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**ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED**  
**WEST COAST MINES**  
**GEOLOGICAL DEPARTMENT.**

MT. BLACK LICENCE.

PROPOSAL FOR EXPLORATION 1974 - 75

C.C.J. BURTON.

95-3668

**OPEN FILE**

**MICROFILMED**  
FICHE No. 013426

## I. MT. BLACK LICENCE

### PROPOSED EXPLORATION PROGRAM FOR 1974/75

This exploration program has been prepared following a request from the Managing Director that the rate of exploration activity over the Mt. Black Licence be accelerated in order to achieve definitive results within the 1974/75 financial year. Since a thorough surface examination is drawing to a close, the emphasis has been placed on the search for blind orebodies by diamond drilling. The objectives may be categorised as:

- A. Clearcut, where supporting evidence is ample and supports a strong recommendation for diamond drilling.
- B. Deferred, where further drilling is dependent on encouraging results from A.
- C. Inferred, where geological reasoning suggests a potential for mineralisation.

The licence has been divided into 10 distinct project areas. Each project is outlined on the following pages along with a proposed exploration program and estimated costs. A summary of the proposed exploration diamond drilling is included as Table 1 on page 11. It is strongly recommended that detailed survey control and topographic mapping be obtained to cover the area as soon as possible.

#### 1. SOUTH HERCULES

##### 1.1 Objective

Recent diamond drilling and surface geological mapping has established that the Hercules host rocks extend south to at least grid 3400 S. Significant sulphide mineralisation and associated carbonates have been proved to grid 2100 S. Further diamond drilling is recommended to search for Hercules type ore lens and to determine the extent of the host rock formation south of Hercules Mine.

##### 1.2 Proposed Exploration

Diamond drilling is planned on 4 sections, 500 ft. apart, to cover a strike length of 2000 ft.

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Phase 1 consists of one drillhole on each of the 4 sections to test the host rocks 250 ft. below previous drilling. Each hole should penetrate up to 400 ft. of footwall rocks to check for disseminated and vein type formation.

Phase 2 comprises 4 drillholes to test the host rocks a further 250 ft. beneath the intersections of Phase 1. Phase 3 is contingent on the results of Phase 1 and 2 and would be planned to outline any ore intersected in the previous drilling and penetrate host rocks if present beneath Phase 2 intersections.

### 1.3 Estimated Costs

a.	<u>Phase 1</u>	3800 ft. of diamond drilling at \$8.00 per ft.	= \$30 400
		Bulldozer hire to form access tracks	500
			<u>\$30 900</u>
b.	<u>Phase 2</u>	3300 ft. of diamond drilling at \$8.00 per ft.	= \$26 400
		Total 1 & 2	= <u>\$57 300</u>
c.	<u>Phase 3</u>	No expenditure budgeted at this date.	

## 2. HERCULES DEEP EXPLORATION DRILLING

### 2.1 Objective

The Hercules ore lenses occur within a sedimentary basin approximately 3000 ft. long and 600 ft. broad. Previous drilling on a number of sections has established that the sediments pinch out downdip where the footwall tuffs and ash flows are directly overlain by hangingwall tuffs and lavas. On the premise that the upper contact of the shales is an unconformity or represents a period of non deposition, it is possible that further sedimentary basins occur at greater depth. Since the Hercules basin represents an area where abundant sulphides were exhaled, it is safe supposition that a nearby basin could be equally well endowed.

2.2 Proposed Exploration

Three drillholes to explore for sedimentary formations 1000 ft. downdip of the termination of the Hercules basin. Each drillhole to be approximately 2000 ft. long and to be collared on sections 4500N, 2500N and 1000 S.

2.3 Estimated Costs

6000 ft. of diamond drilling at \$9.50 per ft.	=	\$57 000
Bulldozer hire to form access tracks	=	<u>\$ 2 500</u>
Total		<u>\$59 500</u>

3. WHITE SPUR3.1 Objective

The area concerned extends from South Hercules south to the east flank of Mt. Dundas. Detailed mapping has been restricted because Mt. Lyell and Texins hold exploration licences covering areas where mapping is required for a more adequate understanding of the structure. The present interpretation of the geology suggests open folding of volcanic and intercalated sediments along undulatory North-South fold axes. In this area there appears to be a wider distribution of sediments and less evidence of the small lagoonal basins which provide favourable conditions for the Rosebery type orebodies.

However both the Rosebery Hercules stratigraphical horizons can be traced into this area. Within the same area a previous examination undertaken by Rio Tinto identified a well defined E.M. and gravity anomaly within ground which we have recently made application.

3.2 Proposed Exploration

- a. Phase 1 A geophysical examination to substantiate and relocate the Rio Tinto anomaly followed by 2 shallow drillholes. Since this area borders ground held by Mt. Lyell an accurate survey and some negotiations with that company may be required.

- b. Phase 2 Detailed mapping of a network of logging roads and along a grid of cut lines to be established. Phase 1 of S. Hercules drilling may assist in the interpretation of the geology. Tentatively 2 drillholes are proposed at approximately 5000 S and 9000 S primarily to search for the southward continuation of the Hercules Host rocks.

### 3.3 Estimated Costs

a. <u>Phase 1</u>	1000 ft. of diamond drilling at \$8.00 per ft.	= \$8000
	Bulldozer hire to form access tracks	= \$ 500
	Geophysical investigations and line cutting	= \$1000
		<u>\$9500</u>
b. <u>Phase 2</u>	2000 ft. of diamond drilling at \$8.00 per ft.	= \$16 000
	Bulldozer hire to form access tracks	= \$ 500
		<u>\$16 500</u>
	Total 1 & 2	<u>\$26 000</u>

## 4. JUPITER

### 4.1 Objective

Separate but adjacent lead zinc and copper pyrite bodies have been prospected with adits and limited diamond drilling to a depth of 500 ft. below surface.

#### a. Lead-Zinc Lens

The lead zinc mineralisation appears to be conformable with the host rocks, which are bedded tuffs. The formations at Jupiter are not directly correlatable with those at Rosebery but have related characteristics such as footwall silicification and hanging wall carbonisation. The data inferred from the limited amount of drilling suggests that the host tuffs and associated sulphides close off, at least locally, to the north. To the south and at depth the prospect is unexplored.

b. Copper-Pyrite Mineralisation

This is located approximately 1000 ft. south east of Jupiter Pb-Zn. The mineralisation consists of disseminated pyrite and chalcopyrite with localised stringer zones over a width of 100 ft. within both chlorite and quartz sericite schists. The highest values were in J.P. 139 with 33 ft. of 1.31% Cu and 18 ft. of 2.05% Cu, but less than 0.5% Zn. Although the zone was tested with shallow drill-holes 300 ft. to the North and 400 ft. to the south of J.P. 139, it was not explored at depth.

4.2 Proposed Exploration

Phase 1

- a. Lead-zinc lens - a minimum of 2 drillholes with a total footage of 1200 ft. to test below and to the south of the known mineralisation.
- b. Copper-pyrite mineralisation - a minimum of 2 drillholes to determine the extent of the mineralisation beneath and lateral to J.P. 139 with a footage of 1200 ft. involved.

Phase 2

- a. Given any encouragement from the Phase 1 drilling a deeper hole beneath the copper pyrite mineralisation would be recommended to assist in determining the relationship between the two types of mineralisation and to assist in interpreting the structure in this area.

4.3 Estimated Costs

<u>Phase 1</u>	2400 ft. of diamond drilling at \$8.00 per ft.	= \$19 200
	Bulldozer hire to form access tracks	= \$ 500
		<u>\$19 700</u>
<u>Phase 2</u>	1800 ft. of diamond drilling at \$9.50 per ft.	= \$17 100
	Bulldozer hire to form access tracks	= \$ 500
		<u>\$17 600</u>
	Total Phases 1 & 2	= <u>\$37 300</u>

5. BOBADIL5.1 Objective

The area comprises that underlain by the Primrose Pyroclastics extending from the north end of Rosebery Mine to the Pieman River. Surface mapping indicates that a major anticline strikes north-south with the Rosebery orebody on the eastern flank. It is suggested that the Primrose shales may occupy the same stratigraphical horizon on the western flank. If this interpretation is correct then the potential for economic mineralisation to be associated with the sediments from Chamberlain to Primrose is greatly enhanced and would merit substantial sub surface exploration.

It is inferred that the Rosebery anticline plunges North and at about grid 7500N there may be a closure with the Rosebery hangingwall-footwall rock contact wrapping around the hinge area. Outcrop is poor near the location of the interpreted closure, but it is unlikely that host rocks or shales would be exposed at the surface at this point, as deep drilling at the north end of Rosebery Mine indicates that the host rocks are pinching out with a steep northerly pitch. However, this northerly pitch may not persist and the presence of black shales at Primrose could represent the surface expression of another part of the same basin. There is a possibility that host rocks could persist at depth from Primrose northwards around the fold hinge to the north end of Rosebery Mine. The major objective is to establish if this interpretation is correct.

5.2 Proposed exploration

- a. Costean across the anticlinal hinge along 2 lines located between grid 6000 N and 9000 N provided glacial overburden is not too deep. This work should be completed in 1973/74.
- b. Collar 3 or 4 shallow drillholes to assist in determining structure and explore for the Rosebery stratigraphical formation in the vicinity of 7500N.
- c. Drill one deephole to determine if the Rosebery host rocks are developed at depth in the hinge area of the fold.

5.3 Estimated Costs

<u>Phase 1</u>	1500 ft. of diamond drilling at \$8.00 per ft.	= \$12 500
	Bulldozer hire to form access tracks	= \$ 500
		<u>\$12 500</u>
<u>Phase 2</u>	2500 ft. of diamond drilling at \$9.50 per ft.	= \$23 750
	Bulldozer hire to form access tracks	= \$ 500
		<u>\$24 250</u>
	Total Phase 1 & 2	= <u><u>\$36 750</u></u>

6. PRIMROSE DEEP EXPLORATION DRILLING6.1 Objective

If the results from Project 5 (Bobadil) indicate that the Primrose and Barkers sediments are most probably on the same stratigraphical horizon as the Rosebery host rocks then there are powerful reasons for drilling the western flank of the anticline. The initial target would be to explore the Primrose sediments at depth to determine if Rosebery type rocks are developed within this sedimentary basin. This would comprise a minimum of 8 drillholes spaced 1500 ft. apart along strike and probing to a depth of 1000 ft. below the surface.

Given that there is inconclusive evidence to relate the Primrose sediments with the Rosebery host rock horizon it is recommended that one drillhole should examine the Primrose shales at depth and a further hole examine the Salisbury area at depth.

6.2 Proposed Exploration

Phase 1 2 drillholes to explore the Primrose and Salisbury shales 1000 ft. below surface.

Phase 2 6 additional drillholes to examine the whole west flank of the anticline from Salisbury prospect to grid 5000 N.

6.3 Estimated Cost

<u>Phase 1</u>	3000 ft. of diamond drilling at \$8.00 per ft.	= \$24 000
	Access tracks	= \$ 500
		<u>\$24 500</u>
 <u>Phase 2</u>	 9000 ft. of diamond drilling at \$8.00 per ft.	 = \$72 000
	Access tracks	= \$ 500
		<u>\$72 500</u>
	 Total Phase 1 & 2	 = <u>\$97 000</u>

7. GRAND CENTRE-KOONYA7.1 Objective

The lead zinc veins at Koonya and the copper pyrite veins at Grand Centre are emplaced within a broad zone of strong alteration within the footwall rocks. The alteration is similar to that observed at Rosebery and has close affinities to that at Mt. Lyell. The footwall ash flows have been converted to sericite-chlorite schists with local lenses of quartz-sericite schists over a width of 1000 ft. and a strike length of at least 3000 ft. To the south the alteration zone appears to merge with the Rosebery host rock horizon. The known mineralisation has been explored in a limited way by adits where it has been exposed as impersistent veins. It is suggested that further more significant mineralisation may be associated with this alteration zone, both laterally to these veins and at depth.

7.2 Proposed Exploration

- a. 3 shallow drillholes will be completed in 1973/74 to explore beneath the Koonya and Grand Centre workings with a third hole to test a Self Potential anomaly midway between.
- b. Given any encouragement 3 1000 ft. drillholes are proposed to test this zone 500 ft. beneath the previous intersections.

7.3 Estimated Cost

3000 ft. of diamond drilling at \$8.00 per ft.	= \$24 000
Bulldozer hire to form access tracks	= \$ 1 000
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	\$25 000

8. SOUTH DALLWITZ8.1 Objective

Soil sampling has indicated a significant Pb-Zn anomaly associated with the Dallwitz sediments. These are considered to be on the same stratigraphic horizon as the Rosebery host rocks.

8.2 Proposed Exploration

- a. Surface mapping is required before a thorough appraisal of the area can be made.
- b. Tentatively 2 shallow drillholes will be required to investigate the source of the anomaly.

8.3 Estimated Costs

800 ft. of diamond drilling at \$8.00 per ft.	= \$6400
Access track	= \$ 500
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	\$6900

9. JUPITER RING9.1 Objective

The contact between the Hercules footwall and hangingwall volcanics has been mapped as far as the Ring River. Further north it is obscured by glacial cover. The structural pattern of this area has not been unravelled, to a large extent because of the glacial cover and owing to the difficulty of differentiating between the footwall and hangingwall rocks. The stratigraphical relationship between the Jupiter and Hercules mineralisation is not known but the proposed drilling at the two locations should assist in clarifying this problem.

9.2 Proposed Exploration

- a. An I.P. survey is recommended to test for sulphides adjacent to the projected contact zone and at the same time a resistivity survey could determine the depth of the glacial cover.

9.3 Estimated Costs

I.P. and resistivity survey, fieldwork, drafting  
and interpretation                      Total cost                      = \$1500

10. Cutty Sark10.1 Objective

This area is east of Bobadil and north of Rosebery and requires further investigation owing to the presence of Turair anomalies and scattered copper prospects. The area has not been mapped and is inferred to be within the Mt. Black volcanics.

10.2 Proposed Exploration

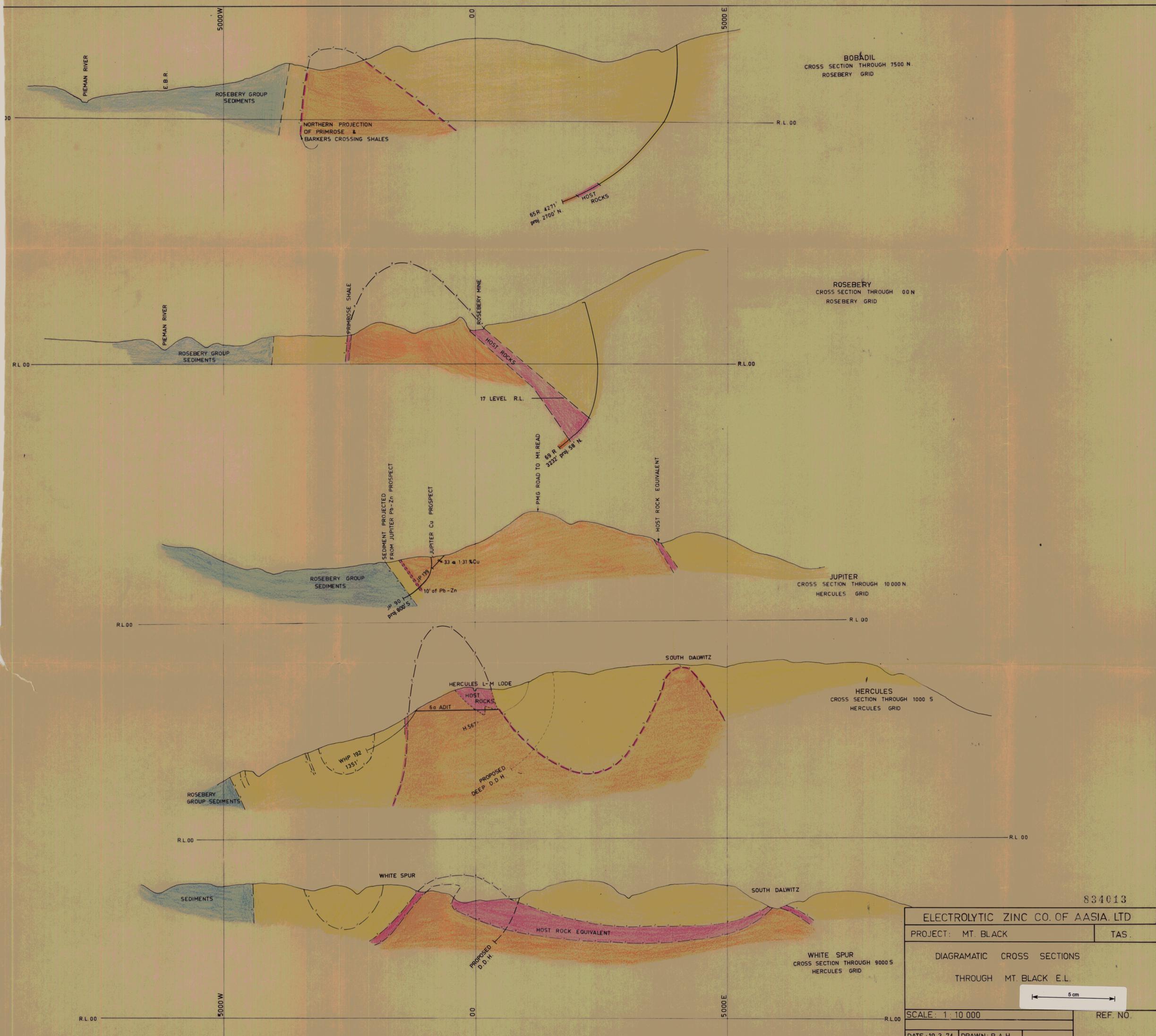
Improved access will be achieved from a new track being formed along a ridge east of Bobadil. A grid of cut lines will be established to cover the ground, to be followed by geochemical soil sampling and geological mapping. Follow up geophysical work may be required to locate the Turair anomalies.

10.3 Estimated Costs

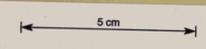
Line cutting 40,000 ft. at \$50 per 1000 ft.	= \$2000
Geochemical soil sampling analyses 800 at \$1.50	= \$1200
Follow up geophysical survey	= \$1500
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	\$4700
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Chief Geologist

No.	Project Location	Phase	No. of D.D.H.s	Total Footage	Est. Cost per ft.	Drilling Cost	Drill time Periods	Access Cost	Other Services Cost	Total Cost	Category
1	South Hercules	1	4	3 800	8.00	\$30 400	3.25	\$ 500	Nil	30 900	A
1	South Hercules	2	4	3 300	8.00	26 400	2.75	-	-	26 400	B
							5		Sub total	57 300	
2	Hercules Deep Exp.	1	3	6 000	9.50	57 000	6	2500	Nil	59 500	C
3	White Spur	1	2	1 000	8.00	8 000	1	500	1000	9 500	A
3	White Spur	2	2	2 000	8.00	16 000	2	500	Nil	16 500	A
									Sub total	26 000	
4	Jupiter	1	4	2 400	8.00	19 200	3	500	Nil	19 700	A
4	Jupiter	2	1	1 800	9.50	17 100	1.5	500	Nil	17 600	B&C
									Sub total	37 300	
5	Bobadil	1	3	1 500	8.00	12 000	1.5	500	Nil	12 500	A
5	Bobadil	2	1	2 500	9.50	23 750	2	500	Nil	24 250	B&C
									Sub total	36 750	
6	Primrose Deep Exp.	1	2	3 000	8.00	29 400	2.5	500	Nil	24 500	C
		2	6	9 000	8.00	72 000	6	500	Nil	72 500	C
									Sub total	97 000	
7	Grand Centre	1	3	3 000	8.00	24 000	2.5	1000	Nil	25 000	B
8	South Dallwitz	1	2	800	8.00	6 400	0.75	500	Nil	6 900	A
	Total excluding Primrose Deep Exp.			28 100	8.75			7500	1000	248 750	
	Total including Primrose Deep Exp.			40 100						345 750	



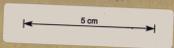
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ELECTROLYTIC ZINC CO. OF AASIA. LTD	
PROJECT: MT. BLACK	TAS.
DIAGRAMATIC CROSS SECTIONS THROUGH MT. BLACK E.L.	
	
SCALE: 1 : 10 000	REF. NO.
DATE: 19-3-74	DRAWN: R.A.H.



- PROJECT**
- 1 SOUTH HERCULES
  - 2 HERCULES EXP D.D.
  - 3 WHITE SPUR
  - 4 JUPITER
  - 5 BOBADIL
  - 6 PRIMROSE
  - 7 GRAND CENTRE - KOONYA
  - 8 SOUTH DALLWITZ
  - 9 JUPITER RING
  - 10 CUTTY SARK

- LEGEND**
- ROSEBERY GROUP SEDIMENTS
  - PRIMROSE PYROCLASTICS HANGING WALL
  - PRIMROSE PYROCLASTICS FOOTWALL
  - HOST ROCKS OR EQUIVALENT
  - PROPOSED DIAMOND DRILLHOLE



MT. BLACK EXPLORATION LICENCE  
 MAP TO INDICATE LOCATION OF PROPOSED  
 DIAMOND DRILLING AND EXPLORATION WORK 1974/75  
 SCALE 4" = 1 MILE