

STAGE I INVESTIGATIONS

COAL DEPOSITS
IN
SOUTHEASTERN TASMANIA

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COAL DEPOSITS IN SOUTHEASTERN MICHIGAN

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SUMMARY & CONCLUSIONS

Of the areas investigated only Catamaran has the potential to fulfill the Company's requirements as an emergency or alternative fuel source for the Port Huon Pulp Mill.

Present work at Catamaran shows the coal to occur in a manner which should be suitable for limited open cut extraction.

A total of some 4500 feet of outcrop is indicated, comprising 2000 feet of "unworked" outcrop delineated by the present work, 1000 feet of outcrop contiguous with and to the west of the former, and 900 feet of "worked" outcrop lying to the east of the first.

On a regional basis, and based on prior drilling results, the section dips at angles varying from 10 degrees to 14 degrees. On the basis of these dips, and on the assumption of extracting coal to an overburden depth of 60 feet, more than 250,000 tons of coal are indicated if an aggregate thickness of 6 feet of coal can be won.

To more accurately assess reserves, quality and structure of the area, a drilling program of 15 shallow holes is recommended. The estimated maximum cost of such a program, including analytical work, surveying, opening up of the remaining 1600 feet of outcrop, and all necessary supervisory and interpretive work is \$26,000.

Once such a program is undertaken, a more accurate assessment of mining costs can be made. Coal quality, once known in detail, will have an important bearing on the nature of boiler conversion work that would be necessary if the coal is to be utilized.

Consideration should also be given to both the future possibility of underground mining and to beneficiation. Both of these aspects can be assessed in considerably more detail once a drilling and analytical program has been completed.

Because of the wet nature of the area, it is recommended that if further work is to be carried out, this should be done during the period February to March, when the area is usually at its driest, and the risk of lost time due to bogged machinery will be minimized.

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November, 1974

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CATAMARAN AREA

The aim of work at Catamaran was to evaluate the nature of the seam (or seams) at outcrop to determine the suitability for possible open cut extraction.

Method of Investigation.

Access was made from the Forestry Commission road (presently under construction in this vicinity), commencing some 1200 feet south east of the New Main Shaft (see Map 2).

Original plans to gain access along the southern edge of the plain area had to be abandoned due to the extremely boggy nature of this area. Access was finally made along the northern edge of a very gentle east-west trending ridge which forms the southern boundary of the plain.

Some 200 feet west of the Forestry road an old coal haulage railway was intersected and this was followed where possible.

Apart from coal mining activities in this region, commercial timber was extracted in the early part of the century, and vegetation now comprises eucalypt regrowth with a dense ti-tree scrub.

About 600 feet southwest of the Forestry road, the old tramway led to an extensive coal spoil heap indicating the near presence of old workings. No adits or shafts were found here as the area is heavily overgrown with both native flora and blackberries. A costean (No. 1 Cut) of some 800 feet total length was put in at this vicinity in an attempt to locate seam outcrop. The entire length of this costean proved to be underlain by dolerite, indicating the seam outcrop occurs further to the north. Access in this direction was precluded by the swampy ground of the plain area.

A second attempt to intersect outcrop (No. 2 Cut) was made about 600 feet southwest of No. 1 Cut (see Map 2). Costeaning was not successful at this locality due to outcropping dolerite which persisted northward almost to the edge of the plain. As the edge of the plain was approached decomposed coal was noticed in tree roots, and a roadway 30 feet long and 8 feet wide was put into the seam. The cut reached a maximum depth of 8 feet. This costean was extended a short distance to the south at a later date when it was found that local dip reversals caused a repetition of the upper part of the seam.

The seam at No. 2 Cut is 9.35 feet thick and dips at 17 deg. to 150 deg. Approximately one hour after completion of the cut about 10 inches of water was present. Within one week the water level had stabilized 10 inches from the surface. Details of the seam investigation are given separately.

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No. 3 Cut was made approximately 1000 feet west of No. 2 in a further attempt to intersect the outcrop. This effort proved unsuccessful as progress to the north was impeded by commencement of the plain where there was a risk of bogging the bulldozer. Some 60 feet north of this point, however, a large ant nest was found composed entirely of coaly material, again indicating the presence of the seam at the topographic boundary between the edge of the plain and the gentle ridge to the south of the plain.

No. 4 Cut is 550 feet southwest of No. 3. At this locality an old inclined adit was found which is thought to be the "Anthracite" Tunnel referred to in the literature and on old maps. An old tramway leads to this tunnel, from which very little production was apparently obtained in the early part of the century.

The seam at the adit dips at 15 deg. to 350 deg. Water level was about two feet from the surface.

No. 4 Cut was placed about 150 feet ENE of the adit to examine the seam at outcrop. Access at this point necessitated the cut being oblique to the dip direction. Despite fairly wet conditions (again right on the edge of the plain), the full section of the seam was exposed, although a greater depth of cut would have been desirable.

The seam appears to be somewhat thicker here than at No. 2 Cut, but retains essentially the same profile. The cut was such that while true thicknesses could be directly measured in the upper part of the seam, in the lower part it was necessary to take measurements horizontally and calculate thickness after correcting for the slope of the cut and the dip of the seam. This has doubtless introduced some error regarding precise thickness. The lower part of this seam appeared to be of particularly good quality, and did not appear to be quite as weathered as the seam at No. 2 Cut. Details of the intersection are given separately.

Length and Nature of Outcrop

Although only two of the four cuts were directly successful in exposing the seam at outcrop, the presence of old workings at No. 1 Cut and the coal in the ant nest at No. 3 Cut indicate outcrop nearby.

This work has clearly established a relationship between seam outcrop and topography, with the coal occurring in close proximity to the edge of the plain.

Between No. 1 Cut and No. 4 Cut some 2500 feet of outcrop are suggested. The workings at No. 1 Cut, in conjunction with old records suggest that there remains some 2000 feet of this outcrop length to the north of which the seam is essentially unworked. West of the "Anthracite" Tunnel, close spaced shallow boring in the early 1900's has delineated a further 1600 feet of outcrop extending to the Catamaran River. Unfortunately there are no records of this boring other than the location of the holes.

Seam Structure

Although dips measured at outcrop were 15 and 17 deg., dips on a regional basis, derived from old drilling results, are given as 10 to 11 deg. for the area between No. 1 and No. 4 cuts, and as less than 14 deg. for the area west of No. 4 Cut.

Extrapolation from the outcrop near No. 1 Cut and the New Main Shaft which intersected the seam at 109 feet, gives a dip of 10 degrees.

Seam Identity

While old records indicate three seams are present in the section at Catamaran, the seam intersected during the present work is certainly the main Catamaran Seam. The other seams, which are much thinner than the main seam, are reported to lie 10 to 12 feet above and below the main seam.

In the area between No. 1 and No. 4 Cuts it appears unlikely that there is any significant thickness of sediment preserved beneath the main seam which appears to rest almost directly on decomposed dolerite.

Old records suggest that the lower seam (Young Seam) is to be found in the area west of the "Anthracite" Tunnel. Both this seam and the seam overlying the main seam were of little interest in the old days as they were too thin for underground operations. However, depending on the coal quality, these seams may provide a useful bonus to an open cut operation.

SEAM DETAILSSeam Section - No. 2 Cut.

Thickness (feet)	Description
2.00+	COAL, very weathered, possibly poor quality; may be very decomposed highly carbonaceous mudstone in part.
0.60	CLAYSTONE, buff, waxy; plant remains present.
0.90	COAL, very weathered, and carbonaceous mudstone.
0.50	MUDSTONE, mid-grey, slightly waxy, becomes carbonaceous towards base.
0.50	MUDSTONE, black, very carbonaceous; grades from underlying unit.
0.80	COAL, weathered, blocky.
0.15	CLAYSTONE, mid-brown, waxy; with white carbonate flecks giving sandy texture; irregular band.
0.50	COAL, weathered, blocky.
0.20	CLAYSTONE as 0.15 ft above; slightly paler in colour.
0.55	COAL, weathered, blocky; grades to black carbonaceous mudstone in part.
0.15	CLAYSTONE, buff, waxy.
0.50	MUDSTONE, black, very carbonaceous.
2.00 (approx)	COAL, weathered, blocky; thin buff claystone band near base.

BASE OF SEAM

SEAM THICKNESS: 9.35 feet.

A graphic section of this seam is given in Figure 1.

The upper section of the seam is almost flat lying in parts, and while considerable dip variation was observed, the bulk of the seam dips at 17 degrees to 350 degrees.

Seam Section - No. 4 Cut.

Thickness (feet)	Description
0.35	COAL, dense, dull; some thin bright bands towards top.
0.05	CLAYSTONE, mid-brown.
1.00 (approx)	COAL, banded, anthracitic; good quality. SAMPLE 3.
0.25	CLAYSTONE, black, carbonaceous; may be very decomposed coal in part.
0.10	CLAYSTONE, buff, waxy.
0.15	CLAYSTONE, black, carbonaceous, to Coal, inferior.
0.10	CLAYSTONE, buff, waxy.
0.50	CLAYSTONE, dark grey, carbonaceous.
0.75	CLAYSTONE, buff, waxy, massive.
0.50	COAL, banded, anthracitic, grades to black carbonaceous claystone and inferior fissile coal at top.
0.50	CLAYSTONE, buff, waxy; plant fragments throughout.
0.15	COAL, anthracitic, closely banded, dense.
0.10	CLAYSTONE, mid to dark brown, waxy.
1.10*	COAL, anthracitic, banded, good quality. SAMPLE 2.
1.25*	CLAYSTONE, light grey, with abundant plant remains at base; becomes increasingly carbonaceous towards top.
4.00 (approx)*	COAL, banded, anthracitic, some very dense and inferior but generally looks good quality; bright bands tend to be more weathered than dull bands. SAMPLE 1.

BASE OF SEAM

SEAM THICKNESS: 10.85 feet.

*NOTE - The thickness of these plies is approximate only and was derived geometrically as measurements had to be made horizontally and obliquely to the dip direction, with account being taken of both the dip of the strata and the varying slope of the cut.



A graphic section of this seam intersection is shown in Figure 1 where comparison with the section at No. 2 Cut can be made. It is considered that the profiles are sufficiently similar, especially the characteristics of the claystone bands, to firmly establish correlation.

The nature of recording seam data in early work is such as to preclude firm correlation of the present work with sections described in the early literature. Nonetheless, the observation applied to the main workings of the better coal being confined to the basal five or six feet of the seam certainly applies to the seam investigated during the present work. Sections compiled from early descriptions are shown in Figure 2. The incomplete nature of the old records is such that many of the localities referred to are not identifiable on available maps. Correlation of sections is further complicated by the fact that many of the old sections describe only part of the seam without reference to the amount of undescribed coal either above or below the described section.

RESERVES.

The present work has directly established some 2000 feet of outcrop down dip from which the seam is essentially unworked. There is a further 900 feet of outcrop adjacent to old workings in the eastern part of the area, and there is an additional 1600 feet of outcrop indicated by prior prospecting operations lying to the west of the present work.

Old colliery plans indicate that the worked areas referred to above comprise first workings only, and certainly no more than 40% of the available coal has been extracted. Within projected highwall limits this remaining coal could be won from an open cut operation.

Records suggest that seam outcrop terminated, due either to faulting or intrusion, some 300 to 400 northeast of the Forestry road (see Map 2). In view of this limited continuation of outcrop to the northeast, and because the Forestry road would necessitate separate operations, this area has been excluded from present considerations.

Despite the fairly high dips recorded at outcrop, the old records are consistent in their reporting of dips based on drilling. Since dips derived from drilling data are much more indicative of the regional structural configuration than dips from outcrop, these former observations have been used in assessing reserves.

For the purposes of calculation, half of the unworked length of outcrop (1800 feet) has been ascribed a dip of 10 degrees, and the remainder 14 degrees. A 10 degree dip has been used for the 900 feet of "worked" outcrop.

On the basis of the above dips, together with the assumption that an aggregate thickness of six feet of coal can be obtained up to a maximum overburden to coal ratio of 10:1, the following reserves are indicated, based on a coal specific gravity of 1.50:-

UNWORKED AREAS(i) 10 deg. Dip

Area - 13 acres
Width of cut - 320 feet
Length of cut - 1800 feet
Coal reserves - 144,000 Tons

Reserves allowing for oxidized coal - 125,000 tons

(ii) 14 deg. Dip

Area - 9 acres
Width of cut - 220 feet
Length of cut - 1800 feet
Coal reserves - 100,000 tons

Reserves allowing for oxidized coal - 86,000 tons



"WORKED" AREA

Area - 6.6 acres
Width of cut - 320 feet
Length of cut - 900 feet
Coal reserves - 73,000 tons

Coal reserves allowing for oxidized coal - 62,000 tons

TOTAL UNOXIDIZED COAL INDICATED TO BE AVAILABLE BY OPEN CUT
EXTRACTION TO 60 feet OF OVERBURDEN - 273,000 tons

For the purposes of determining the extent to which coal is oxidized an arbitrary figure of 10 feet has been taken, above which the coal is assumed to be oxidized. This is probably a pessimistic figure, but drilling will be necessary to establish real values.

COAL QUALITY

Samples from the present work have been submitted for analysis and results will be forwarded as a separate appendix to this report.

Since the presence of water at the edge of the plain necessitated the cuts from which the samples were obtained being extremely shallow, a degree of oxidation is expected, and results should not be taken as being regionally indicative of quality. Certainly the only definite basis to establish quality, thickness and structural configuration of the seam/s in the area is by drilling.

The early literature frequently refers to Catamaran coal as being the best (steaming) coal in the State, and many of the available analyses certainly support this claim. Unfortunately, as has been stated above most of the early work either mentions no location, or if stated, the locations are frequently not identifiable on available maps. In addition many of the analyses apply only to a selected sample from part of the worked section.

While specific assessment of quality will need to be obtained from a drilling program, it is expected that a product of 12% or less ash, and a calorific value of 12,000 or more BTU/lb would be obtained. Sulphur content should be around 0.5% and should not constitute an environmental problem.



RECOMMENDATIONS

The Catamaran area is clearly capable of producing a limited amount of open cut coal, and as such constitutes a valuable emergency or alternative fuel source for the Port Huon Mill.

Extraction of the coal will be relatively expensive in comparison with open cut operations elsewhere, both because of the small volume required and because of the wetness of the area. While it is premature to embark upon any detailed engineering considerations regarding open cut extraction from the area until a drilling program has more realistically defined quality, thickness and structure of the seams, rough costing on producing 100 tons per day to a maximum overburden depth of 60 feet suggests that coal could presently be produced and delivered to the mill at around \$10 per ton.

In comparison with present fuel oil prices, this coal would be substantially cheaper on a thermal equivalent basis than oil, even at the present time. In the event of substantial increases in the price of fuel oil, and especially in the event of it becoming unavailable, then the cost per ton of coal becomes rather academic.

For the above reasons it is recommended that not only should the open cut aspects of the Catamaran area be assessed, but that future consideration be given to underground mining and to the possibility of beneficiation. These matters can be more realistically appraised once a drilling program has been completed. If it is desired to have substantially greater reserves than the 273,000 tons indicated to be available by open cut methods, then it will certainly be necessary to consider underground extraction.

In order to prove sufficient reserves to fulfil the Company's requirements for 10 to 15 years it will be necessary to undertake a limited drilling program. It is recommended that five lines, each consisting of three holes be put in at intervals of 900 feet along the 3600 feet of "unworked" outcrop length. Prior to this it will be necessary to open up the westernmost 1600 feet of outcrop, as has been done for the eastern section. Access for the drilling would be carried out in conjunction with this work.

Drillholes in each line would be located to intersect the main seam at depths of 10 feet, 50 feet and 100 feet respectively. Allowing for the thickness of the seam and sufficient footage to assess the underlying seam, a total footage of 250 feet is indicated for each line.

On the basis of a quote given in August, 1974, by Mono Pumps (Aust) Pty Ltd, of \$12-50 per foot for "N" size diamond drilling, the total drilling cost would be \$15,625. Allowing for necessary core boxes, fully cored drilling would cost around \$16,000. It is expected that once the section is well established by initial holes, later drilling would not need to be fully cored, so that some saving on the drilling estimate should be effected.

A full estimate for the appraisal of the area, including necessary analytical work, is appended.



Should the Company elect to undertake the additional recommended exploration in the Catamaran area, it is strongly suggested that the work be carried out in February-March, as the plain areas will be at their driest during this period, and there will be less risk of machinery becoming bogged. In any event it will be necessary to have either a tracked vehicle or a very large rubber tyred vehicle available to tow the drilling rig from site to site. The ideal form of machine would probably be a bombardier, as used by the Forestry Commission for conveyance of personnel in this type of country. These are a relatively light vehicle with wide tracks. Enquiries would need to be made as to the availability of such a machine in the area.



ESTIMATE FOR PROPOSED DRILLING PROGRAM

"N" size diamond core drilling (including necessary core boxes)	\$16000
Analytical work (based on present ACIRL prices + 10%)	1000
Surveying	500
Geology - management and supervision, logging and sampling, appraisal of results and report preparation	4500
Drafting	500
Bulldozer hire	1000
Hire of tracked vehicle for towing drill rig	1000
Vehicle and fuel	500
Travel and accommodation	500
Contingencies	500
<u>TOTAL ESTIMATED MAXIMUM</u>	<u>\$26,000</u>



ANALYSES

Number	Moisture %	Fixed Carbon %	Ash %	Volatiles %	Sulphur %	Calorific Value BTU/lb
1	5.0	65.8	8.2	21.0	-	-
2	4.4	66.7	8.6	20.3	-	-
3	4.0	67.8	3.7	24.5	-	-
4	2.8	65.6	3.9	27.7	-	-
5	1.4	69.6	5.0	24.0	-	-
6	4.24	66.20	3.84	25.72	-	-
7	3.0	61.2	10.1	24.9	0.8	12,430
8	2.2	69.3	3.8	24.7	-	-
9	3.46	58.84	15.70	22.0	0.44	-
10	2.04	61.66	12.96	23.34	0.51	12,133
11	2.16	62.08	11.46	24.30	0.56	-
12	2.80	60.84	7.46	28.90	0.52	12,880
13	3.20	57.76	13.30	25.74	0.52	11,780
14	2.34	51.86	18.34	27.46	0.44	10,890
15	3.14	43.30	33.20	20.36	0.25	8,370
16	0.86	86.22	5.64	7.28	0.38	14,250
17	1.48	76.78	9.06	12.68	0.29	13,260
18	1.70	67.90	15.96	14.44	0.32	11,910
19	1.32	87.34	7.14	4.20	0.46	-
20	2.92	54.80	21.54	20.74	0.32	-

Sample 1 - 1902

Sample 2 - 1902

Samples 3 & 4 - 1905

Samples 5 & 6 - 1912

Samples 7 & 8 - 1915

Sample 9 - From bins near James Workings

Sample 10 - Bottom of Main Shaft 2ft 7ins of coal

Sample 11 - West tunnel, James workings - 2ft 4ins of coal

Sample 12 - Ratten drive, Ribbon workings - 25ins (basal)

Sample 13 - " " " " - 8ins

Sample 14 - " " " " - 13ins

Sample 15 - " " " " - 9ins (top)

Sample 16 - "Anthracite" (basal) seam - Bottom 18 to 22 ins

Sample 17 - " " " " - Central 4 ins

Sample 18 - " " " " - Top 10 ins

Sample 19 - " " " " - 17 ins

Sample 20 - Middle Seam - 4ft 4ins of coal

Source of data:

Geological Survey Bulletin 20, 1915

Geological Survey Mineral Resources No. 7, 1922

Unpublished Geological Survey Report by Hudson & Nye, 1932

Unpublished Geological Survey Report by Blake, 1939



LUNE RIVER AREA

Trenches and pits covering a linear distance of some 3000 feet were put in by back hoe in the Lune River area, as shown in the accompanying plan.

The aim of this work was to evaluate the coal potential of a westerly dipping sequence of Triassic coal measure sediments.

The positioning of the trenches was determined by the disposition of the sediments occurring in the road cutting immediately south of the Lune River bridge. The costean was located in such a manner as to intersect the sediments in a down-dip direction and approximately normal to the strike. Some variation in this general southwest traversing was necessitated by extremely wet ground.

Whilst traversing sediments trenching was continuous, but once definite doleritic material was encountered test pits were sunk every 100 feet. The depth of the trenches and test pits varied from two to seven feet, and was dependent on the depth required to positively identify the rock types. The back hoe technique proved a very efficient and inexpensive method of evaluation of the geology of the area.

GEOLOGY

The area has a thick mantle of low vegetation and is extremely moist. There is between six and 18 inches of rich black topsoil which over most of the area examined is underlain by up to two feet of Tertiary sediments, comprising poorly to well cemented off-white coarse to medium grained quartzose sandstone, rounded quartzose gravels, and sporadic silcrete pebbles and boulders. On rare occasions the Tertiary sandstones were dark grey in colour due to the presence of a black humic cement.

A true thickness of approximately 150 feet of Triassic coal measure sediments were intersected before intrusive doleritic rocks were encountered. These sediments dip to the southwest at 12 to 15 deg. and consist mainly of decomposed argillaceous rocks represented as moist puggy clays which are moderately to heavily iron-stained.

Two thin medium grained quartzose sandstone beds occurred in the sequence, as shown in Map 1. These were responsible for gentle slope changes, as shown.

The upper sandstone bed is underlain by a sequence of laminated pale and dark grey slightly carbonaceous micaceous siltstones containing coal plant fragments. No coal was intersected.

Clays derived from dolerite invariably had a greenish tinge and were readily distinguishable from the sedimentary clays by the relic igneous textures they retained. Massive dolerite outcrops occur



some 3000 feet from the road along the traverse line, and such outcrops continue sporadically across the plain to the west.

CONCLUSIONS

This work has demonstrated that doleritic intrusive rocks are far more extensive in the Lune plain area than indicated by surface mapping. A true thickness of only some 150 feet of sediments was intersected in the east of the area before the sequence was truncated by igneous material. No coal seams were present in this sequence. In view of the disappointing results, further prospecting in the area is not warranted.



IDA BAY AREA

During the course of the present work a seam outcrop was discovered in a road cutting at Ida Bay, some 1 mile south of the Limestone Quarry turnoff on the Catamaran Road, south of the Lune River settlement.

The seam is 6 to 8 feet thick and appears to contain some reasonable coal, despite its very weathered nature at outcrop. It dips at approximately 20 degrees to 240 degrees.

To the west of the road the outcrop passes into fairly rugged country in the vicinity of the old Ida Bay coal mine, where it was almost certainly the worked seam. To the east of the road, however, is a flat plain area under which the seam may well be present.

Some time was spent examining this area, but away from the cutting no trace of outcrop could be found due to heavy vegetation and thick soil cover.

Since the Company's Exploration Licence has been modified to conform with the requirements of various environmentalist pressure groups, this area on the eastern side of the Catamaran Road is no longer available for exploration. Since it appears that the Company's coal requirements may be met from the Catamaran prospect, there is no immediate need to further investigate this area. However should it be found necessary or desirable to have additional coal to that available from Catamaran, this area could be cheaply appraised in a similar manner to the Lune Plain area. Separate tenure would first need to be obtained however.



"5-METRE SEAM"

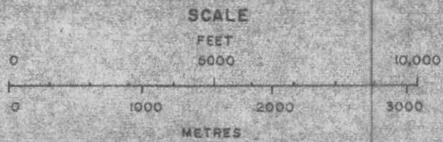
Approximately 1½ miles north of the Catamaran prospect, near where the Forestry road presently ends, a number of seam outcrops have been exposed in the road cuttings. These outcrops are thought to represent the same seam which has been considerably disrupted by faulting associated with dolerite intrusions. This location is shown on maps accompanying earlier reports.

The best exposure at this locality shows the seam to be some five metres in thickness and to be dipping to the northwest at some 25 degrees. The topography is quite steep and the area is heavily timbered. The area consequently has no open cut potential.

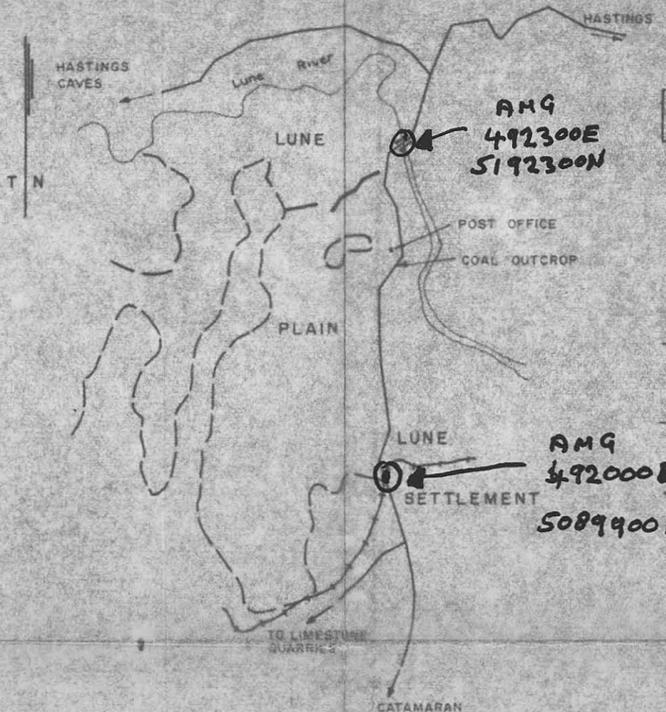
The Forestry Commission has advised that during construction of the road, an old adit into this seam was found. For safety reasons this has subsequently been infilled.

In 1903 the seam at this locality was investigated by the Moss Glen No. 2 Bore, and it was probably as a result of this drilling that the adit was put in.

Whilst the coal appears to be of quite reasonable quality, there is evidence of intrusive rocks a short distance away in both directions along strike and also up the hill immediately above the seam. In view of this indicated lack of continuity, together with the steep dip and rugged topography, this occurrence was not further investigated.

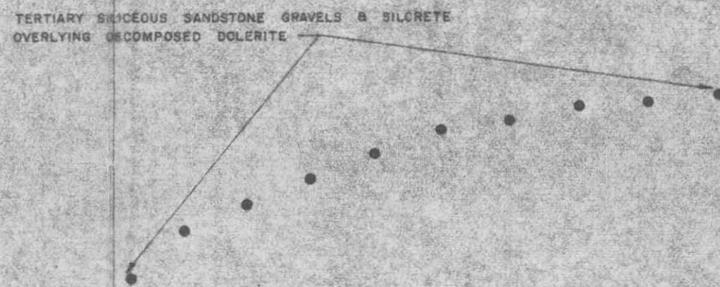


LOCATION PLAN



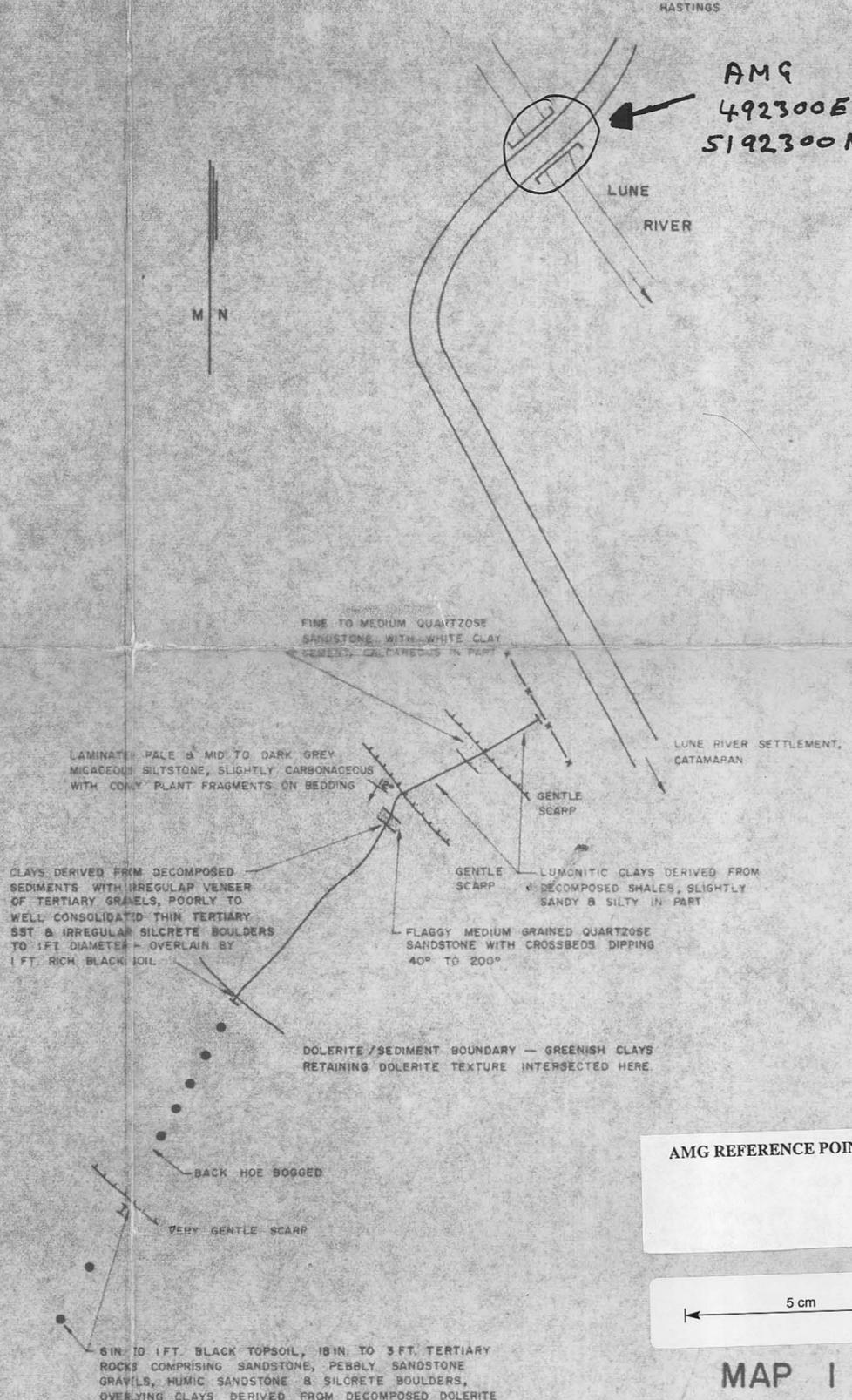
REFERENCE

- DOLERITE FROM SURFACE MAPPING & AIR PHOTO INTERP
- ROAD
- TRAMWAY
- BACK HOE TRAVERSES (see detailed plan)



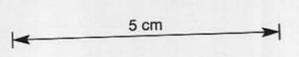
MASSIVE DOLERITE OUTCROP CONTINUES WEST TOWARDS RIVER

- COSTEAN
- TEST PIT

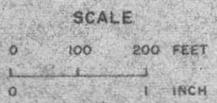


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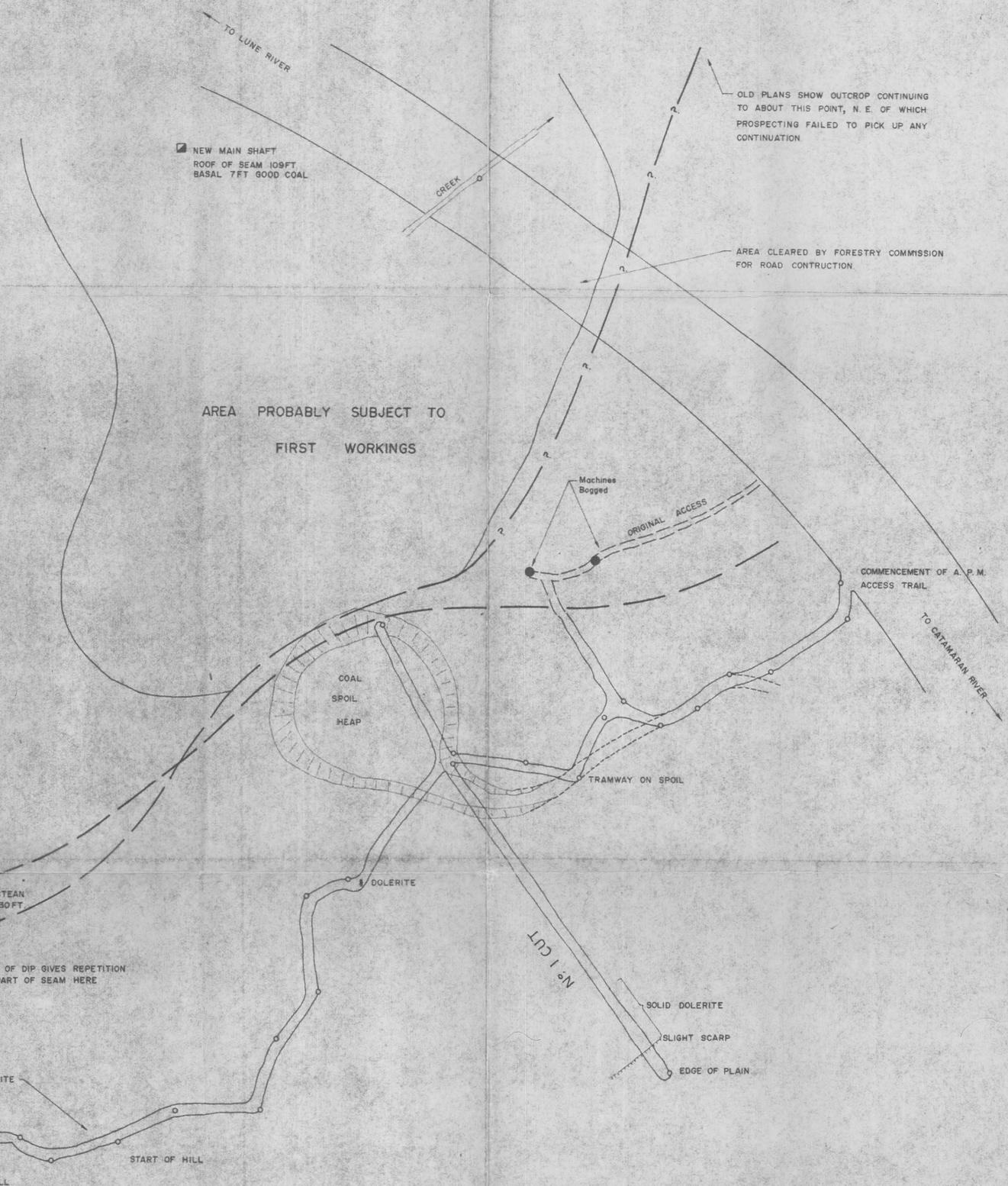
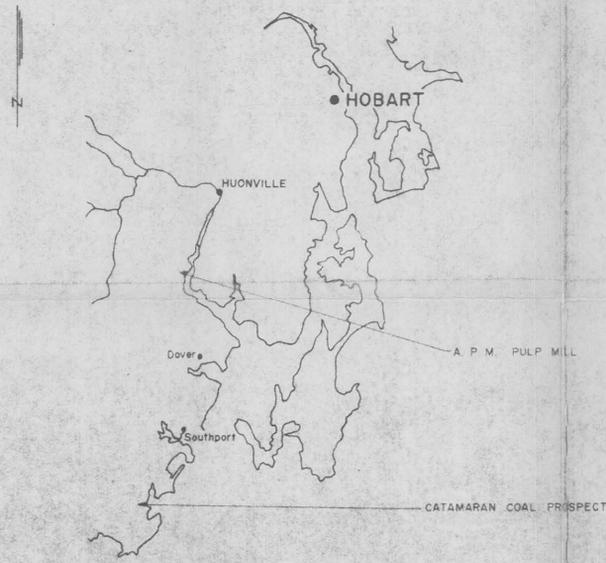


MAP 1 74-1057



EARTH RESOURCES AUSTRALIA PTY. LIMITED
A. P. M. LIMITED
SUMMARY OF BACK HOE TRAVERSING - LUNE RIVER AREA
S. E. TASMANIA
TO ACCOMPANY REPORT BY M. R. BUNNY B. Sc. (Hons.)
NOVEMBER, 1974

LOCATION PLAN



PLAIN

REGIONAL DIP OF STRATA FROM PREVIOUS WORK SHOWN TO BE ABOUT 10° IN THIS REGION (based on drillings)

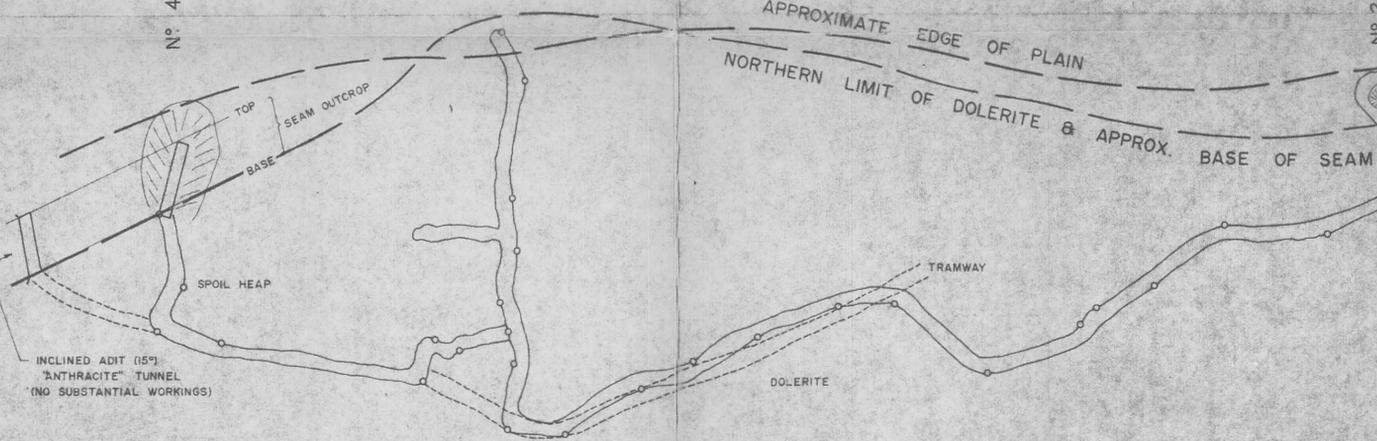
AREA PROBABLY SUBJECT TO FIRST WORKINGS

Nº 4 CUT

Nº 3 CUT

Nº 2 CUT

Nº 1 CUT



MAIN COSTEAN 8 FT X 30 FT

FLATTENING OF DIP GIVES REPETITION OF UPPER PART OF SEAM HERE

DOLERITE

TOP OF HILL

START OF HILL

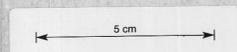
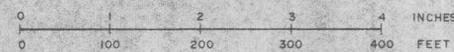
SOLID DOLERITE

SLIGHT SCARP

EDGE OF PLAIN

NOTE: PREVIOUS WORK HAS TRACED THE SEAM OUTCROP A FURTHER 1600FT TO THE W. S. W. OF THE "ANTHRACITE" TUNNEL TO THE CATAMARAN RIVER. (TWELVETREES, 1915, GEOL. SURV. BULL. 20) THE REGIONAL DIP OF THE SEAM FROM THE ABOVE WORK WAS FOUND TO BE 12°

SCALE



553021

MAP 2 74-1057

EARTH RESOURCES AUSTRALIA PTY. LIMITED

A. P. M. LIMITED

STAGE I OPERATIONS

CATAMARAN PROSPECT

TO ACCOMPANY REPORT BY M. R. BUNNY B.Sc.(Hons) NOVEMBER, 1974