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REF. No.				

EXPLORATION LICENCE 37/79
 STYX RIVER, TASMANIA

REPORT FOR THE SIX MONTHS ENDED 1ST MAY, 1982

OPEN FILE

MICROFILMED

C O N T E N T S

1. Title
2. Exploration Philosophy
3. Summary of Previous Work
4. Work during the six months ended 1st May, 1982
5. Conclusions

APPENDIX 1: ANALYSIS RESULTS

FIGURE 1

EL37/79 Styx River Area, S.W. Tasmania,
Locality Map

A4-2264

Geology and Drilling

A2-1393

FIG. 1

1

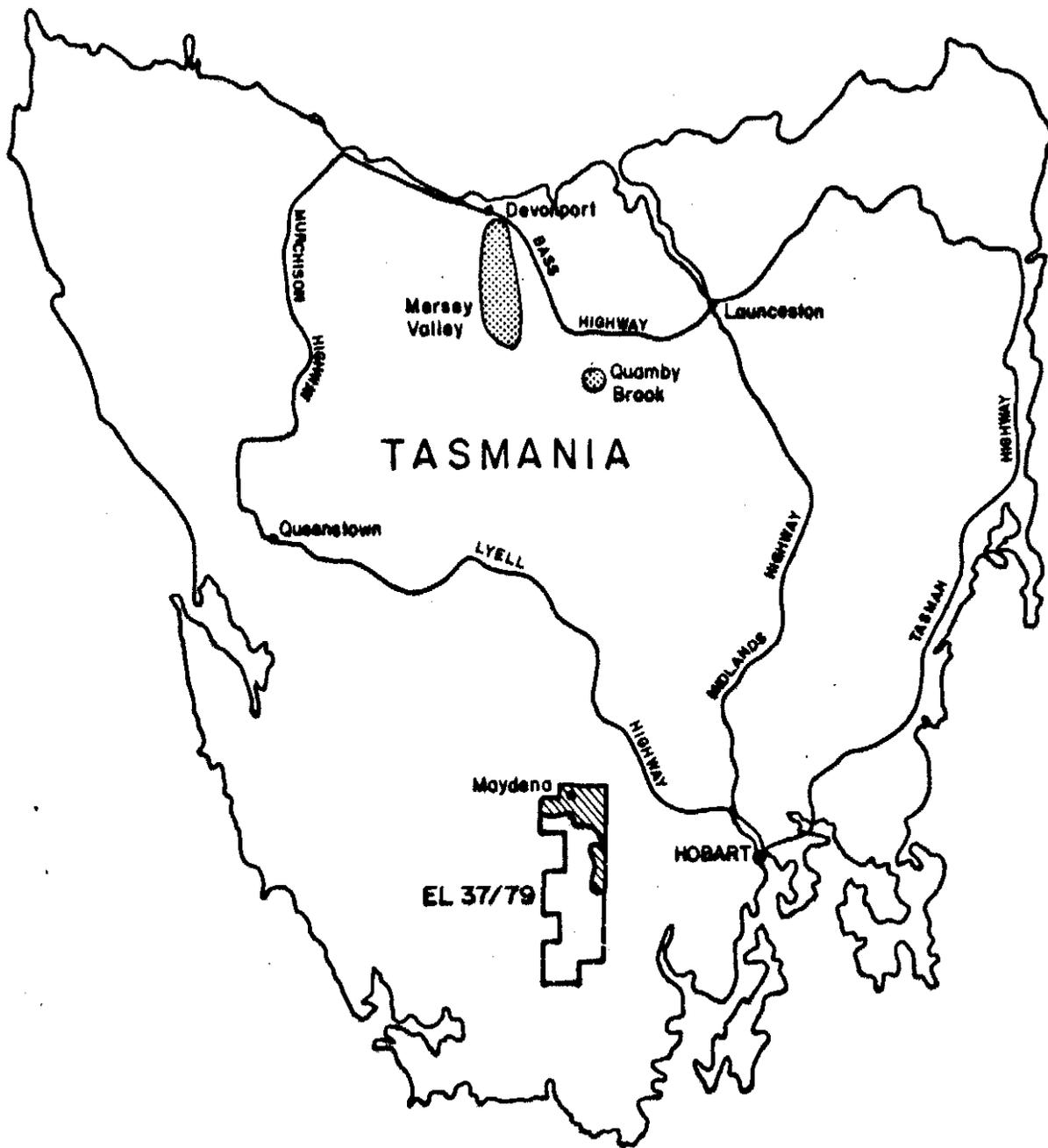
145°E

146°E

147°E

148°E

758003



41° S

42° S

43° S



Major Tasmanite oil shale occurrences
(Woody Island Siltstone correlate)



E.L. area granted



E.L. Application

5 cm

SCALE
1 : 2 000 000



Centre
Melbourne

Date
OCT 1981

THE BROKEN HILL PROPRIETARY CO. LTD.
EL 37/79, STYX RIVER AREA
S.W. TASMANIA
LOCALITY MAP

Drawing No
A4-2264

Project Plan No
C 360-2

EXPLORATION LICENCE 37/79

STYX RIVER, TASMANIA

REPORT FOR THE SIX MONTHS ENDED 1ST MAY, 1982

1. TITLE

Exploration Licence 37/79 of 280 square kilometres was granted to The Broken Hill Proprietary Company Limited on 1st May, 1981 for six months and was renewed for twelve months to 1st November, 1982.

The licence area consists of two parts, one an area of 205 square kilometres including part of the Styx River valley, and the other of 75 square kilometres, covering an area east of the Snowy Range. The bulk of the area originally applied for (Figure 1) lies within the South West Conservation area. Title to this area has not yet been granted.

2. EXPLORATION PHILOSOPHY

Following the discovery of shales with a strong petroliferous odour in the Styx River valley near Maydena, an area covering most of the known Lower Permian exposure in south-eastern Tasmania was applied for. Oil shale, oil and coal were the principal exploration targets. Fischer analysis of outcrop samples in the discovery area returned oil yields varying from 0.5 to 4.1 litres per tonne depending on the degree of weathering of each sample. Two drillholes were sited to test the Lower Permian Strata within the licence area and to obtain fresh samples for analysis.

Two main possibilities were considered:

- 1) the possibility that the Lower Permian strata may contain oil shales (Kerogen rich sediments) of economic grade; and
- 2) the possibility that the Lower permian strata may constitute an oil source rock and that oil accumulations may be present in the fracture zones.

3. SUMMARY OF PREVIOUS WORK

- i) Literature survey and review of available data.
- ii) 1:50,000 scale reconnaissance mapping.
- iii) Drilling, sampling and down-hole logging of two diamond cored holes, S1 and S2 (of 57.2 and 209.7m)
- iv) Oil yield analysis on drill core by Fischer analysis.

4. WORK DURING THE SIX MONTHS ENDED 1ST MAY, 1982

Six core samples of black siltstones from drill hole S1 were analysed for a range of trace elements including base and precious metals.

In addition a one litre sample of water, discharged from the same drill hole, was analysed for hydrocarbons and certain elemental species. Attempts to sample gas bubbles in the water from this drill hole were unsuccessful due to the slow rate of degassing and lack of proper equipment.

Analysis results are presented in Appendix 1.

5. CONCLUSIONS

In the report for the preceding six months to 1st November, 1981 it was concluded that bands of probable tasmanite were found near the base of the Woody Island Siltstone. Oil yields, however, are all low (7 litres/tonne maximum) and it is considered unlikely that thick, high grade oil shales are to be found in the area.

Subsequent analyses have not provided any evidence to upgrade the potential of the area. No base or precious metal anomalies were revealed.

No further exploration for oil shale is warranted in the granted portion of EL 37/79.

This report is
submitted to the
Mines Department
as required by
Schedule A of
Exploration
Licence 37/79.

APPENDIX 1

ANALYSIS RESULTS

DRILL HOLE NO: S1

SAMPLE TYPE: CORE

LABORATORY: Australian Laboratory Services

BATCH NO: L055

DATE ANALYSED:10.12.81

UNITS: ppm

ELEMENT	Cu	Pb	Zn	Ag	Ni	Co	Cr	Bi	Mn	As	Sb	Au	U	V
Depth/Method	1	1	1	1	1	1	1	1	1	5B	8A	120	XRFIA	XRFID
10.97-13.04m	25	40	100	<1	20	20	75	5	355	9	1	< 0.1	4	160
21.0 -23.1m	25	50	125	<1	25	20	60	<5	250	4	<1	< 0.1	<4	170
29.0 -31.0m	25	50	115	2	25	15	70	< 5	550	16	1	< 0.1	<4	160
39.1 -41.1m	40	50	155	1	30	25	50	< 5	520	11	1	< 0.1	4	160
48.9 -51.1m	25	50	105	1	20	25	65	<5	1400	16	<1	< 0.1	<4	110
55.0 -57.2m	25	40	75	1	20	20	140	< 5	675	8	<1	< 0.1	<4	90

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006

DRILL HOLE NO: S1

SAMPLE TYPE: WATER (1 litre)

LABORATORY: Australian Laboratory Services

BATCH NO: H 194

DATE ANALYZED: 11.11.81

UNITS: mg/l

Oil and grease 80

Petroleum hydrocarbons 25

SO₄⁼ 5

Ca 9

Mg 5

Na 90

K 0.6

Fe 0.18

U 1.3

CO₂ 40

S⁼ < 1

Mn, Cu, Ni, Pb, Zn, Co,)
Cd, Cr, As, Mo, Se, Al) all < 0.1

pH = 7.4

758008

007

146° 30' E

E.L. 37/79

146° 50' E

42° 45' S

52 60 000 m N

52 50 000 m N

52 40 000 m N

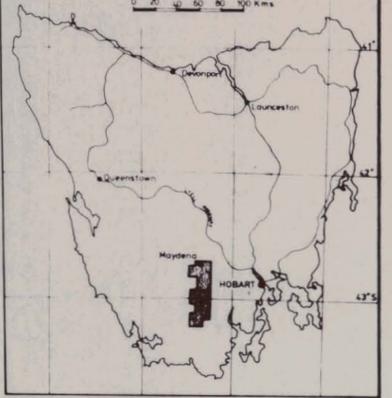
43° 00' S

52 30 000 m N

52 20 000 m N

LOCALITY MAP
E.L. 37/79
STYX RIVER AREA

0 20 40 60 80 100 Kms



LEGEND

- pCa Pre-Cambrian Quartzite
- pCa Pre-Cambrian Diorite
- pG1 Pre-Cambrian ferruginous sandstone and siltstone
- Dg1 Ordovician Gordon Limestone
- Pt Permo-Carboniferous Wynyard Tillite
- Pw Permian Woody Island Siltstone
- Pw.Pc Permian "Fossiliferous Siltstone" and Darlington Limestone
- Pb Permian Bundala Mudstone
- Pm Permian Mersey Group
- Pc Permian Cascades Group
- Pml Permian Malbina Sandstone and Siltstone
- Pf Permian Fernree Mudstone
- Pu Permian undifferentiated
- Puu Upper Permian undifferentiated (Pc, Pml, Pf)
- Tu Triassic undifferentiated
- Jd1 Jurassic dolerite
- Qd1 Quaternary dolerite talus

Stratigraphic and Intrusive Contacts

- located or inferred from closely spaced outcrops
- based on air photo interpretation
- inferred
- guessed only
- based on Jago (1972)

Attitude of beds

- + x Dips measured during present work, horizontal, dipping and striking as indicated

Faulting

- Fault inferred from outcrops
- Fault based on air photo interpretation
- Fault based on Jago (1972)
- Normal fault, downthrown block indicated
- Reverse or thrust fault, upper plate indicated
- Transverse movement on fault, sense of movement

- S2 Diamond drill hole
- EL 37/79 Application area
- EL 37/79 area granted

Scale 1:100 000

0 1 2 3 4 5 6 Km

5 cm

758009

003

THE BROOKHILL PROPRIETARY Co Ltd
EXPLORATION DEPARTMENT

758009
E.L. 37/79, STYX RIVER AREA
S.W. TASMANIA

GEOLOGY AND DRILLING

Scale 1:5000
Drawing
Checked
O.T.C.

DATE 27/11/78
A2-1393
C360-5

FIGURE 2
CENTRE: Melbourne