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GEOPHOTO MINERALS REPORT 1972/22

FINAL REPORT ON THE
ADELAIDE MINE AREA, M.L.47M/57
IN RELATION TO E.L.7/68, WEST TASMANIA

MICROFILMED

PREPARED BY
GEOPHOTO RESOURCES CONSULTANTS

FOR

TEXINS DEVELOPMENT PTY. LIMITED

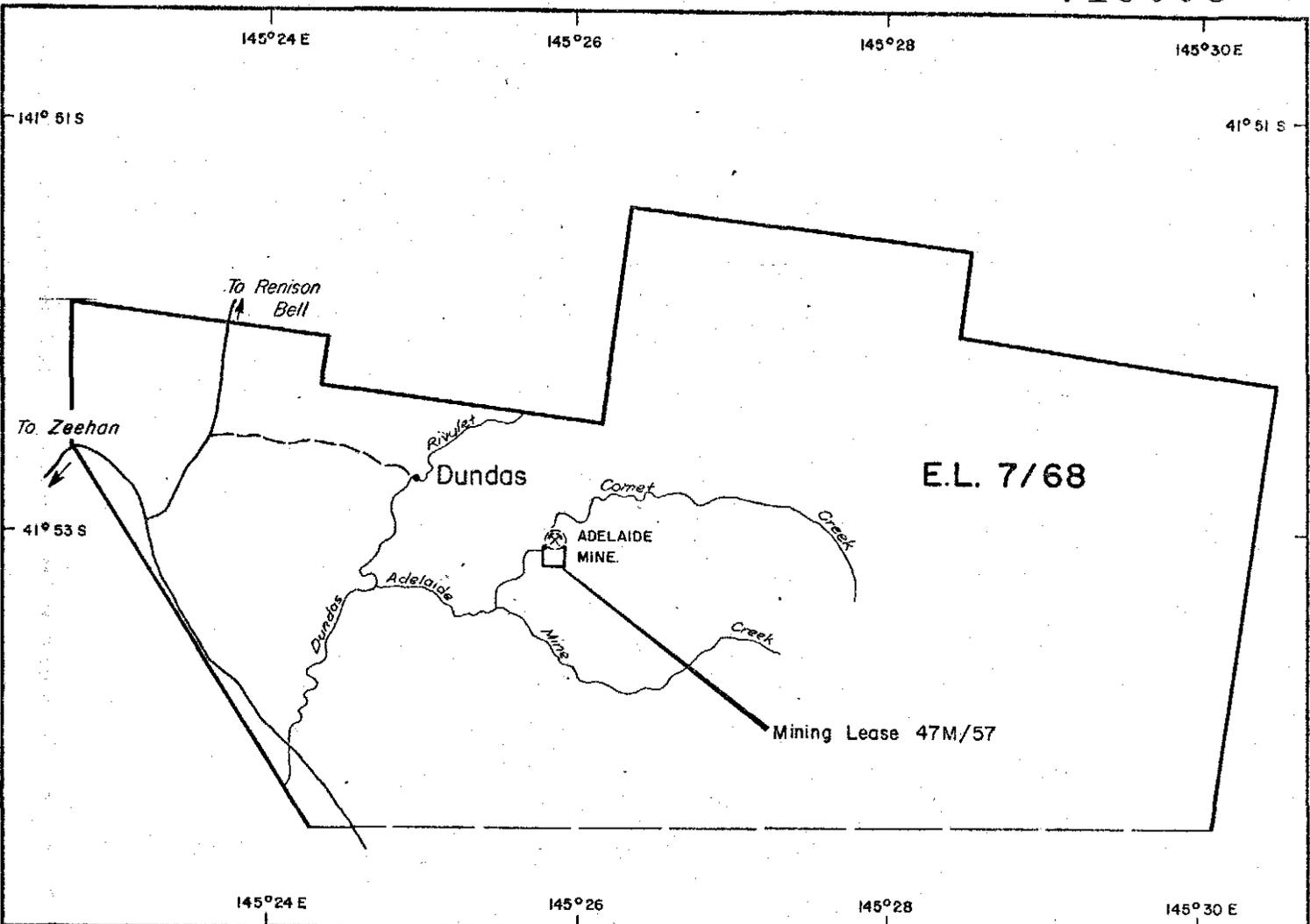
L. DISCALA
DECEMBER, 1972

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DRAWINGS

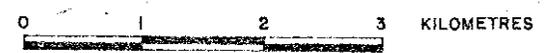
Location Map of M.L.47M/57	Fig. 1
Geologic Map at scale 1" = 100'	Dwg. 1/348
Geologic Map of Adit No. 1	1/347
V.L.F. Map	1/349



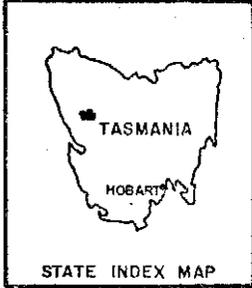
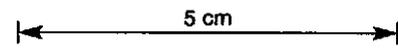
E.L.7/68 DUNDAS DISTRICT TASMANIA.

LOCATION MAP

SCALE



T. / N.



INTRODUCTION

This report presents the results of the investigations undertaken within and in the vicinity of Mineral Lease 47M/57. The study, finalised in November 1972, was conducted for the purpose of determining the extent and the geologic relationship of the vein structures which are exposed in the Adelaide Mine, and their possible extension north and south within E.L.7/68.

A selection of targets to be tested by surface diamond drilling was to follow. A surface geological map of the area under investigation, a V.L.F. first derivative map, and an underground geological map of Adit No. 1 are included.

LOCATION AND ACCESS

The Adelaide Mine is located at about 1km south-east of the abandoned Dundas township, on the southern side of Comet Creek. The area investigated is approximately 0.3km². Access is provided by a track which departs the main Dundas road 2 km east of the Queenstown-Burnie road junction. This track is passable by 2-wheel-drive vehicles throughout the year. Mapping was based on a grid (Adelaide grid) mostly laid down in 1970.

OWNERSHIP

The Adelaide workings are within a 10 acre Mineral Lease 47M/57 held by J.D. Murray of 8 Carter Place, Devonport. Geophoto Resources Consultants has negotiated with the lease holder an option to purchase due on the 1st February, 1973. By mutual agreement Mr. J.D. Murray and his partner, Mr. F. Mihalovitch, have been allowed to continue their limited activity in the mine to obtain specimens of crocoite for sale to collectors. (Fig. 1)

PREVIOUS WORK IN THE AREA

Reconnaissance geological, geochemical and geophysical investigations were carried out in the area by Geophoto Resources in 1969-1970.

Surface geological mapping: random sampling of the gossans, magnetometer, S.P. and V.L.F.-E.M. surveys were undertaken over the lines of the Adelaide grid.

The magnetometer survey broadly outlined the contact between serpentinite and the surrounding foundations.

The pattern obtained by S.P. measurements in the Adelaide and Red Lead grids is rather confused. The negative anomalies occur as ill-defined belts and do not correlate with the trends of the ore bearing structures in the vicinity of the Adelaide Mine. They are probably influenced by unknown and variable background effects.

The V.L.F.-E.M. survey defined an anomaly which roughly outlined the lode zone near the Adelaide main adit extending over a length of approximately 140m. The survey was not extended to the northern portion of the area. The anomaly was thus left open and a possible northwards continuation inferred.

METHODS OF INVESTIGATION

In November, 1972 an additional 7,000 feet of N.E.-S.W. lines, at 200ft intervals were laid out on the northern portion of the Adelaide grid. Geological mapping and V.L.F.-E.M. survey were carried out along the new lines. Further and more detailed surface geological mapping was undertaken in the southern portion of the grid in order to gather information on the nature and possible origin of the large iron-oxide cappings which are widespread in the area. Underground sampling was carried out in

Adit No. 1 of the Adelaide Mine to locate the lodes and define their attitudes.

THE ADELAIDE MINE WORKINGS

The Adelaide Mine has been worked since 1890, although in recent time very little development has been carried out. For some time the only activity has been the collection of mineral specimens.

In the mine, three lodes were worked by four short adits and a main shaft about 300ft deep from which five southerly trending levels were driven on the lodes at 117ft, 171ft, 220ft and 300ft. The lodes were stoped from the 220 ft level to 171 ft level and above the 171ft level for about 30ft (see Geophoto Minerals Report 1970/73 - Adelaide main shaft long. section). Most of the workings are now inaccessible but for a small portion of Adit No. 1. The adit, the portal of which is at an altitude of about 750ft ASL, was driven S.S.W. At 12m from the portal Lode No. 2 was intersected and a crosscut driven for 10m westwards and 6m eastwards to intersect Lode No. 3 and Lode No. 1. At the No. 3 Lode intersection, a drift continued south east for about 35m. Lode No. 1 was followed by a south-east drift for about 90m, while Lode No. 2 was followed for only 6m. A rise was opened from Lode No. 3 to the surface. Some stoping was carried out in the two main drifts. Accurate statistics on the production from the workings of the Adelaide Mine are not available. From old records, Blisset estimates a total output of 1,479 tons of Pb and 147,900 oz. of Ag.

GENERAL GEOLOGY

The general geology of the area under investigation is characterised by the occurrence of large outcrops of massive

serpentinite, interpreted as the product of serpentinization of a pyroxenite sill-like body, intruded in Cambrian time at the base of the Dundas Group (see Dwg. 1/348). The serpentinite has undergone a partial dolomitization and is surrounded by a wide zone of microcrystalline silicified rocks; crysotile and fibrous magnetite occur along joints. The silicification probably took place during the metasomatic alteration of the ultrabasic body when large amounts of SiO_2 were released following the hydration of the Mg. silicates.

In the north-west portion of the area the silicified zone appears to conformably underlie grey, laminated siltstone of the Dundas Group (Brewery Junction formation). In the south-east part of the area the Dundas Group is in fault contact with slates and quartzites of the Proterozoic Oonah formation. It is inferred that the silicified zone is formed by metasomatization of sedimentary units at the base of the Dundas Group.

The serpentinite body weathers along joints into brown granular limonitic agglomerates and, where fracturing has been intense, the final product is widespread iron-oxide outcrops. These form a conspicuous feature in the district and at first sight may be mistaken for the gossans related to oxidation of underlying sulphide masses.

True gossan outcrops, mostly consisting of black botroidal limonite with occasionally scattered crystals of cerussite, crocoite and dundasite, mark on the surface the lode zone, and occur only near the Adelaide Mine and in proximity to the contact between serpentinite and the silicified zone.

It appears that the mineralization of the area took the form of north-westerly trending, easterly dipping, fissure veins (mainly formed of galena with minor sphalerite in a siderite, dolomite, pyrite gangue) along a system of fractures which cut the serpentinite body and the surrounding silicified zone.

OREBODIES

The three lodes developed in the working of the Adelaide Mine are exposed only in the remains of Adit No. 1 (see Dwg. 1/347). Here, primary minerals (galena mostly) are observable in Drift No. 2 and Drift No. 3; Drift No. 1 was driven within the oxidised zone. The lodes strike N.N.W. and dip E.N.E. at 75°-80°. There is very little information about width, length, downward extension, grade and habit of the ore-bearing structures. Old reports (Montgomery, 1890) claim that the lodes were 30ft wide, and over 400ft in length (Reid, 1925). In Adit No. 1, Lodes No. 2 and 3 are represented by thin (maximum width approximately 3.5cm) fissure veins containing coarse galena with minor sphalerite and pyrite. In Drift No. 3 a galena vein cutting yellow brown earthy limonite, probably a weathering product of serpentinite, is visible over a strike length of 20m. Secondary minerals are abundant in Drift No. 3 and red crystals of crocoite and white crystals of cerussite and dundasite occur associated with sub-parallel fractures in the serpentinite-dolomite wall rocks.

The oxidized zone of Lode No. 1 is exposed in Drift No. 1. The hanging wall and footwall are well defined and outline a lenticular oxidized body with a maximum width of 1.5m. This body is a jasper-limonite gossanous breccia with abundant scattered crystals of crocoite and cerussite.

Nothing is known about the galena/sphalerite ratio at depth. There are no records of the Zn content of the Lodes. The mining system followed was to break only the galena-rich portions of the lode and to stop mining whenever the sphalerite content became appreciable.

GEOPHYSICAL INVESTIGATION

A V.L.F.-E.M. survey was carried out over 7,000 linear feet of the new portion of the grid. Readings were taken at 50ft intervals, using the signal from the N.W. Cape Transmitting Station. The quadrature component of the magnetic field was not measured during the survey because of a partial malfunction of the instrument. The data has been filtered and plotted following the Fraser procedure.

The already known main anomaly near the Adelaide Mine (see Dwg. 1/349) was recorded on Line 22S of the new grid. The very sharp gradient indicated a shallow depth for the anomaly, the length of which, by considering the 20- contour line, extends for 900ft. The 30- contour line seems to suggest a change of strike from N.W. to N.E.

In the northern part of the grid, but for a small anomaly on Line 18S, no anomalous values were recorded.

There is no indication of a southward continuity of the main Adelaide anomaly towards the Red Lead V.L.F. anomalies (see V.L.F. map).

CONCLUSIONS AND RECOMMENDATIONS

Surface and underground geological investigations of the area (the latter rather limited because of the inaccessibility of most old workings) suggest that the Adelaide prospect is not attractive, as far as the possibility of finding considerable tonnages of ore of mineable width and grade is concerned. The importance of the large "gossanous" area has been downgraded since it has been found that most iron-oxide cappings are not related to leaching of sulphides but to weathering of the serpentinite.

Any interesting continuity of the mineralization northwards is to be excluded and the extension southwards towards the Red Lead prospect is doubtful.

As far as width and grade of the lodes at depth are concerned, there is unfortunately insufficient data. We know that the mining operations were abandoned because the grade deteriorated below the 271ft level of the main shaft. The lack of records on the Zn content of the lodes, due to the selective mining system followed, is inhibiting.

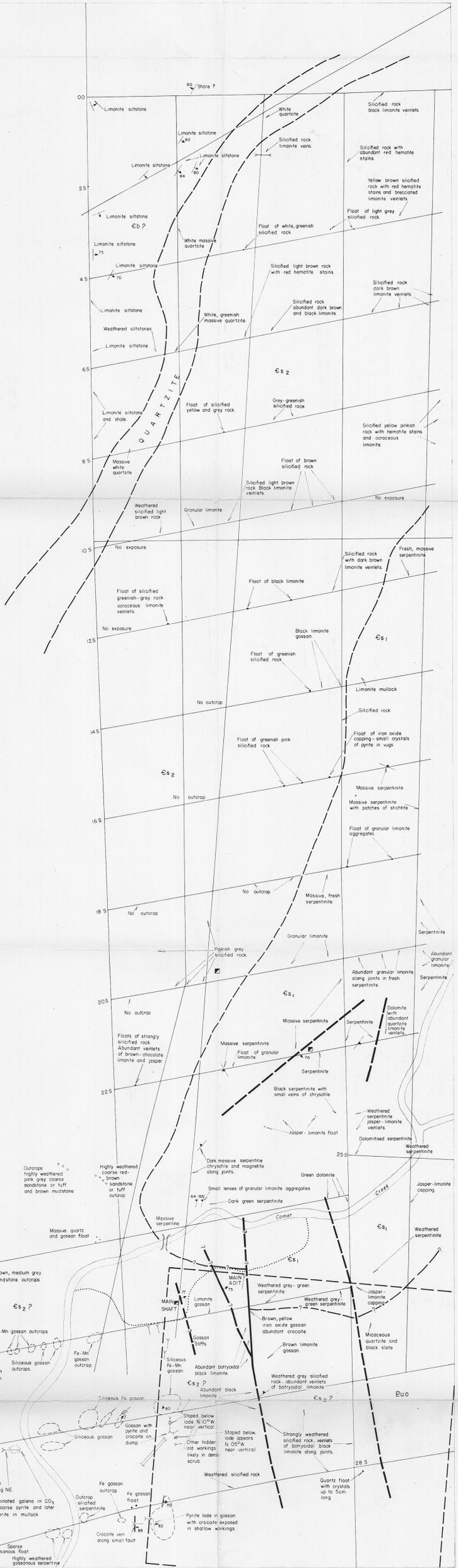
The V.L.F.-E.M. survey has permitted the outlining of a well defined anomaly near the Adelaide Mine, the magnitude and the length of which is considerable, if compared with the average in the Dundas area. However, our experience in the area indicates that V.L.F. anomalies alone are not sufficient for determining the geometry and the importance of the ore-bearing structures. The V.L.F. survey does not provide any indication of a southwards continuity of the mineralization towards the Red Lead prospect.

Summarising, our recommendations are:

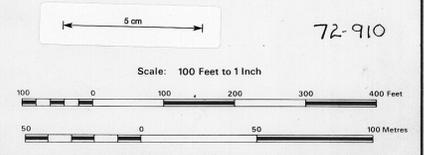
- 1) The option on Mineral Lease 47M/57 should not be exercised.
- 2) No diamond drilling should be undertaken in the area.
- 3) Should it become critical, following the development of our exploration in other more promising areas of E.L.7/68 to obtain additional tonnages of ore, the Adelaide prospect could again be taken into consideration.

In order to undertake such a programme it would not be necessary to negotiate a further option on Mineral Lease 47M/57. All major anomalies, with the exception of a portion of the Adelaide Mine anomaly, fall within E.L.7/68 (see Dwg. 1/349).

L. DISCALA,
December, 1972.



72-910



LEGEND

QUATERNARY	Qc	Colluvium	— ⁷⁰ —	Bedding attitude, inclined.	— — — ?	Fault, dashed where indefinite, questioned where inferred.
BREWERY JUNCTION FORMATION	Eb	Laminated siltstone quartzite (?)	— — —	Bedding attitude, vertical.	— — — ?	Contact, dashed where indefinite, questioned where inferred.
CAMBRIAN	Es2	Silicified rocks of probably sedimentary origin.	— / —	Joint, vertical.	☀	Dump
	Es1	Serpentine, partly dolomitised.	— \ —	Joint, inclined.	■	Shaft
PROTEROZOIC	OONAH FORMATION	Eu0	Micaceous quartzite and black slate.	— / —	○	Adit
					⊗	Trench or costean
					□	Pit
			— — —	Boundary of mining lease 47M/57		

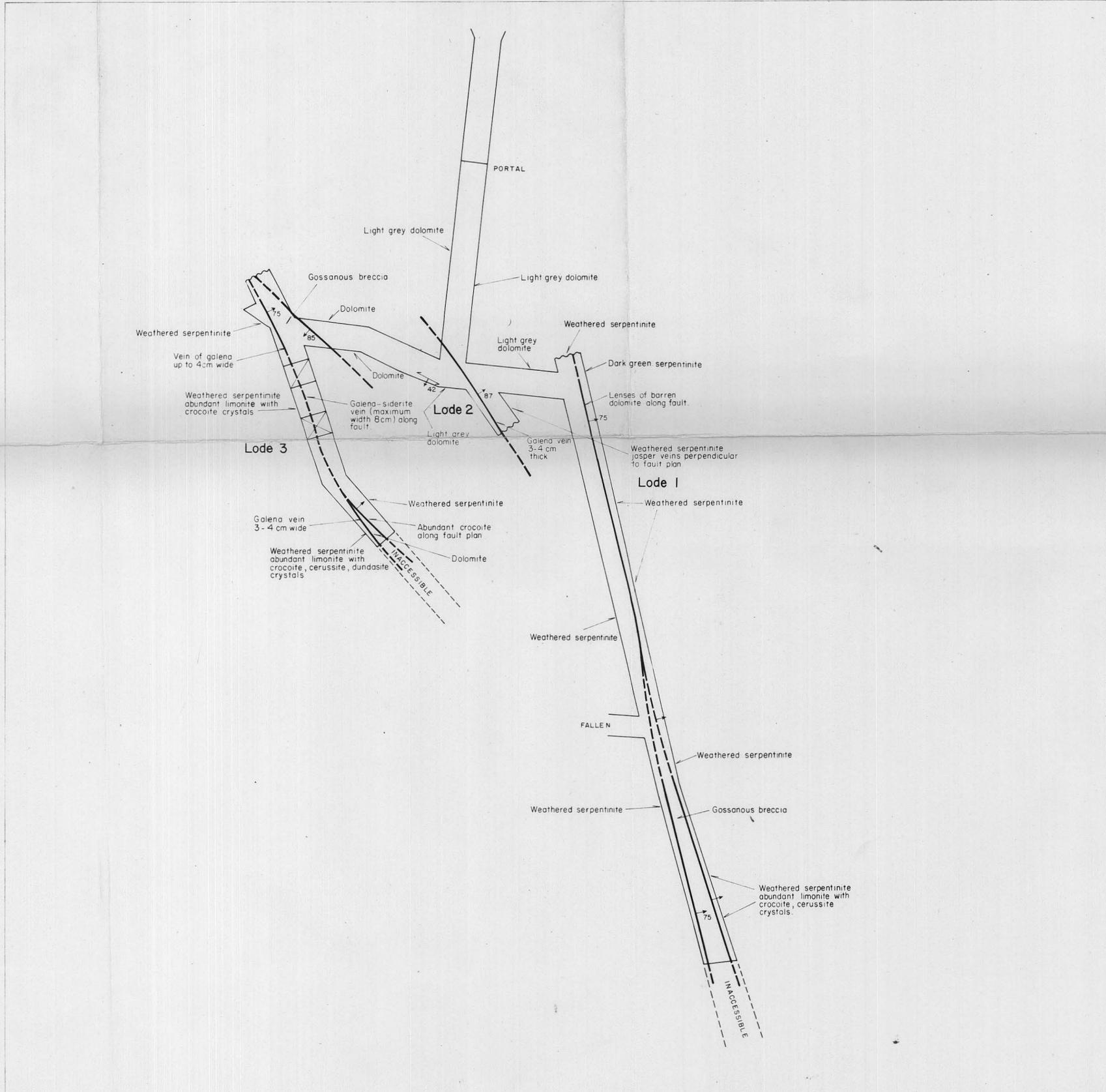
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T.N. TEXINS DEVELOPMENT PTY. LTD.
E.L. 7/68 DUNDAS DISTRICT, TASMANIA

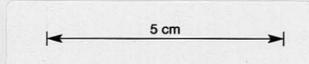
ADELAIDE GRID
GEOLOGY 2291

PROJECT: EL 7/68 AUTHOR: G. Gosson DATE: March 1973 DWG. NO: 1/348



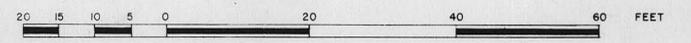
LEGEND

- Shearing inclined
- Fault, dashed where indefinite with arrow showing dip.
- Adit walls
- Face
- Winze
- Rise



Scale: 1: 200

72-910



719013

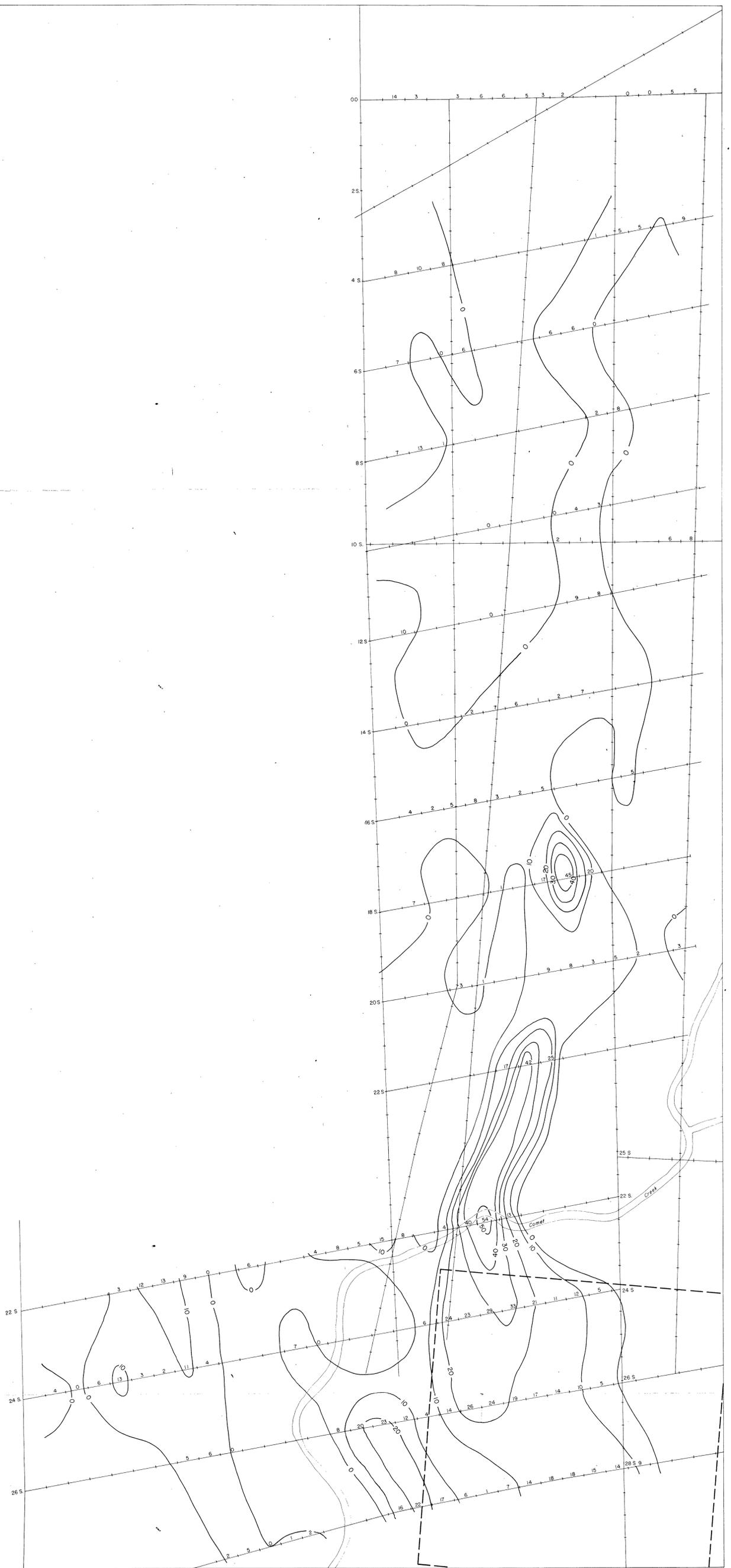
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E.L. 7/68 DUNDAS DISTRICT, TASMANIA
ADELAIDE MINE
GEOLOGY OF ADIT I, 2290

PROJECT	EL. 7/68	AUTHOR	L. Discala	DATE	March '73	DWG. NO.	1/347
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5 cm 72-910

Scale: 100 Feet to 1 Inch



719014

LEGEND	
	First derivative value
	Boundary of Mining Lease 47M/57

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	TEXINS DEVELOPMENT PTY. LTD. E.L. 7/68 DUNDAS DISTRICT, TASMANIA
	ADELAIDE GRID 2292
	V.L.F.-EM FIRST DERIVATIVE CONTOURS
PROJECT	7/68
AUTHOR	L. Discolo
DATE	MARCH 73
DWG NO	1/349