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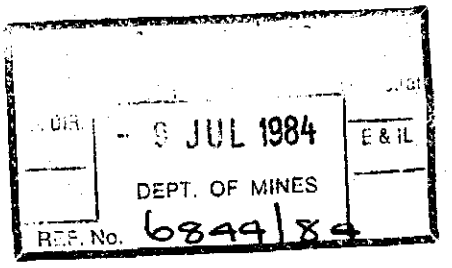
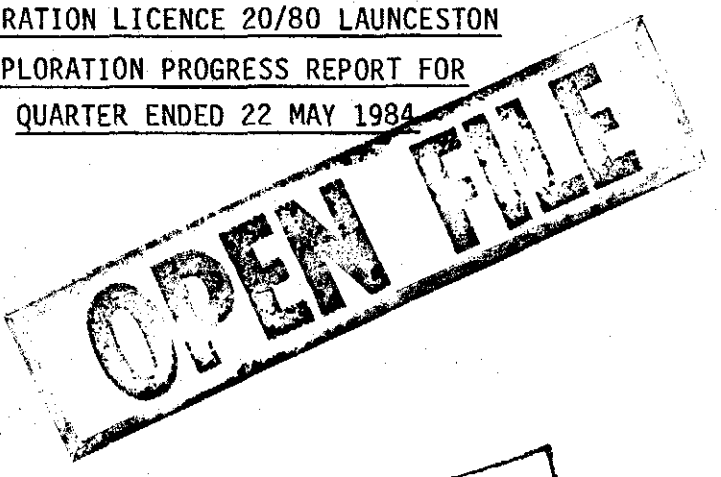
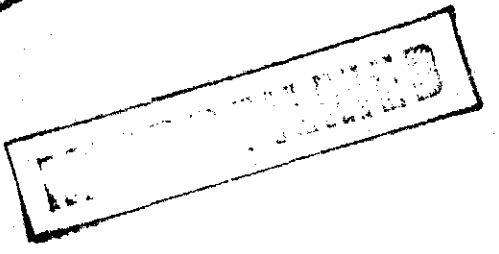



# EXPLORATION LICENCE 20/80 LAUNCESTON
# EXPLORATION PROGRESS REPORT FOR
# QUARTER ENDED 22 MAY 1984



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M.J. Carr June 1984

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Note: Appendices bound separately.

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1. SUMMARY

Computer modelling of the Loatta brown coal deposit was finalised during the reporting period, and reserves recalculated . Indicated reserves to 60m depth in the B, D, and F coal intervals have been increased to 72Mt, 90% of which is contained within the persistent D seam group. Total indicated reserves of the Rosevale Coalfield now stand at 134Mt, compared with 118Mt reported previously. However, structural reinterpretation of Loatta confirms the presence of a series of north and north-east trending faults with vertical displacements ranging up to 70m. Consequently, revision of the original mining plan will be required.

A review of prospective Triassic black coal areas within EL 20/80 confirmed that only the Hummocky Hills block, north-west of Conara Junction, had sufficient exploration potential to warrant further investigation. Four percussion holes, to an aggregate depth of 200.1m, were subsequently drilled in an area of outcropping Triassic sediments flanking the Hummocky Hills dolerite sill. No coal was intersected, each drillhole passing through thin contact metamorphosed "coal measures" before intersecting a major dolerite body. No additional work is planned for the area.

Assessment of coal market opportunities in Tasmania over the next 15 years suggests that there is very limited scope for development of the Rosevale Coalfield other than as a supplier to an on-site thermal power station. In view of Rosevale's exclusion from the present HEC coal supply competition, future work on Rosevale will be limited to maintenance of the currency of mining studies and the geological data base pending improved market outlook.

## 2. INTRODUCTION

### 2.1 Scope of Report

This report outlines geological investigations conducted by CSR Limited in Exploration Licence (EL) 20/80 Launceston, and more specifically, the Rosevale Coalfield, during the three month period ended 22 May 1984. Activity during the quarter centred on geological re-evaluation of the Loatta coal deposit within the Rosevale Coalfield, and exploratory drilling for black coal in the Hummocky Hills Triassic remnant near Epping Forest.

### 2.2 Tenement Details

EL 20/80, originally covering an area of 2,339 $km^2$, was granted to AAR Limited (a wholly-owned subsidiary of CSR) on 19 September 1980. The term of the EL has been progressively extended as first oil shale then coal exploration continued. In February 1983 the licence was transferred from AAR Limited to CSR Limited and the area was reduced to 984 $km^2$. The Licence is due to expire on 22 August 1984.

### 2.3 Location, Access, Climate, Physiography, and Land Use

EL 20/80 extends northwards from Conara Junction to the southern suburbs of Launceston, thence continues north-west from Longford as far as Rosevale and Westbury (Figure 2.3).

The Rosevale Coalfield, defined on the basis of three closely related yet discrete brown coal deposits, is located near the north-western corner of EL 20/80, 20 km due west of Launceston and 12 km north-east of Westbury. The Bass Highway and the Western railway line pass 8 - 10 km south of the deposits.

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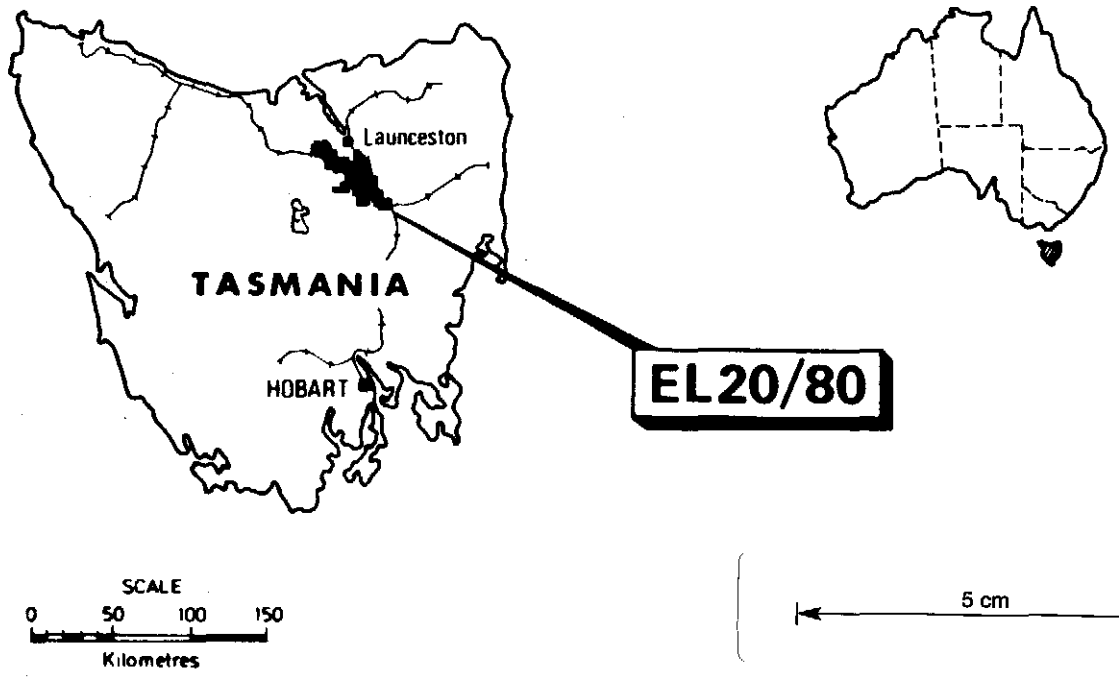


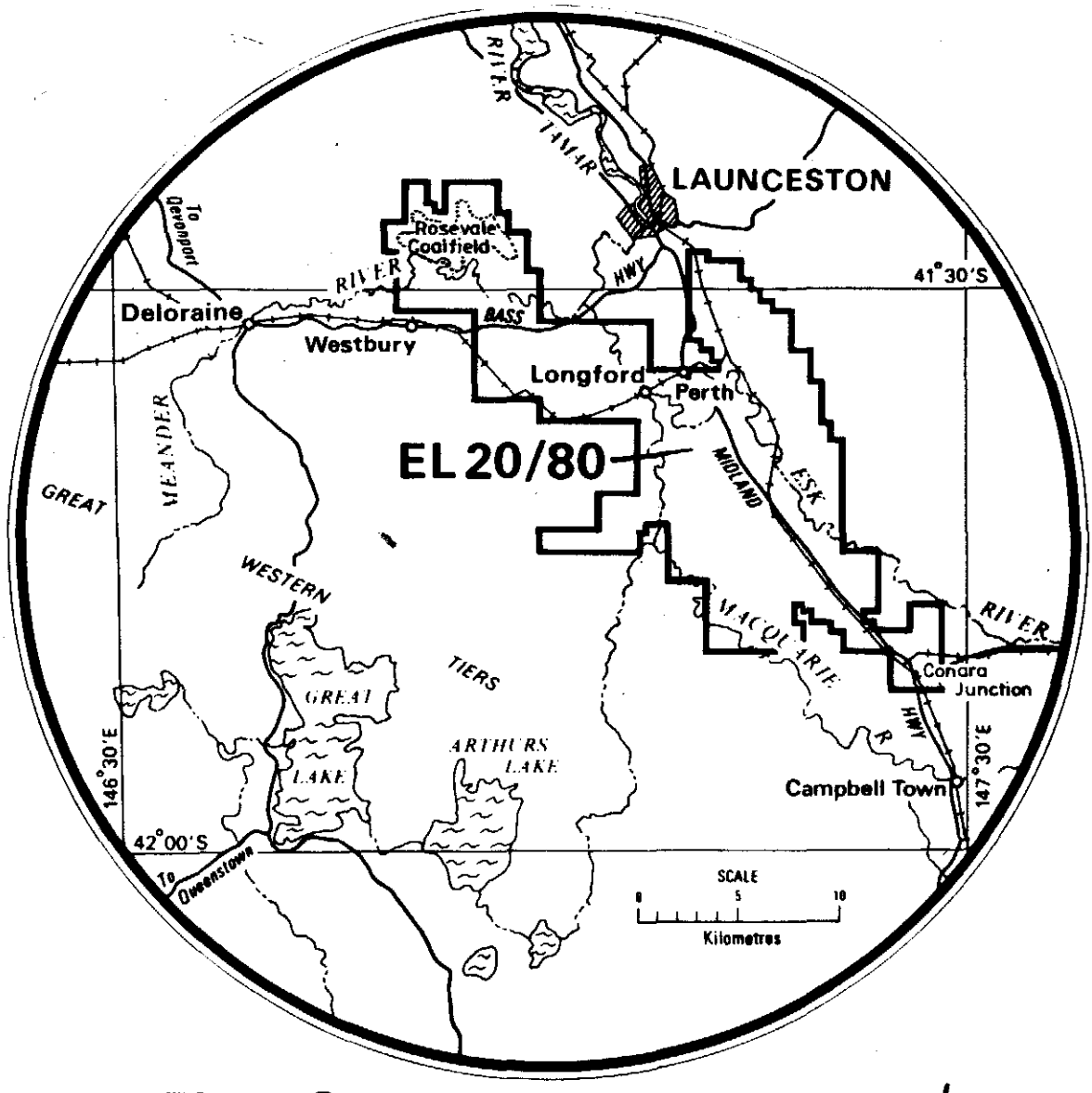


# EXPLORATION LICENCE 20/80
# TASMANIA

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FIGURE 2.3

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Local access to the coalfield is via sealed and good quality unsealed shire roads linking Westwood and Rosevale settlements with Carrick, Hagley and Westbury. Farm tracks provide dry weather access to the greater part of the three deposits. During the wet winter and spring months local pastures become boggy and restrict the movement of vehicles off farm roads.

The climate of the area is temperate, with cold winters in which low-level snowfalls are occasionally recorded and warm, drier summers. Annual rainfall averages 750mm, falling principally in the winter months. January through March is generally dry and is the ideal time for exploration activity.

Topography of the Rosevale area is a reflection of the local geology, with the soft, coal-bearing, Tertiary Launceston Beds expressed as physiographic lows, and the more erosion-resistant Jurassic dolerites and Permo-Triassic sediments occurring as hills around the northern, eastern and western margins of the coal deposits. Late Tertiary basalts cover isolated areas of the Launceston Beds, forming low flat-topped hills and ridges. Total relief in the immediate environs of the coalfield is of the order of 50m. However, a major range of hills separates the Rosevale basin from Launceston, and encircles it to the north.

Southerly flowing ephemeral streams drain the coalfield area, through various low gradient marshy zones (for example, Pipers Lagoons) into the Meander River, which is the major water course around Westbury and is the source of Westbury's reticulated water supply. The river crosses the Tertiary basin just south of the coal deposits, though it does pass over the southern limit of one coal area, before joining the South Esk River close to Hadspen.

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The principal land use over the Rosevale Coalfield is sheep and cattle raising, with small areas being under cultivation. With the exception of the most easterly of the coal deposits, Pipers Lagoons, which is largely covered with light forest, the land on and around the coalfield has been cleared and improved to varying degrees.

That portion of the EL between Perth and Conara Junction lies within eastern Tasmania's rainfall shadow zone, and experiences substantially less rainfall than the Westbury area, at about 500mm per annum. Consequently, this area is lightly vegetated with eucalypt forest remnants and open grassland used almost wholly for sheep grazing. Apart from the conspicuous Hummocky Hills dolerite remnant, standing some 300m above the surrounding plains, topography is subdued, comprising alluvial plains and low rolling hills underlain by dolerite and Tertiary sediments. Excellent access is provided by a network of roads and tracks linking townships on the Midland Highway with Longford, Cressy, and numerous farm settlements.

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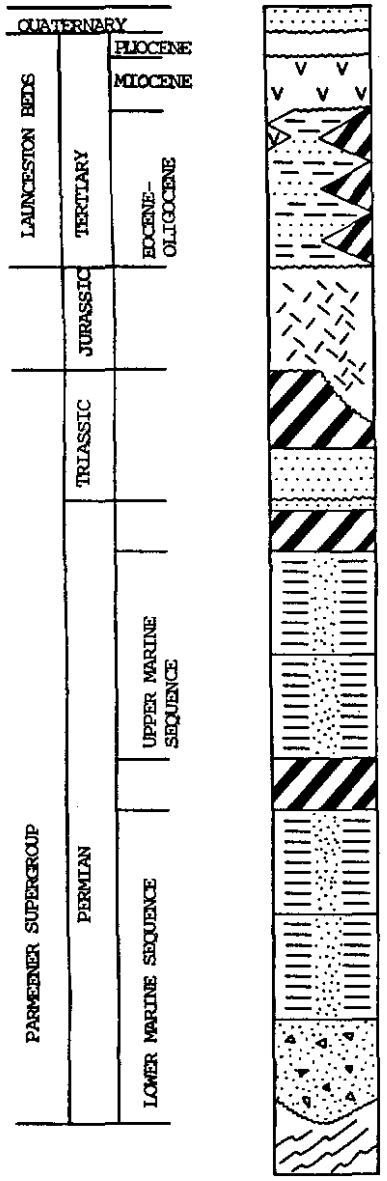
## 3. GEOLOGY OF EL 20/80 LAUNCESTON

### 3.1 Regional Geological Setting

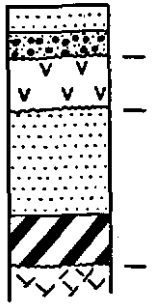
Tertiary brown coals at Rosevale occur in a different structural and stratigraphic setting from Tasmania's better-known Permo-Triassic black coals. Within EL 20/80, it is the Permo-Triassic Parmeener Supergroup and intrusive Jurassic tholeiitic dolerite dykes and sills, which constitute "basement" to the Tertiary coal-bearing Launceston Beds. Black coal has been recorded from EL 20/80 at several horizons within the Parmeener Supergroup (see stratigraphic column, Figure 3.1.1), but not in quantities of any economic significance. However, one area of outcropping Upper Permeener Super-Group coal measures, that flanking the Hummocky Hills dolerite sill west of Epping Forest, remains to be tested for black coal occurrences. Dolerites, as sills up to 300m thick, have consistently intruded Parmeener sediments in the Launceston Basin area at the base of the Triassic succession.

In Tasmania during the early Tertiary a series of north to north-west trending grabens formed, in which predominantly non-marine sediments ranging up to 1,000m in thickness accumulated. Four main grabens are recognised, and each contains traces of brown coal or carbonaceous material. The northern part of the Midlands Graben (Figure 3.1.2), known as the Launceston Basin, contains the largest volume of Tertiary sediments in Tasmania, and consequently has the best potential for development of brown coal deposits in the state. The presence of brown coal has been recorded at several locations in the Launceston Basin, extending from Conara Junction in the south, north to Launceston and north-west to Rosevale (Figure 3.1.3).










| Stratigraphic Name | | Lithological Description | Prospective Area in EL 20/80 | Thickness Range |
|---|---|---|---|---|
| | | Alluvium | | |
| Upper Zone | | Gravel, boulder beds | | |
| | | Alkali – Olivine basalts | | Up to 60m |
| Middle Zone | | Clay, Silt, Sand<br>Brown Coal and Oil Shale | Loatta, Pipers Lagoons and Selbourne Deposits | 0–1,000m |
| Lower Zone | | | Breadalbane Lignite | |
| Dolerite Intrusion | | Medium to course grained, tholeiitic dolerite | | 0–305m |
| Fingal or Newtown Coal Measures | | Feldspathic Sandstone<br>Black coal Seams | Longford Coal Field<br>Norwich and Pateena Mines | 0–200m |
| Knocklofty or Ross Sandstone | | Quartzose Sandstone | | 60–100m |
| Cygnet Coal Measures<br>Jackey Formation | | Carbonaceous Sandstone and Shale with Plant Fragments, | thin coal seams | less than 45m |
| Bogan Gap Group | | Predominantly unfossiliferous mudstone | | up to 200m |
| Poatina Group | | Fossiliferous Mudstone and Sandstone | | 40–100m |
| Mersey Coal Measures<br>Liffey Group | | Carbonaceous Quartz-Mica Sandstone and Shale, thin coal seams | | 30–49m |
| Golden Valley Group | | Unfossiliferous erratic rich mudstone, shale limestone and sandstone | | 45–60m |
| Quamby Mudstone | | Unfossiliferous, dark grey pyritic mudstone. Includes Tasmanite Oil Shales of Railton-Latrobe Area | | 75–120m |
| Stockers Tillite | | Tillite and erratic rich mudstone | | 0–140m |
| Basement | Silurian | Turbidite sequences, dominately shale and siltstone | | |
| | Ordovician | Siliceous conglomerate | | |
| | Cambrian | Turbidite sequences containing quartzite | | |
| | Precambrian | Quartzite | | |

Unconformity

Disconformity

Unconformity

Unconformity

Unconformity

Note: Column 2 after Johnson 1873 only applies to Stratigraphy of Launceston Area

Compiled from information contained in Mathews (1974).

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | CSR |
|---|---|---|
| DRAWING | DATE | |
| DRAWN C.J. | Nov. '82 | STRATIGRAPHY OF THE PARMEENER SUPERGROUP AND LAUNCESTON BASIN IN EL 20/80 |
| CHECKED | | SCALE |
| REVISED | Oct.'83 | FIGURE 3.1.1 |
| | | DRAWING No 70020 - 90 |

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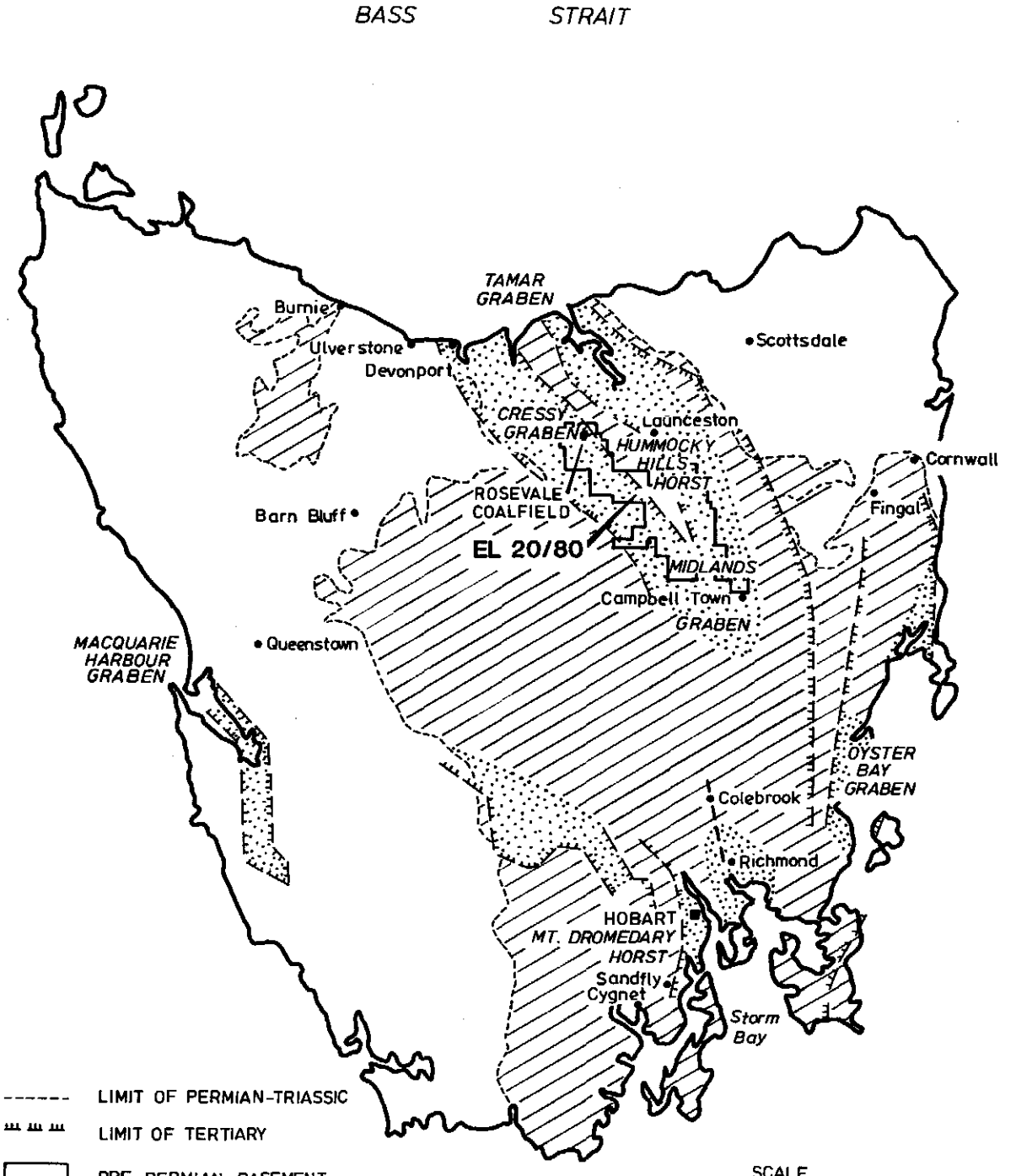
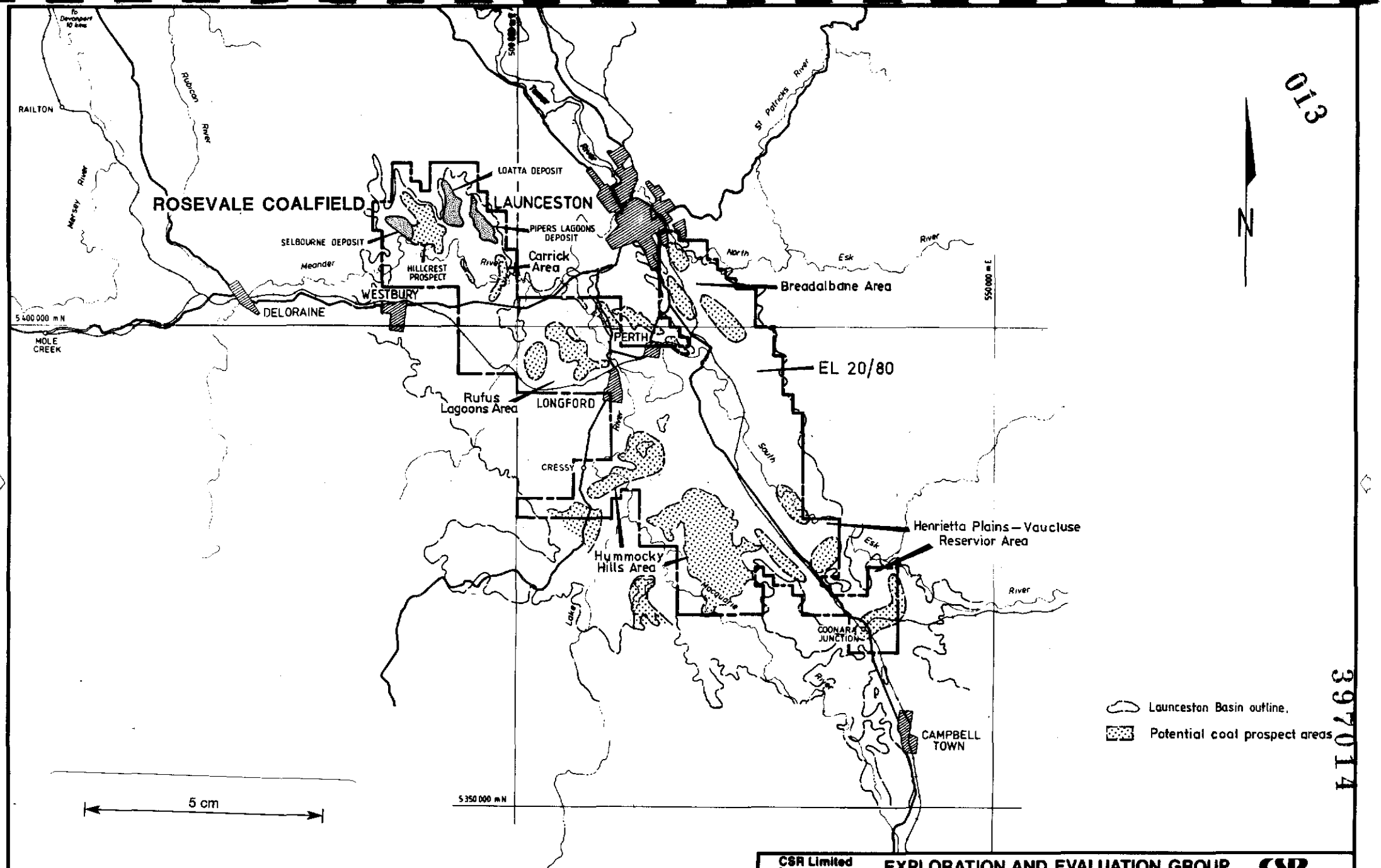



| | | |
|---|---|---|
| CSR Limited Coal Division — EXPLORATION AND EVALUATION GROUP | | |
| DRAWING / DATE | SEDIMENTARY BASINS AND TERTIARY STRUCTURAL ELEMENTS OF TASMANIA | SCALE: AS SHOWN |
| DRAWN: C.J. Dec. '82 | | FIGURE 3-1-2 |
| CHECKED | | DRAWING No: 70020 – 92 |
| REVISED: Oct. '83 | | |

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|---|---|---|---|
| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | | CSR |
| DRAWING | DATE | | |
| DRAWN MRN | Dec.'82 | ROSEVALE COALFIELD AND LOCATION OF PROSPECTIVE AREAS IN EL 20/80 | SCALE 1 : 500000 |
| CHECKED | | | FIGURE 3·1·3 |
| REVISED J.M. | Oct.'89 | | DRAWING No 70020 - 94 'R' |

The Launceston Basin is further subdivided by the Hummocky Hills Horst into a western (Cressy) graben and an eastern (Tamar) graben. The Rosevale Coalfield is located on the eastern edge of the Cressy Graben.

Deposition of sediments in the grabens commenced in the Paleocene to Lower Eocene and continued until the Upper Oligocene. The sequence is composed primarily of non-marine clays, silts, sands and gravel, with brown coal and carbonaceous facies, together with minor marine or brackish water sediments. Environments of deposition were in a state of constant flux during the Tertiary, alternating from fluviatile to lacustrine to subaerial, and are reflected in the rapid lateral facies changes revealed from exploratory drilling. The primary source of the inorganic sediments which infilled the Tertiary grabens was the sandstone, siltstone and mudstone of the Parmeener Supergroup and the Jurassic dolerite.

Basin-wide correlation of Tertiary strata, and particularly brown coal horizons, has not been established in the Launceston Basin, nor has a formal intrabasinal stratigraphic sequence. Johnson (1888) proposed the term "Launceston Beds" for the Tertiary succession and arbitrarily divided it into three zones. The lower zone contains laminated strata, with brown coal seams and fossilised leaves, resting unconformably upon Parmeener Supergroup strata. It is presumed to have accumulated in a lacustrine flood-plain environment. The middle zone is represented by cross-bedded fluviatile sands, as well as clay, silt, oil shale and brown coal. The upper zone comprises gravel and boulder beds on terraces flanking the present course of the Tamar River. The brown coal at Rosevale nominally lies within a dominantly fine clastics facies of Johnson's "middle zone".

Late Tertiary "Newer" volcanics (basalt flows) extensively overlie the Launceston Beds and because the Tertiaries occupy topographically low areas there is widespread veneering by uppermost Tertiary and Quaternary marsh and swamp deposits, alluvium and colluvium.

## 3.2 Local Geology of the Rosevale Coalfield

The Rosevale Coalfield comprises three discrete brown coal deposits, the Loatta, Pipers Lagoons and Selbourne deposits, together with a less well defined area having coal potential referred to as the Hillcrest prospect (Figure 3.2).

The coal deposits lie close to the eastern edge of the Cressy Graben, in a series of restricted "embayments" in the pre-Tertiary basement (locally Jurassic dolerite). Individual coal basins are constrained by outcropping or sub-cropping dolerite and in certain cases the contact between Tertiary sediments and basement rocks is steep, suggestive of penecontemporaneous downwarping or fault displacement.

At Rosevale the Tertiary Launceston Beds comprise a monotonous sequence of interbedded clays, carbonaceous clays and brown coal, with minor sandy intercalations. They have yet to be subdivided stratigraphically. The strata pinch out towards the basin margins by onlap onto basement, and thicken rapidly towards the depositional centres. Total thickness represented locally is not known - one drillhole has penetrated 152m of Tertiary sediments without significant change in lithology.

Whilst clay is the dominant lithology, sandy beds constitute up to a few percent of the drilled section in a number of holes, and locally may comprise 25 - 100% of section. The sands are therefore considered to be lenticular, but insufficient is known of their areal distribution and spatial relationships to determine their environment of deposition. Individual sand bands range in thickness from 2m to about 20m, and almost always occur at a stratigraphic level below the brown coal bearing strata.

Exploration drilling by CSR has identified up to four principal brown coal intervals, each comprising up to 16 individual seams. All seams are lenticular, generally thinning towards basement highs, and occur at comparatively shallow depths.

The brown coal seams have been correlated using characteristic downhole geophysical log signatures and by examination of cross-sections. Correlations can be made with reasonable confidence in the central areas of the deposits where maximum coal development occurs, but become tentative towards the margins. Seam correlation between deposits has not been possible, although with additional drilling, the Hillcrest prospect may provide a link between Loatta and Selbourne.

Cumulative overburden ratios (expressed as bank cubic metres overburden per tonne of coal) calculated to the lowest drilled horizon at Loatta, Pipers Lagoons and Selbourne are, respectively, approximately 3:1, 5:1, and 8:1.

Remnants of late Tertiary basalt cap the Launceston Beds in a number of areas around the margins of the Rosevale coal deposits, forming prominent hills and ridges. Up to 18m of weathered volcanic material has been recorded in drilling to date. The maximum thickness likely to be present on the coalfield is estimated to be 20-25m. Recent cover, soil, clay and sand is volumetrically insignificant except in low-lying swampy areas.

## 3.3 Geology of the Hummocky Hills Inlier

Triassic Upper Parmeener Super-Group sediments, believed referable to the Fingal Coal Measures, crop out over an area of about 7 $km^2$ just south of the Hummocky Hills dolerite sill, apparently overlying quartzose Ross Sandstone. Outcrops of these Triassic rocks are predominantly of baked (contact metamorphosed) mudstone, with lesser fine quartz-lithic and quartzo-felspathic sandstone.

The relationship between the Jurassic dolerites and the sediments is not altogether clear on field evidence. In the rolling hills just south of the main dolerite sill, dolerite tends to crop out on all topographic highs, whereas metasediments dominate the low areas. Thus the situation was intepreted as implying that the coal measures had been exhumed from beneath an overlying sill. However, it had also been observed that close to the summit of the Hummocky Hills about 30-50m of hornfelsed coal measures appear to be sandwiched between the main sill and an upper sill.

West and north-west of the Hummocky Hills shallow dolerite is overlain by a thin veneer of Launceston Beds and younger colluviun or alluvium. To the north and east the Tertiary basin deepens rapidly.

Recent exploratory drilling for black coal in the Triassic rocks south of the Hills failed to confirm the hypothesised relationship between dolerite and sediments (see Section 4.3), and no coal was intersected.

# 4. EXPLORATION AND GEOLOGICAL EVALUATION

## 4.1 Previous Exploration and Geological Evaluation

CSR has previously undertaken four drilling programmes in EL 20/80 over the periods March-April 1981, October-December 1981, and March-April 1982, and October-December 1983. In all 140 holes were completed to a total metreage of 9,608.6m. The later programmes concentrated on the Rosevale area and of the 140 holes drilled 94 are located in the Rosevale Coalfield (refer to Figures 3.2 and 4.2 for borehole locations). Some 56 drillholes lie within the three main deposits, 37 in Loatta (31 non-core, 6 core), 15 in Pipers Lagoons (10 non-core, 6 core), and 4 at Selbourne (1 non-core, 3 core). Coring intervals were determined from adjacent logged open holes and KMLC (100mm diameter) cores were taken from about 1m above each seam to well into floor rock.

All but three of the Rosevale drillholes have been geophysically logged, the earlier ones with a portable S.I.E. unit, the later ones with truck-mounted digital equipment utilising a full suite of probes (gamma, dual-spaced density, caliper, neutron, resistivity, and S.P.). By establishing an empirical relationship between logged long-spaced density and measured ash content (from core analysis) it has been possible to utilise logged non-cored holes for estimation of seam ash content to a high degree of reliability.

Rotary chip cuttings and drillcore were logged in detail. Cored intervals were logged immediately after drilling to minimise bed moisture loss. They were then sealed in PVC tubing or plastic for despatch to CSR's NATA-registered testing laboratory. Analytical work on ply samples generally comprised determination of total moisture, specific energy and relative density, together with proximate analysis. Selected mining sections were then composited and a more comprehensive suite of tests undertaken.

All borehole data (geological and analytical) have been encoded for computer storage and manipulation. Subsequent geological evaluation has centred on computer modelling leading to plan and section generation and calculation of coal reserves. Additional recent work has been in the area of seam lithotype analysis and sedimentological modelling.

## 4.2 Exploration During the Quarter Ended 22 May 1984

Over the period 14-18 May 1984 four boreholes to a total metreage of 200.1m were drilled to test the balck coal bearing potential of the Upper Parmeener Super-Group "coal measures" sequence cropping out south of the Hummocky Hills, 16 km north-west of Conara Junction.

Borehole locations are shown on the 1:100,000 scale plan of EL20/80, given as Figure 4.2, and results summarised in Table 4.2. No coal was intersected, each hole passing from thin contact metamorphosed (baked) sediments into dolerite of unknown thickness. Consequently, the programme was abandoned after only 200m of the planned 600m of drilling had been completed.

TABLE 4.2

Drillhole Summary, Hummocky Hills Programme

| Drillhole No. | Easting mE | Northing mN | Collar RL m | Overburden Thickness m | Triassic Thickness m | Dolerite Thickness m | Total Depth m |
|---|---|---|---|---|---|---|---|
| R0130 | 519100 | 5374400 | 170 | - | 14.5 | 51.1+ | 75.6 |
| R0131 | 521030 | 5375580 | 200 | 0.7 | 2.3 | 57.0+ | 60.0 |
| R0132 | 533610 | 5376100 | 190 | 3.5 | 6.8 | 9.2+ | 19.5 |
| R0133 | 522300 | 5374380 | 170 | 1.1 | 34.7 | 9.2+ | 45.0 |

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Approximately 20m of clay separates the B seam interval from a variably split D seam interval 6 - 50m thick and averaging about 30m. This D - zone persists areally over the greater part of the deposit, although it has been subject to erosion in certain areas. In the south of Loatta, a lower seam group, F, 7 - 25m thick, occurs 20 - 30m below the D seam interval.

With the assistance of geophysical log information, coal horizons, and most individual coal plies, can now be reasonably positively correlated between data points 200 - 500m apart. Correlations are less certain in the south-western sector of the deposit where borehole separation exceeds 500m. Considerable stratigraphic and lateral variation of working sections within the correlatable coal horizons is in evidence.

35 individual seams within the B, D, and F intervals have been shown to be correlatable between two or more boreholes. Of these, 25 are sufficiently developed to have been included in the computer reserves model. Seam designations are listed in Table 4.3. Isopach plots, masked off at a minimum seam thickness of 0.5m and maximum dry basis ash estimate of 50%, and interburden maps, have been created and are included with this report as Figures 4.3.2 - 4.3.55. New in situ reserve estimates based on the revised model, are given in Section 5.1.

East-west cross-sections, and a longitudinal tie-line, have been provided previously. From the seam isopach plots it can be seen that the majority of seams as defined are very limited in their distribution, significantly affecting the mineability of the deposit and reducing the gross tonnage of recoverable coal available. Individual seams range in thickness from 0.5m (the cut off limit) to about 9m, averaging perhaps 1.5 - 2.5m. Interburden thicknesses appear somewhat erratic, primarily as a matter of definition through the inclusion of high ash coal material with the interburden.

022

The geological map of the area, depicting dolerite occupying topographic highs, and sediments the valleys, is basically correct. However, the accepted interpretation, on which the drilling programme was based, of coal measures having been exhumed from beneath the 150m plus thick Hummocky Hills dolerite sill, is clearly wrong. What we are looking at are thin, rafted, baked sediment remnants overlying a major sill, and through which dolerite feeders have intruded (the topographic highs) to a former upper sill (paralleling the apparent relationship between the hornfelsed coal measures and dolerites on the crest of the Hummocky Hills a little to the north). That the Ross Sandstone, which underlies the coal measures immediately to the south of the drilled area, seems also to have been invaded by dolerite suggests the main (lower) sill transgresses the Ross Sandstone - coal measures contact and is stratigraphically "low" in the Triassic pile. Thus prospects for locating coal bearing sediments beneath the dolerite elsewhere in the region appear poor.

No further work is planned in the area.

4.3 Geological Evaluation During Quarter Ended 22 May 1984

Geological re-evaluation of the Loatta deposit, consequent upon the October-December 1983 drilling programme, was essentially completed during the reporting period. Geological log printouts, analytical data printouts, and geophysical logs (in microfiche format) of holes drilled during the previous programme, and geological logs of the four holes completed during the 22 May quarter, accompany this report.

The recent drilling at Loatta indicates a simpler stratigraphic picture than previously given, largely as a result of regrouping and recorrelation of seams. An uppermost banded coal interval, A, which ranges in thickness over 5 - 10m is restricted to the central portion of the deposit in a downthrown block, and occurring as it does very close to surface, is limited by erosion. Approximately 10m of clay separates the A seam interval from a banded B seam interval, which ranges in thickness over 10 - 30m.

023

TABLE 4.3

Summary of Correlatable Coal Seams - Loatta Deposit

| Seam Interval | Individual Seam |
|---|---|
| A | No individual seams correlated* |
| B | 21*, 22*, 31*, 32*, 33*, 41*, 42*, 43*, 51, 52, 53, 6, 7, 8, 9, X. |
| D | H1, H2, I, J1, J2, K, L*, M, N, O, P, Q, R, S, T.* |
| F | A, B, C, D. |

* Not modelled

024

Structurally the Loatta deposit is now known to be much more complex than originally believed. RL variation on the top of the easily correlatable D interval (Seam H1) is indicative of a complicated pattern of faulting, especially in the central western part of the deposit where vertical displacements as great as 70m are in evidence. Figure 4.3.1 shows a possible structural interpretation centring on three major intersecting faults (of unknown relative order). Apart from anomalous seam RL values, further evidence of faulting can be found in irregular fairly steep dips (for example 15-20$^{o}$ in core from C0116, and severe attenuation of geophysical log traces in R0125). Superficially, the south-eastern portion of the Loatta deposit appears to have been subject to only low amplitude folding. This may well be more apparent than real, bearing in mind the more tenuous nature of correlations towards the south.

Drillhole spacing at Loatta ranges between 200m and about 800m. A station spacing of 250m would be required to elevate reserve status to "measured" in view of the stratigraphic variability and structural complexity of the deposit.

Even more closely-spaced drilling will be needed to resolve structural anomalies and accurately locate faults. Certain ground geophysical methods may assist with solution of the structural problem.

Whereas no new evaluation work has been undertaken on the other coal deposits which comprise the Rosevale Coalfield, for completeness a brief description follows.

Like the Loatta deposit, that at Pipers Lagoons is constrained to the east and west by basement outcrop or subcrop and is closed to the south by pinching out of the coal seams. The deposit has an irregular elongate shape, with a distinct, almost separate, lobe in the north.

025

Here, the B and C seam groups are better developed, with 11 separate seams being recognised. Maximum seam thickness is 8.5m in the far north of the deposit, but there are two distinct areas of greatest coal formation. Structure contouring of B and C seam invervals shows the presence of a saddle between two weakly developed domal structures in the north and the south, although again dips are very low ($2^{o}$ or less). Overburden ratios at Pipers Lagoons are not as controlled by topography as at Loatta, with the lowest ratios occurring over the domal features at the extremities of the deposit. The higher ratios occur towards the deposit margins. Both overburden and interburden are composed of grey clay with lesser carbonaceous material. Sand is virtually non-existent in the sequence, having been noted in only one drillhole at depth (beneath the C coal interval).

Selbourne is a small, shallow, flat-lying deposit, formed in apparent isolation without obvious basement confinement. it may, however, interconnect with Loatta via the Hillcrest prospect.

Five separate brown coal seams make up the A, B, and C intervals. They range from 1.5m to 3.7m in thickness. Clay, and to a lesser degree, inferior brown coal and carbonaceous clay, dominate the non-coal Tertiary section, with minor sand lenses appearing in the east. Overburden is primarily clay, except towards the eastern limit of the deposit where basalt veneers the sediments and the overburden to coal ratio increases rapidly.

In the Hillcrest area coal seams thicker than 1.5m have been drilled at depths ranging between 15m and 42m. They are possible stratigraphic equivalents of the B and D intervals of the Loatta deposit. Hillcrest coal is of inferred status only at present and therefore is not included in Rosevale reserves.

## 4.4 Future Activity

During 1983 very substantial expenditure was incurred on the Rosevale Coalfield readying the project for consideration as a potential fuel source for an on-site 400MW thermal power station, planned for commissioning by the HEC in the very early 1990's. Rosevale was subsequently excluded from the competition on non-technical grounds. Consequently CSR then examined the black coal potential of EL 20/80, on the understanding that the HEC was inclining towards a black coal fired station somewhere in the vicinity of Conara Junction. Four exploration holes were drilled in the most prospective area of outcropping Triassic "coal measures", flanking the Hummocky Hills, west of Epping Forest. No coal was intesected.

A review of possible new industrial coal markets in Tasmania to the turn of the century indicates that growth in demand is unlikely to exceed 200,000 tpa local black coal equivalent. Therefore, in the short to medium term opportunities to develop Rosevale at a reasonable threshold production level to serve the non-power markets are likely to be negligible.

Bearing in mind the present state of advancement of Rosevale, and the market difficulties it faces over the next decade, further field activity, other than ongoing tasks such as base level environmental monitoring, is difficult to justify. Thus, future work will be restricted to maintaining the currency of mining studies so that the project remains in a state of readiness pending an improvement in the market situation. For the remaining portion of EL 20/80, options, including relinquishment, will be reviewed over the next reporting period.

## 5. COAL RESOURCES OF EL 20/80

### 5.1 Brown Coal Reserves

As a result of the reassessment of the geology of the Loatta deposit following the 1983 drilling programme, indicated reserves have been increased from 56Mt to 72Mt (to 60m maximum depth). Nearly 90% of this coal is contained with the persistent D interval seams:

| | |
|---|---|
| B interval reserves | 5.6Mt |
| D interval reserves | 63.9Mt |
| F interval reserves | 2.6Mt |
| | 72.1Mt |

Reserve status is expressed in terms of Geological Survey of Queensland guidelines in the absence of an alternative Tasmanian scheme. Whereas cored drillhole density at Rosevale, and Loatta in particular, generally exceeds that required for specification of "measured" reserves, status remains "indicated" in deference to the rapid variation in seam geometry and quality, and the structural complexity, of the major deposits.

Table 5.1 details the brown coal reserves of EL 20/80. Figures for the Pipers Lagoons and Selbourne deposits are unchanged. Note particularly that the quoted reserves are strictly geological, and that recoverable tonnages may be substantially less.

Slightly different cutoff criteria have been used in the revised Loatta model from that adopted previously, and still applying to Pipers Lagoons and Selbourne. Coal containing greater than 50% dry basis ash (approximately 27% ash at 45% total moisture content) has been excluded, as have all partings greater than 0.5m in thickness. Minimum seam thickness in the case of Loatta has now been set at 0.5m, compared with 1.5m for the other deposits.

TABLE 5.1

EL 20/80 Brown Coal Reserves to 60m Depth

| Area | Measured Reserves Mt | Indicated Reserves Mt | Inferred Resources |
|---|---|---|---|
| Loatta | - | 72 | - |
| Pipers Lagoons | - | 43 | - |
| Selbourne | - | 19 | - |
| Hillcrest | - | - | V. Small* |
| TOTAL | - | 134 | V. Small |

* Less than 20Mt.

## 5.2 Coal Quality

Rosevale coal is a low sulphur, low specific energy, comparatively low moisture, high ash lignite suitable for combustion in commercially available boilers designed for coal of this type.

Weighted average coal quality for the three main deposits, based on analytical resuls to hand prior to the October - December 1983 drilling programme, is summarised in Table 5.2.

Two holes, C 081, C 082, were cored during the 1983 programme. A full suite of analytical results (in computer printout format) is included with this resport. Quality data are generally consistent with those given previously.

TABLE 5.2

Weighted Average Coal Quality, Rosevale Coalfield

(Total Moisture Basis)

| Deposit | R.D. | Total Moisture % | V.M. % | F.C. % | Ash % | Total Sulphur % | Specific Energy MJ/kg |
|---|---|---|---|---|---|---|---|
| Loatta | 1.32 | 48.1 | 18.0 | 12.1 | 21.8 | 0.17 | 7.6 |
| Pipers Lagoons | 1.33 | 46.3 | 18.0 | 13.8 | 21.9 | 0.11 | 7.6 |
| Selbourne | 1.33 | 46.4 | 18.0 | 11.9 | 23.7 | 0.18 | 7.2 |
| Weighted Mean | 1.33 | 47.2 | 18.0 | 12.7 | 22.1 | 0.13 | 7.5 |

## 6. REFERENCES


| | | |
|---|---|---|
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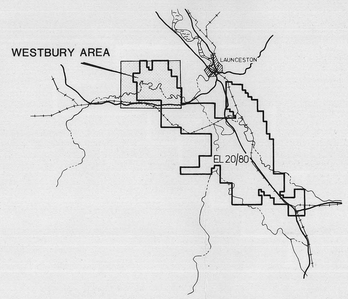
## LEGEND

- Highway, sealed road
- Unsealed road, vehicular track, lane
- Railway
- 'Fairville' Homestead
- Drain
- C033 CSR drillhole coal cored
- R009 CSR drillhole chip sampled
- Deposit Outline
- Prospect Outline
- Outline of Potential Reserves
- Outline of Basement Rock

397033




KEY SHEET DIAGRAM

(TASMANIAN 1:25000 TOPO. SERIES)

| | | |
|---|---|---|
| PARKHAM | BRIDGENORTH | LAUNCESTON |
| DELORAINE | WESTBURY | PROSPECT |

GRID CONVERGENCE 0.2°

GRID MAGNETIC ANGLE 13.0°

TRUE NORTH GRID NORTH AND MAGNETIC NORTH ARE SHOWN DIAGRAMMATICALLY FOR THE CENTRE OF THE MAP. MAGNETIC NORTH IS CORRECT FOR 1980 AND MOVES EASTERLY BY 0.1° ABOUT EVERY THREE YEARS

SCALE 1:25000

1.0 0.5 0 0.5 1.0 1.5 2.0

Kilometres

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | CSR |
|---|---|---|
| DRAWING / DATE | EL 20/80 LAUNCESTON WESTBURY AREA BROWN COAL DEPOSITS & PROSPECTS | SCALE 1:25000 |
| DRAWN A.Y. Sept.'82 | | FIGURE 3-2 |
| CHECKED | | DRAWING No. 70020 – 72 |
| REVISED J.M. June '84 | | |

6259

6259

For full details of drillholes in this area see 1:25 000 scale map

LAUNCESTON

Westbury

Deloraine

Hadspen

Carrick

Perth

Western Junction

Evandale

Longford

Bracknell

Cressy

Powranna

Launceston Airport

BLACK SUGARLOAF

MT. BARROW

PIPERS LAGOON

LAKE TREVALLY

MEANDER RIVER

RIVER TAMAR

TASMAN HIGHWAY

ST PATRICKS RIVER

ESK RIVER

SOUTH ESK RIVER

BASS HIGHWAY

LAKE HIGHWAY

Western Line Railway

MIDLANDS SOUTHERN LINE RAILWAY

HIGHWAY

Rivulet

Westons

HUMMOCKY HILLS

MACQUARIE RIVER

DIPROSE LAGOON

GREAT WESTERN TIERS

GREAT LAKE

LAKE AUGUSTA

DOUBLE LAGOON

DUSE RIVER

LAKE FERGUS

ARTHURS LAKE

MILLERS BLUFF

ISIS RIVER

Campbell Town

460 40' 480 50' 500 10' 520 20' 540

5420 5400 5380 5360000mN 5360 42°00'

41°30' 40' 50'

146°30' 160000mE 147°00' 147°30'

Compiled from Tasmania 1:100 000 Topographic Survey Series 8215 Tamar, 8315 St Patricks, 8314 South Esk, 8214 Meander Edition 3 1979

SCALE 1:100,000

5cm

GRID CONVERGENCE 0·2°

GRID/MAGNETIC ANGLE 13·1°

TRUE NORTH, GRID NORTH AND MAGNETIC NORTH ARE SHOWN DIAGRAMMATICALLY FOR THE CENTRE OF THE MAP. MAGNETIC NORTH IS CORRECT FOR 1979 AND MOVES EASTERLY BY 0·1° IN ABOUT THREE YEARS.

LEGEND

HIGHWAY SEALED, UNSEALED

ROAD SEALED, UNSEALED

RAILWAY

POWER TRANSMISSION LINE

LOCALITY MAP

Devonport

Launceston

EL 20/80

Queenstown

TASMANIA

HOBART

SCALE 50 0 50 Kilometres

LEGEND

CD33 CSR drillhole, coal cored.

RD25 CSR drillhole, chip sampled.

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | EL 20/80 LAUNCESTON |
| DRAWN B.A.W. | JULY '81 | LOCATION OF DRILLHOLES |
| CHECKED | | 6260 |
| REVISED J.M. | June '84 | SCALE 1:100 000 |
| | | FIGURE 4·2·1 |
| | | DRAWING No. 70020-7 |

6260

397034

491000 492000 493000 494000 495000

541 6000 541 5000 541 4000 541 3000 541 2000 541 1000 541 0000

R0122 158.5
150
140
F
R0118 132.1
R0096 150.0
C0081 121.3
R0097 118.6
R0098 136.8
R0099 193.7
160
120
130
140
150
170
D U
R0123 169.6
R0101 140.5
R0100 172.4
R0115 104.7
C0020 152.5
R0102 128.5
110
100
U D
R0124 98.8
90
80
70
60
50
40
R0125 162.2
C0116 116.9
R0119 145.5
R0002 135.7
130
R0104 50.6
C0004 151.7
R0086 130.5
R 103 X
R0126 106.0
R0105 154.2
U D
D U
C0082 152.1
R0121 169.6
R0106 168.9
R0108 144.8
R0117 152.7
R0080 145.8
R0120 127.1
R0084 161.7
R0007 155.6
R0127 151.9

CSR Limited
Coal Division

EXPLORATION AND EVALUATION GROUP

| DRAWING | DATE |
|---|---|
| DRAWN ELLIS | 26-JUN-84 |
| CHECKED | |
| REVISED | |

ROSEVALE
LOATTA
SEAM H1 STRUCTURE ROOF

6260-B

SCALE 1:10000

FIGURE 4.31

DRAWING NO. 70020-226

397035

5 cm

397036

A.G. S. E.G.
DIR. - 3 JUL 1984 L & IL
DEPT. OF MINES
REF. No. 6844/84

# EXPLORATION LICENCE 20/80 LAUNCESTON
# EXPLORATION PROGRESS REPORT FOR
# QUARTER ENDED 22 MAY 1984

## APPENDIX A1

Figures 4.3.2 - 4.3.26
Rosevale, Loatta, Seam Isopachs

MICROFILMED

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0097
0.8

R0115
1.1

R0124
0.5

C0116
0.4

R0104
0.4

R0126
0.8

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA<br>SEAM 51 THICKNESS ISOPACH 6261 |
| DRAWN ELLIS | 14 - JUN - 84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4·3·2 |
| REVISED | | DRAWING NO. 70020 - 111 |

397037

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0097
0.9

R0101
2.2

R0115
1.5

R0124
0.8

C0116
0.6

R0104
1.5

R0126
0.4

R0120
1.7

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA<br>SEAM 52 THICKNESS ISOPACH<br>6262 |
| DRAWN ELLIS | 13-JUN-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4·3·3 |
| REVISED | | DRAWING NO. 70020-114 |

397038

491000 492000 493000 494000 495000

541 6000 / 541 5000 / 541 4000 / 541 3000 / 541 2000 / 541 1000 / 541 0000

R0097
0.3

R0101
0.3

R0124
0.8

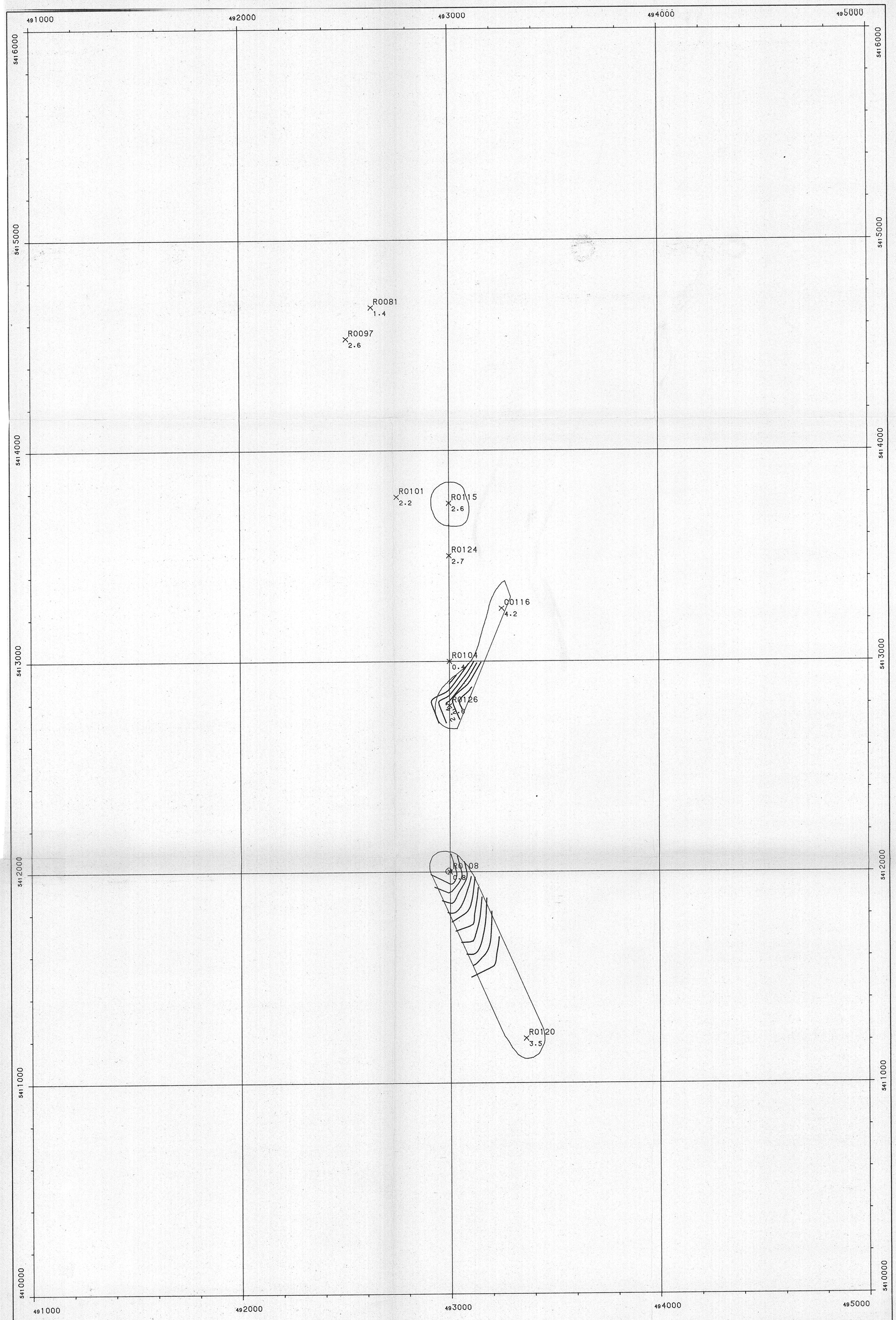
R0104
0.6

R0120
0.9

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA<br>SEAM 53 THICKNESS ISOPACH<br>6263 |
| DRAWN ELLIS | 13-JUN-84 | SCALE 1 : 10000 |
| CHECKED | | FIGURE 4·3·4 |
| REVISED | | DRAWING NO. 70020 - 117 |

397039




5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING / DATE | ROSEVALE<br>LOATTA<br>SEAM 6 THICKNESS ISOPACH | SCALE 1 : 10000 |
| DRAWN ELLIS / 13-JUN-84 | | FIGURE 4.3.5 |
| CHECKED | | DRAWING NO. 70020-203 |
| REVISED | | |

6264

397040

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0096 0.4

R0081 3.0

R0097 1.7

R0100 1.5

R0101 1.0

1.8

R0115 1.4

R0124 1.2

C0116 1.8

R0104 1.2

1.4

1.6

R0086 1.8

R0126 2.0

C0082 2.0

R0108 0.4

R0080 1.1

R0120 3.0

491000 492000 493000 494000 495000

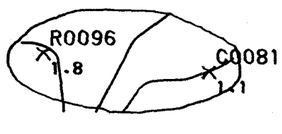
5 cm

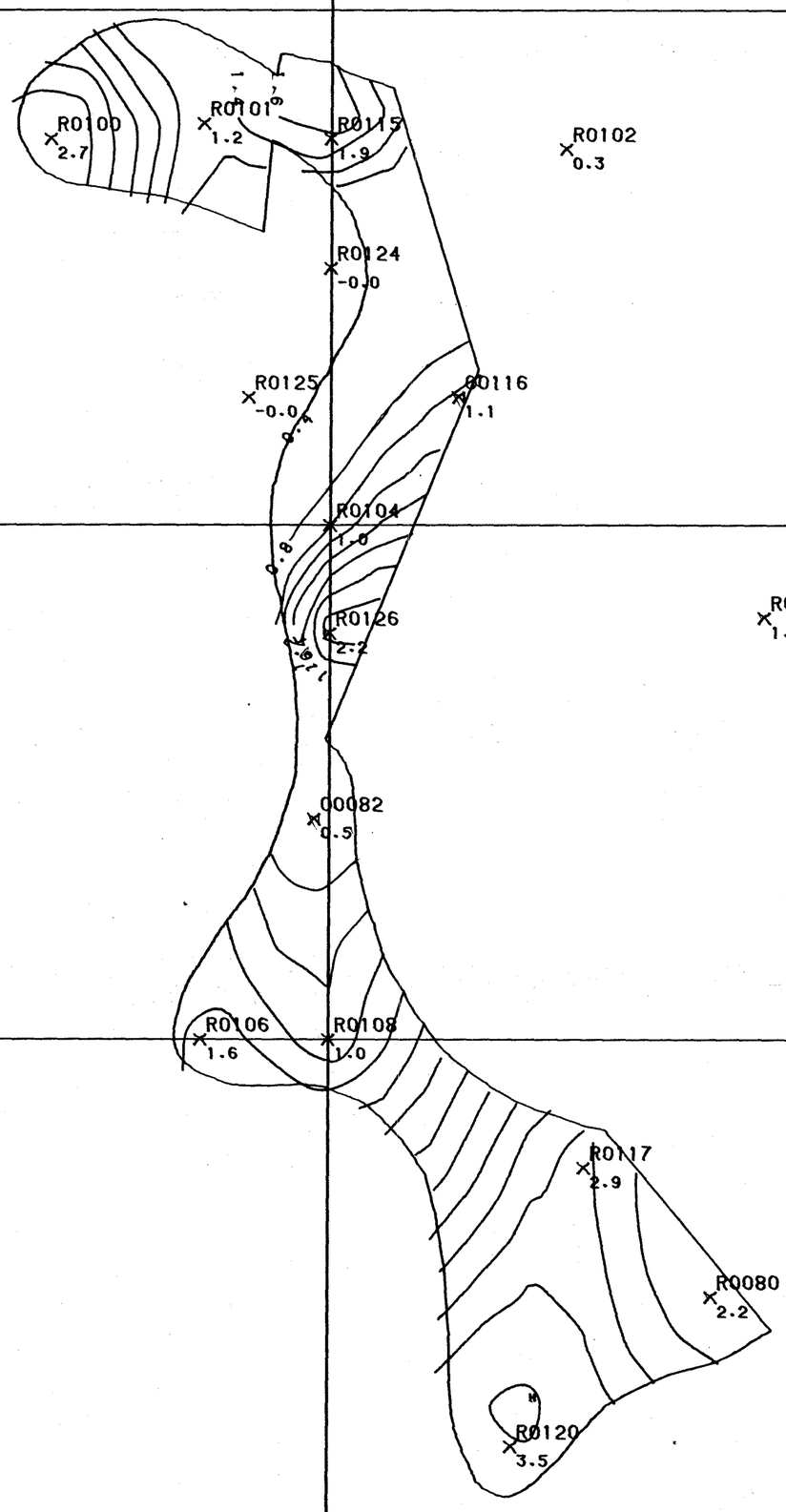
| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA<br>SEAM 7 THICKNESS ISOPACH 6265 |
| DRAWN ELLIS | 13-JUN-84 | SCALE 1 : 10000 |
| CHECKED | | FIGURE 4.3.6 |
| REVISED | | DRAWING NO. 70020-205 |

397041

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000




CSR Limited Coal Division — EXPLORATION AND EVALUATION GROUP

| DRAWING | DATE |
|---|---|
| DRAWN ELLIS | 13-JUN-84 |
| CHECKED | |
| REVISED | |

ROSEVALE
LOATTA
SEAM 8 THICKNESS ISOPACH

6266

SCALE 1:10000

FIGURE 4.3.7

DRAWING NO. 70020-207

5 cm

397042

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0118 2.4

R0098 2.8

C0081 1.9

R0100 1.1

R0101 2.3

1.6 1.2 1.4

R0115 1.6

R0102 1.8

C0116 0.6

R0104 -0.0

R0126 1.5

R0086 0.8

C0082 2.1

R0106 1.0

R0108 0.6

R0117 1.6

R0080 0.9

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | |
| DRAWN ELLIS | 13-JUN-84 | ROSEVALE<br>LOATTA<br>SEAM 9 THICKNESS ISOPACH 6267 |
| CHECKED | | |
| REVISED | | |

SCALE 1:10000

FIGURE 4.3.8

DRAWING NO. 70020 - 209

397043

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0118 -0.0

R0096 -0.0

C0081 0.5

R0097 -0.0

R0098 -0.0

R0100 -0.0

R0101 -0.0

R0115 -0.0

C0020 -0.0

R0102 -0.0

R0124 -0.0

R0125 -0.0

C0116 -0.0

R0104 -0.0

C0004 -0.0

R0126 -0.0

R0086 -0.0

C0082 2.1

R0106 0.9

R0108 -0.0

R0117 -0.0

R0080 1.1

R0120 -0.0

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA<br>SEAM X THICKNESS ISOPACH<br>6268 |
| DRAWN ELLIS | 14-JUN-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4·3·9 |
| REVISED | | DRAWING NO. 70020 - 252 |

397044

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0117 1.0
R0096 0.9
C0081 0.8
R0098 1.5
R0097 1.4
1.0 0.8 0.4 1.2
R0115 1.2
C0020 1.1
R0102 1.2
R0124 1.3
C0116 1.1
R0119 0.7
R0092 1.9
0.6 1.2
R0104 1.6
C0004 1.9
1.6 1.4
R0126 1.1
R0105 0.9
R0086 1.6
1.0 1.8
C0082 1.8
0.8 1.2
R0108 0.6
0.6
R0117 2.2
1.8
1.0
R0080 2.4
2.0
1.2
R0120 1.4
1.4
R0084 1.4
1.6
1.4
1.8
R0127 2.2

5 cm

CSR Limited
Coal Division

EXPLORATION AND EVALUATION GROUP

| DRAWING | DATE |
|---|---|
| DRAWN ELLIS | 13-JUN-84 |
| CHECKED | |
| REVISED | |

ROSEVALE
LOATTA
SEAM H1 THICKNESS ISOPACH

SCALE 1:10000

FIGURE 4·3·10

DRAWING NO. 70020-225

6269

397045

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0118 1.0
R0096 0.9
C0081 1.6
R0097 1.4
R0098 1.5
0.4 0.6 0.8 1.2
R0115 1.3
C0020 1.1
R0102 1.2
1.0
R0124 1.7
C0116 0.5
R0119 1.7
R0082 1.8
1.0 1.2 1.4
R0104 1.8
C0004 1.8
0.8
R0126 0.9
R0086 1.7
1.6
R0105 1.6
1.4 1.2 1.0
C0082 0.5
0.4
0.4
R0108 0.6
0.6
R0117 0.7
R0080 1.3
1.0
R0084 0.9
R0120 0.7
0.8
R0127 0.9

491000 492000 493000 494000 495000

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | CSR |
|---|---|---|
| DRAWING / DATE | ROSEVALE<br>LOATTA<br>SEAM H2 THICKNESS ISOPACH | SCALE 1 : 10000 |
| DRAWN ELLIS / 13-JUN-84 | | FIGURE 4·3·11 |
| CHECKED | 6270 | DRAWING NO. 70020-228 |
| REVISED | | |

397046

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0122
-0.0

R0116
0.5

R0096
1.2

C0081
1.1

R0098
0.8

R0097
2.2

1.8 1.6 1.4 1.2 1.0 0.8 0.6 0.4 0.2

R0115
1.7

C0020
2.1

2.0

R0102
1.9

1.2 1.4

R0124
1.7

1.8

R0125
1.6

C0116
1.7

R0119
2.5

R0002
0.4

2.2 2.6 2.8

R0104
2.0

C0004
1.7

1.6 1.8 2.0 2.4

R0126
1.7

R0086
0.3

0.8

R0105
0.5

1.2 1.0 1.4 1.6 1.2

C0082
1.1

9.0

R0108
1.2

0.6 0.8 1.0 1.2

R0117
1.7

R0080
0.9

1.4

R0084
1.6

R0120
1.4

1.4 1.2

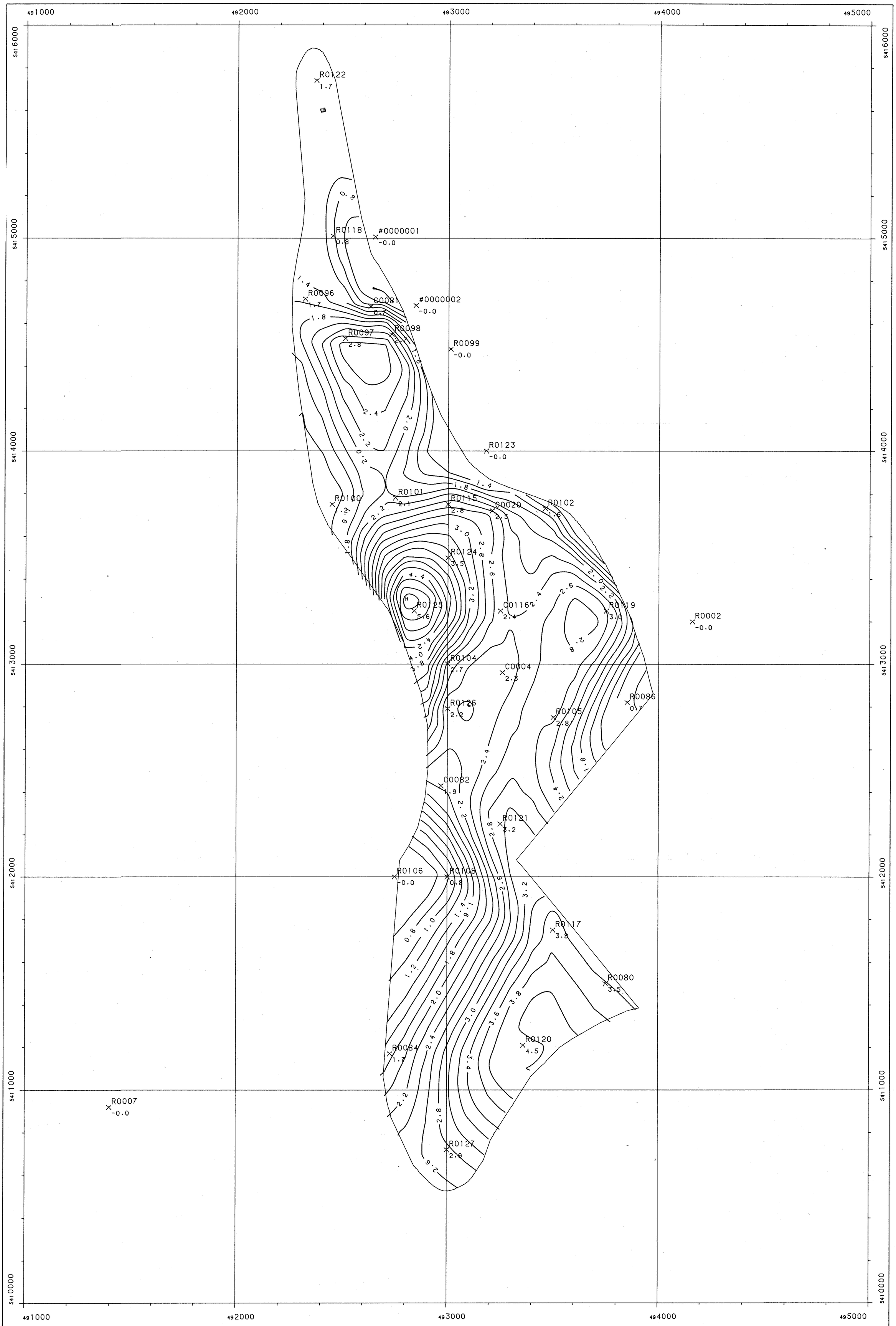
R0127
1.2

491000 492000 493000 494000 495000

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA<br>SEAM I THICKNESS ISOPACH<br>6271 |
| DRAWN ELLIS | 13-JUN-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4·3·12 |
| REVISED | | DRAWING NO. 70020-230 |

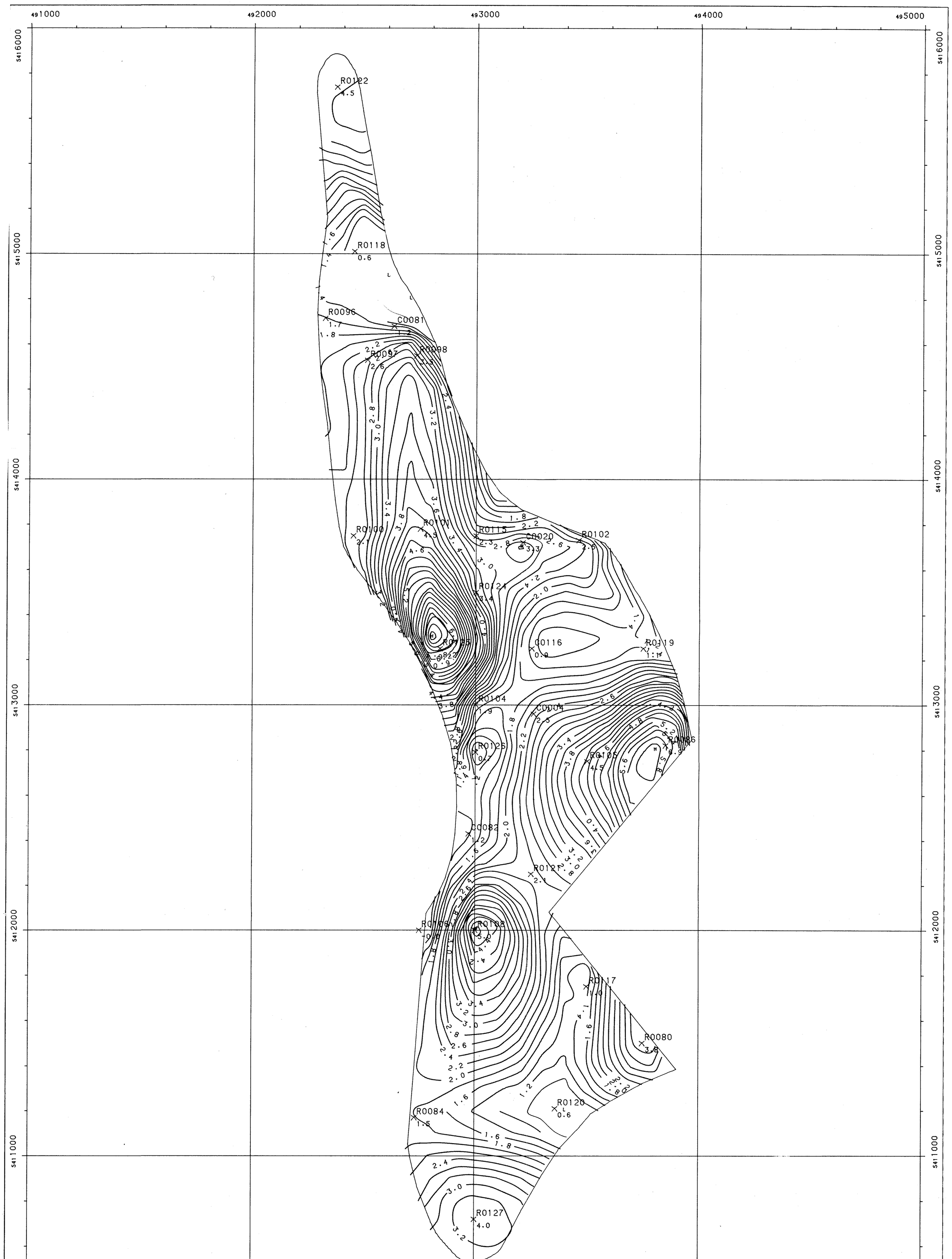
397047




5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | CSR |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA<br>SEAM J1 THICKNESS ISOPACH<br>6272 |
| DRAWN ELLIS | 13-JUN-84 | SCALE 1 : 10000 |
| CHECKED | | FIGURE 4·3·13 |
| REVISED | | DRAWING NO. 70020 – 232 |

397048




| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA<br>SEAM J2 THICKNESS ISOPACH |
| DRAWN ELLIS | 14-JUN-84 | SCALE |
| CHECKED | | FIGURE 4·3·14 |
| REVISED | | DRAWING No. 70020 – 234 |

6273

397049

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0122 3.2

1.8 2.0 R0096 2.9 C0081 1.8 3.0 R0097 3.5 R0098 3.8 3.4 3.6 2.5 1.8 3.6

R0123 3.5

R0100 2.4 R0101 2.9 R0115 4.8 C0020 3.7 R0102 4.1 3.0 4.0 4.4 4.2 R0124 4.0 4.2 4.0 3.2 2.8

R0125 7.3 C0116 4.1 R0119 2.1 3.8 3.8 R0104 3.9 C0004 3.5 5.6 5.4 R0126 R0105 7.8 R0106 3.3 5.2 4.6 C0082 2.2 3.8 3.6 R0121 2.9 1.9

R0108 2.0 2.0 2.2 1.8 R0117 3.3 2.6 2.4 R0080 1.5 2.0 1.8 1.4 1.6

R0084 1.0 R0120 1.5 1.6 2.2 1.8 R0007 1.7

R0127 4.1

491000 492000 493000 494000 495000

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA<br>SEAM K THICKNESS ISOPACH 6274 |
| DRAWN ELLIS | 14-JUN-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4·3·15 |
| REVISED | | DRAWING NO. 7002O-235 |

397050

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0122 3.8
R0118 -0.0
#0000001 -0.0
R0096 0.5
C0081 0.9
#0000002 -0.0
R0098 1.6
R0097 0.5
R0099 -0.0
R0123 2.6
R0100 0.6
R0101 0.6
R0115 2.2
C0020 1.4
R0102 1.0
R0124 0.8
R0125 2.1
C0116 2.4
R0119 0.7
R0002 -0.0
R0104 2.3
C0004 1.8
R0086 0.3
R0126 1.9
R0105 2.5
C0082 0.7
R0021 -0.0
C021R -0.0
R0121 1.7
R0106 -0.0
R0108 0.8
R0109 -0.0
R0110 -0.0
R0111 -0.0
R0117 1.8
R0080 1.0
R0084 -0.0
R0120 -0.0
R0007 -0.0
R0127 1.0

5 cm

CSR Limited
Coal Division

EXPLORATION AND EVALUATION GROUP

| DRAWING | DATE |
|---|---|
| DRAWN ELLIS | 14-JUN-84 |
| CHECKED | |
| REVISED | |

# ROSEVALE
# LOATTA
# SEAM M THICKNESS ISOPACH

6275

SCALE 1:10000

FIGURE 4·3·16

DRAWING NO. 70020-239

397051

491000 492000 493000 494000 495000

541 6000 541 5000 541 4000 541 3000 541 2000 541 1000 541 0000

C0081 1.4
R0098 1.4
R0123 1.0
R0101 1.7
R0115 1.3
C0020 0.9
R0102 1.3
R0124 1.2
R0125 1.1
C0LL6 1.3
R0119 1.6
R0104 0.8
C0004 1.2
R0126 1.4
R0086 2.6
R0105 1.1
C0082 1.5
R0021 0.0
C0021LR -0.0
R0121 2.0
R0106 -0.0
R0108 1.2
R0109 -0.0
R0110 -0.0
R0111 -0.0
R0117 2.7
R0080 1.7
R0084 0.6
R0127 -0.0

5 cm

CSR Limited
Coal Division

EXPLORATION AND EVALUATION GROUP

| DRAWING | DATE |
|---|---|
| DRAWN ELLIS | 14-JUN-84 |
| CHECKED | |
| REVISED | |

# ROSEVALE
# LOATTA
# SEAM N THICKNESS ISOPACH

6276

SCALE 1 : 10000

FIGURE 4·3·17

DRAWING NO. 70020 - 241

397052

491000 492000 493000 494000 495000

541 6000 541 5000 541 4000 541 3000 541 2000 541 1000 541 0000

R0122 2.6

R0098 0.6

1.4 1.6 2.3 2.1

R0123 1.5

R0101 2.1

R0115 0.5

C0020 1.7

R0102 1.4

R0124 1.5

1.4

R0125 1.3

C0116 1.2

R0119 2.8

R0104 1.6

C0004 1.7

R0126 1.4

R0086 0.8

R0105 1.1

R0082 1.6

1.8 2.0 1.4 1.6

R0021 C021R -0.0 -0.0

R0121 1.2

R0106 2.5

R0108 2.8

R0109 1.0

1.2

R0110 -0.0

R0111 -0.0

R0117 1.6

R0080 0.3

R0084 1.3

R0127 -0.0

491000 492000 493000 494000 495000

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA<br>SEAM O THICKNESS ISOPACH |
| DRAWN ELLIS | 14-JUN-84 | |
| CHECKED | | |
| REVISED | | |

SCALE 1:10000

FIGURE 4·3·18

DRAWING NO. 70020-243

6277

397053

491000 492000 493000 494000 495000

541 6000 / 541 5000 / 541 4000 / 541 3000 / 541 2000 / 541 1000 / 541 0000

R0122 2.4

R0098 2.8

R0123 3.6

R0101 2.3

R0115 3.7

R0102 1.7

R0124 3.2

R0125 1.4

C0116 1.8

R0119 3.8

R0104 3.4

C0004 1.0

R0126 1.7

R0105 0.3

R0086 1.9

R0021 0.7

C021R 1.4

R0121 1.2

1.2

R0108 1.1

R0109 1.1

R0110 0.5

R0111 -0.0

R0117 1.4

R0080 1.3

R0084 1.2

R0127 1.1

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA<br>SEAM P THICKNESS ISOPACH |
| DRAWN ELLIS | 14-JUN-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4·3·19 |
| REVISED | | DRAWING NO. 70020-255 |

6278

397054

491000 492000 493000 494000 495000

541 6000 / 541 5000 / 541 4000 / 541 3000 / 541 2000 / 541 1000 / 541 0000

R0122 1.2

R0101 3.0

R0115 0.4

R0124 0.7

R0125 1.0

R0119 2.8

C0004 0.4

R0086 4.3

R0082 0.8

R0021 1.8

C021R 1.8

R0121 1.5

R0108 1.4

R0109 1.5

R0110 1.1

R0111 -0.0

R0117 1.7

R0080 1.5

R0084 1.0

R0127 1.1

5 cm

CSR Limited
Coal Division

EXPLORATION AND EVALUATION GROUP

| DRAWING | DATE |
|---|---|
| DRAWN ELLIS | 14-JUN-84 |
| CHECKED | |
| REVISED | |

# ROSEVALE
# LOATTA
# SEAM Q THICKNESS ISOPACH 6279

SCALE 1 : 10000

FIGURE 4·3·20

DRAWING NO. 70020-246

397055

491000 492000 493000 494000 495000

541 6000 / 541 5000 / 541 4000 / 541 3000 / 541 2000 / 541 1000 / 541 0000

R0098 0.4

R0101 1.5

R0115 0.3

R0125 0.6

R0082 1.4

1.6

1.4

R0121 2.0

R0021 2.8

R0021R 2.1

0.2

8.1

R0108 1.6

R0109 1.8

R0110 1.8

R0111 -0.0

R0117 1.9

R0080 4.0

R0084 0.3

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA<br>SEAM R THICKNESS ISOPACH 6280 |
| DRAWN ELLIS | 14-JUN-84 | SCALE 1 : 10000 |
| CHECKED | | FIGURE 4·3·21 |
| REVISED | | DRAWING NO. 70020 - 248 |

397056

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0098 0.4

R0101 1.5

R0115 0.3

R0125 0.6

R0082 1.4

R0021 2.1

R0121 2.0

R0108 1.6

R0109 1.8

R0110 1.8

R0111 -0.0

R0117 1.9

R0080 4.0

R0084 0.3

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA<br>SEAM S THICKNESS ISOPACH<br>6281 |
| DRAWN ELLIS | 14-JUN-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4·3·22 |
| REVISED | | DRAWING NO. 70020-250 |

397057

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0082 4.7

R0021 R0021R 2.5

R0123 4.0

R0109 5.0

R0110 4.4

R0111 3.8

R0127 3.7

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING / DATE | ROSEVALE<br>LOATTA<br>SEAM A THICKNESS ISPACH | SCALE 1 : 10000 |
| DRAWN ELLIS / 13-JUN-84 | | FIGURE 4·3·23 |
| CHECKED | 6282 | DRAWING NO. 70020 – 218 |
| REVISED | | |

397058

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0082 3.7

R0121 3.4

R0021 R0021R 3.8

4.2

R0109 3.6

R0110 2.9

R0111 1.4

1.6

R0127 1.6

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING / DATE | ROSEVALE<br>LOATTA<br>SEAM B THICKNESS ISOPACH<br>6283 | SCALE 1 : 10000 |
| DRAWN ELLIS 13-JUN-84 | | FIGURE 4·3·24 |
| CHECKED | | DRAWING NO. 70020-220 |
| REVISED | | |

397059

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0082
2.4

R0021
C021R
3.5

R0121
1.6

3.0
4.2

R0109
4.0

R0110
3.3

R0111
2.4

R0127
4.9

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING / DATE | ROSEVALE<br>LOATTA<br>SEAM C THICKNESS ISOPACH 6284 | SCALE 1 : 10000 |
| DRAWN ELLIS 13-JUN-84 | | FIGURE 4·3·25 |
| CHECKED | | DRAWING NO. 70020-222 |
| REVISED | | |

397060

491000 492000 493000 494000 495000

541 6000 541 5000 541 4000 541 3000 541 2000 541 1000 541 0000

R0082
6.0

C021R
8.8

R0121
1.6

R0105
1.4

R0110
0.4

R0111
0.7

R0127
1.3

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING / DATE | ROSEVALE<br>LOATTA<br>SEAM D THICKNESS ISOPACH | SCALE 1 : 10000 |
| DRAWN ELLIS 13-JUN-84 | | FIGURE 4·3·26 |
| CHECKED | | DRAWING NO. 70020-224 |
| REVISED | | |

6285

397061

397062

D of M | A.C. | C.G. | E.O.
D. DIR.
- 9 JUL 1984
DEPT. OF MINES
REF. No. 0844/84
D & IL

# EXPLORATION LICENCE 20/80 LAUNCESTON
# EXPLORATION PROGRESS REPORT FOR QUARTER ENDED 22 MAY 1984

## APPENDIX A2

Figures 4.3.30 - 4.3.55
Rosevale, Loatta, Interburden Isopachs

BUREAU
COPY

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0097
1.1

R0115
1.1 1.2

R0124
0.8 1.0

0.8

C0116
0.4

R0104
0.4

R0126
0.6

491000 492000 493000 494000 495000

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA SEAMS 51-52<br>INTERBURDEN ISOPACH 6286 |
| DRAWN ELLIS | 14-JUN-84 | SCALE 1 : 10000 |
| CHECKED | | FIGURE 4·3·30 |
| REVISED | | DRAWING NO. 70020 - 112 |

397063

491000 492000 493000 494000 495000

541 6000 541 5000 541 4000 541 3000 541 2000 541 1000 541 0000

R0097
0.4

R0101
0.3

R0115
0.2

R0124
0.3

C0116
0.2

R0104
0.4

R0126
0.4

0.4

R0120
0.6

5 cm

CSR Limited
Coal Division

EXPLORATION AND EVALUATION GROUP

CSR

| DRAWING | DATE |
|---|---|
| DRAWN ELLIS | 14-JUN-84 |
| CHECKED | |
| REVISED | |

# ROSEVALE
# LOATTA SEAMS 52-53
# INTERBURDEN ISOPACH

6287

SCALE 1 : 10000

FIGURE 4·3·31

DRAWING NO. 70020 - 115

397064

491000 492000 493000 494000 495000

541 6000 / 541 5000 / 541 4000 / 541 3000 / 541 2000 / 541 1000 / 541 0000

R0097
0.5

R0101
0.5

R0115
0.3

0.4

R0124
0.5

C0116
0.3

R0104
0.3

R0126
0.5

0.4

R0120
0.5

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA SEAMS 53-6<br>INTERBURDEN ISOPACH 6288 |
| DRAWN ELLIS | 14-JUN-84 | SCALE 1 : 10000 |
| CHECKED | | FIGURE 4·3·32 |
| REVISED | | DRAWING NO. 70020 - 116 |

397065

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0081
0.4

R0097
1.2

R0101
1.3

R0115
1.8

R0124
2.2

C0116
1.0

R0104
1.8

R0126
1.3

R0108
4.2

R0120
2.1

1.8 2.0 2.2 2.4 2.6 2.8 3.0 3.4 3.6 3.8 4.0

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA SEAMS 6-7<br>INTERBURDEN ISOPACH<br>6289 |
| DRAWN ELLIS | 14-JUN-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4.3.33 |
| REVISED | | DRAWING NO. 70020-204 |

397066

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0096 2.2
R0097 1.5
1.6
R0100 1.8
R0101 1.1
R0115 1.5
1.6
2.0
R0124 1.5
C0116 2.3
2.4
3.0
3.8
3.6
R0086 3.4
R0108 0.9
3.6
3.4
R0080 3.3
R0120 4.3

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | CSR |
|---|---|---|
| DRAWING / DATE | ROSEVALE<br>LOATTA SEAMS 7-8<br>INTERBURDEN ISOPACH 6290 | SCALE 1:10000 |
| DRAWN ELLIS / 14-JUN-84 | | FIGURE 4.3.34 |
| CHECKED | | DRAWING NO. 70020-206 |
| REVISED | | |

397067

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0096 -0.0
C0081 0.6
R0097 1.0
R0100 0.8
R0101 0.8
R0115 1.4
R0102 3.7
R0124 1.0
R0123 1.1
C0116 1.2
R0086 2.8
R0126 0.7
C0082 0.1
R0106 0.3
R0108 0.4
R0117 2.2
R0080 -0.0
R0120 1.0

0.1 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA SEAMS 8-9<br>INTERBURDEN ISOPACH<br>6291 |
| DRAWN ELLSI | 14-JUN-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4.3.35 |
| REVISED | | DRAWING NO. 70020-208 |

397068

491000 492000 493000 494000 495000

541 6000 / 541 5000 / 541 4000 / 541 3000 / 541 2000 / 541 1000 / 541 0000

R0118 -0.0
R0096 1.4
C0081 1.9
R0097 1.4
R0100 -8.5
R0101 1.6
R0115 1.4
R0102 4.1
R0124 1.8
C0116
R0104
R0126 0.4
R0086 2.0
C0082 .6
R0106 3.3
R0108 1.4
R0117 1.4
R0080 1.0
R0120 1.4

5 cm

CSR Limited Coal Division — EXPLORATION AND EVALUATION GROUP

| DRAWING | DATE |
|---|---|
| DRAWN · ELLIS | 14-JUN-84 |
| CHECKED | |
| REVISED | |

ROSEVALE
LOATTA SEAMS 9-X
INTERBURDEN ISOPACH

6292

SCALE 1 : 10000

FIGURE 4.3.36

DRAWING NO. 70020-110

397069

491000 492000 493000 494000 495000

541 6000 541 5000 541 4000 541 3000 541 2000 541 1000 541 0000

R0118 21.4
R0096 6.2
C0081 16.4
R0098 20.0
R0097 3.8
R0100 13.6
R0101 1.8
R0115 18.7
C0020 17.1
R0102 16.0
R0124 9.3
R0125 9.1
C0116 8.5
R0104 13.0
C0004 18.3
R0126 14.9
R0086 12.1
C0082 10.5
R0106 4.4
R0108 7.6
R0117 6.4
R0080 8.2
R0120 13.7

0.5 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0 14.0 16.0 18.0 19.0

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA SEAMS X-H1<br>INTERBURDEN ISOPACH 6293 |
| DRAWN ELLIS | 14-JUN-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4·3·37 |
| REVISED | | DRAWING NO. 70020-253 |

397070

491000 492000 493000 494000 495000

541 6000 541 5000 541 4000 541 3000 541 2000 541 1000 541 0000

R0122 0.3
R0118 -0.0
#0000001 1.5
C0081 0.0
#0000002 1.5
R0097 -0.0
R0098 -0.0
R0099 1.5
R0123 0.2
R0100 0.4
R0101 0.4
R0115 0.4
C0020 0.1
R0102 -0.0
R0124 -0.0
R0125 0.5
C0116 0.5
R0119 0.9
R0002 -0.0
R0104 0.8
C0004 -0.0
R0126 -0.0
R0086 -0.0
R0105 0.5
C0082 0.6
R0121 1.2
R0106 1.2
R0108 0.8
R0117 0.8
R0080 0.8
R0084 0.4
R0120 0.6
R0007 1.9
R0127 2.5

8.0 9.0 0.6 0.8 0.4 0.2 0.4 0.6 0.8 0.4 0.6 0.4 0.8 1.0 1.2 1.4 1.6 1.8

5 cm

CSR Limited Coal Division — EXPLORATION AND EVALUATION GROUP

| DRAWING | DATE |
|---|---|
| DRAWN | 28-JUN-84 |
| CHECKED | |
| REVISED | |

ROSEVALE
LOATTA SEAMS H1-H2
INTERBURDEN ISOPACH

6294

SCALE 1 : 10000

FIGURE 4·3·38

DRAWING NO. 70020-227

397071

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0122 1.4

R0118 0.5

#0000001 3.1

#0000002 3.1

R0096 0.7

C0081 0.9

R0098 1.1

R0097 2.9

R0099 3.6

R0123 3.5

R0100 2.0

R0101 1.9

R0115 2.1

C0020 1.2

R0102 0.9

R0124 2.5

R0125 3.2

C0116 2.3

R0119 0.8

R0002 1.6

R0104 1.8

C0004 0.7

R0126 0.5

R0105 1.0

R0086 0.7

C0082 1.1

R0121 0.6

R0106 1.3

R0108 1.7

R0117 2.4

R0080 1.5

R0084 1.9

R0120 1.6

R0007 2.5

R0127 1.8

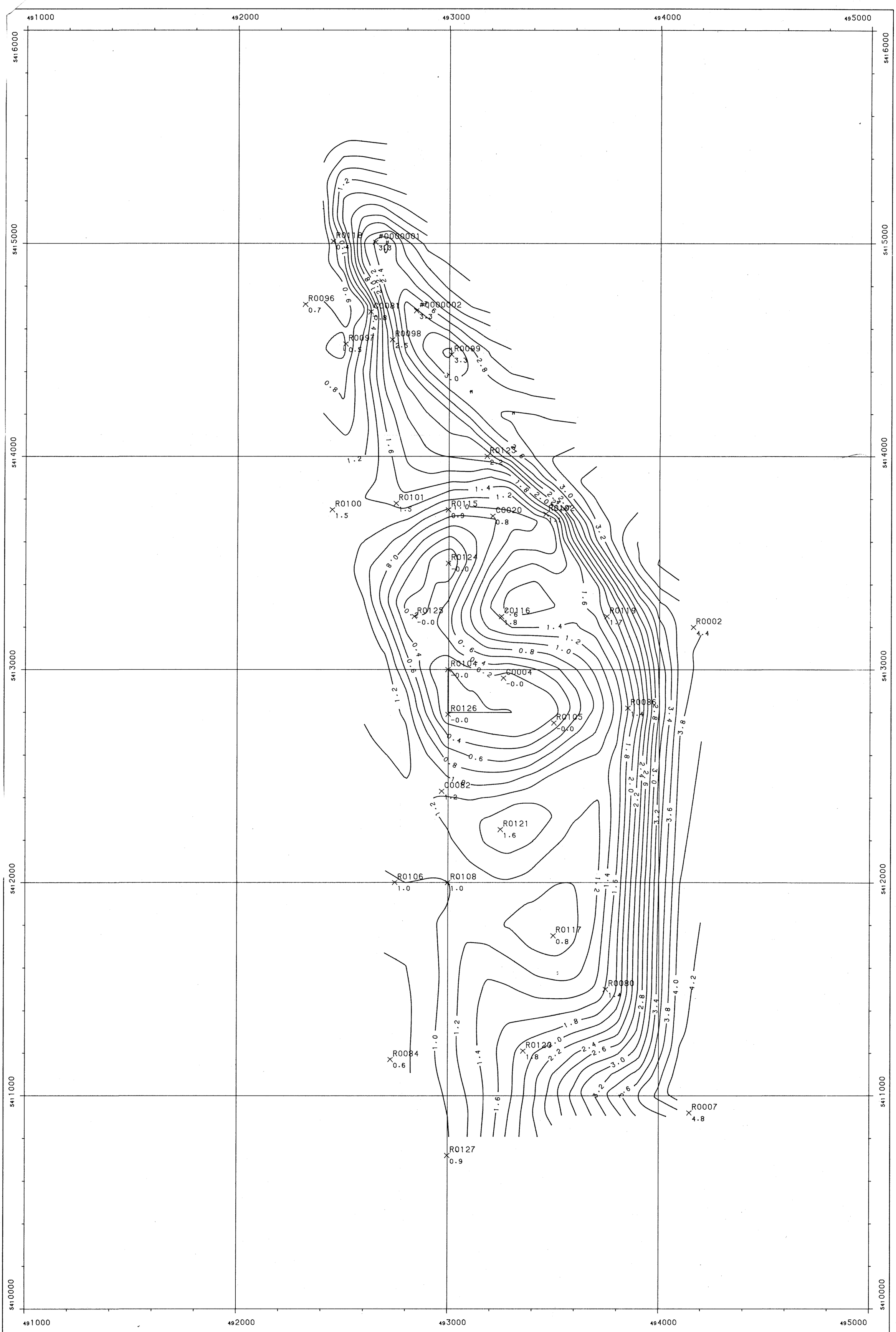
5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA SEAMS H2-I<br>INTERBURDEN ISOPACH<br>6295 |
| DRAWN | 28-JUN-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4·3·39 |
| REVISED | | DRAWING NO. 70020-229 |

397072

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000




5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING / DATE | ROSEVALE<br>LOATTA SEAMS I-J1<br>INTERBURDEN ISOPACH<br>6296 | SCALE 1:10000<br>FIGURE 4·30·40<br>DRAWING NO. 70020-231 |
| DRAWN 28-JUN-84 | | |
| CHECKED | | |
| REVISED | | |

397073

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0122 0.9

R0118 3.4 #0000001 3.6

#0000002 3.6

R0097 -0.0 0.0

R0099 3.6

R0123 3.5

R0100 1.2

R0101 1.0

R0115 0.0

C0020 0.5

R0102 2.2

R0124 -0.0

R0125 0.7

C0116 -0.0

R0119 1.8

R0002 3.8

R0104 0.6

C0004 -0.0

R0126 1.3

R0086 -0.0

R0105 -0.0

C0082 3.3

R0121 1.1

R0106 1.2

R0108 -0.0

R0117 2.6

R0080 0.0

R0120 0.7

R0007 4.9

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA SEAMS J1-J2<br>INTERBURDEN ISOPACH<br>6297 |
| DRAWN | 28-JUN-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4·3·41 |
| REVISED | | DRAWING NO. 70020 — 233 |

397074

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0122 0.6
R0097 0.8
R0098 0.6
R0099 4.1
R0100 0.8
R0101 0.5
R0115 1.47
C0028 1.1
R0124 0.6
R0125 1.3
R0104 0.8
C0004 2.0
R0126 5.8
R0105 1.8
C0082 1.7
R0121 1.8
R0106 2.4
R0108 1.9
R0117 1.8
R0119 1.6
R0002 9.6
R0080 1.1
R0120 5.2
R0084 4.2
R0007 3.6
R0127 1.7

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA SEAMS J2-K<br>INTERBURDEN ISOPACH<br>6298 |
| DRAWN | 2-JUL-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4·3·42 |
| REVISED | | DRAWING NO. 70020-202 |

397075

491000 492000 493000 494000 495000

541 6000 541 5000 541 4000 541 3000 541 2000 541 1000 541 0000

R0122 3.4
R0118 3.4
#0000001 4.0
R0096 0.8
C0081 4.1
#0000002 4.0
R0097 1.5
R0098 1.8
R0099 0.8
R0100 1.4
R0101 1.4
R0115 2.8
C0020 3.7
R0102 3.8
R0123 1.8
R0124 2.3
R0125 2.8
C0116 3.9
R0119 3.4
R0002 4.9
R0104 4.3
C0004 2.0
R0126 9.2
R0105 3.4
R0086 0.8
C0082 3.4
R0021 5.2
C021R 5.2
R0121 3.9
R0106 2.1
R0108 3.4
R0109 5.0
R0110 5.1
R0111 5.2
R0117 7.9
R0080 4.8
R0084 1.6
R0120 6.8
R0007 4.9
R0127 4.4

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA SEAMS K-L<br>INTERBURDEN ISOPACH<br>6299 |
| DRAWN | 28-JUN-84 | SCALE 1 : 10000 |
| CHECKED | | FIGURE 4·3·43 |
| REVISED | | DRAWING NO. 70020-236 |

397076

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0122 1.0

R0118 3.7 #0000001 1.9

R0096 0.4 C0081 #0000002 1.9

R0097 1.0 R0098 -0.0 R0099 1.4

R0123 -0.0

R0100 0.7 R0101 1.0 R0115 0.4 C0020 1.0 R0102 0.4

R0124 0.6

R0125 0.0 C0116 0.9 R0119 0.6 R0002 1.2

R0104 0.5 C0004 -0.0

R0126 0.7

R0082 1.0 R0021 3.1 C021R 3.1 R0121 1.3

R0106 0.6 R0108 0.7 R0109 3.2 R0110 3.1 R0111 3.1

R0117 3.4

R0080 3.2

R0084 0.5 R0120 1.1

R0086 3.3

R0007 1.0

R0127 0.5

5 cm

CSR Limited
Coal Division

EXPLORATION AND EVALUATION GROUP

| DRAWING | DATE |
|---|---|
| DRAWN ELLIS | 28-JUN-84 |
| CHECKED | |
| REVISED | |

# LOATTA SEAMS L-M
# INTERBURDEN ISOPACH

6300

SCALE

FIGURE 4·3·44

DRAWING NO. 70020-237

397077

491000 492000 493000 494000 495000

541 6000 541 5000 541 4000 541 3000 541 2000 541 1000 541 0000

R0122 0.6

2.0 2.2 2.6 3.0

C0081 1.8

R0098 3.2

R0123 3.1

3.4 3.6

R0101 3.3

R0115 3.7

C0020 4.9

R0102 3.0

3.2

4.0 4.4

R0124 4.2

4.6 5.0

R0125 3.7

C0116 3.8

R0119 3.5

5.2 5.4

R0104 5.1

C0004 4.6

R0086 3.5

R0105 3.1

4.2 4.4

R0126 1.0

2.6 2.8 3.0 3.4

C0082

2.0 2.2 1.4 0.1

R0121 2.8

3.0

3.2

R0106 2.0

R0108 0.6

R0109 2.7

R0110 2.7

R0111 2.7

2.6 2.2 2.0

R0117 0.7

1.6 1.0 1.8 1.4

R0080 1.3

R0084 3.7

2.4

R0127 2.4

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | |
| DRAWN ELLIS | 14-JUN-84 | ROSEVALE<br>LOATTA SEAMS M-N<br>INTERBURDEN ISOPACH<br>6301 |
| CHECKED | | |
| REVISED | | |

SCALE 1 : 10000

FIGURE 4·3·45

DRAWING NO. 70020 – 240

397078

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0122 0.4

1.0 1.2 1.6 0.6

R0098 2.0

R0123 0.9

R0101 1.0 R0115 1.8 C0020 0.4 R0102 0.0 0.4

1.2 0.8 0.4 0.6

R0124 1.1

1.0

R0125 1.0 C0116 0.7 R0119 0.7

R0104 0.4 C0004 -0.0

0.4 0.6 0.8 1.0

R0126 0.7 R0086 1.4 R0105 1.3

1.2 1.4 2.4 2.0

R0021 C021R 4.1

R0121 1.5 3.4 3.0 2.6 2.4

R0106 1.9 R0108 0.1 R0109 2.1 R0110 2.1 R0111 2.0

0.8 1.2 1.4 1.6 1.6 8.1

R0117 1.8

2.0 2.2 2.4 2.8 3.0 3.4 3.6 3.8 4.0 4.2 4.4 9.0

R0080 6.4

R0084 2.0

2.6 2.2

R0127 2.0

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA SEAMS N-O<br>INTERBURDEN ISOPACH<br>6302 |
| DRAWN ELLIS | 14-JUN-84 | SCALE 1 : 10000 |
| CHECKED | | FIGURE 4·3·46 |
| REVISED | | DRAWING NO. 70020-242 |

397079

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0122 0.5

R0098 0.7

R0123 1.1

R0101 1.3

R0115 0.9

R0102 2.5

R0124 0.6

R0125 0.5

C0116 0.8

R0119 3.6

R0104 1.0

C0004 2.2

R0086 5.5

R0126 0.8

R0105 0.5

R0021 3.8

C0021R

R0121 3.3

R0108 3.7

R0109 3.1

R0110 5.0

R0111 3.6

R0117 5.0

R0080 7.0

R0084 1.4

R0127 1.8

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA SEAMS O-P<br>INTERBURDEN ISOPACH |
| DRAWN ELLIS | 14-JUN-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4·3·47 |
| REVISED | | DRAWING NO. 70020-244 |

6303

397080

491000 492000 493000 494000 495000

541 6000 541 5000 541 4000 541 3000 541 2000 541 1000 541 0000

R0122 1.8

1.2 1.6 0.8 0.6 1.0 0.8

R0101 0.5

R0115 1.8

1.6 1.8 2.0 2.2 2.4 2.6

R0124 2.8

R0125 0.4

1.4 1.2

R0119 1.5

1.4 1.2 1.0

C0004 1.9 1.6

R0086 0.4

0.6

4.0

R0021 C021R 0.6 0.8

R0121 0.8

1.0 1.2 1.4

R0108 1.7

R0109 0.6 0.5

0.8

R0110 1.1

R0111 1.7

R0117 0.8

1.0

R0080 1.1

R0084 0.8 0.8

R0127 0.4

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA SEAMS P-Q<br>INTERBURDEN ISOPACH<br>6304 |
| DRAWN ELLIS | 14-JUN-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4·3·48 |
| REVISED | | DRAWING NO. 70020 - 245 |

397081

491000 492000 493000 494000 495000

541 6000 / 541 5000 / 541 4000 / 541 3000 / 541 2000 / 541 1000 / 541 0000

R0101 0.8
R0115 1.1
R0125 2.8
R0082 1.3
R0021 2.0
R021R 0.8
R0121 1.4
R0108 1.3
R0109 .5
R0110 0.4
R0111 1.3
R0112 1.5
R0080 -0.0
R0084 2.1

1.4 1.8 2.2 2.2 1.6 1.8 2.0 2.2 1.4 2.0 1.4 1.6 1.8 1.0 0.9 0.7 0.8 1.4

5 cm

CSR Limited
Coal Division

EXPLORATION AND EVALUATION GROUP

CSR

| DRAWING | DATE |
|---|---|
| DRAWN ELLIS | 14-JUN-84 |
| CHECKED | |
| REVISED | |

ROSEVALE
LOATTA SEAMS Q-R
INTERBURDEN ISOPACH

6305

SCALE 1 : 10000

FIGURE 4·3·49

DRAWING NO. 70020 - 247

397082

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0115 0.8

R0125 0.4

0.4 0.6 2.0 0.4 8.0

R0082 0.8 0.8 0.6

R0121 0.7

R0021 0.6 R0021R 0.1

R0108 1.0 1.0

R0109 0.7

R0110 1.6 1.4

R0111 2.2

R0117 1.2 1.6 1.8 1.4 1.2

R0080 0.3

R0084 3.0

5 cm

Prepared by: CSR EXPLORATION AND EVALUATION GROUP

# BRIGALOW MINES PTY. LTD.

| DRAWING | DATE |
|---|---|
| DRAWN ELLIS | 14-JUN-84 |
| CHECKED | |
| REVISED | |

ROSEVALE
LOATTA SEAMS R-S
INTERBURDEN ISOPACH 6306

SCALE 1:10000

FIGURE 4·3·50

DRAWING NO. 70020-249

397083

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0082 4.5
R0021
R021R
R0121 0.6
R0108 1.1
R0109 0.6
R0080 0.6
R0084 0.9
R0127 7.0

1.2 1.0 0.8 1.2 1.4 1.6

L

491000 492000 493000 494000 495000

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LAOTTA SEAMS S-T<br>INTERBURDEN ISOPACH 6307 |
| DRAWN ELLIS | 14-JUN-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4·3·51 |
| REVISED | | DRAWING NO. 70020-251 |

397084

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0082 9.8

20.0

R0021 R0021R 18.2 22.4

R0121 31.2

30.0

R0109 31.6

25.0

20.0

R0127 16.9

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING / DATE | ROSEVALE<br>LOATTA SEAMS T-A<br>INTERBURDEN ISOPACH | SCALE 1 : 10000 |
| DRAWN ELLIS / 14-JUN-84 | | FIGURE 4·3·52 |
| CHECKED | 6308 | DRAWING NO. 70020 - 254 |
| REVISED | | |

397085

491000 492000 493000 494000 495000

5416000 5415000 5414000 5413000 5412000 5411000 5410000

R0082
0.8

R0021
R021R
2.1

R0121
1.1

R0109
0.8

R0110
1.1

R0111
1.8

1.2 1.4 1.6 1.8 2.0 2.2 2.4

R0127
6.0

5 cm

CSR Limited
Coal Division

EXPLORATION AND EVALUATION GROUP

| DRAWING | DATE |
|---|---|
| DRAWN | 28-JUN-84 |
| CHECKED | |
| REVISED | |

# ROSEVALE
# LOATTA SEAMS A-B
# INTERBURDEN ISOPACH

6309

SCALE 1 : 10000

FIGURE 4·3·53

DRAWING NO. 70020 – 219

397086

491000 492000 493000 494000 495000

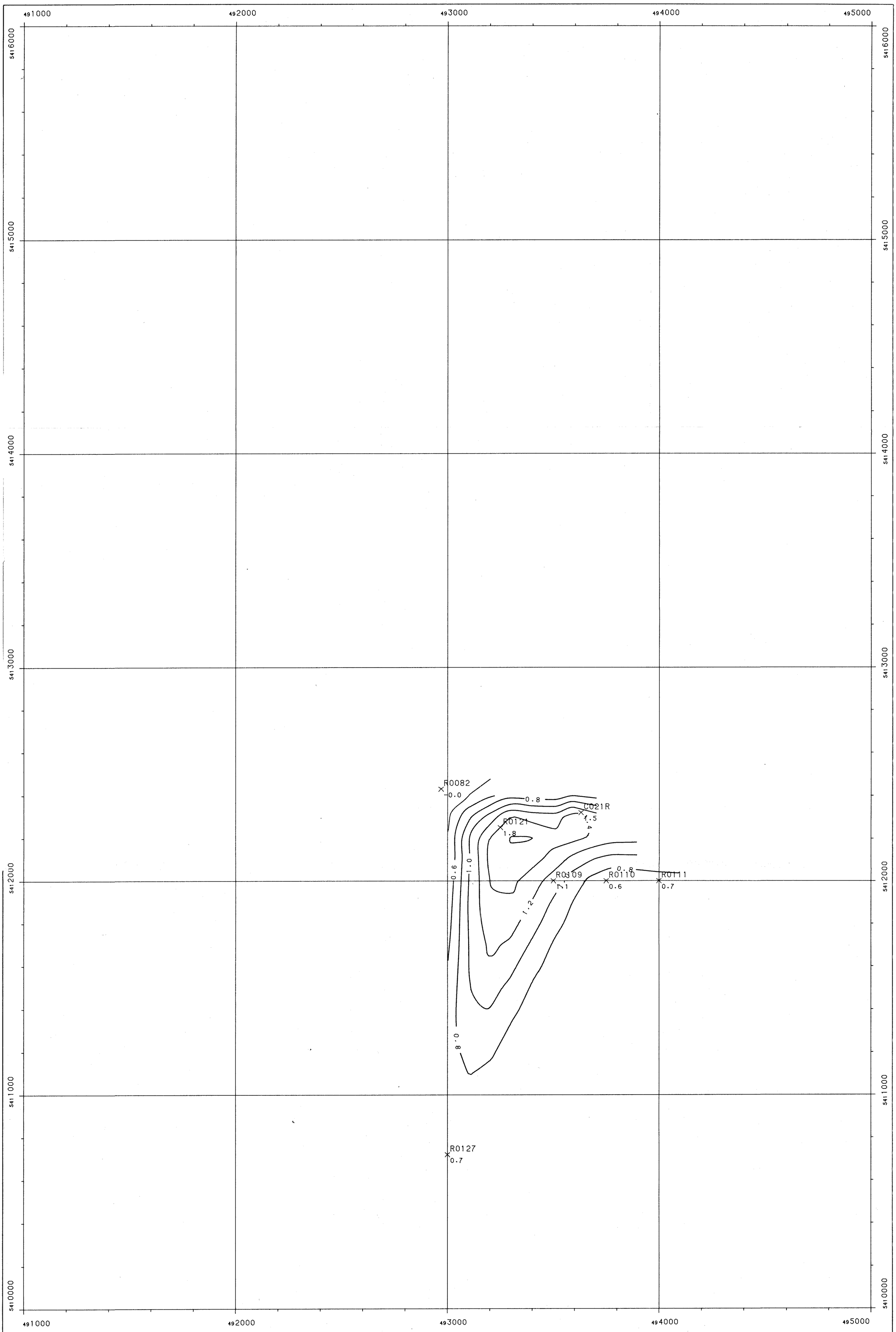
541 6000
541 5000
541 4000
541 3000
541 2000
541 1000
541 0000

R0082
0.8
R0021
C021R
1.7
0.6
R0121
0.5
1.0
R0109
0.5
R0110
0.9
R0111
2.0
0.8
1.2
1.4
1.6
1.8
2.0
R0127
2.9

5 cm

| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING | DATE | ROSEVALE<br>LOATTA SEAMS B-C<br>INTERBURDEN ISOPACH<br>6310 |
| DRAWN ELLIS | 14-JUN-84 | SCALE 1:10000 |
| CHECKED | | FIGURE 4·3·54 |
| REVISED | | DRAWING NO. 70020-221 |

397087




| CSR Limited Coal Division | EXPLORATION AND EVALUATION GROUP | |
|---|---|---|
| DRAWING / DATE | ROSEVALE<br>LOATTA SEAMS C-D<br>INTERBURDEN ISOPACH 6311 | SCALE 1:10000 |
| DRAWN ELLIS 14-JUN-84 | | FIGURE 4·3·55 |
| CHECKED | | DRAWING NO. 70020 - 223 |
| REVISED | | |

5 cm

397088

397089

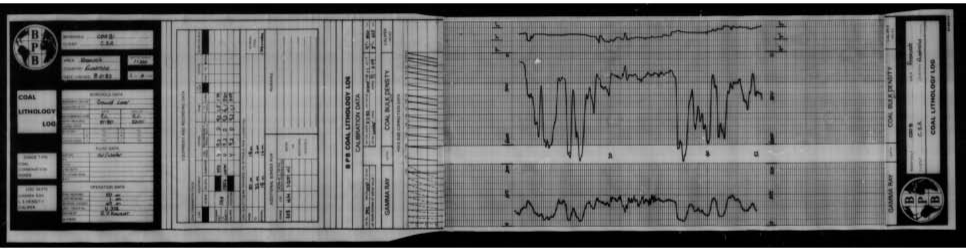
D. DIR. - 9 JUL 1984 Registrar E & IL
DEPT. OF MINES
REF. No. 6844/84

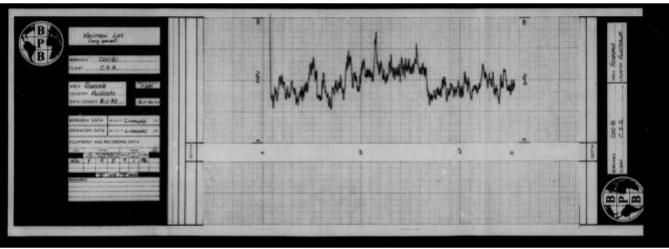
EXPLORATION LICENCE 20/80 LAUNCESTON
EXPLORATION PROGRESS REPORT FOR
QUARTER ENDED 22 MAY 1984

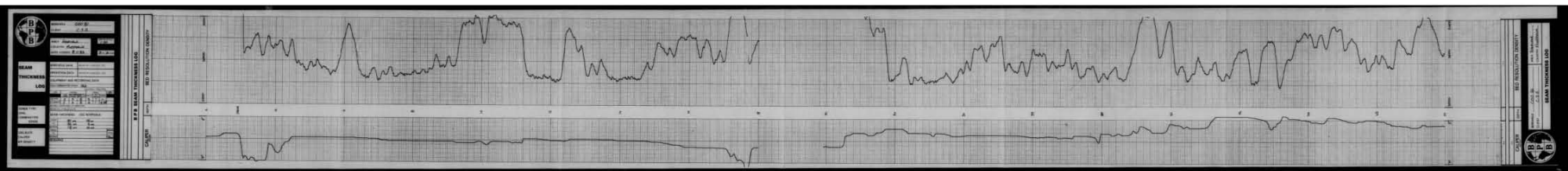
APPENDIX A3

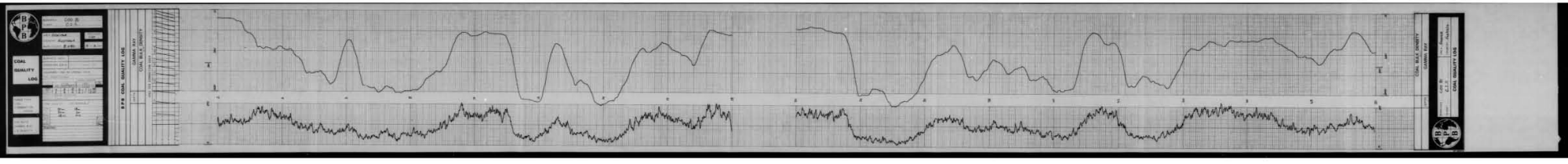
Geophysical Logs of Drillholes R016-127,
C116, C081, C082 (Microfiche Format)

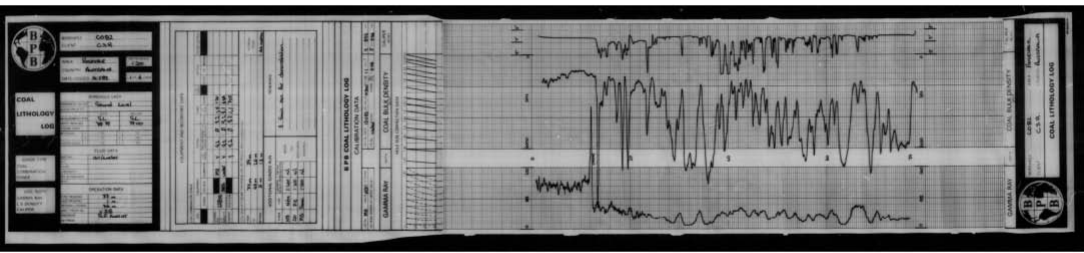
( MICROFICHE 13-50 INCLUSIVE )

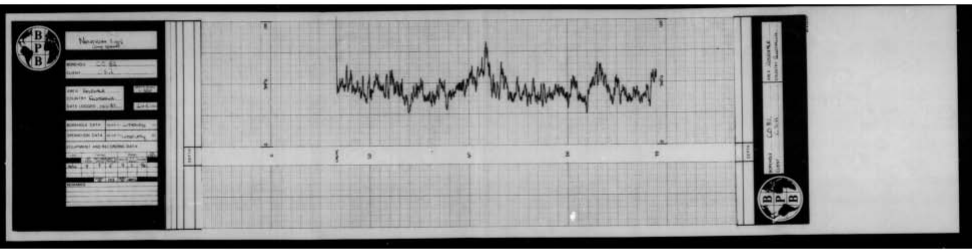

B P B
COAL
LITHOLOGY
LOG
B P B COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
B P B
COAL LITHOLOGY LOG

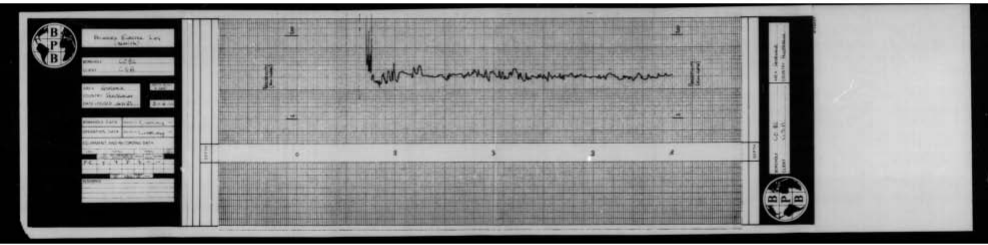


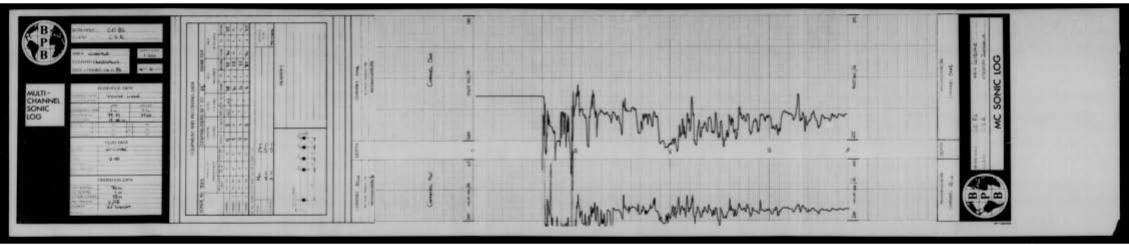

BEAM THICKNESS LOG
BEAM THICKNESS LOG
BEI RESOLUTION DENSITY
CALIPER

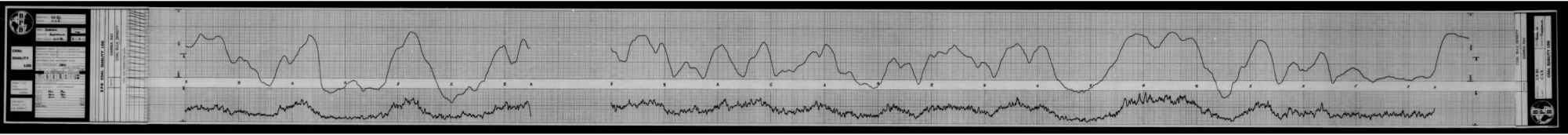

COAL QUALITY LOG
BPB COAL QUALITY LOG
COAL QUALITY LOG


BPB
COAL
LITHOLOGY
LOG
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
COAL
LITHOLOGY LOG

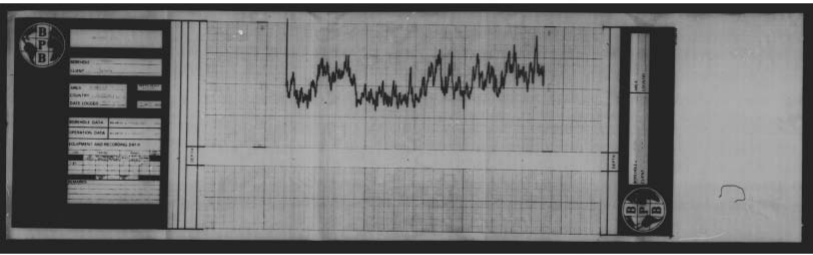


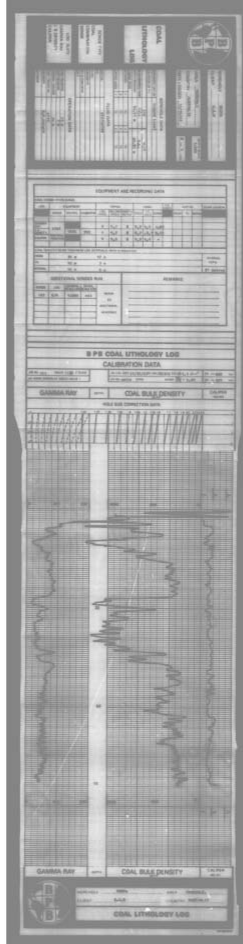



MULTI-
CHANNEL
SONIC
LOG
MC SONIC LOG


COAL QUALITY LOG
COAL QUALITY LOG
COAL QUALITY LOG

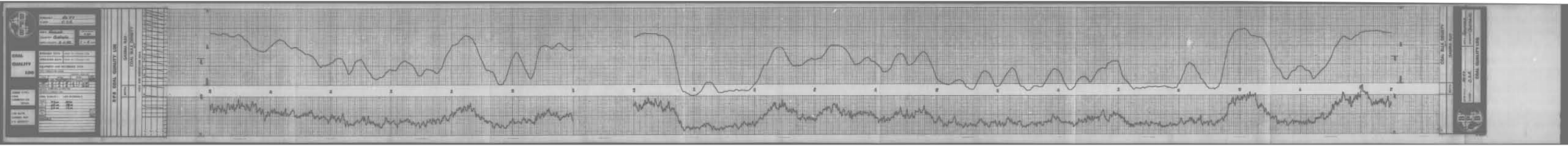
BEAM THICKNESS LOG

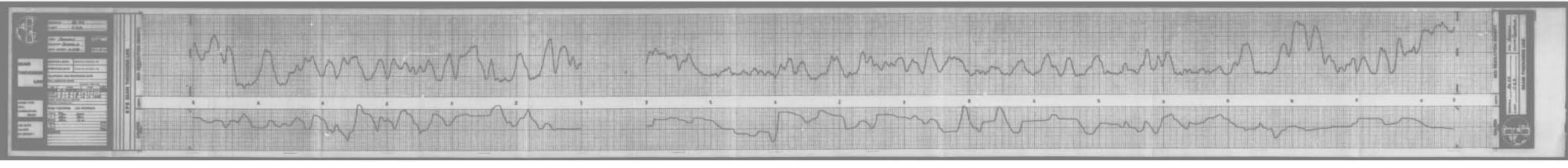


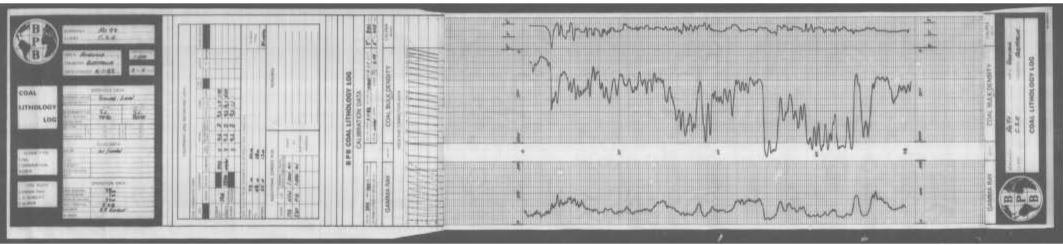

EQUIPMENT AND RECORDING DATA
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
CALIPER
GAMMA RAY
COAL BULK DENSITY
CALIPER
COAL LITHOLOGY LOG

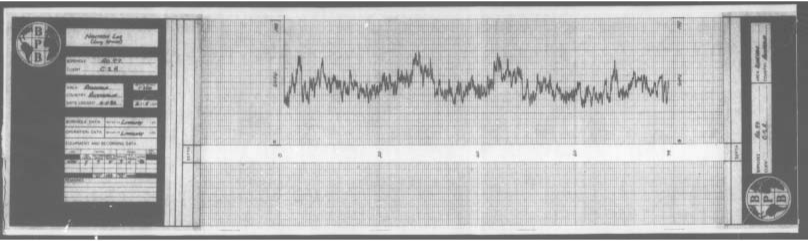
COAL QUALITY LOG

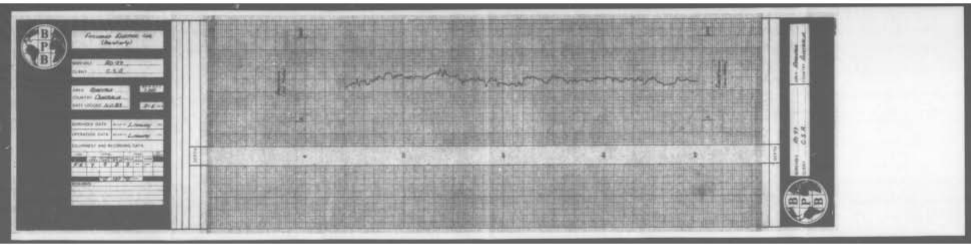
COAL QUALITY LOG

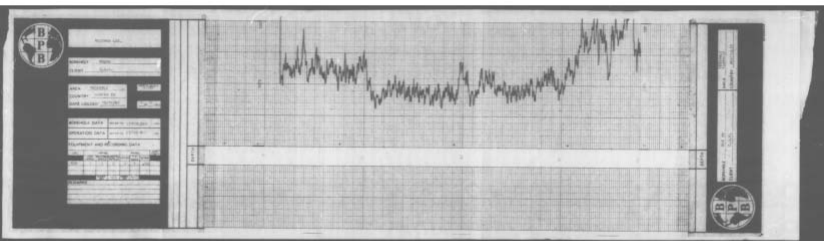


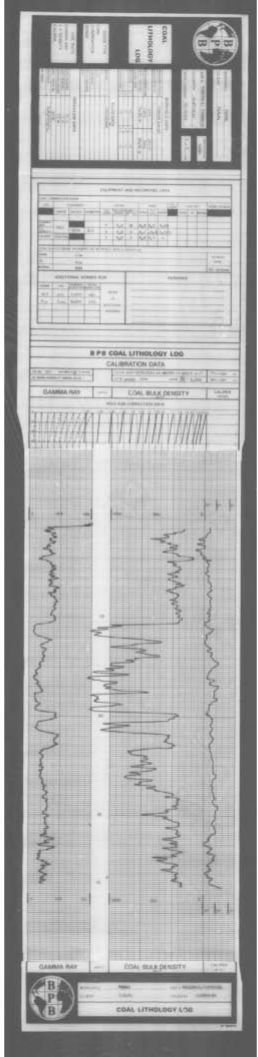


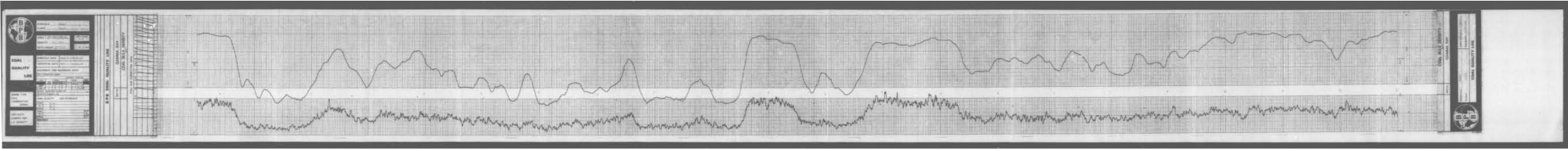

COAL
LITHOLOGY
LOG
BPB COAL LITHOLOGY LOG
COAL BULK DENSITY
GAMMA RAY

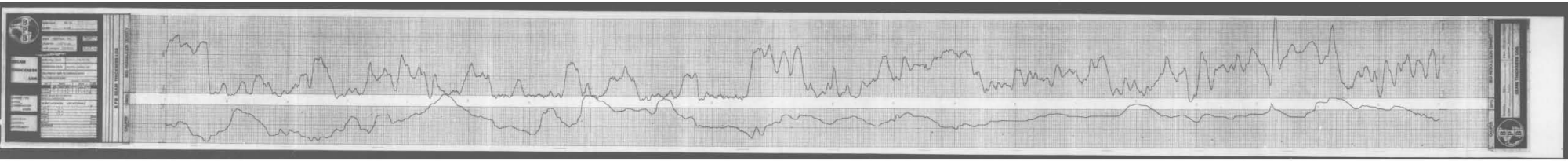


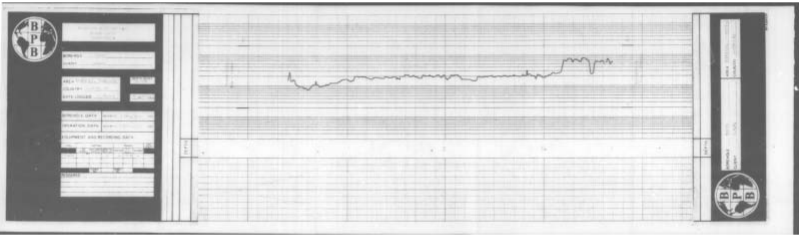


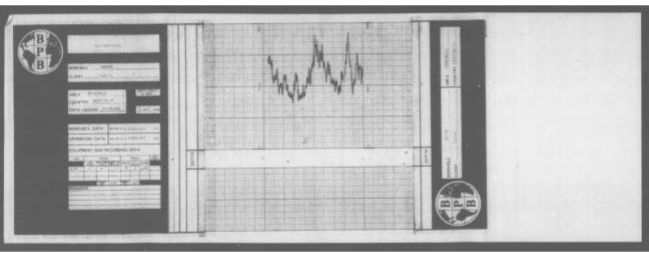


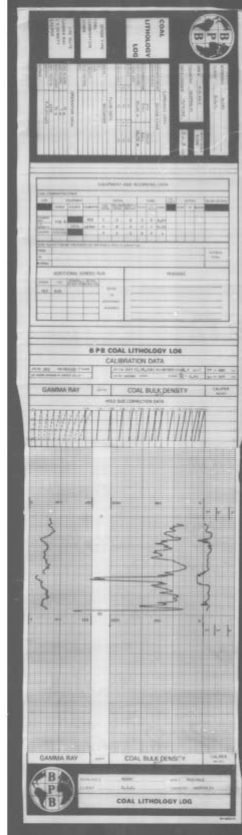

COAL LITHOLOGY LOG
B P B
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
COAL LITHOLOGY LOG

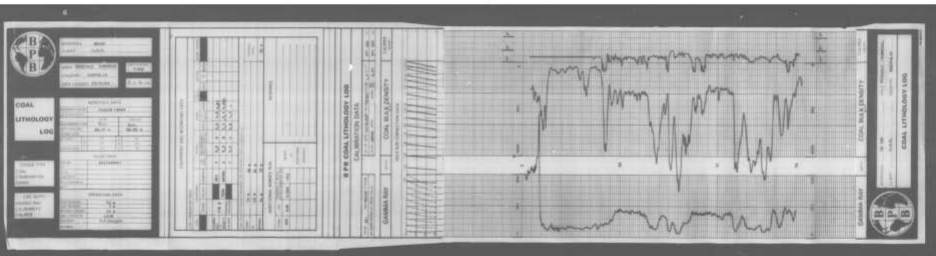

COAL QUALITY LOG
COAL QUALITY LOG

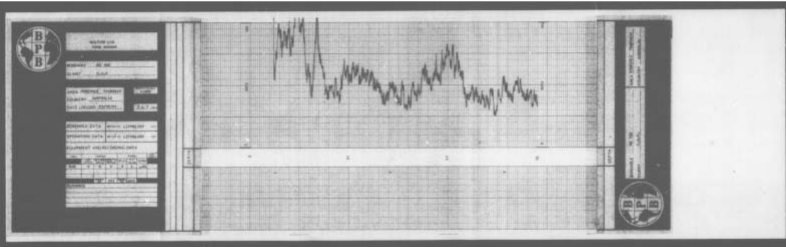


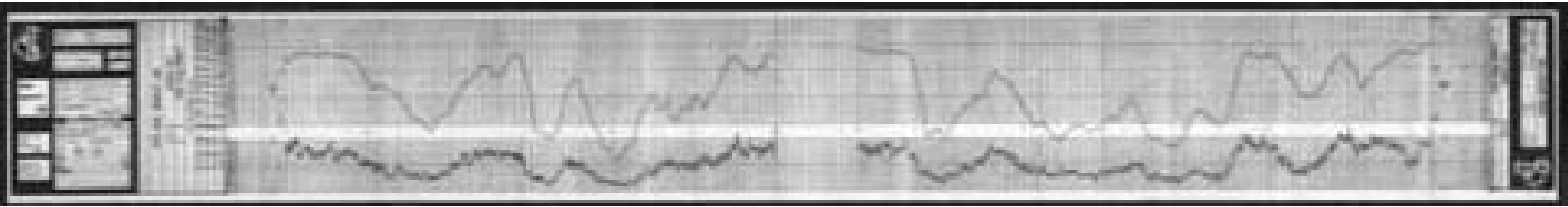


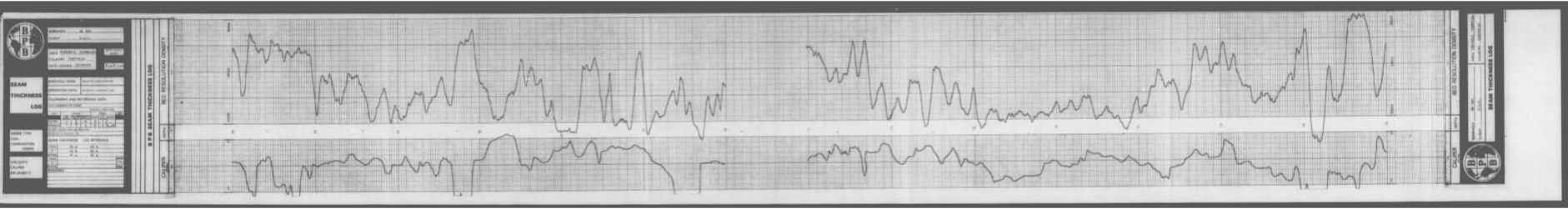


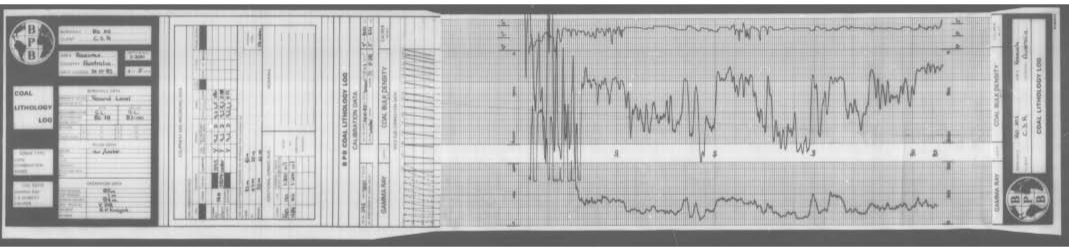

COAL LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
HOLE SIZE CORRECTION DATA
GAMMA RAY
COAL BULK DENSITY
COAL LITHOLOGY LOG

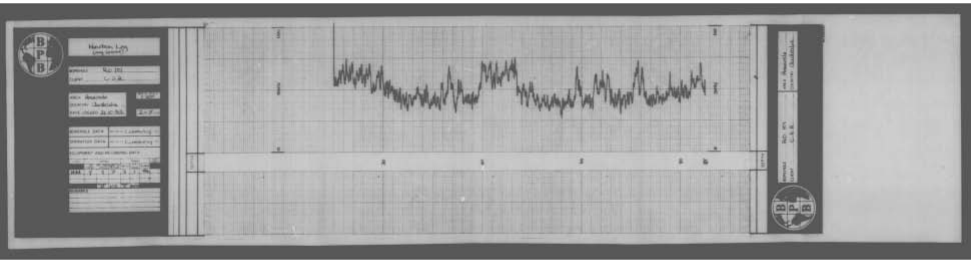

COAL
LITHOLOGY
LOG
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
COAL LITHOLOGY LOG

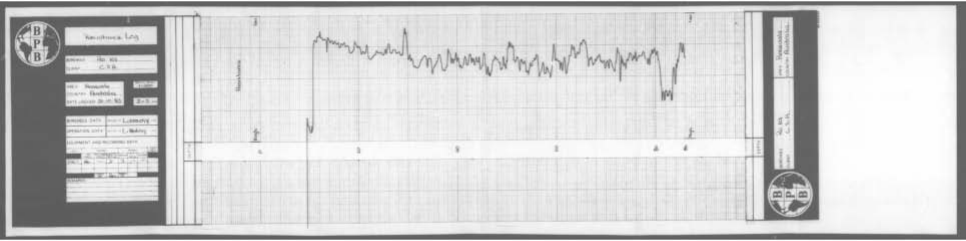


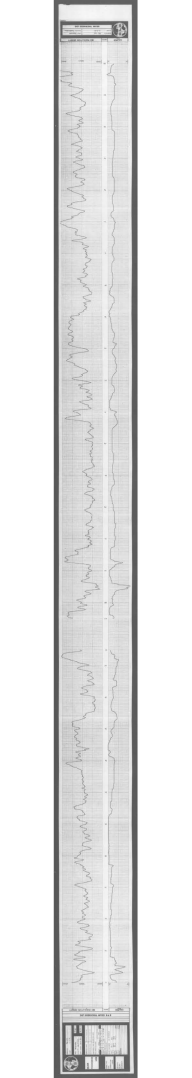


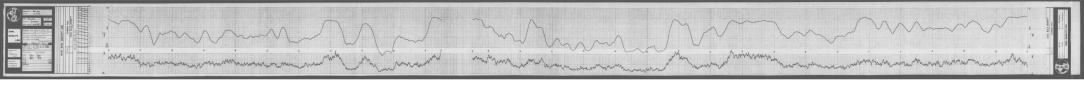

BPB
SEAM THICKNESS LOG
BPB SEAM THICKNESS LOG
HIGH RESOLUTION DENSITY
CALIPER
BPB SEAM THICKNESS LOG

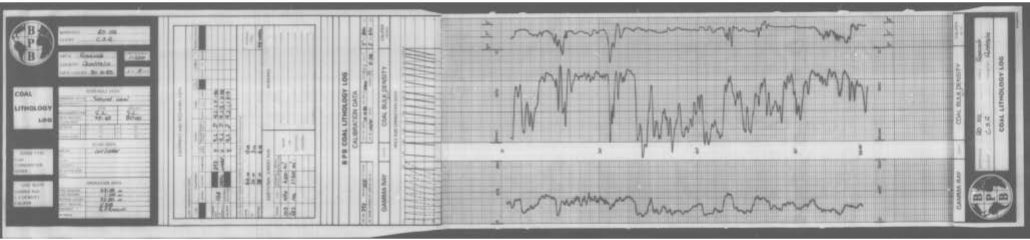

COAL LITHOLOGY LOG
Ground Level
B P B COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
GAMMA RAY
COAL BULK DENSITY
COAL LITHOLOGY LOG

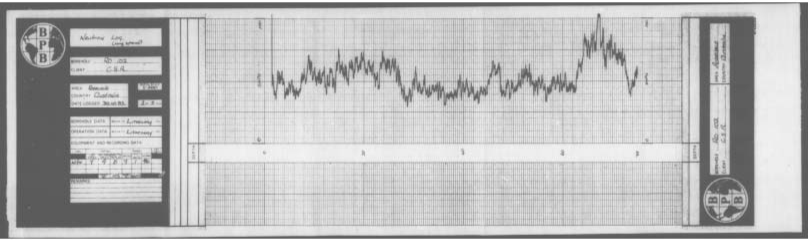


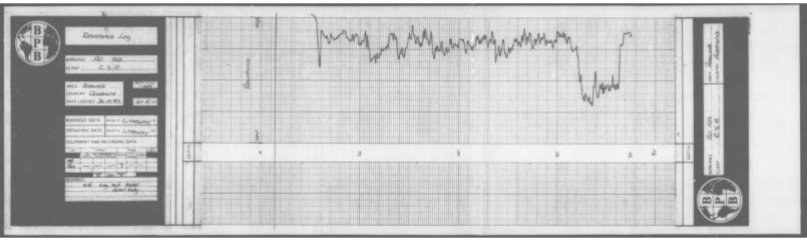


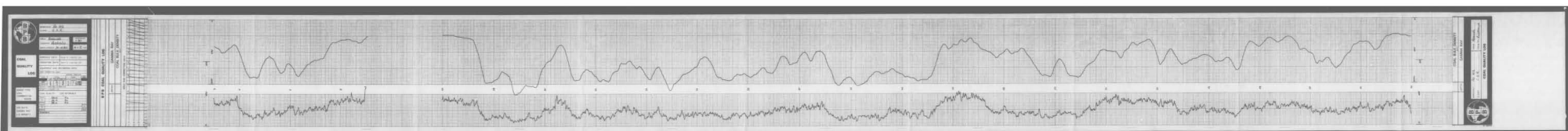


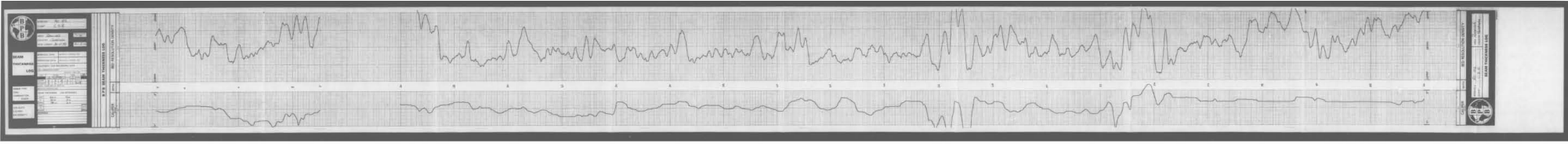


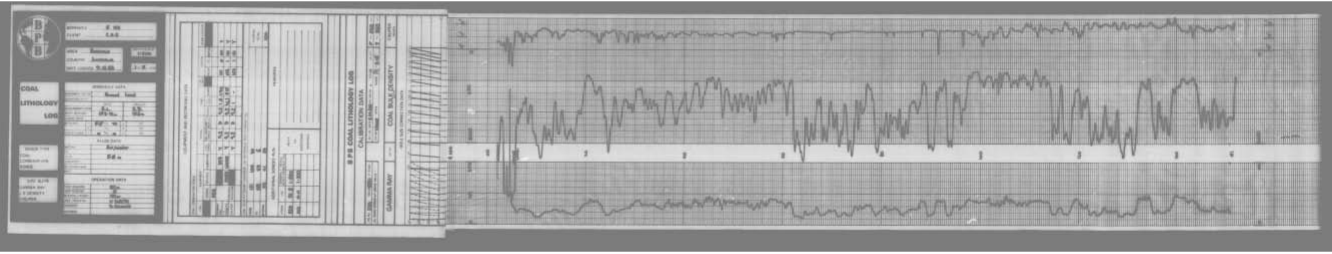

COAL LITHOLOGY LOG
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
COAL LITHOLOGY LOG

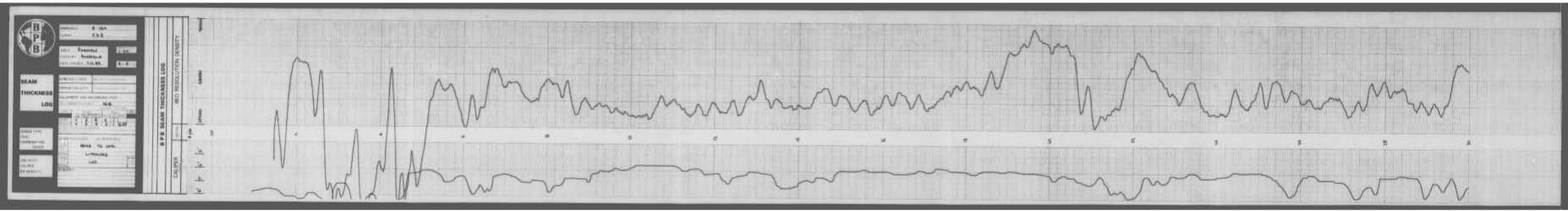


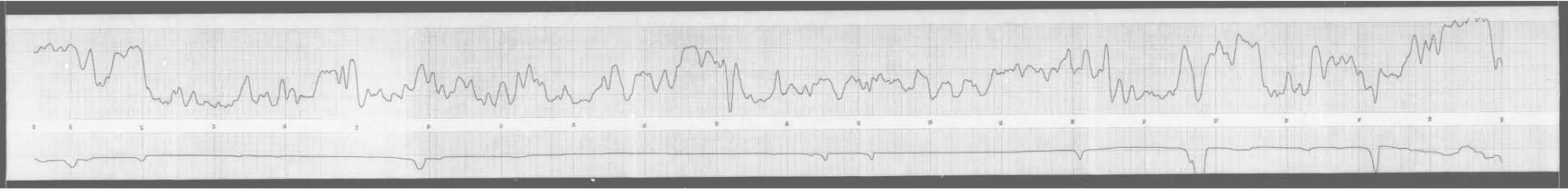

Resistance Log
Resistance
Depth
Scale
Depth
Scale

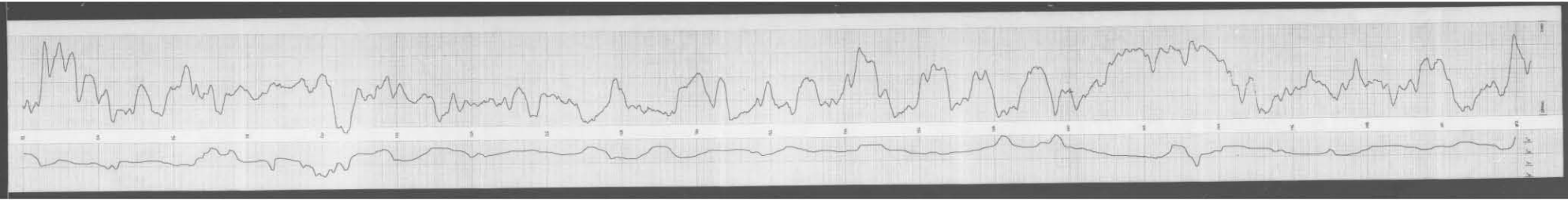


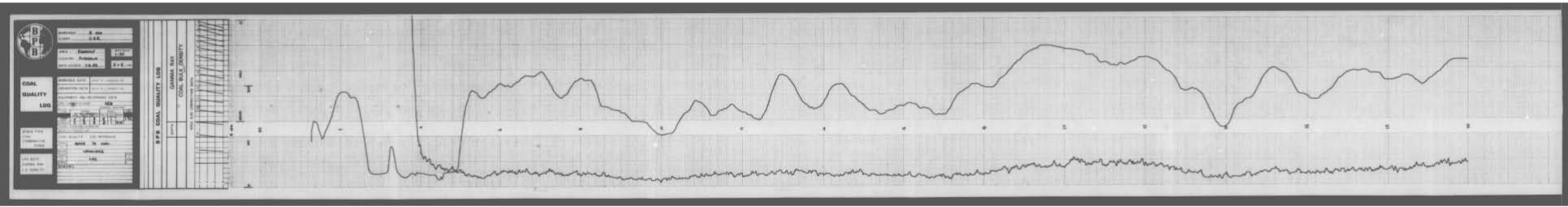

BEAM
TRACKING
LOG

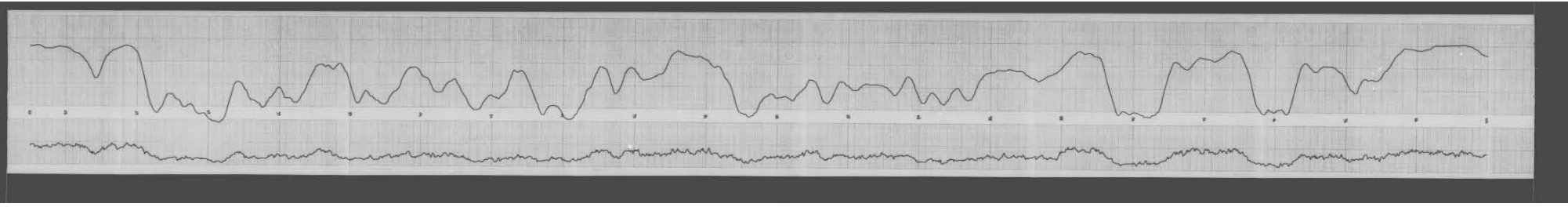

COAL
LITHOLOGY
LOG
B P.B. COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY

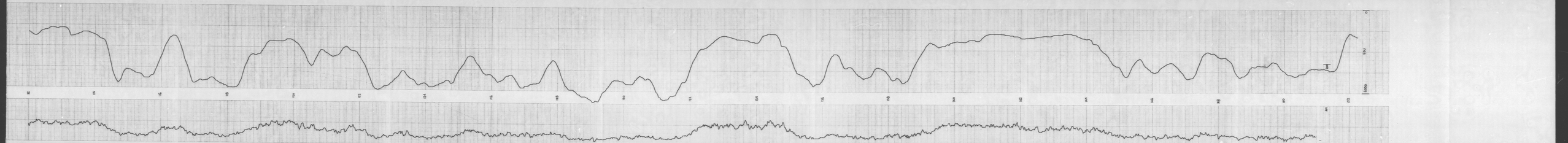

SEAM
THICKNESS
LOG
BPB SEAM THICKNESS LOG
RED RESOLUTION DENSITY
CALIPER

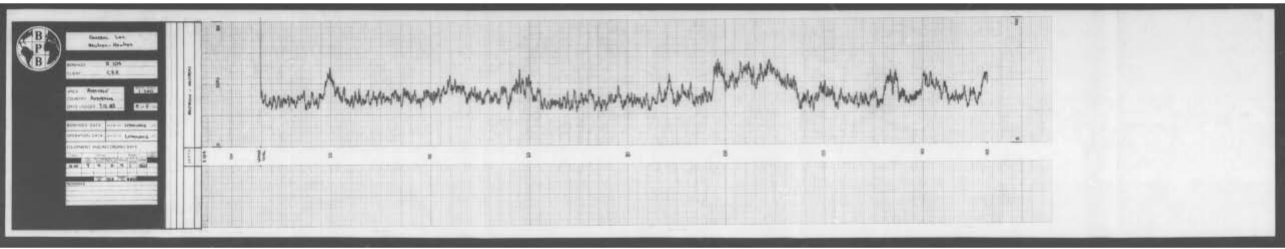


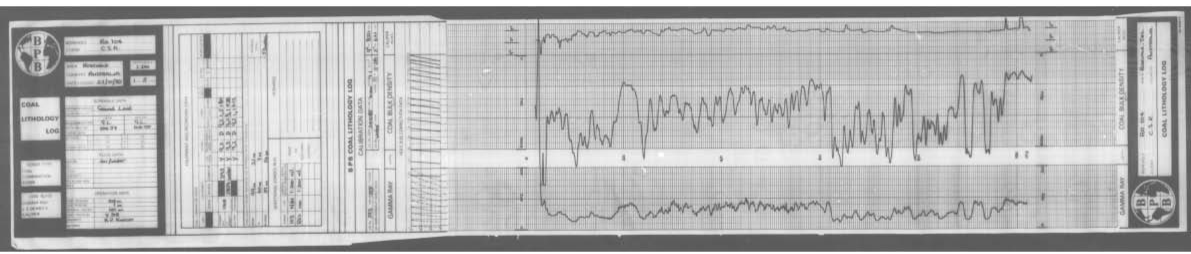


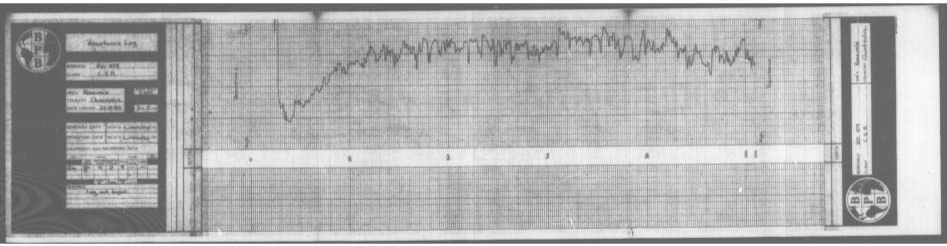

COAL
QUALITY
LOG
SFD COAL QUALITY LOG
GAMMA RAY
COAL QUALITY

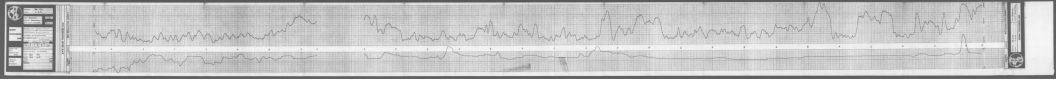


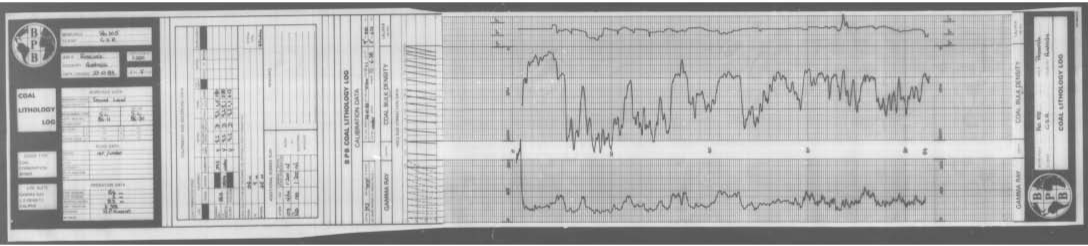


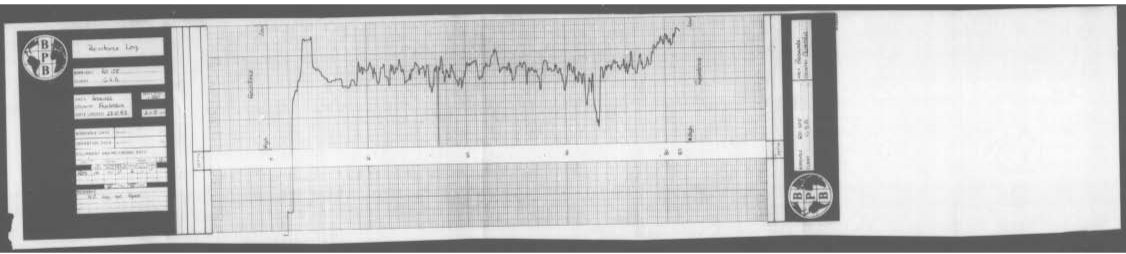


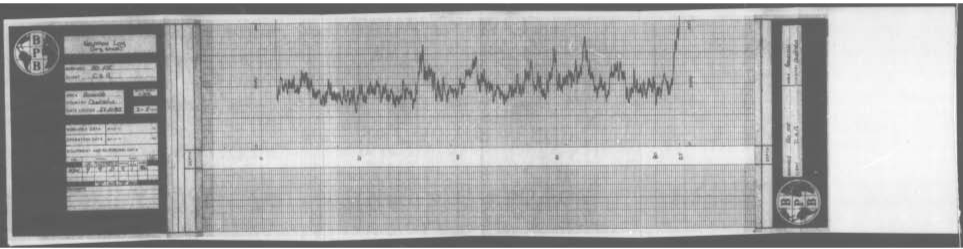

COAL
LITHOLOGY
LOG
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
COAL BULK DENSITY
GAMMA RAY
COAL LITHOLOGY LOG






COAL LITHOLOGY LOG
B P B
B P B COAL LITHOLOGY LOG
CALIBRATION DATA
COAL RHOB DENSITY
GAMMA RAY



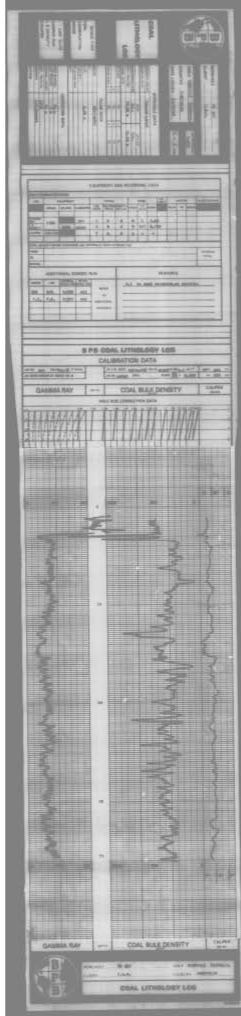


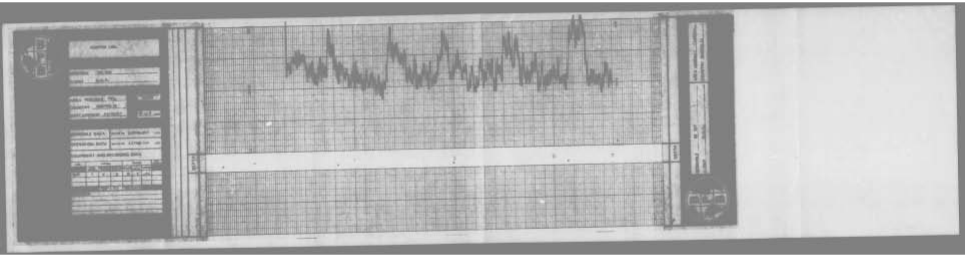
COAL QUALITY LOG

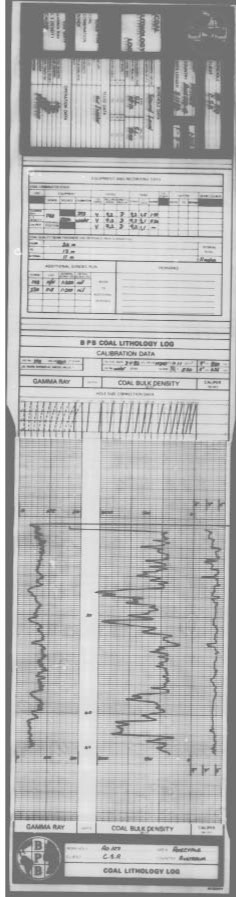
BEAM THICKNESS LOG

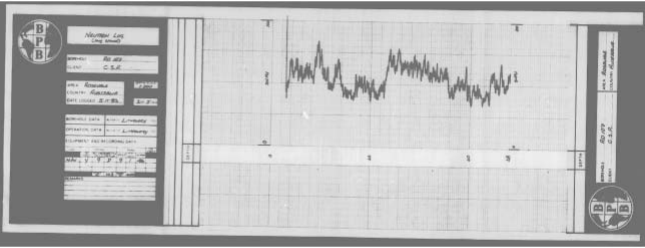
BEAM THICKNESS LOG

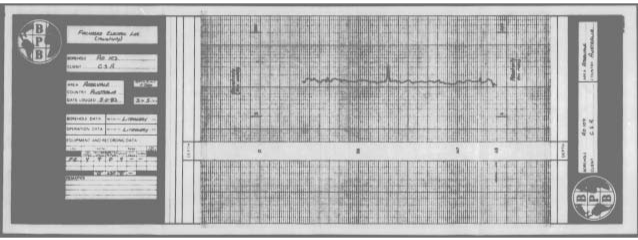
BEAM THICKNESS LOG

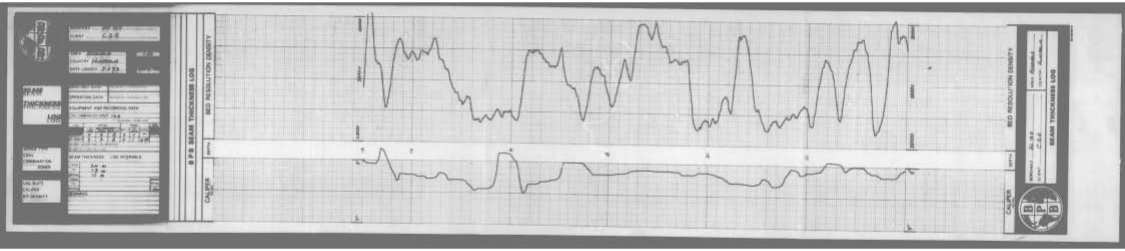

S.P.S COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
GAMMA RAY
COAL BULK DENSITY
COAL LITHOLOGY LOG




BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
CALIPER
GAMMA RAY
COAL BULK DENSITY
CALIPER
COAL LITHOLOGY LOG


Neutron Log
(Long Count)
Well No. 22
C.S.G.
Kaduna
Kaduna
Bore Hole Log
Density Log
Electrical Log
Remarks
Recorded by
Witnessed by
Run No.
Date
Depth-Driller
Depth-Logger
Bottom Log Interval
Top Log Interval
Casing-Driller
Casing-Logger
Bit Size
Type Fluid in Hole
Density
Viscosity
pH
Fluid Loss
Source of Sample
Rm @ Meas. Temp.
Rmf @ Meas. Temp.
Rmc @ Meas. Temp.
Source of Rmf
Source of Rmc
Rm @ BHT
Time Since Circ.
Max. Rec. Temp.
Equip. Location
Recorded By
Witnessed By
Run No.
Date
Depth-Driller
Depth-Logger
Bottom Log Interval
Top Log Interval
Casing-Driller
Casing-Logger
Bit Size
Type Fluid in Hole
Density
Viscosity
pH
Fluid Loss
Source of Sample
Rm @ Meas. Temp.
Rmf @ Meas. Temp.
Rmc @ Meas. Temp.
Source of Rmf
Source of Rmc
Rm @ BHT
Time Since Circ.
Max. Rec. Temp.
Equip. Location
Recorded By
Witnessed By
Well No. 22
C.S.G.
Kaduna
Kaduna




BPB BEAM THICKNESS LOG
BED RESOLUTION DENSITY
CALIPER
BEAM THICKNESS LOG

BPB

COAL QUALITY LOG

BPB COAL QUALITY LOG

GAMMA RAY

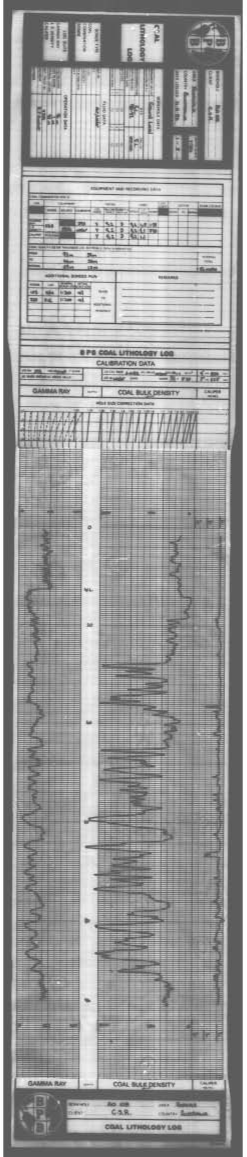
COAL BULK DENSITY

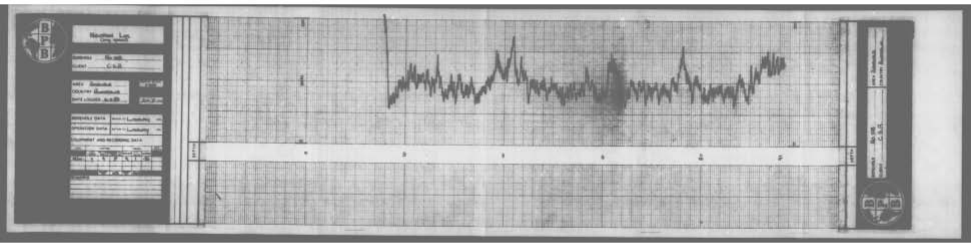
COAL BULK DENSITY

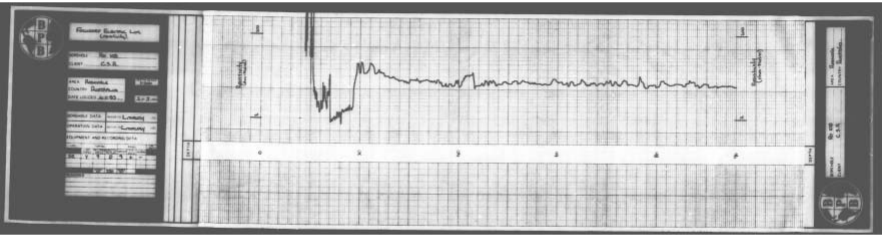
GAMMA RAY

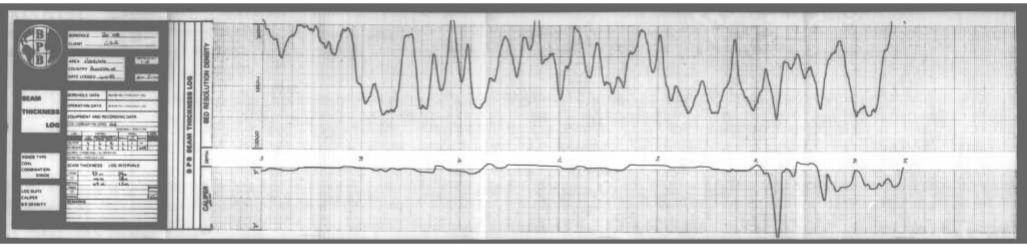
BPB

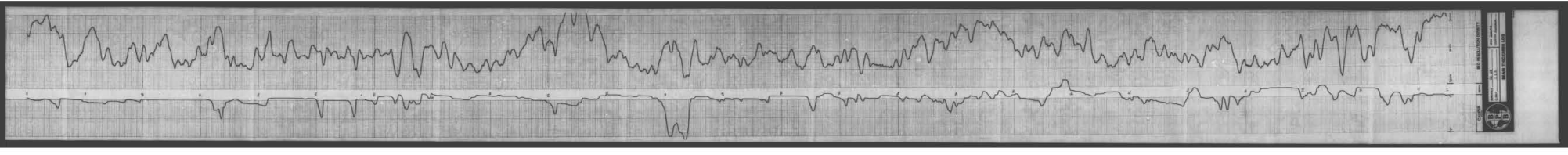
COAL QUALITY LOG

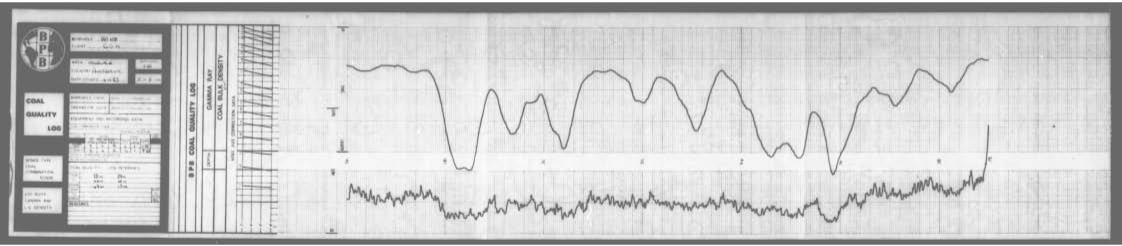

COAL Lithology Log
EQUIPMENT AND RECORDING DATA
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
GAMMA RAY
COAL BULK DENSITY
COAL LITHOLOGY LOG

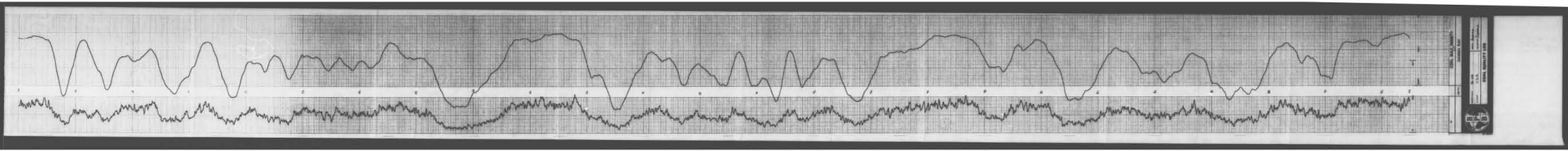


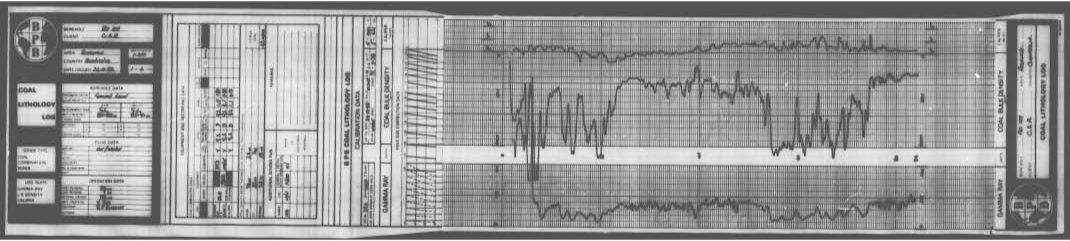


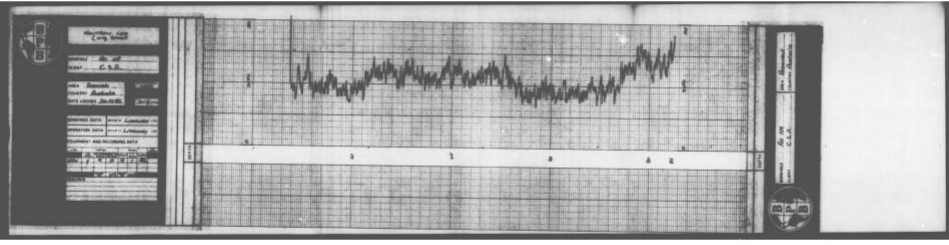

BEAM THICKNESS LOG
BPB BEAM THICKNESS LOG
RED RESOLUTION DENSITY
CALIPER

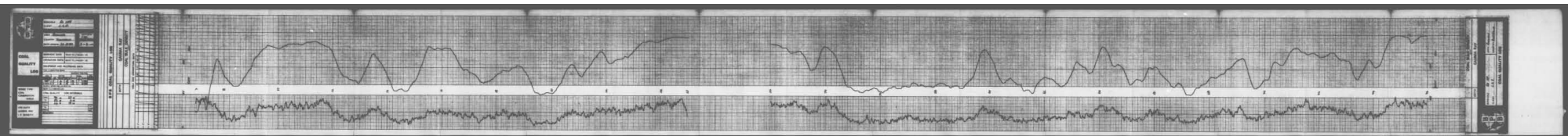


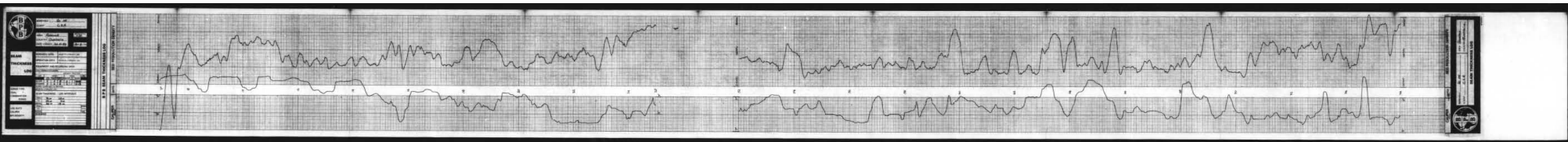

COAL
QUALITY
LOG
BPB COAL QUALITY LOG
GAMMA RAY
COAL BULK DENSITY

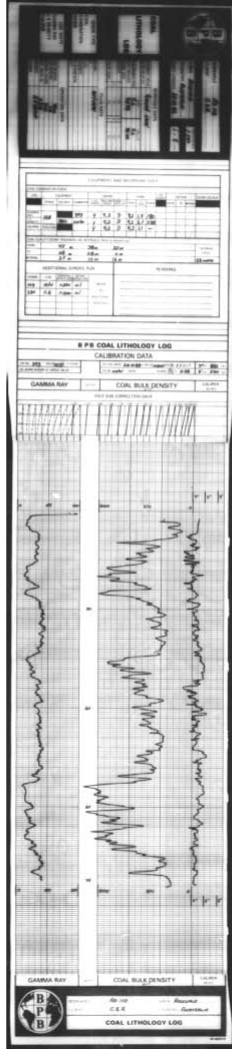


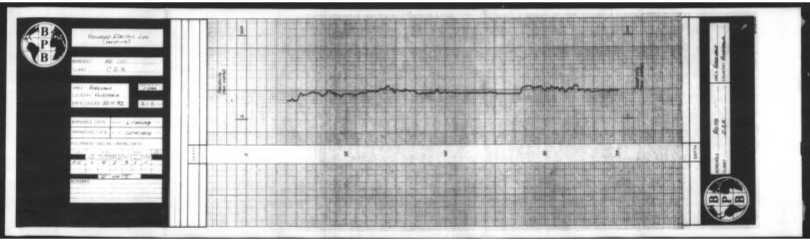

COAL LITHOLOGY LOG
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
COAL BULK DENSITY
GAMMA RAY
COAL BULK DENSITY
GAMMA RAY
COAL LITHOLOGY LOG

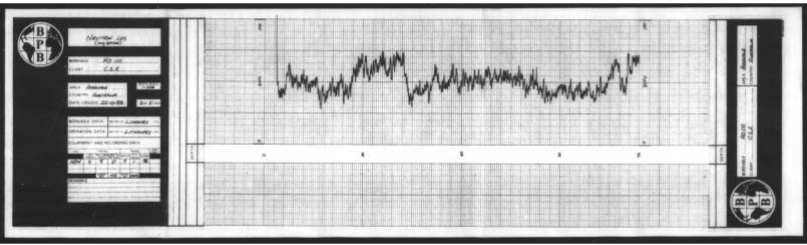


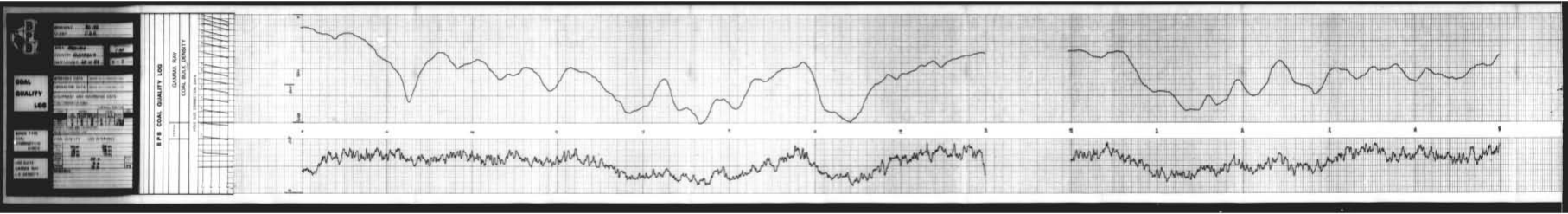


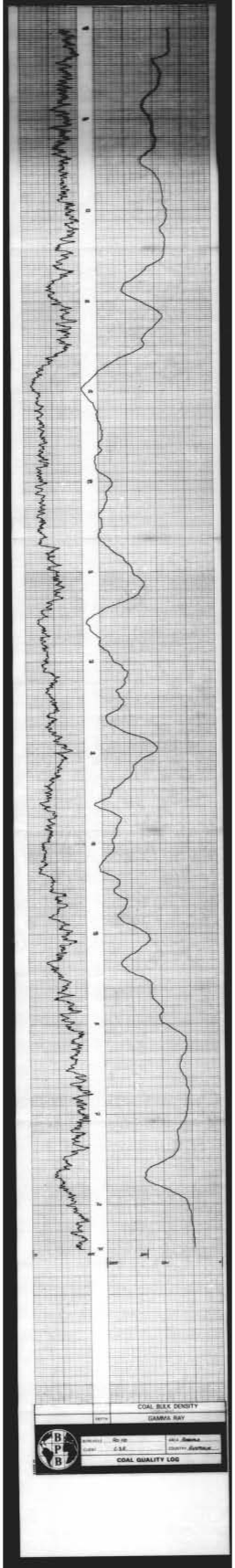


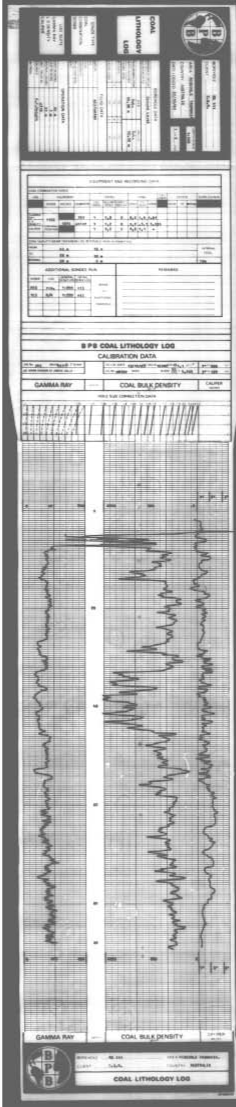

8 PS COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
GAMMA RAY
COAL BULK DENSITY
COAL LITHOLOGY LOG

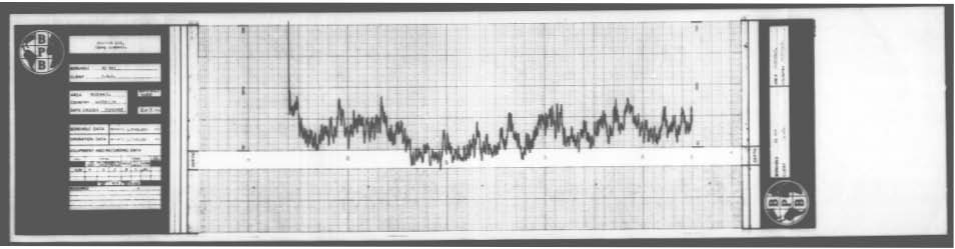


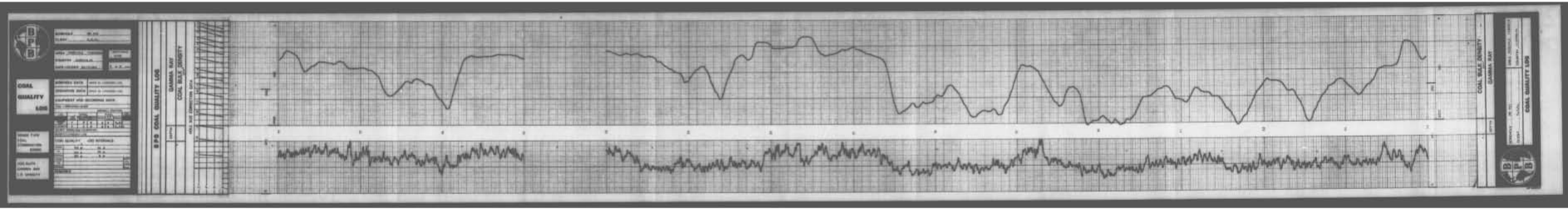


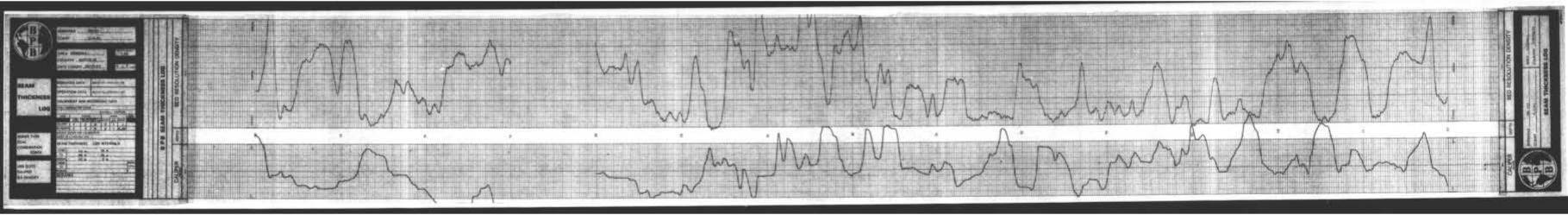

COAL
QUALITY
LOG
EPR COAL QUALITY LOG
GAMMA RAY
COAL BULK DENSITY

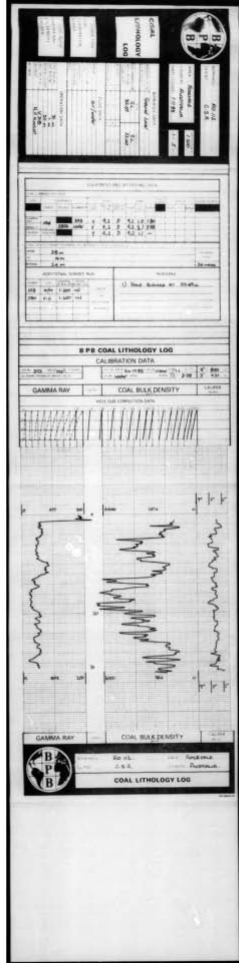

COAL BULK DENSITY
GAMMA RAY
COAL QUALITY LOG

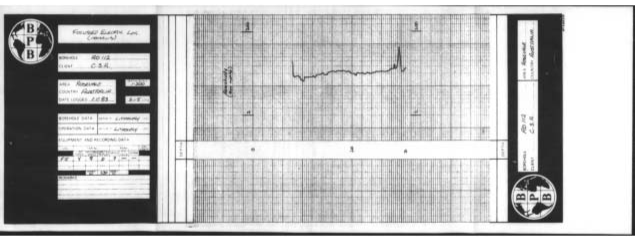

COAL LITHOLOGY LOG
BP
EQUIPMENT AND RECORDING DATA
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
CALIPER
HOLE SIZE CORRECTION DATA
GAMMA RAY
COAL BULK DENSITY
COAL LITHOLOGY LOG

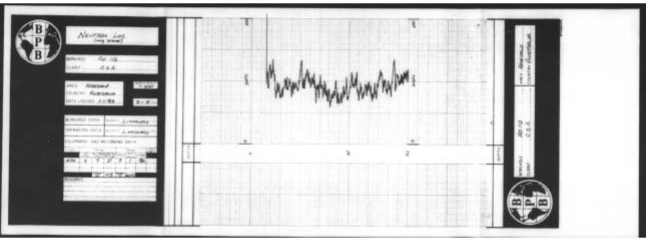


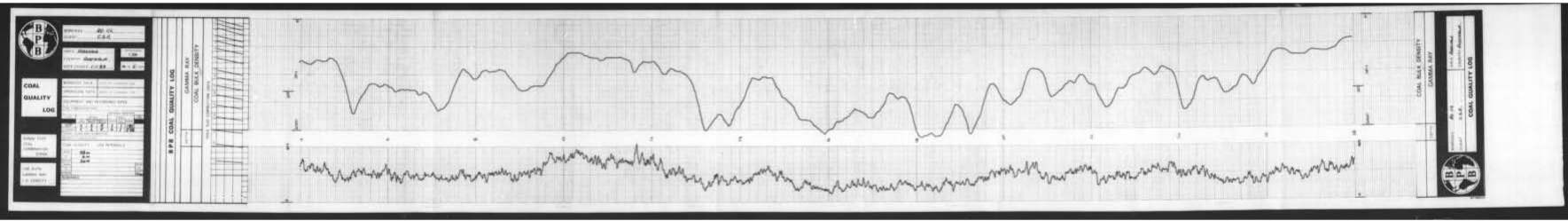

COAL QUALITY LOG
BPB COAL QUALITY LOG
GAMMA RAY
COAL BULK DENSITY
COAL QUALITY LOG

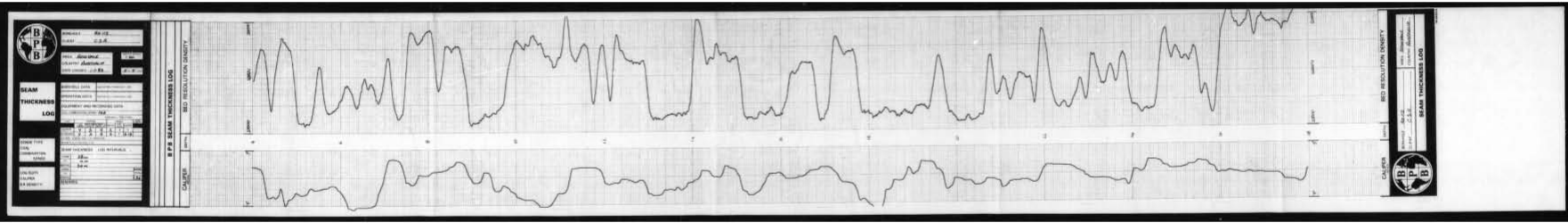

SEAM THICKNESS LOG
BPB SEAM THICKNESS LOG
RED RESOLUTION DENSITY
CALIPER
RED RESOLUTION DENSITY
CALIPER
SEAM THICKNESS LOG

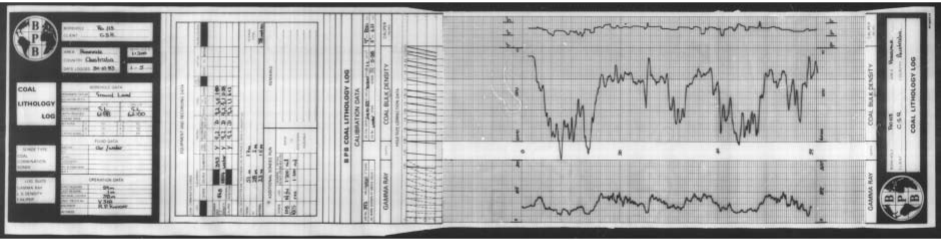

COAL LITHOLOGY LOG
B P B
B P B COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
GAMMA RAY
COAL BULK DENSITY
B P B
COAL LITHOLOGY LOG

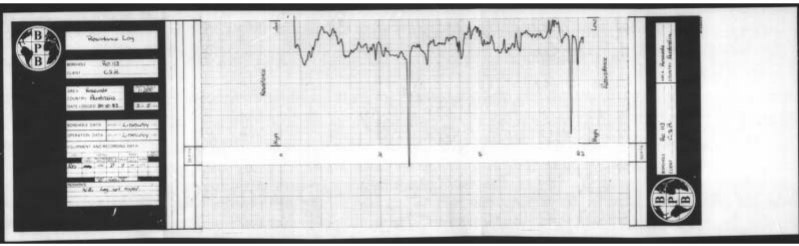

BPB
FIBRE GLASS LTD.
CHESTERFIELD
REMARKS
CLERK
C.S.R.
MAKE
MODEL
COUNTER
DATE FITTED
REMOVED DATE
CONVERSION DATE
CALIBRATED AND RECORDING DATA
REMARKS
BPB
CHESTERFIELD

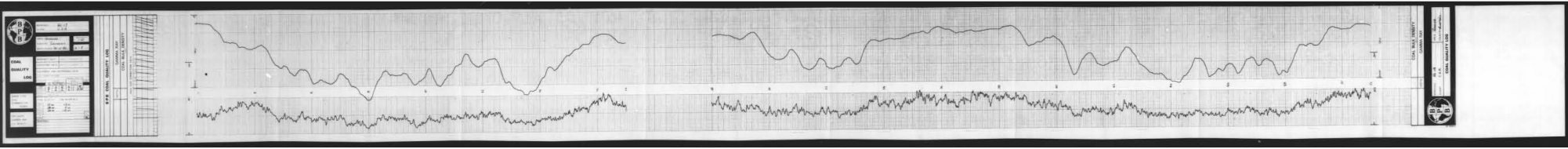

Neutron Log
(long spread)
Rosemont
Lithology
Lithology

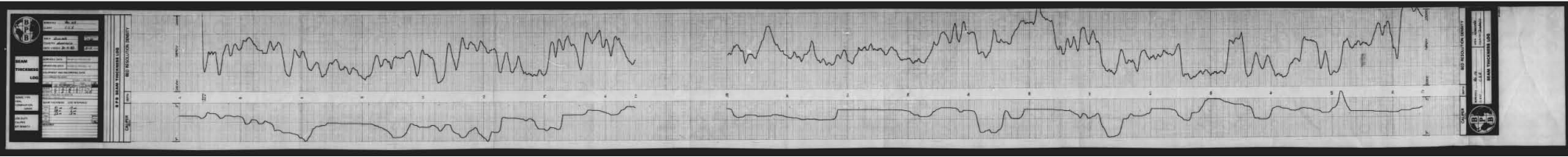

COAL QUALITY LOG
BPB COAL QUALITY LOG
GAMMA RAY
COAL BULK DENSITY
COAL BULK DENSITY
GAMMA RAY
COAL QUALITY LOG

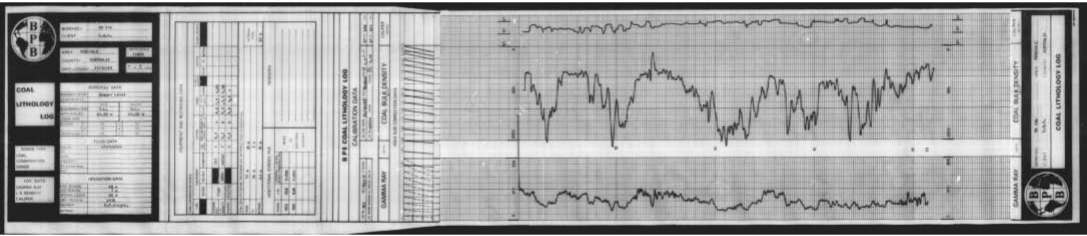

SEAM
THICKNESS
LOG
BPB
BPB SEAM THICKNESS LOG
BED RESOLUTION DENSITY
CALIPER
SEAM THICKNESS LOG

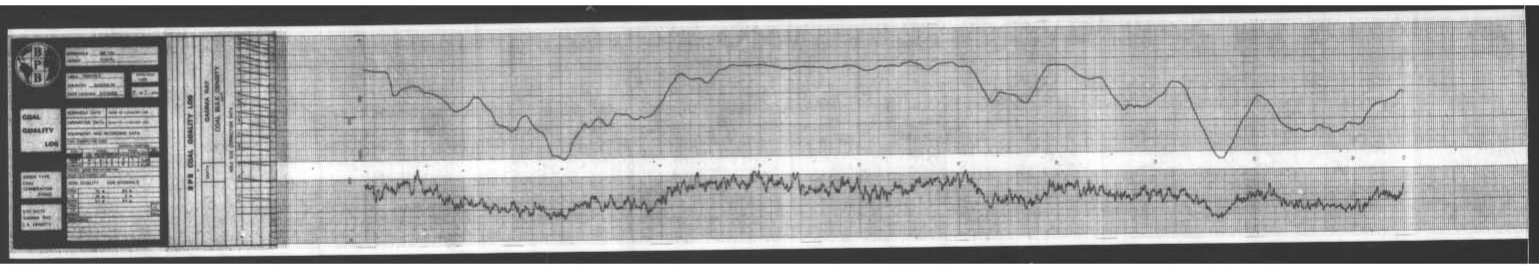

B P B
COAL LITHOLOGY LOG
B P B COAL LITHOLOGY LOG
CALIBRATION DATA
COAL BULK DENSITY
GAMMA RAY
B P B
COAL LITHOLOGY LOG

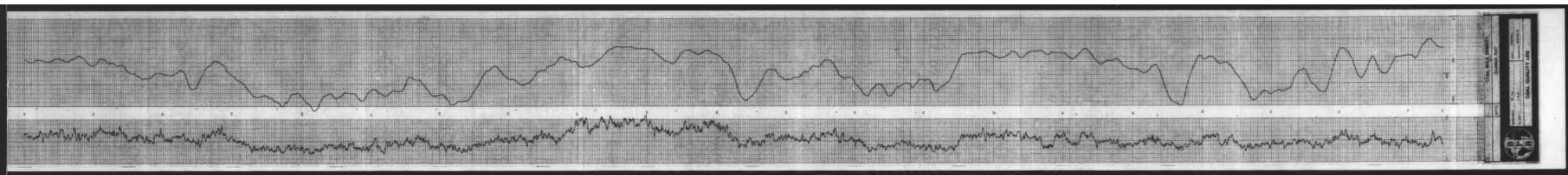

Resistance
Resistance
Resistance

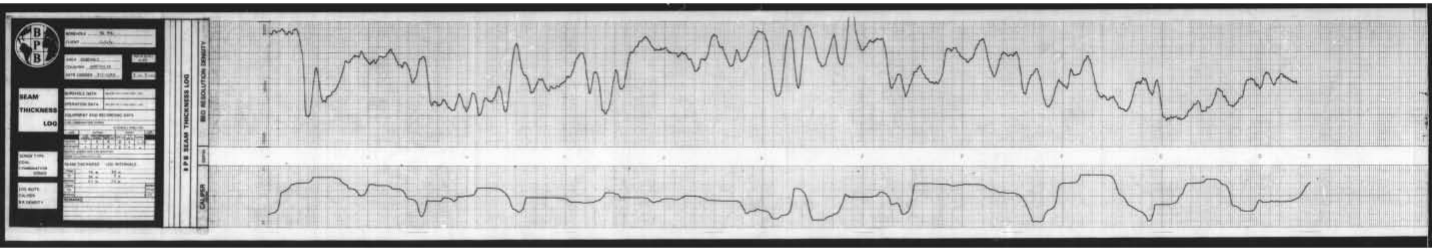

COAL QUALITY LOG
BHP COAL DENSITY LOG
GAMMA RAY
COAL BULK DENSITY
COAL BULK DENSITY
GAMMA RAY
COAL QUALITY LOG

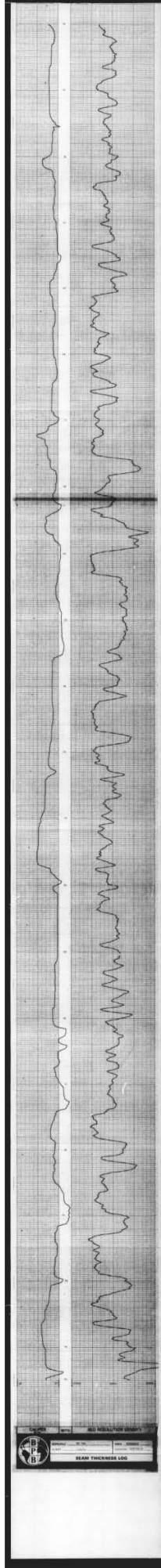

BEAM THICKNESS LOG
BED RESOLUTION DENSITY
CALIPER
BED RESOLUTION DENSITY
CALIPER
BEAM THICKNESS LOG

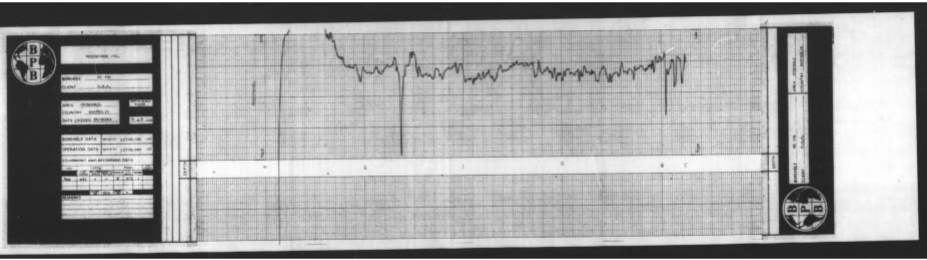

COAL LITHOLOGY LOG
COAL LITHOLOGY LOG
COAL BULK DENSITY
GAMMA RAY

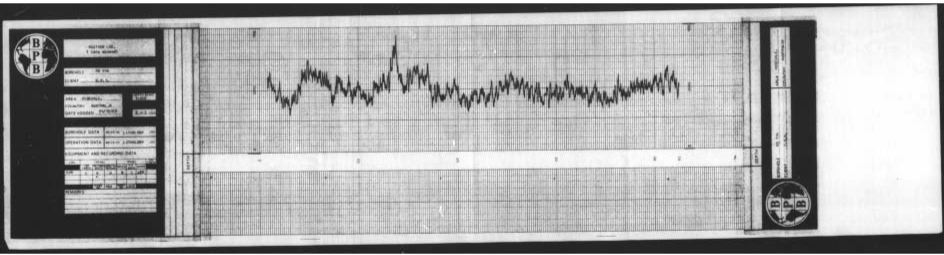

COAL QUALITY LOG
BPB COAL QUALITY LOG
GAMMA RAY
COAL BULK DENSITY

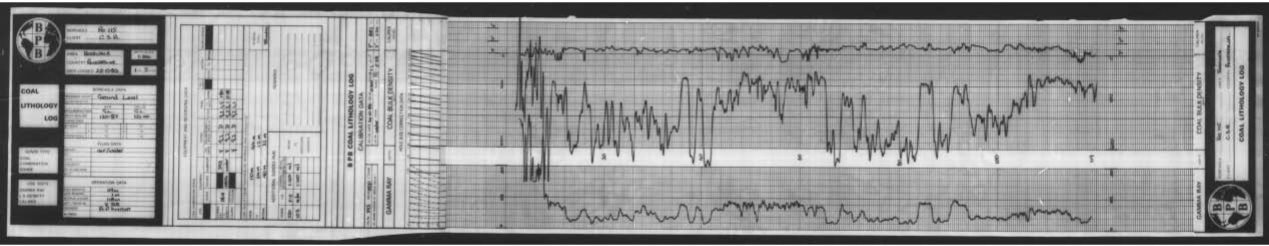


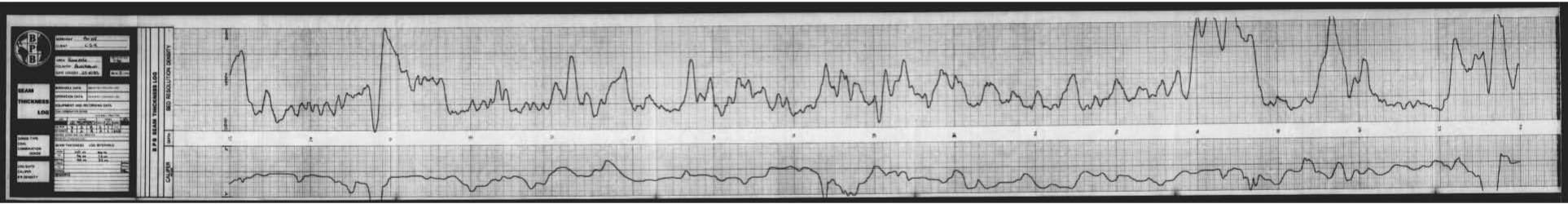

BEAM THICKNESS LOG
BPB BEAM THICKNESS LOG
BEI RESOLUTION DENSITY
CALIPER

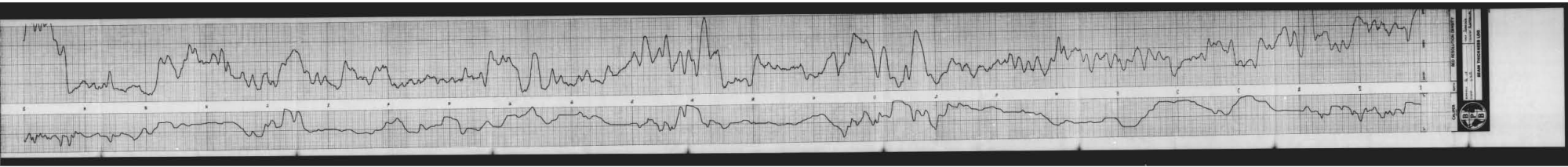

SEAM THICKNESS LOG

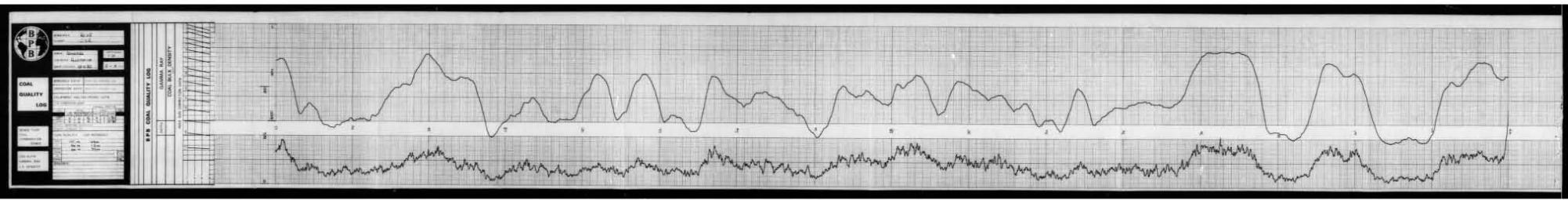


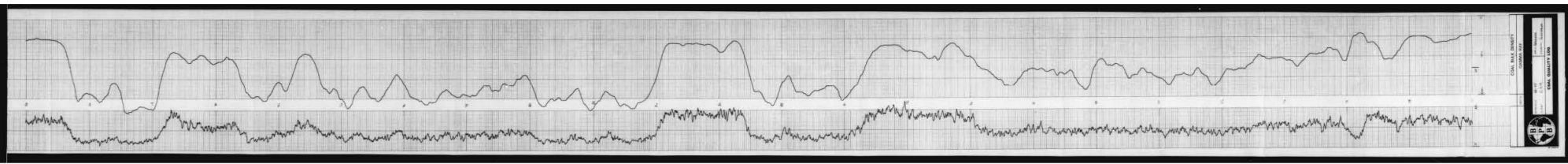


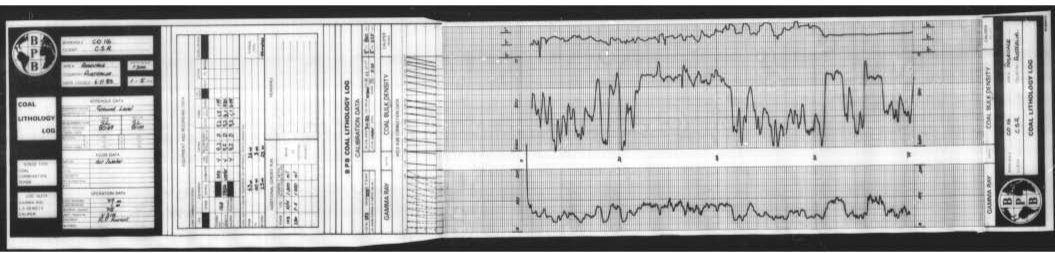

COAL LITHOLOGY LOG
BPB COAL LITHOLOGY LOG
COAL BULK DENSITY
GAMMA RAY
COAL LITHOLOGY LOG

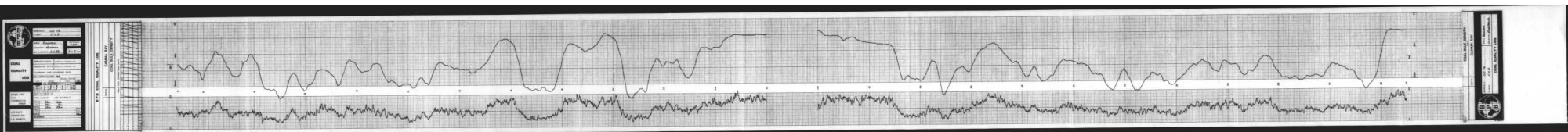

SEAM THICKNESS LOG
BPB SEAM THICKNESS LOG
BED RESOLUTION DENSITY
CALIPER

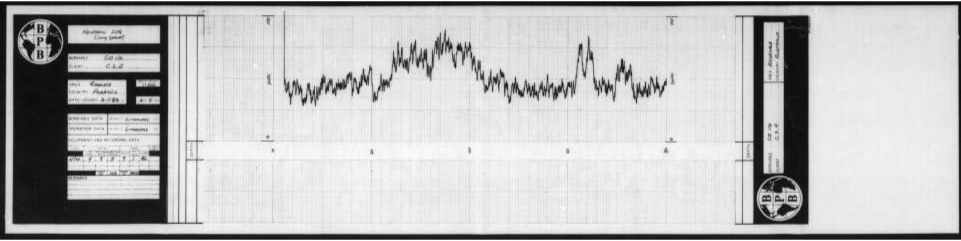


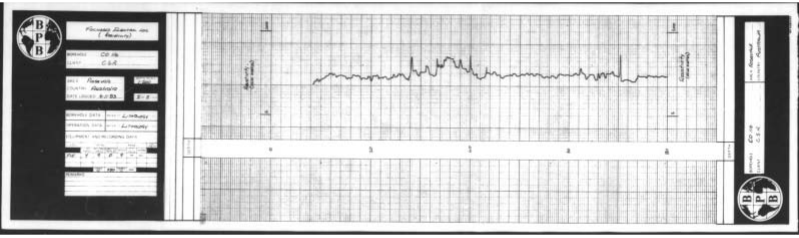

COAL
QUALITY
LOG
BPB COAL QUALITY LOG
GAMMA RAY
COAL BULK DENSITY

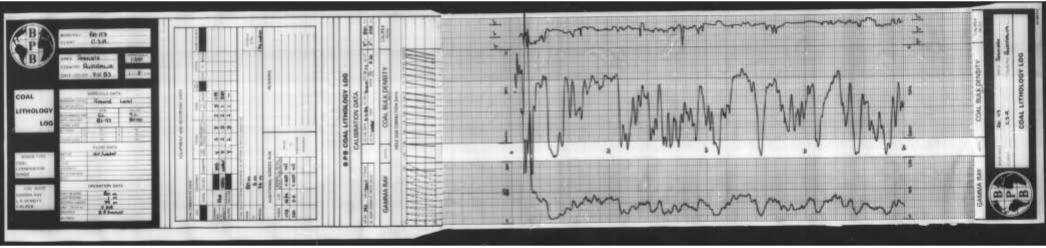

COAL BULK DENSITY
COAL QUALITY LOG

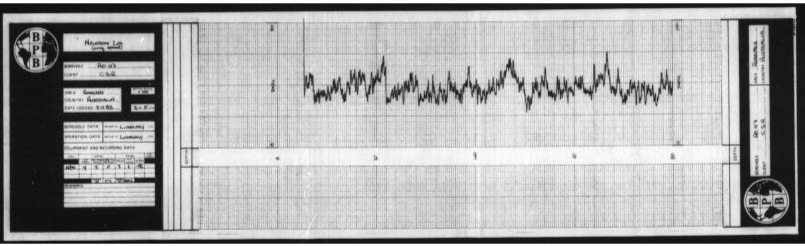

COAL LITHOLOGY LOG
B P B
B P B COAL LITHOLOGY LOG
CALIBRATION DATA
COAL BULK DENSITY
GAMMA RAY
COAL LITHOLOGY LOG

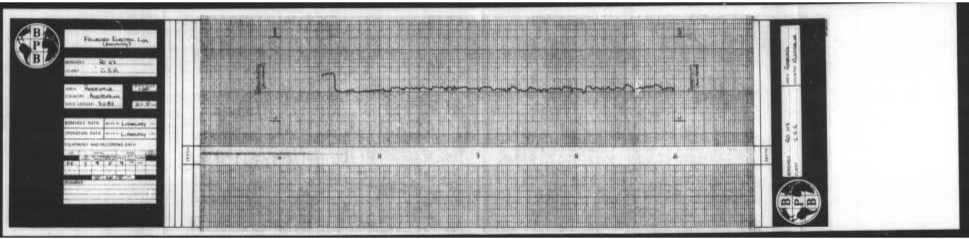


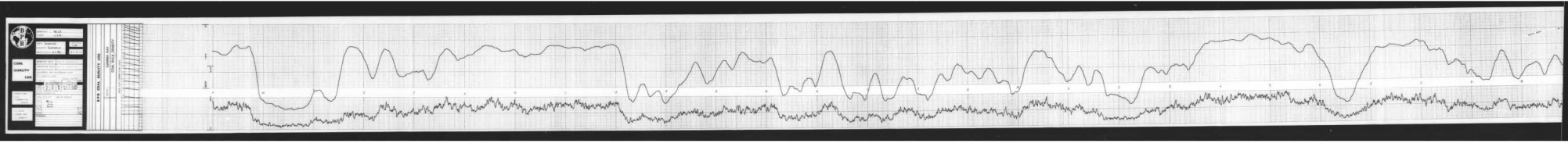


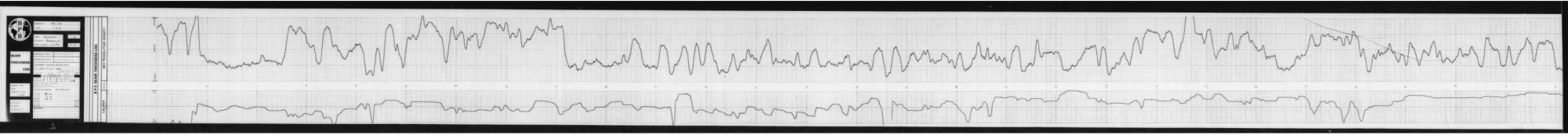


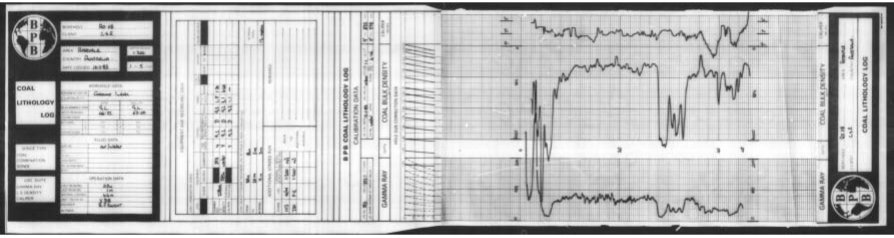

COAL LITHOLOGY LOG
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
COAL LITHOLOGY LOG

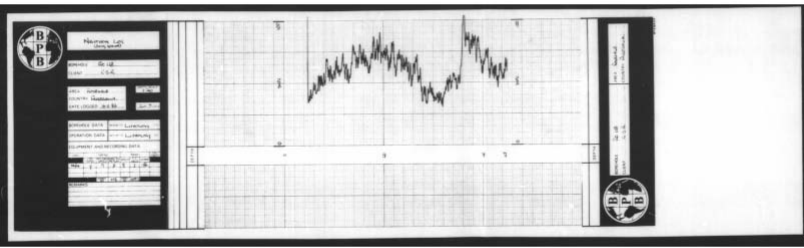


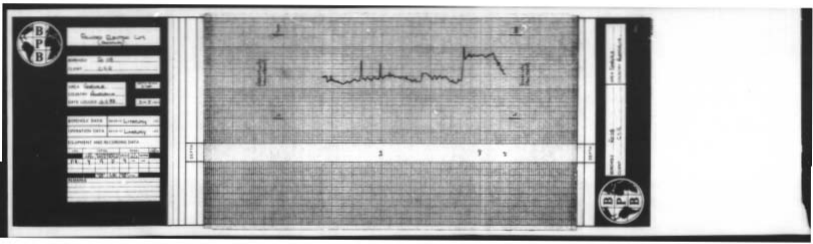


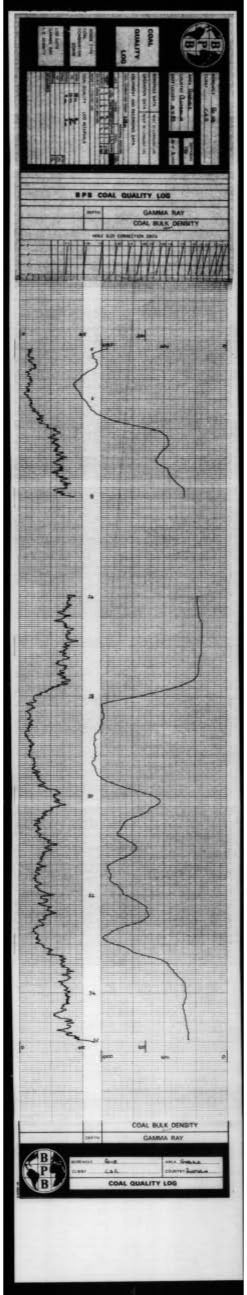

COAL QUALITY LOG

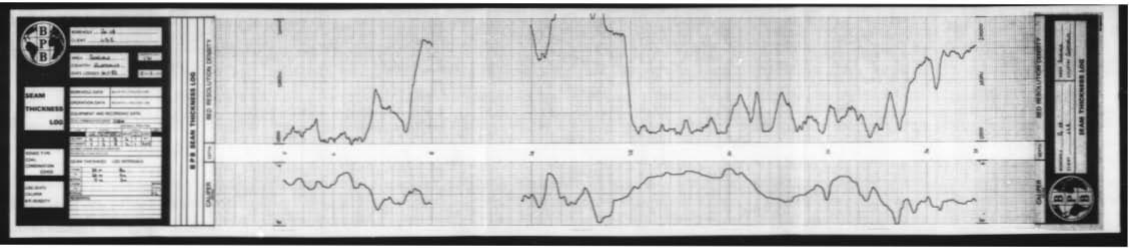


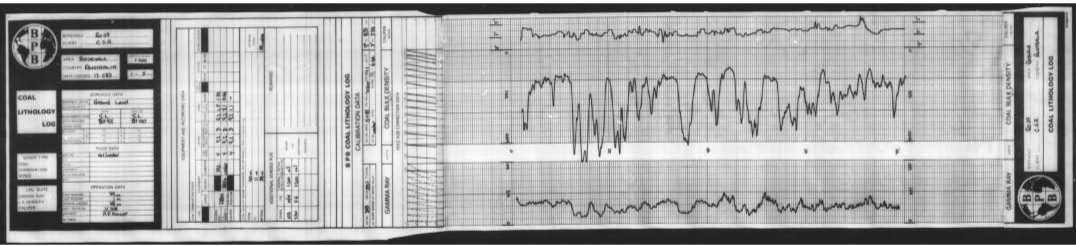

COAL LITHOLOGY LOG
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
COAL LITHOLOGY LOG

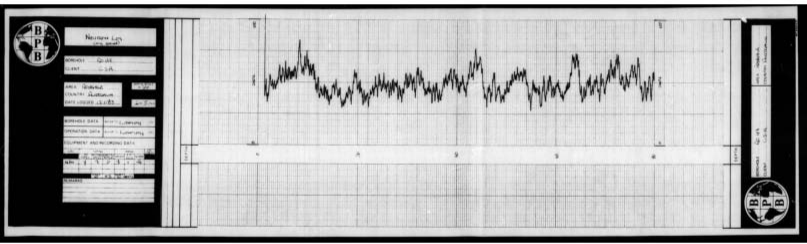

B P B
Maximum Log
(Long length)
COMPANY
CLAIM
FIELD
COUNTRY
DATE LOGGED
SERVICES DATA
OPERATOR DATA
EQUIPMENT AND RECORDING DATA
Log Scale
Log Scale
B P B

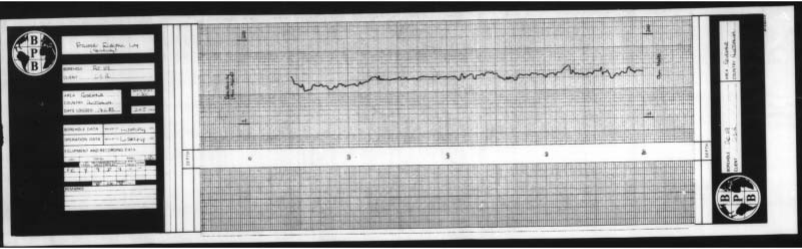


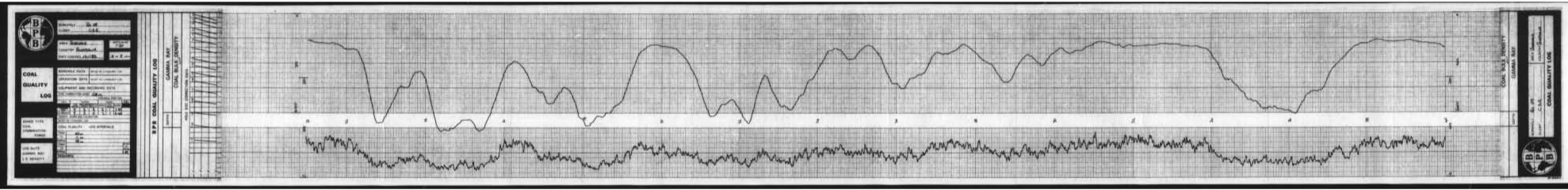

COAL QUALITY LOG
B.P.B. COAL QUALITY LOG
DEPTH
GAMMA RAY
COAL BULK DENSITY
HOLE SIZE CORRECTION (INCH)
COAL BULK DENSITY
DEPTH
GAMMA RAY
COAL QUALITY LOG

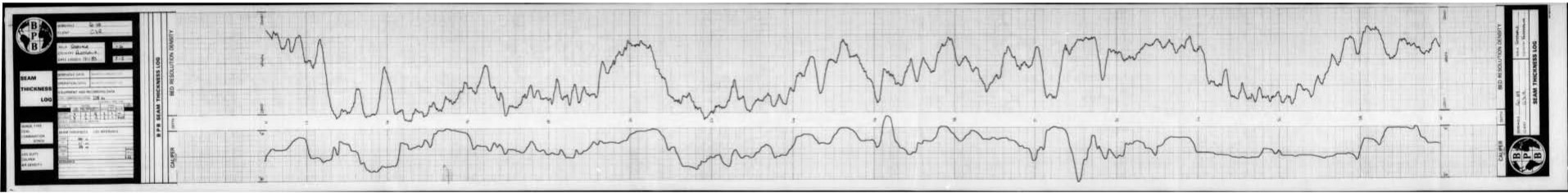

SEAM
THICKNESS
LOG
BPB SEAM THICKNESS LOG
MEDIUM RESOLUTION DENSITY
MEDIUM RESOLUTION DENSITY
SEAM THICKNESS LOG

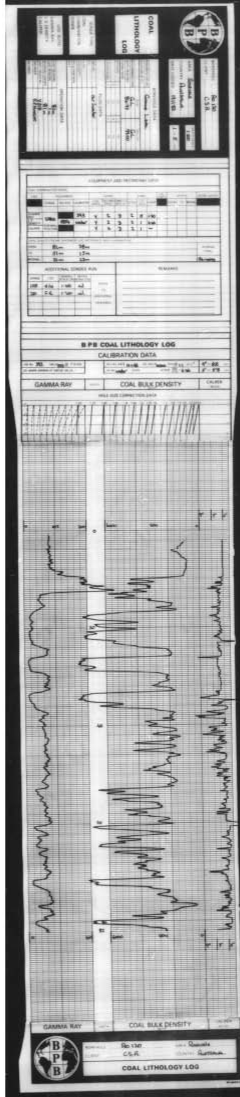

COAL LITHOLOGY LOG
B P B
B P B COAL LITHOLOGY LOG
CALIBRATION DATA
COAL BULK DENSITY
GAMMA RAY
COAL LITHOLOGY LOG

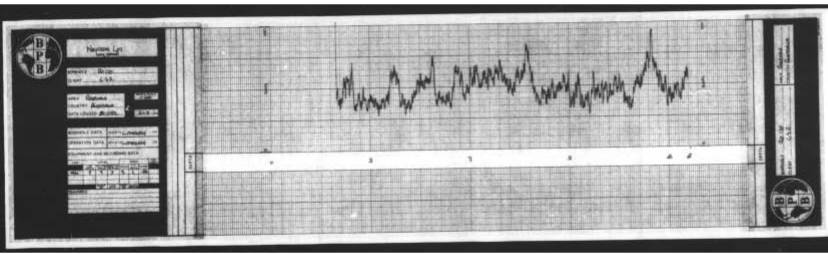

BP B
Neutron Log
Gamma Ray
RECEIVED
COMPANY
WELL
FIELD
COUNTY
STATE
LOCATION
Other Services
Sec.
Twp.
Rge.
Permanent Datum
Elev.
Log Measured From
Drilling Measured From
Elev.: K.B.
D.F.
G.L.
Date
Run No.
Depth-Driller
Depth-Logger
Bottom Logged Interval
Top Logged Interval
Type Fluid in Hole
Salinity
Density
Level
Max. Rec. Temp.
Equip. No.
Location
Recorded By
Witnessed By
RUN
BIT
CASING
TYPE FLUID IN HOLE
DENSITY
VISCOSITY
PH
FLUID LOSS
SOURCE OF SAMPLE
RM @ MEAS. TEMP.
RM @ BHT
RMF @ MEAS. TEMP.
RMC @ MEAS. TEMP.
SOURCE OF RMF
SOURCE OF RMC
RM @ BHT
TIME SINCE CIRC.
MAX. REC. TEMP.
EQUIPMENT NUMBER
LOCATION
RECORDED BY
WITNESSED BY
REMARKS
BP B
Neutron Log
Gamma Ray
RECEIVED
COMPANY
WELL
FIELD
COUNTY
STATE
LOCATION
Other Services
Sec.
Twp.
Rge.
Permanent Datum
Elev.
Log Measured From
Drilling Measured From
Elev.: K.B.
D.F.
G.L.
Date
Run No.
Depth-Driller
Depth-Logger
Bottom Logged Interval
Top Logged Interval
Type Fluid in Hole
Salinity
Density
Level
Max. Rec. Temp.
Equip. No.
Location
Recorded By
Witnessed By
RUN
BIT
CASING
TYPE FLUID IN HOLE
DENSITY
VISCOSITY
PH
FLUID LOSS
SOURCE OF SAMPLE
RM @ MEAS. TEMP.
RM @ BHT
RMF @ MEAS. TEMP.
RMC @ MEAS. TEMP.
SOURCE OF RMF
SOURCE OF RMC
RM @ BHT
TIME SINCE CIRC.
MAX. REC. TEMP.
EQUIPMENT NUMBER
LOCATION
RECORDED BY
WITNESSED BY
REMARKS

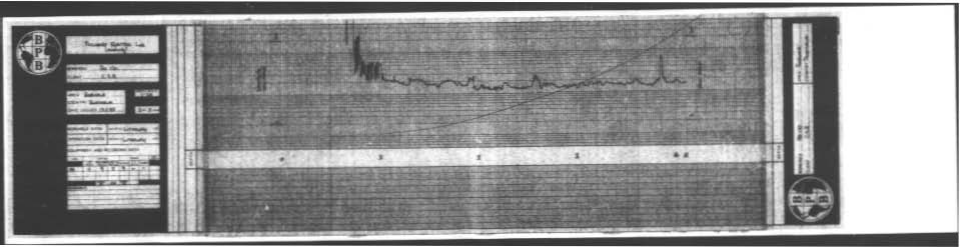


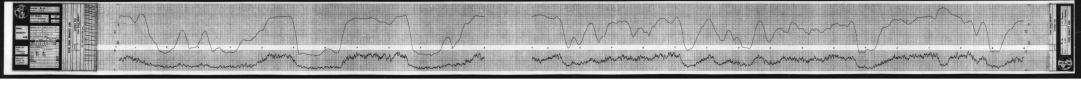

BPB
COAL QUALITY LOG
BPB COAL QUALITY LOG
GAMMA RAY
COAL BULK DENSITY
COAL QUALITY LOG

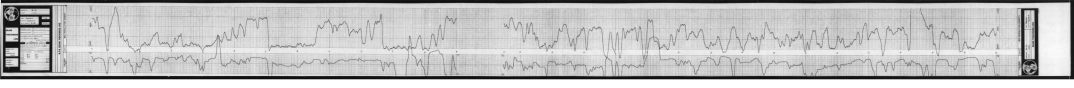

BPB
SEAM THICKNESS LOG
BPB SEAM THICKNESS LOG
MD RESOLUTION DENSITY
CALIPER
BPB SEAM THICKNESS LOG

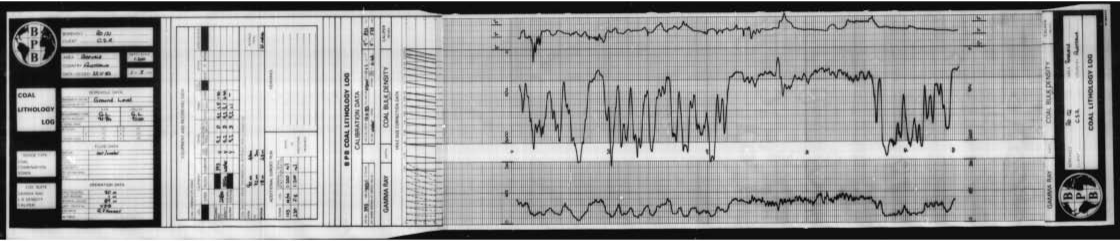

COAL LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA
REMARKS
ADDITIONAL CONDEX RUN
B P B COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
CALIPER
HOLE SIZE CORRECTION DATA
GAMMA RAY
COAL BULK DENSITY
COAL LITHOLOGY LOG

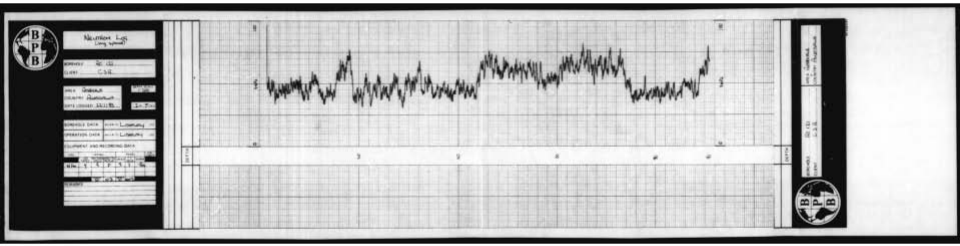


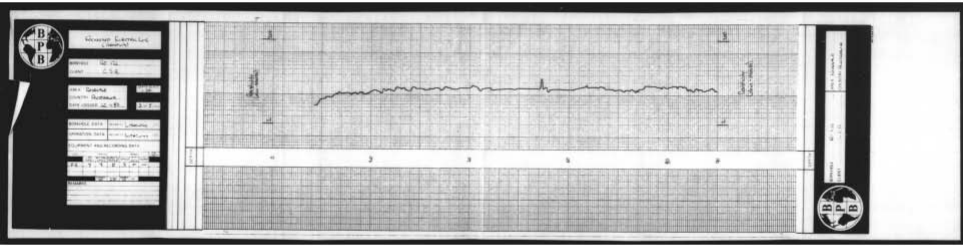


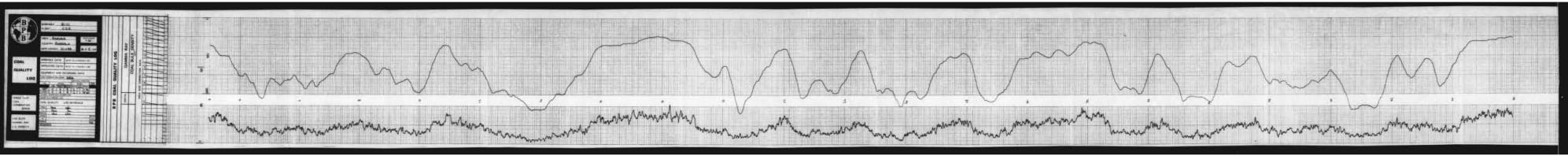




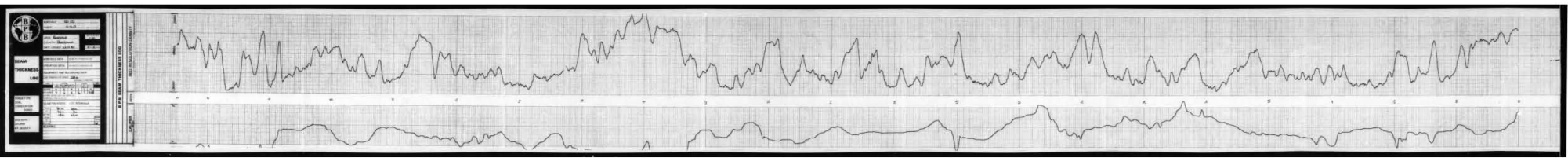

COAL LITHOLOGY LOG
BPB COAL LITHOLOGY LOG
COAL BULK DENSITY
GAMMA RAY

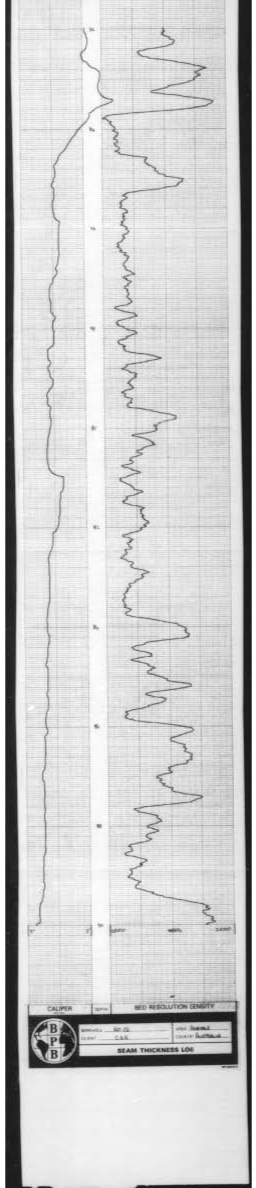

BPB
Neutron Log
(Long Spaced)
COMPANY
WELL
FIELD
COUNTY Oklahoma
STATE
LOCATION
Other Services
Sec. Twp. Rge.
Permanent Datum
Elev.
Log Measured From
Drilling Measured From
Elev.: K.B.
D.F.
G.L.
Date
Run No.
Depth-Driller
Depth-Logger
Btm. Log Interval
Top Log Interval
Casing-Driller
Casing-Logger
Bit Size
Type Fluid in Hole
Dens. Visc.
pH Fluid Loss
Source of Sample
Rm @ Meas. Temp.
Rmf @ Meas. Temp.
Rmc @ Meas. Temp.
Source of Rmf Rmc
Rm @ BHT
Time Since Circ.
Max. Rec. Temp.
Equip. No. Location
Recorded By
Witnessed By
RUN NO.
BIT
CASING
TYPE FLUID IN HOLE
DENS.
VISC.
PH
FLUID LOSS
SOURCE OF SAMPLE
RM @ MEAS. TEMP.
RMF @ MEAS. TEMP.
RMC @ MEAS. TEMP.
SOURCE OF RMF RMC
RM @ BHT
TIME SINCE CIRC.
MAX. REC. TEMP.
EQUIP. NO. LOCATION
RECORDED BY
WITNESSED BY
RUN NO.
DATE
DEPTH-DRILLER
DEPTH-LOGGER
BTM. LOG INTERVAL
TOP LOG INTERVAL
CASING-DRILLER
CASING-LOGGER
BIT SIZE
TYPE FLUID IN HOLE
DENS. VISC.
PH

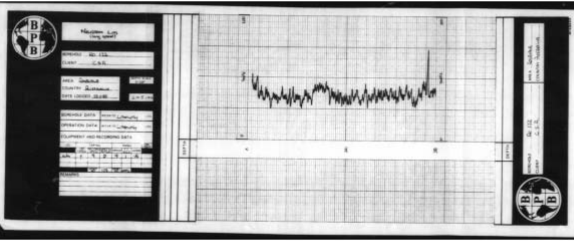


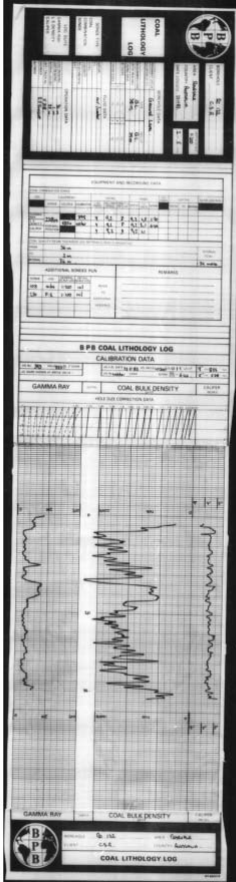

COAL QUALITY LOG

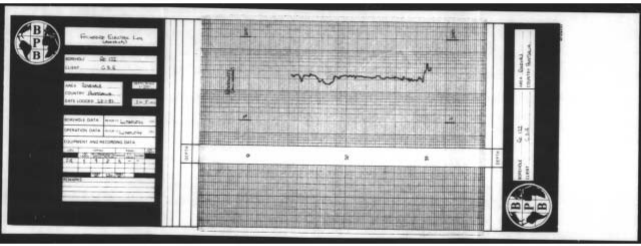
COAL BULK DENSITY
GAMMA RAY
COAL QUALITY LOG

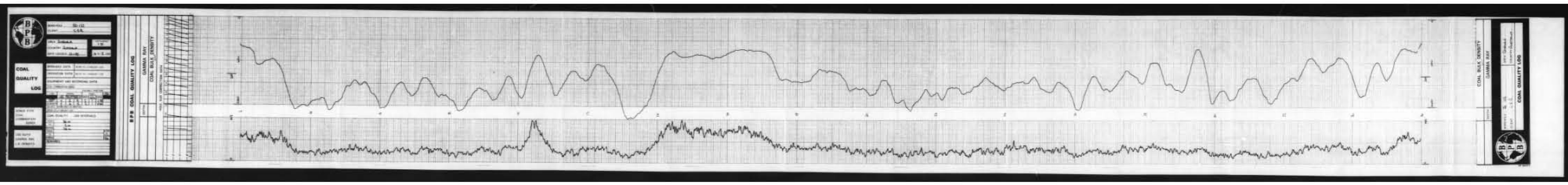

BEAM THICKNESS LOG
B P B BEAM THICKNESS LOG
RED REGULATION UNIT
CALIPER

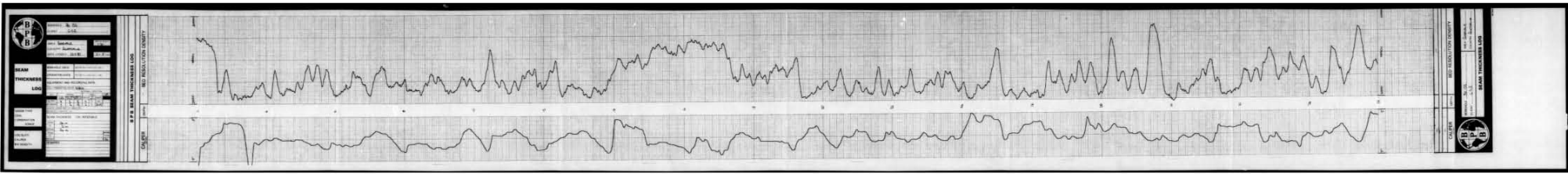

CALIPER
SED RESOLUTION DENSITY
SEAM THICKNESS LOG

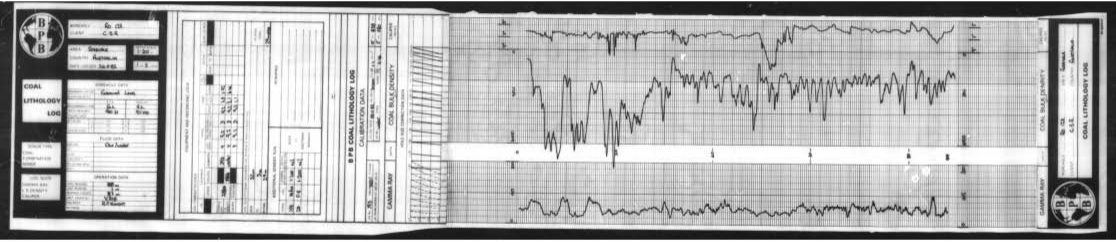


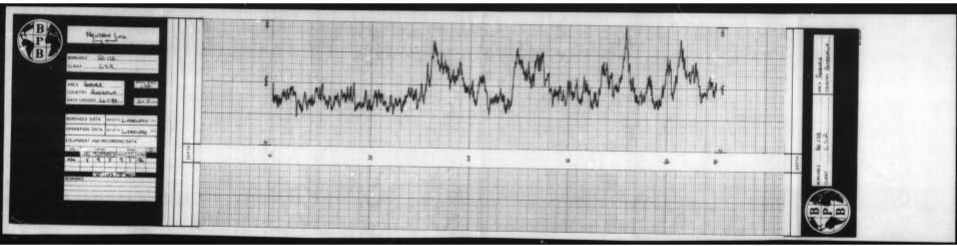

COAL LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
HOLE SIZE CORRECTION DATA
GAMMA RAY
COAL BULK DENSITY
COAL LITHOLOGY LOG

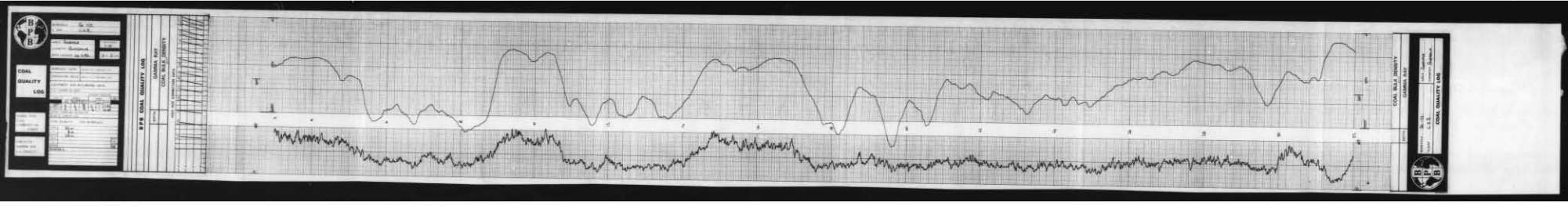


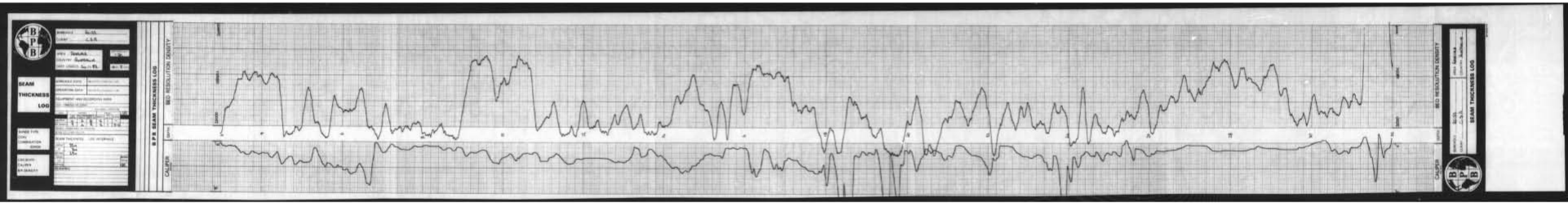

COAL QUALITY LOG
BPB COAL QUALITY LOG
GAMMA RAY
COAL QUALITY
COAL BULK DENSITY
GAMMA RAY
COAL QUALITY LOG

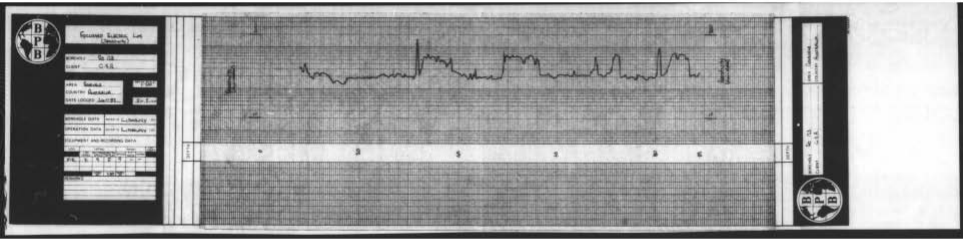

BPB
SEAM THICKNESS LOG
BPB SEAM THICKNESS LOG
HIGH RESOLUTION DENSITY
CALIPER
SEAM THICKNESS LOG

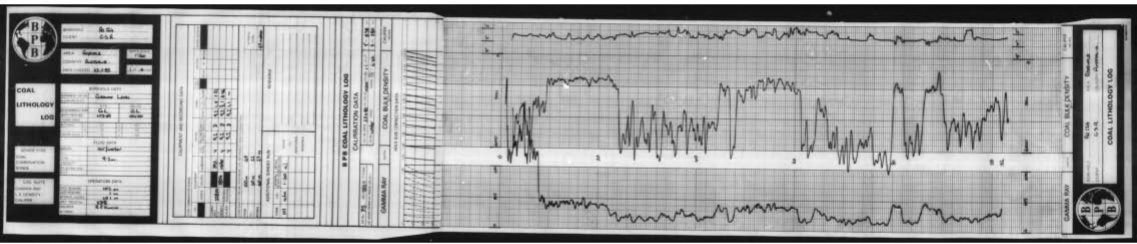

COAL LITHOLOGY LOG
BPB COAL LITHOLOGY LOG
COAL BULK DENSITY
GAMMA RAY

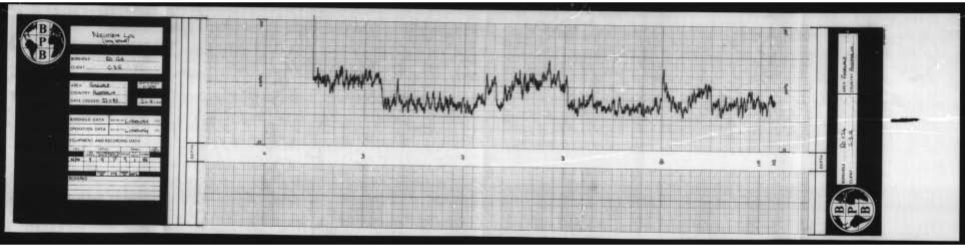


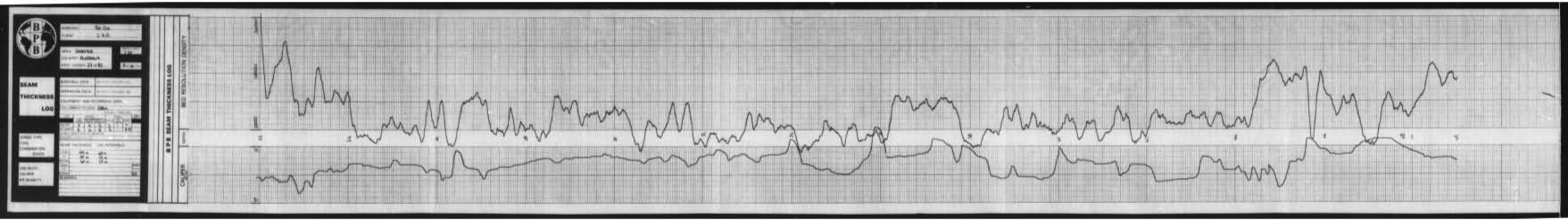

COAL QUALITY LOG
COAL QUALITY LOG
COAL BULK DENSITY


BPB
SEAM THICKNESS LOG
BPB SEAM THICKNESS LOG
BED RESOLUTION DENSITY
CALIPER
BED RESOLUTION DENSITY
CALIPER
SEAM THICKNESS LOG

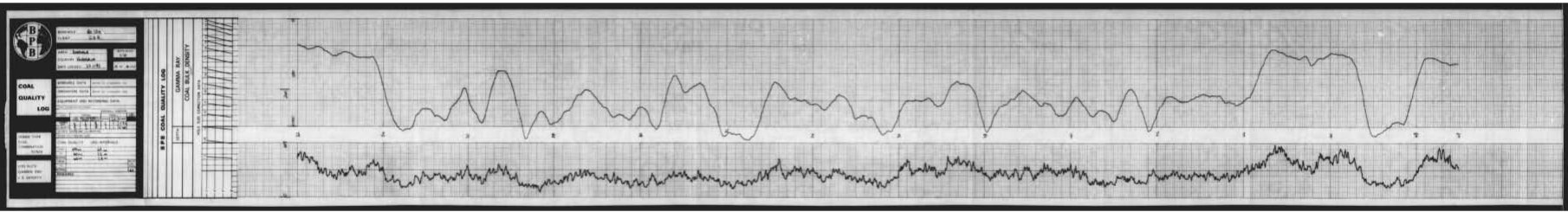


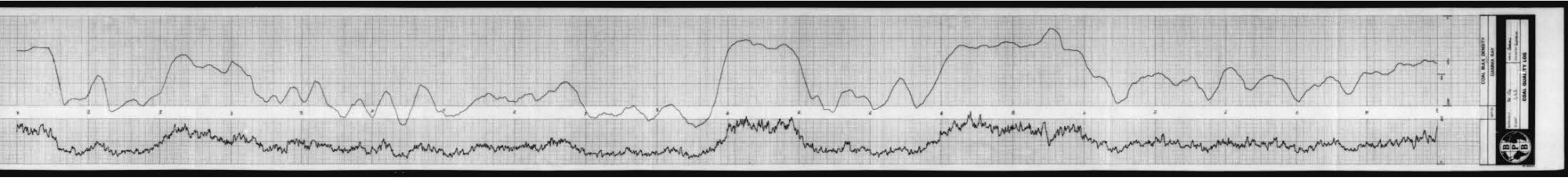

COAL LITHOLOGY LOG
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
COAL BULK DENSITY
GAMMA RAY
COAL LITHOLOGY LOG



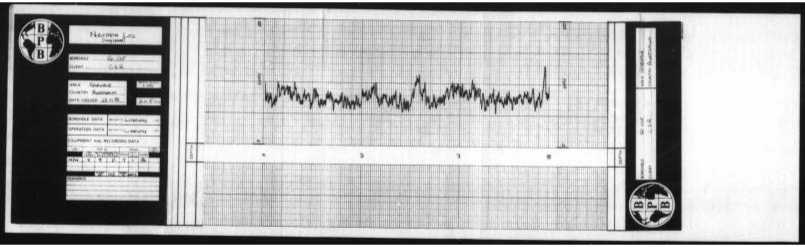

SEAM THICKNESS LOG
BPB SEAM THICKNESS LOG
MED RESOLUTION DENSITY
Caliper

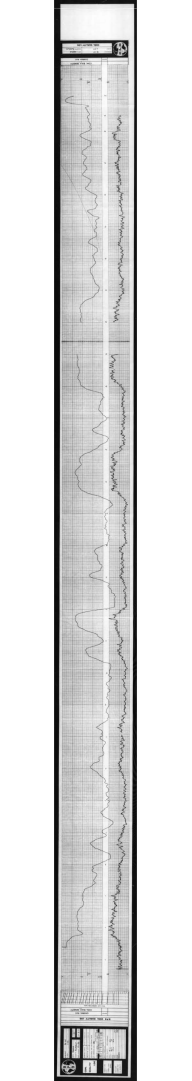
BEAM THICKNESS LOG

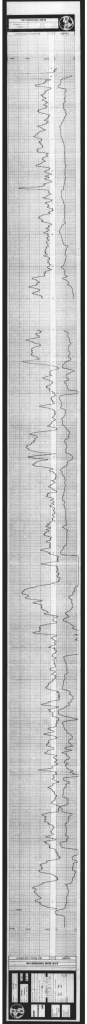

COAL
QUALITY
LOG
BPB COAL QUALITY LOG
GAMMA RAY
COAL BULK DENSITY

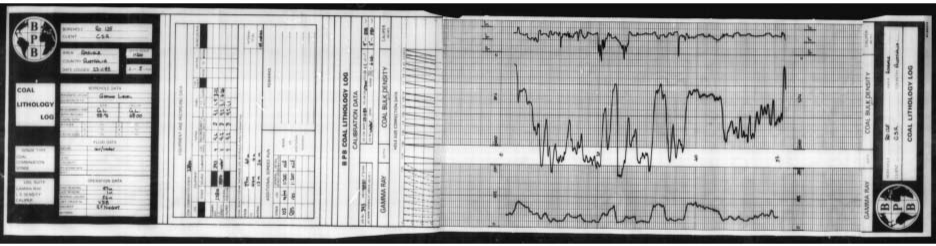

COAL BULK DENSITY
GAMMA RAY
COAL QUALITY LOG

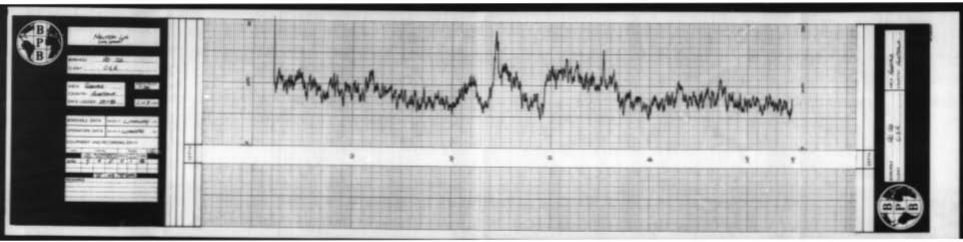
Resistivity Log
BP

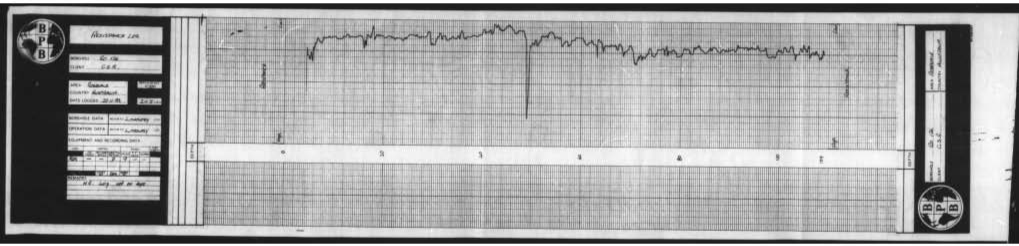

Neutron Log
(Neutron)
COMPANY
WELL
FIELD
COUNTY
STATE
DATE LOGGED
RUN NO.
DEPTH-DRILLER
DEPTH-LOGGER
BTM. LOG INTERVAL
TOP LOG INTERVAL
CASING-DRILLER
CASING-LOGGER
BIT SIZE
TYPE FLUID IN HOLE
DENSITY
VISCOSITY
PH
FLUID LOSS
SOURCE
RM @ MEAS. TEMP.
RMF @ MEAS. TEMP.
RMC @ MEAS. TEMP.
SOURCE: RMF
SOURCE: RMC
RM @ BHT
TIME SINCE CIRCULATION
MAX. REC. TEMP.
EQUIPMENT NO.
LOCATION
RECORDED BY
WITNESSED BY
BOREHOLE DATA
OPERATING DATA
EQUIPMENT AND RECORDING DATA
REMARKS
BPB

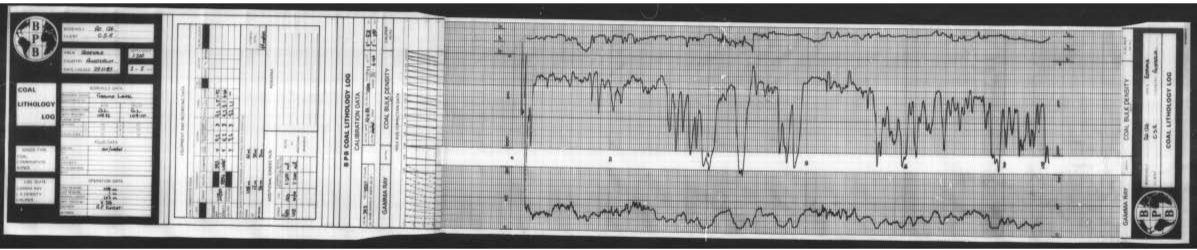


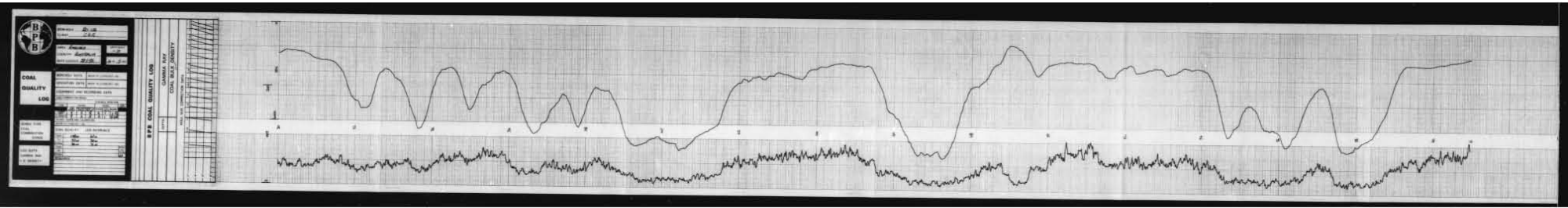


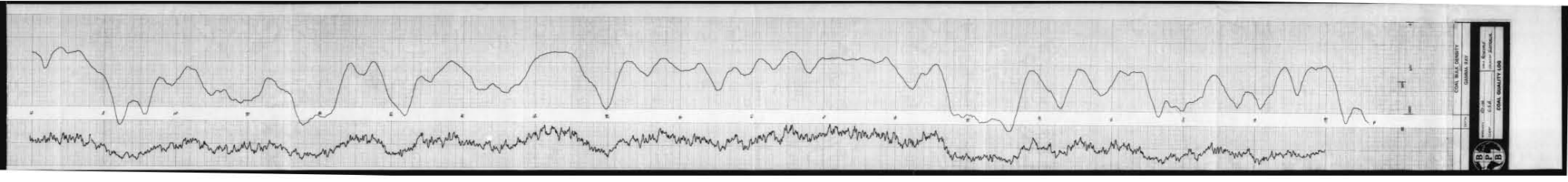

COAL LITHOLOGY LOG
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
GAMMA RAY
COAL BULK DENSITY
COAL LITHOLOGY LOG

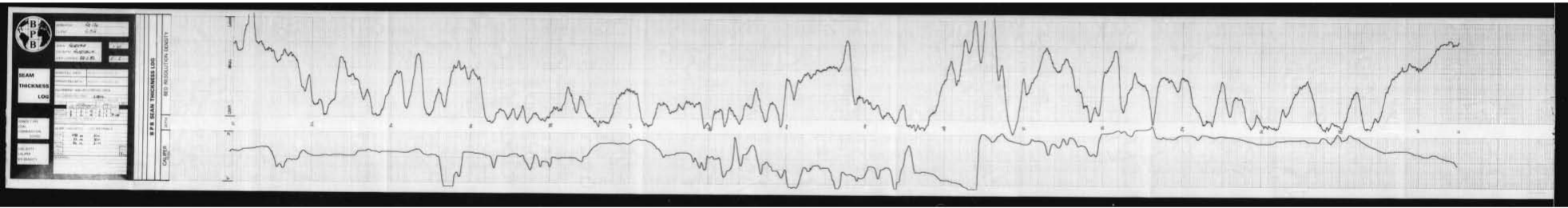


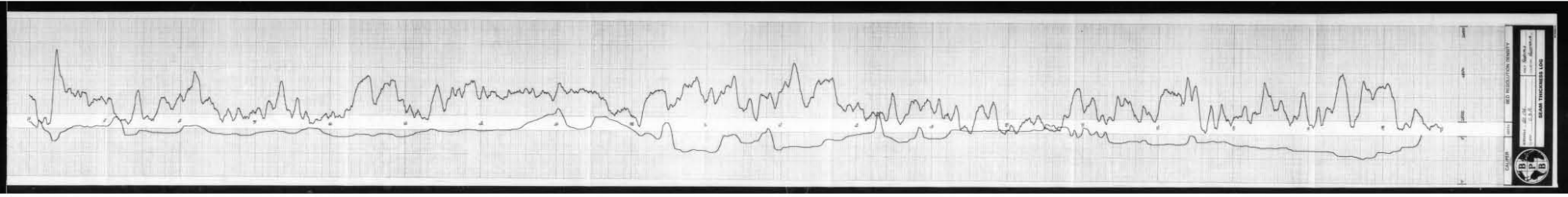

BP
Resistance Log
Company B.P.
Well Gwynn
Field Wildcat
Location Sec. 16 Blk. 3 Survey
Permanent Datum Ground Level
Log Measured From Kelly Bushing
Drilling Measured From Kelly Bushing
Elev. 2240 ft.
Elev. 2252 ft.
Elev. 2240 ft.
Date 1-Feb-71
Run No. One
Depth-Driller 5000 ft.
Depth-Logger 4998 ft.
Bottom Logged Interval 4998 ft.
Top Logged Interval 1000 ft.
Type Fluid in Hole Gel Chem
Density 9.2 lb/gal
Viscosity 38 sec
Fluid Loss 6.4 cc
Source of Sample Pit
R @ Meas. Temp. 0.85 @ 72 °F
R @ Meas. Temp. 0.52 @ 120 °F
R @ Meas. Temp. @ °F
Source of R / R Sample Meas. Meas.
R @ BHT 0.38 @ 140 °F
Time Since Circ. 12 hrs.
Max. Rec. Temp. 140 °F
Equipment No. 1
Location Alice
Recorded By J. Smith
Witnessed By T. Brown
Resistance
Depth
1000
2000
3000
4000
5000
BP

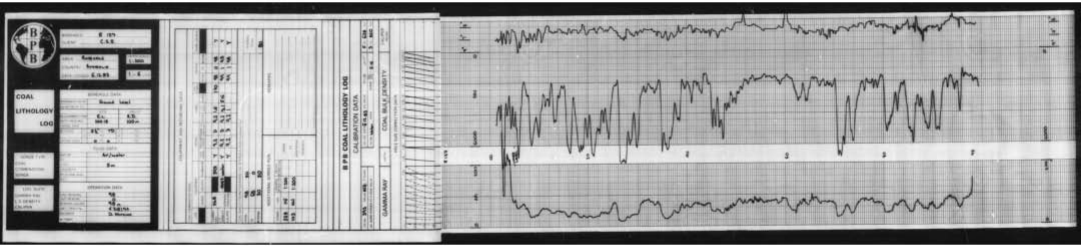

COAL LITHOLOGY LOG
BPB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY
COAL BULK DENSITY
Gamma Ray
BPB
COAL LITHOLOGY LOG

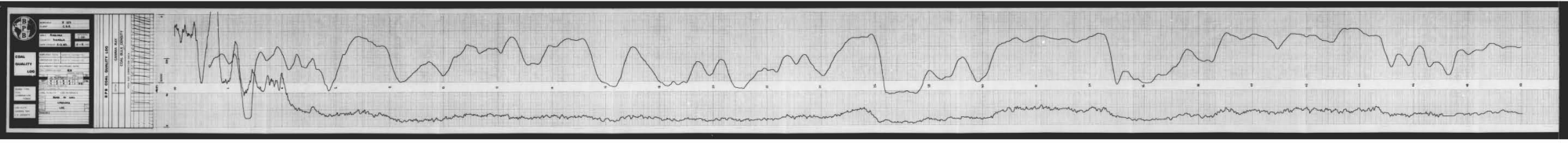

BPB
COAL QUALITY LOG
BPB COAL QUALITY LTD
GAMMA RAY
COAL BULK DENSITY

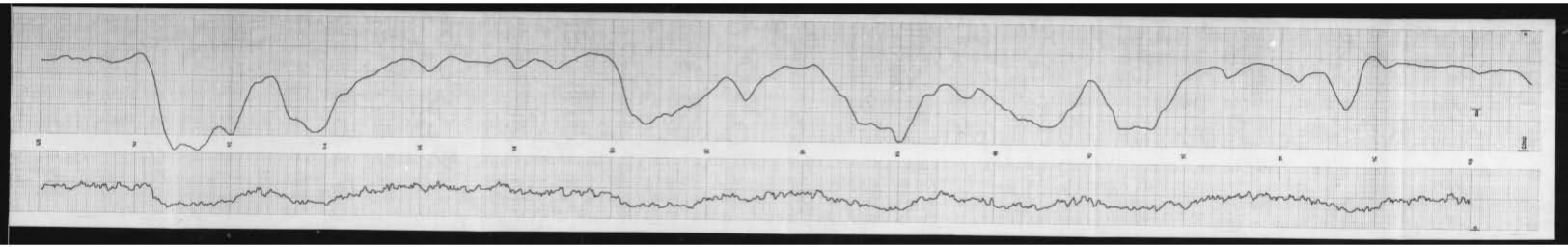

COAL BULK DENSITY
GAMMA RAY
COAL QUALITY CAD

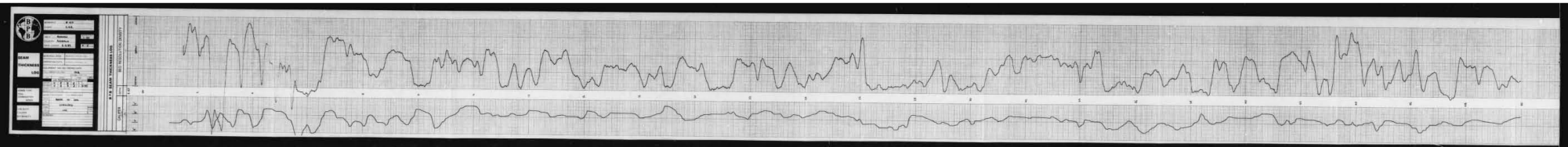

SEAM
THICKNESS
LOG
B P B SEAM THICKNESS LOG
BED RESOLUTION DENSITY
CALIPER

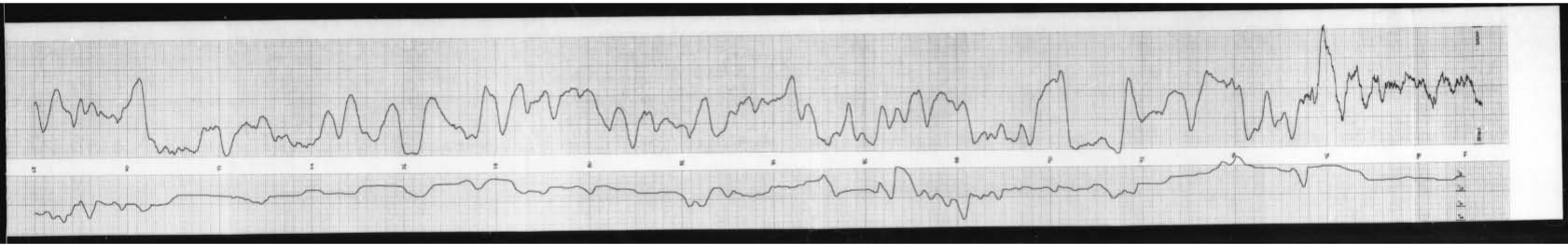

HIGH RESOLUTION DENSITY
SEAM THICKNESS LOG

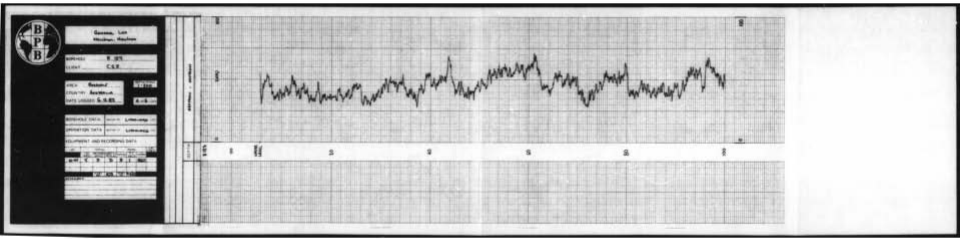

BPB
COAL
LITHOLOGY
LOG
B PB COAL LITHOLOGY LOG
CALIBRATION DATA
GAMMA RAY
COAL BULK DENSITY

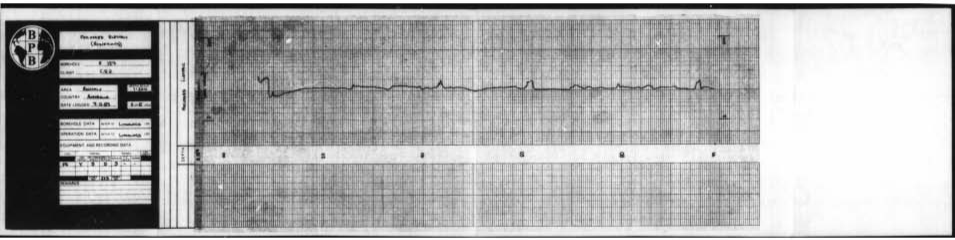

COAL
QUALITY
LOG

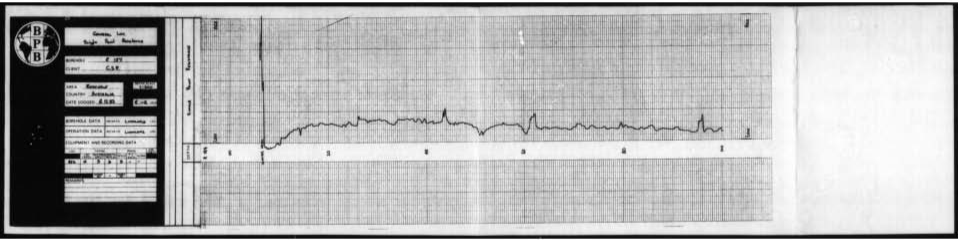











BPB
Sound Near Recovered

397108

3 JUL 1984
DEPT. OF MINES

EXPLORATION LICENCE 20/80 LAUNCESTON
EXPLORATION PROGRESS REPORT FOR
QUARTER ENDED 22 MAY 1984

APPENDIX A4

English Logs of Drillholes R096-133, C116, C081, C082 (Printout Format)
Analytical Data, Drillholes C081, C082 (Printout Format)

84-2160
Vol 5/5

CSR Limited

COAL ANALYSIS TEST NO. 1 BY HOLE

ATP EL2080 Launceston

TENEMENT 2080

OPEN FILE

Sample Types: All

Sample Size: All

Sample Fraction: All

Result bases: All

Composite Weisht Factors: None

Result Basis Conversions (samples): None

Result Basis Conversions (composites): None

Energy Unit Conversion: No conversion

Test Dates Selected: All

MICROFILMED

000

397109

CSR Limited COAL ANALYSIS TEST NO. 1 BY HOLE ATP EL2080 Launceston TENEMENT 2080

| Seam WS | LSN | FSN | Type | RB | Base Depth | Thick | Size -+ | Fraction (Raw Wt) | RD | Yield | PROXIMATES % by WEIGHT IM | VM | ASH | FC | Fuel Ratio (FC/VM) | C S N | S.E. MJ/kg | Total Sulphur | Test Date | Lab |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Drillhole C0081 | | | | | | | | | | | | | | | | | | | | |
| | A68785 | C02952 | 1 | AD | 4.74 | 0.97 | | R | /02.30 2.13 | | 5.2 | 21.4 | 67.6 | 5.8 | 0.27 | | 3.78 | 0.08 | 01/84 | BR |
| | A68786 | C02953 | 1 | AD | 5.84 | 1.10 | | R | /09.48 1.69 | | 9.5 | 32.0 | 39.7 | 18.8 | 0.59 | | 12.64 | 0.38 | 01/84 | BR |
| | A68787 | C02954 | 1 | AD | 6.52 | 0.68 | | R | /04.44 2.21 | | 4.1 | 20.5 | 69.4 | 6.0 | 0.29 | | 3.66 | 0.12 | 01/84 | BR |
| | A68788 | C02955 | 1 | AD | 7.74 | 1.22 | | R | /11.48 1.56 | | 11.6 | 36.3 | 27.4 | 24.7 | 0.68 | | 16.16 | 0.44 | 01/84 | BR |
| | A68789 | C02956 | 1 | AD | 8.60 | 0.86 | | R | /05.77 1.52 | | 14.0 | 36.3 | 25.0 | 24.7 | 0.68 | | 16.56 | 0.34 | 01/84 | BR |
| | A68790 | C02957 | 1 | AD | 9.23 | 0.63 | | R | /05.28 1.76 | | 12.7 | 24.6 | 46.0 | 16.7 | 0.68 | | 9.74 | 0.23 | 01/84 | BR |
| | A68791 | C02958 | 1 | AD | 9.99 | 0.76 | | R | /08.06 2.40 | | 3.8 | 10.9 | 82.0 | 3.3 | 0.30 | | 1.12 | 0.08 | 01/84 | BR |
| | A68792 | C02960 | 1 | AD | 11.20 | 0.56 | | R | /06.22 2.42 | | 4.1 | 11.6 | 83.1 | 1.2 | 0.10 | | 0.16 | 0.09 | 01/84 | BR |
| | A68793 | C02961 | 1 | AD | 12.23 | 1.03 | | R | /06.96 1.43 | | 19.7 | 35.5 | 14.0 | 30.8 | 0.87 | | 18.12 | 0.46 | 01/84 | BR |
| | A68796 | C02964 | 1 | AD | 12.39 | 0.52 | | R | /03.29 1.59 | | 15.4 | 31.3 | 31.1 | 22.2 | 0.71 | | 13.48 | 0.39 | 01/84 | BR |
| | A68794 | C02962 | 1 | AD | 12.63 | 0.40 | | R | /03.79 2.20 | | 5.7 | 16.5 | 72.3 | 5.5 | 0.33 | | 3.48 | 0.10 | 01/84 | BR |
| | A68795 | C02963 | 1 | AD | 12.87 | 0.24 | | R | /01.79 2.02 | | 6.9 | 19.8 | 63.7 | 9.6 | 0.48 | | 6.22 | 0.19 | 01/84 | BR |
| | A68797 | C02965 | 1 | AD | 13.64 | 0.25 | | R | /01.53 1.71 | | 10.6 | 30.2 | 41.2 | 18.0 | 0.60 | | 11.94 | 0.38 | 01/84 | BR |
| | A68798 | C02966 | 1 | AD | 14.77 | 1.13 | | R | /07.54 1.42 | | 21.2 | 34.8 | 13.6 | 30.4 | 0.87 | | 17.72 | 0.46 | 01/84 | BR |
| | A68799 | C02967 | 1 | AD | 15.94 | 1.17 | | R | /09.57 2.12 | | 7.4 | 17.8 | 68.0 | 6.8 | 0.38 | | 4.26 | 0.15 | 01/84 | BR |
| | A68800 | C02968 | 1 | AD | 33.51 | 1.04 | | R | /12.82 2.56 | | 3.6 | 12.7 | 83.6 | 0.1 | 0.01 | | 0.26 | 0.05 | 01/84 | BR |
| | A68801 | C02969 | 1 | AD | 34.28 | 0.77 | | R | /05.34 1.42 | | 16.5 | 38.7 | 15.5 | 29.3 | 0.76 | | 18.86 | 0.56 | 01/84 | BR |
| | A68802 | C02970 | 1 | AD | 34.87 | 0.59 | | R | /04.39 1.48 | | 10.8 | 40.0 | 21.1 | 28.1 | 0.70 | | 18.42 | 0.54 | 01/84 | BR |
| | A68803 | C02971 | 1 | AD | 36.11 | 1.01 | | R | /08.79 1.56 | | 11.2 | 34.0 | 28.1 | 26.7 | 0.79 | | 16.18 | 0.59 | 01/84 | BR |
| | A68804 | C02972 | 1 | AD | 37.04 | 0.93 | | R | /08.57 2.11 | | 6.3 | 17.6 | 70.1 | 6.0 | 0.34 | | 3.84 | 0.23 | 01/84 | BR |
| | A68805 | C02973 | 1 | AD | 38.11 | 1.07 | | R | /07.46 1.72 | | 10.8 | 27.8 | 43.4 | 18.0 | 0.65 | | 11.22 | 0.38 | 01/84 | BR |
| | A68806 | C02974 | 1 | AD | 38.96 | 0.85 | | R | /05.90 1.85 | | 8.2 | 25.2 | 53.3 | 13.3 | 0.53 | | 8.68 | 0.32 | 01/84 | BR |
| | A68807 | C02975 | 1 | AD | 39.62 | 0.66 | | R | /04.41 1.73 | | 9.8 | 28.9 | 44.1 | 17.2 | 0.60 | | 11.20 | 0.54 | 01/84 | BR |
| | A68808 | C02976 | 1 | AD | 40.78 | 1.16 | | R | /08.23 1.56 | | 11.4 | 34.6 | 27.5 | 26.5 | 0.77 | | 16.46 | 0.46 | 01/84 | BR |
| | A68809 | C02977 | 1 | AD | 42.04 | 1.26 | | R | /14.34 2.37 | | 3.9 | 12.9 | 80.1 | 3.1 | 0.24 | | 1.92 | 0.11 | 01/84 | BR |
| | A68810 | C02978 | 1 | AD | 42.83 | 0.79 | | R | /06.28 1.66 | | 9.2 | 32.4 | 36.1 | 22.3 | 0.69 | | 14.16 | 0.46 | 01/84 | BR |
| | A68811 | C02979 | 1 | AD | 43.85 | 1.02 | | R | /10.36 1.67 | | 9.1 | 32.2 | 36.6 | 22.1 | 0.69 | | 13.66 | 0.46 | 01/84 | BR |
| | A68812 | C02980 | 1 | AD | 44.10 | 0.25 | | R | /02.65 2.06 | | 6.9 | 18.6 | 66.3 | 8.2 | 0.44 | | 5.12 | 0.18 | 01/84 | BR |
| | A68813 | C02981 | 1 | AD | 45.10 | 1.00 | | R | | | | | | | | | | | 01/84 | BR |
| Drillhole C0082 | | | | | | | | | | | | | | | | | | | | |
| | A68723 | C02982 | 1 | AD | 26.30 | 0.74 | | R | /07.40 2.06 | | 5.3 | 23.9 | 61.5 | 9.3 | 0.39 | | 6.14 | 0.30 | 01/84 | BR |
| | A68724 | C02983 | 1 | AD | 27.48 | 1.18 | | R | /13.22 2.22 | | 4.2 | 19.2 | 73.0 | 3.6 | 0.19 | | 2.50 | 0.10 | 01/84 | BR |
| | A68725 | C02984 | 1 | AD | 28.09 | 0.61 | | R | /05.81 1.79 | | 9.0 | 28.6 | 46.2 | 16.2 | 0.57 | | 10.20 | 0.32 | 01/84 | BR |
| | A68726 | C02985 | 1 | AD | 28.55 | 0.46 | | R | /04.33 1.80 | | 9.0 | 28.6 | 46.9 | 15.5 | 0.54 | | 10.10 | 0.29 | 01/84 | BR |
| | A68727 | C02986 | 1 | AD | 29.45 | 0.90 | | R | /08.63 1.58 | | 12.3 | 33.6 | 30.4 | 23.7 | 0.71 | | 14.88 | 0.45 | 01/84 | BR |
| | A68728 | C02987 | 1 | AD | 30.26 | 0.81 | | R | /08.30 1.99 | | 7.0 | 23.4 | 59.0 | 10.6 | 0.45 | | 6.96 | 0.22 | 01/84 | BR |
| | A68729 | C02988 | 1 | AD | 30.70 | 0.44 | | R | /05.78 2.52 | | 3.8 | 24.6 | 71.6 | 0.0 | 0.00 | | 2.14 | 0.09 | 01/84 | BR |

001

3971110

CSR Limited COAL ANALYSIS TEST NO. 1 BY HOLE ATP EL2080 Launceston TENEMENT 2080

| Seam WS | LSN | FSN | Type | RB | Base Depth | Thick | Size -+ | Fraction (Raw Wt) | RD | Yield | PROXIMATES % by WEIGHT IM | VM | ASH | FC | Fuel Ratio (FC/VM) | C S N | S.E. MJ/kg | Total Sulphur | Test Date | Lab |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Drillhole C0082 | | | | | | | | | | | | | | | | | | | | |
| ********** | | | | | | | | | | | | | | | | | | | | |
| | A68730 | C02989 | 1 | AD | 31.55 | 0.85 | | R | /06,82 | 1.43 | 16.1 | 38.2 | 13.3 | 32.4 | 0.85 | | 18.94 | 0.36 | 01/84 | BR |
| | A68731 | C02990 | 1 | AD | 32.47 | 0.87 | | R | /08.96 | 2.27 | 4.6 | 15.3 | 76.4 | 3.7 | 0.24 | | 2.74 | 0.09 | 01/84 | BR |
| | A68732 | C02991 | 1 | AD | 33.33 | 0.86 | | R | /06.09 | 1.53 | 12.6 | 36.6 | 23.0 | 27.8 | 0.76 | | 16.88 | 0.35 | 01/84 | BR |
| | A68733 | C02992 | 1 | AD | 33.90 | 0.57 | | R | /04.35 | 1.46 | 14.4 | 37.1 | 18.5 | 30.0 | 0.81 | | 17.96 | 0.27 | 01/84 | BR |
| | A68734 | C02993 | 1 | AD | 34.55 | 0.65 | | R | /05.02 | 1.51 | 14.8 | 35.4 | 20.2 | 29.6 | 0.84 | | 16.78 | 0.29 | 01/84 | BR |
| | A68735 | C02994 | 1 | AD | 35.25 | 0.65 | | R | /06.44 | 2.05 | 6.1 | 23.7 | 61.2 | 9.0 | 0.38 | | 6.32 | 0.18 | 01/84 | BR |
| | A68736 | C02995 | 1 | AD | 36.43 | 0.18 | | R | /07.56 | 1.47 | 14.6 | 36.6 | 17.8 | 31.0 | 0.85 | | 17.92 | 0.33 | 01/84 | BR |
| | A68737 | C02996 | 1 | AD | 37.38 | 0.95 | | R | /06.48 | 1.60 | 11.9 | 32.2 | 32.5 | 23.4 | 0.73 | | 14.48 | 0.29 | 01/84 | BR |
| | A68738 | C02997 | 1 | AD | 37.90 | 0.52 | | R | /05.08 | 2.10 | 5.9 | 20.0 | 65.6 | 8.5 | 0.43 | | 5.56 | 0.14 | 01/84 | BR |
| | A68739 | C02998 | 1 | AD | 38.45 | 0.55 | | R | /05.44 | 2.34 | | | | | | | | | 01/84 | BR |
| | A68740 | C00302 | 1 | AD | 47.93 | 1.01 | | R | /11.16 | 2.40 | 4.2 | 10.9 | 83.6 | 1.3 | 0.12 | | 0.72 | 0.08 | 01/84 | BR |
| | A68741 | C00303 | 1 | AD | 48.73 | 0.80 | | R | /06.49 | 1.76 | 8.8 | 29.0 | 44.3 | 17.9 | 0.62 | | 11.32 | 0.35 | 01/84 | BR |
| | A68742 | C00304 | 1 | AD | 49.21 | 0.48 | | R | /04.58 | 1.92 | 10.9 | 22.0 | 58.9 | 8.2 | 0.37 | | 5.98 | 0.22 | 01/84 | BR |
| | A68743 | C00305 | 1 | AD | 49.77 | 0.56 | | R | /04.10 | 1.62 | 12.2 | 31.8 | 33.6 | 22.4 | 0.70 | | 13.68 | 0.40 | 01/84 | BR |
| | A68744 | C00306 | 1 | AD | 50.35 | 0.58 | | R | /06.57 | 2.24 | 6.0 | 16.4 | 75.3 | 2.3 | 0.14 | | 1.80 | 0.11 | 01/84 | BR |
| | A68745 | C00307 | 1 | AD | 50.86 | 0.51 | | R | /04.55 | 1.86 | 8.9 | 25.6 | 51.2 | 14.3 | 0.56 | | 9.02 | 0.26 | 01/84 | BR |
| | A68746 | C00308 | 1 | AD | 51.98 | 1.12 | | R | /10.56 | 2.16 | 6.2 | 17.1 | 72.3 | 4.4 | 0.26 | | 2.88 | 0.11 | 01/84 | BR |
| | A68747 | C00309 | 1 | AD | 52.57 | 0.59 | | R | /03.82 | 1.67 | 15.8 | 26.7 | 40.4 | 17.1 | 0.64 | | 10.28 | 0.36 | 01/84 | BR |
| | A68748 | C00310 | 1 | AD | 53.11 | 0.54 | | R | /03.65 | 1.75 | 9.1 | 28.8 | 42.9 | 19.2 | 0.67 | | 11.04 | 0.39 | 01/84 | BR |
| | A68749 | C00311 | 1 | AD | 53.51 | 0.40 | | R | /03.29 | 1.93 | 7.5 | 22.9 | 60.0 | 9.6 | 0.42 | | 6.28 | 0.23 | 01/84 | BR |
| | A68750 | C00312 | 1 | AD | 54.28 | 0.77 | | R | /07.54 | 2.14 | 5.8 | 18.8 | 69.3 | 6.1 | 0.32 | | 3.44 | 0.16 | 01/84 | BR |
| | A68751 | C00313 | 1 | AD | 54.97 | 0.69 | | R | /05.21 | 1.72 | 11.8 | 28.6 | 42.3 | 17.3 | 0.60 | | 10.90 | 0.32 | 01/84 | BR |
| | A68752 | C00314 | 1 | AD | 56.17 | 1.20 | | R | /10.42 | 1.61 | 11.8 | 32.6 | 32.0 | 23.6 | 0.72 | | 14.54 | 0.33 | 01/84 | BR |
| | A68753 | C00315 | 1 | AD | 57.01 | 0.84 | | R | /07.36 | 1.94 | 7.1 | 23.0 | 59.4 | 10.5 | 0.46 | | 6.28 | 0.17 | 01/84 | BR |
| | A68754 | C00316 | 1 | AD | 57.68 | 0.67 | | R | /05.16 | 1.64 | 13.2 | 30.4 | 36.4 | 20.0 | 0.66 | | 12.32 | 0.26 | 01/84 | BR |
| | A68755 | C00317 | 1 | AD | 57.97 | 0.29 | | R | /02.40 | 2.04 | 6.4 | 22.0 | 64.6 | 7.0 | 0.32 | | 4.12 | 0.12 | 01/84 | BR |
| | A68757 | C00320 | 1 | AD | 59.44 | 0.50 | | R | /03.95 | 1.95 | 7.4 | 23.9 | 59.5 | 9.2 | 0.38 | | 6.26 | 0.18 | 01/84 | BR |
| | A68758 | C00321 | 1 | AD | 60.59 | 1.15 | | R | /07.36 | 1.70 | 11.5 | 28.7 | 41.8 | 18.0 | 0.63 | | 10.92 | 0.26 | 01/84 | BR |
| | A68759 | C00322 | 1 | AD | 61.37 | 0.80 | | R | /08.28 | 2.21 | 5.8 | 14.8 | 75.5 | 3.9 | 0.26 | | 1.96 | 0.08 | 01/84 | BR |
| | A68760 | C00323 | 1 | AD | 61.53 | 0.16 | | R | /01.25 | 2.31 | 5.1 | 16.4 | 76.8 | 1.7 | 0.10 | | 1.22 | 0.11 | 01/84 | BR |
| | A68767 | C00324 | 1 | AD | 61.83 | 0.30 | | R | /02.67 | 1.90 | 7.8 | 25.3 | 52.6 | 14.3 | 0.57 | | 8.56 | 0.20 | 01/84 | BR |
| | A68762 | C00325 | 1 | AD | 62.10 | 0.27 | | R | /02.78 | 2.21 | 4.1 | 19.9 | 71.3 | 4.7 | 0.24 | | 3.46 | 0.10 | 01/84 | BR |
| | A68763 | C00326 | 1 | AD | 63.30 | 0.97 | | R | /07.32 | 1.52 | 15.7 | 34.1 | 24.5 | 25.7 | 0.75 | | 15.58 | 0.25 | 01/84 | BR |
| | A68764 | C00327 | 1 | AD | 64.00 | 0.70 | | R | /04.58 | 1.47 | 14.4 | 36.8 | 16.6 | 32.2 | 0.88 | | 18.40 | 0.20 | 01/84 | BR |
| | A68765 | C00328 | 1 | AD | 64.54 | 0.54 | | R | /04.53 | 1.59 | 11.8 | 33.3 | 30.7 | 24.2 | 0.73 | | 14.80 | 0.21 | 01/84 | BR |
| | A68766 | C00329 | 1 | AD | 65.08 | 0.54 | | R | /04.56 | 1.85 | 8.7 | 29.1 | 47.2 | 15.0 | 0.52 | | 10.16 | 0.16 | 01/84 | BR |
| | A68767 | C00330 | 1 | AD | 65.38 | 0.30 | | R | /03.16 | 2.20 | 5.6 | 15.2 | 75.3 | 3.9 | 0.26 | | 1.44 | 0.07 | 01/84 | BR |
| | A68768 | C00331 | 1 | AD | 66.93 | 1.55 | | R | /19.09 | 2.50 | 3.3 | 11.6 | 84.1 | 1.0 | 0.09 | | 0.88 | 0.06 | 01/84 | BR |
| | A68770 | C00333 | 1 | AD | 68.60 | 0.66 | | R | /04.52 | 1.70 | 11.1 | 28.2 | 42.1 | 18.6 | 0.66 | | 11.12 | 0.21 | 01/84 | BR |
| | A68771 | C00334 | 1 | AD | 69.30 | 0.70 | | R | /05.08 | 1.43 | 14.3 | 38.7 | 12.5 | 34.5 | 0.89 | | 19.86 | 0.25 | 01/84 | BR |
| | A68772 | C00335 | 1 | AD | 69.55 | 0.25 | | R | /01.70 | 1.71 | 11.6 | 27.8 | 42.2 | 18.4 | 0.66 | | 10.94 | 0.18 | 01/84 | BR |

002

3971111

CSR Limited

COAL ANALYSIS TEST NO. 1 BY HOLE

ATF EL2080
Launceston

TENEMENT 2080

| Seam WS | LSN | FSN | Type | RB | Base Depth | Thick | Size -+ | Fraction (Raw Wt) | RD | Yield | PROXIMATES % by WEIGHT IM | VM | ASH | FC | Fuel Ratio (FC/VM) | C S N | S.E. MJ/kg | Total Sulphur | Test Date | Lab |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Drillhole C0082 | | | | | | | | | | | | | | | | | | | | |
| ********** | | | | | | | | | | | | | | | | | | | | |
| | A68773 | C00336 | 1 | AD | 69.91 | 0.36 | | R /03.27 | 1.92 | | 8.5 | 23.4 | 54.5 | 13.6 | 0.58 | | 8.26 | 0.26 | 01/84 | BR |
| | A68774 | C00337 | 1 | AD | 70.57 | 0.66 | | R /06.78 | 2.21 | | 5.6 | 16.0 | 74.9 | 3.5 | 0.22 | | 2.20 | 0.13 | 01/84 | BR |
| | A68775 | C00338 | 1 | AD | 71.24 | 0.67 | | R /04.39 | 1.60 | | 13.1 | 32.3 | 31.4 | 23.2 | 0.72 | | 14.04 | 0.25 | 01/84 | BR |
| | A68776 | C00339 | 1 | AD | 71.47 | 0.23 | | R /02.01 | 1.93 | | 7.6 | 23.8 | 57.4 | 11.2 | 0.47 | | 7.56 | 0.19 | 01/84 | BR |
| | A68777 | C00340 | 1 | AD | 72.47 | 1.00 | | R /08.88 | 1.70 | | 18.2 | 24.2 | 43.3 | 14.3 | 0.59 | | 9.16 | 0.19 | 01/84 | BR |
| | A68778 | C00341 | 1 | AD | 72.71 | 0.24 | | R /02.21 | 2.21 | | 6.1 | 19.9 | 69.1 | 4.9 | 0.25 | | 3.72 | 0.11 | 01/84 | BR |
| | A68779 | C00342 | 1 | AD | 73.92 | 1.21 | | R /09.08 | 1.60 | | 16.4 | 29.7 | 33.9 | 20.0 | 0.67 | | 12.74 | 0.22 | 01/84 | BR |
| | A68780 | C00343 | 1 | AD | 75.04 | 1.12 | | R /08.59 | 1.57 | | 18.7 | 29.4 | 29.9 | 22.0 | 0.75 | | 13.12 | 0.19 | 01/84 | BR |
| | A68781 | C00344 | 1 | AD | 75.88 | 0.84 | | R /06.17 | 1.57 | | 18.5 | 28.9 | 28.4 | 24.2 | 0.84 | | 13.22 | 0.20 | 01/84 | BR |
| | A68782 | C00345 | 1 | AD | 76.80 | 0.92 | | R /06.91 | 1.56 | | 21.5 | 27.4 | 27.6 | 23.5 | 0.86 | | 12.58 | 0.19 | 01/84 | BR |
| | A68783 | C00346 | 1 | AD | 76.98 | 0.18 | | R /01.28 | 1.81 | | 10.9 | 28.4 | 44.1 | 16.6 | 0.58 | | 9.96 | 0.18 | 01/84 | BR |
| | A68784 | C00347 | 1 | AD | 77.37 | 0.39 | | R /04.01 | 2.43 | | 4.3 | 21.4 | 74.3 | 0.0 | 0.00 | | 2.26 | 0.06 | 01/84 | BR |

*** E N D O F R E P O R T TC52-09 ***

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 Launceston TENEMENT 2080

**********
EL2080 LAUNCESTON R0130
**********

Eastins: 519100.000
Northins: 5374400.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 170.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 75.60
Drillins Commenced: 14/05/84
Drillins Completed: 15/05/84
Inclination: 90
Azimuth:
Standins Water Level:

Available Data:

Lossins Organisation: CSR Exploration and Evaluation Group
Lossed By: M.CARR
Drillins Contractor: H.J. Stacpoole
Geophysical Lossins:

County:
Parish:
Portion:

Plus Depths:
Hole Diameter: 114
Core Diameter:
Cased Depths: 12.0
Core Barrel:

Drill Bits: Percussion

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| TR | | | | R | 6.50 | 6.50 | | MUDSTONE | Metamorphosed, silicified, dark grey, slightly weathered, high strength, sub- conchoidal fracture, very dense, carbonate, secondary, on joints; CUT WATER 5.5M. |
| TR | | | | R | 14.50 | 8.00 | | MUDSTONE | Metamorphosed, silicified, light to medium grey, fresh, high strength, sub- conchoidal fracture, very dense, carbonate, secondary, on joints. |
| JU | | | | R | 23.00 | 8.50 | | BASIC INTRUSION | Medium to dark grey, high strength, uneven fracture, very dense, fine and medium grained. |
| JU | | | | R | 39.00 | 16.00 | | BASIC INTRUSION | Black, extremely high strength, uneven fracture, very dense, medium grained. |
| JU | | | | R | 75.60 | 36.60 | | BASIC INTRUSION | Dark green - grey, extremely high strength, uneven fracture, very dense, medium and coarse grained; FINAL WATER FLOW 9000 L/HR AIR LIFTED AT 350 PSI. |

END OF BORE AT 75.60 m

EL2080 LAUNCESTON R0130

003

397114

**********
EL2080 LAUNCESTON R0131
**********

Eastins: 521030.000
Northins: 5375580.000
Grid Type: Australian Mappins Grid
Accuracy: Approximate
Crl: 200.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 60.00
Drillins Commenced: 16/05/84
Drillins Completed: 17/05/84
Inclination: 90
Azimuth:
Standins Water Level:

Lossins Orsanisation: CSR Exploration and Evaluation Group
Lossed By: M.CARR
Drillins Contractor: H.J. Stacpoole
Geophysical Lossins:

County:
Parish:
Portion:

Plus Depths:
Hole Diameter: 114
Core Diameter:
Cased Depths: 6.0
Core Barrel:
Drill Bits: Percussion

Available Data:

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 Launceston TENEMENT 2080

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| QA | | | | R | 0.70 | 0.70 | | CLAY | Medium to dark brown, very high strength, medium plasticity. |
| TR | | | | R | 3.00 | 2.30 | | MUDSTONE | Metamorphosed, silicified, medium to dark grey, slightly weathered, high strength, sub- conchoidal fracture, very dense. |
| JU | | | | R | 7.00 | 4.00 | | BASIC INTRUSION | Medium to dark grey, fresh, high strength, uneven fracture, very dense, fine grained. |
| JU | | | | R | 60.00 | 53.00 | | BASIC INTRUSION | Dark green - grey, extremely high strength, uneven fracture, very dense, medium and coarse grained; |
| | | | | | | | | | CUT WATER 56.2M. |
| | | | | | | | | | FINAL WATER FLOW 7500 L/HR AIRLIFTED AT 350 PSI. |

END OF BORE AT 60.00 m



007

3971116

**********
EL2080 LAUNCESTON R0132
**********

Eastins: 522610.000
Northins: 5376100.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 190.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 19.50
Drillins Commenced: 17/05/84
Drillins Completed: 17/05/84
Inclination: 90
Azimuth:
Standing Water Level:

Available Data:

Lossins Organisation: CSR Exploration and Evaluation Group
Lossed By: M.CARR
Drillins Contractor: H.J. Stacpoole
Geophysical Lossins:

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 6.0
Core Barrel:

Drill Bits: Percussion

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 Launceston TENEMENT 2080

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| QA | | | | R | 1.00 | 1.00 | | SOIL | Clayey, medium to dark brown; very high strength, medium plasticity. |
| QA | | | | R | 2.10 | 1.10 | | SAND | Matrix 90:10: clayey, light buff, weathered, very high strength, friable, very fine grained, bimodal sorting, medium permeability. |
| QA | | | | R | 3.50 | 1.40 | | CLAY | Intermixed 70:30: sandy, light to medium khaki, weathered, very soft, medium plasticity. |
| TR | | | | R | 6.30 | 2.80 | | MUDSTONE | Light to medium khaki, weathered, stiff, non-plastic, banded. |
| TR | | | | R | 9.50 | 3.20 | | SILTSTONE | Light to medium buff, weathered, stiff, uneven fracture, tough. |
| TR | | | | R | 10.30 | 0.80 | | SILTSTONE | Light grey, slightly weathered, very soft, medium density. |
| JU | | | | R | 11.60 | 1.30 | | BASIC INTRUSION | Medium to dark brown - grey, moderately weathered, moderate strength, uneven fracture, dense, fine grained, iron oxide, secondary, disseminated. |
| JU | | | | R | 19.50 | 7.90 | | BASIC INTRUSION | Dark grey, fresh, extremely high strength, uneven fracture, very dense, fine and medium grained;<br><br>CUT WATER 13.3M. |

END OF BORE AT 19.50 m

EL2080 LAUNCESTON R0132

003

397118

010

**********
EL2080 LAUNCESTON R0133
**********

Eastins: 522300.000
Northins: 5374380.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 170.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 45.00
Drillins Commenced: 18/05/84
Drillins Completed: 18/05/84
Inclination: 90
Azimuth:
Standing Water Level:

Available Data:

Lossins Organisation: CSR Exploration and Evaluation Group
Lossed By: M.CARR
Drillins Contractor: H.J. Stacpoole
Geophysical Lossins:

County:
Parish:
Portion:

Plus Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 6.0
Core Barrel:

Drill Bits: Percussion

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED



397119

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| QA | | | | R | 1.10 | 1.10 | | CLAY | Medium to dark brown, very high strength, fussy. |
| TR | | | | R | 1.90 | 0.80 | | MUDSTONE | Off white, highly weathered, very high strength, medium plasticity. |
| TR | | | | R | 6.40 | 4.50 | | MUDSTONE | Light to medium khaki, weathered, moderate strength, sub-conchoidal fracture, firm. |
| TR | | | | R | 8.00 | 1.60 | | SANDSTONE | Intermixed 80:20; silty, quartzose, light buff, weathered, moderate strength, uneven fracture, friable, very fine grained, well sorted, low permeability, iron oxide, secondary, stainins. |
| TR | | | | R | 11.20 | 3.20 | | SILTSTONE | Metamorphosed, silicified, light to medium khaki, weathered, high strength, uneven fracture, dense; CUT WATER 8.3M. |
| TR | | | | R | 21.90 | 10.70 | | SILTSTONE | Metamorphosed, silicified, light to medium grey, fresh, extremely high strength, uneven fracture, very dense. |
| TR | | | | R | 22.90 | 1.00 | | SILTSTONE | Metamorphosed, silicified, light to medium brown, weathered, high strength, uneven fracture, dense; PROBABLE OXIDATION ON FRACTURE ZONE. |
| TR | | | | R | 26.50 | 3.60 | | SILTSTONE | Metamorphosed, silicified, light grey, fresh, extremely high strength, uneven fracture, very dense. |
| TR | | | | R | 35.80 | 9.30 | | MUDSTONE | Metamorphosed, silicified, light to dark grey, extremely high strength, uneven fracture, very dense. |
| JU | | | | R | 42.00 | 6.20 | | BASIC INTRUSION | Dark green - grey, extremely high strength, uneven fracture, very dense, fine grained. |
| JU | | | | R | 45.00 | 3.00 | | BASIC INTRUSION | Dark green - grey, extremely high strength, uneven fracture, very dense, medium and coarse grained; FINAL WATER FLOW 12000 L/HR AIRLIFTED AT 250 PSI. |

END OF BORE AT 45.00 m

EL2080 LAUNCESTON R0133

011

397120

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 Launceston TENEMENT 2080

END OF GEOLOGICAL LOG REPORT

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON C0081
**********

Easting: 492630.000
Northing: 5414680.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 155.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth:
Drilling Commenced: 06/11/83
Drilling Completed: 08/11/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Detail Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: RB/PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter: 100
Cased Depths: 3.0
Core Barrel: Triefus Triple Barrel

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED



013
397122

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 3.77 | 3.77 | | NO RECORD | |
| | | | | | TOP OF SEAM LBO | | 3.77 | | |
| | | LBO | | C2952 | 3.83 | 0.06 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken, sharp irregular base. |
| | | LBO | | C2952 | 3.94 | 0.11 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LBO | | C2952 | 3.97 | 0.03 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LBO | | C2952 | 4.06 | 0.09 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken;<br>PEN RESULT 1.8 KG/CM2 |
| | | LBO | | C2952 | 4.27 | 0.21 | | CLAY | Ligneous, dark brown, firm, high plasticity (organic), good core - unbroken;<br>PEN RESULT 1.6 KG/CM2 |
| | | LBO | | C2952 | 4.36 | 0.09 | | LIGNEOUS CLAY | Soft, high plasticity (organic), core crushed. |
| | | LBO | | C2952 | 4.44 | 0.08 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, occasional bioturbation. |
| | | LBO | | C2952 | 4.51 | 0.07 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), core crushed. |
| | | LBO | | C2952 | 4.69 | 0.18 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, sharp irregular base, beds dip at 05 degrees. |
| | | LBO | | C2952 | 4.74 | 0.05 | | CLAY | Light to medium brown, firm, high plasticity (organic), good core - unbroken;<br>PEN RESULT 5.6 KG/CM2 |
| | | LBO | | C2953 | 4.79 | 0.05 | | LIGNITE | Dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2953 | 4.84 | 0.05 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2953 | 4.85 | 0.01 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken. |

EL2080 LAUNCESTON C0081

MULTISTREAM LISTING /Brbs:(07)283 3433 /Syd:(021)53 0271 /Melb:(03)544 1899 /Adel:(08)297 4788 /Perth:(09)443 1555
0 4 1
19755555
3 3 1 6 3

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | C2953 | 4.91 | 0.06 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2953 | 4.99 | 0.08 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken. |
| | | LBO | | C2953 | 5.12 | 0.13 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2953 | 5.16 | 0.04 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LBO | | C2953 | 5.18 | 0.02 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LBO | | C2953 | 5.22 | 0.04 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2953 | 5.28 | 0.06 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic), good core - unbroken. |
| | | LBO | | C2953 | 5.35 | 0.07 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2953 | 5.40 | 0.05 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity, good core - unbroken, uniform. |
| | | LBO | | C2953 | 5.44 | 0.04 | | LIGNITE | Clayey, woody textured, medium to dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2953 | 5.48 | 0.04 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic), good core - unbroken, uniform. |
| | | LBO | | C2953 | 5.84 | 0.36 | | LIGNITE | Clayey, woody textured, dark brown - red, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2954 | 6.52 | 0.68 | | CLAY | Light to medium grey - brown, fault, common, subhorizontal joints, good core - unbroken, sharp oblique base, beds dip at 10 degrees, common woody fragments; PEN. RESULT OF SCALE |
| | | LBO | | C2955 | 6.69 | 0.17 | | LIGNITE | Clayey, dark brown - red, firm, coal cleat, friable, common, subvertical joints, angle of joints 80 degrees, good core - unbroken, uniform. |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | C2955 | 6.74 | 0.05 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2955 | 6.77 | 0.03 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2955 | 6.82 | 0.05 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic), good core - unbroken, uniform, sharp irregular base. |
| | | LBO | | C2955 | 6.85 | 0.03 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic), good core - unbroken, uniform. |
| | | LBO | | C2955 | 7.27 | 0.42 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2955 | 7.28 | 0.01 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken;<br>PEN. RESULT 2.25 KG/CM2 |
| | | LBO | | C2955 | 7.74 | 0.46 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken. |
| | | LBO | | C2956 | 7.98 | 0.24 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2956 | 7.99 | 0.01 | | LIGNITE | Medium to dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2956 | 8.24 | 0.25 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2956 | 8.26 | 0.02 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2956 | 8.38 | 0.12 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | | C2954 | 8.42 | 0.04 | | LIGNITE | Clayey, medium to dark brown - yellow, firm, friable, good core - unbroken, uniform, occasional resin aggregates. |
| | | LBO | | C2956 | 8.49 | 0.07 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform, occasional resin aggregates. |
| | | LBO | | C2956 | 8.60 | 0.11 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |

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Brisbane (07) 3221 0711 Sydney (02) 9233 4933

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | C2957 | 8.69 | 0.09 | | CLAY | Medium to dark brown, firm, high plasticity (clay), good core - unbroken, common woody fragments. |
| | | LBO | | C2957 | 8.98 | 0.29 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic), good core - unbroken, uniform, occasional bioturbation |
| | | LBO | | C2957 | 9.03 | 0.05 | | CLAY | Kaolinitic, light to medium brown, firm, high plasticity (clay), good core - unbroken |
| | | LBO | | C2957 | 9.11 | 0.08 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform, common bioturbation |
| | | LBO | | C2957 | 9.14 | 0.03 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken |
| | | LBO | | C2957 | 9.19 | 0.05 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform |
| | | LBO | | C2957 | 9.23 | 0.04 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic), good core - unbroken |
| | | LBO | | C2958 | 9.33 | 0.10 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), good core - unbroken |
| | | LBO | | C2958 | 9.99 | 0.66 | | CLAY | Silty, light to medium brown - grey, firm, high plasticity (clay), good core - unbroken |
| | | LBO | | C2959 | 10.13 | 0.14 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, common bioturbation |
| | | LBO | | C2959 | 10.44 | 0.31 | | CLAY | Silty, sandy, light brown - grey, firm, low plasticity (clay), good core - unbroken, fine and medium grained, fining upwards, sharp planar base, occasional ligneous wisps; PEN. RESULT 4.6 KG/CM2. TO OFF SCALE |
| | | LBO | | C2959 | 10.52 | 0.08 | | CLAY | Silty, sandy, light brown - grey, firm, low plasticity (clay), good core - unbroken, fining upwards, sharp planar base, occasional ligneous wisps. |
| | | LBO | | C2959 | 10.64 | 0.12 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken |
| | | LBO | | C2960 | 11.20 | 0.56 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) good core - unbroken, occasional bioturbation; SAND INFILLING WORM BURROWS |

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| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | 8 | C2961 | 11.25 | 0.05 | | LIGNITE | Clayey, dark brown, firm, friable, core crushed. |
| | | LBO | 8 | C2961 | 11.60 | 0.35 | | LIGNITE | Clayey, dark brown, firm, coal cleat, friable, sparse, subvertical joints, angle of joints 80 degrees, good core - unbroken, occasional bioturbation; Additional features include: good core - unbroken, common siderite, secondary, in cleat. |
| | | LBO | 8 | C2961 | 12.33 | 0.73 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken. |
| | | | | | BASE OF WORKING SECTION 8 | | | 12.33 | 1.13 |
| | | LBO | | C2962 | 12.42 | 0.09 | | CLAY | Medium to dark brown, firm, high plasticity (clay), good core - unbroken. |
| | | LBO | | C2962 | 12.75 | 0.33 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay), good core - unbroken. |
| | | LBO | | C2963 | 12.80 | 0.05 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LBO | | C2963 | 12.85 | 0.05 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic), good core - unbroken, uniform. |
| | | LBO | | C2963 | 12.90 | 0.05 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic), good core - unbroken, uniform. |
| | | LBO | | C2963 | 12.97 | 0.07 | | LIGNEOUS CLAY | Medium to dark brown - black, firm, high plasticity (organic), good core - unbroken. |
| | | LBO | 9 | C2964 | 13.18 | 0.21 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |
| | | LBO | 9 | C2964 | 13.21 | 0.03 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LBO | 9 | C2964 | 13.30 | 0.09 | | LIGNITE | Clayey, woody textured, dark brown, firm, friable, good core - unbroken, subfissile, uniform. |
| | | LBO | 9 | C2964 | 13.31 | 0.01 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken. |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | 9 | C2964 | 13.49 | 0.18 | | LIGNITE | Clayey, dark brown, firm, coal cleat, friable, sparse, subvertical joints, vertical joints, good core = unbroken, uniform. |
| | | LBO | 9 | C2965 | 13.64 | 0.15 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic), good core = unbroken. |
| | | LBO | 9 | C2965 | 13.67 | 0.03 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable, good core = unbroken, uniform. |
| | | LBO | 9 | C2966 | 14.26 | 0.59 | | LIGNITE | Clayey, dark brown, firm, friable, good core = unbroken. |
| | | LBO | 9 | C2966 | 14.68 | 0.42 | | LIGNITE | Clayey, dark brown, firm, coal cleat, friable, sparse, subvertical joints, vertical joints, good core = unbroken, rare pyrite, secondary, in cleat.<br>Additional features include: good core = unbroken, occasional pyrite, secondary, in cleat.<br>Additional features include: good core = unbroken, rare bioturbation. |
| | | LBO | 9 | C2966 | 14.87 | 0.19 | | LIGNITE | Clayey, dark brown, firm, friable, good core = unbroken |
| | | BASE OF WORKING SECTION 9 | | | 14.87 | 1.90 | | | |
| | | BASE OF SEAM LBO | | | 14.87 | 11.10 | | | |
| | | | | C2967 | 14.97 | 0.10 | | LIGNITE | Clayey, dark brown, firm, friable, good core = unbroken |
| | | | | C2967 | 15.30 | 0.33 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core = unbroken, sharp planar base, beds dip at 00 degrees. |
| | | | | C2967 | 15.34 | 0.04 | | LIGNITE | Clayey, dark brown, firm, friable, good core = unbroken, sharp oblique base, beds dip at 30 degrees. |
| | | | | C2967 | 16.04 | 0.70 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core = unbroken;<br>PEN RESULT 4.6 KG/CM2 |
| | | | | R | 32.47 | 16.43 | | NO RECORD | |
| | | | | C | 32.60 | 0.13 | | CORE LOSS | |
| | | TOP OF SEAM LDO | | | 32.60 | | | | |



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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
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| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | C2968 | 32.70 | 0.10 | | CLAY | Silty, light to medium grey, firm, high plasticity (clay), good core = unbroken. |
| | | LDO | | C2968 | 32.83 | 0.13 | | CLAY | Sandy, light to medium grey = yellow, firm, high plasticity (clay), good core = unbroken, occasional siderite, secondary cement. |
| | | LDO | | C2968 | 32.85 | 0.02 | | CLAY | Light to medium grey, firm, high plasticity (clay), good core = unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C2968 | 32.91 | 0.06 | | CLAY | Light to medium grey = brown, firm, high plasticity (clay), good core = unbroken. |
| | | LDO | | C2968 | 33.22 | 0.31 | | CLAY | Light to medium brown = grey, firm, high plasticity (clay), good core = unbroken, laminated, occasional siderite, lenses. |
| | | LDO | | C2968 | 33.25 | 0.03 | | CLAY | Light to medium brown = grey, firm, high plasticity (clay), good core = unbroken, common siderite, nodules. |
| | | LDO | | C2968 | 33.74 | 0.49 | | CLAY | Light to medium brown = grey, firm, high plasticity (clay), good core = unbroken, sharp irregular base, beds dip at 10 degrees;<br>PEN. RESULT 4.7 TO 5.5 KG/CM2 |
| | | LDO | H1 | C2969 | 33.88 | 0.14 | | LIGNITE | Clayey, medium to dark brown = yellow, firm, friable, good core = unbroken, banded, occasional resin aggregates. |
| | | LDO | H1 | C2969 | 34.51 | 0.63 | | LIGNITE | Clayey, medium to dark brown = orange, firm, friable, good core = unbroken, banded. |
| | | | | | BASE OF WORKING SECTION 1 | 34.51 | | 0.77 | |
| | | LDO | H2 | C2970 | 34.57 | 0.06 | | LIGNITE | Clayey, dark brown, firm, friable, good core = unbroken, banded. |
| | | LDO | H2 | C2970 | 34.65 | 0.08 | | LIGNITE | Clayey, medium to dark brown = orange, firm, friable, good core = unbroken, uniform. |
| | | LDO | H2 | C2970 | 34.67 | 0.02 | | LIGNITE | Clayey, dark brown, firm, friable, good core = unbroken, fine grained. |
| | | LDO | H2 | C2970 | 34.79 | 0.12 | | LIGNITE | Clayey, medium to dark brown = orange, firm, friable, good core = unbroken, uniform, rare resin aggregates. |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | H2 | C2970 | 34.93 | 0.14 | | LIGNITE | Clayey, medium to dark brown - yellow, firm, slickensides on fracture, friable, common, oblique joints, angle of joints 50 degrees, good core - unbroken, fibrous, banded, occasional resin aggregates |
| | | LDO | H2 | C2970 | 35.10 | 0.17 | | LIGNITE | Clayey, medium to dark brown - yellow, firm, slickensides on fracture, friable, common, oblique joints, angle of joints 50 degrees, good core - unbroken, fibrous; SLICKS DEVELOPED ON WOODY SURFACES |
| | | LDO | H2 | C2971 | 35.21 | 0.11 | | LIGNITE | Clayey, medium to dark brown - yellow, firm, friable, good core - unbroken, fibrous, banded |
| | | LDO | H2 | C2971 | 35.31 | 0.10 | | LIGNITE | Clayey, medium to dark brown - orange, firm, friable, good core - unbroken, uniform |
| | | LDO | H2 | C2971 | 35.40 | 0.09 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken |
| | | LDO | H2 | C2971 | 35.43 | 0.03 | | LIGNITE | Clayey, medium to dark brown - yellow, firm, friable, good core - unbroken, fibrous, laminated, occasional resin aggregates |
| | | LDO | H2 | C2971 | 35.53 | 0.10 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, banded |
| | | LDO | H2 | C2971 | 35.58 | 0.05 | | LIGNITE | Clayey, medium to dark brown - yellow, firm, friable, good core - unbroken, fibrous, laminated, rare resin aggregates |
| | | LDO | H2 | C2971 | 35.75 | 0.17 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, banded, sharp oblique base, beds dip at 05 degrees |
| | | LDO | H2 | C2971 | 35.78 | 0.03 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken |
| | | LDO | H2 | C2971 | 35.98 | 0.20 | | LIGNITE | Clayey, medium to dark brown - red, firm, friable, good core - unbroken; OCCASIONAL CLAY LENSES |
| | | LDO | H2 | C2971 | 36.02 | 0.04 | | CLAY and INFERIOR LIGNITE | Interbedded 50:50. CLAY: light to medium brown, firm, high plasticity (clay), good core - unbroken, laminated; INFERIOR LIGNITE: clayey, dark brown, firm, friable, good core - unbroken |

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| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | H2 | C2971 | 36.11 | 0.09 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, sharp irregular base, beds dip at 05 degrees, rare resin aggregates.<br>COMMON CLAY LENSES |
| | | | | | BASE OF WORKING SECTION 2 | 36.11 | 1.40 | | |
| | | | | | BASE OF WORKING SECTION H | 36.11 | 2.37 | | |
| | | LDO | | C2972 | 36.13 | 0.02 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), good core - unbroken, gradational base. |
| | | LDO | | C2972 | 36.18 | 0.05 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay), good core - unbroken |
| | | LDO | | C2972 | 36.27 | 0.09 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LDO | | C2972 | 36.62 | 0.35 | | LIGNEOUS CLAY and CLAY | Interbedded 50 50 LIGNEOUS CLAY, medium to dark brown, firm, high plasticity (organic), good core - unbroken, laminated, sharp planar base, beds dip at 00 degrees.<br>CLAY: light to medium brown - grey, firm, high plasticity (clay), good core - unbroken. |
| | | LDO | | C2972 | 36.87 | 0.25 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken, sharp planar base, beds dip at 00 degrees.<br>PEN WILL NOT INDENT PAST HALFWAY TO MARK<br>GOES OFF SCALE |
| | | LDO | | C2972 | 37.04 | 0.17 | | CLAY | Silty, light to medium grey - brown, firm, high plasticity (clay), good core - unbroken, sharp oblique base, beds dip at 10 degrees.<br>PEN RESULT 4.1 TO 5.6 KG/CM2 |
| | | LDO | I | C2973 | 37.11 | 0.07 | | LIGNITE | Clayey, medium to dark brown - orange, firm, friable, good core - unbroken, fibrous, banded, occasional bioturbation. |
| | | LDO | I | C2973 | 37.19 | 0.08 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |



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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | I | C2973 | 37.28 | 0.09 | | LIGNEOUS CLAY and INFERIOR LIGNITE | Interbedded 70:30. LIGNEOUS CLAY: dark brown, firm, low plasticity (organic), good core - unbroken; INFERIOR LIGNITE: dark brown, firm, friable, good core - unbroken. |
| | | LDO | I | C2973 | 37.39 | 0.11 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken. |
| | | LDO | I | C2973 | 37.41 | 0.02 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LDO | I | C2973 | 37.46 | 0.05 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, laminated. |
| | | LDO | I | C2973 | 37.50 | 0.04 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken. |
| | | LDO | I | C2973 | 37.56 | 0.06 | | LIGNITE | Clayey, medium to dark brown - red, firm, friable, good core - unbroken, uniform. |
| | | LDO | I | C2973 | 37.61 | 0.05 | | CLAY | Medium to dark brown - grey, firm, high plasticity (clay), good core - unbroken. |
| | | LDO | I | C2973 | 37.85 | 0.24 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, uniform, sharp oblique base, beds dip at 10 degrees, occasional bioturbation. |
| | | LDO | I | C2973 | 37.88 | 0.03 | | CLAY | Medium to dark brown - grey, firm, high plasticity (clay), good core - unbroken. |
| | | LDO | I | C2973 | 38.02 | 0.14 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken. |
| | | LDO | I | C2973 | 38.11 | 0.09 | | LIGNEOUS CLAY and CLAY | Intermixed 06:94. LIGNEOUS CLAY: dark brown, firm, high plasticity (organic), good core - unbroken; CLAY: medium to dark brown - grey, firm, high plasticity (clay), good core - unbroken. |
| | | BASE OF WORKING SECTION I | | | 38.11 | 1.07 | | | |
| | | LDO | | C2974 | 38.13 | 0.02 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic), good core - unbroken. |
| | | LDO | | C2974 | 38.15 | 0.02 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken, subfissile. |

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Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | C2974 | 38.22 | 0.07 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic), good core - unbroken. |
| | | LDO | | C2974 | 38.27 | 0.05 | | LIGNEOUS CLAY | Medium to dark brown - grey, firm, high plasticity (organic), good core - unbroken. |
| | | LDO | | C2974 | 38.30 | 0.03 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay), good core - unbroken. |
| | | LDO | | C2974 | 38.40 | 0.10 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, fissile. |
| | | LDO | | C2974 | 38.58 | 0.18 | | INFERIOR LIGNITE | Clayey, dark brown, firm, coal cleat, low plasticity (organic), common, subvertical joints, vertical joints, core broken, subfissile. |
| | | LDO | | C2974 | 38.72 | 0.14 | | LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken, fissile. |
| | | LDO | | C2974 | 38.82 | 0.10 | | LIGNITE | Clayey, dark brown - black, firm, friable, core broken. |
| | | LDO | | C2974 | 38.89 | 0.07 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, friable, core broken, fissile. |
| | | LDO | | C2974 | 38.96 | 0.07 | | CLAY | Ligneous, medium to dark brown, firm, high plasticity (clay), core broken, subfissile. |
| | | LDO | J1 | C2975 | 39.00 | 0.04 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic), core broken, fissile. |
| | | LDO | J1 | C2975 | 39.12 | 0.12 | | LIGNITE | Clayey, dark brown, firm, friable, core broken. |
| | | LDO | J1 | C2975 | 39.16 | 0.04 | | CLAY | Medium to dark brown, firm, high plasticity (clay), core broken. |
| | | LDO | J1 | C2975 | 39.17 | 0.01 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic), core broken. |
| | | LDO | J1 | C2975 | 39.24 | 0.07 | | LIGNITE | Clayey, dark brown, firm, coal cleat, friable, sparse, subvertical joints, vertical joints, core broken, subfissile; RARE PYRITE ON BEDDING PLANES. |
| | | LDO | J1 | C2975 | 39.31 | 0.07 | | LIGNITE | Clayey, dark brown - red, firm, friable, core broken. |
| | | LDO | J1 | C2975 | 39.42 | 0.11 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic), core broken, fissile. |

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| STRA NAME | SEQ NO | SEAM NAME | WORK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | J1 | C2975 | 39.48 | 0.06 | | CLAY | Light to medium brown, firm, high plasticity (clay), core broken, sharp oblique base, beds dip at 10 degrees. |
| | | LDO | J1 | C2975 | 39.58 | 0.10 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic), core broken, fissile. |
| | | LDO | J1 | C2975 | 39.62 | 0.04 | | CLAY | Light to medium brown, firm, high plasticity (clay), core broken. |
| | | | | BASE OF WORKING SECTION 1 | | 39.62 | | 0.66 | |
| | | LDO | J2 | C2976 | 39.68 | 0.06 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic), good core - unbroken. |
| | | LDO | J2 | C2976 | 39.86 | 0.18 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken. |
| | | LDO | J2 | C2976 | 39.88 | 0.02 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken. |
| | | LDO | J2 | C2976 | 40.11 | 0.23 | | LIGNITE | Clayey, medium to dark brown - red, firm, friable, good core - unbroken, uniform. |
| | | LDO | J2 | C2976 | 40.14 | 0.03 | | LIGNITE | Clayey, medium to dark brown - yellow, firm, friable, good core - unbroken, fibrous, uniform. |
| | | LDO | J2 | C2976 | 40.78 | 0.64 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, banded, occasional bioturbation. |
| | | | | BASE OF WORKING SECTION 2 | | 40.78 | | 1.16 | |
| | | | | BASE OF WORKING SECTION J | | 40.78 | | 1.82 | |
| | | LDO | | C2977 | 40.91 | 0.13 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LDO | | C2977 | 41.10 | 0.19 | | CLAY | Sandy, light to medium brown - grey, firm, high plasticity (clay), good core - unbroken. |

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
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| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | C2977 | 41.55 | 0.45 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay), good core - unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C2977 | 41.58 | 0.03 | | CLAY | Lignaous, medium to dark brown, firm, high plasticity (clay), good core - unbroken, subfissile. |
| | | LDO | | C2977 | 41.61 | 0.03 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic), good core - unbroken, laminated. |
| | | LDO | | C2977 | 41.63 | 0.02 | | CLAY | Medium to dark brown, firm, high plasticity (clay), good core - unbroken, subfissile. |
| | | LDO | | C2977 | 41.70 | 0.07 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic), good core - unbroken, laminated. |
| | | LDO | | C2977 | 41.98 | 0.28 | | CLAY and CLAY | Interbedded 80:20 CLAY: light to medium brown - grey, firm, high plasticity (clay), good core - unbroken, banded. CLAY: medium to dark brown, firm, high plasticity (clay), good core - unbroken. PEN RESULT 5.6 KG/CM2 |
| | | LDO | | C2977 | 42.04 | 0.06 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay), good core - unbroken, sharp oblique base, beds dip at 05 degrees. P |
| | | LDO | K | C2978 | 42.14 | 0.10 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), good core - unbroken, subfissile, common resin aggregates. |
| | | LDO | K | C2978 | 42.22 | 0.08 | | LIGNITE | Clayey, medium to dark brown - yellow, firm, friable, good core - unbroken, fibrous, common resin aggregates. |
| | | LDO | K | C2978 | 42.24 | 0.02 | | LIGNITE | Clayey, medium to dark brown - grey, firm, friable, good core - unbroken. |
| | | LDO | K | C2978 | 42.26 | 0.02 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken. |
| | | LDO | K | C2978 | 42.29 | 0.03 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay), good core - unbroken |
| | | LDO | K | C2978 | 42.34 | 0.05 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, banded |
| | | LDO | K | C2978 | 42.38 | 0.04 | | LIGNITE | Clayey, medium to dark brown - black, firm, friable, good core - unbroken, banded |



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Brs (071) 263 3433

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 , TENEMENT 2080
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| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | K | C2978 | 42.39 | 0.01 | | LIGNITE | Clayey, light to medium brown - grey, firm, friable, good core - unbroken, uniform, common resin aggregates. |
| | | LDO | K | C2978 | 42.65 | 0.26 | | LIGNITE | Clayey, medium to dark brown - red, firm, friable, good core - unbroken, laminated. |
| | | LDO | K | C2978 | 42.73 | 0.08 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, uniform. |
| | | LDO | K | C2978 | 42.78 | 0.05 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, laminated. |
| | | LDO | K | C2978 | 42.83 | 0.05 | | LIGNITE | Clayey, light to medium brown - grey, firm, friable, good core - unbroken, uniform, common resin aggregates. |
| | | LDO | K | C2979 | 43.21 | 0.38 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, banded, common resin aggregates. |
| | | LDO | K | C2979 | 43.29 | 0.08 | | LIGNITE | Clayey, light to medium brown, firm, friable, good core - unbroken, banded. |
| | | LDO | K | C2979 | 43.31 | 0.02 | | CLAY | Woody textured, light to medium brown - grey, firm, high plasticity (clay), good core - unbroken. |
| | | LDO | K | C2979 | 43.34 | 0.03 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, uniform. |
| | | LDO | K | C2979 | 43.37 | 0.03 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, banded. |
| | | LDO | K | C2979 | 43.62 | 0.25 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, uniform, occasional bioturbation. |
| | | LDO | K | C2979 | 43.67 | 0.05 | | LIGNEOUS CLAY | Medium to dark grey - brown, firm, high plasticity (organic), good core - unbroken, occasional woody fragments. |
| | | LDO | K | C2979 | 43.85 | 0.18 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, uniform, occasional resin aggregates. Additional features include good core - unbroken, common bioturbation. |
| | | | | BASE OF WORKING SECTION K | | 43.85 | | 1.81 | |
| | | | | BASE OF SEAM LDO | | 43.85 | | 11.25 | |

EL2080 LAUNCESTON C0081

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | C2980 | 43.92 | 0.07 | | CLAY | Medium to dark brown, firm, high plasticity (clay), good core - unbroken, occasional woody fragments. |
| | | | | C2980 | 44.05 | 0.13 | | INFERIOR LIGNITE | Clayey, medium to dark brown - grey, firm, low plasticity (organic), good core - unbroken, laminated, occasional bioturbation. |
| | | | | C2980 | 44.10 | 0.05 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay), good core - unbroken, occasional bioturbation. |
| | | | | C2981 | 45.10 | 1.00 | | CLAY | Light to medium grey, firm, high plasticity (clay); Additional features include: expanding clay. |
| | | | | R | 51.10 | 6.00 | | NO RECORD | |

END OF BORE AT 51.10 m

EL2080 LAUNCESTON C0081

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON C0082
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Easting: 492970.000
Northing: 5412430.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 200.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 79.40
Drilling Commenced: 09/11/83
Drilling Completed: 14/11/83
Inclination:
Azimuth:
Standing Water Level:

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: RB/PRE
Drilling Contractor: H.J. Starpcle
Geophysical Logging: S.P.E. Pty Ltd
County:
Parish:
Portion:
Plug Depths:
Hole Diameter: 150
Core Diameter: 100
Cased Depths: 13.5
Core Barrel: Triefus Triple Barrel

Available Data:

Drill Bits: Blades
Percussion
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 25.56 | 25.56 | | NO RECORD | |
| | | | | | | | | | DRILL STRING 28.81 + 3. |
| | | | | | | | | | SU END CHIP 2.10<br>DEPTH END CHIP 25.56<br>DRILL STRING CORE R1 28.87 + 3.2 = 32.07<br>CR1 SSU 5.35<br>CR1 FSU 2.37<br>CR1 FROM 25.56 TO 28.55<br>RAN 2.98 REC 3.01 |
| | | | | | TOP OF SEAM LBO | | | 25.56 | |
| | | LBO | | C2982 | 25.83 | 0.27 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity, gradational base, common ligneous fragments. |
| | | LBO | | C2982 | 26.06 | 0.23 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity, gradational base, abundant woody fragments;<br>Additional features include: rare pyrite, nodules;<br>PEN RESULT OFF SCALE |
| | | LBO | | C2982 | 26.30 | 0.24 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity, gradational base, common woody fragments. |
| | | LBO | | C2983 | 26.60 | 0.30 | | CLAY | Light to medium grey - brown, firm, high plasticity, gradational base, common woody fragments. |
| | | LBO | | C2983 | 26.68 | 0.08 | | CLAY | Lithic, silty, medium to dark grey - brown, firm, puggy, gradational base, common woody fragments. |
| | | LBO | | C2983 | 26.80 | 0.12 | | CLAY | Lithic, dark brown, firm, low plasticity, gradational base, abundant woody fragments;<br>Additional features include: common bioturbation. |
| | | LBO | | C2983 | 26.88 | 0.08 | | INFERIOR LIGNITE | Clayey, woody textured, dark brown - black, firm, low plasticity, sharp irregular base, common woody fragments;<br>Additional features include: occasional pyrite, nodules. |
| | | LBO | | C2983 | 27.48 | 0.60 | | CLAY | Light to medium grey, firm, high plasticity, gradational base, common woody fragments;<br>Additional features include: common bioturbation. |

EL2080 LAUNCESTON C0082

MULTISTREAM LISTING Brisb (07) 263 3433 Syd. (02) 53 07 Melb. (03) 544 1899 Adel (08) 297 4788 Perth (09) 443 1555

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 , TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | 7 | C2984 | 27.74 | 0.26 | | LIGNITE | Clayey, dark brown, firm, low plasticity, abundant bioturbation;<br>Additional features include: occasional woody fragments. |
| | | LBO | 7 | C2984 | 27.87 | 0.13 | | LIGNITE | Clayey, dark brown, firm, friable, gradational base, occasional bioturbation;<br>Additional features include: occasional woody fragments;<br>Additional features include: common siderite nodules. |
| | | LBO | 7 | C2984 | 28.06 | 0.19 | | LIGNITE | Dark brown, firm, friable, common woody fragments. |
| | | LBO | 7 | C2984 | 28.09 | 0.03 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity. |
| | | LBO | 7 | C2985 | 28.27 | 0.18 | | LIGNITE | Clayey, dark brown, firm, low plasticity, occasional woody fragments;<br>BROKEN ZONE AT 28.20M, POSSIBLY SMALL FAULT |
| | | LBO | 7 | C2985 | 28.55 | 0.28 | | LIGNITE | Woody textured, dark brown, firm, friable, occasional pyrite nodules;<br>CORE RUN 2 DRILLED 3.00 M RECOVERED 3.00M |
| | | LBO | 7 | C2986 | 29.45 | 0.90 | | LIGNITE | Dark brown, stiff, friable, common, subvertical joints, angle of joints 80 degrees, good core - unbroken, gradational base, common woody fragments;<br>Additional features include: LIGNITE: dark brown, stiff, friable, common, subvertical joints, angle of joints 80 degrees, good core - unbroken, gradational base, occasional pyrite, on joints. |
| | | BASE OF WORKING SECTION 7 | | | 29.45 | 1.97 | | | |
| | | LBO | | C2987 | 29.59 | 0.14 | | CLAY | Light to medium grey, firm, high plasticity, good core - unbroken, gradational base, common woody fragments. |
| | | LBO | | C2987 | 29.83 | 0.24 | | INFERIOR LIGNITE | Clayey, dark brown, firm, puggy. |
| | | LBO | | C2987 | 30.04 | 0.21 | | LIGNITE | Clayey, dark brown, firm, friable;<br>BROKEN ZONE AT 29.90M PYRITE NODULES ABUNDANT |
| | | LBO | | C2987 | 30.26 | 0.22 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy, gradational base. |

EL2080 LAUNCESTON C0082

MULTISTREAM LISTING Brisb:(07)263 3433 Syd:(02)5301723 Melb:(03)544 1889 Adel:(08)297 4788 Perth:(09)443 1555 v2.25

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | C2988 | 30.58 | 0.32 | | CLAY | Medium to dark brown, firm, high plasticity, good core - unbroken, occasional siderite, nodules. |
| | | LBO | | C2988 | 31.03 | 0.45 | | SIDERITE | Light brown - yellow, high strength, tough, good core - unbroken, sharp irregular base. |
| | | LBO | 8 | C2989 | 31.55 | 0.52 | | LIGNITE | Dark brown, firm, friable, good core - unbroken, occasional resin aggregates. Additional features include: common woody fragments; |
| | | | | | | | | | CORE RUN 3 DRILLED 3.00M RECOVERED 2.95M |
| | | | | | BASE OF WORKING SECTION 8 | | | 31.55 | 0.52 |
| | | LBO | | | 31.60 | 0.05 | | CORE LOSS | |
| | | LBO | 9 | C2993 | 32.25 | 0.65 | | LIGNITE | Dark brown, stiff, friable, occasional bioturbation. |
| | | LBO | 9 | C2992 | 32.82 | 0.57 | | LIGNITE | Dark brown, stiff, friable, occasional woody fragments. |
| | | LBO | 9 | C2991 | 33.68 | 0.86 | | LIGNITE | Dark brown - black, stiff, friable, common, angle of joints 80 degrees, angle of joints 50 degrees, occasional bioturbation; Additional features include: common pyrite, on joints. |
| | | | | | BASE OF WORKING SECTION 9 | | | 33.68 | 2.08 |
| | | LBO | | C2990 | 33.89 | 0.21 | | LIGNEOUS CLAY | Medium to dark brown, firm, puggy, good core - unbroken, gradational base |
| | | LBO | | C2990 | 34.25 | 0.36 | | LIGNEOUS CLAY | Medium to dark brown, firm, non-plastic, common, angle of joints 70 degrees, angle of joints 50 degrees, good core - unbroken, gradational base |
| | | LBO | | C2990 | 34.55 | 0.30 | | CLAY | Light to medium brown - gray, firm, puggy, good core - unbroken, common siderite, nodules; SLICKED SURFACE DIPPING AT 45 DEG AT 34.41M PEN. RESULT 5.1 KG/CM2 |
| | | | | | | | | | CORE RUN 4 DRILLED 2.75 RECOVERED 2.70 |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 Launceston TENEMENT 2080

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | | 34.60 | 0.05 | | CORE LOSS | |
| | | LBO | | C2994 | 34.71 | 0.11 | | CLAY | Sideritic, light brown - yellow, firm, puggy, good core - unbroken, abundant siderite nodules. |
| | | LBO | | C2994 | 35.25 | 0.54 | | LIGNEOUS CLAY | Dark brown - black, firm, low plasticity, good core - unbroken, common bioturbation. |
| | | LBO | X | C2995 | 35.61 | 0.36 | | LIGNITE | Dark brown, firm, friable, core broken, occasional bioturbation. |
| | | LBO | X | C2995 | 36.43 | 0.82 | | LIGNITE | Dark brown, firm, friable, common, subvertical joints, angle of joints 80 degrees, good core - unbroken, occasional bioturbation.<br>Additional features include: occasional resin aggregates.<br>BROKEN ZONE AT BASE |
| | | LBO | X | C2996 | 36.60 | 0.17 | | LIGNITE | Clayey, dark brown, firm, puggy, good core - unbroken. |
| | | LBO | X | C2996 | 36.65 | 0.05 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity, good core - unbroken. |
| | | LBO | X | C2996 | 37.30 | 0.65 | | LIGNITE | Dark brown, firm, friable, abundant, subvertical joints, angle of joints 80 degrees, core broken.<br>CORE RUN 5 DRILLED 2.65M RECOVERED 2.54 |
| | | LBO | X | C2996 | 37.38 | 0.08 | | LIGNITE | Dark brown, firm, friable, core broken, occasional bioturbation |
| | | BASE OF WORKING SECTION X | | | 37.38 | 2.13 | | | |
| | | BASE OF SEAM LBO | | | 37.38 | 11.82 | | | |
| | | | | C2997 | 37.90 | 0.52 | | LIGNEOUS CLAY | Dark brown, firm, puggy, gradational base, abundant bioturbation.<br>PEN OFF SCALE |
| | | | | C2998 | 38.45 | 0.55 | | CLAY | Medium to dark brown, firm, high plasticity, common carbonaceous remains.<br>PEN. RESULT 9.5 KG/CM2 |

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| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | C2998 | 38.54 | 0.09 | | CORE LOSS | |
| | | | | | | | | | CORE GRINDING |
| | | | | C2999 | 39.99 | 1.45 | | CLAY | Light grey - green, firm, puggy, common siderite nodules. PEN RESULT 9.8 KG/CM2 |
| | | | | | | | | | RESUME CHIP DRILLING |
| | | | | R | 46.00 | 6.01 | | CLAY | Sandy, light grey, firm, high plasticity, common woody fragments. |
| | | | | | | | | | CORE RUN 6. DRILLED 0.92M RECOVERED 0.92M |
| | | | | C3000 | 46.39 | 0.39 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity. |
| | | | | C3000 | 46.49 | 0.10 | | CLAY | Light to medium grey, firm, high plasticity, sharp planar base, beds dip at 03 degrees. PEN OFF SCALE |
| | | | | C0301 | 46.92 | 0.43 | | CLAY | Lithic, dark brown, firm, low plasticity, good core - unbroken, common woody fragments. PEN RESULT OFF SCALE |
| | | | | | | | | | CORE RUN 7 DRILLED 2.95M RECOVERED 2.95M |
| | | | | C0302 | 47.93 | 1.01 | | CLAY | Light to medium grey - brown, firm, high plasticity, good core - unbroken, sharp planar base, beds dip at 03 degrees, occasional woody fragments. PEN RESULT |
| | | | | TOP OF SEAM LDO | | 47.93 | | | |
| | LDO | H1 | | C0303 | 47.97 | 0.04 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, sharp irregular base. |
| | LDO | H1 | | C0303 | 48.06 | 0.09 | | CLAY | Lithic, dark brown, firm, puggy, good core - unbroken, gradational base, abundant carbonaceous remains. |
| | LDO | H1 | | C0303 | 48.73 | 0.67 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, sharp planar base, beds dip at 03 degrees, occasional bioturbation. |

EL2080 LAUNCESTON C0082

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | H1 | C0304 | 48.90 | 0.17 | | CLAY | Lithic, dark brown - grey, firm, puggy, good core - unbroken, gradational base |
| | | LDO | H1 | C0304 | 49.11 | 0.21 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | LDO | H1 | C0304 | 49.22 | 0.11 | | CLAY | Lithic, dark brown - grey, firm, puggy, good core - unbroken, gradational base, occasional resin aggregates. |
| | | LDO | H1 | C0305 | 49.77 | 0.55 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, gradational base, occasional bioturbation. |
| | | | | | BASE OF WORKING SECTION 1 | | | 49.77 | 1.84 |
| | | | | | BASE OF WORKING SECTION H | | | 49.77 | 1.84 |
| | | LDO | | C0306 | 49.84 | 0.07 | | LIGNEOUS CLAY | Medium to dark brown, firm, puggy, good core - unbroken; CORE RUN 8 DRILLED 2.70M RECOVERED 2.70M |
| | | LDO | | C0306 | 50.20 | 0.36 | | CLAY | Light brown - grey, firm, low plasticity, good core - unbroken, gradational base, common carbonaceous remains. |
| | | LDO | | C0306 | 50.35 | 0.15 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity, good core - unbroken, sharp irregular base, beds dip at 02 degrees. |
| | | LDO | H2 | C0307 | 50.54 | 0.19 | | INFERIOR LIGNITE | Dark brown, firm, low plasticity, good core - unbroken, gradational base, common bioturbation. |
| | | LDO | H2 | C0307 | 50.66 | 0.12 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, gradational base, occasional bioturbation. |
| | | LDO | H2 | C0307 | 50.86 | 0.20 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity, good core - unbroken, gradational base, common bioturbation. |
| | | | | | BASE OF WORKING SECTION 2 | | | 50.86 | 0.51 |
| | | | | | BASE OF WORKING SECTION H | | | 50.86 | 0.51 |

EL2080 LAUNCESTON C0082

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | C0308 | 51.20 | 0.34 | | LIGNEOUS CLAY | Medium to dark brown, firm, buggy, good core - unbroken, gradational base, common carbonaceous remains; SLICKED SURFACES DIPPING 70 DEG COMMON PEN. RESULT 9.0 KG/CM2 |
| | | LDO | | C0308 | 51.46 | 0.26 | | LIGNEOUS CLAY | Dark brown - grey, firm, buggy, good core - unbroken, abundant carbonaceous remains. |
| | | LDO | | C0308 | 51.56 | 0.10 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity, good core - unbroken. |
| | | LDO | | C0308 | 51.98 | 0.42 | | CLAY | Light to medium brown - grey, firm, good core - unbroken; LIGNEOUS TOWARDS BASE |
| | | LDO | I | C0309 | 52.57 | 0.59 | | LIGNITE | Dark brown, firm, friable, core broken; CORE RUN 8 DRILLED 2.40M RECOVERED 2.35M |
| | | LDO | I | C0310 | 52.62 | 0.05 | | CORE LOSS | |
| | | LDO | I | C0310 | 52.94 | 0.32 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity, core broken. |
| | | LDO | I | C0310 | 53.11 | 0.17 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, occasional resin aggregates. |
| | | | | | BASE OF WORKING SECTION I | | | 53.11 | 1.13 |
| | | LDO | | C0311 | 53.30 | 0.19 | | CLAY | Lithic, medium to dark brown, firm, high plasticity, good core - unbroken, gradational base; SLICKED SURFACES DIPPING 60 DEG. COMMON |
| | | LDO | | C0311 | 53.51 | 0.21 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity, good core - unbroken; PEN. RESULT 10.2 KG/CM2 |
| | | LDO | | C0312 | 53.74 | 0.23 | | CLAY | Lithic, light to medium brown - grey, firm, high plasticity, good core - unbroken, abundant carbonaceous remains; PEN. RESULT OFF SCALE |
| | | LDO | | C0312 | 54.03 | 0.29 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity. |

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Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | C0312 | 54.28 | 0.25 | | CLAY | Lithic, medium to dark brown, firm, puggy, core broken, abundant carbonaceous remains. PEN. RESULT OFF SCALE |
| | | LDO | J1 | C0313 | 54.97 | 0.69 | | LIGNITE | Clayey, dark brown, firm, friable, occasional woody fragments. CORE RUN 9 DRILLED 3.05M RECOVERED 3.06M |
| | | LDO | J1 | C0314 | 55.00 | 0.03 | | LIGNITE | Clayey, dark brown - grey, firm, low plasticity, good core - unbroken. |
| | | LDO | J1 | C0314 | 55.26 | 0.26 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken. |
| | | LDO | J1 | C0314 | 55.29 | 0.03 | | INFERIOR LIGNITE | Clayey, dark brown - grey, firm, puggy, good core - unbroken. |
| | | LDO | J1 | C0314 | 55.48 | 0.19 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken. |
| | | LDO | J1 | C0314 | 55.52 | 0.04 | | CLAY | Lithic, dark brown - grey, firm, puggy, good core - unbroken. |
| | | LDO | J1 | C0314 | 56.17 | 0.65 | | LIGNITE | Dark brown, firm, friable, common, subvertical joints, angle of joints 80 degrees, good core - unbroken. |
| | | | | | BASE OF WORKING SECTION 1 | 56.17 | 1.89 | | |
| | | | | | BASE OF WORKING SECTION J | 56.17 | 1.89 | | |
| | | LDO | | C0315 | 56.24 | 0.07 | | CLAY | Lithic, dark brown, firm, puggy, good core - unbroken. |
| | | LDO | | C0315 | 56.33 | 0.09 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity, good core - unbroken. |
| | | LDO | | C0315 | 56.47 | 0.14 | | CLAY | Lithic, dark brown, firm, high plasticity, good core - unbroken, common carbonaceous remains. |
| | | LDO | | C0315 | 56.62 | 0.15 | | CLAY | Lithic, light to medium brown, firm, high plasticity, good core - unbroken, common carbonaceous remains. |
| | | LDO | | C0315 | 56.90 | 0.28 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity, good core - unbroken. |

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Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | C0315 | 57.01 | 0.11 | | CLAY | Lithic, dark brown - black, firm, high plasticity, good core - unbroken, common carbonaceous remains. |
| | | LDO | | C0316 | 57.08 | 0.07 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity, common, angle of joints 20 degrees, angle of joints 50 degrees, good core - unbroken. |
| | | LDO | | C0316 | 57.58 | 0.50 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken. |
| | | LDO | | C0316 | 57.68 | 0.10 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, high plasticity, good core - unbroken, abundant carbonaceous remains. |
| | | LDO | | C0317 | 57.97 | 0.29 | | CLAY | Lithic, dark brown, firm, high plasticity, good core - unbroken, abundant carbonaceous remains. |
| | | | | | | | | | CR10 SSU 2.50M |
| | | | | | | | | | CR10 FSU 1.38M<br>CR10 FROM 57.97 TO 58.99M<br>RAN 1 12, REC 0.88<br>DRILL STRING 61.52M |
| | | LDO | | C0318 | 58.09 | 0.12 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken, gradational base, abundant bioturbation. |
| | | LDO | | C0318 | 58.19 | 0.10 | | CLAY | Ligneous, medium to dark brown, firm, high plasticity (clay), good core - unbroken, abundant bioturbation. |
| | | LDO | | C0318 | 58.29 | 0.10 | | CLAY | Light to medium grey - brown, stiff, brittle, good core - unbroken, abundant siderite, secondary, nodules. |
| | | LDO | | C0318 | 58.37 | 0.08 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic), good core - unbroken, gradational base, abundant bioturbation. |
| | | | | | | | | | SIDERITIC CLAY INFILLING BURROWS |
| | | LDO | | C0318 | 58.48 | 0.11 | | CLAY | Ligneous, medium to dark brown, firm, high plasticity (clay), good core - unbroken, sharp oblique base, beds dip at 00 degrees, abundant bioturbation. |
| | | LDO | | C0318 | 58.51 | 0.03 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken, sharp planer base, beds dip at 00 degrees, abundant bioturbation. |

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Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | C0318 | 58.60 | 0.09 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay), good core - unbroken, abundant bioturbation; Additional features include: expanding clay; OEN. RESULT 4.4 TO 4.8 KG/CM2 |
| | | LDO | | C0318 | 58.76 | 0.16 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), good core - unbroken, abundant bioturbation. |
| | | LDO | | C0318 | 58.76 | 0.00 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, slickensides on fracture, friable, sparse, oblique joints, angle of joints 30 degrees, good core - unbroken, abundant bioturbation. |
| | | LDO | | C0318 | 58.85 | 0.09 | | CLAY | Medium to dark brown, firm, slickensides on fracture, high plasticity (clay), sparse, oblique joints, angle of joints 60 degrees, good core - unbroken; |
| | | | | | | | | | CR11 SSU 1.38 + 2.93 = 4.31 |
| | | | | | | | | | CR11 FSU 1.93<br>CR11 FROM 58.99 TO 61.37M.<br>DRILL STRING 61.52 + 2.93 = 64.45<br>RAN 2.38, REC. 2.55 |
| | | LDO | | C0319 | 58.94 | 0.09 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken. |
| | | LDO | | C0320 | 59.04 | 0.10 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic), good core - unbroken, occasional bioturbation. |
| | | LDO | | C0320 | 59.08 | 0.04 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken. |
| | | LDO | | C0320 | 59.21 | 0.13 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |
| | | LDO | | C0320 | 59.29 | 0.08 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LDO | | C0320 | 59.31 | 0.02 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic), good core - unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C0320 | 59.41 | 0.10 | | CLAY | Ligneous, medium to dark grey - brown, firm, high plasticity (clay), good core - unbroken, gradational base, beds dip at 00 degrees, common bioturbation. |
| | | LDO | | C0320 | 59.44 | 0.03 | | CLAY | Ligneous, medium to dark brown, firm, low plasticity (clay), good core - unbroken, gradational base, common bioturbation. |

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Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | J2 | C0321 | 59.62 | 0.18 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken, sharp planar base, beds dip at 00 degrees, occasional bioturbation. |
| | | LDO | J2 | C0321 | 59.66 | 0.04 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, sharp planar base, beds dip at 00 degrees, occasional bioturbation. |
| | | LDO | J2 | C0321 | 59.71 | 0.05 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken, sharp planar base, beds dip at 00 degrees, occasional bioturbation. |
| | | LDO | J2 | C0321 | 59.74 | 0.03 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, sharp planar base, beds dip at 00 degrees, occasional bioturbation. |
| | | LDO | J2 | C0321 | 59.78 | 0.04 | | LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken, sharp oblique base, beds dip at 00 degrees, occasional bioturbation. |
| | | LDO | J2 | C0321 | 59.86 | 0.08 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, sharp planar base, beds dip at 00 degrees, occasional bioturbation. |
| | | LDO | J2 | C0321 | 59.90 | 0.04 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, uniform, sharp planar base, beds dip at 00 degrees. |
| | | LDO | J2 | C0321 | 59.98 | 0.08 | | CLAY | Ligneous, medium to dark brown, firm, high plasticity (clay), good core - unbroken, sharp planar base, beds dip at 00 degrees, occasional bioturbation. |
| | | LDO | J2 | C0321 | 60.59 | 0.61 | | LIGNITE | Clayey, dark brown, firm, friable, core broken, uniform, sharp planar base, beds dip at 00 degrees, occasional bioturbation. |
| | | | | | BASE OF WORKING SECTION 2 | | | 60.59 | 1.15 |
| | | | | | BASE OF WORKING SECTION J | | | 60.59 | 1.15 |
| | | LDO | | C0322 | 60.62 | 0.03 | | CLAY | Ligneous, medium to dark brown - grey, firm, high plasticity (clay), good core - unbroken, laminated, gradational base, beds dip at 00 degrees, common bioturbation. |

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| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | C0322 | 60.67 | 0.05 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), good core = unbroken, laminated, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C0322 | 60.80 | 0.13 | | CLAY | Ligneous, medium to dark brown = grey, firm, high plasticity (clay), good core = unbroken, sharp planar base, beds dip at 00 degrees, occasional bioturbation. |
| | | LDO | | C0322 | 60.87 | 0.07 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core = unbroken, laminated, gradational base |
| | | LDO | | C0322 | 60.94 | 0.07 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core = unbroken, common siderite, secondary, nodules. |
| | | LDO | | C0322 | 61.00 | 0.06 | | CLAY | Sideritic, light to medium brown, firm, high plasticity (clay), good core = unbroken, laminated, common ligneous wisps;<br>Additional features include, common siderite, secondary, nodules. |
| | | LDO | | C0322 | 61.37 | 0.37 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core = unbroken, common siderite, secondary, nodules.<br>PEN. RESULT OFF SCALE FROM 60.69 TO 61.45M<br>CR12 SSU 1.93<br>CR12 FSU 0.97<br>CR12 FROM 61.37 TO 62.33M<br>DRILL STRING 64.55M<br>RAN 0.96M, REC 0.73M |
| | | LDO | | C0323 | 61.53 | 0.16 | | CLAY | Micaceous, medium to dark brown, firm, high plasticity (clay), core disaggregated.<br>ALMOST LOW STRENGHT BRITTLE |
| | | LDO | | C0324 | 61.55 | 0.02 | | LIGNITE | Clayey, dark brown, firm, friable, good core = unbroken, subfissile, sharp planar base, beds dip at 00 degrees |
| | | LDO | | C0324 | 61.66 | 0.11 | | LIGNITE | Clayey, dark brown = black, firm, friable, good core = unbroken, sharp planar base, beds dip at 00 degrees, common bioturbation |
| | | LDO | | C0324 | 61.73 | 0.07 | | INFERIOR LIGNITE | Clayey, dark brown = black, firm, friable, good core = unbroken, sharp planar base, beds dip at 00 degrees, common bioturbation |

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Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | C0324 | 61.75 | 0.02 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable, good core = unbroken, sharp planar base, beds dip at 00 degrees, common bioturbation. |
| | | LDO | | C0324 | 61.80 | 0.05 | | INFERIOR LIGNITE | Clayey, dark brown = black, firm, low plasticity (organic), good core = unbroken, sharp planar base, beds dip at 00 degrees, common bioturbation. |
| | | LDO | | C0324 | 61.83 | 0.03 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic), good core = unbroken, sharp irregular base, common bioturbation. |
| | | LDO | | C0325 | 61.98 | 0.15 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core = unbroken, gradational base, common bioturbation. MORE LIGNEOUS TOWARDS BASE |
| | | LDO | | C0325 | 62.10 | 0.12 | | LIGNEOUS CLAY | Dark brown, firm, slickensides or fracture, high plasticity (organic), sparse, oblique joints, angle of joints 50 degrees, good core = unbroken. |
| | | LDO | | C | 62.33 | 0.23 | | CORE LOSS | CR13 SSU 0.97 + 4.0 = 4.97<br>CR13 FROM 62.33 TO 65.32M<br>DRILL STRING 68.45M<br>RAN 3.05 REC 3.05 |
| | | LDO | K | C0326 | 62.53 | 0.20 | | LIGNITE | Clayey, dark brown, firm, friable, good core = unbroken, uniform, sharp planar base, beds dip at 00 degrees, common bioturbation. |
| | | LDO | K | C0326 | 62.61 | 0.08 | | LIGNITE | Clayey, dark brown = black, firm, friable, good core = unbroken, uniform, occasional bioturbation. |
| | | LDO | K | C0326 | 62.93 | 0.32 | | LIGNITE | Clayey, dark brown, firm, friable, good core = unbroken, uniform, occasional bioturbation. |
| | | LDO | K | C0326 | 63.30 | 0.37 | | LIGNITE | Clayey, dark brown = red, firm, friable, good core = unbroken, uniform, occasional bioturbation. |
| | | LDO | K | C0327 | 63.81 | 0.51 | | LIGNITE | Clayey, dark brown = red, firm, coal cleat, friable, common subvertical joints, vertical joints, core broken, uniform, occasional bioturbation. |
| | | LDO | K | C0327 | 64.00 | 0.19 | | LIGNITE | Clayey, dark brown = red, firm, friable, good core = unbroken, uniform, rare bioturbation. |

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| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | K | C0328 | 64.12 | 0.12 | | LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken, banded. |
| | | LDO | K | C0328 | 64.42 | 0.30 | | LIGNITE | Clayey, dark brown - red, firm, friable, good core - unbroken, uniform, occasional bioturbation. Additional features include: good core - unbroken, occasional siderite, secondary, nodules. |
| | | LDO | K | C0328 | 64.54 | 0.12 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform, occasional bioturbation. Additional features include: occasional siderite, secondary, nodules; SIDERITIC INFILLING WORM BURROWS. |
| | | | | BASE OF WORKING SECTION K | 64.54 | 2.21 | | | |
| | | LDO | | C0329 | 64.58 | 0.04 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LDO | | C0329 | 64.95 | 0.41 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, banded, occasional bioturbation. Additional features include: good core - unbroken, occasional siderite, nodules; SIDERITIC INFILLING WORM BURROWS. |
| | | LDO | | C0329 | 65.01 | 0.02 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken, laminated, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C0329 | 65.08 | 0.07 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic), good core - unbroken, laminated. |
| | | LDO | | C0330 | 65.15 | 0.07 | | LIGNEOUS CLAY and INFERIOR LIGNITE | Interbedded 50:50 LIGNEOUS CLAY medium to dark brown - grey, firm, high plasticity (organic), good core - unbroken. INFERIOR LIGNITE clayey, dark brown - black, firm, low plasticity (organic), good core - unbroken, laminated. |
| | | LDO | | C0330 | 65.22 | 0.07 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay), good core - unbroken, laminated, siderite, nodules. |

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| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | C0330 | 65.38 | 0.16 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), good core - unbroken, laminated, siderite, nodules.<br>CR14 SSU 1.92 + 4.00 = 5.92<br>CR14 FSU 2.92<br>CR14 FROM 65.38 TO 68.38<br>DRILL STRING 68.45 + 4.00 = 72.45<br>RAN 3.0 REC 2.52<br>KL AT BOTTOM OF CORE CATCHER BROKE |
| | | LDO | | C0331 | 65.56 | 0.18 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken, gradational base. |
| | | LDO | | C0331 | 65.79 | 0.23 | | CLAY | Silty, light to medium brown, firm, high plasticity (clay), good core - unbroken, fining upwards. |
| | | LDO | | C0331 | 65.87 | 0.08 | | CLAY | Silty, light to medium brown, firm, high plasticity (clay), good core - unbroken, fining upwards. |
| | | LDO | | C0331 | 66.04 | 0.17 | | CLAY | Silty, light to medium brown, firm, high plasticity (clay), good core - unbroken, laminated. |
| | | LDO | | C0331 | 66.55 | 0.51 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken.<br>PEN OFF SCALE |
| | | LDO | | C0331 | 66.76 | 0.21 | | CLAY | Silty, sideritic, light to medium brown, firm, high plasticity (clay), good core - unbroken, laminated, sharp planar base, beds dip at 00 degrees |
| | | LDO | | C0331 | 66.88 | 0.12 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken, sharp planar base, beds dip at 00 degrees.<br>PEN OFF SCALE |
| | | LDO | | C0331 | 66.93 | 0.05 | | SILT | Sandy, clayey, light to medium yellow - brown, firm, non-plastic, good core - unbroken. |
| | | LDO | | C0332 | 67.77 | 0.84 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken, laminated. |

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| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | C0332 | 67.90 | 0.13 | | CLAY | Light to medium brown, firm, slickensides on fracture, high plasticity (clay), sparse, oblique joints, angle of joints 50 degrees, good core - unbroken; Additional features include: sparse, oblique joints, angle of joints 20 degrees, good core - unbroken; PEN OFF SCALE |
| | | | | | | | | | CR15 SSU 2.92 |
| | | | | | | | | | CR15 FSU 1.75 CR15 FROM 68.38 TO 67.55 DRILL STRING 72.45 RAN 1.17 REC 1.61 + .48 = 1.65 KL = 0.04M |
| | | LDO | | C0332 | 67.94 | 0.04 | | CORE LOSS | |
| | | LDO | L | C0333 | 68.01 | 0.07 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, banded, sharp planar base, beds dip at 00 degrees. |
| | | LDO | L | C0333 | 68.05 | 0.04 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, laminated, sharp planar base, beds dip at 00 degrees. |
| | | LDO | L | C0333 | 68.10 | 0.05 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, banded, sharp planar base, beds dip at 00 degrees. |
| | | LDO | L | C0333 | 68.16 | 0.06 | | LIGNEOUS CLAY | Medium to dark brown - grey, firm, high plasticity (organic), good core - unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LDO | L | C0333 | 68.20 | 0.04 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, banded, sharp planar base, beds dip at 00 degrees. |
| | | LDO | L | C0333 | 68.24 | 0.04 | | LIGNEOUS CLAY | Light to medium grey - brown, firm, high plasticity (organic), good core - unbroken, banded, sharp planar base, beds dip at 00 degrees, common ligneous wisps. |
| | | LDO | L | C0333 | 68.27 | 0.03 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay), good core - unbroken, sharp oblique base, beds dip at 05 degrees, common woody fragments. |
| | | LDO | L | C0333 | 68.33 | 0.06 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic), good core - unbroken, banded, sharp planar base, beds dip at 00 degrees. |

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Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | L | C0333 | 68.34 | 0.01 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay), good core - unbroken, laminated, sharp planar base, beds dip at 00 degrees. |
| | | LDO | L | C0333 | 68.42 | 0.08 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken, banded, sharp planar base, beds dip at 00 degrees. |
| | | LDO | L | C0333 | 68.44 | 0.02 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LDO | L | C0333 | 68.47 | 0.03 | | LIGNITE | Dark black - brown, firm, friable, good core - unbroken, subfissile, sharp planar base, beds dip at 00 degrees. |
| | | LDO | L | C0333 | 68.51 | 0.04 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken. |
| | | LDO | L | C0333 | 68.52 | 0.01 | | LIGNEOUS CLAY | Dark brown - black, firm, coal cleat, high plasticity (organic), sparse, subvertical joints, vertical joints, good core - unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LDO | L | C0333 | 68.54 | 0.02 | | INFERIOR LIGNITE | Clayey, dark brown, firm, slickensides on fracture, friable, sparse, subvertical joints, vertical joints, good core - unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LDO | L | C0333 | 68.56 | 0.02 | | LIGNEOUS CLAY | Dark brown - black, firm, coal cleat, high plasticity (organic), sparse, subvertical joints, vertical joints, good core - unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LDO | L | C0333 | 68.60 | 0.04 | | CLAY | Light to medium brown - grey, firm, coal cleat, high plasticity (clay), sparse, subvertical joints, vertical joints, good core - unbroken, sharp planar base, beds dip at 00 degrees. CORE BROKEN + DISAGGREGATED WHENBAGGED, NOT COMPETENT AND SOLID PROBABLY DRILLING INDUCED |
| | | LDO | L | C0334 | 69.30 | 0.70 | | LIGNITE | Clayey, dark brown, firm, coal cleat, friable, common, subvertical joints, vertical joints, good core - unbroken, uniform, sharp planar base, beds dip at 00 degrees. |
| | | LDO | L | C0335 | 69.33 | 0.03 | | CLAY | Medium to dark brown, firm, high plasticity (clay), good core - unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LDO | L | C0335 | 69.37 | 0.04 | | INFERIOR LIGNITE | Clayey, dark brown, firm, coal cleat, friable, sparse, subvertical joints, vertical joints, good core - unbroken, sharp planar base, beds dip at 00 degrees. |

EL2080 LAUNCESTON C0082

Melb (03) 544 1899 Adel (08) 297 4798 Perth (09) 443 1555 Brs (07) 263 3433 Sy (02) 51 07 MULTISTREAM LISTING

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | L | C0335 | 69.43 | 0.06 | | CLAY | Light to medium brown - grey, firm, coal cleat, high plasticity (clay), sparse, subvertical joints, vertical joints, good core - unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LDO | L | C0335 | 69.55 | 0.12 | | LIGNITE | Clayey, dark brown, firm, coal cleat, friable, sparse, subvertical joints, vertical joints, good core - unbroken. CR16 SSU 1.75 + 3.00 = 4.75 CR16 FSU 2.70 CR16 FROM 69.55 TO 71.46 DRILL STRING 72.45 + 3.0 = 75.45M RAN 2.05 REC 2.05 |
| | | BASE OF WORKING SECTION L | | | 69.55 | 1.61 | | | |
| | | LDO | | C0336 | 69.63 | 0.08 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C0336 | 69.65 | 0.02 | | CLAY | Ligneous, medium to dark brown, firm, high plasticity (clay), good core - unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C0336 | 69.73 | 0.08 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic), good core - unbroken, uniform, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C0336 | 69.82 | 0.09 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, banded, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C0336 | 69.86 | 0.04 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), good core - unbroken, gradational base. |
| | | LDO | | C0336 | 69.91 | 0.05 | | CLAY | Ligneous, medium to dark brown, firm, high plasticity (clay), good core - unbroken, sharp planar base, beds dip at 00 degrees, occasional bioturbation. |
| | | LDO | | C0337 | 70.11 | 0.20 | | CLAY | Light to medium grey, firm, high plasticity (clay), good core - unbroken, gradational base, common bioturbation. |
| | | LDO | | C0337 | 70.37 | 0.26 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay), good core - unbroken, gradational base, common bioturbation. |

EL2080 LAUNCESTON C0082

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | C0337 | 70.57 | 0.20 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken, sharp planar base, beds dip at 00 degrees, PEN OFF SCALE FOR ALL CLAY 69.91 TO 70.57 |
| | | LDO | M | C0338 | 70.64 | 0.07 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, uniform, sharp planar base, beds dip at 00 degrees, occasional bioturbation. |
| | | LDO | M | C0338 | 70.91 | 0.27 | | LIGNITE | Clayey, dark brown - red, firm, friable, good core - unbroken, uniform, sharp planar base, beds dip at 00 degrees, occasional bioturbation. |
| | | LDO | M | C0338 | 70.97 | 0.06 | | INFERIOR LIGNITE | Clayey, medium to dark brown - black, firm, low plasticity (organic), good core - unbroken, uniform, occasional bioturbation. |
| | | LDO | M | C0338 | 71.08 | 0.11 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform. |
| | | LDO | M | C0338 | 71.10 | 0.02 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic), good core - unbroken. |
| | | LDO | M | C0338 | 71.19 | 0.09 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken. |
| | | LDO | M | C0338 | 71.21 | 0.02 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic), good core - unbroken. |
| | | LDO | M | C0338 | 71.24 | 0.03 | | INFERIOR LIGNITE | Dark brown, firm, friable, good core - unbroken. |
| | | | | BASE OF WORKING SECTION M | | 71.24 | | 0.67 | |
| | | LDO | | C0339 | 71.34 | 0.10 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LDO | | C0339 | 71.38 | 0.04 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic), good core - unbroken, occasional bioturbation. |
| | | LDO | | C0339 | 71.47 | 0.09 | | LIGNEOUS CLAY | Medium to dark brown - grey, firm, slickensides on fracture, high plasticity (organic), sparse, oblique joints, angle of joints 50 degrees, good core - unbroken, occasional bioturbation. |

EL2080 LAUNCESTON C0082

MULTISTREAM LISTING Bris.:(07)263 3433 Syd.:(02)53 0771 Melb.:(03)544 1899 Adel.:(08)297 4788 Perth:(09)481 9656

0483
19555
3 9 1 2 1 5 1 8

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | C0340 | 71.60 | 0.13 | | LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken, occasional bioturbation;<br>CR17 SSU 2.70<br>CR17 FSU 0.38<br>CR17 FROM 71.60 TO 73.92<br>DRILL STRING 75.45M<br>RAN 2.32M REC |
| | | LDO | | C0340 | 71.62 | 0.02 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken, laminated, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C0340 | 71.64 | 0.02 | | CLAY | Light to medium grey, firm, high plasticity (clay), good core - unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C0340 | 71.69 | 0.05 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, uniform, gradational base. |
| | | LDO | | C0340 | 71.76 | 0.07 | | LIGNEOUS CLAY | Medium to dark brown, firm, slickensides on fracture, high plasticity (organic), sparse, oblique joints, angle of joints 40 degrees, good core - unbroken;<br>Additional features include: sparse, oblique joints, angle of joints 20 degrees. |
| | | LDO | | C0340 | 71.81 | 0.05 | | LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken, uniform. |
| | | LDO | | C0340 | 71.83 | 0.02 | | LIGNEOUS CLAY | Medium to dark brown - grey, firm, high plasticity (organic), good core - unbroken, common ligneous wisps. |
| | | LDO | | C0340 | 71.94 | 0.11 | | INFERIOR LIGNITE | Clayey, dark brown, firm, coal cleat, friable, common, subvertical joints, vertical joints, good core - unbroken, uniform, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C0340 | 72.01 | 0.07 | | CLAY | Medium to dark brown - grey, firm, high plasticity (clay), good core - unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C0340 | 72.03 | 0.02 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C0340 | 72.09 | 0.06 | | LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken, uniform, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C0340 | 72.10 | 0.01 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic), good core - unbroken, sharp planar base, beds dip at 00 degrees. |

EL2080 LAUNCESTON C0082

MULTISTREAM LISTING Brisb:(07)263 3433 Melb:(03)543 8990 Adel:(08)223 2033 Perth:(09)443 1533 Syd:(02)267 2733

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | C0340 | 72.13 | 0.03 | | INFERIOR LIGNITE | Clayey, dark black - brown, firm, friable, good core - unbroken, subfissile, uniform. |
| | | LDO | | C0340 | 72.18 | 0.05 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken. |
| | | LDO | | C0340 | 72.23 | 0.05 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | | C0340 | 72.25 | 0.02 | | INFERIOR LIGNITE | Clayey, dark black - brown, firm, low plasticity (organic), good core - unbroken, uniform. |
| | | LDO | | C0340 | 72.28 | 0.03 | | INFERIOR LIGNITE | Clayey, dark black - brown, firm, low plasticity (organic), good core - unbroken, subfissile. |
| | | LDO | | C0340 | 72.38 | 0.10 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LDO | | C0340 | 72.40 | 0.02 | | CLAY | Medium to dark brown, soft, high plasticity (clay), good core - unbroken; Additional features include: expanding clay; PEN 1.1 TO 2.5 KG/CM2 |
| | | LDO | | C0340 | 72.42 | 0.02 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LDO | | C0340 | 72.47 | 0.05 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken. |
| | | LDO | N | C0341 | 72.52 | 0.05 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken; Additional features include: expanding clay; PEN 8.440 11 KG/CM2 |
| | | LDO | N | C0341 | 72.64 | 0.12 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken, laminated, sharp oblique base, beds dip at 00 degrees, abundant siderite, nodules. |
| | | LDO | N | C0341 | 72.71 | 0.07 | | CLAY | Medium to dark brown, firm, high plasticity (clay), good core - unbroken, sharp planar base, beds dip at 00 degrees; Additional features include: expanding clay; PEN OFF SCALE |
| | | LDO | N | C0342 | 72.74 | 0.03 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, uniform. |
| | | LDO | N | C0342 | 72.93 | 0.19 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, banded. |

EL2080 LAUNCESTON C0082

MULTISTREAM USING Bris (07) 263 133 Syd (02) 53 077 Melb (03) 544 899 Adel (08) 297 4788 Perth (09) 443 1555

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 , TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WDK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | N | C0342 | 73.04 | 0.11 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, banded |
| | | LDO | N | C0342 | 73.08 | 0.04 | | LIGNEOUS CLAY | Woody textured, medium to dark brown, firm, low plasticity (organic), good core - unbroken |
| | | LDO | N | C0342 | 73.47 | 0.39 | | LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, banded |
| | | LDO | N | C0342 | 73.76 | 0.29 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, friable, good core - unbroken, banded |
| | | LDO | N | C0342 | 73.92 | 0.16 | | LIGNITE | Clayey, dark brown, firm, slickensides on fracture, friable, sparse, oblique joints, angle of joints 50 degrees, good core - unbroken, uniform.<br>CR18 SSU 0.38 + 3.20 = 3.58<br>CR18 FSU 0.50<br>CR18 FROM 73.92 TO 77.00<br>DRILL STRING 75.45 + 3.2 = 78.65<br>RAN 3.08 REC 3.06 |
| | | BASE OF WORKING SECTION N | | | 73.92 | 1.45 | | | |
| | | LDO | | C0343 | 75.04 | 1.12 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, banded, gradational base |
| | | LDO | | C0344 | 75.42 | 0.38 | | LIGNITE | Clayey, medium to dark brown - red, firm, friable, good core - unbroken, uniform, gradational base |
| | | LDO | | C0344 | 75.60 | 0.18 | | LIGNITE | Clayey, medium to dark brown - red, firm, friable, good core - unbroken, gradational base |
| | | LDO | | C0344 | 75.88 | 0.28 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken. |
| | | LDO | | C0345 | 75.95 | 0.07 | | LIGNITE | Clayey, dark brown, firm, friable, core broken |
| | | LDO | | C0345 | 76.80 | 0.85 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken. |
| | | LDO | | C0346 | 76.98 | 0.18 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, common siderite, nodules |
| | | BASE OF SEAM LDO | | | 76.98 | 29.05 | | | |

EL2080 LAUNCESTON C0082

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REPORT TC14-01 CSR COAL DIVISION PAGE 201 RUN AT 10:21:01 15/ 6/84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 77.00 | 0.02 | | CORE LOSS | |
| | | | | | | | | | RE OF WOOD<br>CR19 SSU 0.5 + 4.0 = 4.5<br>CR19 FSU 2.10<br>CR19 FROM 77.0 TO 79.4M<br>DRILL STRING 78.65 + 4.0 = 82.65M<br>RAN 2.4 REC 2.4 |
| | | | | C0347 | 77.27 | 0.27 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay), good core - unbroken, occasional siderite, nodules;<br>PEN OFF SCALE |
| | | | | C0347 | 77.31 | 0.04 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay), good core - unbroken, sharp irregular base, beds dip at 20 degrees, common siderite, nodules;<br>SIDERTE REPLACING LARGE WOOD FRAGMENT |
| | | | | C0347 | 77.37 | 0.06 | | CLAY | Silty, light buff, firm, low plasticity (clay), good core - unbroken, sharp oblique base, beds dip at 30 degrees, common siderite, cement |
| | | | | C0348 | 78.90 | 1.53 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken, sharp planar base, beds dip at 00 degrees, common woody fragments;<br>PEN 10.6 TO OFF SCALE<br>ROOTS IN GROWTH POSITION |
| | | | | C0348 | 79.40 | 0.50 | | CLAY | Silty, light to medium grey, firm, high plasticity (clay), good core - unbroken;<br>PEN OFF SCALE |

END OF BORE AT 79.40 m

EL2080 LAUNCESTON C0082

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON C0116
**********

Easting: 493250.000
Northing: 5413250.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 160.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 81.00
Drilling Commenced: 05/11/83
Drilling Completed: 06/11/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Detail Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter: 100
Cased Depths: 3.0
Core Barrel: Triefus Triple Barrel

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON C0116

053

397162

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 1.00 | 1.00 | | CLAY | Kaolinitic, mottled yellow - off white, firm, high plasticity (clay). |
| | | | | R | 2.50 | 1.50 | | CLAY | Kaolinitic, light to medium grey, firm, high plasticity (clay). |
| | | | | R | 3.55 | 1.05 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | | | TOP OF SEAM LBO | | 3.55 | | | |
| | | LBO | | R | 3.62 | 0.07 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable. |
| | | LBO | | C | 3.95 | 0.33 | | CORE LOSS | |
| | | LBO | | C2930 | 4.13 | 0.18 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay), good core - unbroken. |
| | | LBO | | C2930 | 4.22 | 0.09 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic), good core - unbroken. |
| | | LBO | | C2930 | 4.48 | 0.26 | | LIGNEOUS CLAY and CLAY | Interbedded 80:20, LIGNEOUS CLAY: dark brown, firm, high plasticity (organic), good core - unbroken, sharp oblique base, beds dip at 00 degrees. CLAY: light to medium grey, firm, high plasticity (clay), good core - unbroken. |
| | | LBO | | C2930 | 4.55 | 0.07 | | CLAY | Light to medium grey, firm, high plasticity (clay), good core - unbroken, sharp irregular base. |
| | | LBO | | C2930 | 4.69 | 0.14 | | CLAY | Mottled brown, firm, high plasticity (clay), good core - unbroken. |
| | | LBO | | C2930 | 4.76 | 0.07 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken. CONTAINS MODERN DAY TREE ROOTS |
| | | LBO | | C2930 | 4.89 | 0.13 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic), good core - unbroken. |
| | | LBO | | C2930 | 4.92 | 0.03 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken. |

EL2080 LAUNCESTON C0116

Perth (09) 443 555 Adel (08) 297 1988 Bris (07) 262 9377 Mel (03) 544 1822 SYDNEY (02) 233 5466

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | C2930 | 4.97 | 0.05 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic), good core - unbroken. |
| | | LBO | | C2930 | 5.01 | 0.04 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LBO | | C2930 | 5.14 | 0.13 | | LIGNEOUS CLAY | Dark brown - black, firm, low plasticity (organic), good core - unbroken. |
| | | LBO | | C2930 | 5.17 | 0.03 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken. |
| | | LBO | 41 | C2931 | 5.25 | 0.08 | | LIGNITE | Clayey, dark brown, firm, friable, core crushed. |
| | | LBO | 41 | C2931 | 5.31 | 0.06 | | LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken, sharp irregular base, beds dip at 15 degrees. |
| | | LBO | 41 | C2931 | 5.34 | 0.03 | | LIGNITE | Clayey, dark black, firm, friable, good core - unbroken, subfissile. |
| | | LBO | 41 | C2931 | 5.45 | 0.11 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken. |
| | | LBO | 41 | C2931 | 5.50 | 0.05 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LBO | 41 | C2931 | 5.60 | 0.10 | | LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken. |
| | | LBO | 41 | C2931 | 5.71 | 0.11 | | LIGNITE | Clayey, dark brown, firm, slickensides on fracture, friable, sparse, oblique joints, angle of joints 40 degrees, good core - unbroken. |
| | | BASE OF WORKING SECTION 1 | | | 5.71 | 0.54 | | | |
| | | BASE OF WORKING SECTION 4 | | | 5.71 | 0.54 | | | |
| | | LBO | | C2932 | 5.89 | 0.18 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay), good core - unbroken, sharp oblique base, beds dip at 20 degrees. |
| | | LBO | | C2932 | 5.95 | 0.06 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken. |

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | C2932 | 6.07 | 0.12 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken, sharp planar base, beds dip at 00 degrees. |
| | | LBO | | C2932 | 6.13 | 0.06 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken, common ligneous wisps. |
| | | LBO | | C2932 | 6.23 | 0.10 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken. |
| | | LBO | 42 | C2933 | 6.59 | 0.36 | | LIGNITE | Clayey, dark brown, firm, coal cleat, friable, common, subvertical joints, vertical joints, good core - unbroken, occasional siderite, secondary, in cleat. |
| | | LBO | 42 | C2934 | 7.19 | 0.60 | | LIGNITE | Clayey, dark brown, firm, friable, core disaggregated; CRUSHES DISAGREGATED SAMPLE OBTAINED |
| | | | | | BASE OF WORKING SECTION 2 | 7.19 | 0.96 | | |
| | | | | | BASE OF WORKING SECTION 4 | 7.19 | 0.96 | | |
| | | LBO | | | 7.37 | 0.18 | | CORE LOSS | |
| | | LBO | | C2935 | 7.42 | 0.05 | | LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken. |
| | | LBO | | C2935 | 7.54 | 0.12 | | CLAY | Light to medium brown, firm, high plasticity (clay), good core - unbroken. |
| | | LBO | | C2935 | 7.64 | 0.10 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken. |
| | | LBO | | | 7.66 | 0.02 | | CORE LOSS | |
| | | LBO | 43 | C2936 | 7.79 | 0.13 | | LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken, sharp oblique base, beds dip at 10 degrees. |
| | | LBO | 43 | C2936 | 7.85 | 0.06 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken, sharp oblique base, beds dip at 10 degrees. |

EL2080 LAUNCESTON C0116

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT ZORC Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | 43 | C2936 | 7.90 | 0.05 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, sharp oblique base, beds dip at 10 degrees. |
| | | LBO | 43 | C2936 | 7.91 | 0.01 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic), good core - unbroken, sharp oblique base, beds dip at 10 degrees. |
| | | LBO | 43 | C2936 | 7.99 | 0.08 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic), good core - unbroken, sharp oblique base, beds dip at 10 degrees. |
| | | LBO | 43 | C2936 | 8.01 | 0.02 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken, sharp oblique base, beds dip at 10 degrees. |
| | | LBO | 43 | C2936 | 8.09 | 0.08 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, sharp oblique base, beds dip at 10 degrees. |
| | | LBO | 43 | C2936 | 8.13 | 0.04 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic), good core - unbroken, sharp oblique base, beds dip at 10 degrees. |
| | | LBO | 43 | C2936 | 8.15 | 0.02 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, sharp oblique base, beds dip at 10 degrees. |
| | | LBO | 43 | C2936 | 8.22 | 0.07 | | LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic), good core - unbroken, sharp oblique base, beds dip at 10 degrees. |
| | | LBO | 43 | C2936 | 8.39 | 0.17 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, sharp oblique base, beds dip at 10 degrees. |
| | | LBO | 43 | C2936 | 8.40 | 0.01 | | LIGNEOUS CLAY | Light to medium brown, firm, high plasticity (organic), good core - unbroken, sharp oblique base, beds dip at 10 degrees. |
| | | LBO | 43 | C2936 | 8.44 | 0.04 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, sharp oblique base, beds dip at 10 degrees. |
| | | LBO | 43 | C2936 | 8.46 | 0.02 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), good core - unbroken, sharp oblique base, beds dip at 10 degrees. |
| | | LBO | 43 | C2936 | 8.50 | 0.04 | | LIGNITE | Clayey, dark brown, firm, friable, good core - unbroken, sharp oblique base, beds dip at 10 degrees. |
| | | LBO | 43 | C2936 | 8.51 | 0.01 | | LIGNEOUS CLAY | Dark brown - grey, firm, high plasticity (organic), good core - unbroken, sharp oblique base, beds dip at 10 degrees. |
| | | LBO | 43 | C2936 | 8.61 | 0.10 | | LIGNITE | Clayey, dark brown - black, firm, friable, good core - unbroken, sharp oblique base, beds dip at 10 degrees. |

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WDK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF WORKING SECTION 3 | 8.41 | 0.95 | | |
| | | | | | BASE OF WORKING SECTION 4 | 8.41 | 0.95 | | |
| | LBO | | R | | 9.10 | 0.49 | | LIGNEOUS CLAY | Dark brown - grey, firm, high plasticity (organic). |
| | LBO | 51 | R | | 9.50 | 0.40 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | 9.50 | 0.40 | | |
| | | | | | BASE OF WORKING SECTION 5 | 9.50 | 0.40 | | |
| | LBO | | R | | 9.90 | 0.40 | | CLAY | Medium to dark grey - brown, firm, high plasticity (clay). |
| | LBO | 52 | | | 10.50 | 0.60 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic) |
| | | | | | BASE OF WORKING SECTION 2 | 10.50 | 0.60 | | |
| | | | | | BASE OF WORKING SECTION 5 | 10.50 | 0.60 | | |
| | LBO | | | | 11.00 | 0.50 | | CLAY | |
| | LBO | 61 | | | 12.00 | 1.00 | | LIGNITE and INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 70.15.15. LIGNITE: clayey, dark brown, firm, friable; INFERIOR LIGNITE: clayey, medium to dark brown - red, firm, friable; LIGNEOUS CLAY: dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | 12.00 | 1.00 | | |
| | LBO | 62 | | | 15.20 | 3.20 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 2 | 15.20 | 3.20 | | |



MULTISTRAT 4M Melb (03) 544 1899 Adel (08) 297 4 88 Perth (09) 443 1555 Bris (07) 263 3433 Syd (02) 53 077

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 , TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF WORKING SECTION 6 | 15.20 | 4.20 | | |
| | | LBO | | | 16.20 | 1.00 | | CLAY | Medium to dark grey - brown, firm, high plasticity (clay). |
| | | LBO | 7 | | 18.00 | 1.80 | | LIGNITE | Clayey, woody textured, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 7 | 18.00 | 1.80 | | |
| | | LBO | | | 20.30 | 2.30 | | CLAY | Medium to dark grey - brown, firm, high plasticity (clay). |
| | | LBO | 8 | | 21.40 | 1.10 | | LIGNITE | Clayey, woody textured, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 8 | 21.40 | 1.10 | | |
| | | LBO | | | 32.60 | 1.20 | | CLAY | Carbonaceous, medium to dark brown - grey, firm, high plasticity (clay) |
| | | LBO | 9 | | 23.20 | 0.60 | | INFERIOR LIGNITE | Clayey, woody textured, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 9 | 23.20 | 0.60 | | |
| | | | | | BASE OF SEAM LBO | 23.20 | 19.65 | | |
| | | | | | 27.80 | 4.60 | | CLAY | Silty, micaceous, light to medium brown, firm, high plasticity (clay) |
| | | | | | 28.40 | 0.60 | | SIDERITE | Light to medium brown, high strength, brittle |
| | | | | | 43.10 | 14.70 | | CLAY | Silty, light to medium brown, firm, high plasticity (clay) |
| | | | | | TOP OF SEAM LDO | 43.10 | | | |
| | | LDO | H1 | | 44.20 | 1.10 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable. |



MULTIFOTO Melb (03) 263 5433 Bris (07) 844 1193 Adel (08) 297 4 30 Perth (09) 443 1555

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF WORKING SECTION 1 | | | 44.20 | 1.10 |
| | | | | | BASE OF WORKING SECTION H | | | 44.20 | 1.10 |
| | | LDO | | | 44.70 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | H2 | | 45.20 | 0.50 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 2 | | | 45.20 | 0.50 |
| | | | | | BASE OF WORKING SECTION H | | | 45.20 | 0.50 |
| | | LDO | | | 46.20 | 1.00 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | | | 47.50 | 1.30 | | CLAY | Ligneous, medium to dark brown, firm, high plasticity (clay). |
| | | LDO | I | | 49.20 | 1.70 | | INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 70:30 INFERIOR LIGNITE: clayey, dark brown, firm, high plasticity (organic). LIGNEOUS CLAY: dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION I | | | 49.20 | 1.70 |
| | | LDO | | | 51.00 | 1.80 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | J1 | | 51.60 | 0.60 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | LDO | J1 | | 52.10 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | J1 | | 52.70 | 0.60 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | LDO | J1 | | 53.40 | 0.70 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | | | 53.40 | 2.40 |

EL2080 LAUNCESTON C0116

Perth (09) 443 1555 Adel (08) 29 4788 Mel (03) 544 699 Syd (02) 53 0771 Bri (07) 263 3433

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 20RC
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | J2 | | 54.30 | 0.90 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION J2 | 54.30 | 0.90 | | |
| | | | | | BASE OF WORKING SECTION J | 54.30 | 3.30 | | |
| | | LDO | | | 55.20 | 0.90 | | CLAY | Lignenous, medium to dark brown, firm, high plasticity (organic). |
| | | LDO | | | 55.60 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | | | 56.40 | 0.80 | | CLAY | Lignenous, medium to dark brown, firm, high plasticity (organic). |
| | | LDO | | | 57.10 | 0.70 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable. |
| | | LDO | | | 57.80 | 0.70 | | CLAY | Lignenous, medium to dark brown, firm, high plasticity (organic). |
| | | LDO | K | | 59.80 | 2.00 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | LDO | K | | 60.90 | 1.10 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | K | | 61.90 | 1.00 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION K | 61.90 | 4.10 | | |
| | | LDO | | | 65.80 | 3.90 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | L | | 66.70 | 0.90 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (clay). |
| | | | | | BASE OF WORKING SECTION L | 66.70 | 0.90 | | |
| | | LDO | | | 67.60 | 0.90 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | M | | 68.90 | 1.30 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | LDO | M | | 69.40 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | M | | 70.00 | 0.60 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION M | | | 70.00 | 2.40 |
| | | LDO | | | 70.60 | 0.60 | | CLAYSTONE | Indurated, light brown, low strength, brittle. |
| | | LDO | | | 73.80 | 3.20 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | N | | 75.10 | 1.30 | | LIGNEOUS CLAY | Dark brown, extremely high strength, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION N | | | 75.10 | 1.30 |
| | | LDO | | | 75.80 | 0.70 | | CLAY | Ligneous, medium to dark brown, firm, high plasticity (clay). |
| | | LDO | O | | 77.00 | 1.20 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION O | | | 77.00 | 1.20 |
| | | LDO | | | 77.80 | 0.80 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | P | | 79.60 | 1.80 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION P | | | 79.60 | 1.80 |
| | | LDO | | | 81.00 | 1.40 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | | | | BASE OF SEAM LDO | | | 81.00 | 37.90 |

END OF BORE AT 81.00 m

EL2080 LAUNCESTON C0116

Brls (07) 263 3433 Syd (02) 3 0771 Melb (03) 544 1899 Adel (08) 297 4788 Perth (09) 443 1555

062

397171

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0096
**********

Easting: 492320.000
Northing: 5414715.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 168.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 60.00
Drilling Commenced: 17/10/83
Drilling Completed: 17/10/83
Inclination:
Azimuth:
Standing Water Level: 3.0

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: BROADLEY
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter:
Core Diameter: 150
Cased Depths: 3.0
Core Barrel:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Drill Bits: Blades
Percussion
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0096

Brs (0) 263 3433 Syd (02) 53 0 71 Meth (0) 544 395 Adel (08) 297 4780 Perth (09) 442 1555

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.50 | 0.50 | | SOIL | Clayey, medium to dark brown - black, very soft, puggy. |
| | | | | R | 3.20 | 2.70 | | CLAY | Off white - brown, very soft, high plasticity. |
| | | | | | TOP OF SEAM LBO | | | 3.20 | |
| | | LBO | 7 | R | 3.60 | 0.40 | | INFERIOR LIGNITE | |
| | | | | | BASE OF WORKING SECTION 7 | | | 3.60 | 0.40 |
| | | LBO | | R | 5.80 | 2.20 | | CLAY | Off white - brown, very soft, high plasticity. |
| | | LBO | 8 | R | 7.60 | 1.80 | | LIGNITE | |
| | | | | | BASE OF WORKING SECTION 8 | | | 7.60 | 1.80 |
| | | LBO | 9 | R | 10.40 | 2.80 | | INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 60:40 INFERIOR LIGNITE; LIGNEOUS CLAY; occasional woody fragments. |
| | | | | | BASE OF WORKING SECTION 9 | | | 10.40 | 2.80 |
| | | | | | BASE OF SEAM LBO | | | 10.40 | 7.20 |
| | | | | R | 12.50 | 2.10 | | CLAY | Sandy, light to medium brown - grey, very soft, puggy, occasional woody fragments. |
| | | | | R | 18.00 | 5.50 | | CLAY | Light to medium brown - grey, very soft, high plasticity, occasional woody fragments. |
| | | | | | TOP OF SEAM LDO | | | 18.00 | |
| | | LDO | H1 | R | 18.90 | 0.90 | | LIGNITE | |
| | | | | | BASE OF WORKING SECTION 1 | | | 18.90 | 0.90 |



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397173

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | H2 | R | 19.80 | 0.90 | | LIGNITE | |
| | | | | | BASE OF WORKING SECTION 2 | 19.80 | 0.90 | | |
| | | | | | BASE OF WORKING SECTION H | 19.80 | 1.80 | | |
| | | LDO | | R | 20.50 | 0.70 | | CLAY | Medium to dark brown, very soft, high plasticity. |
| | | LDO | I | R | 21.70 | 1.20 | | INFERIOR LIGNITE | |
| | | | | | BASE OF WORKING SECTION I | 21.70 | 1.20 | | |
| | | LDO | | R | 22.40 | 0.70 | | LIGNEOUS CLAY | Medium to dark brown - black, very soft, puggy. |
| | | LDO | J1 | R | 24.15 | 1.75 | | LIGNITE and LIGNEOUS CLAY | Interbedded 80:20, LIGNITE; |
| | | | | | BASE OF WORKING SECTION 1 | 24.15 | 1.75 | | |
| | | LDO | J2 | R | 25.90 | 1.75 | | LIGNITE and LIGNEOUS CLAY | Interbedded 80:20, LIGNITE; |
| | | | | | BASE OF WORKING SECTION 2 | 25.90 | 1.75 | | |
| | | | | | BASE OF WORKING SECTION J | 25.90 | 3.50 | | |
| | | LDO | K | R | 26.40 | 0.50 | | INFERIOR LIGNITE | Clayey. |
| | | LDO | K | R | 27.65 | 1.25 | | LIGNITE and LIGNEOUS CLAY | Interbedded 80:20, LIGNITE; clayey; |
| | | LDO | K | R | 28.80 | 1.15 | | INFERIOR LIGNITE and CLAY | Interbedded 60:40, INFERIOR LIGNITE; CLAY; ligneous, medium to dark brown - black, very soft, puggy. |

EL2080 LAUNCESTON R0096

Brisbane 4M LISTING Brisbane 07 253 1433 Sydney 02 1 53 077 Melb (03) 544 1899 Adel (08) 297 4788 Perth (09) 443 1555

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF WORKING SECTION K | | | 28.80 | 2.90 |
| | | LDO | | R | 29.60 | 0.80 | | CLAY | Medium to dark brown, very soft, puggy. |
| | | LDO | L | R | 30.10 | 0.50 | | INFERIOR LIGNITE | Clayey |
| | | | | | BASE OF WORKING SECTION L | | | 30.10 | 0.50 |
| | | LDO | | R | 30.50 | 0.40 | | LIGNEOUS CLAY | |
| | | LDO | M | R | 31.00 | 0.50 | | INFERIOR LIGNITE | Clayey |
| | | | | | BASE OF WORKING SECTION M | | | 31.00 | 0.50 |
| | | | | | BASE OF SEAM LDO | | | 31.00 | 13.00 |
| | | | | R | 33.00 | 2.00 | | CLAY | Light brown - grey, stiff, puggy |
| | | | | R | 36.00 | 3.00 | | CLAY | Light grey - blue, stiff, high plasticity, common woody fragments. |
| | | | | R | 36.40 | 0.40 | | INFERIOR LIGNITE | Clayey |
| | | | | R | 41.50 | 5.10 | | CLAY and INFERIOR LIGNITE | Interbedded 70:30. CLAY: light to medium brown, stiff, puggy. |
| | | | | R | 54.60 | 13.10 | | CLAY | Light grey - blue, stiff, high plasticity |
| | | | | R | 56.80 | 2.20 | | DOLERITE | Light to medium blue - grey, highly weathered, moderate strength, brittle, common woody fragments. |
| | | | | R | 60.00 | 3.20 | | DOLERITE | Light to medium blue - grey, high strength, tough. |

END OF BORE AT 60.00 m

EL2080 LAUNCESTON R0096

Perth (09) 443 1555

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0097
**********

Easting: 492510.000
Northing: 5414530.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 165.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth:
Drilling Commenced: 02/10/83
Drilling Completed: 04/10/83
Inclination:
Azimuth:
Standing Water Level:

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 6.0
Core Barrel:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Drill Bits: Blades
Rollers
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0097

Perth (09) 443 1555 Adel (08) 297 4798 Melb (03) 544 1899 Brs (01) 2[illegible]433 Svd 02/ 3 0771

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.30 | 0.30 | | SILT | Sandy, clayey, light to medium brown, weathered, firm, puggy |
| | | | | R | 2.00 | 1.70 | | CLAY | Sandy, light to medium brown - yellow, weathered, firm, high plasticity (clay) |
| | | | | R | 6.00 | 4.00 | | BASALT | Light to medium brown - grey, weathered, extremely high strength, tough |
| | | | | R | 7.80 | 1.80 | | CLAY | Kaolinitic, mottled yellow - off white, weathered, firm, high plasticity (clay) |
| | | | | R | 9.50 | 1.70 | | CLAY | Kaolinitic, mottled off white - yellow, weathered, firm, high plasticity (clay) |
| | | | | R | 14.40 | 4.90 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). Bands include: CLAY, light to medium grey, firm, high plasticity (clay) |
| | | | | R | 16.10 | 1.70 | | CLAY | Silty, sandy, light to medium grey, firm, high plasticity (clay), fine and medium grained |
| | | | | R | 23.80 | 7.70 | | CLAY | Silty, light to medium grey, firm, high plasticity (clay) |
| | | | | R | 27.00 | 3.20 | | CLAYSTONE | Indurated, light to medium grey, low strength, brittle |
| | | | | R | 29.20 | 2.20 | | CLAY and CLAYSTONE | Interbedded 60:40. CLAY: silty, sandy, light to medium grey - green, firm, low plasticity (clay), occasional woody fragments; CLAYSTONE: indurated, sandy, light to medium grey - green, low strength, brittle, occasional woody fragments |
| | | | | | TOP OF SEAM LBO | | | 29.20 | |
| | | LBO | 51 | R | 30.00 | 0.80 | | CLAY | Ligneous, light to medium brown, firm, high plasticity (clay) |
| | | | | | BASE OF WORKING SECTION 1 | | | 30.00 | 0.80 |
| | | | | | BASE OF WORKING SECTION 5 | | | 30.00 | 0.80 |

EL2080 LAUNCESTON R0097

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | R | 31.10 | 1.10 | | CLAY | Light to medium grey, firm, high plasticity (clay). |
| | | LBO | 52 | R | 32.00 | 0.90 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | | | BASE OF WORKING SECTION 2 | 32.00 | | 0.90 | |
| | | | | | BASE OF WORKING SECTION 5 | 32.00 | | 0.90 | |
| | | LBO | | R | 32.40 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LBO | 53 | R | 32.70 | 0.30 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | | | BASE OF WORKING SECTION 3 | 32.70 | | 0.30 | |
| | | | | | BASE OF WORKING SECTION 5 | 32.70 | | 0.30 | |
| | | LBO | | R | 33.20 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LBO | 6 | R | 33.80 | 0.60 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | LBO | 6 | R | 34.80 | 1.00 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LBO | 6 | R | 35.80 | 1.00 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | | | BASE OF WORKING SECTION 6 | 35.80 | | 2.60 | |
| | | LBO | | R | 37.00 | 1.20 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | LBO | 7 | R | 37.80 | 0.80 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | LBO | 7 | R | 38.30 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | LBO | 7 | R | 38.70 | 0.40 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | | | BASE OF WORKING SECTION 7 | 38.70 | | 1.70 | |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF SEAM LDO | 38.70 | 9.50 | | |
| | | | | R | 43.30 | 4.60 | | CLAY and CLAY | Interbedded 70:30 CLAY: lignEous, medium to dark brown - grey, firm, high plasticity (clay). CLAY: light to medium brown - grey, firm, high plasticity (clay). |
| | | | | R | 49.40 | 6.10 | | CLAY | Light grey, firm, high plasticity (clay) |
| | | | | | TOP OF SEAM LDO | 49.40 | | | |
| | LDO | H1 | R | | 50.80 | 1.40 | | LIGNITE | Clayey, dark brown - black, firm, friable |
| | | | | | BASE OF WORKING SECTION 1 | 50.80 | 1.40 | | |
| | LDO | H2 | R | | 52.20 | 1.40 | | LIGNITE | Clayey, dark brown - black, firm, friable |
| | | | | | BASE OF WORKING SECTION 2 | 52.20 | 1.40 | | |
| | | | | | BASE OF WORKING SECTION H | 52.20 | 2.80 | | |
| | LDO | | R | | 53.40 | 1.20 | | CLAY | Silty, light grey, firm, high plasticity (clay) |
| | LDO | | R | | 54.30 | 0.90 | | LIGNEOUS CLAY | Silty, dark brown, firm, high plasticity (organic) |
| | LDO | | R | | 55.10 | 0.80 | | CLAY | Silty, light grey, firm, high plasticity (clay) |
| | LDO | I | R | | 57.30 | 2.20 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). Bands include: CLAY, light to medium grey - brown, firm, high plasticity (clay) |
| | | | | | BASE OF WORKING SECTION I | 57.30 | 2.20 | | |
| | LDO | | R | | 57.80 | 0.50 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) |



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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | J1 | R | 60.60 | 2.80 | | LIGNITE and INFERIOR LIGNITE | Interbedded 70:30, LIGNITE: clayey, dark brown - black, firm, friable;<br>INFERIOR LIGNITE: clayey, dark brown - black, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | 60.60 | 2.80 | | |
| | | LDO | J2 | R | 63.20 | 2.60 | | LIGNITE and INFERIOR LIGNITE | Interbedded 70:30, LIGNITE: clayey, dark brown - black, firm, friable;<br>INFERIOR LIGNITE: clayey, dark brown - black, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 2 | 63.20 | 2.60 | | |
| | | | | | BASE OF WORKING SECTION J | 63.20 | 5.40 | | |
| | | LDO | | R | 64.00 | 0.80 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | K | R | 66.10 | 2.10 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | LDO | K | R | 66.60 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | K | R | 67.50 | 0.90 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | | | BASE OF WORKING SECTION K | 67.50 | 3.50 | | |
| | | LDO | | R | 69.00 | 1.50 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | LDO | L | R | 69.50 | 0.50 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | | | BASE OF WORKING SECTION L | 69.50 | 0.50 | | |
| | | LDO | | R | 70.50 | 1.00 | | LIGNEOUS CLAY | |

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | M | R | 71.00 | 0.50 | | LIGNITE and INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 50:40:10 LIGNITE: clayey, dark brown - black, firm, friable; INFERIOR LIGNITE: clayey, dark brown - black, firm, low plasticity (organic); LIGNEOUS CLAY: dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION M | | | 71.00 | 0.50 |
| | | | | | BASE OF SEAM LDO | | | 71.00 | 21.60 |
| | | | | R | 80.00 | 9.00 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). Bands include: LIGNEOUS CLAY, dark brown, firm, low plasticity (organic). |

END OF BORE AT 80.00 m

EL2080 LAUNCESTON R0097

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0098
**********

Easting: 492730.000
Northing: 5414550.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 158.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 80.60
Drilling Commenced: 17/10/83
Drilling Completed: 18/10/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Detail Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0098

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.30 | 0.30 | | SAND | Silty, clayey, light to medium brown, weathered, firm, fuggy. |
| | | | | R | 1.00 | 0.70 | | CLAY | Silty, sandy, light to medium brown - yellow, weathered, firm, low plasticity (clay), fine and medium grained. |
| | | | | R | 6.20 | 5.20 | | CLAY | Kaolinitic, mottled off white - yellow, weathered, firm, high plasticity (clay). |
| | | | | R | 7.50 | 1.30 | | CLAY | Silty, light to medium brown - yellow, weathered, firm, high plasticity (clay) |
| | | | | R | 8.40 | 0.90 | | SIDERITE | Light brown - grey, high strength, brittle; |
| | | | | | | | | | CLAY BALLING, POOR SAMPLE RETURN |
| | | | | | | | | | 10 TO 13 METRES |
| | | | | R | 12.00 | 3.60 | | CLAY | Sandy, quartzose, light to medium grey, firm, low plasticity (clay), medium grained; |
| | | | | | | | | | SLAKES AND DISPERSES |
| | | | | R | 14.20 | 2.20 | | CLAY | Silty, light to medium grey - brown, firm, low plasticity (clay) |
| | | | | R | 14.80 | 0.60 | | SIDERITE | Light brown - grey, high strength, brittle. |
| | | | | R | 21.20 | 6.40 | | CLAY | Silty, light to medium grey - brown, firm, low plasticity (clay). |
| | | | | | TOP OF SEAM LDO | | 21.20 | | |
| | LDO | H1 | | R | 22.70 | 1.50 | | LIGNITE | Clayey, dark black - brown, firm, friable; Bands include: LIGNEOUS CLAY, dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | | 22.70 | 1.50 | |
| | LDO | H2 | | R | 24.20 | 1.50 | | LIGNITE | Clayey, dark black - brown, firm, friable; Bands include: LIGNEOUS CLAY, dark brown, firm, high plasticity (organic) |



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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF WORKING SECTION 2 | | | 24.20 | 1.50 |
| | | | | | BASE OF WORKING SECTION H | | | 24.20 | 3.00 |
| | | LDO | | R | 25.30 | 1.10 | | CLAY | Medium to dark brown, firm, high plasticity (clay). |
| | | LDO | I | R | 26.10 | 0.80 | | LIGNITE | Clayey, dark black - brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION I | | | 26.10 | 0.80 |
| | | LDO | | R | 26.70 | 0.60 | | CLAY | Medium to dark brown, firm, high plasticity (clay). |
| | | LDO | | R | 27.30 | 0.60 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | | R | 28.00 | 0.70 | | CLAY | Medium to dark brown, firm, high plasticity (clay). |
| | | LDO | | R | 28.30 | 0.30 | | LIGNEOUS CLAY | Dark brown. |
| | | LDO | | R | 28.40 | 0.10 | | CLAY | Medium to dark brown, firm, high plasticity (clay). |
| | | LDO | | R | 28.60 | 0.20 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | LDO | J1 | R | 29.00 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | J1 | R | 29.80 | 0.80 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | LDO | J1 | R | 30.20 | 0.40 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | LDO | J1 | R | 30.40 | 0.20 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | LDO | J1 | R | 31.00 | 0.60 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | LDO | J1 | R | 31.30 | 0.30 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | | | 31.30 | 2.70 |
| | | LDO | J2 | R | 31.70 | 0.40 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |

EL2080 LAUNCESTON R0098

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | J2 | R | 32.90 | 1.20 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | LDO | J2 | R | 33.40 | 0.50 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | LDO | J2 | R | 34.80 | 1.40 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic); Bands include: LIGNEOUS CLAY, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 2 | | | 34.80 | 3.50 |
| | | | | | BASE OF WORKING SECTION J | | | 34.80 | 6.20 |
| | | LDO | | R | 35.40 | 0.60 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | K | R | 37.20 | 1.80 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | LDO | K | R | 38.00 | 0.80 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | LDO | K | R | 39.20 | 1.20 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION K | | | 39.20 | 3.80 |
| | | LDO | | R | 41.00 | 1.80 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | L | R | 41.60 | 0.60 | | LIGNITE | Clayey, dark black - brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION L | | | 41.60 | 0.60 |
| | | LDO | M | R | 42.20 | 0.60 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | LDO | M | R | 43.20 | 1.00 | | LIGNITE | Clayey, dark black - brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION M | | | 43.20 | 1.60 |
| | | LDO | | R | 46.40 | 3.20 | | CLAY | Light to medium brown, firm, high plasticity (clay). |

EL2080 LAUNCESTON R0098

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397185

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | N | R | 47.80 | 1.40 | | INFERIOR LIGNITE | Clayey, dark black - brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION N | 47.80 | 1.40 | | |
| | | LDO | | R | 49.80 | 2.00 | | CLAY | Carbonaceous, light to medium brown, firm, high plasticity (clay), occasional ligneous wisps. |
| | | LDO | O | R | 50.40 | 0.60 | | INFERIOR LIGNITE | Clayey, dark black - brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION O | 50.40 | 0.60 | | |
| | | LDO | | R | 51.10 | 0.70 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | P | R | 51.40 | 0.30 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | LDO | P | R | 51.80 | 0.40 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | P | R | 52.70 | 0.90 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic). |
| | | LDO | P | R | 53.20 | 0.50 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | P | R | 53.90 | 0.70 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION P | 53.90 | 2.80 | | |
| | | LDO | | R | 54.30 | 0.40 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | | R | 55.10 | 0.80 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | LDO | | R | 58.40 | 3.30 | | CLAY | Ligneous, silty, light to medium brown, firm, high plasticity (clay). |
| | | LDO | | R | 58.60 | 0.20 | | SIDERITE | Light brown - grey, moderate strength, brittle. |
| | | LDO | | R | 59.60 | 1.00 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | R | R | 60.00 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION R | 60.00 | 0.40 | | |

EL2080 LAUNCESTON R0098

MULTISTREAM LISTING Bris (07) 263 3433 Syd (02) 510 0771 Melb (03) 544 1899 Adel (08) 297 4788 Perth (09) 443 1556

077

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF SEAM LDO | | 60 00 | 38 80 | |
| | | | R | | 63 55 | 3 55 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | | | | TOP OF SEAM MAQ | | 63 55 | | |
| | | MAQ | R | | 69 40 | 5 85 | | SAND | Clayey, quartzose, light to medium grey, low strength, friable, fine and medium grained.<br>Bands include: CLAY, sandy, light to medium grey, firm, low plasticity (clay) |
| | | MAQ | R | | 70 00 | 0 60 | | CLAY | Sandy, light to medium grey, firm, low plasticity (clay). |
| | | MAQ | R | | 74 80 | 4 80 | | SAND | Clayey, quartzose, light to medium grey, low strength, friable, fine and medium grained |
| | | MAQ | R | | 79 00 | 4 20 | | SAND | Clayey, quartzo-feldspathic, light to medium grey - cream, low strength, friable, fine and medium grained. |
| | | | | | BASE OF SEAM MAQ | | 79 00 | 15 45 | |
| | | | R | | 80 60 | 1 60 | | CLAY | Light to medium grey, firm, high plasticity (clay) |
| | | | | | END OF BORE AT | | 80 60 m | | |

EL2080 LAUNCESTON R0098

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0099
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Easting: 493010.000
Northing: 5414480.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 157.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 60.00
Drilling Commenced: 17/10/83
Drilling Completed: 17/10/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Density Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0099

MULTISPEAV ... Brs (071) 3 3433 ... Melb (03) 544 1899 Adel (08) 297 4788 Perth (09) 447 1555

397188

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.50 | 0.50 | | SAND | Quartzose, light to medium buff - yellow, low strength, non-plastic, fine and medium grained. |
| | | | | R | 0.70 | 0.20 | | COLLUVIUM | Clayey, light to medium brown - yellow, low strength, non-plastic, coarse to very coarse grained. |
| | | | | R | 2.00 | 1.30 | | CLAY | Sandy, quartzose, light to medium yellow - buff, firm, low plasticity (clay), fine and medium grained. |
| | | | | R | 3.50 | 1.50 | | CLAY | Mottled grey - brown, firm, high plasticity (clay). |
| | | | | R | 3.70 | 0.20 | | LIGNITE | Dark brown - black, firm, friable. |
| | | | | R | 10.00 | 6.30 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay), common ligneous wisps;<br>Bands include: CLAY, light to medium grey - brown, firm, high plasticity (clay). |
| | | | | R | 10.40 | 0.40 | | LIGNEOUS CLAY | Dark brown - black, firm, low plasticity (organic). |
| | | | | R | 12.00 | 1.60 | | CLAY | Silty, sandy, light to medium grey, firm, low plasticity (clay), fine and medium grained, fining upwards;<br>SANDY TOWARDS BASE |
| | | | | R | 15.00 | 3.00 | | SAND | Clayey, quartzose, light to medium grey - cream, low strength, friable, fine and medium grained, abundant woody fragments. |
| | | | | R | 16.70 | 1.70 | | SAND | Clayey, quartzose, light to medium grey - cream, low strength, friable, occasional woody fragments. |
| | | | | R | 34.00 | 17.30 | | SAND | Clayey, quartzose, light to medium grey - cream, low strength, friable, fine and medium grained, abundant woody fragments;<br>Bands include: SAND, clayey, quartzose, light to medium grey - cream, low strength, friable, fine and medium grained. |
| | | | | R | 43.00 | 9.00 | | SAND | Clayey, quartzose, light to medium grey - cream, low strength, friable, fine and medium grained, occasional woody fragments;<br>Bands include: CLAY, silty, light to medium grey, soft, low plasticity (clay). |

EL2080 LAUNCESTON R0099

MULTISTREAM LISTING Bris:(07)263.3423 Syd.(02)53 0733 Web.303 Adel(08)297 4788 Perth.(09)443 1555 2780 CPerth(09)463 1555

68176

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 45.00 | 2.00 | | SAND | Clayey, quartzose, light to medium grey, low strength, friable, medium and coarse grained. |
| | | | | R | 59.60 | 14.60 | | SAND | Clayey, quartzose, light to medium grey, low strength, friable. |
| | | | | R | 60.00 | 0.40 | | SIDERITE | Light to medium brown, moderate strength, brittle; |
| | | | | | | | | | ALL WOOD FRAGMENTS SLIGHTLY |
| | | | | | | | | | GELLIFED-GELLIFICATION INDEX 1<br>WOOD IS FIBROUS<br>HOLE GEOPHYSICALLY LOGGED TO<br>20 METRES |

END OF BORE AT 60.00 m

EL2080 LAUNCESTON R0099

Mail Stat M ... Perth (09) 443 1555 Adel (08) 297 4788 Syd (02) 53 0771 Mel (03) 544 899

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397190

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0100
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Easting: 492450.000
Northing: 5413750.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 212.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 60.00
Drilling Commenced: 21/10/83
Drilling Completed: 23/10/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: BROADLEY
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 16.5
Core Barrel:

Drill Bits: Blades
Percussion
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0100

397191

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.30 | 0.30 | | SOIL | Dark brown - black, weathered, very soft, friable. |
| | | | | R | 4.50 | 4.20 | | BASALT | Weathered;<br>BROKEN BASALT |
| | | | | R | 16.45 | 11.95 | | BASALT | Fresh;<br>BASALT, BROKEN NEAR BASE |
| | | | | | TOP OF SEAM LBO | | 16.45 | | |
| | LBO | 5 | | R | 17.30 | 0.85 | | INFERIOR LIGNITE | |
| | | | | | BASE OF WORKING SECTION 5 | | 17.30 | 0.85 | |
| | LBO | | | R | 26.60 | 9.30 | | CLAY | Light to medium grey - brown, very soft, high plasticity. |
| | LBO | 7 | | R | 28.10 | 1.50 | | LIGNITE | Very soft, low plasticity. |
| | | | | | BASE OF WORKING SECTION 7 | | 28.10 | 1.50 | |
| | LBO | | | R | 29.90 | 1.80 | | CLAY | Medium to dark brown, very soft, high plasticity. |
| | LBO | 8 | | R | 30.80 | 0.90 | | LIGNITE | Very soft, low plasticity. |
| | LBO | 8 | | R | 31.50 | 0.70 | | CLAY | Medium to dark brown - grey, very soft, high plasticity. |
| | LBO | 8 | | R | 32.60 | 1.10 | | LIGNITE | Very soft, low plasticity. |
| | | | | | BASE OF WORKING SECTION 8 | | 32.60 | 2.70 | |
| | LBO | | | R | 33.40 | 0.80 | | CLAY | Lithic, dark brown, very soft, puggy. |
| | LBO | 9 | | R | 34.50 | 1.10 | | INFERIOR LIGNITE | Dark brown - black, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION 9 | | 34.50 | 1.10 | |
| | | | | | BASE OF SEAM LBO | | 34.50 | 18.05 | |

EL2080 LAUNCESTON R0100

Perth (08) 443 1555 Adel (08) 297 4188 Bris (07) 252 3423 Syd (02) 544 399 Mel
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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 43.50 | 9.00 | | CLAY | Light to medium brown - grey, very soft, high plasticity |
| | | | | | TOP OF SEAM LDO | | | 43.50 | |
| | | LDO | J1 | R | 44.65 | 1.15 | | LIGNITE | Very soft, low plasticity |
| | | | | | BASE OF WORKING SECTION 1 | | | 44.65 | 1.15 |
| | | | | | BASE OF WORKING SECTION J | | | 44.65 | 1.15 |
| | | LDO | | R | 45.90 | 1.25 | | CLAY | Medium to dark brown, very soft, puggy |
| | | LDO | J2 | R | 48.00 | 2.10 | | LIGNITE | Low plasticity |
| | | | | | BASE OF WORKING SECTION 2 | | | 48.00 | 2.10 |
| | | | | | BASE OF WORKING SECTION J | | | 48.00 | 2.10 |
| | | LDO | | R | 48.80 | 0.80 | | CLAY | Lithic, dark brown, very soft, puggy |
| | | LDO | K | R | 50.00 | 1.20 | | LIGNITE | |
| | | LDO | K | R | 50.45 | 0.45 | | CLAY | Lithic, dark brown, very soft, puggy |
| | | LDO | K | R | 51.20 | 0.75 | | LIGNITE | SLIGHTLY INFERIOR |
| | | | | | BASE OF WORKING SECTION K | | | 51.20 | 2.40 |
| | | LDO | | R | 52.60 | 1.40 | | CLAY | Light to medium brown - grey, very soft, puggy |
| | | LDO | L | R | 53.50 | 0.90 | | LIGNEOUS CLAY | Dark brown, very soft, puggy |
| | | | | | BASE OF WORKING SECTION L | | | 53.50 | 0.90 |

EL2080 LAUNCESTON R0100

Perth (09) 443 1555

397193

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | R | 54.20 | 0.70 | | CLAY | Medium to dark brown - grey, very soft, low plasticity |
| | | LDO | M | R | 54.80 | 0.60 | | LIGNEOUS CLAY | Dark brown, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION M | | | 54.80 | 0.60 |
| | | | | | BASE OF SEAM LDO | | | 54.80 | 11.30 |
| | | | | R | 60.00 | 5.20 | | CLAY | Medium to dark grey - brown, very soft, puggy. |
| | | | | | | | | | LOG COMPILED FROM GEOPHYSICAL DENSITY LOG |
| | | | | | | | | | POOR CIRCULATION RESULTED DUE TO BAD SEATING OF |
| | | | | | | | | | CASING THROUGH BASALT. HOLE TERMINATED AT 60.00 M |
| | | | | | | | | | DUE TO EXCESSIVE WATER LOSS |

END OF BORE AT 60.00 m

EL2080 LAUNCESTON R0100

AUSTEAM DRILLING Bris (07) 253 3433 Syd (02) 53 0 7 Mel (03) 544 1899 Adel (08) 297 4786 Perth (09) 443 1555

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397194

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0101
**********

Easting: 492750.000
Northing: 5413780.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 185.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 87.00
Drilling Commenced: 30/10/83
Drilling Completed: 31/10/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: BROADLEY
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 6.0
Core Barrel:

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0101

397195

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT SCBC
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.30 | 0.30 | | SOIL | Clayey, medium to dark brown, very soft, friable. |
| | | | | R | 0.70 | 0.40 | | CLAY | Light grey - off white, very soft, high plasticity |
| | | | | R | 2.00 | 1.30 | | CLAY | Medium to dark brown - red, very soft, high plasticity |
| | | | | R | 3.20 | 1.20 | | CLAY | Light grey - off white, very soft, high plasticity. |
| | | | | R | 5.30 | 2.10 | | CLAY | Light grey, very soft, high plasticity. |
| | | | | R | 6.40 | 1.10 | | CLAY | Light brown, very soft, high plasticity. |
| | | | | R | 6.70 | 0.30 | | CLAY | Carbonaceous, dark grey - brown, very soft, puggy. |
| | | | | R | 7.50 | 0.80 | | CLAY | Light brown, very soft, high plasticity. |
| | | | | R | 11.50 | 4.00 | | CLAY | Light to medium grey, very soft, high plasticity. |
| | | | | R | 22.60 | 11.10 | | CLAY | Light grey, very soft, high plasticity.<br>WOOD FRAGMENTS AT 22.00M |
| | | | | | TOP OF SEAM LBO | | | 22.60 | |
| | LBO | 41 | | R | 23.10 | 0.50 | | INFERIOR LIGNITE | Clayey, dark brown - black, very soft, puggy |
| | | | | | BASE OF WORKING SECTION 1 | | | 23.10 | 0.50 |
| | | | | | BASE OF WORKING SECTION 4 | | | 23.10 | 0.50 |
| | LBO | | | R | 25.10 | 2.00 | | CLAY | Medium to dark brown, very soft, puggy. |
| | LBO | 42 | | R | 25.90 | 0.80 | | LIGNEOUS CLAY | Dark brown, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION 2 | | | 25.90 | 0.80 |
| | | | | | BASE OF WORKING SECTION 4 | | | 25.90 | 0.80 |

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Mutch Pty Ltd 3 Kings Park Rd West Perth (09) 443 1555 Adel (08) 297 4788
103 44 1839 Bris (07) 251 3423 Syd (02) 53 07

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 , TENEMENT [illegible]
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WDK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | R | 26.40 | 0.50 | | CLAY | Medium to dark brown, very soft, puggy. |
| | | LBO | 43 | R | 27.20 | 0.80 | | LIGNEOUS CLAY | Dark brown, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION 3 | 27.20 | 0.80 | | |
| | | | | | BASE OF WORKING SECTION 4 | 27.20 | 0.80 | | |
| | | LBO | | R | 27.90 | 0.70 | | CLAY | Light to medium brown - grey, very soft, low plasticity. |
| | | LBO | 52 | R | 30.10 | 2.20 | | LIGNEOUS CLAY | Medium to dark brown, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION 2 | 30.10 | 2.20 | | |
| | | | | | BASE OF WORKING SECTION 5 | 30.10 | 2.20 | | |
| | | LBO | | R | 30.40 | 0.30 | | CLAY | |
| | | LBO | 53 | R | 30.70 | 0.30 | | INFERIOR LIGNITE | |
| | | | | | BASE OF WORKING SECTION 3 | 30.70 | 0.30 | | |
| | | | | | BASE OF WORKING SECTION 5 | 30.70 | 0.30 | | |
| | | LBO | | R | 31.20 | 0.40 | | CLAY | Light to medium brown - grey, very soft, low plasticity. |
| | | LBO | 6 | R | 33.40 | 2.20 | | LIGNEOUS CLAY | Dark brown - black, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION 6 | 33.40 | 2.20 | | |
| | | LBO | | R | 34.70 | 1.30 | | CLAY | Light to medium brown - grey, very soft, puggy. |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT CODE
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | 7 | R | 35.70 | 1.00 | | INFERIOR LIGNITE | Dark brown - black, very soft, low plasticity. |
| | | | | | BASE OF WORKING SECTION 7 | 35.70 | 1.00 | | |
| | | LBO | | R | 36.75 | 1.05 | | CLAY | Medium to dark brown - grey, very soft, puggy. |
| | | LBO | 8 | R | 38.00 | 1.25 | | LIGNITE | Dark brown - black, very soft, low plasticity. |
| | | | | | BASE OF WORKING SECTION 8 | 38.00 | 1.25 | | |
| | | LBO | | R | 38.80 | 0.80 | | LIGNEOUS CLAY | |
| | | LBO | 9 | R | 41.15 | 2.35 | | INFERIOR LIGNITE | Clayey, dark brown - black, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION 9 | 41.15 | 2.35 | | |
| | | | | | BASE OF SEAM LBO | 41.15 | 18.55 | | |
| | | | | R | 48.30 | 7.15 | | CLAY | Light to medium brown, stiff, puggy. |
| | | | | | TOP OF SEAM LDO | 48.30 | | | |
| | | LDO | J1 | R | 49.00 | 0.70 | | INFERIOR LIGNITE | Clayey |
| | | LDO | J1 | R | 49.50 | 0.50 | | LIGNEOUS CLAY | Dark brown, very soft, puggy |
| | | LDO | J1 | R | 50.40 | 0.90 | | INFERIOR LIGNITE | Dark brown - black, very soft, low plasticity. |
| | | | | | BASE OF WORKING SECTION 1 | 50.40 | 2.10 | | |
| | | | | | BASE OF WORKING SECTION J | 50.40 | 2.10 | | |

EL2080 LAUNCESTON R0101

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0030

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | R | 51.40 | 1.00 | | CLAY | Medium to dark brown, very soft, puggy. |
| | | LDO | J2 | R | 52.00 | 0.60 | | LIGNITE | |
| | | LDO | J2 | R | 52.40 | 0.40 | | LIGNEOUS CLAY | |
| | | LDO | J2 | R | 55.90 | 3.50 | | LIGNITE and LIGNEOUS CLAY | Interbedded 60:40. LIGNITE: dark brown - black, very soft, low plasticity; LIGNEOUS CLAY: dark brown, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION 2 | 55.90 | 4.50 | | |
| | | | | | BASE OF WORKING SECTION J | 55.90 | 4.50 | | |
| | | LDO | | R | 56.40 | 0.50 | | CLAY | Medium to dark brown, very soft, puggy. |
| | | LDO | K | R | 59.30 | 2.90 | | LIGNITE and INFERIOR LIGNITE | Interbedded 80:20. LIGNITE: very soft, low plasticity; INFERIOR LIGNITE: clayey. |
| | | | | | BASE OF WORKING SECTION K | 59.30 | 2.90 | | |
| | | LDO | | R | 60.70 | 1.40 | | CLAY | Light to medium brown - grey, very soft, puggy. |
| | | LDO | L | R | 61.40 | 0.70 | | INFERIOR LIGNITE | Dark brown - black, very soft, low plasticity. |
| | | | | | BASE OF WORKING SECTION L | 61.40 | 0.70 | | |
| | | LDO | | R | 62.40 | 1.00 | | CLAY | Medium to dark brown, very soft, puggy |
| | | LDO | M | R | 63.00 | 0.60 | | LIGNEOUS CLAY | Dark brown, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION M | 63.00 | 0.60 | | |
| | | LDO | | R | 66.30 | 3.30 | | CLAY | Silty, medium to dark brown - grey, very soft, puggy. |
| | | LDO | N | R | 68.00 | 1.70 | | INFERIOR LIGNITE | |

EL2080 LAUNCESTON R0101

MULTISTREAM LISTING Brisb.(07)263.3433 Adel.(08)297.4788 Perth.(09)443.1555

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Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF WORKING SECTION N | 68.00 | | 1.70 | |
| | LDO | | R | | 69.00 | 1.00 | | LIGNEOUS CLAY | Dark brown, very soft. |
| | LDO | O | R | | 71.10 | 2.10 | | INFERIOR LIGNITE | Dark brown - black, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION O | 71.10 | | 2.10 | |
| | LDO | | R | | 72.40 | 1.30 | | CLAY | Medium to dark brown, very soft, puggy. |
| | LDO | P | R | | 74.70 | 2.30 | | LIGNEOUS CLAY and CLAY | Interbedded 40:40, LIGNEOUS CLAY: dark brown, very soft, puggy.<br>CLAY: medium to dark brown, very soft, puggy, common woody fragments. |
| | | | | | BASE OF WORKING SECTION P | 74.70 | | 2.30 | |
| | LDO | | R | | 75.20 | 0.50 | | CLAY | |
| | LDO | Q | R | | 78.20 | 3.00 | | LIGNEOUS CLAY and CLAY | Interbedded 60:40, LIGNEOUS CLAY: |
| | | | | | BASE OF WORKING SECTION Q | 78.20 | | 3.00 | |
| | LDO | | R | | 79.00 | 0.80 | | CLAY | |
| | LDO | R | R | | 80.50 | 1.50 | | LIGNEOUS CLAY and CLAY | Interbedded 60:40, LIGNEOUS CLAY: |
| | | | | | BASE OF WORKING SECTION R | 80.50 | | 1.50 | |
| | | | | | BASE OF SEAM LDO | 80.50 | | 32.20 | |



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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 86.50 | 6.00 | | CLAY | Sandy, light grey - blue, highly weathered, very soft; WEATHERED DOLERITE |
| | | | | R | 87.00 | 0.50 | | DOLERITE | Medium to dark grey - blue, extremely high strength; DOLERITE BASEMENT |

END OF BORE AT 87.00 m

EL2080 LAUNCESTON R0101

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0102
**********

Easting: 493460.000
Northing: 5413730.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 156.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 80.00
Drilling Commenced: 25/10/83
Drilling Completed: 26/10/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: BROADLEY
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0102

MULTISTREAM LISTING B s (07) 253 3433 Syd (02) 30 71 Melb (03) 544 1899 Adel (08) 297 4788 Perth (09) 443 1555

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.30 | 0.30 | | SOIL | Medium to dark brown, very soft, friable. |
| | | | | R | 1.50 | 1.20 | | CLAY | Light brown - yellow, firm, high plasticity. |
| | | | | | TOP OF SEAM LBO | | 1.50 | | |
| | | LBO | 8 | R | 1.80 | 0.30 | | LIGNEOUS CLAY | Dark brown, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION 8 | | 1.80 | 0.30 | |
| | | LBO | | R | 4.20 | 2.40 | | CLAY | Medium to dark brown, firm, high plasticity. |
| | | LBO | | R | 4.90 | 0.70 | | LIGNEOUS CLAY | Dark brown, firm, puggy. |
| | | LBO | | R | 5.50 | 0.60 | | CLAY | Light grey - brown, firm, high plasticity. |
| | | LBO | 9 | R | 7.35 | 1.85 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity. |
| | | | | | BASE OF WORKING SECTION 9 | | 7.35 | 1.85 | |
| | | | | | BASE OF SEAM LBO | | 7.35 | 5.85 | |
| | | | | R | 11.50 | 4.15 | | CLAY | Medium to dark brown, firm, high plasticity. |
| | | | | R | 11.80 | 0.30 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | | | R | 13.50 | 1.70 | | CLAY | Light grey, firm, high plasticity. |
| | | | | R | 13.80 | 0.30 | | SILTSTONE | Siliceous, light brown, high strength, brittle. |
| | | | | R | 17.00 | 3.20 | | CLAY | Silty, light to medium grey, firm, high plasticity. |
| | | | | R | 22.50 | 5.50 | | CLAY | Medium to dark grey, firm, high plasticity. |
| | | | | R | 25.00 | 2.50 | | CLAY | Silty, light to medium grey, firm, high plasticity. |
| | | | | R | 27.50 | 2.50 | | CLAY | Light to medium grey - brown, firm, high plasticity. |
| | | | | | TOP OF SEAM LDO | | 27.50 | | |



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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEG NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | H1 | R | 28.75 | 1.25 | | LIGNITE | Dark brown - black, firm, friable. |
| | | | | | BASE OF WORKING SECTION 1 | 28.75 | 1.25 | | |
| | | LDO | H2 | R | 30.00 | 1.25 | | LIGNITE | Dark brown - black, firm, friable. |
| | | | | | BASE OF WORKING SECTION 2 | 30.00 | 1.25 | | |
| | | | | | BASE OF WORKING SECTION H | 30.00 | 2.50 | | |
| | | LDO | | R | 30.95 | 0.95 | | CLAY | Medium to dark brown, firm, puggy. |
| | | LDO | I | R | 32.80 | 1.85 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity. |
| | | | | | BASE OF WORKING SECTION I | 32.80 | 1.85 | | |
| | | LDO | | R | 33.90 | 1.10 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | LDO | J1 | R | 34.30 | 0.40 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity. |
| | | LDO | J1 | R | 35.00 | 0.70 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | LDO | J1 | R | 35.50 | 0.50 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 1 | 35.50 | 1.60 | | |
| | | | | | BASE OF WORKING SECTION J | 35.50 | 1.60 | | |
| | | LDO | | R | 36.70 | 1.20 | | CLAY | Light to medium grey - brown, firm, high plasticity. |
| | | LDO | J2 | R | 39.20 | 2.50 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity. |
| | | | | | BASE OF WORKING SECTION 2 | 39.20 | 2.50 | | |

EL2080 LAUNCESTON R0102

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF WORKING SECTION J | | | 39.20 | 2.50 |
| | | LDO | | R | 41.20 | 2.00 | | LIGNEOUS CLAY | Dark brown - grey, firm, puggy. |
| | | LDO | K | R | 42.70 | 1.50 | | LIGNITE | Dark brown, firm, friable. |
| | | LDO | K | R | 44.00 | 1.30 | | INFERIOR LIGNITE | Clayey, dark brown, firm, puggy. |
| | | LDO | K | R | 45.40 | 1.40 | | LIGNITE | Clayey, dark brown, firm, low plasticity. |
| | | | | | BASE OF WORKING SECTION K | | | 45.40 | 4.20 |
| | | LDO | | R | 49.20 | 3.80 | | CLAY | Medium to dark brown - grey, firm, high plasticity, occasional woody fragments. SLIGHTLY LIGNEOUS AT BASE |
| | | LDO | L | R | 50.00 | 0.80 | | LIGNITE | Clayey, dark brown, firm, low plasticity. |
| | | | | | BASE OF WORKING SECTION L | | | 50.00 | 0.80 |
| | | LDO | | R | 50.40 | 0.40 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | LDO | M | R | 51.40 | 1.00 | | LIGNITE | Clayey, dark brown, firm, low plasticity. |
| | | | | | BASE OF WORKING SECTION M | | | 51.40 | 1.00 |
| | | LDO | | R | 54.00 | 2.60 | | CLAY | Dark grey - brown, firm, puggy. |
| | | LDO | | R | 54.30 | 0.30 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | LDO | | R | 54.70 | 0.40 | | CLAY | Dark grey - brown, firm, puggy. |
| | | LDO | N | R | 56.00 | 1.30 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | | | | BASE OF WORKING SECTION N | | | 56.00 | 1.30 |

EL2080 LAUNCESTON R0102

397205

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | O | R | 57.40 | 1.40 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | | | | BASE OF WORKING SECTION O | | | 57.40 | 1.40 |
| | | LDO | | R | 59.90 | 2.50 | | CLAY | Light to medium grey - brown, firm, high plasticity, occasional woody fragments. |
| | | LDO | P | R | 61.60 | 1.70 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | | | | BASE OF WORKING SECTION P | | | 61.60 | 1.70 |
| | | | | | BASE OF SEAM LDO | | | 61.60 | 34.10 |
| | | | | R | 66.50 | 4.90 | | CLAY | Dark grey, firm, high plasticity. |
| | | | | R | 69.00 | 2.50 | | SAND | Quartzose, clayey, light to medium grey, firm, friable, fine grained, common woody fragments. |
| | | | | R | 75.00 | 6.00 | | CLAY | Sandy, medium to dark grey, stiff, puggy, occasional woody fragments; SAND FRACTION VERY FINE |
| | | | | R | 80.00 | 5.00 | | CLAY | Lithic, silty, medium to dark grey - brown, firm, puggy. |

END OF BORE AT 80.00 m

EL2080 LAUNCESTON R0102

MULTISTREAM LISTING Bris. (07) 263 3433 Syd. (02) 53 0771 Melb. (03) 544 1899 Adel. (08) 297 4788 Perth (09) 443 1555

097
1974075
397206

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0103
**********

Easting: 492740.000
Northing: 5412730.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 197.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 33.00
Drilling Commenced: 31/10/83
Drilling Completed: 01/10/83
Inclination:
Azimuth:
Standing Water Level:

Available Data:

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: BROADLEY
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter:
Core Diameter: 150
Cased Depths: 7.5
Core Barrel:

Drill Bits: Blades
Percussion
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0103

397207

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.30 | 0.30 | | SOIL | Dark brown - black, very soft, friable |
| | | | | R | 5.50 | 5.20 | | BASIC VOLCANIC | Dark grey, high strength, brittle; BASALT, BROKEN AT TOP |
| | | | | R | 9.50 | 4.00 | | CLAY | Light to medium yellow, very soft, high plasticity. |
| | | | | R | 19.30 | 9.80 | | CLAY | Medium to dark brown, very soft, high plasticity. |
| | | | | R | 21.50 | 2.20 | | CLAY | Light grey, very soft, high plasticity. |
| | | | | R | 23.00 | 1.50 | | CLAY and CLAY | Interbedded 50:50. CLAY: lithic, dark brown, very soft, puggy; CLAY: silty, light to medium grey, very soft, puggy. |
| | | | | R | 24.30 | 1.30 | | CLAY | Medium to dark brown, very soft, high plasticity. |
| | | | | R | 26.10 | 1.80 | | CLAY and CLAY | Interbedded 60:40. CLAY: medium to dark brown, very soft, high plasticity; CLAY: lithic, dark brown, very soft, puggy; Bands include: CLAY, light grey - blue, very soft, puggy; WEATHERED BASEMENT |
| | | | | R | 33.00 | 6.90 | | BASIC VOLCANIC | Dark grey, high strength, brittle; DOLERITE |

END OF BORE AT 33.00 m

EL2080 LAUNCESTON R0103

397208

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 , TENEMENT 2080
Launceston

**********

EL2080 LAUNCESTON RO104

**********

Easting: 493000.000
Northing: 5413000.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 165.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 106.00
Drilling Commenced: 26/10/83
Drilling Completed: 27/10/83
Inclination:
Azimuth:
Standing Water Level:

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: BROADLEY
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd
County:
Parish:
Portion:
Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:
Drill Bits: Blades
Tungsten Carbide

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON RO104

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT CODE
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.50 | 0.50 | | SOIL | Clayey, dark brown - black, very soft, friable. |
| | | | | R | 3.50 | 3.00 | | CLAY | Off white - yellow, very soft, high plasticity. |
| | | | | R | 4.50 | 1.00 | | CLAY | Light to medium brown, very soft, high plasticity. |
| | | | | R | 6.00 | 1.50 | | CLAY and INFERIOR LIGNITE | Interbedded 50:50. CLAY: lithic, medium to dark brown, very soft, high plasticity.<br>INFERIOR LIGNITE: clayey, dark brown - black, very soft, puggy. |
| | | | | R | 8.50 | 2.50 | | CLAY and INFERIOR LIGNITE | Interbedded 60:40. CLAY: lithic, medium to dark brown, very soft, puggy.<br>INFERIOR LIGNITE: dark brown - black, very soft, puggy. |
| | | | | R | 10.50 | 2.00 | | LIGNITE and CLAY | Interbedded 90:10. LIGNITE: dark brown - black, very soft, friable.<br>CLAY: lithic, dark brown. |
| | | | | R | 11.30 | 0.80 | | CLAY | Dark brown, very soft, puggy.<br>SLIGHTLY LIGNEOUS. |
| | | | | R | 13.00 | 1.70 | | LIGNITE and INFERIOR LIGNITE | Interbedded 80:20. LIGNITE: dark brown - black, very soft, friable.<br>INFERIOR LIGNITE: clayey, dark brown - black, very soft, puggy. |
| | | | | R | 13.80 | 0.80 | | CLAY | Medium to dark brown, very soft, high plasticity. |
| | | | | R | 18.80 | 5.00 | | INFERIOR LIGNITE and LIGNITE | Interbedded 70:30. INFERIOR LIGNITE: clayey, dark brown - black, very soft, puggy.<br>LIGNITE: dark brown - black, very soft, friable. |
| | | | | R | 23.20 | 4.40 | | CLAY | Sandy, light to medium brown - grey, very soft, high plasticity. |
| | | | | R | 24.90 | 1.70 | | LIGNITE | |
| | | | | R | 26.00 | 1.10 | | CLAY | |
| | | | | R | 27.00 | 1.00 | | LIGNITE | |
| | | | | R | 29.50 | 2.50 | | CLAY and CLAY | Interbedded 60:40. CLAY: lithic, dark brown - grey, very soft, puggy.<br>CLAY: medium to dark grey - brown, very soft, high plasticity. |

EL2080 LAUNCESTON R0104

Perth (09) 443 1555 Adel (08) 297 4788 Bris (07) 263 3433 Syd (02) 0 71 Mel (03) 544 899 Published by SIRLAM LIMITED

TC14-03

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOR SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 31.20 | 1.70 | | CLAY | Medium to dark brown - grey, very soft, high plasticity. |
| | | | | R | 43.60 | 12.40 | | CLAY and CLAY and INFERIOR LIGNITE | Interbedded 50:30:20. CLAY, lithic, dark brown - grey, very soft, puggy;<br>CLAY, medium to dark brown - grey, very soft, high plasticity;<br>INFERIOR LIGNITE, dark brown - black, very soft, puggy. |
| | | | | R | 47.00 | 3.40 | | CLAY | Light brown - grey, very soft, high plasticity. |
| | | | | R | 54.00 | 7.00 | | CLAY and INFERIOR LIGNITE | Interbedded 50:50. CLAY, lithic, dark brown - grey, very soft, puggy;<br>INFERIOR LIGNITE, dark brown - black, very soft, puggy. |
| | | | | R | 57.60 | 3.60 | | CLAY and CLAY | Interbedded 75:25. CLAY, lithic, dark brown - grey, very soft, puggy;<br>CLAY, medium to dark brown, very soft, high plasticity. |
| | | | | R | 62.40 | 4.80 | | CLAY | Medium to dark brown - grey, very soft, high plasticity.<br>LIGNEOUS BAND AT 61.0 METRES. |
| | | | | | TOP OF SEAM LBO | | | 62.40 | |
| | LBO | 21 | | R | 64.80 | 2.40 | | LIGNITE | Clayey, dark brown - black, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION 1 | | | 64.80 | 2.40 |
| | LBO | 22 | | R | 67.00 | 2.20 | | LIGNITE and LIGNEOUS CLAY | Interbedded 60:40. LIGNITE, clayey, dark brown - black, very soft, puggy;<br>LIGNEOUS CLAY, dark brown - black, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION 2 | | | 67.00 | 2.20 |
| | | | | | BASE OF WORKING SECTION 2 | | | 67.00 | 4.60 |
| | LBO | | | R | 68.10 | 1.10 | | CLAY | Medium to dark grey - brown, very soft, high plasticity. |
| | LBO | 31 | | R | 69.60 | 1.50 | | INFERIOR LIGNITE | Dark grey - black, very soft, low plasticity. |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080

Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF WORKING SECTION 1 | | 69.60 | 1.50 | |
| | | | | | BASE OF WORKING SECTION 3 | | 69.60 | 1.50 | |
| | | LBO | | R | 71.30 | 1.70 | | CLAY | Medium to dark brown, very soft, high plasticity. |
| | | LBO | 32 | R | 72.50 | 1.20 | | LIGNITE | Clayey, dark brown - black, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION 2 | | 72.50 | 1.20 | |
| | | | | | BASE OF WORKING SECTION 3 | | 72.50 | 1.20 | |
| | | LBO | | R | 73.30 | 0.80 | | LIGNEOUS CLAY | Dark brown, very soft, puggy. |
| | | LBO | 33 | R | 74.80 | 1.50 | | LIGNITE | Clayey, dark brown - black, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION 3 | | 74.80 | 1.50 | |
| | | | | | BASE OF WORKING SECTION 3 | | 74.80 | 1.50 | |
| | | LBO | 41 | R | 76.10 | 1.30 | | CLAY and INFERIOR LIGNITE | Interbedded 50:50. CLAY: medium to dark brown, very soft, high plasticity; INFERIOR LIGNITE: dark brown - black, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION 1 | | 76.10 | 1.30 | |
| | | | | | BASE OF WORKING SECTION 4 | | 76.10 | 1.30 | |
| | | LBO | | R | 78.85 | 2.75 | | CLAY | Medium to dark grey - brown, very soft, high plasticity. |

EL2080 LAUNCESTON R0104

397212

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | 42 | R | 80.70 | 1.85 | | LIGNITE | Clayey, dark brown - black, very soft, puggy |
| | | | | | BASE OF WORKING SECTION 2 | 80.70 | 1.85 | | |
| | | | | | BASE OF WORKING SECTION 4 | 80.70 | 1.85 | | |
| | | LBO | | R | 81.20 | 0.50 | | CLAY | |
| | | LBO | 51 | R | 81.60 | 0.40 | | INFERIOR LIGNITE | Clayey. |
| | | | | | BASE OF WORKING SECTION 1 | 81.60 | 0.40 | | |
| | | | | | BASE OF WORKING SECTION 5 | 81.60 | 0.40 | | |
| | | LBO | | R | 82.00 | 0.40 | | LIGNEOUS CLAY | |
| | | LBO | 52 | R | 83.50 | 1.50 | | INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 50:50. INFERIOR LIGNITE: clayey; |
| | | | | | BASE OF WORKING SECTION 2 | 83.50 | 1.50 | | |
| | | | | | BASE OF WORKING SECTION 5 | 83.50 | 1.50 | | |
| | | LBO | | R | 83.90 | 0.40 | | CLAY | |
| | | LBO | 53 | R | 84.90 | 1.00 | | INFERIOR LIGNITE | Clayey |
| | | | | | BASE OF WORKING SECTION 3 | 84.90 | 1.00 | | |
| | | | | | BASE OF WORKING SECTION 5 | 84.90 | 1.00 | | |

EL2080 LAUNCESTON R0104

397213

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | R | 85.20 | 0.30 | | LIGNEOUS CLAY | |
| | | LBO | 6 | R | 85.60 | 0.40 | | INFERIOR LIGNITE and LIGNEOUS CLAY and LIGNITE | Interbedded 60:30:10. INFERIOR LIGNITE: clayey, dark brown - black, very soft, puggy; LIGNEOUS CLAY: dark brown, very soft, high plasticity; LIGNITE: clayey, dark brown - black, very soft, puggy. |
| | | | | | BASE OF WORKING SECTION 6 | | | 85.60 | 0.40 |
| | | LBO | | R | 88.20 | 2.30 | 88.5 | LIGNEOUS CLAY | Dark brown, very soft, puggy. |
| | | LBO | | R | 89.90 | 1.70 | | CLAY | Medium to dark grey - brown, very soft, high plasticity. |
| | | LBO | 7 | R | 91.10 | 1.20 | | LIGNITE | Dark brown - black, very soft, low plasticity. |
| | | | | | BASE OF WORKING SECTION 7 | | | 91.10 | 1.20 |
| | | LBO | | R | 93.50 | 2.40 | | CLAY | Medium to dark grey - brown, very soft, high plasticity. |
| | | LBO | 8 | R | 94.50 | 1.00 | | LIGNITE | Dark brown - black, very soft, low plasticity. |
| | | | | | BASE OF WORKING SECTION 8 | | | 94.50 | 1.00 |
| | | LBO | | R | 97.50 | 3.00 | | LIGNEOUS CLAY and CLAY | Interbedded 60:40. LIGNEOUS CLAY: dark brown, very soft, puggy; CLAY: medium to dark brown - grey, very soft, high plasticity. |
| | | | | | BASE OF SEAM LBO | | | 97.50 | 35.10 |
| | | | | R | 106.00 | 8.50 | | CLAY | Medium to dark brown - grey, very soft, high plasticity; SIDERITE BANDS AT 98.40M AND 102.50M. |
| | | | | | | | | | HOLE TERMINATED IN HARD SIDERITE |

EL2080 LAUNCESTON R0104

397214

MULTISTREAM LISTING Brs (07) 263 3433 Sy 1 (02) 53 1771 Melo (03) 544 1839 Adel (08) 297 4788 Perth (09) 443 1555

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 114.40 | 8.40 | | CLAY | Silty, light brown - grey, firm, high plasticity (clay), common siderite, nodules; SLAKES AND DISPERSES |
| | | | | | TOP OF SEAM LDO | | | 114.40 | |
| | | LDO | H1 | | 115.95 | 1.55 | | LIGNITE and INFERIOR LIGNITE | Interbedded 80:20. LIGNITE: clayey, medium to dark brown, firm, friable; INFERIOR LIGNITE: clayey, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | | | 115.95 | 1.55 |
| | | | | | BASE OF WORKING SECTION H | | | 115.95 | 1.55 |
| | | LDO | | | 116.70 | 0.75 | | CLAY | Light to medium brown - grey, soft, high plasticity (clay). |
| | | LDO | H2 | | 118.50 | 1.80 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 2 | | | 118.50 | 1.80 |
| | | | | | BASE OF WORKING SECTION H | | | 118.50 | 1.80 |
| | | LDO | | | 120.30 | 1.80 | | CLAY | Light to medium brown - grey, soft, high plasticity (clay). |
| | | LDO | I | | 120.70 | 0.40 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | LDO | I | | 122.30 | 1.60 | | CLAY and LIGNEOUS CLAY | Interbedded 60:40. CLAY: light to medium brown - grey, firm, high plasticity (clay); LIGNEOUS CLAY: medium to dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION I | | | 122.30 | 2.00 |



397215

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | J1 | | 125.05 | 2.75 | | LIGNITE and LIGNEOUS CLAY and CLAY | Interbedded 80:10:10. LIGNITE: clayey, medium to dark brown, soft, low plasticity (organic); LIGNEOUS CLAY: medium to dark brown, firm, high plasticity (organic); CLAY: light to medium brown, firm, high plasticity (clay). |
| | | | | | BASE OF WORKING SECTION 1 | | | 125.05 | 2.75 |
| | | | | | BASE OF WORKING SECTION J | | | 125.05 | 2.75 |
| | | LDO | | | 125.70 | 0.65 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | LDO | J2 | | 127.60 | 1.90 | | LIGNITE and LIGNEOUS CLAY | Interbedded 80:20. LIGNITE: clayey, medium to dark brown, soft, low plasticity (organic); LIGNEOUS CLAY: medium to dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 2 | | | 127.60 | 1.90 |
| | | | | | BASE OF WORKING SECTION J | | | 127.60 | 1.90 |
| | | LDO | | | 128.10 | 0.50 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |
| | | LDO | K | | 132.00 | 3.90 | | LIGNITE and INFERIOR LIGNITE | Interbedded 60:40. LIGNITE: clayey, medium to dark brown, soft, low plasticity (organic); INFERIOR LIGNITE: clayey, woody textured, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION K | | | 132.00 | 3.90 |
| | | LDO | | | 135.10 | 3.10 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). SLAKES AND DISPERSES. |
| | | LDO | L | | 136.10 | 1.00 | | LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |

EL2080 LAUNCESTON R0104

397210

MULTISTREAM LISTING Brs (07) 263 3433 Svd (02) 3 0 71 Melb (03) 544 899 Adel (08) 297 4788 Perth (09) 443 565

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF WORKING SECTION L | 136.10 | 1.00 | | |
| | | LDO | | | 136.60 | 0.50 | | CLAY | Carbonaceous, light to medium brown, soft, high plasticity (clay). |
| | | LDO | M | | 138.90 | 2.30 | | INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 70:30. INFERIOR LIGNITE: clayey, medium to dark brown, soft, low plasticity (organic). LIGNEOUS CLAY: medium to dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION M | 138.90 | 2.30 | | |
| | | LDO | | | 141.00 | 2.10 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | | | 144.60 | 3.60 | | CLAY | Light grey - brown, firm, high plasticity (clay). |
| | | LDO | N | | 145.40 | 0.80 | | INFERIOR LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION N | 145.40 | 0.80 | | |
| | | LDO | | | 145.80 | 0.40 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |
| | | LDO | O | | 146.20 | 0.40 | | INFERIOR LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |
| | | LDO | O | | 146.80 | 0.60 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |
| | | LDO | O | | 147.40 | 0.60 | | INFERIOR LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION O | 147.40 | 1.60 | | |
| | | LDO | | | 148.40 | 1.00 | | CLAY | Light grey - brown, firm, high plasticity (clay). |
| | | LDO | P | | 148.90 | 0.50 | | INFERIOR LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |
| | | LDO | P | | 149.90 | 1.00 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |
| | | LDO | P | | 151.80 | 1.90 | | INFERIOR LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION P | 151.80 | 3.40 | | |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | | 152.00 | 0.20 | | CLAY | Silty, light to medium brown, firm, high plasticity (clay) |

BASE OF SEAM LDO 152.00 37.60

END OF BORE AT 152.00 m

EL2080 LAUNCESTON R0104

Bris (07) 263 3433 Syd (02) 53 0771 Melb (03) 544 893 Adel (08) 297 4788 Perth (09) 442 556

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON RO105
**********

Easting: 493500.000
Northing: 5412750.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 165.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 86.30
Drilling Commenced: 26/10/83
Drilling Completed: 27/10/83
Inclination:
Azimuth:
Standing Water Level:

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Starpole
Geophysical Logging: B.P.B. Pty Ltd
County:
Parish:
Portion:
Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 9.0
Core Barrel:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.30 | 0.30 | | SAND | Silty, clayey, light to medium brown, firm, muggy. |
| | | | | R | 2.00 | 1.70 | | CLAY | Silty, sandy, light to medium yellow, firm, high plasticity (clay), fine and medium grained. |
| | | | | R | 3.50 | 1.50 | | CLAY | Silty, sandy, mottled yellow - off white, firm, high plasticity (clay). |
| | | | | R | 7.50 | 4.00 | | SAND | Clayey, quartzose, light to medium yellow, soft, non-plastic. |
| | | | | R | 8.00 | 0.50 | | SAND | Clayey, quartzose, light to medium brown - red, moderate strength, brittle, iron oxide, secondary, staining. |
| | | | | R | 10.60 | 2.60 | | CLAY | Silty, light to medium grey, firm, high plasticity (clay). |
| | | | | R | 10.80 | 0.20 | | CLAY | Carbonaceous, dark brown, firm, high plasticity (organic). |
| | | | | TOP OF SEAM LDO | | 10.80 | | | |
| | LDO | H1 | R | | 11.70 | 0.90 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | | BASE OF WORKING SECTION 1 | | 11.70 | | 0.90 | |
| | | | | BASE OF WORKING SECTION H | | 11.70 | | 0.90 | |
| | LDO | | R | | 12.20 | 0.50 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | LDO | H2 | R | | 12.70 | 0.50 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | LDO | H2 | R | | 13.30 | 0.60 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic). |
| | LDO | H2 | R | | 13.80 | 0.50 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | | BASE OF WORKING SECTION 2 | | 13.80 | | 1.60 | |
| | | | | BASE OF WORKING SECTION H | | 13.80 | | 1.60 | |

EL2080 LAUNCESTON R0105

Perth (09) 443 1555 Ariel (08) 297 4788 Brisbane (07) 252 3433 Sydney (02) 232 6300 Melbourne (03) 544 1899

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | R | 14.80 | 1.00 | | CLAY | Light to medium brown, firm, high plasticity (clay); Bands include: CLAY, ligneous, medium to dark brown, firm, high plasticity (clay). |
| | | LDO | I | R | 15.30 | 0.50 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION I | 15.30 | 0.50 | | |
| | | LDO | J | R | 16.00 | 0.70 | | INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 70:30. INFERIOR LIGNITE: clayey, dark brown - black, firm, low plasticity (organic); LIGNEOUS CLAY: dark brown, firm, low plasticity (organic). |
| | | LDO | J | R | 18.10 | 2.10 | | LIGNITE | Dark brown, firm, friable; Bands include: LIGNEOUS CLAY, dark brown, firm, low plasticity (organic); Bands include: CLAY, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | J | R | 18.55 | 0.45 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable. |
| | | LDO | J | R | 20.40 | 1.85 | | LIGNITE | Clayey, dark brown - black, firm, friable; Bands include: LIGNEOUS CLAY, dark brown, firm, low plasticity (organic); Bands include: CLAY, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | J | R | 21.50 | 1.10 | | LIGNEOUS CLAY and LIGNEOUS CLAY | Interbedded 70:30. LIGNEOUS CLAY: clayey, dark brown - black, firm, friable; LIGNEOUS CLAY: dark brown, firm, low plasticity (organic). |
| | | LDO | J | R | 22.60 | 1.10 | | LIGNITE | Clayey, dark brown - black, firm, friable; Bands include: INFERIOR LIGNITE, clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION J | 22.60 | 7.30 | | |
| | | LDO | | R | 24.45 | 1.85 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay); Bands include: CLAY, light grey, firm, high plasticity (clay). |
| | | LDO | K | R | 25.20 | 0.75 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, friable. |

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | K | R | 25.50 | 0.30 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | LDO | K | R | 26.40 | 0.90 | | INFERIOR LIGNITE and LIGNITE | Interbedded 50:50. INFERIOR LIGNITE: clayey, dark brown - black, firm, friable; LIGNITE: clayey, dark brown - black, firm, friable. |
| | | LDO | K | R | 26.80 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | LDO | K | R | 27.60 | 0.80 | | LIGNEOUS CLAY | Clayey, dark brown - black, firm, low plasticity (organic). Bands include: CLAY, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | K | R | 28.20 | 0.60 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic). |
| | | LDO | K | R | 29.50 | 1.30 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | LDO | K | R | 30.50 | 1.00 | | CLAY | Ligneous, medium to dark brown, firm, high plasticity (clay). |
| | | LDO | K | R | 30.70 | 0.20 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | LDO | K | R | 31.10 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | LDO | K | R | 32.20 | 1.10 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION K | | | 32.20 | 7.75 |
| | | LDO | | R | 34.10 | 1.90 | | CLAY | Light grey, firm, high plasticity (clay). |
| | | LDO | | R | 34.50 | 0.40 | | SIDERITE | Light grey, high strength, brittle. |
| | | LDO | | R | 35.60 | 1.10 | | CLAY | Light grey, soft, high plasticity (clay). |
| | | LDO | L | R | 36.40 | 0.80 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |
| | | LDO | L | R | 36.80 | 0.40 | | CLAY | Ligneous, medium to dark brown - grey, firm, high plasticity (clay). |
| | | LDO | L | R | 37.20 | 0.40 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION L | | | 37.20 | 1.60 |

EL2080 LAUNCESTON R0105

MULTISTREAM LISTING Brisbane (07) 263 3433 Sydney (02) 53 0771 Melbourne (03) 544 1899 Adel (08) 297 4788 Perth (09) 443 1555 Perth (09) 443 1555

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT JOBC
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | R | 38.90 | 1.70 | | CLAY | Lignecus, medium to dark brown - grey, firm, high plasticity (clay). |
| | | LDO | M | R | 41.40 | 2.50 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION M | 41.40 | 2.50 | | |
| | | LDO | | R | 46.50 | 5.10 | | CLAY | Light grey, firm, high plasticity (clay). |
| | | LDO | N | R | 47.60 | 1.10 | | INFERIOR LIGNITE | Clayey, gelatinous, dark brown, soft, low plasticity (organic) |
| | | | | | BASE OF WORKING SECTION N | 47.60 | 1.10 | | |
| | | LDO | | R | 48.90 | 1.30 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | LDO | O | R | 50.00 | 1.10 | | INFERIOR LIGNITE | Clayey, gelatinous, dark brown, soft, low plasticity (organic) |
| | | | | | BASE OF WORKING SECTION O | 50.00 | 1.10 | | |
| | | LDO | | R | 50.50 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic) |
| | | LDO | P | R | 50.80 | 0.30 | | INFERIOR LIGNITE | Clayey, gelatinous, dark brown, soft, low plasticity (organic) |
| | | | | | BASE OF WORKING SECTION P | 50.80 | 0.30 | | |
| | | LDO | | R | 51.20 | 0.40 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) |
| | | LDO | | R | 52.00 | 0.80 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic) |
| | | | | | BASE OF SEAM LDO | 52.00 | 41.20 | | |

EL2080 LAUNCESTON R0105

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 57.80 | 5.80 | | CLAY and CLAY | Interbedded 80:20. CLAY: light grey - brown, firm, high plasticity (clay); CLAY: carbonaceous, light to medium grey - brown, firm, high plasticity (clay), occasional woody fragments. |
| | | | | R | 58.90 | 1.10 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | | | R | 64.30 | 5.40 | | CLAY | Light grey - brown, firm, high plasticity (clay). |
| | | | | R | 64.60 | 0.30 | | CLAY | Carbonaceous, light to medium grey - brown, firm, high plasticity (clay). |
| | | | | R | 66.40 | 1.80 | | CLAY | Light grey - brown, firm, high plasticity (clay), common woody fragments. |
| | | | | R | 66.90 | 0.50 | | CLAY | Carbonaceous, light to medium grey - brown, firm, high plasticity (clay), common woody fragments. |
| | | | | R | 67.60 | 0.70 | | CLAY | Light grey - brown, firm, high plasticity (clay), common woody fragments. |
| | | | | R | 69.00 | 1.40 | | CLAY | Carbonaceous, light to medium grey - brown, firm, high plasticity (clay), common woody fragments. |
| | | | | R | 69.70 | 0.70 | | CLAY | Light grey - brown, firm, high plasticity (clay), common woody fragments. |
| | | | | R | 70.80 | 1.10 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), common woody fragments. |
| | | | | R | 74.10 | 3.30 | | CLAY | Light grey - brown, firm, high plasticity (clay), common woody fragments. |
| | | | | R | 76.40 | 2.30 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), common woody fragments; Bands include: CLAY, carbonaceous, light to medium grey - brown, firm, high plasticity (clay), common woody fragments. |
| | | | | R | 78.40 | 2.00 | | LIGNEOUS CLAY and CLAY | Interbedded 50:50. LIGNEOUS CLAY: dark brown, firm, high plasticity (organic), common woody fragments; CLAY: carbonaceous, light to medium grey - brown, firm, high plasticity (clay). |
| | | | | R | 79.00 | 0.60 | | CLAY | Light grey - brown, firm, high plasticity (clay), common woody fragments. |

EL2080 LAUNCESTON R0105

MOLDSTREAM LISTING Brns (07) 263 3433 Syd (02) 53 0771 Melb (03) 544 1899 Adel (08) 297 4788 Perth (09) 443 1555

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 80.00 | 1.00 | | CLAY | Carbonaceous, light to medium grey - brown, firm, high plasticity (clay), common woody fragments. |
| | | | | R | 80.50 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic), common woody fragments. |
| | | | | R | 86.30 | 5.80 | | CLAY | Light grey - brown, firm, high plasticity (clay), common woody fragments. Bands include: CLAY, light to medium grey - brown, firm, high plasticity (clay), common woody fragments. |

END OF BORE AT 86.30 m

EL2080 LAUNCESTON R0105

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT [illegible]
Launceston

**********
EL2080 LAUNCESTON R0106
**********

Easting: 492750.000
Northing: 5412000.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 195.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 51.00
Drilling Commenced: 04/11/83
Drilling Completed: 05/11/83
Inclination:
Azimuth:
Standing Water Level:

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: BRADLEY
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Drill Bits: Blades
Percussion
Tungstan Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED



MULTISTRAM LISTING Brisbane (07) 229 1433 Perth (09) 443 1555 Adel (08) 297 4788 Melb (03) 544 1994

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.30 | 0.30 | | SOIL | Medium to dark brown - red, very soft, friable. |
| | | | | R | 2.00 | 1.70 | | CLAY | Light brown - yellow, firm, puggy. CONTAINS BASALTIC FRAGMENTS |
| | | | | R | 3.00 | 1.00 | | CLAY | Yellow, stiff, brittle. |
| | | | | R | 6.00 | 3.00 | | CLAY | Off white, stiff, brittle |
| | | | | R | 8.50 | 2.50 | | CLAY | Off white - yellow, firm, high plasticity |
| | | | | R | 10.00 | 1.50 | | CLAY | Light to medium brown, firm, high plasticity |
| | | | | R | 12.00 | 2.00 | | CLAY | Medium to dark grey - brown, firm, high plasticity, common woody fragments |
| | | | | R | 14.50 | 2.50 | | CLAY | Medium to dark brown - grey, firm, high plasticity. HARD INDURANTED SILTSTONE BAND AT 13.20M |
| | | TOP OF SEAM LBO | | | | 14.50 | | | |
| LBO | 8 | | | R | 16.10 | 1.60 | | LIGNITE | Clayey, dark brown, firm, low plasticity |
| | | BASE OF WORKING SECTION 8 | | | 16.10 | 1.60 | | | |
| LBO | | | | R | 16.45 | 0.35 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy |
| LBO | 9 | | | R | 17.50 | 1.05 | | INFERIOR LIGNITE | Clayey, dark brown, firm, puggy |
| | | BASE OF WORKING SECTION 9 | | | 17.50 | 1.05 | | | |
| LBO | | | | R | 19.50 | 2.00 | | CLAY | Medium to dark grey - brown, firm, high plasticity |
| LBO | | | | R | 20.20 | 0.70 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| LBO | | | | R | 20.80 | 0.60 | | CLAY | Light to medium grey - brown, firm, high plasticity |
| LBO | X | | | R | 21.70 | 0.90 | | LIGNITE | Dark brown, firm, friable. |
| | | BASE OF WORKING SECTION X | | | 21.70 | 0.90 | | | |



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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | R | 22.80 | 1.10 | | CLAY | Dark brown, firm, high plasticity. |
| | | LBO | | R | 23.45 | 0.65 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | | | | BASE OF SEAM LBO | | | 23.45 | 8.95 |
| | | | | R | 35.80 | 12.35 | | CLAY | Light to medium grey, firm, high plasticity; SIDERITE BAND AT 26.20, HARD |
| | | | | | TOP OF SEAM LDO | | | 35.80 | |
| | | LDO | L | R | 37.25 | 1.45 | | LIGNEOUS CLAY | Dark brown, firm, puggy. |
| | | | | | BASE OF WORKING SECTION L | | | 37.25 | 1.45 |
| | | LDO | | R | 41.80 | 4.55 | | CLAY | Medium to dark grey - brown, firm, high plasticity, common carbonaceous remains. |
| | | LDO | O | R | 44.30 | 2.50 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, puggy. |
| | | | | | BASE OF WORKING SECTION O | | | 44.30 | 2.50 |
| | | | | | BASE OF SEAM LDO | | | 44.30 | 8.50 |
| | | | | R | 51.00 | 6.70 | | CLAY | Light grey - blue, firm, puggy; WEATHERED DOLERITE BASEMENT |

END OF BORE AT 51.00 m

EL2080 LAUNCESTON R0106

MULTISTREAM LISTING Brs (07) 253 3433 Syd (02) 53 077 Melt (03) 544 903 Acef (08) 297 4788 Perth (09) 449 55

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397228

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080

Launceston

**********

EL2080 LAUNCESTON R0107

**********

Easting: 494250.000
Northing: 5412750.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 155.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 72.90
Drilling Commenced: 21/10/83
Drilling Completed: 21/10/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED



397228

REPORT TC14-01 CSR COAL DIVISION PAGE 820 RUN AT 10:29:00 19/ /84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.30 | 0.30 | | SAND | Silty, clayey, light to medium brown, soft, non-plastic. |
| | | | | R | 0.60 | 0.30 | | CLAY | Silty, gravelly, light to medium brown, firm, high plasticity (clay); LATERITE, IRON OXIDE CONCRETIONS |
| | | | | R | 1.70 | 1.10 | | CLAY | Silty, mottled brown - off white, firm, high plasticity (clay). |
| | | | | R | 2.70 | 1.00 | | CLAY | Silty, mottled off white - yellow, firm, high plasticity (clay); WITH SOME IRON OXIDE CONCRETIONS |
| | | | | R | 3.00 | 0.30 | | SILT | Clayey, light to medium brown, soft, low plasticity (clay). |
| | | | | R | 6.80 | 3.80 | | CLAY | Mottled off white - yellow, firm, high plasticity (clay). |
| | | | | R | 7.40 | 0.60 | | GRAVEL | Clayey, medium to dark brown - orange, moderate strength, brittle, iron oxide, cement. |
| | | | | R | 7.80 | 0.40 | | CLAY | Mottled off white - yellow, firm, high plasticity (clay). |
| | | | | R | 9.50 | 1.70 | | CLAY | Light off white, firm, high plasticity (clay), gradational base. |
| | | | | R | 10.50 | 1.00 | | CLAY | Silty, light grey - brown, firm, high plasticity (clay), gradational base. |
| | | | | R | 11.30 | 0.80 | | CLAY | Silty, light to medium grey, firm, high plasticity (clay). |
| | | | | R | 14.80 | 3.50 | | CLAY | Sandy, silty, light to medium brown, firm, low plasticity (clay), occasional ligneous wisps. |
| | | | | R | 15.20 | 0.40 | | SILT | Clayey, sandy, light to medium grey, firm, high plasticity (silt), gradational base. |
| | | | | R | 15.70 | 0.50 | | SIDERITE | Light grey, high strength, brittle. |
| | | | | R | 22.20 | 6.50 | | CLAY | Light to medium grey, firm, high plasticity (clay). |
| | | | | R | 25.60 | 3.40 | | CLAY and LIGNEOUS CLAY | Interbedded 80:20. CLAY: light to medium grey - brown, firm, high plasticity (clay), occasional ligneous wisps; LIGNEOUS CLAY: medium to dark brown, firm, high plasticity (organic). |

EL2080 LAUNCESTON R0107

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 26.60 | 1.00 | | LIGNEOUS CLAY and INFERIOR LIGNITE | Interbedded 50:50, LIGNEOUS CLAY: medium to dark brown, firm, high plasticity (organic);<br>INFERIOR LIGNITE: clayey, dark brown - black, firm, friable. |
| | | | | R | 30.05 | 3.45 | | SAND | Clayey, quartzose, light to medium grey, low strength, friable, coarsening upwards, common woody fragments. |
| | | | | R | 31.70 | 1.65 | | CLAY | Light to medium grey, firm, high plasticity (clay). |
| | | | | R | 33.20 | 1.50 | | CLAY | Light to medium grey, firm, high plasticity (clay), siderite, nodules;<br>Bands include: SIDERITE, 00.30 m thick, base at 0032.90m, light grey, high strength, tough. |
| | | | | R | 34.10 | 0.90 | | CLAY | Sandy, light to medium grey, firm, high plasticity (clay). |
| | | | | R | 34.90 | 0.80 | | CLAY | Sandy, light to medium grey, firm, high plasticity (clay), siderite, nodules. |
| | | | | R | 35.40 | 0.50 | | CLAY | Sandy, light to medium grey, firm, high plasticity (clay). |
| | | | | R | 35.90 | 0.50 | | SIDERITE | Light grey, moderate strength, brittle. |
| | | | | R | 37.00 | 1.10 | | CLAY | Sandy, light to medium grey, firm, high plasticity (clay). |
| | | | | R | 39.10 | 2.10 | | SAND | Clayey, quartzose, light to medium grey, low strength, friable. |
| | | | | R | 43.20 | 4.10 | | CLAY | Silty, light to medium grey, firm, high plasticity (clay);<br>SLAKES AND DISPERSES |
| | | | | R | 43.70 | 0.50 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | R | 44.21 | 0.51 | | SIDERITE | Light grey, moderate strength, brittle. |
| | | | | R | 49.80 | 5.59 | | CLAY | Silty, light to medium grey, firm, high plasticity (clay);<br>SLAKES AND DISPERSES |
| | | | | R | 53.30 | 3.50 | | SILT | Sandy, clayey, light to medium grey, soft, non-plastic, abundant woody fragments. |
| | | | | R | 63.20 | 9.90 | | CLAY | Silty, sandy, soft, high plasticity (clay), coarsening upwards;<br>SLAKES AND DISPERSES |





MULTISTREAM LISTING Bris:(07)263 3423 Syd:(02)53 0233 Melb:(03)544 1893 Adel:(08)297 4788 Perth:(09)443 1555

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 66.70 | 3.50 | | SILT | Sandy, clayey, light to medium grey, soft, non-plastic, common woody fragments. |
| | | | | R | 72.90 | 6.20 | | CLAY | Silty, sandy, light to medium brown - grey, firm, high plasticity (clay). |

END OF BORE AT 72.90 m

EL2080 LAUNCESTON R0107

Perth (09) 443 1555 Adel (08) 297 4788 Melb (03) 544 1899 Syd (02) 53 0771 Bris (07) 253 0433 MULTI STREAM LISTING

397232

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON RO108
**********

Easting: 493000.000
Northing: 5412000.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 190.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 100.00
Drilling Commenced: 01/11/83
Drilling Completed: 04/11/83
Inclination:
Azimuth:
Standing Water Level:

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: BROADLEY
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 18.5
Core Barrel:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Drill Bits: Blades
Percussion
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED



3672333

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.30 | 0.30 | | SOIL | Dark brown - red, very soft, friable. |
| | | | | R | 5.00 | 4.70 | | BASALT | Dark grey, high strength; BROKEN BASALT SCREE |
| | | | | R | 18.00 | 13.00 | | BASALT | Dark grey, extremely high strength; SOLID BASALT |
| | | | | R | 19.50 | 1.50 | | CLAY | Sandy, medium to dark grey, firm, high plasticity. |
| | | | | R | 27.85 | 8.35 | | CLAY | Sandy, light grey, firm, high plasticity. |
| | | | | | TOP OF SEAM LBO | | | 27.85 | |
| | | LBO | 61 | R | 28.60 | 0.75 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 1 | | | 28.60 | 0.75 |
| | | | | | BASE OF WORKING SECTION 6 | | | 28.60 | 0.75 |
| | | LBO | | R | 29.00 | 0.40 | | CLAY | Dark brown, firm, high plasticity. |
| | | LBO | 62 | R | 29.50 | 0.50 | | INFERIOR LIGNITE | Clayey, dark brown, firm, puggy. |
| | | | | | BASE OF WORKING SECTION 2 | | | 29.50 | 0.50 |
| | | | | | BASE OF WORKING SECTION 6 | | | 29.50 | 0.50 |
| | | LBO | | R | 30.00 | 0.50 | | LIGNEOUS CLAY | Medium to dark brown, firm, puggy. |
| | | LBO | 63 | R | 30.45 | 0.45 | | INFERIOR LIGNITE | Dark brown, firm, high plasticity. |
| | | | | | BASE OF WORKING SECTION 3 | | | 30.45 | 0.45 |
| | | | | | BASE OF WORKING SECTION 6 | | | 30.45 | 0.45 |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | R | 32.80 | 2.35 | | CLAY | Medium to dark brown - grey, firm, high plasticity. |
| | | LBO | 7 | R | 33.20 | 0.40 | | INFERIOR LIGNITE | Clayey. |
| | | | | | BASE OF WORKING SECTION 7 | | | 33.20 | 0.40 |
| | | LBO | | R | 34.15 | 0.95 | | CLAY | Medium to dark brown - grey, firm, high plasticity. |
| | | LBO | 8 | R | 35.20 | 1.05 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity. |
| | | | | | BASE OF WORKING SECTION 8 | | | 35.20 | 1.05 |
| | | LBO | | R | 35.60 | 0.40 | | CLAY | |
| | | LBO | 9 | R | 36.20 | 0.60 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 9 | | | 36.20 | 0.60 |
| | | | | | BASE OF SEAM LBO | | | 36.20 | 8.35 |
| | | | | R | 42.00 | 5.80 | | CLAY | Silty, light to medium grey - brown, stiff, low plasticity. |
| | | | | R | 43.50 | 1.50 | | CLAY | Sandy, light to medium grey - brown, stiff, low plasticity. |
| | | | | R | 45.20 | 1.70 | | CLAY | Silty, medium to dark brown - grey, stiff, puggy. |
| | | | | | TOP OF SEAM LDO | | | 45.20 | |
| | | LDO | H1 | R | 45.80 | 0.60 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 1 | | | 45.80 | 0.60 |
| | | | | | BASE OF WORKING SECTION H | | | 45.80 | 0.60 |

EL2080 LAUNCESTON R0108

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | R | 46.60 | 0.80 | | CLAY | Light to medium grey - brown, firm, high plasticity. |
| | | LDO | H2 | R | 47.20 | 0.60 | | INFERIOR LIGNITE | Clayey, dark brown - grey, firm, puggy. |
| | | | | | BASE OF WORKING SECTION 2 | 47.20 | 0.60 | | |
| | | | | | BASE OF WORKING SECTION H | 47.20 | 0.60 | | |
| | | LDO | | R | 48.85 | 1.65 | | CLAY | Medium to dark brown - grey, firm, high plasticity. |
| | | LDO | I | R | 50.00 | 1.15 | | INFERIOR LIGNITE | Dark brown, firm, low plasticity. |
| | | | | | BASE OF WORKING SECTION I | 50.00 | 1.15 | | |
| | | LDO | | R | 51.00 | 1.00 | | CLAY | Light to medium grey - brown, firm, high plasticity. |
| | | LDO | J1 | R | 51.75 | 0.75 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 1 | 51.75 | 0.75 | | |
| | | LDO | J2 | R | 56.70 | 4.95 | | CLAY and CLAY | Interbedded 60:40, CLAY: lighter, dark brown - black, firm, puggy; CLAY: medium to dark grey - brown, firm, high plasticity. |
| | | | | | BASE OF WORKING SECTION 2 | 56.70 | 4.95 | | |
| | | | | | BASE OF WORKING SECTION J | 56.70 | 5.70 | | |
| | | LDO | | R | 58.60 | 1.90 | | CLAY | Medium to dark grey - brown, firm, high plasticity. |
| | | LDO | K | R | 60.60 | 2.00 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION K | 60.60 | 2.00 | | |



Brisbane (07) 3891 6211 Melbourne (03) 9670 7933 Sydney (02) 9957 4133 Brisbane (07) 3221 0711

REPORT TC14-01 CSR COAL DIVISION PAGE 827 RUN AT 10:29:04 15/ 6/84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | R | 64.00 | 3.40 | | CLAY | Light to medium grey - brown, firm, high plasticity, occasional carbonaceous remains. |
| | | LDO | L | R | 65.60 | 1.60 | | LIGNITE | Dark brown, firm, friable. |
| | | LDO | L | R | 67.00 | 1.40 | | CLAY | Light to medium grey - brown, firm, high plasticity. |
| | | LDO | L | R | 67.60 | 0.60 | | INFERIOR LIGNITE | Clayey. |
| | | | | | BASE OF WORKING SECTION L | | | 67.60 | 3.60 |
| | | LDO | | R | 68.25 | 0.65 | | CLAY | Medium to dark grey, firm, high plasticity. |
| | | LDO | M | R | 69.00 | 0.75 | | INFERIOR LIGNITE | Clayey. |
| | | | | | BASE OF WORKING SECTION M | | | 69.00 | 0.75 |
| | | LDO | | R | 69.60 | 0.60 | | CLAY | Light to medium grey - brown, firm, high plasticity. |
| | | LDO | N | R | 70.80 | 1.20 | | LIGNITE | Clayey, dark brown, firm, low plasticity. |
| | | | | | BASE OF WORKING SECTION N | | | 70.80 | 1.20 |
| | | LDO | | R | 71.25 | 0.45 | | CLAY | Light to medium grey, high plasticity. |
| | | LDO | O | R | 71.90 | 0.65 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, puggy. |
| | | LDO | O | R | 72.80 | 0.90 | | CLAY | Light to medium brown - grey, firm, high plasticity. |
| | | LDO | O | R | 74.10 | 1.30 | | LIGNITE | Dark brown, firm, low plasticity. |
| | | | | | BASE OF WORKING SECTION O | | | 74.10 | 2.85 |
| | | LDO | | R | 77.80 | 3.70 | | CLAY | Light to medium grey - brown, firm, high plasticity, common carbonaceous remains. |
| | | LDO | P | R | 78.85 | 1.05 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | | | | BASE OF WORKING SECTION P | | | 78.85 | 1.05 |

EL2080 LAUNCESTON R0108

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REPORT TC14-01 CSR COAL DIVISION PAGE 528 RUN AT 10:29:05 15/ 6/84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | R | 80.50 | 1.65 | | CLAY | Light grey, firm, high plasticity. |
| | | LDO | Q | R | 81.90 | 1.40 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION Q | | | 81.90 | 1.40 |
| | | LDO | | R | 83.20 | 1.30 | | CLAY | Medium to dark brown - grey, firm, puggy. |
| | | LDO | R | R | 84.80 | 1.60 | | INFERIOR LIGNITE | Clayey, dark brown - grey, firm, puggy. |
| | | | | | BASE OF WORKING SECTION R | | | 84.80 | 1.60 |
| | | LDO | | R | 85.80 | 1.00 | | CLAY | Light to medium grey, firm, high plasticity. |
| | | LDO | S | R | 87.80 | 2.00 | | LIGNITE | Clayey, dark brown, firm, low plasticity. |
| | | | | | BASE OF WORKING SECTION S | | | 87.80 | 2.00 |
| | | LDO | | R | 88.90 | 1.10 | | CLAY | Medium to dark grey - brown, firm, high plasticity. |
| | | LDO | T | R | 90.30 | 1.40 | | INFERIOR LIGNITE | Clayey, dark brown - grey, firm, puggy. |
| | | | | | BASE OF WORKING SECTION T | | | 90.30 | 1.40 |
| | | | | | BASE OF SEAM LDO | | | 90.30 | 45.10 |
| | | | | R | 100.00 | 9.70 | | CLAY | Light grey - brown, firm, high plasticity, occasional carbonaceous remains. |

END OF BORE AT 100.00 m

EL2080 LAUNCESTON R0108

MULTISTREAM LISTING Bris (07) 263 3433 Syd (02) 53 ... Melb (03) 544 1899 Adel (08) 297 4788 Perth (09) 143 1555

397238

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0109
**********

Easting: 493500.000
Northing: 5412000.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 175.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 8.59
Drilling Commenced: 25/10/83
Drilling Completed: 26/10/83
Inclination:
Azimuth:
Standing Water Level:

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd
County:
Parish:
Portion:
Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED



CSR EXPLORATION

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.30 | 0.30 | | SILT | Sandy, clayey, light to medium brown, firm, low plasticity (silt). |
| | | | | R | 0.80 | 0.50 | | CLAY | Silty, light to medium yellow, firm, high plasticity (clay). |
| | | | | R | 1.00 | 0.20 | | SAND | Light to medium red, moderate strength, brittle, iron oxide, secondary, cement. |
| | | | | R | 3.30 | 2.30 | | CLAY | Kaolinitic, mottled off white - pink, firm, high plasticity (clay); Additional features include: yellow. |
| | | | | R | 3.50 | 0.20 | | CLAY | Kaolinitic, light to medium grey - brown, firm, high plasticity (clay). |
| | | | | R | 4.20 | 0.70 | | CLAY | Kaolinitic, mottled off white - pink, firm, high plasticity (clay); Additional features include: brown. |
| | | | | R | 7.00 | 2.80 | | CLAY | Light to medium brown, firm, high plasticity (clay); Bands include: INFERIOR LIGNITE, clayey, dark black - brown, firm, friable. |
| | | | | R | 8.00 | 1.00 | | CLAY | Light brown - grey, firm, high plasticity (clay). |
| | | | | | TOP OF SEAM LDO | | | 8.00 | |
| | | LDO | O | R | 9.00 | 1.00 | | LIGNITE | Clayey, dark black - brown, firm, friable; Bands include: LIGNEOUS CLAY, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION O | | | 9.00 | 1.00 |
| | | LDO | | R | 12.10 | 3.10 | | CLAY | Light grey - brown, firm, high plasticity (clay). |
| | | LDO | P | R | 13.20 | 1.10 | | LIGNITE and LIGNEOUS CLAY | Interbedded 80:20. LIGNITE: clayey, dark brown - black, firm, friable; LIGNEOUS CLAY: dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION P | | | 13.20 | 1.10 |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | R | 13.70 | 0.50 | | CLAY | Light to medium grey, firm, high plasticity (clay) |
| | | LDO | Q | R | 15.20 | 1.50 | | LIGNITE and LIGNEOUS CLAY | Interbedded 80:20 LIGNITE, clayey, dark brown - black, firm, friable; LIGNEOUS CLAY, dark brown, firm, low plasticity (organic). Bands include: CLAY, light to medium grey, firm, high plasticity (clay); LIGNITE CONTAINS APPROX 10% WOODY FRAGMENTS |
| | | | | | BASE OF WORKING SECTION Q | 15.20 | 1.50 | | |
| | | LDO | | R | 16.70 | 1.50 | | CLAY | Light to medium grey, firm, high plasticity (clay) |
| | | LDO | R | R | 17.90 | 1.20 | | LIGNITE | Clayey, dark brown - black, firm, friable |
| | | LDO | R | R | 18.50 | 0.60 | | INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 80:20 INFERIOR LIGNITE, clayey, dark brown - black, firm, friable; LIGNEOUS CLAY, dark brown, firm, low plasticity (organic) |
| | | | | | BASE OF WORKING SECTION R | 18.50 | 1.80 | | |
| | | LDO | | R | 19.20 | 0.70 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic) |
| | | LDO | S | R | 20.30 | 1.10 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | LDO | S | R | 20.80 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic) |
| | | LDO | S | R | 21.40 | 0.60 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION S | 21.40 | 2.20 | | |
| | | LDO | | R | 22.00 | 0.60 | | CLAY | Light to medium grey, firm, high plasticity (clay) |
| | | LDO | T | R | 22.90 | 0.90 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic) |
| | | | | | BASE OF WORKING SECTION T | 22.90 | 0.90 | | |

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 20[illegible]
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF SEAM LDO | | 22.90 | 14.90 | |
| | | | | R | 23.40 | 0.50 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay) |
| | | | | R | 36.40 | 13.00 | | CLAY | Light grey, firm, high plasticity (clay), rare woody fragments; |
| | | | | | | | | | SLAKES AND DISPERSES |
| | | | | R | 37.70 | 1.30 | | CLAY | Silty, light to medium grey - brown, firm, high plasticity (clay); |
| | | | | | | | | | SLAKES AND DISPERSES |
| | | | | R | 38.90 | 1.20 | | CLAY | Silty, light to medium grey - brown, firm, high plasticity (clay), occasional woody fragments; |
| | | | | | | | | | SLAKES AND DISPERSES |
| | | | | R | 39.90 | 1.00 | | SIDERITE | Light grey - green, high strength, brittle. |
| | | | | R | 47.40 | 7.50 | | CLAY | Light grey - off white, soft, high plasticity (clay). |
| | | | | | | | | | SLAKES AND DISPERSES |
| | | | | R | 48.00 | 0.60 | | SIDERITE | Light grey - off white, moderate strength, brittle. |
| | | | | R | 53.20 | 5.20 | | CLAY | Light grey - off white, soft, high plasticity (clay). |
| | | | | R | 53.70 | 0.50 | | INFERIOR LIGNITE | Clayey, gelatinous, dark brown - black, firm, low plasticity (organic). |
| | | | | R | 54.45 | 0.75 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay) |
| | | | | | TOP OF SEAM LFO | | 54.45 | | |

EL2080 LAUNCESTON R0109

AUSTREAM (03) 344 1899 Adel (08) 297 4788 Perth 09) 443 1555
AUSTREAM (03) 263 3433 Bris (07) 252 4788 Syd (02) 230 7[illegible] Melb

REPORT TC14-01 CSR COAL DIVISION PAGE 833 RUN AT 10:29:08 13/ 4/84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LFO | A | R | 59.40 | 4.95 | | LIGNITE | Clayey, gelatinous, dark brown - black, firm, low plasticity (organic); Bands include: LIGNEOUS CLAY, dark brown, firm, low plasticity (organic); APPROX 30% WOOD FRAGMENTS WOOD CONTENT INCREASES TOWARDS BASE OF UNIT, PU TO 60% |
| | | | | | BASE OF WORKING SECTION A | | | 59.40 | 4.95 |
| | | LFO | | R | 60.15 | 0.75 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) |
| | | LFO | B | R | 62.90 | 2.75 | | LIGNITE | Clayey, dark brown - black, firm, friable |
| | | LFO | B | R | 63.40 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic) |
| | | LFO | B | R | 63.80 | 0.40 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic) |
| | | | | | BASE OF WORKING SECTION B | | | 63.80 | 3.65 |
| | | LFO | | R | 64.30 | 0.50 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) |
| | | LFO | C | R | 64.90 | 0.60 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic) |
| | | LFO | C | R | 65.60 | 0.70 | | LIGNITE | Clayey, dark brown - black, firm, friable |
| | | LFO | C | R | 66.30 | 0.70 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic) |
| | | LFO | C | R | 68.30 | 2.00 | | LIGNITE | Clayey, dark brown - black, firm, friable |
| | | | | | BASE OF WORKING SECTION C | | | 68.30 | 4.00 |
| | | LFO | | R | 69.40 | 1.10 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic) |
| | | LFO | D | R | 70.20 | 0.80 | | LIGNITE | Clayey, dark brown - black, firm, friable |
| | | LFO | D | R | 70.80 | 0.60 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic) |
| | | | | | BASE OF WORKING SECTION D | | | 70.80 | 1.40 |

EL2080 LAUNCESTON R0109

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REPORT TC14-01 CSR COAL DIVISION PAGE 834 RUN AT 10:29:08 15/ 6/84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LFO | | R | 73.20 | 2.40 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay) |
| | | LFO | | R | 73.60 | 0.40 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | LFO | | R | 74.00 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LFO | | R | 74.40 | 0.40 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF SEAM LFO | | | 74.40 | 19.95 |
| | | | | R | 75.00 | 0.60 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay) |
| | | | | R | 85.20 | 10.20 | | CLAY | Light to medium grey, soft, high plasticity (clay); SLAKES AND DISPERSES |
| | | | | R | 85.40 | 0.20 | | SIDERITE | Light grey, low strength, brittle. |
| | | | | R | 85.90 | 0.50 | | CLAY | Light to medium grey, soft, high plasticity (clay). |

END OF BORE AT 85.90 m

EL2080 LAUNCESTON R0109

J.T.S. KEAM LISTING Bris (07) 261 3433 Syd (02) 53 2771 Melb (03) 544 899 Adel (08) 297 4788 Perth (09) 443 1555

397244

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080

Launceston

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EL2080 LAUNCESTON R0110

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| | | | |
|---|---|---|---|
| Easting: | 493750.000 | Logging Organisation: | CSR Exploration and Evaluation Group |
| Northing: | 5412000.000 | Logged By: | PRE |
| Grid Type: | Australian Mapping Grid | Drilling Contractor: | H.J. Stacpoole |
| Accuracy: | Approximate | Geophysical Logging: | B.P.D. Pty Ltd |
| Crl: | 185.00 | | |
| Datum: | Australian Height Datum | | |
| Sheet Reference: | | County: | |
| Sheet Index: | | Parish: | |
| Total Depth: | 7.64 | Portion: | |
| Drilling Commenced: | 23/10/83 | | |
| Drilling Completed: | 25/10/83 | | |
| Inclination: | | Plug Depths: | |
| Azimuth: | | Hole Diameter: | 150 |
| Standing Water Level: | | Core Diameter: | |
| | | Cased Depths: | 3.0 |
| | | Core Barrel: | |
| Available Data: | Gamma Logs | | |
| | Neutron Logs | | |
| | Density Logs | Drill Bits: | Blades |
| | Resistivity Logs | | Rollers |
| | Caliper Logs | | Tungsten Carbide |

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0110

397245

LAUNCESTON GEOLOGICAL LOG REPORT AIP EL2080 TENEMENT CODE: Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.70 | 0.70 | | CLAY | Silty, sandy, light to medium brown, weathered, firm, high plasticity (clay). |
| | | | | | | | | | BASALT FLOAT CHANGE TO ROLLER BIT |
| | | | | R | 2.00 | 1.30 | | BASALT | Light to medium grey, weathered, extremely high strength tough. |
| | | | | R | 3.70 | 1.70 | | BASALT | Light to medium grey, weathered, extremely high strength tough;<br>Bands include: CLAY, light to medium green, weathered, firm, high plasticity (clay); |
| | | | | | | | | | CLAY PROBABLY OCCURS AS INFILL ON |
| | | | | | | | | | JOINTS. HOLE CAVING 2.0 TO 2.4M |
| | | | | R | 5.20 | 1.50 | | CLAY | Light to medium yellow - buff, firm, high plasticity (clay - gradational base. |
| | | | | | | | | | 120MM BLADES FROM 4M |
| | | | | R | 9.50 | 4.30 | | CLAY | Kaolinitic, mottled off white - yellow, firm, high plasticity (clay);<br>Additional features include, pink. |
| | | | | R | 10.00 | 0.50 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | | | R | 11.10 | 1.10 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). |
| | | | | TOP OF SEAM LDO | | 11.10 | | | |
| | LDO | Q | | R | 12.20 | 1.10 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | | BASE OF WORKING SECTION Q | | 12.20 | | 1.10 | |
| | LDO | | | R | 12.60 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | LDO | R | | R | 13.80 | 1.20 | | LIGNITE | Clayey, dark brown - black, firm, friable. |

EL2080 LAUNCESTON R0110



Adelaide (08) 344 1899 Actel (08) 297 4788 Perth (09) 443 1455
Brisbane (07) 252 3433 Sydney (02) 211 0711 Melbourne (03) 543 3277

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | R | R | 14.00 | 0.20 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | LDO | R | R | 14.40 | 0.40 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | | | BASE OF WORKING SECTION R | | 14.40 | 1.80 | |
| | | LDO | | R | 16.00 | 1.60 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | S | R | 17.20 | 1.20 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | | | BASE OF WORKING SECTION S | | 17.20 | 1.20 | |
| | | | | | BASE OF SEAM LDO | | 17.20 | 6.10 | |
| | | | R | | 29.40 | 12.20 | | CLAY | Light to medium off white, firm, high plasticity (clay). |
| | | | | | | | | | 21.6 TO 25M NO CUTTING RETURN |
| | | | R | | 31.60 | 2.20 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | R | | 32.00 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | | R | | 32.60 | 0.60 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | R | | 33.20 | 0.60 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). |
| | | | R | | 33.90 | 0.70 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | | R | | 38.00 | 4.10 | | CLAY and CLAY | Interbedded 60:40. CLAY: ligneous, medium to dark brown, firm, high plasticity (clay); CLAY: light to medium brown - grey, firm, high plasticity (clay). |
| | | | R | | 39.60 | 1.60 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | | R | | 43.50 | 3.90 | | CLAY and CLAY | Interbedded 60:40. CLAY: light to medium grey - brown, firm, high plasticity (clay); CLAY: carbonaceous, light to medium brown - grey, firm, high plasticity (clay). |

EL2080 LAUNCESTON R0110

MULTISTREAM LISTING Brisbane (07) 263 3433 Sydney (02) 29 0713 Melb. 3031 Adelaide (08) 297 4788 Perth (09) 448 1555 418 Spencer Street West Perth 6005 448 1556

39 2 2 4 5

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 20BC
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 48.60 | 5.10 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) |
| | | | | R | 51.10 | 2.50 | | CLAY and CLAY | Interbedded 60:40, CLAY: carbonaceous, light to medium brown - grey, firm, high plasticity (clay); CLAY: light to medium grey - brown, firm, high plasticity (clay) |
| | | | | R | 53.30 | 2.20 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) |
| | | | | TOP OF SEAM LEO | 53.30 | | | | |
| | | LEO | | R | 54.00 | 0.70 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable |
| | | LEO | | R | 55.20 | 1.20 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) |
| | | LEO | A | R | 59.60 | 4.40 | | LIGNITE and INFERIOR LIGNITE | Interbedded 90:10, LIGNITE: clayey, dark brown - black, firm, friable; INFERIOR LIGNITE: clayey, dark brown - black, firm, friable |
| | | | | BASE OF WORKING SECTION A | 59.60 | 4.40 | | | |
| | | LEO | | R | 60.70 | 1.10 | | LIGNEOUS CLAY | Dark brown, soft, low plasticity (organic) |
| | | LEO | B | R | 61.70 | 1.00 | | LIGNITE | Clayey, woody textured, dark brown - black, firm, friable |
| | | LEO | B | R | 63.00 | 1.30 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic) |
| | | LEO | B | R | 63.60 | 0.60 | | LIGNITE | Clayey, woody textured, dark brown - black, firm, friable |
| | | | | BASE OF WORKING SECTION B | 63.60 | 2.90 | | | |
| | | LEO | | R | 64.50 | 0.90 | | CLAY | Carbonaceous, light to medium brown - grey, firm, high plasticity (clay) |
| | | LEO | C | R | 67.10 | 2.60 | | LIGNITE and INFERIOR LIGNITE | Interbedded 80:20, LIGNITE: clayey, woody textured, dark brown - black, firm, friable; INFERIOR LIGNITE: clayey, dark brown, firm, low plasticity (organic) |
| | | LEO | C | R | 67.80 | 0.70 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic) |



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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT PORO
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF WORKING SECTION C | 67.80 | 3.30 | | |
| | | LEO | | R | 68.40 | 0.60 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | LEO | D | R | 68.80 | 0.40 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION D | 68.80 | 0.40 | | |
| | | | | | BASE OF SEAM LEO | 68.80 | 15.50 | | |
| | | | | R | 73.00 | 4.20 | | CLAY | Light to medium grey - off white, soft, high plasticity (clay); SLAKES AND DISPERSES |
| | | | | R | 73.70 | 0.70 | | LIGNEOUS CLAY | Dark brown, soft, low plasticity (organic). |
| | | | | R | 76.00 | 2.30 | | CLAY | Light to medium grey - off white, soft, high plasticity (clay). |
| | | | | R | 76.40 | 0.40 | | SIDERITE | Light grey, high strength, brittle. |
| END OF BORE AT 76.40 m | | | | | | | | | |

EL2080 LAUNCESTON R0110

MULTISTREAM LISTING Bris: (07)263 3433 Syd: (02) 53 0711 Melb: (03) 544 1893 Adel: (08) 297 4288 Perth: (09) 448 1555

397249

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

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EL2080 LAUNCESTON R0111

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Easting: 494000.000
Northing: 5412000.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 175.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 90.50
Drilling Commenced: 22/10/83
Drilling Completed: 22/10/83
Inclination:
Azimuth:
Standing Water Level:

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED



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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.30 | 0.30 | | CLAY | Silty, sandy, light to medium brown, weathered, firm, low plasticity (clay). |
| | | | | R | 1.00 | 0.70 | | CLAY | Silty, mottled cream - yellow, weathered, firm, high plasticity (clay). |
| | | | | R | 1.50 | 0.50 | | GRAVEL | Medium to dark brown - orange, weathered, low strength, brittle, iron oxide, cement;<br>IRON OXIDE PISOLITIC GRAVEL |
| | | | | R | 3.70 | 2.20 | | CLAY | Silty, mottled cream - yellow, firm, high plasticity (clay). |
| | | | | R | 4.60 | 0.90 | | CLAY | Kaolinitic, light to medium grey, firm, high plasticity (clay) |
| | | | | R | 5.50 | 0.90 | | CLAY | Silty, light to medium yellow, firm, low plasticity (clay) |
| | | | | R | 5.80 | 0.30 | | CLAY | Mottled cream - yellow, firm, high plasticity (clay);<br>Additional features include: purple. |
| | | | | R | 7.50 | 1.70 | | CLAY | Kaolinitic, light to medium grey, firm, high plasticity (clay). |
| | | | | R | 8.90 | 1.40 | | CLAY | Silty, mottled cream - yellow, firm, high plasticity (clay) |
| | | | | R | 11.00 | 2.10 | | CLAY | Silty, gravelly, light to medium yellow, firm, low plasticity (clay);<br>Bands include: SILT, clayey, light to medium yellow, soft, low plasticity (silt). |
| | | | | R | 12.40 | 1.40 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). |
| | | | | R | 12.90 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | R | 13.80 | 0.90 | | CLAY | Ligneous, medium to dark brown, firm, high plasticity (clay). |
| | | | | R | 14.30 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic);<br>Bands include: LIGNITE, clayey, dark black - brown, firm, low plasticity (organic) |
| | | | | R | 18.00 | 3.70 | | CLAY | Silty, light to medium brown, firm, high plasticity (clay).<br>SLAKES AND DISPERSES |
| | | | | R | 27.00 | 9.00 | | CLAY | Silty, light to medium grey - brown, firm, high plasticity (clay);<br>SLAKES AND DISPERSES |



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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 27.40 | 0.40 | | CLAY | Silty, sandy, light to medium brown, firm, high plasticity (clay), very fine grained. |
| | | | | R | 28.00 | 0.60 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | R | 28.50 | 0.50 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | | | R | 29.00 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | R | 29.50 | 0.50 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | | | R | 30.00 | 0.50 | | SIDERITE | Light grey, moderate strength, brittle. |
| | | | | R | 30.65 | 0.65 | | CLAY | Silty, sandy, light to medium brown - grey, firm, low plasticity (clay).<br>SLAKES AND DISPERSES, SAND LENSES AND BANDS. |
| | | | | R | 31.00 | 0.35 | | SIDERITE | Light grey, high strength, brittle. |
| | | | | R | 31.50 | 0.50 | | CLAY | Silty, sandy, light to medium grey, firm, low plasticity (clay).<br>SLAKES AND DISPERSES, SAND LENSES AND BANDS. |
| | | | | R | 32.20 | 0.70 | | SIDERITE | Light grey, high strength, brittle. |
| | | | | R | 32.80 | 0.60 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). |
| | | TOP OF SEAM LEO | | | 32.80 | | | | |
| | LEO | A | | R | 33.90 | 1.10 | | LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic).<br>Bands include: INFERIOR LIGNITE, clayey, dark brown - black, firm, low plasticity (organic). |
| | LEO | A | | R | 34.60 | 0.70 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | LEO | A | | R | 35.80 | 1.20 | | LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic). |
| | | BASE OF WORKING SECTION A | | | 35.80 | 3.00 | | | |
| | LEO | | | R | 36.60 | 0.80 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). |

EL2080 LAUNCESTON R0111

Australia Wide Coal Pty Ltd 3rd Floor 191 St Georges Terrace Perth WA 6000 Australia Tel (09) 321 4711 Telex AA 93 544 Cable Australia Perth (09) 322 1699 Acsel (08) 29 4782 Perth (09) 449 1555

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WDK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LFO | | R | 37.20 | 0.60 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic) |
| | | LFO | | R | 37.60 | 0.40 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LFO | B | R | 39.00 | 1.40 | | LIGNITE and LIGNEOUS CLAY | Interbedded 90:10 LIGNITE, clayey, gelatinous, dark brown - black, firm, friable, occasional woody fragments. LIGNEOUS CLAY, dark brown, firm, high plasticity (organic) |
| | | | | BASE OF WORKING SECTION B | | 39.00 | 1.40 | | |
| | | LFO | | R | 39.80 | 0.80 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | LFO | | R | 40.20 | 0.40 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic) |
| | | LFO | | R | 41.00 | 0.80 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic) |
| | | LFO | C | R | 41.70 | 0.70 | | LIGNITE | Clayey, dark brown - black, firm, friable |
| | | LFO | C | R | 42.90 | 1.20 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). Bands include: CLAY, light to medium grey - brown, firm, high plasticity (clay) |
| | | LFO | C | R | 43.40 | 0.50 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | | BASE OF WORKING SECTION C | | 43.40 | 2.40 | | |
| | | LFO | | R | 44.10 | 0.70 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic) |
| | | LFO | D | R | 44.80 | 0.70 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, low plasticity (organic) |
| | | | | BASE OF WORKING SECTION D | | 44.80 | 0.70 | | |
| | | | | BASE OF SEAM LFO | | 44.80 | 12.00 | | |
| | | | | R | 45.35 | 0.55 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | | | R | 45.75 | 0.40 | | SIDERITE | Light grey, high strength, brittle |



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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 206C
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 52.40 | 6.65 | | CLAY | Light to medium grey, firm, high plasticity (clay). |
| | | | | R | 53.60 | 1.20 | | SIDERITE | Light grey - brown, high strength, brittle; |
| | | | | | | | | | CAVING OF SIDERITE ZONE |
| | | | | R | 58.10 | 4.50 | | CLAY | Light to medium grey, soft, high plasticity (clay); |
| | | | | | | | | | SLAKES AND DISPERSES |
| | | | | R | 64.40 | 6.30 | | CLAY | Light to medium grey, soft, high plasticity (clay), common siderite, nodules; Bands include: SIDERITE, light grey - brown, moderate strength, brittle. |
| | | | | R | 74.40 | 10.00 | | CLAY | Light to medium grey, soft, high plasticity (clay). |
| | | | | R | 75.10 | 0.70 | | SIDERITE | Light grey, high strength, brittle. |
| | | | | R | 90.50 | 15.40 | | CLAY | Light to medium grey, soft, high plasticity (clay). |

END OF BORE AT 90.50 m

EL2080 LAUNCESTON R0111

Melb (03) 544 899 Adel (08) 297 4788 Perth (09) 443 1555

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT [illegible]
Launceston

**********
EL2080 LAUNCESTON RO112
**********

Easting: 495750.000
Northing: 5413250.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 145.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 5.24
Drilling Commenced: 01/11/83
Drilling Completed: 01/11/83
Inclination:
Azimuth:
Standing Water Level:

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.E.P. Pty Ltd
County:
Parish:
Portion:
Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED



CSR 21868

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.50 | 0.50 | | SAND | Silty, clayey, light to medium brown, soft, non-plastic, fine and medium grained. |
| | | | | R | 1.00 | 0.50 | | SAND | Silty, gravelly, light to medium red - brown, soft, non-plastic, iron oxide, staining. |
| | | | | R | 2.50 | 1.50 | | CLAY | Kaolinitic, light to medium grey, firm, high plasticity (clay). |
| | | | | R | 3.40 | 0.90 | | CLAY | Mottled grey - khaki, firm, high plasticity (clay). |
| | | | | R | 3.90 | 0.50 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). |
| | | | | R | 4.95 | 1.05 | | CLAY | Silty, sandy, light to medium brown, firm, high plasticity (clay), fine and medium grained, fining upwards; |
| | | | | | | | | | SANDY TOWARDS BASE |
| | | | | R | 5.30 | 0.35 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | R | 6.95 | 1.65 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | | | R | 7.40 | 0.45 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | R | 8.80 | 1.40 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | | | R | 9.75 | 0.95 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic), gradational base. |
| | | | | R | 13.00 | 3.25 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | | | R | 14.00 | 1.00 | | LIGNITE | Clayey, woody textured, medium to dark brown - black, soft, low plasticity (organic), fibrous. |
| | | | | R | 15.00 | 1.00 | | CLAY | Ligneous, medium to dark brown, firm, low plasticity (organic). |
| | | | | R | 17.20 | 2.20 | | LIGNITE | Clayey, woody textured, medium to dark brown - black, soft, low plasticity (organic), fibrous. |
| | | | | R | 17.80 | 0.60 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | | | R | 18.70 | 0.90 | | LIGNITE | Clayey, woody textured, medium to dark brown - black, soft, low plasticity (organic). |

EL2080 LAUNCESTON R0112

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 19.10 | 0.40 | | INFERIOR LIGNITE | Clayey, woody textured, medium to dark brown - black, soft, low plasticity (organic). |
| | | | | R | 19.40 | 0.30 | | LIGNITE | Clayey, woody textured, medium to dark brown - black, soft, low plasticity (organic). |
| | | | | R | 19.80 | 0.40 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |
| | | | | R | 20.40 | 0.60 | | INFERIOR LIGNITE | Clayey, woody textured, medium to dark brown - black, soft, low plasticity (organic), fibrous. |
| | | | | R | 20.90 | 0.50 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). |
| | | | | R | 21.30 | 0.40 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |
| | | | | R | 22.10 | 0.80 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). |
| | | | | R | 22.70 | 0.60 | | INFERIOR LIGNITE | Clayey, woody textured, medium to dark brown - black, soft, low plasticity (organic), fibrous. |
| | | | | R | 24.00 | 1.30 | | CLAY | Light grey - brown, firm, high plasticity (clay). |
| | | | | R | 24.30 | 0.30 | | INFERIOR LIGNITE | Clayey, woody textured, medium to dark brown - black, soft, low plasticity (organic), fibrous. |
| | | | | R | 24.90 | 0.60 | | CLAY | Ligneous, medium to dark brown, firm, high plasticity (clay). |
| | | | | R | 25.90 | 1.00 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |
| | | | | R | 28.70 | 2.80 | | CLAY | Light grey, firm, high plasticity (clay). |
| | | | | R | 29.20 | 0.50 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |
| | | | | R | 29.80 | 0.60 | | CLAY | Light grey, firm, high plasticity (clay), common siderite, nodules. |
| | | | | R | 30.40 | 0.60 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |
| | | | | R | 33.50 | 3.10 | | CLAY | Light grey, firm, high plasticity (clay). |
| | | | | R | 33.60 | 0.10 | | SIDERITE | Light to medium brown, moderate strength, brittle. |
| | | | | R | 36.60 | 3.00 | | CLAY | Light grey - brown, firm, high plasticity (clay). |
| | | | | R | 36.90 | 0.30 | | SIDERITE | Light to medium brown, high strength, brittle. |

EL2080 LAUNCESTON R0112

39725

REPORT TC14-01 CSR COAL DIVISION PAGE 848 RUN AT 10:29:16 15[illegible]

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT [illegible]
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 41.90 | 5.00 | | CLAY | Light grey - purple, firm, high plasticity (clay). |
| | | | | R | 42.00 | 0.10 | | SIDERITE | Light grey - green, high strength, brittle |
| | | | | R | 44.20 | 2.20 | | CLAY | Light grey - purple, firm, high plasticity (clay). |
| | | | | R | 45.30 | 1.10 | | SIDERITE | Light to medium brown, high strength, brittle. |
| | | | | R | 47.20 | 1.90 | | CLAY | Silty, light grey, firm, high plasticity (clay). |
| | | | | R | 47.40 | 0.20 | | SIDERITE | Light brown - green, high strength, brittle. |
| | | | | R | 50.50 | 3.10 | | CLAY | Light grey - green, firm, high plasticity (clay), rare woody fragments. |
| | | | | R | 50.70 | 0.20 | | SIDERITE | Light grey, moderate strength, brittle. |
| | | | | R | 52.40 | 1.70 | | CLAY | Light grey, firm, high plasticity (clay). |
| | | | | | | | | | GEOPHYSICALLY LOGGED TO 32M |

END OF BORE AT 52.40 m

EL2080 LAUNCESTON R0112

Melb (03) 544 839 Adel (08) 297 4788 Perth (09) 443 555
Bris (07) 263 3133 Syd (02) 53 3[illegible]

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0113
**********

Easting: 495750.000
Northing: 5412750.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 145.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 6.20
Drilling Commenced: 30/10/83
Drilling Completed: 30/10/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0113

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT

Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 1.00 | 1.00 | | CLAY | Light to medium yellow, weathered, firm, high plasticity (clay). |
| | | | | R | 2.20 | 1.20 | | CLAY | Kaolinitic, mottled yellow - off white, weathered, firm, high plasticity (clay).<br>Additional features include: pink, weathered. |
| | | | | R | 3.60 | 1.40 | | CLAY | Kaolinitic, mottled off white - khaki, very low strength, fault, high plasticity (clay), gradational base.<br>Bands include: CLAY, kaolinitic, mottled off white - pink, weathered, firm, high plasticity (clay). |
| | | | | R | 3.90 | 0.30 | | CLAY | Mottled brown, weathered, firm, high plasticity (clay). |
| | | | | R | 4.60 | 0.70 | | CLAY | Medium to dark brown, weathered, firm, high plasticity (clay). |
| | | | | R | 5.30 | 0.70 | | LIGNITE | Clayey, medium to dark brown - purple, weathered, firm, friable, subfissile. |
| | | | | R | 6.00 | 0.70 | | LIGNITE | Clayey, dark brown - purple, weathered, firm, friable, subfissile. |
| | | | | R | 6.30 | 0.30 | | LIGNITE | Clayey, humified, dark brown - black, firm, friable, subfissile.<br>Bands include: LIGNEOUS CLAY, medium to dark brown, firm, high plasticity (organic). |
| | | | | | | | | | LIGNITE IS HUMIFIED, WOODY MATERIAL IS |
| | | | | | | | | | GELLIFIED, NO FIBROUS WOOD |
| | | | | R | 6.50 | 0.20 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | | | R | 6.90 | 0.40 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | | R | 7.50 | 0.60 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | R | 8.25 | 0.75 | | LIGNITE | Clayey, humified, dark brown - black, firm, friable. |
| | | | | R | 9.50 | 1.25 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | R | 10.00 | 0.50 | | LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | | R | 10.20 | 0.20 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |



Adelaide (08) 297 4788 Perth (09) 442 1554 Brisbane (07) 3252 3430 Melbourne (03) 9670 7377

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT EC080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 11.00 | 0.80 | | LIGNITE and INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 80:10:10. LIGNITE: clayey, woody textured, dark brown - black, firm, friable; INFERIOR LIGNITE: clayey, dark brown, firm, low plasticity (organic); LIGNEOUS CLAY: dark brown, firm, high plasticity (organic). |
| | | | | R | 11.60 | 0.60 | | CLAY | Ligneous, medium to dark brown, firm, high plasticity (organic). |
| | | | | R | 12.10 | 0.50 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | R | 12.70 | 0.60 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | R | 14.40 | 1.70 | | LIGNITE | Clayey, woody textured, dark brown - black, firm, friable; Bands include: LIGNEOUS CLAY, dark brown, firm, low plasticity (organic); Bands include: CLAY, light to medium grey - brown, firm, high plasticity (clay). |
| | | | | R | 14.60 | 0.20 | | LIGNITE | Clayey, light to medium brown, firm, friable. |
| | | | | R | 16.30 | 1.70 | | CLAY and CLAY | Interbedded 50:50. CLAY: light to medium brown - grey, firm, high plasticity (clay); CLAY: medium to dark brown, firm, high plasticity (clay). |
| | | | | R | 18.90 | 2.60 | | CLAY | Light grey - off white, firm, high plasticity (clay). |
| | | | | R | 20.40 | 1.50 | | SIDERITE | Light grey - brown, moderate strength, brittle. |
| | | | | R | 23.50 | 3.10 | | CLAY | Light grey - off white, firm, high plasticity (clay). |
| | | | | R | 24.30 | 0.80 | | CLAY | Silty, light to medium brown, firm, high plasticity (clay). |
| | | | | R | 25.00 | 0.70 | | CLAY | Light grey - off white, firm, high plasticity (clay). |
| | | | | R | 25.45 | 0.45 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | | | R | 26.00 | 0.55 | | SIDERITE | Light to medium brown, firm, tough. |
| | | | | R | 29.90 | 3.90 | | CLAY | Light grey - off white, firm, high plasticity (clay). |
| | | | | R | 30.60 | 0.70 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | R | 31.00 | 0.40 | | CLAY | Ligneous, medium to dark brown, firm, high plasticity (clay). |

EL2080 LAUNCESTON R0113

MULTISTREAM LISTING Bris:(07)263 3433 Syd:(02) 50 0711 Melb:(03) 544 1899 Adel:(08) 297 4088 Perth:(09) 443 1555

39/2961

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 33.30 | 2.30 | | INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 60:40. INFERIOR LIGNITE: clayey, woody textured, dark brown - black, soft, low plasticity (organic); LIGNEOUS CLAY: dark brown, firm, high plasticity (organic). |
| | | | | R | 34.20 | 0.90 | | CLAY | Mottled brown, firm, high plasticity (clay). |
| | | | | R | 38.80 | 4.60 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | | | R | 39.40 | 0.60 | | CLAY | Carbonaceous, light to medium brown, firm, high plasticity (clay). |
| | | | | R | 40.35 | 0.95 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | | | R | 40.80 | 0.45 | | LIGNITE | Clayey, woody textured, dark black - brown, firm, friable. |
| | | | | R | 41.30 | 0.50 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | | | R | 42.20 | 0.90 | | INFERIOR LIGNITE | Clayey, woody textured, dark brown - black, firm, low plasticity (organic). |
| | | | | R | 42.80 | 0.60 | | CLAY | Carbonaceous, light to medium brown - grey, firm, high plasticity (clay). |
| | | | | R | 44.60 | 1.80 | | LIGNITE | Clayey, woody textured, dark brown - black, soft, low plasticity (organic). |
| | | | | R | 45.20 | 0.60 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | | | R | 46.60 | 1.40 | | LIGNITE and INFERIOR LIGNITE and CLAY | Interbedded 40:40:20. LIGNITE: clayey, woody textured, dark brown - black, soft, low plasticity (organic); INFERIOR LIGNITE: clayey, woody textured, dark brown - black, soft, low plasticity (organic); CLAY: carbonaceous, light to medium brown - grey, firm, high plasticity (clay). |
| | | | | R | 47.00 | 0.40 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | | | R | 47.20 | 0.20 | | INFERIOR LIGNITE | Clayey, woody textured, dark brown - black, soft, low plasticity (organic). |
| | | | | R | 48.30 | 1.10 | | LIGNITE | Clayey, woody textured, dark brown - black, soft, low plasticity (organic). |
| | | | | R | 50.10 | 1.80 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). |
| | | | | R | 54.00 | 3.90 | | CLAY | Light grey, firm, high plasticity (clay). |

EL2080 LAUNCESTON R0113

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397262

MULTISTREAM LISTING Brisb (07) 263 3433 Syd (02) 53 0771 Melb (03) 544 1899 Adel (08) 297 4788 Perth (09) 443 1555

REPORT TC14-01 CSR COAL DIVISION PAGE 853 RUN AT 10:29:20 15/ /84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 54.70 | 0.70 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic) |
| | | | | R | 55.50 | 0.80 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay) |
| | | | | R | 55.90 | 0.40 | | CLAY | Woody textured, carbonaceous, light to medium brown - grey, firm, high plasticity (clay), abundant woody fragments. |
| | | | | R | 56.30 | 0.40 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay) |
| | | | | R | 57.00 | 0.70 | | INFERIOR LIGNITE | Clayey, woody textured, dark brown, firm, low plasticity (organic) |
| | | | | R | 58.20 | 1.20 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay) |
| | | | | R | 58.80 | 0.60 | | SIDERITE | Light to medium brown, moderate strength, brittle. |
| | | | | R | 59.60 | 0.80 | | CLAY | Light grey, firm, high plasticity (clay) |
| | | | | R | 60.20 | 0.60 | | SIDERITE | Light to medium brown, moderate strength, brittle. |
| | | | | R | 61.60 | 1.40 | | CLAY | Light grey, firm, high plasticity (clay) |
| | | | | R | 62.00 | 0.40 | | SIDERITE | Light to medium brown, high strength, brittle |

END OF BORE AT 62.00 m

EL2080 LAUNCESTON R0113

397263

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT
Launceston

**********
EL2080 LAUNCESTON RO114
**********

Easting: 496000.000
Northing: 5412080.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 145.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 8.56
Drilling Commenced: 31/10/83
Drilling Completed: 31/10/83
Inclination:
Azimuth:
Standing Water Level:

Logging Organisation: CSR Exploration and Evaluation Grp.
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd.
County:
Parish:
Portion:
Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED



AUSTRALIA WIDE STRONG Brs (07) 263 3433 Syd (02) 53 0777 Melb (03) 544 1899 Adel (08) 297 4788 Perth (09) 443 1555

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080

Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.80 | 0.80 | | CLAY | Silty, light to medium yellow, weathered, firm, high plasticity (clay). |
| | | | | R | 1.30 | 0.50 | | CLAY | Silty, kaolinitic, mottled yellow - off white, weathered, firm, high plasticity (clay); Additional features include: pink, weathered. |
| | | | | R | 3.50 | 2.20 | | CLAY | Silty, kaolinitic, mottled off white - pink, weathered, firm, high plasticity (clay); Additional features include: yellow, weathered. |
| | | | | R | 4.10 | 0.60 | | LIGNITE | Clayey, light to medium brown - purple, weathered, firm, friable. |
| | | | | R | 4.60 | 0.50 | | LIGNEOUS CLAY | Light to medium brown - purple, weathered, firm, friable. |
| | | | | R | 5.60 | 1.00 | | LIGNITE | Clayey, light to medium brown - purple, weathered, firm, friable. |
| | | | | R | 6.20 | 0.60 | | LIGNITE | Clayey, dark brown - purple, weathered, firm, friable. |
| | | | | R | 7.00 | 0.80 | | INFERIOR LIGNITE | Clayey, medium to dark brown - purple, weathered, firm, friable. |
| | | | | R | 8.00 | 1.00 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | | | R | 14.40 | 6.40 | | CLAY | Micaceous, light to medium brown - grey, firm, high plasticity (clay). |
| | | | | R | 15.60 | 1.20 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | R | 16.90 | 1.30 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | | | R | 18.00 | 1.10 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | R | 18.80 | 0.80 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | | | R | 19.60 | 0.80 | | LIGNITE | Clayey, woody textured, dark brown - black, firm, low plasticity (organic). |
| | | | | R | 20.30 | 0.70 | | CLAY | Light to medium grey, firm, high plasticity (clay). |
| | | | | R | 22.20 | 1.90 | | INFERIOR LIGNITE | Clayey, dark brown - black, firm, friable. |
| | | | | R | 23.60 | 1.40 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |

EL2080 LAUNCESTON R0114

397265

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 27.10 | 3.50 | | CLAY | Silty, light to medium grey - brown, firm, high plasticity (clay);<br>SLAKES AND DISPERSES |
| | | | | R | 27.65 | 0.55 | | SIDERITE | Light to medium brown, moderate strength, brittle. |
| | | | | R | 33.80 | 6.15 | | CLAY | Silty, light to medium grey - brown, firm, high plasticity (clay);<br>SLAKES AND DISPERSES |
| | | | | R | 36.80 | 3.00 | | CLAY | Ligneous, light to medium brown, firm, high plasticity (clay). |
| | | | | R | 38.60 | 1.80 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | | | R | 39.00 | 0.40 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | R | 40.00 | 1.00 | | CLAY | Ligneous, light to medium brown, firm, high plasticity (clay). |
| | | | | R | 44.90 | 4.90 | | INFERIOR LIGNITE and LIGNITE and LIGNEOUS CLAY | Interbedded 40:40:20, INFERIOR LIGNITE: clayey, woody textured, dark brown - black, soft, low plasticity (organic); LIGNITE: clayey, woody textured, dark brown - black, soft, low plasticity (organic); LIGNEOUS CLAY: dark brown, firm, high plasticity (organic). |
| | | | | R | 45.50 | 0.60 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | R | 47.00 | 1.50 | | LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | R | 47.80 | 0.80 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | R | 48.90 | 1.10 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | R | 54.40 | 5.50 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | | | R | 55.10 | 0.70 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | R | 56.60 | 1.50 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | R | 57.40 | 0.80 | | CLAY | Ligneous, light to medium grey - brown, firm, high plasticity (clay). |

EL2080 LAUNCESTON R0114

MULTISTREAM LISTING Bris.(07)263 3433 Syd.(02) 53 0771 Melb.(03) 644 1899 Adel.(08) 297 4788 Perth (09) 443 1555

157
19741135
39726

158

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 60.80 | 3.40 | | LIGNITE and INFERIOR LIGNITE and LIGNEOUS CLAY and CLAY | Interbedded 35:35:20:10. LIGNITE: clayey, woody textured, dark brown, soft, low plasticity (organic); INFERIOR LIGNITE: clayey, woody textured, dark brown, soft, low plasticity (organic); LIGNEOUS CLAY: dark brown, firm, low plasticity (organic); CLAY: light to medium grey - brown, firm, high plasticity (clay) |
| | | | | R | 65.75 | 4.95 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) |
| | | | | R | 66.50 | 0.75 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic) |
| | | | | R | 66.80 | 0.30 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) |
| | | | | R | 67.50 | 0.70 | | LIGNITE | Clayey, woody textured, dark brown, soft, low plasticity (organic) |
| | | | | R | 69.00 | 1.50 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) |
| | | | | R | 70.60 | 1.60 | | LIGNITE | Clayey, woody textured, dark brown, soft, low plasticity (organic) |
| | | | | R | 71.10 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic) |
| | | | | R | 71.70 | 0.60 | | INFERIOR LIGNITE | Clayey, woody textured, dark brown, soft, low plasticity (organic). |
| | | | | R | 72.30 | 0.60 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) |
| | | | | R | 72.70 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic) |
| | | | | R | 73.00 | 0.30 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) |
| | | | | R | 73.40 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | R | 80.70 | 7.30 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) common woody fragments. |
| | | | | R | 80.90 | 0.20 | | SIDERITE | Light to medium brown, moderate strength, brittle |
| | | | | R | 85.60 | 4.70 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) common woody fragments. |

END OF BORE AT 85.60 m

EL2080 LAUNCESTON R0114

397267

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0115
**********

Easting: 493000.000
Northing: 5413750.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 170.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 121.00
Drilling Commenced: 24/10/83
Drilling Completed: 27/10/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: BROADLEY
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0115

Perth 09443 1555 Adel (08) 293 4788 Melb (03) 544 1699 Sv 1 102 3 0 71 (1) 263 3433

897268

REPORT TC14-01 CSR COAL DIVISION PAGE 859 RUN AT 10:29:22 15/ 6/84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080

Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.50 | 0.50 | | SOIL | Clayey, medium to dark brown, very soft, friable. |
| | | | | R | 7.00 | 6.50 | | CLAY | Light brown - off white, very soft, high plasticity. |
| | | | | R | 9.30 | 2.30 | | CLAY | Light yellow - off white, very soft, high plasticity. |
| | | | | R | 9.60 | 0.30 | | INFERIOR LIGNITE and CLAY | Interbedded 60:40. INFERIOR LIGNITE; CLAY: lithic, dark brown, very soft, puggy. |
| | | | | R | 11.40 | 1.80 | | CLAY | Light to medium brown - grey, very soft, high plasticity, occasional woody fragments. |
| | | | | R | 11.60 | 0.20 | | INFERIOR LIGNITE | Clayey. |
| | | | | R | 12.40 | 0.80 | | CLAY | Light to medium brown - grey, very soft, high plasticity, common woody fragments. |
| | | | | | TOP OF SEAM LBO | | | 12.40 | |
| | | LBO | 21 | R | 13.70 | 1.30 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 1 | | | 13.70 | 1.30 |
| | | LBO | 22 | R | 15.00 | 1.30 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 2 | | | 15.00 | 1.30 |
| | | | | | BASE OF WORKING SECTION 2 | | | 15.00 | 2.60 |
| | | LBO | | R | 17.30 | 2.30 | | CLAY | Light to medium brown - grey, firm, high plasticity, common woody fragments. |
| | | LBO | 31 | R | 18.10 | 0.80 | | LIGNITE | Dark brown, firm, friable. |
| | | LBO | 31 | R | 18.80 | 0.70 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | | | | BASE OF WORKING SECTION 1 | | | 18.80 | 1.50 |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WORK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | 32 | R | 19.90 | 1.10 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 2 | 19.90 | 1.10 | | |
| | | | | | BASE OF WORKING SECTION 3 | 19.90 | 2.60 | | |
| | | LBO | | R | 20.70 | 0.80 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity. |
| | | LBO | 33 | R | 21.20 | 0.50 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | LBO | 33 | R | 21.90 | 0.70 | | LIGNEOUS CLAY | Dark brown, firm, friable. |
| | | LBO | 33 | R | 23.10 | 1.20 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 3 | 23.10 | 2.40 | | |
| | | | | | BASE OF WORKING SECTION 3 | 23.10 | 2.40 | | |
| | | LBO | | R | 23.60 | 0.50 | | CLAY | Light to medium grey - brown, firm, high plasticity. |
| | | LBO | 41 | R | 24.40 | 0.80 | | LIGNEOUS CLAY | Dark brown, firm, puggy. |
| | | | | | BASE OF WORKING SECTION 1 | 24.40 | 0.80 | | |
| | | | | | BASE OF WORKING SECTION 4 | 24.40 | 0.80 | | |
| | | LBO | | R | 25.40 | 1.00 | | CLAY | Light to medium grey - brown, firm, high plasticity. |
| | | LBO | 42 | R | 26.40 | 1.00 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 2 | 26.40 | 1.00 | | |



A.C.I.R. 33

Australian Stock Exchange Limited ACN 008 624 691 Brisbane (07) 346 5000 Melbourne (03) 617 8600 Perth (09) 224 0000 Sydney (02) 227 0000 Adelaide (08) 234 5355 A Tel (08) 237 8096 Perth (09) 443 1555 (03) 544 699

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL 2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | 43 | R | 27.90 | 1.50 | | CLAY | Lithic, dark brown - black, very soft, puggy |
| | | | | | BASE OF WORKING SECTION 3 | 27.90 | 1.50 | | |
| | | | | | BASE OF WORKING SECTION 4 | 27.90 | 2.50 | | |
| | | LBO | | R | 28.80 | 0.90 | | CLAY | Light to medium brown, firm, high plasticity |
| | | LBO | 51 | R | 29.90 | 1.10 | | INFERIOR LIGNITE | Clayey, dark brown, firm, puggy |
| | | | | | BASE OF WORKING SECTION 1 | 29.90 | 1.10 | | |
| | | | | | BASE OF WORKING SECTION 5 | 29.90 | 1.10 | | |
| | | LBO | | R | 31.00 | 1.10 | | CLAY | Light to medium brown - grey, firm, high plasticity; LIGNEOUS TOWARDS BASE |
| | | LBO | 52 | R | 32.50 | 1.50 | | LIGNITE | Clayey, dark brown, firm, friable |
| | | | | | BASE OF WORKING SECTION 2 | 32.50 | 1.50 | | |
| | | | | | BASE OF WORKING SECTION 5 | 32.50 | 1.50 | | |
| | | LBO | | R | 33.00 | 0.50 | | CLAY | Light to medium grey - brown, firm, high plasticity |
| | | LBO | 6 | R | 33.50 | 0.50 | | LIGNITE | Dark brown, firm, friable |
| | | LBO | 6 | R | 35.60 | 2.10 | | INFERIOR LIGNITE | Clayey, dark brown, firm |
| | | | | | BASE OF WORKING SECTION 6 | 35.60 | 2.60 | | |



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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | R | 37.40 | 1.80 | | CLAY | Light to medium grey - brown, firm, high plasticity, occasional woody fragments. |
| | | LBO | 7 | R | 38.80 | 1.40 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 7 | 38.80 | 1.40 | | |
| | | LBO | | R | 40.30 | 1.50 | | CLAY | Light to medium grey - brown, firm, high plasticity, occasional woody fragments. |
| | | LBO | 8 | R | 42.20 | 1.90 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 8 | 42.20 | 1.90 | | |
| | | LBO | | R | 43.60 | 1.40 | | CLAY | Silty, medium to dark brown, firm, high plasticity. |
| | | LBO | 9 | R | 45.20 | 1.60 | | CLAY | Lithic, dark brown - black, firm, puggy. |
| | | | | | BASE OF WORKING SECTION 9 | 45.20 | 1.60 | | |
| | | | | | BASE OF SEAM LBO | 45.20 | 32.80 | | |
| | | | | R | 47.00 | 1.80 | | CLAY | Light to medium brown - grey, firm, puggy. |
| | | | | R | 47.10 | 0.10 | | SIDERITE | High strength. |
| | | | | R | 48.60 | 1.50 | | CLAY | Off white, firm, high plasticity. |
| | | | | R | 49.00 | 0.40 | | SIDERITE | |
| | | | | R | 56.00 | 7.00 | | CLAY | Silty, light to medium grey, firm, puggy, common woody fragments. |
| | | | | R | 60.00 | 4.00 | | CLAY | Silty, light grey - off white, firm, high plasticity. |
| | | | | R | 60.10 | 0.10 | | SIDERITE | High strength. |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 65.30 | 5.20 | | CLAY | Silty, light to medium brown - grey, firm, high plasticity. CONTAINS OCCASIONAL SIDERITE BANDS |
| | | | | | TOP OF SEAM LDO | | | 65.30 | |
| | | LDO | H1 | R | 66.50 | 1.20 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 1 | | | 66.50 | 1.20 |
| | | | | | BASE OF WORKING SECTION H | | | 66.50 | 1.20 |
| | | LDO | | R | 66.90 | 0.40 | | CLAY | Lithic, dark brown - black, firm, puggy. |
| | | LDO | H2 | R | 68.20 | 1.30 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 2 | | | 68.20 | 1.30 |
| | | | | | BASE OF WORKING SECTION H | | | 68.20 | 1.30 |
| | | LDO | | R | 70.60 | 2.40 | | CLAY | Medium to dark brown - grey, firm, puggy. |
| | | LDO | I | R | 72.30 | 1.70 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION I | | | 72.30 | 1.70 |
| | | LDO | | R | 73.20 | 0.90 | | CLAY | Light to medium grey - brown, firm, high plasticity. |
| | | LDO | J1 | R | 74.30 | 1.10 | | LIGNITE | Dark brown, firm, friable. |
| | | LDO | J1 | R | 74.70 | 0.40 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | LDO | J1 | R | 75.40 | 0.70 | | LIGNITE | Clayey, dark brown, firm, low plasticity. |
| | | LDO | J1 | R | 76.00 | 0.60 | | LIGNEOUS CLAY | Medium to dark grey - brown, firm, puggy. |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT CODE
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBER | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF WORKING SECTION 1 | 76.00 | 2.80 | | |
| | LDO | J2 | R | | 78.30 | 2.30 | | LIGNITE | Clayey, dark brown; INFERIOR TOWARDS BASE |
| | | | | | BASE OF WORKING SECTION 2 | 78.30 | 2.30 | | |
| | | | | | BASE OF WORKING SECTION J | 78.30 | 5.10 | | |
| | LDO | | R | | 80.00 | 1.70 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity. |
| | LDO | K | R | | 84.00 | 4.00 | | LIGNITE and INFERIOR LIGNITE | Interbedded 60:40, LIGNITE, dark brown, firm, friable; INFERIOR LIGNITE, clayey, dark brown, firm, waxy. |
| | | | | | BASE OF WORKING SECTION K | 84.00 | 4.00 | | |
| | LDO | | R | | 86.80 | 2.80 | | CLAY | Light to medium brown, firm, brittle |
| | LDO | L | R | | 87.80 | 1.00 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION L | 87.80 | 1.00 | | |
| | LDO | | R | | 88.20 | 0.40 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity. |
| | LDO | M | R | | 90.40 | 2.20 | | LIGNITE | Clayey, dark brown, firm, low plasticity |
| | | | | | BASE OF WORKING SECTION M | 90.40 | 2.20 | | |
| | LDO | | R | | 94.10 | 3.70 | | CLAY | Silty, light to medium grey - brown, firm, high plasticity |
| | LDO | N | R | | 95.40 | 1.30 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity. |
| | | | | | BASE OF WORKING SECTION N | 95.40 | 1.30 | | |



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Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | R | 97.30 | 1.90 | | CLAY | Lithic, dark brown, firm, puggy. |
| | | LDO | O | R | 97.80 | 0.50 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, puggy. |
| | | | | | BASE OF WORKING SECTION O | 97.80 | | 0.50 | |
| | | LDO | | R | 98.75 | 0.95 | | CLAY | Silty, light to medium grey, high strength, high plasticity. |
| | | LDO | P | R | 102.40 | 3.65 | | INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 50:50 INFERIOR LIGNITE: clayey; |
| | | | | | BASE OF WORKING SECTION P | 102.40 | | 3.65 | |
| | | LDO | | R | 104.20 | 1.80 | | CLAY | Carbonaceous |
| | | LDO | Q | R | 104.60 | 0.40 | | LIGNEOUS CLAY | |
| | | | | | BASE OF WORKING SECTION Q | 104.60 | | 0.40 | |
| | | LDO | | R | 105.70 | 1.10 | | CLAY | Silty |
| | | LDO | R | R | 106.00 | 0.30 | | LIGNEOUS CLAY | |
| | | | | | BASE OF WORKING SECTION R | 106.00 | | 0.30 | |
| | | LDO | | R | 106.80 | 0.80 | | CLAY | Silty |
| | | LDO | S | R | 107.60 | 0.80 | | LIGNEOUS CLAY | |
| | | | | | BASE OF WORKING SECTION S | 107.60 | | 0.80 | |
| | | | | | BASE OF SEAM LDO | 107.60 | | 42.30 | |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 121.00 | 13.40 | | CLAY | Silty, light to medium grey, firm, high plasticity. |

END OF BORE AT 121.00 m

EL2080 LAUNCESTON R0115

Perth (09) 443 1555 Ader (08) 297 4788 Melb 031 544 893 Syd 02 [illegible] Bris [illegible]

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0117
**********

Easting: 493500.000
Northing: 5411750.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 175.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 80.00
Drilling Commenced: 06/11/83
Drilling Completed: 07/11/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: BROADLEY
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Drill Bits: Blades

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0117

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT [illegible]
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.50 | 0.50 | | SOIL | Dark brown, very soft, friable. |
| | | | | R | 1.50 | 1.00 | | CLAY | Yellow, very soft, puggy. |
| | | | | R | 3.00 | 1.50 | | CLAY | Light grey - brown, firm, high plasticity. |
| | | | | R | 4.00 | 1.00 | | CLAY | Yellow, firm, high plasticity. |
| | | | | R | 4.30 | 0.30 | | LIGNEOUS CLAY | Dark brown, firm, puggy. |
| | | | | R | 6.30 | 2.00 | | CLAY | Light brown - off white, firm, high plasticity. |
| | | | | R | 8.05 | 1.75 | | CLAY | Medium to dark brown, firm, high plasticity. |
| | | | | | TOP OF SEAM LBO | | | 8.05 | |
| | | LBO | 8 | R | 11.00 | 2.95 | | LIGNITE and INFERIOR LIGNITE | Interbedded 90:10 LIGNITE, dark brown, firm, friable; INFERIOR LIGNITE, clayey, dark brown - black, firm, low plasticity. |
| | | | | | BASE OF WORKING SECTION 8 | | | 11.00 | 2.95 |
| | | LBO | | R | 12.00 | 1.00 | | CLAY | Medium to dark brown - grey, firm, high plasticity, common carbonaceous remains. |
| | | LBO | | R | 12.50 | 0.50 | | LIGNEOUS CLAY | Common woody fragments. |
| | | LBO | | R | 13.20 | 0.70 | | CLAY | Medium to dark grey, firm, high plasticity, common carbonaceous remains. |
| | | LBO | 9 | R | 14.85 | 1.65 | | LIGNEOUS CLAY | Dark brown, firm, puggy. |
| | | | | | BASE OF WORKING SECTION 9 | | | 14.85 | 1.65 |
| | | | | | BASE OF SEAM LBO | | | 14.85 | 6.80 |
| | | | | R | 22.30 | 7.45 | | CLAY | Medium to dark brown - grey, firm, high plasticity. |
| | | | | | TOP OF SEAM LDO | | | 22.30 | |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 : TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WORK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | H1 | R | 24.50 | 2.20 | | LIGNITE | Clayey, dark brown, firm, low plasticity. |
| | | | | | BASE OF WORKING SECTION 1 | 24.50 | 2.20 | | |
| | | | | | BASE OF WORKING SECTION H | 24.50 | 2.20 | | |
| | | LDO | | R | 25.30 | 0.80 | | CLAY | Light to medium grey - brown, firm, high plasticity. |
| | | LDO | H2 | R | 26.00 | 0.70 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | | | | BASE OF WORKING SECTION 2 | 26.00 | 0.70 | | |
| | | | | | BASE OF WORKING SECTION H | 26.00 | 0.70 | | |
| | | LDO | | R | 29.35 | 2.35 | | CLAY | Medium to dark grey - brown, firm, high plasticity. |
| | | LDO | I | R | 30.05 | 1.70 | | INFERIOR LIGNITE | Dark brown, firm, low plasticity. |
| | | | | | BASE OF WORKING SECTION I | 30.05 | 1.70 | | |
| | | LDO | | R | 30.85 | 0.80 | | CLAY | Light to medium brown - grey, firm, high plasticity. |
| | | LDO | J1 | R | 32.00 | 1.15 | | LIGNITE | Dark brown, firm, friable. |
| | | LDO | J1 | R | 32.45 | 0.45 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | LDO | J1 | R | 33.10 | 0.65 | | LIGNITE | Dark brown, firm, friable. |
| | | LDO | J1 | R | 33.90 | 0.80 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | LDO | J1 | R | 34.65 | 0.75 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 1 | 34.65 | 3.80 | | |
| | | | | | BASE OF WORKING SECTION J | 34.65 | 3.80 | | |

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | R | 37.20 | 2.55 | | LIGNEOUS CLAY | Medium to dark brown - grey, firm, puggy. |
| | | LDO | J2 | R | 38.20 | 1.00 | | LIGNITE | |
| | | | | | BASE OF WORKING SECTION J | | 38.20 | 1.00 | |
| | | LDO | | R | 39.50 | 1.30 | | CLAY | Light to medium brown - grey, firm, high plasticity. |
| | | LDO | K | R | 41.40 | 1.90 | | LIGNEOUS CLAY and INFERIOR LIGNITE | Interbedded 50:50, LIGNEOUS CLAY: dark brown - black, firm puggy; INFERIOR LIGNITE clayey. |
| | | LDO | K | R | 42.80 | 1.40 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION K | | 42.80 | 3.30 | |
| | | LDO | | R | 45.00 | 2.20 | | LIGNEOUS CLAY | |
| | | LDO | | R | 50.20 | 5.20 | | CLAY | Light to medium brown - grey, firm, high plasticity. |
| | | LDO | L | R | 51.60 | 1.40 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION L | | 51.60 | 1.40 | |
| | | LDO | | R | 55.00 | 3.40 | | CLAY | Light to medium brown - grey, firm, high plasticity. |
| | | LDO | M | R | 56.85 | 1.85 | | INFERIOR LIGNITE | Clayey. |
| | | | | | BASE OF WORKING SECTION M | | 56.85 | 1.85 | |
| | | LDO | | R | 57.50 | 0.65 | | CLAY | Medium to dark brown - grey, firm, high plasticity. |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | N | R | 60.20 | 2.70 | | INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 60.40 INFERIOR LIGNITE: clayey, dark brown, firm, puggy; LIGNEOUS CLAY: dark brown - black, firm, high plasticity |
| | | | | | BASE OF WORKING SECTION N | 60.20 | 2.70 | | |
| | | LDO | | R | 62.00 | 1.80 | | CLAY | Light to medium grey - brown, firm, high plasticity. |
| | | LDO | O | R | 63.60 | 1.60 | | LIGNITE | Firm, friable. |
| | | | | | BASE OF WORKING SECTION O | 63.60 | 1.60 | | |
| | | LDO | | R | 67.40 | 3.80 | | CLAY | Light to medium grey - brown, firm, high plasticity. |
| | | LDO | P | R | 68.80 | 1.40 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity. |
| | | | | | BASE OF WORKING SECTION P | 68.80 | 1.40 | | |
| | | LDO | | R | 69.65 | 0.85 | | CLAY | Medium to dark grey - brown, firm, high plasticity. |
| | | LDO | Q | R | 71.30 | 1.65 | | LIGNITE | Dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION Q | 71.30 | 1.65 | | |
| | | LDO | | R | 72.85 | 1.55 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | LDO | R | R | 74.75 | 1.90 | | INFERIOR LIGNITE | Clayey, dark brown, firm, puggy. |
| | | | | | BASE OF WORKING SECTION R | 74.75 | 1.90 | | |
| | | LDO | | R | 76.00 | 1.25 | | LIGNEOUS CLAY | Dark brown - black, firm, puggy. |
| | | LDO | S | R | 77.40 | 1.40 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION S | 77.40 | 1.40 | | |

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Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | R | 80.00 | 2.60 | | CLAY | Light to medium brown - grey, firm, high plasticity. |

BASE OF SEAM LDO 80.00 57.70

END OF BORE AT 80.00 m

EL2080 LAUNCESTON R0117

397282

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT ZORC
Launceston

**********
EL2080 LAUNCESTON R0118
**********

Easting: 492450.000
Northing: 5415010.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 160.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 6.70
Drilling Commenced: 15/11/83
Drilling Completed: 16/11/83
Inclination:
Azimuth:
Standing Water Level:

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd
County:
Parish:
Portion:
Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED



CSR Limited (02) 9375 5000 Mail: GPO Box 483 Sydney NSW 2001 Australia Telex: AA 20539 Cable: CSRSYD Fax: (02) 9375 5078 Tel: (02) 9375 5000 Telex: AA 20539 Cable: CSRSYD Fax: (02) 9375 5078 Mail: GPO Box 483 Sydney NSW 2001 Australia

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 2.00 | 2.00 | | SILT | Clayey, light to medium brown, weathered, firm, non-plastic; CONTAINS WEATHERED BASALT FLOATERS |
| | | | | R | 2.50 | 0.50 | | CLAY | Silty, light to medium yellow, weathered, firm, high plasticity (clay). |
| | | | | R | 3.00 | 0.50 | | CLAY | Kaolinitic, mottled off white - yellow, weathered, firm, high plasticity (clay); Additional features include: pink. |
| | | | | R | 4.10 | 1.10 | | CLAY | Kaolinitic, light to medium grey, weathered, firm, high plasticity (clay). |
| | | | | | TOP OF SEAM LBO | | | 4.10 | |
| | | LBO | 9 | R | 4.80 | 0.70 | | LIGNITE | Woody textured, clayey, medium to dark brown, weathered, firm, friable. |
| | | LBO | 9 | R | 6.50 | 1.70 | | LIGNITE | Woody textured, clayey, dark brown - black, firm, friable. |
| | | | | | BASE OF WORKING SECTION 9 | | | 6.50 | 2.40 |
| | | LBO | | R | 8.40 | 1.90 | | LIGNEOUS CLAY and CLAY | Interbedded 60:40. LIGNEOUS CLAY: medium to dark brown, firm, high plasticity (organic); CLAY: light to medium grey - brown, fault, common, subhorizontal joints. |
| | | | | | BASE OF SEAM LBO | | | 8.40 | 4.30 |
| | | | | R | 11.00 | 2.60 | | CLAY | Silty, light to medium grey, firm, high plasticity (clay), fining upwards, gradational base. |
| | | | | R | 15.50 | 4.50 | | CLAY | Silty, light to medium grey, firm, high plasticity (clay), fining upwards. |
| | | | | R | 15.95 | 0.45 | | SIDERITE | Light off white, moderate strength, brittle. |

EL2080 LAUNCESTON R0118

MULTISTREAM LISTING Bris. (07) 263 3433 Syd. (02) 53 0771 Melb. (03) 544 1899 Adel. (08) 297 4788 Perth (09) 443 1555

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397281

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 16.10 | 0.15 | | CLAY | Sandy, silty, light to medium grey, firm, high plasticity (clay), fine and medium grained, fining upwards; SLAKES AND DISPERSES |
| | | | | R | 18.50 | 2.40 | | CLAY | Sandy, silty, light to medium grey, firm, high plasticity (clay), fine and medium grained, coarsening upwards; SLAKES AND DISPERSES |
| | | | | R | 19.45 | 0.95 | | CLAY | Silty, light to medium grey, firm, high plasticity (clay), coarsening upwards; SLAKES AND DISPERSES |
| | | | | R | 19.80 | 0.35 | | SIDERITE | Light off white, moderate strength, brittle |
| | | | | R | 27.90 | 8.10 | | CLAY | Silty, light to medium grey, firm, high plasticity (clay), coarsening upwards. |
| | | | | | TOP OF SEAM LDO | | | 27.90 | |
| | | LDO | H1 | R | 28.85 | 0.95 | | LIGNITE | Woody textured, clayey, dark brown - black, firm, friable |
| | | | | | BASE OF WORKING SECTION 1 | | | 28.85 | 0.95 |
| | | LDO | H2 | R | 29.80 | 0.95 | | LIGNITE | Woody textured, clayey, dark brown - black, firm, friable |
| | | | | | BASE OF WORKING SECTION 2 | | | 29.80 | 0.95 |
| | | | | | BASE OF WORKING SECTION H | | | 29.80 | 1.90 |
| | | LDO | | R | 30.30 | 0.50 | | CLAY | Ligneous, light to medium brown, firm, high plasticity (clay) |

EL2080 LAUNCESTON R0118

Brisbane (07) 263 4773 Syd (02) 53 0771 Melb (03) 544 1839 Adel (08) 267 4788 Perth (09) 443 1555

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | I | R | 30.80 | 0.50 | | LIGNITE | Woody textured, clayey, dark brown - black, firm, friable. |
| | | | | | BASE OF WORKING SECTION I | 30.80 | 0.50 | | |
| | | LDO | | R | 31.20 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | J1 | R | 32.00 | 0.80 | | LIGNITE | Woody textured, clayey, dark brown - black, firm, friable. |
| | | LDO | J1 | R | 32.60 | 0.60 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | J1 | R | 33.20 | 0.60 | | LIGNITE | Woody textured, clayey, dark brown - black, firm, friable. |
| | | | | | BASE OF WORKING SECTION 1 | 33.20 | 2.00 | | |
| | | | | | BASE OF WORKING SECTION J | 33.20 | 2.00 | | |
| | | | | | BASE OF SEAM LDO | 33.20 | 5.30 | | |
| | | | | R | 36.35 | 3.15 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | | | R | 36.75 | 0.40 | | SIDERITE | Light brown, extremely high strength, tough. |
| | | | | R | 51.50 | 14.75 | | SAND | Clayey, quartzose, light to medium grey, soft, non-plastic, fine and medium grained, common siderite nodules. |
| | | | | R | 55.20 | 3.70 | | CLAY | Light green - grey, weathered, soft, high plasticity (clay). CONTAINS WEATHERED DOLERITE DETRITUS SOME MODERATE STRENGTH BRITTLE BANDS |
| | | | | R | 58.00 | 2.80 | | SAND | Clayey, quartzose, light grey - green, firm, non-plastic, fine and medium grained. |
| | | | | R | 59.20 | 0.20 | | SIDERITE | Light grey, high strength, brittle |

EL2080 LAUNCESTON R0118

Australian Drilling & Grouting Services (03) 344 189 Perth (08) 297 4788 Adel (08) 263 3423 Bris (07) 263 3423 Gold Coast (07) 5571 Metro

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 60.00 | 1.80 | | SAND | Clayey, quartzose, light grey - green, firm, non-plastic, fine and medium grained; |
| | | | | | | | | | SOME DOLERITE DETRITUS |
| | | | | R | 63.00 | 3.00 | | CLAY | Sandy, light green - grey, very low strength; |
| | | | | | | | | | SOME LOW STRENGTH FRIABLE CLASTS |
| | | | | R | 63.30 | 0.30 | | SIDERITE | Light grey, moderate strength, brittle |
| | | | | R | 64.00 | 0.70 | | CLAY | Silty, medium to dark brown, soft, low plasticity (clay) |
| | | | | R | 67.00 | 3.00 | | CLAY | Light green - grey, weathered, firm, high plasticity (clay); |
| | | | | | | | | | SOME MODERATE STRENGTH BANDS |
| | | | | | | | | | WEATHERED DOLERITE |

END OF BORE AT 67.00 m

EL2080 LAUNCESTON R0118

39728

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0119
**********

Easting: 493750.000
Northing: 5413250.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 158.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 8.10
Drilling Commenced: 16/11/83
Drilling Completed: 17/11/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths:
Core Barrel:

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0119

MULTISTREAM LOGGING Bris (0 1 2 3 3433 Syd (02) 53 0771 Melb (03) 544 839 Adel (08) 297 4786 Perth (09) 443 1555

397288

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT JOBC
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 0.50 | 0.50 | | CLAY | Silty, medium to dark yellow, firm, high plasticity (clay) |
| | | | | R | 2.40 | 1.90 | | CLAY | Kaolinitic, light off white, firm, high plasticity (clay) |
| | | | | R | 3.40 | 1.00 | | INFERIOR LIGNITE | Clayey, light to medium brown, weathered, firm, high plasticity (clay).<br>Bands include: INFERIOR LIGNITE, clayey, dark brown - black, firm, friable |
| | | | | R | 8.50 | 5.10 | | CLAY | Silty, light to medium grey, firm, high plasticity (clay). |
| | | | | R | 8.80 | 0.30 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | | | R | 12.50 | 3.70 | | CLAY and CLAY | Interbedded 80:20. CLAY: silty, sandy, light to medium grey, firm, high plasticity (clay), fine and medium grained.<br>CLAY: sandy, quartzose, light grey - off white, firm, low plasticity (clay), fine and medium grained. |
| | | | | TOP OF SEAM LDO | | 12.50 | | | |
| | LDO | H1 | R | | 13.20 | 0.70 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | BASE OF WORKING SECTION 1 | | 13.20 | | 0.70 | |
| | | | | BASE OF WORKING SECTION H | | 13.20 | | 0.70 | |
| | LDO | | R | | 14.10 | 0.90 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic). |
| | LDO | H2 | R | | 15.80 | 1.70 | | LIGNITE | Clayey, woody textured, dark brown, firm, low plasticity (organic). |
| | | | | BASE OF WORKING SECTION 2 | | 15.80 | | 1.70 | |
| | | | | BASE OF WORKING SECTION H | | 15.80 | | 1.70 | |
| | LDO | | R | | 16.60 | 0.80 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay) |



Exhibit No. 1
Date 13/12/88
Doc. No. 3912

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT WORK
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | I | R | 17.30 | 0.70 | | LIGNITE | Clayey, woody textured, dark brown, firm, friable. |
| | | LDO | I | R | 17.75 | 0.45 | | INFERIOR LIGNITE | Clayey, woody textured, dark brown, firm, friable. |
| | | LDO | I | R | 19.10 | 1.35 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION I | 19.10 | 2.50 | | |
| | | LDO | | R | 20.80 | 1.70 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | LDO | J1 | R | 22.30 | 1.50 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | LDO | J1 | R | 22.80 | 0.50 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic). |
| | | LDO | J1 | R | 23.80 | 1.00 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 1 | 23.80 | 3.00 | | |
| | | | | | BASE OF WORKING SECTION J | 23.80 | 3.00 | | |
| | | LDO | | R | 25.60 | 1.80 | | CLAY | Light to medium grey, firm, high plasticity (clay). |
| | | LDO | J2 | R | 26.70 | 1.10 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 2 | 26.70 | 1.10 | | |
| | | | | | BASE OF WORKING SECTION J | 26.70 | 1.10 | | |
| | | LDO | | R | 28.30 | 1.60 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | | R | 29.00 | 0.70 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic). |
| | | LDO | | R | 30.00 | 1.00 | | CLAY | Carbonaceous, light to medium brown, firm, high plasticity (clay). |
| | | LDO | | R | 34.30 | 4.30 | | CLAY | Light grey, firm, high plasticity (clay). |



Multishot Pty Ltd 15 Rigg Ave Bibra Lake WA 6163 Australia Tel 54 899 Adel (08) 297 4793 Perth (08) 447 1455

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | K | R | 37.00 | 2.70 | | LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION K | 37.00 | | 2.70 | |
| | | LDO | | R | 40.20 | 3.20 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | LDO | L | R | 41.00 | 0.80 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION L | 41.00 | | 0.80 | |
| | | LDO | | R | 41.60 | 0.60 | | CLAY | Carbonaceous, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | M | R | 42.30 | 0.70 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION M | 42.30 | | 0.70 | |
| | | LDO | | R | 45.80 | 3.50 | | CLAY | Light grey, firm, high plasticity (clay). |
| | | LDO | N | R | 46.20 | 0.40 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic). |
| | | LDO | N | R | 46.70 | 0.50 | | CLAY | Ligneous, medium to dark brown, firm, high plasticity (clay). |
| | | LDO | N | R | 47.40 | 0.70 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION N | 47.40 | | 1.60 | |
| | | LDO | | R | 48.10 | 0.70 | | CLAY | Light grey, firm, high plasticity (clay). |
| | | LDO | O | R | 50.90 | 2.80 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). Bands include: LIGNITE, clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION O | 50.90 | | 2.80 | |
| | | LDO | | R | 54.50 | 3.60 | | CLAY | Light grey, firm, high plasticity (clay). |

EL2080 LAUNCESTON R0119

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | P | R | 55.60 | 1.10 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | LDO | P | R | 56.90 | 1.30 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic). |
| | | LDO | P | R | 58.30 | 1.40 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION P | | | 58.30 | 3.80 |
| | | LDO | | R | 59.80 | 1.50 | | CLAY | Silty, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | Q | R | 62.60 | 2.80 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION Q | | | 62.60 | 2.80 |
| | | LDO | | R | 65.00 | 2.40 | | CLAY | Silty, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | | R | 65.30 | 0.30 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic). |
| | | LDO | | R | 66.10 | 0.80 | | CLAY | Silty, light to medium brown - grey, firm, high plasticity (clay) |
| | | LDO | | R | 66.70 | 0.60 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic). |
| | | LDO | | R | 70.55 | 3.85 | | CLAY | Silty, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | | R | 77.65 | 7.10 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | | | | BASE OF SEAM LDO | | | 77.65 | 65.15 |
| | | | | R | 78.40 | 0.75 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | R | 81.00 | 2.60 | | CLAY | Light to medium brown, firm, high plasticity (clay). |

END OF BORE AT 81.00 m

EL2080 LAUNCESTON R0119

397202

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0120
**********

Easting: 493360.000
Northing: 5411210.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 180.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 99.00
Drilling Commenced: 17/11/83
Drilling Completed: 19/11/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Self Potential Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 120
Core Diameter:
Cased Depths: 10.5
Core Barrel:

Drill Bits: Blades
Rollers
Percussion
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0120

397293

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 10.00 | 10.00 | | BASALT | Medium to dark grey - brown, weathered, extremely high strength, tough. |
| | | | | R | 12.90 | 2.90 | | CLAY | Light to medium grey, weathered, firm, high plasticity (clay). |
| | | | | | | | | | NOTE GAMMA ROLLFRONT |
| | | | | | TOP OF SEAM LBO | 12.90 | | | |
| | | LBO | | R | 14.10 | 1.20 | | INFERIOR LIGNITE | Clayey, dark brown, weathered, firm, high plasticity (organic). |
| | | LBO | | R | 16.85 | 2.75 | | CLAY | Light to medium grey, firm, high plasticity (clay). |
| | | LBO | 52 | R | 18.60 | 1.75 | | LIGNITE | Clayey, woody textured, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 2 | 18.60 | 1.75 | | |
| | | | | | BASE OF WORKING SECTION 5 | 18.60 | 1.75 | | |
| | | LBO | | R | 19.20 | 0.60 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic). |
| | | LBO | 53 | R | 20.10 | 0.90 | | LIGNITE | Clayey, woody textured, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 3 | 20.10 | 0.90 | | |
| | | | | | BASE OF WORKING SECTION 5 | 20.10 | 0.90 | | |
| | | LBO | | R | 20.60 | 0.50 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic). |
| | | LBO | 6 | R | 24.05 | 3.45 | | LIGNITE | Clayey, woody textured, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 6 | 24.05 | 3.45 | | |

EL2080 LAUNCESTON R0120

MULTISTREAM LISTING Brisb:(07)263 3433 Syd:(02) 53 0771 Melb:(03) 544 1899 Adel:(08) 297 4788 Perth (09) 443 1555

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REPORT TC14-01 CSR COAL DIVISION PAGE 855 RUN AT 10:29:37 15/ 4/84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080

Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | R | 26.10 | 2.05 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay) |
| | | LBO | 7 | R | 29.05 | 2.95 | | LIGNITE | Clayey, medium to dark brown, firm, friable |
| | | | | | BASE OF WORKING SECTION 7 | | | 29.05 | 2.95 |
| | | LBO | | R | 33.30 | 1.90 | 44.7 | CLAY | Light to medium brown, firm, high plasticity (clay) |
| | | LBO | 8 | R | 36.80 | 3.50 | | LIGNITE | Clayey, medium to dark brown, firm, friable; |
| | | | | | | | | | POOR CIRCULATION RETURN TO 46M |
| | | | | | | | | | NO CUTTING RETURNED FROM 46M TO TD. 1000 GALS WATER PER 10 TO 15M ADVANCE 6.0M CASING BROKEN OFF, WATER AND CUTTINGS GOING INTO FRACTURED BASALT |
| | | | | | BASE OF WORKING SECTION 8 | | | 36.80 | 3.50 |
| | | | | | BASE OF SEAM LBO | | | 36.80 | 23.90 |
| | | | | R | 39.20 | 2.40 | | CLAY | Light to medium brown, firm, high plasticity (clay) |
| | | | | R | 40.00 | 0.80 | | CLAY | Carbonaceous, medium to dark brown, firm, high plasticity (clay) |
| | | | | R | 41.60 | 1.60 | | CLAY | Light to medium brown, firm, high plasticity (clay) |
| | | | | R | 42.20 | 0.60 | | CLAY | Carbonaceous, medium to dark brown, firm, high plasticity (clay) |
| | | | | R | 43.50 | 1.30 | | CLAY | Light to medium brown, firm, high plasticity (clay) |
| | | | | R | 44.00 | 0.50 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic) |
| | | | | R | 44.95 | 0.95 | | CLAY | Light to medium brown, firm, high plasticity (clay) |
| | | | | R | 45.40 | 0.45 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic) |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | R | 52.90 | 7.50 | | CLAY | Light to medium brown, firm, high plasticity (clay); Bands include: CLAY, carbonaceous, medium to dark brown, firm, high plasticity (clay). |
| | | | | | TOP OF SEAM LDO | | | 52.90 | |
| | | LDO | H1 | R | 54.30 | 1.40 | | LIGNITE | Clayey. |
| | | | | | BASE OF WORKING SECTION 1 | | | 54.30 | 1.40 |
| | | | | | BASE OF WORKING SECTION H | | | 54.30 | 1.40 |
| | | LDO | | R | 54.90 | 0.60 | | CLAY | |
| | | LDO | H2 | R | 55.60 | 0.70 | | LIGNITE | Clayey. |
| | | | | | BASE OF WORKING SECTION 2 | | | 55.60 | 0.70 |
| | | | | | BASE OF WORKING SECTION H | | | 55.60 | 0.70 |
| | | LDO | | R | 57.20 | 1.60 | | CLAY | |
| | | LDO | I | R | 57.60 | 0.40 | | LIGNEOUS CLAY | |
| | | LDO | I | R | 58.00 | 0.40 | | CLAY | Carbonaceous. |
| | | LDO | I | R | 58.60 | 0.60 | | LIGNEOUS CLAY | |
| | | | | | BASE OF WORKING SECTION I | | | 58.60 | 1.40 |
| | | LDO | | R | 60.45 | 1.85 | | CLAY | |
| | | LDO | J1 | R | 61.40 | 0.95 | | LIGNITE | Clayey. |

EL2080 LAUNCESTON R0120

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | J1 | R | 62.50 | 1.10 | | CLAY | |
| | | LDO | J1 | R | 63.10 | 0.60 | | LIGNITE | Clayey |
| | | LDO | J1 | R | 63.50 | 0.40 | | LIGNEOUS CLAY | |
| | | LDO | J1 | R | 64.95 | 1.45 | | LIGNITE | Clayey |
| | | | | | BASE OF WORKING SECTION 1 | 64.95 | 4.50 | | |
| | | | | | BASE OF WORKING SECTION J | 64.95 | 4.50 | | |
| | | LDO | | R | 65.60 | 0.65 | | CLAY | |
| | | LDO | J2 | R | 66.20 | 0.60 | | LIGNITE | Clayey |
| | | | | | BASE OF WORKING SECTION 2 | 66.20 | 0.60 | | |
| | | | | | BASE OF WORKING SECTION J | 66.20 | 0.60 | | |
| | | LDO | | R | 67.20 | 1.00 | | LIGNEOUS CLAY | |
| | | LDO | | R | 67.75 | 0.55 | | CLAY | Carbonaceous |
| | | LDO | | R | 69.80 | 2.05 | | LIGNEOUS CLAY | Bands include: CLAY, carbonaceous |
| | | LDO | | R | 71.35 | 1.55 | | CLAY | Carbonaceous |
| | | LDO | K | R | 72.85 | 1.50 | | LIGNITE | Clayey |
| | | | | | BASE OF WORKING SECTION K | 72.85 | 1.50 | | |
| | | LDO | | R | 76.50 | 3.65 | | CLAY | |
| | | LDO | | R | 77.60 | 1.10 | | SIDERITE | |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | R | 78.80 | 1.20 | | CLAY | |
| | | LDO | | R | 79.30 | 0.50 | | LIGNEOUS CLAY | |
| | | LDO | | R | 79.70 | 0.40 | | CLAY | |
| | | LDO | L | R | 80.75 | 1.05 | | LIGNITE | Clayey. |
| | | | | | BASE OF WORKING SECTION L | | | 80.75 | 1.05 |
| | | | | | BASE OF SEAM LDO | | | 80.75 | 27.85 |
| | | | | R | 83.00 | 2.25 | | CLAY | Carbonaceous; |
| | | | | | | | | | GEOPHYSICALLY LOGGED TO 83M. |
| | | | | R | 99.00 | 16.00 | | NO RECORD | |

END OF BORE AT 99.00 m

EL2080 LAUNCESTON R0120

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0121
**********

Easting: 493250.000
Northing: 5412250.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 170.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 92.20
Drilling Commenced: 21/11/83
Drilling Completed: 22/11/83
Inclination:
Azimuth:
Standing Water Level:

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: ELLIS
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd
County:
Parish:
Portion:
Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Available Data: Gamma Logs
Neutron Logs
Detail Density Logs
Resistivity Logs
Caliper Logs

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED



8629B

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 0.50 | 0.50 | | SILT | Clayey, light to medium brown, weathered, firm, low plasticity (silt). |
| | | | | | 1.00 | 0.50 | | CLAY | Silty, mottled cream - off white, weathered, firm, high plasticity (clay). |
| | | | | | 2.20 | 1.20 | | CLAY | Mottled off white - yellow, weathered, firm, high plasticity (clay). |
| | | | | | 3.80 | 1.60 | | CLAY and CLAY | Interbedded 08:92, CLAY: silty, light brown - gray, weathered, firm, high plasticity (clay).<br>CLAY, light to medium brown, weathered, firm, high plasticity (clay). |
| | | | | | TOP OF SEAM LDO | | | 3.80 | |
| | LDO | J1 | | | 7.05 | 3.25 | | LIGNITE | Clayey, medium to dark brown, weathered, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | | | 7.05 | 3.25 |
| | | | | | BASE OF WORKING SECTION J | | | 7.05 | 3.25 |
| | LDO | | | | 8.20 | 1.15 | | CLAY | Carbonaceous, light to medium brown, firm, high plasticity (clay). |
| | LDO | J2 | | | 8.60 | 0.40 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | LDO | J2 | | | 8.95 | 0.35 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic). |
| | LDO | J2 | | | 10.30 | 1.35 | | LIGNITE and LIGNEOUS CLAY | Interbedded 90:10, LIGNITE, clayey, dark brown, soft, low plasticity (organic).<br>LIGNEOUS CLAY: dark brown - black, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 2 | | | 10.30 | 2.10 |
| | | | | | BASE OF WORKING SECTION J | | | 10.30 | 2.10 |



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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080

Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | | 11.00 | 0.70 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | | | 12.15 | 1.15 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic). |
| | | LDO | K | | 15.05 | 2.90 | | LIGNITE | Clayey, medium to dark brown, firm, friable; Bands include: LIGNEOUS CLAY, dark brown - black, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION K | | | 15.05 | 2.90 |
| | | LDO | | | 19.00 | 3.95 | | CLAY | Silty, light to medium brown, firm, high plasticity (clay). |
| | | LDO | L | | 19.80 | 0.80 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | LDO | L | | 20.20 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | L | | 21.00 | 0.80 | | LIGNITE | Medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION L | | | 21.00 | 2.00 |
| | | LDO | | | 22.30 | 1.30 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | M | | 22.70 | 0.40 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | LDO | M | | 23.20 | 0.50 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | LDO | M | | 24.00 | 0.80 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION M | | | 24.00 | 1.70 |
| | | LDO | | | 24.75 | 0.75 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | N | | 26.70 | 1.95 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION N | | | 26.70 | 1.95 |
| | | LDO | | | 28.20 | 1.50 | | CLAY | Ligneous, dark brown, firm, high plasticity (clay). |

EL2080 LAUNCESTON R0121

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | O | | 29.40 | 1.20 | | LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION O | | | 29.40 | 1.20 |
| | | LDO | | | 31.00 | 1.60 | | CLAY | Light to medium brown, soft, high plasticity (clay). |
| | | LDO | | | 32.70 | 1.70 | | CLAY | Silty, light to medium brown, firm, high plasticity (clay). |
| | | LDO | P | | 33.90 | 1.20 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION P | | | 33.90 | 1.20 |
| | | LDO | | | 34.70 | 0.80 | | CLAY | Carbonaceous, light to medium brown, firm, high plasticity (clay). |
| | | LDO | Q | | 36.20 | 1.50 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION Q | | | 36.20 | 1.50 |
| | | LDO | | | 37.60 | 1.40 | | LIGNEOUS CLAY and CLAY | Interbedded 50:50. LIGNEOUS CLAY: dark brown, firm, high plasticity (organic); CLAY: light to medium brown, firm, high plasticity (clay). |
| | | LDO | R | | 39.60 | 2.00 | | INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 80:20. INFERIOR LIGNITE: clayey, medium to dark brown, firm, low plasticity (organic); LIGNEOUS CLAY: medium to dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION R | | | 39.60 | 2.00 |
| | | LDO | | | 40.30 | 0.70 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | LDO | S | | 41.70 | 1.40 | | LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION S | | | 41.70 | 1.40 |

EL2080 LAUNCESTON R0121

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT [illegible] Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | | 42.30 | 0.60 | | CLAY | Light to medium brown, firm, high plasticity (clay) |
| | | LDO | T | | 42.80 | 0.50 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic) |
| | | LDO | T | | 43.30 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic) |
| | | LDO | T | | 44.00 | 0.70 | | LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic) |
| | | | | | BASE OF WORKING SECTION T | | | 44.00 | 1.70 |
| | | | | | BASE OF SEAM LDO | | | 44.00 | 40.20 |
| | | | | | 54.00 | 10.00 | | CLAY | Light grey, firm, high plasticity (clay); SLAKES AND DISPERSES |
| | | | | | 54.70 | 0.70 | | SIDERITE | Light brown - grey, high strength, brittle |
| | | | | | 73.90 | 19.20 | | CLAY | Light grey, firm, high plasticity (clay); SLAKES AND DISPERSES |
| | | | | | TOP OF SEAM LFO | | | 73.90 | |
| | | LFO | | | 74.40 | 0.50 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic) |
| | | LFO | | | 75.20 | 0.80 | | CLAY | Light to medium brown, firm, high plasticity (clay) |
| | | LFO | A | | 79.20 | 4.00 | | LIGNITE and LIGNEOUS CLAY | Interbedded 90:10, LIGNITE, clayey, medium to dark brown, firm, low plasticity (organic) LIGNEOUS CLAY: medium to dark brown, firm, high plasticity (organic) |
| | | | | | BASE OF WORKING SECTION A | | | 79.20 | 4.00 |

EL2080 LAUNCESTON 80121

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT CORE
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LEO | | | 80.30 | 1.10 | | CLAY | Carbonaceous, light to medium brown - grey, firm, high plasticity (clay), common woody fragments. |
| | | LEO | B | | 81.50 | 1.20 | | LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic). |
| | | LEO | B | | 82.20 | 0.70 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic). |
| | | LEO | B | | 82.60 | 0.40 | | LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic). |
| | | LEO | B | | 83.10 | 0.50 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic). |
| | | LEO | B | | 83.70 | 0.60 | | LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic). |
| | | | BASE OF WORKING SECTION B | | 83.70 | 3.40 | | | |
| | | LEO | | | 84.20 | 0.50 | | CLAY | Carbonaceous, light to medium brown - grey, firm, high plasticity (clay). |
| | | LEO | C | | 84.80 | 0.60 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic). |
| | | LEO | C | | 85.30 | 0.50 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | LEO | C | | 85.80 | 0.50 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic). |
| | | | BASE OF WORKING SECTION C | | 85.80 | 1.60 | | | |
| | | LEO | | | 87.60 | 1.80 | | CLAY | Carbonaceous, light to medium brown - grey, firm, high plasticity (clay). |
| | | LEO | D | | 89.20 | 1.60 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic). |
| | | | BASE OF WORKING SECTION D | | 89.20 | 1.60 | | | |
| | | LEO | | | 92.20 | 3.00 | | CLAY | Carbonaceous, light to medium brown - grey, firm, high plasticity (clay). |
| | | | BASE OF SEAM LEO | | 92.20 | 18.30 | | | |
| | | | END OF BORE AT | 92.20 m | | | | | |

EL2080 LAUNCESTON R0121

Mitchell Drilling Pty Ltd Australia Box 503, 544 Port Road, Woodville, S.A. 5011 Telex AA87343 Tel (08) 268 2033
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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080

Launceston

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EL2080 LAUNCESTON R0122

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Easting: 492370.000
Northing: 5415740.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 160.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 39.00
Drilling Commenced: 22/11/83
Drilling Completed: 22/11/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0122

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 0.70 | 0.70 | | SILT | Clayey, gravelly, light to medium brown, weathered, soft, non-plastic. |
| | | | | | 1.50 | 0.80 | | CLAY | Silty, mottled orange - grey, weathered, firm, high plasticity (clay). |
| | | | | | 3.20 | 1.70 | | CLAY | Kaolinitic, mottled off white - yellow, weathered, firm, high plasticity (clay);<br>Additional features include: orange - brown. |
| | | | | | TOP OF SEAM LDO | | 3.20 | | |
| | | LDO | J1 | | 4.90 | 1.70 | | LIGNITE | Woody textured, clayey, medium to dark brown, firm, friable, fibrous. |
| | | | | | BASE OF WORKING SECTION 1 | | 4.90 | 1.70 | |
| | | | | | BASE OF WORKING SECTION J | | 4.90 | 1.70 | |
| | | LDO | | | 5.80 | 0.90 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | LDO | J2 | | 6.30 | 0.50 | | LIGNITE | Woody textured, clayey, medium to dark brown, firm, friable, fibrous. |
| | | LDO | J2 | | 6.70 | 0.40 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | LDO | J2 | | 7.10 | 0.40 | | INFERIOR LIGNITE | Clayey, woody textured, medium to dark brown, soft, low plasticity (organic). |
| | | LDO | J2 | | 7.70 | 0.60 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (clay). |
| | | LDO | J2 | | 8.60 | 0.90 | | LIGNITE | Clayey, woody textured, medium to dark brown, soft, low plasticity (organic). |
| | | LDO | J2 | | 9.15 | 0.55 | | INFERIOR LIGNITE | Clayey, woody textured, medium to dark brown, soft, low plasticity (organic). |
| | | LDO | J2 | | 9.60 | 0.45 | | LIGNITE | Clayey, woody textured, medium to dark brown, soft, low plasticity (organic). |

EL2080 LAUNCESTON R0122

MULTISTREAM LISTING Bris.(07)263 3433 Syd.(02) 53 0711 Melb. (03) 544 1899 Adel.(08) 297 4788 Perth (09) 481 1555

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | J2 | | 9.95 | 0.35 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | LDO | J2 | | 10.30 | 0.35 | | LIGNITE | Clayey, woody textured, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 2 | | | 10.30 | 4.50 |
| | | | | | BASE OF WORKING SECTION J | | | 10.30 | 4.50 |
| | | LDO | | | 10.85 | 0.55 | | CLAY | Carbonaceous, light to medium brown, firm, high plasticity (clay). |
| | | LDO | K | | 11.40 | 0.55 | | INFERIOR LIGNITE | Clayey, woody textured, medium to dark brown, firm, low plasticity (organic). |
| | | LDO | K | | 12.90 | 1.50 | | CLAY and LIGNEOUS CLAY | Interbedded 70:30. CLAY: carbonaceous, light to medium brown, firm, high plasticity (clay); LIGNEOUS CLAY: medium to dark brown, firm, high plasticity (organic). |
| | | LDO | K | | 14.00 | 1.10 | | LIGNITE | Clayey, woody textured, medium to dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION K | | | 14.00 | 3.15 |
| | | LDO | | | 17.35 | 3.35 | | CLAY | Light grey - brown, firm, high plasticity (clay). |
| | | LDO | L | | 18.40 | 1.05 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION L | | | 18.40 | 1.05 |
| | | LDO | | | 19.35 | 0.95 | | CLAY | Carbonaceous, medium to dark brown - grey, firm, high plasticity (clay). |
| | | LDO | M | | 20.30 | 0.95 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic). |
| | | LDO | M | | 20.70 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |

EL2080 LAUNCESTON R0122

397307

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT

Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | M | | 21.50 | 0.80 | | LIGNITE | Clayey, woody textured, medium to dark brown, soft, low plasticity (organic). |
| | | LDO | M | | 23.10 | 1.60 | | INFERIOR LIGNITE | Clayey, woody textured, medium to dark brown, soft, low plasticity (organic). Bands include: LIGNITE, clayey, woody textured, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION M | 23.10 | 3.75 | | |
| | | LDO | | | 23.70 | 0.60 | | LIGNEOUS CLAY | Medium to dark brown, soft, high plasticity (organic). |
| | | LDO | N | | 24.20 | 0.50 | | INFERIOR LIGNITE | Clayey, woody textured, medium to dark brown, soft, low plasticity (organic). |
| | | LDO | N | | 25.40 | 1.20 | | LIGNEOUS CLAY | Medium to dark brown, soft, high plasticity (organic). |
| | | LDO | N | | 25.90 | 0.40 | | INFERIOR LIGNITE | Clayey, woody textured, medium to dark brown, soft, low plasticity (organic). |
| | | LDO | N | | 26.30 | 0.50 | | LIGNITE | Clayey, woody textured, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION N | 26.30 | 2.60 | | |
| | | LDO | | | 26.70 | 0.40 | | LIGNEOUS CLAY | Medium to dark brown, soft, high plasticity (organic). |
| | | LDO | O | | 27.30 | 0.60 | | INFERIOR LIGNITE | Clayey, woody textured, medium to dark brown, soft, low plasticity (organic). |
| | | LDO | O | | 27.80 | 0.50 | | LIGNEOUS CLAY | Medium to dark brown, soft, high plasticity (organic). |
| | | LDO | O | | 28.05 | 0.25 | | INFERIOR LIGNITE | Clayey, woody textured, medium to dark brown, soft, low plasticity (organic). |
| | | LDO | O | | 28.50 | 0.45 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | O | | 29.30 | 0.80 | | INFERIOR LIGNITE | Clayey, woody textured, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION O | 29.30 | 2.60 | | |



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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | | 29.80 | 0.50 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | P | | 30.70 | 0.90 | | LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |
| | | LDO | P | | 31.40 | 0.70 | | LIGNEOUS CLAY | Medium to dark brown, soft, high plasticity (organic). |
| | | LDO | P | | 32.20 | 0.80 | | LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |
| | | BASE OF WORKING SECTION P | | | 32.20 | 2.40 | | | |
| | | LDO | | | 34.00 | 1.80 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | Q | | 34.50 | 0.50 | | LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |
| | | LDO | Q | | 34.90 | 0.40 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | Q | | 35.20 | 0.30 | | LIGNEOUS CLAY | Medium to dark brown, soft, high plasticity (clay). |
| | | BASE OF WORKING SECTION Q | | | 35.20 | 1.20 | | | |
| | | BASE OF SEAM LDO | | | 35.20 | 32.00 | | | |
| | | | | | 36.00 | 0.60 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | | | | 36.45 | 0.45 | | SIDERITE | Light grey - brown, moderate strength, brittle. |
| | | | | | 38.30 | 1.85 | | CLAY | Mottled green - grey, weathered, firm, high plasticity (clay).<br>LOW STRENGHT BRITTLE BANDS |
| | | | | | 39.00 | 0.70 | | DOLERITE | Medium to dark green, weathered, low strength, brittle. |
| | | END OF BORE AT | | | 39.00 m | | | | |

EL2080 LAUNCESTON R0122

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0123
**********

Easting: 493180.000
Northing: 5414000.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 162.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 90.00
Drilling Commenced: 23/11/83
Drilling Completed: 24/11/83
Inclination:
Azimuth:
Standing Water Level:

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Available Data: Gamma Logs
Neutron Logs
Detail Density Logs
Caliper Logs

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED



Adelaide 08 297 4788 Perth 09 443 1555
Melb 03 544 899 Bris. 07 263 433 Syd. (02) 53 077

201
3163

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 0.50 | 0.50 | | CLAY | Silty, light to medium yellow, weathered, firm, high plasticity (clay). |
| | | | | | 2.80 | 2.30 | | CLAY | Kaolinitic, mottled off white - pink, weathered, firm, high plasticity (clay). Additional features include: yellow - brown, weathered. |
| | | | | | 4.70 | 1.90 | | CLAY | Mottled brown - off white, weathered, firm, high plasticity (clay). |
| | | | | | 5.00 | 0.30 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | | | | 5.45 | 0.45 | | LIGNEOUS CLAY | Light to medium brown, firm, high plasticity (organic). |
| | | | | | TOP OF SEAM LDO | | | 5.45 | |
| | | LDO | K | | 9.00 | 3.55 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION K | | | 9.00 | 3.55 |
| | | LDO | | | 10.80 | 1.80 | | CLAY | Light to medium grey, firm, high plasticity (clay). |
| | | LDO | L | | 11.80 | 1.00 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION L | | | 11.80 | 1.00 |
| | | LDO | M | | 12.20 | 0.40 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable. |
| | | LDO | M | | 12.80 | 0.60 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | LDO | M | | 13.35 | 0.55 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable. |
| | | LDO | M | | 14.40 | 1.05 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION M | | | 14.40 | 2.60 |
| | | LDO | | | 17.50 | 3.10 | | CLAY | Light to medium grey, firm, high plasticity (clay). |

EL2080 LAUNCESTON R0123

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | N | | 18.50 | 1.00 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION N | | 18.50 | 1.00 | |
| | | LDO | | | 19.40 | 0.90 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic). |
| | | LDO | O | | 19.80 | 0.40 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | LDO | O | | 20.50 | 0.70 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable. |
| | | LDO | O | | 20.90 | 0.40 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION O | | 20.90 | 1.50 | |
| | | LDO | | | 22.00 | 1.10 | | CLAY | Dark brown - black, firm, high plasticity (clay). |
| | | LDO | P | | 25.60 | 3.60 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION P | | 25.60 | 3.60 | |
| | | LDO | | | 29.40 | 3.80 | | CLAY | Medium to dark grey - brown, firm, high plasticity (clay). |
| | | LDO | | | 30.05 | 0.65 | | INFERIOR LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF SEAM LDO | | 30.05 | 24.60 | |
| | | | | | 31.30 | 1.25 | | CLAY | Carbonaceous, medium to dark grey - brown, firm, high plasticity (clay). |
| | | | | | 32.00 | 0.70 | | SIDERITE | Moderate strength, brittle. |
| | | | | | 38.60 | 6.60 | | SAND | Quartzose, clayey, light grey - white, firm, non-plastic, fining upwards, common woody fragments. |
| | | | | | | | | | POTENTIAL AQUIFIER, MORE CLAYEY AT TOP. |
| | | | | | 41.20 | 2.60 | | CLAY | Medium to dark grey - brown, firm, high plasticity (clay). |



Perth (09) 443 1555 Adel (08) 297 4788 Syd (02) 233 1433 Mel (03) 544 1899

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 41.90 | 0.70 | | CLAY | Carbonaceous, medium to dark brown - grey, firm, high plasticity (clay). |
| | | | | | 43.60 | 1.70 | | CLAY | Medium to dark grey - brown, firm, high plasticity (clay). |
| | | | | | 45.10 | 1.50 | | CLAY | Carbonaceous, medium to dark brown - grey, firm, high plasticity (clay). |
| | | | | | 45.60 | 0.50 | | CLAY | Medium to dark grey - brown, firm, high plasticity (clay). |
| | | | | | 46.50 | 0.90 | | CLAY | Carbonaceous, medium to dark brown - grey, firm, high plasticity (clay). |
| | | | | | 47.20 | 0.70 | | CLAY | Medium to dark grey - brown, firm, high plasticity (clay). |
| | | | | | 48.10 | 0.90 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | | 49.00 | 0.90 | | INFERIOR LIGNITE | Clayey, dark brown, firm, high plasticity (organic). |
| | | | | | 49.50 | 0.50 | | SIDERITE | Mottled black. |
| | | | | | 56.50 | 7.00 | | SAND | Quartzose, clayey, light grey - white, firm, non-plastic. |
| | | | | | | | | | POTENTIAL AQUIFIER |
| | | | | | 80.10 | 23.60 | | SAND | Clayey, quartzose, light grey - white, firm, non-plastic. |
| | | | | | 87.00 | 6.90 | | SAND | Quartzose, clayey, light grey - white, firm, non-plastic. |
| | | | | | | | | | POTENTAIL AQUIFIER |
| | | | | | 90.00 | 3.00 | | SAND | Clayey, quartzose, light grey - white, firm, non-plastic. |

END OF BORE AT 90.00 m

EL2080 LAUNCESTON R0123

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0124
**********

Easting: 493000.000
Northing: 5413500.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 160.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 104.00
Drilling Commenced: 26/11/83
Drilling Completed: 27/11/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Detail Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

EL2080 LAUNCESTON R0124

AMULSTREAM LISTING B s (07) 25 3433 Syd (02) 53 077 Malb (03) 544 1899 Adel (08) 297 4788 Perth (09) 448 1555

39731

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2.50 | 2.50 | | CLAY | Silty, mottled buff - grey, firm, high plasticity (clay). |
| | | | | | | | | | WITH NODULES OF CONCRETIONARY IRONSTONE |
| | | | | | 3.00 | 0.50 | | CLAY | Kaolinitic, mottled off white - pink, firm, high plasticity (clay).<br>Additional features include: yellow |
| | | | | | 7.00 | 4.00 | | CLAY | Silty, mottled yellow - off white, firm, high plasticity (clay). |
| | | | | | 24.10 | 17.10 | | CLAY | Silty, light to medium grey, firm, high plasticity (clay). |
| | | | | | | | | | WITH SOME SANDY BANDS |
| | | | | | TOP OF SEAM LBO | | | 24.10 | |
| LBO | 21 | | | | 25.70 | 1.60 | | LIGNITE and LIGNEOUS CLAY | Interbedded 80:20 LIGNITE: clayey, dark brown, soft, low plasticity (organic).<br>LIGNEOUS CLAY: dark brown - black, firm, high plasticity (organic) |
| | | | | | BASE OF WORKING SECTION 1 | | | 25.70 | 1.60 |
| | | | | | BASE OF WORKING SECTION 2 | | | 25.70 | 1.60 |
| LBO | | | | | 26.20 | 0.50 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic) |
| LBO | 22 | | | | 26.60 | 0.40 | | LIGNITE | Clayey, dark brown, soft, low plasticity (organic) |
| | | | | | BASE OF WORKING SECTION 2 | | | 26.60 | 0.40 |
| | | | | | BASE OF WORKING SECTION 2 | | | 26.60 | 0.40 |

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | | 27.20 | 0.60 | | CLAY | Carbonaceous, medium to dark grey - brown, firm, high plasticity (clay). |
| | | LBO | 31 | | 28.50 | 1.30 | | LIGNITE | Clayey, dark brown - black, firm, high plasticity (organic |
| | | | | | BASE OF WORKING SECTION 1 | 28.50 | | 1.30 | |
| | | LBO | 32 | | 30.70 | 2.20 | | LIGNITE and LIGNEOUS CLAY | Interbedded 90:10. LIGNITE: clayey, dark brown, firm, high plasticity (organic). LIGNEOUS CLAY: dark brown - black, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 2 | 30.70 | | 2.20 | |
| | | | | | BASE OF WORKING SECTION 3 | 30.70 | | 3.50 | |
| | | LBO | | | 31.80 | 1.10 | | LIGNEOUS CLAY | Dark brown - black, firm, high plasticity (organic); Bands include: INFERIOR LIGNITE, clayey, dark brown, firm, high plasticity (organic). |
| | | LBO | 33 | | 32.90 | 1.10 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 3 | 32.90 | | 1.10 | |
| | | | | | BASE OF WORKING SECTION 3 | 32.90 | | 1.10 | |
| | | LBO | | | 33.40 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LBO | 41 | | 34.50 | 1.10 | | INFERIOR LIGNITE | Clayey, dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | 34.50 | | 1.10 | |
| | | | | | BASE OF WORKING SECTION 4 | 34.50 | | 1.10 | |

EL2080 LAUNCESTON R0124

MULTISTREAM LISTING Brs (07) 262 3433 Svd (02) 53 0771 Melb (03) 544 699 Adel (08) 297 4788 Perth (09) 442 1555

REPORT TC14-01 CSR COAL DIVISION PAGE 907 RUN AT 10:29:49 15/ 6/84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | | 34.95 | 0.45 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | LBO | 42 | | 36.00 | 1.05 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 2 | 36.00 | | 1.05 | |
| | | LBO | 43 | | 37.20 | 1.20 | | INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 50:50. INFERIOR LIGNITE: clayey, dark brown, firm, high plasticity (organic); LIGNEOUS CLAY: dark brown, firm, high plasticity (organic) |
| | | | | | BASE OF WORKING SECTION 3 | 37.20 | | 1.20 | |
| | | | | | BASE OF WORKING SECTION 4 | 37.20 | | 2.25 | |
| | | LBO | | | 37.95 | 0.75 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LBO | 51 | | 38.40 | 0.45 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic) |
| | | | | | BASE OF WORKING SECTION 1 | 38.40 | | 0.45 | |
| | | | | | BASE OF WORKING SECTION 5 | 38.40 | | 0.45 | |
| | | LBO | | | 39.20 | 0.80 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LBO | 52 | | 40.00 | 0.80 | | INFERIOR LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 2 | 40.00 | | 0.80 | |
| | | | | | BASE OF WORKING SECTION 5 | 40.00 | | 0.80 | |
| | | LBO | | | 40.35 | 0.35 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |

EL2080 LAUNCESTON R0124

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REPORT TC14-01 CSR COAL DIVISION PAGE 908 RUN AT 10:29:49 15/ 6/84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | 53 | | 41.20 | 0.85 | | INFERIOR LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 3 | | | 41.20 | 0.85 |
| | | | | | BASE OF WORKING SECTION 5 | | | 41.20 | 0.85 |
| | | LBO | | | 41.70 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LBO | 6 | | 42.05 | 0.35 | | LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | LBO | 6 | | 44.40 | 2.35 | | INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 60:40. INFERIOR LIGNITE: clayey, woody textured, dark brown, soft, low plasticity (organic); LIGNEOUS CLAY: dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 6 | | | 44.40 | 2.70 |
| | | LBO | | | 46.80 | 2.40 | | CLAY | Silty, light grey, firm, high plasticity (clay). |
| | | LBO | 7 | | 48.00 | 1.20 | | LIGNITE | Clayey, dark brown, soft, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 7 | | | 48.00 | 1.20 |
| | | | | | BASE OF SEAM LBO | | | 48.00 | 23.90 |
| | | | | | 61.20 | 13.20 | | CLAY | Silty, light grey, firm, high plasticity (clay); WITH SOME SANDY HORIZONS MAINLY NEAR BASE OF UNIT. |
| | | | | | TOP OF SEAM LDO | | | 61.20 | |
| | | LDO | H1 | | 62.10 | 0.90 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |

EL2080 LAUNCESTON R0124

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Melbourne Brisbane Sydney Adel (08) 297 4788 Perth (09) 443 555

LAUNCESTON GEOLOGICAL LOG REPORT AIP EL2080 TENEMENT 80124
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | H1 | | 62.50 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | 62.50 | 1.30 | | |
| | | LDO | H2 | | 64.20 | 1.70 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 2 | 64.20 | 1.70 | | |
| | | | | | BASE OF WORKING SECTION H | 64.20 | 3.00 | | |
| | | LDO | | | 66.65 | 2.45 | | CLAY | Light grey, firm, high plasticity (clay). |
| | | LDO | I | | 68.30 | 1.65 | | LIGNITE and LIGNEOUS CLAY | Interbedded 80:20, LIGNITE, clayey, dark brown, firm, low plasticity (organic).<br>LIGNEOUS CLAY: dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION I | 68.30 | 1.65 | | |
| | | LDO | J1 | | 71.20 | 2.90 | | LIGNITE | Clayey, medium to dark brown, firm, friable;<br>Bands include: INFERIOR LIGNITE, clayey, dark brown, firm, low plasticity (organic). |
| | | LDO | J1 | | 71.80 | 0.60 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | 71.80 | 3.50 | | |
| | | LDO | J2 | | 72.80 | 1.00 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | LDO | J2 | | 75.20 | 2.40 | | LIGNITE and INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 50:30:20, LIGNITE, clayey, medium to dark brown, firm, friable;<br>INFERIOR LIGNITE, clayey, dark brown, firm, low plasticity (organic);<br>LIGNEOUS CLAY: dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 2 | 75.20 | 3.40 | | |

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF WORKING SECTION J | | | 75.20 | 6.90 |
| | | LDO | | | 75.80 | 0.60 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | LDO | K | | 79.80 | 4.00 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION K | | | 79.80 | 4.00 |
| | | LDO | | | 82.15 | 2.35 | | CLAY | Silty, light grey - brown, firm, high plasticity (clay); SLAKES AND DISPERSES |
| | | LDO | L | | 84.60 | 2.45 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION L | | | 84.60 | 2.45 |
| | | LDO | | | 85.20 | 0.60 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | LDO | M | | 86.00 | 0.80 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION M | | | 86.00 | 0.80 |
| | | LDO | | | 88.90 | 2.90 | | CLAY | Silty, light grey - brown, firm, high plasticity (clay). |
| | | LDO | | | 89.50 | 0.60 | | SIDERITE | |
| | | LDO | | | 90.15 | 0.65 | | CLAY | Silty, light grey - brown, firm, high plasticity (clay). |
| | | LDO | | | 90.15 | 0.00 | | CLAY | Silty, light grey - brown, firm, high plasticity (clay). |
| | | LDO | N | | 91.30 | 1.15 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION N | | | 91.30 | 1.15 |
| | | LDO | | | 92.40 | 1.10 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |

EL2080 LAUNCESTON R0124

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REPORT TC14-01 CSR COAL DIVISION PAGE 911 RUN AT 10:29:51 15/ 6.84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080

Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | O | | 92.80 | 0.40 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic) |
| | | LDO | O | | 93.35 | 0.55 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | LDO | O | | 93.90 | 0.55 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION O | | | 93.90 | 1.50 |
| | | LDO | | | 94.50 | 0.60 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | LDO | P | | 94.95 | 0.45 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic) |
| | | LDO | P | | 95.90 | 0.95 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | LDO | P | | 96.40 | 0.50 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | LDO | P | | 97.30 | 0.90 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic) |
| | | LDO | P | | 97.70 | 0.40 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION P | | | 97.70 | 3.20 |
| | | LDO | | | 98.80 | 1.10 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic) |
| | | LDO | | | 101.50 | 2.70 | | CLAY | Carbonaceous, medium to dark grey - brown, firm, high plasticity (clay) |
| | | LDO | Q | | 102.20 | 0.70 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION Q | | | 102.20 | 0.70 |
| | | | | | BASE OF SEAM LDO | | | 102.20 | 41.00 |
| | | | | | 104.00 | 1.80 | | CLAY | Silty, light to medium grey - brown, firm, high plasticity (clay); |
| | | | | | | | | | SLAKES AND DISPERSES |

EL2080 LAUNCESTON R0124

397321

REPORT TC14-01 CSR COAL DIVISION PAGE 912 RUN AT 10:29:51 15/ 6/84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|

END OF BORE AT 104.00 m

EL2080 LAUNCESTON R0124

397322

MULTISTEM DRILLING Bris (07) 263 1433 Syd (02) 53 0771 Melb (03) 544 1899 Adel (08) 297 4788 Perth (09) 443 1505

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0125
**********

Easting: 492840.000
Northing: 5413250.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 165.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 70.00
Drilling Commenced: 27/11/83
Drilling Completed: 27/11/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Detail Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED



397323

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT CODE
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1.00 | 1.00 | | CLAY | Sandy, silty, light to medium orange, weathered, firm, low plasticity (clay). |
| | | | | | 2.20 | 1.20 | | CLAY | Silty, mottled orange - yellow, weathered, firm, high plasticity (clay).<br>Additional features include: off white, weathered. |
| | | | | | 4.70 | 2.50 | | CLAY | Kaolinitic, mottled off white - grey, weathered, firm, high plasticity (clay).<br>Additional features include: yellow, weathered. |
| | | | | | 5.20 | 0.50 | | CLAY | Mottled off white - brown, weathered, firm, high plasticity (clay). |
| | | | | | 6.55 | 1.35 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | | | | TOP OF SEAM LDO | | | 6.55 | |
| | | LDO | I | | 7.50 | 0.95 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | LDO | I | | 8.10 | 0.60 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION I | | | 8.10 | 1.55 |
| | | LDO | J1 | | 8.90 | 0.80 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | LDO | J1 | | 9.60 | 0.70 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | J1 | | 13.70 | 4.10 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION J | | | 13.70 | 5.60 |
| | | | | | BASE OF WORKING SECTION J | | | 13.70 | 5.60 |
| | | LDO | | | 14.40 | 0.70 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | J2 | | 16.40 | 2.00 | | LIGNITE | Clayey, dark brown, firm, friable. |



AUSTRAM Listing Brisbane (07) 3229 3433 Sydney (02) 550 0711 Melbourne (03) 544 1899 Adelaide (08) 297 4788 Perth (09) 443 1555

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT [illegible]
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | J2 | | 16.80 | 0.40 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | LDO | J2 | | 18.50 | 1.70 | | LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organi |
| | | LDO | J2 | | 20.80 | 2.30 | | LIGNITE | Clayey, woody textured, medium to dark brown, low strength friable. |
| | | LDO | J2 | | 21.70 | 0.90 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | J2 | | 22.60 | 0.90 | | LIGNITE | Woody textured, clayey, medium to dark brown, low strength friable. |
| | | | | BASE OF WORKING SECTION J | | 22.60 | 8.20 | | |
| | | LDO | | | 23.90 | 1.30 | | CLAY | Silty, light to medium brown, firm, high plasticity (clay). |
| | | LDO | K | | 25.85 | 1.95 | | LIGNITE | Woody textured, clayey, medium to dark brown, low strength friable. |
| | | LDO | K | | 26.35 | 0.50 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | K | | 27.50 | 1.15 | | LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organi |
| | | LDO | K | | 27.90 | 0.40 | | INFERIOR LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organi |
| | | LDO | K | | 31.20 | 3.30 | | LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organi |
| | | | | BASE OF WORKING SECTION K | | 31.20 | 7.30 | | |
| | | LDO | | | 34.00 | 2.80 | | CLAY | Silty, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | L | | 35.00 | 1.00 | | LIGNITE | Clayey, woody textured, medium to dark brown, firm, friable |
| | | LDO | L | | 35.60 | 0.60 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, friable |
| | | | | BASE OF WORKING SECTION L | | 35.60 | 1.60 | | |

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | M | | 37.70 | 2.10 | | LIGNITE | Clayey, woody textured, medium to dark brown, firm, friable |
| | | | | | BASE OF WORKING SECTION M | 37.70 | 2.10 | | |
| | | LDO | | | 39.00 | 1.30 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | | | 45.40 | 6.40 | | CLAY | Light grey - brown, firm, high plasticity (clay). |
| | | LDO | N | | 46.50 | 1.10 | | INFERIOR LIGNITE | Clayey, medium to dark brown, low strength, friable. |
| | | | | | BASE OF WORKING SECTION N | 46.50 | 1.10 | | |
| | | LDO | | | 47.50 | 1.00 | | LIGNEOUS CLAY | Medium to dark brown, soft, low plasticity (organic). |
| | | LDO | O | | 48.80 | 1.30 | | INFERIOR LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION O | 48.80 | 1.30 | | |
| | | LDO | | | 49.30 | 0.50 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |
| | | LDO | P | | 50.70 | 1.40 | | INFERIOR LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION P | 50.70 | 1.40 | | |
| | | LDO | | | 51.10 | 0.40 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |
| | | LDO | Q | | 52.10 | 1.00 | | INFERIOR LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION Q | 52.10 | 1.00 | | |
| | | LDO | | | 52.60 | 0.50 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |
| | | LDO | | | 53.10 | 0.50 | | INFERIOR LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |

EL2080 LAUNCESTON R0125

PLUSTRE4M LISTING Brs (0) 263 2433 Syd (02) 53 0771 Melb (03) 544 1899 Adel (08) 297 4788 Perth (09) 443 1555

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | | 54.90 | 1.80 | | CLAY and LIGNEOUS CLAY | Interbedded 50:50. CLAY: carbonaceous, light to medium brown, firm, high plasticity (clay); LIGNEOUS CLAY: medium to dark brown, firm, low plasticity (organic). |
| | | LDO | R | | 55.50 | 0.60 | | LIGNEOUS CLAY | Medium to dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION R | | | 55.50 | 0.60 |
| | | LDO | | | 55.90 | 0.40 | | CLAY | Carbonaceous, light to medium brown, firm, high plasticity (clay). |
| | | LDO | S | | 57.70 | 1.80 | | LIGNEOUS CLAY and INFERIOR LIGNITE | Interbedded 50:50. LIGNEOUS CLAY: light to medium brown, firm, low plasticity (organic); INFERIOR LIGNITE: clayey, medium to dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION S | | | 57.70 | 1.80 |
| | | | | | BASE OF SEAM LDO | | | 57.70 | 51.15 |
| | | | | | 59.00 | 1.30 | | CLAY | Sandy, kaolinitic, mottled white - purple, firm, high plasticity (clay); Bands include: SIDERITE, light to medium yellow - brown, moderate strength, brittle. |
| | | | | | 62.50 | 3.50 | | CLAY | Kaolinitic, sandy, mottled white - purple, firm, high plasticity (clay); Additional features include: green. |
| | | | | | 64.00 | 1.50 | | CLAY | Sandy, light to medium brown, firm, high plasticity (clay). |
| | | | | | TOP OF SEAM MAG | | | 64.00 | |
| | | MAG | | | 68.00 | 4.00 | | SAND | Clayey, quartzose, light grey - white, fine and medium grained, common woody fragments; Additional features include: occasional heavy minerals, accessory, clasts. |

EL2080 LAUNCESTON R0125

REPORT TC14-01 CSR COAL DIVISION PAGE 916 RUN AT 10:29:54 15/ 6.84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF SEAM MAG | | | 68.00 | 4.00 |
| | | | | | 70.00 | 2.00 | | CLAY | Light to medium brown - grey; |
| | | | | | | | | | ARTESIAN GROUNDWATER CONDITIONS |
| | | | | | | | | | 27/11/83 FLOWING 1400 GAL/HR |
| | | | | | | | | | 28/11/83 FLOWING 400 GALS/HR |
| | | | | | | | | | HOLE ABANDONED DUE TO HIGH ARTESIAN PRESSURE |

END OF BORE AT 70.00 m

EL2080 LAUNCESTON R0125

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

**********
EL2080 LAUNCESTON R0126
**********

Easting: 493000.000
Northing: 5412790.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 180.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 109.00
Drilling Commenced: 28/11/83
Drilling Completed: 29/11/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Detail Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: PRE
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.B. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diameter: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

LAUNCESTON GEOLOGICAL LOG REPORT AIP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2.00 | 2.00 | | CLAY | Silty, light to medium khaki, firm, high plasticity (clay). |
| | | | | | 5.00 | 3.00 | | CLAY | Mottled buff - grey, firm, high plasticity (clay). |
| | | | | | 6.00 | 1.00 | | CLAY | Light to medium buff, firm, high plasticity (clay); |
| | | | | | | | | | WITH SOME IRON OXIDE CONCRETIONS |
| | | | | | 8.40 | 2.40 | | CLAY | Light to medium khaki - buff, firm, high plasticity (clay). |
| | | | | | 13.60 | 5.20 | | CLAY and CLAY | Interbedded 80:20. CLAY: light to medium off white, firm, high plasticity (clay);<br>CLAY: silty, light to medium yellow, firm, high plasticity (silt). |
| | | | | | 14.30 | 0.70 | | CLAY | Kaolinitic, light white, firm, high plasticity (clay). |
| | | | | | 15.50 | 1.20 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | | | | 16.00 | 0.50 | | CLAY | Kaolinitic, light white, firm, high plasticity (clay). |
| | | | | | 16.30 | 0.30 | | CLAY | Carbonaceous, light to medium brown, firm, high plasticity (clay). |
| | | | | | 17.30 | 1.00 | | CLAY | Silty, light to medium brown - red, firm, low plasticity (clay). |
| | | | | | 17.80 | 0.50 | | CLAY | Carbonaceous, ligneous, light to medium brown, firm, high plasticity (clay). |
| | | | | | 19.00 | 1.20 | | CLAY | Kaolinitic, light to medium off white, firm, high plasticity (clay). |
| | | | | | 20.10 | 1.10 | | CLAY | Silty, light to medium yellow, firm, high plasticity (clay). |
| | | | | | 22.40 | 2.30 | | CLAY and CLAY | Interbedded 70:30. CLAY: silty, light to medium brown - yellow, firm, high plasticity (clay);<br>CLAY: kaolinitic, light to medium off white, firm, high plasticity (clay). |
| | | | | | 24.00 | 1.60 | | CLAY and CLAY | Interbedded 80:20. CLAY: kaolinitic, light off white, firm, high plasticity (clay);<br>CLAY: kaolinitic, mottled off white - yellow, firm, high plasticity (clay). |



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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 28.00 | 4.00 | | CLAY | Kaolinitic, mottled yellow - off white, firm, high plasticity (clay). |
| | | | | | 29.30 | 1.30 | | CLAY and CLAY | Interbedded 80:20. CLAY: silty, mottled yellow - off white, firm, high plasticity (clay). CLAY: silty, mottled yellow - pink, firm, high plasticity (clay). |
| | | | | | 31.60 | 2.30 | | CLAY | Sandy, mottled grey - yellow, firm, low plasticity (clay). |
| | | | | | TOP OF SEAM LBO | | | 31.60 | |
| | | LBO | 41 | | 32.40 | 0.80 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | | | 32.40 | 0.80 |
| | | | | | BASE OF WORKING SECTION 4 | | | 32.40 | 0.80 |
| | | LBO | | | 33.20 | 0.80 | | CLAY | Silty, light to medium grey - brown, firm, high plasticity (clay). |
| | | LBO | 42 | | 33.80 | 0.60 | | LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 2 | | | 33.80 | 0.60 |
| | | | | | BASE OF WORKING SECTION 4 | | | 33.80 | 0.60 |
| | | LBO | | | 34.60 | 0.80 | | CLAY | Dark grey, firm, high plasticity (clay). |
| | | LBO | 43 | | 35.10 | 0.50 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 3 | | | 35.10 | 0.50 |
| | | | | | BASE OF WORKING SECTION 4 | | | 35.10 | 0.50 |

EL2080 LAUNCESTON R0126

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | | 36.10 | 1.00 | | CLAY | Dark grey, firm, high plasticity (clay). |
| | | LBO | 51 | | 36.90 | 0.80 | | LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | 36.90 | 0.80 | | |
| | | | | | BASE OF WORKING SECTION 5 | 36.90 | 0.80 | | |
| | | LBO | | | 37.50 | 0.60 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LBO | 52 | | 37.90 | 0.40 | | LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 2 | 37.90 | 0.40 | | |
| | | | | | BASE OF WORKING SECTION 5 | 37.90 | 0.40 | | |
| | | LBO | | | 38.80 | 0.90 | | CLAY | Dark grey, firm, high plasticity (clay). |
| | | LBO | 61 | | 41.40 | 2.60 | | LIGNITE and LIGNEOUS CLAY | Interbedded 90:10, LIGNITE: clayey, dark brown, soft, low plasticity (organic); LIGNEOUS CLAY: dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | 41.40 | 2.60 | | |
| | | | | | BASE OF WORKING SECTION 6 | 41.40 | 2.60 | | |
| | | LBO | | | 45.70 | 4.30 | | CLAY | Silty, light to medium brown - grey, firm, high plasticity (clay). |
| | | LBO | 7 | | 47.70 | 2.00 | | LIGNITE | Clayey, woody textured, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 7 | 47.70 | 2.00 | | |



Melbourne (03) 267 3733 Sydney (02) 264 3433 Perth (09) 322 1955 Adelaide (08) 297 4783

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LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT PROG
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LBO | | | 48.40 | 0.70 | | CLAY | Silty, light to medium brown - grey, firm, high plasticity (clay) |
| | | LBO | | | 49.40 | 1.00 | | SIDERITE | Light to medium yellow, extremely high strength, tough. |
| | | LBO | | | 54.30 | 4.90 | | CLAY | Light to medium grey, firm, high plasticity (clay). |
| | | LBO | 8 | | 54.80 | 0.50 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | LBO | 8 | | 55.30 | 0.50 | | LIGNEOUS CLAY | Dark brown. |
| | | LBO | 8 | | 56.50 | 1.20 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 8 | 56.50 | 2.20 | | |
| | | LBO | | | 57.20 | 0.70 | | CLAY | Carbonaceous, light to medium brown - grey, firm, high plasticity (clay) |
| | | LBO | 9 | | 58.70 | 1.50 | | LIGNITE | Clayey, dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 9 | 58.70 | 1.50 | | |
| | | | | | BASE OF SEAM LBO | 58.70 | 27.10 | | |
| | | | | | 64.10 | 5.40 | | CLAY | Light to medium grey, firm, high plasticity (clay). |
| | | | | | 64.50 | 0.40 | | SIDERITE | |
| | | | | | 68.30 | 3.80 | | CLAY | Light to medium grey, firm, high plasticity (clay). |
| | | | | | 68.70 | 0.40 | | SIDERITE | |
| | | | | | 74.00 | 5.30 | | CLAY | Light to medium grey, firm, high plasticity (clay) |
| | | | | | TOP OF SEAM LDO | 74.00 | | | |
| | | LDO | H1 | | 75.10 | 1.10 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic) |
| | | | | | BASE OF WORKING SECTION 1 | 75.10 | 1.10 | | |



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REPORT TC14-01 CSR COAL DIVISION PAGE 924 RUN AT 10:29:57 15/ /84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | H2 | | 76.00 | 0.90 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 2 | 76.00 | 0.90 | | |
| | | | | | BASE OF WORKING SECTION H | 76.00 | 2.00 | | |
| | | LDO | | | 76.50 | 0.50 | | CLAY | Carbonaceous, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | I | | 78.20 | 1.70 | | INFERIOR LIGNITE | Clayey, dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION I | 78.20 | 1.70 | | |
| | | LDO | J1 | | 80.40 | 2.20 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | 80.40 | 2.20 | | |
| | | | | | BASE OF WORKING SECTION J | 80.40 | 2.20 | | |
| | | LDO | | | 81.70 | 1.30 | | CLAY | Carbonaceous, silty, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | J2 | | 82.40 | 0.70 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 2 | 82.40 | 0.70 | | |
| | | | | | BASE OF WORKING SECTION J | 82.40 | 0.70 | | |
| | | LDO | | | 84.00 | 1.60 | | CLAY | Silty, light to medium brown - grey, firm, high plasticity (clay). Bands include: LIGNEOUS CLAY, dark brown, firm, high plasticity (organic). |

EL2080 LAUNCESTON R0126

397334

REPORT TC14-01 CSR COAL DIVISION PAGE 925 RUN AT 10:29:58 15/ 6/84

LAUNCESTON GEOLOGICAL LOG REPORT ATP EL2080 TENEMENT 2080
Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | | 85.70 | 1.70 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | | | 87.40 | 1.70 | | CLAY | Silty, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | K | | 88.10 | 0.70 | | LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION K | | | 88.10 | 0.70 |
| | | LDO | | | 90.70 | 2.60 | | CLAY | Silty, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | | | 91.10 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | | | 95.90 | 4.80 | | CLAY | Silty, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | | | 96.70 | 0.80 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | | | 97.30 | 0.60 | | CLAY | Light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | L | | 99.30 | 2.00 | | LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION L | | | 99.30 | 2.00 |
| | | LDO | | | 100.00 | 0.70 | | CLAY | Carbonaceous, silty, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | M | | 100.70 | 0.70 | | LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | LDO | M | | 101.20 | 0.50 | | CLAY | Carbonaceous, silty, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | M | | 101.90 | 0.70 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION M | | | 101.90 | 1.90 |
| | | LDO | | | 102.95 | 1.05 | | CLAY | Carbonaceous, silty, light to medium brown - grey, firm, high plasticity (clay). |

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| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | N | | 104.40 | 1.45 | | LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION N | | | 104.40 | 1.45 |
| | | LDO | | | 105.10 | 0.70 | | CLAY | Carbonaceous, silty, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | O | | 106.50 | 1.40 | | INFERIOR LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION O | | | 106.50 | 1.40 |
| | | LDO | | | 106.90 | 0.40 | | CLAY | Carbonaceous, silty, light to medium brown - grey, firm, high plasticity (clay). |
| | | LDO | | | 107.30 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | LDO | P | | 109.00 | 1.70 | | LIGNITE | Clayey, dark brown, soft, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION P | | | 109.00 | 1.70 |
| | | | | | BASE OF SEAM LDO | | | 109.00 | 35.00 |

END OF BORE AT 109.00 m

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Easting: 493000.000
Northing: 5410720.000
Grid Type: Australian Mapping Grid
Accuracy: Approximate
Crl: 160.00
Datum: Australian Height Datum
Sheet Reference:
Sheet Index:
Total Depth: 101.00
Drilling Commenced: 29/11/83
Drilling Completed: 05/12/83
Inclination:
Azimuth:
Standing Water Level:

Available Data: Gamma Logs
Neutron Logs
Detail Density Logs
Resistivity Logs
Caliper Logs

Logging Organisation: CSR Exploration and Evaluation Group
Logged By: ELLIS
Drilling Contractor: H.J. Stacpoole
Geophysical Logging: B.P.D. Pty Ltd

County:
Parish:
Portion:

Plug Depths:
Hole Diamater: 150
Core Diameter:
Cased Depths: 3.0
Core Barrel:

Drill Bits: Blades
Tungsten Carbide

ALL ROCKS ARE FRESH UNLESS OTHERWISE INDICATED

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| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2.00 | 2.00 | | CLAY | Silty, light to medium brown - yellow, weathered, firm, high plasticity (clay). |
| | | | | | 4.40 | 2.40 | | CLAY | Mottled grey - blue, weathered, firm, high plasticity (clay). Additional features include: red, weathered. |
| | | | | | 5.00 | 0.60 | | CLAY | Silty, light to medium yellow, weathered, firm, high plasticity (clay). |
| | | | | | 7.30 | 2.30 | | CLAY | Mottled grey - pink, weathered, firm, high plasticity (clay). |
| | | | | | 7.80 | 0.50 | | CLAY | Silty, light to medium yellow, weathered, firm, high plasticity (clay). |
| | | | | | 8.10 | 0.30 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | | | | TOP OF SEAM LDO | | | 8.10 | |
| | | LDO | H1 | | 8.90 | 0.80 | | LIGNITE | Clayey, woody textured, medium to dark brown - black, low strength, friable. |
| | | LDO | H1 | | 9.70 | 0.80 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | LDO | H1 | | 10.30 | 0.60 | | LIGNITE | Clayey, woody textured, medium to dark brown - black, low strength, friable. |
| | | | | | BASE OF WORKING SECTION 1 | | | 10.30 | 2.20 |
| | | | | | BASE OF WORKING SECTION H | | | 10.30 | 2.20 |
| | | LDO | | | 12.80 | 2.50 | | CLAY and LIGNEOUS CLAY | Interbedded 70:30. CLAY: carbonaceous, light to medium brown - grey, firm, high plasticity (clay); LIGNEOUS CLAY: medium to dark brown, firm, high plasticity (organic). |
| | | LDO | H2 | | 13.70 | 0.90 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 2 | | | 13.70 | 0.90 |

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| STRA NAME | SEQ NO | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF WORKING SECTION H | 13.70 | 0.90 | | |
| | | LDO | | | 15.50 | 1.80 | | CLAY | Light grey, firm, high plasticity (clay). |
| | | LDO | I | | 16.70 | 1.20 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION I | 16.70 | 1.20 | | |
| | | LDO | | | 17.60 | 0.90 | | CLAY | Light brown - grey, firm, high plasticity (clay). |
| | | LDO | J1 | | 19.20 | 1.60 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | LDO | J1 | | 19.70 | 0.50 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | LDO | J1 | | 20.10 | 0.40 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, low plasticity (organic). |
| | | LDO | J1 | | 20.55 | 0.45 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION 1 | 20.55 | 2.95 | | |
| | | LDO | J2 | | 22.60 | 2.05 | | LIGNITE | Clayey, medium to dark brown, soft, low plasticity (organic). |
| | | LDO | J2 | | 23.75 | 1.15 | | LIGNEOUS CLAY and INFERIOR LIGNITE | Interbedded 80:20 LIGNEOUS CLAY, medium to dark brown, firm, low plasticity (organic). INFERIOR LIGNITE, clayey, medium to dark brown, firm, low plasticity (organic). |
| | | LDO | J2 | | 24.60 | 0.85 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION 2 | 24.60 | 4.05 | | |
| | | | | | BASE OF WORKING SECTION J | 24.60 | 7.00 | | |
| | | LDO | | | 26.30 | 1.70 | | CLAY | Light to medium brown, firm, high plasticity (clay). |
| | | LDO | K | | 29.00 | 2.70 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |

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| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | K | | 29.55 | 0.55 | | LIGNEOUS CLAY | Dark brown, firm, low plasticity (organic). |
| | | LDO | K | | 30.35 | 0.80 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION K | 30.35 | 4.05 | | |
| | | LDO | | | 34.80 | 4.45 | | CLAY | Light grey - brown, firm, high plasticity (clay).<br>Bands include: CLAY, light grey - brown, firm, high plasticity (clay), occasional siderite, secondary, nodules |
| | | LDO | L | | 37.30 | 2.50 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION L | 37.30 | 2.50 | | |
| | | LDO | | | 37.80 | 0.50 | | CLAY | Carbonaceous, light to medium brown, firm, high plasticity (clay). |
| | | LDO | M | | 38.80 | 1.00 | | INFERIOR LIGNITE and LIGNEOUS CLAY | Interbedded 50:50, INFERIOR LIGNITE: clayey, medium to dark brown, firm, friable;<br>LIGNEOUS CLAY: medium to dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION M | 38.80 | 1.00 | | |
| | | LDO | | | 45.00 | 6.20 | | CLAY and CLAY | Interbedded 60:40, CLAY: silty, light to medium brown - grey, firm, high plasticity (clay);<br>CLAY: light grey, firm, high plasticity (clay);<br>SLAKES AND DISPERSES |
| | | LDO | P | | 45.40 | 0.40 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, high plasticity (organic). |
| | | LDO | P | | 45.80 | 0.40 | | LIGNEOUS CLAY | Medium to dark brown, firm, high plasticity (organic). |
| | | LDO | P | | 46.10 | 0.30 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION P | 46.10 | 1.10 | | |



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Launceston

| STRA NAME | SEQ NO. | SEAM NAME | WORK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | LDO | | | 46.50 | 0.40 | | CLAY | Light grey - brown, firm, high plasticity (clay). |
| | | LDO | Q | | 47.60 | 1.10 | | INFERIOR LIGNITE | Clayey, medium to dark brown, firm, high plasticity (organic). |
| | | | | | BASE OF WORKING SECTION Q | 47.60 | 1.10 | | |
| | | | | | BASE OF SEAM LDO | 47.60 | 39.50 | | |
| | | | | | 52.00 | 4.40 | | CLAY and CLAY | Interbedded 60:40 CLAY: silty, light to medium brown - grey, firm, high plasticity (clay). CLAY: light grey, firm, high plasticity (clay). SLAKES AND DISPERSES |
| | | | | | 70.50 | 18.50 | | CLAY | Light grey, firm, high plasticity (clay). SLAKES AND DISPERSES |
| | | | | | TOP OF SEAM LEO | 70.50 | | | |
| | | LEO | A | | 72.30 | 1.80 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | LEO | A | | 73.10 | 0.80 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | LEO | A | | 74.20 | 1.10 | | LIGNITE | Clayey, medium to dark brown, firm, friable. |
| | | | | | BASE OF WORKING SECTION A | 74.20 | 3.70 | | |
| | | LEO | | | 80.20 | 6.00 | | CLAY | Light to medium grey - brown, fault, common, subhorizontal joints). SLAKES AND DISPERSES |
| | | LEO | B | | 81.80 | 1.60 | | LIGNITE | Clayey, dark brown, firm, friable. |

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| STRA NAME | SEQ NO. | SEAM NAME | WOK SEC | SAMPL NUMBR | DEPTH (m) | THICK (m) | % REC | ROCK TYPE | GEOLOGICAL DESCRIPTION OF STRATA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | BASE OF WORKING SECTION B | | | 81.80 | 1.60 |
| | | LFO | | | 82.70 | 0.90 | | CLAY | Light to medium grey - brown, firm, high plasticity (clay). |
| | | LFO | | | 83.10 | 0.40 | | LIGNEOUS CLAY | Dark brown, soft, low plasticity (organic). |
| | | LFO | | | 84.75 | 1.65 | | CLAY | Silty, light to medium grey - brown, firm, high plasticity (clay); SLAKES AND DISPERSES |
| | | LFO | C | | 86.40 | 1.65 | | LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | LFO | C | | 88.10 | 1.70 | | CLAY and LIGNEOUS CLAY | Interbedded 70:30. CLAY: silty, light to medium brown - grey, firm, high plasticity (clay); LIGNEOUS CLAY: dark brown, firm, low plasticity (organic). |
| | | LFO | C | | 89.70 | 1.60 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION C | | | 89.70 | 4.95 |
| | | LFO | | | 90.40 | 0.70 | | CLAY | Silty, light to medium brown - grey, firm, high plasticity (clay) |
| | | LFO | D | | 91.70 | 1.30 | | INFERIOR LIGNITE | Clayey, dark brown, firm, low plasticity (organic). |
| | | | | | BASE OF WORKING SECTION D | | | 91.70 | 1.30 |
| | | | | | BASE OF SEAM LFO | | | 91.70 | 21.20 |
| | | | | | 95.40 | 3.70 | | CLAY | Light grey, soft, high plasticity (clay). |
| | | | | | 95.80 | 0.40 | | LIGNEOUS CLAY | Dark brown, firm, high plasticity (organic). |
| | | | | | 101.00 | 5.20 | | CLAY | Light grey - white, soft, high plasticity (clay). |

END OF BORE AT 101.00 m

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END OF GEOLOGICAL LOG REPORT

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