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STAGE II INVESTIGATIONS

CATAMARAN COAL PROSPECT
SOUTHEASTERN TASMANIA

PREPARED FOR · Australian Paper Manufacturers Limited

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May, 1975

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CONTENTS

1.0 SUMMARY AND CONCLUSIONS.

A costeaning and drilling programme has fully evaluated the potential of the Catamaran area to fulfil the Company's requirements as an emergency or alternative fuel source for the Port Huon Mill.

Although over 1,300 metres of coal measure outcrop was delineated, drilling and analytical results to depths of 32 metres clearly indicate that the area is incapable of providing open cut coal of the quantity or quality required.

The extensive nature of the first workings of the Catamaran Mine and the rapid deterioration in coal quality, possibly due to faulting, away from the mine area preclude any possibility of the Company's requirements being satisfied from open cut exploitation. The possibility of underground extraction has not been tested.

Further exploration in the Catamaran area is not justified and consideration should be given to cancelling the lease application.

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2.0 COSTEANING AND SITE PREPARATION.

Following work carried out in Stage I operations during which some 2000 feet of outcrop was established west of the area of probable old workings, further track development and costeaning was carried out in order to extend the length of seam outcrop and evaluate the nature of the seam at outcrop.

All tracks and costeans developed during Stage I and Stage II operations are shown on Map I.

Access was extended to the west from Cut 4 along the gentle ridge forming the southern boundary of the button grass plain. Approximately 1100 feet west of cut 4, a track was put down to the edge of the plain and Cut 5 excavated. This cut is about 50 feet in length and has a maximum depth of 6 feet.

The cut was such that it was necessary to take measurements horizontally and calculate thicknesses after correcting for the slope of the cut, the dip of the seam and the development of the cut at an oblique angle to the dip of the seam.

The cut remained dry on completion of excavation but was later filled with water for use in drilling.

It was believed that this cut was developed on the same seam as previous cuts 2 and 4. Drilling proved this supposition to be erroneous and the seam exposed in Cut 5 was in fact a seam higher in the section. Details of the seam intersection are given in Table 1.

The access track was extended a further 350 feet west along the ridge and Cut 6 excavated at the edge of the plain. This Cut is approximately 150 feet in length and has a maximum depth of 3 feet. A general section of the seam exposed in this cut is given in Table 2. The section is a general one only as an extremely heavy thunderstorm filled the cut with water as it was being excavated, making detailed measurements almost impossible. The rainwater remained in the cut for some weeks but there was no groundwater seepage. The cut was such that it was necessary to take measurements horizontally and calculate thicknesses after correcting for the slope of the cut, the dip of the seam and the development of the cut at an oblique angle to the dip of the seam.

The access track was extended a further 650 feet to the west along the base of the ridge at which point access to the west was prevented by extremely dense stands of timber and access to the north was precluded by the swampy nature of the plain. A prospecting shaft was located a further 150 feet to the west. The shaft is surrounded by coal spoil indicating that the seam outcrop extends to at least this point. (see Map 1).

In an attempt to trace the seam further west, a second access track was constructed along the ridge top some 400 feet to the south of the first track. This track was developed to a point some 1200 feet west of Cut 6. At this point an attempt was made to put the track down to the plain but very steep gullies prevented this.

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As over 4,000 feet of seam outcrop had been indicated at this time, the development of this track was suspended pending initial drilling results.

As Stage I and Stage II operations to this time had indicated a length of seam outcrop providing the potential to fulfil the Company's tonnage requirements, access tracks for drilling sites were constructed onto the button grass plain at Cuts 2, 4 and 5, thus providing drilling sites at approximate 1,000 feet intervals along the strike of the seam outcrop.

Because of the swampy nature of the plain it was necessary to put up to 6 feet of filling on the tracks into the swamp in order to provide solid ground to support the bulldozer and drilling rig. This necessitated somewhat longer use of the bulldozer than had been anticipated.

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TABLE 1
SEAM SECTION - NO. 5 CUT.

Thickness (m)	Description
	TOP OF SEAM OBSCURED
0.18	COAL, inferior, grading to black carbonaceous claystone in part.
0.09	COAL, Db
0.09	COAL, dull to inferior, grading to carbonaceous claystone in part.
0.06	COAL, Db
0.02	CLAYSTONE, buff, waxy.
0.11	COAL, Db
0.28	COAL, inferior, grading to black carbonaceous claystone in part.
0.40	COAL, dull, hard.
0.03	CLAYSTONE, buff, waxy.
0.03	COAL, dull.
0.03	CLAYSTONE, buff, waxy.
0.23	COAL, dull, hard.
0.02	CLAYSTONE, buff, waxy.
0.15	COAL, dull, hard.
	BASE OF SEAM
	CLAYSTONE, orange and fawn, mottled.

SEAM THICKNESS - 1.72m+

NOTE - As the cut was developed obliquely to the direction of dip of the seam, measurements had to be made horizontally and obliquely to the dip direction. Thus the thickness of the plies is approximate only, being geometrically derived.

TABLE 2
SEAM SECTION - NO. 6 CUT

Thickness (m)	Description
	TOP OF SEAM OBSCURED
3.30	COAL , dull, occasional inferior COAL and black carbonaceous claystone bands.
2.40	COAL , dull and carbonaceous claystone , black, 50/50 in units to 0.3m.
0.58	CLAYSTONE, grey.
2.10	COAL, dull to inferior.
	BASE OF SEAM OBSCURED

SEAM THICKNESS - 8.38m+

NOTE - This section is a very general one only as an extremely heavy thunderstorm filled the cut with water as it was being excavated, making detailed measurements impossible.

As the cut was developed obliquely to the direction of dip , measurements had to be made horizontally and obliquely to the dip direction. Thus the thickness of the plies is approximate only, being geometrically derived.

3.0 DRILLING

A drilling programme consisting of seven holes was carried out between 13th March and 18th April 1975. The purpose of the programme was to determine the nature and quality of the seams detected at outcrop during previous costeaning investigations.

A total of 140.02m of drilling was carried out consisting of 111.09m of NMLC coring and 28.93m of open hole augering. NX casing was utilised in all holes. Drilling was carried out by Mono Pumps (Australia) Pty. Ltd. - Tasmanian Drilling Division using a trailer mounted Gemco drilling rig.

The programme as originally envisaged was to consist of approximately 500m of drilling in fifteen holes. However, the programme was abandoned after seven holes due to the very poor results obtained.

The time taken to drill holes D.D.H. 1, 2 and 3 was much longer than might normally be anticipated for shallow holes of this nature. This was due principally to atrocious weather conditions (snow, hail and incessant rain), continual cave-ins in the holes resulting in the casing having to be kept a short distance behind the bit, the need to pump water a considerable distance (400m) and continual jamming of the split inner tubes in the core barrel because of the very soft and puggy nature of the interseam sediments and some of the claystones within the seams. This problem was rectified to some degree in later holes by the use of new core barrels and the drilling of very short runs (1 to 2 feet).

The holes were logged on site and the seams sampled for subsequent analysis. The remainder of the core, generally less than 5m in each hole was discarded.

3.1 Catamaran D.D.H. 1

Catamaran D.D.H. 1 was sited 33m north of cut 5 and designed to intersect the seam exposed in cut 5 at a depth of approximately 4m. It was thought that the seam exposed in cut 5 was the lowermost seam in the section, but this supposition proved to be erroneous.

Relevant details are given below.

Total Depth : 26.21m
Open Hole : 2.59m (0 - 2.59m)
NMLC Core 23.62m (2.59 - 26.21m)
NX Casing used : 19.2m (all casing reclaimed)

A graphic log of the hole is shown in Fig. 1. Two seams were intersected being 2.68m (5.12 - 7.76m) and 7.99m (11.41 - 19.40m) in thickness.

Analyses of samples from the two seams are given in Table 3. The coal in both seams is of very poor quality, the lowest ash content being 22.4% for a 0.36m ply (Sample C1/13 - Table 3) in the lower seam.

jammed in the core barrel. In order to free the tubes it was necessary to auger the core out of the tubes, resulting in a loss of sample. Because of the poor quality of the coal encountered in D. D. H. 1 and D. D. H. 2 on the same line it was not considered necessary to redrill the hole.

Samples from this hole were not analysed because of the inferior nature of the coal and the poor analytical results obtained from D. D. H. 1 and D. D. H. 2 on the same line.

The basal 1.64 m of the seam has been cindered by the intrusion of a dolerite sill.

3.4 Catamaran D. D. H. 4.

Catamaran D. D. H. 4 was sited 15m north of Cut 4 and was designed to intersect the seam exposed in Cut 4 at a depth of approximately 3m. Relevant details are given below.

Total Depth : 14.01m
Open Hole : 3.20m (0 - 3.20m)
NMLC Core : 10.81m (3.20 - 14.01m)
NX Casing used 7.6m (all casing reclaimed)

A graphic log of this hole is shown on Fig. 2. The seam exposed in Cut 4 was intersected from 3.66m to 13.71m, being 10.05m in thickness.

Analyses of Samples from this seam are given in Table 5. The coal is of poor quality with only one thin ply of 0.18m containing less than 20% ash. (Sample C4/7 - Table 5).

The basal 6.63 m of coal in the seam has been affected by the intrusion of a dolerite sill as indicated by the drop in the percentage of volatile matter in Samples C4/8 - C4/10 (Table 5). The basal 2.13m of the seam is heavily cindered with extensive calcite veining.

3.5 Catamaran D. D. H. 5

Catamaran D. D. H. 5 was sited 49m north of D. D. H. 4 and designed to intersect the seam exposed in Cut 4 and intersected in D. D. H. 4 at a depth of approximately 10m. Relevant details are given below.

Total Depth : 20.41m
Open Hole 3.50m (0 - 3.50m)
NMLC Core 16.91m (3.50 - 20.41m)
NX Casing used : 17.4m (all casing reclaimed)

A graphic log of this hole is shown in Fig. 2 . Two seams were intersected, from 3.94 to 6.95 (3.01m in thickness) and from 9.75 to 19.25m (9.50 m in thickness). The lower seam is the seam exposed in Cut 4 and intersected in D. D. H. 4. The seams

Coal in the basal 4.62m of the lower seam has been cindered as a result of the intrusion of a dolerite sill. This cindering is reflected by the sudden drop in the percentage of volatile matter in Samples C1/17 - C1/21A (Table 3) compared to samples higher in the seam.

Water flowed from this hole on completion of drilling.

3.2 Catamaran D.D.H. 2

Catamaran D.D.H. 2 was sited 46m north of D.D.H. 1 and was designed to intersect the upper seam encountered in D.D.H. 1 at a depth of approximately 15m. Relevant details are given below.

Total Depth · 32.00m
Open Hole : 11.88m (0 - 11.88m)
NMLC Core : 20.12m (11.88 - 32.00m)
NX Casing used : 17.4m (all casing reclaimed)

A graphic log of this hole is shown on Fig. 1. The two seams previously intersected in Catamaran D.D.H. 1 were intersected from 15.23 to 18.38m (3.15m in thickness) and from 22.10 to 31.01m (8.91m in thickness) respectively.

Analyses of samples from the two seams are given in Table 4. Coal in both seams was again very poor in quality, the best sample being a 1.27m ply with ash content of 17.9% (Sample C2/7B-Table 4) in the lower seam. This was a picked sample with all bands excluded.

The basal 5.64m of the lower seam has been affected by the intrusion of a dolerite sill, as reflected by the drop in the percentage of volatile matter in Samples C2/8 and C2/9 (Table 4).

Water flowed from this hole on completion of drilling.

3.3 Catamaran D.D.H. 3

Catamaran D.D.H. 3 was sited 37m south of Catamaran D.D.H. 1 (Map 1) and was designed to intersect the lower seam at a depth of approximately 3m. Relevant details are given below.

Total Depth · 10.97m
Open Hole 2.13m (0 - 2.13m)
NMLC Core : 8.86m (2.13 - 10.97m)
NX Casing used : 5.2m (all casing reclaimed)

The lower seam was intersected from 2.13m - 10.68m (8.55m in thickness). The upper seam was not intersected as the hole was sited up dip from the outcrop of this seam. (See Fig 1 and Map 1).

A total of 3.28m of core was lost in this hole (6.40 - 7.25m and 7.61 - 9.04m) because of the split inner tubes becoming

are those previously intersected in D. D. H. 's 1, 2 and 3.

Analyses of samples from the two seams are given in Table 6. The coal in both seams is of poor quality with only one ply of 0. 28m in the lower seam containing less than 20% ash (Sample C5/6 - Table 6).

The low percentage of volatile matter in Sample C5/13 indicates the close proximity of the dolerite sill although dolerite was not intersected in the hole.

3.6 Catamaran D. D. H. 6.

Catamaran D. D. H. 6 was sited 60m north of Cut 2 and was designed to intersect the seam exposed in Cut 2 at a depth of approximately 15m. Relevant details are given below.

Total Depth · 20. 72m
Open Hole : 3. 35m (0 - 3. 35m)
NMLC Core: 17. 37m (3. 35 - 20. 72m)
NX Casing used · 13. 1m (all casing reclaimed)

A graphic log of this hole is shown in Fig. 2. A 3. 56m seam was intersected from 7. 61 to 11. 17m. Other thin inferior coal and carbonaceous bands were present in the interval 11. 17 to 18. 28m.

At 18. 28m old workings were intersected. An attempt was made to drill through the floor of the workings, but from the evidence of rust and iron on the bit, progress was halted by the presence of an old railway track in the workings.

Because of the inferior nature of the coal in the upper seam, no samples from this hole were submitted for analysis.

Weathering and oxidation of the sediments and coal in this hole were more extensive than in hole D. D. H 1 to 5, presumably due to the much wetter, swampy nature of the ground at this point.

3.7 Catamaran D. D. H. 7

Catamaran D. D. H. 7 was sited 49m south of D. D. H. 6 and 11m north of Cut 2 and designed to intersect the seam exposed in Cut 2 at a depth of approximately 4m. Relevant details are given below.

Total Depth · 15. 70m
Open Hole : 2. 13m (0 - 2. 13m)
NMLC Core : 13. 57m (2. 13 - 15. 70m)
NX Casing used 4. 6m (all casing reclaimed)

A graphic log of this hole is shown in Fig. 2. Several bands of inferior coal and carbonaceous claystone are present in the interval 2. 13 to 9. 18m. A seam was intersected from 9. 24 to 11. 58m at which point old workings were again encountered. The

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hole was continued for 1.07m below the floor of the workings, this section consisting of mid grey claystone. Attempts to continue the hole beyond this point proved fruitless principally because of lack of water returns.

No samples of coal from this hole were analysed because of the inferior nature of the coal.

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4.0 NATURE AND QUALITY OF SEAMS.

At least two, and possibly four, seams were intersected by drilling. Old workings were intersected in two holes and consequently the quality of the coal in these seams could not be determined. The quality of the coal in the seams intersected in the other holes was very poor, and could in no way satisfy the Company's requirements.

4.1 Seam Identity.

Old records indicate that three seams are present in the area of old workings of the Catamaran Mine, viz -

Upper Seam - very thin
Catamaran Seam - 1.01 to 1.17 m
Young Seam - 0.76 to 0.91 m

The Young Seam is 2.4 to 3.6 m below the Catamaran Seam but the separation between the Upper and Catamaran Seams is uncertain.

Correlation of sections referred to in old records and results obtained in the present programme is very difficult and is complicated by the fact that most of the old sections describe only that part of the seam that was mined and give little other information.

Two holes, namely D. D. H. 6 and D. D. H. 7 were drilled in the vicinity of, and in fact intersected, old workings, and it must be assumed that these old workings are on the Catamaran Seam.

It is possible that these workings are in fact access openings as they do not occur at identical levels in the seam in holes D. D. H. 6 and D. D. H. 7. In D. D. H. 6 the workings are 0.44 m below the top of the seam and in D. D. H. 7 the workings are 2.60 m below the top of the seam.

Sections obtained in D. D. H. 6 and D. D. H 7 cannot be correlated with those obtained in holes D. D. H. 1 to 5 to the west, (fig. 1 and fig. 2) indicating that either

(i) there is a sudden increase in the thickness of the seams with an accompanying deterioration in quality west of holes D. D. H 6 and D. D. H. 7 , or

(ii) faulting is present between D. D. H. 6 & 7 and D. D. H. 4 & 5 with the effect that seams occurring west of D. D. H. 6 & 7 are in a different section of the coal measure sequence to those present in the Catamaran Mine area.

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4.2 Upper Seam - D. D. H. 6 and D. D. H. 7.

The upper seam intersected in D. D. H. 6, the basal part of which was intersected in D. D. H. 7 (see FIG. 2), is a heavily banded seam, 3.56 m in thickness in D. D. H. 6, consisting of inferior coal and carbonaceous claystone with bands of grey, fawn and tan claystone. This is the seam exposed in Cut 2 during Stage I operations.

No samples from this seam were analysed because of the obviously inferior and oxidised nature of the coal and the heavy banding.

4.3 Middle Seam - D. D. H. 6 and D. D. H. 7.

A 1.59 m seam of dull and inferior coal was intersected 1.56 m below the upper seam in D. D. H. 7. This seam is represented in D. D. H. 6 by two bands of inferior coal and carbonaceous claystone separated by 1.05 m of claystone . (See Fig. 2).

This seam was not encountered in outcrop, presumably being truncated by dolerite to the south of Cut 2.

No samples from this seam were analysed because of the inferior nature of the coal and the discontinuous nature of the seam.

4.4 Lower (? Catamaran) Seam - D. D. H. 6 and D. D. H. 7:

A 5.65 m seam, probably the Catamaran Seam, was intersected as the lowest of three seams in D. D. H. 7. The upper part of the seam consists of dull to inferior coal. The basal part of the seam has been removed by old workings in both D. D. H. 6 and D. D. H. 7.

This seam was not exposed at outcrop during Stage I operations and is presumably truncated by dolerite to the south of Cut 2.

No samples from this seam were analysed.

4.5 Upper Seam - D. D. H.'s 1 to 5.

An upper seam varying in thickness from 2.68 m in thickness in D. D. H. 1 to 3.15 m in D. D. H. 2 was intersected in D. D. H.'s 1, 2 and 5. The seam was also exposed in Cut 5.

The seam consists of dull to inferior coal and carbonaceous claystone with bands of fawn and buff claystone (See Figs. 1 and 2). The coal in this seam in D. D. H. 5 was oxidised and decomposed, particularly in the top half of the seam.

Analyses of samples from the basal parts of the seam in

D. D. H. 1 are given in Table 3 (Samples C1/1 - C1/4); in D. D. H. 2 are given in Table 4 (Samples C2/2 and C2/3); and in D. D. H. 5 are given in Table 6 (Sample C5/1). The samples are all inferior in quality with high ash contents varying from 30.8% in Sample C1/1 to 41.9% in Sample C1/4.

There are no sections within this seam offering any possibility of exploitation.

4.6 Lower Seam - D. D. H. 's 1 to 5.

A lower seam varying in thickness from 7.99 m in D. D. H. 1 to 10.05 m in D. D. H. 4 was intersected in D. D. H. 's 1 to 5 and exposed in Cuts 4 and 6. There is a considerable variation in the thickness of this seam over short distances and it is probable that the basal part of the seam has been digested by dolerite in holes D. D. H. 1, 2 and 3 and particularly in D. D. H. 1.

The seam consists of dull to inferior coal and carbonaceous claystone. Grey claystone bands are common towards the top of the seam. The basal parts of the seam are cindered in all holes D. D. H. 1 to 5 (See Section 4.7). The coal is commonly very soft and fissile throughout the seam. Extensive jointing is also common.

Analyses of samples from this seam in D. D. H. 1 are given in Table 3 (Samples C1/10 to C1/21); in D. D. H. 2 are given in Table 4 (Samples C2/5 to C2/9); in D. D. H. 4 are given in Table 5 (Samples C4/1 to C4/10) and in D. D. H. 5 are given in Table 6 (Samples C5/3 to C5/13). Samples from D. D. H. 3 were not analysed because of considerable core loss and the very poor analytical results obtained in adjoining holes D. D. H. 1 and 2.

The analyses of samples from this seam indicate poor quality, high ash coals with ash contents of up to 80.2% in Sample C1/21A. The ash content of many of the samples such as this is so high that they cannot be described as coals but are carbonaceous claystones.

Only two plies contain less than 20% ash, a thin 0.18 m ply in D. D. H. 4 (Sample C4/7) containing 14.7% ash and a 1.27 m ply in D. D. H. 2 (Sample C2/7B) containing 17.9% ash. Similar plies are not present in the seams in other holes.

There are no sections within the seam offering any possibility of exploitation.

4.7 Effects of Dolerite Intrusion.

Two forms of dolerite intrusion are present in the area drilled. These are -

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(i) A dolerite sill intruded approximately along the base of the lower seam in D. D. H.'s 1 to 5 and outcropping to the south of these holes. This intrusion appears to have digested part of the lower seam in these holes, particularly in holes D. D. H. 1 , 2 and 3. The intrusion has cindered the base of the seam to varying degrees as evidenced by the lower percentage of volatile matter in the basal parts of the seam (See Tables 3, 4, 5 and 6). The coal and/or claystone in the basal part of the seam is commonly very hard and calcite weining is abundant.

(ii) A dolerite sill or stock occurring at and to the east of Cut 2. This intrusion truncates the two lowest seams in D. D. H.' 6 and 7 as these seams do not outcrop. As the lowest seam appears to have been mined in close proximity to the dolerite outcrop, this intrusion has apparently had very little deleterious effect on the coal.

The two forms of intrusion are probably different expressions of the same dolerite intrusion.

4.8 Seam Structure.

Although dips measured at outcrop are from 14 to 17 deg., regional dips based on outcrop and drilling results are -

(i) 10 deg. in the vicinity of Cut 2.
(ii) 7 deg. in the vicinity of Cut 4.
(iii) 12 deg. in the vicinity of Cut 5.

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TABLE 3
ANALYSES - CATAMARAN D. D. H. 1

Ply Number	Thickness(m)	Moisture(%)	Ash(%)	Volatile Matter(%)	Fixed Carbon(%)	Sulphur(%)	Calorific Value (BTU/lb)
C1/1	0.40	3.8	30.8	21.6	43.8	--	--
C1/2	0.15	4.0	31.0	19.7	45.3	--	--
C1/4	0.35	5.8	41.9	19.5	32.8	--	--
C1/10	1.20	5.4	27.6	20.5	46.5	--	9,220
C1/13	0.36	5.0	22.4	21.0	51.6	--	--
C1/15	0.84	6.1	39.1	16.6	38.2	--	--
C1/17	0.14	4.4	66.9	7.5	21.2	--	--
C1/19	0.10	4.9	61.8	7.5	25.8	--	--
C1/20	0.90	6.0	71.5	8.1	14.4	--	--
C1/21*	2.81	5.4	59.1	5.7	29.8	--	--
C1/21B*	2.01	5.4	50.7	5.7	38.2	0.15	--
C1/21A*	0.80	5.4	80.2	5.6	8.8	--	--

* SAMPLEC1/21 - Total sample including bands.
C1/21B - Sample excluding ban ds.
C1/21A - Bands.

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TABLE 4
ANALYSES - CATAMARAN D. D. H. 2

Ply Number.	Thickness(m)	Moisture(%)	Ash(%)	Volatile Matter(%)	Fixed Carbon(%)	Sulphur(%)	Calorific Value(BTU/lb)
C2/2	0.10	3.6	33.2	23.0	40.2	--	--
C2/3	0.72	4.6	41.1	18.4	35.9	--	--
C2/5	0.38	4.1	38.3	19.8	37.8	--	--
C2/7*	1.86	4.6	25.9	22.2	47.3	--	--
C2/7B*	1.27	4.2	17.9	24.0	53.9	0.36	10,880
C2/7A*	0.59	5.3	43.2	18.5	33.0	--	--
C2/8*	2.06	5.6	66.0	9.4	19.0	--	--
C2/8B*	1.46	5.3	61.4	9.4	23.9	0.13	--
C2/8A*	0.60	6.2	77.2	9.3	7.3	--	--
C2/9	0.52	4.1	27.7	5.6	62.6	--	--

*SAMPLE C2/7 - Total sample including bands.
C2/7B - Sample excluding bands.
C2/7A - Bands.

*SAMPLE C2/8 - Total sample including bands.
C2/8B - Sample excluding bands.
C2/8A - Bands.

TABLE 5
ANALYSES - CATAMARAN D. D. H. 4

Ply Number	Thickness(m)	Moisture(%)	Ash(%)	Volatile Matter(%)	Fixed Carbon(%)	Sulphur(%)	Calorific Value(BTU/lb)
C4/1	0.43	5.0	26.5	22.0	46.5	--	--
C4/3	0.28	5.7	28.6	19.0	46.7	--	--
C4/5	1.01	6.1	31.7	20.2	42.0	--	--
C4/7	0.18	4.0	14.7	25.2	56.1	--	--
C4/8	1.63	4.0	69.3	9.4	17.3	--	--
C4/9	0.12	4.5	37.5	8.8	49.2	--	--
C4/10	1.62	4.9	79.9	6.1	9.1	--	--

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TABLE 6
ANALYSES - CATAMARAN D. D. H. 5

Ply Number	Thickness(m)	Moisture(%)	Ash(%)	Volatile Matter(%)	Fixed Carbon(%)	Sulphur(%)	Calorific Value(BTU/lb)
C5/1	0.28	3.7	28.4	22.0	45.9	--	--
C5/3	0.31	4.0	47.7	15.9	32.4	--	--
C5/6	0.28	4.1	13.5	28.5	53.9	--	--
C5/7	0.45	4.1	43.9	18.1	33.9	--	--
C5/10	0.98	4.1	32.6	18.4	44.9	--	--
C5/11	0.37	4.6	50.9	11.1	33.4	--	--
C5/12	0.84	5.0	21.1	10.2	63.7	--	--
C5/13	0.14	5.0	66.5	6.7	21.8	--	--

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5.0 RECOMMENDATIONS.

The drilling programme has clearly indicated that the Catamaran area is incapable of providing open cut coal of the required quantity or quality to satisfy the Company's requirements as an alternative fuel source for the Port Huon Mill.

The intersection of old workings in D. D. H. 's 6 and 7 indicates that the first workings of the Catamaran Mine were much more extensive than had been indicated by such mine plans as were available. As pillars were apparently removed prior to the closure of the mine, there is no possibility of obtaining the required tonnages by open cut methods in this part of the area.

The seam could not be traced east of the area of first workings during early prospecting, probably due to faulting or dolerite intrusion. This part of the area therefore offers no prospect of required tonnages being obtained.

West of the area of old workings poor coal quality precludes any possibility of the Company's requirements being met from open cut extraction.

No further exploration is warranted in the Catamaran area and it is recommended that action be taken to cancel the lease application lodged over the area.

021

APPENDIX

CATAMARAN D. D. H. 1 - D. D. H. 7

BORE HOLE LOGS

NOTE The following abbreviations are used in the logs.

COAL, Db - COAL, mainly dull with frequent bright bands, the percentage of bright coal being between 10 and 40.

COAL, Dmb - COAL, dull with minor bright bands, the percentage of bright coal being between 1 and 10.

COAL, D - COAL, dull, the percentage of bright coal being less than 1.

022

BORE NAME : Catamaran D. D. H. 1
Commenced : 13. 3. 75
Completed : 22. 3. 75
Total Depth : 26. 21 m
Sunk By : Mono Pumps Aust. Pty. Ltd.

Open Hole : 0 - 2. 59m
Cored : 2. 59 - 26. 21m

Description	From m	To m	Interval m	Core Rec. %
SOIL, black, clayey.	0	2.59	2.59	0
CLAY, Black.	2.59	4.08	1.49	0
CLAY, black.	4.08	4.36	0.28	100
SANDSTONE, fine grained, mid grey, lithic, bright COAL band 0.002m thick at top.	4.36	4.61	0.25	100
CLAYSTONE, carbonaceous, dark grey to black, very soft.	4.61	5.03	0.42	100
CLAYSTONE, yellow.	5.03	5.06	0.03	100
COAL, inferior.	5.06	5.09	0.03	100
CLAYSTONE, yellow.	5.09	5.12	0.03	100
TOP OF SEAM				
COAL, inferior, core very badly broken.	5.12	5.85	0.73	100
COAL, D, grades to claystone, black, carbonaceous at base.	5.85	6.07	0.22	100
CLAYSTONE, buff, waxy.	6.07	6.23	0.16	100
COAL, D.	6.23	6.28	0.05	100
CLAYSTONE, fawn.	6.28	6.29	0.01	100
COAL, D to inferior. SAMPLE C1/1	6.29	6.69	0.40	100
COAL, D. SAMPLE C1/2	6.69	6.84	0.15	100
CLAYSTONE, buff, waxy.	6.84	6.88	0.04	100
COAL, inferior. SAMPLE C1/3	6.88	6.92	0.04	100
CLAYSTONE, buff, waxy.	6.92	6.96	0.04	100
COAL, D, with fawn claystone band, core badly broken. SAMPLE C1/4	6.96	7.31	0.35	100
COAL, D to inferior. Core badly broken, SAMPLE C1/5	7.31	7.76	0.45	100
BASE OF SEAM				
SILTSTONE, fine grained, mid grey, very soft and puggy, coalified plant remains throughout becoming more numerous towards base.	7.76	11.26	3.50	100
CLAYSTONE, mid grey.	11.26	11.41	0.15	100
TOP OF SEAM				
COAL. D.	11.41	11.49	0.08	100
CLAYSTONE, yellow. SAMPLE C1/6	11.49	11.54	0.05	100
COAL, D	11.54	11.79	0.25	100
CLAYSTONE, dark grey to Coal inferior. Core badly broken. SAMPLE C1/7	11.79	11.85	0.06	100
COAL, inferior. SAMPLE C1/8	11.85	11.93	0.08	100

023

Description	From m	To m	Interval m	Core Rec. %
CLAYSTONE, mid grey	11.93	11.96	0.03	100
COAL, inferior. } SAMPLE C1/9	11.96	12.03	0.07	100
CLAYSTONE, mid grey.	12.03	12.06	0.03	100
CLAYSTONE, black, carbonaceous to COAL, inferior.	12.06	12.21	0.15	100
COAL, D.	12.21	12.31	0.10	100
CLAYSTONE, dark grey, carbonaceous.	12.31	12.46	0.15	100
COAL, D to inferior.	12.46	12.51	0.05	100
CLAYSTONE, buff	12.51	12.56	0.05	100
COAL, D to inferior.	12.56	13.26	0.70	100
CLAYSTONE, dark brown, carbonaceous.	13.26	13.41	0.15	100
COAL, inferior and CLAYSTONE, fawn, 60/40, core very badly broken. SAMPLE C1/11	13.41	13.54	0.13	100
SILTSTONE, fawn, micaceous.	13.54	13.56	0.02	100
SAMPLE C1/12				
COAL, D, occasional bright bands to 0.004m. SAMPLE C1/13.	13.56	13.92	0.36	100
CLAYSTONE, fawn, waxy. SAMPLE C1/14	13.92	13.94	0.02	100
COAL, inferior to claystone, dark brown, carbonaceous. Occasional bands of bright COAL to 0.003m. Core badly broken basal 0.5m. SAMPLE C1/15	13.94	14.78	0.84	100
COAL, inferior to D. SAMPLE C1/16.	14.78	15.01	0.23	100
COAL, inferior, core badly broken, SAMPLE C1/17.	15.01	15.15	0.14	100
COAL, inferior to CLAYSTONE, black carbonaceous. SAMPLE C1/18.	15.15	15.39	0.24	100
COAL, D. SAMPLE C1/19.	15.39	15.49	0.10	100
COAL, Dmb. SAMPLE C1/20.	15.49	16.39	0.90	100
COAL, inferior to D, cindered, core badly broken.	16.39	17.41	1.02	100
COAL, inferior to Claystone, black Carbonaceous.	17.41	17.61	0.20	100
COAL, D, cindered, core badly broken	17.61	19.20	1.59	100
COAL, D, core badly broken. SAMPLE C1/22	19.20	19.40	0.20	100
BASE OF SEAM				
DOLERITE, very fine grained, light green, core badly broken.	19.40	21.02	1.62	100
DOLERITE, coarse grained.	21.02	21.42	0.30	100
DOLERITE, very fine grained, light green.	21.42	22.56	1.14	100
DOLERITE, coarse grained.	22.56	26.21	3.65	100

BASE OF HOLE

024

BORE NAME : Catamaran D. D. H. 2
Commenced: 23. 3. 75
Completed : 31. 3. 75
Total Depth : 32. 00m
Sunk By : Mono Pumps Aust. Pty. Ltd.

Open Hole : 0 - 11. 88m
Cored : 11. 88-32m

Description	From m	To m	Interval m	Core Rec. %
CLAY and SOIL, Black.	0	3. 05	3. 05	0
SANDSTONE , light grey and CLAYSTONE, Dark grey, interlaminated in units up to 0. 30m	3. 05	11. 88	8. 83	0
SANDSTONE, light grey and CLAYSTONE dark grey as above. Core badly broken, Claystone very soft and puggy, sandstone sometimes very soft.	11. 88	15. 23	3. 35	20
TOP OF SEAM				
COAL , D, core broken	15. 23	15. 41	0. 18	100
SANDSTONE, light grey-green, quartz-lithic.	15. 41	15. 47	0. 06	100
COAL , D.	15. 47	15. 52	0. 05	100
CLAYSTONE, fawn, fissile.	15. 52	15. 56	0. 04	100
COAL , D.	15. 56	15. 70	0. 14	100
CLAYSTONE, fawn, fissile, coaly stringers throughout.	15. 70	15. 85	0. 15	100
COAL , D, calcite in cleats and joints.	15. 85	15. 99	0. 14	100
CLAYSTONE, fawn, fissile.	15. 99	16. 03	0. 04	100
COAL , D, with fawn claystone bands, core very badly broken.	16. 03	16. 29	0. 26	100
CLAYSTONE , fawn.	16. 29	16. 30	0. 01	100
COAL , D.	16. 30	16. 41	0. 11	100
CLAYSTONE, fawn, fissile.	16. 41	16. 47	0. 06	100
COAL , D, core broken.	16. 47	16. 71	0. 24	100
SILTSTONE, light grey. SAMPLE C2/1	16. 71	16. 73	0. 02	100
COAL , D.	16. 73	17. 03	0. 30	100
CLAYSTONE, buff, waxy.	17. 03	17. 09	0. 06	100
COAL , D, core broken. SAMPLE C2/2	17. 09	17. 19	0. 10	100
SILTSTONE, mid grey, coaly wisps throughout.	17. 19	17. 29	0. 10	100
COAL , D. SAMPLE C2/3.	17. 29	18. 01	0. 72	100
CLAYSTONE, light grey, puggy, micaceous.	18. 01	18. 08	0. 07	100
COAL , D, core broken at base. SAMPLE C2/4	18. 08	18. 38	0. 30	100
BASE OF SEAM				
CLAYSTONE, light grey, puggy, silty in part.	18. 38	19. 04	0. 66	100

Description	From m	To m	Interval m	Core Rec. %
COAL, inferior.	19.04	19.08	0.04	100
CLAYSTONE, light grey, puggy, soft, coaly wisps in basal 0.1m	19.08	22.10	3.02	100
TOP OF SEAM				
COAL, D.	22.10	22.15	0.05	100
CLAYSTONE, fawn, fissile.	22.15	22.20	0.05	100
COAL, D, core broken, SAMPLE C2/5	22.20	22.58	0.38	100
CLAYSTONE, fawn, soft.	22.58	22.64	0.06	100
COAL, inferior	22.64	22.72	0.08	100
CLAYSTONE, dark grey, carbonaceous.	22.72	22.76	0.04	100
COAL, inferior.	22.76	22.84	0.08	100
CLAYSTONE, dark grey, carbonaceous, coaly wisps and partings throughout.	22.84	23.02	0.18	100
COAL, D to inferior. Core broken.	23.02	23.17	0.15	100
CLAYSTONE, fawn, soft.	23.17	23.37	0.20	100
COAL, Db.	23.37	23.41	0.04	100
SILTSTONE, dark grey, micaceous.	23.41	23.43	0.02	100
COAL, inferior to CLAYSTONE, black carbonaceous.	23.43	24.23	0.80	100
CLAYSTONE, black, carbonaceous.	24.23	24.38	0.15	100
COAL, inferior.	24.38	24.53	0.15	100
CLAYSTONE, fawn.	24.53	24.57	0.04	100
COAL, D, rare bright bands to 0.002m.	24.57	25.07	0.50	100
CLAYSTONE, black, carbonaceous.	25.07	25.29	0.22	100
CLAYSTONE, dark grey.	25.29	25.37	0.08	100
COAL, inferior, core badly broken.	25.37	26.27	0.90	100
COAL, D.	26.27	26.42	0.15	100
CLAYSTONE, black, carbonaceous, to COAL inferior.	26.42	26.52	0.10	100
COAL, inferior.	26.52	26.72	0.20	100
COAL, D to inferior.	26.72	26.82	0.10	100
COAL, D.	26.82	27.43	0.61	100
COAL, D, cindered, core badly broken. SAMPLE C2/9	27.43	27.95	0.52	100
COAL, D. SAMPLE C2/10	27.95	28.75	0.80	100
COAL, D, fissile. SAMPLE C2/11	28.75	28.90	0.15	100
COAL, D to inferior. SAMPLE C2/12	28.90	29.32	0.42	100
COAL, D, fissile. SAMPLE C2/13	29.32	29.54	0.22	100
COAL, Dmb, calcite in cleats. SAMPLE C2/14	29.54	29.82	0.28	100
COAL, D, fissile. Core badly broken and contaminated with dolerite. SAMPLE C2/15.	29.82	29.98	0.16	100
COAL, Dmb, core badly broken and contaminated with dolerite. SAMPLE C2/16	29.98	30.07	0.09	100

SAMPLE C2/6

SAMPLE C2/7

SAMPLE C2/8

Description	From m	To m	Interval m	Core Rec. %
DOLERITE	30.07	30.47	0.40	100
COAL, D, cindered.	30.47	30.57	0.10	100
DOLERITE	30.57	30.65	0.08	100
COAL, D, cindered.	30.65	30.90	0.25	100
DOLERITE	30.90	30.95	0.05	100
COAL, D, cindered.	30.95	31.01	0.06	100
DOLERITE	31.01	32.00	0.99	100

BASE OF HOLE

529028

BORE NAME : Catamaran D. D. H. 3
Commenced : 2.4.75
Completed : 7.4.75
Total Depth : 10.97m
Sunk by : Mono Pumps Aust. Pty. Ltd.

Open Hole : 0-2.13m
Cored : 2.13 - 10.97m

Description		From m	To m	Interval m	Core Rec. %
SILTSTONE and CLAYSTONE, yellow.		0	2.13	2.13	0
TOP OF SEAM					
COAL, inferior.	SAMPLE C3/1	2.13	2.23	0.10	100
CLAYSTONE, grey.	SAMPLE C3/1	2.23	2.28	0.05	100
COAL, Db.	SAMPLE C3/1	2.28	2.39	0.11	100
CLAYSTONE, mid grey.	SAMPLE C3/2	2.39	2.45	0.06	100
CLAYSTONE, black, carbonaceous to COAL, inferior.	SAMPLE C3/2	2.45	2.49	0.04	100
CLAYSTONE, black, carbonaceous.	SAMPLE C3/2	2.49	2.56	0.07	100
CLAYSTONE, olive-grey.		2.56	2.58	0.02	100
COAL, inferior to CLAYSTONE, black, carbonaceous, very soft. SAMPLE C3/3		2.58	2.80	0.22	100
CLAYSTONE, buff.		2.80	2.86	0.06	100
COAL, inferior, crumbly, fissile. SAMPLE C3/4		2.86	3.97	1.11	100
COAL, inferior, rare bands of bright coal to0.004m SAMPLE C3/5		3.97	4.87	0.90	100
COAL, inferior.	SAMPLE C3/6	4.93	5.33	0.40	100
COAL, Db.	SAMPLE C3/6	5.33	5.38	0.05	100
CLAYSTONE, dark grey, carbonaceous.	SAMPLE C3/6	5.38	5.39	0.01	100
COAL, Db.	SAMPLE C3/6	5.39	5.44	0.05	100
COAL, inferior	SAMPLE C3/6	5.44	6.40	0.96	100
COAL and CLAYSTONE - core lost.	SAMPLE C3/6	6.40	7.25	0.85	0
COAL, Dmb. SAMPLE C3/7	SAMPLE C3/6	7.25	7.61	0.36	100
COAL, and CLAYSTONE. - core lost.	SAMPLE C3/6	7.61	9.04	2.43	0
CLAYSTONE, black, carbonaceous to COAL, inferior.	SAMPLE C3/8	9.04	9.24	0.20	100
COAL, D.	SAMPLE C3/8	9.24	9.39	0.15	100
CLAYSTONE, black carbonaceous to COAL, inferior.	SAMPLE C3/8	9.39	9.89	0.50	100
COAL, inferior.	SAMPLE C3/8	9.89	10.18	0.29	100
CLAYSTONE. grey		10.18	10.38	0.20	100
DOLERITE		10.38	10.48	0.10	100
COAL, cindered.		10.48	10.68	0.20	100
DOLERITE		10.68	10.97	0.29	100
BASE OF HOLE					

BORE NAME : Catamaran D. D. H. 4
Commenced : 8.4.75
Completed : 9.4.75
Total Depth: 14.01 m
Sunk by : Mono Pumps Aust. Pty. Ltd.

Open Hole 0-3.20m
Cored : 3.20-14.01m

Description	From m	To m	Interval m	Core Rec. %
CLAY, brown	0	2.13	2.13	0
CLAYSTONE, grey.	2.13	3.66	1.53	0
TOP OF SEAM				
COAL, inferior, core badly broken.	3.66	3.76	0.10	100
CLAYSTONE, buff.	3.76	3.81	0.05	100
COAL, inferior.	3.81	3.91	0.10	100
COAL, D to inferior.	3.91	4.06	0.15	100
CLAYSTONE, mid grey.	4.06	4.11	0.05	100
CLAYSTONE, black, carbonaceous to COAL, inferior.	4.11	4.15	0.04	100
CLAYSTONE, buff	4.15	4.19	0.04	100
CLAYSTONE, black, carbonaceous.	4.19	4.26	0.07	100
CLAYSTONE, olive-grey.	4.26	4.44	0.18	100
COAL, inferior.	4.44	4.59	0.15	100
COAL, D to inferior.	4.59	4.69	0.10	100
CLAYSTONE, buff.	4.69	4.87	0.18	100
COAL, D to inferior. SAMPLE C4/1	4.87	5.16	0.29	100
CLAYSTONE, black, carbonaceous. SAMPLE C4/2	5.16	5.18	0.02	100
COAL, D, fissile from 5.18-5.36m SAMPLE C4/3	5.18	5.46	0.28	100
CLAYSTONE, black, carbonaceous. SAMPLE C4/4	5.46	5.48	0.02	100
COAL, Dmb, calcite in cleats and joints. SAMPLE C4/5.	5.48	6.49	1.01	100
CLAYSTONE, black, carbonaceous, silty in part. SAMPLE C4/6	6.49	6.90	0.41	100
COAL, Dmb. SAMPLE C4/7	6.90	7.08	0.18	100
CLAYSTONE, black, carbonaceous, to COAL, inferior. Rare bands of bright coal to 0.002m SAMPLE C4/8	7.08	8.71	1.63	100
COAL. Db SAMPLE C4/9	8.71	8.83	0.12	100
COAL and CLAYSTONE core lost.	8.83	9.29	0.46	0
CLAYSTONE, dark grey carbonaceous.	9.29	9.89	0.60	100
COAL, inferior.	9.89	10.19	0.30	100
CLAYSTONE, black, carbonaceous to COAL, inferior	10.19	10.36	0.17	100
COAL, D	10.36	10.51	0.15	100
CLAYSTONE, dark grey, carbonaceous.	10.51	10.91	0.40	100
COAL, inferior. SAMPLE C4/10	10.91	11.58	0.67	100

029

Description	From m	To m	Interval m	Core Rec. %
COAL, inferior, cindered, very hard, extensive calcite veining throughout. SAMPLE C4/11	11.58	13.71	2.13	100
DOLERITE	13.71	14.01	0.30	100
BASE OF HOLE				

030

529031

BORE NAME · Catamaran D. D. H. 5
Commenced · 10.4.75
Completed : 13.4.75
Total Depth: 20.41m
Sunk by: Mono Pumps Aust. Pty. Ltd.

Open Hole · 0-3.50m
Cored: 3.50-20.41m

Description	From m	To m	Interval m	Core Rec. %
CLAY, black	0	3.94	3.94	0
TOP OF SEAM				
CLAY, black.	3.94	4.04	0.10	100
CLAY, dark grey.	4.04	4.17	0.13	100
CLAY, black - decomposed COAL.	4.17	4.22	0.05	100
CLAY, Dark grey.	4.22	4.32	0.10	100
CLAY, black - decomposed COAL .	4.32	4.63	0.31	100
SANNSTONE, fawn, soft.	4.63	4.66	0.03	100
CLAY, black - decomposed COAL.	4.66	4.76	0.10	100
CLAYSTONE, buff, fissile.	4.76	4.80	0.04	100
CLAY, black - decomposed COAL.	4.80	4.87	0.07	100
CLAYSTONE, off-white, puggy.	4.87	5.04	0.17	100
CLAYSTONE, dark brown, carbonaceous.	5.04	5.18	0.14	100
CLAYSTONE, fawn, some inferior COAL bands to 0.002m. Core badly broken.	5.18	5.38	0.20	100
CLAYSTONE, dark grey, carbonaceous.	5.38	5.41	0.03	100
CLAYSTONE, fawn, very soft.	5.41	5.46	0.05	100
COAL, inferior, very soft.	5.46	6.06	0.60	100
CLAYSTONE, dark grey, carbonaceous.	6.06	6.11	0.05	100
CLAYSTONE, light brown.	6.11	6.14	0.03	100
COAL, inferior, very soft.	6.14	6.28	0.14	100
CLAYSTONE, dark grey , carbonaceous.	6.28	6.40	0.12	100
COAL , Db SAMPLE C5/1	6.40	6.68	0.28	100
CLAYSTONE, fawn.	6.68	6.72	0.04	100
CLAYSTONE, light grey,	6.72	6.75	0.03	100
COAL , inferior.	6.75	6.95	0.20	100
BASE OF SEAM				
CLAYSTONE, light grey, silty in part, soft and puggy.	6.95	9.75	2.80	100
TOP OF SEAM				
COAL, inferior, core badly broken and contaminated with claystone from above.	9.75	9.81	0.06	100
CLAYSTONE, buff.	9.81	9.84	0.03	100
COAL, Dmb, calcite in joints, hard SAMPLE C5/3	9.84	10.15	0.31	100
CLAYSTONE, mid grey.	10.15	10.19	0.04	100

031

Description	From m	To m	Interval m	Core Rec. %
CLAYSTONE, black carbonaceous, to COAL, inferior, very soft.	10.19	10.23	0.04	100
CLAYSTONE, fawn.	10.23	10.27	0.04	100
CLAYSTONE, black, carbonaceous.	10.27	10.34	0.07	100
CLAYSTONE, light olive-grey.	10.34	10.55	0.21	100
CLAYSTONE, black, carbonaceous to COAL, inferior. Mid grey claystone bands and partings throughout.	10.55	10.68	0.13	100
COAL, Db. SAMPLE C5/4	10.68	10.75	0.07	100
CLAYSTONE, buff.	10.75	10.78	0.03	100
CLAYSTONE, mid to light grey, fissile.	10.78	10.93	0.15	100
COAL, Db. SAMPLE C5/5	10.93	11.00	0.07	100
CLAYSTONE, fawn.	11.00	11.03	0.03	100
COAL, Db. SAMPLE C5/6	11.03	11.31	0.28	100
COAL, D to inferior. Carbonaceous claystone bands to 0.003m throughout. SAMPLE C5/7	11.31	11.76	0.45	100
CLAYSTONE, dark brown, carbonaceous. SAMPLE C5/8	11.76	11.78	0.02	100
CLAYSTONE, dark grey, carbonaceous. SAMPLE C5/9	11.78	11.92	0.14	100
COAL, Dmb. SAMPLE C5/10	11.92	12.80	0.98	100
CLAYSTONE, dark brown, carbonaceous, occasional bands of bright coal to 0.002 m.	12.80	13.64	0.84	100
COAL, inferior. SAMPLE C5/11	13.64	14.01	0.37	100
CLAYSTONE, dark brown, carbonaceous.	14.01	14.21	0.20	100
COAL, inferior.	14.21	14.31	0.10	100
CLAYSTONE, black, carbonaceous to COAL, inferior.	14.31	14.71	0.40	100
COAL, Db SAMPLE C5/12	14.71	15.55	0.84	100
CLAYSTONE, dark grey, fissile.	15.55	16.23	0.68	100
COAL, inferior, Bright band 0.004m at 16.25m	16.23	16.51	0.28	100
CLAYSTONE, carbonaceous, black, grading to COAL, inferior at base.	16.51	16.68	0.17	100
COAL, Db, calcite in cleats, fissile. SAMPLE C 5/13	16.68	16.82	0.14	100
CLAYSTONE, dark grey, carbonaceous.	16.82	17.22	0.40	100
COAL, inferior, dense, extensive calcite veining throughout.	17.22	17.68	0.46	100
CLAYSTONE, dark grey, carbonaceous.	17.68	17.74	0.06	100
CLAYSTONE, black, carbonaceous to COAL, inferior.	17.74	18.84	1.10	100
CLAYSTONE, dark grey, carbonaceous.	18.84	18.95	0.11	100
COAL, inferior, hard, dense, extensive calcite veining throughout.	18.95	19.25	0.30	100

032

Description	From m	To m	Interval m	Core Rec. %
CLAYSTONE, light to mid grey. Very hard, extensive calcite veining throughout.	19.25	20.41	1.16	100

BASE OF HOLE

033

529034

BORE NAME · Catamaran D. D. H. 6
Commenced : 14. 4. 75
Completed 16. 4. 75
Total Depth : 20. 72m
Sunk by : Mono Pumps Aust. Pty. Ltd.

Open Hole 0.-3. 35m
Cored · 3. 35-20. 72m

Description	From m	To m	Interval m	Core Rec. %
CLAY, yellow.	0	2.00	2.00	0
SANDSTONE, soft, mid to dark green fine grained, lithic.	2.00	7.61	5.61	100
TOP OF SEAM				
COAL, D.	7.61	7.67	0.06	100
CLAYSTONE, mid grey.	7.67	7.75	0.08	100
COAL, D.	7.75	7.86	0.11	100
COAL, inferior to CLAYSTONE , black carbonaceous, very soft.	7.86	8.00	0.14	100
CLAYSTONE, buff.	8.00	8.01	0.01	100
COAL , inferior to Claystone, black, carbonaceous, very soft.	8.01	8.19	0.18	100
CLAYSTONE, tan.	8.19	8.41	0.22	100
COAL, inferior, soft at base.	8.41	8.53	0.12	100
CLAYSTONE, buff	8.53	8.55	0.02	100
COAL, inferior to CLAYSTONE, black carbonaceous.	8.55	9.05	0.50	100
CLAYSTONE , tan.	9.05	9.14	0.09	100
COAL, inferior.	9.14	9.29	0.15	100
CLAYSTONE, fawn	9.29	9.36	0.07	100
COAL, inferior.	9.36	9.42	0.06	100
CLAYSTONE, fawn.	9.42	9.57	0.15	100
COAL, inferior.	9.57	9.74	0.17	100
CLAYSTONE, mid to dark grey.	9.74	9.86	0.12	100
CLAYSTONE, black, carbonaceous, very soft.	9.86	10.36	0.50	100
COAL, inferior.	10.36	10.54	0.18	100
SILTSTONE, dark brown.	10.54	10.58	0.04	100
CLAYSTONE, fawn.	10.58	10.66	0.08	100
CLAYSTONE, black, carbonaceous, to COAL inferior	10.66	10.81	0.15	100
CLAYSTONE, tan.	10.81	10.93	0.12	100
COAL, inferior.	10.93	11.17	0.24	100
BASE OF SEAM				
CLAYSTONE, mid grey , soft.	11.17	12.90	1.73	100
COAL , inferior.	12.90	13.00	0.10	100
CLAYSTONE, buff.	13.00	13.03	0.03	100

034

Description	From m	To m	Interval m	Core Rec. %
COAL, inferior to CLAYSTONE, black carbonaceous, soft.	13.03	13.17	0.14	100
CLAYSTONE, mid brown, soft.	13.17	14.22	1.05	100
COAL, inferior, to CLAYSTONE, black, carbonaceous.	14.22	14.52	0.30	100
CLAYSTONE, fawn, soft, plant remains throughout.	14.52	15.74	1.22	100
CLAYSTONE, tan, soft, core badly broken.	15.74	17.64	1.90	50
COAL, Inferior.	17.64	17.71	0.07	100
CLAYSTONE, light grey.	17.71	17.80	0.09	100
CLAYSTONE, dark grey, carbonaceous.	17.80	17.83	0.03	100
COAL, D.	17.83	17.96	0.13	100
CLAYSTONE, tan.	17.96	18.08	0.12	100
COAL, D.	18.08	18.28	0.20	100
OLD WORKINGS	18.28	20.72	2.44	0

BASE OF HOLE

035

529036

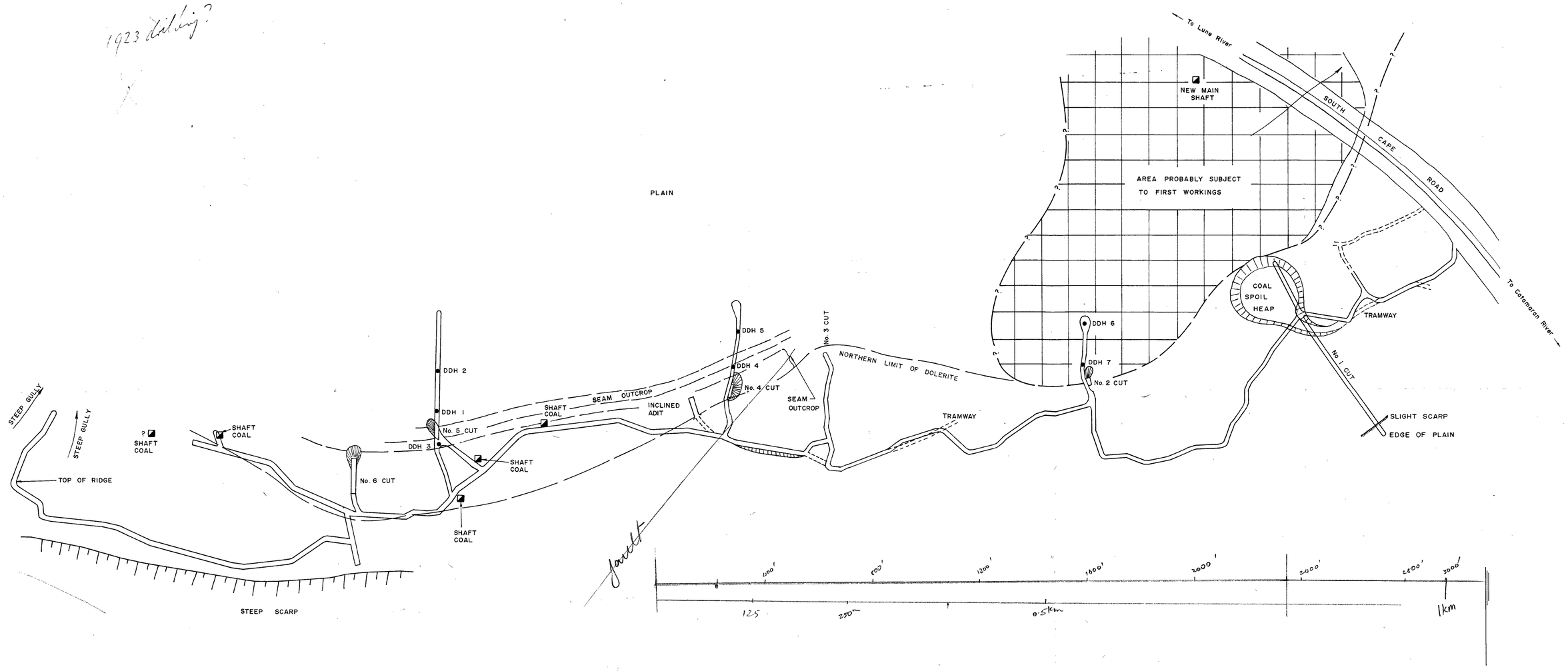
BORE NAME : Catamaran D. D. H. 7
Commenced : 17. 4. 75
Completed : 18. 4. 75
Total Depth: 15. 70m
Sunk by : Mono Pumps Aust. Pty. Ltd.

Open Hole : 0-2. 13m
Cored; 2. 13-15. 70m

Description	From m	To m	Interval m	Core Rec. %
TRACK FILLING	0	1. 22	1. 22	0
CLAY, black.	1. 22	2. 13	0. 91	0
COAL, inferior, very soft.	2. 13	2. 40	0. 27	100
CLAYSTONE, fawn, very soft.	2. 40	2. 62	0. 22	100
COAL, inferior to CLAYSTONE, black carbonaceous, very soft in part.	2. 62	2. 94	0. 32	100
CLAYSTONE, fawn, very soft.	2. 94	3. 02	0. 08	100
CLAYSTONE, black, carbonaceous, soft, rare bands of bright coal to 0. 002m	3. 02	3. 39	0. 37	100
CLAYSTONE, tan, very soft.	3. 39	4. 50	1. 11	25
COAL, inferior.	4. 50	4. 70	0. 20	100
CLAYSTONE, fawn.	4. 70	4. 75	0. 05	100
COAL, D	4. 75	6. 09	1. 34	100
CLAYSTONE, light grey.	6. 09	8. 98	2. 89	40
COAL, inferior.	8. 98	9. 18	0. 20	100
CLAYSTONE, fawn.	9. 18	9. 24	0. 06	100
COAL D.	9. 24	10. 36	1. 12	25
COAL, D	10. 36	10. 97	0. 61	100
CLAYSTONE, buff. } SAMPLE C7/1	10. 97	10. 99	0. 02	100
COAL, D	10. 99	11. 58	0. 69	75
OLD WORKINGS	11. 58	14. 63	3. 05	0
CLAYSTONE, mid grey, plant remains throughout.	14. 63	15. 70	1. 07	100

BASE OF HOLE

1923 drilling?



LEGEND

- TRACK
- COSTEAN WITH SPOIL HEAP
- SHAFT
- AREA OF FIRST WORKINGS
- ● DDH 7 — DIAMOND DRILL HOLE LOCATION
- OLD TRAMWAY
- SCARP

SCALE

0 1 2 INCHES

0 100 200 300 400 FEET

5.2cm = 400'

5 cm

1:2400 to 1:12500 reduce by 10.4

1000 m = 3000'

1. 2400

1" = 200'

1" = 2400'

529037 MAP 1 75-1090

EARTH RESOURCES AUSTRALIA PTY. LIMITED.

A. P. M. LIMITED

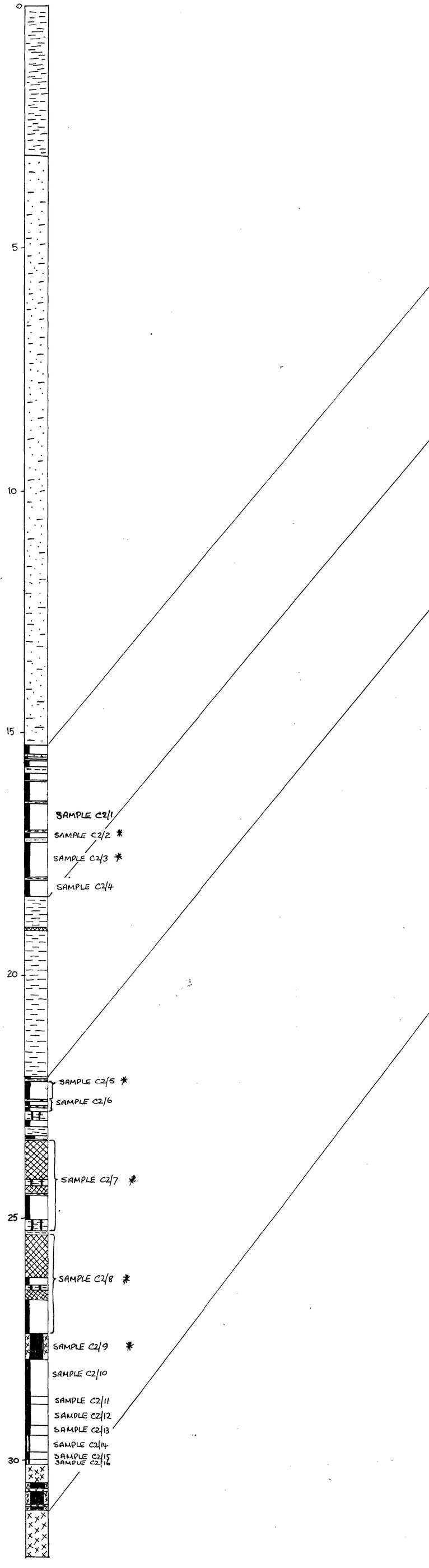
CATAMARAN PROSPECT

STAGE I & II OPERATIONS

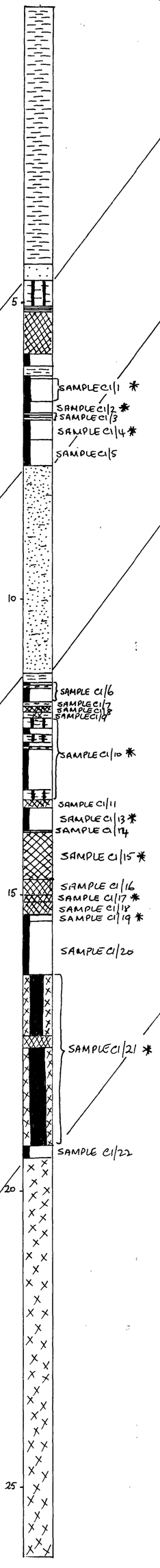
TO ACCOMPANY REPORT BY P. RASMUS (B. Sc.) MAY, 1975.

1785

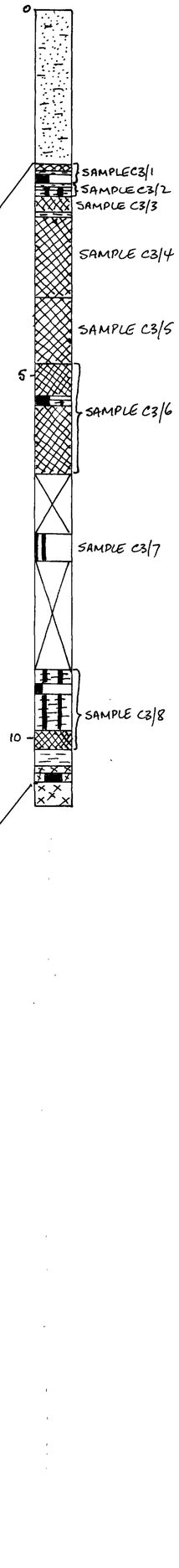
D.D.H. C2



D.D.H. C. 1



D.D.H. C3



Sandstone

Siltstone

Claystone

COAL bright

COAL bright with frequent dull bands

COAL interbanded dull and bright

COAL mainly dull with frequent bright bands

COAL dull with minor bright bands

COAL Dull

COAL inferior

COAL sandered

Carbonaceous unit

Dolerite

Core not recovered

SCALE
Vertical 1:50
Horizontal 1:250

* Plies Analysed - see analyses sheets - Tables 3 and 4

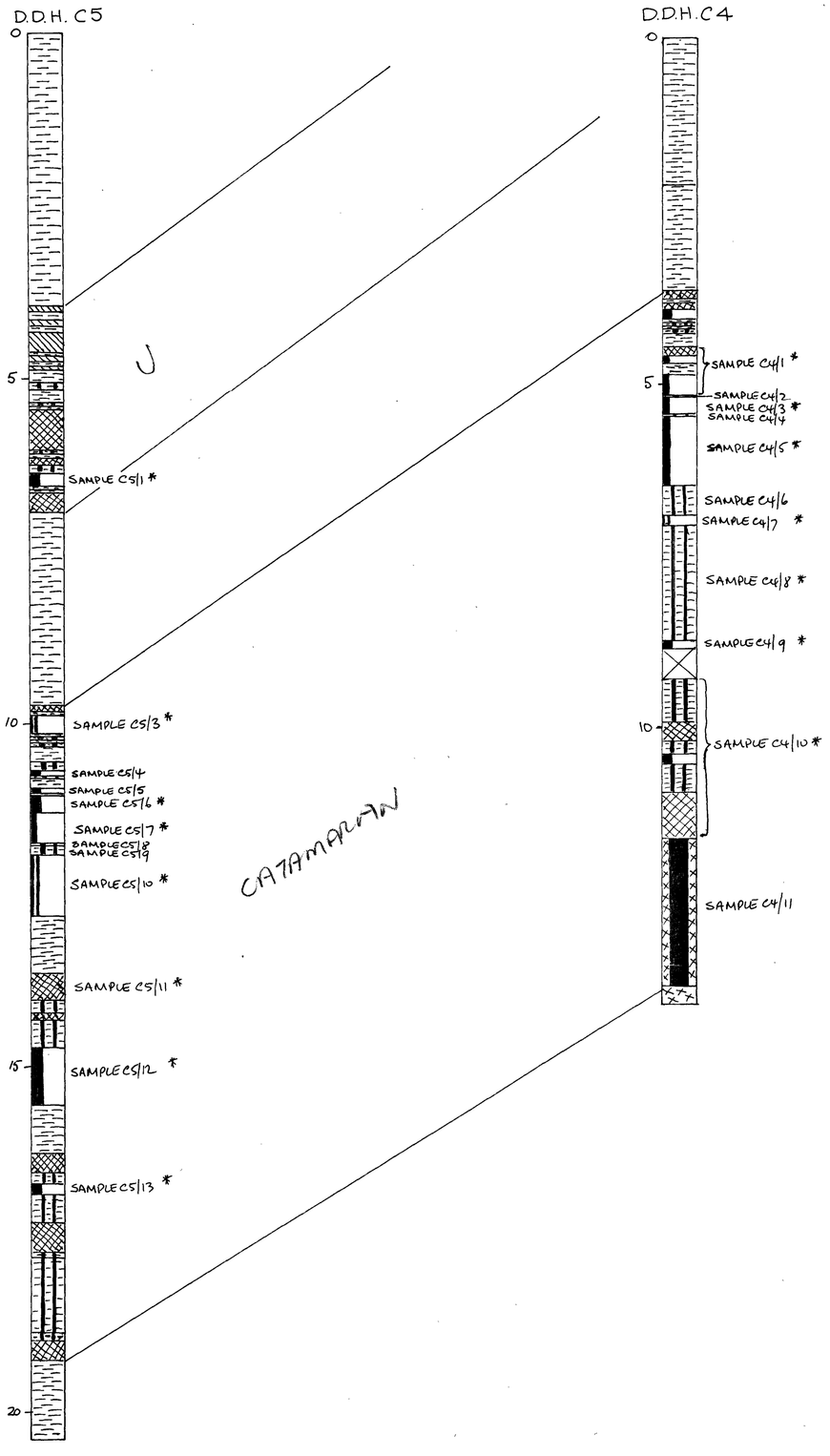
5 cm

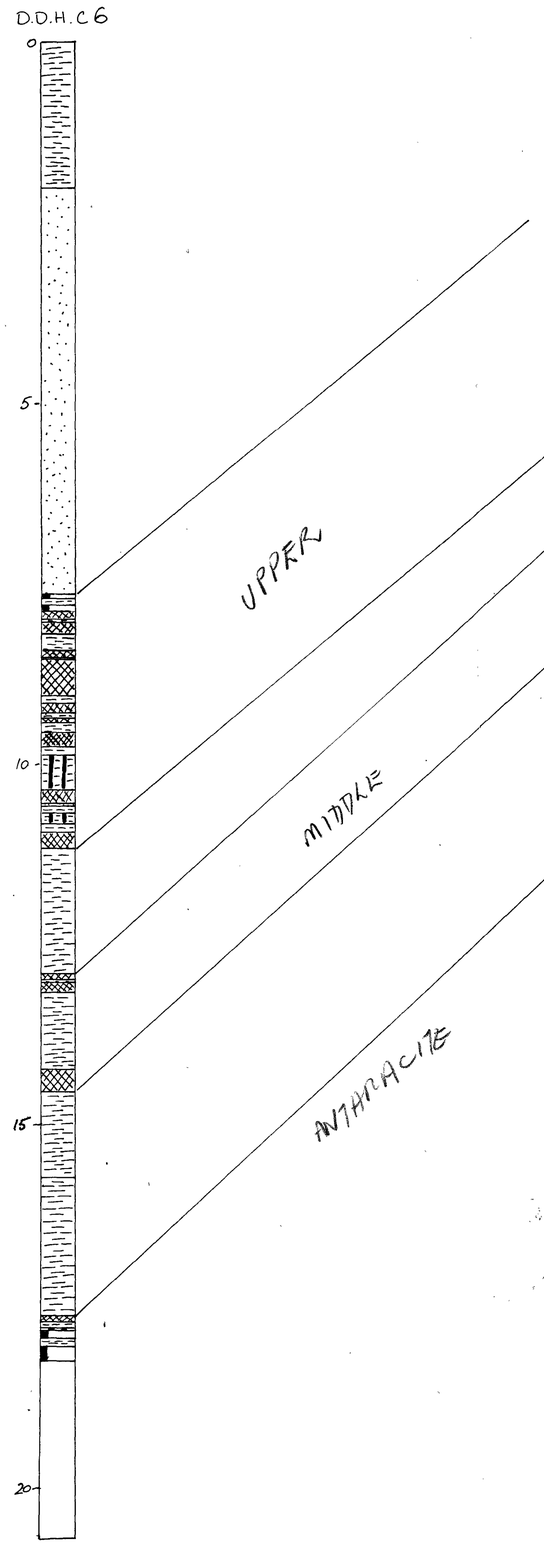
529038

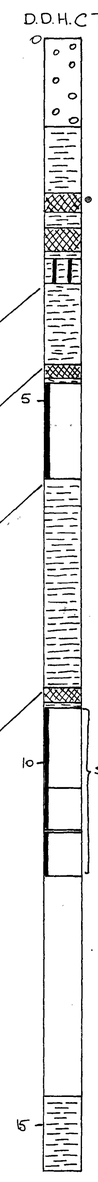
75-1090

FIG 1

1786







SCALE
Vertical 1:50
Horizontal 1:250

* Plies analysed, see analyses sheets - Tables 5 and 6

5 cm

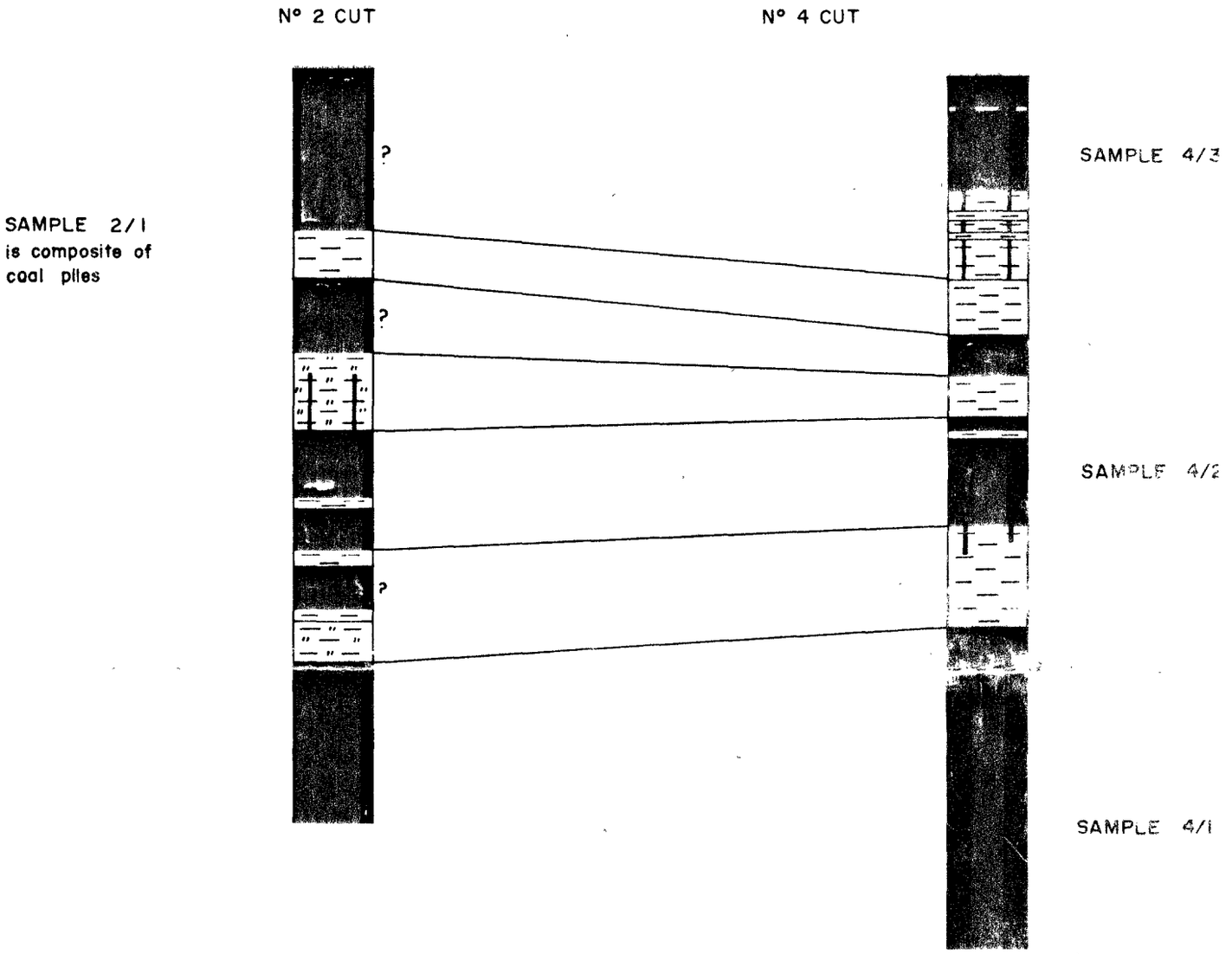
- Track Filling
- Sandstone
- Siltstone
- Claystone
- Coal, mainly dull with frequent bright bands
- Coal, dull with minor bright bands
- Coal, dull
- Coal, inferior
- Coal, cindered
- Carbonaceous unit
- Dolerite
- Old workings
- Oxidised Coal

75-1090 FIG 2

529039 1787

EL 16/74

75-1090



ONE INCH = TWO FEET

5 cm

COAL

? DECOMPOSED COAL OR BLACK MUDSTONE

MUDSTONE

CLAYSTONE

CARBONACEOUS UNIT

FIGURE 1

529040

036

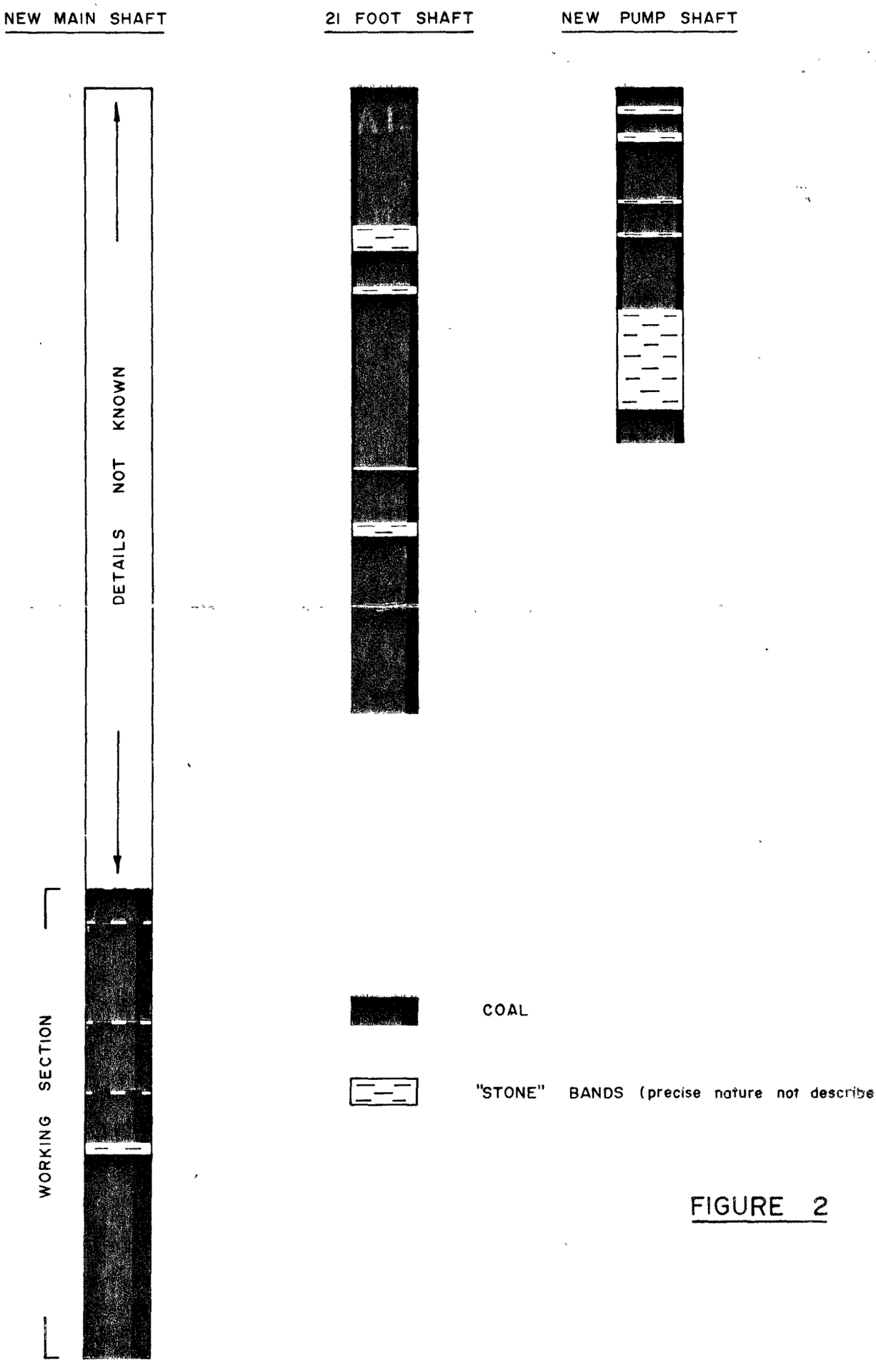

NEW MAIN SHAFT
21 FOOT SHAFT
NEW PUMP SHAFT
DETAILS NOT KNOWN
WORKING SECTION
COAL
"STONE" BANDS (precise nature not describe

FIGURE 2