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VICTOR PETROLEUM & RESOURCES LTD.

TASMANIAN EXPLORATION LICENCE - 6/81

RENEWAL & PROGRESS REPORT TO NOVEMBER 21, 1981

Licence Holder:

Victor Petroleum & Resources Ltd.

Report by:

Messrs. T.G. Summons & K.C. Morrison,

November 27, 1981.

OPEN FILE

AMG REFERENCE POINTS ADDED

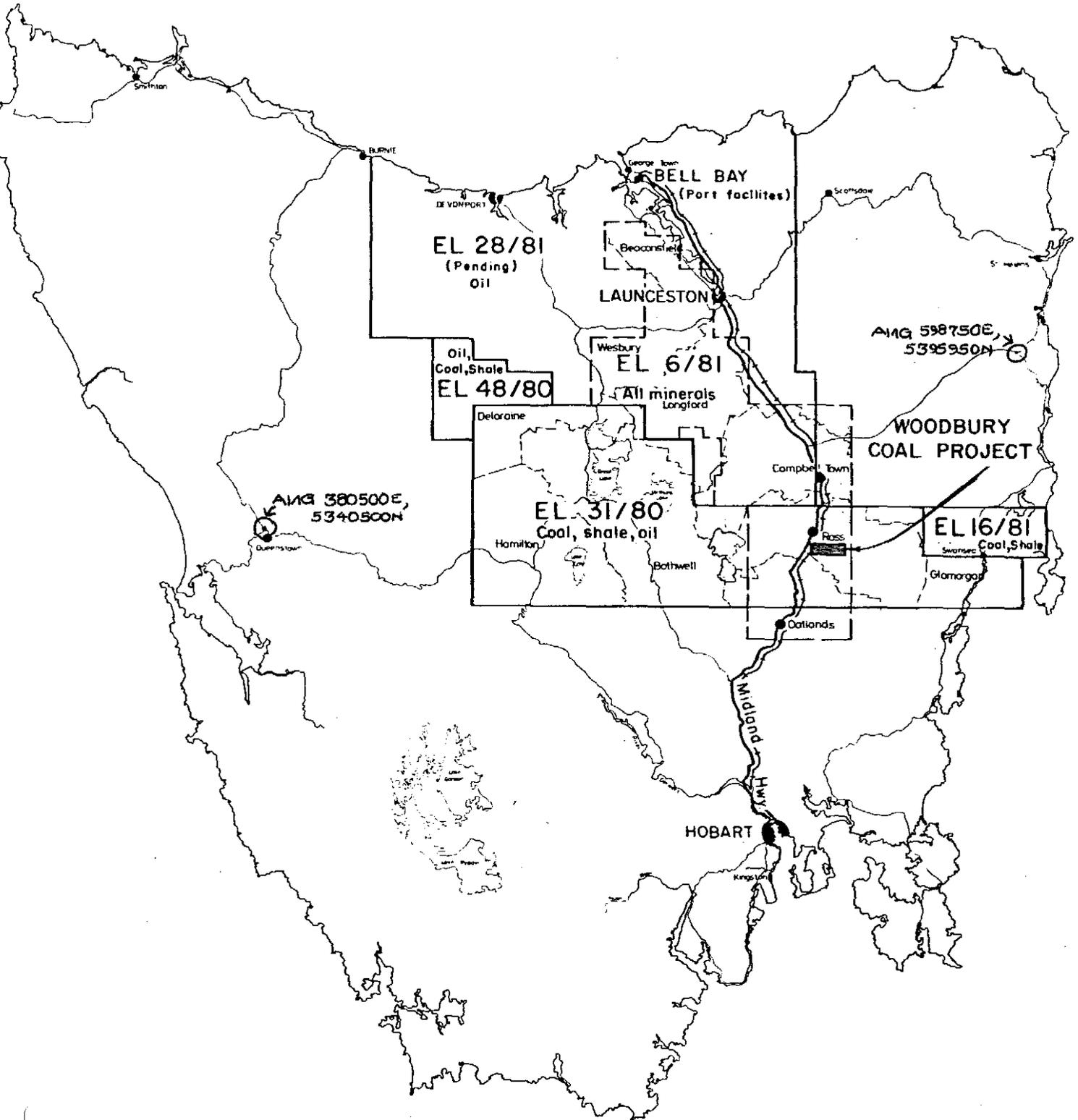
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AMG REFERENCE POINTS ADDED

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VICTOR PETROLEUM & RESOURCES LTD.
 LOCALITY PLAN OF
 E.L. 28/81 , E.L. 48/80 , E.L. 6/81 , E.L. 31/80 & E.L. 16/81

20 10 0 20 40 60 km

MARCH 1981

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EL 6/81

1.0 SUMMARY

Exploration activities during the six month period to November 15, 1981, have consisted of ground geological reconnaissance, drilling (percussion) and logging (geological and geophysical). Consultant geophysicist, Dr. D.E. Leaman, undertook a thorough review of existing geophysical data, with the object of defining the depth and characteristics of the Palaeozoic basement. This report is included as Appendix to Report on EL 31/80.

Work performed during the period may be summarised as follows:-

- Orientation drilling and geological/geophysical logging of dolerite covered areas adjacent to Woodbury.
- Investigation of the bauxite potential.
- Investigation of the silica potential.
- Geophysical data review.

Exploration expenditure for the period totalled \$71,253.

2.0 ORIENTATION DRILLING AND LOGGING

Six percussion scout holes were drilled to the west and east of Woodbury to provide geological and geophysical data in areas of surface outcropping dolerite. The ultimate object of this exercise was to facilitate geophysical survey interpretation of proposed broad scale magnetic and gravity programs. Total drilling amounted to 695m, with 694m of geophysical logging, and 347m (3 holes) of electric and gamma logging using a portable SIE T450E logging unit. Drill hole collar sites, written logs of the holes, and wireline logs of the holes were submitted with the Quarterly Report for EL6/81.

3.0 BAUXITE POTENTIAL

The work on bauxite and potential bauxite occurrences in EL 6/81 has, so far, identified numerous localities of ferricrete and laterite, as shown in Table 1. Ferricrete is defined as all concentrations of iron which are not demonstrably part of a laterite profile; the usage of the term 'ferricrete' is also intended in a non-genetic sense, in contrast to laterites which have a well documented range of requisite paramaters. Laterite is defined as being the product of thorough weathering of a rock, such that a typical profile consists of an upper R₂O₃ (Fe, Al oxides etc.) enriched upper zones overlying a mottled to packed clay zones, in turn overlying a variably developed silificied parent rocks.

Bauxite is the term given to aluminous laterite, which, by examining the data on Australian bauxite deposits/mines, should contain:-

Al ₂ O ₃	(total)	>30%
Al ₂ O ₃	(available)	>25%
SiO ₂	(total)	<22%
SiO ₂	(reactive)	< 5%
Fe ₂ O ₃		<40%
TiO ₂		< 3%

The most important grade parameters are available Al₂O₃ and reactive SiO₂. Available Al₂O₃ is that Al₂O₃ contained in hydroxide form, and amenable to extraction using hot caustic soda (Bayer process). Reactive SiO₂ is that which reacts with caustic soda at temperatures below 140°C, namely the alumino silicates (clay minerals).

Tasmanian bauxite occurrences are believed to have formed over either Jurassic dolerite (Owen, St. Leonards) or Tertiary basalt (Myalla), although some of the bauxite in the Launceston area has formed in part over early Tertiary sediments occupying grabens in the dolerite.

3.0 BAUXITE POTENTIAL (Contd.)

The main problem in any appraisal of laterite/bauxite in Tasmania is the recognition and discrimination of the abundant ferricrete occurrences. Numerous mechanisms for the formation of ferricrete have been cited by various authors, ranging from exhumed soil B horizons, to remnant or incompletely formed laterite profiles.

Ferricrete is often characterized by a concentration of pisolitic goethite (buckshot gravel), but may also be massive in form (hardpan).

Summons et al (1981) recognized two laterite profiles in the Andersons Creek area near Beaconsfield in northern Tasmania; the more completely developed laterite was referred to as the Older Laterite, in contrast to the relatively immature Younger Laterite. These two periods of laterization differ in age by an appreciable period; the Older Laterite being possibly Cretaceous/early Tertiary in age, and the Younger Laterite, late Tertiary/early Quaternary age.

The exploration program for bauxite has been based on two models of bauxite formation:-

- (i) The Mt. Saddleback/Mitchell Plateau type bauxite (mafic parent); this could have formed in either Older Laterite (over dolerite) or Younger Laterite (over dolerite or basalt) time.
- (ii) The Weipa/Gove type bauxite (sediment parent); this could have formed in either Older Laterite (over Mesozoic sediments), or Younger Laterite (over Mesozoic and Tertiary sediments) time.

The known occurrences of bauxite in the Launceston area (Dilston, Rocherlea, Mowbray, St. Leonards, Bridgeworth, Cormiston) are considered to have formed in Older Laterite time, whereas the Myalla and Campbell Town bauxites could be of either Laterite age, depending on the age of the basalts.

3.0 BAUXITE POTENTIAL (Contd.)

Adopting the standards used for the Australian bauxite deposits, the optimum average grade of bauxite that could be expected to have formed from dolerite or basalt in Tasmania would be 30-45% total Al_2O_3 , 33% available Al_2O_3 , total SiO_2 2%, reactive SiO_2 1%, 20-40% Fe_2O_3 and 2% TEO_2 .

Although considerable work was done on Tasmanian bauxite during the period 1941-1950, (Owen, 1954), there is a paucity of reactive SiO_2 data, and data on available Al_2O_3 is incomplete. The limited analytical data shown in Table 1 indicates the Bridgeworth Ecclestone Road and Campbell Town deposits contain satisfactory total Al_2O_3 , marginal to satisfactory available Al_2O_3 and indeterminate reactive SiO_2 .

However, second sampling and analysis of the Rocherlea/Mowbray bauxite deposits by Cormales (F. Bardenhagen, pers.comm.) reveals an average of 28% total Al_2O_3 , 10% available Al_2O_3 , 25% total SiO_2 and 31% Fe_2O_3 . As the dolerite parent is unlikely to have contained 25% quartz, most of the total SiO_2 figure relates to reactive SiO_2 , which is an observation in accord with the figure of 18% Al_2O_3 in the form of clay minerals (kaolin).

Although most Tasmanian bauxite has been found to overly dolerite or basalt, the potential exists for locating laterite/bauxite over sedimentary rocks, the most prospective of which would be the feldspathic/lithic clastics of the Parmeener Super Group.

The largest volume of ferricrete and laterite in EL 6/81 occurs discontinuously in a zone 60 km in length from Westbury to Campbelltown. This belt is marginal to the Longford Basin, and is estimated to contain 28×10^6 tonnes of ferricrete/laterite (using 1m thickness, excepting Campbelltown 2 and 3 deposits, and a density factor of 1.8 C/m^3).

3.0 BAUXITE POTENTIAL

However, field investigations have shown the Westbury, Brackness, Carrick, Macquarie River and Epping Forest West deposits to consist largely of pisolitic ferricrete with minor thin laterite.

4.0 SILICA POTENTIAL

Although siliceous rocks (e.g. chalcedony, petrified wood, chert, contact metamorphics, cemented sediment) have been encountered, usually as float fragments, over much of the area investigated, only 4 promising occurrences of silcrete outcrop have been recognized to date.

4.1 Gavins Tier

Waxy white silcrete associated with laminite and friable sands, bearing bodies of indurated clay. The silcrete contains well-preserved leaves and other plant debris. Diatomite in the laminite may have been the source of silica.

4.2 Rosedale

- Silicified quartz sandstone, with some plane and cross-bedding preserved. Rarely are sand grains preserved. The rock is often mottled cream, red and brown, shows a honeycombed silica texture, and fractures into slabs and blocks. It is spatially associated with both dolomite and basalt.
- A hard chalcedonic silcrete with a characteristic ring with struck with the hammer. This type fractures conchoidally, leaving very sharp edges on the fragments. The silcrete appears to occur in a near-horizontal sheet at least one metre thick and is overlain by basalt. It grades vertically into the above. Plant fossils are common.

4.3 Connerville

Several outcrops of apparently lenticular bodies of silcrete. The silcrete consists of cemented gravels and sands, with common silicified wood and roots. Some roots appear to be orientated normal to bedding, suggesting an origin due to silicification of soil and/or surficial sediments.

4.4 Macquarie River - West Bank

At Macquarie River (east of Woodbury), a layer of partly chalcedonic silcrete (0.5m thick) is underlain by dolerite and overlain by basalt.

The field evidence suggests that several different types of material can host siliceous cementation and thus becomes silcretes. It is not clear whether the presence of basalt has any genetic relationship to the silcrete. Taylor and Smith (1975, in Langford-Smith (Ed) 1978) concluded that basalts overlying silcretes in the Southern Tablelands, N.S.W. had made no chemical contribution to the silcretes. They claim that the role of the basalt was to physically seal off aquifers thus encouraging groundwater saturation and precipitation of silica. Other authors (eg. Gunn and Galloway in Langford-Smith 1978) suggest that adequate silica could be leached from either basalts or sedimentary rocks during weathering. The only mechanism which seems to find no support in the literature, is contact metamorphism.

No evidence suggesting that silcretes are associated with "deep weathering profiles", or laterites, has been obtained from the examples in EL 6/81.

5. GEOPHYSICAL DATA REVIEW

Consultant geophysicist (Dr. D.E. Leaman) compiled a report on all available geophysical data covering EL 6/81.

The report considered seismic, electrical, wireline logging, magnetic and gravity data. Leaman was able to identify several areas (Glengarry and south of Deloraine) where the Precambrian or Palaeozoic basement rocks are within 400m of the surface.

However, much of EL 6/81 is poorly covered by geophysical surveys, and further detailed work (magnetics, gravity) is required to allow more accurate definition of areas of thin dolerite and Parmeener Super Group cover.

Other salient features arising from the work by Leaman are recognition of the Tamar Fracture System, an ultramafic belt, Cambrian volcanics and lower Palaeozoic sedimentary rocks east of the Precambrian Tyenna Geanticline.

In addition, Leaman observed that the thickness of post Carboniferous rocks is generally ≤ 2 km.

This report is included as Appendix 1 to report on EL 31/80.

References:

- Langford-Smith T (Ed) 1978, Silcrete in Australia, Univ. of New England.
Owen, H.B. 1954, Bauxite in Australia.
Summons, T.G., Green, D.C., Everard, J.L., 1981, The Occurrence of Chronite in the Andersons Creek Area, Beaconsfield, Tasmania.

LEGEND

- a Bridgenorth No. 1 deposit referred to as Rosevale by Owen (1954)
- b Bridgenorth Road - Ecclestone Road deposit referred to as Cormiston West by Owen (1954)
- c Average of five grab samples (Revision 1, BHP 2, Analabs 2), results supplied by F Bardenhagen. The deposit is approximately bounded by Bridgenorth Road to the north, and Ecclestone Road to the south.
- d Analytical data for the Ecclestone Road South deposit was taken from the Cormiston East deposit described by Owen (1954)
- e Analytical data for the Westbury deposits was taken from the Westbury deposit described by Owen (1954)
- f Bracknell deposit data based on one grab sample analysed by Analabs Pty. Ltd., result supplied by F. Bardenhagen.
- g Campbell Town No. 2 deposit referred to as the Rosedale and Meadowbank deposits by Owen (1954).
- h Campbell Town No. 3 deposit referred to as the Riccarton deposits by Owen (1954).

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TABLE 1 FERRICRETE & LATERITE IN EL6/81

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MAP QUADRANGLE	LOCALITY	AREA (km ²)	VOLUME m ³ x 10 ⁶	TONNES x 10 ⁶	LEGEND	Al ₂ O ₃		SiO ₂	Fe ₂ O ₃	TiO ₂	LOI	
						T	A					
						%	%	%	%	%	%	
Frankford	Bridgenorth (1)	1.19	1.90	3.42	a	39.3	32.8	8.7	25.5	2.3	-	
	Bridgenorth (2)	0.49	0.49	0.88		-	-	-	-	-	-	
	Bridgenorth East	0.19	0.19	0.34		-	-	-	-	-	-	
Lancasteron	Bridgenorth Rd)	4.26	4.26	7.67	b	37.9	28.2	14.1	23.4	2.6	-	
	- Ecclestone Rd)					38.9	-	11.8	28.2	-	-	
	Ecclestone Rd South	1.09	1.09	1.96	d	33.0	-	16.5	30.4	2.1	17.	
Quamby	Westbury	2.06	2.06	3.71	e	40.7	-	13.3	19.6	2.3	24.	
	Carrick	0.76	0.76	1.37		-	-	-	-	-	-	
	Bracknell	4.69	4.69	8.44		f	36.9	-	11.9	33.9	-	-
	Osmaston	0.47	0.47	0.85			-	-	-	-	-	-
Langford	Carrick East	0.38	0.38	0.68	g	-	-	-	-	-	-	
	Carrick South	0.27	0.27	0.49		-	-	-	-	-	-	
	Western Junction	0.19	0.19	0.34		-	-	-	-	-	-	
	Cressy	0.29	0.29	0.52		-	-	-	-	-	-	
	Hummocky Hill	0.10	0.10	0.18		-	-	-	-	-	-	
Lake River	Stone Quarry South	0.80	0.80	1.44	h	-	-	-	-	-	-	
	Macquarie River	2.50	2.50	4.50		-	-	-	-	-	-	
	Epping Forest West	0.12	0.12	0.22		-	-	-	-	-	-	
	Campbell Town (1)	0.25	0.25	0.45		-	-	-	-	-	-	
	Campbell Town (2)	1.50	2.19	3.94		-	35.9	4.7	-	-	-	
	Campbell Town (3)	1.12	2.24	4.03		41.3	36.5	7.7	17.5	8.5	24.7	
	Campbell Town (4)											
Snow Hill	Campbell Town (3)	1.50	1.50	2.70	i	-	-	-	-	-	-	
	Campbell Town (4)	1.50	1.50	2.70		-	-	-	-	-	-	
TOTALS		25.72	28.24	50.83								

6.0 PROPOSED EXPLORATION PROGRAMME FOR EL 6/81 FOR PERIOD TO
NOVEMBER 15, 1982

Future exploration activities within Exploration Licence 6/81 will consist of:-

- Regional reconnaissance, mapping and appraisal of bauxite and sil/crete deposits to determine the nature and tonnages of materials occurring.
- Field reconnaissance and mapping of areas containing and likely to contain heavy mineral occurrences.
- Field investigation of the occurrence of industrial minerals such as limestone, bentonite, zeolites and diatomite.
- Reconnaissance gravity and ground magnetometer traversing for orientation purpose and to follow up those areas identified by the geophysical review as meeting shallow paleozoic basement criteria.
- Scout open hole drilling of those targets identified by the field mapping.
- Airborne magnetic surveys will be conducted if justified and in conjunction with this company's other Exploration Licences.

An estimated expenditure of \$200,000 is proposed for the period to conduct the necessary and justifiable exploration activities detailed above.

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Victor Petroleum & Resources Ltd.

Incorporated in Victoria

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November 27, 1981.

Department of Mines,
G.P.O. Box 124B,
HOBART, Tas. 7001

Exploration Licence 6/81

Statement of Expenditure for Quarter ended 31st October, 1981

	<u>Total to</u> <u>31.7.81</u>	<u>1.8.81</u> <u>to 31.10.81</u>	<u>Total</u> <u>to Date</u>
1. Salaries & Consulting Fees	\$7,491	\$9,644	\$17,135
2. Travel & Accommodation	1,435	750	2,185
3. Operation & Field Expenses	5,672	1,200	6,872
4. Administration	2,351	2,950	5,301
5. Geochemical Analyses	-	-	-
6. Geophysics Contracts	-	2,227	2,227
7. Drilling	37,533	-	37,533
	<u>\$54,482</u>	<u>\$16,771</u>	<u>\$71,253</u>

Statutory Declaration

I, Ernest Maxwell Allen of 1 Dale Street, Deepdene 3103 Melbourne in the State of Victoria do solemnly and sincerely declare that to the best of my knowledge and belief the above statement of expenditure fulfils the requirements of Schedule "A" (Revised), Conditions of the Special Prospectors' Licences and Exploration Licences under the Mining Act, 1929.

And I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of an Act of the Parliament of Victoria rendering persons making a false declaration punishable for wilful and corrupt perjury.

Declared at Melbourne
in the State of Victoria
this 27th day of November,
1981.

E. M. Allen

Before me:-


A Commissioner of the Supreme Court
of Victoria for taking Affidavits.