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Cyprus Minerals Australia Company

PROJECT A-84-111

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REF. No.	6568/86		

OPEN FILE

PROGRESS REPORT

SIX MONTHS TO JUNE 1986

ELLIOTT BAY EL 40/85

SOUTHWEST TASMANIA

AMG REFERENCE POINTS ADDED

P A JONES
CONSULTANT TO CYPRUS MINERALS

JUNE 1986

REPORT 489

CYPRUS

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ENCLOSURES

Scale

1	EL 40/85 - Dighem Survey	PRELIMINARY INTERPRETATION	
		● SHEET 1	1:20000
2		● SHEET 2	1:20000

004

146° E

012005

TASMANIA

BASS STRAIT

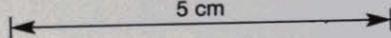


- ✈ Airport
- 🚊 Railway
- Power Station

50 km

Project Location

5 cm



SUMMARY AND CONCLUSIONS

The Elliott Bay tenement has excellent potential for hosting a volcanogenic massive sulfide deposit and subordinate potential for a volcanic associated gold deposit.

The tenement was granted to Cyprus at the end of December 1985 and a joint venture which is yet to be finalized was entered into with Poseidon Ltd with Cyprus acting as managers. Access to the tenement is gained via both fixed wing and helicopter with ground access predominantly by foot and occasionally by four-wheeled motorcycle.

BHP and Geopeko have previously explored the licence during the period 1965 to 1984. Surveys by Geopeko culminated in the discovery of two massive sulfide lenses which assayed 11.8% lead, 19.6% zinc, 0.2% copper, 270 g/t silver and 0.7 g/t gold over two

to four meters. Limited follow-up failed to locate lateral and depth extent to the bodies and Geopeko withdrew from the area.

The geology of the tenement is highly prospective with the host Mount Read Sequence of calc-alkaline volcanics known to host world class VMS deposits at Rosebery, Hellyer, Que River and Mount Lyell.

Cyprus' initial program concentrated on the follow-up of Dighem anomalies east of Mount Osmund as well as conducting limited reconnaissance surveys over Geopeko anomalies. Surveys included detailed mapping, bedrock sampling, Max-min EM surveying as well as minor petrographic surveys.

Cyprus will continue to evaluate the Dighem anomalies and also follow up a number of anomalies (coincident geochemical/geophysical) delineated from the 1986 field program. Follow-up of any anomalies arising from the re-evaluation of Geopeko's data by Mitre Geophysics will also be undertaken.

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RECOMMENDATIONS

It is recommended Cyprus carry out the proposed program of follow-up of Dighem anomalies, coincident geochemical/geophysical anomalies as well as anomalies generated from Mitre Geophysics re-evaluation of Geopeko's data.

It is envisaged line cutters would proceed the main camp move with exploration commencing early in December 1986.

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EXPLORATION TARGET

The Cambrian Mount Read Volcanics within the tenement have excellent potential for hosting a Rosebery or Hellyer style (20 million tonnes grading +20% lead-zinc with important gold and silver credits) exhalitive volcanogenic massive sulfide deposit. There is subordinate potential for volcanic hosted gold deposits.

DESCRIPTION OF THE PROPERTY AND OWNERSHIP

Cyprus Minerals Australia Company and joint applicant Poseidon Limited submitted a tender for the Mount Osmund Exempt Area - Application 8479 during October 1985. The 250 square kilometer licence is described as follows:

Commencing at the posted notice situate at a southwest corner of the area whose grid co-ordinates are 385350 meters E 5240000 meters N and being at high water mark on Elliott Bay thence by that high water mark in a general westerly and northerly direction to its intersection with 376000 meters E grid north to 5262000 meters N grid east to 383000 meters E grid south to 5261000 meters N again grid east to 386000 meters E again grid south to 5258000 meters N again grid east to 389000 meters E again grid south to 5240000 meters N aforesaid thence grid west to the point of commencement.

Cyprus was later advised the tender had been successful. The issue of the licence (EL 40/85) however could only proceed on a sole application basis because of administrative problems within the Mines Department. Poseidon withdrew from the application and the licence was granted on December 24, 1985 for a period of 12 months.

Subsequently Cyprus and Poseidon entered into a joint venture the terms of which are currently being finalized with Poseidon contributing 50% of expenditure and Cyprus as manager.

The minimum expenditure commitments on the licence are \$60,000 in Year One and \$150,000 in Year Two.

The whole of the licence lies within the Southwest Conservation Area and hence exploration guidelines have to be adhered to and programs (including alterations to programs) approved by the 'working group' (Mines Department, National Parks and Wildlife, Forestry and the Department of Environment) prior to any ground operations.

LOCATION AND ACCESS

The Elliott Bay area is located on the southwest coast of Tasmania approximately 85 kilometers south-southeast of Strahan (Figure 1).

Climatic conditions prevent effective field exploration in all but the summer months of December through March. Surface access to the tenement is via barge across Macquarie Harbor from Strahan and then on a vehicle track originally built to service the lighthouse at Low Rocky Point (long since decommissioned). This route is only passable to tracked vehicles (ie bombadiers). An airstrip at Moores Valley near the northern boundary of the licence serves as a staging point for helicopters ferrying men and equipment into the property and is the most practical means of transport available.

012
012013

145°00'E
42°30'S

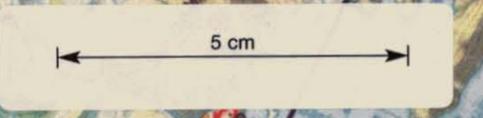
SOUTHERN

OCEAN

43°00'S
145°30'E
LOW ROCKY POINT



Figure 1
Location
10 km



AMG REFERENCE POINTS ADDED

Ground access within the tenement is similarly difficult with large areas of heathy scrubland mixed with impenetrable bauera and very thick expanses of rainforest necessitating helicopter support. Four-wheeled motorcycles proved useful in carrying heavy gear from camp to work site situations.

HISTORY AND PREVIOUS EXPLORATION

Prior to Cyprus' program of 1986 the Elliott Bay area has been actively explored by both BHP (1965-1975) and Geopeko (1977-1984).

BHP held the ground under EL 13/65 and conducted a helicopter borne EM (H-400) survey in 1975 but apparently did not follow-up any of the 100 or so anomalies. Minor ground work in the area entailed wide spaced stream sampling and rockchip sampling surveys with copper, zinc and nickel being used as anomaly identifiers.

No samples were assayed for gold and no follow-up programs were undertaken.

Since 1977 Geopeko have completed the following work:

- 1 Regional geological mapping of the Mount Read Volcanics at scale 1:10000 with particular emphasis on mapping zones of chlorite, sericite, silica and pyrite alteration
- 2 Stream sediment sampling over the Lewis River Volcanics with a sample density of ten samples per square kilometer. Broad coverage of the Mainwaring Group has been completed at a density of about eight samples per square kilometer
- 3 Follow-up of all significant aeromagnetic anomalies over the Lewis River Volcanics (defined in a previous airborne survey by BHP)
- 4 Follow-up of about 20% of the EM anomalies revealed by a McPhar 400 airborne survey
- 5 Gridding and bedrock geochemistry over the most easily accessible of the potential volcanic succession
- 6 Diamond drilling of 3008 meters in 16 holes and a further 638 meters in 16 Jacro AQ holes
- 7 A major dipole-dipole IP survey on 200 meter line spacing over the Wart Hill Pyroclastics in the Mount Osmund syncline area
- 8 A UTEM survey over ground considered most prospective for high grade volcanogenic massive sulfide deposits including Voyagers 19, 29 and 9 (see attached Mitre Geophysics report on Elliott Bay geophysical surveys).

The most significant result of Geopeko's work was the discovery of two zones of bedded massive sulfide lead-zinc-silver mineralization exposed in costeans north of the Voyager 19 alteration zone. The mineralization zones are 260 meters apart and at the same stratigraphic level within sericitic quartz feldspar crystal tuffs. Channel sampling across the zones gave the following results:

Zone A 4 meters of 10.2% lead, 17.9% zinc, 0.16% copper, 138 g/t silver, 0.6 g/t gold

Zone B 3 meters of 13.9% lead, 21.9% zinc, 0.2% copper, 680 g/t silver, 0.8 g/t gold

Three diamond holes drilled in 1981/2 were designed to test the mineralization at depth but failed to intersect significant grades. IP, gravity and UTEM surveys have confirmed the limited extent of costeaned mineralization.

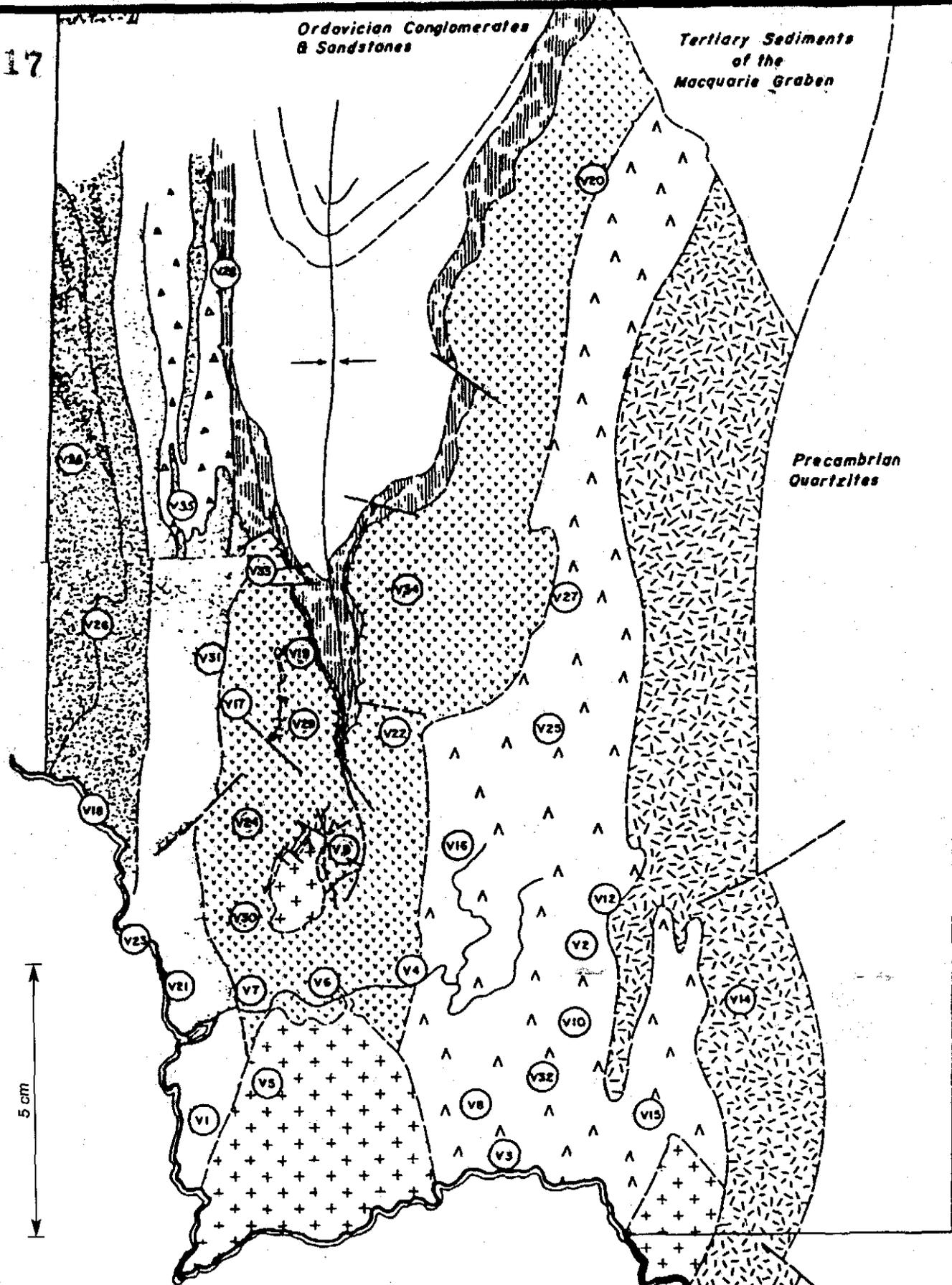
Table 1 lists all the anomalies defined by Geopeko at Elliott Bay and their rating (see Figure 2 for locations).

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Ordovician Conglomerates & Sandstones

Tertiary Sediments of the Macquarie Graben

Precambrian Quartzites



CAMBRIAN SEQUENCES

-  MAINWARING GROUP
-  WT. READ CORRELATES
-  Western Sequence
-  Tyndal Group Correlates

LEWIS RIVER VOLCANICS (Control Belt)

-  Wart Hill Pyroclastics
-  Nudson River Pyroclastics
-  Elliott Point Porphyry
-  Granite
-  Undifferentiated Acid Volcanics

Figure 2

E.L.27/76
 ELLIOTT BAY, TASMANIA
 GEOLOGY & PROSPECT LOCATIONS



KILOMETRES

GEPEKO-DEVONPORT BASE

TABLE: 1 SUMMARY OF PROGRESS ON VOYAGER PROSPECTS, ELLIOTT BAY E.L. 27/76

AUGUST 1983

PROSPECT	DEFINITION	STYLE OF MINERALIZATION	WORK COMPLETED	SIGNIFICANT RESULTS	PRIORITY RATING
Voyager 1	Old Cu prospect	Cu-U Chemical Sediment	. Grid . Mapping . Soil geochem . IP . Turam . Magnetics . 2 JDM	. Magnetic anomaly . Turam anomaly	C
Voyager 2	Old Cu prospect	Stratiform Pb-Zn-Ag	. Grid . Mapping . Soil geochem . IP . 5 JDM . 1 200m DDH	. 5m at 2.22Pb, 29g/tAg in drill hole	B
Voyager 3	Old prospect	Stratiform Pb-Zn-Cu	. Grid . Mapping . Soil geochem . IP . VLF-EM . 2 JDM . 1 200m DDH	. Good soil Pb-Zn anomalies with coincident IP.. Drill holes intersected low grade mineralization	B
Voyager 4	A.E.M. anomaly Drainage Anomalies	Unknown	. Recy line of VLF-EM	. Anomaly not located	C
Voyager 5	Aeromagnetic Anomaly	Unknown	. Gridding . Magnetics . IP . 2 JDM	. No mineralization Located	C
Voyager 6	Aeromagnetic Anomaly	Granite Contact Skarn?	. Gridding . Magnetics . VLF-EM	. Magnetic anomaly . Rock chip Cu, Pb, Au anomaly	C
Voyager 7	Aeromagnetic Anomaly	Unknown	. Gridding . Magnetics . Sampling . Soil	. No significant results	C
Voyager 8	Tin Stream Anomalies	Unknown	. Mapping . Pit sampling	. Source of Sn in Tertiary gravels	C
<u>Voyager 9*</u>	Aeromagnetic Anomaly Alteration zone	Stratiform Cu-Pb-Zn	. Gridding . Mapping . Magnetics . VLF-EM . Soil Sampling . IP . Gravity . 2 DDH . 1 JDM	. Good soil anomalies for Cu and for Pb + Zn. Chlorite stringer zone in drill core . IP anomalies revealed 1982/83 survey	A
Voyager 10	Pb-Zn Stream anomaly	Stratiform Pb-Zn-Cu	. Gridding . IP . Sampling . Soil	. No IP anomalies . Weak soil anomalies	C
Voyager 11	Airborne EM	Unknown	. Recy lines of VLF-EM	. Anomaly not located	C
Voyager 12	Au-Ag gossams	Epigenetic Au-Ag veins	. Gridding . Geology . IP . SF . VLF-EM . 4 JDM . 1 160m DDH	. Weak mineralization located	C
Voyager 14	Aeromagnetic Anomaly	Unknown	. Recy lines of magnetics	. Narrow anomaly located	C
Voyager 15	Aeromagnetic Anomaly	Unknown	. No work to date	.	C
Voyager 16	Aeromagnetic Anomaly Drainage Pb-Zn Anomaly	Stratiform Pb-Zn-Cu	. Gridding . Geology . Soil Sampling . Au panning . Magnetics	. Anomalous Au in streams . Good Cu Pb Zn Fe soil anomaly	C

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PROSPECT	DEFINITION	STYLE OF MINERALIZATION	WORK COMPLETED	SIGNIFICANT RESULTS	PRIORITY RATING
Voyager 17	Aeromagnetic Anomaly	Unknown	<ul style="list-style-type: none"> One grid line Magnetics Soil Sampling 	<ul style="list-style-type: none"> Weak magnetic anomaly 	C
Voyager 18	Copper bearing outcrops	CPY-dolomite in basic volcanics	<ul style="list-style-type: none"> Mapping Rock chip sampling 	<ul style="list-style-type: none"> 15m of 0.1% Cu in shales 	C
<u>Voyager 19*</u>	Large alteration zone Anomalous rock chip samples	Stratiform Cu-Pb-Zn-Ag	<ul style="list-style-type: none"> Gridding Mapping Magnetics VLF-EM Gravity Soil Sampling IP Costeaming 3 DDH 	<ul style="list-style-type: none"> Massive galena-sphalerite mineralization located in two zones 250m apart Weak IP anomaly revealed 1982/83 	A
Voyager 20	Cossano zone Pb-Zn stream anomaly	Stratiform Pb-Zn-Cu	<ul style="list-style-type: none"> Reconnaissance Gridding Mapping Soil Sampling Magnetics 	<ul style="list-style-type: none"> Soil geochemical anomalies located at favourable stratigraphic position 	B
Voyager 21	A.E.N. Anomaly	Cu chemical Sediment	<ul style="list-style-type: none"> Gridding Magnetics Turan Soil Sampling 	<ul style="list-style-type: none"> Linear magnetic anomaly Weak curam anomaly 	C
Voyager 22	Sericite-chlorite Alteration Zone	Stratiform Cu-Pb-Zn	<ul style="list-style-type: none"> Gridding Soil Sampling Magnetics Mapping 	<ul style="list-style-type: none"> Moderate soil geochemical anomaly located No significant IP 	B
Voyager 23	Copper Bearing outcrops	CPY-dolomite in basic tuffs	<ul style="list-style-type: none"> Mapping Rock chip sampling 	<ul style="list-style-type: none"> Weak Cu mineralization located 	C
<u>Voyager 24*</u>	Au drainage anomaly	Vein or porphyry gold in rhyolitic agglomerates and tuffs	<ul style="list-style-type: none"> Gridding Mapping Panned concentrate sampling Soil sampling Costeaming Resistivity 300m DDH 	<ul style="list-style-type: none"> Gold source traced to rhyolitic tuffs and silicified agglomerates. Coincident base metal anomalies IP anomalies revealed 1982/83 	A
Voyager 25	Pb-Zn-U drainage anomaly	Stratiform Pb-Zn-Cu	<ul style="list-style-type: none"> Reconnaissance mapping only 		C
Voyager 26	Airborne E.N. anomalies	Cu-dolomite type	<ul style="list-style-type: none"> Gridding Mapping Soil Sampling Magnetics 	<ul style="list-style-type: none"> No significant mineralization Anomaly caused by black shales? 	C
Voyager 27	Pb-Zn drainage anomaly	Stratiform Pb-Zn-Cu	<ul style="list-style-type: none"> No work done 		B
Voyager 28	Anomalous Au in soil sampling	Vein style Au?	<ul style="list-style-type: none"> Geological reconnaissance Soil sampling 	<ul style="list-style-type: none"> Gold believed to have a source in Tertiary gravel cover. Good single station base metal anomaly located 	C
<u>Voyager 29*</u>	Anomalous Ag-Pb-Zn in reconnaissance soil samples	Stratiform Pb-Zn-Ag	<ul style="list-style-type: none"> Gridding Soil sampling Mapping VLF-EM Magnetics IP Gravity Pitting 	<ul style="list-style-type: none"> Good soil geochemical Pb Zn Ag anomalies, highest value of 72 Cu+ Pb+ Zn. The best geochemical anomaly has coincident IP, gravity and SP response Deep IP anomaly on western side of grid 	A
Voyager 30*	Anomalous Au-Sn in streams	Gold vein style	<ul style="list-style-type: none"> Panned concentrate sampling Gridding Mapping Pitting VLF-EM Magnetics Soil sampling IP 	<ul style="list-style-type: none"> Au source related to tuff horizon within Wart Hill pyroclastics. Coincident IP, SP VLF-EM magnetic and base metal soil anomaly Pb-Zn-Ag-Au mineralization located in quartz veins Complex IP zone from 1982/83 Survey. 	A

PROSPECT	DEFINITION	STYLE OF MINERALIZATION	WORK COMPLETED	SIGNIFICANT RESULTS	PRIORITY RATING
Voyager 31	Stream geochemical anomaly	Vein As-Pb-Zn-Ag mineralization along major lineament	<ul style="list-style-type: none"> . Gridding . Mapping . Soil sampling . Rock chip sampling 	<ul style="list-style-type: none"> . Mineralization located in pyroclastics over a 1km length; erratic grade distribution, structurally controlled 	B
Voyager 32	Area between Voyager 3 and Voyager 10 favourable stratigraphy	Stratiform Pb-Zn-Cu	<ul style="list-style-type: none"> . Regional geological mapping . Rock chip sampling 	<ul style="list-style-type: none"> . Anomalous Cu in gossanous material from volcanic-sediment interface 	B
<u>Voyager 33*</u>	Favourable stratigraphy N of V19 in western flank of the Mt Osmond syncline	Stratiform Pb-Zn-Cu	<ul style="list-style-type: none"> . Gridding . Geological mapping . Soil sampling . VLF-EM . Magnetics . Fitting 	<ul style="list-style-type: none"> . Two good Pb-Zn-Ag soil geochemical anomalies located . Costam revealed mineralization of 8m width @ 1.1% Pb, 96gm/t Ag. . Strong coincident IP anomaly 	A
<u>Voyager 34*</u>	Area having favourable stratigraphy on E of Mt Osmond syncline	Stratiform Pb-Zn-Cu	<ul style="list-style-type: none"> . Gridding . Mapping . Soil geochemistry . Magnetics . IP 	<ul style="list-style-type: none"> . Area of good Cu-Pb-Zn-Ag soil geochemistry located . Weak IP character 	A
Voyager 35*	Drainage anomalies in Mainwaring group	Unknown	<ul style="list-style-type: none"> . No follow up 		B
	<u>PRIORITY RATING</u>	A - Good Potential B - Medium Potential C - Low Potential			
		* Prospects recommended for follow-up in 1983/84 season.			

REGIONAL GEOLOGY AND MINERALIZATION

The regional geological setting is related to Paleozoic volcanic and sedimentary processes in a linear trough (the Dundas Trough) along the western margin of the Precambrian Tyennan nucleus composed of metamorphosed siltstones and quartzites. Early Cambrian sedimentation includes sandstone, shale and carbonates (Success Creek Group) followed by mudstones, greywacke and basic volcanics (Crimson Creek Formation) and in the middle to late Cambrian mudstones, conglomerate and minor volcanics of the Dundas Group. The associated calc-alkaline Mount Read Volcanics developed on shallow water eastern margin of the trough sediments adjacent to the Precambrian nucleus. The volcanics interfinger with or are faulted against the Cambrian sediments (Upper Dundas Group) to the west and are composed of rhyolite, dacite, intermediate rocks and basalt in the form of lava flows, breccias, tuffs and plugs.

Sedimentation continued in the late Cambrian to Ordovician with deposition of siliceous sands and gravels (Owen Conglomerate) then shallow water limestones and shales (Gordon Limestone). In the silurian and Devonian sandstones and siltstones of the Eldon Group were deposited.

Folding and faulting of the above sequences and post tectonic granitoid intrusives occurred during the mid Devonian Tabberabberan Orogeny and the resulting sedimentary - intrusive complex is overlain by subhorizontal Carboniferous - Triassic successions intruded by Jurassic dolerite sills and dikes.

All known metal mines and prospects in the region occur in late Precambrian to late Devonian rocks. Base metal and gold production is dominated by the Mount Lyell, Rosebery and Que River mines (Table 2).

TABLE 2 BASE METAL AND GOLD PRODUCTION - TASMANIA WEST COAST

Mine	Gross Reserves (million tonnes)	Grade
Rosebery	18.4	5.6% Pb, 18.2% Zn, 0.7% Cu, 187 g/t Ag, 3.4 g/t Au
Mt Lyell	147	1.5% Cu, 8 g/t Ag, 0.4 g/t Au
Que River	6	7% Pb, 12.5% Zn, 0.4% Cu, 171 g/t Ag, 3.5 g/t Au
Hellyer	25+	7% Pb, 14.0% Zn, 0.3% Cu, 180 g/t Ag, 2.5 g/t Au
Pinnacles	0.1	6.6% Pb, 18.8% Zn, 1.3% Cu, 122 g/t Ag, 4.1 g/t Au
Elliott Bay	-	11.8% Pb, 19.6% Zn, 0.2% Cu, 370 g/t Ag, 0.7 g/t Au

These are volcanogenic massive sulfide deposits hosted by the central parts of the Cambrian Mount Read Volcanics, a sequence of felsic breccias, tuffs and lavas with minor siltstone. The deposits are characterized by large tonnage and area and are finely layered with generally high zinc-copper ratios. Typical mineral assemblage is pyrite, sphalerite, galena and chalcopyrite with silica and barite gangue minerals. They have extremely variable conductivity and chargeability properties. Airborne EM systems have been successfully used to detect massive sulfides, for example the Que River S lens, however the much larger Que River P lens is nonconductive and lacked an EM response but was strongly responsive to the induced polarization technique. Other favored ground techniques include stream sediment and soil geochemical sampling especially in areas where outcrop and access is poor. However stream sediment dispersion trains may be short (less than a few hundred meters) due to rapid dilution caused by high rainfall and the acid reducing environment caused by thick vegetation. In rapid flowing streams where there is an absence of -80 mesh silt consideration should be given to cold extraction geochemistry to detect trace metals fixed by manganese and iron coatings on gravels. This technique can enhance anomaly to background contrasts and give longer dispersion trains around mineralization.

GEOLOGY AND MINERALIZATION OF THE PROPERTY

Geological control within the tenement is poor due to its remoteness and poor outcrop (generally less than 1%) with mapping being based entirely on work conducted by BHP and more recently by Geopeko (Enclosures 1 and 2).

Geopeko have mapped the following major lithostratigraphic units

		Approx Thickness (meters)
TERTIARY	- Unconsolidated gravels	0-50
ORDOVICIAN	- Owen Conglomerate	900
CAMBRIAN	- Mainwaring Group	2500
	- Lewis River Volcanics	7000
PRECAMBRIAN	- Arthur Group	-

The Lewis River Volcanics represent the southern most stratigraphic equivalent of the Mount Read Volcanics and have been subdivided by Geopeko geologists into five major units (Figure 2).

TABLE 3 LEWIS RIVER VOLCANICS - STRATIGRAPHY AND DESCRIPTIONS

1	Tyndall Group Correlates	- reworked rhyolitic tuffs, agglomerates sandstones and black shales
2	Western Sequence	- argillites, black shales, basic volcanics with minor dolomites and rhyolitic tuffs
3	Wart Hill Pyroclastics	- mixture of massive rhyolite lavas and pyroclastics (ashflows) plus minor quartz pebble conglomerates and shales
4	Hudson River Pyroclastics	- predominantly chloritic dacite - rhyolite tuffs and lavas with minor horizons of greywacke and siltstone
5	Elliott Point Porphyry	- massive coarse grained quartz feldsparbiotite porphyry

Three bodies of Cambrian granite intrude the Lewis River Volcanics in the southern part of the tenement. Cyprus' initial reconnaissance surveys over the Lewis River Volcanics failed to detect any discernable textural or compositional difference between Geopeko's Wart Hill Pyroclastics and Hudson River Pyroclastics and the basis for the subdivision is questioned.

Collectively however, Units 3, 4 and 5 (Table 3) are considered to be equivalent to the Central Lava Belt of Corbett (1981). The most significant mineralization discovered to date occurs in Unit 3 with lesser mineralization in Unit 2 and 4. As discussed previously (History and Previous Exploration) two lenses of massive base metal sulfide were discovered near Wart Hill in a classical volcanogenic environment. The banded lead/zinc mineralization is hosted by mudstones and tuffaceous mudstones which have been intensely altered to chlorite and sericite schists. A mineralized trend within Unit 4 contains possible stringer sulfide mineralization (V-12) with high gold (to 265 g/t) and silver (to 440 g/t) and close to V-2 a Geopeko diamond hole encountered 53 meters grading 0.3% lead including 5 meters of 2.3% lead and 29 g/t silver. Minor occurrences of copper (to 1%) in iron rich (magnetite and/or pyrite) volcanics are known from several localities within Unit 2 and are associated with anomalous (+ 0.1 g/t) gold.

The Mainwaring Group conformably overlies the Lewis River Volcanics and is composed dominantly of basaltic to andesitic volcanics, chloritic shales and minor dolomites. This group is considered to correlate with the Dundas Trough sequences further north. Very little exploration has been carried out by Geopeko in the Mainwaring Group primarily due to inaccessibility in extremely thick rainforest areas.

The major structural feature of the area is the Mount Osmund Syncline, a broad structure of Tabberaberan age which has folded the Ordovician and Tyndal Group rocks. It is tentatively suggested the syncline lies adjacent to a major Cambrian basement structure which passes northwards up the western flank of the syncline and southwards towards the Low Rocky Point granite. The structure is readily observed on landsat imagery, however is less evident on the 1:42000 black and white aerial photography. The syncline may be due to a reactivation or en-echelon tear along this structure. Further major north-south structures bring the western sequence into juxtaposition with the Mainwaring Group of volcanics and sediments.

Cleavage generally shows greater development in the Lewis River Volcanics than further north in the Mount Read Belt. Only one cleavage is developed commonly parallel to the axes of the folds varying from a strike of 290° to 020° with a mean of about 330° magnetic. In the overlying Mainwaring Group the rocks show a considerably greater degree of deformation with two cleavages being developed. The dominant cleavage strikes at 345° to 010° dipping west at $70-80^{\circ}$ while a second poorly developed older cleavage occurs roughly at right angles to the first.

WORK CONDUCTED BY CYPRUS

Work during the 1986 summer field season included the flying of helicopter borne Dighem-magnetic surveys and the subsequent ground follow-up of anomalies generated. Ground surveys included wide spaced grid line cutting, bedrock soil sampling, minor rockchip sampling, geological mapping and geophysical Max-min EM surveys.

Field examination commenced in mid March and was prematurely completed at the end of April due to weather conditions. The crew consisted of from two to three geologists, four field assistants, one geophysicist and a cook. Daily radio contact was maintained with the Cyprus base in Zeehan and 'resupply runs' were spaced at approximate weekly intervals.

All access to the tenement was by air with the initial camp site (Enclosures 1 and 2) being serviced by fixed wing aircraft into

Moore's Valley Airstrip with gear being ferried to the camp site by a four-wheeled motorcycle. The second camp site was serviced entirely by helicopter. Access to all prospects was by foot with back-up by the four-wheeled motorcycle carrying the more heavier loads (Max-min EM system). The motorcycle was also used on a reconnaissance basis allowing prospects to be evaluated utilizing existing Geopeko tracks which would otherwise have been considered too far for foot access.

Base maps at a scale of 1:10000 are currently being prepared from Mines Department 1:15840 topographic sheets obtained through Dr R Richardson.

All reconnaissance areas are shown on Enclosures 1 and 2 and sections showing minor geology, sample locations, lead and zinc assays and all geophysical data at a scale of 1:5000 are included as Appendix 3.

Ten samples have been submitted to Pontifex and Associates for detailed descriptions. A Mitre Geophysics evaluation of the ground program is currently in progress however appended is a comprehensive evaluation of the Dighem data (Appendix 1). All assay results are included as Appendix 4. Joint venture partner geologist D Edgecombe submitted an appraisal of his reconnaissance surveys along with his study of the Geopeko literature to both Poseidon and Cyprus (Appendix 2) indicating his thoughts on the prospectivity of the tenement.

Gridding

Lines 1 to 15 totalling 19.25 line kilometers were cut and marked at 25 meter intervals along lines. The burnt out heath and bushland proved extremely difficult to negotiate especially with bulky EM gear hence it proved necessary to cut most lines. A number of the small but steep gullies proved to be very difficult with extremely thick baueria. In light of this line cutters will be brought in prior to the commencement of the next field season to set out and cut the required traverse lines.

Helicopter Borne Geophysics

Dighem Limited was contracted in early January to fly 500 line kilometers of EM with a minimum line length specification of three kilometers and 150 meter spacings between lines (Figure 3).

The two volcanic belts outcropping on both the western and eastern links of the Mount Osmund Syncline were covered. Both these areas had received little work by preceding explorers and Dighem was chosen as a cost effective method of screening the prospective sequence to an approximate depth of 50 meters.

Mitre Geophysics conducted a preliminary evaluation of the analog data during February in order to identify targets worthy of ground follow-up prior to the cessation of the summer field season (Appendix 1). Ten anomalous areas were targeted for ground evaluation using Bishop's recommended Max-min EM system. Extra care including the levelling (clinometer) of lines was necessary when using this system. The system is more sensitive than 'Genie EM' which was used on the adjacent Cyprus Sorell licences during the preceding summer and has a frequency (3555 Hz) closer to that generated by Dighem EM.

Ground Geophysics

Lines 1 to 14 were surveyed with max-min EM - 3555, 888 and 222Hz at 25 meter spacings with a 50 meter separation between receiver and transmitter. Ground magnetics were completed over Lines 1 to 12 using a MP-2 magnetometer at 12.5 meter spacings along lines. This was designed to aid the location of helicopter borne EM anomalies (as magnetics were flown concurrently) should the Max-min have failed.

In general the magnetics proved to be quite 'flat' with only five responses being delineated varying from 20 nanoTeslas to 160 nanoTeslas on Lines 2, 3, 5 and 8. Poor outcrop in the vicinity of the responses hindered their appraisal, however assay results showed little to no anomalism.

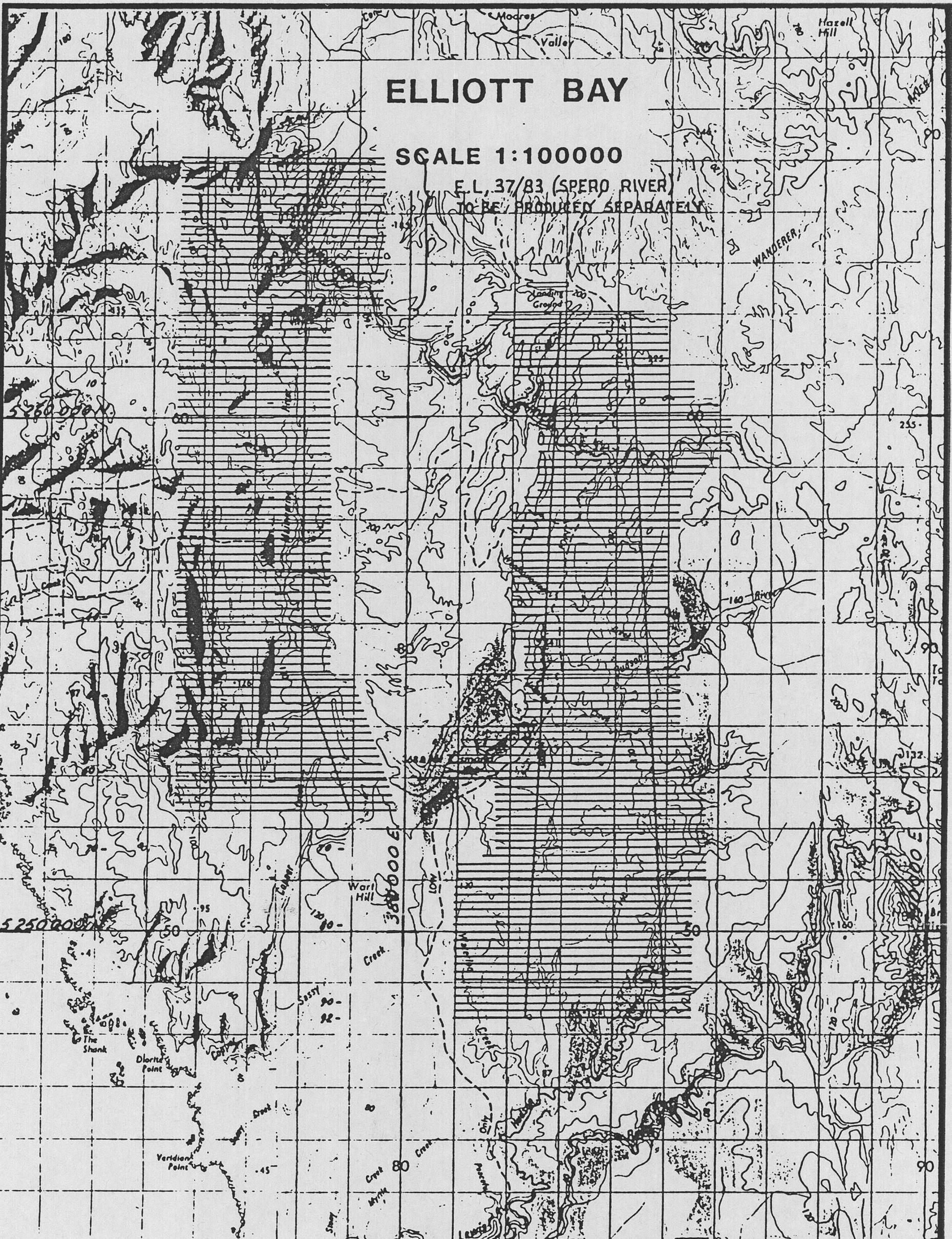
031

012032

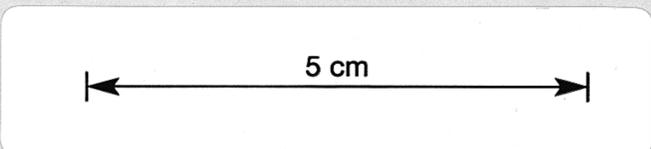
ELLIOTT BAY

SCALE 1:100000

E.L. 37/83 (SPERO RIVER)
TO BE PRODUCED SEPARATELY



630 line-km
+ ~56 line km magnetics tie-lines



MITRE GEOPHYSICS PTY. LTD.

ELLIOTT BAY, TAS.
PROPOSED FLIGHT LINES
DIGHEM SURVEY

DRAWN BY :	J.R.B.
DRAFTSMAN:	
DATE :	Nov '85
REVISIONS :	

FILE NO.

SCALE 1:100,000

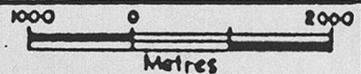


FIG. 3

Dighem responses were defined extremely well utilizing the Max-min EM system. Data from the system were plotted in the field and anomalous zones were targeted for infill geochemical surveys. Mitre Geophysics is currently conducting a comprehensive evaluation of this data along with the Dighem, geochemistry and geological results. Mitre is also conducting a review of Geopeko's geophysical data, more specifically their resistivity, chargeability and UTEM data encompassing the Wart Hill area.

Geochemistry

A total of 445 bedrock soil samples and 14 rockchip samples were taken at 50 meter spacings along Lines 1 to 12 and 14. Areas of anomalous Max-min activity were infilled at 25 meter spacings.

Samples were boxed wet in the field and dispatched to Amdel in Burnie for sample preparation. Pulps were subsequently sent to Amdel's laboratories in Adelaide where they were assayed for copper, zinc, silver by AAS, lead and arsenic by XRF and gold by fire assay, 50 gram charge and AAS finish.

Initial gold results of >1.0 g/t proved highly encouraging however check assaying after previous assay problems failed to substantiate the initial results. At present all gold assays are being re-assayed to alleviate the problem of following up bogus results this coming summer field season.

Base metal values proved interesting, results of which are as follows:

- Line 2 a) A strong zinc (to 550 ppm) anomaly occurs from 10550 to 10850E - no coincident lead
- b) Minor lead-zinc (to 100 and 200 ppm) values occur semi coincident with a spiky (shallow?) magnetic response from 11000 to 11150E with no associated EM response

Line 5 Strongly anomalous zinc (to 690 ppm) and lead (to 175 ppm) occur coincident with a strong Max-min response

Line 8 Low tenor lead (to 100 ppm) and zinc (to 190 ppm) geochemistry was delineated coincident with a moderate tenor Max-min response

Spiky one point anomalies (ie lead to 950 ppm) occur along most lines and are possibly related to minor veining carrying trace amounts of galena and sphalerite. Obvious formational changes are observed when background values of less than 30 ppm abruptly plateau to 80 to 100 ppm as on Line 3. Background values in general however ranged from 20 to 50 ppm lead and/or zinc.

Arsenic values proved quite low and until representative gold values are returned no appraisal can be made on their significance.

Geology

Reconnaissance geologic mapping along lines has shown outcrop is extremely poor - less than 1% and what appears to be outcrop on aerial photographs is in fact abundant milky quartz and quartzite fragments derived from the Precambrian set in a peaty matrix.

Mapping on Lines 1 to 15 has outlined a monotonous sequence of rhyolite crystal tuffs, crystal-lithic tuffs of probably ashflow origin (minor welded units), minor agglomerates and lapilli tuffs and abundant quartz chlorite veining and blooms.

The rocks are very weakly altered, locally sericitic and are very 'hungry' looking - little or no pyrite being evident. South of Line 15 reconnaissance traverses were conducted over Geopeko anomalies Voyager 19, 22, 27, 29 and 34 and Dighem anomalies 5 and 8. Mapping suggests the degree of alteration increases southwards evidenced by increasing pyrite or ferruginous stainings as well as increasing chlorite and sericite styles of

alteration. In the vicinity of Dighem anomaly 8 rocks of a more mafic composition were observed possibly of andesitic to dacitic composition. Trace amounts of galena were observed from this locality associated with strong chlorite/sericite alteration.

As stated previously, Geopeko's Wart Hill Pyroclastics and Hudson River Pyroclastics boundary was crossed several times and no textural or compositional difference was observed and the basis for the subdivision is questioned. In light of this fact a great deal more volcanics become increasingly more prospective especially the line of anomalies delined by Geopeko - Voyager 3, 32, 10, 2 and V12.

Very few exposures of fine grained (silt, clay) epiclastics rocks as well as very altered tuffaceous rocks occur east of Mount Osmund. This is probably more a reflection of relative resistance to weathering than abundance as there are large tracts of ground with no outcrop much of which may contain some of these rock types.

Similar rocks to those east of Mount Osmund outcrop in the Wart Hill/Voyager 19 area with rhyolite crystal tuffs being dominant. A higher percentage of agglomeratic units are also present and their large size indicates a reasonable proximity to a vent source. The alteration is weak to moderate in general with pervasive sericite and minor ferruginization. Strong siliceous alteration has affected the immediate Wart Hill area in association with a marked increase in ferruginization. The two sulfide lenses are hosted by intensely altered chlorite and sericite schists with minor siliceous zones. None of the host sequence outcrops nor the mineralization hence large tracts of ground with correspondingly poor to nil outcrop remain highly prospective. Similarly the belt of volcanics mapped by Geopeko west of Mount Osmund (Voyager 28 area) also remains highly prospective primarily due to its unexplored nature and that it be along strike from the V19 mineralization.

Petrography

Ten samples have been submitted to Pontifex and Associates for general descriptions and comment on genesis of rock types and of any sulfide phases.

EXPLORATION POTENTIAL

The tenement has excellent potential for hosting an exhalitive volcanogenic massive copper, lead, zinc, silver, gold deposit (VMS) with reserves of from 10 to 20 million tonnes grading +20% combined base metals. There is subordinate potential for volcanic hosted gold deposits.

The Mount Read Volcanics represent an excellent host for VMS deposits and volcanic gold deposits for the following reasons

Volcanogenic Massive Sulfides

- 1 The Cambrian Volcanics host four world class volcanic exhalitive copper, lead, zinc, silver, gold deposits over a strike length of 65 kilometers

- 2 Syngenetic base metal plus gold and silver mineralization has been outlined by costeaning in the vicinity of Wart Hill
- 3 The volcanic sequence within the tenement is highly anomalous with numerous stringer style mineralization zones being evident as is seen associated with most volcanic hosted base metal deposits

Gold Potential

- 1 Very anomalous stream, soil and rockchip values within the tenement
- 2 Limited gold exploration in association with basic volcanics to the northwest (old records report of alluvial gold)
- 3 Up to 4.0 g/t gold in selected samples of altered agglomerate within the Wart Hill pyroclastics.

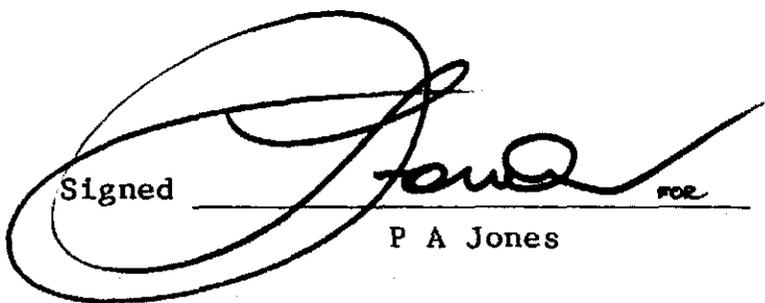
PROPOSED PROGRAM

The remaining Dighem anomalies not examined in the field during 1986 will be geological/geochemically and geophysically surveyed during the 1986-87 summer season. Follow-up surveys will be conducted over Lines 2, 5 and 8 where coincident geochemical and geophysical (Max-min EM/Dighem) responses have been delineated. Evaluation surveys may be recommended by Mitre Geophysics after the re-evaluation of both the IP and UTEM data. Possible surveys will include downhole EM surveys on the mineralized zones as well as follow-up surveys on possible resistive zones (due to silicification) or chargeable zones previously overlooked.

The 1986-87 survey will again be helicopter supported with the initial 'push' into the tenement assisted by fixed wing into Moores Valley airstrip. Four-wheeled motorcycles will again be utilized to lessen the time taken to walk to places of work and to carry heavy loads such as the EM system. More substantial

039

accommodation will also be investigated as tent camping to date has not been a success due to extremely high winds in the generally unprotected coastal environment.

Signed  FOR
P A Jones

CYPRUS MINERALS AUSTRALIA COMPANY

30

EXPENDITURE FOR THE PERIOD ENDING MAY 31, 1986

ELLIOTT BAY EL 40/80

Salaries and Wages	23,312.63
Drafting	3,350.49
Cookery	5,530.68
Field Office Rent	50.00
Field Supplies	3,013.48
Freight	1,340.71
Aircraft Charter	25,436.90
Travel	1,346.09
Communications	1,778.90
Geophysics	76,767.22
Consultants/Contractors	38,762.59
Drilling	-
Assays	6,161.00
Legal Fees	-
Equipment Rental	4,174.00
Equipment Operation & Maintenance	2,177.24
Property Payments	791.80
Outside Services	-
	<u>193,993.73</u>
Overhead	<u>19,399.36</u>
	<u>213,393.09</u>
	=====



T.J. CONQUEST

ACCOUNTANT

Disc 308

APPENDICES

APPENDIX 1

PRELIMINARY INTERPRETATION OF THE ELLIOTT BAY DIGHEM SURVEYS



PRELIMINARY INTERPRETATION

OF THE ELLIOTT BAY AND MUDDY COVE DIGHEM SURVEYS.

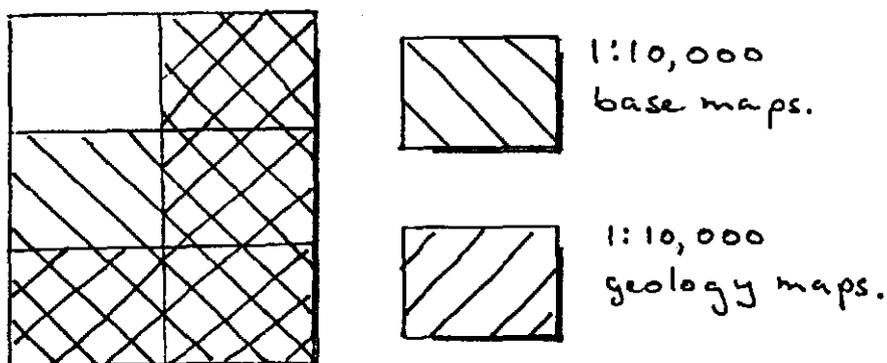
The Dighem surveys of Elliott Bay and Muddy Cove were completed on the 19th January, 1986. Processing of the data is expected to take about two months. Since some follow up is desired this field season, a preliminary interpretation has been made of both areas.

The preliminary interpretation was carried out by picking responses from the analog records and positioning these on to the aerial photographs (enlarged to approximately 1:10,000 scale). (The locations were mostly made using the navigator's in-flight positioning; some of these will be in error, particularly on the western side of the Elliott Bay survey where there are few landmarks.)

The responses were graded into three categories according to their conductances. On the photographs, the most conductive are coloured blue, then green and the least conductive, red. On the maps, three different symbols have been used (see legends).

ELLIOTT BAY

A base map for Elliott Bay was prepared by tracing from Geopeko's 1:10,000 scale maps (no map for the north-west corner). The geology was traced from four 1:10,000 scale maps with the missing segments (see diagram below) filled in using a 1:42,000 scale map. (The 1:42,000 scale map is more recent than the 1:10,000 scale maps and is different in some details, however these are not shown on this plan).



The Dighem responses were placed on the base map by matching rivers and tracks. Agreement between the photographs and the base map was generally good (ie, the photographs are close to scale).

The long zones of responses on either side of the Osmund syncline are most likely due to Tyndall shales, thus the geology appears



to be incorrectly located on the Geopeko base maps. (Note also the discrepancy between the V28 position marked on the geology sheet and as seen on the air-photograph.) The final plans from Dighem Ltd will undoubtedly have responses in slightly different positions to those shown here, particularly in the north-western quarter where there are few features to assist recovery. Accurate plotting of the geology on to these plans is recommended.

MUDDY COVE

The map for this area was traced directly from the photographs. The AMG lines were drawn in by best fitting a number of landmarks positioned from the 1:20,000 topography map (again the fits were reasonably good). The geology has been sketched in from a 1:20,000 scale map (which in turn is an enlargement of a 1:50,000 scale map).

RECOMMENDATIONS AND CONCLUSIONS

No first-class anomalies have been interpreted (ie, no responses indicating good conductors recorded over a short strike length in an area of prospective geology). However a large number of responses have outlined weak to moderate conductors, several in areas of favourable geology. Since a massive sulphide deposit in these areas is likely to be only a moderate conductor, all of these responses are valid targets for follow up. The most promising have been outlined on the plans and numbered in order of priority and listed in the accompanying table. There are several other likely targets, but investigation of these can await the final interpretation. Any ground investigations should be planned directly from the aerial photographs.

A Maxmin EM system with highest frequency of 3555hz* is recommended for ground follow up. Extra care and certain procedures have to be taken in areas of steep topography†, but it has been my experience that the system is more sensitive than 'Genie' which was not particularly successful at Sorell. Magnetics should also be read to help the location (using the final Dighem plans). One or two lines should be surveyed in for each anomaly or anomalous zone, as was done at Sorell.

For the western side of Elliott Bay and the Muddy Cove area, the possibility of hiring a satellite navigation system could be investigated. This would both assist location of the anomalies and permit a more accurate (and confident) plotting of the ground data.


 J.R. Bishop
 Jan., 1986.

* Some Maxmin systems read only to 1777hz.

† Most of the Elliott Bay areas should be relatively flat.



List of prospects arising from the preliminary interpretation
of the Digheem surveys over Elliott Bay & Muddy Cove.
(in order of priority)

ELLIOTT BAY

1. Numerous short zones (2 or 3 responses) of intermediate conductors within HRP and WRF*. Close to V28 which had very good base metal geochem and no further work (by Geopeko). Access is very good.
2. A single intermediate to good conductor in WHP with good access. Also a short zone of intermediate responses in WRT with good access.
3. A single intermediate response on the western side of the licence: probably in acid volcanics. Difficult access and navigation.
4. A single intermediate response within acid volcanics on the western side of the licence. Access is not good, but it may be within the recently burnt area. Also a zone of intermediate responses apparently within the Tyndall tuffs & agglomerates. The southern end is in open country and should be easily located. A useful check on the western geology.
5. A single zone of weak and intermediate responses in WHP; near and sub-parallel to a fault or contact. Access is good.
6. A single zone of weak responses with one intermediate response near the (eastern) contact of the HRP and Porphyry. In open country.
7. Three or four zones of intermediate responses within HRP. It lies immediately to the south of prospect no. 1 with good access.
8. Two zones of weak and intermediate responses within a broad area of WHP. Good access.
9. Three short zones of weak and intermediate responses: mapped as Mainwaring and Western Sequence, in the north-western section of the survey.
10. Two long zones including one 'good' response: mapped as Ordovician sediments, but may be Tyndall shales. In the north-western section of the survey.

* WHP: Wart Hill Pyroclastics
HRP: Hudson River Pyroclastics
WRT: Wanderer River Tuffs.

APPENDIX 2

MEMO: DEDGECOMBE TO K YATES (POSEIDON) DISCUSSION OF GEOLOGY
AND PROSPECTIVITY OF TENEMENT

INTER-OFFICE MEMORANDUM

K.R. Yates

From D.R. Edgecombe

Date 30th April, 1986.

Our Ref. No.

Your Ref. No.

Subject: ELLIOTT BAY GEOLOGY

These notes summarise observations made during the writer's field visit in April 1986. Despite the late timing of the visit, and somewhat inclement weather, field work was undertaken on four of the five days available. Areas traversed include Peko prospects Voyager 19, 22, 27, 29 and 34 and Dighem anomalies 5 and 8 (see attached plan). These areas are confined to the Mount Read Volcanics "Central Belt" and Tyndal Group; the "Western Sequence" and Dundas Group equivalents ("Mainwaring Group") were not examined.

As a preliminary comment on geology, it is stressed that outcrop of the M.R.V. over most of the area is extremely poor, certainly much less than 1%. The exception is Wart Hill itself, where siliceous alteration is intense and outcrop is common, perhaps 40%. There is (was) no surface expression of the two sulphide lenses found by Peko north of Wart Hill, though sulphides are present 20 to 30 cms below ground level: "gossan" development is confined to skins 1 to 2 cms thick (i.e. effectively non-existent). The region appears to have been glaciated (though no moraines were observed) and is covered by dark soil containing abundant coarse milky quartz and quartzite fragments derived from Precambrian rocks which outcrop to the east.

To the east of Mount Osmund the predominant outcropping lithology is rhyolite crystal tuff of probable ashflow origin, comparatively little altered (locally sericitic) and relatively uninspiring. However, our reconnaissance suggests that the degree of alteration is increasing southwards. In the vicinity of Dighem anomaly 8 I also located some rocks of more mafic composition (andesitic to dacitic). Whether these rocks extend further north is unknown (lack of outcrop), however they are significant in highlighting the sequence as being calc-alkaline (cf. Hellyer, Que River) rather than wholly rhyolitic. The andesite/dacite outcrops were quite strongly altered (chlorite and sericite), though no sulphides were observed. In the absence of siliceous alteration, these rocks would be significantly less resistant to weathering than the enclosing rhyolitic tuffs, and will therefore be rare or absent in areas of poor outcrop.

Very few exposures of fine grained (silt, clay) epiclastic rocks have been observed east of Mount Osmund. This is probably more a reflection of relative resistance to weathering than abundance in the generally pyroclastic sequence; however, given their economic significance, the presence of even small outcrops vindicates further exploration in the eastern areas.

In this context the line to line continuity of some Dighem anomalies is considered likely to be reflecting the presence of conductive mudstones : soil geochemistry may provide further evidence (and perhaps targets for pitting and/or drilling).

During reconnaissance in the eastern sector, the boundary between Peko's informal units, the Wart Hill Pyroclastics and Hudson River Pyroclastics, was crossed several times : no discernable textural or compositional differences were observed and the basis for the subdivision is questioned.

In the Wart Hill/Voyager 19 area an essentially similar lithologic sequence is present, i.e. rhyolite tuffs are dominant. Rocks mapped by Peko as "lavas" are probably ashflows rather than flows, though proximity to a vent may be inferred from the presence of large bombs (to + 1 metre). Alteration is variable, though all rocks are sericitic. Strong siliceous alteration has affected the immediate Wart Hill area, hence its prominent relief. The mudstones and tuffaceous mudstones which host the known sulphide mineralisation have been intensely altered to chlorite and sericite schists.

Further exploration at Wart Hill/Voyager 19 is warranted. Peko's testing of the sulphides (3 drillholes) did not reveal down-dip extensions, however no allowance has been made for a plunge direction other than steeply to the south at the southern sulphide occurrence, and Peko neglected to undertake downhole EM surveys. It is my understanding that Peko's UTEM survey was conducted subsequent to this drilling and that the data have not been subjected to the detailed interpretation which experience at Hellyer has proven appropriate to the technique. I have therefore requested that John Bishop examine Peko's UTEM data with Hellyer responses in mind, and pay particular attention to both the known sulphide areas and the belt of no outcrop south of Wart Hill.

In terms of economic parameters, the grade of mineralisation at Wart Hill is comparable to that of other VMS deposits in the Mount Read Volcanics, i.e. far higher in terms of value/tonne than major base metal deposits on the mainland (see attached table).

In the remainder of the E.L. lack of exposure precludes a definitive comment on prospectivity based on our field observations. However, from limited observations and Peko reports several priority targets other than Wart Hill can be identified:

- 1) The V20 - V22 - V4 belt where Dighem has identified anomalous rocks (anomalies 1,2,5,7,8) in a possible stratigraphically controlled zone. Limited work by Peko (V20, V22, V4) identified co-incident anomalous geochemistry and possible exhalative rocks (V20), but was not followed up. This belt may be stratigraphically equivalent to V19 rocks.
- 2) The V3 - V32 - V20 - V2 - V12 belt. Peko identified a series of strong geochemical anomalies with large dimensions : this may be a single stratigraphic horizon. Possible stringer sulphide mineralisation at V12 with high Au (to 265ppm) and Ag (to 440 ppm) values and a significant drillhole intersection at V2 (53m 0.3% Pb including 5m 2.3% Pb 29 p.p.m. Ag) with substantive geophysics have not been adequately followed up.

- 3) The Western Sequence/Central Belt contact has been shown to contain strongly anomalous Pb, Zn, Ag, Ba, As with co-incident Dighem anomalies (3,4,9) over a long strike distance. Cherty rocks, probably of exhalative origin are present in the carbonaceous mudstone which hosts the mineralisation. If this mineralisation is stratabound/stratiform, as appears probable, and is not a fault related vein system, then the horizon represents an excellent exploration target.
- 4) Gold anomalous rocks at V24 - V30 require examination both for stockwork Au mineralisation and for stratiform base metal sulphides.
- 5) Intensely altered (chlorite & carbonate) basic and possibly ultrabasic rocks are present interbedded with the Western sequence/Mainwaring Group. Minor occurrences of copper (to 1%) in iron rich (magnetite and/or pyrite) volcanics are known from several localities and are associated with anomalous (+ 0.1 p.p.m.) gold.

As these rocks are part of a volcano/ sedimentary sequence, and not fault slices, the potential for platinum group metals (in association with nickel, copper and chrome) should be tested. A relatively rapid screening of the sequence could be achieved by collection of stream sediments (or preferably pan concentrates) for P.G.M. assay.

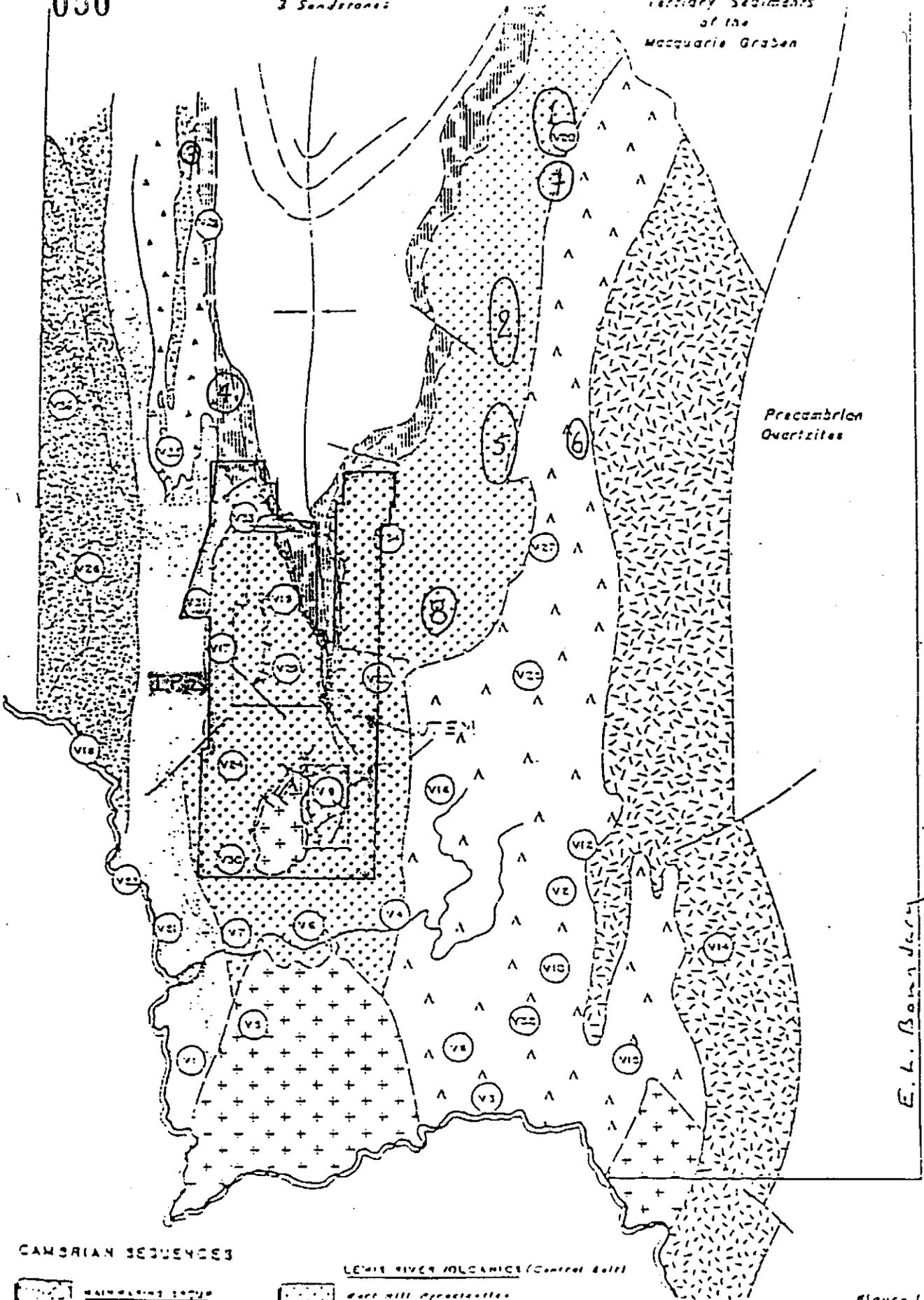
In summary, I would contend that exploration at Elliott Bay is still in its infancy. Despite its isolation, the area generally presents fewer difficulties on the ground than most areas of the Mount Read Volcanics to the north. The sequence has excellent potential to host major high-grade sulphide deposits, but will require patience and persistence.

050

Ordovician Conglomerates
& Sandstones

Tertiary Sediments
of the
Macquarie Graben

Precambrian
Quartzites



E. L. Bennett

5 cm

CAMBRIAN SEQUENCES

- MAINWALING GROUP
- MT. READ CONGLOMERATES
- Western Sequence
- General Stone Cellulose

LEWIS RIVER VOLCANICS (Control Belt)

- West Hill Gneissites
- Hudson River Gneissites
- Elliott Point Gneiss
- Granite
- Lewis River Gneiss

Ditchy Prospect

Figure 1

E.L.27/76
ELLIOTT BAY, TASMANIA
GEOLOGY & PROSPECT LOCATIONS

KILOMETRES

COMPARATIVE TONNEAGE / GRADE / \$ GRADE

FIGURES FOR SELECTED AUSTRALIAN MINES / PROSPECTS

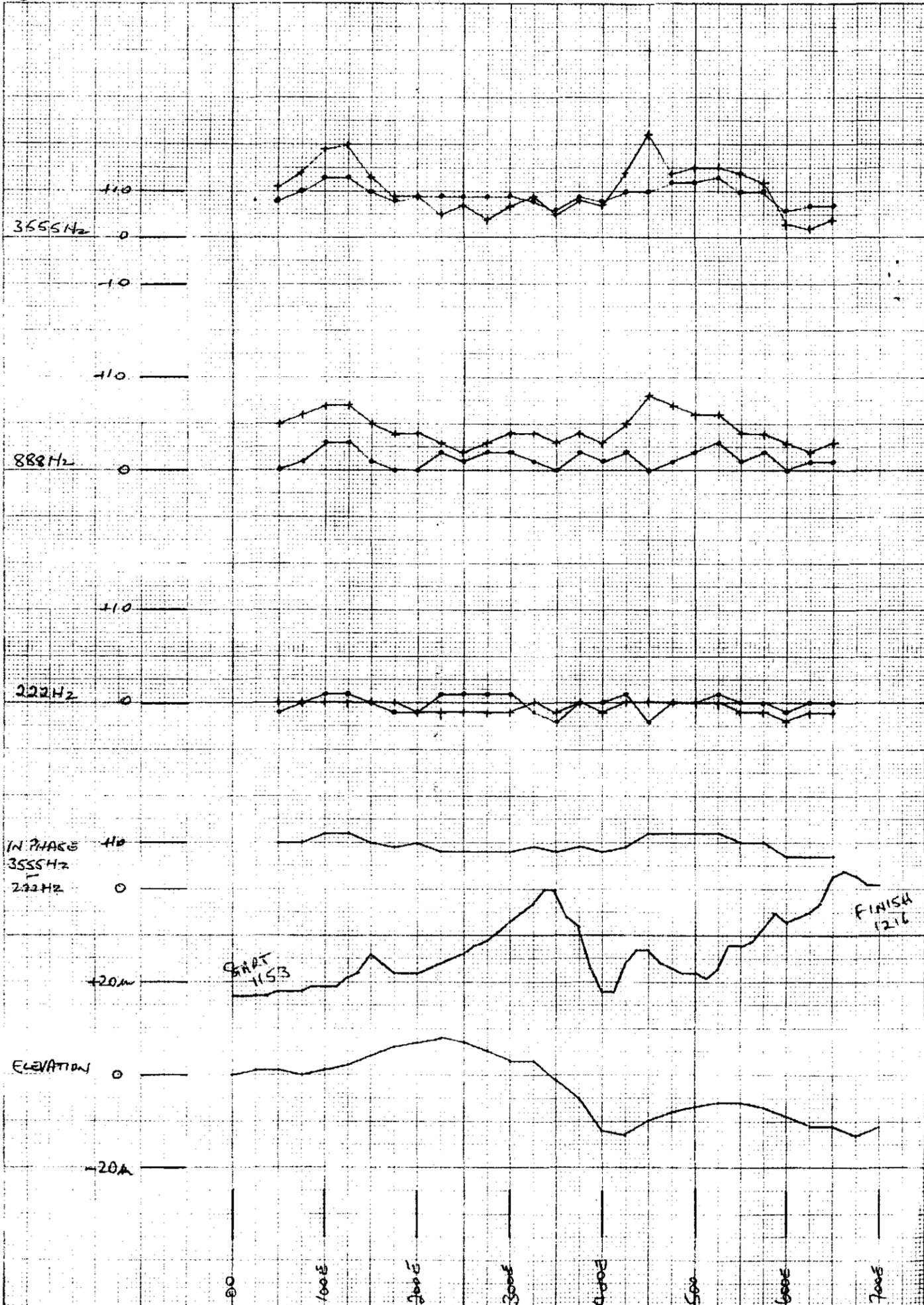
<u>Deposit</u>	<u>Total Reserves</u> (Mt)	<u>% Pb</u>	<u>% Zn</u>	<u>% Cu</u>	<u>p.p.m. Au</u>	<u>p.p.m. Ag</u>	<u>\$A/Tonne</u>
Rosebery	+ 18	5.6	18.2	0.7	3.4	187	322)
Hellyer	+ 25	7.0	14.0	0.3	2.5	180	264)Tas.VMS
Que River	6	7.0	12.5	0.4	3.5	171	264)AV. \$235
Elliot Bay	-	11.8	19.6	0.2	0.7	370	361
Pinnacles	0.1	6.6	18.8	1.3	4.1	122	341
Hilton	45	6.6	9.6	-	-	150	167
Mt. Isa Cu	180	-	-	3.0	-	-	62
Mt. Isa Pb/Zn	90	5.9	6.8	-	-	149	135
North B.H.		12.1	9.5	-	-	192	206
M.S.		7.4	10.5	-	-	64	160
Lackwood's		5.4	5.6	-	-	137	117
Scuddles	21	-	8.2	1.2	-	67	122
Elura	27	5.6	8.3	-	-	146	147
Woodlawn	10	3.0	8.4	1.5	-	53	144
Mt. Lyell	120	-	-	1.5	0.4	8	39
Lady Loretta	9	6.5	14.8	-	-	95	204

METAL PRICES (25 - 4 - 1986) SA

Pb \$/t	Zn \$/t	Cu \$/t	Au \$/gm	Ag \$/gm
550	1,000	2,060	15 - 11	0 - 22

APPENDIX 3

GEOLOGICAL, GEOPHYSICAL AND GEOCHEMICAL PROFILES



Eldest Bay
Line # 1.

● IN PHASE
— OUT OF PHASE

Resurveyed 26-03-1986

Transmitter H.E.
Receiver P.M.

Max Min EM Survey

H. Scale 1:5000

Tropography Vertical
Scale 1cm = 10m

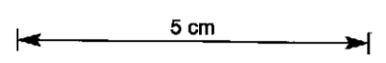
Magnetic

V scale 1cm = 10m T
Surveyed 11 April 1986.

PRELIMINARY

Mag channel data
1140 - 1200 (L1/2000)
1140 - 1430 (L3/9100)

LINE 1



LINE 1 GEOCHEMISTRY

Scale 1:5000

5 cm

Pb, Zn
ppm

800
700
600
500
400
300
200
100

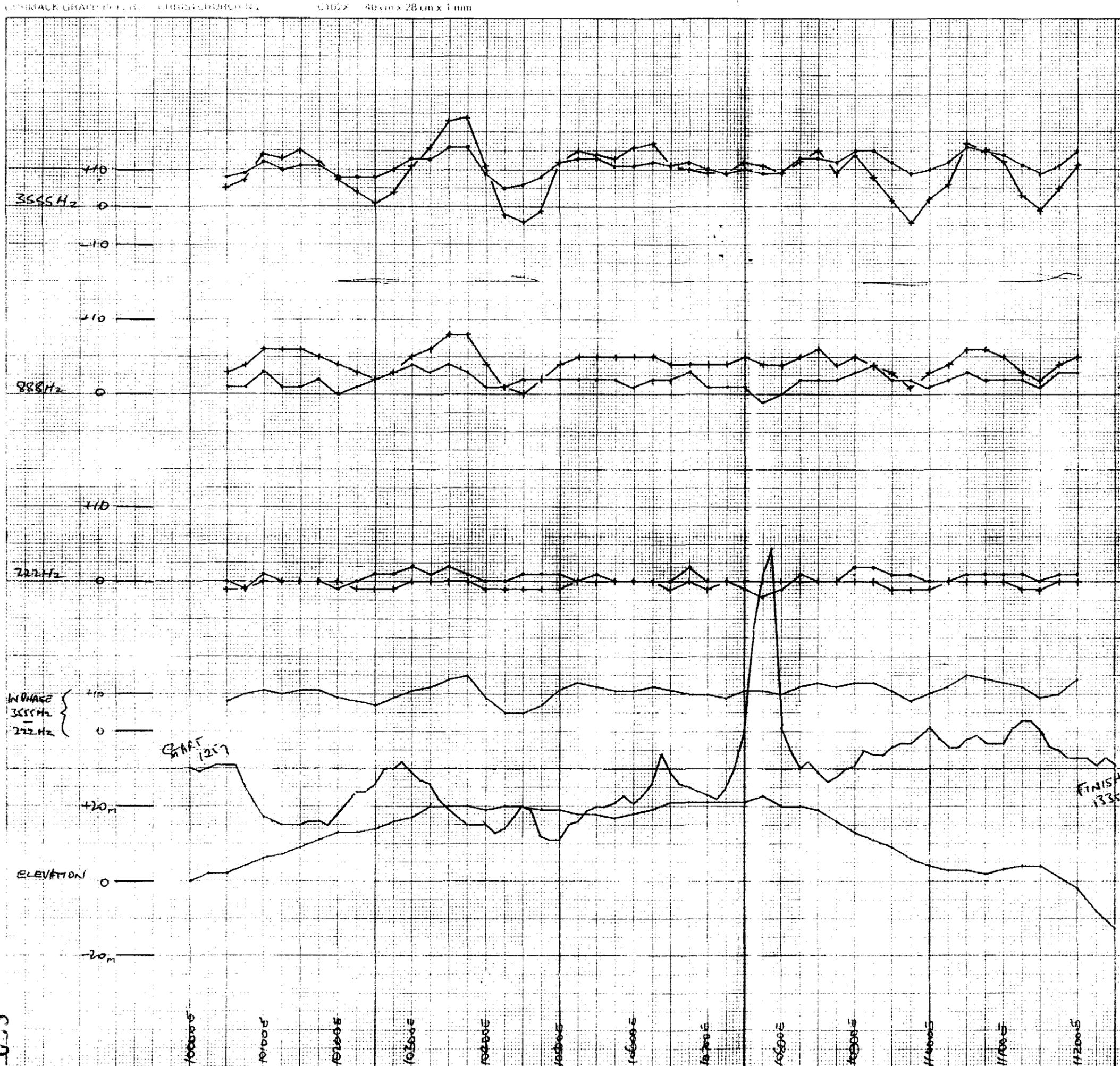
1.0
0.8
0.6
0.4
0.2
0

ppm Au

Zinc
lead.
gold.

LINE 1

100 200 300 400 500 600 700



Balliott Bay

Line #2

Resurveyed 26-03-1986

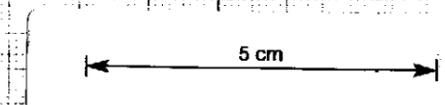
Transmitter H.E.
Receiver P.M.

MaxMin EM Survey

○ — ○ IN PHASE
 + — + OUT OF PHASE

H. Scale 1:5000

Topography Vertical
Scale 1cm = 10m.



— 62720
 — 62700
PRELIMINARY
 — 62680
 — 62660

FINISH 1335

START 1217

IN PHASE
3555 Hz
222 Hz

ELEVATION

Mag. channel 1223-1335 (L2/10000 E)

LINE 2

Mag. surveyed
11 April 1986.

035

Pb, Zn
ppm.

LINE 2 GEOCHEMISTRY.

Scale 1:5000

5 cm

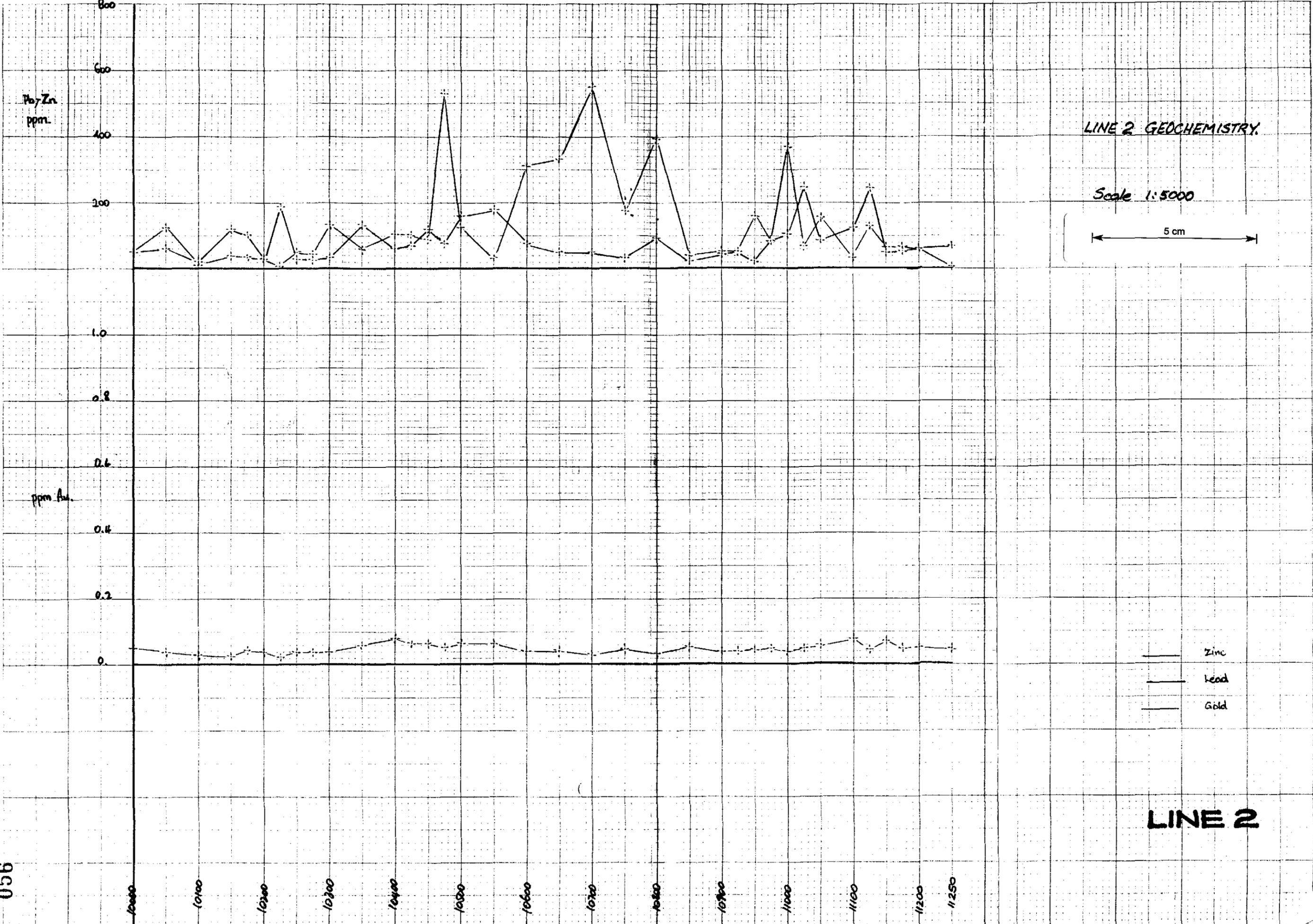
ppm Au.

— Zinc
 — Lead
 — Gold

LINE 2

056

10000 10100 10200 10300 10400 10500 10600 10700 10800 10900 11000 11100 11200 11250



012058

MINIMUM LEM SURVEY

28.05.1980

Rx P.M.

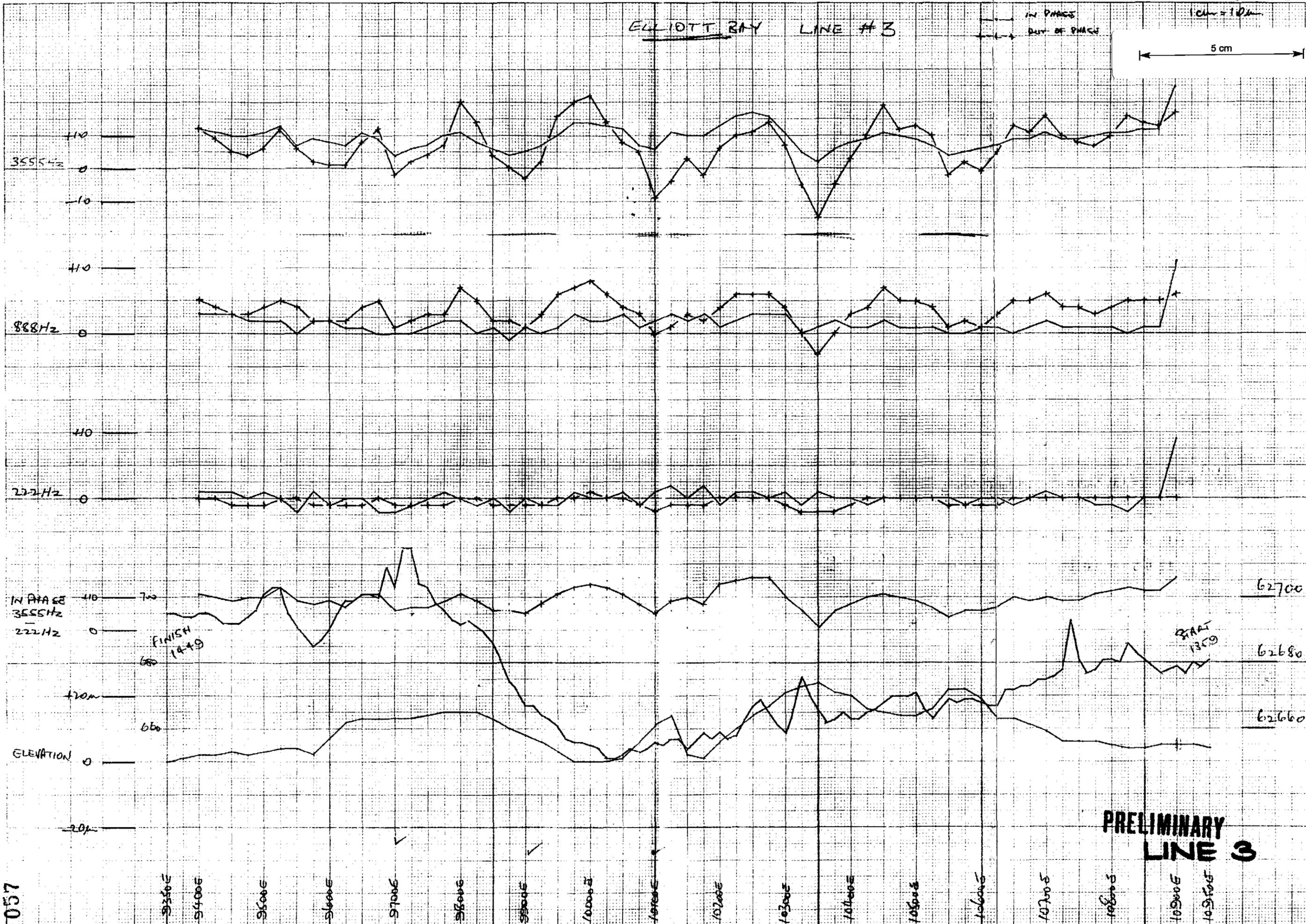
ELEVATION V. SCALE

ELLIOTT BAY LINE #3

IN PHASE
OUT OF PHASE

1cm = 10m

5 cm



057

PRELIMINARY
LINE 3

LINE 3 GEOCHEMISTRY.

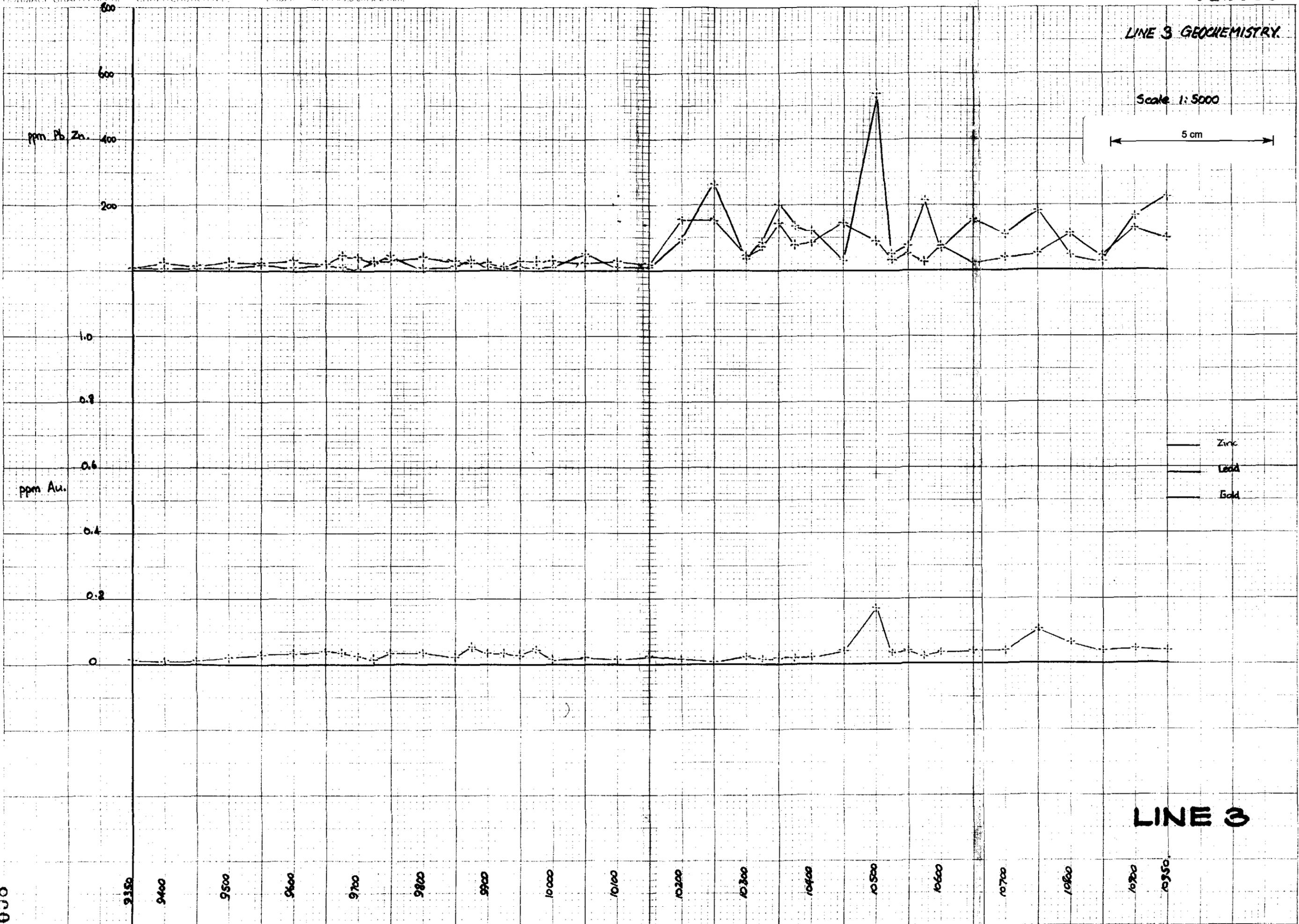
Scale 1:5000

5 cm

ppm Pb Zn.

ppm Au.

— Zinc
 — Lead
 — Gold



LINE 3



ELLIOTT BAY
 MAXMIN GM SURVEY
 LINE # 4
 SURVEYED 28.03.1986
 TX JOE RX P.M.

--- IN PHASE
 - - - - - OUT OF PHASE

HORIZONTAL SCALE 1:5000

"ELEVATION" V SCALE 1cm = 10m.

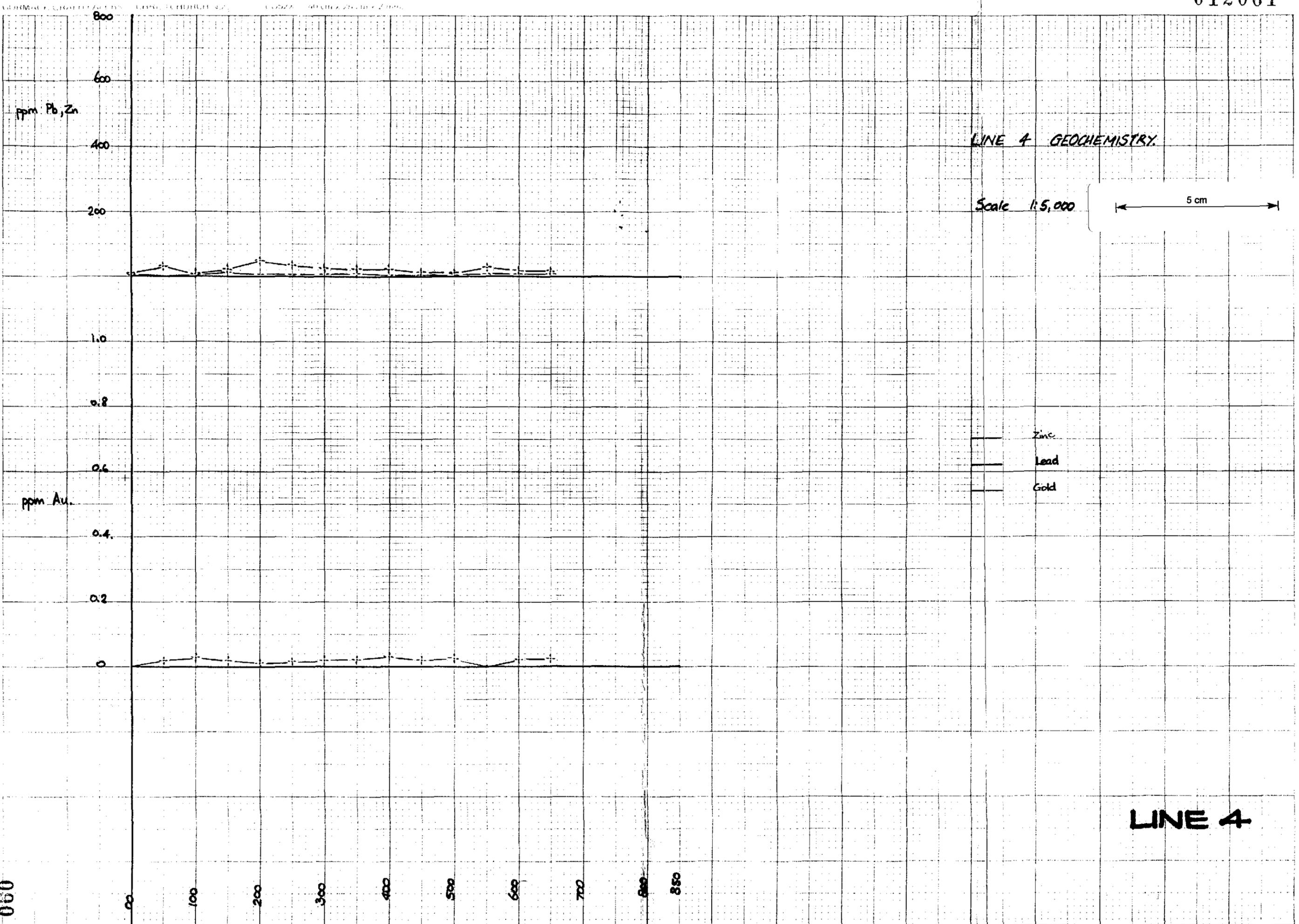
5 cm

Mag V Scale 1cm = 10nT
 Surveyed 10 April 1986

PRELIMINARY

62700
 62680
 62660
 62640
 TOTAL FIELD MAG INTENSITY
 Sensor HT 2m.

LINE 4



060

LINE 4

012062

GORMACK GRAPH PAPERS CHRISTCHURCH N.Z. C102X 40cm x 28cm x 1mm

5 cm

ELLIOTT BAY
MAXMIN EM SURVEY

LINE 5



IN PHASE
OUT OF PHASE

SCALE 1:5000

ELEVATION V SCALE
1cm = 10m

SURVEYED 29-03-1986

Tx 0929
Rx 1022

62720

62700

62680

62660

62640

62620

LINE 5

Mag Surveyed
10 April 1986

TOTAL FIELD MAG INTENSITY
SENSOR HT 2m

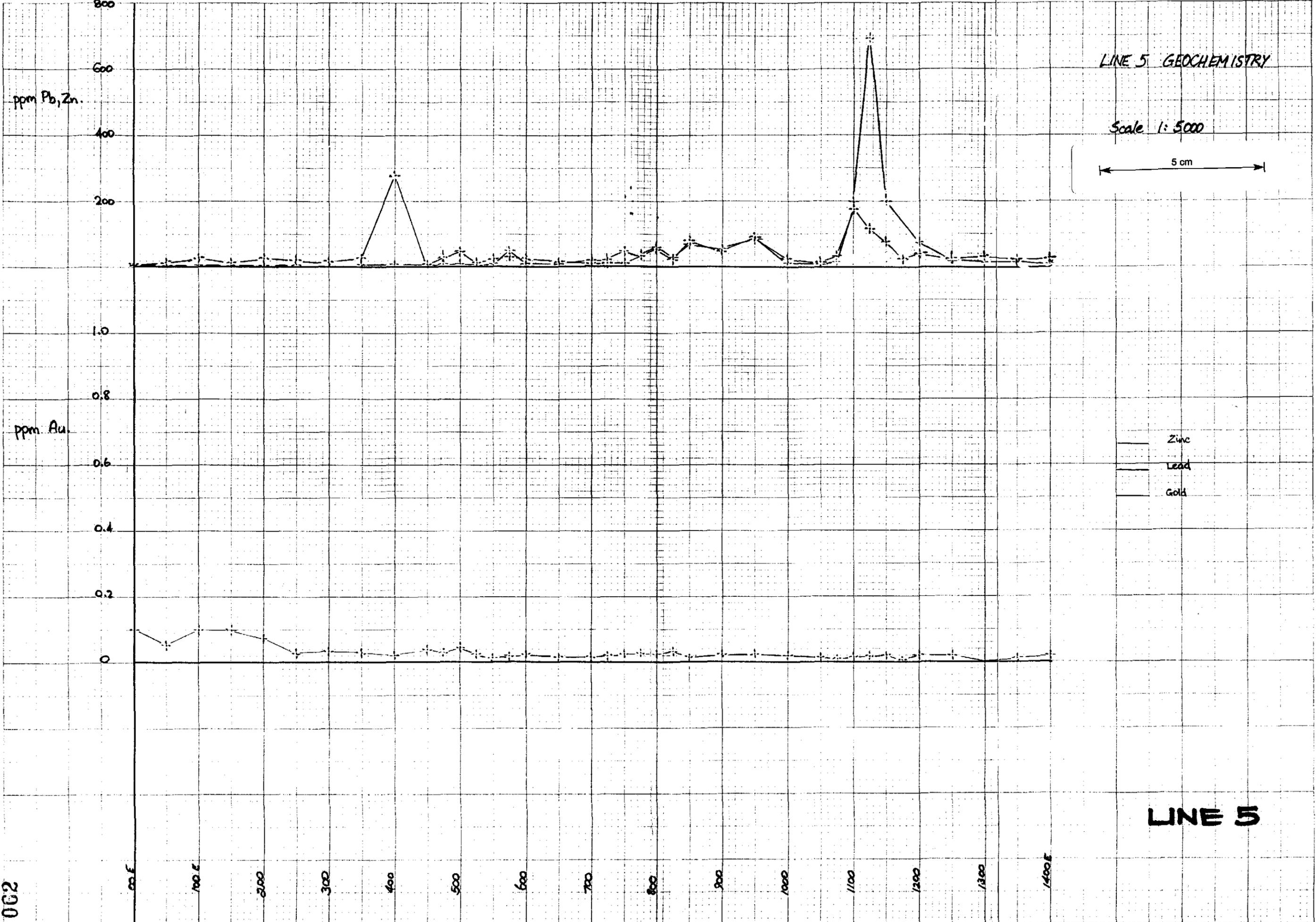
START
0929

FINISH
1022

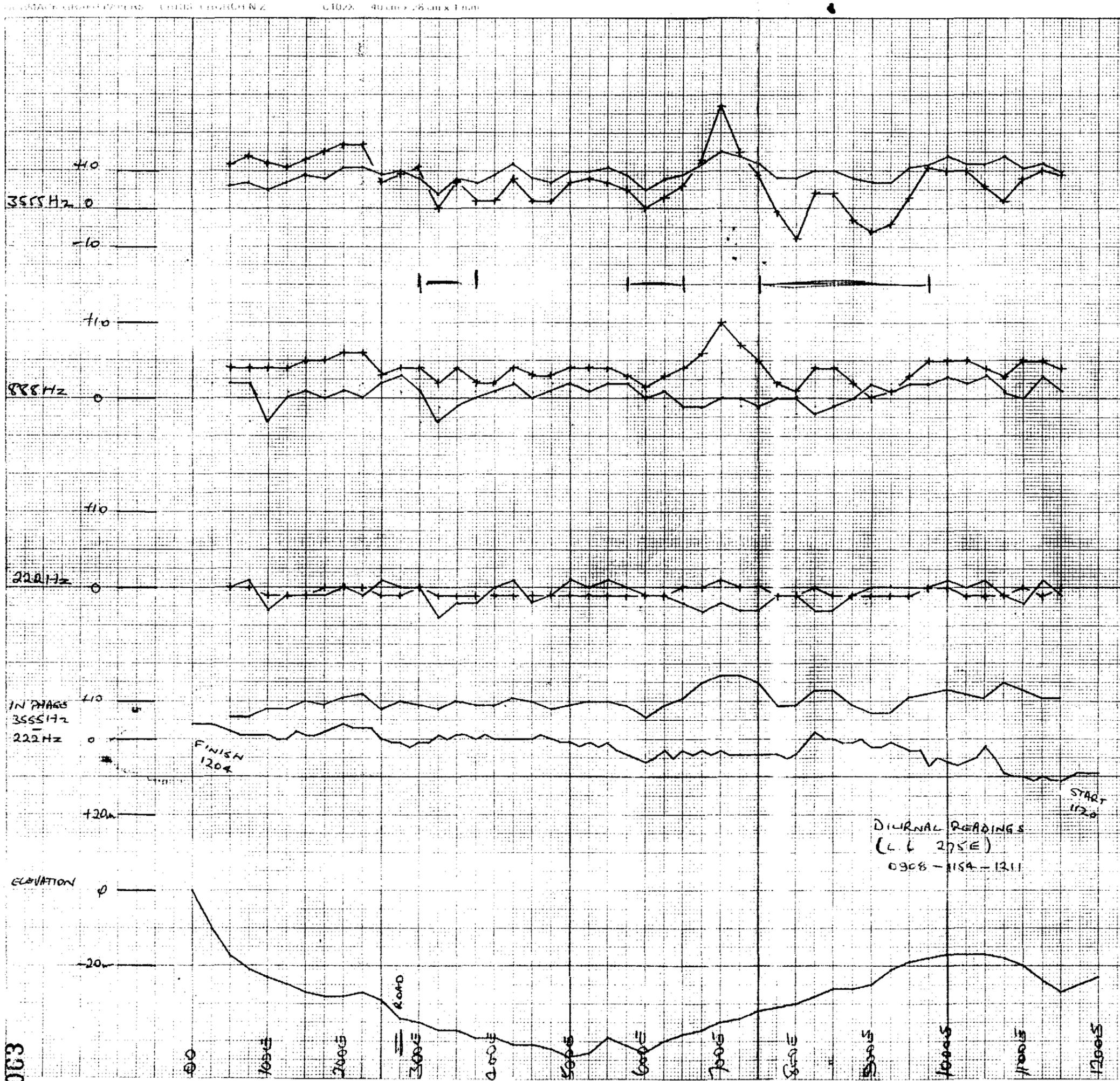
Dummal sdgs (L5, 100)
0929 - 1221

GEOPHYS BASELINE

001



002



Elliott Bay
 Maximum EM Survey
 30 March 1986

LINE # 6
 SCALE 1:5000 ↔ 5 cm

IN PHASE
 OUT OF PHASE
 Tx-Rx Spacing 100m

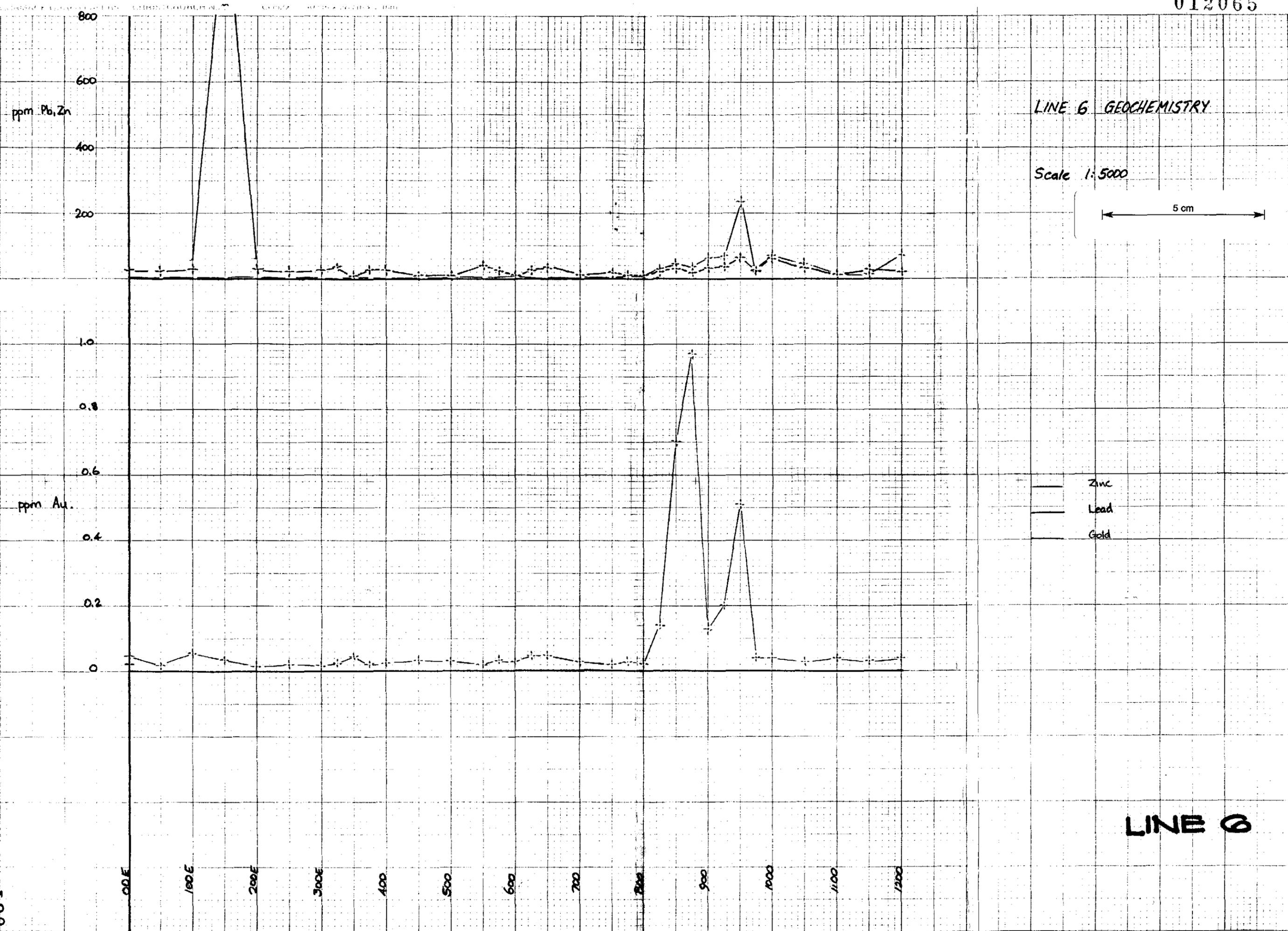
Elevation V Scale 1cm = 10m
 Tx Trans; Rx P.M

Mag V Scale 1cm = 10nT
 Mag Surveyed 10 April 1986

62680
 62660
 62640
 GEOPHYSICAL BASELINE
 TOTAL FIELD
 MAG INTENSITY
 SENSOR HT 2m

DIURNAL READINGS
 (L 6 275E)
 0908-1154-1311

LINE 6



LINE 6 GEOCHEMISTRY

Scale 1:5000

5 cm

— Zinc
 - - - Lead
 . . . Gold

LINE 6

81051 km

Maximum EM Survey
30 March 1986

IN PHASE
OUT OF PHASE
Tx-Rx Spacing 100m

Scale 1:5000
Elevation V scale
1cm = 10m

Tx
Rx
T
R

5 cm

355 Hz

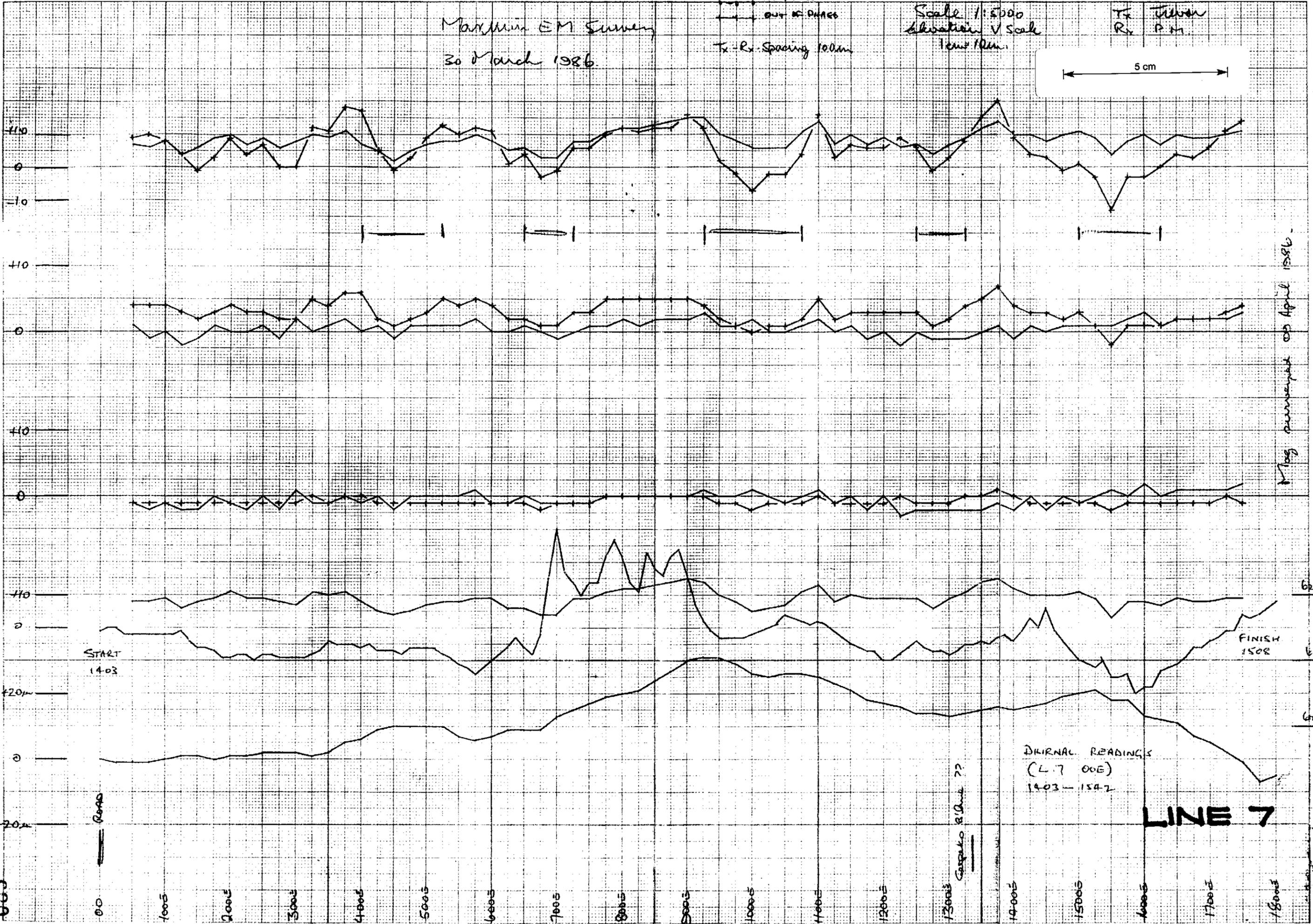
888 Hz

222 Hz

355 Hz - 222 Hz

Elevation

0.05



Mag survey on April 1986

TOTAL FIELD MAG INTENSITY

6270
6268
6266

DIURNAL READINGS
(L 7 00E)
1403-1542

LINE 7

Carpenter Bldg ??

START
1403

FINISH
1508

Road

0.0

1005

2005

3005

4005

5005

6005

7005

8005

9005

1005

1105

1205

1305

1405

1505

1605

1705

1805

LINE 7 GEOCHEMISTRY

Scale 1:5000

5 cm

ppm Pb, Zn

800
600
400
200
10
0.8
0.6
0.4
0.2
0

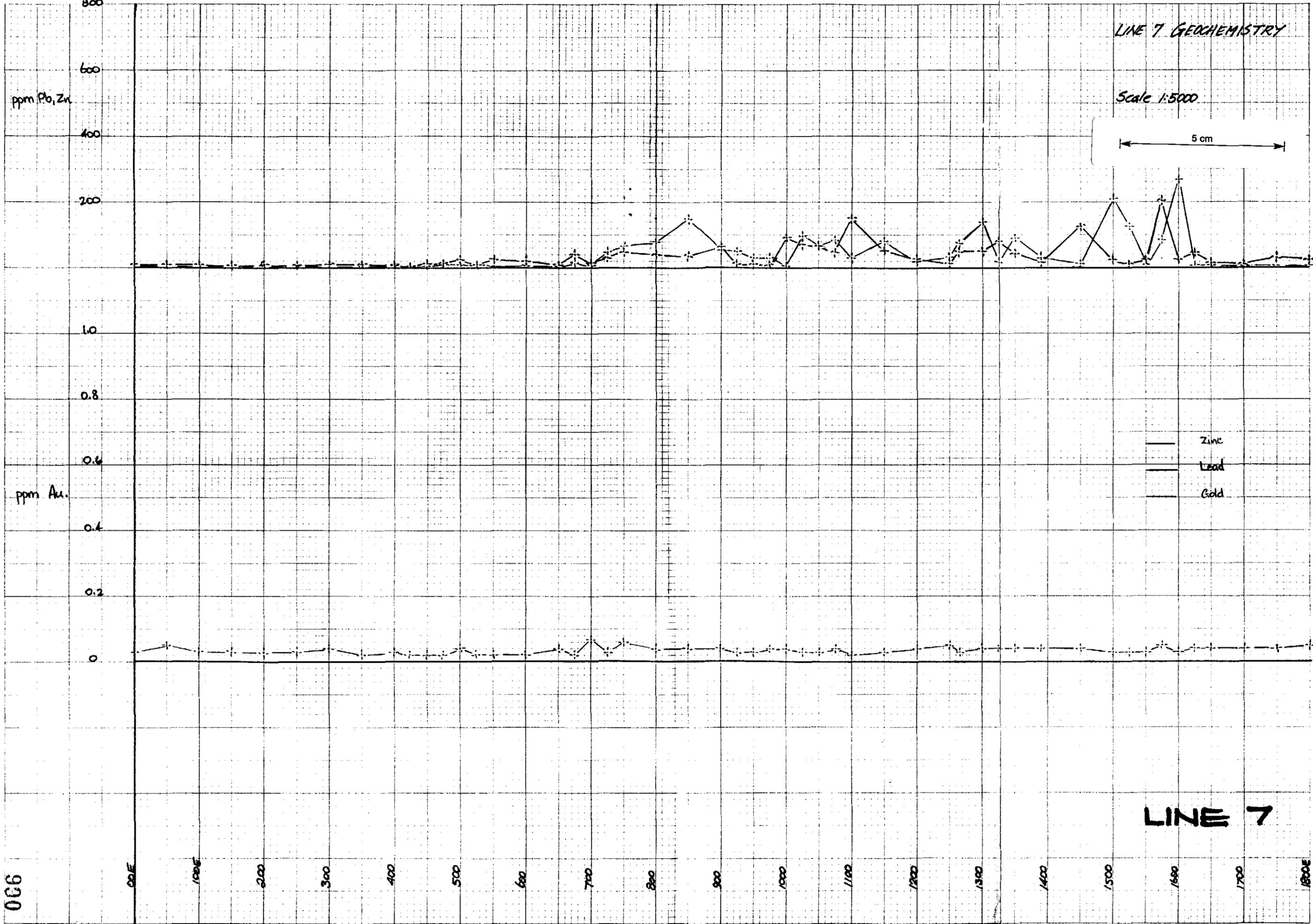
ppm Au

Zinc
Lead
Gold

LINE 7

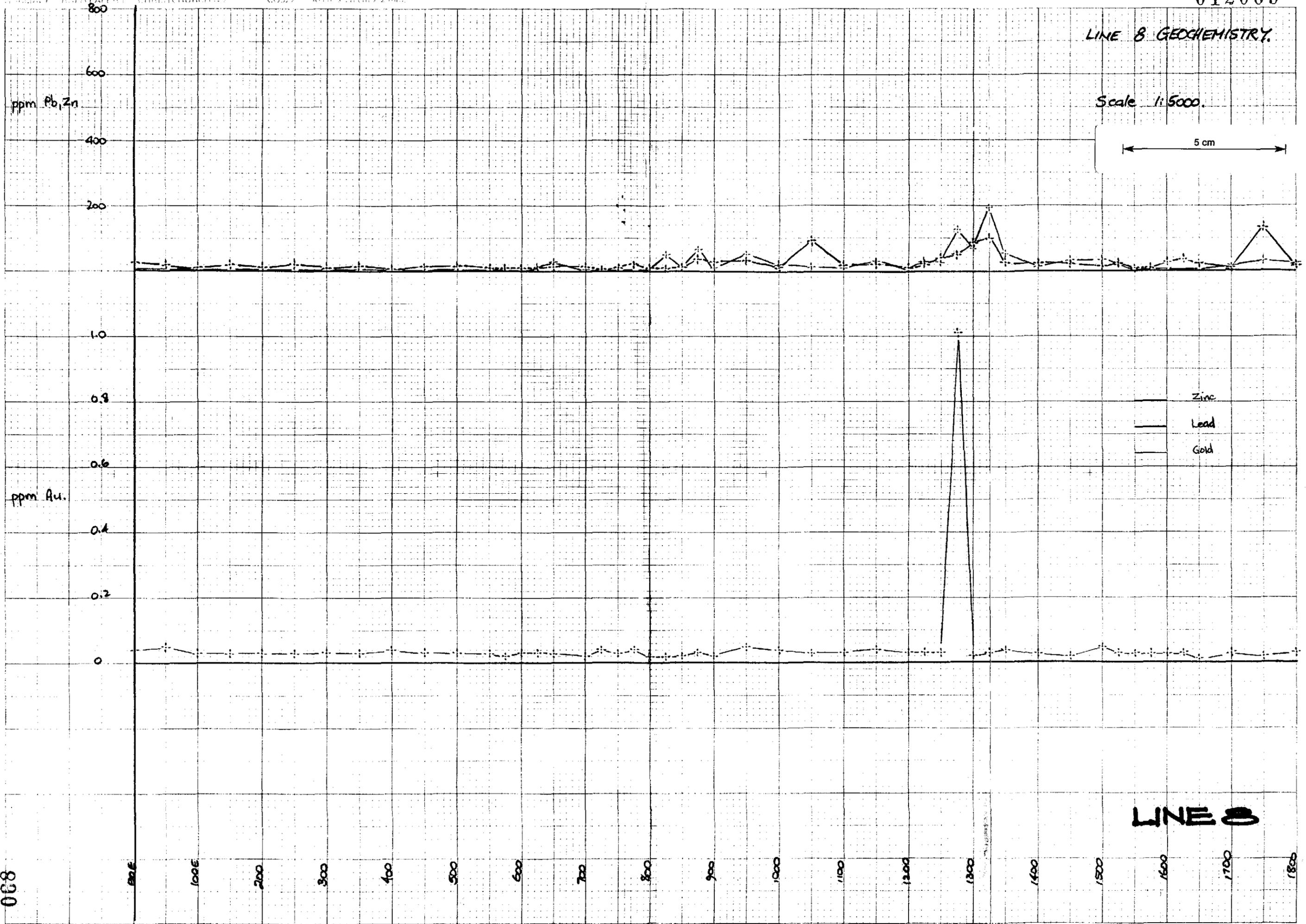
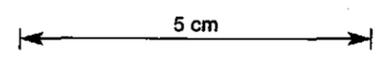
930

00E 100E 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800E



LINE 8 GEOCHEMISTRY.

Scale 1:5000.



LINE 8

Maxima EMI Survey Line 2

Out of phase

012070

5 cm

Maxima EMI Survey

Scale 1:5000
Elevation V Scale
1cm = 10m

Surveyed 02 March 1986
Tx Howard Rx PM
Tx-Rx Spacing 100m

Geochron infill

Mag averaged 08 April 1986

TOTAL FIELD MAG INTENSITY

5145
0957

FINISH
1112

DIGITAL READINGS
(L9 005)
0957-1315

PRELIMINARY

LINE 9

069

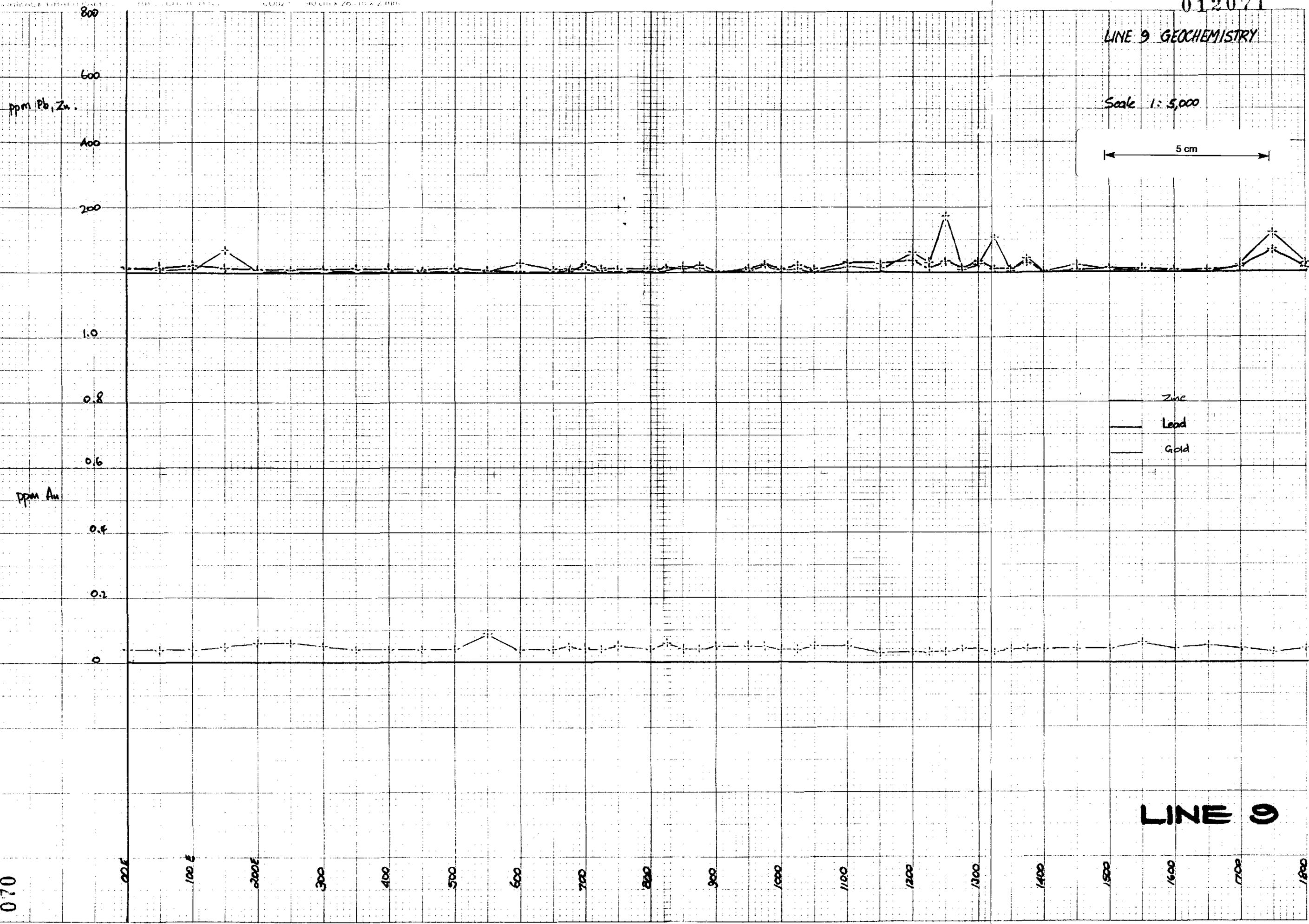
00 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000 15000 16000 17000 18000

012071

LINE 9 GEOCHEMISTRY

Scale 1:5,000

5 cm



LINE 9

070

00E

100E

200E

300

400

500

600

700

800

900

1000

1100

1200

1300

1400

1500

1600

1700

1800

5 cm

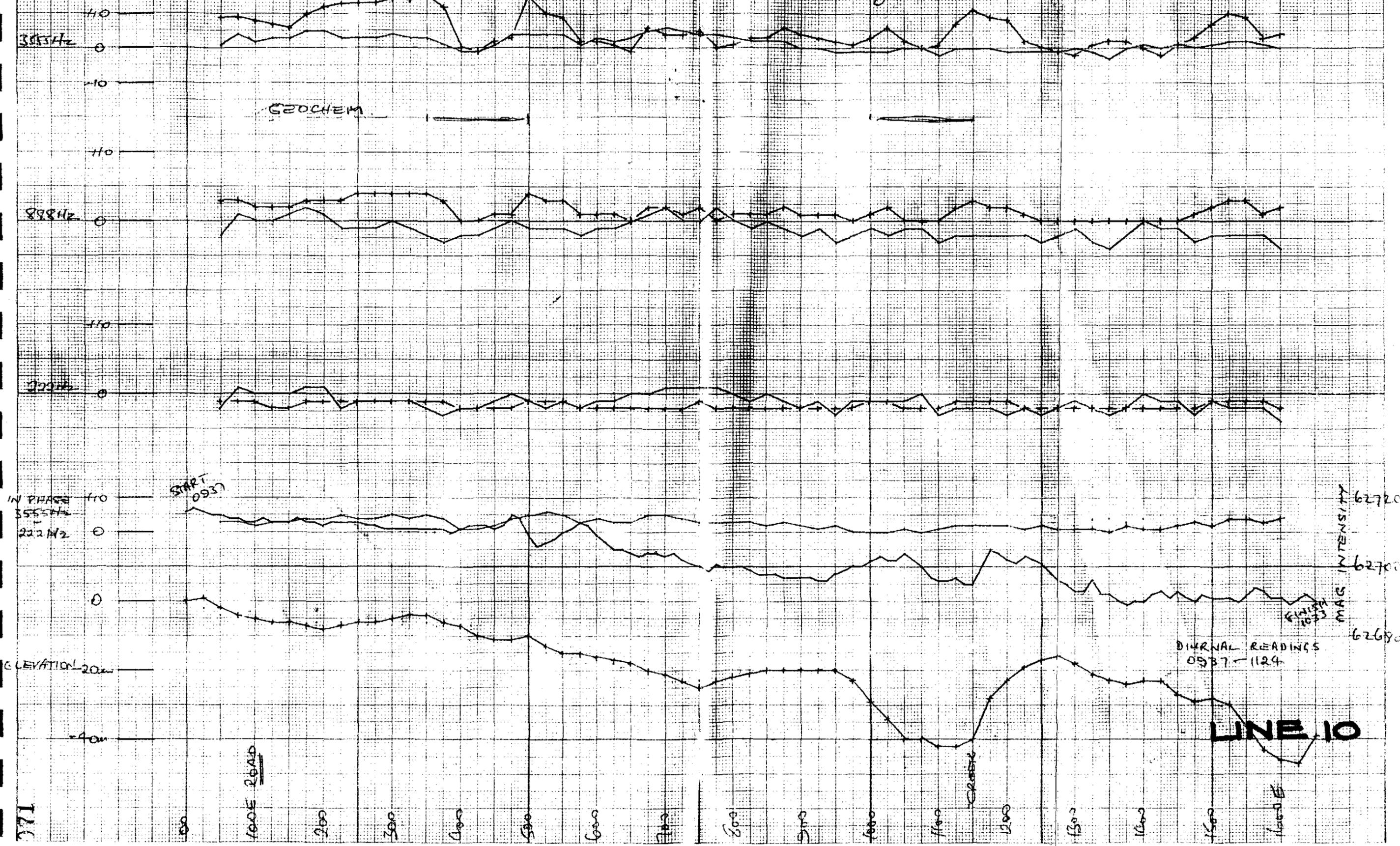
Maximum GPT Survey
Surveyed 14 April 1986
Tx Mark
Rx P.M.

IN PHASE
OUT OF PHASE

Coil spacing 100m

H Scale 1:5000
Elevation V Scale 1cm=10m

Mag V Scale 1cm=10m Surveyed 12 April 1986



MAG INTENSITY
62720
62700
62680

DIP
DIP
DIP

LINE 10



072

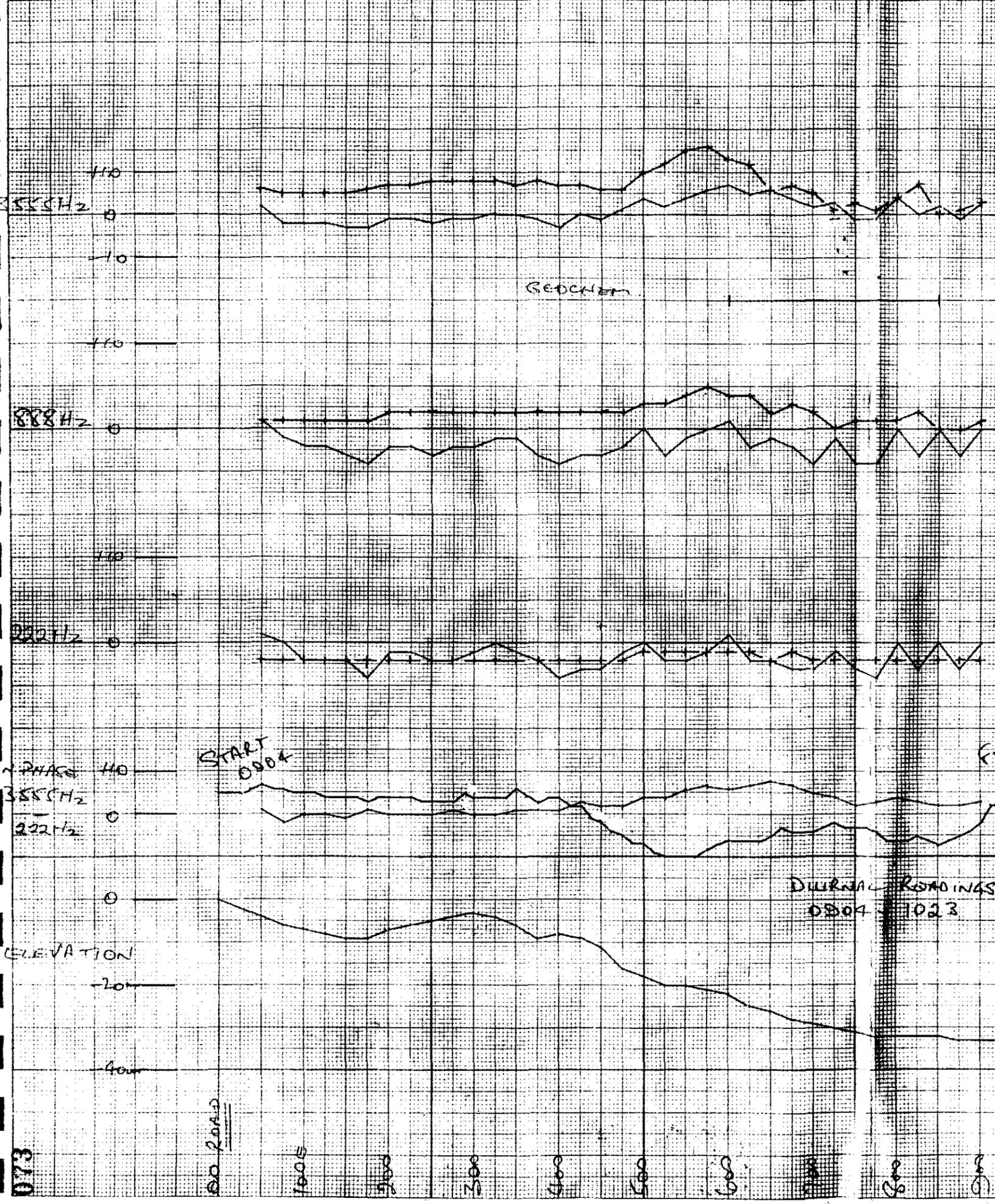
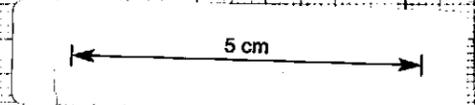
Maximin EM Survey
Surveyed 14 April 1986

Tx Marks, Rx PM

IN PHASE
OUT OF PHASE
Tx-Rx SPACING 100m

Scale 1:5000
Elevation V scale 1cm = 10m

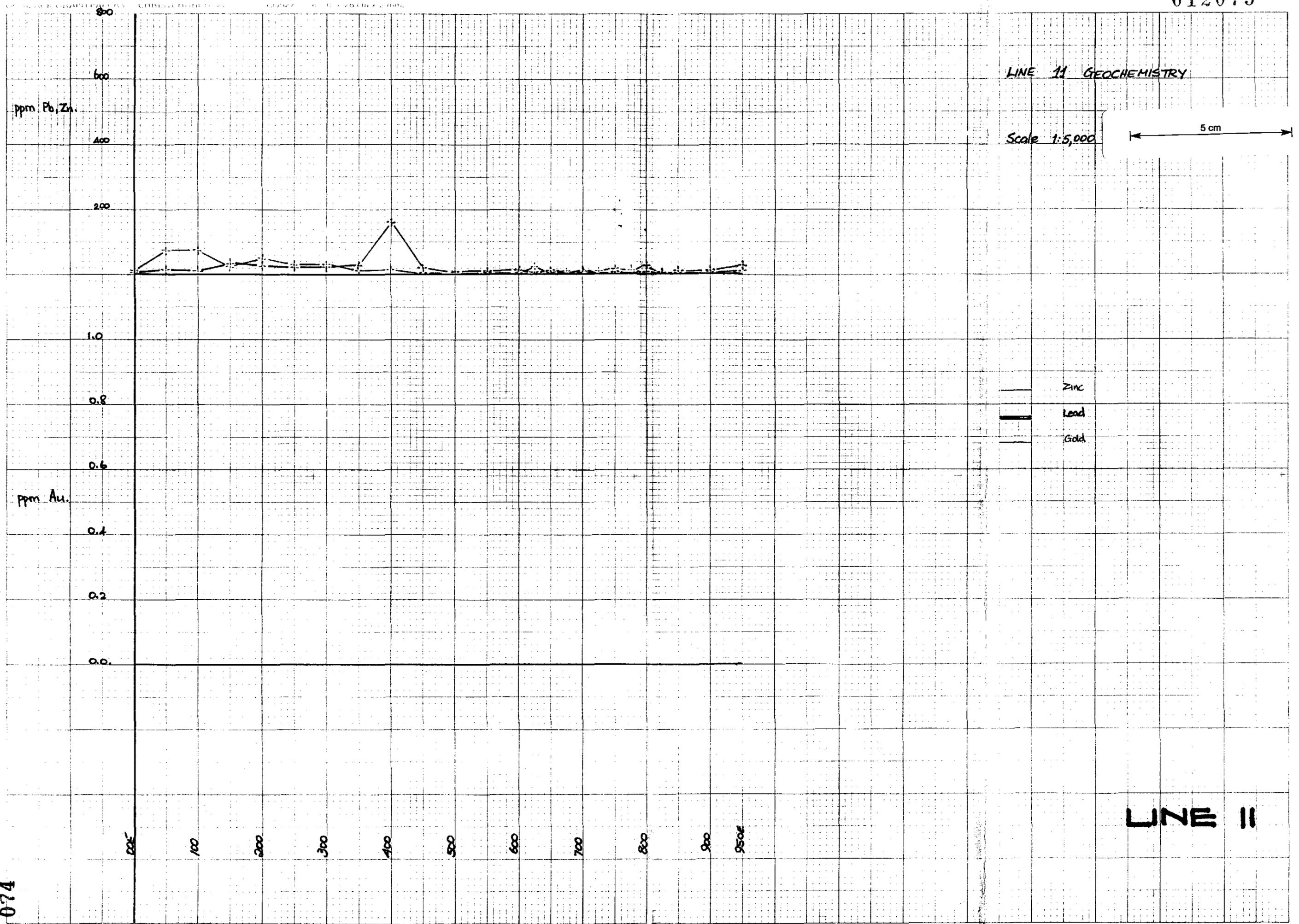
Mag V scale 1cm = 10mT
Mag Surveyed 15 April 1986



62700
62700
62680
TOTAL FIELD MAG INTENSITY
SENSOR 14T 2m

LINE II

073



LINE 11

Maxwell EM Survey
Surveyed 14 April 1986

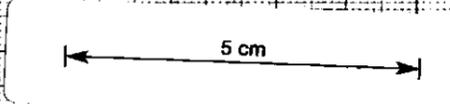
Tx - Rx Spacing 100m

IN PHASE
OUT OF PHASE

Tx - Rx Spacing 100m

Scale 1:5000
Elevation & Scale 1cm = 10m

Mag V Scale 1cm = 10uT
Mag surveyed 15 April 1986



62720
62700
62680
TOTAL FIELD MAG INTENSITY
SENSITIVITY 2mV

START 0904

DIURNAL READINGS
0904-1023

LINE 12

075

ROAD

100

200

300

400

500

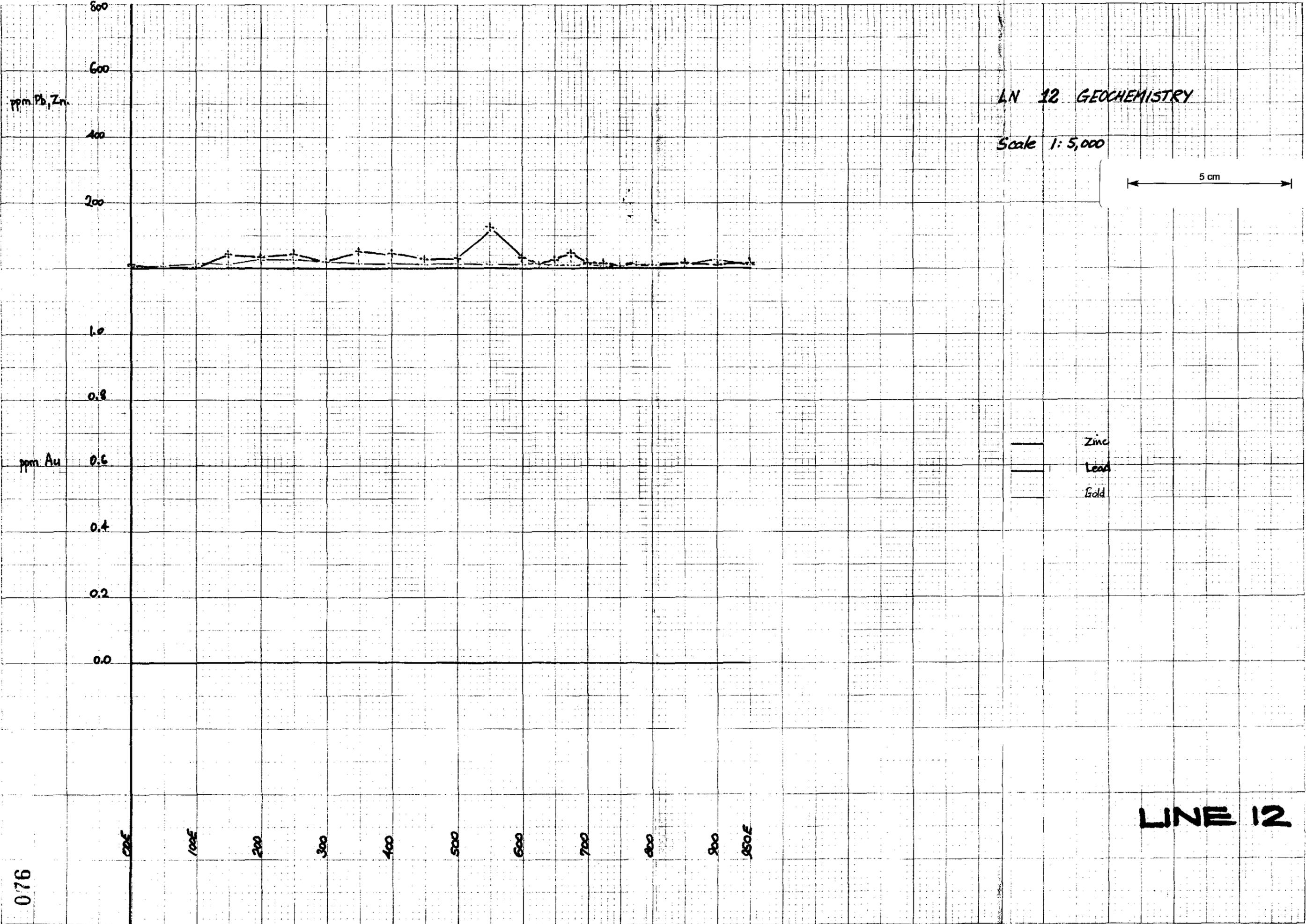
600

700

800

900

1000



076

LINE 12

ELLIOTT BAY LINE 13

MAXIM ELECTROMAGNETICS

••••• IN PHASE
- - - - - OUT OF PHASE

Tx COIL Rx PM

COIL SPACING 100m

Summed

SCALE 1:5000

ELEVATION $\sqrt{\text{SCALE}}$ 1cm = 10m

5 cm

NOTE
Magnetic not run.

LINE 13



ELEVATION

270

Station Log

Maximum GM Survey

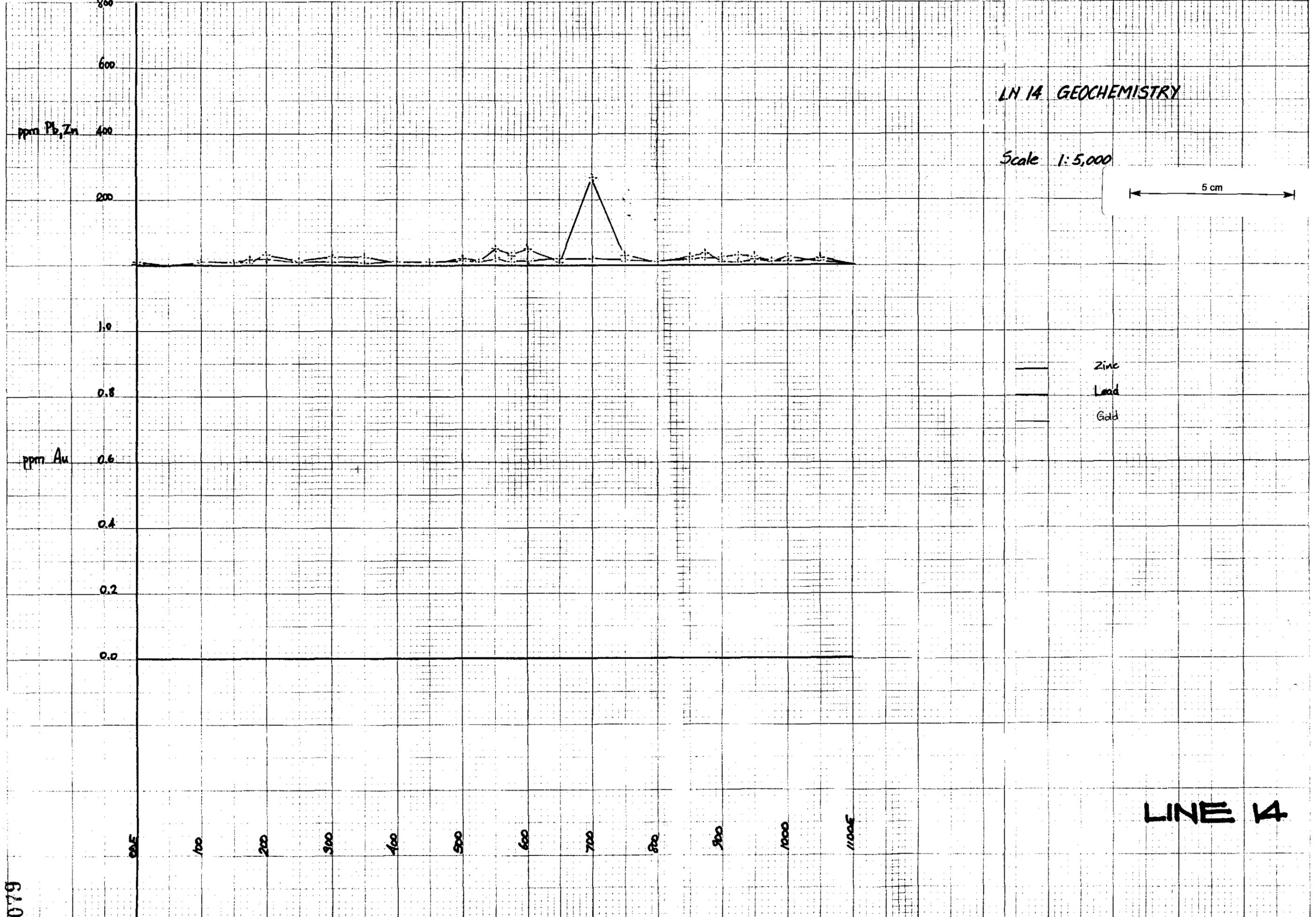


~~~~~ IN PHASE  
 ~~~~~ OUT OF PHASE  
 Tx-Rx spacing 100m
 Tx coil Rx PM

Scale 1:5000
 Elevation \checkmark scale 1cm = 10m
 5 cm

NOTE
 Magnetism not run

LINE 14



LN 14 GEOCHEMISTRY

Scale 1:5,000

5 cm

——— Zinc
 ——— Lead
 ——— Gold

LINE 14

APPENDIX 4

ANALYTICAL RESULT SHEETS



The Australian
Mineral Development
Laboratories

Flemington Street, Frewville,
South Australia 5063
Phone Adelaide (08) 79 1662
Telex AA82520

Please address all
correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

amdel

3/786/0 - AC 4290/86
SPT 126/86

1 May 1986

NATA CERTIFICATE

RECEIVED

Mr. Phil Jones
Cyprus Minerals Australia Company - 6 MAY 1986
61 Counsel Street
ZEEHAN TASMANIA 7469

REPORT AC 4290/86

YOUR REFERENCE: Order Number E 16980
Despatch 2334

REPORT COMPRISING: Cover sheet
Pages 1 - 3
Pages G1 - G5

DATE RECEIVED: 16 April 1986

Approved Signatory: Martin R. Hanckel

Manager, Chemistry Services

for Dr. William G. Spencer
General Manager
Applied Sciences Group

cc Mr. B. Roxburgh
Cyprus Minerals Australia Company
P.O. Box 499
NORTH SYDNEY N.S.W. 2060

hy

ELLIOTT BAY

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Queensland 4814
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Report AC 4290/86
Page 1ANALYSIS
g/tonne

| SAMPLE
MARK | GOLD
Au | SAMPLE
MARK | GOLD
Au | SAMPLE
MARK | GOLD
Au |
|----------------|------------|----------------|------------|----------------|------------|
| 161651 | 0.025 | 161671 | 0.075 | 161700 | 0.045 |
| 161652 | 0.030 | 161672 | 0.080 | 161701 | 0.025 |
| 161653 | 0.025 | 161673 | 0.060 | 161702 | 0.030 |
| 161654 | 0.080 | 161674 | 0.040 | 161703 | 0.040 |
| 161655 | 0.030 | 161675 | 0.050 | 161704 | 0.050 |
| 161656 | 0.030 | 161676 | 0.045 | 161705 | 0.040 |
| 161657 | 0.020 | 161677 | 0.050 | 161706 | 0.045 |
| 161658 | 0.055 | 161678 | 0.050 | 161707 | 0.040 |
| 161659 | 0.075 | 161688 | 0.065 | 161708 | 0.065 |
| 161660 | 0.075 | 161689 | 0.065 | 161709 | 0.105 |
| 161661 | 0.075 | 161690 | 0.055 | 161710 | 0.040 |
| 161662 | 0.055 | 161691 | 0.065 | 161711 | 0.040 |
| 161663 | 0.060 | 161692 | 0.065 | 161712 | 0.035 |
| 161664 | 0.055 | 161693 | 0.080 | 161713 | 0.040 |
| 161665 | 0.045 | 161694 | 0.060 | 161714 | 0.170 |
| 161666 | 0.055 | 161695 | 0.040 | 161715 | 0.040 |
| 161667 | 0.070 | 161696 | 0.040 | 161716 | 0.020 |
| 161668 | 0.055 | 161697 | 0.040 | 161717 | 0.020 |
| 161669 | 0.050 | 161698 | 0.025 | 161718 | 0.025 |
| 161670 | 0.055 | 161699 | 0.040 | 161719 | 0.005 |

Method: A7/2 (50g Charge)

ANALYSIS
g/tonne

| SAMPLE MARK | GOLD Au | SAMPLE MARK | GOLD Au | SAMPLE MARK | GOLD Au |
|-------------|---------|-------------|---------|-------------|---------|
| 161720 | 0.015 | 161740 | 0.040 | 161760 | 0.025 |
| 161721 | 0.025 | 161741 | 0.035 | 161761 | 0.020 |
| 161722 | 0.015 | 161742 | 0.030 | 161762 | 0.010 |
| 161723 | 0.020 | 161743 | 0.020 | 161763 | <0.005 |
| 161724 | 0.025 | 161744 | 0.010 | 161764 | 0.020 |
| 161725 | 0.035 | 161745 | 0.010 | 161765 | 0.020 |
| 161726 | 0.020 | 161746 | 0.015 | 161766 | 0.005 |
| 161727 | 0.015 | 161747 | <0.005 | 161767 | 0.020 |
| 161728 | 0.015 | 161748 | 0.020 | 161768 | 0.015 |
| 161729 | 0.045 | 161749 | 0.030 | 161769 | 0.015 |
| 161730 | 0.025 | 161750 | 0.020 | 161770 | 0.010 |
| 161731 | 0.035 | 161751 | 0.010 | 161771 | 0.015 |
| 161732 | 0.035 | 161752 | 0.015 | 161772 | 0.020 |
| 161733 | 0.055 | 161753 | 0.020 | 161773 | 0.025 |
| 161734 | 0.020 | 161754 | 0.020 | 161774 | 0.025 |
| 161735 | 0.035 | 161755 | 0.030 | 161775 | 0.015 |
| 161736 | 0.035 | 161756 | 0.020 | 161776 | 0.035 |
| 161737 | 0.015 | 161757 | 0.025 | 161777 | 0.025 |
| 161738 | 0.025 | 161758 | <0.005 | 161778 | 0.030 |
| 161739 | 0.035 | 161759 | 0.020 | 161779 | 0.025 |

Method: A7/2 (50g Charge)

Report AC 4290/86
Page 3ANALYSIS
g/tonne

| SAMPLE
MARK | GOLD
Au | SAMPLE
MARK | GOLD
Au | SAMPLE
MARK | GOLD
Au |
|----------------|------------|----------------|------------|----------------|------------|
| 161780 | 0.020 | 161800 | 0.020 | 161820 | 0.025 |
| 161781 | 0.015 | 161801 | 0.055 | 161679 | 0.045 |
| 161782 | 0.015 | 161802 | 0.035 | 161680 | 0.040 |
| 161783 | 0.025 | 161803 | 0.015 | 161681 | 0.040 |
| 161784 | 0.020 | 161804 | 0.020 | 161682 | 0.055 |
| 161785 | 0.015 | 161805 | 0.015 | 161683 | 0.035 |
| 161786 | 0.025 | 161806 | 0.025 | 161684 | 0.050 |
| 161787 | 0.045 | 161807 | 0.045 | 161685 | 0.030 |
| 161788 | 0.030 | 161808 | 0.020 | 161686 | 0.040 |
| 161789 | 0.040 | 161809 | 0.025 | 161687 | 0.040 |
| 161790 | 0.020 | 161810 | 0.035 | | |
| 161791 | 0.030 | 161811 | 0.030 | | |
| 161792 | 0.035 | 161812 | 0.020 | | |
| 161793 | 0.030 | 161813 | 0.035 | | |
| 161794 | 0.075 | 161814 | 0.030 | | |
| 161795 | 0.100 | 161815 | 0.050 | | |
| 161796 | 0.100 | 161816 | 0.050 | | |
| 161797 | 0.055 | 161817 | 0.030 | | |
| 161798 | 0.100 | 161818 | 0.020 | | |
| 161799 | 0.050 | 161819 | 0.030 | | |

Method: A7/2 (50g Charge)



Analysis code A1/1,2 X3

Report AC 4290/86

Page G1

NATA Certificate

Order No. 6980

Results in ppm

| Sample | Cu | Pb | Zn | Ag | As |
|------------|-----|-----|-----|-----|-----|
| 161651 | 17 | 34 | 11 | <1 | 7 |
| 161652 | 9 | 28 | 20 | <1 | 5 |
| 161653 | 3 | 32 | 14 | <1 | 6 |
| 161654 | 2 | 26 | 11 | <1 | 5 |
| 161655 | <2 | 50 | 11 | <1 | 12 |
| 161656 | <2 | 46 | 16 | <1 | 7 |
| 161657 | 3 | 160 | 13 | <1 | 32 |
| 161658 | <2 | 40 | 35 | <1 | 5 |
| 161659 | 3 | 58 | 27 | <1 | 12 |
| 161660 | <2 | 32 | 29 | <1 | 54 |
| 161661 | <2 | 42 | 12 | <1 | 12 |
| 161662 | <2 | 50 | 11 | <1 | 10 |
| 161663 | <2 | 32 | 5 | <1 | 42 |
| 161664 | 4 | 48 | 9 | <1 | 14 |
| 161665 | 3 | 36 | 47 | <1 | 23 |
| 161666 | 2 | 84 | 56 | <1 | 19 |
| 161667 | 4 | 72 | 72 | <1 | 11 |
| 161668 | 3 | 48 | 230 | <1 | 7 |
| 161669 | 4 | 68 | 3 | <1 | 13 |
| 161670 | 6 | 64 | 60 | <1 | 3 |
| 161671 | 5 | 52 | 64 | <1 | 5 |
| 161672 | 6 | 125 | 33 | <1 | 17 |
| 161673 | 4 | 84 | 155 | <1 | 13 |
| 161674 | 6 | 105 | 370 | <1 | 10 |
| 161675 | 4 | 58 | 64 | 1 | 6 |
| 161676 | 58 | 245 | 130 | 1 | 5 |
| 161677 | 3 | 250 | 70 | <1 | 36 |
| 161678 | 3 | 84 | 82 | <1 | 5 |
| 161679 | 5 | 22 | 160 | <1 | 6 |
| 161680 | 3 | 54 | 48 | <1 | 6 |
| 161681 | 9 | 42 | 54 | <1 | 3 |
| 161682 | 2 | 22 | 40 | <1 | 5 |
| 161683 | 3 | 96 | 395 | <1 | 3 |
| 161684 | 7 | 36 | 175 | <1 | <2 |
| 161685 | 8 | 46 | 550 | <1 | 4 |
| 161686 | 3 | 46 | 335 | <1 | 3 |
| 161687 | 15 | 76 | 310 | 2 | 3 |
| 161688 | 11 | 180 | 31 | 2 | 7 |
| 161689 | 7 | 160 | 125 | 1 | 18 |
| 161690 | 6 | 78 | 530 | 2 | 3 |
| Detn limit | (2) | (4) | (2) | (1) | (2) |



Analysis code A1/1,2 X3

Report AC 4290/86

Page G2

NATA Certificate

Order No. 6980

Results in ppm

| Sample | Cu | Pb | Zn | Ag | As |
|------------|-----|-----|-----|-----|-----|
| 161691 | 3 | 120 | 90 | 1 | 6 |
| 161692 | 3 | 72 | 105 | 1 | 8 |
| 161693 | 3 | 62 | 105 | 1 | 8 |
| 161694 | 3 | 135 | 60 | 1 | 21 |
| 161695 | 4 | 36 | 135 | 2 | 4 |
| 161696 | 4 | 28 | 44 | 1 | 7 |
| 161697 | 5 | 30 | 50 | <1 | 5 |
| 161698 | 3 | 190 | 9 | <1 | 39 |
| 161699 | 5 | 38 | 28 | <1 | 8 |
| 161700 | 5 | 105 | 37 | <1 | 23 |
| 161701 | 4 | 120 | 40 | <1 | 18 |
| 161702 | 4 | 20 | 12 | <1 | 7 |
| 161703 | 5 | 62 | 125 | <1 | 8 |
| 161704 | 5 | 50 | 52 | <1 | 7 |
| 161705 | 5 | 98 | 225 | <1 | 8 |
| 161706 | 7 | 130 | 165 | <1 | 14 |
| 161707 | 5 | 44 | 29 | <1 | 9 |
| 161708 | 4 | 115 | 42 | <1 | 9 |
| 161709 | 5 | 56 | 180 | <1 | 7 |
| 161710 | 8 | 40 | 110 | <1 | 4 |
| 161711 | 5 | 28 | 155 | <1 | 3 |
| 161712 | 4 | 78 | 62 | <1 | 10 |
| 161713 | 4 | 52 | 76 | <1 | 10 |
| 161714 | 5 | 88 | 540 | <1 | 11 |
| 161715 | 4 | 145 | 31 | 1 | 16 |
| 161716 | 4 | 82 | 120 | <1 | 16 |
| 161717 | 4 | 145 | 200 | 1 | 11 |
| 161718 | 5 | 42 | 37 | <1 | 8 |
| 161719 | 4 | 155 | 260 | 1 | 18 |
| 161720 | 4 | 155 | 96 | 1 | 33 |
| 161721 | 6 | 20 | 19 | 1 | 6 |
| 161722 | 8 | 28 | 11 | <1 | 4 |
| 161723 | 4 | 24 | 49 | <1 | 4 |
| 161724 | 3 | 26 | 215 | <1 | 3 |
| 161725 | 5 | 34 | 50 | <1 | 3 |
| 161726 | 4 | 80 | 135 | 1 | <2 |
| 161727 | <2 | 76 | 92 | <1 | 5 |
| 161728 | <2 | 30 | 14 | <1 | 6 |
| 161729 | 4 | 30 | 12 | <1 | 4 |
| 161730 | 4 | 32 | 16 | <1 | 4 |
| Detn limit | (2) | (4) | (2) | (1) | (2) |

087

Analysis code A1/1,2 X3

Report AC 4290/86

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NATA Certificate

Order No. 6980

Results in ppm

| Sample | Cu | Pb | Zn | Ag | As |
|------------|-----|-----|-----|-----|-----|
| 161731 | 4 | 14 | 8 | <1 | 6 |
| 161732 | 5 | 26 | 14 | <1 | <2 |
| 161733 | 4 | 22 | 32 | <1 | 4 |
| 161734 | 4 | 30 | 16 | <1 | 5 |
| 161735 | 6 | 42 | 11 | <1 | 5 |
| 161736 | 5 | 36 | 44 | <1 | 5 |
| 161737 | 4 | 30 | 22 | <1 | 6 |
| 161738 | 4 | 40 | 8 | <1 | 7 |
| 161739 | 6 | 44 | 12 | <1 | 8 |
| 161740 | 3 | 20 | 20 | 1 | 4 |
| 161741 | 4 | 32 | 13 | <1 | 5 |
| 161742 | 6 | 24 | 18 | <1 | 5 |
| 161743 | 5 | 24 | 11 | <1 | 3 |
| 161744 | 5 | 16 | 6 | <1 | 3 |
| 161745 | 6 | 26 | 6 | <1 | 7 |
| 161746 | 4 | 12 | 6 | <1 | 3 |
| 161747 | <2 | 10 | 4 | <1 | 4 |
| 161748 | <2 | 34 | <2 | <1 | 16 |
| 161749 | <2 | 10 | 4 | <1 | 3 |
| 161750 | <2 | 22 | 10 | 1 | 6 |
| 161751 | 4 | 50 | 4 | <1 | 9 |
| 161752 | 6 | 36 | 4 | <1 | 11 |
| 161753 | 4 | 28 | 6 | <1 | 14 |
| 161754 | 4 | 22 | 9 | 1 | 9 |
| 161755 | 4 | 22 | 4 | <1 | 5 |
| 161756 | 7 | 14 | 5 | <1 | 9 |
| 161757 | 5 | 10 | 6 | <1 | 6 |
| 161758 | 4 | 28 | 6 | <1 | 8 |
| 161759 | 4 | 20 | 5 | <1 | 4 |
| 161760 | 4 | 18 | 11 | <1 | 7 |
| 161761 | 15 | 26 | 13 | <1 | 3 |
| 161762 | 3 | 24 | 17 | <1 | 5 |
| 161763 | 4 | 32 | 16 | <1 | 4 |
| 161764 | 7 | 24 | 19 | <1 | 2 |
| 161765 | 4 | 40 | 76 | <1 | 3 |
| 161766 | 4 | 22 | 26 | <1 | 7 |
| 161767 | 5 | 76 | 200 | 1 | 6 |
| 161768 | 4 | 115 | 690 | 1 | 15 |
| 161769 | 3 | 175 | 195 | 1 | 11 |
| 161770 | 4 | 28 | 17 | <1 | 4 |
| Detn limit | (2) | (4) | (2) | (1) | (2) |



Analysis code A1/1,2 X3

Report AC 4290/86

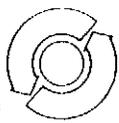
Page G4

NATA Certificate

Order No. 6980

Results in ppm

| Sample | Cu | Pb | Zn | Ag | As |
|------------|-----|-----|-----|-----|-----|
| 161771 | 4 | 18 | 15 | <1 | 8 |
| 161772 | 5 | 26 | 13 | <1 | 6 |
| 161773 | 13 | 92 | 92 | 1 | 3 |
| 161774 | 6 | 48 | 56 | <1 | 7 |
| 161775 | 8 | 82 | 76 | 1 | <2 |
| 161776 | 6 | 26 | 32 | <1 | 6 |
| 161777 | 9 | 56 | 60 | <1 | 5 |
| 161778 | <2 | 38 | 38 | <1 | 13 |
| 161779 | <2 | 12 | 44 | <1 | 8 |
| 161780 | <2 | 12 | 21 | <1 | 7 |
| 161781 | <2 | 12 | 21 | <1 | 4 |
| 161782 | 3 | 18 | 6 | <1 | <2 |
| 161783 | 4 | 28 | 9 | <1 | 6 |
| 161784 | 7 | 32 | 49 | 1 | 3 |
| 161785 | 3 | 26 | 10 | <1 | 3 |
| 161786 | 4 | 14 | 8 | <1 | 4 |
| 161787 | 3 | 46 | 8 | <1 | 11 |
| 161788 | 3 | 32 | 7 | <1 | 9 |
| 161789 | 4 | 8 | <2 | <1 | 2 |
| 161790 | <2 | 280 | 4 | <1 | 7 |
| 161791 | <2 | 32 | 2 | <1 | 9 |
| 161792 | <2 | 18 | <2 | <1 | 4 |
| 161793 | <2 | 22 | 3 | <1 | 6 |
| 161794 | <2 | 26 | 2 | <1 | 5 |
| 161795 | 3 | 14 | 3 | <1 | 8 |
| 161796 | 4 | 32 | 4 | <1 | 8 |
| 161797 | 3 | 18 | 6 | <1 | <2 |
| 161798 | 3 | 12 | 4 | <1 | 3 |
| 161799 | 5 | 24 | 2 | <1 | 6 |
| 161800 | 2 | 22 | 2 | <1 | 7 |
| 161801 | 3 | 28 | 2 | <1 | 8 |
| 161802 | 3 | 950 | 3 | <1 | 230 |
| 161803 | 3 | 28 | 3 | <1 | 4 |
| 161804 | 3 | 22 | 3 | <1 | 7 |
| 161805 | 7 | 26 | 5 | <1 | 9 |
| 161806 | 6 | 38 | 3 | <1 | 11 |
| 161807 | 6 | 8 | 3 | <1 | 3 |
| 161808 | 3 | 26 | 3 | <1 | 8 |
| 161809 | 4 | 26 | 3 | <1 | 6 |
| 161810 | 10 | 10 | 5 | <1 | 2 |
| Detn limit | (2) | (4) | (2) | (1) | (2) |



Analysis code A1/1,2 X3

Report AC 4290/86

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NATA Certificate

Order No. 6980

Results in ppm

| Sample | Cu | Pb | Zn | Ag | As |
|------------|-----|-----|-----|-----|-----|
| 161811 | 5 | 12 | 3 | <1 | 4 |
| 161812 | 4 | 40 | 4 | <1 | 11 |
| 161813 | 3 | 22 | 4 | <1 | 7 |
| 161814 | 18 | 10 | 9 | 1 | 5 |
| 161815 | 6 | 26 | 6 | 1 | 6 |
| 161816 | 5 | 36 | 6 | <1 | 12 |
| 161817 | 5 | 14 | 4 | <1 | 7 |
| 161818 | 3 | 18 | 6 | <1 | 6 |
| 161819 | 2 | 10 | 8 | <1 | 3 |
| 161820 | 2 | 14 | 9 | <1 | 5 |
| Detn limit | (2) | (4) | (2) | (1) | (2) |

090



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Telex AA82520

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correspondence to
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SA 5063
In reply quote:

amdel

3/397/0 - AC 4420/86
SPT 132/86

2 May 1986

NATA CERTIFICATE

Mr. Phil Jones
Cyprus Minerals Australia Company
61 Counsel Street
ZEEHAN TASMANIA 7469

REPORT AC 4420/86

YOUR REFERENCE: Order Number E 16995
Despatch Number 2335

REPORT COMPRISING: Cover sheet
Pages G1 - G5

DATE RECEIVED: 28 April 1986

Approved Signatory: Martin R. Hanckel

Manager, Chemistry Services

for Dr. William G. Spencer
General Manager
Applied Sciences Group

cc Mr. Bryce Roxburgh
Cyprus Minerals Australia Company
P.O. Box 493
NORTH SYDNEY N.S.W. 2060

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Analysis code A1/1,2
A7/2,X3

Report AC 4420/86

Page G1

NATA Certificate

Order No. 2335

Results in ppm

| Sample | Cu | Pb | Zn | Ag | As | Au |
|--------|----|-----|-----|----|----|------|
| 161821 | 7 | 20 | 28 | <1 | <2 | 0.14 |
| 161822 | 4 | 30 | 42 | <1 | <2 | 0.70 |
| 161823 | 5 | 18 | 36 | <1 | 5 | 0.97 |
| 161824 | 6 | 34 | 62 | <1 | 3 | 0.13 |
| 161825 | 6 | 38 | 70 | <1 | 6 | 0.20 |
| 161826 | 5 | 66 | 235 | <1 | <2 | 0.51 |
| 161827 | 6 | 22 | 23 | <1 | 2 | 0.04 |
| 161828 | 5 | 62 | 72 | <1 | 12 | 0.04 |
| 161829 | 4 | 38 | 46 | <1 | <2 | 0.03 |
| 161830 | 5 | 16 | 15 | <1 | 5 | 0.04 |
| 161831 | 5 | 26 | 18 | <1 | 8 | 0.03 |
| 161832 | 5 | 20 | 74 | <1 | <2 | 0.04 |
| 161833 | 6 | 22 | 7 | <1 | 4 | 0.05 |
| 161834 | 6 | 30 | 7 | <1 | 4 | 0.04 |
| 161835 | 6 | 10 | 8 | <1 | 5 | 0.04 |
| 161836 | 5 | 18 | 11 | <1 | 2 | 0.04 |
| 161837 | 10 | 44 | 10 | <1 | 2 | 0.04 |
| 161838 | 5 | 24 | 6 | <1 | 4 | 0.03 |
| 161839 | 5 | 205 | 270 | <1 | 2 | 0.05 |
| 161840 | 4 | 26 | 84 | <1 | <2 | 0.03 |
| 161841 | 5 | 14 | 12 | <1 | 7 | 0.03 |
| 161842 | 11 | 26 | 125 | <1 | 4 | 0.03 |
| 161843 | 8 | 125 | 210 | <1 | 3 | 0.04 |
| 161844 | 6 | 18 | 16 | <1 | 11 | 0.04 |
| 161845 | 7 | 42 | 29 | <1 | 6 | 0.04 |
| 161846 | 8 | 80 | 88 | 1 | 9 | 0.04 |
| 161847 | 7 | 48 | 18 | <1 | <2 | 0.04 |
| 161848 | 11 | 50 | 140 | <1 | 4 | 0.03 |
| 161849 | 10 | 16 | 74 | 1 | 6 | 0.05 |
| 161850 | 8 | 22 | 32 | <1 | 2 | 0.04 |
| 161851 | 6 | 54 | 21 | <1 | 4 | 0.03 |
| 161852 | 32 | 155 | 80 | 1 | 2 | 0.02 |
| 161853 | 8 | 46 | 31 | 1 | 4 | 0.04 |
| 161854 | 8 | 66 | 82 | <1 | 5 | 0.03 |
| 161855 | 7 | 76 | 62 | <1 | <2 | 0.03 |
| 161856 | 10 | 92 | 98 | 1 | 9 | 0.04 |
| 161857 | 5 | 6 | 3 | 1 | 2 | 0.04 |
| 161858 | 4 | 12 | 30 | 1 | 2 | 0.03 |
| 161859 | 4 | 16 | 33 | <1 | <2 | 0.03 |
| 161860 | 9 | 62 | 50 | <1 | 2 | 0.04 |

Detn limit (2) (4) (2) (1) (2) (0.01)



Analysis code A1/1,2
A7/2,X3

Report AC 4420/86

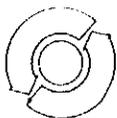
Page G2

NATA Certificate

Order No. 2335

Results in ppm

| Sample | Cu | Pb | Zn | Ag | As | Au |
|------------|-----|-----|-----|-----|-----|--------|
| 161861 | 4 | 38 | 58 | 1 | 2 | 0.04 |
| 161862 | 4 | 40 | 150 | <1 | 7 | 0.04 |
| 161863 | 4 | 52 | 78 | <1 | 5 | 0.06 |
| 161864 | 3 | 32 | 66 | <1 | 2 | 0.03 |
| 161865 | 4 | 18 | 44 | <1 | 7 | 0.07 |
| 161866 | 5 | 40 | 15 | <1 | 13 | 0.02 |
| 161867 | 5 | 6 | 17 | <1 | 4 | 0.04 |
| 161868 | 5 | 20 | 10 | <1 | 5 | 0.02 |
| 161869 | 4 | 22 | 3 | <1 | 7 | 0.02 |
| 161870 | 5 | 8 | <2 | <1 | 2 | 0.02 |
| 161871 | 10 | 28 | 7 | <1 | 10 | 0.04 |
| 161872 | 3 | 16 | 11 | <1 | 3 | 0.02 |
| 161873 | 5 | 16 | 13 | <1 | 6 | 0.02 |
| 161874 | 5 | 4 | 3 | <1 | <2 | 0.02 |
| 161875 | 5 | 6 | 5 | <1 | 6 | 0.03 |
| 161876 | 3 | 12 | 8 | <1 | 5 | 0.02 |
| 161877 | 5 | 10 | 7 | <1 | 3 | 0.04 |
| 161878 | 4 | 6 | 7 | <1 | <2 | 0.03 |
| 161879 | 4 | 10 | 8 | <1 | 2 | 0.03 |
| 161880 | 4 | 8 | 3 | <1 | 5 | 0.03 |
| 161881 | 4 | 12 | 8 | <1 | 3 | 0.03 |
| 161882 | 4 | 12 | 7 | <1 | 9 | 0.05 |
| 161883 | 4 | 12 | 6 | <1 | 5 | 0.03 |
| 161884 | 4 | 28 | 6 | <1 | 7 | 0.04 |
| 161885 | 4 | 20 | 3 | <1 | 5 | 0.05 |
| 161886 | 3 | 12 | 7 | <1 | 3 | 0.03 |
| 161887 | 3 | 20 | 6 | <1 | 6 | 0.03 |
| 161888 | 4 | 16 | 5 | <1 | 4 | 0.03 |
| 161889 | 5 | 20 | 6 | <1 | 6 | 0.03 |
| 161890 | 3 | 10 | 3 | <1 | 4 | 0.03 |
| 161891 | 8 | 18 | 4 | <1 | 7 | 0.03 |
| 161892 | 5 | 8 | 4 | <1 | 2 | 0.04 |
| 161893 | 4 | 16 | 2 | <1 | 2 | 0.03 |
| 161894 | 4 | 14 | 6 | <1 | 3 | 0.03 |
| 161895 | 4 | 10 | 6 | <1 | 4 | 0.03 |
| 161896 | 7 | 12 | 7 | <1 | <2 | 0.02 |
| 161897 | 6 | 8 | 2 | <1 | 2 | 0.03 |
| 161898 | 4 | 8 | 14 | <1 | 3 | 0.03 |
| 161899 | 4 | 16 | 24 | <1 | 6 | 0.03 |
| 161900 | 6 | 16 | 6 | <1 | <2 | 0.02 |
| Detn limit | (2) | (4) | (2) | (1) | (2) | (0.01) |



Analysis code A1/1,2
A7/2,X3

Report AC 4420/86

Page G3

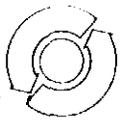
NATA Certificate

Order No. 2335

Results in ppm

| Sample | Cu | Pb | Zn | Ag | As | Au |
|--------|----|-----|-----|----|----|------|
| 161901 | 3 | 6 | 3 | <1 | 2 | 0.04 |
| 161902 | 3 | 14 | 2 | <1 | 5 | 0.03 |
| 161903 | 4 | 20 | 4 | <1 | <2 | 0.04 |
| 161904 | 3 | 10 | 8 | <1 | 3 | 0.02 |
| 161905 | 6 | 6 | 47 | <1 | 4 | 0.02 |
| 161906 | 6 | 12 | 7 | <1 | 6 | 0.02 |
| 161907 | 3 | 36 | 64 | <1 | 7 | 0.03 |
| 161908 | 3 | 28 | 11 | <1 | <2 | 0.02 |
| 161909 | 4 | 34 | 52 | 1 | 2 | 0.05 |
| 161910 | 4 | 12 | 19 | <1 | 4 | 0.04 |
| 161911 | 4 | 94 | 16 | <1 | 21 | 0.03 |
| 161912 | 4 | 18 | 15 | <1 | <2 | 0.03 |
| 161913 | 7 | 20 | 29 | <1 | 7 | 0.04 |
| 161914 | 6 | 8 | 14 | <1 | 4 | 0.03 |
| 161915 | 4 | 20 | 24 | <1 | 3 | 0.03 |
| 161916 | 5 | 40 | 24 | <1 | 5 | 0.03 |
| 161917 | 14 | 46 | 125 | 1 | 3 | 1.10 |
| 161918 | 8 | 88 | 72 | 1 | 4 | 0.02 |
| 161919 | 10 | 100 | 195 | 1 | 5 | 0.03 |
| 161920 | 4 | 32 | 54 | 1 | 3 | 0.04 |
| 161921 | 4 | 22 | 17 | <1 | <2 | 0.03 |
| 161922 | 5 | 20 | 28 | <1 | <2 | 0.02 |
| 161923 | 4 | 16 | 30 | <1 | 3 | 0.05 |
| 161924 | 5 | 26 | 20 | <1 | <2 | 0.03 |
| 161925 | 4 | 6 | 7 | <1 | 2 | 0.03 |
| 161926 | 4 | 6 | <2 | <1 | <2 | 0.03 |
| 161927 | 8 | 26 | 8 | <1 | <2 | 0.03 |
| 161928 | 8 | 36 | 8 | <1 | <2 | 0.03 |
| 161929 | 3 | 24 | 5 | <1 | <2 | 0.01 |
| 161930 | 2 | 14 | 18 | <1 | 3 | 0.03 |
| 161931 | 5 | 135 | 27 | <1 | 4 | 0.02 |
| 161932 | 2 | 18 | 21 | <1 | 4 | 0.03 |
| 161933 | 6 | 16 | 25 | <1 | <2 | 0.04 |
| 161934 | 11 | 70 | 120 | 1 | 8 | 0.03 |
| 161935 | 5 | 14 | 22 | <1 | 4 | 0.04 |
| 161936 | 5 | 6 | 6 | <1 | 5 | 0.05 |
| 161937 | 6 | 4 | 8 | <1 | 4 | 0.04 |
| 161938 | 4 | 10 | 3 | <1 | 2 | 0.06 |
| 161939 | 5 | 12 | 13 | <1 | 5 | 0.04 |
| 161940 | 4 | 8 | 20 | <1 | <2 | 0.04 |

Detn limit (2) (4) (2) (1) (2) (0.01)



Analysis code A1/1,2
A7/2,X3

Report AC 4420/86

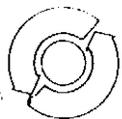
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NATA Certificate

Order No. 2335

Results in ppm

| Sample | Cu | Pb | Zn | Ag | As | Au |
|------------|-----|-----|-----|-----|-----|--------|
| 161941 | 4 | <4 | 4 | <1 | 2 | 0.04 |
| 161942 | 6 | 28 | 41 | <1 | <2 | 0.04 |
| 161943 | 5 | 12 | 5 | <1 | 3 | 0.04 |
| 161944 | 4 | 12 | 105 | <1 | 2 | 0.03 |
| 161945 | 6 | 34 | 27 | <1 | 2 | 0.04 |
| 161946 | 5 | 18 | 10 | <1 | 2 | 0.04 |
| 161947 | 6 | 34 | 175 | <1 | 4 | 0.03 |
| 161948 | 3 | 18 | 28 | <1 | <2 | 0.03 |
| 161949 | 3 | 36 | 60 | <1 | 9 | 0.03 |
| 161950 | 7 | 26 | 10 | <1 | 5 | 0.03 |
| 161951 | 3 | 28 | 16 | <1 | 2 | 0.05 |
| 161952 | 6 | 10 | 5 | <1 | 5 | 0.05 |
| 161953 | 6 | 22 | 14 | <1 | 6 | 0.04 |
| 161954 | 5 | 12 | 17 | <1 | 5 | 0.04 |
| 161955 | 6 | 26 | 21 | <1 | 4 | 0.05 |
| 161956 | 5 | 14 | 12 | <1 | 3 | 0.05 |
| 161957 | 4 | 4 | 4 | <1 | 3 | 0.05 |
| 161958 | 5 | 22 | 9 | <1 | 4 | 0.04 |
| 161959 | 4 | 14 | 19 | <1 | <2 | 0.04 |
| 161960 | <2 | 16 | 2 | <1 | 6 | 0.06 |
| 161961 | <2 | 10 | 3 | <1 | <2 | 0.04 |
| 161962 | <2 | 12 | 7 | <1 | 3 | 0.05 |
| 161963 | <2 | 16 | 5 | <1 | 2 | 0.04 |
| 161964 | 2 | 28 | 12 | <1 | 6 | 0.04 |
| 161965 | 5 | 8 | 9 | <1 | <2 | 0.05 |
| 161966 | 4 | 4 | 9 | <1 | 6 | 0.04 |
| 161967 | 6 | 6 | 29 | <1 | 2 | 0.04 |
| 161968 | 4 | 8 | 3 | <1 | 6 | 0.09 |
| 161969 | 5 | 14 | 6 | <1 | 3 | 0.04 |
| 161970 | 4 | 8 | 7 | <1 | 2 | 0.04 |
| 161971 | 3 | 12 | 9 | <1 | 4 | 0.04 |
| 161972 | 3 | 14 | 6 | <1 | 4 | 0.04 |
| 161973 | 3 | 14 | 5 | <1 | 7 | 0.05 |
| 161974 | 5 | 8 | 4 | <1 | 4 | 0.06 |
| 161975 | 3 | 10 | 4 | <1 | 3 | 0.06 |
| 161976 | 4 | 14 | 68 | 1 | 10 | 0.05 |
| 161977 | 5 | 20 | 12 | <1 | 3 | 0.04 |
| 161978 | 4 | 14 | 9 | 1 | 3 | 0.04 |
| 161979 | 4 | 14 | 16 | 1 | 4 | 0.04 |
| 171001 | 25 | 38 | 250 | 1 | 4 | 0.04 |
| Detn limit | (2) | (4) | (2) | (1) | (2) | (0.01) |



Analysis code A1/1,2
A7/2,X3

Report AC 4420/86

Page G5

NATA Certificate

Order No. 2335

Results in ppm

| Sample | Cu | Pb | Zn | Ag | As | Au |
|------------|-----|-----|-----|-----|-----|--------|
| 171002 | 7 | 8 | 60 | <1 | 4 | 0.06 |
| 171010 | 17 | 8 | 16 | 1 | 6 | 0.04 |
| 171011 | 19 | 245 | 310 | <1 | 27 | 0.04 |
| 171012 | 36 | 24 | 10 | 1 | 92 | 0.04 |
| 171013 | 15 | 18 | 6 | <1 | <2 | 0.04 |
| 171014 | 10 | 6 | 5 | 1 | 2 | 0.04 |
| 171015 | 9 | 86 | 5 | <1 | 6 | 0.03 |
| 171016 | 14 | 10 | 19 | <1 | 11 | 0.05 |
| Detn limit | (2) | (4) | (2) | (1) | (2) | (0.01) |



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In reply quote:

amdel

3/397/0 - AC 4677/86
SPT 149/86
26 May 1986

NATA CERTIFICATE

PART REPORT 1

Mr. P. Jones
Cyprus Minerals Australia Company
61 Counsel Street
ZEEHAN TASMANIA 7469

REPORT AC 4677/86

YOUR REFERENCE: Order Number E16996, Despatch 2336

REPORT COMPRISING: Cover Sheet
Pages G1 - G2

DATE RECEIVED: 15 May 1986

NOTE: Au results are being finalised as
per discussions A. Ciplys/P. Jones.

Approved Signatory: Martin R. Hanckel

Manager, Chemistry Services

for Dr William G. Spencer
General Manager
Applied Sciences Group

cc Mr. B. Roxburgh
Cyprus Minerals Australia Company
PO Box 493
NORTH SYDNEY NSW 2060

ij



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Analysis code A1/1,2
X3 A7/2
NATA Certificate

Report AC 4677/86
Order No. E 16996

Page G1
Results in ppm

| Sample | Cu | Pb | Zn | Ag | As | Au |
|------------|-----|-----|-----|-----|-----|---------|
| 161980 | 2 | 24 | 60 | <1 | 3 | 0.020 |
| 161981 | <2 | 12 | 21 | <1 | <2 | 0.040 |
| 161982 | <2 | 10 | 5 | <1 | <2 | 0.020 |
| 161983 | <2 | 20 | 12 | <1 | <2 | 0.030 |
| 161984 | <2 | 12 | 8 | <1 | 2 | 0.20 |
| 161985 | <2 | 22 | 78 | <1 | <2 | 0.20 |
| 161986 | <2 | 24 | 7 | <1 | <2 | 0.015 |
| 161987 | <2 | 42 | 22 | <1 | <2 | 0.015 |
| 161988 | 3 | 14 | <2 | <1 | 3 | 0.015 |
| 161989 | 4 | 38 | 14 | <1 | <2 | 0.015 |
| 161990 | <2 | 20 | 7 | <1 | 4 | 0.030 |
| 161991 | <2 | 50 | 48 | <1 | 5 | 0.030 |
| 161992 | 2 | 26 | 6 | <1 | 3 | 0.020 |
| 161993 | <2 | 6 | 4 | <1 | <2 | 0.020 |
| 161994 | <2 | 32 | 12 | <1 | <2 | 0.020 |
| 161995 | <2 | 10 | 18 | <1 | 4 | 0.020 |
| 161996 | 4 | 6 | 3 | <1 | 3 | 0.020 |
| 161997 | <2 | 10 | 14 | <1 | <2 | 0.020 |
| 161998 | 3 | 185 | 52 | <1 | <2 | 0.025 |
| 161999 | <2 | 6 | 5 | <1 | 5 | 0.020 |
| 162000 | 2 | <4 | 4 | <1 | <2 | 0.025 |
| 171051 | 2 | 6 | 9 | <1 | <2 | 0.030 |
| 171052 | 3 | 22 | 14 | <1 | <2 | 0.020 |
| 171053 | <2 | 14 | 13 | <1 | 4 | 0.020 |
| 171054 | <2 | 26 | 13 | <1 | <2 | 0.020 |
| 171055 | <2 | 10 | 11 | <1 | 2 | 0.030 |
| 171056 | 2 | 8 | 3 | <1 | 2 | 0.015 |
| 171057 | 2 | 4 | 7 | <1 | 2 | 0.035 |
| 171058 | <2 | 24 | 12 | <1 | 4 | 0.025 |
| 171059 | 2 | 22 | 13 | <1 | 2 | 0.035 |
| 171060 | <2 | 46 | 20 | <1 | 2 | 0.015 |
| 171061 | 2 | 18 | 18 | <1 | 2 | 0.030 |
| 171062 | <2 | 12 | 16 | <1 | 4 | 0.030 |
| 171063 | 3 | 10 | 11 | <1 | 3 | 0.020 |
| 171064 | 2 | 10 | 5 | <1 | 4 | 0.025 |
| 171065 | <2 | 10 | 3 | <1 | 5 | 0.030 |
| 171066 | <2 | 6 | 3 | <1 | 3 | 0.040 |
| 171067 | 3 | 34 | 2 | 3 | 3 | 0.030 |
| 171068 | 3 | 32 | 16 | <1 | 3 | 0.050 |
| 171069 | 3 | 14 | 9 | <1 | 2 | 0.040 |
| Detn limit | (2) | (4) | (2) | (1) | (2) | (0.005) |



Analysis code A1/1,2
X3 A7/2

Report AC 4677/86

Page G2

NATA Certificate

Order No. E 16996

Results in ppm

| Sample | Cu | Pb | Zn | Ag | As | Au |
|------------|-----|-----|-----|-----|-----|---------|
| 171070 | 3 | 14 | 4 | <1 | 4 | 0.020 |
| 171071 | 10 | 28 | 6 | <1 | 2 | 0.020 |
| 171072 | 2 | 8 | 19 | <1 | 4 | 0.025 |
| 171073 | 2 | 12 | 14 | <1 | 25 | 0.025 |
| 171074 | 3 | 14 | 6 | <1 | 2 | 0.035 |
| 171075 | 3 | 16 | 6 | <1 | 6 | 0.035 |
| 171076 | <2 | 12 | 7 | <1 | 6 | 0.020 |
| 171077 | <2 | 8 | 8 | <1 | 7 | 0.025 |
| 171078 | 3 | 20 | 7 | <1 | 2 | 0.020 |
| 171079 | <2 | 160 | 17 | <1 | <2 | 0.030 |
| 171080 | 3 | 28 | 16 | <1 | 6 | 0.035 |
| 171017 | 13 | 44 | 135 | <1 | <2 | 0.30 |
| Detn limit | (2) | (4) | (2) | (1) | (2) | (0.005) |



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Mineral Development
Laboratories

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South Australia 5063
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Telex AA82520

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correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

amdel

3/397/0 - AC 4647/86

SPT 148/86

23 May 1986

NATA CERTIFICATE

Mr. P. Jones
Cyprus Minerals Australia Company,
Saddle Road
KETTERING TASMANIA 7155

REPORT AC 4647/86

YOUR REFERENCE: Order Number E 16998, Despatch 2337

REPORT COMPRISING: Cover Sheet
Pages G1 - G2

DATE RECEIVED: 13 May 1986

Approved Signatory: Martin R. Hanckel

Manager, Chemistry Services

for Dr William G. Spencer
General Manager
Applied Sciences Group

cc Mr B. Roxburgh
Cyprus Minerals Australia Company
PO Box 949
NORTH SYDNEY NSW 2060

ij



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Analysis code A1/1,2
X3 A7/2
NATA Certificate

Report AC 4677/86
Order No. E 16996

Page G1
Results in ppm

| Sample | Cu | Pb | Zn | Ag | As | Au |
|------------|-----|-----|-----|-----|-----|---------|
| 161980 | 2 | 24 | 60 | <1 | 3 | 0.020 |
| 161981 | <2 | 12 | 21 | <1 | <2 | 0.040 |
| 161982 | <2 | 10 | 5 | <1 | <2 | 0.020 |
| 161983 | <2 | 20 | 12 | <1 | <2 | 0.030 |
| 161984 | <2 | 12 | 8 | <1 | 2 | 0.20 |
| 161985 | <2 | 22 | 78 | <1 | <2 | 0.20 |
| 161986 | <2 | 24 | 7 | <1 | <2 | 0.015 |
| 161987 | <2 | 42 | 22 | <1 | <2 | 0.015 |
| 161988 | 3 | 14 | <2 | <1 | 3 | 0.015 |
| 161989 | 4 | 38 | 14 | <1 | <2 | 0.015 |
| 161990 | <2 | 20 | 7 | <1 | 4 | 0.030 |
| 161991 | <2 | 50 | 48 | <1 | 5 | 0.030 |
| 161992 | 2 | 26 | 6 | <1 | 3 | 0.020 |
| 161993 | <2 | 6 | 4 | <1 | <2 | 0.020 |
| 161994 | <2 | 32 | 12 | <1 | <2 | 0.020 |
| 161995 | <2 | 10 | 18 | <1 | 4 | 0.020 |
| 161996 | 4 | 6 | 3 | <1 | 3 | 0.020 |
| 161997 | <2 | 10 | 14 | <1 | <2 | 0.020 |
| 161998 | 3 | 185 | 52 | <1 | <2 | 0.025 |
| 161999 | <2 | 6 | 5 | <1 | 5 | 0.020 |
| 162000 | 2 | <4 | 4 | <1 | <2 | 0.025 |
| 171051 | 2 | 6 | 9 | <1 | <2 | 0.030 |
| 171052 | 3 | 22 | 14 | <1 | <2 | 0.020 |
| 171053 | <2 | 14 | 13 | <1 | 4 | 0.020 |
| 171054 | <2 | 26 | 13 | <1 | <2 | 0.020 |
| 171055 | <2 | 10 | 11 | <1 | 2 | 0.030 |
| 171056 | 2 | 8 | 3 | <1 | 2 | 0.015 |
| 171057 | 2 | 4 | 7 | <1 | 2 | 0.035 |
| 171058 | <2 | 24 | 12 | <1 | 4 | 0.025 |
| 171059 | 2 | 22 | 13 | <1 | 2 | 0.035 |
| 171060 | <2 | 46 | 20 | <1 | 2 | 0.015 |
| 171061 | 2 | 18 | 18 | <1 | 2 | 0.030 |
| 171062 | <2 | 12 | 16 | <1 | 4 | 0.030 |
| 171063 | 3 | 10 | 11 | <1 | 3 | 0.020 |
| 171064 | 2 | 10 | 5 | <1 | 4 | 0.025 |
| 171065 | <2 | 10 | 3 | <1 | 5 | 0.030 |
| 171066 | <2 | 6 | 3 | <1 | 3 | 0.13 |
| 171067 | 3 | 34 | 2 | 3 | 3 | 0.29 |
| 171068 | 3 | 32 | 16 | <1 | 3 | 0.050 |
| 171069 | 3 | 14 | 9 | <1 | 2 | 0.040 |
| Detn limit | (2) | (4) | (2) | (1) | (2) | (0.005) |



Analysis code A1/1,2
X3 A7/2

Report AC 4677/86

Page G2

NATA Certificate

Order No. E 16996

Results in ppm

| Sample | Cu | Pb | Zn | Ag | As | Au |
|------------|-----|-----|-----|-----|-----|---------|
| 171070 | 3 | 14 | 4 | <1 | 4 | 0.020 |
| 171071 | 10 | 28 | 6 | <1 | 2 | 0.020 |
| 171072 | 2 | 8 | 19 | <1 | 4 | 0.025 |
| 171073 | 2 | 12 | 14 | <1 | 25 | 0.025 |
| 171074 | 3 | 14 | 6 | <1 | 2 | 0.035 |
| 171075 | 3 | 16 | 6 | <1 | 6 | 0.035 |
| 171076 | <2 | 12 | 7 | <1 | 6 | 0.020 |
| 171077 | <2 | 8 | 8 | <1 | 7 | 0.025 |
| 171078 | 3 | 20 | 7 | <1 | 2 | 0.020 |
| 171079 | <2 | 160 | 17 | <1 | <2 | 0.030 |
| 171080 | 3 | 28 | 16 | <1 | 6 | 0.035 |
| 171017 | 13 | 44 | 135 | <1 | <2 | 0.30 |
| Detn limit | (2) | (4) | (2) | (1) | (2) | (0.005) |



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amdel

3/786/0 - AC 4647/86
SPT 148/86

30 May 1986

NATA CERTIFICATE

AMENDED REPORT

- 4 JUN 1986

Mr. P. Jones
Cyprus Minerals Australia Company
Saddle Road
KEETTERING TASMANIA 7155

REPORT AC 4647/86

YOUR REFERENCE:

Order Number E 16998, Despatch 2337

REPORT COMPRISING:

Cover Sheet
Pages G1 - G2

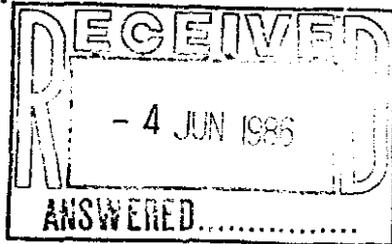
DATE RECEIVED:

13 May 1986

NOTE:

Au assays are being checked as per discussions with Alan Ciplys.

Report AC 4647/86 sent 23/5/86 had inadvertently contained results from Report AC 4677/86 Part 1. The attached results are the correct results. We apologise for any inconvenience we may have caused.



ELLIOTT DAY

Approved Signatory:

Martin R. Hanckel

Manager, Chemistry Services

for Dr William G. Spencer
General Manager
Applied Sciences Group

cc Mr B. Roxburgh
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Analysis code A1/1,2
X3,A7/2

Report AC 4647/86

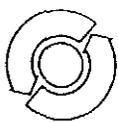
Page G1

NATA Certificate

Order No. 2337

Results in ppm

| Sample | Cu | Pb | Zn | Ag | As | Au |
|------------|-----|-----|-----|-----|-----|---------|
| 171020 | 4 | 16 | 6 | <1 | 4 | 0.060 |
| 171021 | 5 | 18 | 8 | <1 | 3 | 0.070 |
| 171022 | <2 | 24 | 21 | <1 | 25 | 0.050 |
| 171023 | 7 | 56 | 205 | <1 | 4 | 0.040 |
| 171081 | <2 | 36 | 25 | <1 | 3 | 0.15 |
| 171082 | 2 | 32 | 22 | <1 | 5 | 0.060 |
| 171083 | 3 | 50 | 27 | <1 | 2 | 0.030 |
| 171084 | <2 | 22 | 32 | <1 | 2 | 0.035 |
| 171085 | 3 | 74 | 9 | 1 | <2 | 0.040 |
| 171086 | 45 | 74 | 15 | <1 | 11 | 0.050 |
| 171087 | 2 | 16 | 4 | <1 | 6 | 0.035 |
| 171088 | 2 | <4 | 4 | <1 | <2 | 0.055 |
| 171089 | 2 | 12 | 4 | <1 | <2 | 0.045 |
| 171090 | 2 | 10 | 13 | <1 | 12 | 0.045 |
| 171091 | 3 | 12 | 4 | <1 | 4 | 0.045 |
| 171092 | 2 | 28 | 8 | <1 | 7 | 0.030 |
| 171093 | 3 | 14 | 9 | <1 | <2 | 0.040 |
| 171094 | <2 | 12 | 24 | <1 | 31 | 0.045 |
| 171095 | 2 | 18 | 16 | <1 | 4 | 0.040 |
| 171096 | 2 | 10 | 11 | <1 | 2 | 0.030 |
| 171097 | 2 | 10 | 14 | <1 | 6 | 0.025 |
| 171098 | 2 | 6 | 5 | <1 | 4 | 0.12 |
| 171099 | <2 | 16 | 6 | <1 | 7 | 0.035 |
| 171100 | <2 | 18 | 8 | <1 | 2 | 0.045 |
| 171101 | 2 | 48 | 10 | <1 | 2 | 0.030 |
| 171102 | 2 | 26 | 8 | <1 | 3 | 0.035 |
| 171103 | 3 | 16 | 17 | <1 | 3 | 0.11 |
| 171104 | <2 | 32 | 12 | <1 | 4 | 0.050 |
| 171105 | 15 | 125 | 13 | <1 | 3 | 0.040 |
| 171106 | 2 | 32 | 14 | <1 | 4 | 0.025 |
| 171107 | 2 | 30 | 13 | <1 | 4 | 0.045 |
| 171108 | 3 | 44 | 17 | <1 | 3 | 0.035 |
| 171109 | 2 | 52 | 16 | <1 | 2 | 0.030 |
| 171110 | 2 | 20 | 21 | <1 | <2 | 0.025 |
| 171111 | 3 | 42 | 25 | <1 | <2 | 0.025 |
| 171112 | 2 | 36 | 26 | <1 | 8 | 0.020 |
| 171113 | 3 | 42 | 9 | <1 | 2 | 0.030 |
| 171114 | 2 | 4 | 14 | <1 | 4 | 0.045 |
| 171115 | 2 | 6 | 5 | 1 | 2 | 0.060 |
| 171116 | <2 | 12 | 5 | <1 | <2 | 0.075 |
| Detn limit | (2) | (4) | (2) | (1) | (2) | (0.005) |



Analysis code A1/1,2

Report AC 4647/86

Page G2

NATA Certificate

Order No. 2337

Results in ppm

| Sample | Cu | Pb | Zn | Ag | As | Au |
|--------|----|----|-----|----|----|-------|
| 171117 | 2 | <4 | 4 | <1 | <2 | 0.035 |
| 171118 | 10 | 12 | 18 | <1 | 5 | 0.040 |
| 171119 | 4 | 26 | 15 | <1 | 4 | 0.030 |
| 171120 | 3 | 12 | 12 | <1 | 8 | 0.035 |
| 171121 | 4 | 24 | 19 | <1 | 4 | 0.045 |
| 171122 | 7 | 34 | 7 | <1 | 3 | 0.050 |
| 171123 | 2 | 26 | 12 | <1 | 7 | 0.035 |
| 171124 | <2 | 22 | 37 | <1 | <2 | 0.025 |
| 171125 | 2 | 18 | 24 | <1 | 3 | 0.020 |
| 171126 | <2 | 8 | 9 | <1 | <2 | 0.030 |
| 171127 | <2 | 12 | 29 | <1 | 2 | 0.035 |
| 171128 | <2 | 18 | 270 | <1 | 6 | 0.040 |
| 171129 | 2 | 20 | 13 | <1 | 2 | 0.030 |
| 171130 | <2 | 10 | 50 | <1 | 2 | 0.020 |
| 171131 | <2 | 8 | 29 | <1 | <2 | 0.040 |
| 171132 | <2 | 20 | 46 | <1 | <2 | 0.035 |
| 171133 | <2 | 10 | 10 | <1 | <2 | 0.045 |
| 171134 | 2 | 14 | 19 | <1 | <2 | 0.035 |
| 171135 | <2 | 10 | 9 | <1 | 3 | 0.040 |
| 171136 | 2 | 12 | 7 | <1 | <2 | 0.030 |
| 171137 | 2 | 24 | 7 | <1 | 3 | 0.030 |
| 171138 | 2 | 24 | 9 | <1 | 4 | 0.040 |
| 171139 | 4 | 12 | 7 | <1 | 5 | 0.030 |
| 171140 | <2 | 32 | 19 | <1 | 9 | 0.025 |
| 171141 | 2 | 6 | 17 | <1 | 4 | 0.080 |
| 171142 | 3 | 8 | 6 | <1 | <2 | 0.030 |
| 171143 | <2 | 12 | 11 | <1 | 5 | 0.030 |
| 171144 | 2 | <4 | 4 | <1 | 3 | 0.035 |
| 171145 | 5 | 12 | 5 | <1 | 4 | 0.020 |

Detn limit (2) (4) (2) (1) (2) (0.005)



012106

5 cm

LEGEND

- Diplex Response
- ⊕ Increasing conductivity
- ⊗ Source boundary
- [2]** area recommended for follow up, listed in order of priority

PREPARED BY MITRE GEOPHYSICS FOR
 CYPRUS MINERALS
 ELLIOTT BAY (E.L. 401/11)
 DIGHEM SURVEY
 PRELIMINARY INTERPRETATION
 (Northern Sheet)
SHEET 1

Scale approx. 1:20,000 Jan, 1996

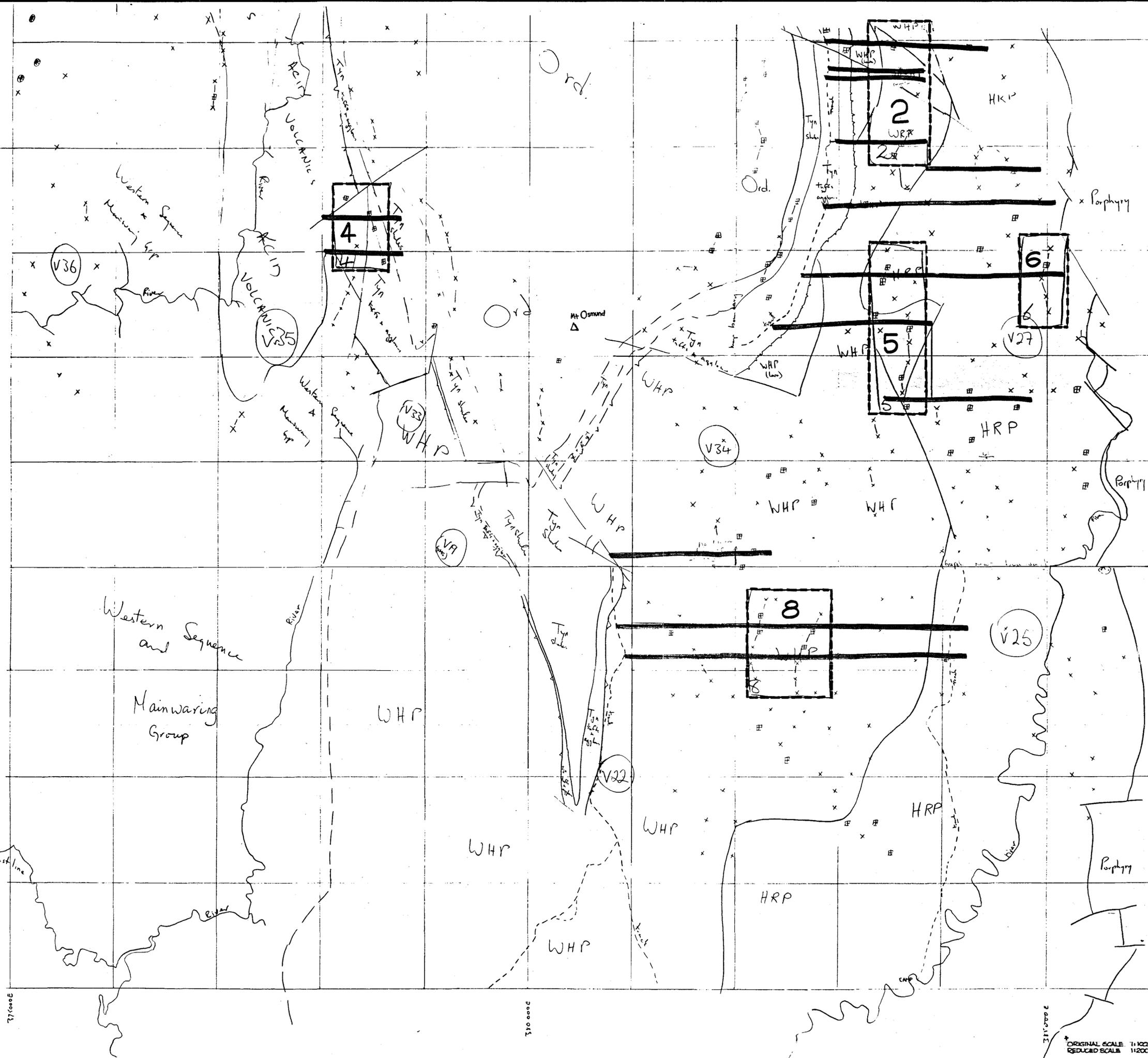
NORTHERN SHEET

5257000 N

5255000 N

5250000 N

5250000 N



LEGEND

- 012107
- DIGHEM RESPONSES
 - ⊕ (circle with cross) ↑ increasing conductivity
 - ⊞ (square with cross)
 - ⊗ (square with dot)
 - ⊘ (square with circle)
 - ⊙ (square with dot)
 - ⊚ (square with circle)
 - ⊛ (square with dot)
 - ⊜ (square with circle)
 - ⊝ (square with dot)
 - ⊞ (square with cross)
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 - ⊻ (square with cross)
 - ⊼ (square with cross)
 - ⊽ (square with cross)
 - ⊾ (square with cross)
 - ⊿ (square with cross)
 - ⊞ (square with cross) Survey boundary
 - ⊞ (square with cross) area recommended for follow up below in order of priority

5 cm 6991

PREPARED BY MITER GEOLOGICAL INC.

CYPRUS MINERALS
 ELLIOTT BAY EL 60/85
 DIGHEM SURVEY
 PRELIMINARY INTERPRETATION
 (Southern Sheet)
 SHEET 2

* ORIGINAL SCALE 1:10000
 REDUCED SCALE 1:20000

86-2568

Scale (approx) 1:10,000 Jan 1986