

03_4897

Report on the Oakleigh Creek Tungsten Mine -
EL5/1977
Aquitaine Australia Minerals Proprietary Limited; Buka
Anon EL15/1977

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TUNGSTEN MINE
TASMANIA - AUSTRALIA

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SOCIETE D'ETUDES DE RECHERCHES ET D'EXPLOITATIONS MINIERES

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OAKLEIGH CREEK

TUNGSTEN MINE

TASMANIA - AUSTRALIA

82/SYD/05

JANUARY - 1982

SEREM (AUSTRALIA) PTY. LTD.

MINERAL EXPLORATION

55 CLARENCE STREET SYDNEY N.S.W. 2000

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CHAPTER 1

LOCATION AND ACCESS

The Oakleigh Creek mine, previously known as Mount Pelion, is located on the right bank of the Forth River 70 km south of Devonport.

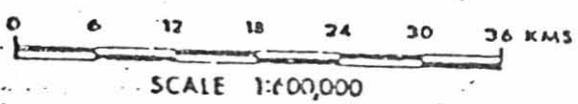
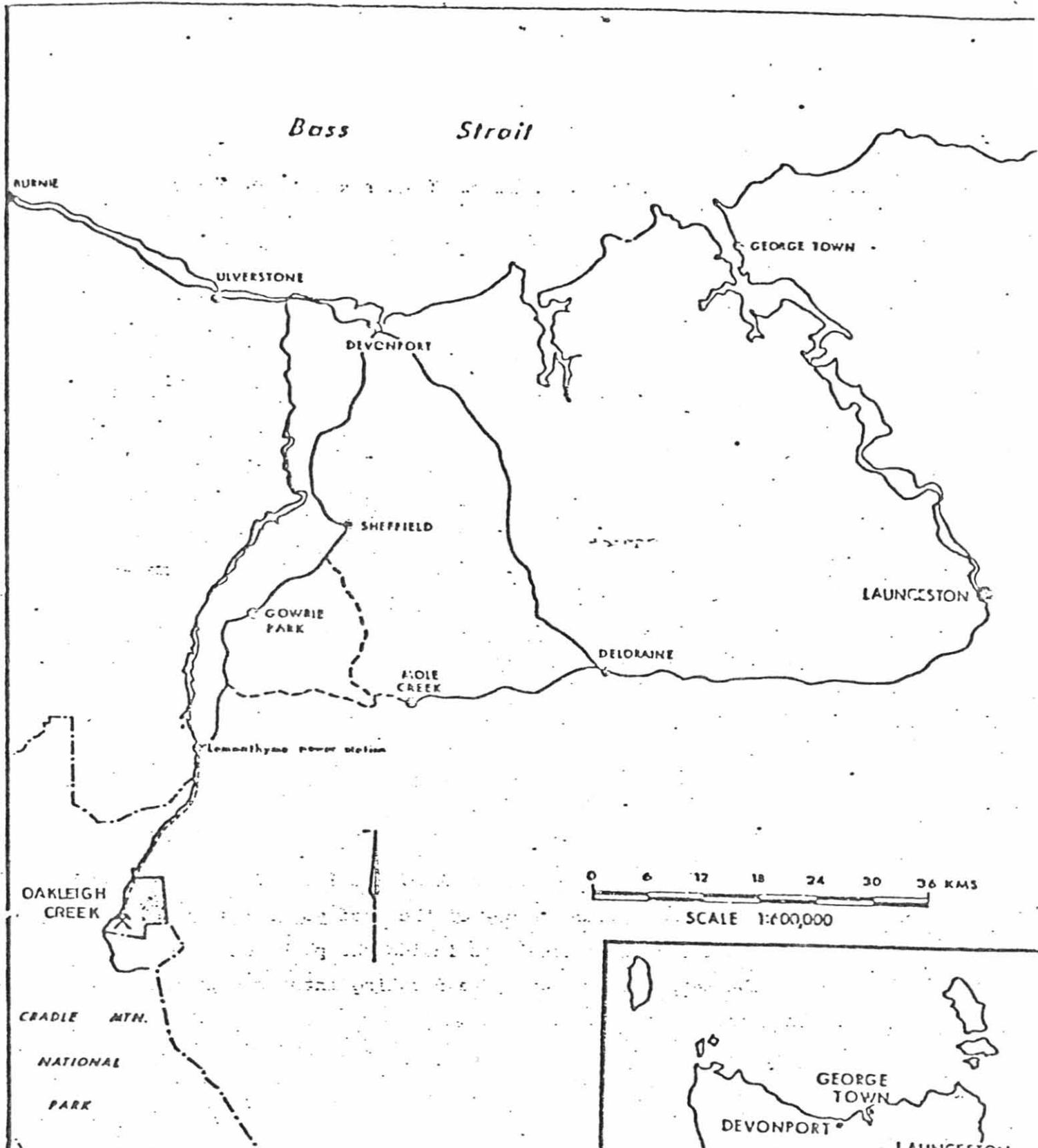
In the upper part of its course the Forth River cuts deeply through the glacial plateau of central Tasmania whose altitude ranges from 1,000 to 1,200 m while the valley bottom at the latitude of the mine is 200 m above sea level. (1)

At this point the valley bottom on the right side of the river is narrow. At the slope bottoms, however, there is a terrace of glacial formations which on the other side is bounded by a steep slope dominating the river by about fifteen metres. This terrace is very important for the setting up of the mine installations. It has a width of about forty metres in the vicinity of the mine works and a width of 150 to 200 m a little further north.

The climate is cold and very humid with precipitation of approximately 2,500 mm per year. This rainfall made possible in the valley bottom the development of rain forest which progressively gives way to eucalyptus forest on the slopes and further downstream.

To the west and on the opposite bank of the Forth River begins the Cradle Mountain National Park which is one of the most popular in Australia. It should be noted that the river itself is inside the park. It appears that the boundaries of the national park were drawn taking into account the existence of the mine.

(1) Levels 240 and 280 which will be discussed below correspond to arbitrary conventional elevations and not to altitudes above sea level.



LOCALITY MAP

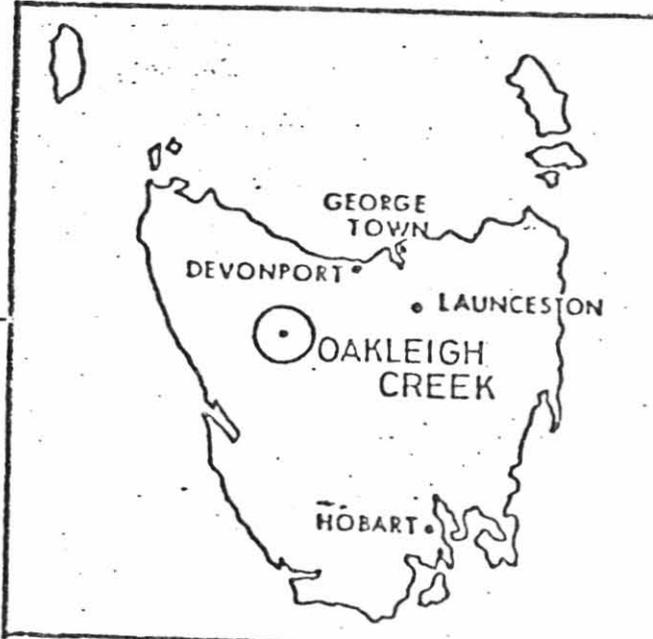


FIGURE 1

Access to Oakleigh Creek is easiest through Devonport. This city is 99 km away by road and the last 26 km consist of forest track. Devonport is a port through which the mine equipment can be shipped.

Other nearby cities are as follows :

- ++ Launceston (150 km by road) is the main city in the north of Tasmania and the administrative centre;
- ++ Burnie (151 km by road) is a small industrial city and ore port where the concentrates from the mine can be loaded.

Smaller towns connected with the project are as follows :

- ++ Sheffield is 66 km by road from Oakleigh Creek and is the closest village in which the families of mine executive could live. It is also planned to set up secretarial services here.
- ++ Gowrie Park is a group of houses 52 km from the mine where the Sheffield township has offered as a campsite for the joint venture. Although this would have several advantages this offer was not accepted because a trip of about 1 hour 20 minutes is involved.
- ++ At the locality called Lemonhyme, 26 km from the mine, there is an uninhabited hydroelectric plant which marks the end of the asphalt road and the closest location at which it is possible to link up with the electrical supply network.
- ++ Deloraine is the township upon which the project will depend administratively since the mine is located on its territory.

Lastly, it should be noted that throughout the northern coast of Tasmania there are many small workshops and construction firms capable of carrying out the kind of work which is usually subcontracted.

CHAPTER 2

LEGAL ASPECTS OF PROJECT

2.1. Project ownership

Participants in the joint venture, which is operated through a trustee company, CENTRAL TASMANIAN TUNGSTEN PTY. LTD., are as follows:

. TRIAKO MINES N.L.	25%
. BUKA MINERALS N.L.	25%
. SEREM (AUSTRALIA) PTY. LTD.,	33-1/3%
. AQUITAINE AUSTRALIA MINERALS PTY. LTD.,	16.2/3%

SEREM (AUSTRALIA) PTY. LTD., is a wholly owned subsidiary of SOCIETE D'ETUDES, DE RECHERCHES ET D'EXPLOITATIONS MINIERES (S.E.R.E.M.) which is itself a wholly owned subsidiary of Bureau de Recherches Géologiques et Minières (B.R.G.M.) a mining and geological agency of the French Government.

BUKA MINERALS N.L. and TRIAKO MINES N.L. are both listed on the Australian Stock Exchange and are controlled by AQUITAINE (AUST. & NEW ZEALAND) LTD.

SEREM is the mining and exploration operator responsible to a Management Committee, which comprises representatives of SEREM, TRIAKO, BUKA and AQUITAINE MINERALS, voting in accordance with the percentage share of each party.

The joint-venture has 4 mining leases which were bought from Scamander Mining Corporation N.L. and Louisa Mining Corp. These leases are surrounded by an Exploration Licence (see figure 2).

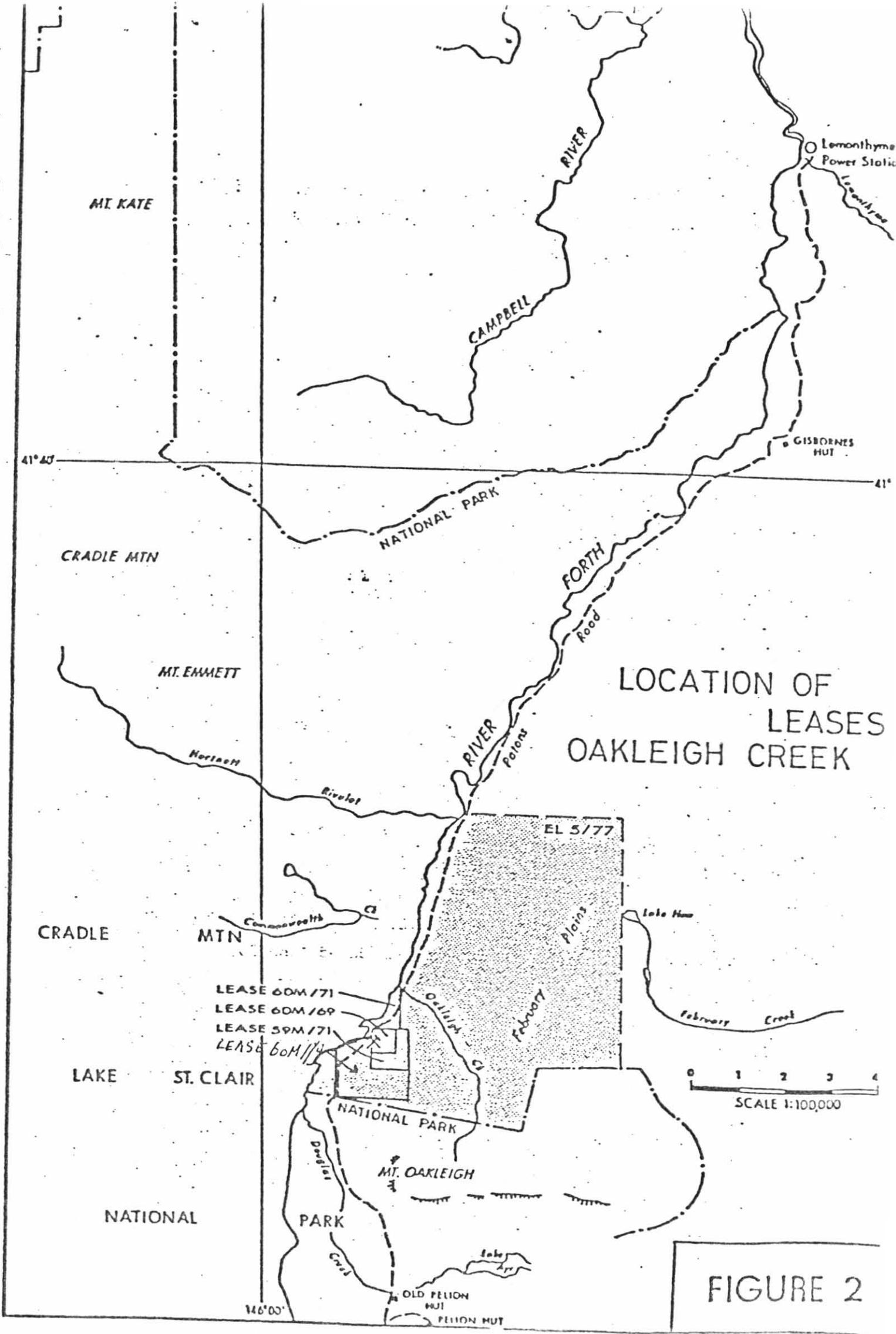


FIGURE 2

CHAPTER 3

GEOLOGICAL BACKGROUND

3.1. General geological background

The Oakleigh Creek mine is located in a Pre-Cambrian metamorphic series consisting essentially of quartzites and micaschists. The trend of the beds in the neighbourhood of the mine ranges from 82° to 109° and their dip from 15° to 27° north.

1,600 m to the northeast of level 240 outcrops the small granitic intrusion of Birthday which traverses the Pre-Cambrian series. There is another granitic outcrop of the same type at Lone Pine 3 km further north. It is believed that these granites are the origin of the tungsten tin and copper occurrences found in this region.

3.2. The main vein

The only ore body of economic interest which is known up to the present time is a quartz vein traversing Pre-Cambrian quartzites. Its trend varies from 170° to 175° and its dip is 75° east. At the outcrop and over the first 70 m of level 240 there is only a single vein with a thickness varying from 30 to 40 cm. Further south it frequently breaks up into a bundle of two or three parallel veinlets with an accumulated quartz thickness of between 30 and 50 cm while the total thickness including the intercalated gangue ranges from 1 m to 2 m.

In addition to the quartz the minerals usually observed in the vein are as follows: tourmaline, wolframite, muscovite, goethite, siderite, fluorite, pyrite, mispickel, bismuthinite and cassiterite. Sphalerite, chalcopyrite and pyrrhotite are observed more rarely. Tourmaline is found mainly on the edges of the vein and is very abundant in the walls. It should be noted that scheelite is practically absent.

This mineralogical composition resembles that at Storey's Creek and Rossarden. Cassiterite and fluorite are, however, less abundant and

no concentrates of muscovite or pyrite are observed along the walls.

To the north of the portal of level 240 the vein disappears under glacial formations. Hall and Relph (1970) as well as Fleming (1977) state that the extension of the vein was found on the western bank of the Forth River in the National Park. This statement could not be confirmed by the SEREM geologists and should be considered very hypothetical.

CHAPTER 5

UNDERGROUND MINING

5.1. Mining method

5.1.1. Choice of mining method

The geometrical and geotechnical characteristics on the basis of which a working method for Oakleigh Creek can be chosen are as follows :

- . subvertical and regular vein with working widths of between one and two metres ;
- . walls with very good stability.

Under these conditions, two working methods were considered :

- . open overhand or underhand stoping ;
- . shrinkage stoping.

The two methods have comparable costs and each has advantages and disadvantages.

Open underhand stoping was considered in the first studies. The principal argument in its favor was that it eliminated the problem of blockage during drawing from a one meter wide stope which is the major disadvantage of shrinkage stoping.

However after further examination, shrinkage stoping was chosen for the following reasons :

- . recent exploration work showed that the average stope width would often be greater than one meter (see § 5.1.2). Under these conditions, drawing becomes much easier ;
- . personnel and the Department of Mines would at the present time be unlikely to accept the work and safety conditions involved in open stoping ;
- . local miners are much better acquainted with shrinkage stoping methods.

Once shrinkage stoping is decided upon, other choices must be made.

5.1.2. Haulage adit in the vein ore in the foot-wall

This is a classical alternative and it is not necessary to insist upon the advantages of an adit gallery in the foot-wall parallel to the vein. It should only be noted that in the case of shrinkage stoping, this solution would make it possible to eliminate shutes and this facilitates extraction.

The adit in the vein is more profitable in the short term because it can be constructed more quickly and has a lower operating cost. This solution will therefore be used for starting up the mining operations. For the sake of simplification, this is the only solution which will be considered in this report. The haulage adit in the foot-wall could however be more profitable in the long term and a test could be made when a new stope is to be prepared.

Both solutions are adaptable to rail as well as truck haulage.

5.1.3. Geometry of standard mining panel (cf. figure 4)

a) *distance between levels* : 40 m

b) *standard length of panels* : 50 m

These two parameters were chosen so as to give a reasonable mining time. Working with one shift, 7.5 months of working are necessary before beginning to empty the stopes.

c) *average stope width* : 1.20 m

This parameter is obviously not chosen but imposed by the mineralization (cf. § 4.4). During mining operations an effort should be made to keep this width as narrow as possible except for the base sublevel where a minimum of 1.20 m should be kept in order to avoid blockage.

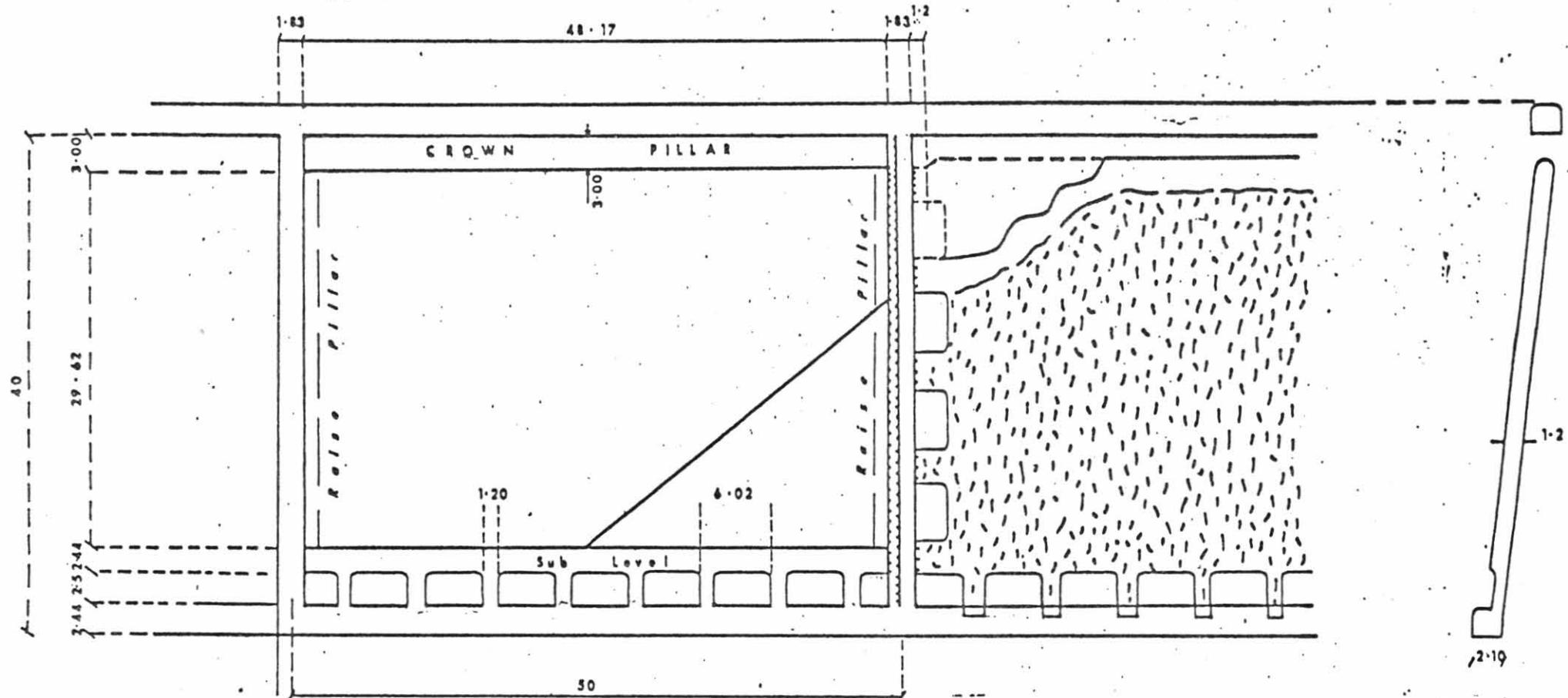
d) *base adit with 2.25 x 2.40 section.*

The height of 2.40 m is imposed so as to allow ducts (ϕ 500) to be laid down easily. The width of 2.25 is an average. There is a width of 2.10 m at level 280 since the hauling will be very short. The width will be slightly greater at levels 200 and 160 where hauling will be trackless.

e) *main raises : section 1.83 x 1.20 m*

The length of 1.80 m makes it possible to divide the raise if necessary into an ore compartment and a passage compartment. These passages will serve as means of access to the stope face. A timber partition will have to be built between the passage and the stope filled with blasted ore as the latter fills up.

It is planned to leave protective pillars on the ore compartment side. These pillars can partly be recovered at the time the raise is abandoned and the possibility of recovering half of these pillars is taken into consideration in this report.



50 METRE STOPE BLOCK DIMENSIONS

STOPE BLOCK	Dimensions	Volume (tonnes)	Notes
STOPE BLOCK on main drive	50 × 37.56 × 1.2 × 2.7	6085	tonnes
SUB LEVEL DRIVE	48.17 × 2.44 × 1.2 × 2.7	381	"
MAIN RAISE (1/2 each end of block)	37.56 × 1.2 × 1.83 × 2.7	223	"
SILL PILLAR	48.17 × 2.5 × 1.2 × 2.7	390	"
CHUTE RAISE	8 × 1.20 × 1.20 × 2.5 × 2.7	78	"
CHUTE CONES	8 × 1 × 1 × 1.20 × 2.7	26	"
ADJUSTED SILL PILLAR	390 - 78 - 26	286	"
CROWN PILLAR	48.17 × 2.7 × 1.2 × 3	468	"
PART RAISE PILLAR (half)	1.0 × 1.2 × 29.62 × 2.7	96	"
ORE IN STOPE	29.62 × 1.2 × 46.17 × 2.7	4431	"

ORE DISTRIBUTION in TONNES per 50 METRE' STOPE BLOCK

	DEVELOPMENT	IN SITU	RUN OF MINE
SUB LEVEL DRIVE	381		
MAIN RAISE (2 × 1/2)	223		
CHUTE RISE (8)	78		
CHUTE CONE (8)	26		
ADJUSTED SILL PILLAR		286	
CROWN PILLAR		468	
PART RAISE PILLAR (2) remains		96	
PART RAISE PILLAR (2) extracted			96
ORE IN STOPE			4431
TOTALS	708	850	4527
TOTAL STOPE BLOCK	6085		

SCALE 1:500

6) *safety pillars at base level*

These safety pillars are shown in fig. 4. Their recovery will be rather hypothetical as the hauling in the vein solution is chosen. Obviously if the haulage adit in the foot-wall had been chosen, no safety pillars would be left above the base level.

5.1.4. Back filling of empty stopes

Since the safety pillars are considered sufficient to protect the levels it is not planned to back fill the empty stopes. However if circumstances make this necessary it would be easy to dump jig waste into the chambers from the upper level.

The corresponding increase in the cost price is \$2-3 per cubic metre of back fill depending upon the transport distance. This operation will however be exceptional and its cost is included in "adit maintenance and miscellaneous".

INTERIM REPORT

OAKLEIGH CREEK MINE - INTERIM REPORTPREPARED FOR C.T.T. MEETING - JUNE 16TH, 1981I. MILL1.1) Plant operating results (see appendix 1A - 1B)

	<u>First Quarter</u>	<u>April</u>	<u>May</u>	<u>Total</u>
Mill throughput (t)	7,145	2,114	3,045	12,304
Estimated Rough Concentrate recovered (kg)	40,189	13,688	18,197	72,074
Estimated Grade Recovered as Rough concentrate (kg/t)	5.62	6.47	5.98	5.86
Hours available (hr)	870.00	282.50	320.00	1472.50
Running Hours (hr)	594.75	172.25	249.50	1016.50
Operating Capacity (t/hr)	12.00	12.25	12.00	12.00
Plant Availability (%)	68	61	78	69

1.2) Concentrate production (see appendix 2)

	<u>Up to 27/03</u>	<u>27/03-22/05</u>	<u>02/05-30/05</u>	<u>Upto 30/05</u>
<u>Rough Concentrate</u> (kg)				
Opening Stock	3160	3000	100	3160
Estimated Production	39785	15052	17237	72074
Estimated Conc. Treated	39945	17952	16767	74664
Closing Stock	3000	100	570	570
<u>Clean Concentrate</u> (kg)				
Opening stock	900	3825	10500	900
Production	38925	13875	14700	67500
Shipment	36000	7200	14400	57600
Closing Stock	3825	10500	10800	10800
<u>Plant Recovery</u>				
Cumulative Mill throughput (t)	7043	9414	12304	
Cumulative Clean Conc. Prod. (kg)	38925	52800	67500	
Recovered Grade as clean conc. (kg/t)	5.53	5.61	5.49	

1.3) Major Maintenance Operations and Plant Alterations

<u>Downtime</u>	<u>April</u>	<u>May</u>
Secondary crusher and P1 pump	13%	61%
P5 Jig tailings pump and line	5%	8%
P2/P4/P8 pumps, lines, cyclones and Rod Mill	60%	11%
P6/P9 pumps, lines, cyclones and whims	5%	-
Start up and shut down		8%
Others (individually being less than 5%)	17%	12%
	<hr/>	<hr/>
TOTAL	100%	100%

In April, the major downtime factor was due to the replacement of the rod mill liners (4 days).

In May, the secondary crusher gave serious operating and mechanical problems and accounted for more than 60% of the downtime. Concave and mantle were replaced twice in the month and the shoulders were repaired several times.

The 30 mm and 3 mm decks of the screen were replaced respectively in April and May.

Comments

The major repairs and plant alterations were carried on during the first four months. As a result, the plant was operating in May at 78% availability, the highest figure since the beginning of the year. However, because skilled workers have left the Company, the plant availability could drop during the few months left before closure.

2) MINE2.1) Mine production (see appendix 3)

During the period covered by this interim report (24/03-04/06), 1290 t of ore were broken mainly in the 240/102 stope (1003 t). 245 tonnes of unbroken ore were discarded in this stope due to very bad hanging wall conditions.

Mining was halted May 21st and only one miner was kept for ore tramping.

During the same period 6284 t of ore were trammed to the plant, mainly from the 240 level stopes (5206 t). The ore from the 280 level stopes is drawn through the stopes of the 240 level to avoid long haulage distances.

During the period 64 t were treated from the #1 Stockpile.

2.2) Development

Nil.

../3

2.3) Ore Reserves (as at June 4th)

Low Grade Ore Reserves	1928 t
Reserves (excluding low grade ore)	2985 t
Stockpile	1950 t (Rough Estimate)

Assuming that the plant will be working at an average of 2250 t per month, the reserves will be depleted by the middle of July. Additional ore is expected to be recovered from the low grade ore reserves and from the stockpiles. Therefore, plant closure should be foreseen for August.

3. SALES (See Appendix 4)

During the period covered by this interim report, 45.60 t of wolframite concentrate were delivered to customers in five shipments (including shipment 9 due June 22nd) for a total value of US\$ 468,135 - A\$ 407,074 (1.15 conversion factor).
 Average Grade During the period 72.2% W_3
 Average price received during the period US\$ 142.18 - A\$ 123.64 per mtu.
 Concentrate Stock at end of May 3600 kg

4. INCOME AND EXPENSES4.1) Up to May 30th

		<u>Per Unit</u>	<u>Per Unit</u>
		<u>Income (\$)</u>	<u>Expenses (\$)</u>
Grade recovered	kg/t 5.5		
W_3 content	% 71.4		
Recovered concentrate	t 67.5	8,925	6,322
Tonnes treated	t 12304	49	35

Price received per unit	A\$ 125
Income	\$ 602,438
Expenses	\$ 426,704
Revenue	\$ 175,734

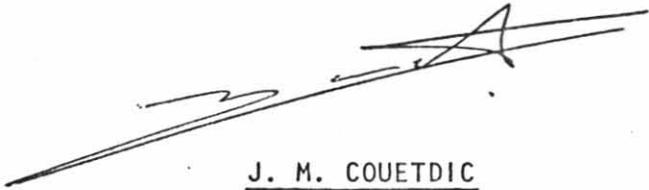
Cut off grade 3.9 kg/t.

4.2) Up to plant closure

<u>Expenses</u>	<u>June</u>	<u>July</u>	<u>TOTAL</u>
C.T.T.	60,000	60,000	120,000
Management Fees	10,000	7,000	17,000
Extraordinary Exp.	6,500	-	6,500
Drilling	15,000	-	15,000
Others	8,500	4,000	12,500
TOTAL	100,000	71,000	171,000

Income

Plant Throughput 2250 t x 2	=	4,500 t
Recovered grade as clean concentrate	=	5.25 kg/t (assumed to be slightly lower)
Clean concentrate	=	23.6 t
WO ₃ content	=	72%
Unit WO ₃ produced	=	1700 unit
Price per unit	=	125 A\$/mtu
Income	=	\$ 212,500
Expenses	=	\$ 171,000
Revenue	=	\$ 41,500


J. M. COUETDIC
15/06/81

D	Tonnes Treated	Rough Conc.	Rec Grade	Cum. Tonnes Treated	Cum. Rough Conc. Prod.	Cum. Grade Rec.	Hours Worked (hr)		Cum. Hours Worked (hr)		Production Actual	Rate (t/h)
	(t)	(kg)	(kg/t)	(t)	(kg)	(kg/t)	Pr	T	Pr	T		
1	170	1011	5.95	170	1011	5.95	14.25	17	14.25	17	12.0	12.0
2	130	945	7.27	300	1956	6.52	12.00	17	26.25	34	11.0	11.0
3	47	280	5.96	347	2236	6.44	4.25	11.5	30.50	45.5	11.0	11.0
4	28	180	6.43	375	2416	5.81	2.75	3.0	33.25	48.5	10.0	11.0
	SUNDAY											
6	139	569	4.09	514	2985	5.81	11.75	15	45.00	63.5	12.0	11.0
7	50	283	4.46	564	3208	5.81	4.75	17	49.75	80.5	10.5	11.0
8	0	0	-	564	3208	5.81	0	17	49.75	97.5	-	11.0
9	0	0	-	564	3208	5.81	0	17	49.75	114.5	-	11.0
10	0	0	-	564	3208	5.81	0	8	49.75	122.5	-	11.0
11	SATURDAY											
12	SUNDAY											
13	79	420	5.32	643	3628	5.64	6.25	16	56	138.5	12.5	11.0
14	115	1120	9.74	758	4748	6.26	11.00	18	67	156.5	10.5	11.0
15	192	1240	6.46	950	5988	6.30	16.00	18	83	174.5	12.0	11.0
16	129	774	6.00	1079	6762	6.27	10.00	12	93	186.5	13.0	11.0
17	GOOD FRIDAY											
18	SATURDAY											
19	SUNDAY											
20	EASTER MONDAY											
21	159	929	5.84	1238	7691	6.21	13.25	15	106.25	201.5	12.0	11.0
22	198	1577	7.96	1436	9268	6.45	14.00	18	120.25	219.5	14.0	12.0
23	56	430	7.68	1492	9698	6.50	5.75	6.25	126.00	225.5	10.0	12.0
24	81	540	6.67	1573	10238	6.51	7.25	7.75	133.25	233.5	11.0	12.0
25	SATURDAY											
26	SUNDAY											
27	PUBLIC HOLIDAY											
28	177	1090	6.16	1750	11328	6.47	12.25	15	146.00	248.5	14.0	12.0
29	188	1190	6.33	1938	12518	6.46	13.50	17	159.50	265.5	14.0	12.0
30	176	1170	6.65	2114	13688	6.47	12.75	17	172.25	282.5	14.0	12.0
31	/ / / / /											
TOTAL	2114	13688	6.47				172.25	282.5	AVAILABILITY 65%		12.25	

DA	Tonnes Treated	Rough Conc.	Rec Grade	Cum. Tonnes Treated	Cum. Rough Conc. Prod.	Cum. Grade Rec.	Hours Worked		Cum. Hours Worked		Production	
							(hr)		(hr)		(t/h)	
							Pr	T	Pr	T	Actual	C
1	115	700	6.09	115	700	6.09	10	11.5	10	11.5	11.5	11
	40	260	6.50	155	960	6.19	4	5	14	16.5	10.0	11
	SUNDAY											
4	111	640	5.77	266	1600	6.02	8.5	15	22.5	31.5	13.0	14
	195	1320	6.77	461	2920	6.33	14.0	17.0	36.5	48.5	14.0	12
6	196	990	5.05	657	3910	5.95	14.5	17.0	51.0	65.5	13.5	12
	145	810	5.59	802	4720	5.89	11	17	62.0	82.5	13.0	12
8	88	480	5.45	890	5200	5.84	6.75	7.75	68.75	90.25	13.0	13
	SATURDAY											
10	SUNDAY											
	132	820	6.21	1022	6020	5.89	12	15	80.75	105.25	13.0	12
12	109	540	4.95	1131	6560	5.80	9.75	17	90.50	122.25	11.0	12
13	101	640	6.34	1232	7200	5.84	7.25	17	97.75	139.25	14.0	12
14	171	980	5.73	1403	8180	5.83	13.5	17	111.25	156.25	12.5	12
15	86	720	8.37	1489	8900	5.98	7	7	118.25	163.25	12.5	12
	SATURDAY											
17	SUNDAY											
	156	1101	7.06	1645	10001	6.08	13.75	15	132.00	178.25	11.5	12
19	175	1087	6.21	1820	11088	6.09	15	18	147	196.25	11.5	12
	157	793	5.05	1977	11881	6.01	12.75	16	159.75	212.25	12.5	12
21	170	1046	6.15	2147	12927	6.02	14	17	173.75	229.25	12.0	12
	42	330	7.86	2189	13257	6.06	3.75	8	177.5	237.25	11.0	12
22	SATURDAY											
	SUNDAY											
23	130	820	6.31	2319	14077	6.07	11.00	15.00	188.50	252.25	12.0	12.5
26	172	1160	6.74	2491	15237	6.12	14.75	17.00	203.25	269.25	11.5	12.5
	190	1170	6.16	2681	16407	6.12	15.50	17.00	218.75	286.25	12.5	12.5
28	198	1140	5.76	2879	17547	6.09	16.25	17.00	235.00	303.25	12.0	12.0
	116	500	4.31	2995	18047	6.03	10.00	11.75	245.00	315	11.5	12.0
30	50	150	3.00	3045	18197	5.98	4.50	5.00	249.5	320	11.0	12.0
	SUNDAY											
TOTAL	3045	18197	5.98				249.50	1520.00	AVAILABILITY 78%		12.0	

STOPES (1)	1979 1980	1981 Balance Forward	Second quarter 1981 (Interim Report)							TOTAL
			07/04	31/04	05/05	19/05	04/06	12/06		
<u>BROKEN</u>		up to 24/03								
240/101	1853		-	-	-	-	-	-	-	-
240/102	2228	1344	337	201	112	353	-	-	-	1003
240/103	5300		-	-	-	-	-	-	-	-
240/104	2211	1973	287	-	-	-	-	-	-	287
240/105	2437		-	-	-	-	-	-	-	-
280/102	1096	179	-	-	-	-	-	-	-	-
280/103	2998	276	-	-	-	-	-	-	-	-
280/104	2496	-	-	-	-	-	-	-	-	-
280/105										
TOTAL	20 669	3772	624	201	112	353	-	-	-	1290
<u>DRAWN</u>										
240/101	806	910	-	-	-	-	-	-	-	-
240/102	776	436	60	76	44	200	924	-	-	1304
240/103	2132	2771	378	80	-	16	-	-	-	474
240/104	664	476	64	404	1300	1004	20	-	-	2792
240/105	1191	-	-	-	-	80	556	-	-	636
280/102	356	44	-	-	-	-	488	-	-	488
280/103	1144	1816	590	-	-	-	-	-	-	590
280/104	1365	-	-	-	-	-	-	-	-	-
280/105										
TOTAL	8434	6453	1092	560	1344	1300	1988	-	-	6284
<u>BALANCE</u>										
240/101	1047	137	137	137	137	137	137	-	-	Low grade
240/102	1452	2360	2637	2768	2830	2983	2059	-	-	-
240/103	3168	387	19	(-61)	(-61)	(-77)	-	-	-	Empty
240/104	1547	3044	3267	2863	1563	559	539	-	-	-
240/105	1296	1296	1296	1296	1296	1216	660	-	-	Low grade
280/102	740	875	875	875	875	875	387	-	-	-
280/103	1254	314	(-276)	(-276)	-	-	-	-	-	Empty
280/104	1131	1131	1131	1131	1131	1131	1131	-	-	Low grade
280/105										
TOTAL	12235	9554			7832	6901	4913		Reserves Excl. low grade ore	2985

CENTRAL TASMANIAN TUNGSTEN PTY. LTD.

ORE SALES DATA C.T.T.REPORT TO 12/06/81

SHIPMENT	PRESHIPMENT ANALYSIS (% WO ₃)	TONNAGE (T)	UNITS (MTU)	PRESHIPMENT VALUE (\$US)	DATE SHIPPED
No. 1	70.53	16.8	1184.90	178031.78	5.9.80
No. 2	71.53	7.2	515.02	70685.95	16.1.81
No. 3	71.53	12.0	858.36	117809.91	16.3.81
No. 4	70.25	19.2	1348.80	199622.40	16.3.81
No. 5	71.4	4.8	342.72	49204.31	11.4.81
No. 6	72.32	12.0	867.84	124387.51	16.4.81
No. 7	71.9	7.2	517.68	72407.90	15.5.81
No. 8	72.00	7.2	518.40	72576.00	13.5.81
No. 9	72.63	14.4	1045.87	149559.41	22.6.81
TOTAL		100.8	7199.59	1034285.17	

Wt. Average Grade = 71.42%

Av. Price Received = US\$ 143.66 / mtu

= A\$ 124.92/mtu (1.15 conversion)

OAKLEIGH CREEK MINE - BREAKDOWN OF OPERATING COSTS 1981

PREPARED FOR CTT MEETING - JUNE 16TH, 1981

1) BREAKDOWN OF OPERATING COSTS FOR 1981

Table 1 gives a monthly breakdown of the Oakleigh Creek Mine operating costs with SEREM's Management Fees for each corresponding month.

From the monthly total cost excluding SEREM management fees, we suggest to deduct:

- a) Freight Outward which is representative of the sales realisation costs and therefore should be deducted from the sales proceeds.
- b) Extraordinary Expenses of large amounts which occur once a year and can be averaged over each month (for a one year operation!).

	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>
TOTAL (000%)	94	55	64	95	63
To deduct Freight Outward	2			7	3
Extraord. Exp.	23			26	
TOTAL (000%)	69	55	64	62	60

N.B. The low figure in February may be due only to the change in the accounting system.

It is shown that monthly operating costs were fairly constant over the last five months with an average figure of \$62000. In fact, the release of workers is mostly affected by the necessity to pay holiday leave on their departure and the slight increase in overtime. This situation will continue until plant closure and very little reduction in labour cost is foreseen for the next two months.

2) COMPARATIVE MONTHLY COSTS 1980/1981

Table 2, gives a comparison of the monthly average costs over the last six months for 1980 and the first five months for 1981.

3) INCOME FROM SALES

Table 3, gives the sales proceeds since the beginning of the year.

.../...

	January	February	March	April	May	June	July	August	September	October	November	December
3.0 LABOUR COST	26 223.56	28 476.55	28 618.50	44 642.10	29 054.28							
1.1 WAGES	24 984.56	27 119.05	27 295.75	38 455.89	27 884.06							
1.2 WAGES ON COSTS	1 239.01	1 357.50	1 322.75	16 186.22	1 170.22							
2.0 MILL CONSUMABLES	19 157.50	4 865.34	10 582.27	10 662.54	7 159.66							
3.0 MINE CONSUMABLES	5 679.46		1 809.04	2 229.07	1 887.13							
4.0 CAMP CONSUMABLES	3 423.00	1 420.40	2 707.38	1 245.15	1 773.45							
5.0 WORKSHOP CONSUMABLES	2 746.96	126.09	2 686.96	1 317.94	590.15							
6.0 OFFICE COSTS	735.00	3 768.76	712.49	11 336.00	5 028.22							
6.1 Direct Exp	735.00	3 738.06	712.49	337.33	2 355.70							
6.2 Tax - Duty		24.71		63.50	177.52							
6.3 Legal fees + Ins				10 335.17	2 495.00							
7.0 FREIGHT INWARD	857.29	555.88	374.76	904.06	809.19							
8.0 FREIGHT OUTWARD	2 519.06	230.00	568.53	7 402.14	3 231.50							
9.0 TRANSPORT VEHICLES	567.66	940.81	628.92	573.37	988.47							
10.0 MOBILE EQUIPMENT	952.01	268.60	386.74	446.47	45.00							
11.0 FUEL AND LUBE	6 980.55	11 810.26	10 979.23	7 942.38	11 501.69							
12.0 EXTERNAL COSTS	619.35	497.30	401.96	3 439.46	234.71							
13.0 EXPLOSIVES		2 254.60	1 505.75	3 856.22								
14.0 TRAVEL EXPENSES		42.70	538.00		73.55							
15.0 CAPITAL EXPENDITURE	25 333	80.00	1 000.00									
TOTAL	93 824.70	53 324.29	64 036.93	94 997.50	68 637.00							
REM Reimbursed Costs	8 366.67	15 164.48	13 690.78	8 857.07	9 784.92							
TOTAL	102 191.37	70 488.77	77 727.71	103 854.57	78 421.92							

CENTRAL TASMANIAN TUNGSTEN PTY. LTD.

TABLE 2 : C.T.T. - COMPARISON OF 1980/1981 MONTHLY COSTS

<u>ITEM</u>	<u>MONTHLY AVER. 1980</u>	<u>MONTHLY AVER. 1981</u>	<u>COMMENTS</u>
	(Over last 6 Months)	(Over First 5 Months)	
Wages	46500	27150	
On Costs	7430	4255	
Ratio	16%	16%	
Mill Cons.	16545	10500	
Mine Cons.	18750	3845	Including Explosives and Compressed Air
Comp Cons.	3040	2115	
Workshop Cons.	3260	1495	Including Power Supply
Office cost	3415	* 4315	1980 : Over 12 months
Freight Inward	743	820	
Freight Outward		2790	
Transport Vehicles	1890	740	
Mobile Equipment	5445	420	
Fuel and Lube	11170	9845	
External Costs		890	
Travel Expenses	225	130	

* Insurance, Audit and Car Registration paid for the year.

CENTRAL TASMANIAN TUNGSTEN PTY. LTD.

TABLE 3 : NET INCOME FROM SALES

(P. Provisional - F. Final)

<u>MONTH</u>	<u>SHIPMENT</u>	<u>INCOME</u>	<u>TOTAL</u>	<u>ACCUM.</u>
January	2/P	53,881.05		
	3/P	89,801.81	143,682.86	143,682.86
February	1/F	22,649.95	22,649.95	166,332.81
March	4/P	96,929.54	96,929.54	263,262.35
April	4/P	57,751.07		
	5/P	38,349.37		
	6/P	97,287.52	193,387.96	456,650.31
May	7/P	57,205.30		
	8/P	57,024.07	114,229.37	570,879.68
June (Estimates)	9/P	132,353.46		
	2/F	12,040.12	144,393.58	713,273.26

OAKLEIGH CREEK MINE - OPTIONS FOR CLOSURE

(Prepared for CTT Meeting - June 16th
1 9 8 1)

1) OPTIONS FOR CLOSURE

According to the drilling results, the following options can be envisaged.

1.1) Positive Drilling Result

Exploration

More drill holes can be envisaged to assess potential reserves before planning new mine development or looking for potential buyers.

Mine

Dismantling of the mine - Flooding - Closure.

Sales of mobile equipment only or of all mining equipment

Plant

Care and Maintenance

Sales of one generator (or more) to be replaced by a small one.

1.2) Negative Drilling Result

Two options can be envisaged.

A- Selling the property. Potential buyers can be difficult to find.

The plant will be put on care and maintenance basis. See above for action that could be implemented as regards to Mine and Plant.

B- Dismantling the property.

This option will implement the following actions:

- . Dismantling of the mine, flooding and closure
- . Sales of major equipment
- . Dismantling and auction sales

Auction Sales can be on site or off site (Sheffield - Devonport)

- . Rehabilitation.

CENTRAL TASMANIAN TUNGSTEN PTY. LTD.

2) PRELIMINARY COST ESTIMATES

2.1) Care and Maintenance (One year)

		INCOME	EXPENDITURES
Care-taker 12 x \$2,000		-	28,000
Transport care-taker, maintenance, fuel		-	23,000
Supervision Serem, administration, telephone, ML rents, misc. 12 x \$1500			18,000
Payment to Scamander Feb 1982			23,000
Purchase small generator			8,000
Sale of 913 Loader		80,000	
911 Loader		15,000	
Wagner truck		90,000	
Eimco truck		5,000	
Misc. mining equipment		20,000	
Generators 3 x 15,000		45,000	
TOTAL	\$ 155,000	255,000	100,000

2.2) Dismantling plant and rehabilitation

		INCOME	EXPENDITURES
Supervision Serem, 3 months at \$10,000		-	30,000
Dismantling plant, transport		-	100,000
Rehabilitation		-	30,000
Payment to Scamander Feb. 1982		-	23,000
Sale of mining equipment & Generator		255,000	-
Sale of other equipment		100,000	-
TOTAL	\$ 172,000	355,000	183,000

ORE POTENTIAL IN THE AREA

Potential deposits in the area can be classified as follows:

- a) The main vein below the 240 m level.
- b) Parallel veins.
- c) The granite contact zone.
- d) Other areas in the region.

a) The main vein

The following information is available on the main vein below the 240 m level.

200 m level drive: this drive, reached by a decline, follows the vein over a length of 210 m.

Several 100 Tonnes of sample were taken and treated in the plant. Head-grades were calculated and the following results were obtained (from South to North):

Sampling length group of samples	Average grade % WO_3	Average width of vein
36.7 m	0.69	0.31 m
40.1 m	1.08	0.37 m
48.8 m	1.36	0.37 m
48.3 m	1.17	0.40 m

Five diamond drill-holes were sunk of which one hole could not get through the glacial tilt of the Forth Valley and four cut the vein at different levels.

The following table gives the characteristics of the veins in these holes.

Drill-hole	Width of vein (m)	Mineralisation	Nature of vein	Depth of intersection
MP 2	0.48	± 20% WO ₃	Quartz + wolframite	180 m level
MP 3	0.72	low WO ₃ , low SnO ₂	Quartz	195 m level
MP 4	-	-	-	-
MP 5	0.90	0.89% WO ₃	Quartz + tourmaline	40 m level
MP 6	0.35	trace WO ₃ . 0.06 SnO ₂	Quartz	160 m level

Taking into account the possible extension of the vein to the North as far as the boundary between the ML and the national park and the fact that the vein was still existant and mineralised at the 40 m level, we may expect the following possible ore reserves by assuming different average widths of the vein:

Possible strike length	:	500 m
Possible depth		200 m
Possible tonnage assuming	0.40 m vein width	: 100,000 T
	0.50 m	: 130,000 T
	0.70 m	: 180,000 T
	1.20 m mining width	: 300,000 T
	1.40 m mining width	: 360,000 T

It is difficult to estimate the real width of the vein at depth and even more difficult to project the real grade.

In the first half-year of 1981, total operating cost was in the order of \$39 per tonne, but some \$10 per tonne should be added to this cost to take into account development work done previously. It may also be necessary to add another \$5 per tonne for transport costs on ore coming from below the 240 m level.

This means that the total operating cost per tonne should be in the order of \$54.

By assuming a 80% recovery grade and a wolfram price of A\$ 120 mtu, the cut-off grade should be in the order of 0.56% WO_3 for an adequate mining width (1.2-1.4m).

The ore found on the 200 m level towards the northern part of the drive is marginally uneconomic (0.40% WO_3 for a mining width of 1.20 m), but the vein may widen to the north as drill-hole MP3 seems to indicate (0.72 m width).

It is impossible to determine the grade of the vein by drilling as most of the wolframite is found in pockets, while most of the vein consists of nearly barren quartz.

At least this is the case of the vein outside the granite.

Drill-hole MP5 found a different type of mineralisation inside the granite. The wolframite is fine-grained and seems to be more equally distributed in a quartz-tourmaline vein.

Mineralised width is	0.90 m	:	0.89 % WO_3
	1.40 m	:	0.61 % WO_3
	4.00 m	:	0.38 % WO_3

It would be very interesting to investigate the possible extension of this type of mineralisation, either by further drilling or by deepening the decline. Drilling has the disadvantage of giving only limited information, while we found it also difficult to keep the declination of the holes under control.

6 drill-holes of 220 m length each would cost some \$100,000 m in direct costs.

To investigate the vein by underground workings till the 40 m level would cost:

1120 m of decline at \$400 a metre	:	448,000	
200 m of raises at \$400 a metre	:	80,000	
1700 m of drives at \$250 a metre	:	425,000	
		<hr/>	
		\$ 953,000	say \$1 million.

But the full amount would only have to be spent in case of favourable results obtained in the early phases of exploration.

b) Parallel veins

Several smaller veins have been found in the Mining Lease area, but only the ones near the main vein have been investigated by various drill-holes both from the surface and from underground positions. No interesting results have been obtained and it is unlikely that any other vein of economic value exists in the immediate neighbourhood of the main vein.

c) The granite contact

The contact-zone was cut by drill-holes 5 and 6.

Tungsten mineralisation was found to be weak but widespread both inside and outside the granite.

The 42 m of sampled drill-cores before the granite was reached, averaged 306 p.p.m. of WO_3 .

The next 100 m inside the granite averaged 557 p.p.m of WO_3 , with low Sn values, Mo values generally between 5 and 60 p.p.m. (exceptionally up to 200 - 300 p.p.m.) and Bi values between 20 and 100 p.p.m (a few values above 200 p.p.m.).

We do believe that the high background values for W (and to a certain extent for Mo and Bi) make the granite intrusion below the main vein a prime exploration target for wolfram deposits of various types.

d) Other areas

There are two outcropping granite intrusions in the area of the E.L.: Birthday Granite and Lone Pine Granite.

There are some narrow veins cutting these intrusions on which some prospecting workings have been carried out. (There is a ML covering the veins in the Birthday Granite).

C.T.T. did some stream geochemistry and values up to 110 p.p.m for W and 620 p.p.m for Sn were found in creeks draining the two intrusions. Some costeans were dug to find the possible extension of some of the veins outside the granite, but thick overburden and scree made it impossible to reach the bedrock.

It should be interesting to do some soil geochemistry on and around the two granite intrusions as disseminated mineralisation near the surface could be of some economic interest.

C.T.T. geologists visited several times the Old Nation mine situated some 30 km to the north. There is a vein several 100 m long and 20 - 50 cm wide, well mineralised in some parts.

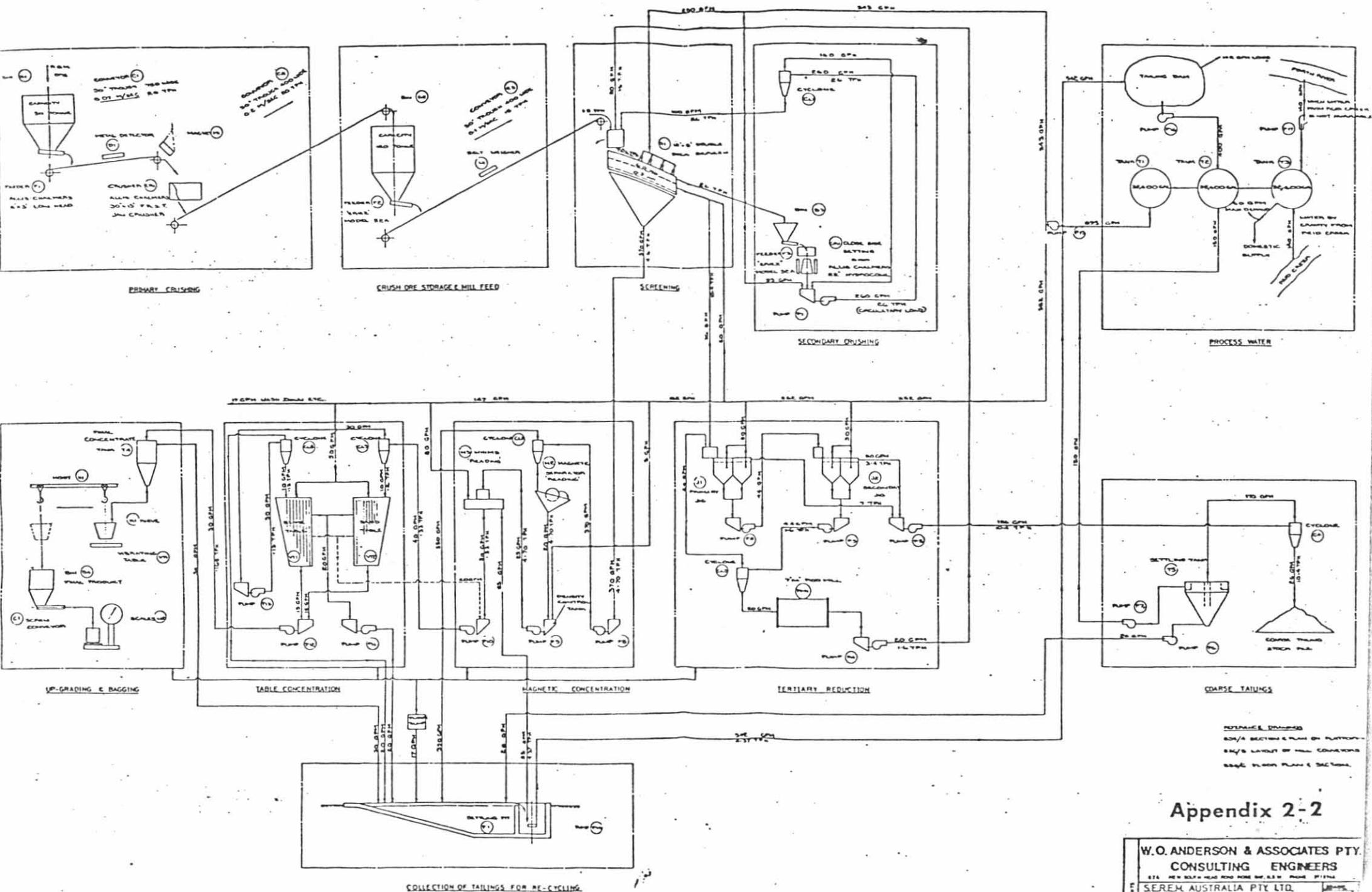
Several drill-holes were sunk last year by the Tasmanian Mines Dept.

As good intersections of the vein were found in these holes, the value of the prospect has increased considerably.

The lease-holders (Messrs. Gran and Kidd) are looking for a farm-in partner, who will earn an interest by sinking a decline and a drive.

Mo and base metals are more common around this vein and the granite exists probably at shallow depth.

The existing plant at Oakleigh Creek would be a great help if bulk sampling would have to be carried out on other prospects in the area.



Appendix 2-2

W.O. ANDERSON & ASSOCIATES PTY.
 CONSULTING ENGINEERS
 SEREM AUSTRALIA PTY LTD.
 CORKLEIGH CREEK —
 WOLFRAMITE PROJECT —
 PROCESS FLOW CHART

- BUILDINGS -

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
1	30' x 19' x 18' shed (workshop)	1,475	26.04.78
1	Chesney Caravan 22' (s'hand)	4,200	22.09.78
1	Atlas Copco 40' x 10' Kitchen - ablution-mess	4,000	24.05.79
1	Atlas Copco 40' x 10' 5 room bunkhouse	4,000	24.05.79
1	Moblle office 12.8m x 3.05m.	6,200	19.06.79
4	Bunk Units (for 6) with furniture	39,800	19.06.79
	Ablution block - toilets	5,321	4.07.79
	Wash car locker	14,860	4.07.79
1	60' x 45' Workshop building		
1	Change room unit		

- MINE - MAJOR EQUIPMENT -

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
5	Panther Rockdrills (BBD91W), Airlegs (BMX91R), Oil Bottles (BL630)	10,400	31.7.78
1	Scoma Bogger (loader) C150	4,240	25.8.78
2	Falcon Rockdrills BBD46WS8 & Oil Bottles (BL630)	3,244	29.9.78
1	Atlas Copco PR700 compressor (volvo diesel)	11,500	31.10.78
1 •	S A 34 B N 2 Double drum Scraper with winch 15 HP air motor	10,126.00	4.5.79
	Scraper bucket	1,375.00	25.5.79
	6" MINSUP Scraper block	103.50	23.5.79
	Wire rope	192.50	12.4.79
2	Winches LHB10	3,300.00	30.11.79
1	BBD 91W Panther Rockdrill (8311-0204-43)	1,250.00	21.12.79
1	BMK 91R leg 8321-0104-26	828.00	21.12.79
1	Falcon Rockdrill Stoper S/N 516009524	1,879.00	31.7.79
1	PT 1050 60BW Air compressor	38,500.00	31.7.79
1	Nolman Silver Three machine and Air Leg		
1	36" Fan with 25HP Motor		
1	Atlas Copco 4HG - 63B Air Winch with Auto brake		
2	Unused 30" 40HP Axial flow fans + 500 metres 30" unused vent tubing + two 90° T-pieces Angle pieces and joining rings		
3	21 F.V.G.W. Axial ventilation fans		
	Ingersol Rand Air Auger.		

NOTE : We estimate 10 Panther Rock Drill and 12 Air Legs.

ADDITIONAL

- MINE - MAJOR EQUIPMENT -

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
1	Marcy Density Gauge with standard plastic buckets and scale, 2 spare aluminium buckets and freight.	310.67	11.01.80
1	Eimco model 913 LHD Machine	114,347.00	
	- Spare wheels and tyre assembly	1,207.00	
	- 5 specialist tyres - as ordered (Inv. 19357 - 1.5.80 P59/7)	4,388.00	
	- Freight	1,198.07	
		<u>\$121,140.07</u>	18.02.80
2	Panther Rockdrills with Airlegs	4,156.00	12.02.80
1	Brethoven Exploder	352.00	13.03.80
2	Panther Rockdrills with Airlegs	4,156.00	21.03.80
1	Sump Pump	846.00	15.04.80
1	15 HP Electric motor		
1	4/3 DAH Warman Pump	750.00	May 1980
1	Wagner MT 413-30 Rear dump mine track Generally to Wagner Mining Equipment Co. Specification 604145, powered by Deutz F6L - 413 Engine fitted with water both Serubler	111,073.00	23.05.80
1	WEG 25 HP 1440 RPM TEFC Motor - 25 HP Starter.	759.00	28.05.80
1	CMG 1/2 HP 1440 RPM Driproof Motor	94.50	
2	WEG 10 HP 1440 RPM TEFC Motor	584.00	
1	WEG 5.1/2 HP 1440 RPM TEFC Motor	157.30	
		<u>\$ 835.50</u>	10.06.80
2	30E 2P Axial flow fane complete with 30KW 2 poles TEAO Motor	3,122.43	21.08.80
1	BWK 91R Airleg	1,020.00	10.09.80
1	BWK 91R Airleg	1,033.08	20.10.80

- MILL - MAJOR EQUIPMENT -

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
1	15.5HP Bunt 30 TEFC 1440 RPM motor for pump 10 S/N 8239520	122.00	13.08.79
1	15.30 ST Jaw Crusher including vee belt drive	39,266.00	22.08.79
	Water tanks	9,266.00	08.79
1	Model SE 740 Style MCI suspended electromagnet	6,563.00	31.08.79
1	Model 80B vibratory Feeder	6,279.00	31.08.79
2	Model 52A vibratory feeders	2,590.00	31.08.70
1	20 HP Burt 30 TEFC 6 pole Motor for rod mill	605.00	16.08.79
1	2-22 hydrocone crusher including vee belt drive & assoc. parts	38,845.00	25.09.79
1	Reading 8 pole W.H.I.M.S. Seperator Wet drum magnet	60,702.00	28.09.79
1	3' diameter x 6' Marcy central peripheral discharge Rod mill without motor with initial rods.	47,555.00	26.10.79
1	6R rubber lined cyclone with fixed spigot W/O P79/548 S/N SY 1356	863.00	17.09.79
2	6R rubber lined cyclones with fixed spigots W/O P79/549 S/N SY 1357-8	863.00	17.09.79
1	10RS rubber lined cyclone with fixed spigot W/O P79/550 S/N SY 1359	1,174.00	17.09.79
1	10RS rubber lined cyclone with fixed spigot W/O P79/551 S/N SY 1360	1,174.00	17.09.79

- MILL - MAJOR EQUIPMENT -

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
1	Water tank erection and parts	3,842.00	10.79
1	left hand model 12 Wilfey concentrating Table with 3'6" x 7' deck complete	5,918.00	16.11.79
1	Right hand model 12 Wilfey concentrating Table with 3'6" x 7' deck complete	5,918.00	16.11.79
1	25HP Burt/Teco 30 TEFC Motor 3000 rpm S/N 7603 99	472.00	4.10.79
1	15HP Burt/Teco 30 TEFC Motor 3000 rpm S/N 631 5397	293.00	4.10.79
	Steel work (as detailed in drawings)	6,700.00	-.10.79
1	40 cum.hr C.F.I. Sloids Settler type 166/1	18,140.00	28.11.79
1	120 ton Storage bin	12,900.00	31.10.79
1	Single idler Ramsey Conveyor Scale System	7,107.00	28.11.79
1	head Tail and take up pulleys floor beams to specs		
1	Conveyors, trestles and associated parts	40,137.00	28.11.79
1	Oil emersion heater and assembly for crusher	635.00	30.11.79
1	Roll-a-shutter R.H. Electric Operator	2,095.00	20.12.79
1	Spindle cantilevered shaft Slump D 180L 22 Kw 1450 RPM Motor W/O P79/510 Serial No SY 19060	5,314.00	29.11.79
	Crusher chutes, frames & support hopper	7,519.00	-.11.79
	Motor base frame	235.00	-.11.79
	Table dewatering tank, live roll tavle frame & overflow chute product dewatering cone & supports detail of kieve and bridle pump P4 Sump		
	Pump P9 sump	5,085.00	-.11.79

- MILL - MAJOR EQUIPMENT -

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
1	Bin high level probe	394.20	-
	ICAL/SYTNRON model 2 DTVP - 240 electro magnetic vibratory packer	5,675.00	-
1	Toledo portable scale with backrail capacity 250 kg.	1,150.00	30.11.79
1	No 1 Motor control centre & control console		
1	No 2 Motor control centre & control console plus modules for Hydrocone lubrication	22,460.00	19.12.79
1	Water tank	4,624.00	-.06.79
	Installation of water tank	1,505.00	-.07.79
1	Bayliss Mark 5 metal detector S/N 5-790701	3,222.00	19.07.79
1	30 HP Burt TEFC 1440 RPM motor for pump S/N 8545810	549.00	13.08.79
1	15 HP burt TEFC		
1	440 RPM motor for pump # 5 S/N 8501324	304.00	13.08.79
3	3 HP motors for pumps 6,9,12 Burt TEFC 1440 RPM S/N 91012217 91012293 91072224	297.00	13.08.79
1	10 HP Burt 30 TEFC 1440 RPM motor pump # 1 S/N 8160826	218.00	13.08.79
1	20 HP Burt 30 TEFC 1440 RPM motor for pump # 8 S/N 854546	382.00	13.08.79
1	50 HP Burt TEFC 6 pole motor c/w slide rails for primary crusher	1,461.00	16.08.79
1	30 HP Burt 30 TEFC 4 pole motor for secondary crusher	549.00	16.08.79
2	7.1/2 HP (5.5kw) burt 30 TEFC 1440 RPM electric motors for pumps # 2 & 4	352.00	14.08.79

- MILL - MAJOR EQUIPMENT -

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
9	Various centrifugal seal pumps	16,615.00	27.07.79
2	Mod B H P F Hitachi hoist c/w 5 met. lift.	2,896.00	15.10.79
2	2 ton Hitachi push trolley 165-203	334.00	15.10.79
4	5 ton load skates.	288.52	15.10.79
1	Screen hopper	1,400.00	19.10.79
1	3.6m x 1.5m two deck vibrating screen S/N 733M 7.5kw electric motor, belts, guard, drive and drive pulleys + 6.3mm & 12.0mm aperture stainless steel cloths	11,010.00	2.08.79
1	48" Jig	5,200.00	31.12.79
	Recommended spares	443.00	31.12.79
	water tank parts	1,561.20	- .11.79
	C.I. Conveyor		
	32 CFM Compressor Automan		
	One set of Manganese plus one set of Molychrome crusher jaws - Unused.		
	C.2 Conveyor		
	ENDECOTT Sieve shaker and screens		
	C.3 Conveyor		
	2 Riffles (Note : only 1 identified)		
	1 Lab crusher, chemicals and glassware		
	2 Microscopes (Note : Only 1 binocular microscope Identified)		
	1 C.I.G. 300 two phase welder.		
	<u>MILL STORES</u>		
	Pumps, Cyclones and Screens	3,075.00	14.06.78

- MILL - MAJOR EQUIPMENT -

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
	Freight and distributor panel (recorded 1979)	858.00	29.02.80
	Rod mill distributor and support	405.00	
	Product handling crane	3,895.00	Jan. 80
	Fine one bin discharge	306.00	Jan. 80
1	T.E. 25 HP starter	138.60	19.02.80
1	ASI 25 HP 4 pole motor with accessories	704.70	4.02.80
1	Impeller RV	153.00	18.02.80
	Mill Parts	1,713.00	30.01.80
1	Belts for motor	52.44	4.01.80
1	WEG 15 HP 4 pole TEFC Motor	340.00	30.01.80
1	T.E. LRI - 02535 overload	21.45	30.01.80
	Part of mill building	11,793.00	31.07.80
	Part of mill building construction	29,120.00	30.09.80
1	Seal pump	1,066.00	19.08.80
1	EFG II Mark II Sieve Shaker and wet washing to suit.	1,551.35	6.08.80
1	Eriez bin vibrator Model 30N	158.00	29.07.80
1	1/2" x 32 riffle stainless sample splitter	670.64	30.04.80
1	NEG 10 HP 1440 RPM motor	292.00	12.05.80
1	CMG 1/2 HP Driproof motor with pulley	104.30	19.05.80
1	10 kg satter suspended weigher + Metric weight	133.35	24.06.80
1	Wilfley left hand No 12 Concentrating Table 3' x 6" x 7' with variable drive and motor	6,520.00	12.06.80

- P U M P S -

<u>QTY.</u>	<u>ITEMS</u>
3	250 K.V.A. Generators
1	4 x 3 Warman Pump with 25 H.P. Motor
1	4 x 3 " " " 15 " "
1	4 x 3 " " " 35 " "
1	4 x 3 " " " No Motor
1	3 x 2 " " " 15 H.P. Motor
1	2 x 1.1/2 " " " 15 " "
1	2 x 1.1/2 " " " 10 " "
1	2 x 1.1/2 " " " 7.1/2 "
1	2 x 1.1/2 " " " 10 " "
1	2 x 1.1/2 " " " No Motor
1	1.1/2 x 1 " " " 10 H.P. Motor
1	1.1/2 x 1 " " " 10 " "
1	1.1/2 x 1 " " " 10 " "
1	1.1/2 x 1 " " " 7.1/2 "
1	1 x 3/4 " " " 3 " "
1	1 x 3/4 " " " 3 " "
1	3 x 2.1/2 Southern-Cross Water Pump with 25 H.P. Motor
	Ingersol Land air pumps
3	Water supply tanks. Internal diam. 10.16m x 1.8m

- FIXED PLANT -

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
2	Richardson fans electric 15 hp	2,286.00	29.06.78
1	" " " "	1.190.00	14.03.79
1	Alternator 60 KVA (s'hand) McLaren brush	4,500.00	16.06.78
1	Electric starter motor CAVSRL27366B for McLaren alternator	270.00	25.10.78
1	1.75 KVA startmatic Lister engine	400.00	24.05.79
1	Portal and legs	1,528.00	31.08.79
1	B514J 250 KVA Cummins generating set	28,782.00	16.11.79
	Control panel S/N 18471 M/M 78289/1	3,950.00	16.11.79
	Freight	2,029.97	16.11.79
1	Main distribution panel	8,850.00	28.11.79
1	Cummins generator set with heat sink, cooling & silencer electric governing fuel gauge B514J 250 KVA	28,782.00	30.11.79
	Freight and commisioning	1,760.02	30.11.79
1	B514J 250 KVA diesel generating set with cummins engine	22,882.00	2.07.79
	Silencer	150.00	2.07.79
	Speed control	1,900.00	2.07.79
	Heaters and condensers	250.00	2.07.79
1	Distribution panels	1,350.00	2.07.79
2	Kilowatt hour meters	800.00	28.11.79
1	Voltmeter & selector switch	180.00	28.11.79
	Additional depth added to main switchboard	85.00	28.11.79

- FIXED PLANT - SPARES

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
1	Starter motor to start McLaren Alternator	175.08	25.08.78
1	McLaren engine MR4MK11 4 cycles 88 hp E41865	350.00	3.10.78

- MOBILE PLANT -

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
1	Fiat 411R Tractor (s'hand)	1,000	27.04.78
1	Grader Blade for tractor	270	5.09.78
1	Eimco 911B loader no. 514 (ejector bucket)	51,369	24.04.79
1	Eimco 964 Dump Truck (incl. freight) truck no. 4058	34,561.39	19.09.78
1	Case W9 loader (s'hand) SN 9805357 37/2/3	13,500	5.06.79

- MOTOR VEHICLES -

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
1	Subaru FWD/4WD station Wagon - SOLD -	6,400	3.04.78
1	Holden 1 tonne Ute (s'hand) - SOLD -	4,065	13.04.78
1	International ACCO F1950 Tipper 1970 BA6073 V8 Diesel Engine No. 167814 dual axle	11,000	23.04.79
1	Toyota landcruiser Ute 1975 BC 8321	5,750	25.05.79
1	Holden HX Sedan Eng. No. QL756490 Reg. BD 1005 (less trade in)	2,190	24.11.79
1	Leyland 23 passenger bus Eng. no. 40 KAU 1998	9,500	17.07.79
1	HJ Holden 202 1 ton Utility Eng QL688594 Reg. AL 3612	4,000	13.06.79
1	Ambulance V8 F100 3 years old 112,000 km	5,000	
1	1978 Holden 1 ton flat tray (less trade in)	4,325.00	28.01.80
1	Ford Backhoe - tractor	1,500.00	6.09.80

- MINOR EQUIPMENT/TOOLS -

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
2	Chainsaws Stihl 031-AV NO. 420283 & 4230258	746.00	19.04.78
1	Electrical impact Drill SBE-450	127.46	10.05.78
1	Skil bench grinder 6"	54.00	12.07.78
1	Dolmar chainsaw (air)	754.00	31.07.78
1	Power Hacksaw	350.00	2.08.78
1	Concrete Mixer (petrol)	225.00	31.08.78
1	Concrete Mixer - Anfo (electric)	225.00	27.10.78
1	Air winch (hoist) MH662	3,513.00	29.09.78
1	Drill steel angle Grinder LSD61 (steel sharpener)	967.00	29.09.78
1	Anfo loader 5E50	145.00	31.01.79
1	Impact Wrench	1,100.00	25.10.78
1	Series 2000 die grinder-button bit sharpening tool	95.00	28.02.79
1	Automan drill (compressed Air) 1/2" chuck	125.00	30.11.78
1	Black and Decker 9" angle Grinder	130.00	2.08.78
2	Pr. Stilsons (now valued \$120 each)	65.00	14.06.78
1	2 ton chain block - anchor	120.00	14.06.78

- MINOR EQUIPMENT/TOOLS - (Cont.)

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
1	Electric Welder - Trans arc HD400 415V 61a Type TAD87 CIG sigle phase Serial No. AT3808	100.00	24.5.79
1	Electric Welder - twin arc, single phase 240 V. 18a - transcore	100.00	24.05.79
1	Drill machine (electric) type 2m spec HTP16 frame 6221 Serial No. SIK321 . 75 h.p. 1430 rpm 400/415v - McPherson	100.00	24.05.79
1	Grinder type 1450 3 h.p. 3 Phase 400 V Serial No. 11135-EAEC	50.00	24.05.79
1	Battery charger	26.50	23.08.78
1	Electric Bench Saw - 'Home joiner Combination' - Artisans	100.00	24.05.79
1	Lathe - 5' - Mitchell	2,500.00	24.05.79
1	Comet 3 Oxy acetylene Set	100.00	24.05.79
1	transformer - Miners Cap Lamps	50.00	24.05.79
1	Tension wrench	90.07	23.05.79
1	Theodolite 020 (Zeiss) 186592	1,400.00	25.05.79
1	5" Snatch Block	37.56	12.04.79
1	6" Snatch block	44.24	12.04.79
	Catering ustensils	105.70	27.08.79
16	Club chairs	640.00	28.11.79
4	Fold top tables	280.00	28.11.79
11	Stacking chairs at \$19 each	209.00	13.08.79

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
1	Calculator P21 400401	132.00	13.07.79
1	Felsan Toilet	90.00	4.06.79
24	Matresses	1,843.00	30.06.79
1	Enerpac Jack	340.00	11.07.79
1	Electric Welder 130 Amp.	170.00	10.07.79
1	Woodson WB4A 4 Pot Warmer	378.00	22.07.79
1	Rockdrill	200.00	21.08.79
1	Rheemglass 281/340 75 gal H/W Cylinder	336.60	4.04.79
1	Fill rite Series 800A meter	78.00	10.08.79
1	Spiro Duct	229.60	31.08.79
1	Portable unilectric Emergency Light	130.00	31.08.79
1	Plant comet 3 P/C Oxy Acetone Kit	322.00	29.08.79
1	22 KWAI Drill	729.00	22.09.79
1	5 ton Beam Trolley	264.00	17.09.79
1	Fan	200.00	17.09.79
4	Wardrobes	829.00	- .10.79
1	GEC Dryer	329.00	- .10.79
1	Stove (not at site)	585.00	26.10.79
1	Oxygen Regulator & regular kit for Entinox + 2 Entinox Cylinders.	336.00	28.12.79
2	Remear Bits	287.00	11.05.79
2	Septic Tanks @ \$250.00	500.00	2.07.79
	13mm 5ply H.D. water delivery Hose	176.52	20.06.79
	25mm 5ply Rockdrill air 250 SNHD	347.33	20.06.79
1	Gas heater Pyrox 303	280.00	27.06.79
1	Gas heater Rinna 1WM24	140.00	27.06.79

- MINOR EQUIPMENT/TOOLS - (Cont)

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
1	Oxy Viva 3W/Demand	580.00	27.06.79
	Miners Cap lamp Rack plus accessories	356.58	19.06.79
.	Miners Cap lamp Head pieces	154.00	19.06.79
2	Plastic Anfoloaders c/w 4'6" Earthing Strap Terminals and Pins	160.00	24.07.79
3	Mess Tables 1800, 800 steel framed	218.00	-. 06.79
1	Canopy @ fan for kitchen	612.00	13.07.79
1	9.1/4" Saw	152.00	31.07.79
1	Cordless Drill S/N 45728	80.49	31.07.79
3	Scraper Blocks	310.50	11.07.79
1	Extension ladder	93.00	-.07.79
2	Rheemglass cylinders	712.00	4.07.79
1	Fuji KOH S 302 W level no. 31248 complete with wooden tripod	460.00	6.07.79
1	30m tape	20.00	6.07.79
1	GEC 12 cu ft 3452 Freezer	330.00	12.07.79
2	Complete Miners Lamps	113.50	31.05.79
4	Type T batteries	118.00	31.05.79
1	Fillrite Series 800A meter	78.00	15.05.79
3	Benches with Vices (2 benches and Vices identified)		
1	C.I.G. HD 350 Phase 3 Welder		
1	1" to 3" Pipe treader		
1	Bench Drill		
1	Eutectic Wire feeder welder	1,197.00	18.07.80

- MINOR EQUIPMENT - GENERAL -

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>	<u>SUPPLIER</u>
1	Vice	43.80	2.08.78	Webster
1	Wheel Barrow	90.00	31.01.79	Webster
1	6' x 3' Brownbuilt cupboard	50.00	24.05.79	Kibuka
2	8' x 3' steel workbenches	50.00	24.05.79	Kibuka
1	9" vice	25.00	24.05.79	Kibuka
3	Welding shields	20.00	24.05.79	Kibuka
2	Rechargeable fire extinguishers	20.00	24.05.79	Kibuka
1	3' square	5.00	24.05.79	Kibuka
1	3' straight edge	5.00	24.05.79	Kibuka
1	Pop rivetter	25.00	24.05.79	Kibuka
1	Set letter punches	5.00	24.05.79	Kibuka
1	Stillsons 24" P6/07	15.95	22.05.79	Teague & Shepperd
1	A2H Pump 9/07	26.00	15.05.79	North West Petroleum
1	A2H Pump 9/07	26.00	28.05.79	North West Petroleum
1	Birko 2gal Urn 45/07	96.00	4.06.79	GEC Electrical Wholesale
2	BCF Fire Extinguisher 53/07	90.45	27.06.79	CIG Ltd.
1	BCF Fire Extinguisher 53/07	49.50	27.06.79	CIG Ltd.
1	Wire rope 59/07	152.50	1.06.79	R.R.Rex & Son (Burni P/L)
2	Tarpaulins 65/07	221.62	June 79	Pickers Canvas Plastic Man. Co.
1	6" Abney level 5/08	34.50	3.07.79	Prospectors Supplies
60pr	Sheets and Pillowcases 35/08	1,019.40	July 79	F.C.Slater P/L
60	Blankets 35/08	899.40	July 79	F.C.Slater P/L
18	Pillows 35/08	103.50	July 79	F.C.Slater P/L

MINOR EQUIPMENT - GENERAL - (Cont)

<u>QTY.</u>	<u>ITEM</u>		<u>COST</u>	<u>DATE PURCHASED</u>	<u>SUPPLIER</u>
5	BCF Fire Extinguishers	50/10	258.00	4.10.79	
1	Maxi Bar B Que	50/10	215.25	4.10.79	C.I.G.
	20 x 15 Tarp	77/10	106.00	16.10.79	Pickers Canvas & + Plastic Man.
2	Unilectric emergency	3.11		17.10.79	
	Lighting units	87/10	260.00		Mersey Plant Hire
6	BCF Fire extinguishers	88/10 4.028	309.60	17.10.79	C.I.G.
1	BCF " "	88/10 "	26.70	17.10.79	C.I.G.
1	BCF " "	88/10 "	16.70	17.10.79	C.I.G.
6	Complete Miners Cap lamps	38/11 3.01	382.50	6.11.79	George Harvey Electrics P/L
1	Grinder	67/11 3.48	58.00	15.11.79	Mersey Plant Hire P/L
1	Drill	67/11 3.48	160.00	15.11.79	Mersey Plant Hire P/L
1	1/2" Drill	67/11 3.48	147.65	15.11.79	Mersey Plant Hire P/L
	Eclipse Saw Set	90/11 3.48	59.79	20.11.79	J. Blackwood & Son P/L
	Rheemglass Z81/045 H/W cylinder	103/11 3.11	136.80	22.11.79	Robert Fergusson P/L
2	Anfo loaders	61/12 3.01	160.00	18.12.79	Whyte Hall P/L
.	Flaring tool	89/12 6.109	56.00	20.12.80	Webster Ltd.
1	Eclipse Saw set no.79	108/12 6.109	66.78	9.01.80	J. Blackwood & son Ltd.
1	Tasco Binocular Microscope & light with transformer	1/1 1.012	940.00	30.01.80	B.R.G.M.
1	Balance	1/1 1.012			
1	Set Laboratory Sieves	1/1 1.012			
	1200mm long urinal	60/12 3.11	376.00	18.12.79	Seba Sheetmetal P/L

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>	<u>SUPPLIER</u>	
	.75" Lo Stat Hose	8/10	59.22	17.08.79	CI Aust. Operation
	Rockdrill Air Hose	3/10	173.67	16.08.79	Purple Pig Aust.
6	Safety Caps with Muffs	29.10	129.94	10.08.79	Protector Safety
	Birko 4 gal Urn	33/10	115.00	20.08.79	GEC Electrical Wholesale
	8" Grinder	49/10	60.00	3.09.79	Alpha Electrics

- OFFICE EQUIPMENT -

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>	<u>SUPPLIER</u>
1	Wooden Desk	40	24.05.79	Kibuka
1	Small (single pedestal) metal desk	20	24.05.79	Kibuka
1	4 Drawer filing Cabinet	30	24.05.79	Kibuka
1	3 Drawer filing Cabinet	20	24.05.79	Kibuka
1	Adler manual typewriter	100	24.05.79	Kibuka
1	Plan Table	150	24.05.79	Kibuka
1	Stool	20	24.05.79	Kibuka
1	Swivel base Chair	15	24.05.79	Kibuka
1	Minolta Fax Electrostatic Photocopier Model 1114 SN 954031 (S'hand)	600	18.05.79	Hopwood Business Equipment P/L
1	D.P. Desk 100 top 1500, 900 3 legal drawers, 1 hand 1 legal and filing drawer right hand	246	- .06.79	Devonfield Industries

- STORES -

<u>QTY.</u>	<u>ITEM</u>	<u>COST</u>	<u>DATE PURCHASED</u>
1	44 gal Drum assorted galvanised pipe fittings	25	24.05.79
5 doz	Assorted brass poly fittlings	60	24.05.79
5 doz	Victaulic Rings	30	24.05.79
1 roll	Gasket Paper	10	24.05.79

OAKLEIGH CREEK WOLFRAMITE PROJECT

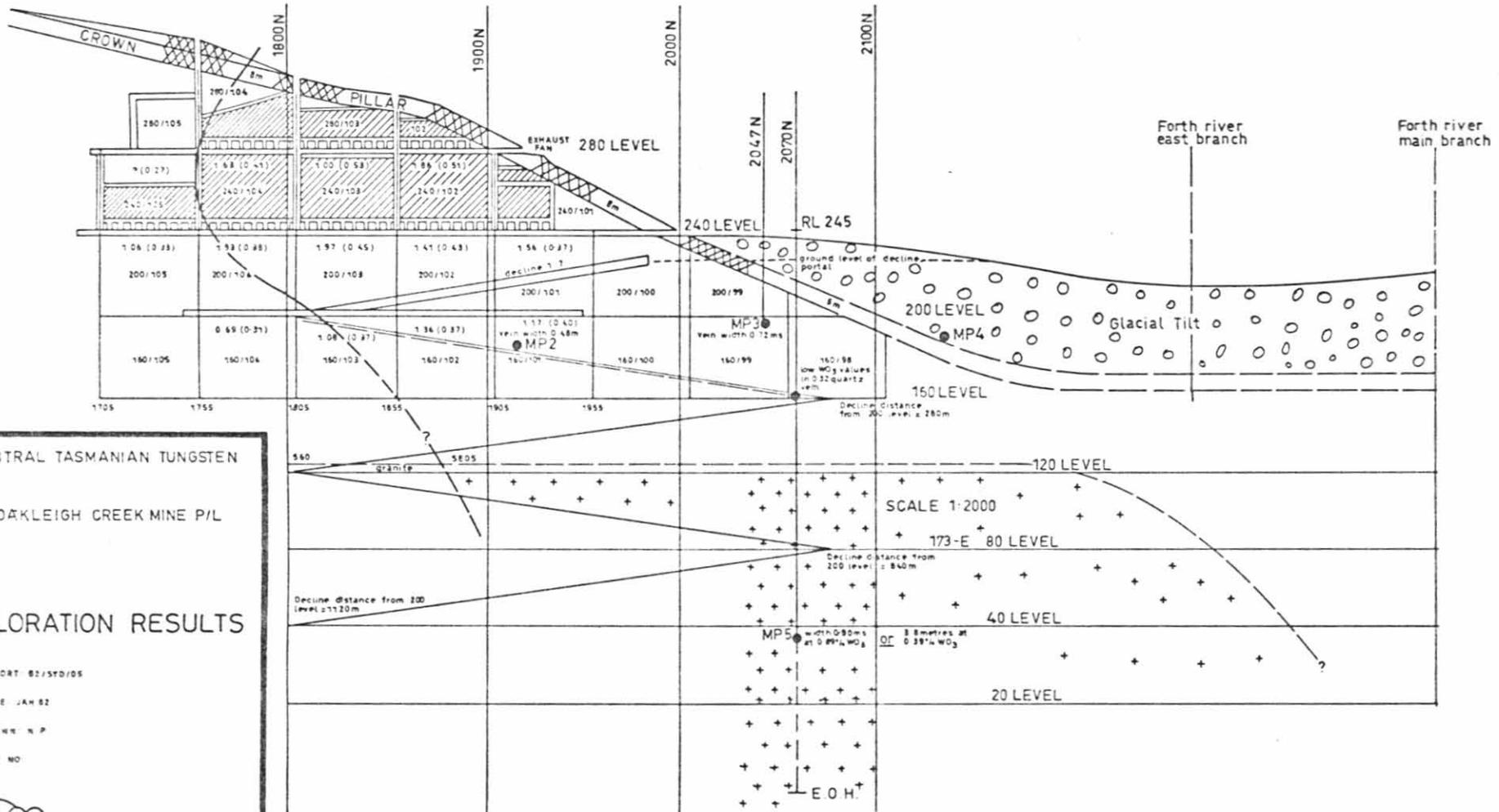
Stopped area (started 27/10/78) Grades in % W₀ 1.02 (bulk sampling results assuming 70% recovery of plant)
 Drill holes Width in m (D.40) of vein

LONGITUDINAL SECTION

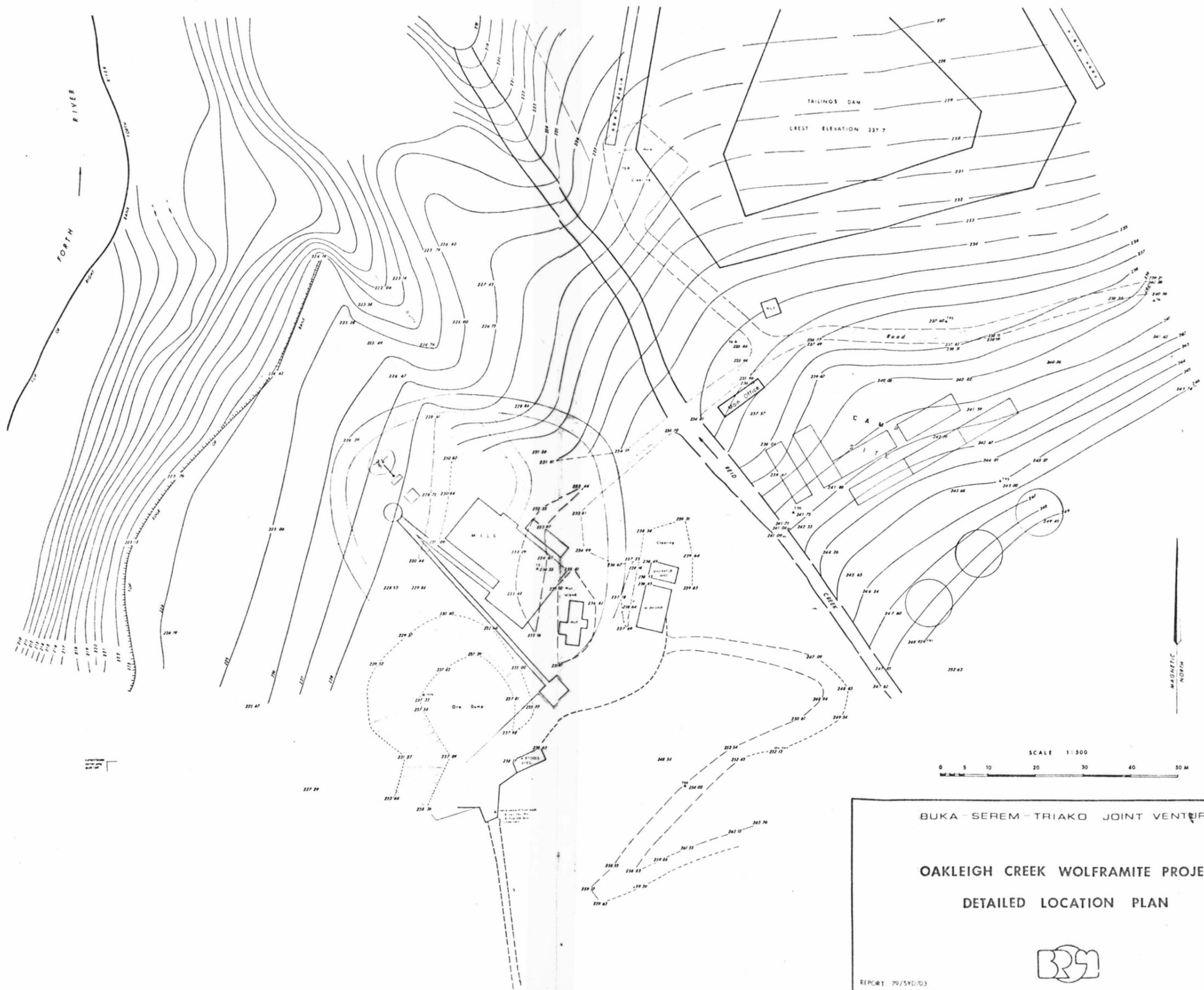
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SITUATION AS AT DECEMBER 1981



CENTRAL TASMANIAN TUNGSTEN
 OAKLEIGH CREEK MINE P/L
 EXPLORATION RESULTS
 REPORT 82/SFD/05
 DATE JAN 82
 DRAWN N.P.
 FILE NO

TAILINGS DAM
CREST ELEVATION 237.7

Main Office

CAMP SITE



MAGNETIC NORTH

BUKA - SEREM - TRIAKO JOINT VENTURE

OAKLEIGH CREEK WOLFRAMITE PROJECT

DETAILED LOCATION PLAN



REPORT 70/SVD/03
DATE FEBRUARY 1970

REVISED OCTOBER 1981