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MONTHLY REPORT

FOR THE PERIOD 1st SEPT. TO 30th SEPT. 1974

EXPLORATION LICENCE No. 4/74

LAND DISTRICT OF DEVON

LOCALITY OF LATROBE

NORTHERN TASMANIA

18th October, 1974

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LAND DISTRICT OF DEVON

LOCALITY OF LATROBE

NORTHERN TASMANIA

BY

L.G. NIXON

L.G.E. NIXON AND ASSOCIATES

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ATTACHMENTS

18th October, 1974

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LAND DISTRICT OF DEVON

LOCALITY OF LATROBE

NORTHERN TASMANIA

SUMMARY

During the period under review the writer flew to Hobart in connection with the transfer of the E.L. to Endeavour Oil Company of Melbourne. In addition meetings were held with staff of the North West Master Planning Authority at Ulverston with Foresters of the Tasmanian Forestry Commission at Burnie and Devenport and with Mono Pumps in connection with drilling operations. A meeting was also held with Comalco Aluminium technical staff at Bell Bay in connection with specifications for petroleum coke anodes and their annual requirements.

Field work occupied six days of the present visit. This time was mainly spent in attempting to locate old pits and shafts, checking published geological data, and evaluating the potential of the oil shale areas especially with a view to open pit mining operations.

INTRODUCTION

Since the previous report the results of tests run on the sample forwarded to Lurgi for processing using the Lurgi Rhurgas process had been telexed to Australia. The full technical report

is in the process of being translated into English and has not yet been received. Lurgi report that the L R - process will be suitable for processing the oil shale. For details of the telexed data see Appendix I attached.

The main activities during this period had been directed towards liaison with the Forestry Commission and the North West Master Planning Authority, and to the location of existing workings in the Nook, China Flat, Knight, Churchills and Paramatta areas.

FORESTRY COMMISSION

The Regional Forester at Burnie has advised that the Forestry Commission had planned to clear the native bush in the China Flat area during 1975, followed by a planting programme in 1976. This area has the best potential for an open pit mining operation because of its relatively large size and the shallow depths at which the shale oil beds occur. In order for the Forestry Commission to integrate their forward planning with the proposed programme of exploration and development, liaison with the Forestry Commission is to be established at an early date.

NORTH WEST MASTER PLANNING AUTHORITY

Mr. D. Derrick who is a Director of the Authority advised that Interim Development Order No. 1 has been altered. The present writer has not been notified by the Authority of any alterations to date.

The overall impression gained from discussions with Mr. Derrick was that no unreasonable requests would be made and no unfeas-

ible obstacles would be put in the way of orderly planned mining operations.

MONO PUMPS LIMITED

A meeting was held with Mr. G. Spalding, Tasmanian Drilling Manager, of Mono Pumps to discuss the quote submitted for drilling the oil shale areas. It was pointed out to Mr. Spalding that for the programme planned a drill and drillers could be shipped from Melbourne and returned for approximately 50% of the cost quoted by Mono Pumps for the same programme. Mono Pumps are to submit a revised quote.

PROPERTY EXAMINATION

The field work was mainly concerned at this stage with the location of existing workings which have been described in early reports and Bulletins. The areas to which attention was particularly directed were:-

i) China Flat ii) Paramatte iii) Churchills and Knights areas.

China Flat

This area is located on the western side of the Mersey River about 6 miles S.S.W. of Latrobe. The oil shale occurs interbedded in a sequence of blue grey coloured mudstones overlying conglomerates all of Permian age.

The area can be divided conveniently into three physiographic zones - the western zone which flanks the western margin of the Permian sequence is composed of rudites and arenites of Ordovician age which form a conspicuous northerly trending ridge. Float from this sequence

extends over considerable areas in the region.

The central zone is composed of flat lying Permian Sediments. The ground slopes gently eastwards and is cut by shallow creeks draining into the Mersey. The oil shale beds in this area occur at relatively shallow depths varying from 3 feet to 151ft. below the surface.

The northern extension of the shale deposit here appears to be limited by dolerite dyke intrusives, however, this needs to be tested by drilling. The southern limit has not been defined but it is expected to extend southeastwards across the Mersey River to the vicinity of Kimerley. Reserve estimates are unreliable, Reid computes the probable reserves in this area at 3,492,000 tons whereas Twelvetrees has estimated reserves at around 2,000,000 tons. It is probable that a large part of the oil shale in this area could be won by open pit mining. However, drilling is necessary to establish the probable reserves more accurately, to outline the depth and extent of the shale bed and to determine what volume can be open cut.

Dolerite was found sub-outcropping at the northern end of China Flat. This dolerite had previously been mapped by Twelvetrees and more recently by a soil scientist from the Forestry Department. The occurrence is not shown on the existing 1:250,000 Sheffield Sheet of the Geological Atlas Series.

China Flat has been explored along widely spaced lines by numerous test pits, 17 shafts, 15 drill holes and three small open pits. The proposed drilling programme envisages 20 holes drilled along the centre of the oil shale area. The primary objectives of

the programme are to test for extensions to the north and south of the known shale areas, to obtain information on the lithologies and drilling characteristics of the Permian sequence down to and including the shale bed for reference when drilling less well known areas, to obtain more accurate information as to the thickness and depth of the oil shale bed and to fill in between the existing widely spaced lines of prospecting shafts, and drill holes.

Knight - Churchill Area

This area is located three miles southeast of Latrobe. Some old tracks traverse the area but these are no longer negotiable by vehicular traffic because of erosion by streams.

The northern area known as Knights has been tested by a number of pits and shafts and drill holes. The writer found no deep workings nor any oil shale on the spoil heaps of the shallow pits seen. However, in the Knights area the shale is reported to be at a depth of 18 feet in No. 6 Shaft, and shale is reported to be outcrop at three other localities. The present writer found a small oil shale outcrop in Bennett Creek in the Churchill area where a small retorting plant had been operated. It is not known if this outcrop is one of the three areas referred to in the Report of the Tasmanian Shale Oil Investigation Committee. The oil shale beds were found to dip at 5° towards the northeast.

It seems likely that a significant tonnage of shale could be proved up for open cut operations in this area. However, because of the very limited amount of prospecting work and exploratory work

that has been done to date, a programme of exploratory drill holes extending from the known southern limit at Churchills northwards to the Knights area is warranted. This exploratory line of holes should give useful information of depth, thickness and grade of oil shale and some indication of the potential of the area.

In the Knights area a small dolerite plug was found in the vicinity of No. 6 shaft. This plug is not shown on the Sheffield Sheet of the 1:250,000 geological atlas series although it is probably the same as that shown on Twelvetrees Map. It is possible that other small dyke like intrusions will be found if the area is opened up for exploitation.

Parramatta Area:

A brief examination was made of this area which is not very prospective for development at this stage, because of the depth beneath the surface at which the shale has been cut by bores and the relatively thin oil shale bed (1ft. to 2ft.) reported to have been intersected.

Two minor differences were noted between the existing 1:250,000 Sheffield Sheet geological map and the present writer's observations. The first was the presence of olivene basalt well to the west of the area shown on the geological sheet, the other is the position of eastern boundary of the quartz mica schist on the eastern side of the Mersey River. The boundary extends further east and further north at the southern bend of the Great Bend of the Mersey River than is shown on the Sheffield Sheet.

LURGI TEST RESULTS

A telex message from Lurgi in connection with tests on the oil shale sample advised that the Lurgi-Rhurgas (L.R.) process would be suitable fermtorting the Tasmanian Oil Shales. A copy of the telex message showing their preliminary test results is attached together with a file memo giving further information in response to questions they were asked regarding some of their report.

At this stage Lurgi's full report has not been translated and the details of the tests carried out are not known. It is hoped that they have done more extensive tests than the Fischer Assay they have reported on.

FUTURE WORK

The most immediate action is to liaise with the Forestry Commission regarding the dozing of roads and access tracks into the China Flat and Knight-Churchill areas prior to drilling.

The current work programme envisages constructing a road commencing near the Mersey River south of Hoggs Bridge and proceeding northwesterly across China Flat to the area known as Olivers, a distance of approximately 360 chains. It is anticipated that the initial boring programme will be in the China Flat area and involve 20 holes of varying depths ranging from 17 feet to about 160 feet.

A bulk sample weighing approximately 500 lbs. is to be collected for reporting to obtain a few gallons of crude oil for coking tests and analyses. The Fischer Assay failed to yield sufficient oil for any additional testing such as specific gravity etc.

ANDEL can do the retorting.

Mr. R. Clements, Mining Engineer is to visit the area in late October to examine the feasibility of using open cut methods to mine the oil shale beds.

COST ESTIMATES

SALARIES, WAGES AND CONSULTANT'S FEES		$2,085.00
Transportation		
Air fares		$ 153.50
Car hire		$ 177.56
Taxis		$ 45.95
Accommodation and meals		$ 230.23
Communications		$ 25.32
	TOTAL	$2,717.56

L.G. NIXON
L.G.B. NIXON & ASSOCIATES

18th October, 1974

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COOKOIL AA31859
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LURGIOEL FFM 19.9.74 10.30 NR. 876/OEL

REF: OIL SHALE LABORATORY TESTS.

1.
TESTS ON YOUR OIL SHALE HAVE BEEN FINISHED. TEST REPORT AND COMMENTS ARE IN TRANSLATION AND WILL BE MAILED SOOENST.
2.
CARBONISATION ASSAY (FISCHER) SHOW FOLLOWING FIGURES:

MOISTURE	3,2 WT O/O
GAS LIQUOR	3,6 ''
OIL	9,0 ''
RESIDUE	80,8 ''
GAS (BALANCE)	3,4 ''

APPROX. 10 WT O/O OIL MAY BE OBTAINABLE BY LR PROCESS,

3.
CARBON CONTENT ON RESIDOE (6 WT O/O) WILL BE O.K. FOR HEATING REQUIREMENTS.
4.
SHALE DISINTERGRATION DURING RETORTING WILL BE SLIGHTLY LOWER THAN IN THE CASE OF COLORADO OIL SHALE AND IS O.K. FOR LR-PROCESS.
5.
LR-PROCESS WILL BE SUITABLE FOR YOUR OIL SHALE.

REGARDS

LURGIOEL WEISS++

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FILE MEMO - TASMANIA - OIL SHALE

30.9.74 Phone call from O'Dea at Lurgi (Melbourne)

(a) Test report on oil shale should be mailed at the end of this week

(b) Density of oil in shale could not be measured because of the size of sample. However from experience it should be approximately 22° A.P.I.

(c) Likewise the composition of the gas liquors could not be measured but tests on Colorado Oil Shales indicate

Ammonia	-	18 grms	per	litre
Oil	-	3.5 "	"	"
Sulphur	-	NIL "	"	"
Phenols	-	0.25 "	"	"

(d) Gas could be used for moistening the dry shale residue before disposal

(e) Balance of gases as per original assay (3.4%)

1.6% - Distillation Gas with density of 1.2 K/GRMS PER CUBIC METRE
- Gross calorific value 7500 KILO/CALORIES PER CUBIC METRE

1.8% - Losses and errors in analyses

No further distribution confirmation letter Received