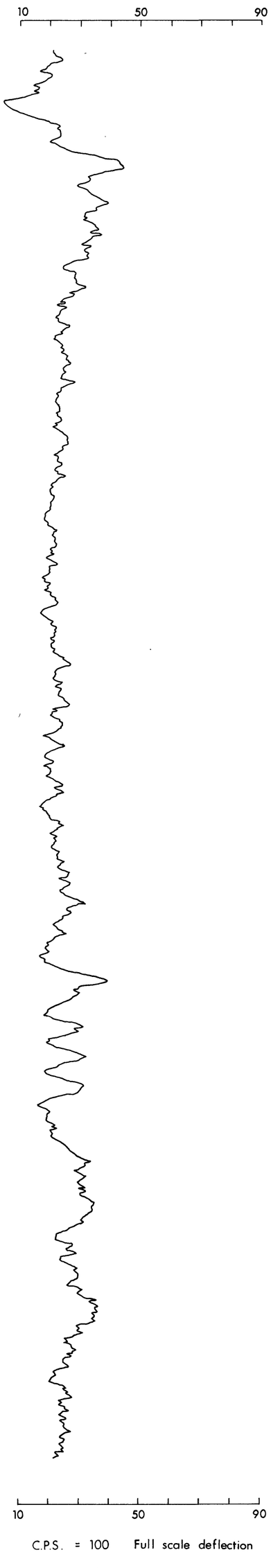
GRAPHIC LOG & SEAM SECTIONS

REF.	SKSS - 6	84-2294 vol 2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	19 - 10 - 1984	PLAN No. TASh	2181

DD 84 PT 12



NATURAL GAMMA



C.P.S. = 100 Full scale deflection

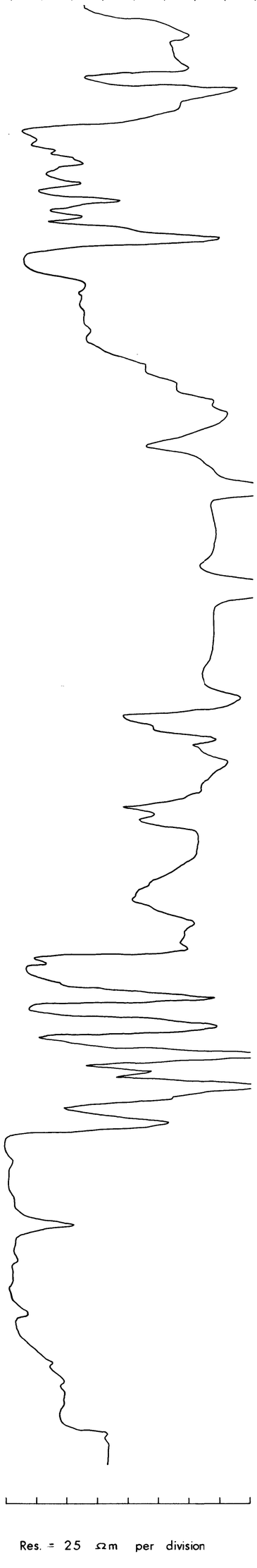
T.C. = 2

Logging speed = 6 m/min

HIGH RESOLUTION DENSITY

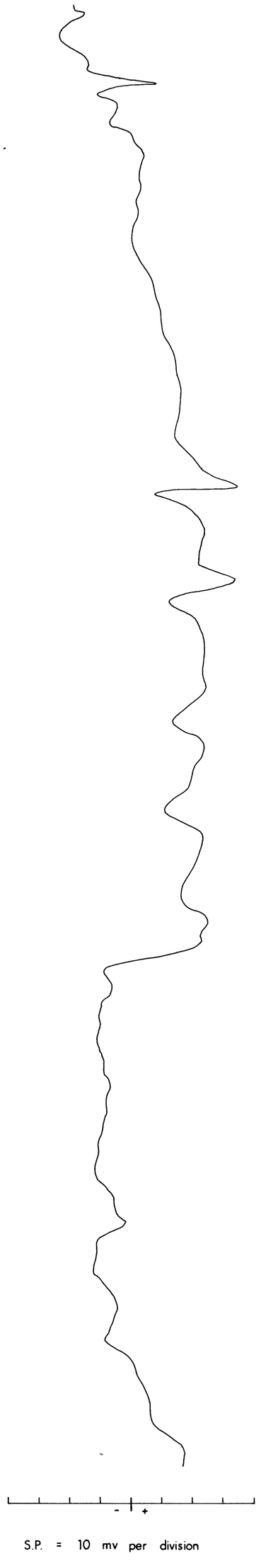
CALIPER

RESISTIVITY



Res. = 25 Ω m per division

SELF POTENTIAL



S.P. = 10 mv per division

0
10
20
30
40
50
60
70

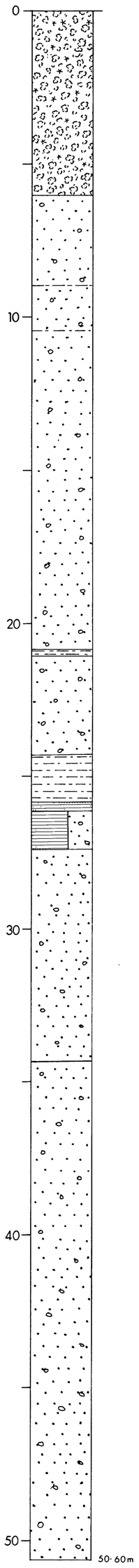
Note : No HRD or Caliper logs due to hole caving.

270309

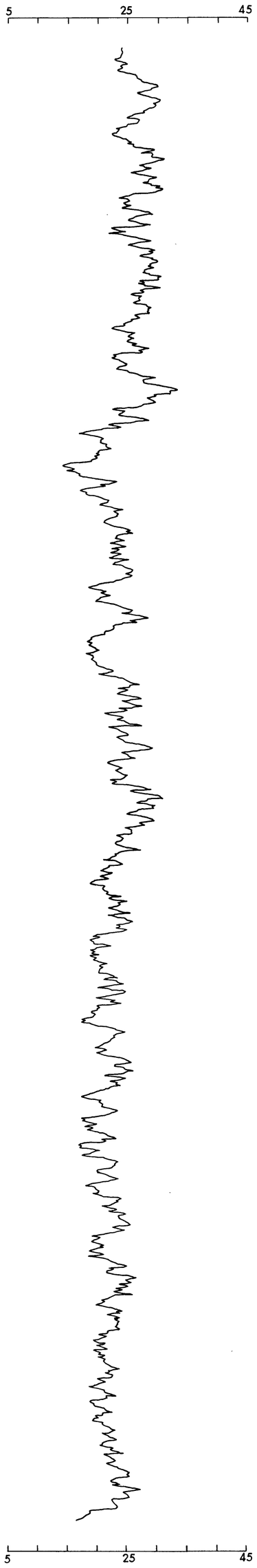
5 cm

CRA EXPLORATION PTY. LIMITED	
PARATTAH E.L. 18/82 DD 84 PT 12 031 GEOPHYSICAL LOGS	
REF. SK 55-6 84-2294 vol 2/3.	
SCALE 1 : 100	DRAWN D.L.
AUTHOR J.L.	REPORT No.
DATE 9 - 11 - 1984	PLAN No. TASh 2205

DD 84 PT 14



NATURAL GAMMA



C.P.S. = 50 Full scale deflection

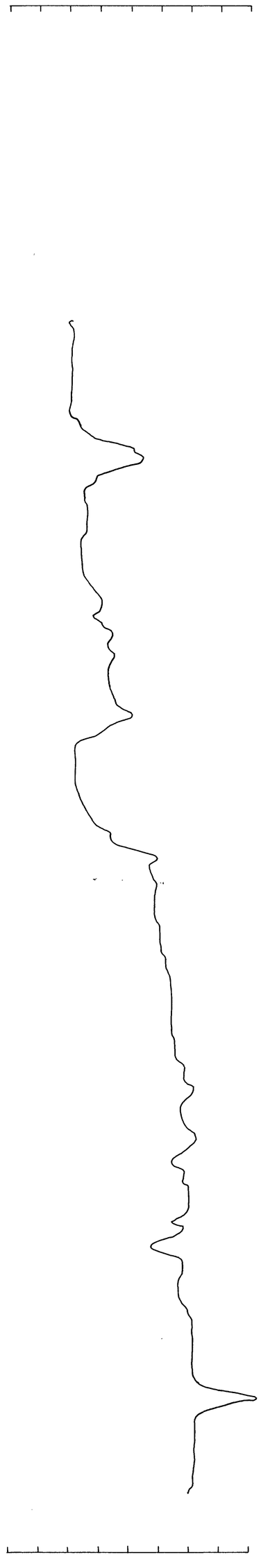
T.C. = 2

Logging speed = 6 m/min

HIGH RESOLUTION DENSITY

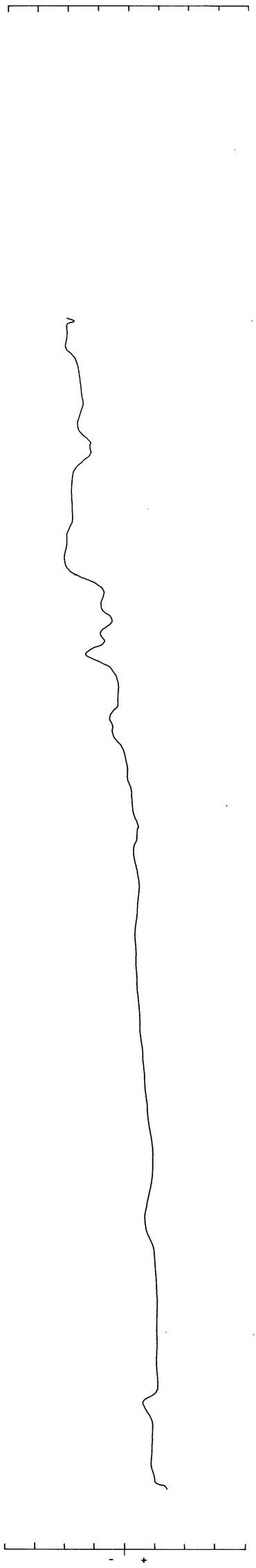
CALIPER

RESISTIVITY



Res = 25 Ωm per division

SELF POTENTIAL



S P. = 10 mv per division

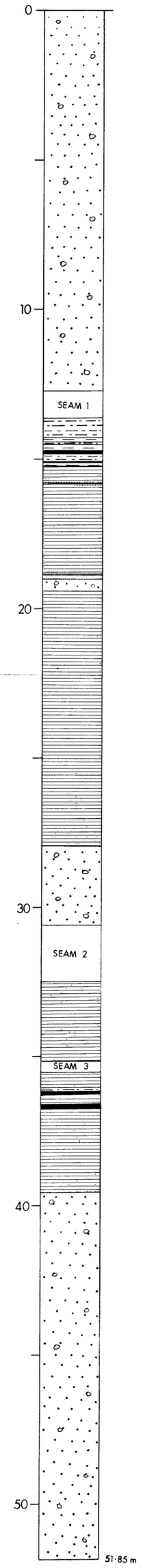
270310

Note . No HRD or Caliper logs due to hole caving

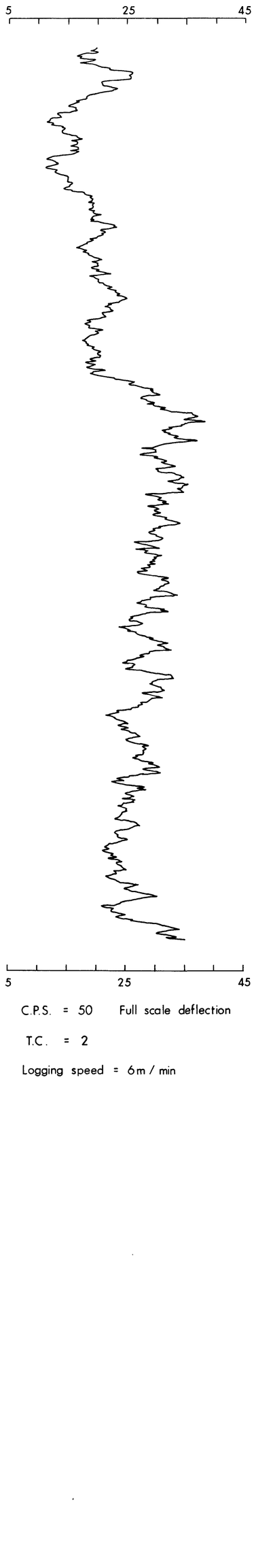
5 cm

CRA EXPLORATION PTY. LIMITED	
PARATTAH E.L. 18/82 DD 84 PT 14 032 GEOPHYSICAL LOGS	
REF. SK 55-6 84-2294 vol 2/3	
SCALE 1:100	DRAWN D.L.
AUTHOR J L	REPORT No.
DATE 9 - 11 - 1984	PLAN No. TASh 2206

DD 84 PT 18



NATURAL GAMMA

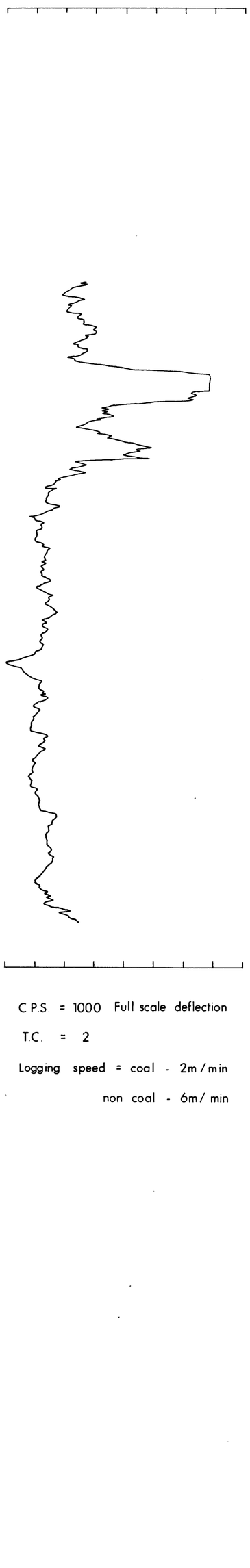


C.P.S. = 50 Full scale deflection

T.C. = 2

Logging speed = 6m / min

HIGH RESOLUTION DENSITY



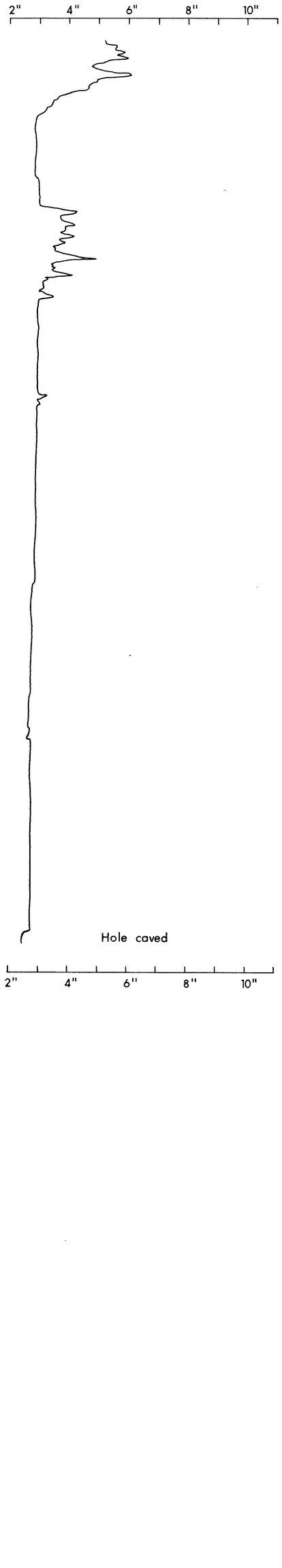
C P.S. = 1000 Full scale deflection

T.C. = 2

Logging speed = coal - 2m / min

non coal - 6m / min

CALIPER



RESISTIVITY

SELF POTENTIAL

0
10
20
30
40
50
60
70

270311

Note : No Res or SP logs due to hole caving

5 cm

CRA EXPLORATION PTY. LIMITED	
PARATTAH E.L. 18/82 DD 84 PT 18 033 GEOPHYSICAL LOGS	
REF. SK 55-6 84-2294 V01 2/3	
SCALE 1:100	DRAWN D.L.
AUTHOR J L.	REPORT No.
DATE 9 - 11 - 1984	PLAN No. TASh 2207

DD 84 PT 20

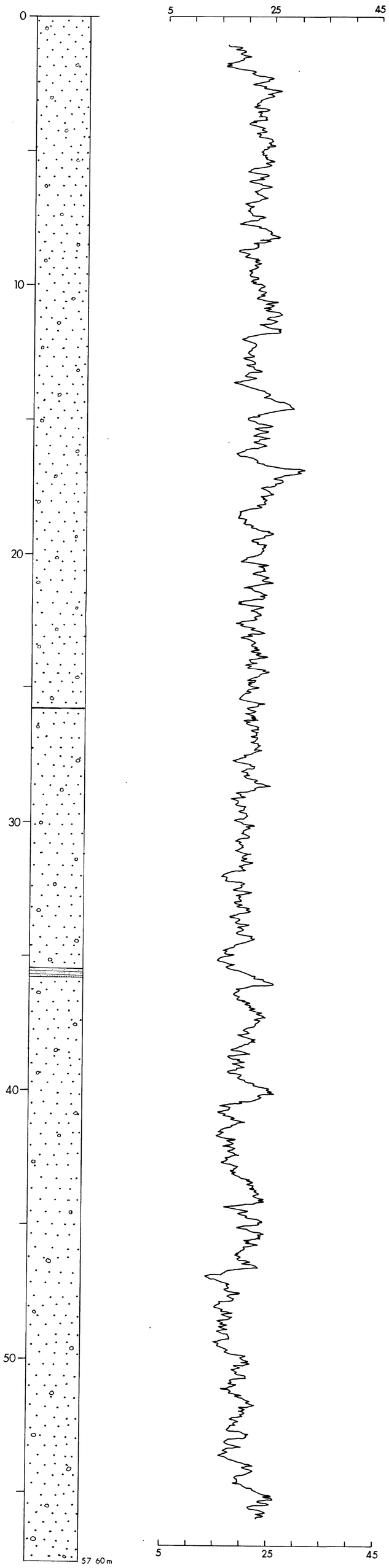
NATURAL GAMMA

HIGH RESOLUTION DENSITY

CALIPER

RESISTIVITY

SELF POTENTIAL



C.P.S. = 50 Full scale deflection

T.C. = 2

Logging speed = 6 m / min

270312

5 cm

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

DD 84 PT 20 034

GEOPHYSICAL LOGS

REF. SK 55-6 84-2294 vol 2/3	
SCALE 1:100	DRAWN D.L.
AUTHOR J.L.	REPORT No.
DATE 9 - 11 - 1984	PLAN No. TASh 2208

DD 84 PT 25

NATURAL GAMMA

5 25 45

HIGH RESOLUTION DENSITY

2000 3000 4000 5000

CALIPER

0" 2" 4" 6" 8"

RESISTIVITY

SELF POTENTIAL

0 10 20 30 40 50 60 70

SEAM 1

SEAM 2

70.64 m

Note: Discrepancy with driller's log depth. Section moved up by 1·70 metres.

C.P.S. = 50 Full scale deflection

T.C. = 2

Logging speed = 6 m/min

C.P.S. = 5000 Full scale deflection

TC = 2

Logging speed = coal - 2 m / min

non coal - 6 m / min

Res = 25 Ωm per division

S P. = 10 mv per division

270313

5 cm

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

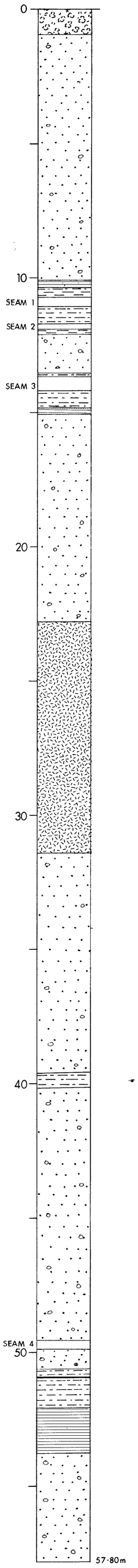
DD 84 PT 25

GEOPHYSICAL LOGS

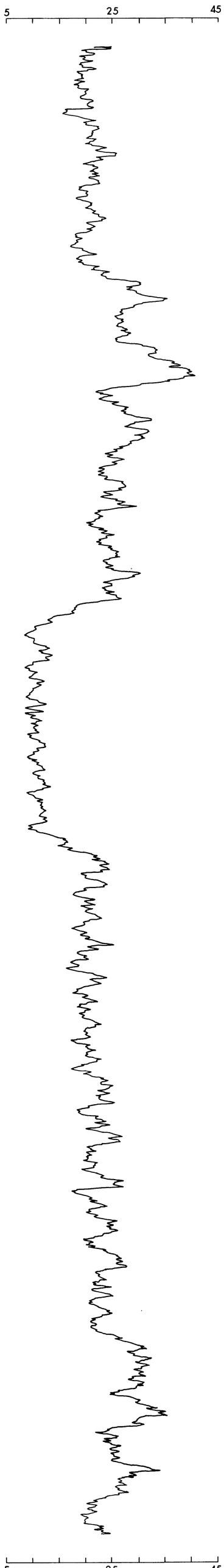
035

REF. SK 55-6	84-2214 Vol 2/3
SCALE 1 : 100	DRAWN D. L.
AUTHOR J. L.	REPORT No.
DATE 9 - 11 - 1984	PLAN No. TASh 2209

DD 84 PT 30



NATURAL GAMMA

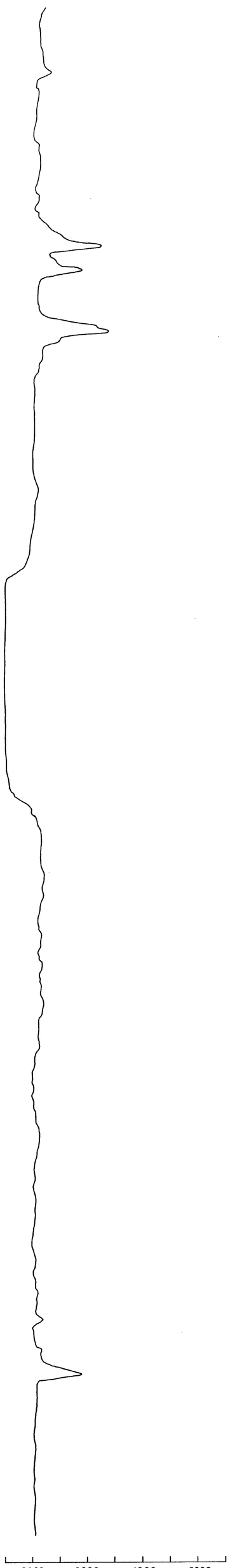


C.P.S. = 50 Full scale deflection

T.C. = 2

Logging speed = 6 m / min

HIGH RESOLUTION DENSITY



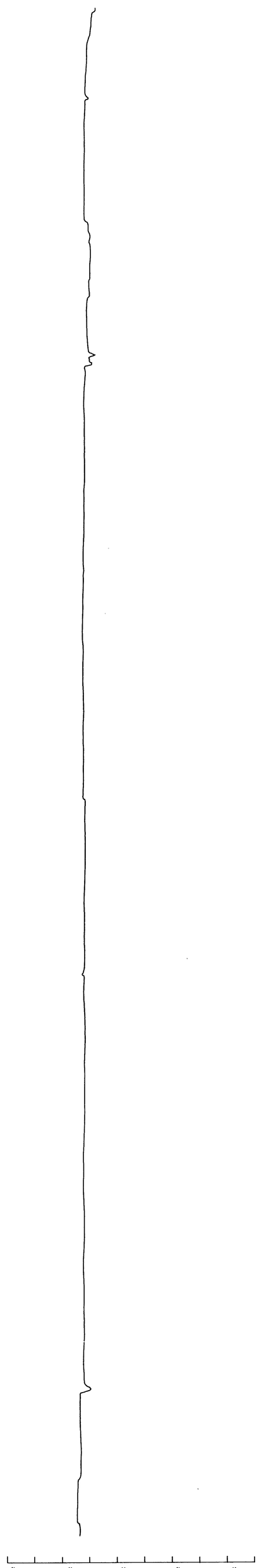
C.P.S. = 5000 Full scale deflection

T.C = 2

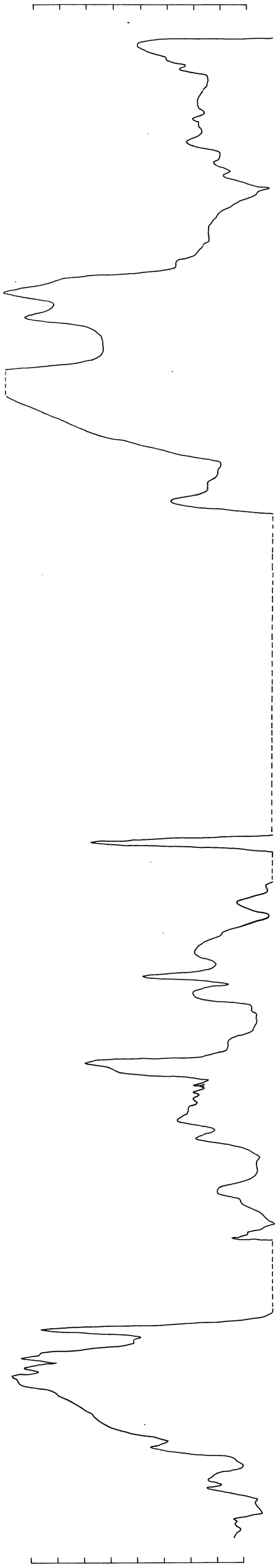
Logging speed = coal - 2 m / min

non coal - 6 m / min

CALIPER

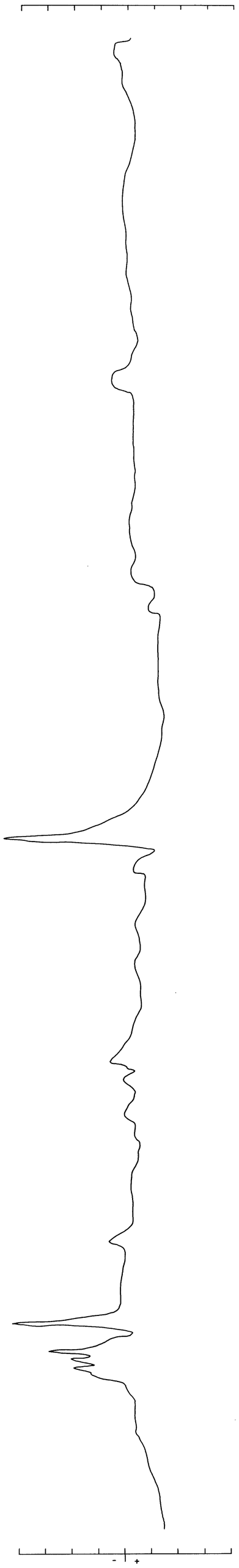


RESISTIVITY



Res = 10 Ωm per division

SELF POTENTIAL



S.P. = 10 mv per division

5 cm

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

DD 84 PT 30 036

GEOPHYSICAL LOGS

REF. SK 55-6	84-2294 Vol 2/3
SCALE 1 : 100	DRAWN D.L.
AUTHOR J.L.	REPORT No.
DATE 15-10-84	PLAN No. TASh 2210

270314

DD 84 PT 31

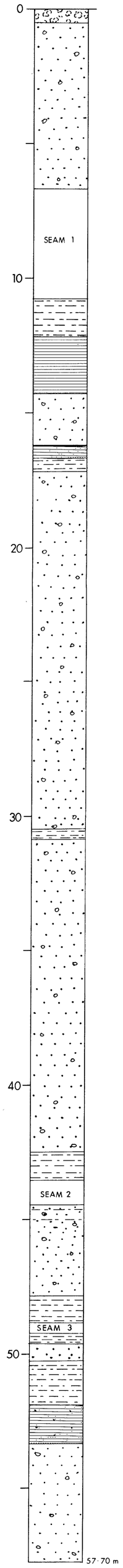
NATURAL GAMMA

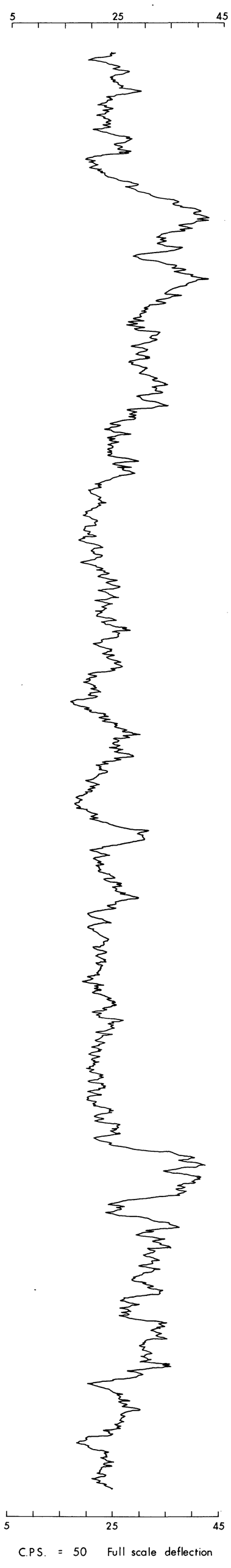
HIGH RESOLUTION DENSITY

CALIPER

RESISTIVITY

SELF POTENTIAL

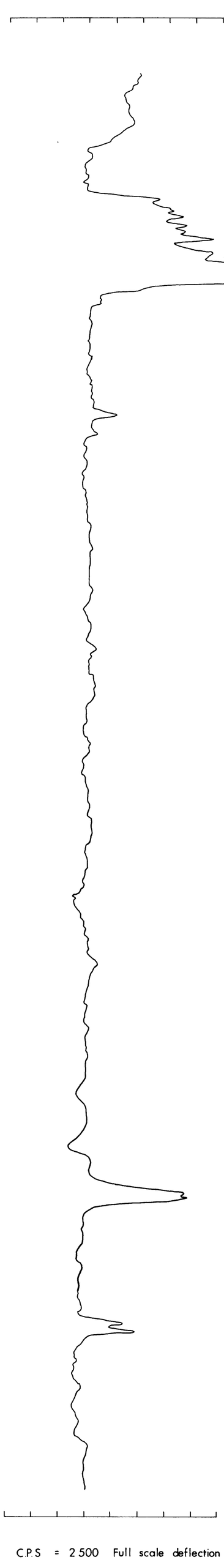




C.P.S. = 50 Full scale deflection

T.C. = 2

Logging speed = 6 m / min

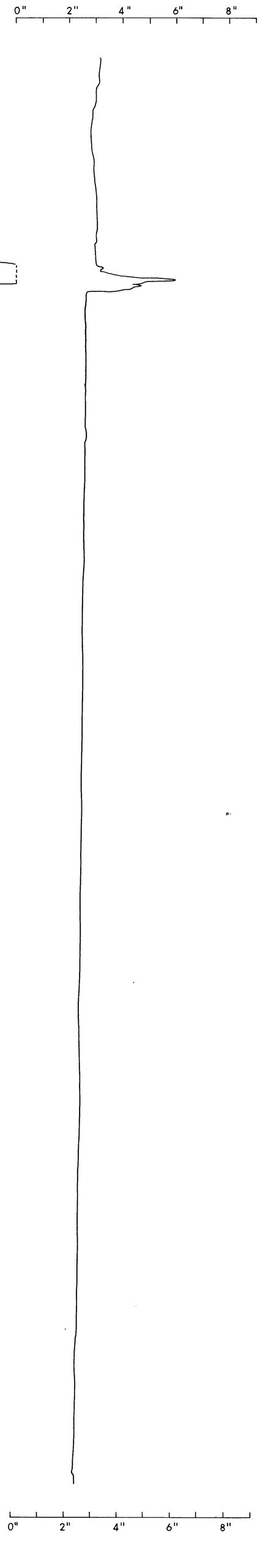


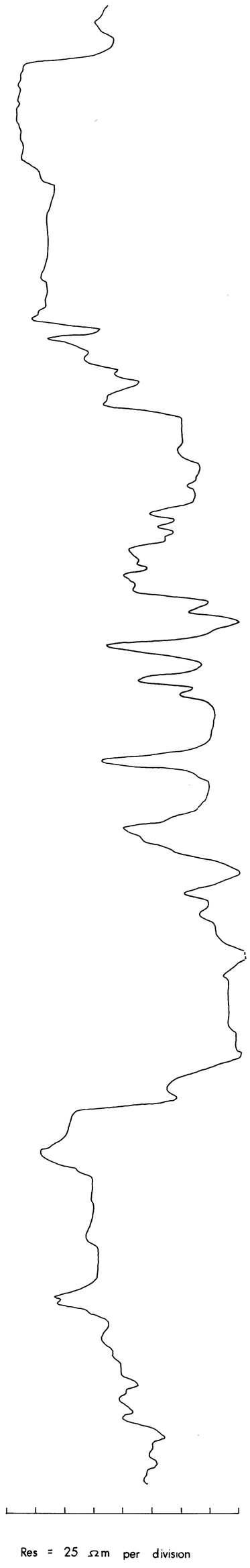
C.P.S = 2 500 Full scale deflection

T.C. = 2

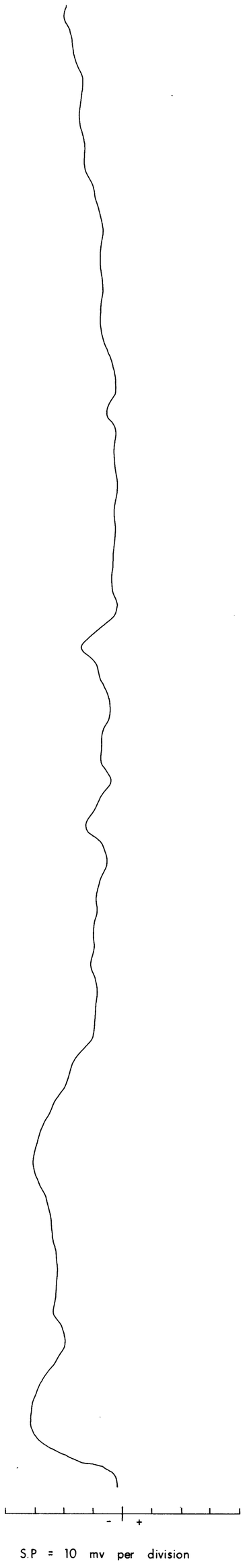
Logging speed = coal - 2 m / min

non coal - 6 m / min





Res = 25 Ωm per division



S.P = 10 mv per division

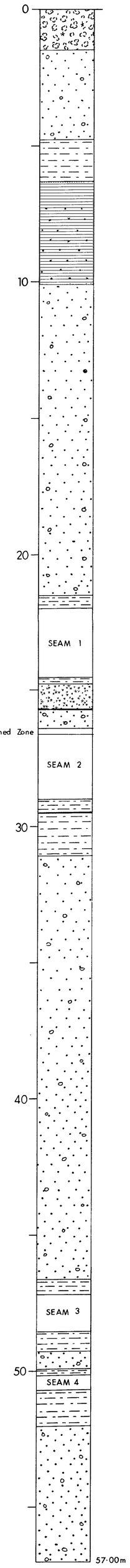
0
10
20
30
40
50
60
70

270315

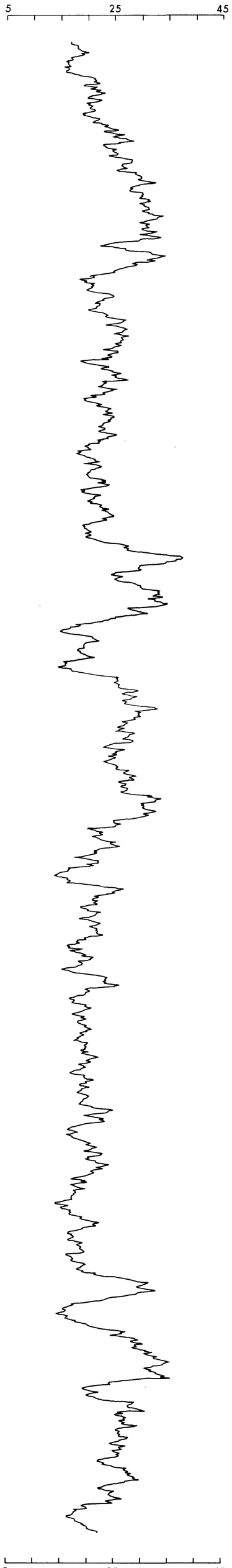
5 cm

CRA EXPLORATION PTY. LIMITED	
PARATTAH E.L. 18/82 DD 84 PT 31 037 GEOPHYSICAL LOGS	
REF. SK 55-6 84-2294 vol 2/3	
SCALE 1 : 100	DRAWN D.L.
AUTHOR J L.	REPORT No.
DATE 17 - 10 - 84	PLAN No. TASh 2211

DD 84 PT 32



NATURAL GAMMA

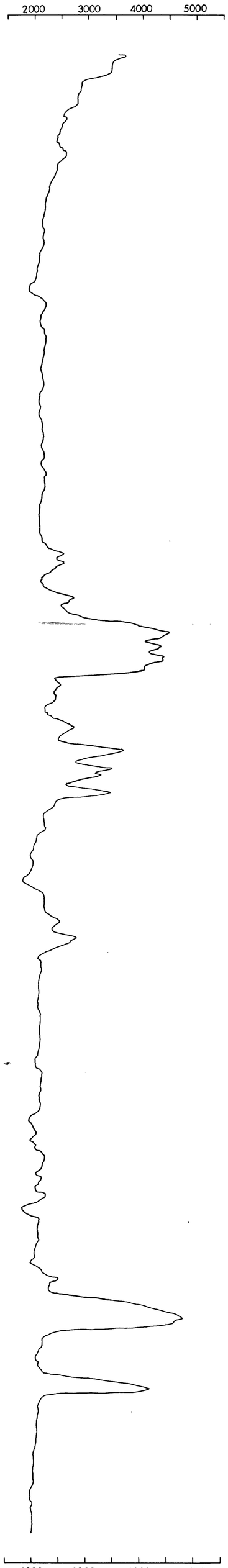


C.P.S. = 50 Full scale deflection

T.C. = 2

Logging speed = 6 m / min

HIGH RESOLUTION DENSITY



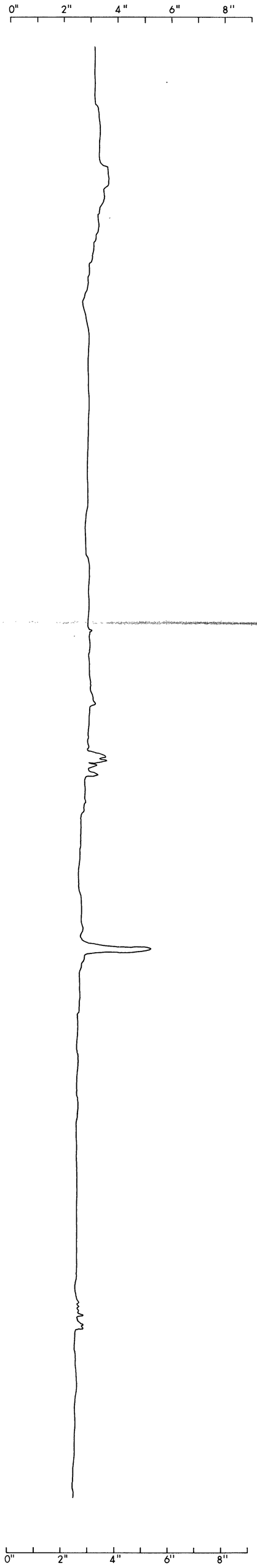
C.P.S. = 5000 Full scale deflection

T.C. = 2

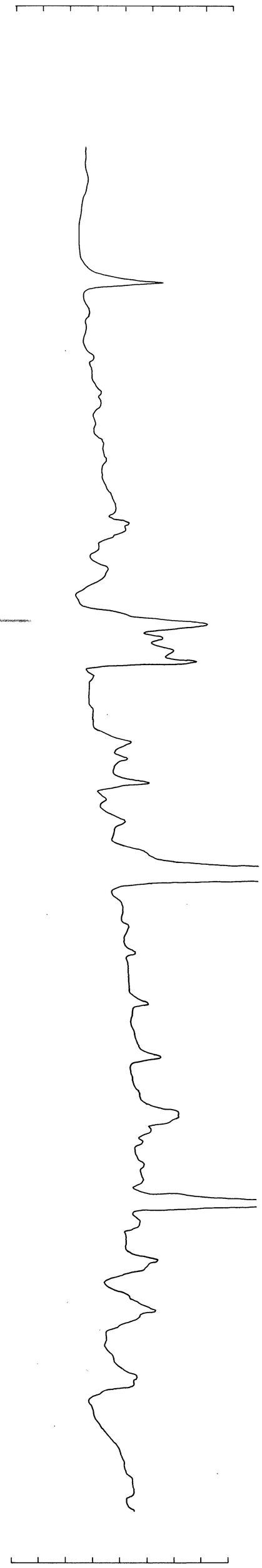
Logging speed = coal - 2 m/min

non coal - 6 m / min

CALIPER

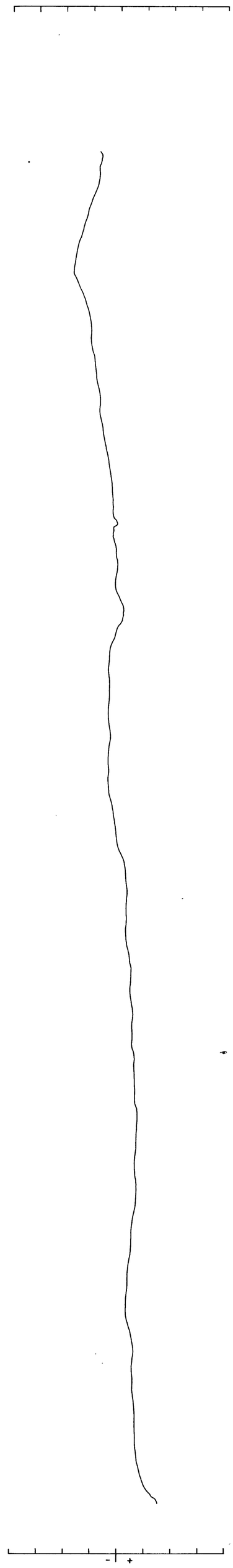


RESISTIVITY



Res. = 25 Ωm per division

SELF POTENTIAL



S.P. = 10 mv per division

0
10
20
30
40
50
60

270316

5 cm

CRA EXPLORATION PTY. LIMITED	
PARATTAH E.L. 18/82 DD 84 PT 32 038 GEOPHYSICAL LOGS	
REF. SK 55-6 84-229L vol 2/3	
SCALE 1 : 100	DRAWN D. L.
AUTHOR J. L.	REPORT No.
DATE 18 - 10 - 84	PLAN No. TASh 2212

DD 84 PT 34

NATURAL GAMMA

5 25 45

HIGH RESOLUTION DENSITY

2 500 5000

CALIPER

2" 4" 6" 8" 10"

RESISTIVITY

SELF POTENTIAL

0 10 20 30 40 50 60

SEAM 1

SEAM 2

60·58m

5 25 45

C.P.S. = 50 Full scale deflection

T.C. = 2

Logging speed = 6m / min

2500 5000

C.P.S. = 5000 Full scale deflection

T.C. = 2

Logging speed = coal - 2 m/min

non coal - 6 m/min

2" 4" 6" 8" 10"

Res. = 25 Ωm per division

- | +

S.P. = 10 mv per division

5 cm

270317

CRA EXPLORATION PTY. LIMITED

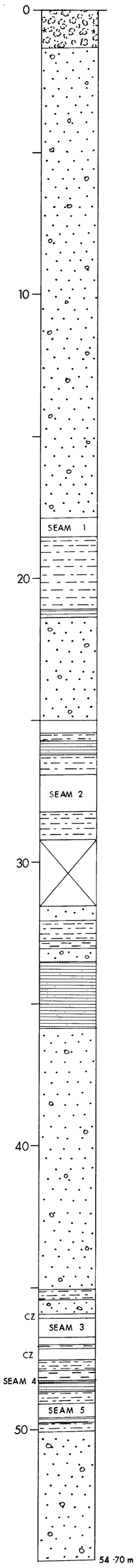
PARATTAH E.L. 18/82

DD 84 PT 34 039

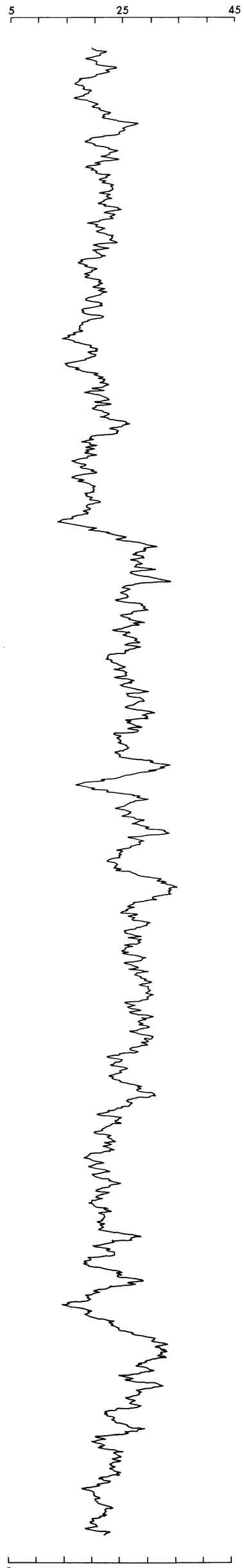
GEOPHYSICAL LOGS

REF. SK 55-6	84-2214 vol 2/3
SCALE 1:100	DRAWN D.L.
AUTHOR J.L.	REPORT No.
DATE 20-10-84	PLAN No. TASh 2213

DD 84 PT 35



NATURAL GAMMA

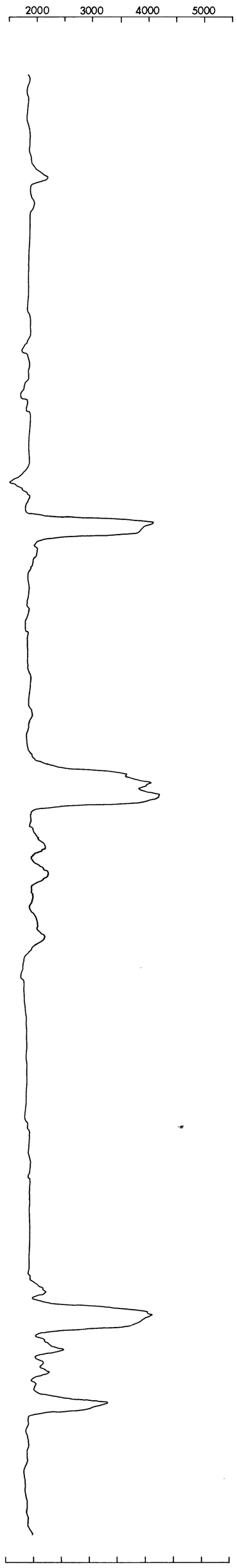


C.P.S. = 50 Full scale deflection

T.C. = 2

Logging speed = 6 m/min

HIGH RESOLUTION DENSITY



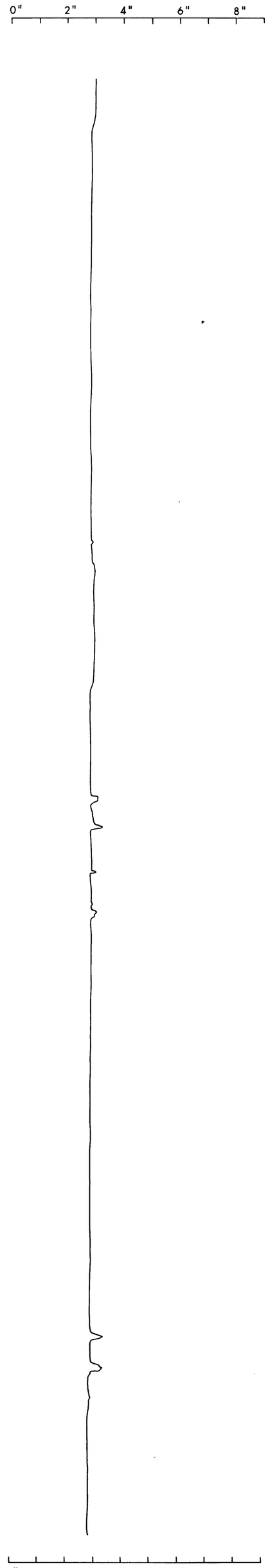
C PS = 5000 Full scale deflection

T.C. = 2

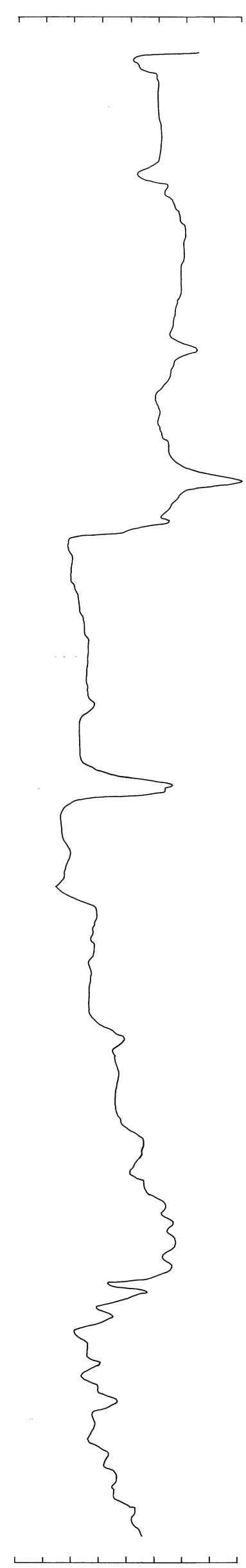
Logging speed = coal - 2 m / min

non coal - 6 m / min

CALIPER

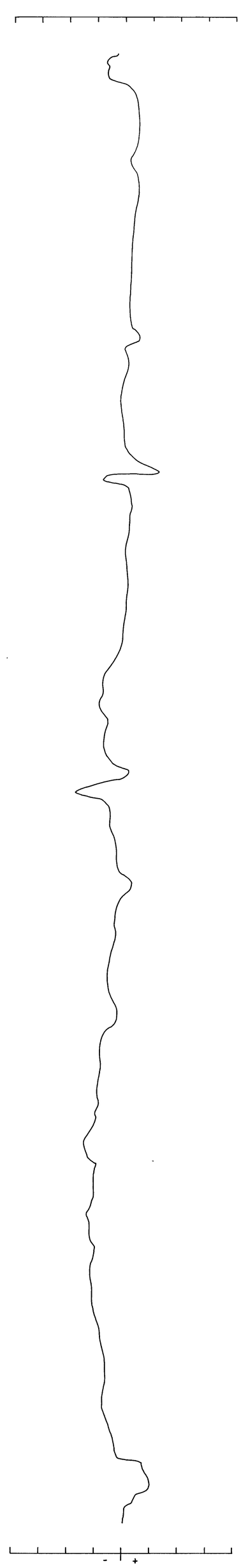


RESISTIVITY



Res. = 25 Ωm per division

SELF POTENTIAL



S.P. = 10 mv per division

0
10
20
30
40
50
60
70

5 cm

270318

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

DD 84 PT 35 040

GEOPHYSICAL LOGS

REF. SK 55-6	8/-2294 vol 2-3
SCALE 1:100	DRAWN D.L.
AUTHOR J.L.	REPORT No.
DATE 19-10-84	PLAN No. TASh 2214

DD 84 PT 36

NATURAL GAMMA

5 25 45

HIGH RESOLUTION DENSITY

2000 3000 4000 5000

CALIPER

0" 2" 4" 6" 8"

RESISTIVITY

SELF POTENTIAL

0 10 20 30 40 50

SEAM 1
SEAM 2
SEAM 3
SEAM 4
SEAM 5

55 50 m

5 25 45

C.P.S. = 50 Full scale deflection

T.C. = 2

Logging speed = 6 m/min

2000 3000 4000 5000

C.P.S. = 5000 Full scale deflection

T.C. = 2

Logging speed = coal - 2 m/min

non coal - 6 m/min

0" 2" 4" 6" 8"

Res. = 25 Ωm per division

- +

S.P. = 10 mv per division

0 10 20 30 40 50 60 70

5 cm

270319

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

DD 84 PT 36

GEOPHYSICAL LOGS

041

REF. SK 55-6	84-2294 vol 2/3.
SCALE 1:100	DRAWN D.L.
AUTHOR J.L.	REPORT No.
DATE 22-10-84	PLAN No. TASh 2215

DD 84 PT 37

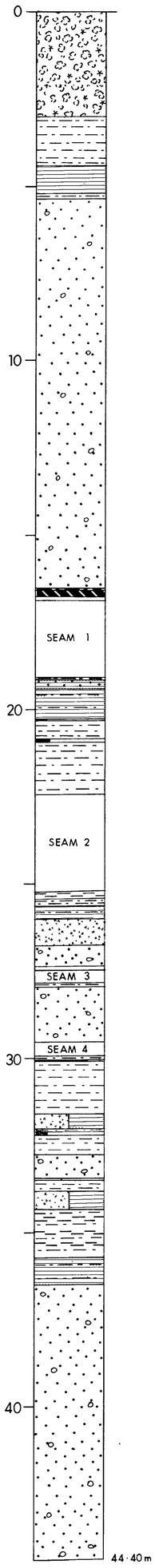
NATURAL GAMMA

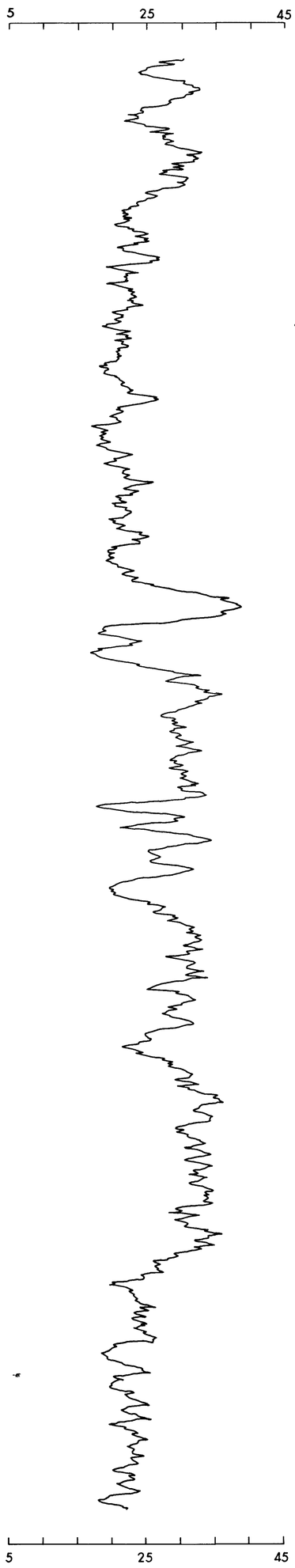
HIGH RESOLUTION DENSITY

CALIPER

RESISTIVITY

SELF POTENTIAL

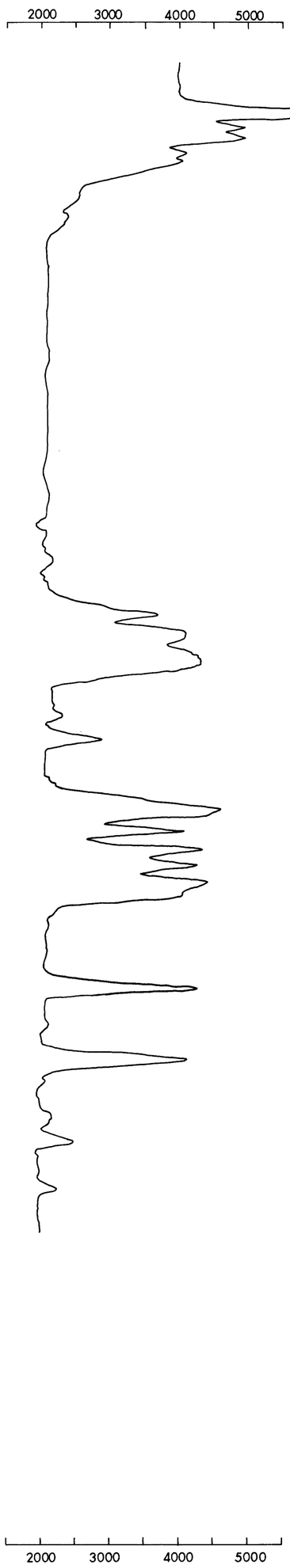




C.P.S. = 50 Full scale deflection

T.C. = 2

Logging speed = 6 m/min

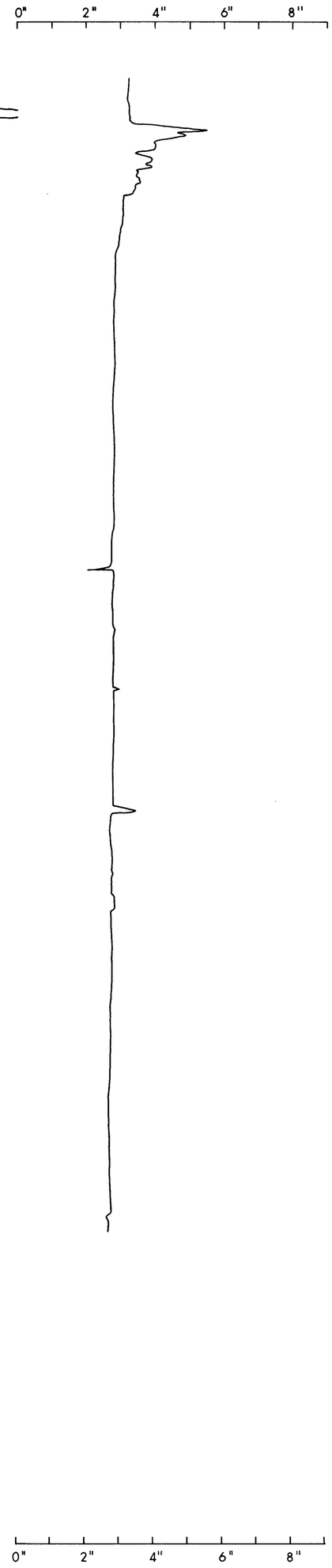


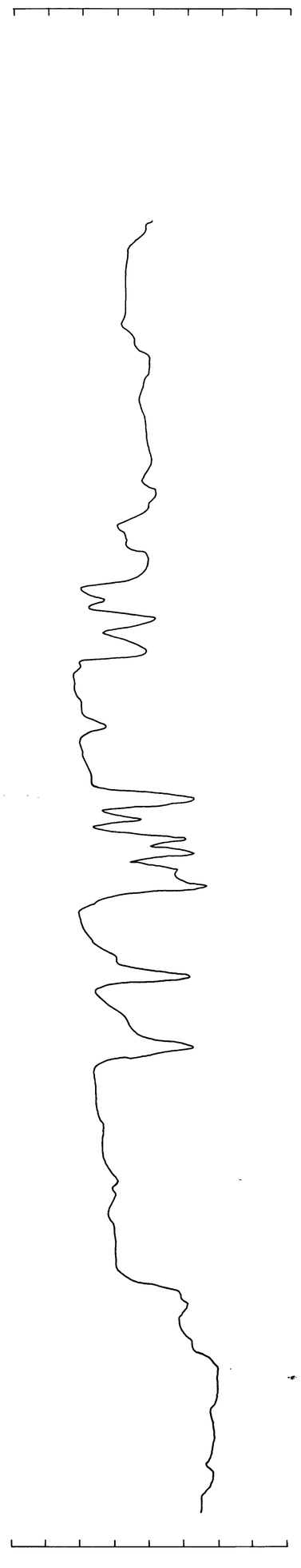
C.P.S. = 5000 Full scale deflection

TC = 2

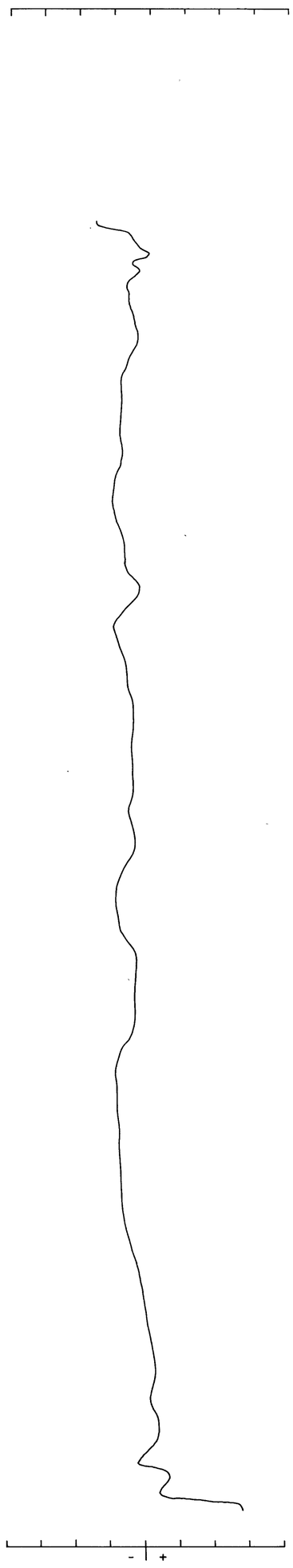
Logging speed = coal - 2 m/min

non coal - 6 m/min





Res. = 5 Ωm per division



S.P. = 10 mv per division

0
10
20
30
40
50
60
70

5 cm

270320

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

DD 84 PT 37 042

GEOPHYSICAL LOGS

REF. SK 55-6 84-229L VOL 2/3	
SCALE 1:100	DRAWN D.L.
AUTHOR J.L.	REPORT No.
DATE 24-10-84	PLAN No. TASh 2216

DD 84 PT 38

SEAM 1

SEAM 2

47·70m

NATURAL GAMMA

5 25 45

C.P.S. = 50 Full scale deflection

T.C. = 2

Logging speed = 6 m/min

HIGH RESOLUTION DENSITY

2000 3000 4000 5000

C.P.S = 5000 Full scale deflection

T.C. = 2

Logging speed = coal - 2 m/min

non coal - 6 m/min

CALIPER

0" 2" 4" 6" 8"

RESISTIVITY

Res. = 25 Ωm per division

SELF POTENTIAL

- +

S.P. = 10 mv per division

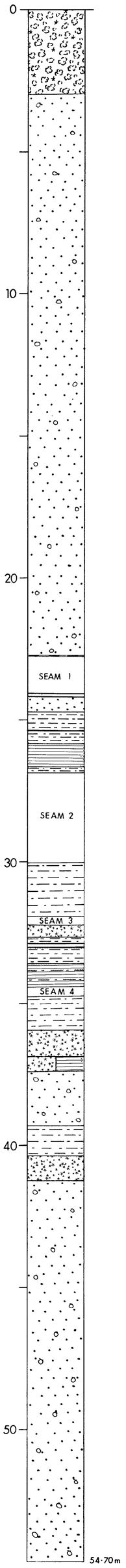
0 10 20 30 40 50 60 70

5 cm

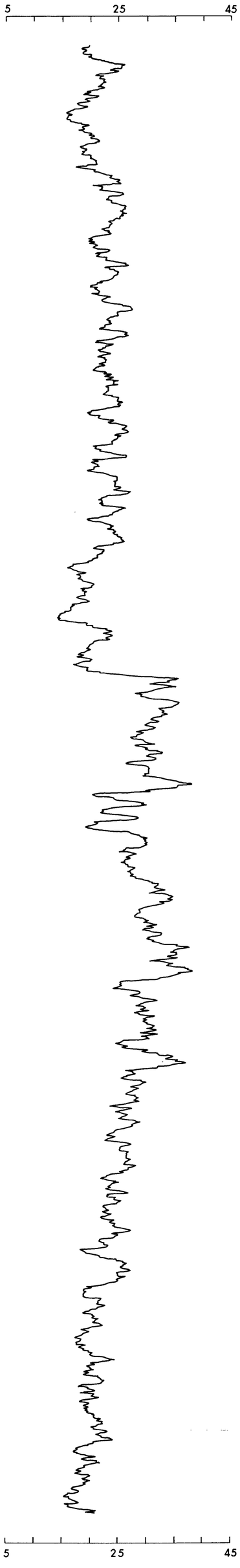
270321

CRA EXPLORATION PTY. LIMITED	
PARATTAH E.L. 18/82 DD 84 PT 38 043 GEOPHYSICAL LOGS	
REF. SK 55-6 84-2294 vol 2/3	
SCALE 1:100	DRAWN D.L.
AUTHOR J.L.	REPORT No.
DATE 25-10-84	PLAN No. TASh 2217

DD 84 PT 39



NATURAL GAMMA

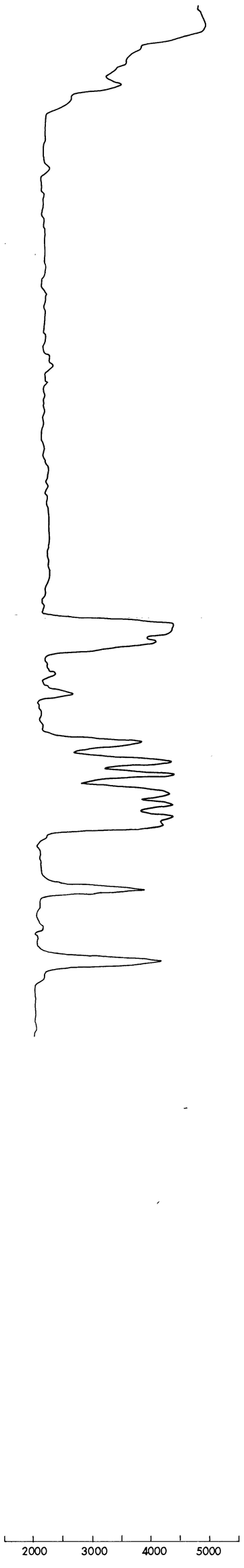


C.P.S. = 50 Full scale deflection

T.C. = 2

Logging speed = 6 m/min

HIGH RESOLUTION DENSITY



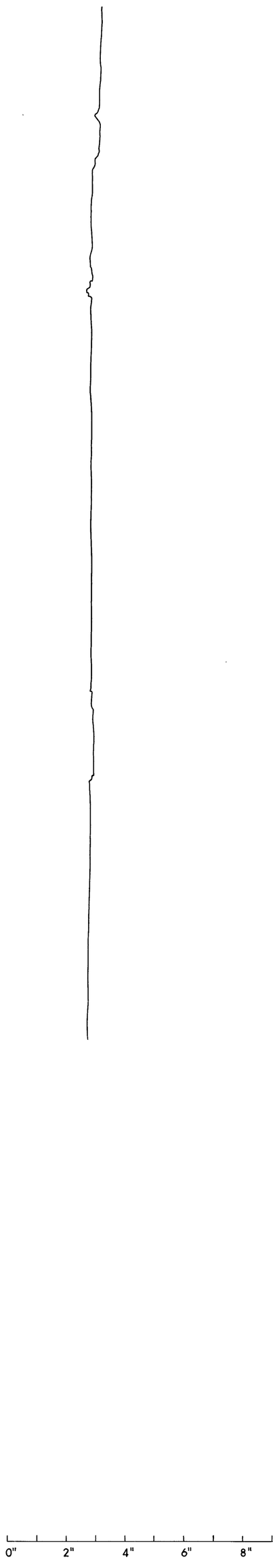
C.P.S. = 5000 Full scale deflection

T.C. = 2

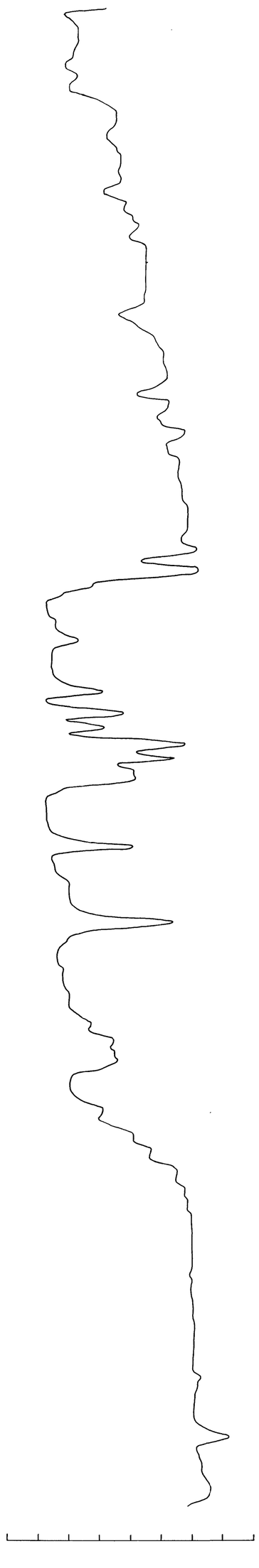
Logging speed = coal - 2 m/min

non coal - 6 m/min

CALIPER

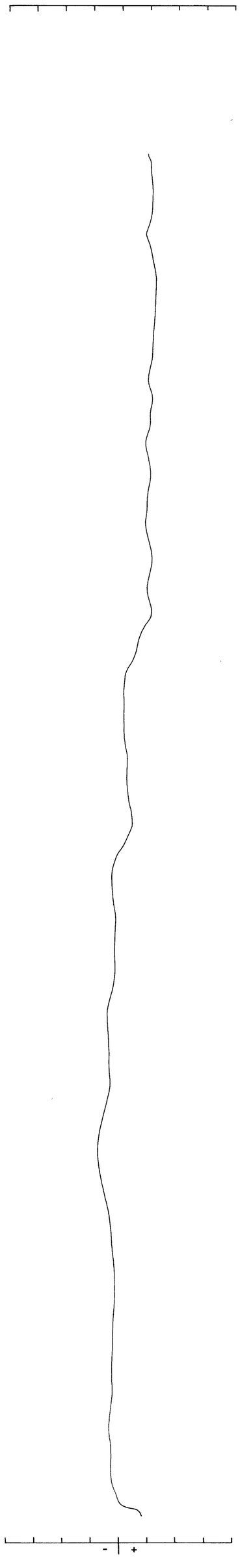


RESISTIVITY

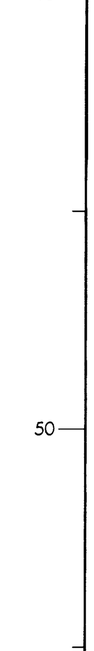


Res. = 25 Ω2m per division

SELF POTENTIAL



S.P. = 10 mv per division



5 cm

270322

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

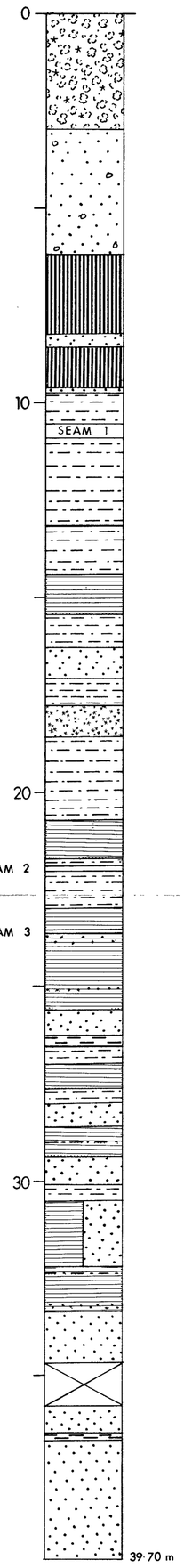
DD 84 PT 39

GEOPHYSICAL LOGS

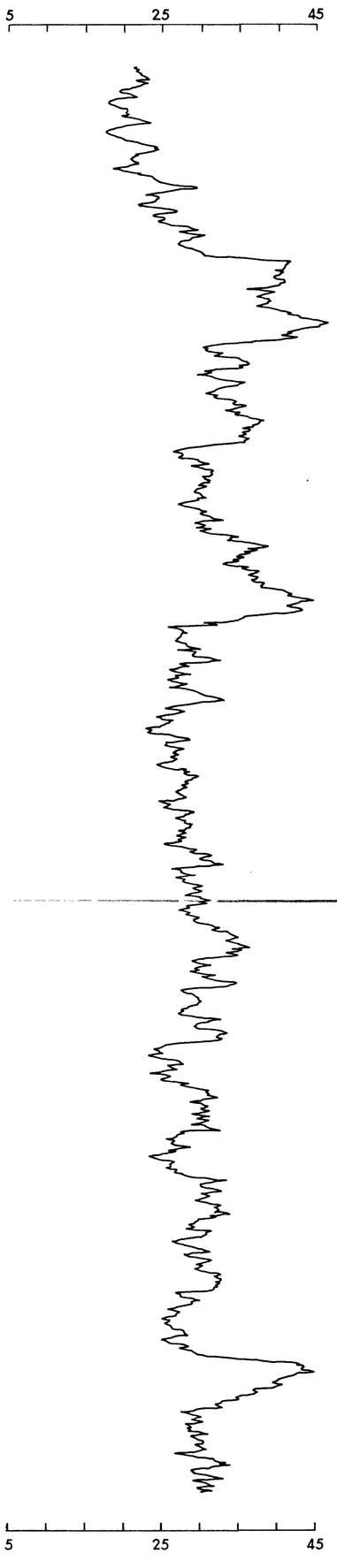
044

REF. SK 55-6 84-2294 vol 3/3	
SCALE 1:100	DRAWN D.L.
AUTHOR J.L.	REPORT No.
DATE 26-10-84	PLAN No. TASh 2218

DD 84 PT 40



NATURAL GAMMA

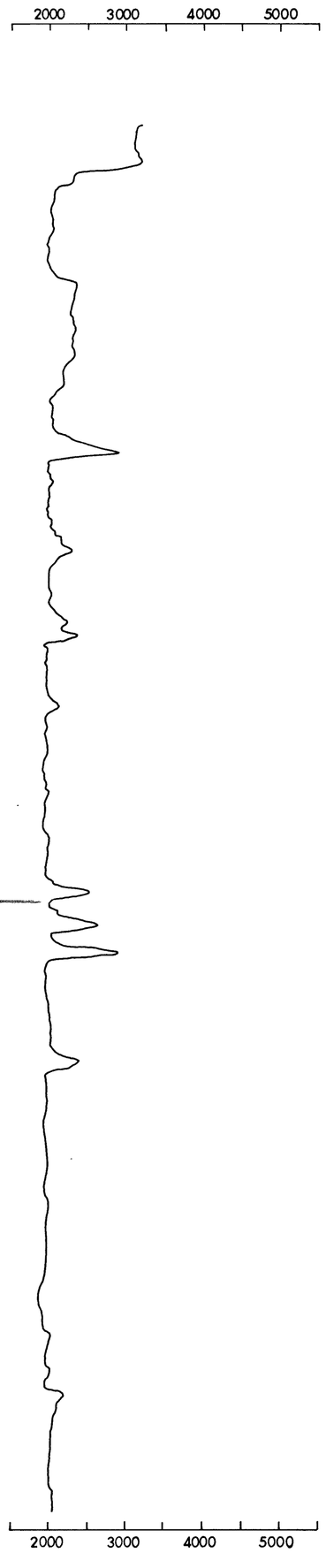


C.P.S. = 50 Full scale deflection

T.C. = 2

Logging speed = 6 m / min

HIGH RESOLUTION DENSITY



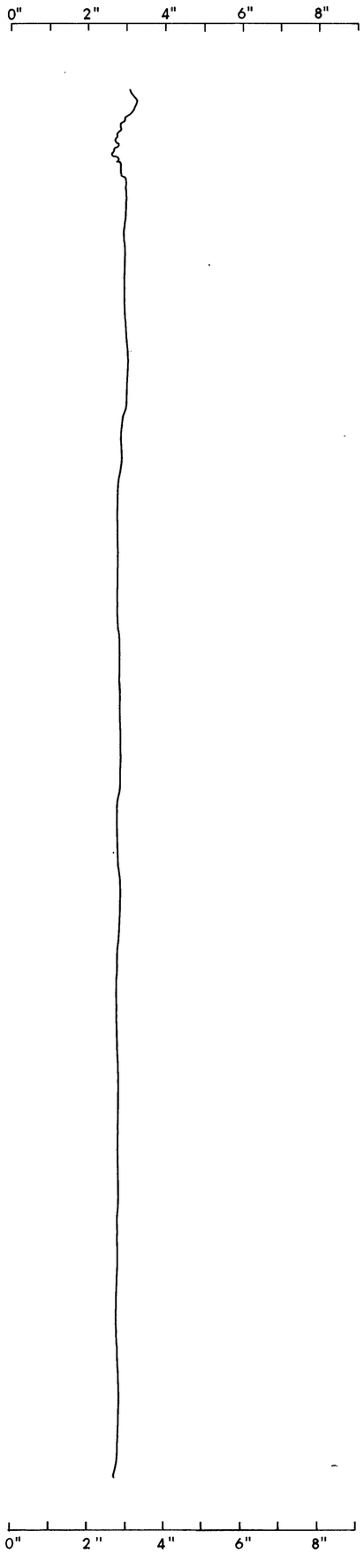
C.P.S. = 5000 Full scale deflection

T.C = 2

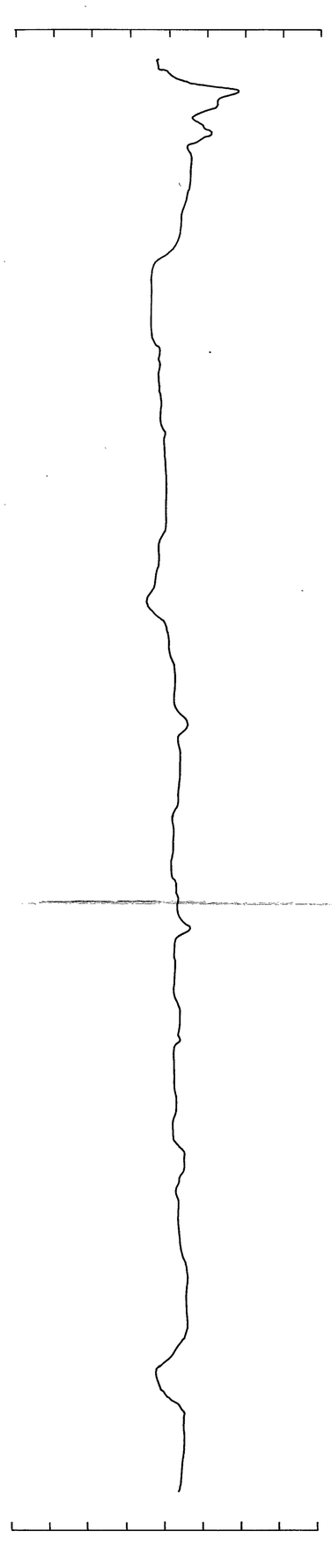
Logging speed = coal - 2 m / min

non coal - 6 m / min

CALIPER

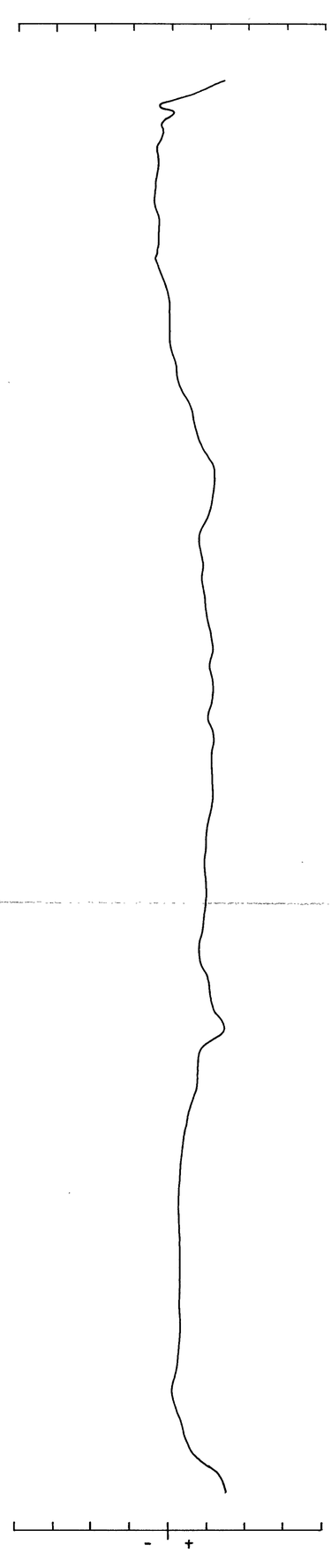


RESISTIVITY



Res. = 25 Ω.m per division

SELF POTENTIAL



S.P. = 10 mv per division

0
10
20
30
40
50
60
70

5 cm

270323

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82
DD 84 PT 40
GEOPHYSICAL LOGS

045

REF. SK 55-6 84-229L vol 2/3	
SCALE 1 : 100	DRAWN D.L.
AUTHOR J.L.	REPORT No.
DATE 29 - 10 - 84	PLAN No. TASh 2219

PT.29/30
PT.25
PT.31
PT.28
PT.15
PT.16/17
PT.32
0.06
PT.18
PT.14
PT.20
PT.21
PT.39
PT12/0.02
PT.38
PT.37
PT.36
PT.11/0.3A
PT.40
PT.19
PT.26
PT.24
PT.27
PT.10/0.01
PT.22
PT.35
PT.23
PT.33
PT.34
PT.30
YP.2
ADIT
ADIT
Pawtella

323
322
321
s320 000mN
319
318
317
534
535
536
537
538
539
540 000mE
541

270824

5 cm

CRA EXPLORATION PTY. LIMITED

YORK PLAINS E.L. 18/82
TOPOGRAPHY & BOREHOLE LOCATIONS
046

REF.	SK 55-6	84-2294 VOL 3/3.	
SCALE	1:15,000	DRAWN	R.T.
AUTHOR	T.W.D.	REPORT No.	12961
DATE	14 - 11 - 1984	PLAN No.	TASh 2039

PT.29/30
PT.25
PT.31
PT.28
PT.16/17
PT.15
PT.32
PT.20
PT.18
PT.14
0.06
PT.21
PT.39
PT12/0.02
PT.38
PT.37
PT.36
PT.11/0.3A
PT.40
PT.19
PT.26
PT.24
PT.27
PT.10/0.01
PT.22
PT.35
PT.23
PT.33
PT.34
PT.30
ADIT
YP21
ADIT
Pawtella

323
322
321
s320 000mN
319
318
317
534
535
536
537
538
539
540 000mE
541

TERTIARY BASALT
TERTIARY DIATREME
JURASSIC DOLERITE
SEQUENCE 1 LITHIC ARENITE
FAULT

5 cm

270325

CRA EXPLORATION PTY. LIMITED

YORK PLAINS E.L. 18/82

GEOLOGICAL PLAN 047

REF	SK 55-6	84-229L vol 3 3	
SCALE	1:15,000	DRAWN	D.L
AUTHOR	J.L	REPORT No	12961
DATE	14-11-1984	PLAN No	TAS: 2239



⊙ PT.36 BOREHOLE LOCATION

(356) R.L. OF ROOF OF SEAM

{0.8} SEAM THICKNESS

POTENTIAL RESOURCE AREA

SEAM ERODED

—360— STRUCTURE CONTOUR (Interval 10 m)

FAULT

SEAM OUTCROP (Inferred)

0 .5 1 km

Scale 1 : 15 000

N.B. Seam W in block W2 may represent Seam V.

5 cm

270326

CRA EXPLORATION PTY. LIMITED

YORK PLAINS E.L. 18/82
SEAM W
STRUCTURE CONTOURS 048
ON TOP OF SEAM

REF.	SK 55-6	84-2294 V013	
SCALE	1:15,000	DRAWN	R.T.
AUTHOR	J.L.	REPORT No.	12961
DATE	14 - 11 - 1984	PLAN No. TASh	2241

325
324
323
322
321
319
318
317
s 320 000mN
534
535
536
537
538
539
540 000mE
541
542
543
544

SORELL SPRINGS ROAD (Abandoned)
YORK PLAINS ROAD
MAIN LINE
PAWTELLA ROAD
NAIA ROAD
Pawtella

PT.29/30
PT.25
PT.31
PT.28
PT.15
PT.16/17
PT.32
PT.20
PT.21
PT.14
PT.18 (12·70)
0.06 (9·80)
PT.39
PT.12/0.02 (5·10)
PT.38
PT.37
PT.36 (11·20)
PT.11/0.3A
PT.19
PT.40
PT.26 (21·50)
PT.24
PT.27
PT.10/0.01 (8·00)
PT.22
PT.35 (17·80)
PT.23
PT.33
PT.34
PT.3
YP.2
ADIT
ADIT

BLOCK W1
BLOCK W2
BLOCK W3

10
20
30
40
50
60

WH

⊙ PT.35 — BOREHOLE LOCATION
(8·00) — OVERBURDEN THICKNESS
RESOURCE BLOCK
—20— OVERBURDEN ISOPACH
FAULT
SEAM OUTCROP (Inferred)

0 ·5 1 km
Scale 1 : 15 000

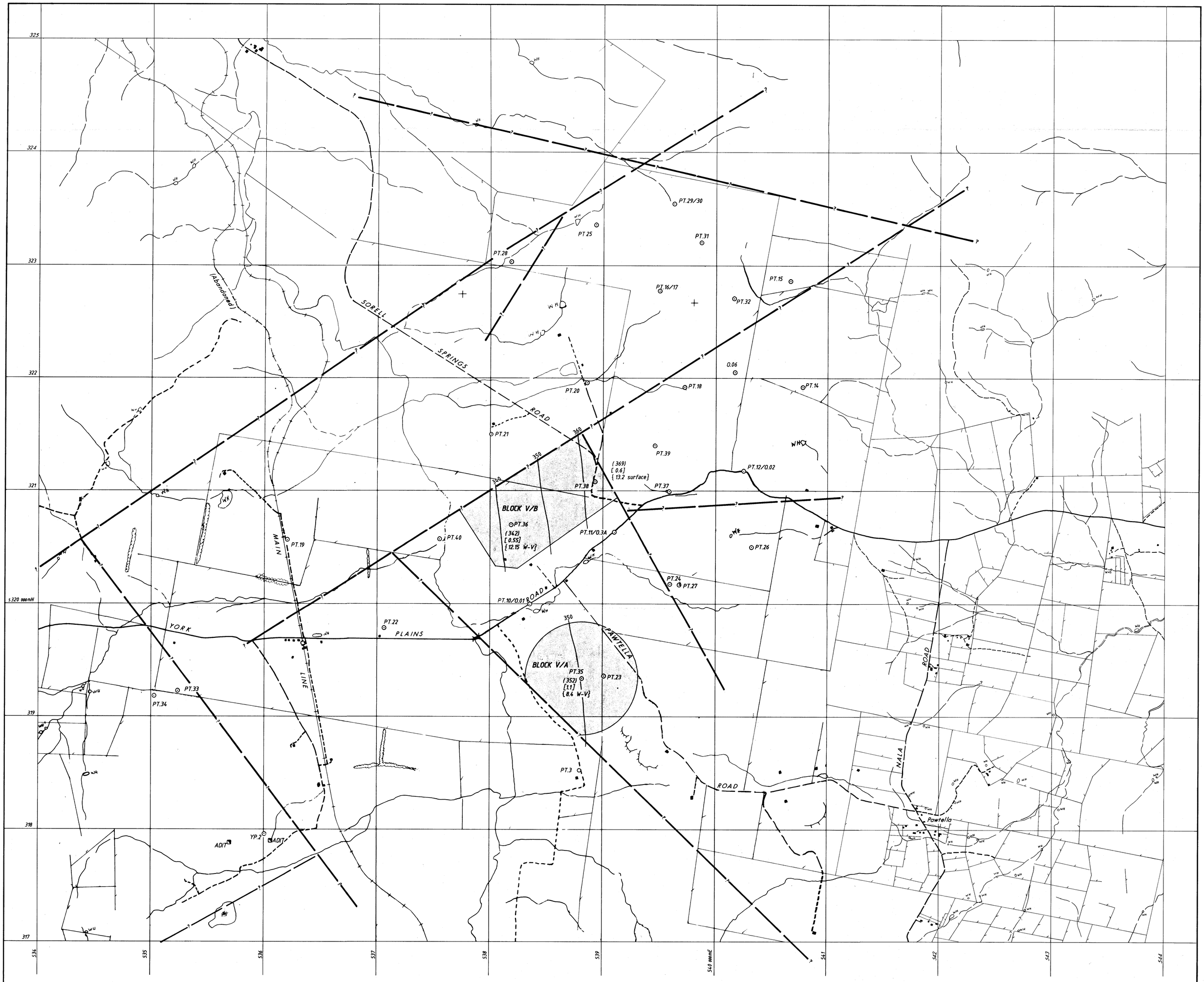
270327
5 cm

N.B. Seam W in block W2 may represent Seam V.

CRA EXPLORATION PTY. LIMITED

YORK PLAINS E.L. 18/82
SEAM W (049
OVERBURDEN ISOPACHS

REF.	SK 55-6	81-2294 vol 3/3	
SCALE	1:15,000	DRAWN	D.L.
AUTHOR	J.L.	REPORT No.	12961
DATE	14 - 11 - 1984	PLAN No. TASh	2240



PT.35	BOREHOLE LOCATION	350	STRUCTURE CONTOUR (INTERVAL 10m)
(352)	R.L. ROOF OF SEAM		POTENTIAL RESOURCE AREA
[1.1]	SEAM THICKNESS		FAULT
{8.4 W-V}	INTERBURDEN THICKNESS		
{13.2 surface}	OVERBURDEN THICKNESS		

0 ·5 1 km

SCALE 1 : 15 000

270328

5 cm

CRA EXPLORATION PTY. LIMITED

YORK PLAINS E.L. 18/82
SEAM VA /VB 050
Structure Contours on Top of Seam

REF.	SK 55-6	8L-2294	4013/3
SCALE	1:15,000	DRAWN	R.T.
AUTHOR	J.L.	REPORT No.	12961
DATE	14 - 11 - 1984	PLAN No.	TASh 2242

BLOCK U/A

BLOCK U/B

BLOCK U/C

BLOCK U/D

PT.25 (412)
PT.28
PT.29/30 (449)
(456) PT.31
PT.15
(430) PT.16/17
PT.32 (417)
(444) 0.06
PT.18 (388)
PT.14
PT.20
PT.21
PT.39 (379)
PT.12/0.02 (412)
PT.37 (384)
(353) PT.38
PT.36 (330)
PT.40 (338)
PT.11/0.3A (351)
PT.26 (442)
PT.24
PT.27 (424)
(329) PT.10/0.01
PT.22
PT.35 (333)
PT.23
PT.19
PT.33
PT.34
PT.3
YP.2
ADIT
ADIT

(Abandoned)
SORELL SPRINGS ROAD
MAIN YORK PLAINS ROAD
LINE ROAD
PAWTELLA ROAD
NALA ROAD
Pawtella

325
324
323
322
321
320 000mN
319
318
317
534
535
536
537
538
539
540 000mE
541
542
543
544

PT.39 BOREHOLE LOCATION
(379) REDUCED LEVEL OF ROOF
340 STRUCTURE CONTOUR
FAULT
SEAM OUTCROP
POTENTIAL RESOURCE AREA

0 -5 1 km
Scale 1 : 15 000

270329

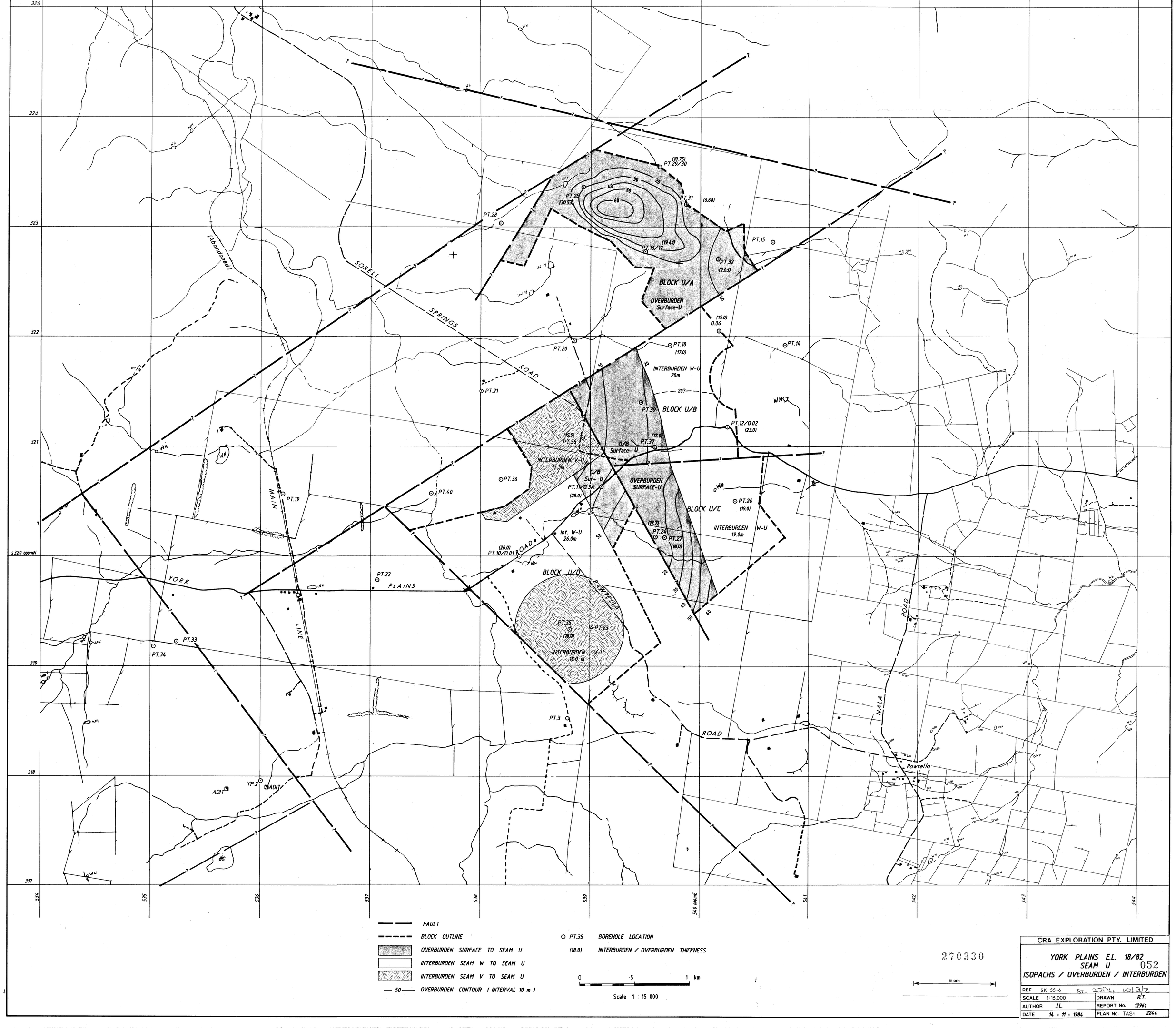
5 cm

CRA EXPLORATION PTY. LIMITED

YORK PLAINS E.L. 18/82
SEAM U
STRUCTURE CONTOURS ON ROOF OF SEAM

051

REF.	SK 55-6	84-2294 vol 3	23
SCALE	1:15,000	DRAWN	R.T.
AUTHOR	J.L.	REPORT No.	12961
DATE	14 - 11 - 1984	PLAN No. TASh	2243



FAULT

BLOCK OUTLINE

OVERBURDEN SURFACE TO SEAM U

INTERBURDEN SEAM W TO SEAM U

INTERBURDEN SEAM V TO SEAM U

— 50 — OVERBURDEN CONTOUR (INTERVAL 10 m)

PT.35 BOREHOLE LOCATION

(18.0) INTERBURDEN / OVERBURDEN THICKNESS

0 ·5 1 km

Scale 1 : 15 000

270330

5 cm

CRA EXPLORATION PTY. LIMITED

YORK PLAINS E.L. 18/82
SEAM U 052
ISOPACHS / OVERBURDEN / INTERBURDEN

REF.	SK 55-6	82-2294	Vol 3
SCALE	1:15,000	DRAWN	R.T.
AUTHOR	J.L.	REPORT No.	12961
DATE	14 - 11 - 1986	PLAN No. TASh	2246



PT.24 BOREHOLE LOCATION

(3.00) SEAM THICKNESS

POTENTIAL RESOURCE AREA

—1.0— ISOPACH

FAULT

SEAM OUTCROP

0 ·5 1 km

Scale 1 : 15 000

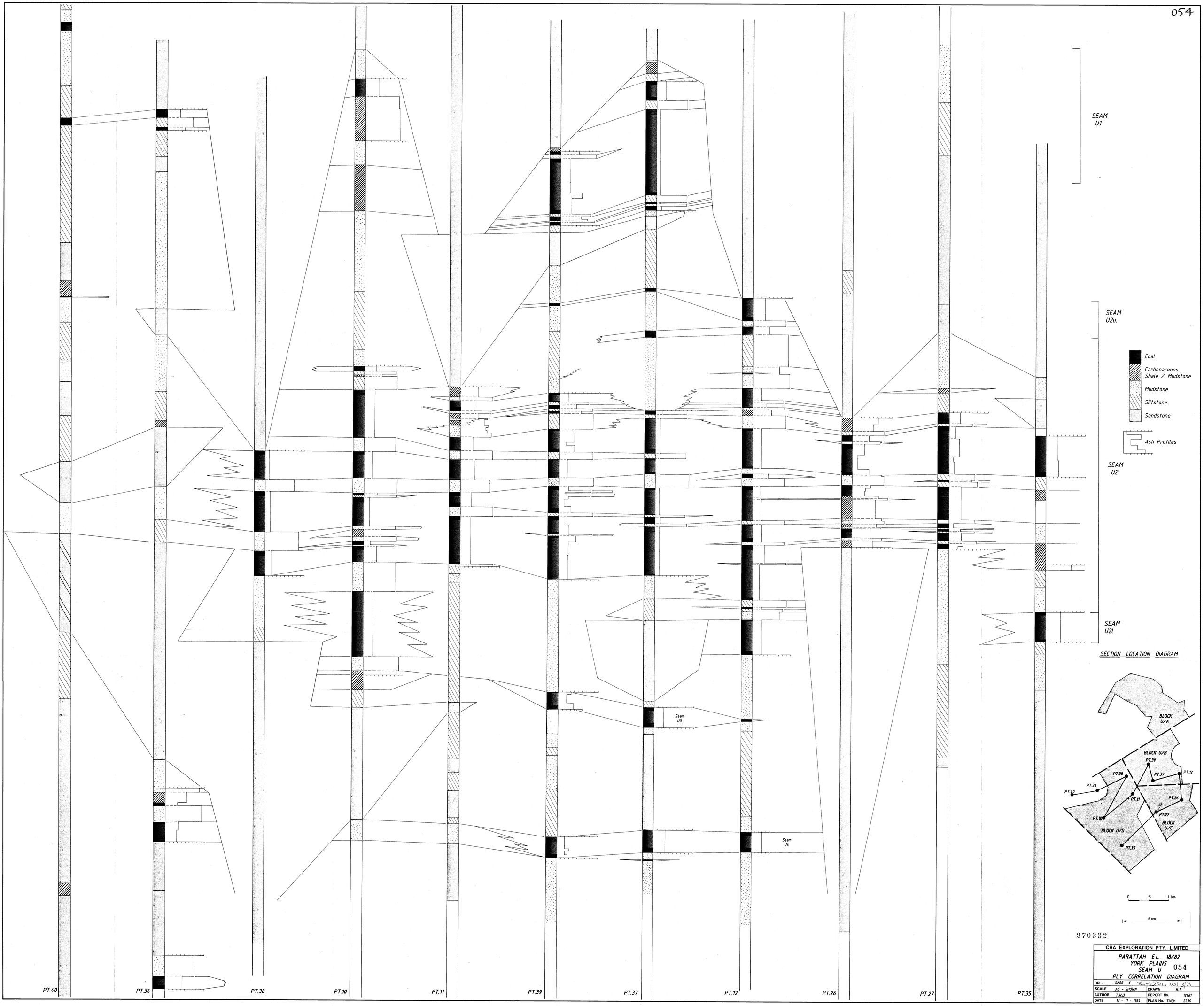
270331

5 cm

CRA EXPLORATION PTY. LIMITED

YORK PLAINS E.L. 18/82
SEAM U
ISOPACHS 053

REF.	SK 55-6	84-2294 VOL 3 B3	
SCALE	1:15,000	DRAWN	R.T.
AUTHOR	J.L.	REPORT No.	12961
DATE	14 - 11 - 1984	PLAN No. TASh	2245



SECTION LOCATION DIAGRAM

0 5 1 km

5 cm

270332

CRA EXPLORATION PTY. LIMITED			
PARATTAH E.L. 18/82 YORK PLAINS 054 SEAM U PLY CORRELATION DIAGRAM			
REF.	SKSS - 6	8-229L.V013	
SCALE	AS - SHOWN	DRAWN	R.T.
AUTHOR	T.W.D.	REPORT No.	12961
DATE	13 - 11 - 1984	PLAN No. TASh	2236

SOIL

DOLERITE SILL

SEAM W

SEAM U1

SEAM U2

SEAM U3

SEAM U4

SEAM T1

SEAM T2

PT 34

PT 25

PT 30

PT 31

PT 16

PT 32

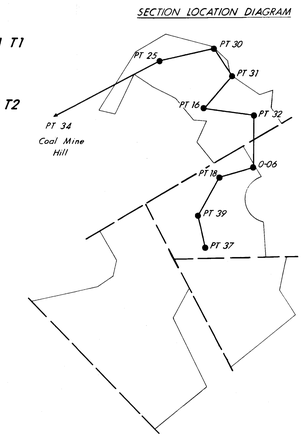
O-06

PT 18

PT 39

PT 37

SECTION LOCATION DIAGRAM



LEGEND

- CORRELATION DATUM LINE
- COAL
- CARBONACEOUS MUDSTONE
- SANDSTONE
- SILTSTONE / MUDSTONE

VERTICAL SCALE- 1:100

HORISONTAL SCALE - Nominal

GRAPHIC LOG

HIGH RESOLUTION DENSITY LOG

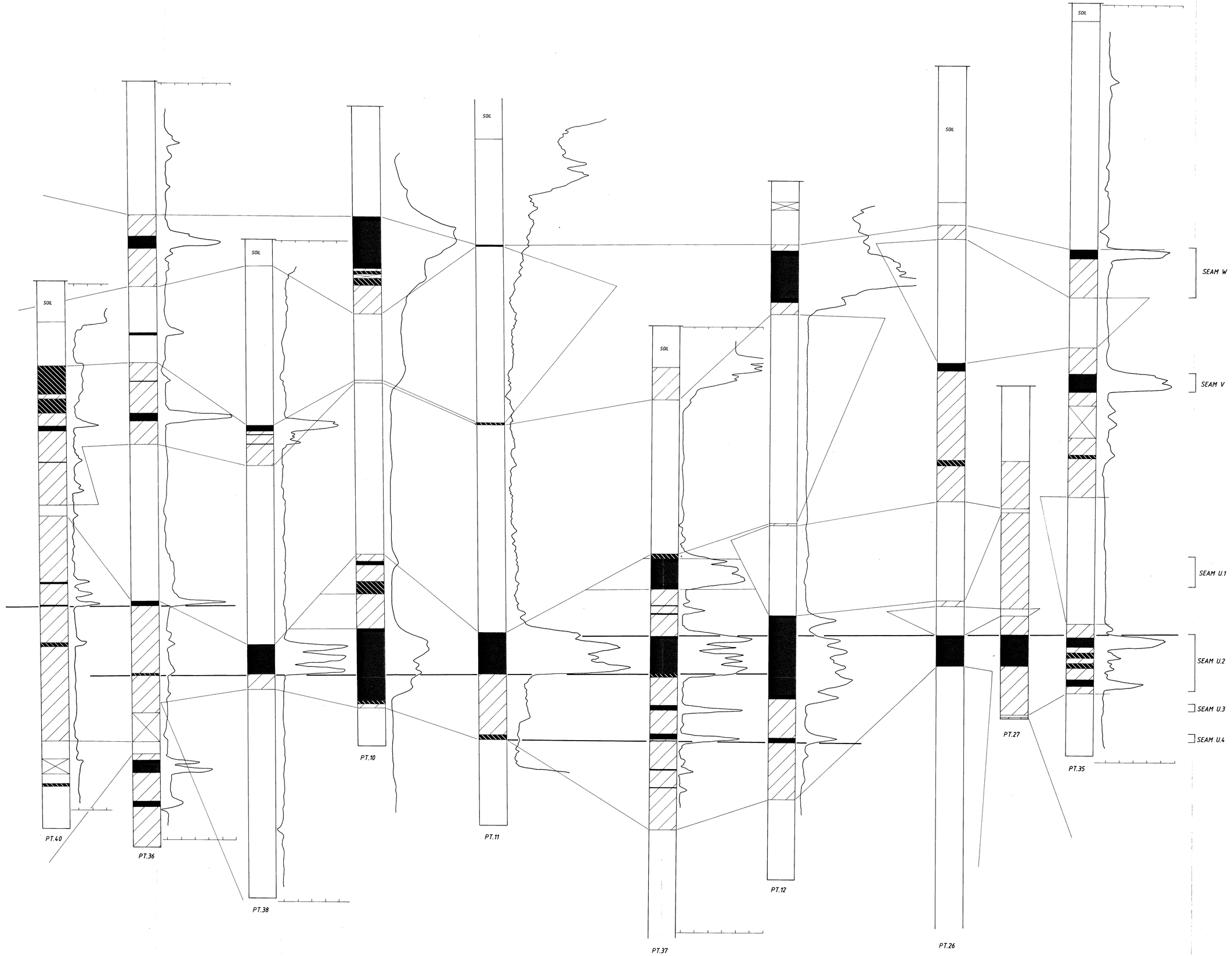
270333

5 cm

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82
YORK PLAINS 055
SEAM CORRELATION DATA
NORTHERN SHEET

REF.	SK55 - 6	82-2234 vol 2/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.W.D.	REPORT No.	12961
DATE	13 - 11 - 1984	PLAN No. TASh	2237



CORRELATION DATUM LINE

COAL

CARBONACEOUS MUDSTONE

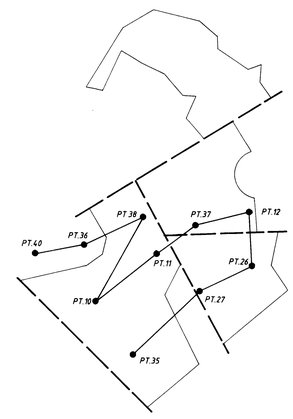
SANDSTONE

SILTSTONE / MUDSTONE

HIGH RESOLUTION DENSITY LOG

VERTICAL SCALE 1 : 100
HORIZONTAL SCALE NOMINAL

SECTION LOCATION DIAGRAM

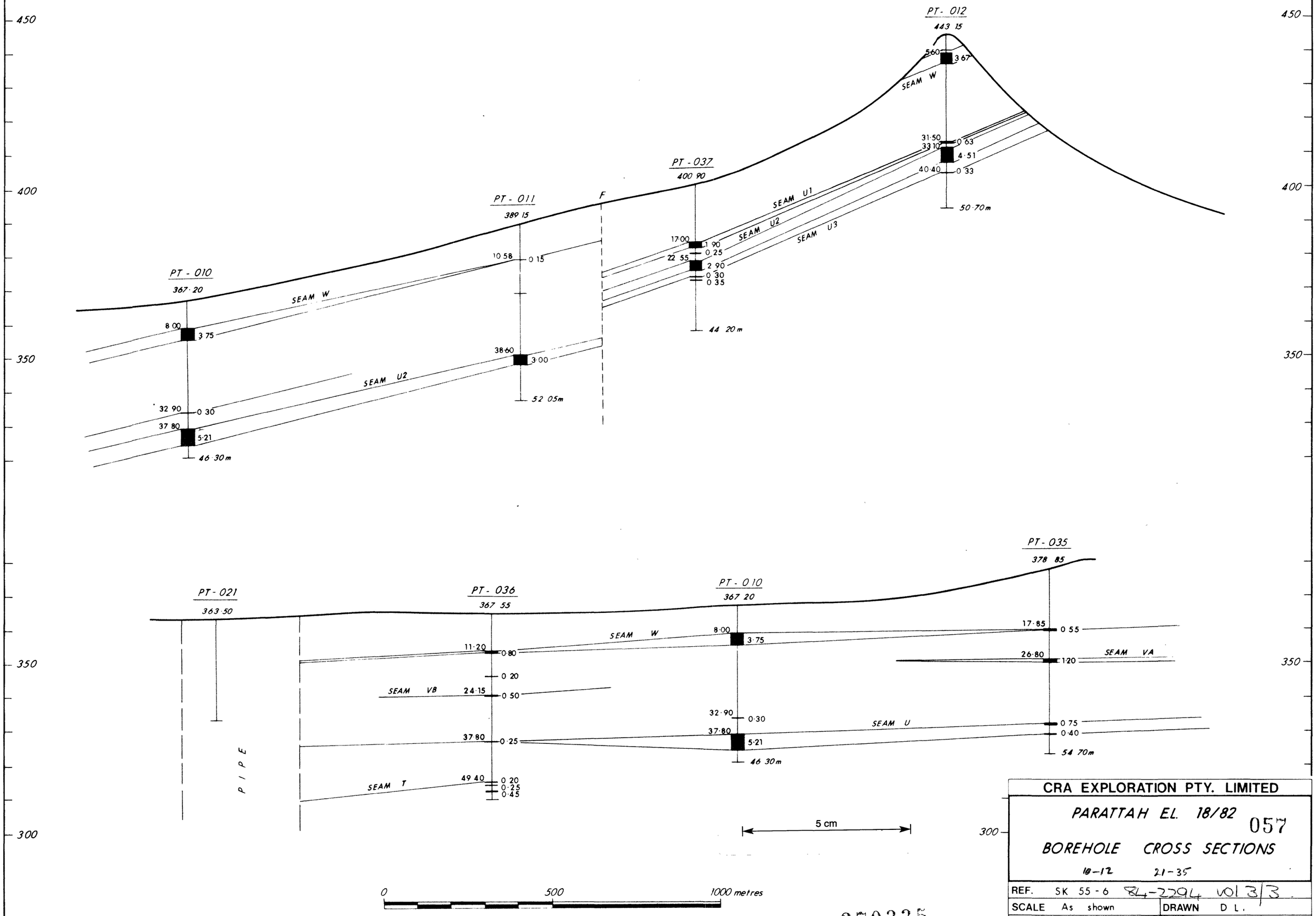


0 ·5 1 km

270334

5 cm

CRA EXPLORATION PTY. LIMITED			
PARATTAH E.L. 16/82 YORK PLAINS 056 SEAM CORRELATION DATA SOUTHERN SHEET			
REF.	SK55 - 6	84-2254 vol 3/3	
SCALE	AS SHOWN	DRAWN	R.T.
AUTHOR	T.W.D.	REPORT No.	12961
DATE	13 - 11 - 1984	PLAN No. TASh	2238



CRA EXPLORATION PTY. LIMITED

PARATTAH EL. 18/82

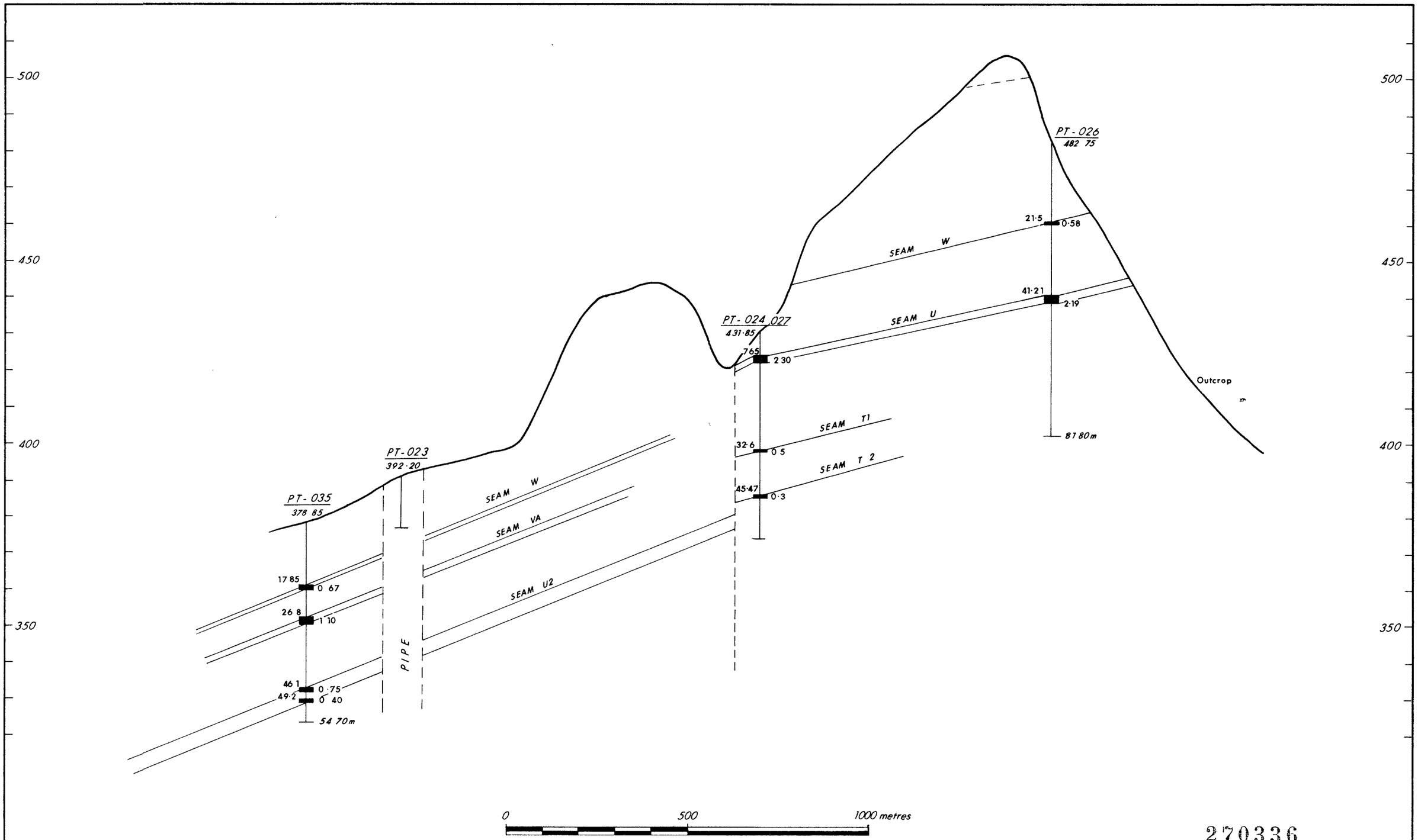
057

BOREHOLE CROSS SECTIONS

10-12 21-35

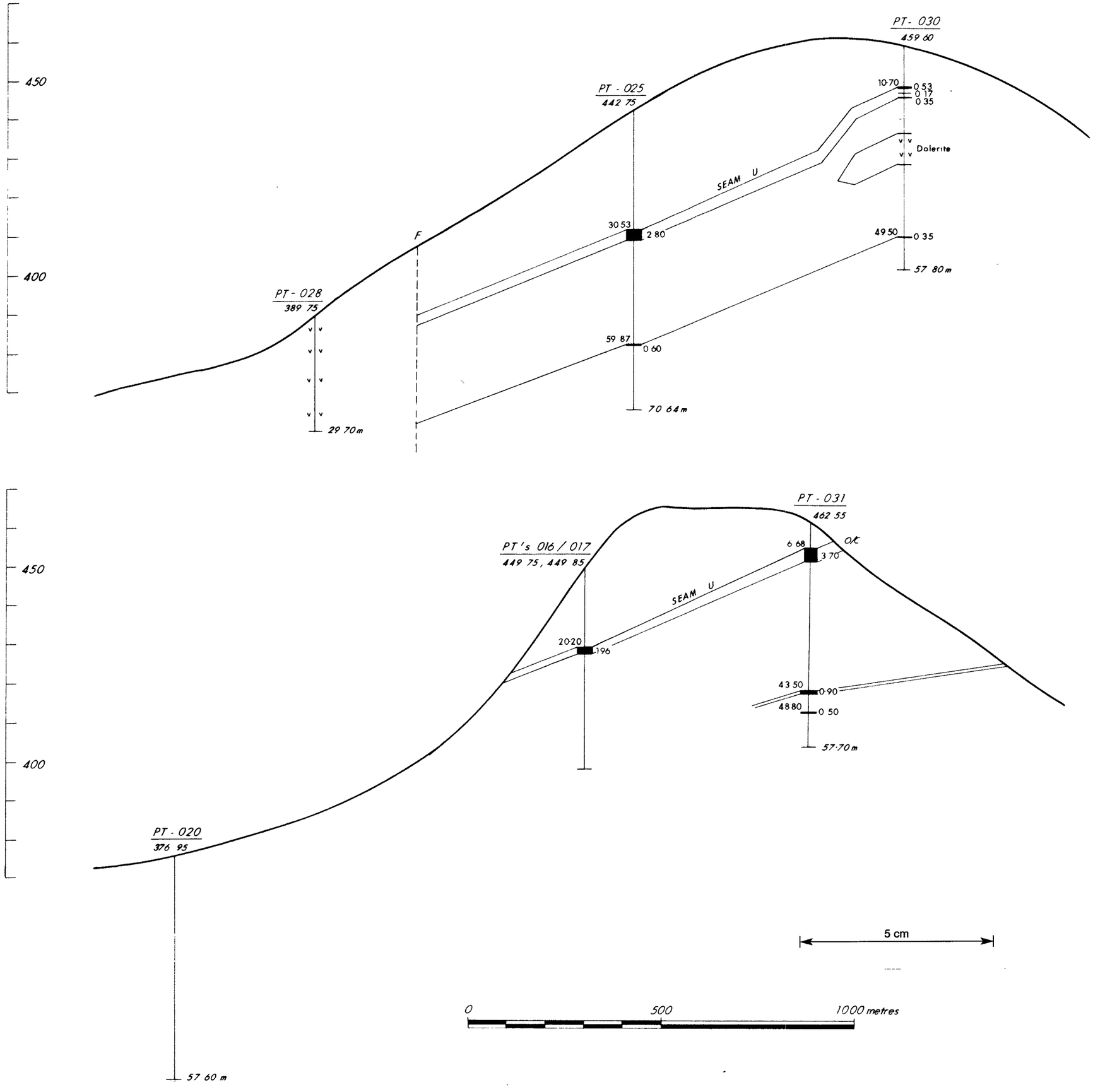
REF. SK 55 - 6	84-2294 vol 3/3
SCALE As shown	DRAWN D L.
AUTHOR T W. D.	REPORT No. 12961
DATE 9 - 11 - 84	PLAN No. TASh 2220

270335



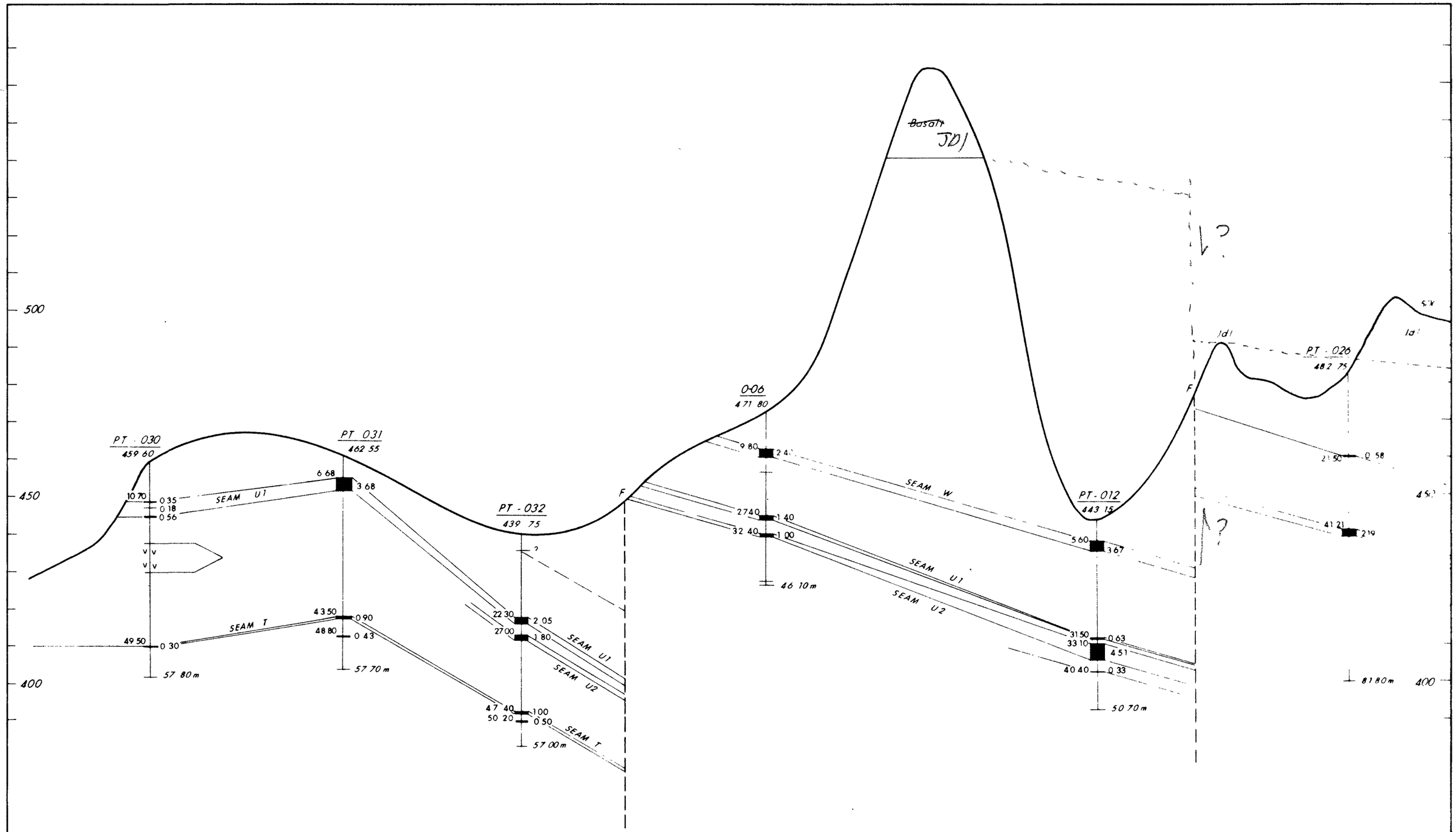
270336

CRA EXPLORATION PTY. LIMITED	
PARATTAH EL 18/82 058 BOREHOLE CROSS SECTIONS 35-26	
REF. SK 55-6 VOL 3/3 84-2294	
SCALE As shown	DRAWN D.L
AUTHOR T W D	REPORT No. 12961
DATE 9 - 11 - 84	PLAN No. TASh 2221



270337

CRA EXPLORATION PTY. LIMITED	
PARATTAH E.L. 18/82 059 BOREHOLE CROSS SECTIONS 28-30 20-31	
REF. SK 55-6 84-2294 vol 3/3	
SCALE As shown	DRAWN D L
AUTHOR T W D	REPORT No. 12961
DATE 9-11-84	PLAN No. TASh 2222



270338

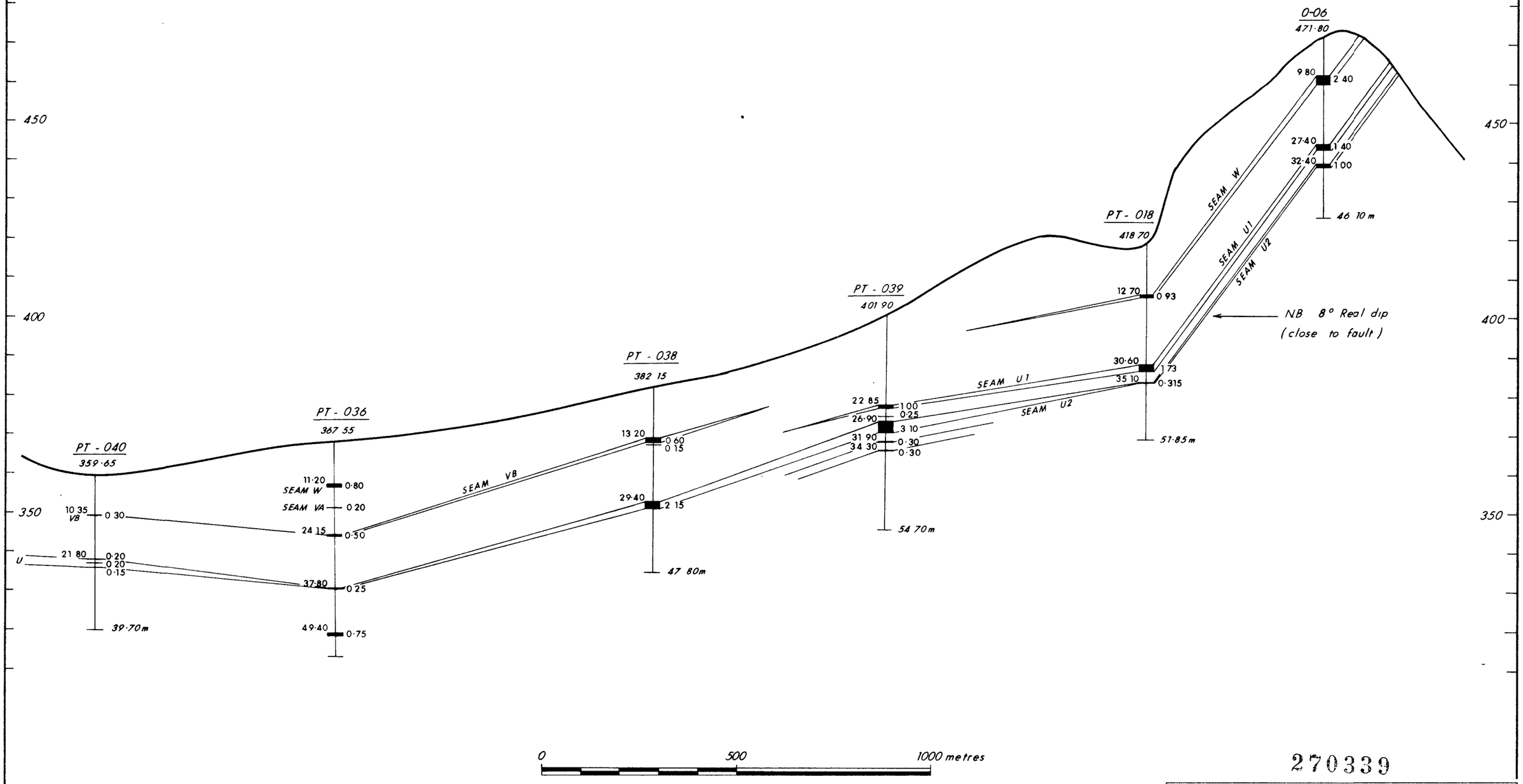
CRA EXPLORATION PTY. LIMITED

PARATTAH EL 18/82 060

BOREHOLE CROSS SECTIONS

30 -26

REF SK 55-6 84-2294 vol 3/3	
SCALE As shown	DRAWN D L
AUTHOR T W D	REPORT No. 12961
DATE 9 - 11 - 84	PLAN No. TASh 2223



270339

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

061

BOREHOLE CROSS SECTIONS

40 - 06

REF. SK 55-6 84-2294 V01 3/3	
SCALE As shown	DRAWN D L.
AUTHOR T W D	REPORT No. 12961
DATE 9 - 11 - 84	PLAN No. TASh 2224

N

5 cm

BLOCK U/A
AREA = 1·58 km²
RESERVES = 6·93 m.t.

BLOCK U/B
AREA = 1·36 km²
RESERVES = 9·40 m.t.

BLOCK U/C
AREA = 1·27 km²
RESERVES = 4·30 m.t.

BLOCK U/D
AREA = 2·76 km²
RESERVES = 12·75 m.t.

PT.15 PT.14 PT.32 PT.31 PT.29/30 PT.16/17 PT.25 PT.28 PT.18 PT.39 PT.37 PT.12/0.02 PT.26 PT.27 PT.24 PT.23 PT.35 PT.3 PT.38 PT.11/0.3A PT.20 PT.21 PT.36 PT.10/0.01 PT.40 PT.22

0.06 0 0.34

PAWTELLA ROAD

SORELL SPRINGS ROAD

PLAINS ROAD

DIATREME

FAULT

SEAM OUTCROP

POTENTIAL RESOURCE BLOCK

PT 25 BOREHOLE LOCATION

270340

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

SEAM U 062

RESOURCE BLOCK, AREA & TONNAGE

REF. SK 55-6 84-2294 vol 3/3	
SCALE 1:15 000	DRAWN D.L.
AUTHOR J.L.	REPORT No. 12961
DATE 12-11-1984	PLAN No. TASh 2246

N

5 cm

PT.29/30
PT.31
PT.15
PT.32
PT.16/17
PT.18
PT.14
0.06
PT.39
PT.12/0.02
PT.37
PT.26
0
PT.24
PT.27
ROAD
PT 25
PT 28
PT.20
PT.21
SPRINGS
ROAD
PT.38
PT.36
PT.11/0.3A
PT.10/0.01
ROAD
PT.40
PT.22
PLAINS
PAWTELLA
PT.23
PT.35
PT.3

BLOCK VB
AREA = 0·82 km²
RESERVES = 0·91 mt.

BLOCK VA
AREA = 0·60 km²
RESERVES = 1·12 mt.

DIATREME
FAULT
SEAM OUTCROP
POTENTIAL RESOURCE BLOCK
PT 25 BOREHOLE LOCATION

270341

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

SEAM V 063

RESOURCE BLOCK, AREA & TONNAGE

REF. SK 55-6 84-2294 Vol 3/3	
SCALE 1:15 000	DRAWN D.L.
AUTHOR J.L.	REPORT No. 12961
DATE 14-11-1984	PLAN No. TASh 2247

N

5 cm

BLOCK W1
AREA = 0·51 km²
RESERVES = 1·83 m.t.

BLOCK W2
AREA = 0·47 km²
RESERVES = 0·39 m.t.

BLOCK W3
AREA = 2·00 km²
RESERVES = 5·61 m.t.

PAWTELLA

PT 29/30 PT 31 PT 15 PT 32 PT 16/17 PT 25 PT 28 PT 20 PT 21 PT 38 PT 39 PT 37 PT 14 PT 12/0.02 0.06 PT 18 PT 26 PT 24 PT 27 PT 11/0.3A PT 36 PT 10/0.01 PT 23 PT 35 PT 3 PT 40 PT 22

ROAD

SPRINGS ROAD

PLAINS ROAD

DIATREME

FAULT

SEAM OUTCROP

POTENTIAL RESOURCE BLOCK

PT 25 BOREHOLE LOCATION

270342

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

SEAM W

064

RESOURCE BLOCK, AREA & TONNAGE

REF.	SK 55-6	84-2294 V013/3	
SCALE	1:15 000	DRAWN	D.L.
AUTHOR	J.L.	REPORT No.	12 961
DATE	14 - 11 - 1984	PLAN No.	TASh 2248

N

5 cm

BLOCK U/A

BLOCK U/B

BLOCK U/C

BLOCK U/D

PT 14

PT 15

PT 12/0.02 (40·2)

PT.32 (43·3)

PT.26 (26·9)

PT 31 (10·8)

PT 29/30 (26·9)

PT 16/17 (18·7)

PT 18 (36·8)

PT.39 (44·9)

PT.37 (39·4)

PT.24

PT.27 (34·3)

PT 25 (49·3)

PT 20

PT.38 (30·9)

PT.11/0.3A (33·4)

PT.23

PT.35 (53·2)

PT 28

PT 21

PT 36 (34·5)

PT.10/0.01 (33·4)

PT 40 (49·1)

PT 22

PT 3

PAWTELLA

ROAD

SPRINGS

SORELL

PLAINS

0 0·5 1km

FAULT

SEAM OUTCROP

POTENTIAL RESOURCE BLOCK

PT 25 BOREHOLE LOCATION

30 FIXED CARBON % ISOLINE

(36·8) FIXED CARBON %

270343

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

SEAM U

065

FIXED CARBON % (air dried)

REF. SK 55-6	84-2294 vol 3/3
SCALE 1:15 000	DRAWN D.L.
AUTHOR J. L.	REPORT No. 12961
DATE 12 - 11 - 1984	PLAN No. TASh 2230

N

5 cm

BLOCK U/A

BLOCK U/B

BLOCK U/C

BLOCK U/D

PT 29/30 (8·93)

PT 31 (3·32)

PT 16/17 (5·52)

PT 32 (18·45)

PT 25 (19·86)

PT 18 (13·13)

PT 39 (17·79)

PT 37 (16·6)

PT 14

PT 15

0.06

PT 12/0.02 (17·82)

PT 26 (12·40)

PT 24

PT 27 (15·24)

PT 11/0.3A (14·72)

PT 38 (18·72)

PT 35 (19·84)

PT 23

PT 3

PT 36 (13·60)

PT 10/0.01 (13·92)

PT 40 (19·53)

PT 22

PT 20

PT 21

PT 28

ROAD

SPRINGS

SORELL

PLAINS

PAWTELLA

ROAD

0 0·5 1km

FAULT

SEAM OUTCROP

POTENTIAL RESOURCE BLOCK

PT 25 BOREHOLE LOCATION

15 SPECIFIC ENERGY (MJ/Kg) ISOLINE

(17·79) SPECIFIC ENERGY (a.d.)

270344

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

SEAM U 066

SPECIFIC ENERGY (air dried)

REF SK 55-6 84-2294 V01 3/3	
SCALE 1:15 000	DRAWN D.L.
AUTHOR J.L.	REPORT No. 12961
DATE 12-11-1984	PLAN No. TASh 2231

N

5 cm

BLOCK U/A

BLOCK U/B

BLOCK U/C

BLOCK U/D

PAWTELLA

PT 14

PT 15

PT 31

PT 29/30 (5·5)*

PT 32 (13·3)

PT 16/17 (12·4)

PT 18 (6·0)*

PT 39 (9·6)*

PT 12/0.02 (11·8)

PT 37 (12·2)

PT 26 (12·6)

PT 24

PT 27 (14·8)

PT 11/0.34 (12·9)

PT 38 (10·5)

PT 23

PT 35 (8·1)*

PT 3

PT 25 (10·5)

PT 20

PT 28

PT 21

PT 36 (8·7)

PT 10/0.01 (10·6)

PT 40 (10·8)*

PT 22

ROAD

SPRINGS

SORELL

PLAINS

0 0·5 1km

* WEIGHTED AVERAGE

FAULT

SEAM OUTCROP

POTENTIAL RESOURCE BLOCK

PT 25 BOREHOLE LOCATION

8 VOLATILE MATTER % ISOLINE

(9·6) VOLATILE MATTER % (a.d)

270345

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

SEAM U 067

VOLATILE MATTER % (air dried)

REF. SK 55-6 84-2294 V0133.	
SCALE 1:15 000	DRAWN D.L.
AUTHOR J. L.	REPORT No. 12961
DATE 12 - 11 - 1984	PLAN No. TASh 2232

N

5 cm

BLOCK U/A

BLOCK U/B

BLOCK U/C

BLOCK U/D

PAWTELLA

PT 14

PT 15

PT 32 (23·2)

PT 31 (35·7)

PT 29/30 (21·2)

PT 16/17 (28·4)

PT 18 (14·05)

PT 12/0·02 (21·6)

PT 26 (31·9)

PT 39 (17·7)

PT 37 (23·6)

PT 24

PT 27 (30·1)

PT 11/0·34 (27·9)

PT 38 (20·8)

PT 25 (17·6)

PT 20

PT 28

PT 21

PT 36 (20·13)

PT 10/0·01 (24·1)

PT 40 (18·0)

PT 22

PT 23

PT 35 (13·4)

PT 3

Heat affected by diatreme

ROAD

SPRINGS

SORELL

PLAINS

0 0·5 1km

? FAULT

SEAM OUTCROP

POTENTIAL RESOURCE BLOCK

PT 25 BOREHOLE LOCATION

16 VOLATILE MATTER % ISOLINE

(28·4) VOLATILE MATTER % (d.a.f.)

270346

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

SEAM U 068

VOLATILE MATTER % (dry ash free)

REF. SK 55-6 84-2294 vol3/3	
SCALE 1:15 000	DRAWN D.L.
AUTHOR J. L.	REPORT No. 12961
DATE 12 - 11 - 1984	PLAN No. TASh 2233

N

5 cm

BLOCK U/A

BLOCK U/B

BLOCK U/C

BLOCK U/D

PT 29/30 (11·3)

PT 31 (8·2)

PT 32 (3·8)

PT 16/17 (5·8)

PT 18 (3·0)

PT 39 (3·0)

PT 37 (3·8)

PT 12/0.02 (3·8)

PT 14

PT 15

PT 26 (7·0)

PT 24

PT 27 (6·4)

PT 11/0.3A (5·5)

PT 38 (2·7)

PT 10/0.01 (5·4)

PT 36 (4·7)

PT 40 (2·3)

PT 25 (2·1)

PT 28

PT 20

PT 21

PT 22

PT 23

PT 35 (3·5)

PT 3

ROAD

PAWTELLA

SPRINGS ROAD

SORELL PLAINS ROAD

0 0·5 1km

? FAULT

SEAM OUTCROP

POTENTIAL RESOURCE BLOCK

PT 25 BOREHOLE LOCATION

5 TOTAL MOISTURE % ISOLINE

(3·8) TOTAL MOISTURE % (a.d.)

270347

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82

SEAM U 069

TOTAL MOISTURE % (air dried)

REF. SK 55-6	84-2293 vol 3/3
SCALE 1:15 000	DRAWN D.L.
AUTHOR J.L.	REPORT No. 12961
DATE 12-11-1984	PLAN No. TASh 2234

N

5 cm

BLOCK U/A

BLOCK U/B

BLOCK U/C

BLOCK U/D

PT 15

PT 14

PT 12/0.02 (41·5)

PT.32 (36·7)

PT 31 (75·0)

PT 29/30 (62·6)

PT.16/17 (68·1)

PT.18 (54·5)

PT.39 (41·6)

PT.37 (44·0)

PT.26 (53·5)

PT.24

PT.27 (44·5)

PT.25 (38·1)

PT.38 (44·9)

PT.11/0.3A (46·20)

PT.23

PT.35 (35·9)

PT 3

PT.10/0.01 (50·6)

PT.36 (52·1)

PT 20

PT 21

PT 28

PT 40 (37·8)

PT 22

ROAD

SPRINGS

SORELL

PAWTELLA

PLAINS

FAULT

SEAM OUTCROP

POTENTIAL RESOURCE BLOCK

PT 25 BOREHOLE LOCATION

50 ASH % ISOLINE

(41·6) ASH %

0 0·5 1 km

270348

CRA EXPLORATION PTY. LIMITED

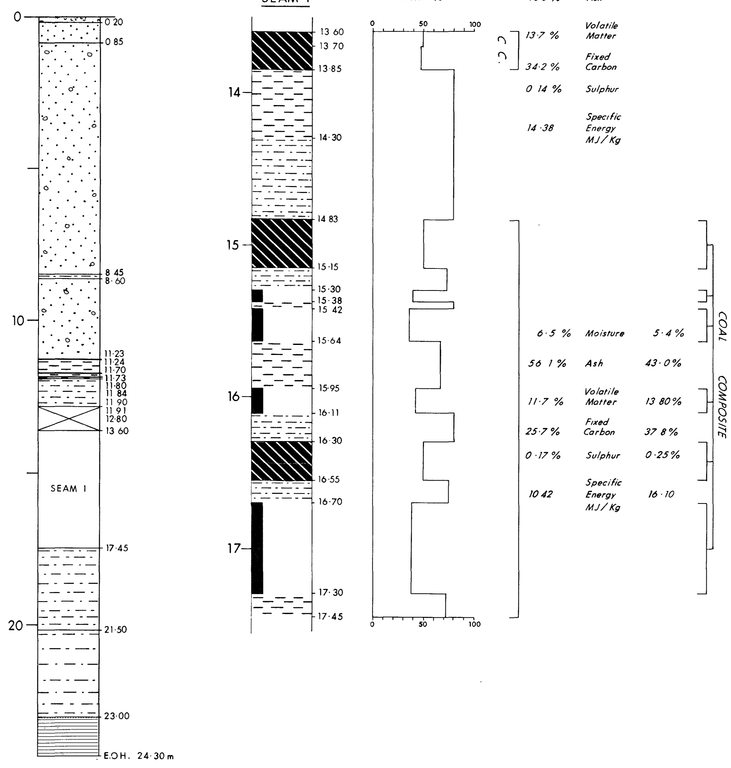
PARATTAH E.L. 18/82

SEAM U 070

ASH % ISOLINES ON IN SITU COAL

REF. SK 55-6 84-2294 V0 3/3	
SCALE 1:15 000	DRAWN D.L.
AUTHOR J. L.	REPORT No. 12961
DATE 12 - 11 - 1984	PLAN No. TASn 2235

DD 84 PT 08



LEGEND

QUATERNARY — CLAYS, SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL > 90 % brightness; COAL 60 - 90 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 1 - 10 % brightness; COAL < 1 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE SHALE; LITHIC; SUB LITHIC; QUARTZ (SANDSTONE); DOLERITE

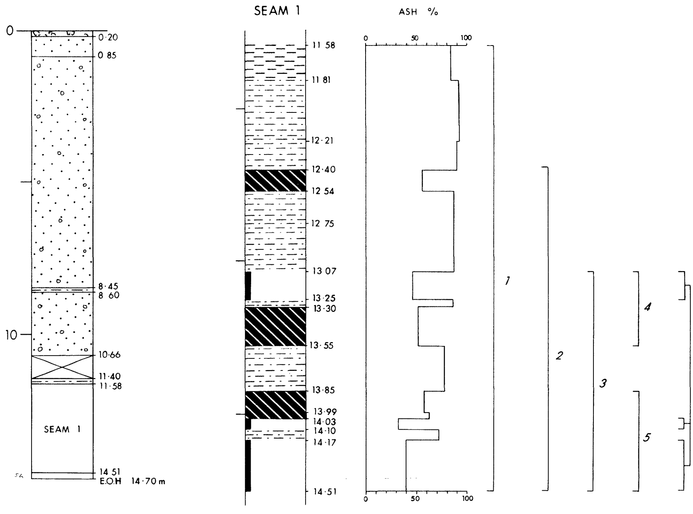
JURASSIC — DOLERITE

270349

5 cm

CRA EXPLORATION PTY. LIMITED			
PARATTAH E.L. 18/82 DD 84 PT 08 GRAPHIC LOG AND SEAM SECTIONS			071
REF.	SK55 - 6	R-2291 VOL 3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	14 - 11 - 1984	PLAN No. TASh	2252

DD 84 PT 08A



	1	2	3	4	5	6
Moisture	3·7 %	4·5 %	5·1 %	4·4 %	4·9 %	4·1 %
Ash	73·7 %	66·0 %	57·4 %	54·3 %	48·1 %	41·7 %
Volatile Matter	8·1 %	9·2 %	10·8 %	10·7 %	13·4 %	15·6 %
Fixed Carbon	14·5 %	20·3 %	26·7 %	30·6 %	33·6 %	39·3 %
Sulphur	0·10 %	0·14 %	0·17 %	0·21 %	0·19 %	0·24 %
Specific Energy MJ/Kg	5·60	7·82	10·58	12·74	14·34	17·58

LEGEND

QUATERNARY — SAND & GRAVEL; ALLUVIAL DOLERITE

TERTIARY — SAND; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL >95 % brightness; COAL 60 - 95 % brightness; COAL 40 - 60 % brightness; COAL 10 - 40 % brightness; COAL 5 - 10 % brightness; COAL < 5 % brightness; HEAVY DULL COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE SHALE; LITHIC; SUB LITHIC SANDSTONE; QUARTZ

JURASSIC — DOLERITE

270350

5 cm

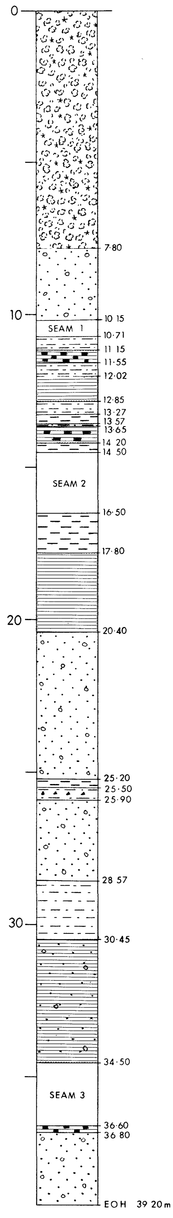
CRA EXPLORATION PTY. LIMITED

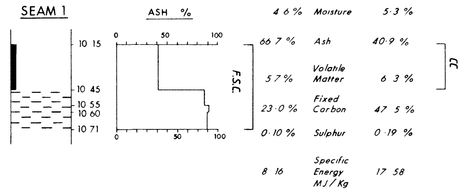
PARATTAH E.L. 18/82
DD 84 PT 08A
GRAPHIC LOG AND
SEAM SECTIONS

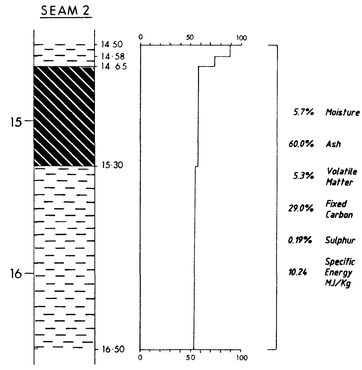
072

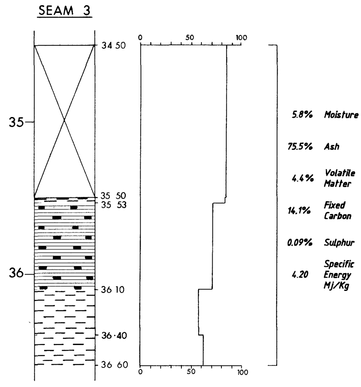
REF.	SK55 - 6	84-2294 vol 3/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	11 - 11 - 1984	PLAN No. TASh	2253

DD 84 PT 09

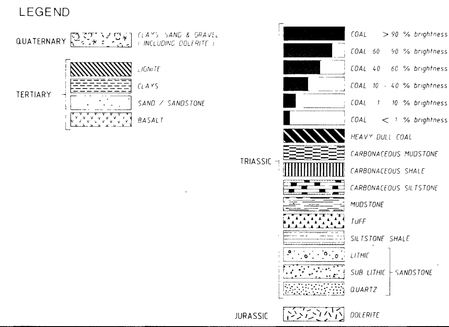








LEGEND



270351

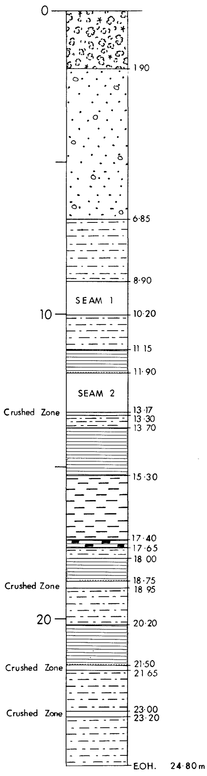
5 cm

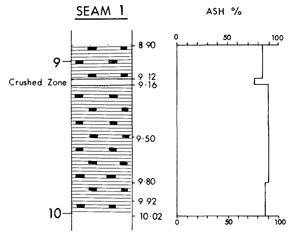
CRA EXPLORATION PTY. LIMITED

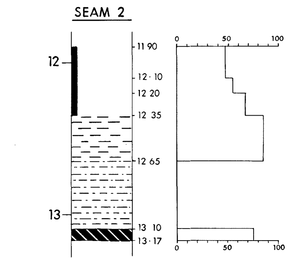
PARATTAH E.L. 18/82
DD 84 PT 09 073
GRAPHIC LOG AND SEAM SECTIONS

REF.	SK55 - 6	84-2254 VOL 3/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	14 - 11 - 1984	PLAN No. TASh	2254

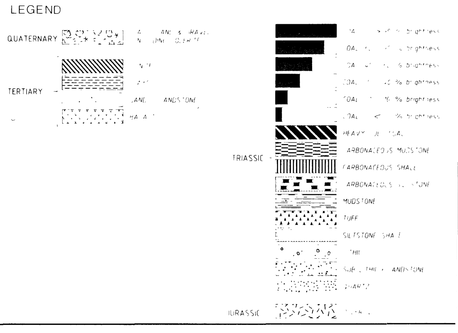
DD 84 PT 13







LEGEND

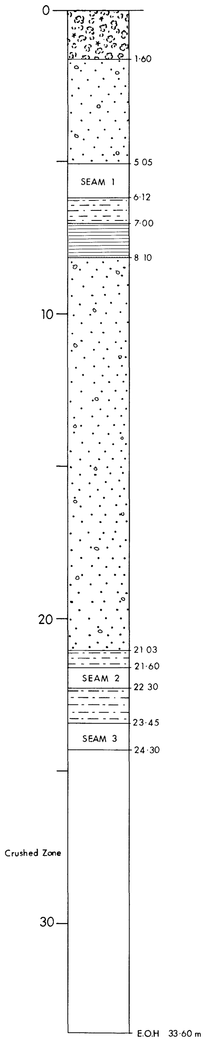


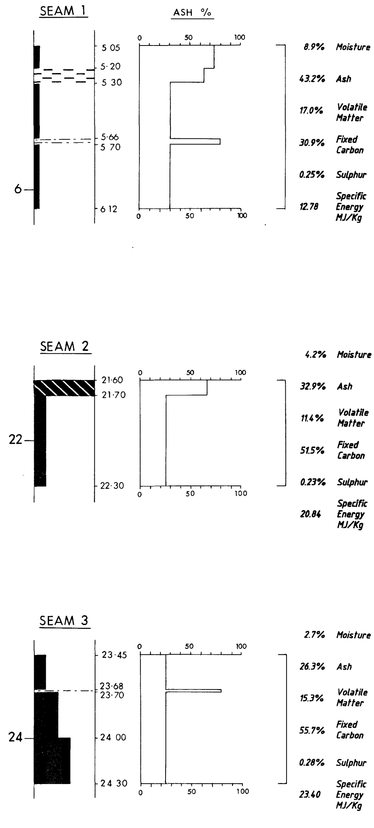
270352

5 cm

CRA EXPLORATION PTY. LIMITED			
PARATTAH E.L. 18/82 DD 84 PT 13 GRAPHIC LOG AND SEAM SECTIONS			074
REF.	SK55 - 6	84-2254 Vol 3	3
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	14 - 11 - 1984	PLAN No. TASh	2255

DD 84 JC 12





LEGEND

QUATERNARY — CLAYS SAND & GRAVEL (INCLUDING DOLERITE)

TERTIARY — LIGNITE; CLAYS; SAND / SANDSTONE; BASALT

TRIASSIC — COAL >90 % brightness; COAL 60 90 % brightness; COAL 40 60 % brightness; COAL 10 40 % brightness; COAL 1 10 % brightness; COAL <1 % brightness; HEAVY DUL. COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE SHALE; LITHIC; SUB LITHIC; QUARTZ — SANDSTONE

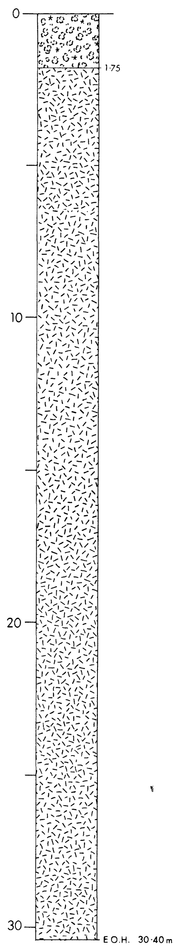
JURASSIC — DOLERITE

270353

5 cm

CRA EXPLORATION PTY. LIMITED		
JERICHO E.L. 20/82 DD 84 JC 12 GRAPHIC LOG AND SEAM SECTIONS		075
REF. SK55 - 6		
SCALE AS SHOWN	DRAWN D.L.	
AUTHOR T.G.S.	REPORT No. 12961	
DATE 14 - 11 - 1984	PLAN No. TASh 2256	

DD 84 JC 13



LEGEND

QUATERNARY

TERTIARY

TRIASSIC

JURASSIC

270354

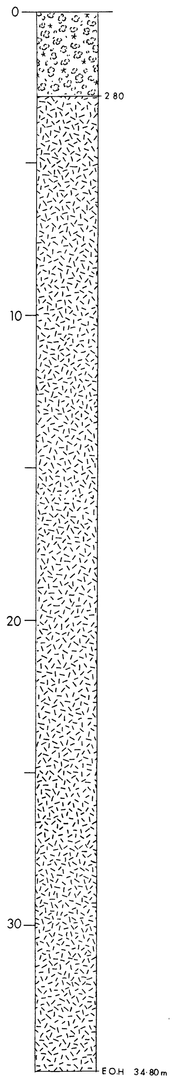
CRA EXPLORATION PTY. LIMITED

JERICHO E.L. 20/82
DD 84 JC 13
GRAPHIC LOG AND
SEAM SECTIONS

076

REF.	SK55 - 6	84-2259L VOL 3	3
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	14 - 11 - 1984	PLAN No. TASh	2257

DD 84 JC 13A



LEGEND

QUATERNARY — CLAY, SAND & GRAVEL INCLUDING OPALITE

TERTIARY — BASALT

TRIASSIC — COAL >10 % brightness; HEAVY INCL. COAL; CARBONACEOUS MUDSTONE; CARBONACEOUS SHALE; CARBONACEOUS SILTSTONE; MUDSTONE; TUFF; SILTSTONE SHALE; SUB-LITHIC SANDSTONE

JURASSIC — VOLCANIC

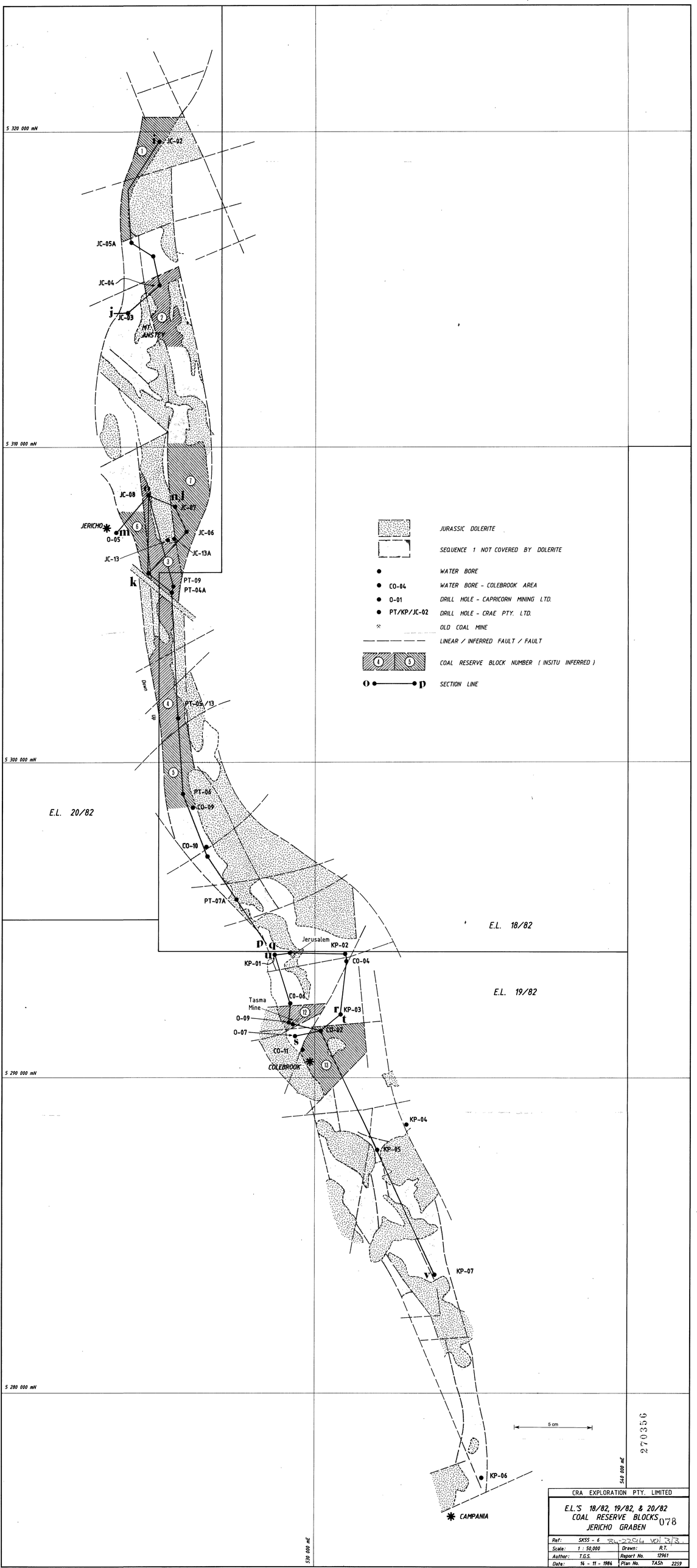
270355

CRA EXPLORATION PTY. LIMITED

JERICHO E.L. 20/82
DD 84 JC 13A
GRAPHIC LOG AND
SEAM SECTIONS

077

REF.	SK55 - 6	BL-2296, vol 3/3	
SCALE	AS SHOWN	DRAWN	D.L.
AUTHOR	T.G.S.	REPORT No.	12961
DATE	14 - 11 - 1984	PLAN No. TASh	2258



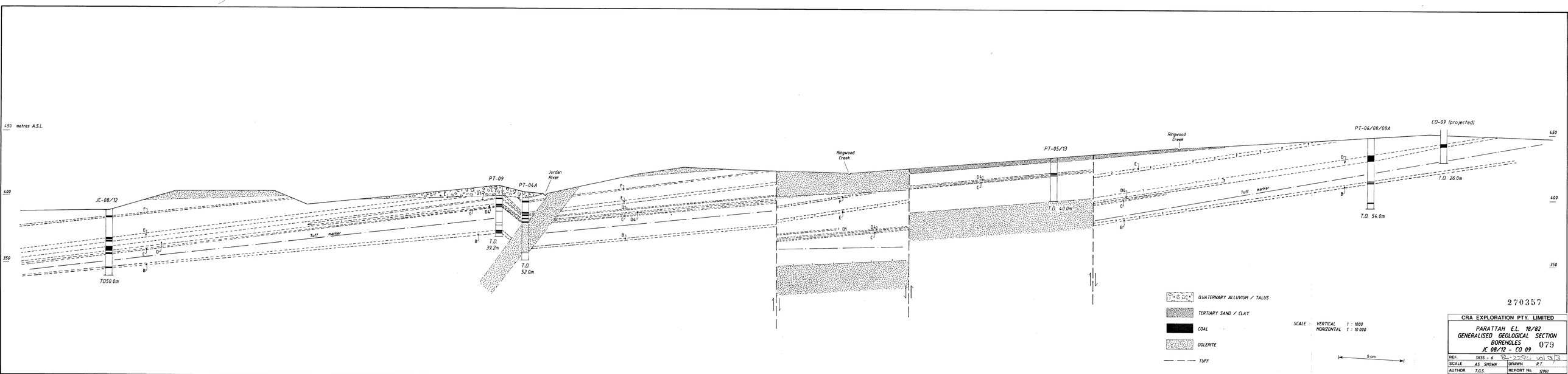
CRA EXPLORATION PTY. LIMITED

E.L.'S 18/82, 19/82, & 20/82
COAL RESERVE BLOCKS
JERICHO GRABEN

Ref:	SK55 - 6		
Scale:	1 : 50,000	Drawn:	R.T.
Author:	T.G.S.	Report No.	12961
Date:	14 - 11 - 1984	Plan No.	TASh 2259

078

270356



270357

CRA EXPLORATION PTY. LIMITED

PARATTAH E.L. 18/82
GENERALISED GEOLOGICAL SECTION
BOREHOLES 079
JC 08/12 – CO 09

REF.	SKSS - 6	DRAWN	R.T.
SCALE	AS SHOWN	REPORT No.	12961
AUTHOR	T.G.S.	PLAN No. TASh	2251
DATE	14 - 11 - 1984		