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Cyprus Minerals Australia Company

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PROGRESS REPORT

OCTOBER 1985 TO SEPTEMBER 1986

CYGNET EL 36/82

TASMANIA

P A JONES

SEPTEMBER 1986

REPORT 497

Phil Jones & Associates

CYPRUS

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- 1 \ Cygnet EL 36/82 • PROSPECT LOCATION AND
SAMPLE LOCATION

Scale
1:25000



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146° E

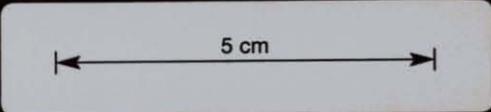
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TASMANIA

BASS STRAIT



Project Location



SUMMARY AND CONCLUSIONS

Exploration Licence 36/82 was granted to Amoco Minerals Australia Company (now Cyprus Minerals) on October 26, 1984. The licence is renewable for a further twelve months subject to Mines Department approval.

The licence lies approximately 36 kilometers south-southwest of Hobart, is centered on the township of Cygnet and is well situated with respect to potential mine infrastructure.

The targets of exploration are stratabound gold deposits similar to the Carlin deposits of Nevada and disseminated stockwork deposits associated with high level intrusives.

Previous mining and recent exploration were concentrated on the two major areas of Black Jack and Mount Mary.

The tenement is underlain by Permo-Triassic sediments through which have been intruded Cretaceous alkali igneous rocks and Jurassic dolerites. The intrusion has domed the sediments into shallow dipping sequences 10-15° away from an epicenter near the Mount Mary group of workings.

The 1985-86 program was designed to evaluate the first pass stream sediment coverage conducted during 1984-85. Detailed rockchip sampling surveys and regional mapping surveys were implemented to locate zones worthy of detailed follow-up. Four such zones were delineated over which gridding, soil and rockchip sampling, petrographic and geologic mapping surveys were conducted. Three of the areas were later trenched.

Trenching to date has indicated highly anomalous gold values occur in association with highly altered sediments near intrusive contact zones at Mount Mary, Black Jack and to a lesser extent at Tobys Hill.

Further costeaning is required to delineate zones of mineralization prior to the commencement of a reverse circulation drilling program.

RECOMMENDATIONS

Cyprus should undertake additional trenching to define targets for the proposed reverse circulation drilling program to be conducted early in 1986.

Dependent upon results, diamond drilling would be conducted to aid the geological understanding of both the mineralization and mode of environment.

EXPLORATION TARGETS

The tenement has geologic similarities to the Nevada goldfields in the United States and the target is for Carlin style (replacement) fine grained, open pittable deposits as well as porphyry and/or breccia pipe deposits within the Cretaceous gold-silver bearing intrusive.

DESCRIPTION OF THE PROPERTY AND OWNERSHIP

Amoco Minerals Australia Company (now Cyprus) applied for a 100 square kilometer exploration licence EL 36/82, embracing potential host rocks for replacement style gold mineralization.

The tenement is bounded on the north by AMG 522400mN, on the east by 510000mE, on the south by 521400mN and on the west by 500000mE (Figure 1 and Enclosure 1).

Numerous objections were forthcoming from the licence application necessitating a Wardens Court hearing before the licence was granted on October 26, 1984 for a period of twelve months. The licence is renewable for a further twelve months subject to Mines Department approval.

A joint venture has been negotiated whereby Poseidon may earn a 50% interest in EL 36/82 and Cyprus may earn a 50% interest in

the adjacent EL 23/83 (129 square kilometers) held by Poseidon Minerals Limited with Cyprus managing the program.

Pre-existing mining leases occur in the tenement one of which lies south of the Mount Mary line of workings (986 P/M) and the second at Killala Bay (902 P/M) (Report 459 - Enclosure 1). These are both stone and mineral leases.

LOCATION AND ACCESS

The tenement lies approximately 36 kilometers south-southwest of Hobart and is centered on the township of Cygnet. Sealed and gravel all-weather roads transect the property giving reliable access to most areas.

Steep terrain associated with the alkali intrusive porphyries is accessible only by four-wheel drive and foot however the sediments in general are less steep and are undulating to flat.

No difficulties would be anticipated with respect to power, water and transport should a mine be developed. The area has an annual rainfall of 75-90 centimeters in the lower lying areas and 125 centimeters in the higher areas.

014



10 km

980015
Cygnet EL 36/82
 FIGURE 1



HISTORY AND PREVIOUS EXPLORATION

Around the turn of the century numerous mines were developed in the Cygnet district and some 3000 ounces of gold were produced to 1902. Early workings concentrated on the richer alluvial deposits and it was not until 1898 that lode mining began on the hornfelsed contact zones between the alkali intrusives and the surrounding flat lying to gently dipping fossiliferous, limey and carbonaceous siltstones, mudstones, tillites and marine limestones. Gold values from the altered sediments averaged from trace to 22 g/t with silver credits, however the very fine grained nature of the gold hindered recoveries and hence further development. Old reports also noted that gold (to 6 g/t), silver and sulfides were present in some altered alkali to acidic intrusives raising the possibility of porphyry style gold deposits.

Recent exploration was undertaken in the district by Pechiney in 1971 with a limited stream sediment sampling program being implemented. Minor copper anomalies were defined, one draining from Mt Windsor (275 ppm) and the other at Mount Mary (115 ppm). However no assaying for gold or silver was conducted.

BHP conducted a small orientation program over two gold occurrences at the Mount Mary and Livingstone Mines to ascertain the suitability of the alkali intrusive to host large tonnage low-grade porphyry style gold mineralization. The ground was not pegged and no further work was conducted, however sampling by BHP showed an association of gold with silver, arsenic, copper, lead, zinc and possibly barium.

The Golden Apple Mining Syndicate of Cygnet held the area to 1982 conducting minor gridding, mapping and rudimentary geophysical surveys. No major geochemical work was undertaken. The Mount Mary gold mine was protected by Mining Lease Applications (MLAs 1059, 1060) which were later revoked by the Mines Department. The vacant MLAs were applied for by Cyprus and included into EL 36/82.

REGIONAL GEOLOGY AND MINERALIZATION

A large block of Permo-Carboniferous lower marine mudstones, sandstones and shales from the relatively horizontal basement complex found throughout southeastern Tasmania. These are disconformably overlain by Triassic fluviolacustrine sequences of sandstone, siltstone and mudstone. Doming and faulting of the sediments preceded and accompanied the intrusion of Jurassic dolerites (140-170 million years). Cretaceous Port Cygnet Alkaline Intrusives (100-110 million years) were the final units intruded into the sequence carrying with them gold, silver and minor base metal values.

The dolerite appears to have been injected as multiple sheets and the alkaline rocks as a laccolithic tongue and dike swarm. The alkali intrusive belt is approximately 25 kilometers long by 10

kilometers wide and extends from just south of Snug to Surges Bay on the west bank of the Huon River. Recent fluvial and pleistocene glacial erosion have produced the present topography.

The sediments form a gently domed sequence centered west of Cygnet with dips of 5-10°. The doming with associated radial and concentric faulting is due to the intrusion of a large mass of Jurassic dolerite. The vent area for the dolerite also appears to have been the locus for the emplacement of Cretaceous alkali to acid intrusives in the form of sills and numerous dikes. The alkaline rocks intrude Permian sediments and Jurassic dolerite but to date have not been found to intrude Triassic rocks. Hybrid rocks also occur where Cretaceous intrusives have partially assimilated Jurassic dolerite during emplacement.

The coincidence of what are apparently unique dome structures at Cygnet and at nearby Oyster Cove and the petrologically distinct alkaline intrusives suggest a strong northeast-southwest generative link between the two. This is borne out by the predominance of workings and anomalous gold stream sediment values occurring along a similar trend.

Several small lode and alluvial gold deposits have been worked in the district since 1898. Most of the gold production estimated at 3000 ounces has come from alluvial deposits. The largest of these were at Lymington (Forsters Rivulet) and Wheatlys Bay (Riseleys Creek). Small lodes were prospected by adits and shafts at the Mount Mary and Livingstone mines near Cygnet and prospecting pits were sunk at other localities where pyrite and other sulfides had developed in alkali to felsic intrusives and adjacent sediments (Black Jack Ridge and King's Hill workings).

The style of mineralization within the sediments is analogous to a replacement type (Carlin style) gold deposit. This premise further enhanced by work conducted by BHP in 1979 which showed a close association of gold to arsenic, antimony, mercury, barium and sulfur, key elemental associations for Carlin type deposits, during their orientation survey.

A diamond hole drilled along strike to the 'vein' system at the Mount Mary mine was logged and assayed by Cyprus for the Golden Apple Mining Syndicate in order to ascertain the nature and

grades of the gold mineralization. Eleven meters of core from 74-85 meters assayed 0.23 g/t gold within a pyritic and epidotized, chloritic pebbly and brecciated mudstone. The sediments were intruded by a thick sequence of altered monzonitic porphyries which are weakly anomalous in gold the so called reef system was not encountered.

Recent costeaning has shown that the mineralized zones are associated with wide zones of shearing and alteration adjacent to altered feldspar alkali porphyries. A possible mode of genesis for the mineralization invokes selective replacement of carbonaceous rich strata by solutions associated with intrusion of alkali dikes, sills etc along zones of structural weakness formed by faults. Little to no quartz veining was observed along the line of workings.

WORK CONDUCTED BY CYPRUS

During the period regional rockchip sampling surveys were conducted culminating in the delineation of four anomalous areas requiring detailed follow-up.

Detailed surveys were conducted at Black Jack Ridge, Mount Mary, Tobys Hill and Kings Hill localities. Surveys included gridding, soil sampling, rockchip sampling, geologic mapping and petrographic studies.

A trenching program was initiated at the Black Jack, Mount Mary and Tobys Hill prospects to evaluate old workings and soil geochemical zones outlined by bedrock soil sampling surveys.

Regional Rockchip Geochemistry

Reconnaissance rockchip sampling surveys were initiated to follow-up anomalous stream sediment values obtained during the twelve month period to September 1985. A total of 221 samples were collected over the majority of anomalous areas (Table 1) with rock types varying from Cretaceous syenite-monzonite intrusives to mudstones, siltstones and tillites of Permo-Triassic age. Location of samples are plotted on Enclosure 1 and Figures 3, 17, 34 and 51. Analytical result sheets are included as Appendix 2.

Areas of interest were outlined at Black Jack associated with a shaft and minor pitting excavated on highly altered, fossiliferous, weakly gold/arsenic mineralized Bundella Mudstone (gold values to 1.3 g/t). A second high gold/arsenic/lead and zinc anomalous zone was delineated at Mount Mary where an adit, shafting, pitting and trenching were excavated in altered Truro Tillite intruded by Cretaceous syenitic and monzonitic rocks (gold values to 24 g/t). Shafting, trenching adits and abundant pitting associated with weakly altered massive siltstones and altered monzonites/syenites were observed at Tobys Hill (Livingstone Mine area - gold values to 0.78 g/t). A fourth area was identified at Kings Hill where large scale pitting and costeaning has been conducted on two small hydrothermally altered breccia pipes and stockworked pyritic monzonitic intrusives. Gold values proved negative to very weak, however minor base metal values are associated with the pipes. A number of other areas in the region showed evidence of extensive leaching activity (Enclosure 1), however no anomalous values were returned from sampling surveys.

Five 5 liter water samples were taken from creeks draining probable unprospective and highly prospective catchments to test a Mines Department technique for analysing humic acids for gold. Assay results are not yet to hand.

TABLE 1 REGIONAL ROCKCHIP SAMPLING - ASSAY RESULTS

Location	Copper	Lead	Zinc	Silver	Arsenic	Gold
Kings Hill Area (total 21)	5-975	x-0.86%	x-0.21%	x-186	x-85	x-0.23
Mount Mary (total 31)	10-260	x-0.31%	10-0.42%	x-151	x-270	x-23
Langdons Hill (total 9)	5-35	x-40	10-175	x-1.5	x-18	x-0.055
NW Langdons (total 15)	5-160	x-1550	10-185	x-5.5	1-28	x-0.11
SW Langdons (total 1)	10	x	85	x	3	x
Black Jack Ridge (total 44)	x-300	x-85	5-240	x-1.0	x-900	x-1.30
Copper Alley (total 3)	NA	NA	NA	x	NA	x-0.015
Forsters Rivulet (total 4)	NA	NA	NA	x-42	NA	x-0.11
Eric's Road (total 2)	20-55	5-50	10-80	x	2-17	0.005-0.02
Direens Spur (total 11)	5-285	x-5	5-35	x-0.5	x-56	x-0.03
Coads Adit (total 5)	35-60	10-410	35-190	0.5-7.5	x-14	0.02-0.095
Coads Hill (total 12)	x-15	x-15	20-120	x	x-18	x-0.03
Silver Hill Rd (total 15)	x-25	x-35	5-130	x	x-13	x-0.055
Golden Valley Rd (total 1)	20	25	90	x	10	x
Gourlays Rd (total 2)	10	5-20	20-35	x	11-19	x
Olbrichts Rd (total 2)	x-10	x-10	15-40	x	x-4	x
Tobys Hill Area (total 46)	5-195	5-1500	20-570	x-2	x-680	x-0.62

All values in ppm unless stated otherwise. X = below limit of detection.

Regional Petrographic Surveys

Rockchip samples Copper Alley 1-2, 152265, 152332, 364, 369, 388 were taken from ungridded areas within the licence and submitted for petrographic description. Locations of the samples are shown on Enclosure 1 and their petrographic description included in Appendix 1. Pontifex and Associates of Adelaide conducted the petrography paying particular attention to alteration assemblages. Two samples from Copper Alley showed extensive K-spar alteration with clay/sericite and minor scattered pyrite occurring in the laminated siltstone and lithic sandstones. A fine silty to sandy sediment from Direens Spur showed extensive K-spar and quartz alteration with minor disseminated fine pyrite, pyrrhotite and chalcopyrite. Hydro-thermal alteration including extensive sericite-kaolin with minor secondary and hydrothermal quartz was observed in weakly porphyritic (quartz) monzonites located at Coads adit. The remaining three intrusive samples showed weak to moderate K-spar alteration with minor pyrite, arsenopyrite and magnetite. Two of the samples showed a trachytic habit due to being sampled from narrow dikes.

Detailed Surveys

Four major grids, Black Jack, Mount Mary, Tobys Hill and Kings Hill were established covering prospective areas defined by the stream and rockchip surveys. All of these needed line cutting in scrubby terrain and all were slope corrected due to excessively steep terrain. Following is a table outlining the grid details.

Grid	BL		X-Lines (km)	Spaced (m)	Coords X-lines	Coords BL
	Bearing (T)	Length (km)				
Black Jack	152°	0.8	4.3	100	9600-10400N	10000E
Mount Mary	31.5°	1.0	6.57	100 & 50	9600-10600E	10000N
Tobys Hill	60°	1.0	4.27	100	9400-10400E	10000N
Kings Hill	286°	0.4	2.5	100	9800-10200E	10000N

Geochemistry: The majority of soil samples and rockchip samples were dispatched to Analabs in Burnie for preparation (dried, crushed and pulverized and split) and assayed for copper, lead, zinc, silver, arsenic and gold. The remaining samples were assayed and prepared by Amdel. Sample preparation was carried out in Burnie, Tasmania and splits taken and dispatched by air to Adelaide for analysis. All analytical result sheets are included as Appendix 2.

Petrography: Pontifex and Associates was contracted to describe a total of 21 samples collected from all grids. Consistent K-spar alteration plus pyritic, sericitic and minor silicification were observed in both the sediments and intrusives to varying degrees. Little free gold was observed, however a number of samples were geochemically anomalous possibly indicating the fine nature of the gold or its possible association with pyrite. Pontifex reports are included in Appendix 1.

Costeaning: Seventeen trenches totalling 384 meters were excavated across previously defined bedrock, rockchip geochemical anomalies and lines of old workings to determine the width and nature (stratabound or lode) of the selected zones (Figures 5, 19 and 36).

Trenches were excavated with a Kobelco K903B excavator operated by Hazel Bros of Margate, Tasmania using a 60 centimeter bucket. Some of the trenches were cleaned with compressed air before being mapped and sampled at two meter intervals.

Two meter channel samples of approximately two kilograms each were processed at the laboratories of Analabs in Burnie, Tasmania. After pulverizing the whole sample a split was taken sufficient to assay for the following elements:

Copper, lead, zinc, silver	- by AAS
Arsenic	- by Hydride
Gold *	- by AAS (0.01 ppm detection)

*check assaying of anomalous values was conducted using 50 gram charge fire assays with AAS finish. It should be noted that in general at the low levels (<0.5 g/t gold) there was good agreement with the AAS and fire techniques. Values >0.5 g/t gold with AAS usually repeated higher when fire assayed. Analytical result sheets included in Appendix 2.

Depths to recognizable bedrock were typically 0.5 to 2 meters although some trenches were excavated to 3 meters occasionally without encountering bedrock.

The trenches generally exposed an interbedded sequence of variably altered mudstones, siltstones, cherty fine siltstones and minor sandstones. Numerous syenitic and monzonitic dikes and other intrusives cut these generally flat laying sediments at high angles. The majority of contact zones show intense crushing possibly indicating a zone of weakness prior to the emplacement of the intrusives and possibly acting as channel ways for hydrothermal solutions. Weathering varies from minimal for the cherty K-spar and pyritic siltstones to complete for some of the altered porphyries and mudstones.

Intervals assaying greater than 0.1 g/t gold were detected in all trenches. No correlation with a particular lithology is yet apparent other than more of the anomalous values could be ascribed to the Bundella Mudstone. Significant results are listed in the following table.

TABLE 2 COSTEANING - SIGNIFICANT RESULTS

Trench	From	To	Width	Lead (%)	Zinc (%)	Gold (g/t)
Black Jack						
1	9954	9958	= 4m	-	-	0.13
	9964	9966	= 2m	-	-	0.26
2*	9937	9965	= 28m	-	-	0.35

	incl	9949	9955	=	6m	-	-	0.68
3		9945	9949	=	4m	-	-	0.14
		9953	9955	=	2m	-	-	0.18
4		9990	9992	=	2m	-	-	0.17

Mount Mary

1		10022	10030	=	8m	0.38	0.12	1.78
2		10006	10016	=	10m	0.02	0.14	0.34
	incl	10012	10016	=	4m	0.04	0.16	0.60
3*		10006	10018	=	12m	0.03	0.10	0.49
	incl	10014	10016	=	2m	0.03	0.09	0.90
4		8	10	=	2m	0.19	0.07	0.31
5*		4	7	=	3m	0.03	0.28	0.38
6*	SE wall							
		0	2	=	2m	0.17	0.11	1.66
	NW wall							
		0	3	=	3m	0.12	0.12	1.98

Tobys Hill

1		10046	10048N	=	2m	-	-	0.41
2		10000	10004N	=	4m	-	-	0.32
	and	10008	10010N	=	2m	-	-	0.22
GA1		0	4SE	=	4m	-	-	0.93
4		2	4	=	2m	-	-	0.26

* = not closed off

The following details work conducted and results obtained from the four gridded areas and is to be read in conjunction with Figures 2 through 58 included at the end of text.

Black Jack Ridge (Figures 2 through 15)

Gridding: A total of 4.3 line kilometers of gridding and line cutting was completed along an 800 meter long baseline (bearing 152°T). Lines were spaced at 100 meter intervals (9600N to

10400N) and were staked at 50 meter stations along lines.

Geochemistry: Soil sampling was conducted over the grid at 25 meter spacings at depths from 20 centimeters to 1 meter. All samples were assayed for base metals (copper, lead, zinc, silver) plus gold and arsenic (Figures 6 to 11). A number of weakly anomalous scattered copper, lead and zinc zones were isolated. One of these zinc zones lies coincident with a moderately anomalous gold trend. The remaining anomalous gold trends lie on the flanks of a large well-defined, highly anomalous arsenic zone (to 900 ppm) from 9600N to 10100N. Gold values from these areas assay up to 0.17 g/t and average 0.05 g/t.

Twenty-one composite rockchip samples were taken over the gridded area. Weakly anomalous values were obtained from the majority of sites with best results of 1.3 g/t, 0.81 g/t and 0.57 g/t being obtained from close proximity to the old Black Jack Shaft. Highly altered sediments nearby assayed greater than 0.1 g/t gold.

Geology: The very steep terrain and associated deep scree slopes made geological mapping difficult. However from outcrop available it is evident a relatively flat flying (15° to 20° to the west) sequence of mudstones (Bundella Mudstone) and siltstones (Woody Island Siltstone, Deep Bay Formation) probably faulted to the north and south are cut by Cretaceous syenitic and monzonitic dikes and sills (Figure 2). Minor ironstones have been observed both within the sediments and intrusives but generally having little strike extent. The intrusion of the Cretaceous alkali complex had led to marked alteration assemblages including potassic (K-spar), sericitic, minor silicification and pyritization in the less weathered rocks. The alteration appears more pronounced in the possibly more porous Bundella (fossiliferous) Mudstone sequence.

Petrography: Four rocks (samples 152312, 316, 317, 320) were sent to Pontifex and Associates for thin and polished section investigation to determine the genesis of possible hydrothermal alteration systems and to describe individual rock types (Figure

4 and Appendix 1). Three samples were K-spar altered sandy mudstones containing variable amounts of sericite/quartz and jarosite/limonite and the fourth was a porphyritic latite (lava) again with abundant K-spar, 5-10% sulfide grains (pyrrhotite-pyrite minor chalco-pyrite) and minor dispersed fine chloritic clays.

Costeaning: Costeans are located on Figure 5 and detailed costean profiles, geology and assays included on Figures 12 to 15.

Trench 1

Location : 9987N/9954-9990E

Bearing : Grid West

Length : 36 meters

Sited to test two parallel zones of minor pitting associated with moderately K-spar altered, gold amonalous fossiliferous mudstones. Best results returned were 2 meters of 0.26 g/t gold and a further 4 meters of 0.13 g/t gold. This is consistent with values obtained from rockchip surveys.

Trench 2

Location : 10030N/9935-9965E

Bearing : Grid West

Length : 38 meters

Located to test highly anomalous rockchip values (to 0.80 g/t gold) with associated moderately strong soil values (to 0.115 g/t gold) centered on a collapsed small shaft. Encouraging assays were returned from ferruginous brecciated sediments along the entire length of the costean with 28 meters averaging 0.35 g/t gold including 6 meters of 0.68 g/t gold.

Trench 3

Location : 10060N/9919-9955E

Bearing : Grid West

Length : 36 meters

Designed to test a rockchip sample location assaying 1.3 g/t gold. Very weak gold values were returned; 4 meters of 0.14 g/t and 2 meters of 0.18 g/t gold, associated with very weakly altered sediments close to the Bundella Mudstone contact zone.

Trench 4

Location : 10100N/9970-10000E

Bearing : Grid west

Length : 30 meters

Sited to test an ironstone zone adjacent to a porphyry and within sediments. A small prospecting pit returned weakly anomalous gold values from rockchips which conceivably could have improved with depth. Best value was 2 meters of 0.17 g/t gold from a weakly altered syenomonzonitic porphyry, crushed and weakly ferruginous.

Mount Mary (Figures 16 through 32)

Gridding: A total of 6.6 line kilometers of gridding and line cutting was completed along a 1 kilometer long baseline (bearing 31.5°T). Lines were spaced at 100 meter intervals (9600E-10600E) and were staked at 50 meter stations along lines. Infill lines were later staked at 50 meter intervals from 10250E to 10550E.

Geochemistry: Soil sampling was conducted over the grid at 25 meter spacings at depths from 20 centimeters to 1 meter. All samples were assayed for base metals (copper, lead, zinc, silver) plus gold and arsenic (Figures 21 to 26). Two highly anomalous gold zones were delineated with coincident lead, zinc and arsenic geochemistry. Zone 1 lies coincident with the Mount Mary line of lode and is 200 meters long by 25 meters wide assaying >0.1 g/t and ranging up to 1.08 g/t gold. Lead/zinc values in this zone assay >200 ppm lead (up to 0.28%) and >200 ppm zinc (up to 0.1% zinc) with prominent arsenic to 105 ppm.

Zone 2 lies oblique to Zone 1 from 10300E to 10550E and approximately 25 to 50 meters in width assaying >0.1 g/t and ranging up to 1.4 g/t gold. Nebulous lead and zinc values occur

along the zone however a strong arsenic anomaly is delineated coincident with the gold trend assaying up to 285 ppm.

Other moderately anomalous gold zones were delineated which will require follow-up surveys.

Thirty-three composite rockchip samples were taken over the gridded area (Figure 17). Approximately half the samples returned trace to weakly anomalous gold values. Highly anomalous values were returned from 25% of the samples with values ranging up to 24 g/t gold. Three areas were delineated.

- Mount Mary Line of Lode - averaging about 1 g/t gold and ranging up to 23 g/t gold with occasionally highly anomalous silver, lead and zinc
- Western Reef Workings - averaging 0.1 g/t and ranging up to 10.6 g/t gold with little associated base metal values
- Shear Zone Area - narrow ferruginous shear assayed 24 g/t gold, originally assayed at 2.8 g/t gold

The majority of anomalous values were from ferruginous and altered sediments with only minor values being returned from altered intrusive rocks.

Geology: Lack of outcrop over the sediment sequence has led to the false impression that alkali intrusive rocks predominate (Figure 16). The intrusive rocks including syenites, syenomonzonites and monzonites occur in the western third of the gridded area. They are generally pyritic especially the monzonitic phase, weakly to moderately K-spar altered and only poorly outcrop. Further east the intrusives become more dike-like and narrower. The sediments are varied with the cherty looking (K-spar altered) massive purple siltstones predominating near the massive intrusives to the west. Grey to mottled orange/yellow pebbly altered mudstones (Truro Tillite) were delineated during the costeaning program as no outcrop was available especially in

the Mount Mary area. Narrow dike-like bodies are observed cutting through the mudstone sequence as subvertical bodies. Adjacent to these bodies are zones of intense crushing and weak to moderate ferruginization. Elsewhere stockworking is found within the pebbly mudstone again adjacent to intrusive dike-like bodies. The crush zones and stockwork zones predominantly assay from 0.5 to 1.0 g/t gold. No sulfides were observed from the trenching which indicates possible leaching of the mineralized zones. This is consistent with the poor silver values obtained from the costeaning compared to those returned from dump sampling which presumably came from below the level of oxidation.

Petrography: Pontifex and Associates was contracted to describe eight samples (Mt Mary 1-5, 152236, 242, 247) using both thin and polished sections to check for hydrothermal alteration in both the intrusive and sediment sequences (Appendix 1 and Figure 18). The lithic diamictic sediments showed both metasomatic alteration features including biotite and opaline silica as well as hydrothermal assemblages including K-spar (throughout the matrix), clay sericite, silica, jarosite and trace gold (sample Mount Mary 5). The intrusive rocks varied from unaltered micromonzonites containing stringer pyrite (magnetite/minor chalcopyrite mineralization within quartz veinlets to altered micromonzonites, feldspar prophyries and phonolites which were K-spar altered with abundant to minor clay sericite.

Costeaning: Costeans are located on Figure 19 and detailed costean profiles, geology and assays included on Figures 27 to 32.

Trench 1

Location : 10400E/9988-10038N

Bearing : Grid North

Length : 50 meters

Located to test a small costean with associated soil geochemical anomaly to 0.8 g/t gold. The anomalous soil zone lies along strike to the east of the Mount Mary Line of Lode. Best values

034

obtained were 8 meters assaying 1.78 g/t gold. The gold is associated with crushed and altered sediments adjacent to a syenitic intrusive.

Trench 2

Location : 10350E/9992-10042N

Bearing : Grid North

Length : 50 meters

Sited to test for mineralization along strike (less than 10 meters) from a major shaft and minor trenches. Crushed and altered, ferruginous sediments over 10 meters returned 0.34 g/t gold with associated high (to 0.14%) zinc. This included 4 meters of 0.60 g/t gold and 0.16% zinc.

Trench 3

Location : 10300E/9992-10018N

Bearing : Grid North

Length : 26 meters (to be lengthened)

Located to test coincident base metal and gold geochemistry (to 0.2% lead, 0.08% zinc and 1.08 g/t gold) in close proximity to the main Mount Mary shaft. Best assays were 12 meters returning 0.49 g/t gold associated with altered stringer (carbonate) veined pebbly mudstones adjacent to an intrusive syenitic porphyry.

Trench 4

Location : 9947E/10035N (approximate only)

Bearing : 139° Magnetic

Length : 14 meters

Located to test highly anomalous gold values returned from composite rockchip samples of dump material from small pits. The trench exposed highly altered K-spar, pyritic, brecciated sediments intruded by a narrow dike. The margins of the dike were brecciated, highly ferruginous and weakly gold mineralized. Best values returned being 2 meters of 0.31 g/t gold.

Trench 5

Location : 10335E/10010N (approximate only)

Bearing : 090° Magnetic

Length : 7 meters

Located to test for mineralization adjacent to a major shaft. Altered pebbly mudstones were exposed cut by a highly ferruginous crush zone which assayed 3 meters of 0.38 g/t gold plus 0.28% zinc. The mineralized zone remains open grid south.

Trench 6

Location : 10025N/10036E (approximate only)

Bearing : 175° Magnetic

Length : 3 meters

Sited to test a number of shallow trenches at an oblique angle to the main Mount Mary line of mineralization. Best values returned were 3 meters of 1.98 g/t gold plus 0.12% lead and 0.12% zinc associated with ferruginous crush zones within sediments. Sampling of the opposite wall of the trench returned 2 meters of 1.66 g/t gold plus 0.17% lead and 0.11% zinc. The small trench has mineralization open to the north and south.

Location of further trenches proposed for Mount Mary are shown on Figure 20.

Tobys Hill (Figures 33 through 49)

Gridding: A total of 4.3 line kilometers of line cutting, gridding was completed along a 1 kilometer long baseline (bearing 60°T). Lines were spaced at 100 meter intervals (9400E-10400E) and were staked at 50 meter stations along lines.

Geochemistry: Nebulous and spotty geochemical zones were delineated from soil sampling surveys completed over all lines at 25 meter spacings. Sample depths varied from surface to 1 meter and samples were assayed for base metals (copper, lead, zinc,

silver) plus gold and arsenic (Figures 37 to 42). A low to moderate tenor lead/arsenic anomaly was delineated semi-coincident with the abandoned Livingstone Mine. Gold values proved very poor with only trace to 0.01 ppm being returned. Moderately anomalous values to 0.07 ppm gold were delineated on line 10200E 150 meters along strike to the east semi-coincident with minor costeaning. Composite rockchip samples from the trench assayed to 0.62 ppm gold. Further spotty highly anomalous soil values to 0.94 ppm gold were delineated elsewhere on the grid however no readily discernible geochemical trend was outlined. It was hoped trenching across critical areas would aid the geological and geochemical knowledge of the prospect.

A total of 44 composite rockchip samples (Figure 34) were taken over the grid, half of which proved weakly to moderately anomalous. Values ranged up to 0.62 ppm and a significant number of samples in the range 0.1 to 0.5 ppm. The majority of anomalous values clustered around existing workings, ie the Livingstone shaft however numerous other pitted areas remain geochemically dead.

Geology: Again lack of outcrop over the sediment sequence has led to the false impression that alkali intrusive rocks predominate. This allied with steep slopes and accompanying thick scree deposits has made interpretation of the geological environment difficult. A sequence of monzonitic and syenomonzonitic intrusive dikes and small stocks is found in the center of the gridded area (Figure 33). In general these mark the local topographic highs around which flat lying (5° - 15° E) micaceous and weakly K-spar altered massive mudstones are found. Fossiliferous (possibly Bundella Mudstone) mudstones crop-out to the eastern portion of the grid and overlie more massive and generally unfossiliferous units to the west. The rocks generally show much less alteration than those at both Black Jack and Mount Mary. The Livingstone Mine was opened on a quartz stockwork vein approximately one meter in width located in an altered monzonite near the contact with massive siltstones and mudstones. Minor contact metamorphism with associated mineralization (4 meters of 0.93 ppm gold) was

located in trench GA-1 however other contact zones proved negative. No recognizable trend for mineralization was observed during surface mapping nor was there after completing the costeaning program. Anomalous gold values to 0.2 ppm gold in trench 10175E were however associated with highly altered fossiliferous mudstones adjacent to a small intrusive dike/stock complex similar to those at Mount Mary. There appears to be little strike extent to this mineralized zone as on line 10200E geochemical values proved negative.

Petrography: Five samples (152208, 209, 220, 222, 400) were submitted to Pontifex for description (Figure 35 and Appendix 1). Two samples were weakly altered intrusives and the remaining three were weakly K-spar, clay/sericite minor quartz altered mudstones and sandy mudstones. Minor limonite staining after pyrite.

Costeaning: Costeans are located on Figure 36 and detailed costean profiles, geology and assays included on Figures 43 to 49.

Trench 1

Location : 10000E/10030-10062N

Bearing : Grid North

Length : 32 meters

Designed to test a composite rockchip sample assaying 0.21 g/t gold from a small costean in close proximity to the Mt Livingstone mine. The trench exposed variably altered monzonitic intrusives cutting a sequence of massive weakly altered siltstones. A two meter zone assaying 0.41 g/t gold located adjacent to the porphyry contact upon re-assay by fire gave <0.005 g/t gold. This may be due to a nugget effect or an initial incorrect assay.

Trench 2

Location : 10175E/9992-10010N

Bearing : Grid North

Length : 18 meters

Located to test anomalous rockchip values to 0.62 g/t gold coincident with minor trenching. Weakly gold mineralized altered sediments cut by syeno-monzonitic dikes were exposed. Best results were 4 meters of 0.32 g/t gold and 2 meters of 0.22 g/t gold.

Trench 3

Location : 10200E/9972-9994N

Bearing : Grid North

Length : 22 meters

Located to test weak soil geochemistry (to 0.07 g/t gold) along strike from Trench 2. No anomalous values were returned from massive micaceous grey muddy siltstones.

Trench 4

Location : 10075E/10002N (approximate only)

Bearing : 352° Magnetic

Length : 8 meters

Sited to clean out an existing old trench. Weakly altered siltstones were exposed cut by weakly ferruginous syeno-monzonites. Minor gold result of 2 meters of 0.26 g/t was returned from within the porphyry.

Trench 5

Location : 10096E/9995N (approximate only)

Bearing : 338° Magnetic

Length : 6 meters

Also sited to clean out an existing old trench. Again weakly altered, blocky, weakly ferruginous siltstones were exposed returning no anomalous gold.

Trench 6 (Golden Apple-1 : GA-1)

Location : 10030E/9995N (approximate only)

Bearing : 200° Magnetic

Length : 10 meters

Located to re-expose a contact zone defined by the Golden Apple Mining Syndicate. Weakly altered and veined sediments were cut by a porphyritic syenomonzonite intrusive with associated highly ferruginous contact. Best assays over this contact zone returned 0.93 g/t gold over 4 meters.

Trench 7 (Golden Apple-2 : GA-2)

Location : 10028E/10005N (approximate only)

Bearing : 192° Magnetic

Length : 8 meters

Also located to assess a second Golden Apple Mining Syndicate trench. Weakly altered porphyritic intrusives were found to cut weakly stockworked siltstones, however no ferruginous contact zone was observed and overall assays were low.

Kings Hill (Figures 50 through 58)

Gridding: A baseline was established on a bearing of 286°T over previously worked altered and pyrite mineralized monzonitic intrusives with 2.5 line kilometers of cross lines being established. Lines were cut and staked at 100 meter intervals (9800-10200E) with stations pegged at 50 meter intervals along lines.

Geochemistry: Soil sampling was conducted over the grid at 25 meter spacings at depths from surface to 0.8 meter. All samples were assayed for base metals (copper, lead, zinc, silver) plus gold and arsenic (Figures 53 to 58). A small hydrothermal breccia pipe was immediately delineated with a coincident lead and zinc response occurring on line 10000E. A pyritic, stockworked altered monzonite lying adjacent to the breccia pipe has an associated weak copper/zinc/lead anomaly. Both geologically interesting rock

types showed nil values for gold in both soils and rockchips.

Ten rockchip samples (Figure 51) were taken predominantly from dump material and to a lesser extent from outcrop material. Best gold value returned was 0.04 g/t being from the hydrothermal breccia pipe. The remainder varied from BLD to 0.025 ppm gold.

Geology: Ninety five per cent of the grid is covered by intrusive rocks including highly altered and stockworked pyritic monzonites, less altered syenomonzonites and extremely altered and silicified breccia pipes (Figure 50). The remaining five per cent is a wedge of sediment at the western end of the grid.

Outcrop is again poor and confused by thick scree slopes however a readily discernible highly K-spar and silicified altered monzonite was delineated. The highly quartz veinleted and pyritic cherty intrusive looks an exciting geologic host for gold mineralization, however both soil and rockchip values proved extremely poor. Trace amounts of gold were detected from rockchip samples taken from the extensively altered and hydrothermally quartz veined breccia pipe adjacent to the altered monzonite. A possible genetic link is probably between the two. The remainder of the gridded area is covered by less altered and very weakly veined massive jointed syenomonzonites and syenites. The little amount of pebbly mudstone to the west shows little alteration which is in agreement with the geochemical data.

Petrography: Four samples (152270, 273, 152386A, B) were dispatched to Pontifex for thin and polished section description (Appendix 1 and Figure 52). Two of these were from the highly altered hydrothermal breccia pipe which contained abundant pyrite and minor specularite. The other two samples were a moderately porphyritic syenite and a phlogopite-pyroxinite rock containing primary magnetite, pyrite and hematite.

Costeaming: No trenching surveys were conducted over the gridded area due to the poor geochemical characteristics of the intrusive sequences.

EXPLORATION POTENTIAL

The tenement is considered to have excellent potential for hosting a replacement style (Carlin type) disseminated gold deposit associated with the intrusion of gold anomalous alkali porphyries into limey and carbonaceous mudstones, tillites siltstones and limestones.

There is possibly secondary potential for a large tonnage, low grade porphyry style gold deposit as well as possible hydrothermal breccia pipe type gold deposits within the alkali intrusive.

PROPOSED PROGRAM

Follow-up costean surveys will be implemented to close off highly anomalous gold geochemical zones at Mount Mary and Black Jack. Once particular zones have been delineated, a reverse circulation drilling program (totalling approximately 1500 meters) will be conducted to assess the potential of the prospects. Should encouragement come from the percussion program some diamond drilling would be undertaken to assess the mineralization further.

Minor follow-up surveys will be conducted on isolated geochemical highs delineated previously including Langdons Hill and the headwaters of Galleries Creek (near Tobys Hill). These more regional reconnaissance surveys are aimed at locating further anomalous zones and refining the geologic data base.

Signed P A Jones of Phil Jones and Associates for Cyprus Minerals



CYPRUS MINERALS AUSTRALIA COMPANY

EXPENDITURE FOR THE 12 MONTHS ENDED 30 SEPTEMBER 1986

CYGNET EL 36/82

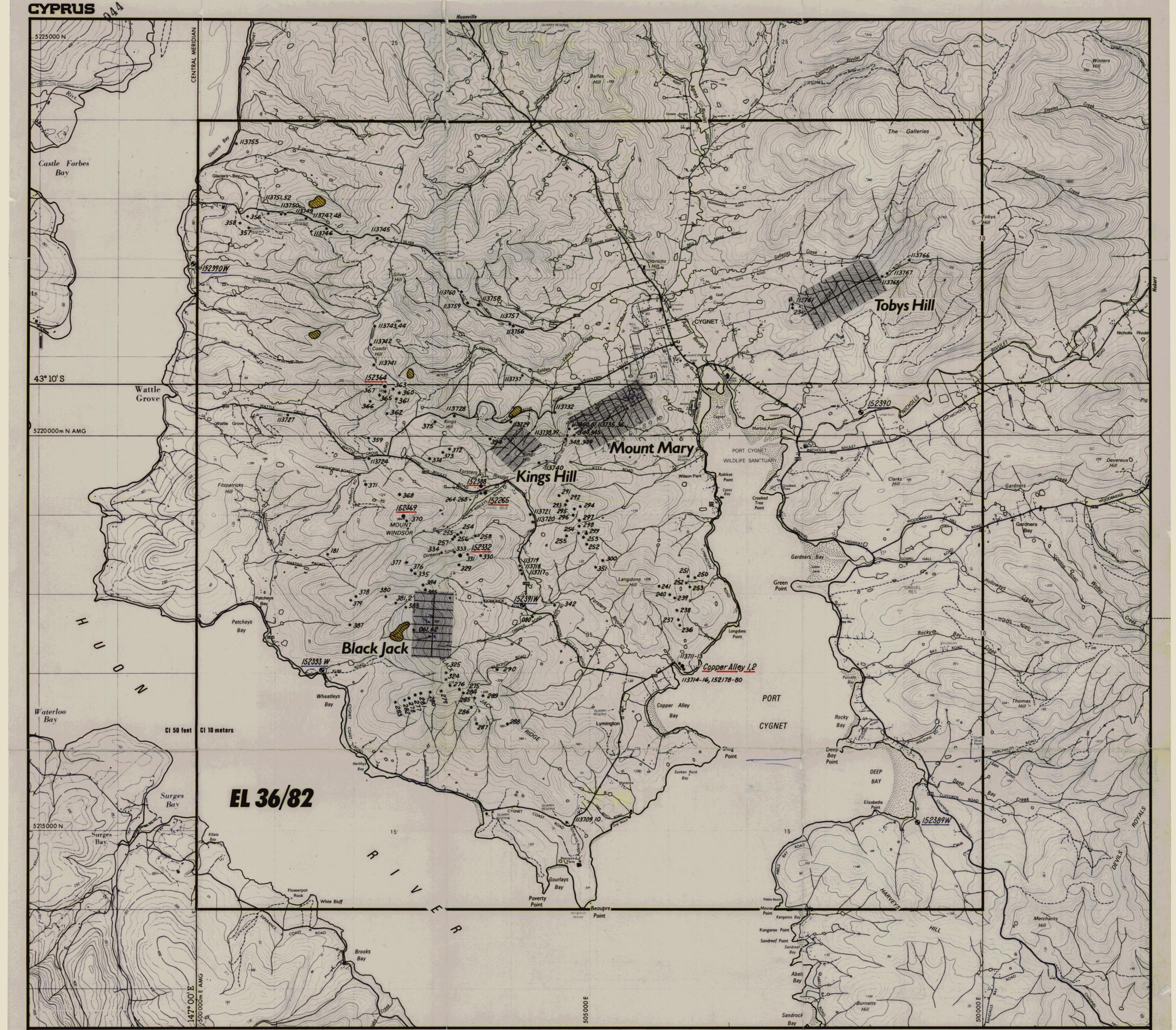
	\$
Salaries and Wages	9,295.40
Benefits	1,397.54
Drafting	227.60
Field Supplies	508.70
Cookery	(368.00)
Field Office Rent	(143.65)
Freight	(533.06)
Communications	(237.31)
Consulting	(298.90)
Contractors	16,601.89
Geophysics	(1,000.00)
Assays	11,198.73
Equipment Rental	2,708.28
Equipment Operation and Maintenance	142.69
Property Payments	(1,385.67)
Legal Fees	1,466.20

	39,580.44
Overhead	3,958.04

	43,538.48
	=====

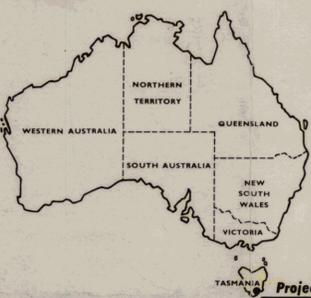


TREVOR CONQUEST
ACCOUNTANT

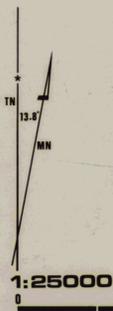


EL 36/82

Location



Base reproduced from 1:25000 sheets
Cygnet and Lymington and from the Geveeston 1:31680
sheet acquired from the Tasmanian Lands Department



Notes

3 digit sample numbers have 152... prefix omitted

Results and descriptions included in Report 497 (Table 1, Appendices 1 & 2)

- Petrographic sample ● 152388
- Rockchip sample ● 113719
- Water sample ● 152389W

- Alluvial/loaming area ■
- Prospect grid (detail rockchipping) ▨

980045



Cyprus Minerals Australia Company

Project	HEEMSKIRK	Nº	A-84-111
Project Partner	POSEIDON		
Cygnet EL 36/82			
PROSPECT LOCATION AND SAMPLE LOCATION			
Map Ref. ANG	K-55-8	Latitude	43° 10' S
		Longitude	147° 00' E
Surveyed	Date	1986	Scale 1:25000
Drawn	S. Fowler	Date	1986 Drawing Nº M86-2419

Report 497

86-2601

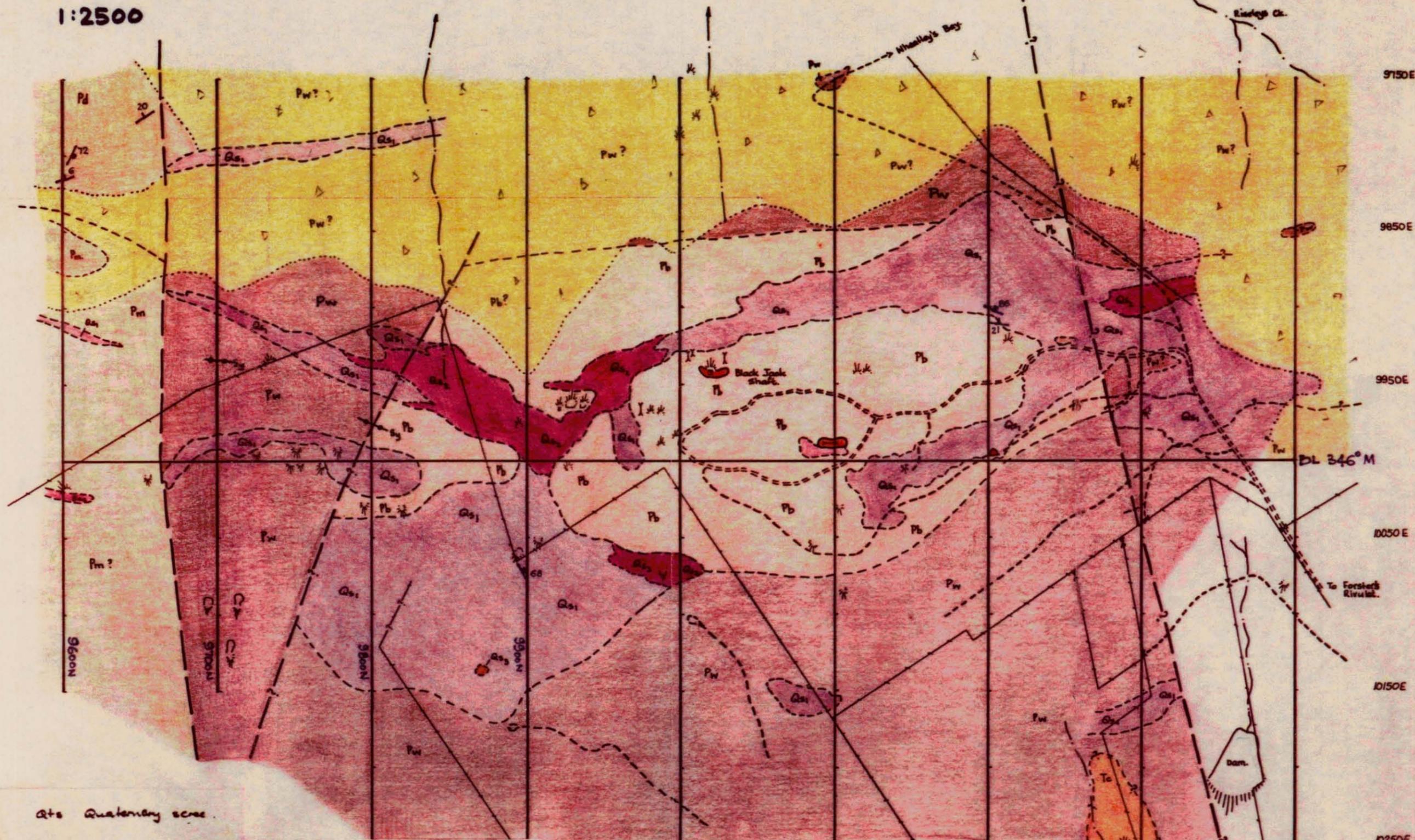
Enclosure 1

FIGURES

BLACK JACK GEOLOGY

5 cm

1:2500



980047

- Qts Quaternary scree
- Tc Tertiary conglomerate
- Pm Minnie Point Fm
- Pd Deep Bay formation
- Pb Bundella Mudstone
- Pw Woody Island siltstone

- Qs1 Syenite, porphyritic
- Qs2 Monzonitic syeno-monzonite
- Qs3 Breccia
- S Ironstone.

FIGURE 2

BLACK JACK
ROCKCHIPS : GOLD

980048

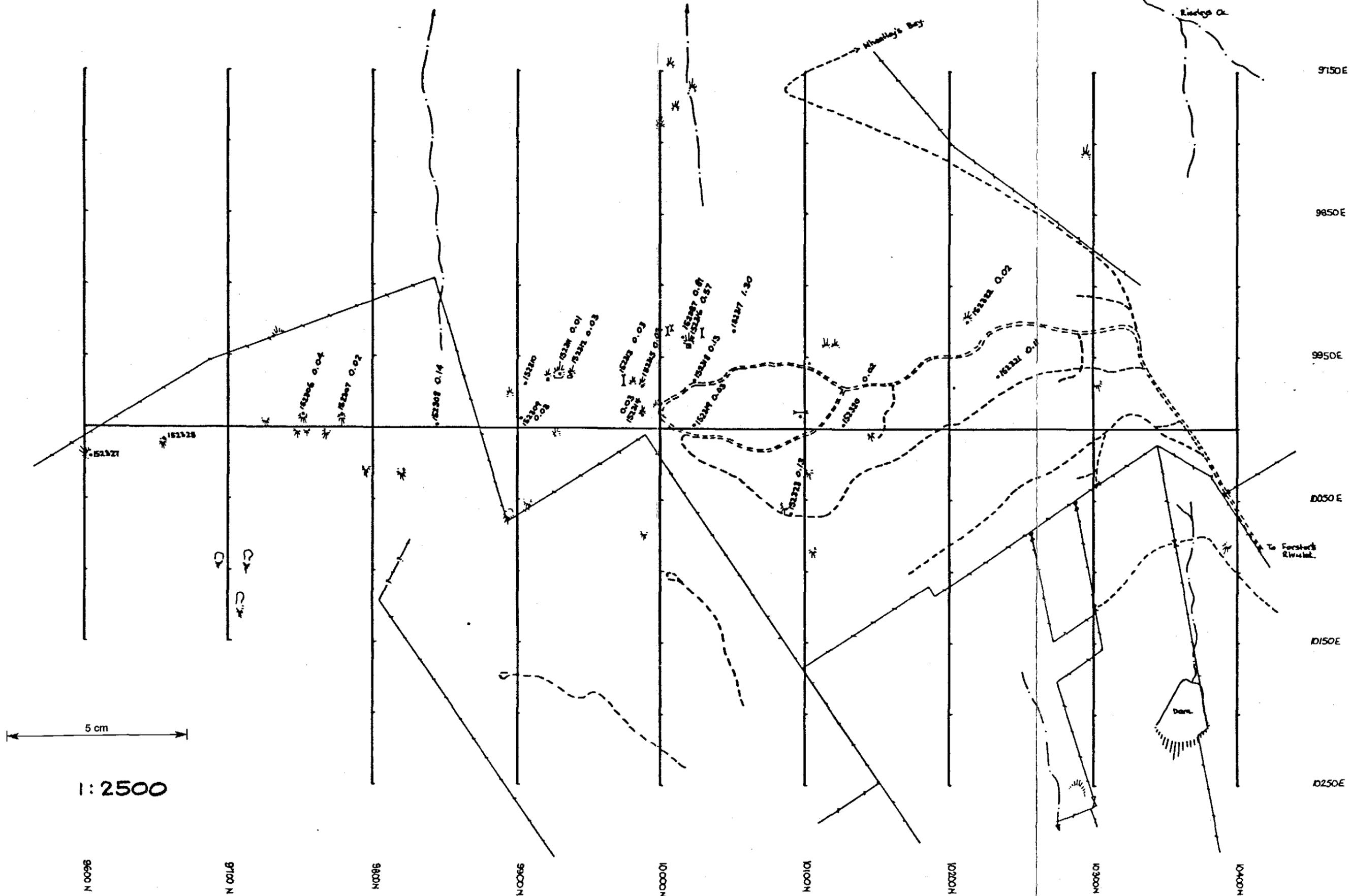


FIGURE 3

047

980049

BLACK JACK PETROGRAPHIC SAMPLE LOCATION

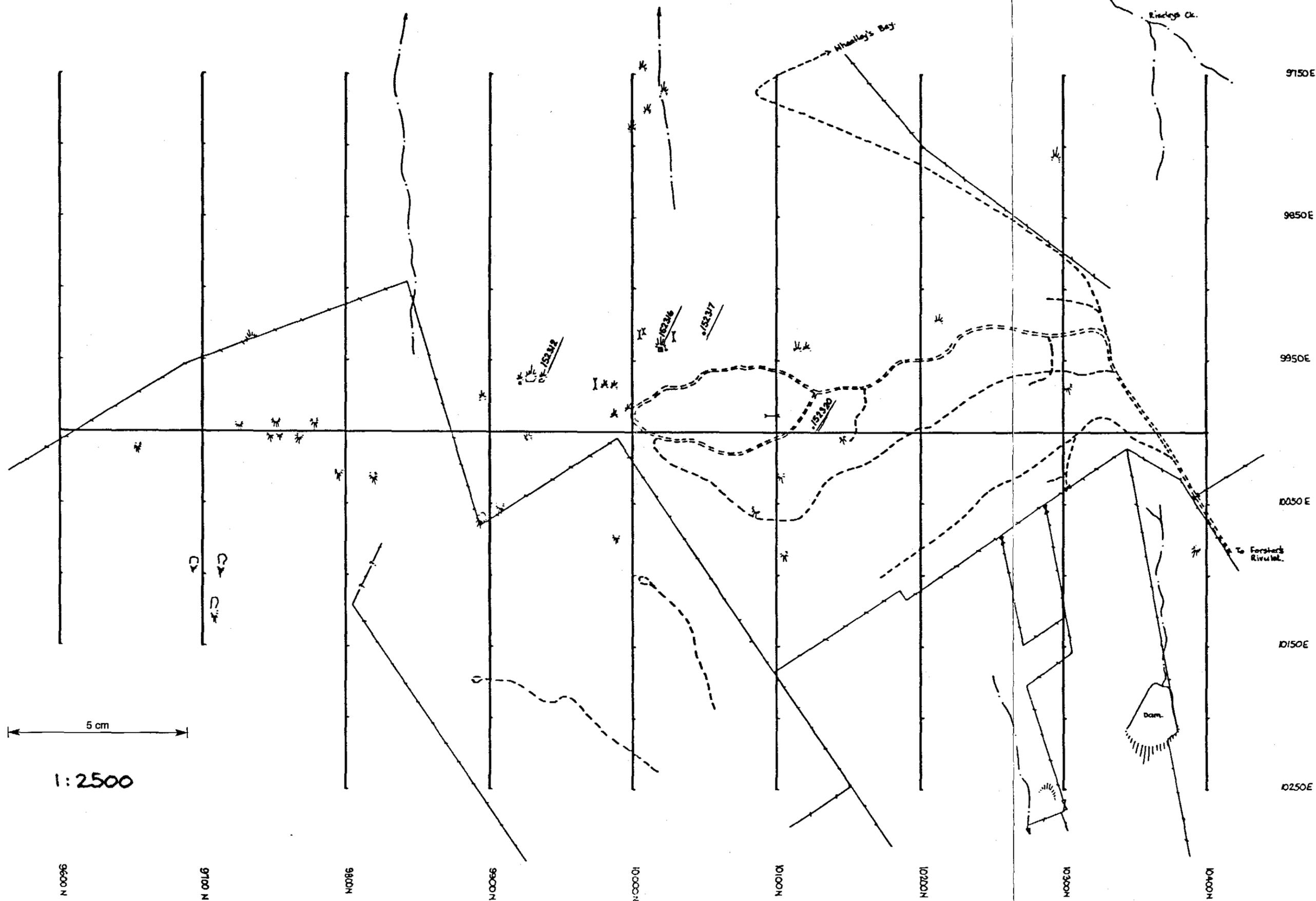


FIGURE 4

048
Loc 1

980050

BLACK JACK TRENCH LOCATION & RESULTS

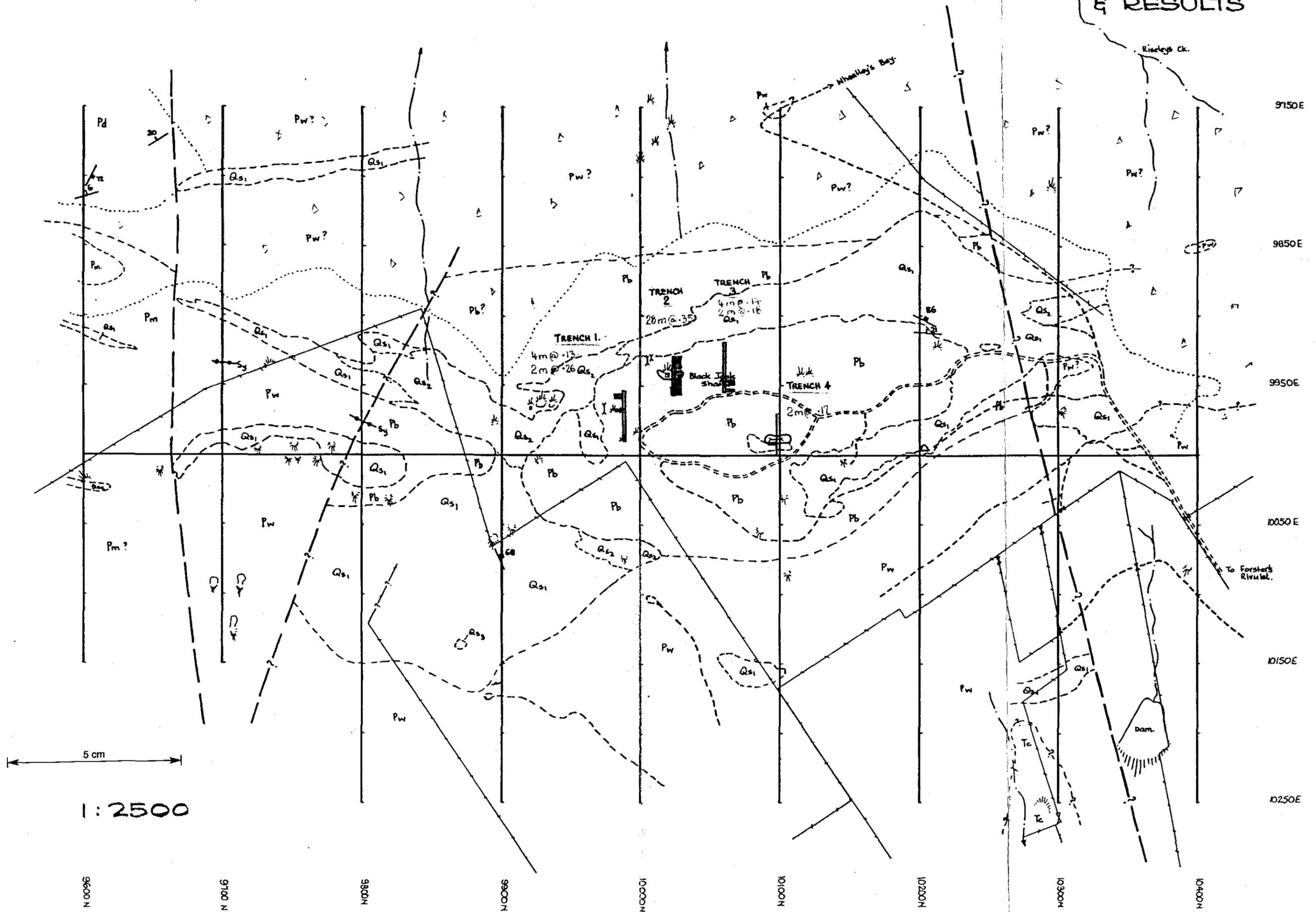


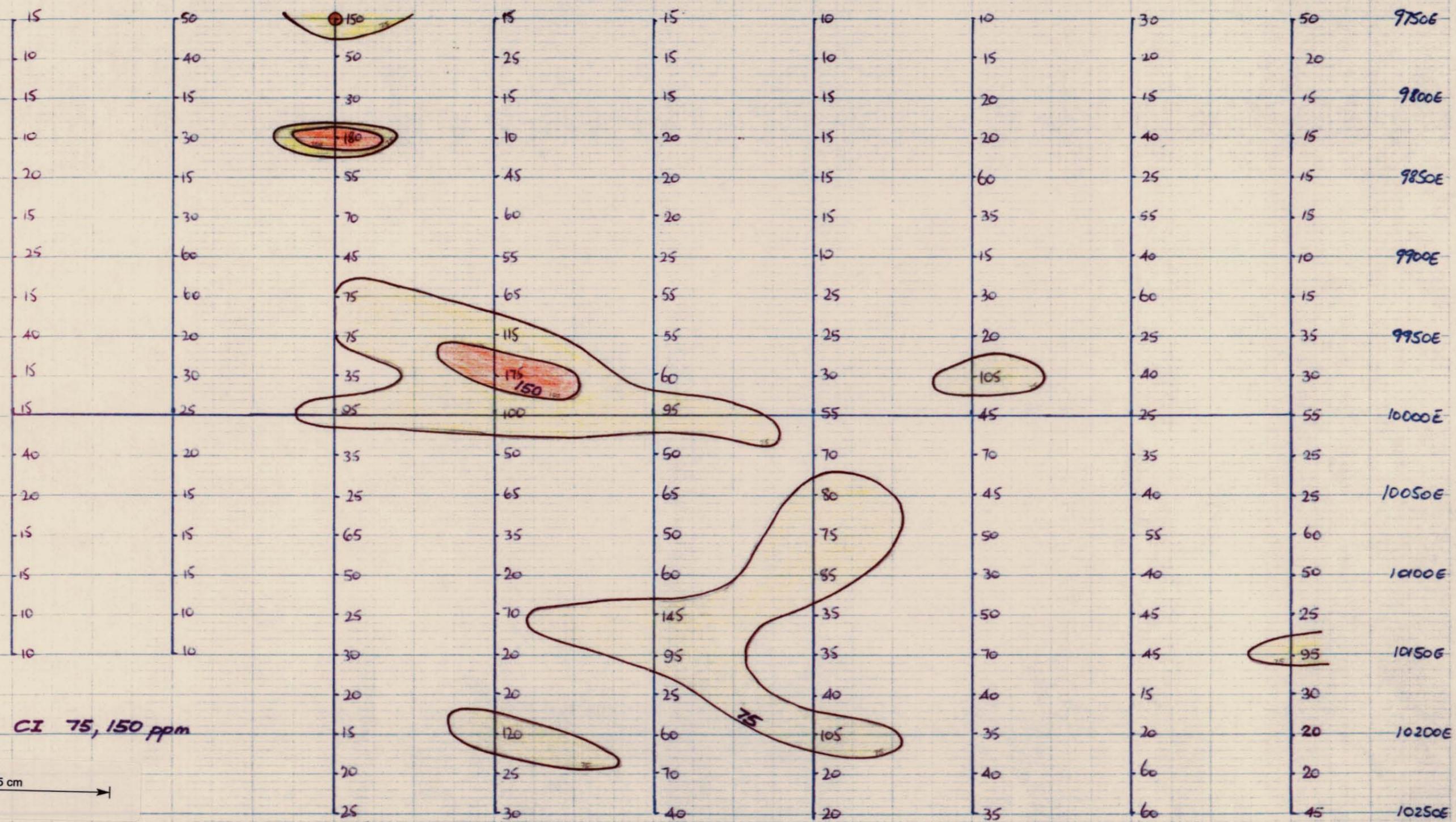
FIGURE 5

670

980051

JORMACK GRAPH PAPERS CHRISTCHURCH N.Z. COB2X 40 cm x 28 cm x 2 mm.

BLACK JACK SOIL GEOCHEMISTRY COPPER



0-0

9600N

9700N

9800N

9900N

10000N

10100 N

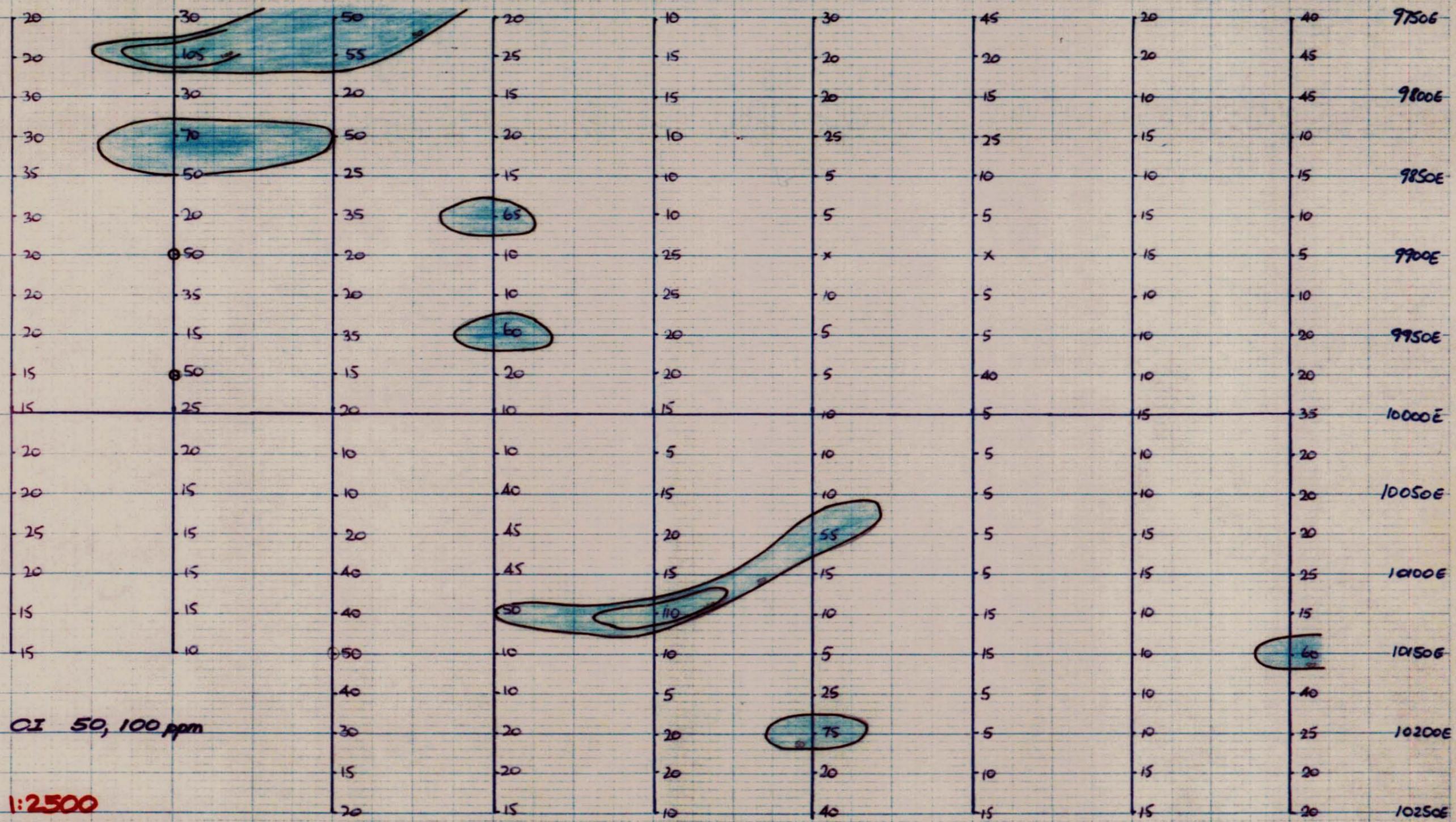
10200N

10300N

10400N

FIGURE 6

BLACK JACK
SOIL GEOCHEMISTRY
ZINC



052

9600N

9700N

9800N

9900N

10,000N

10100 N

10200N

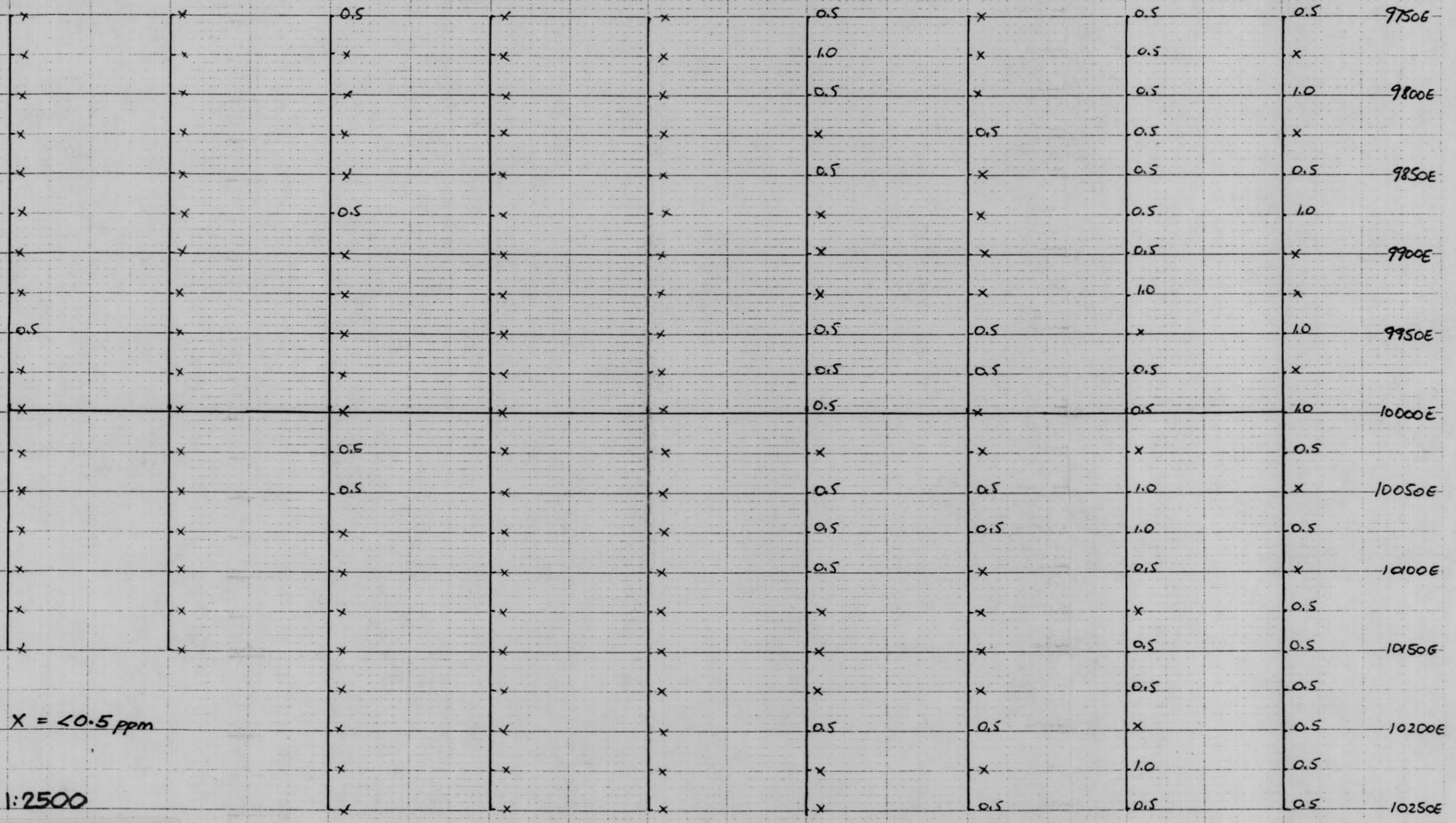
10300N

10400N

FIGURE 8

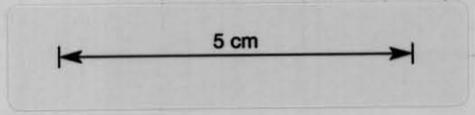
980054

BLACK JACK SOIL GEOCHEMISTRY SILVER



X = <math>< 0.5 \text{ ppm}</math>

1:2500



053

9600N

9700N

9800N

9900N

10,000N

10100N

10200N

10300N

10400N

FIGURE 9

BLACK JACK SOIL GEOCHEMISTRY ARSENIC

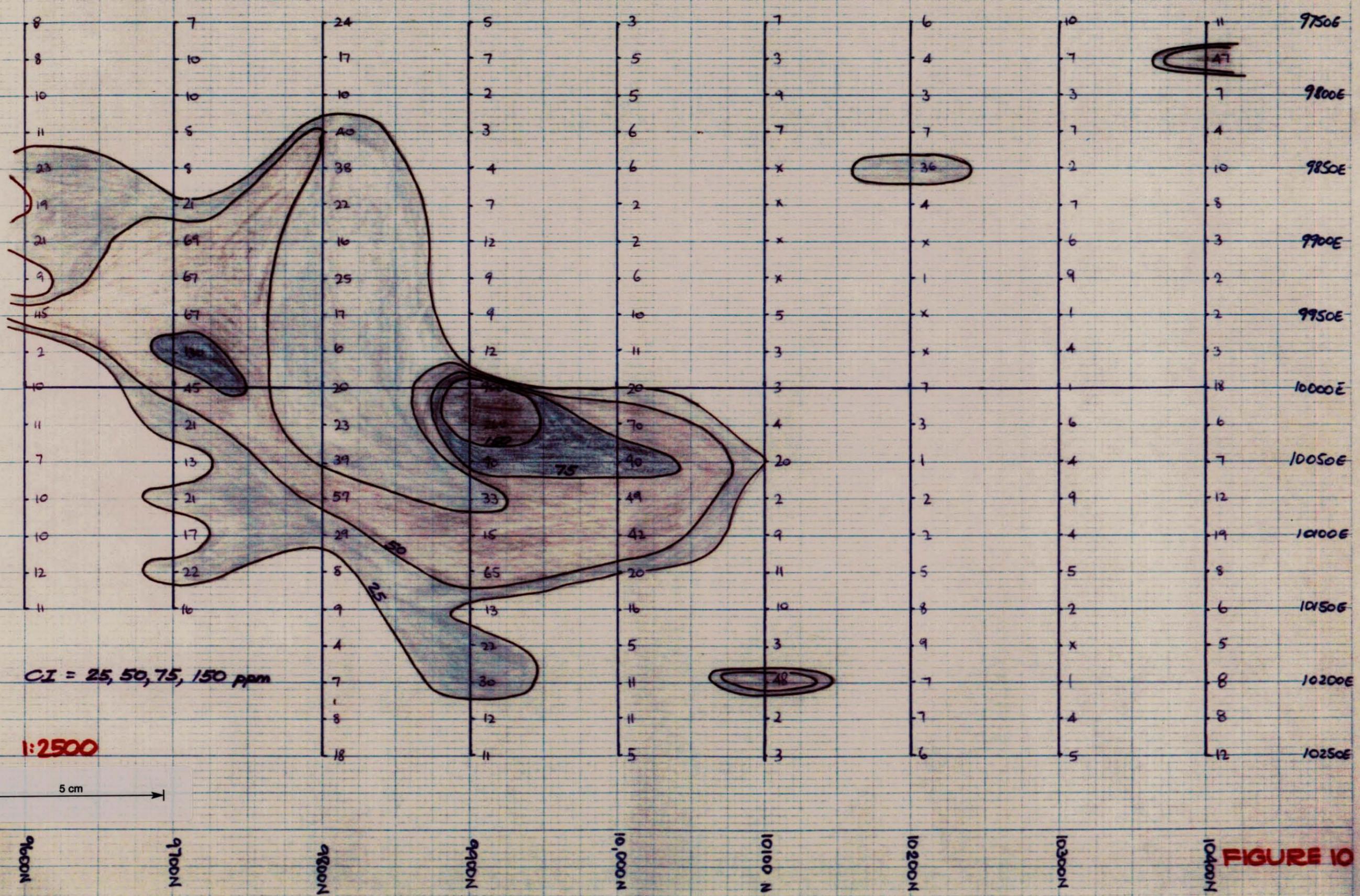
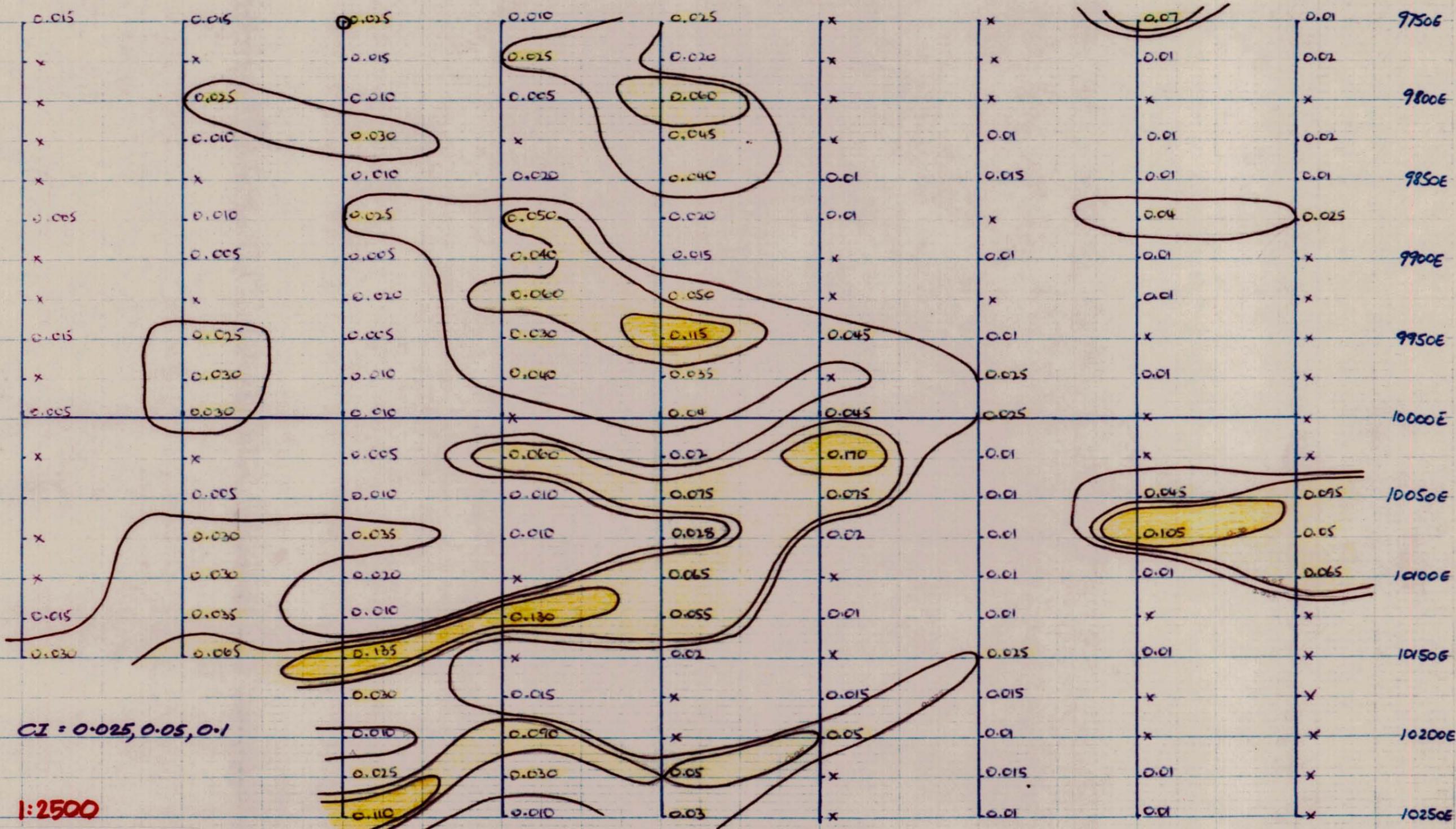


FIGURE 10

054

BLACK JACK SOIL GEOCHEMISTRY GOLD



050

9750N
9770N
9790N
9810N
9830N
9850N
9870N
9890N
9910N
9930N
9950N
9970N
9990N
10010N
10030N
10050N
10070N
10090N
10110N
10130N
10150N
10170N
10190N
10210N
10230N
10250N

FIGURE II

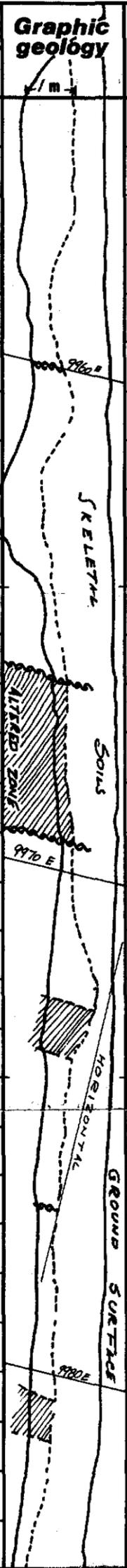
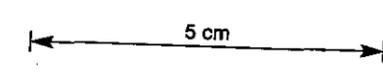
056

980057

costean profile

Project CYGNET NO A-84-111 C	Commenced
Prospect BLACK JACK	Completed
Coordinates: Line 9987N (PART) 9954 E to 9990 E	Logged by P Jones
	Sample length 2 meters
Total length 30m of 36 meters	Scale 1:100

Assays ANALOGS						AAS FIRE	Graphic geology	Meter- age & SAMPLE NO	Geologic description
Cu	Pb	Zn	Ag	Au	As				
45	5	15	0.5	0.10	7		9954E		
							169047	Bedding 151/11S, joint 170/73E; well bedded gr cr modular wkly fossil mod to highly limonitic stained siltn/mudstone weakly kaolinized, blocky appearance due to jointing	
135	5	15	0.5	0.13	24		169046	Bedding 130/10S limonite/goerthite filled shear zone 15° trend	
90	5	10	0.5	0.01	13		169045	Minor zones of increased ferruginisation limonitic thru shear zone trends 180°	
65	45	15	0.5	0.05	5		169044	Prominent joint 160/48°E in floor, 76/69N on wall	
90	45	15	0.5	0.06	10		169043	Limonite interface between soil and rock Bedding 75/15°S	
95	5	15	0.5	0.15	15		169042	Prominent joint 205/V cut by conjugate set 116°70NE blocky parting	
75	5	15	0.5	0.02	21		169041	Zone of silicification & ferruginisation; modular siltn cooked/baked purple brn K-spar alt? silicif, high % goerthite	
45	45	10	0.5	0.01	29		169040	Cut by shear zone 196/70E limonite filled Baked siltn - beige/cr massive Prom joint 252/87N semi/trench - conjugate set 166/86W	
40	45	10	0.5	0.01	34		169039	Pred ferrug modular, wkly fossil gr cr siltn/mudstone	
65	45	20	0.5	0.01	29		169038	Prom joint 032/66SE zone of increased ferruginisation and crushing (blockey)	
55	45	10	0.5	0.05	20		169037	Bedding 101/26S	
60	45	15	0.5	0.05	21		169036	limonite filled shear zone trending 195° dipping steep E	
80	45	15	0.5	0.04	31		169035		
105	45	15	0.5	0.01	94		169034	Bedding 108/27S partial silicification of siltn/mudstone, mod/strong ferruginisation but patchy	
125	45	15	0.5	0.01	190		169033	Bedding 84/6S Patchy altn (silicif K-spar) with patchy ferrug	
							9984E		



BLACK JACK TRENCH 1

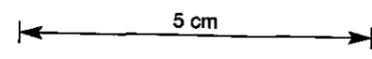
058

980059

costean profile

Project CYGNET	Nº A-84-111c	Commenced
Prospect BLACK JACK		Completed
Coordinates: Line 10030N		Logged by P. Jones
	9937E to 9965E	Sample length 2 meters
Total length 28 meters		Scale 1:100

Assays						Graphic geology	Meterage & SAMPLE NO	Geologic description
Cu	Pb	Zn	Ag	Au	As			
							1135E	START OF TRENCH
							9937E	Possible bedding 112/215 mod to strongly ferrug (joint coatings, etc) pyritic, highly K spar altered Bundetta fossilif modular siltstone
75	10	25	40.5	0.32/0.24	3		169048	Major joint 093/75 SW, also 200/81 NW
							9939E	Sections of alt seds chalcedonic, hornfelsed? contains v fine grained pyrite (possible Aspys)
65	5	35	40.5	0.47/0.04	1		169049	Some of modules qtz filled, rock more massive cream coloured baked siltstone
							9941E	
115	10	10	40.5	0.32/0.39	21		169050	Ferrug highly modular and fossil orange yell altered sltn bedding 280/24 sth
							9943E	Heavily crushed, very blocky
55	45	25	40.5	0.63/0.71	3		169051	
							9945E	Major joint 075/85E
75	45	15	40.5	0.16/0.16	2		169052	Joint 099/75NE
							9947	
75	5	20	40.5	0.16/0.18	1		169053	Bedding 287/25°S, partially hornfelsed? altered, chloritic pyritic fossil siltstone mudstone
							9949	Promin joint face 047/80N
175	5	25	40.5	0.62/0.53	32		169054	Patchy altered K spar, ferrug shelly mudstones/siltstones, casts after shells, etc goerthite
							9951	Zone of intense crushing/shearing very blocky goerthite/limonite filled fractures, joints 295/0, 22/82E
110	45	30	40.5	0.60/0.59	2		169055	Bedding 098/21S wkly to mod patchy altered mudstone/siltstone very fossilif
							9953	Predomin grey cream weakly modular, pebbly? mod ferrug blocky mudstone
95	5	25	40.5	0.88/0.91	1		169056	
							9955	Goerthite filled shear = 1.5cm wide
90	45	25	40.5	0.28/0.24	18		169057	Bedding 105/25S well bedded soft sed deformed gr and cream mudstones
							9957	
75	45	20	40.5	0.24/0.16	27		169058	Zone of crushing, rock very blocky
							9959	
45	5	165	40.5	0.27/0.29	15		169059	
							9961	Bedding 75/15S patchy mod K-spar, pyrite altered modular fossilif mudstone, major joint 075/75NW
120	10	30	40.5	0.22/0.24	8		169060	
							9963	Major joint 035/86NW
60	45	30	40.5	0.31/0.28	11	169061	Kaolintic mudstone gr to cream	
						9965E		



Assays in ppm unless noted otherwise

END

FIGURE 13

Costean Line 10030N

BLACK JACK TRENCH 2

059

980060

costean profile

Project CYGNET N ^o A-84-111C	Commenced
Prospect BLACK JACK	Completed
Coordinates: Line 10060N (PART I) 9919E to 9948E (9955E)	Logged by P Jones
Total length 29 of 36 meters	Sample length 2 meters
	Scale 1:100

Assays						Graphic geology	Meterage & SAMPLE N ^o	Geologic description
Cu	Pb	Zn	Ag	Au	As			
							9919E	
35	45	10	<0.5	0.01	14		169071	
							21	Gr. grn massive micaceous mudstone, prominent joint 064/84Sth, another 110/43NE.
75	45	40	<0.5	0.08	21		169072	Prominent joint 000/53°NW.
							23	* Soil rock interface generally highly ferruginous.
40	45	20	<0.5	<0.01	20		169073	Zone of wkly alt (K-spar - silicif) mod ferruginous mudstones - siltstones.
							9925E	
50	45	25	<0.5	<0.01	13		169074	
							27	Joint 225/660SE in green gr micaceous mudstone. Some joints limonite filled.
60	45	35	<0.5	0.05	23		169075	Extensive zone of crushing, mod to strongly ferruginous, wkly alt mudstones
							29	Joint 035/86NW Goerthite filled joint 065/67N
40	45	40	<0.5	0.01	21		169076	
							31	Possible bedding of 251/315 in otherwise v blocky moderately ferrug mudstone minor goerthite thin layers to 4mm concordant to layering.
55	45	55	<0.5	0.01	16		169077	Weakly alt, mod ferrug stained (joints) siltstone (baked mudstone) prominent joint - 215/88Sth generally goerthite filled.
							33	
65	25	50	<0.5	0.01	31		169078	
							9935E	
50	5	95	<0.5	0.03	15		169079	
							37	Limonite filled shear zone
45	25	75	<0.5	<0.01	14		169080	
						39		
45	5	60	<0.5	<0.01	14	169081	Possible bedding in massive mudstone 90°/14 S Associated jointing 170/90V.	
						41		
65	20	30	<0.5	0.01	13	169082	Shear or crush zone ferruginous.	
						43		
40	10	15	<0.5	0.04	9	169083		
						9945E	Prom shear direction 210/87SE	
90	15	20	<0.5	0.12	27	169084		
						9947E		
45	5	15	<0.5	0.09	10	169085		

Assays in ppm unless noted otherwise

060

980061

costean profile

Project CYGNET N ^o A-84-111c	Commenced
Prospect BLACK JACK	Completed
Coordinates: Line 10060N (PART 2) 9948E to 9955E	Logged by P Jones
Total length 7 of 36 meters	Sample length 2 meters
	Scale 1:100

Assays						Graphic geology	Meter-age	Geologic description
Cu	Pb	Zn	Ag	Au	As			
							9948E	Gr green blocky jointed mudstone mod ferruginous
40	45	10	40.5	0.09	8		169086	
							51	
30	45	15	40.5	0.06	5		169087	
							53	
40	45	10	40.5	0.18	5		169088	Bundella fossilif, modular, wkly to mod ferruginous mudstone siltstone, cream to ferrug orange yeil v ferrug casts
							9955E	Bedding 075/225
								END OF TRENCH

BLACK JACK TRENCH 3

Assays in ppm unless noted otherwise

FIGURE 14 PART 2

Costean Line 10060N PART 2

costean profile

Project CYBNET NO A -84-111c	Commenced
Prospect BLACK JACK	Completed
Coordinates: Line 10100N 9970 E to 10000E	Logged by P Jones
Total length 30 meters	Sample length 2 meters
	Scale 1:100

Assays						Graphic geology	Meter-age & SAMPLE NO	Geologic description
Cu	Pb	Zn	Ag	Au	As			
35	<5	15	<0.5	<0.01	3		9970E	074/23S possible bedding
							169089	Predominantly limonitic stained NW siltstones and mudstones
							72	
125	<5	10	<0.5	<0.01	5		169090	Prominent joint 247/84N
							74	
120	<5	15	<0.5	<0.01	17		169091	
							76	Slightly more ferrug and crushed
40	<5	15	<0.5	<0.01	6		169092	
							78	
65	<5	15	<0.5	<0.01	9		169093	Contact 150/60E with alt intrusive and altered sediments
							9980E	Prominent jointing 156/70E rock quite blocky, bleached white light grey massive mudstone? joint faces silica coated?
65	<5	15	<0.5	0.01	24		169094	Shear zone 160/69E green clay filled and 6cm width, v ferrug shear zone
							82	Prom joint 51/V
90	<5	20	<0.5	<0.01	16		169095	Green clay alteration in kaolinitic and grnd (W?) intrusive
							84	
180	<5	20	<0.5	<0.01	13		169096	Sheared and alt ferrug intrusive
							86	Shear zone 149/74 strongly ferrug Mod/strongly ferrug very alt kaolinitic (CW?) intrusive cut by numerous thin ferrug veinlets
190	<5	40	<0.5	0.05	24		169097	
							88	Massive concolidal fractured hematitic ironstone, minor banded goerthitic I/S and v minor v alt intrusive (kaolinitic) inclusions
60	<5	25	<0.5	0.04	6	169098	Alt monz porphyry becomes prog more ferrug until ironstone contact at 88.2m	
						90	Joint 092/66S	
						9990E		
80	<5	25	<0.5	0.17	5	169099		
						92	Prominent contact 336/36E lammar goerthitic = 2cm width. FW to it is highly alt (resistant) porphyritic monzonite? H/52 intrusive (K-spar) mod ferrug	
95	<5	25	<0.5	0.01	4	169100	Joint 084/82N	
						94	CW intrusive more coarser grained and gr, rusty brn mottled colour	
130	<5	25	<0.5	0.05	1	169101		
						96		
110	10	25	<0.5	0.09	7	169102	Limonitic clay filled shear trending 135/85NE zone 2m either side brecciated and mod to strongly ferruginous	
						99 98E		
85	<5	30	<0.5	<0.01	3	169103	Pred med grnd CW cream yell weakly ferrug massive intrusive? containing MW relict boulders of grey pyritic biotitic med grained wkly porphritic monzonitic? * H/S sample 1	

Assays in ppm unless noted otherwise

END

FIGURE 15

Costean Line 10100N

BLACK JACK TRENCH

MOUNT MARY GEOLOGY



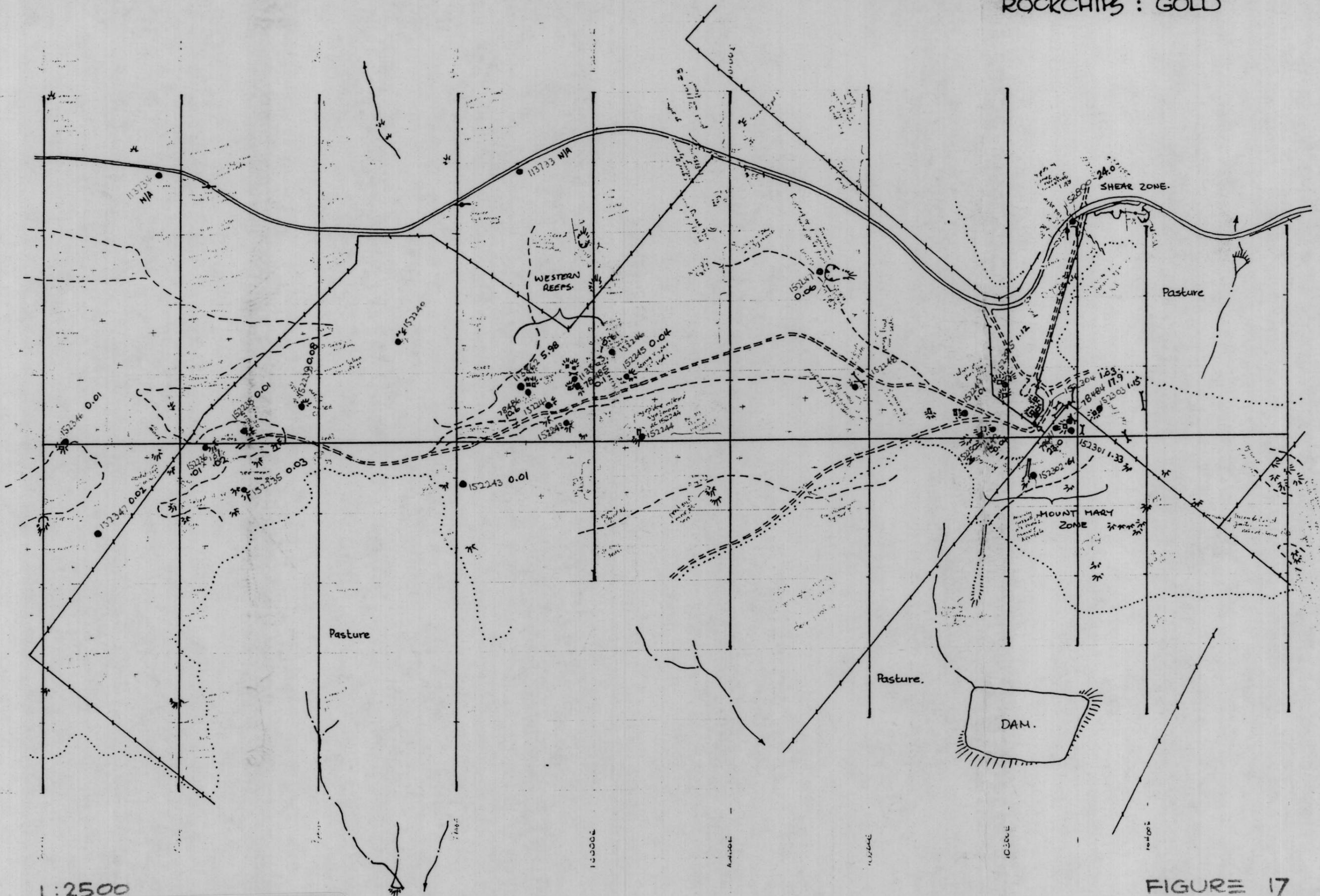
1:2500

5 cm

FIGURE 16

062

MOUNT, MARY ROCKCHIPS : GOLD



1:2500

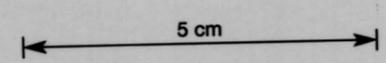
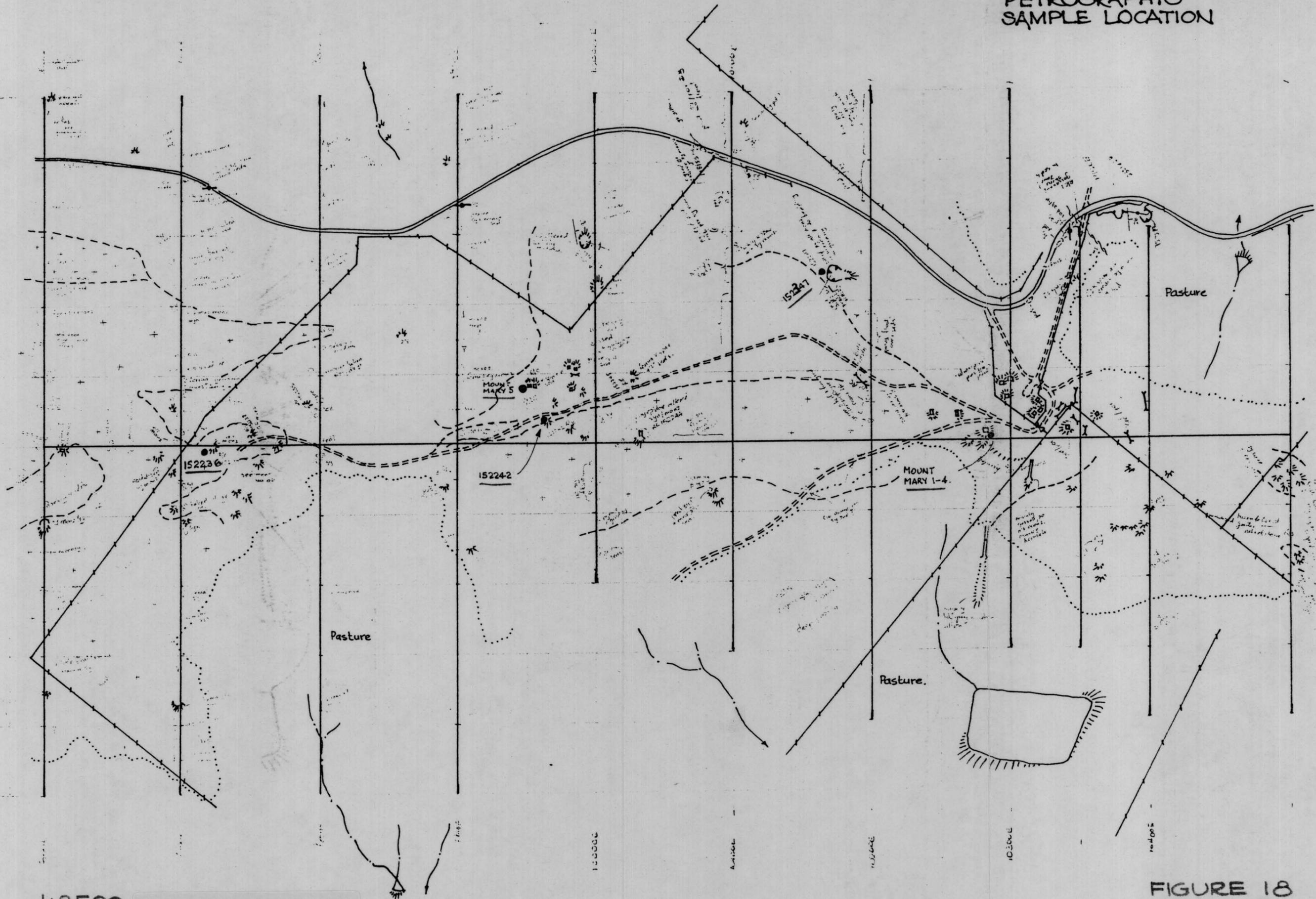


FIGURE 17

890

MOUNT MARY PETROGRAPHIC SAMPLE LOCATION



064

1:2500

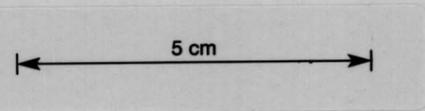
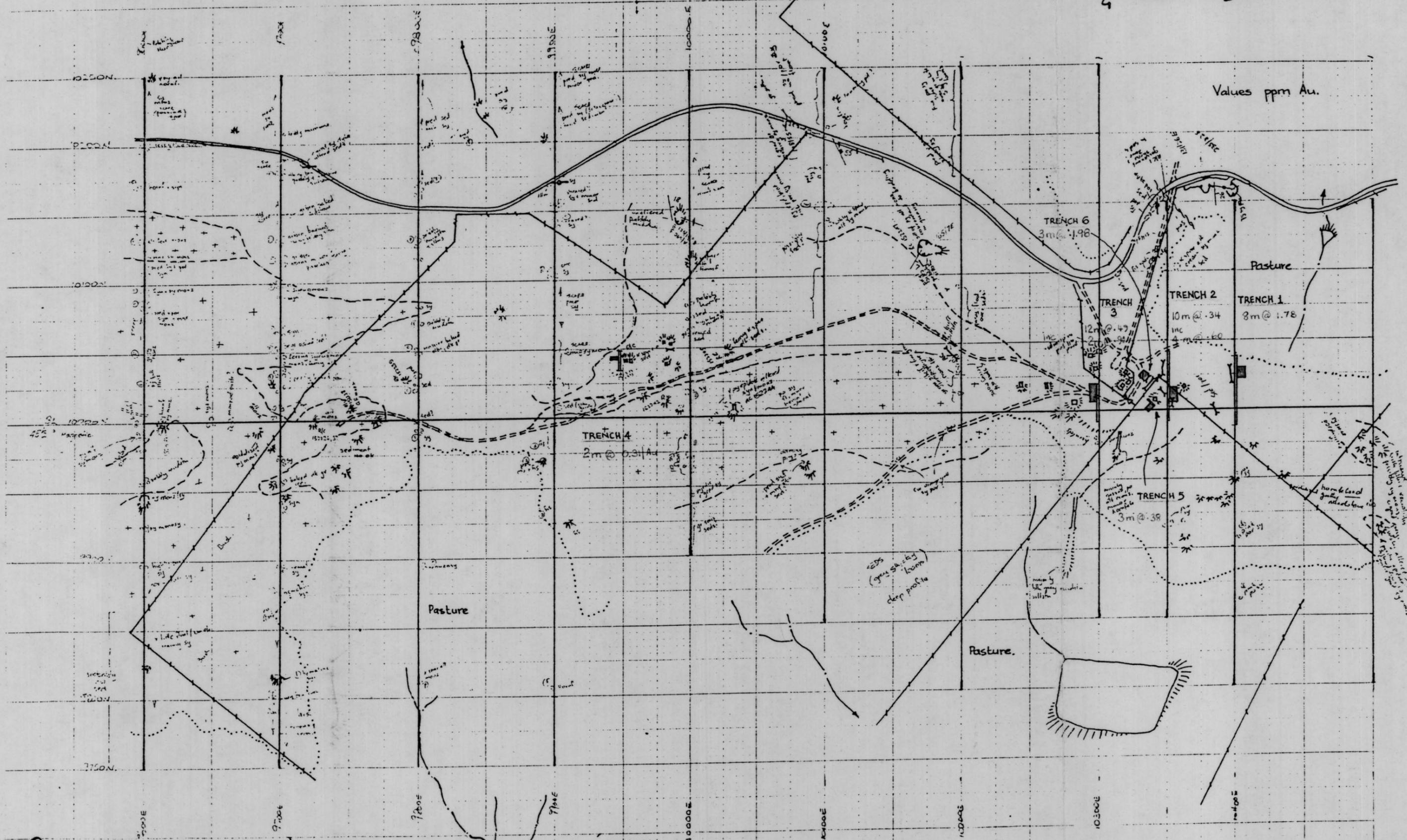


FIGURE 18

MOUNT MARY TRENCH LOCATION & RESULTS



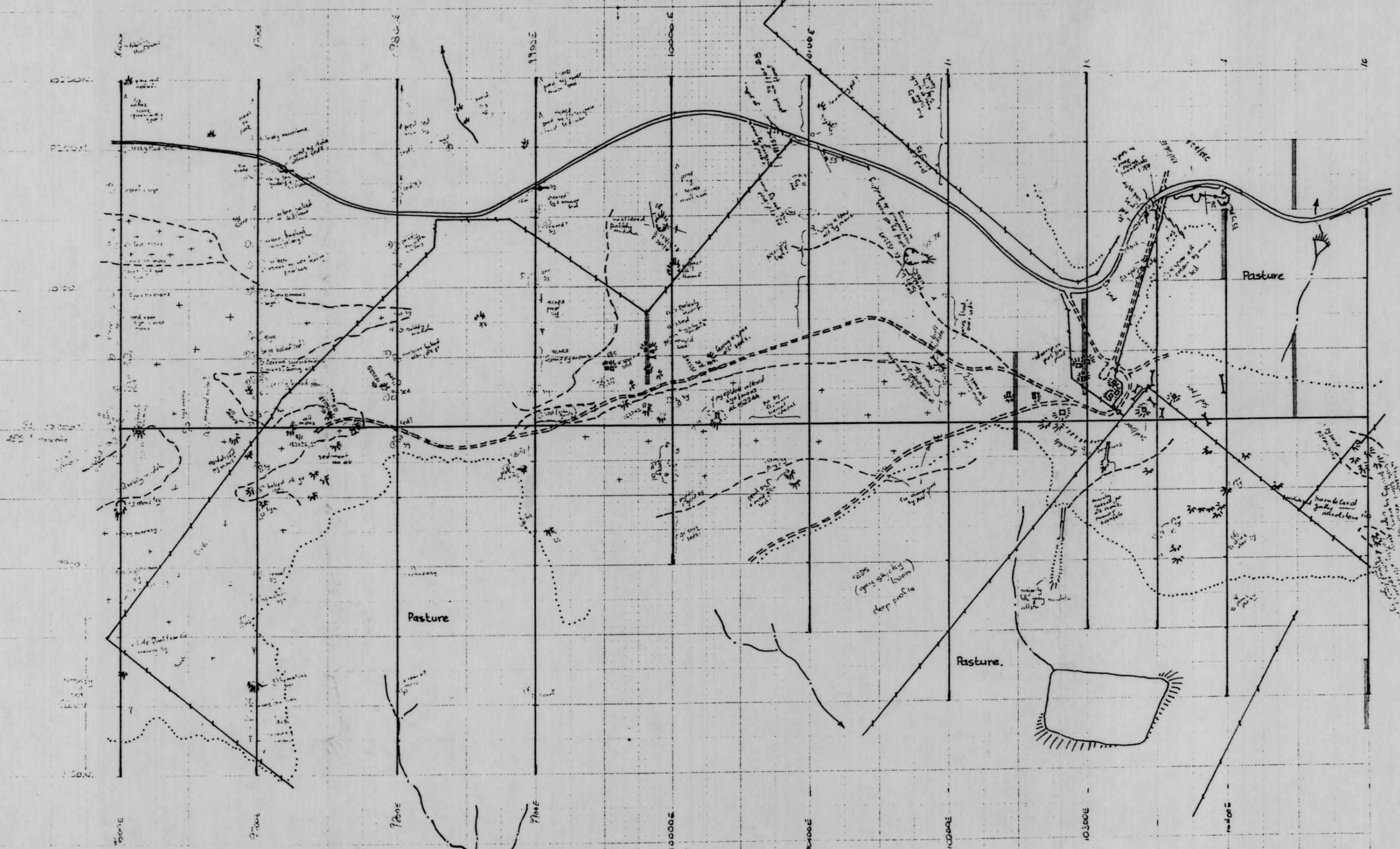
065

1:2500

5 cm

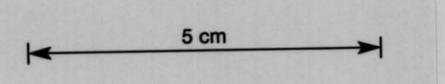
FIGURE 19

MOUNT MARY PROPOSED TRENCHES



990

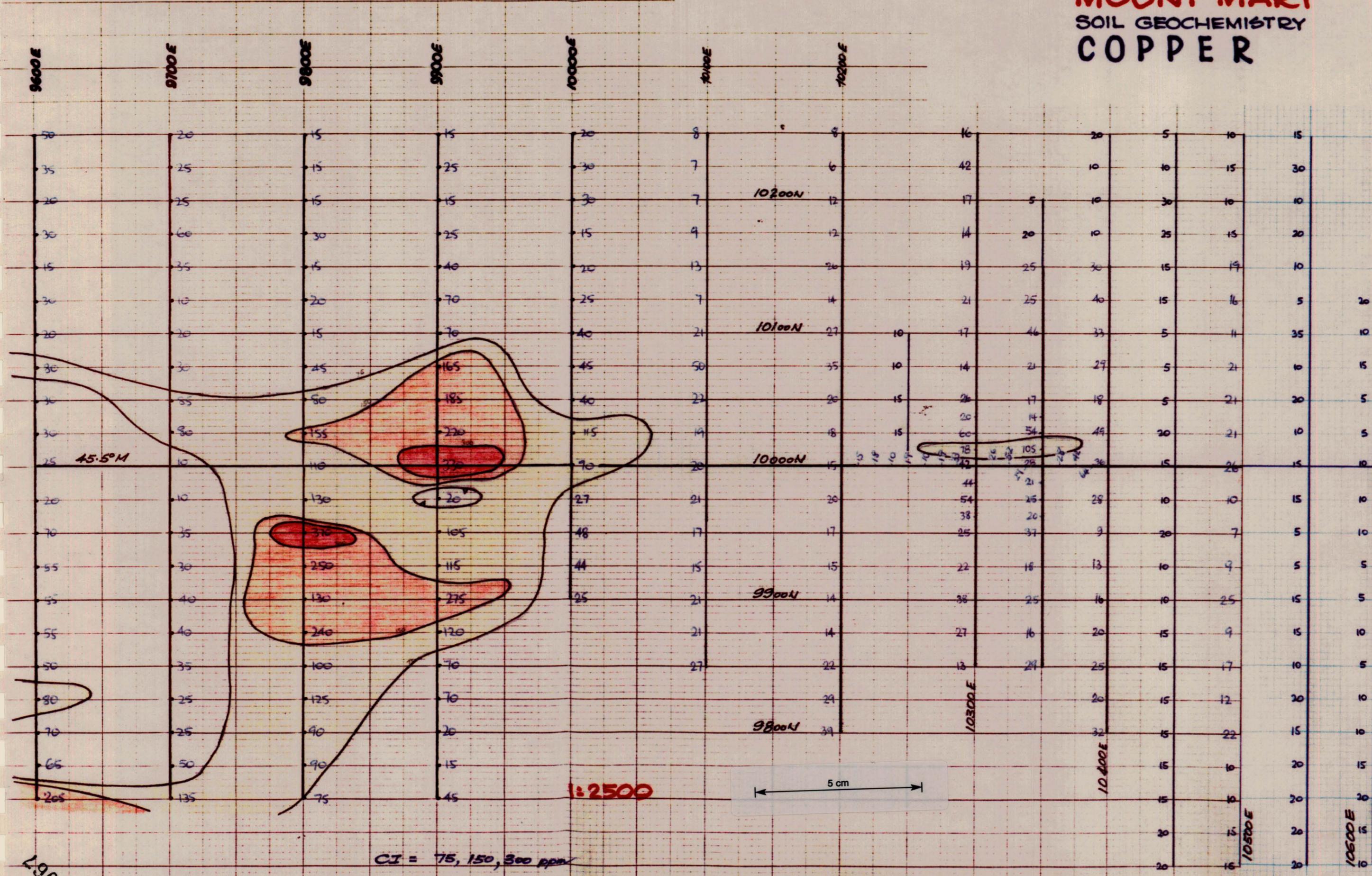
1:2500



Scale 1:2,500
FIGURE 20

MOUNT MARY SOIL GEOCHEMISTRY COPPER

CHRISTCHURCH N.Z. CG52X 40cm x 28cm x 2mm.



CI = 75, 150, 300 ppm

1:2500

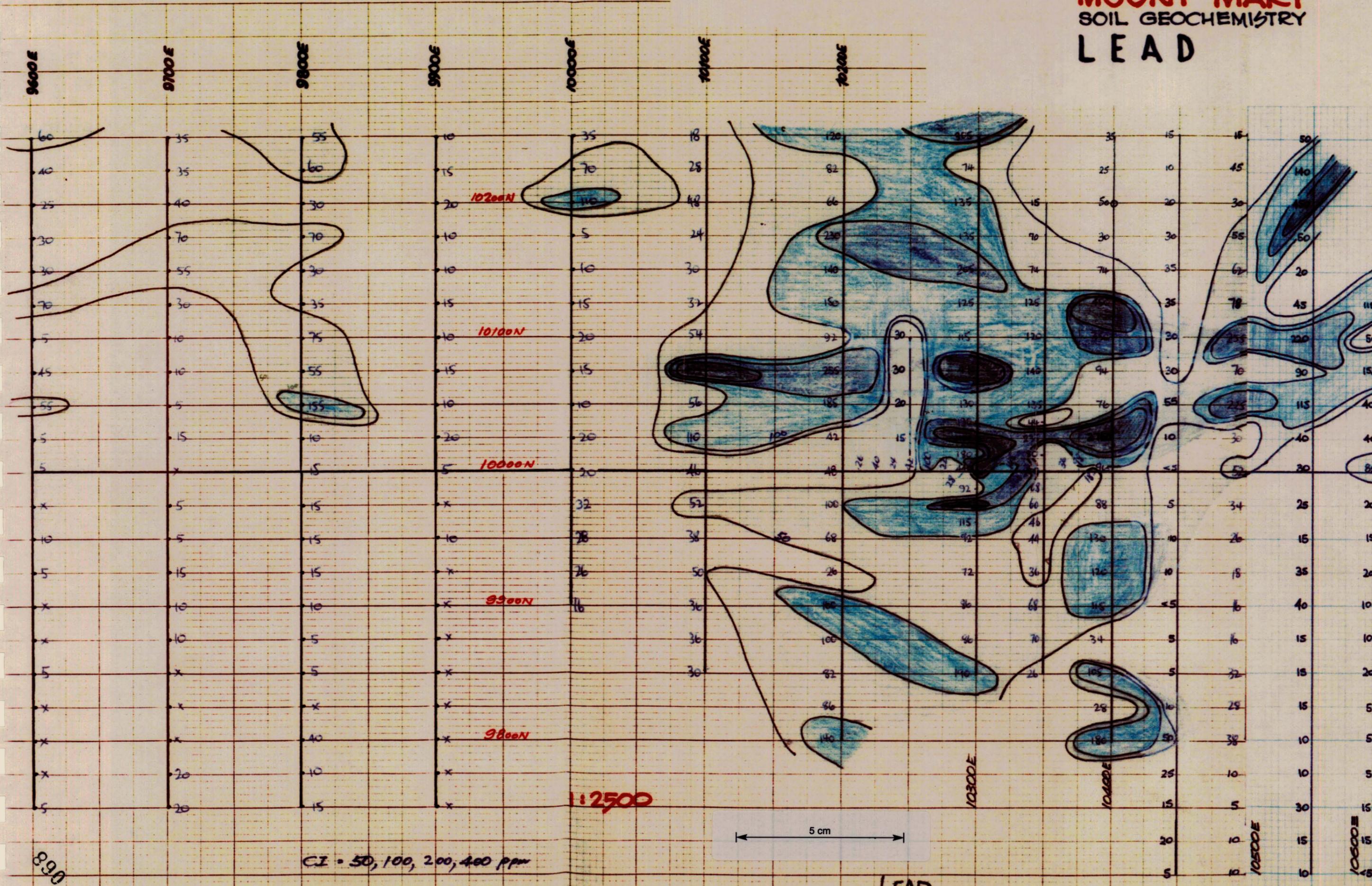
5 cm

COPPER

FIGURE 21

290

MOUNT MARY SOIL GEOCHEMISTRY LEAD



0689

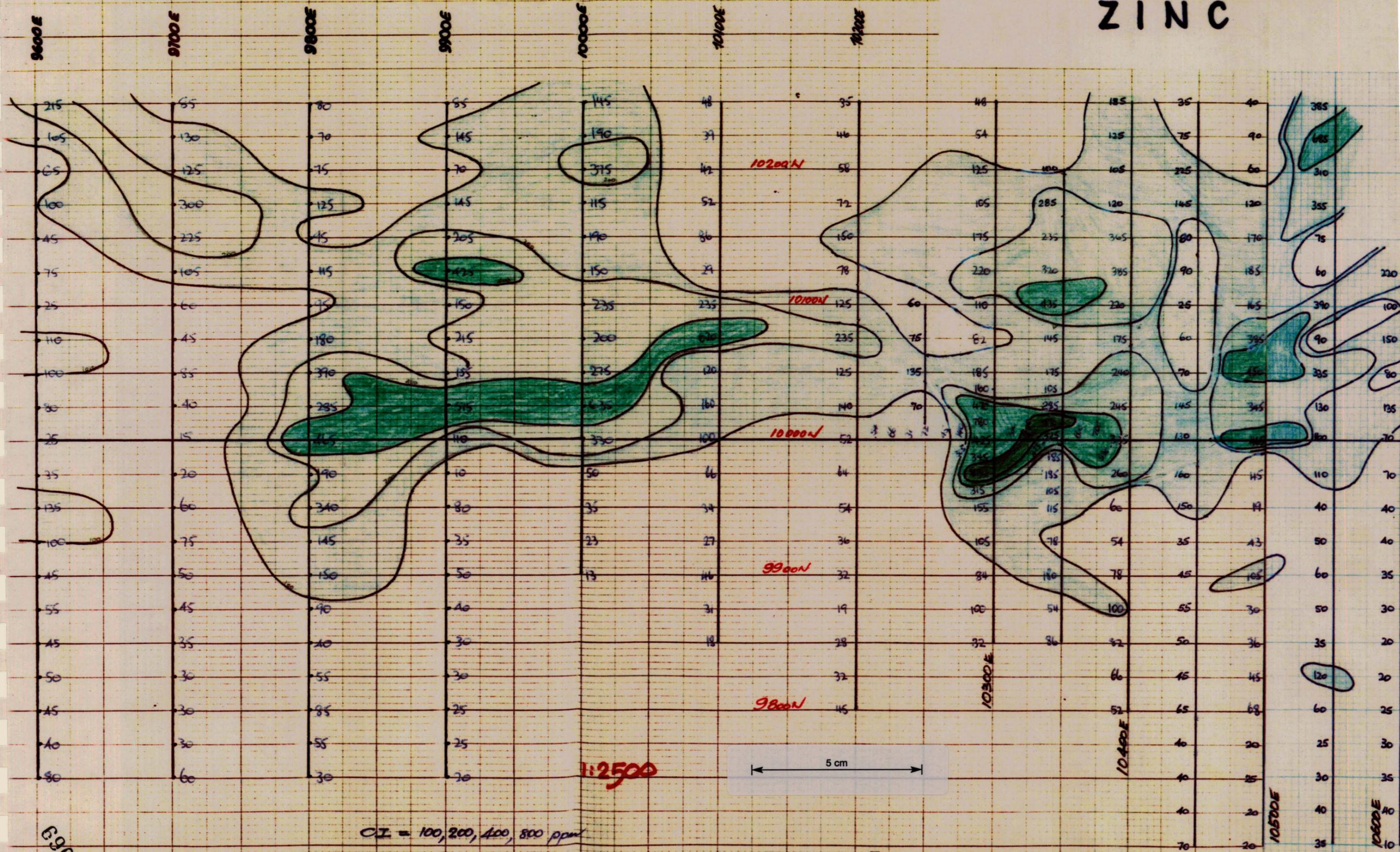
CI = 50, 100, 200, 400 ppm

5 cm

LEAD

FIGURE 22

MOUNT MARY SOIL GEOCHEMISTRY ZINC



1:2500

5 cm

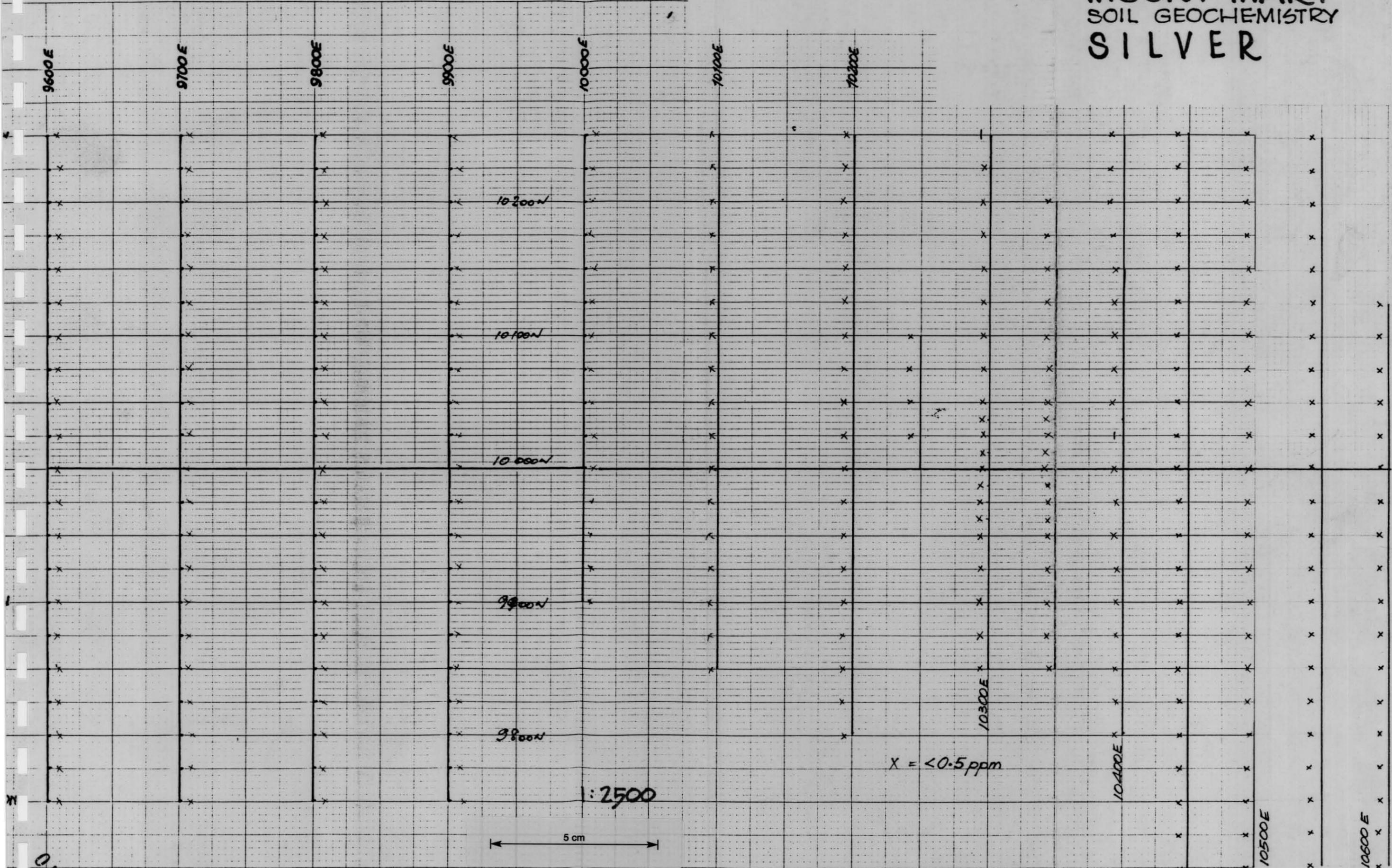
C.I. = 100, 200, 400, 800 ppm

ZINC

FIGURE 23

MOUNT MARY SOIL GEOCHEMISTRY SILVER

RS CHRISTCHURCH N.Z. CO52X 40 cm x 28 cm x 2 mm.

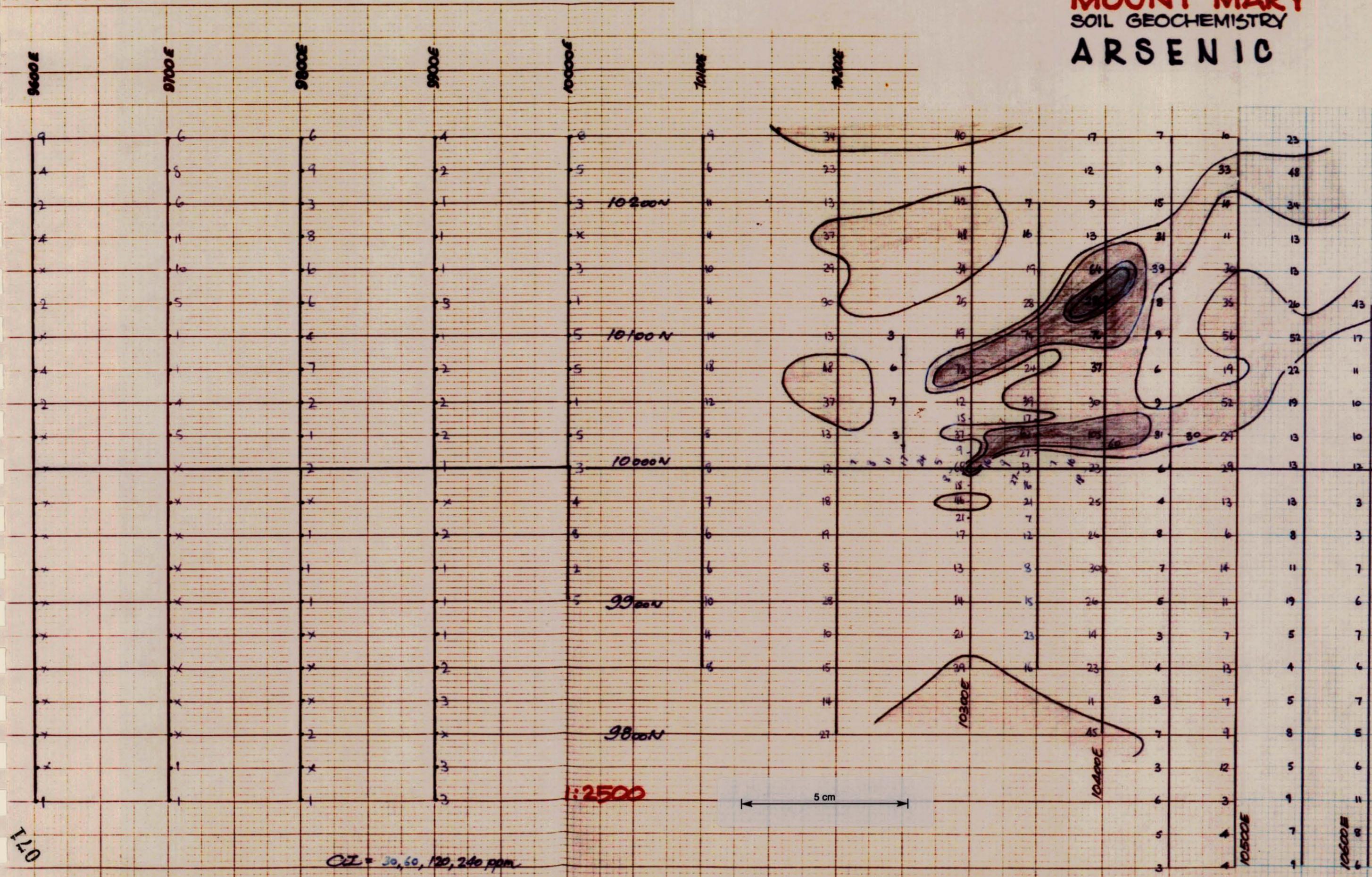


0710

SILVER

FIGURE 24

MOUNT MARY SOIL GEOCHEMISTRY ARSENIC



071

CI = 30, 60, 120, 240 ppm

1:2500

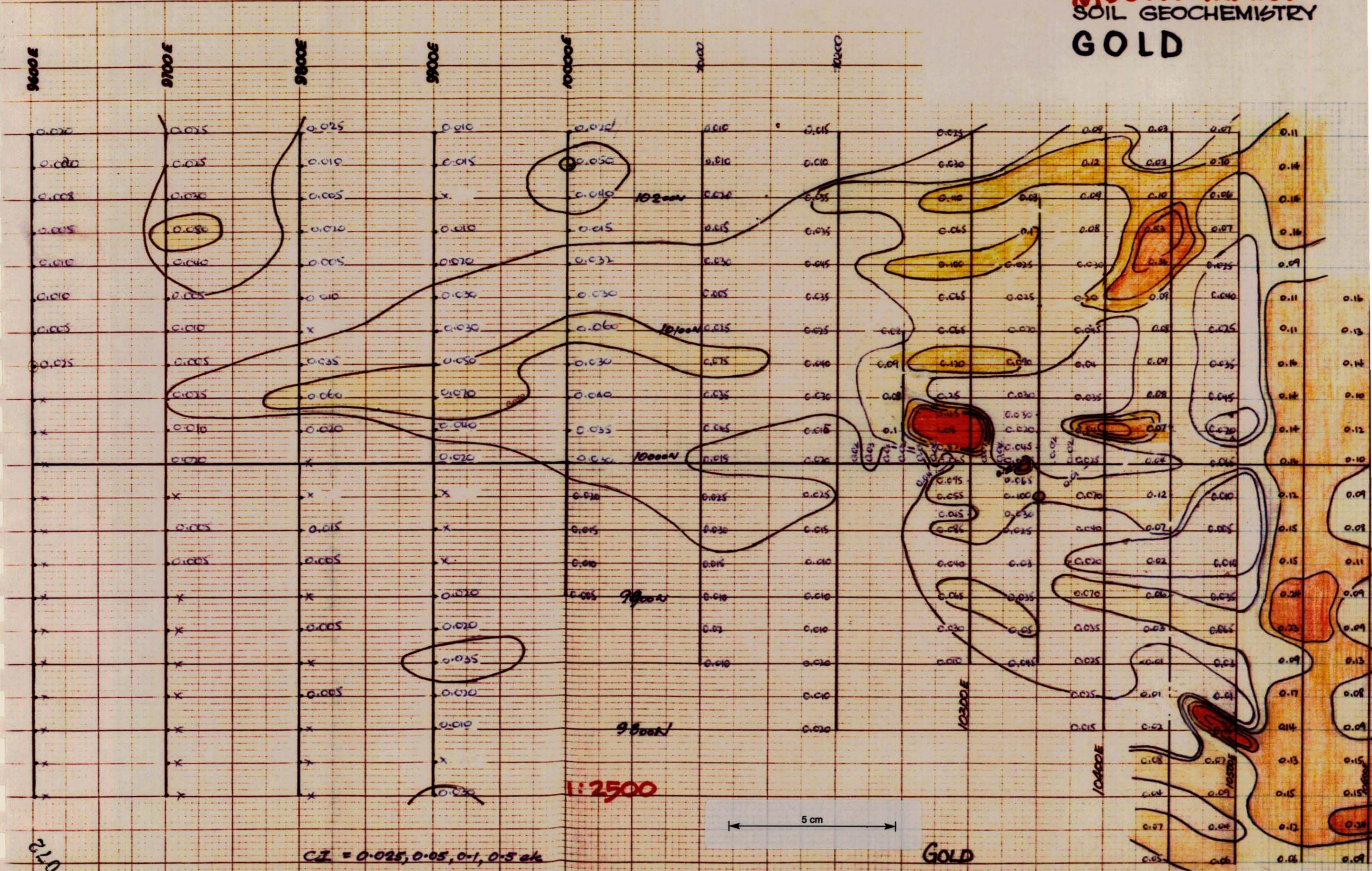
5 cm

ARSENIC

FIGURE 25

MOUNT MARY SOIL GEOCHEMISTRY GOLD

CHRISTCHURCH N.Z. CO52X 40 cm x 28 cm x 2 mm.



0.210

CZ = 0.025, 0.05, 0.1, 0.5 etc

1:2500

5 cm

GOLD

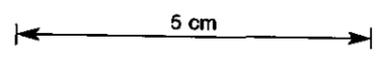
FIGURE 26

073

costean profile

Project CYGNET NP A-84-111C	Commenced
Prospect MOUNT MARY	Completed
Coordinates: Line 10400E (PART 1) 10010N to 10038N	Logged by P. Jones
Total length 28 meters (50m total)	Sample length 2 meters (horizontal channel)
	Scale 1:100

Assays ANALABS						AAS FIRE	Graphic geology	Meter- age & SAMPLE No.	Geologic description
Cu	Pb	Zn	Ag	Au	As				
60	375	960	0.5	0.08	103		10038N	Ferrug (mod) massive seds (mudsts) I/s zone ~ 25cm wide with org ferrug clays 045/80N	
							169131	Cleavage? 175/71NW	
							36		
55	660	950	1.0	0.08	75		169132	Ferrug org shear zones	
							34	Possible bedding 015/5NE wkly layered org beige mudstone Joint 176/66NW	
75	475	1350	0.5	0.12	78		169133	068/82E ferrug shear ~ 2cm width	
							32	Rock pred grey beige mudstone, mod well jointed, cut by numerous small shears	
110	910	1250	1.0	0.07	101		169134	Midstone increasingly ferrug, crushed, cut by numerous thin shears Ferrug crush zone	
							10030N	Joint 115/46NE in wkly ironstained blocky fine pebbly mudstone	
140	2625	1200	0.5	0.57 / 0.70	58		169135	Mudstone gr mottled reg/yell on joint faces, mod blocky	
							28		
105	3950	1250	0.5	1.81 / 2.30	96		169136		
							26	Extremely crushed, v. ferrug in patches, clay altered CW? shear zone comprising mudstones both ferrug and manganiferous and cream coloured possibly intrusive?	
260	7300	1375	2.5	2.02 / 3.10	420		169137		
							24	Ferrug contact with intrusive contact 215/75W	
70	1200	870	0.5	0.90 / 1.00	55		169138		
							22	HW-CW mod ferrug/manganiferous (along fractures) rotten, altered? brown, cream intrusive minor epidote? altn	
70	150	665	0.5	0.14	29		169139		
							10020N	Prominent fracturing 130/72SW, 187/86SW	
70	150	665	0.5	0.13	32		169140		
							18		
60	120	585	0.5	0.07	7		169141	Contact of porphyry to highly crushed v blocks seds	
							16		
50	140	550	0.5	0.04	7		169142	Blk to dk grey wkly fissile, massive? mudstones minor siliceous nodules or dropstones	
							14		
50	95	485	1.0	0.05	6		169143	Minor patchy epidote altn	
							12		
50	75	545	1.0	0.04	8		169144	Lot of patchy (modular) ferruginisation	
							10010N		



MOUNT MARY TRENCH 1

Assays in ppm unless noted otherwise

JOINS PART 2

FIGURE 27 PART 1

Costean Line 10400N PART 1

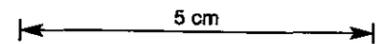
980074

075

costean profile

Project CYGNET NO A-84-111C	Commenced
Prospect MOUNT MARY	Completed
Coordinates: Line 10350E PART 1 9992N to 10042N (10014N)	Logged by P Jones
Total length 28 meters (50m total)	Sample length 2 meters
	Scale 1:100

Assays ANALARS						ASSAYS Au Ag As	Graphic geology	Meter- age of SAMPLE No	Geologic description
Cu	Pb	Zn	Ag	Au	As				
35	50	295	<0.5	0.06	27		10042N	SW hornfelsed dark grey gritty pyritic mudstone	
							169106		
							10040N	Porphyritic (sanidine) coarse grained syenitic dyke	
35	60	235	<0.5	0.04	19		169107	Chlorite filled fracture 135/73 SW	
							38	SW massive, hard, hornfelsed?, purple gritty mudstone, trace pyrite	
50	55	240	<0.5	0.05	22		169108		
							36		
65	90	400	<0.5	0.07	47		169109		
							34	HW-CW grey green gritty mudstones progressively becoming harder - hornfelsed? to the north	
105	55	280	<0.5	0.08	44		169110		
							32	Transitional	
105	45	290	<0.5	0.27 / 0.10	43		169111	MW weakly altered (cut by thin jarosite clay filled fractures) sheared mudstone, minor epidote veining	
							10030N	Joint 150/74, 080/53NE	
90	50	370	<0.5	0.05	17		169112	Joint 030/87SW	
							28	HW-CW grey green gritty mudstones	
95	55	400	<0.5	0.06	53		169113	Minor quartz/carbonate veining <1cm width	
							26		
85	35	355	<0.5	0.14	35		169114		
							24	Joint 155/76SW	
85	45	365	<0.5	0.05	38		169115	Predominantly grey green blocky pebbly mudstone	
							22		
85	80	960	<0.5	0.17	98		169116		
							10020N	Ferruginous shear zone adjacent to quartz carbonate? vein approx 2cm width dipping 65°W	
95	85	780	<0.5	0.13	42		169117		
							10018		
145	390	1300	<0.5	0.75 / 0.78	68		169118	MN-HW blocky mudstones varying from light grey to white (bleached?) pebbly, minor ferruginous zones	
							10016		
170	400	1850	<0.5	0.34 / 0.42	35		169119	MN-HW blocky, weakly K-spar altered, weakly ferruginous sheared mudstone	
							10014N	Joint 110/65NE	
								Very ferruginous contact zone over 10cm	



Assays in ppm unless noted otherwise

JOINS PART 2

FIGURE 28 PART 1 Costean Line 10350N PART 1

980076

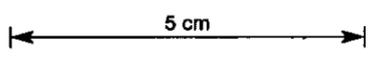
MOUNT MARY TRENCH 2

076

costean profile

Project CYGNET	Nº A-84-111 C	Commenced
Prospect MOUNT MARY		Completed
Coordinates: Line 10350E PART 2		Logged by P Jones
	9990N to 10014N	Sample length 2 meters
Total length 22 meters (50m total)		Scale 1:100

Assays ANALABS						Graphic geology	Meterage of SAMPLE Nº	Geologic description
Cu	Pb	Zn	Ag	Au	As			
100	145	1600	<0.5	0.12	10		10014N	CW feldspathic coarse grained porphyritic (sanidine) syenonite dyke - trends 045/70W sheared? southern contact
							169120	
70	95	1150	<0.5	0.23	9		10012N	
							169121	
90	130	1250	<0.5	0.24 / 0.135	9		10010N	
							169122	
80	75	1400	<0.5	0.16	5		01	HW-CW predominantly grey to dark grey olive mudstone containing small to large pebbles of acid tuff, acid intrusives, siltstone, siliceous arenites, unit massive and highly cleaved. No obvious bedding, clots of very ferruginous micaceous sediment - CW
							169123	
65	85	925	<0.5	0.09	6		06	
							169124	
80	80	800	<0.5	0.09 / 0.12	8		04	
							169125	
75	55	575	<0.5	0.13	4		02	HW-CW coarse grained granular intrusive
							169126	
55	45	560	<0.5	0.24 / 0.10	6		10000N	
						169127		
80	55	415	0.5	0.06	5	98		
						169128		
30	90	520	<0.5	0.02	7	96	SW-MW coarse grained hornblende, minor quartz rich porphyritic syenonite Minor boxworks after pyrite! prominent fracture 130/V, jointing 190/76W	
						169129		
20	35	330	<0.5	0.04	7	94		
						169130		
						92		
						9990N		



Assays in ppm unless noted otherwise

FIGURE 28 PART 2 Costean Line 10350N PART 2

980077

MOUNT MARY TRENCH 2

077

costean profile

Project CYGNET N ^o A-84-111c	Commenced
Prospect MOUNT MARY	Completed
Coordinates: Line 10300E (TRENCH 3) 9992N to 10018N	Logged by P Jones
Total length 26 meters	Sample length 2 meters
	Scale 1:100

Assays ANALARS Au						AS G/RC	Graphic geology	Meter- age SAMPLE N ^o	Geologic description
Cu	Pb	Zn	Ag	Au	As				
90	250	1350	<0.5	0.43 0.52	7		10018N	Decreasing stockworking to north	
80	320	900	<0.5	0.97 0.90	5		10016N	Heavy calcite? stockworked pebbly mudstone weak to moderate ferruginisation and epidote veining	
90	590	870	<0.5	0.40 0.48	7		10014N	Numerous 1-2cm wide calcite-clay filled veins	
80	510	840	<0.5	0.40 0.45	4		10012N	Contact zone (calcite altered, brecciated) between stockworked mudstone and porphyritic syenite dyke (50cm width) trending oblique to trench	
80	165	750	<0.5	0.31 0.35	38		10010N	Contact approximately 182 ^o M green chloritic syenite dyke and grey green pebbly mudstone	
75	80	1100	<0.5	0.23	7		10008N	Ferruginous/manganiferous clay filled vein 047/80N	
60	70	715	<0.5	0.12	5		10006N		
50	75	685	<0.5	0.07	3		10004N		
50	65	585	1.0	0.15	6		10002N		
45	60	545	<0.5	0.06	3		10000N		
45	40	520	<0.5	0.05	2		9998N	Joint 237/186W Weakly ferruginous thin (<1cm) wide calcite vein? dip = 45 ^o S	
40	35	465	<0.5	0.08	5		9996N	Joint 135/65W	
45	35	385	<0.5	0.14	2		9994N	Predominantly dark grey to grey HW-CW clayey cleaved pebbly mudstone, dropstones comprised of ferruginous micaceous intrusives and/or volcanics and minor schist fragments	
							9992N		

MOUNT MARY TRENCH 3

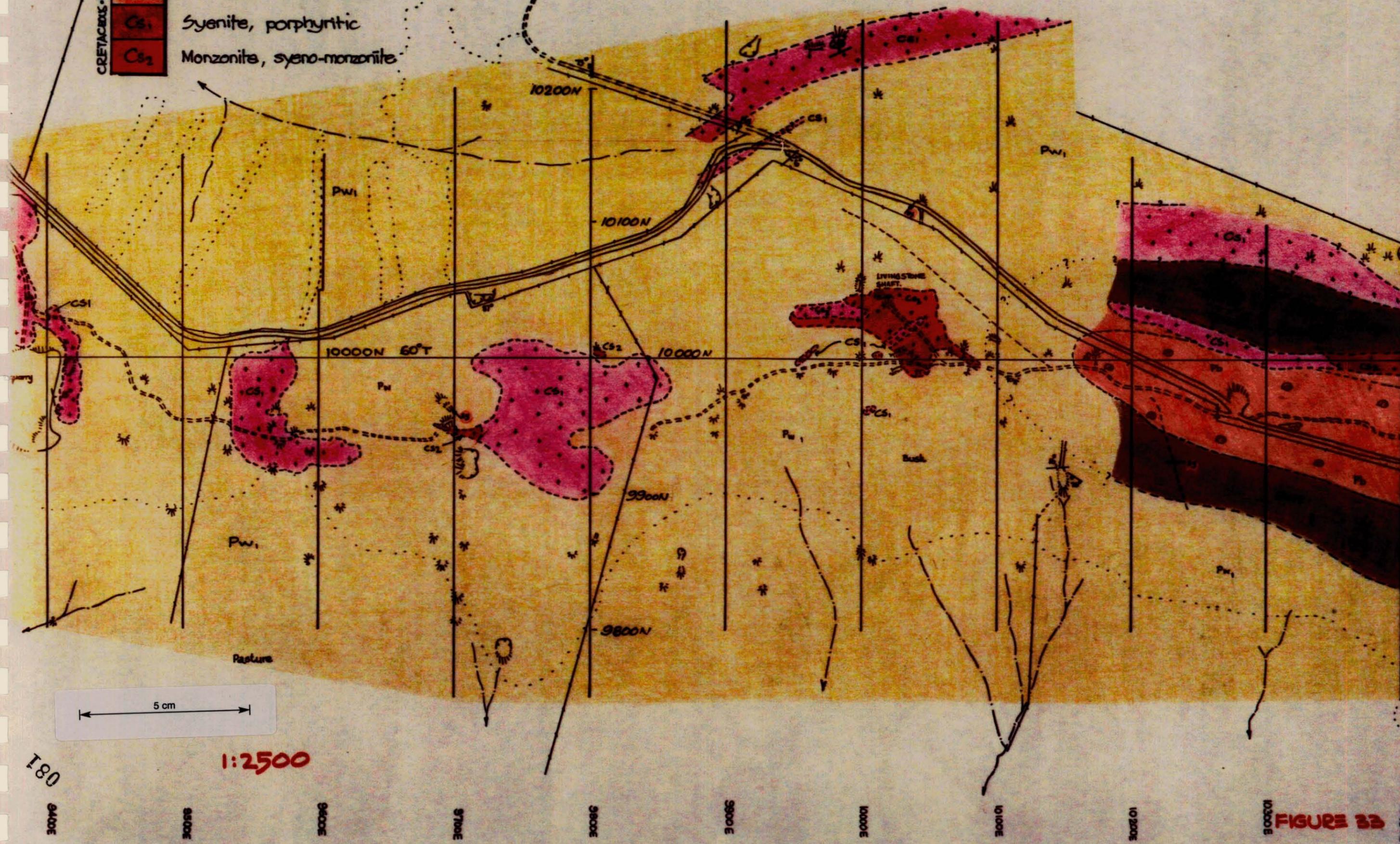
Assays in ppm unless noted otherwise

FIGURE 29

Costean Line 10300E

980078

CRETACEOUS-PERMIAN	Pw ₁	Woody Is. siltstone
	Pb	Bundella Mudstone
	Cs ₁	Syenite, porphyritic
	Cs ₂	Monzonite, syeno-monzonite



081
9400E

9500E

9600E

9700E

9800E

9900E

10000E

10100E

10200E

10300E

FIGURE 33

TOBYS HILL ROCKCHIPS : GOLD & NOTEBOOK LOCATIONS

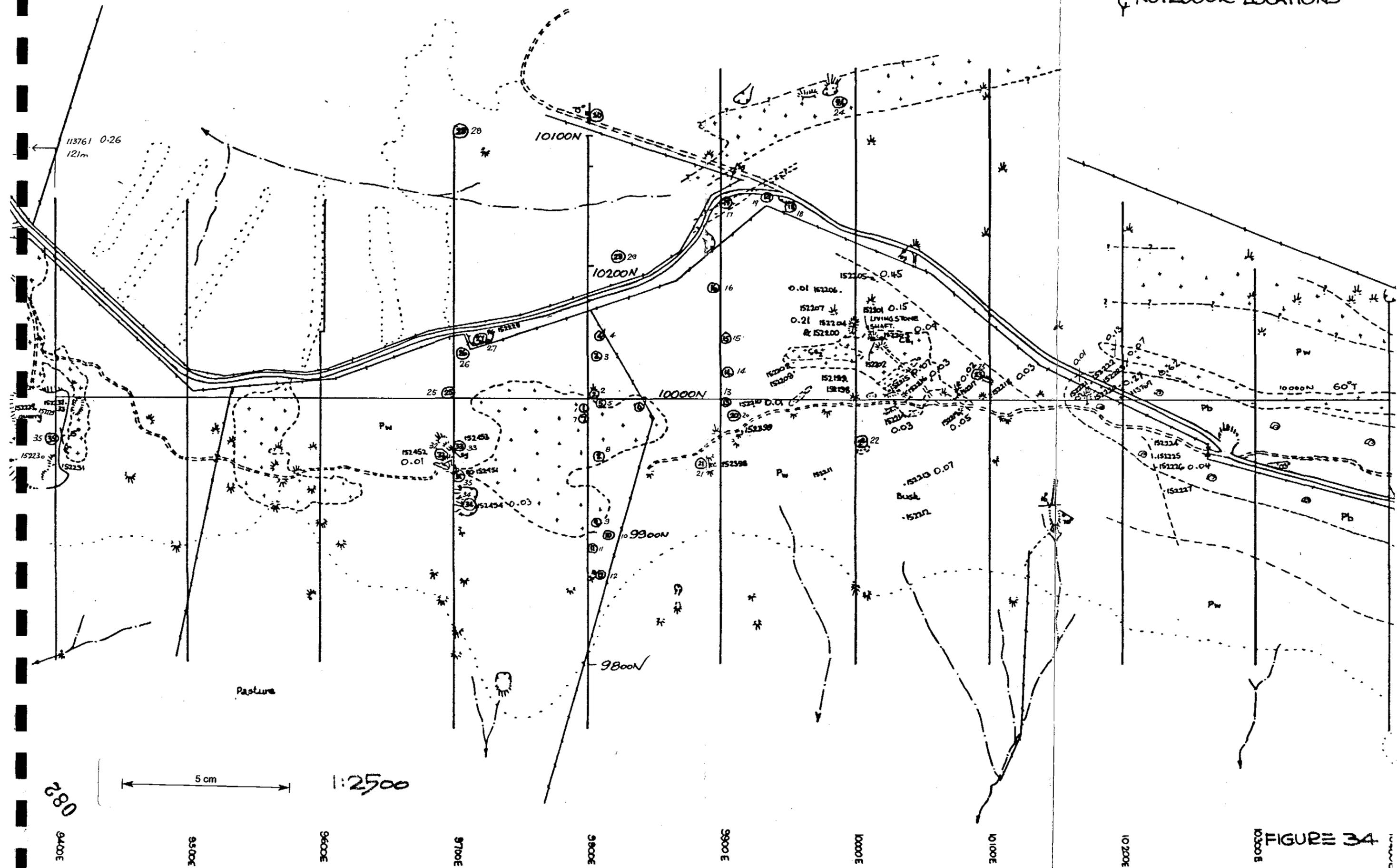


FIGURE 34

980084

TOBYS HILL PETROGRAPHIC SAMPLE LOCATIONS

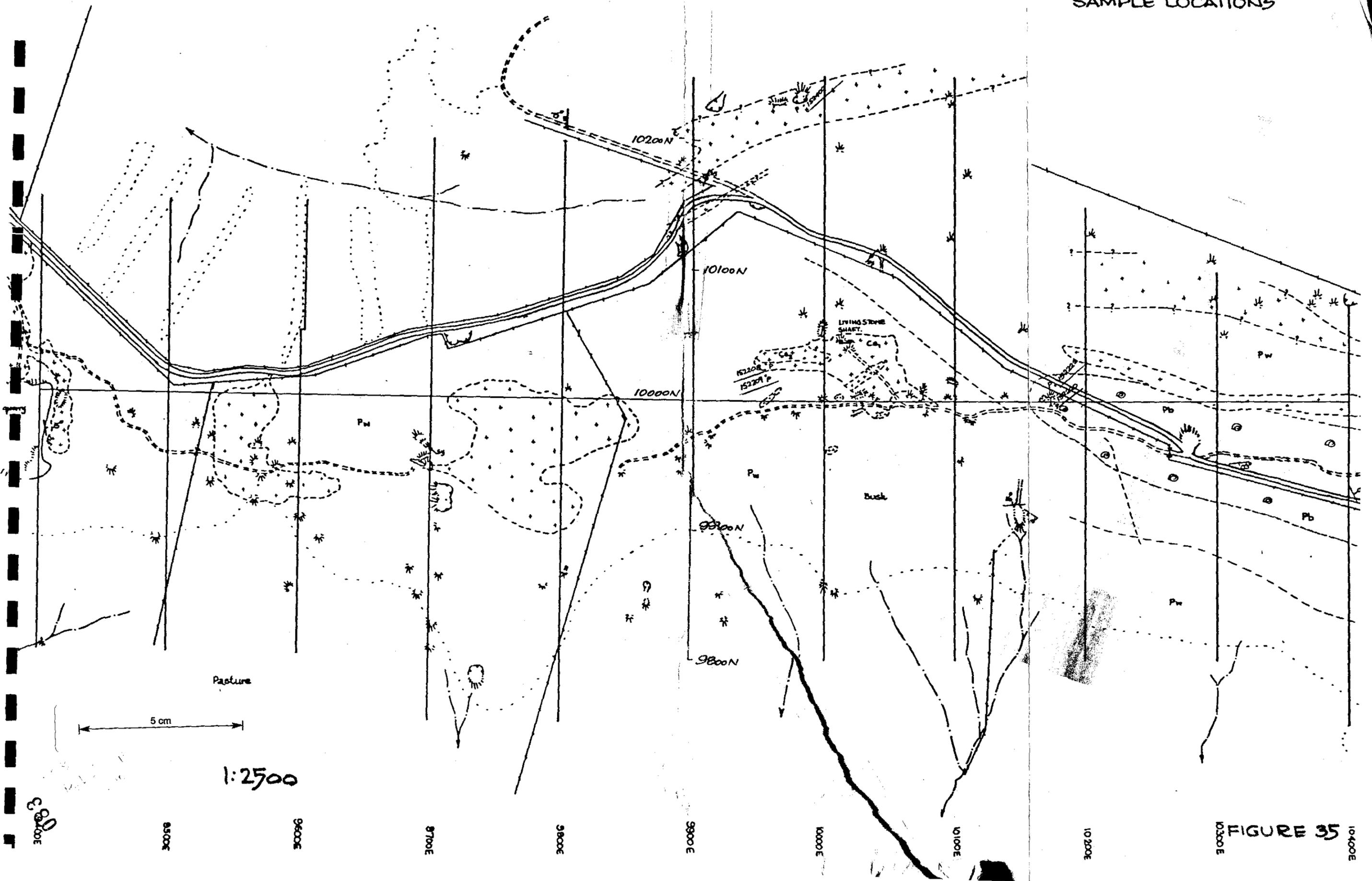
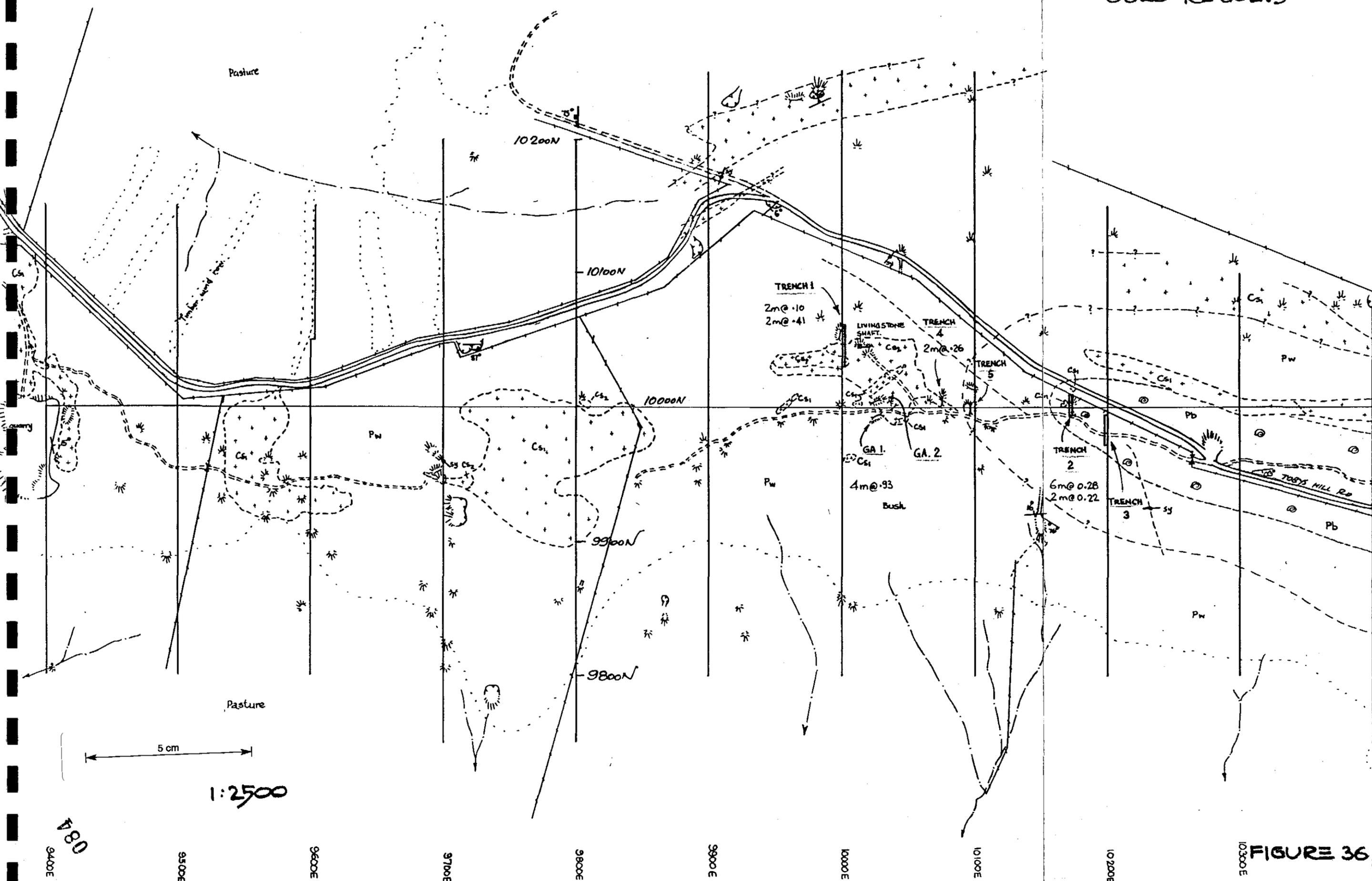


FIGURE 35

980085

TOBYS HILL TRENCH LOCATION & GOLD RESULTS



084
9400E

9500E

9600E

9700E

9800E

9900E

10000E

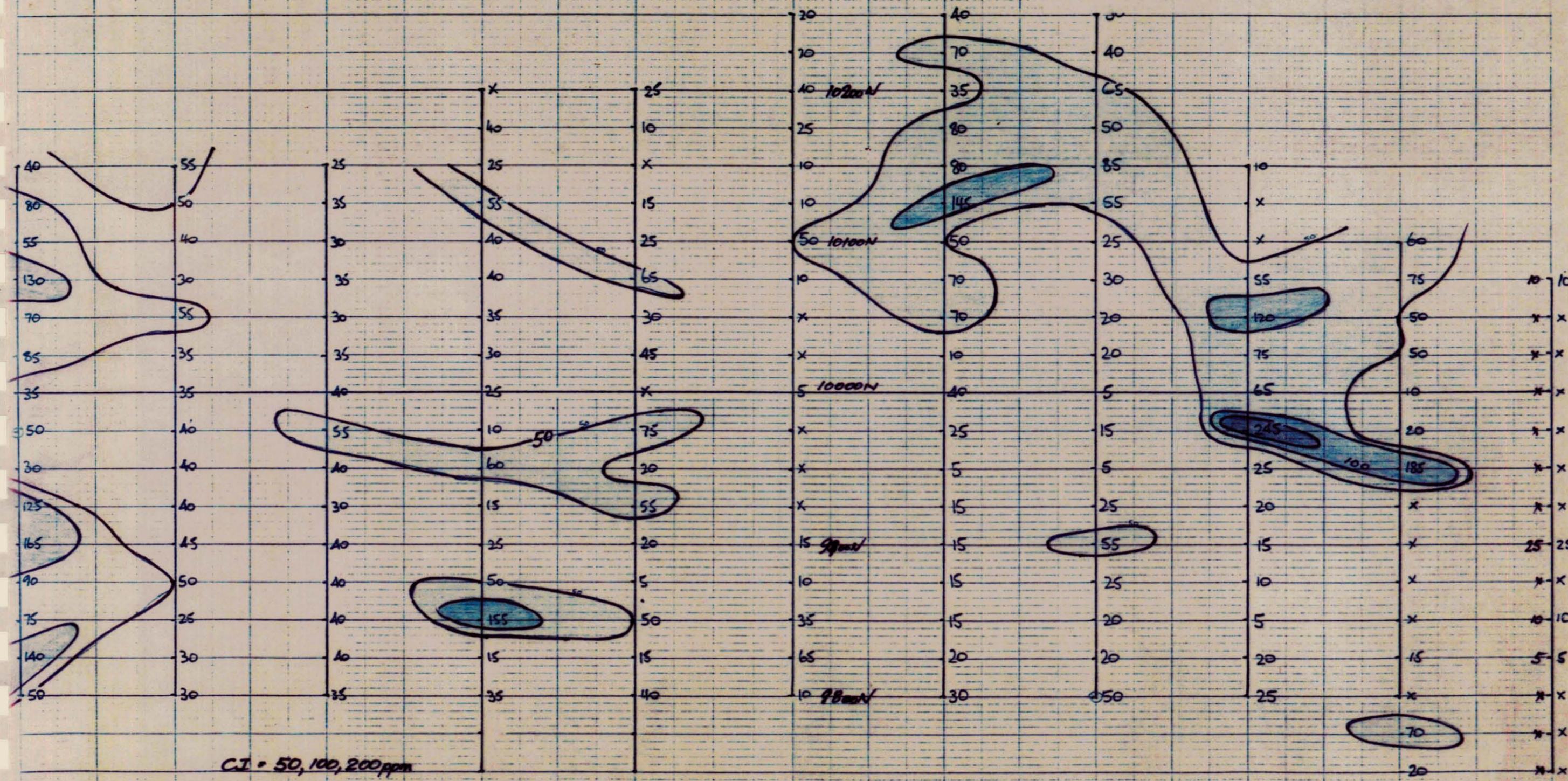
10100E

10200E

10300E

FIGURE 36

TOBYS HILL SOIL GEOCHEMISTRY LEAD



CI = 50, 100, 200 ppm

X = <5 ppm

Contours
50 ppm
100 ppm
200 ppm

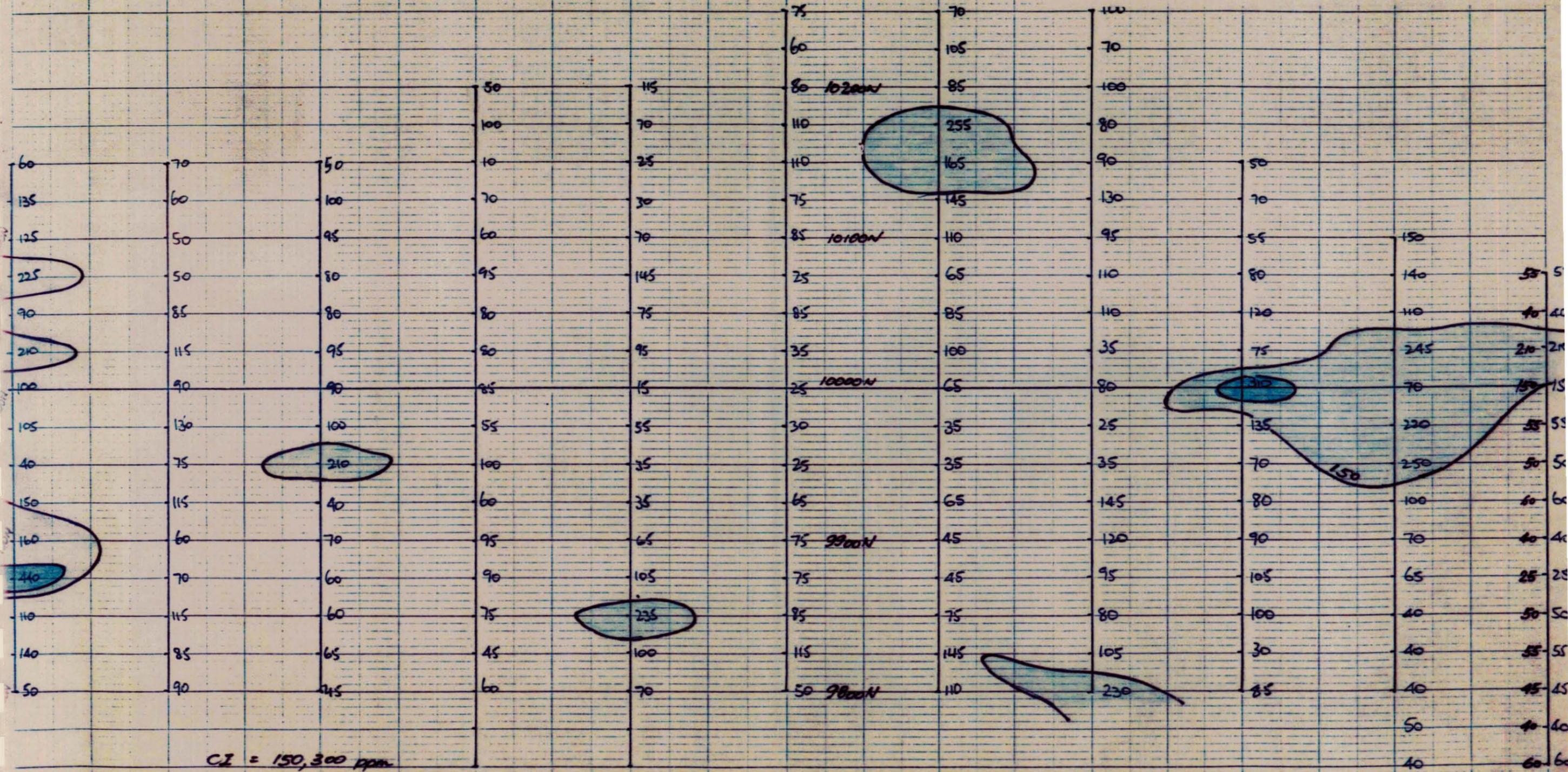
FIGURE 3B

980

1:2500

9400E 9500E 9600E 9700E 9800E 9900E 10000E 10100E 10200E 10300E 10400E

TOBYS HILL SOIL GEOCHEMISTRY ZINC



C.I. = 150, 300 ppm

5 cm

1:2500

Contours 150
300

087
9400E

9500E

9600E

9700E

9800E

9900E

10000E

10100E

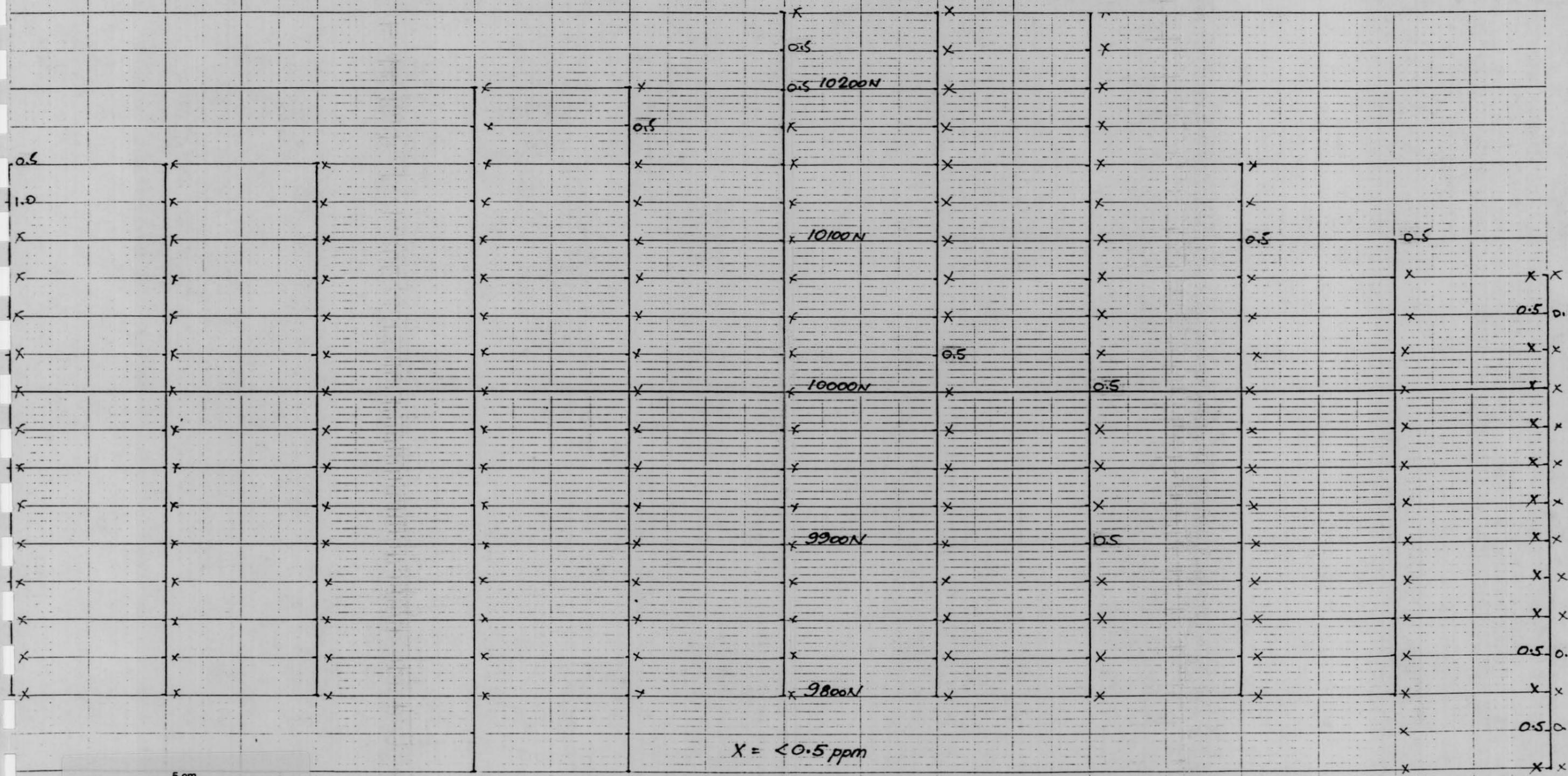
10200E

10300E

FIGURE 39

10400E

980089
TOBYS HILL
 SOIL GEOCHEMISTRY
SILVER

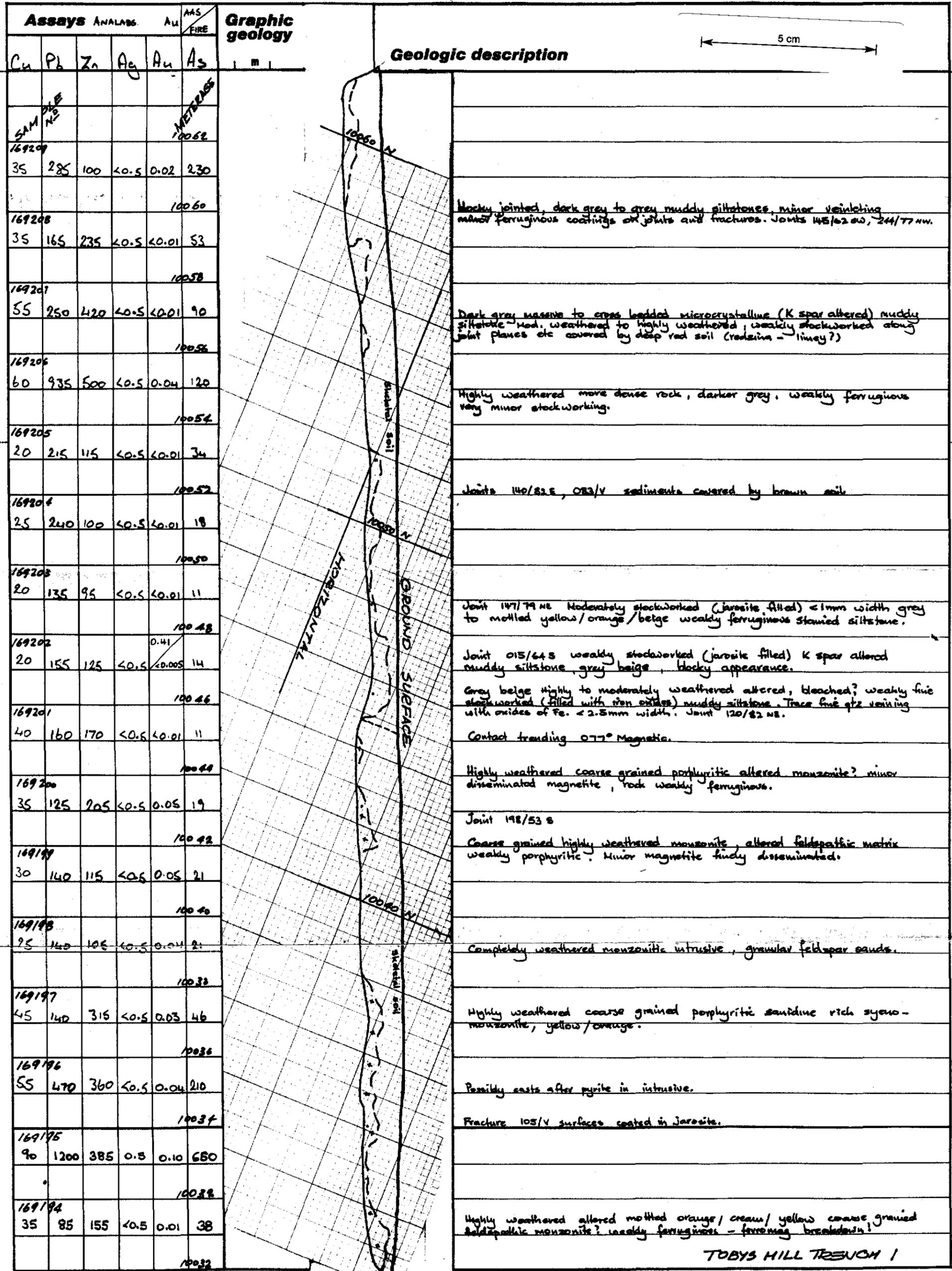


880
 9400E
 9500E
 9600E
 9700E
 9800E
 9900E
 10000E
 10100E
 10200E
 10300E
 10400E

1:2500

FIGURE 40

Project	OT GRNET	Nº 94-110	Commenced
Prospect	TOBYS HILL		Completed
Coordinates:	Line 10000 E		Logged by
	10030 N to 10062 N		P Jones
Total length	32 meters		Sample length
			2 meters
			Scale
			1:100



Assays in ppm unless noted otherwise

FIGURE 43 Costean Line 10,000 E

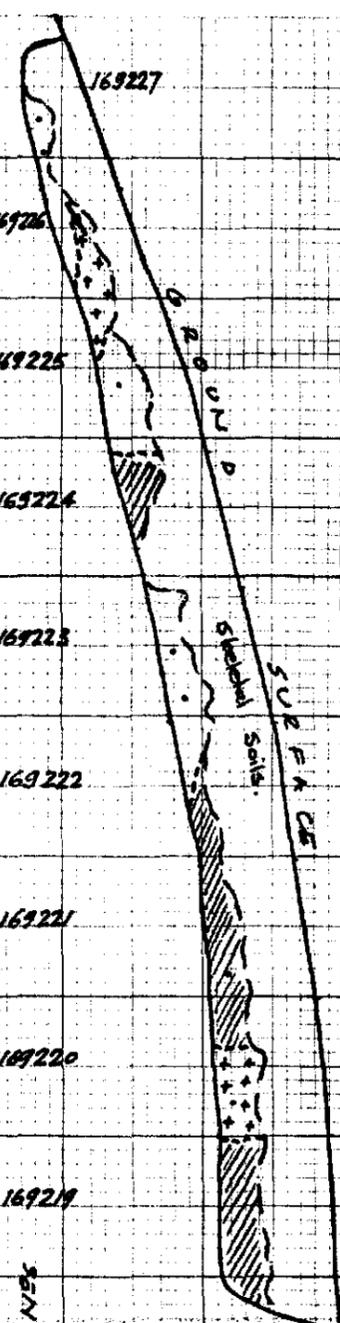
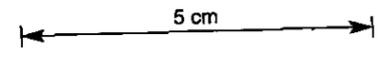
980092

092

costean profile

Project CYGNET N9 A-84-III C	Commenced
Prospect TOBYS HILL	Completed
Coordinates: Line 10175 E 9992 N to 10010 N	Logged by P Jones
Total length 18 meters	Sample length 2 meters
	Scale 1:100

Assays ANALABS Au AAS FIRE						Graphic geology	Meterage. Geologic description
Cu	Pb	Zn	Ag	Au	As		
							10010
60	670	180	40.5	0.22	26	169227	Highly fossiliferous (shells quartz, jarosite filled) very ferruginous beige/pink/orange muddy siltstone. Joint 042/81NE, 110/V. Large joint face 136/66 S.
95	130	210	40.5	0.04	20	169226	Sandstone porphyry dyke trending 252/39N overlying sediments - leads into thicker sequence of intrusive, syenite, porphyritic coarse grained grey green.
55	205	160	40.5	0.13	14	169225	Weakly to moderately ferruginous, jarosite coated massive beige bleached siltstone. Joint 110/80SE, 130/56 N.
145	675	190	10	0.40 / 0.48	31	169224	Moderate to highly ferruginous, also siliceous, patchy, unit previously weakly fossiliferous. Unit possibly brecciated.
95	80	100	40.5	0.24	15	169223	Ferruginous yellow clays, completely weathered sediment.
60	75	115	40.5	0.06	23	169222	Strongly ferruginous poorly bedded weakly to moderately fossiliferous siltstone with beige grey less ferruginous interbeds, less fossiliferous. Layering 295/7 E Joint 085/85 NW.
50	40	140	40.5	0.01	9	169221	Crushed very blocky unfossiliferous grey to black muddy siltstones - weakly ferruginous. NB on opposite wall of trench porphyritic syenite.
45	60	185	40.5	0.04	35	169220	Joint 190/47 E 9996 Porphyritic grey syenite, sandstone rich 217/54 E Joint; 137/65 N.
45	60	210	40.5	0.02	26	169219	9994 Crushed very blocky grey beige to ferruginous brown unfossiliferous muddy siltstones.
							9992



980093

Assays in ppm unless noted otherwise

FIGURE 44 Costean Line 10175 E

TOBYS HILL TRENCH 2

093

costean profile

Project CYGNET N ^o A-84-111c	Commenced
Prospect TOBYS HILL	Completed
Coordinates: Line 10200E 9972 N to 9994 N	Logged by P Jones
Total length 22 meters	Sample length 2 meters
	Scale 1: 100

Assays ANALABS Au						AAS FIRE	Graphic geology	Sample N ^o	Moterage. Geologic description
Cu	Pb	Zn	Ag	Au	As				
								9994	
10	45	60	<0.5	0.06	12			169228	Grey beige, micaceous, mottled mudstone/siltstone. moderately to highly weathered.
								9992	
15	90	90	<0.5	0.05	66			169229	
								9990	
10	65	100	<0.5	0.01	24			169230	blocky fracturing.
								9988	
10	65	105	<0.5	0.01	11			169231	Rock becoming darker grey, south.
								9986	
10	180	100	<0.5	0.01	45			169232	buff, yellow, grey micaceous siltstone
								9984	
10	115	115	<0.5	0.01	17			169233	
								9982	crush zone
10	105	150	<0.5	0.01	15			169234	Joint 135/86N, 215/85 S Fracture 280/V.
								9980	
15	190	140	<0.5	0.01	20			169235	Bedding 135/22E Minor leigang rings in weathered micaceous muddy siltstone. minor bivalve fossil casts. Fracture 019/84N, Joint 148/70E
								9978	
10	65	180	<0.5	0.01	22			169236	
								9976	
10	135	145	<0.5	0.01	40			169237	Major joint 060/88 S
								9974	
10	100	80	<0.5	0.02	7		169238	Joint 140/55 with alteration along faces. Massive grey micaceous muddy siltstone.	
							9972		

Assays in ppm unless noted otherwise

FIGURE 45

Costean Line 10200E

980094

TOBYS HILL TRENCH 3

096

costean profile

Project CYQUET	Nº A-84-111 C	Commenced
Prospect TOBYS HILL		Completed
Coordinates: Line GA TRENCH / by 200°M 0 to 10		Logged by P Jones
		Sample length 2 meters
Total length 10 meters		Scale 1:100

Assays ANALABS.						AAS FIRE	Graphic geology 1 m	Sample Nº	Meterage Geologic description
Cu	Pb	Zn	Ag	Au	As				
				1.49				0	Coarse grained, highly weathered sanidine porphyry, orange-yellow
65	175	220	40.5	1.30	4.9		169210	Reddish, crushed contact zone.	
				0.37			2	169211	Orange massive siltstone, blocky, partially (weakly) contact metamorphosed Honey brown siltstone, weakly silicified, very weak stockworking.
95	70	155	40.5	0.49	27		4	169212	
40	50	85	1.0	0.07	9		6	169213	Darker brown, moderately silicified, fractured, weakly stockworked siltstone.
90	45	90	40.5	0.05	20		8	169214	
45	45	85	40.5	40.0	13		10		

TOBYS HILL TRENCH 6

Assays in ppm unless noted otherwise

FIGURE 48 Costean GA 1

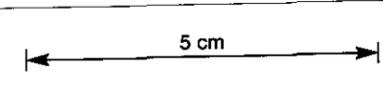
980097

097

costean profile

Project CYGNET N ^o A-84-111c	Commenced
Prospect TOBYS HILL	Completed
Coordinates: Line GA TRENCH 2 by 192°M 0 to 8	Logged by P Jones
	Sample length 2 meters
Total length 8 meters	Scale 1 : 100

Assays ANALABS						AAS FIRE	Graphic geology	Sample N ^o	Meters	Geologic description
Cu	Pb	Zn	Ag	Au	As					
10	40	70	20.5	0.04	6	169215		0	Highly weathered porphyritic intrusive, coarse grained, minor finely disseminated magnetite, feldspars altered.	
15	50	100	20.5	0.02	7	169216		2		
45	65	110	20.5	20.01	9	169217		4		
30	105	190	20.5	20.01	16	169218		6	CONTACT.	
								8	Yellow brown massive, weakly stockworked, silicified siltstone.	



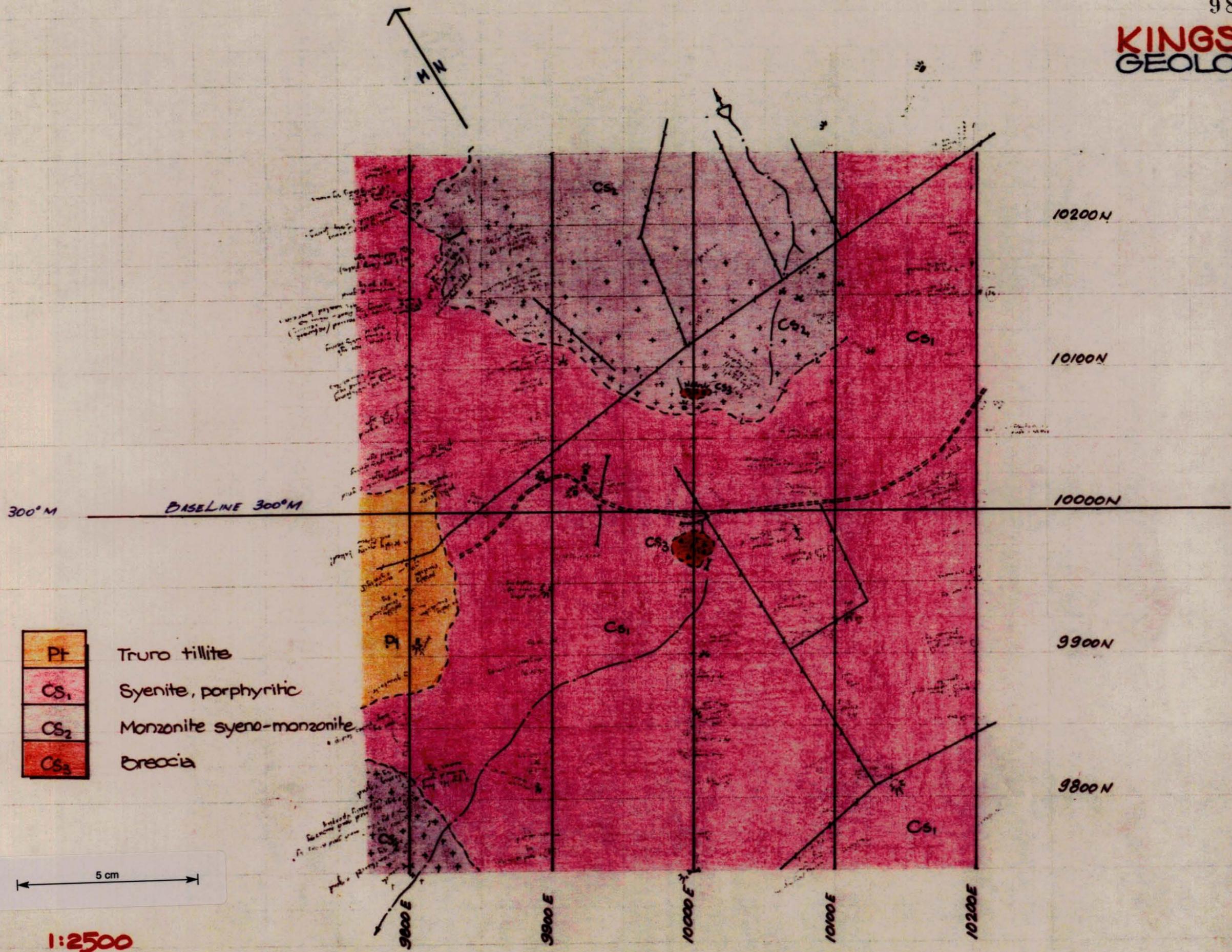
Assays in ppm unless noted otherwise

FIGURE 49 Costean GA 2

860086

TOBYS HILL TRENCH 7

KINGS HILL GEOLOGY

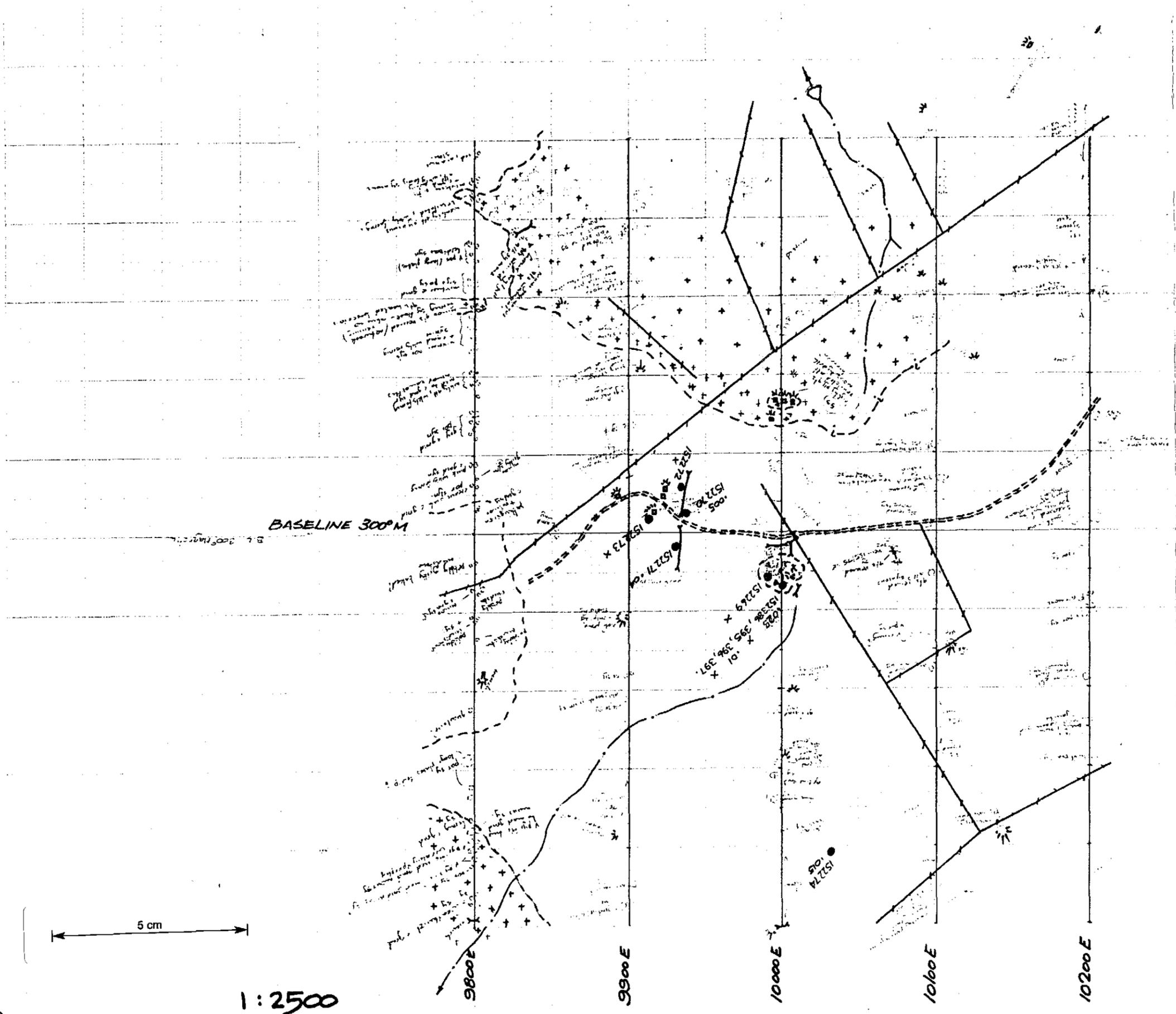


860

1:2500

FIGURE 50

980100
KINGS HILL
ROCKCHIPS : GOLD



10200N
10100N
10000N
9900N
9800N

70086
9900E
10000E
10100E
10200E

5 cm

1:2500

FIGURE 51

660

JOURNAL
KINGS HILL
PETROGRAPHIC
SAMPLE LOCATION

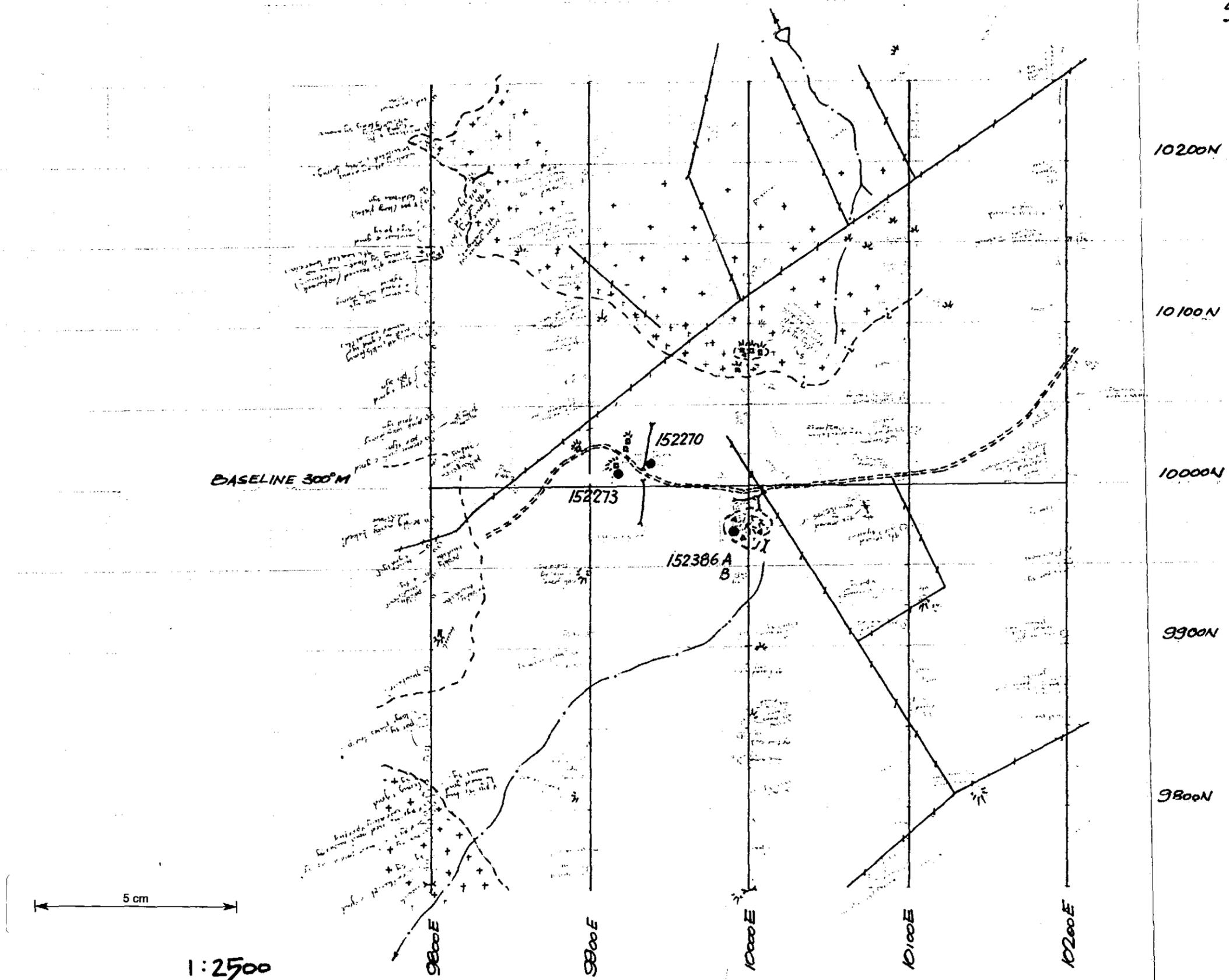
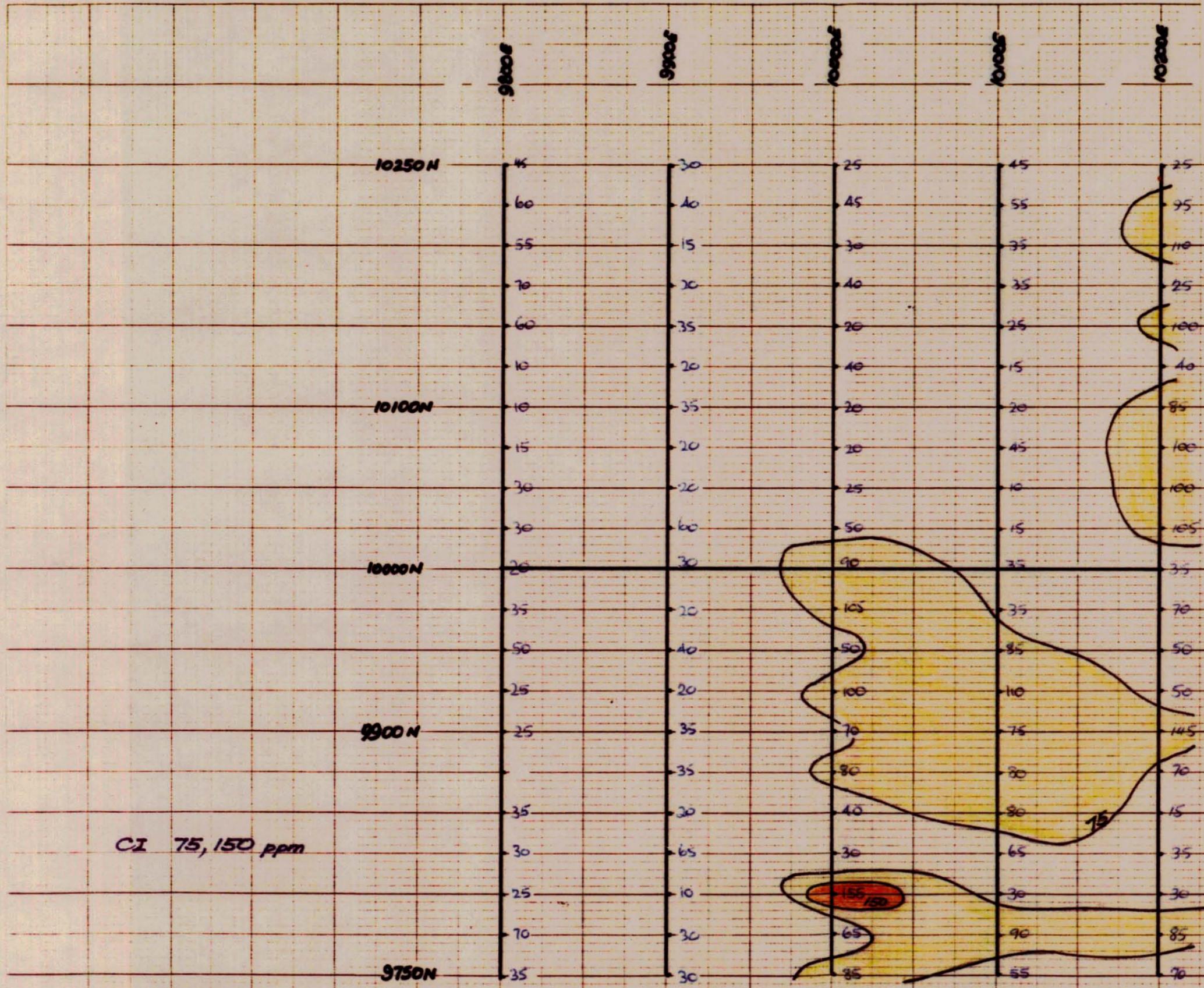


FIGURE 52

100T

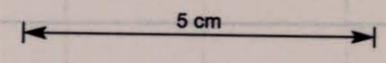
980102

KINGS HILL
SOIL GEOCHEMISTRY
COPPER



CI 75, 150 ppm

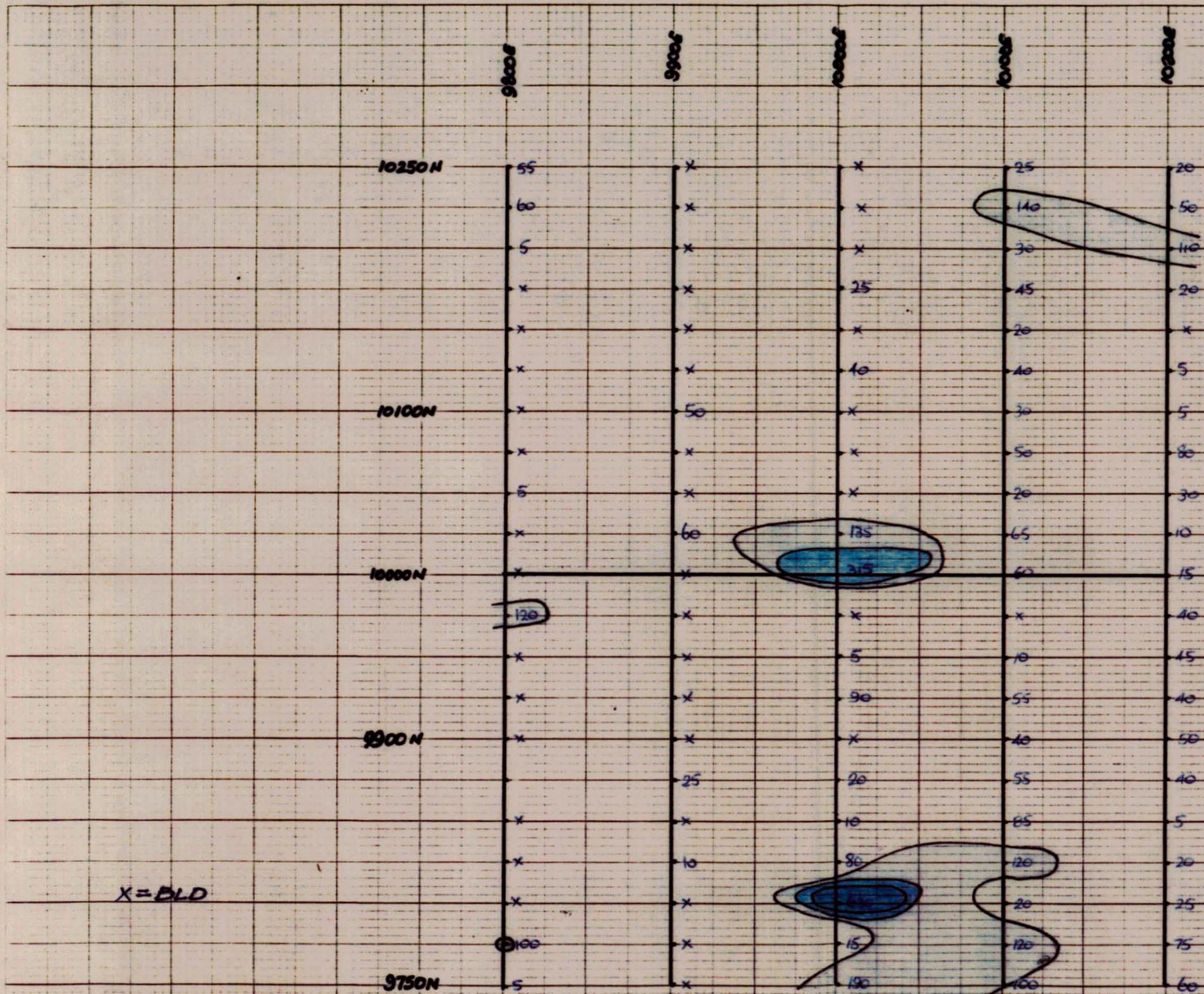
1:2500



TOT

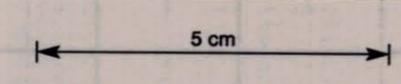
FIGURE 53

KINGS HILL
SOIL GEOCHEMISTRY
LEAD



Cl = 100, 200, 400 ppm

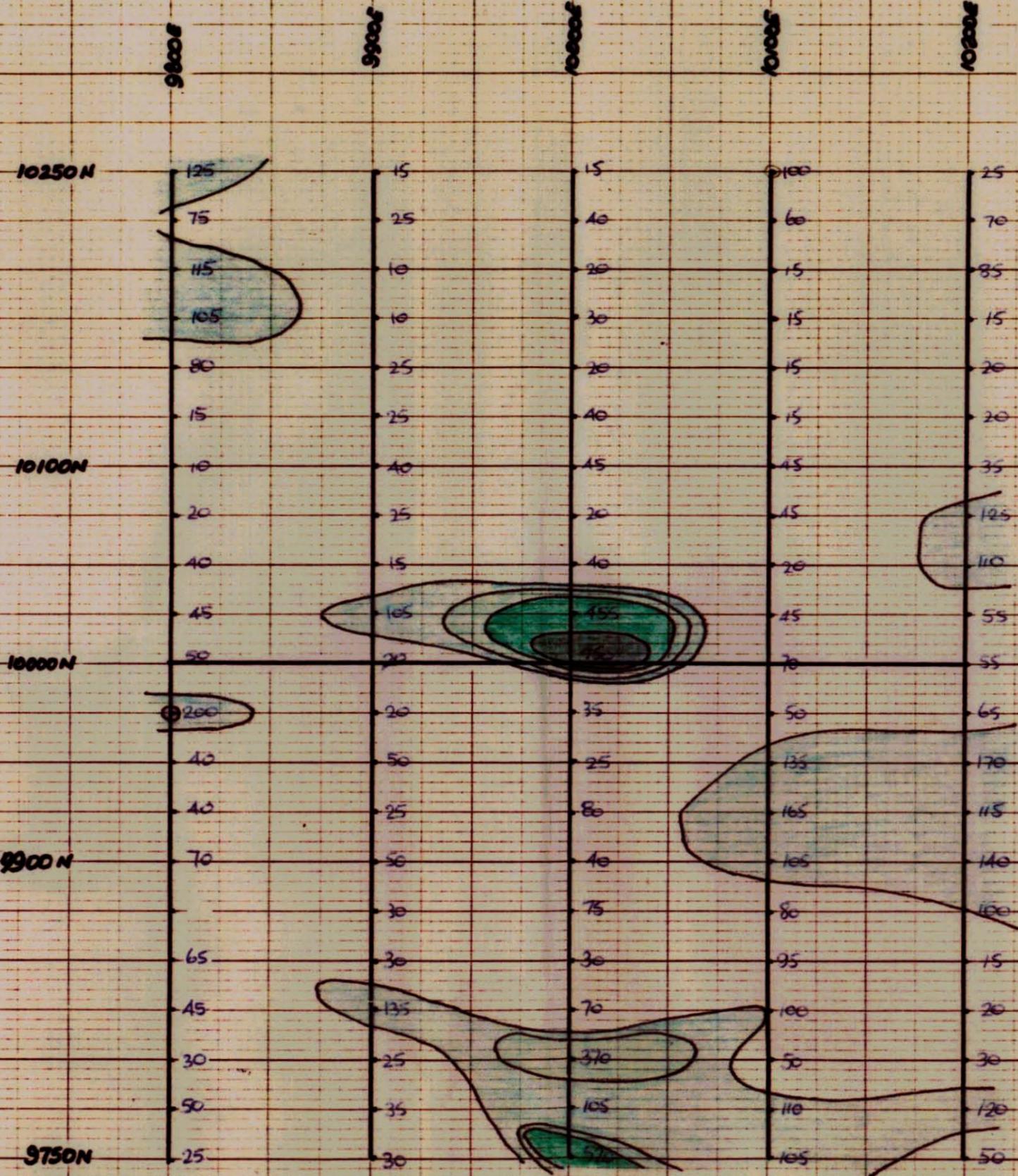
1:2500



107

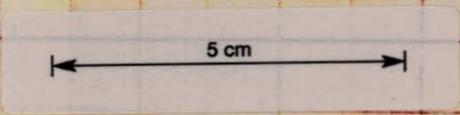
FIGURE 54

KINGS HILL SOIL GEOCHEMISTRY ZINC



CI = 100, 200, 400, 800 ppm

1:2500



101

FIGURE 55

980105
 KINGS HILL
 SOIL GEOCHEMISTRY
 SILVER

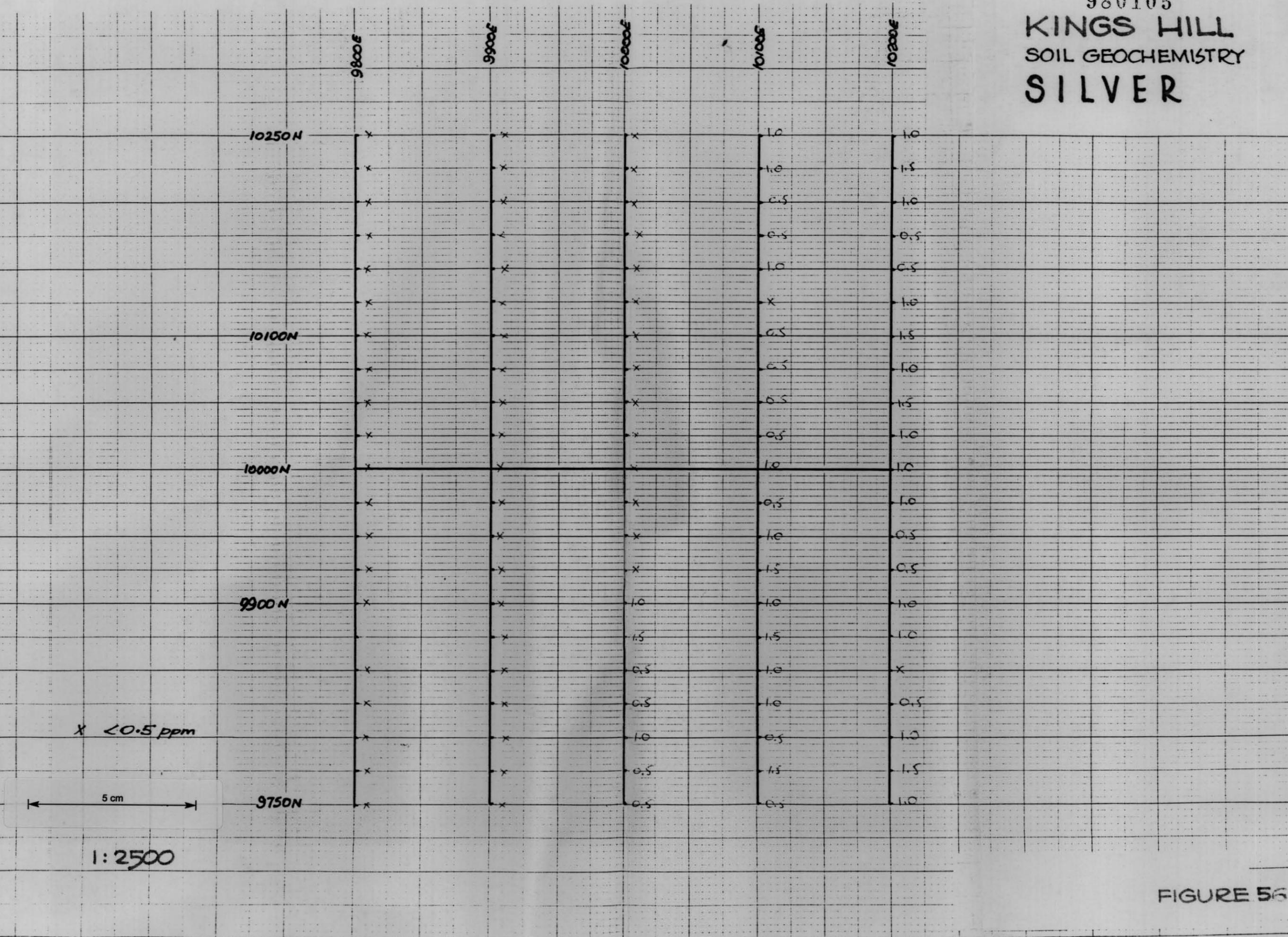
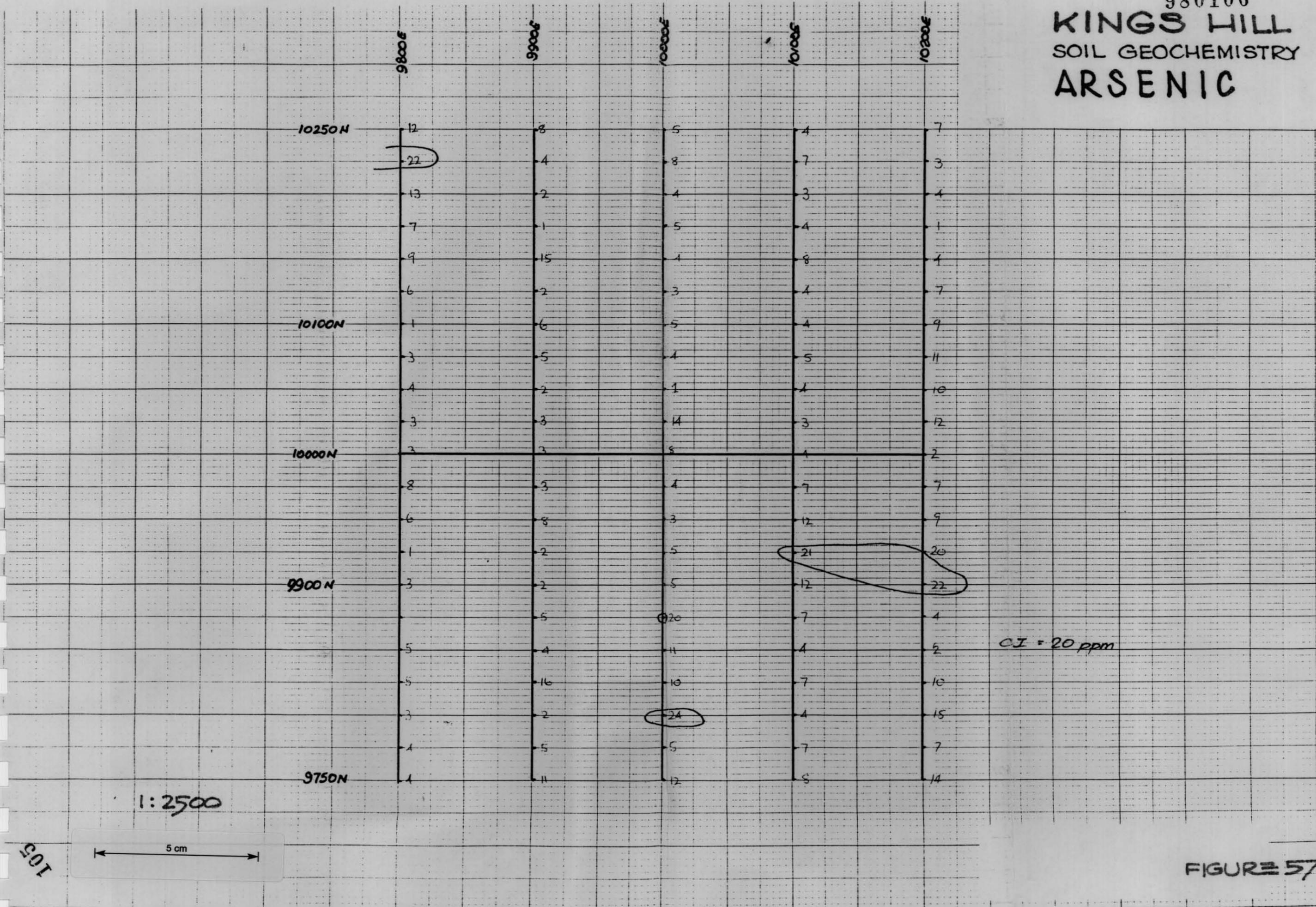


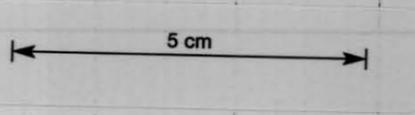
FIGURE 56

104

KINGS HILL SOIL GEOCHEMISTRY ARSENIC



1:2500



CI = 20 ppm

FIGURE 57

105

OPEN FILE*10,816/36.***DISTRIBUTION**

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- Mines Department
- o Sydney
- o Field
- o Spare
- o Poseidon
- o Arimco

APPENDICES

APPENDIX 1

MINERALOGICAL REPORTS

by Pontifex and Associates

Pontifex & Associates Pty. Ltd.

TEL. 332 6744
A.H. 31 3816

26 KENSINGTON ROAD, ROSE PARK
SOUTH AUSTRALIA

P.O. BOX 91, NORWOOD
SOUTH AUSTRALIA 5067

MINERALOGICAL REPORT NO. 4571

1st July, 1985

TO: Mr. D. Edgecomb
Poseidon Ltd.,
106 Hutt St.,
ADELAIDE S.A. 5000

YOUR REFERENCE: Samples personally delivered
18.5.85

MATERIAL: Rock samples (Tasmania)

IDENTIFICATION: Mt. Mary 1, 2, 3, 4, 5
Copper Alley 1, 2
Cygnet East

WORK REQUESTED: Thin and polished thin section
preparation as required, descriptions
with comments on alteration etc.

SAMPLES & SECTIONS: Returned to you with this
report.



PONTIFEX & ASSOCIATES PTY. LTD.

SUMMARY COMMENTS

The 7 samples submitted are petrographically described, some in polished thin section to study opaque phases and to check for gold. Comments are made in some descriptions on genesis, and comparisons within the suite (although the spatial relationships of the differently place-named groups is not known to the author).

The sample "Mount Mary 4" which is a garnet-sanidine-phonolite (with aegirine and ?sodalite); and Cygnet East which is an altered garnet-hauyne-sanidine porphyry; are both derived from a shoshonitic magma.

Mount Mary 1 is a latite or monzonitic porphyry with a K-spar groundmass.

Mount Mary 2 is a diamictitic sediment with an intensely biotitised matrix. Mount Mary 3, the breccia fragments in MM5, also the laminated pelitic siltstone "Cu-alley 1", and the sandstone "Cu-alley 2, are all characterised by extensive extremely fine K-spar of probable secondary/epigenetic origin throughout the matrix. This extensive potash alteration may be related to intrusion of the porphyries of the MM1 type, or of the Cygnet East type.

Minor extremely fine graphite occurs in Cu-Alley 1.

Minor pyrite in Cu-Alley 1 is more or less bedded and appears to be syngenetic, although disconformable "veins" of pyrite represent remobilised sulphide. Pyrite in the matrix of Cu-Alley 2 is similar in detail to the pyrite in Cu-Alley 1, it has a random distribution in the matrix however, and in altered detritus to suggest an epigenetic origin.

.../.

Jarosite and limonite after pyrrhotite occurs between breccia blocks in MM5. The jarosite is essentially supergene. Trace gold occurs in the jarosite and in supergene limonitic clays (but not in vein quartz or ex-pyrrhotite), therefore this gold may? also be supergene.

MOUNT MARY 1 : felspar porphyry of overall latite composition, dominated by altered zoned plagioclase phenocrysts in fine K-spar matrix; accessory oxidised biotite; some K-spar in matrix may be secondary

Abundant phenocrysts, ranging in size from 0.5 to 5 mm of euhedral plagioclase crystals (50%), are randomly disposed throughout this rock. These are strongly zoned, microfissured and altered to limonitised clays + sericite, commonly selectively within different zones. Lesser phenocrysts of probable original hornblende (5 - 7%) are altered to clays densely clouded by titaniferous dust, and several coarse (5 mm) crystals of K-spar (orthoclase) are present.

Other discrete crystals are small cubes of pyrite (3%), <0.3 mm size, and completely oxidised to small limonite boxwork.

All of these components occur within a microcrystalline to almost cryptocrystalline groundmass of K-spar, at least some of which may be secondary.

MOUNT MARY 2 : unsorted, lithic diamictitic sediment, dominated by a massive matrix of extremely fine biotite mixed with quartz of ?hornfelsic and/or metasomatic derivation.

This rock consists of angular lithic detritus (20 - 25%) ranging in size from 0.3 mm to 10 mm, also single crystal grains of quartz, and of lithic detritus (15 - 20%), <0.3 mm; all randomly disposed, thus very poorly sorted, within a compact extremely fine matrix, which supports the grains.

The rock thus appears to be originally diamictitic, with a possible genesis of mud flow (?glacial), submarine slumping, or turbidite.

The lithic detritus consists largely of (altered) shale; sericitic siltstone; vein or metasomatic-quartz, some with pyrite; chert and/or microquartzite; and one larger clast of microgranitoid. The finer detritus has the same representation, together with fine to coarse quartz sand grains. Rare clasts are rimmed by adularia. *

The matrix is essentially ultrafine biotite, intimately mixed with equally fine quartz, and both appear to be products of hornfelsic and/or metasomatic alteration. *

MOUNT MARY 3 : lithic, pebbly, diamictitic sediment,
in which the extensive matrix is invaded
and replaced by cryptocrystalline K-spar
and opaline silica.

On the sawn surface, this rock is seen to contain a subrounded ovoid pebble at least 20 mm x 30 mm, and several much smaller pebbles and grains, in a pale very siliceous matrix. The polished thin section consists mostly of matrix but with several small pebbles.

Petrographically, the equivalent of the large pebble, and two much smaller pebbles, are seen to consist of inequigranular fine meta-quartzite, probably silicified quartz sandstone, with small accessory heavy minerals.

Other abundant detritus, ranging in size from medium sand to clasts about 1.5 mm, is similar to that in Mount Mary 2, and includes fragments of (silicified) shale, sericitic-siltstone, vein quartz, chert single crystal quartz grains of silt to coarse sandsize and rare possible granitoid fragments.

The matrix to this material consists of irregular but extensive domains of virtually cryptocrystalline K-spar (highlighted on the stained offcut), together with opaline (isotropic) silica, and with localised patches of clay-sericite. This groundmass material also replaces the shale detritus.

Detailed examination of the polished section failed to reveal any gold.

MOUNT MARY 4 : garnet sanidine phonolite:
with phenocrysts of sanidine diffuse crystals
of feldspathoid or zeolite (?sodalite),
rare microphenocrysts of aegirine and garnet.

At least 85% of this rock consists of a homogeneous, strongly flow-textured groundmass of felted, micro-laths of K-spar, and possibly nepheline, (highlighted on the stained offcut). Subordinate amounts of extremely fine prisms and needles of flow-oriented, pale green aegirine or aegirine-augite are (15% of the whole rock) are fairly evenly disposed through the felted K-spar, and are mainly responsible for the dark grey colour of the rock, together with dispersed extremely fine leucoxene.

Phenocrysts consist of prisms of K-spar and sanidine, 1 mm x 6 mm in size, mostly flow oriented. Rare discrete euhedral crystals of bright green aegirine, up to 1 mm long; and several euhedral crystals of zoned, dark brownish garnet (with associated green aegirine) also to 1 mm in size are present.

Several irregular 'patches' about 1 mm across of a virtually isotropic phase appear to be feldspathoid or zeolite "phenocrysts" (5 - 7%) encroached upon by the groundmass, particularly by small aegirine microlites.

Trace purple colour in some suggests sodalite hauyne (Na feldspathoids), but conceivably altered to zeolite.

This rock is classified as a garnet sanidine phonolite, derived from a shoshonitic magma, and conceivably related to the "Cygnet East" sample in this suite.

MOUNT MARY 5 : breccia of the same diamictitic sediment described for Mount Mary 3, also silicified + fine K-spar, matrix filled by jarosite limonite after pyrrhotite; trace minute grains of (?supergene) gold mainly in jarosite and limonitic-clays.

About half of this rock consists of blocky breccia clasts, about 5 x 15 mm in size in the thin section, but up to 40 mm across in the hand specimen. These breccia blocks represent the same facies as the sample Mount Mary 3, i.e. unsorted fine to coarse sand and lithic detritus within an extremely fine matrix of virtually cryptocrystalline and rarely opaline silica, with patchy, equally fine K-spar.

Areas between the breccia fragments are occupied mostly by microcrystalline jarosite, + patches of intense brown limonite and diffuse limonitic clays mixed with patchy domains of hydrothermal vein quartz. The randomly interlocked prisms of the vein quartz, and some enclosed voids, indicates fairly "high level", but it is not completely characteristic of epithermal quartz.

There is no evidence that the jarosite specifically, pseudomorphically replaces sulphides. However the intense brown limonite is crowded with intricate boxwork textures which suggest that they replace original hexagonal pyrrhotite, and/or secondary pyrite/marcasite after hexagonal pyrrhotite.

Minute inclusions of pyrrhotite are abundant, and minute inclusions of pyrite are rare in the vein quartz.

Two minute grains of gold (0.01 mm size) were seen in limonitic-clays, adjacent to concentrated limonite.

Mount Mary 5 continued:

Four grains of gold, also 0.01 mm size, occur within massive microcrystalline jarosite, between patches of brown concentrated limonite. Gold was not seen actually in vein quartz, or in the brown limonite boxwork/replica.

The evidence suggests therefore that the grains of gold seen are supergene, related to the movement and accumulation of the jarosite and supergene limonitic-clays.

COPPER ALLEY 1 : laminated, pyritic, shaly siltstone,
grading to very fine quartz sandstone;
with ?secondary K-spar through matrix.
trace to accessory extremely fine graphite
in the darker layers;
minor pyrite with layered distribution
(syngenetic) zoned and partly leached.

This is a laminated to thin bedded sequence of pelitic, silty and very fine sandy sediment, locally with fine scale cross bedding structures. The darker grey laminations and thin beds contain a higher proportion of turbid pelitic sediment and/or of extremely fine altered detritus than quartz silt to fine sand. The paler layers contain more quartz silt to fine sand, with a subordinate proportion of pelitic matrix. Ultrafine K-spar (apparently secondary) has a fairly extensive but patchy distribution through the matrix of this sediment (see stained offcut).

The darker layers also contain minor wisps and threads and minute flakes of graphite along the bedding, and this graphite occurs in concentrations of 1 - 2% to a maximum of 5 - 7% in different laminations in the dark layers.

Crystals of pyrite, up to 0.1 mm but generally about 0.05 mm have a more or less layered distribution, locally quite concentrated into pyritic laminations. Locally the pyrite occurs in discontinuous, intergranular patches. Many of the pyrite crystals (total about 10% of the rock) have an internal zones which tend to be differentially leached.

Several poorly defined and discontinuous "veins" of loosely clustered pyrite crystals are oblique to the bedding. The grains in these clusters have the same characteristics as the "bedded" grains, although slightly more leached. These "veins" are not convincingly

Copper Alley 1 continued:

epigenetic, but rather appear to be reorganised equivalents of the syngenetic-layered pyrite.

There is no evidence of gold in the section examined.
Trace chalcopyrite is present.

COPPER ALLEY 2 : unsorted, fine to coarse, (lithic) quartz sandstone;
extensive matrix replaced by/alterd to extremely fine K-spar + clay-sericite, minor scattered pyrite crystals.

About 60% of this rock consists of a very loose-packed aggregate of generally subangular to subrounded quartz grains, unsorted and ranging in size from 0.1 mm to 3 mm maximum dimension. This aggregate includes minor clasts of clouded clays, (mudstone and shale), of minor quartzite and of minor stressed vein quartz.

The entire intergranular matrix (about 25% of the rock) consists of extremely fine K-spar (which is clearly highlighted on the stained offcut), mixed with minor clay-sericite and ultrafine biotite in some areas.

Crystals of pyrite (5 - 7% of the whole rock), average size about 0.5 mm, are scattered through intergranular areas, in patchy localised parts of the rock.

These pyrite crystals are seen to occur in the K-spar + clay-sericite matrix, but some are located in altered lithic or feldspathic detritus. In detail they are subhedral, and many are incipiently "leached" along microfissures and rarely along vague zones, same as the pyrite in Copper Alley 1. Trace chalcopyrite is present.

Objectively this pyrite would appear to be epigenetic, introduced with the secondary K-spar alteration in the matrix.

Kettering.

CYGNET EAST : hauyne-garnet-sanidine porphyry of shoshonitic-magma origin;
moderate to extensive (clay) and sericite alteration.

White tabular phenocrysts of sanidine up to 6 mm x 12 mm are randomly disposed to form about 35% of this rock. They are fairly extensively altered, at least around their margins to clay-sericite.

Abundant microphenocrysts (0.5 mm size) of a former mineral with a "garnet-shape" are scattered to form 7 - 10% of the rock. Almost certainly these were originally the feldspathoid hauyne, now completely altered. Dark coloured microphenocrysts of altered zoned garnet (5%) up to 1.5 mm maximum dimension are also scattered.

All of these components occur through a microcrystalline (pilotaxitic) of subparallel felted feldspar microlites of alkali feldspar, and probable albite, partly altered to clay-sericite.

This is an altered hauyne-garnet-sanidine porphyry, (recorded from Port Cygnet by Joplin in Petrography of Australian Igneous Rocks pp. 110).

SUMMARY COMMENTS

All samples are described from polished thin section, providing a rock name, alteration characteristics, including opaque minerals. Comments are made in the individual descriptions relating to your field notes, and comparisons within the suite as appropriate.

Detailed examination in reflected light failed to reveal any gold.

Briefly, the igneous and prominently porphyritic rocks have the following composition:

152208	microsyenite (gradational to micromonzonite)
15223	quartz-micromonzonite
152242	micromonzonite
152320	latite
152347	micromonzonite (same as 152236, but without quartz phenocrysts)

Sample 152208; is characterised by minor phenocrysts of clinopyroxene as well as amphibole; in the other porphyries the mafic-silicate phenocrysts are virtually all hornblende (generally altered to uralite and chloritic clays + pyrite).

All of the porphyries except the latite 152320, are characterised by abundant/accessory sphene, magnetite rarer apatite, with pyrite (partly replacing magnetite and some in stringers with magnetite). The latite does not contain magnetite, but does have scattered pyrrhotite, pyrite/marcasite. Trace chalcopyrite is present.

Hydrothermal alteration in these rocks is basically restricted to the mafic-silicate minerals, with associated pyrite, and some pyrite replacing magnetite microphenocrysts.

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Summary comments continued:

The sediment sample 152209 shows relatively weak "background" quartz-sericite alteration, with trace pyrite. The sediments 152312, 152332, are pervaded and replaced by ultrafine secondary K-spar + quartz with disseminated pyrite, pyrrhotite, rarer chalcopyrite. Coarser sulphides in garnet lenses occur in 152332. This alteration/mineralisation probably relates to the porphyritic intrusives.

GENERAL NOTES ON PORT CYGNET INTRUSIVE COMPLEX

A.C. Purvis PhD, working with Pontifex & Associates Pty. Ltd. has some knowledge of the calc-alkaline to alkaline rocks of the Cygnet Intrusive Complex, largely due to his very detailed work on a similar igneous complex at Mount Dromedary, N.S.W. The following brief comments are therefore included for your general information, which you may find useful in addition to published references.

The calc-alkaline to alkaline rocks of the Port Cygnet Intrusive Complex includes a very wide range of arc-type intrusive rocks ranging from dacite to garnet phonolite in composition. The saturated types have very little in common with the less saturated rocks, except that xenoliths of ?Triassic sandstone and Jurassic dolerite occur in some of them, indicating a post-dolerite age for these rocks. The sub-groups recognised are :

- 1) dacites-rhyodacites and quartz microdiorite
- 2) latites, monzonites and micromonzonites
- 3) syenites and microsyenites
- 4) per-calcic syenites, trachytes and phonolites
- 5) per-calcic, per-alkaline trachyte + phonolite

- 1) The dacite/rhyodacite lavas have phenocrysts of quartz, also of strongly zoned, partly sericitised plagioclase, in a groundmass of quartz and alkali feldspar. Minor apatite and sphene are common. Xenoliths of fine grained feldspathic quartz sandstone may be present.
- 2) The latites and monzonites (as per your suite described herein) are variously porphyritic in plagioclase, hornblende, augite, biotite, magnetite, apatite and sphene.
- 3) The micromonzonites are generally similar to the central banatite at Mt. Dromedary with augite, hornblende, plagioclase, alkali feldspar, magnetite, sphene, and apatite. A little quartz occurs in the micromonzonites and monzonites.
- 4) The syenite-microsyenite-trachyte group includes all of the alkali feldspar-rich rocks which lack mineralogical indications of normative aegirine (peralkaline character). They mostly have a relatively pale pyroxene with probably only minor CaFeAlSiO_6 component, with green hornblende, sphene, magnetite and apatite.

Some contain biotite and have an aphytic texture, with minor quartz. Some have totally altered ferromagnesian grains. Biotite-rich xenoliths, and Metadolerite xenoliths may be present.

5) Percalcic syenites, trachytes and phonolites

These rocks are termed "percalcic" by analogy with the term "peralkaline", since they contain normative wollastonite (and anorthite) as indicated by the presence of garnet phenocrysts and CaFeAlSiO -rich pyroxenes.

The magma types represented are:

.../.

- 1) continental quartz tholeiites
- 2) calc-alkaline dacites and quartz diorite
- 3) saturated shoshonitic latites and monzonites, with hornblende-rich xenoliths.
- 4) undersaturated shoshonitic percalcic rocks together with some percalcic/peralkaline rocks.

The quartz-tholeiites are part of the Antarctic-Southern Australian tholeiite province (Farar Dolerites, Tasmanian Dolerites, Kangaroo Island basalt). The dacites and quartz-diorite are normal arc calc-alkaline rocks, with xenoliths of sandstone (?Triassic) and dolerite (Jurassic), and are presumably part of the magmatic arc which extended from Queensland to Marie Byrd Land, Antarctica.

The other rocks are progressively of more alkaline arc parentage. They are petrographically quite similar to monzonites, trachytes and garnetiferous felsic rocks from Mount Dromedary and are related to the same magmatic arc.

Characteristics of arc rocks, reflected in the geochemistry which may be interpreted from the petrography of these suites of samples and include strong enrichment in K, Rb, Ba, Sr, and weak enrichment in light REE, relative to Nb, Zr, Y, Ti, etc.

The sediments in the Cygnet area include graphitic and non-graphitic siltstones and sandstones, ranging from argillaceous, matrix-supported felspar-bearing sandstones, to quartzose grain-supported clean sandstones. These are presumed to be of Triassic age. Some of the graphitic sediments have bleached areas and contain sulphide-bearing lenses, with one or more of clinopyroxene, actinolite, calcite, scapolite and quartz. These patches are considered to be the result of intrusive activity adjacent to the sediments.

Breccias in the Cygnet area are broadly similar to contact breccias around the Tilba Tilba Lake caldera at Mount Dromedary, N.S.W. (Purvis in press 1984), with fragments of ?Triassic sediments, quartz,

and vein-quartz in a matrix of sericite and/or biotite. Patches similar to those in the sediments, with sulphides and calc-silicate minerals. occur in some of the breccias.

Dolerites in the Cynnet area are generally quartz-bearing and weakly to strongly hornfelsed.

Sulphides are present in many of the rocks in the Cynnet area. iron sulphides are by far the most abundant and widespread. Traces of chalcopyrite occur mostly in the garnet-bearing trachyte/syenite/phonolite group, also in the country rocks (dolerite and sediments), and in the breccias. The breccias and the sediments with bleached zones contain more pyrrhotite than the other rocks.

The latites, monzonites, dacites and diorites contain relatively less sulphides, but do include accessory pyrite, and traces of chalcopyrite. Magnetite is widespread and commonly altered to hematite.

INDIVIDUAL DESCRIPTIONSTOBY'S HILL.

152208 : calc-alkaline, porphyritic micro-syenite
(gradational to porphyritic micro-monzonite);
including small phenocrysts of clinopyroxene,
accessory sphene, apatite, magnetite, pyrite.

Field note: weakly altered, coarse, biotite (hornblende)
felspar porphyry

At least 50% of this rock consists of a diffuse aphanitic groundmass dominated by K-spar (highlighted on the stained offcut), but with minor to possibly subordinate plagioclase; and minor, dispersed, extremely fine crystals of sphene, rutile, and secondary chlorite.

This groundmass is crowded with abundant randomly disposed phenocrysts, and microphenocrysts, as euhedral crystals as follows:

- * plagioclase (20 - 25%), 0.5 to 3 mm; mostly as individual crystals, some zoned; some clustered around and as inclusions in K-spar crystals.
- * K-spar (12 - 15%), 0.5 to 3 mm, rarely 5 mm, as fresh individual crystals, with a very low 2V, indicative of sanidine, some with inclusions of plagioclase, rarely of zircon, sphene and hornblende.
- * apple green (?alkaline) clinopyroxene (5 - 7%), average size 0.5 mm, partly altered to chloritic clays.
- * darkish brownish green hornblende (3 - 5%), average size 0.5 mm, partly altered to chloritic clays.

.../.

152208 continued:

- * sphene (2%) as microphenocrysts.
- * magnetite (2%), as microphenocrysts
- * apatite (trace) as microphenocrysts
- * pyrite oxidised to goethite (2 - 4%), scattered as microphenocrysts, locally clustered.

No evidence of gold.

TOBY'S HILL.

152209 : homogeneous, silty and fine sandy pelitic sediment; largely of extremely fine quartz and sericite which appears to be partly a pervasive "background" hydrothermal alteration.

Field note: weakly fossiliferous, fine to medium grained felspathic sandstone.

Macroscopically, this is a massive, pale coloured, homogeneous very fine grained sedimentary rock. In thin section, about 40% of it is seen to consist of dispersed detritus of quartz grains, rarely clustered, of silt to fine sandsize, with far lesser apparent lithic detritus (10%), maximum size 0.15 mm.

These grains occur within a matrix of diffuse extremely fine quartz, intimately mixed with a subequal amount of random to weakly schistose sericite.

Very fine grains and stains of limonitic and leucoxenic material are dispersed throughout, locally in parallel shreds which define a weak foliation. Trace fine oxidised pyrite is present.

This is a silty, very fine sandy pelitic sediment. The siliceous-sericitic matrix may be partly metamorphic but appears to include a low grade, "background", (?regional) hydrothermal alteration.

KING'S HILL RD.

152236 : strongly plagioclase-porphyritic quartz micro-monzonite;
 accessories as in 152208;
 mostly unaltered, stringers of pyrite-magnetite-trace chalcopyrite;

Field note: pyritic, ?carbonate altered; between Cretaceous syenite and Jurassic dolerite.

About 45% of this rock consists of a homogeneous, aphanitic micromosaic dominated by K-spar, with subordinate plagioclase and chlorite and apparent very minor quartz. The following discrete grains are scattered in accessory abundance, and occur in stringers; they have the same size as the groundmass, up to microphenocrystal size (0.35 mm);

magnetite	decreasing abundance
pyrite	↓
sphene	
apatite	

(The magnetite + pyrite in the veins is "secondary" with respect to the disseminated more titaniferous magnetite.)

Trace chalcopyrite occurs in pyrite in the veins.

The macrophenocrysts, generally 0.6 to 2 mm and as euhedral crystals are:

- * zoned plagioclase (40%), microfissured but mostly fresh except for patches of clay in some.
- * orthoclase (3 - 5%)
- * quartz (3%), bipyramidal, embayed
- * bluish-green hornblende (5 - 7%), smaller partly altered to chlorite and uralite.

152236 continued:

Accessory secondary amphibole, epidote occurs in veinlets within magnetite and pyrite. A clot (xenolith) rich in extremely fine Ti-Fe oxides is present.

This rock has the same accessory minerals as in 152208, and is thus probably related, but the more abundant plagioclase and presence of minor quartz phenocrysts makes it a porphyritic quartz micro-monzonite (indeed transitional to rhyodacite).

KING'S HILL RD.

152242 : K-spar, hornblende, plagioclase, porphyritic
micromonzonite;
accessory magnetite, lesser sphene, apatite
and allanite;
disseminated pyrite locally replaces magnetite.

Field note: siliceous, pyritic-altered monzonite? porphyry

The potassic-felsic groundmass, and the abundant plagioclase and sanidine phenocrysts in this rock are all similar to 152208, but the relatively minor mafic components are different and there are less crystals of the accessory mineral suite.

The groundmass which forms about 50% of the rock consists of aphanitic K-spar, minor plagioclase, minor dispersed chlorite, accessory extremely fine epidote and magnetite.

Prominant phenocrysts, 1 to 4 mm in size are:

- * plagioclase (25%); generally zoned, some clustered
- * K-spar (15 - 20%); probably sanidine, generally large, commonly with small inclusions of plagioclase.
- * hornblende (10%); bluish green, strongly pleochroic, altered to uralitic actinolite ± minor epidote.

Microphenocrysts, scattered in accessory abundance include:

magnetite
epidote (commonly associated with magnetite)
rarer : sphene, apatite and several small allanite crystals.

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152242 continued:

Subhedral pyrite crystals (5%) have the same size and distribution as magnetite, and indeed very rarely are seen to be replacing the magnetite, which gives some support to your field interpretation of "pyritic-altered". (There is no evidence of siliceous alteration however).

There is no pyroxene in this rock, and no gold was seen in the section examined.

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BLACK JACK

152312 : massive feldspathic quartz silt to medium grained sandstone;
pervaded and largely replaced by secondary K-spar;
jarosite and limonite dispersed, replacing minor disseminated pyrite, also concentrated into random veins.

Field note: pyritic, altered siliceous sediment.

At least 50% of this rock consists of angular detrital quartz-grains, ranging in size from silt to medium sand size (0.25 mm), with rare grains to 1 mm. Minor discrete feldspar grains are also present, and very small quartz-feldspar lithic fragments.

These components are randomly disposed through a poorly defined matrix of mainly diffuse secondary K-spar (highlighted on the stained offcut), with minor dispersed sericite. Local small patches of slightly coarser K-spar (adularia) and decussate sericite are present.

The groundmass is partly camouflaged by variable intensity of limonite and jarosite staining with minor discrete spots of jarosite replicas after pyrite. Numerous random microfissures are filled by migratory jarosite, jarositic clays and limonite.

BLACK JACK.

152320 : plagioclase porphyritic latite (lava);
only rare K-spar phenocrysts, minor small hornblende
phenocrysts altered, no magnetite but minor grains of
altered pyrrhotite and pyrite/marcasite, some with
altered hornblende, trace chalcopyrite.

Field note: trachytic textured, grey-green felspathic porphyry.

This rock has considerably less phenocrysts than the other porphyries in the suite, and it has a trachytic texture (mentioned in your field notes), not seen in the other rocks. Also it lacks the complete distinctive accessory suite as seen in 152208 and the other porphyries.

About 65% of the rock consists of a groundmass of very fine and more or less felted laths of K-spar, with minor dispersed extremely fine chloritic clays. (The K-spar is altered to clays in the bleached weathering zone, about 20 mm deep into the rock).

Phenocrysts of plagioclase (20%) measure 0.3 to 3 mm long are microfissured, commonly zoned, and apart from being supergene altered to clays show rare deuteric alteration to fine granular epidote. Original, generally much smaller phenocrysts of hornblende (10%) + rare biotite?, are completely altered to khaki chloritic-clays. Relict outlines of rare pyroxene and K-spar crystals are present.

Magnetite is absent, but iron sulphide grains are scattered to form 7 - 10% of the rock, and indeed may substitute for magnetite. These include a small 'clot' or xenolith 5 mm across, of fine pyrrhotite aggregate, altered to melnicovite-pyrite, and accompanied by chalcopyrite and pyrite.

Smaller grains of pyrite/marcasite, and of similarly altered pyrrhotite are scattered, some intergrown with altered hornblende- to suggest some form of selective hydrothermal alteration of the mafic phases.

DIRENS SPUR.

152332 : silty to fine sandy sediment, extensively altered to/replaced by extremely fine K-spar and quartz, disseminated fine pyrite pyrrhotite chalcopyrite; coarse grains of these sulphides in lenses with garnet.

Field note: heavily altered, hornfelsed, pyritic-cherty sediment.

This rock does have a cherty appearance in hand specimen, but the stained offcut reveals extensive ultrafine K-spar, which petrographically is difficult to resolve from equally fine silica. Both of these components appear to be present throughout the matrix of this altered sediment however.

About 30% of the rock consists of weakly bedded, silt to fine sand size detrital quartz grains. These occur throughout a poorly defined extremely fine diffuse matrix, composed of secondary K-spar and quartz (noted above), with minor sericite, accessory extremely fine epidote leucoxene and opaques.

These fine dispersed opaques consist of pyrite, pyrrhotite and chalcopyrite, all variably oxidised, in grains to 0.1 mm. Coarser (0.5 mm) grains of pyrite, rarer pyrrhotite and chalcopyrite occur locally in small lenses together with garnet, leucoxene and ?vesuvianite.

A quartz veinlet carries pyrite. Detailed examination failed to reveal any gold.

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KING'S HILL RD.

152347 : strongly plagioclase-porphyrific micromonzonite (essentially same as 152236), abundant/accessory magnetite, pyrite sphene, rarer apatite, stringers of pyrite and secondary magnetite, trace chalcopryrite.

Field note: pyritic siliceous-altered ?monzonite porphyry

This rock has the same texture, and very similar composition to 152236. It lacks the few quartz phenocrysts seen in that rock, but does contain abundant/accessory sphene, magnetite, pyrite, and rare apatite.

At least 45% of the rock consists of a fairly homogeneous, entirely primary, aphanitic micromosaic groundmass, dominated by K-spar, with minor possible albite.

Discrete crystals, 0.1 to 0.4 mm in size, and which may be considered as microphenocrysts are:

magnetite	decreasing abundance
pyrite (locally replacing magnetite)	↓
sphene	
apatite	

Fine pyrite also occurs in several quartz stringers together with chloritic-clays and jarosite and secondary magnetite, + trace oxidised chalcopryrite, exactly the same as in 152236.

The major phenocrysts are:

- * plagioclase, commonly zoned and clustered, some partly altered to brownish clays.
- * smaller crystals of hornblende, altered to "uralite" clouded by leucoxene, and commonly accompanied by pyrite.

Detailed examination failed to reveal any gold.

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MINERALOGICAL REPORT NO. 4611

4th September, 1985

TO:

Mr. P.A. Jones,
Cyprus Minerals Aust. Co.,
5 Bedford Street,
NEWTOWN TASMANIA 7008

YOUR REFERENCE:

Amoco Order No. E.15168

MATERIAL:

Rock samples, Cygnet

IDENTIFICATION:

152265 to 152388 (7 in all)

WORK REQUESTED:

Polished thin section preparation
and description

SAMPLES & SECTIONS:

Returned to you
with this report



PONTIFEX & ASSOCIATES PTY. LTD.

COMMENTS

Each sample is described in polished thin section as requested, with the aim of determining the rock type, the style of alteration, and the identifying of opaques.

Fairly detailed comments on the alteration, are given in the individual descriptions, together with comments on genesis and comparisons within the suite as appropriate.

All sections were particularly checked in reflected light for gold, but gold was not found in any of them.

COAD'S ADIT.

152265 : weakly porphyritic (quartz) monzonite,
gradational to syenite;
extensive sericite-kaolin alteration of plagioclase,
microfractures with minor secondary quartz;
localised hydrothermal quartz veins with random
clay-filled voids, local pervasive silicification

Field note : quartz-veined, altered monzonite?
Cretaceous Pt. Cygnet Syenite

Geochem : (ppm) Cu 55; Pb 410; Zn 190; Ag 3.5; As 14; Au 0.07

Most of this sample is a white extensively argillised igneous rock, but the section also includes part of a small area of vuggy grey quartz vein.

The rock is weakly porphyritic with medium to coarse size subhedral crystals to 6 mm, of K-spar apparently subordinate plagioclase. The K-spar is weakly clouded by clay-sericite, the plagioclase shows advanced alteration to kaolin/sericite. The very low optical 2V of the K-spar suggests a composition approaching sanidine.

Intergranular areas between the plagioclase crystals consist of fine quartz (7 - 10% of the rock) of probable primary origin, together with clay-sericite after primary feldspar. Minor introduced quartz occurs however, in parts of some of the numerous microfractures cutting this rock.

Several clusters of minute rutile/anatase crystals (3%) appear to replace mainly small crystals of sphene, in the original groundmass. Scattered kaolin-lined voids appear to be after plagioclase crystals.

The hydrothermal vein-quartz consists of medium to coarse quartz mosaic, incorporating numerous irregular voids lined by clays. Relict textures, plus leucoxenitic dust, from the host monzonite are locally preserved in some of the quartz, indicating rather passive silicic replacement. Some fragments of the altered monzonite occur in the vein-quartz however.

Accessory extremely fine pyrite and rarer chalcopyrite are disseminated through the vein-quartz, mostly near the contact with the host rock (+ fine rutile), but not in the coarser vein-quartz away from this contact.

KING'S HILL RD.

152270 : phlogopite-pyroxenite with primary magnetite
selectively leucoxenised-pyritised and/or martitised;
incorporating areas of amphibole with extensive
intergranular introduced K-spar, and pyritised magnetite
rimmed and partly substituted for by secondary
magnetite/hematite

Field note : pyritic, hematitic, biotite, tourmaline? rock
Cretaceous Port Sygnet Syenite

Geochem (ppm): Cu 45; Zn 25; Au 0.005

There are two types of mineralogical domain in this rock. One which appears to be primary, is a fine (0.6 mm) granular aggregate of pale green clinopyroxene, with subordinate, intergranular to weakly poikilitic flakes of green-biotite/phlogopite, and intergranular, subhedral to amoeboidal-shaped opaque grains. Minor secondary K-spar is intergranular (see stained offcut).

The opaque grains are of particular interest. They are original magnetite, which in some areas are martitised and partly leucoxenitised; elsewhere they are extensively pseudomorphically replaced by pyrite, (with accompanying development of extremely fine rutile-sphene-leucoxene along original crystal directions of the magnetite).

In the other mineralogical domain (see below) the pyrite is rimmed by and partly replaced by, secondary magnetite + intergrown hematite, with local clusters of fine bladed hematite. Minor blebs of chalcopyrite occur in the pyrite but some indigenous copper occurs as chalcocite in some intensely leucoxenised magnetite crystals.

.../

152270 continued :

The other mineralogical domain consists of interlocking, ragged crystals of actinolitic-hornblende, incorporating local, small clusters of altered biotite, minor scattered sphene-leucoxene and altered biotite, with more extensive intergranular K-spar. Pyrite in these domains forms larger and more irregular grains than in the pyroxene areas, and tends to be rimmed by fine granular, secondary magnetite/hematite.

The clinopyroxene-rich domain is interpreted as a primary phlogopite-pyroxenite but with minor introduced K-spar and selectively pyritised-leucoxenised magnetite. The amphibole areas appear to be altered equivalent, with the alteration possibly metamorphic/retrograde, but also probably related to more extensive introduced K-spar.

KING'S HILL RD.

152273 : moderately porphyritic syenite, with partly albitised K-spar, minor small crystals of biotite/amphibole or possible pyroxene, selectively altered to porous limonitic clays, accessory sphene crystals replaced by rutile; accessory primary magnetite; some limonitic clays also replacing feldspar

Field note : weakly altered, feldspar alkali porphyry, coarse zoned sanidine, quartz veins

This rock is moderately porphyritic, similar to 152265, but with a much higher proportion of K-spar (see stained offcut), but only rare, abnormally coarse crystals of K-spar. It consists of a loose packed aggregate of subhedral K-spar crystals (60%), average size about 1.3 mm. The optical 2V is very low and indicates a composition approaching sanidine. These crystals incorporate minor to abundant, extremely fine micronetworks of albite but it is not certain if these are primarily exsolved or caused by albitisation. Rare crystals of ssericitised plagioclase are present.

The intergranular groundmass consists mostly of a micromosaic, also of K-spar but most grains have a rim of albite.

Accessory to minor, small (0.5 mm) crystals of former amphibole or pyroxene are scattered and extensively altered to limonitic clays. Minor zones and cleavages within some of the coarse and finer K-spar crystals have a meshwork of clays, partly leached out and limonitised.

Accessory sphene crystals (3%) rarely to 1 mm, are altered to rutile/anatase. Accessory subhedral crystals of primary magnetite are disseminated, and oxidised to martite pseudomorphs.

Several quartz veins and stringers cut the rock, and sparse very fine quartz, of probable secondary origin, is intergranular.

MOUNT WINDSOR.

152369 : syenitic to monzonitic porphyry, with abundant phenocrysts of plagioclase, lesser K-spar, in an extensive trachytic groundmass, numerous microphenocrysts of sphene, trace apatite; scattered pyrite (+ "marcasite"), rare-trace arsenopyrite, with quartz and altered mafic crystals

Field note : pyritic/arsenopyritic? coarse alkali intrusive
minor apatite?, xenoliths

This rock is more strongly porphyritic than all other rocks in the suite, Phenocrysts consist mostly of euhedral plagioclase crystals (35% of the rock) 2 to 3 mm size, commonly zoned and cut by extremely fine-scale microfissure networks. Most of these crystals contain ultrafine dispersed clay-sericite and rare K-spar. Rare filamentous pyrite permeates some felspar crystals.

Subordinate, and commonly larger phenocrysts of K-spar (20%) are relatively unaltered and commonly enclose small crystals of plagioclase.

Microphenocrysts of completely fresh euhedral sphene crystals (3%) to 1 mm long, are scattered. Small irregular grains of pyrite (7%) are scattered as individuals, some are clustered with each other and with altered small crystals of pyroxene, biotite and of possible amphibole + quartz. Three crystals of apatite, about 0.3 mm size, are present.

The groundmass consists of fine, trachytic, felted microlaths of K-spar and forms about 40% of the rock.

Pyrite, as described, is almost the only sulphide, however two very small (0.02 mm) crystals of arsenopyrite (? or marcasite) occurs in two pyrite grains. Rare, very small grains of chalcopyrite occur independently. Some pyrite crystals have optical properties gradational to marcasite and to melnicovite pyrite, which suggests that it may be largely after pyrrhotite.

KING'S HILL RD.

152386 (A): breccia of weakly porphyritic syenite,
extensive microfissures in K-spar selectively argillised,
minor intergranular secondary quartz;
healed by coarse hydrothermal quartz-pyrite,
also fractured, voids filled by clays and minor specularite

Field note : hydrothermal pyritic altered breccia;
altered kaolinised monzonite, matrix of silica;
pyrite, ?galena or hematite

The limited area of this polished-thin section includes mostly the quartz-pyrite-rich veining flooding between breccia fragments, with relatively minor representation of the host rock clasts.

These clasts however, represent a weakly porphyritic syenite (similar to 152273) dominated by K-spar. The K-spar crystals in these clasts are bleached and extensively microfissured with ultrafine clay along most microfissures, but these clays do not pervade the bulk of the K-spar crystals. Very minor plagioclase in the clasts are selectively kaolinised, and minor secondary quartz has been introduced into intergranular areas. Altered microphenocrysts of euhedral sphene crystals are scattered in the clast

The extensive vein network cementing the clasts is dominated by coarse crystalline hydrothermal quartz, incorporating minor quite coarse pyrite. Both of these components are themselves brecciated, suggesting that they were intruded during the main tectonism, or that they were fractured by renewed fracturing. Voids and cavities in the quartz-pyrite are partly primary (semi-drusy), and now filled by turbid clays, and some by clusters of micaceous hematite. These clays may be supergene or they and the hematite may be of very late-stage, hydrothermal origin.

KING'S HILL RD.

152386 (B) : breccia; a large clast of microporphyritic monzonite with plagioclase phenocrysts selectively kaolinised and accessory pyrite; is separated by a quartz vein with minor associated pyrite, from an incipiently porphyritic monzosyenite, selectively kaolinised plagioclase, minor altered sphene and biotite

This is reported in the field notes as basically the same as 152386 (A) but with two different rock types forming the breccia. This is true, but the network of quartz veins is less extensive, with the two rock types separated by one vein of coarse hydrothermal quartz with minor associated pyrite.

One rock type is characterised by abundant euhedral phenocrysts of plagioclase (35%), average size about 1 x 2 mm, and almost completely altered to kaolinitic clays. This alteration reflects an original internal crystal zoning, and a very thin rim of albite occurs around most. Some have a core of K-spar. Generally somewhat larger and relatively unaltered phenocrysts of K-spar (30%) are less altered, and enclose very small crystals of plagioclase.

The groundmass is microcrystalline/felsic, with relatively unaltered K-spar dominant over plagioclase, and with accessory microphenocrysts of altered sphene, and accessory small scattered grains of pyrite. Minor quartz in the groundmass is probably secondary.

This rock is a microporphyritic-monzonite.

.../

152386 (B) continued :

The other rock type contains relatively more K-spar (about 70% in total) than plagioclase (about 20%). The plagioclase occurs as euhedral phenocrysts to 3 mm, completely altered to kaolin + limonite, with some relict zoning, as in the monzonite. Some cores of kaolinised plagioclase are mantled by K-spar. The far more abundant K-spar crystals are very crowded, allowing only a very minor groundmass. These crystals are extensively microfissures, with sparse extremely fine clay along the fissures, but by no means are the crystals pervasively argillised (i.e. same as in 152386 (A)).

Fine K-spar and very rare quartz do occur in a groundmass, however. Accessory altered sphene and biotite are scattered. Pyrite is absent.

This rock may be called an incipiently porphyritic monzosyenite.

The pyrite near the vein-quartz is accompanied by altered sphene and rare micaceous hematite.

COAD'S ADIT.*05 monzodiorite*

152388 : moderately porphyritic (hornblende, augite)
 quartz-mangerite (K-spar-rich diorite);
 accessory sphene, magnetite;
 late-magmatic very fine quartz and K-spar through
 groundmass, minor quartz stringers,
 rare pyrite and lesser chalcopyrite

Field note : stringer veined, pyritic, biotite-rich alkali? intrusive

About 50% of this rock consists of euhedral zoned, plagioclase crystals, average and fairly consistent size of about 2 mm. These are weakly microfissured but essentially unaltered. Minor slightly larger crystals of K-spar (7 - 10%) of similar size, are present.

These crystals constitute a very loosely packed aggregate of phenocrysts, with a groundmass (30% of the rock), of late magmatic micromosaic of quartz and K-spar in subequal abundance. (The K-spar is particularly well shown on the stained offcut.)

The remaining 10% of the rock consists of small microphenocrysts of mafic minerals, i.e. hornblende, augite, rarer biotite, magnetite; also accessory, small, euhedral crystals of sphene. These minerals are essentially unaltered, thus there is really very little alteration in this rock, except for the relatively late magmatic enrichment in the groundmass of quartz and K-spar.

Accessory grains of pyrite and rarer chalcopyrite are disseminated, but without specific association with any alteration. Several quartz stringers are present but barren of sulphides.

The texture and composition is typical of calc-alkaline porphyritic K-spar-quartz-diorite (as may be seen in porphyry copper host rocks), but the presence of primary K-spar phenocrysts indicates transition to monzonite. Such a transitional rock is classified as a quartz-mangerite (or quartz-deficient granodiorite).

149

Pontifex & Associates Pty. Ltd.

980151

TEL. 332 6744
A.H. 31 3816

26 KENSINGTON ROAD, ROSE PARK
SOUTH AUSTRALIA

P.O. BOX 91, NORWOOD
SOUTH AUSTRALIA 5067

MINERALOGICAL REPORT NO. 4615

6th September, 1985

TO:

Mr. Phil Jones,
Cyprus Minerals Aust. Co.,
5 Bedford Street,
NEWTOWN, Tasmania 7008

YOUR REFERENCE:

Your letter dated 23/8/85

MATERIAL:

Rock samples,
Cygnet Tasmania

IDENTIFICATION:

152220 to 152400 (6 in all)

WORK REQUESTED:

Polished thin section
preparation and description

SAMPLES & SECTIONS:

Returned to you
with this report



PONTIFEX & ASSOCIATES PTY. LTD.

1.

COMMENTS

All samples are described from polished thin sections; all offcuts are stained for K-spar, which is abundant in 1522316, 317 sediments and in the "trachytes" 364 and 400. The reflected light study enabled the identification of trace pyrite inclusions in clusters of secondary quartz crystals of the altered sediments, and a check to be made on the limonite (most of which is not after sulphide). A detailed check for gold was also made, but no gold was found in any section.

The sediments are "mudstone" incorporating up to 35% angular quartz detritus of silt to medium and rarer coarse sand-size. The bulk matrix in 152220 and 152222 is of clays and sericite of probable sedimentary origin. Minor diffuse ultrafine K-spar occurs in the matrix in 152222.

The matrix to the silt sand in 152316, 317 is dominated by diffuse ultrafine K-spar, which appears to be an alteration product of, and/or an introduced replacement phase of the original sedimentary mud component. Discrete individual grains or crystals of this K-spar cannot be resolved optically.

Irregularly lenticular 'patches' occur in all sediment samples as separate unconnected entities. They have partly void cores, but otherwise consist of interlocking microsparry quartz prisms, interstitial limonite, commonly with envelopes of limonitised sericite and/or chloritic-clays. Minute inclusions of pyrite occur in some quartz crystals, and fine ?tourmaline and/or rutile in the quartz in patches in 152317. Only very rarely is the limonite in and around these patches, after sulphides.

The exact genesis of these patches is uncertain. The quartz is "secondary" and gives some impression of being "epithermal" with thin alteration haloes, but how and why it formed in discrete domains (without any connecting vein network) is not known. Some ovoid and curved shapes to these patches tends to suggest that fossils formed the locus of this sporadic mineralisation (as you note in your field comments). There is no positive petrographic evidence of fossils however, and no confirmation of sedimentary "pellets" (which certainly do appear to be manifest in the hand specimen).

It may be speculated, without being able to explain the exact mechanism, that the sediments were passively pervaded by a metasome which was largely potassic (?from the Cygnet alkali intrusives), which effected bulk-rock replacement, with a Si component selectively localising in voids afforded by fossils or sediment heterogeneities. Conceivably trace gold accompanies these localised mineralised centres, but none was seen.

The holocrystalline samples 152364, 400; are identified respectively as microporphyritic trachyte with flow texture, and a less obviously microporphyritic, quench-textured trachyte or microsyenite with disseminated Fe-Ti oxides. Objectively the petrography cannot distinguish between a dyke or flow geological mode of occurrence for these rocks.

**

TOBY'S HILL.

152220 : massive, silty to fine sandy mudstone with widely scattered sericite (probably sedimentary), incorporating patchy domains of microsparry quartz crystals with related sericitic envelopes, and limonite which is very rarely after pyrite

Field note : ferruginous, lithic, pelletal siltstone, altered
Near contact Bundella Mudstone & Woody Island Siltstone

This rock is distinctive in the suite because it is the only one without K-spar. Petrographically the rock is seen to consist of a fairly massive, heterogeneous mixture of silt to very fine sand quartz grains (25 - 30%), randomly disposed within a matrix of sericite and ill-defined clays clouded with dispersed leucoxene. Rare small (0.5 x 1 mm) fragments of graphitic shale are present.

Numerous heterogeneities are manifest as irregular streaks and patches up to 20 mm maximum dimension, which are enriched in limonite throughout, or around rims. These may be the components referred to in your field notes as 'lithic'. Most of them, and certainly the most prominent of them, have a core of microsparry quartz prisms surrounded by an envelope of relatively concentrated sericite (which tends to be selectively ferruginised). Limonite is also interstitial to the sparry quartz prisms, but only rarely does it appear to be replacing in-situ sulphides. Rare minute inclusions of pyrite occur in some quartz crystals.

The genesis of these domains is uncertain; they do not appear to be pellets, or definite lithic clasts or definite fossils, but they are isolated from each other and thus generally do not seem to represent a vein system either. Several elongate and curved individuals of limonite 1 mm x 10 mm, including minor 'vein' quartz, and with sericitic envelopes may be altered fossil fragments. One patch with a vague limonitic skeletal internal frame within sericite, may be a selectively altered fossil fragment.

The sericite dispersed throughout the silt-clay matrix cannot be positively distinguished to be of sedimentary origin or as superimposed hydrothermal alteration, but the former seems most likely. Accessory very small disseminated grains of oxidised pyrite does suggest a weak pervasive hydrothermal influence, however.

TOBY'S HILL.

152222 : weakly bedded, silty to fine sandy, clay-sericitic (potassic) mudstone, localised small domains of uncertain exact genesis, of sparry quartz crystals with minute pyrite inclusions, surrounded by an alteration rim of sericite-chlorite

Field note : fossiliferous slightly ferruginous siltstone, altered around fossil moulds, casts. Bundella Mudstone

The bulk of this rock is essentially the same as 152220 except that the stained offcut reveals diffuse patches of ultrafine K-spar through the clay matrix (but which is not clearly resolvable in thin section) and there is more sericite and less clay in the "matrix". Quartz grains of silt to very fine sand size (20%) have a vaguely bedded distribution. As in 152220 it is not really possible to determine if the widely dispersed sericite is sedimentary or incipient, hydrothermal, pervasive alteration, but it seems to be mostly sedimentary.

Several subparallel shredded foliae of limonite follow weak bedding planes, basically as a staining.

As in 152220, there are very minor (two in the section) localised patches, 3 x 7 mm, of crystalline/sparry quartz crystals, enclosing voids, and surrounded by an alteration envelope of concentrated sericite, and in this rock, of chlorite as well. The sericite in these envelopes, which are 3 mm wide, is slightly different to the widely dispersed sericite. Rare, minute inclusions of pyrite occur in some of the quartz crystals, but there is no evidence of disseminated pyrite. There is no evidence of fossils.

BLACK JACK RIDGE.

152316 : massive, silty and sandy, ?mudstone,
in which the original sedimentary mud matrix has been
pervasively replaced by ultrafine K-spar;
scattered cellular patches of limonite + small quartz prisms
with an envelope of chloritic clays and sericite
(?selectively altered fossils)

Field note : possibly weakly silicified, fossiliferous/pelletal silty
fine sandstone, ferruginous moulds and casts 1 to 20 mm
Bundella Mudstone

The bulk of this rock produces an intense yellow stain (with sodium cobaltinitrite) indicating essential dispersed ultrafine K-spar, but too fine for individual crystals or grains to be resolved optically.

Basically it consists of unsorted angular quartz grains of silt through to rare coarse sand-size grains disseminated throughout a matrix of diffuse ultrafine K-spar which incorporates leucoxene, apparently after a former clay matrix. The clays as such however, and the dispersed sericite, as in the previous sample, are absent.

Several irregular patches up to 5 x 15 mm size, are scattered, as in the previous samples, to represent the "pellets" or "fossils" mentioned in your field notes. They have a similar composition as in the previous rocks, i.e. small random quartz prisms, and patchy fine partly cellular limonite (not after sulphides), enclosing random void space, with irregular envelopes of limonitised chloritic-clays and sericite. The exact genesis of these patches is uncertain, but the curved and ovoid shape of several of these suggests original fossils.

Trace minute bleb-like grains of pyrite occur as inclusions in some of the quartz prisms.

BLACK JACK RIDGE.

152317 : massive silty and sandy mudstone, in which a former mud matrix is pervasively replaced/alterd to diffuse ultrafine K-spar;
abundant irregular limonitic lenses, some staining but some of patches of "secondary" quartz crystals with ultrafine tourmaline and/or rutile and pyrite

Field note : gossanous altered pelletal sediment, Bundella Mudstone near faulted contact with Woody Island Siltstone

This rock consists of abundant, irregularly lenticular domains, about 5 x 10 mm, similarly aligned within a very fine matrix.

The most prominent of these limonitic patches are virtually the same as in previous samples; they consist of quite coarse allotriomorphic to prismatic/sparry quartz, intergrown with fine cellular limonite, but with discontinuous surrounds of limonitised chloritic clays + sericite. Minute bleb-like inclusions of pyrite occur in the quartz as in other samples, but abundant, extremely fine, fibro-lamellar-form prisms also occur as inclusions in the quartz, and appear to be tourmaline, and/or rutile. In spite of the sparse minute inclusions of pyrite, the limonite in these patches does not appear to be after sulphide.

Other limonitic areas appear to be simply sporadic staining without any obvious relationship to discrete physical structures in the rock.

The bulk of the rock is the same as in 152316, angular quartz grains of silt to medium and coarse sand-size, also rare lithic fragments of mudstone, and rare coarse fragments of perthitic K-spar crystals vaguely bedded within a matrix of diffuse ultrafine "secondary" K-spar. This K-spar is clouded with leucoxene dust and seems to replace a former clay matrix.

MISSING LINK ROAD.

152364 : weakly K-spar porphyritic trachytic lava
 (or possible dyke);
 very minor dispersed sericite indicates only
 very incipient alteration, sparse disseminated hematite

Field note : H/W microsyenite dyke?

Phenocrysts in this sample consist mostly of euhedral crystals of K-spar (10% of the whole rock). These are 1 to 2 mm in size, rarely up to 4 mm, randomly disposed, some in clumps, microfissured but essentially unaltered except for sparse dispersed sericite. Rarer, smaller phenocrysts of sericitised plagioclase (1 - 2%) and of trace altered hornblende and biotite, are also present.

The larger K-spar phenocrysts have a composition approaching sanidine.

The groundmass is very homogeneous, and consists of felted, flow oriented microlaths of K-spar dusted with minor clay-sericite. Accessory very small Fe-Ti grains are disseminated, mostly in fact composed of hematite some after magnetite, some as individual microflakes.

Rare boxwork after small crystals of ?garnet locally accompany a cluster of K-spar phenocrysts.

The fairly well developed flow texture in this rock suggests that it may be a trachytic lava rather than a dyke (however, this texture does not exclude the possibility of a dyke).

TOBY'S HILL.

152400 : very fine crystalline and probably quenched,
trachytic (or microsyenitic) rock,
which may be a dyke or lava;
minor scattered voids after small felspar phenocrysts;
abundant small crystals of altered magnetite, sphene,
also specular hematite

Field note : micro-hornblende syenite

About 80% of this rock consists of a more or less felted aggregate of very fine and somewhat feathery laths of K-spar, which have a random, probable quench texture. These laths are turbid with clays and titaniferous dust, but show only very sparse alteration to sericite.

There are no existing phenocrysts, but several ill-defined cellular patches of sericite probably represent former (?plagioclase) phenocrysts, and more numerous non-limonitic voids, about 1 mm across seen in the hand specimen, probably represent completely altered and leached out felspar phenocrysts.

The quite abundant dark coloured grains and voids (7 - 10% of the whole rock) are all of Fe-Ti composition; variably martitised and leucoxenised magnetite; oxidised micro-bladed hematite, and leucoxenised sphene crystals. There is no positive evidence of original hornblende.

APPENDIX 2

ANALYTICAL RESULT SHEETS

ANALABS

980161

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (02) 458 7999

52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No.

999.0 00 1546

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Amoco
P.O. Box 949
North Sydney
N.S.W. 2060

E 8861 **CYGNET**

DATE RECEIVED: 5.10.82

5.10.82

PAGES OF RESULTS

DATE REPORTED

NO. OF COPIES

TOTAL NO. OF SAMPLES

		3	5
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SAMPLE NO.	SAMPLE NUMBER	PRE-TREATMENT						ANALYSIS				
		DRY	CHURN	SPLIT	PUL. VESSEL	WET	OTHER SPEC. REMARKS	NO. OF	REF. TO ANALYSR SECTION	PREPARATION	RESULTS	
Ro	79639-43		1	3	2 4					Cu Pb Zn Ag Co	101	101 304 402 401

S. Fowler
As Above

Philip Jones
61 Counsel Street
Zeehan

REMARKS

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core	perchloric acid	atomic absorption
split core	hydrochloric acid	X-ray fluorescence
drilling	nitric acid	spectrophotometry
slit	aqua regia	colorimetry
soil	nitric-perchloric	chromatography
pulp	HF mixture	titration
water	HF under pressure	other chemical means
sludge	fusion	miscellaneous
seam sediment		fluorescence
any mineral		inductively coupled plasma

AUTHORISED OFFICER: *[Signature]*

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A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

999.0 08 1546

8.10.82

E 8861

1 OF 2

1	79639	10	25	165	X	45	Tobys Hill		
2	79640	15	25	150	X	45	Tobys Hill		
3	79641	40	40	4150	151*	3050	Mt Mary		
4	79642	10	80	145	0.5	45	Mt Mary		
5	79643	15	45	65	X	10	Petchy's Bay		
7									
8									
9									
10									
11									
12									
13									
14									
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17									
18									
19									
20									
21									
22									
23									
24									
25									

Results in ppm unless otherwise specified.
 T = element present but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

AUTHORISED OFFICER *[Signature]*

161

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980163

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

999.0 08 1546

8.10.82

E 8861

20F

1	STD FS4	125	305	750	1.0	105			
2	RPT 79639 10	25	165	X	40				
3									
4									
5									
6									
7									
8									
9	NOTE: * Analysed by Method 104								
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	5	5	5	0.5	5			
24	DIGESTION	101	101	101	101	101			
25	METHOD	101	101	101	101	101			

Results in ppm unless otherwise specified
 T = element present, but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

AUTHORISED OFFICER

162

980164

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ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

999.0 08 1546 12.10.82 E 8861 1 of 1

LINE NO.	SAMPLE NO.	FLU	FLU							
1	79639	X	-							
2	79640	0.349	0.78							
3	79641	13.1	23.0							
4	79642	0.035	-							
5	79643	X	-							
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	0.02	0.005							
24	DIGESTION									
25	METHOD	304	309							

Results in ppm unless otherwise specified.
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

AUTHORISED OFFICER *[Signature]*

163

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

999.0 08 1546

14.10.82

E 8861

1 of 1

LINE NO.	SAMPLE NO.									
1	79639	X	X							
2	79640	X	X							
3	79641	60	62							
4	79642	X	X							
5	79643	X	X							
6										
7										
8										
9										
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11										
12										
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14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	4	4							
24	DIGESTION									
25	METHOD	402	401							

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER: *[Signature]*

980166

ANALABS

LYREI

Phone (09) 458 7999

A Division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No. 4.5 08 2984

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Amoco Minerals Australia Coy
PO Box 949
North Sydney
N.S.W. 2060

E 14708

RB4-111C **GNB**

DATE RECEIVED

RESULTS REQUIRED

11.3.85

No. OF PAGE
OF RESULTS

DATE
REPORTED

No. OF
COPIES

TOTAL No. OF SAMPLES

3

18

STATE OF SAMPLE	SAMPLE NUMBERS	PRE-TREATMENT							ANALYSIS		
		DISS	FLUX	SPUT	PH VOLTS	SIEVE	OTHER (SEE REMARKS)	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SS	113701,03,05,07, 22,25,30,53	1				2			Cu Pb Zn Ag As Au	101	101 114 313
PC	113702,04,06,08, 23,26,31,54	1				2			Cu Pb Zn Ag As Au	101	101 114 313
RO	113771-113772	1	2			3 4 5			Cu Pb Zn Ag As Au	101	101 114 313

As Above
Att. B. Roxburgh

REMARKS

Despatch No. 4947

RESULTS

TO

RESULTS

TO

Att. Phil Jones
61 Counsel Street
Zeehan Tas 7470

Invoice to Zeehan

STATE OF SAMPLES	ANALYSIS	PREPARATION	ANALYSIS - METHOD				
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	X-ray fluorescence	XRF
bitting	CU	nitric acid	A3	other mixed acids	MA	spectrophotometry	SPEC
rock	RO	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	filtration	FTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemical means	CHEM
sludge	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
ream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER *[Signature]*

165

980167

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ANALYTICAL DATA

← → Cymnet

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

4.5 08 2984

19.3.85

E 14708

1 OF 2

LINE No.	SAMPLE No.	Ca	Pb	Zn	As	Fe	Mn	Other	Notes
1	113701	X	20	15	0.5	X	X		
2	113703	15	35	40	1.0	7	X		
3	113705	10	30	45	X	3	X		
4	113707	5	50	40	X	9	0.015	✓	
5	113722	30	20	30	X	1	X		
6	113725	5	20	30	X	2	X		
7	113730	50	65	55	0.5	2	0.02	✓	
8	113753	10	15	15	X	X	0.065	✓	
9	113702	5	50	90	1.0	X	X		
10	113704	X	10	30	X	7	X		
11	113706	X	X	15	X	X	X		
12	113708	X	10	15	X	X	X		
13	113723	35	5	35	X	1	0.02	✓	
14	113726	X	X	15	X	1	X		
15	113731	5	60	15	X	X	X		
16	113754	X	X	10	X	X	X		
17	113771	20	40	5	1.0	4000	X		Howards Rd
18	113772	1.66%*	40	195	7.5	86	0.09		Heavy Copper
19									
20									
21									
22									
23									
24									
25									

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED OFFICER

[Signature]

980168

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		4.5 08 2984	19.3.85		E 14708		2 OF 2	
NO	SAMPLE	Cd	Pb	Zn	Hg	As	Bi	
1	STD 3036	170	625	260	3.0	740		
2	RPT 11370	5	20	15	0.5	X		
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14	NOTE: * Analysed by Method 104							
15								
16								
17								
18								
19								
20								
21								
22								
23	DETECTION	5	5	5	0.5	1	0.005	
24	DIGESTION							
25	METHOD	101	101	101	101	114	313	

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

AUTHORISED OFFICER

Refined

980169

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No.

11 E 09 3042

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Amoco Minerals Australia Coy
PO Box 949
North Sydney
N.S.W. 2060

ORDER NO. E 14726 PROJECT H84-1110/B

DATE RECEIVED 23.4.85 RESULTS REQUIRED ASAP

No. OF PAGES OF RESULTS: [] DATE REPORTED: [] No. OF COPIES: 3 TOTAL No. OF SAMPLES: 69 **CYBNET**

STATE OF SAMPLES	SAMPLE NUMBERS	PRE-TREATMENT							ANALYSIS		
		DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
RC	113864-900 150910-995 152036-093 152501-530 Not Continuous	1		3	2				Flu		309
RC	150117	1		3	2						
RC	150118-121	1	2	3	4						

RESULTS TO

1. Amoco Minerals,
PO Box 493
North Sydney NSW 2060
Att. B. Roxburgh

RESULTS TO

2. Copy of results and invoice to
Amoco Minerals
61 Council Street
Zeeman TRC 7469
Att. G.L. Kery

REMARKS

Despatch No. 2302

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core	perchloric acid A1	atomic absorption AAS
lit core	hydrochloric acid A2	x-ray fluorescence XRF
bitting	nitric acid A3	spectrophotometry SPEC
rock	aqua regia A4	colorimetry COL
soil	nitric-perchloric A5	chromatography CHR
pulp	HF mixture A6	titration TTN
water	HF under pressure A7	other chemicals means CHEM
sludge	fusion A8	miscellaneous MISC
beach sediment		fluorescence FLUOR
heavy mineral		inductively coupled plasma ICP

AUTHORISED OFFICER *[Signature]*

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980170

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

4.5 08 3042

30.4.85

E 14726

1 OF 3

TUBE No.	SAMPLE No.	RU								
1	113864	X								
2	113866	X								
3	113868	X								
4	113871	X								
5	113873	0.83	✓							
6	113875	X								
7	113876	X								
8	113878	X								
9	113880	X								
10	113882	X								
11	113884	X								
12	113886	X								
13	113888	X								
14	113890	X								
15	113892	X								
16	113894	X								
17	113896	X								
18	113898	X								
19	113900	X								
20	150117	1.82	Std. Hungaria							
21	150118	X								
22	150119	X								
23	150120	X								
24	150121	X								
25	150510	X								

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

AUTHORISED OFFICER

980171

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A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

4.5 08 3042

30.4.85

E 14726

2 OF 3

TUBE No.	SAMPLE	Result							
1	150911	X							
2	150913	X							
3	150914	X							
4	150915	0.005	✓						
5	150916	X							
6	150917	X							
7	150918	X							
8	150920	X							
9	150922	X							
10	150924	0.02	✓						
11	150926	X							
12	150927	X							
13	150929	X							
14	150931	X							
15	150933	0.02	✓						
16	150937	0.01	✓						
17	150939	X							
18	150941	X							
19	150945	X							
20	150947	X							
21	150949	X							
22	150957	X							
23	150995	X							
24	152036	X							
25	152051	X							

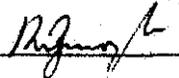
Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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A division of MacDonald Hamilton & Co. Pty. Ltd.

980172

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

4.5 00 3042

30.4.85

E 14726

3 OF 3

TUBE No.	SAMPLE	RESULT								
1	152056	X								
2	152077	0.55 ✓								
3	152079	0.005 ✓								
4	152090	X								
5	152501	X								
6	152503	0.135 ✓								
7	152505	X								
8	152507 SOIL	X								
9	152509	X								
10	152512	X								
11	152514	X								
12	152516	X								
13	152518	X								
14	152520	0.01 ✓								
15	152522	X								
16	152524	X								
17	152526	X								
18	152528	X								
19	152530	X								
20										
21										
22										
23	DETECTION	0.005								
24	DETECTION									
25	METHOD	313								

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED OFFICER

R. King

ANALABS

980173

Phone (09) 458 7999

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No. 4.5 08 3086

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Amoco Minerals Australia Company
P.O. Box 493
North Sydney
N.S.W. 2060

ORDER No.

PROJECT

E 14737

Cygnat

DATE RECEIVED

RESULTS REQUIRED

17.5.85

ASAP

No. OF PAGES OF RESULTS

DATE REPORTED

No. OF COPIES

TOTAL No. OF SAMPLES

3

15

DATE OF SAMPLES	SAMPLE NUMBER	PRE-TREATMENT							ANALYSIS		
		DRY	CRUSH	SPLIT	PULVERISE	SEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
RO	113860-63, 152178-84,	1	2	4	3 5				Au Ag		313 104
SO	152185	1			2				Au Ag		313 104

REMARKS

RESULTS

TO

As Above

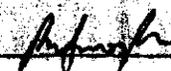
Despatch No.
2305

RESULTS

TO

STATE OF SAMPLES	ANALYSIS — PREPARATION				ANALYSIS — METHOD		
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
drilling	CU	nitric acid	A3	other mixed acids	MA	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IC	filtration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
slime	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER



ANALABS

980174

Phone (09) 458 7999

A Division of MacDonal Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No.

4.5 US 2086

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Amoco Minerals Australia Company
P.O. Box 493
North Sydney
N.S.W. 2060

ORDER No.	E 14737	PROJECT	Cygnat
DATE RECEIVED	17.5.85	RESULTS REQUIRED	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
		3	15

STATE OF SAMPLES	REF. BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS			
			DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	80	113860-63, 152178-84,	1	2	4	3 5				Au Ag		313 104
	90	152185	1			2				Au Ag		313 104

RESULTS	As Above
RESULTS TO	

REMARKS

Despatch No. 2086

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	calorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemical means CHEM
tissue TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

AUTHORISED OFFICER *[Signature]*

173

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

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21.5.85

E 14737

1 of 1

LINE	SAMPLE NO.	QTY							
1	113860	X							
2	113861	X							
3	113862	10							
4	113863	X							
5	152178	X							
6	152179	X							
7	152180	X							
8	152181	X							
9	152182	X							
10	152183	X							
11	152184	42							
12	152061	X							
13	152062	X							
14	152080	X							
15	152185	3							
17									
18									
19									
20									
21									
22									
23	DETECTION	2							
24	DIGESTION								
25	METHOD	104							

Results in ppm unless otherwise specified
 T = element present, but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

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980175

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

4.5 00 0086

21.5.05

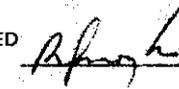
E 14237

1 OF 1

TUBE No.	SAMPLE No.	Con.								
1	113860	X								
2	113861	X								
3	113862	10								
4	113863	X								
5	152176	X								
6	152179	X								
7	152180	X								
8	152181	X								
9	152182	X								
10	152183	X								
11	152184	42								
12	152061	X								
13	152062	X								
14	152080	X								
15	152185	X								
17										
18										
19										
20										
21										
22										
23	DETECTION									
24	DETECTION									
25	METHOD	LOW								

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
- = element not determined

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175

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

4.5 08 3086

24.5.85

E 14737

1 OF 1

TUBE No.	SAMPLE No.	RD								
1	113860	X								
2	113861	0.015 ✓								
3	113862	5.98 ✓								
4	113863	0.61 ✓								
5	152061	0.01 ✓								
6	152062	0.005 ✓								
7	152178	0.015 ✓								
8	152179	0.015 ✓								
9	152180	X								
10	152181	X								
11	152182	X								
12	152183	0.11 ✓								
13	152184	0.005 ✓								
14	152185	1.38								
15	152080	0.035								
17										
18										
19										
20										
21										
22										
23	DETECTION	0.005								
24	DIGESTION									
25	METHOD	313								

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

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176

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

4.5 08 3086

24.5.85

E 14737

OF 1

TUBE No.	SAMPLE No.	CONC.							
1	113860	X							
2	113861	0.015v							
3	113862	5.98 ✓							
4	113863	0.61 ✓							
5	152061	0.01 ✓							
6	152062	0.005 ✓							
7	152179	0.015 ✓							
8	152179	0.015 ✓							
9	152180	X							
10	152181	X							
11	152182	X							
12	152183	0.11 ✓							
13	152184	0.005 ✓							
14	152185	1.98 ✓							
15	152060	0.035 ✓							
16									
17									
18									
19									
20									
21									
22									
23	DEFECTIVE	DEFECTIVE							
24	DEFECTIVE	DEFECTIVE							
25	DEFECTIVE	DEFECTIVE							

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORIZED OFFICER

980178

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No. 999.0 08 3195

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

ORDER NO. 15157	PROJECT Cynet
DATE RECEIVED 22.7.85	RESULTS REQUIRED URGENT

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES 3	TOTAL No. OF SAMPLES 42
-------------------------	---------------	--------------------	----------------------------

STATE OF SAMPLES	SAMPLE REFERENCE	PRE-TREATMENT							ANALYSIS		
		DRY	CRUSH	SPLIT	FIL-VERSE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
90	152198-239	1	2		3				Cu Pb Zn Ag		101 114 313

RESULTS
As Above
Attn: B. Roxburgh

RESULTS
Attn: P. Jones
5 Bedford St.,
New Town
Tasmania 7008

REMARKS

Despatch No. 2389.

STATE OF SAMPLES	ANALYSIS - PREPARATION	ANALYSIS - METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting block CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemical means CHEM
sludge SI	fusion A8	miscellaneous MISC
ream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

AUTHORISED OFFICER *[Signature]*

980179

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

999.0 08 3195

30.7.85

15157

1 OF 3

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Au	Au Chk	
1	152198		30	35	70	X	1	X	X	LIVINGSTONE HINE Pyritic Qtz
2	152199		15	60	45	X	3	X		Qtz vein
3	152200		15	40	100	X	3	X		Alt porphy mous
4	152201		60	220	85	2.0	20	15		Ferug siltsln
5	152202		25	50	125	X	8	X		Qtz veined seds / intrusive
6	152203		10	10	40	X	6	0.09		Mous porphy Alt
7	152204		50	240	15	X	42	15		Ferug siltsln
8	152205		70	150	90	1.0	36	15		Qtz, seds.
9	152206		60	150	205	X	680	0.01 ?		Alt seds.
10	152207		20	190	105	X	95	X ?		Wkly ferug seds.
11	152208		5	20	40	X	1	X		Monzante.
12	152209		25	60	35	X	1	X		seds.
13	152210		20	40	45	X	3	0.01		seds.
14	152211		20	25	35	X	44	X		ferug syenite
15	152212		15	35	40	X	5	X		
16	152213		20	15	40	X	4	0.07		
17	152214		45	30	95	X	18	0.03		
18	152215		30	35	100	X	19	0.07		
19	152216		20	35	60	X	1	0.03		
20	152217		15	20	55	X	3	0.015		
21	152218		30	20	00	X	3	0.015	0.025	
22	152219		25	10	30	X	4	0.045		
23	152220		195	85	140	X	13	155		
24	152221		40	150	155	X	13	0.01		
25	152222		30	115	105	X	10	0.13		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED OFFICER

R. [Signature]

980180

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A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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15157

2 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au Chk
1	152223	30	105	220	X	8	0.07	
2	152224	10	15	100	X	6	X	
3	152225	15	35	150	X	10	X	
4	152226	15	25	95	X	5	0.04	
5	152227	10	20	75	X	5	X	
6	152228	30	95	105	X	7	0.035	0.055
7	152229	30	110	85	X	41	0.065	
8	152230	45	95	120	X	7	0.03	
9	152231	40	30	65	X	23	X	
10	152232	45	65	50	X	110	0.02	
11	152233	30	25	145	0.5	17	0.035	
12	152234	30	50	125	0.5	20	X	
13	152235	75	25	130	X	1	0.03	
14	152236	55	15	25	X	X	0.01	
15	152237	25	15	10	X	X	0.015	
16	152238	40	30	80	X	X	0.01	0.01
17	152239	45	75	245	X	1	0.08	
18								
19								
20								
21								
22								
23								
24								
25								

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER

Refined

980181

180

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

999.0 08 3195

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15157

3 OF 3

LINE NO.	SAMPLE PREFIX	Cu	Pb	Zn	Hg	As	Mn	Ca	Mg
1	STD 3036	170	590	245	2.0	600			
2	RPT 152198	30	35	70	X	1			
3	RPT 152217	15	25	55	X	3			
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	5	5	5	0.5	1	0.005	0.005	
24	DIGESTION								
25	METHOD	101	101	101	101	114	313	313	

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

AUTHORISED OFFICER

[Signature]

980182

181

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No. 999.0 01 3263

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

ORDER No. PROJECT

Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

15159

Cygnat

DATE RECEIVED

RESULTS REQUIRED

26.7.85

URGENT

No. OF PAGES OF RESULTS

DATE REPORTED

No. OF COPIES

TOTAL No. OF SAMPLES

3

27

STATE OF SAMPLES	SAMPLE NUMBERS	PRE-TREATMENT							ANALYSIS		
		DRY	CRUSH	SPLIT	PULVERISE	SEIVE	OTHER (SEE REMARKS)	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
RO	152323-349	1	2		3				Cu Pb Zn Ag As Au		101 114 313

RESULTS

As Above
Attn: B. Roxburgh

REMARKS

Despatch No. 2311.

RESULTS

Attn: P. Jones
5 Bedford St.,
New Town
Tasmania 7008

STATE OF SAMPLES

ANALYSIS — PREPARATION

ANALYSIS — METHOD

whole core	WC	perchloric acid	A1	gold acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline titration	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TIT
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemical means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

[Signature]

980183

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ANALABS

Division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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999.0 08 3203

1.8.85

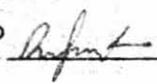
15159

1 OF 3

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Au	Au Chk	
1	152323 /		125	10	10	X	39	0.15		
2	152324 /		5	X	10	X	7	X	X	
3	152325 /		5	5	10	X	10	X		
4	152326 /		10	5	5	X	1	X		
5	152327 /		45	X	5	0.5	X	X		
6	152328 /		5	5	55	0.5	4	X		
7	152329 /		50	X	25	X	4	0.01		
8	152330		10	5	10	X	1	0.005		
9	152331		45	5	10	X	56	0.025		
10	152332		285	5	30	X	2	0.005		
11	152333		80	X	10	X	1	0.01		
12	152334		30	X	10	0.5	5	0.025	0.03	
13	152335 /		5	X	5	0.5	X	0.005		
14	152336		5	20	20	X	18	0.015		
15	152337		35	10	175	X	15	0.015		
16	152338		10	X	10	X	1	X		
17	152339		10	5	15	X	3	0.005		
18	152340		15	X	15	X	17	0.015		
19	152341 /		30	40	20	1.5	16	0.025		
20	152342 /		20	5	30	X	17	0.005		
21	152343 /		55	5	10	X	2	0.02		
22	152344 -		50	5	20	0.5	X	X	X	
23	152345		55	10	30	0.5	1	X		
24	152346		30	10	25	0.5	X	0.01		
25	152347		125	10	20	X	X	0.015		

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER



980184

183

ANALABS

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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1.8.85

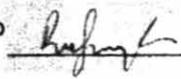
15159

2 OF 3

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Au	Au Chk	
1	152348		115	115	2100	0.5	1	X		
2	152349		975*	0.86%*	650*	136*	27			
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER



980185

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

999.0 08 3203

1.9.85

15159

3 OF 3

TUBE No.	SAMPLE	Co	Mo	Zn	Pb	Cd	As	Se	Cr	Other
1	STD 3036	165	560	240	2.0	510				
2	RPT 152323	120	10	10	X	35				
3	RPT 152342	20	5	75	0.5	19				
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14	NOTE: * ASSAYED BY 104.									
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	1	0.005	0.005		
24	DIGESTION									
25	METHOD	101	101	101	101	114	313	313		

Results in ppm unless otherwise specified
 J = element present, but concentration too low to measure
 * = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER

980186

185

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

Phone (09) 458 7999

Telex AA92560

ANALYTICAL REPORT No. 229, 0 01 3198

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

ORDER No.	PROJECT
15158	Cygnat
DATE RECEIVED	RESULTS REQUIRED
24.7.85	URGENT

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
		3	33

STATE OF SAMPLES	REF. NO.	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS				
			DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
RO		152240-50 152301-22	1	2		3					Cu Pb Zn Ag As Au		10. 11. 12.

RESULTS TO

As Above
Attn: J. Roxburgh

RESULTS TO

Attn: P. Jones
5 Bedford St.,
Hewtown
Tasmania 7008

REMARKS

Despatch No.
2310

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemical means CHEM
tissue TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

AUTHORISED OFFICER *[Signature]*

980187

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A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		999.0 08 3198			1.8.85		15158		1 OF 3	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Hg	As	Pu			
1	152240	25	45	195	X	1	0.005		KINGS HILL Syanite partly	
2	152241	25	X	485	X	2	X		Partly mudstone	
3	152242	20	10	140	X	1	X		Alt monz porphyry	
4	152243	25	5	40	X	2	0.01		Py silic porphyry	
5	152244	25	10	50	X	X	0.005		Py monz	
6	152245	35	310	405	0.5	14	0.04		silic py sed	
7	152246	20	20	35	X	3	X		Hornfels	
8	152247	20	35	135	X	5	0.055		Dyles / seds	
9	152248	15	10	75	X	5	0.005		Alt monz	
10	152249	260	70	300	2.0	170	0.01		Gossan Ironstn	
11	152250	35	40	305	1.0	1	0.005		Alt Monz.	
12	152301	140	300	450	4.5	48	0.01		Ferrous seds / porphyry	
13	152302	230	150	350	6.0	270	0.01		Ironstn Breccia	
14	152303	185	130	250	2.0	33	0.01		Ferrous seds.	
15	152304	65	100	150	1.0	120	0.01		Ferrous Breccia / seds	
16	152305	70	250	300	1.0	50	0.01		Ironstn Breccia KINGS HILL	
17	152306	15	X	35	X	1	0.005		BLACK JACK Ferrous silic sst	
18	152307	20	10	30	0.5	5	0.01		Py silic mudstn	
19	152308	75	5	25	X	400	0.005		Ferrous alt sed.	
20	152309	300	5	25	X	4	0.03		Pyritic alt monz.	
21	152310	50	10	20	0.5	2	X		Ferrous alt sed.	
22	152311	200	5	25	X	5	0.01		Pyritic chert.	
23	152312	100	5	20	1.0	35	0.01		Pyritic chert	
24	152313	70	10	20	X	1	0.01		Pyritic chert	
25	152314	55	5	25	X	30	0.025		Ferrous sst	

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

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Profing h

980188

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A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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CLIENT ORDER No.

PAGE

		999.0 08 3198				1.8.85		15158		2 OF 3	
TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Au			
1	152315		45	5	20	X	(15)	0.02			ferrous silic sed.
2	152316		200	20	30	X	(21)	0.57			Ironst alt sed
3	152317		110	15	25	0.5	(74)	0.30			Alt goss foss sed
4	152318		60	10	20	X	4	0.10			alt ferrous sed
5	152319		20	5	20	0.5	5	0.025			foss ferrous sst
6	152320		20	X	20	0.5	4	0.02			alt fer foss sed
7	152321		30	X	20	X	3	0.03			w fer w silic sed
8	152322		40	X	15	0.5	3	0.015			ferrous sst
9											
10											
11											
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20											
21											
22											
23											
24											
25											

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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999.0 08 3198

1.8.85

15158

3 OF 3

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Fe	Sr	Mn		
1	STD 3036		170	580	250	1.5	670			
2	RPT 152240		30	40	195	X	1			
3	RPT 152305		310	5	30	X	4			
4	RPT 152243							0.005		
5	RPT 152313							0.025		
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
17										
18										
19										
20										
21										
22										
23	DETECTION		S	S	S	0.5	1	0.005		
24	DIGESTION									
25	METHOD		101	101	101	101	114	313		

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER

980190

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No.

199.9 08 3019

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA.

Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

ORDER No	E 15163	PROJECT	Cygnat
DATE RECEIVED	6.8.85	RESULTS REQUIRED	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
		3	53

STATE OF SAMPLES	SAMPLE NUMBER	PRE-TREATMENT							ANALYSIS			
		DRY	CRUSH	SPLIT	PUL-VERSE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
	113709-710, 728, 738-737, 742-752, 755-760, 766, 768, 130251-274, 52759	1	2		3					Cu Pb Zn Hg As Au	101	101 114 313

RESULTS

TO

As Above
Att. Mr. B. Robinson

RESULTS

TO

Att. Mr. P. Jones
5 Bedford Street
Newcastle NSW 2300

REMARKS

Despatch No. 2312

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemical means CHEM
issue TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

AUTHORISED OFFICER *[Signature]*

980191

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A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

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TUBE No.	SAMPLE No.	FLU								
1	113709	X	Sed.							
2	113710	X	Sed							
3	113728	X	Sed							
4	113733	0.01	Seds							
5	113734	0.045	Seds.							
6	113735	0.005	Syenite							
7	113736	0.005	Seds.							
8	113737	X	Seds.							
9	113742	X	Seds.							
10	113743	X	Seds.							
11	113744	X	Syenite							
12	113745	X	Syenite							
13	113746	X	Syenite							
14	113747	X	Syenite							
15	113748	X	Syenite							
16	113749	X	Syenite							
17	113750	X	Syenite							
18	113751	X	Syenite							
19	113752	0.005	Syenite							
20	113755	X	Seds.							
21	113756	0.005	Seds.							
22	113757	0.005	Syenite							
23	113758	0.005	Seds							
24	113759	X	Seds.							
25	113760	X	Syenite							

Results in ppm unless otherwise specified
 Y = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

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[Signature]

980192

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ANALYTICAL DATA

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REPORT NUMBER

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999.0 00 3213B

12.8.85

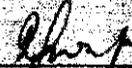
E 15163

2 OF 3

NO.	SAMPLE No.	QU.							
1	113766	X	homfels.						
2	113767	X	Seds.						
3	113768	0.005	Seds.						
4	152251	0.015	Seds.						
5	152252	0.055	sed.						
6	152253	0.01	porphyry						
7	152254	0.005	Monz.						
8	152255	X	Sed.						
9	152256	0.01	Monz.						
10	152257	0.015	Sed.						
11	152258	X	Monz.						
12	152259	X	s/sed.						
13	152260	X	plc.						
14	152261	0.005	s/sed						
15	152262	0.01	plc.						
16	152263	X	plc						
17	152264	0.005	qtz vein						
18	152265	0.07	qtz vein						
19	152266	0.03	qtz vein						
20	152267	0.035	qtz vein						
21	152268	0.02	Monz.						
22	152269	X	Breccia.						
23	152270	0.005	porphyry						
24	152271	0.04	porphyry						
25	152272	X	porphyry						

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

AUTHORISED OFFICER



980193

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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CLIENT ORDER No.

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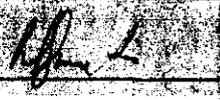
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E 15163

3 OF 3

SUB No.	SAMPLE No.	DU								
1	152273	X	perfluyng							
2	152274	0.015	perfluyng							
3	152350	X								
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	0.005								
24	DIGESTION									
25	METHOD	313								

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
X = element concentration is below detection limit
- = element not determined

AUTHORISED OFFICER 

193

ANALABS

Phone (09) 458 7999

A division of MacDonal Hamilton & Co.
52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No. 999.0 08 3227

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

ORDER NO.	E15167	PROJECT	Cyanet
DATE RECEIVED	19.8.85	RESULTS REQUIRED	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
		3	63

STATE OF SAMPLES	SAMPLE NUMBERS	PRE-TREATMENT							ANALYSIS		
		DRY	CRUSH	SPLIT	PULP VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFS TO ANALYSIS SECTION	PREPARATION	METHOD
RC	152275-300 152351-387	1	2	4	3				Cu Pb Zn Ag		101
									As		114
									Au		313

REMARKS

RESULTS TO

As Above

RESULTS TO

Cyprus Minerals
5 Bedford St.,
New Town
Tasmania 7008

STATE OF SAMPLES	ANALYSIS - PREPARATION	ANALYSIS - METHOD
whole core	perchloric acid A1 cold acid CA	atomic absorption AAS
split core	hydrochloric acid A2 specific sulphide SS	x-ray fluorescence XRF
cutting	nitric acid A3 other mixed acids Ma	spectrophotometry SPEC
rock	aqua regia A4 alkaline attack AA	colorimetry COL
soil	nitric-perchloric A5 volatilization VO	chromatography CHR
pulp	HF mixture A6 ignition IG	titration TTN
water	HF under pressure A7 pressed powder (XRF) PP	other chemical means CHEM
sludge	fusion A8 glass fusion (XRF) GF	miscellaneous MISC
slam sediment		fluorescence FLUOR
heavy mineral		inductively coupled plasma ICP

AUTHORISED OFFICER *[Signature]*

980195

194

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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CLIENT ORDER No.

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E15167

2 OF 3

TUBE No.		Cu	Zn	As	Pb				
1	152300	5	25	4	X	X	15		NW Langdon's Hill
2	152351	10	65	2	X	X	X		"
3	152352	5	60	X	X	X	X		-
4	152353	85	185	12	5.0	0.025	1550		-
5	152354	70	135	28	5.5	0.11	230		"
6	152355	X	20	1	X	X	X		"
7	152356	X	80	11	X	X	5		Silver Hills Rd
8	152357	X	5	5	X	X	5		"
9	152358	X	65	2	X	X	X		"
10	152359	15	120	17	X	X	X		Missing Link Rd
11	152360	X	60	2	X	X	X		-
12	152361	X	35	2	X	0.015	X		"
13	152362	5	85	13	X	X	X		"
14	152363	5	35	4	X	0.02	X		"
15	152364	X	20	6	X	0.03	X		"
16	152365	5	65	18	X	0.01	X		"
17	152366	X	40	17	X	X	X		"
18	152367	5	65	2	X	X	X		"
19	152368	5	10	X	X	X	X		Upper Forsters Rivulet
20	152369	35	5	2	X	X	5		"
21	152370	10	5	5	X	0.08	X		"
22	152371	10	75	29	X	0.015	50		"
23	152372	X	10	17	X	X	X		"
24	152373	X	5	X	X	0.005	X		-
25	152374	30	10	7	X	0.025	X		-

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

AUTHORISED OFFICER *A. Kennedy*

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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E15167

1 OF 3

TUBE No.	SAMPLE No.	Cu	Zn	Pb	As	Pb	Pb	Black Jack Ridge
1	152275	10	30	3	X	0.015	10	"
2	152276	X	15	X	X	X	10	"
3	152277	5	240	13	X	X	85	"
4	152278	X	45	X	X	X	5	"
5	152279	X	15	2	X	X	5	"
6	152280	5	25	3	X	X	5	"
7	152281	X	40	X	X	X	5	"
8	152282	X	40	3	X	X	5	"
9	152283	40	80	X	X	X	5	"
10	152284	X	10	3	X	X	10	"
11	152285	5	95	X	X	X	X	"
12	152286	X	55	3	X	X	5	"
13	152287	X	20	3	X	X	5	"
14	152288	X	65	15	X	X	55	"
15	152289	X	50	4	X	X	X	"
16	152290	10	85	3	X	X	X	SW Langdon Hill
17	152291	X	45	1	X	X	5	NW Langdon Hill
18	152292	35	15	1	X	0.025	20	"
19	152293	35	25	14	X	0.025	400	"
20	152294	25	10	3	X	X	10	"
21	152295	45	45	2	X	X	5	"
22	152296	100	60	2	X	0.05	10	"
23	152297	15	25	1	X	0.055	X	"
24	152298	10	35	1	X	X	X	"
25	152299	160	45	1	X	X	5	"

Results in ppm unless otherwise specified
 T = element present, but concentration too low to measure
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AUTHORISED OFFICER

M. Hardy

196

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No. 999.0 08 3227

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

ORDER No.	E15167	PROJ	Cygnat
DATE RECEIVED	19.8.85	RESULTS REQUIRED	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
		3	63

STATE OF SAMPLES	SAMPLE NUMBERS	PRE-TREATMENT							ANALYSIS		
		DRY	CRUSH	GRIT	PULV. VERSE	SIEVE	OTHER (SEE REMARKS)	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
C	152275-300 152351-387	1	2	4	3				Cu Pb Zn Ag As Au		101 114 313

RESULTS TO
As Above

RESULTS TO
Cyprus Minerals
5 Bedford St.,
New Town
Tasmania 7008

REMARKS

STATE OF SAMPLES	ANALYSIS - PREPARATION	ANALYSIS - METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqueous A4	colorimetry COL
soil SO	nitric perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemical means CHEM
tissue TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

AUTHORISED OFFICER *M. [Signature]*

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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E15167

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TUBE No.	SAMPLE No.	Cu	Zn	Pb	Ag	Bi	Pb		
1	152375	20	55	20	X	X	X		Upper Forsters Rivulet.
2	152376	25	10	X	X	X	X		5th Blk Jack Ridge.
3	152377	25	25	6	X	X	X		
4	152378	5	15	19	X	X	X		
5	152379	X	35	19	X	X	X		
6	152380	10	20	8	X	0.005	X		
7	152381	10	X	X	X	0.01	X		
8	152382	5	10	X	X	0.01	X		
9	152383	20	70	24	X	X	X		
10	152384	65	X	X	X	X	X		
11	152385	15	X	4	X	X	X		
12	152386	57.5	X		X	0.025	X		Silica healed Breccia
13	152387	300	10	45	X	0.81	30		troustone (seed)
14									
15									
17									
18									
19									
20									
21									
22									
23	DETECTION	5	5	1	0.5	0.005	5		
24	DIGESTION								
25	METHOD	101	101	114	101	313	101		

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined.

AUTHORISED OFFICER *M. [Signature]*

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

Phone (09) 458 7999

Telex AA92560

ANALYTICAL REPORT No.

999.0 08 8.57

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

ORDER No.	PROJECT
E 15170	Cyanet
DATE RECEIVED	RESULTS REQUIRED
5.9.85	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	12/9/85	3	57

STATE OF SAMPLE	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS			
		DRY	CRUSH	SPLIT	PULVERISE	SEIVE	OTHER - SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
RC	152394-399	1	2	3	4				Cu Pb Zn Ag		101
	152451-454								As		114
SO	152401-447								Au		313

RESULTS TO

As Above

RESULTS TO

✓ P. Jones
3 Bedford St.,
New Town 7008

REMARKS

STATE OF SAMPLES	ANALYSIS - PREPARATION	ANALYSIS - METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HT under pressure A7	other chemical means CHEM
sludge SL	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

AUTHORISED OFFICER *M. Kusly*

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

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E 15170

1 OF 3

TUBE No.	SAMPLE No.	Ca	Pb	Zn	Fe	As	Au	Ag	Notes		
1	152394	5	x	20	x	x	0.005		silt silt		
2	152395	70	5	x	x	x	x		Hydroth. Breccia		
3	152396	170	x	x	x	x	0.010		"		
4	152397	70	10	x	x	1	x		"		
5	152398	30	10	40	x	11	0.005		T. Hill silt	9890E - 9957N	
6	152399	15	5	20	x	5	x		"	9910E 9970N	
7	152401	15	30	110	x	14	0.005		T. Hill soils	10,000E - 9800N	
8	152402	20	20	145	x	11	x		"	9825N	
9	152403	10	15	75	x	5	x		"	9850N	
10	152404	5	15	45	x	5	x		"	9875N	
11	152405	10	15	45	x	10	x		"	9900N	
12	152406	20	15	65	x	8	x		"	9925N	
13	152407	5	5	35	x	4	0.020		"	9950N	
14	152408	5	25	35	x	6	x		"	9975N	
15	152409	x	40	65	x	x	x		"	10000N	
16	152410	20	10	100	0.5	14	x		"	10025N	
17	152411	25	70	85	x	40	0.010		"	10050N	
18	152412	10	70	65	x	20	0.005		"	10075N	
19	152413	20	50	110	x	40	x		"	10100N	
20	152414	30	145	145	x	44	x		"	10125N	
21	152415	10	80	165	x	20	0.005		"	10150N	
22	152416	x	80	255	x	6	0.005		"	10175N	
23	152417	x	35	85	x	10	0.010		"	10200N	
24	152418	5	70	105	x	4	0.005		"	10225N	
25	152419	x	40	70	x	5	0.005		"	10250N	

Results in ppm unless otherwise specified
 T = element present but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

AUTHORISED OFFICER

M. Murray

980201

200

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A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

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E 15170

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PIPE NO.	SAMPLE	CU	FO	TO	TR	RS	RU	TONS ALL SOILS	
1	152420	5	30	100	x	3	0.005	10100E	10250N
2	152421	5	40	70	x	7	0.010	"	10225N
3	152422	5	65	100	x	11	0.010	"	10200N
4	152423	5	50	80	x	14	0.025	"	10175N
5	152424	20	85	90	x	20	0.010	"	10150N
6	152425	15	55	130	x	12	0.015	"	10125N
7	152426	15	25	95	x	11	0.005	"	10100N
8	152427	10	30	110	x	19	0.005	"	10075N
9	152428	15	20	110	x	32	0.005	"	10050N
10	152429	10	20	35	x	18	x	"	10025N
11	152430	35	5	80	0.5	2	0.005	"	10000N
12	152431	15	15	25	x	13	0.005	"	9975N
13	152432	15	5	35	x	5	x	"	9950N
14	152433	15	25	145	x	11	x	"	9925N
15	152434	15	55	120	0.5	14	0.005	"	9900N
16	152435	10	25	95	x	13	x	"	9875N
17	152436	10	20	80	x	13	0.005	"	9850N
18	152437	15	20	105	x	14	x	"	9825N
19	152438	30	50	230	x	17	0.210	"	9800N
20	152439	20	25	85	x	2	0.005	10200E	9800N
21	152440	5	20	30	x	x	0.005	"	9825N
22	152441	x	5	100	x	12	0.005	"	9850N
23	152442	10	10	105	x	7	x	"	9875N
24	152443	5	15	90	x	10	x	"	9900N
25	152444	10	20	80	x	12	x	"	9925N

Results in ppm unless otherwise specified
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 - = element not determined

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ANALYTICAL DATA

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E 15170

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TUBE No.	SAMPLE No.				Pp	Pp	Pu	TOOYS	HILO	SOILS
1	152445	10	25	70	x	11	x	10200E	9950N	
2	152446	5	245	135	x	49	0.070	"	9975N	
3	152447	35	65	310	x	38	0.030	"	10,000N	
4	152451	30	10	75	x	x	0.005	T.MILL R/E silic	9700E/9950N	
5	152452	35	15	50	x	x	0.010	silic silic	9700E/9955N	
6	152453	30	30	100	x	6	x	silic	9696E/9965N	
7	152454	35	10	105	x	x	0.030	silic	9710E/9920N.	
8										
9										
10										
11										
12										
13										
14										
15										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	1	0.005			
24	DIGESTION									
25	METHOD	101	101	101	101	114	313			

Results in ppm unless otherwise specified
 T = element present, but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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TUBE No.	SAMPLE No.	CU	ZN	FE	CO	NI	AS	SE	OTHER	DESCRIPTION
1										Upper Forsters Rivulet.
2										Stn Blk Jack Ridge.
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										Silica heated Breccia
13										Ironstone (sed)
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 = element not determined

AUTHORISED OFFICER 

203

Phone (09) 458 7999

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd
52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No.

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ORDER No.

PROJECT

[Faint handwritten text, possibly sample description]

DATE RECEIVED

RESULTS REQUIRED

No. OF PAGES OF RESULTS

DATE REPORTED

No. OF COPIES

TOTAL No. OF SAMPLES

STATE OF SAMPLES	PRE-TREATMENT	ANALYSIS									
					REFER TO ANALYSIS SECTION	PREPARATION	METHOD				
REBEL	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE			

RESULTS TO

RESULTS TO

✓

REMARKS

STATE OF SAMPLES	ANALYSIS -- PREPARATION	ANALYSIS -- METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
string CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemicals means CHEM
sludge TI	fusion A8	miscellaneous MISC
slam sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

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980205

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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										OF
TUBE No.	SAMPLE No.	Li	Fe	Zn	Ba	Pb	Al	Notes		
1								silt slt		
2								Hydroth. Breccia		
3								"		
4								"		
5								T. Hill slt	9890E - 9957N	
6								"	9910E 9970N	
7								T. Hill soils		
								10,000E -	9800N	
8								"	9825 N	
9								"	9850 N	
10								"	9875 N	
11								"	9900N	
12								"	9925N	
13								"	9950N	
14								"	9975 N	
15								"	10000N	
								"	10025N	
17								"	10050N	
18								"	10075N	
19								"	10100N	
20								"	10125N	
21								"	10150N	
22								"	10175N	
23								"	10200N	
24								"	10225N	
25								"	10250N	

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 = element not determined

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980206

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ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Hg	As	Mn	TOBY'S HILL SOILS	
1	152440							10200E	9950N
2	152440							"	9975N
3	152440							"	10,000N
4								T.HILL RIC silw	9700E/9950N
5								silic silw	9700E/9955N
6								silw	9696E/9965N
7	152440							silw	9710E/9920N.
8									
9									
10									
11									
12									
13									
14									
15									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

AUTHORISED OFFICER *[Signature]*

980208

207

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No.

705 08 2273

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

ORDER No.

PROJECT

Cyprus Minerals
PO Box 493
North Sydney
NSW 2060

E 15171

Cygnat

DATE RECEIVED

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13.9.85

ASAP

No. OF PAGES OF RESULTS

DATE REPORTED

No. OF COPIES

TOTAL No. OF SAMPLES

3

72

STATE OF SAMPLES REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT							ANALYSIS			
		DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
SO	152448-450 152456-500 152532-555	1			2					Cu Pb Zn Ag As Au		101 114 313

REMARKS

RESULTS TO

Attn: Phil Jones
5 Bedford St
NEWTOWN 7008

RESULTS TO

Attn: B. Roxburgh
As Above

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core	perchloric acid	atomic absorption
split core	hydrochloric acid	x-ray fluorescence
cutting	nitric acid	spectrophotometry
rock	aqua regia	colorimetry
soil	nitric-perchloric	chromatography
pulp	HF mixture	titration
water	HF under pressure	other chemicals means
issue	fusion	miscellaneous
ream sediment		fluorescence
heavy mineral		inductively coupled plasma

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980209

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E 15171

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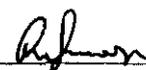
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As				
1	152448	30	75	75	X	11				
2	152449	25	120	120	X	20				
3	152450	10	55	80	X	20				
4	152456	5	X	55	0.5	11				
5	152457	5	X	70	X	11				
6	152458	5	10	50	X	18				
7	152459	10	60	150	0.5	21				
8	152460	10	75	140	X	20				
9	152461	5	50	110	X	18				
10	152462	20	50	245	X	25				
11	152463	30	10	70	X	40				
12	152464	5	20	220	X	11				
13	152465	5	185	250	X	20				
14	152466	5	X	100	X	12				
15	152467	5	X	70	X	10				
16	152468	5	X	65	X	14				
17	152469	5	X	40	X	9				
18	152470	5	15	40	X	8				
19	152471	5	X	40	X	7				
20	152472	5	70	50	X	7				
21	152473	5	20	40	X	11				
22	152474	5	X	60	X	9				
23	152475	5	X	40	0.5	11				
24	152476	5	X	45	X	8				
25	152477	5	5	55	0.5	X				

Results in ppm unless otherwise specified

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- = element not determined

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ANALYTICAL DATA

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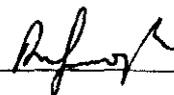
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Pg	Rs				
1	152478	5	10	50	X	11				
2	152479	5	X	25	X	4				
3	152480	5	25	40	X	2				
4	152481	5	X	60	X	18				
5	152482	5	X	50	X	13				
6	152483	5	X	55	X	17				
7	152484	5	X	150	X	20				
8	152485	5	X	210	X	19				
9	152486	X	X	40	0.5	X				
10	152487	5	10	55	X	10				
11	152488	5	20	75	X	12				
12	152489	5	20	60	0.5	12				
13	152490	10	40	80	0.5	12				
14	152491	5	25	110	X	16				
15	152492	5	10	110	X	24				
16	152493	5	10	75	X	12				
17	152494	20	50	85	X	20				
18	152495	5	10	25	X	11				
19	152496	25	X	85	X	22				
20	152497	25	X	85	X	12				
21	152498	15	5	25	X	26				
22	152499	15	X	30	X	18				
23	152500	15	X	25	X	3				
24	152532	25	X	65	X	20				
25	152533	20	15	75	X	8				

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED
OFFICER

980211

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ANALYTICAL DATA

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E 15171

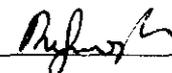
3 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As				
1	152534	10	10	75	X	10				
2	152535	15	35	85	X	12				
3	152536	15	65	115	X	20				
4	152537	10	10	50	X	9				
5	152538	25	40	70	X	15				
6	152539	25	15	100	X	10				
7	152540	20	50	235	X	10				
8	152541	20	5	105	X	10				
9	152542	5	20	65	X	11				
10	152543	65	55	35	X	10				
11	152544	40	20	35	X	4				
12	152545	20	75	55	X	X				
13	152546	15	X	15	X	3				
14	152547	35	45	95	X	11				
15	152548	20	30	75	X	9				
16	152549	20	65	145	X	20				
17	152550	20	25	70	X	10				
18	152551	10	15	30	X	7				
19	152552	5	X	25	X	8				
20	152553	15	10	70	0.5	9				
21	152554	20	25	115	X	11				
22	152555	5	X	50	X	7				
23	DETECTION	5	5	5	0.5	1				
24	DIGESTION									
25	METHOD	101	101	101	101	114				

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

AUTHORISED OFFICER



980212

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ANALYTICAL DATA

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REPORT NUMBER

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CLIENT ORDER No.

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E 15171

1 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au		
1	152448	30	75	75	X	11	0.045	-		
2	152449	25	120	120	X	20	x	-		
3	152450	10	55	80	X	20	x	-		
4	152456	5	X	55	0.5	11	x	-		
5	152457	5	X	70	X	11	x	-		
6	152458	5	10	50	X	18	x	-		
7	152459	10	60	150	0.5	21	x	-		
8	152460	10	75	140	X	20	x	-		
9	152461	5	50	110	X	18	x	x		
10	152462	20	50	245	X	25	x	-		
11	152463	30	10	70	X	40	x	-		
12	152464	5	20	220	X	11	0.01	-		
13	152465	5	185	250	X	20	0.01	-		
14	152466	5	X	100	X	12	0.01	-		
15	152467	5	X	70	X	10	0.01	-		
16	152468	5	X	65	X	14	0.01	-		
17	152469	5	X	40	X	9	x	-		
18	152470	5	15	40	X	8	x	-		
19	152471	5	X	40	X	7	x	x		
20	152472	5	70	50	X	7	x	-		
21	152473	5	20	40	X	11	x	-		
22	152474	5	X	60	X	9	x	-		
23	152475	5	X	40	0.5	11	x	-		
24	152476	5	X	45	X	8	x	-		
25	152477	5	5	55	0.5	X	x	-		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED OFFICER



980213

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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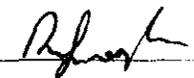
E 15171

2 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au		
1	152478	5	10	50	X	11	x	-		
2	152479	5	X	25	X	4	x	-		
3	152480	5	25	40	X	2	x	-		
4	152481	5	X	60	X	18	x	-		
5	152482	5	X	50	X	13	x	-		
6	152483	5	X	55	X	17	x	-		
7	152484	5	X	150	X	20	x	-		
8	152485	5	X	210	X	19	x	-		
9	152486	X	X	40	0.5	X	x	-		
10	152487	5	10	55	X	10	x	-		
11	152488	5	20	75	X	12	x	-		
12	152489	5	20	60	0.5	12	x	-		
13	152490	10	40	80	0.5	12	x	-		
14	152491	5	25	110	X	16	x	x		
15	152492	5	10	110	X	24	0.010	-		
16	152493	5	10	75	X	12	x	-		
17	152494	20	50	85	X	20	x	-		
18	152495	5	10	25	X	11	x	-		
19	152496	25	X	85	X	22	x	-		
20	152497	25	X	35	X	12	x	-		
21	152498	15	5	25	X	26	x	-		
22	152499	15	X	30	X	18	x	-		
23	152500	15	X	25	X	3	x	-		
24	152532	25	X	65	X	20	x	x		
25	152533	20	15	75	X	8	x	-		

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

AUTHORISED OFFICER



980214

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A division of MacDonal & Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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23.9.85

E 15171

3 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Hg		
1	152534	10	10	75	X	10	X	-		
2	152535	15	35	85	X	12	X	-		
3	152536	15	65	115	X	20	X	-		
4	152537	10	10	50	X	9	X	-		
5	152538	25	40	70	X	15	0.010	-		
6	152539	25	15	100	X	10	0.010	-		
7	152540	20	50	235	X	10	0.010	-		
8	152541	20	5	105	X	10	0.015	-		
9	152542	5	20	65	X	11	0.010	0.010		
10	152543	65	55	35	X	10	X	-		
11	152544	40	20	35	X	4	X	-		
12	152545	20	75	55	X	X	X	-		
13	152546	15	X	15	X	3	X	-		
14	152547	35	45	95	X	11	X	-		
15	152548	20	30	75	X	9	X	-		
16	152549	20	65	145	X	20	X	-		
17	152550	20	25	70	X	10	X	-		
18	152551	10	15	30	X	7	X	-		
19	152552	5	X	25	X	8	0.010	X		
20	152553	15	10	70	0.5	9	0.015	-		
21	152554	20	25	115	X	11	0.010	-		
22	152555	5	X	50	X	7	X	-		
23	DETECTION	5	5	5	0.5	1	0.005	0.005		
24	DIGESTION									
25	METHOD	101	101	101	101	114	313	313		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED OFFICER



980215

214

ANALABS

Phone (09) 458 7999

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No. 7.5 88 3276

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2 - OCT 1985

Cyprus Minerals
PO Box 493
North Sydney
NSW 2060

ORDER No.	PROJECT
E 15172	Cygnat
DATE RECEIVED	RESULTS REQUIRED
17.9.85	ASAP

STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS			
			DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
		152556-603	1			2					Cu Pb Zn Ag As Au	101 114 313

RESULTS TO

As Above
Attn: B. Roxburgh

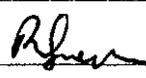
RESULTS TO

P. Jones
5 Bedford Street
NEWTOWN Tas

REMARKS

Despatch No. 2316

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemicals means CHEM
issue TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

AUTHORISED OFFICER 

980216

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A division of MacDonal Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

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15172

1 OF 3

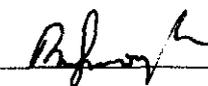
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As				
1	152556	15	40	100	x	14				
2	152557	5	25	10	x	4				
3	152558	10	55	70	x	16				
4	152559	5	40	60	x	8				
5	152560	15	40	95	x	15				
6	152561	15	35	80	x	17				
7	152562	25	30	80	x	22				
8	152563	30	25	85	x	36				
9	152564	20	10	55	x	6				
10	152565	80	60	100	x	21				
11	152566	30	15	60	x	5				
12	152567	25	25	95	x	6				
13	152568	20	50	90	x	11				
14	152569	15	155	75	x	9				
15	152570	10	15	45	x	6				
16	152571	10	35	60	x	8				
17	152572	5	35	45	x	14				
18	152573	15	40	65	x	18				
19	152574	15	40	60	x	12				
20	152571	10	40	60	x	7				
21	152576	10	40	70	x	11				
22	152577	30	30	40	x	14				
23	152578	20	40	210	x	15				
24	152579	10	55	100	x	21				
25	152580	10	40	90	x	16				

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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ANALYTICAL DATA

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2 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As				
1	152581	20	35	95	x	23				
2	152582	50	30	80	x	27				
3	152583	15	35	80	x	19				
4	152584	15	30	95	x	17				
5	152585	15	35	100	x	14				
6	152586	5	25	50	x	7				
7	152587	5	55	70	x	100				
8	152588	5	50	60	x	21				
9	152589	5	40	50	x	16				
10	152590	5	30	50	x	21				
11	152591	15	55	85	x	21				
12	152592	15	35	115	x	12				
13	152593	10	35	90	x	12				
14	152594	15	40	130	x	11				
15	152595	10	40	75	x	13				
16	152596	10	40	115	x	16				
17	152597	10	45	60	x	8				
18	152598	25	50	70	x	41				
19	152599	20	25	115	x	23				
20	152600	10	30	85	x	15				
21	152601	10	30	90	x	41				
22	152602	5	50	50	x	9				
23	152603	25	140	140	x	25				
24										
25										

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

-- = element not determined

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ANALYTICAL DATA

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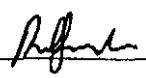
15172

3 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As				
1	DETECTION	5	5	5	0.5	1				
2	DIGESTION									
3	METHOD	101	101	101	101	114				
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

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ANALYTICAL DATA

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11572

4 OF 4

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As			
1	STD 3036		165	580	245	2.5	640			
2	RPT 152556		15	35	95	x	17			
3	RPT 152575		10	40	55	x	10			
4	STD 3036		165	580	250	1.0	650			
5	RPT 152596		15	40	110	x	19			
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		5	5	5	0.5	1			
24	DIGESTION									
25	METHOD		101	101	101	101	114			

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 -- = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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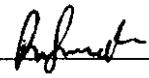
27.9.85

E 15172

5 OF 7

TUBE No.	SAMPLE No.	Au	Au Cks						
1	152556	X							
2	152557	X							
3	152558	0.94							
4	152559	0.06							
5	152560	X							
6	152561	0.01							
7	152562	0.015							
8	152563	0.030							
9	152564	0.010							
10	152565	0.070							
11	152566	0.010							
12	152567	0.010							
13	152568	0.010							
14	152569	0.010							
15	152570	0.010							
16	152571	X							
17	152572	X							
18	152573	X							
19	152574	X							
20	152575	0.050							
21	152576	X							
22	152577	0.020							
23	152578	0.010							
24	152579	X							
25	152580	0.010	0.010						

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

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ANALYTICAL DATA

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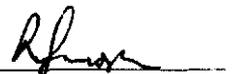
E 15172

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TUBE No.	SAMPLE No.	Au	Au Cks							
1	152581	0.010								
2	152582	0.010								
3	152583	0.010								
4	152584	X								
5	152585	X								
6	152586	X								
7	152587	X								
8	152588	0.010								
9	152589	X								
10	152590	X	X							
11	152591	X								
12	152592	X								
13	152593	X								
14	152594	X								
15	152595	X								
16	152596	0.90								
17	152597	0.050								
18	152598	X								
19	152599	X								
20	152600	X	X							
21	152601	X								
22	152602	X								
23	152603	X								
24										
25										

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

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A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

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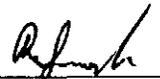
E 15172

7 OF 7

TUBE No.	SAMPLE No.	AU	AU Cks							
1	DETECTION	0.005	0.005							
2	DIGESTION									
3	METHOD	313	313							
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER



980223

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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1 of 1

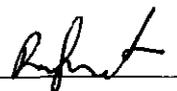
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As				
1	152604	25	75	110	x	33				
2	152605	35	90	440	x	20				
3	152606	35	165	160	x	29				
4	152607	60	125	150	x	33				
5	152608	20	30	40	x	7				
6	152609	30	50	105	x	20				
7	152610	25	35	100	x	7				
8	152611	25	85	210	x	12				
9	152612	25	70	90	x	25				
10	152613	30	130	225	x	490				
11	152614	20	55	125	x	25				
12	152615	25	80	135	1.0	30				
13	152616	10	40	60	0.5	40				
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	1				
24	DIGESTION									
25	METHOD	101	101	101	101	114				

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

AUTHORISED
OFFICER

980225

224

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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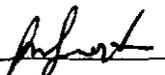
15173

1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Pg	As			
1	Std 3036	175	515	245	1.5	580			
2	Rpt 152604	25	80	115	x	39			
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	5	5	5	0.5	1			
24	DIGESTION								
25	METHOD	101	101	101	101	114			

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 -- = element not determined

AUTHORISED OFFICER



980226

225

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A division of MacDowall Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

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REPORT NUMBER

REPORT DATE

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E 15173

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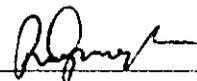
TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Ru		
1	152604		25	75	110	X	33	X		
2	152605		35	90	440	X	20	0.01		
3	152606		35	165	160	X	29	0.015		
4	152607		60	125	150	X	33	0.01		
5	152608		20	30	40	X	7	X		
6	152609		30	50	105	X	20	X		
7	152610		25	35	100	X	7	X		
8	152611		25	85	210	X	12	X		
9	152612		25	70	90	X	25	X		
10	152613		30	130	225	X	490	X		
11	152614		20	55	125	X	25	X		
12	152615		25	80	135	1.0	30	X		
13	152616		10	40	60	0.5	40	X		
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

--- = element not determined

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OFFICER


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A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

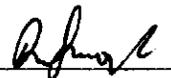
CLIENT ORDER No.

PAGE

		7.5 08 3279			27.9.85		E 15173		2 OF 2	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au			
1	STD 3036	175	615	245	1.5	680				
2	RPT 152604	25	80	115	X	39				
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	1	0.005			
24	DIGESTION					101				
25	METHOD	101	101	101	101	114	313			

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER



980228

227

ANALABS

A division of MacDonald, Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No. 7.5 08 3301

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

RECEIVED

Cyprus Minerals
PO Box 493
North Sydney
NSW 2060

5 NOV 1985

ORDER No.	PROJECT
E 15176	Cygnat
DATE RECEIVED	RESULTS REQUIRED
1.10.85	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
		3	94

STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS				
			DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
	60	152617-152710	1			2					Cu Pb Zn Ag As Au	101 101	101 114 313

RESULTS TO

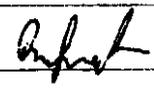
RESULTS TO

As Above
Att. Mr. B. Roxburgh

Mr. Philip Jones
Cyprus Minerals
5 Bedford Street
New Town Tas 7008

REMARKS
Despatch No:- 2319

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemical means CHEM
tissue TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

AUTHORISED OFFICER 

980229

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ANALYTICAL DATA

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10.10.85

E 15176

1 OF 5

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Pg				
1	152617		20	X	25	0.5				
2	152618		30	X	40	0.5				
3	152619		95	5	60	0.5				
4	152620		45	X	20	0.5				
5	152621		20	X	20	0.5				
6	152622		25	X	15	0.5				
7	152623		50	X	25	X				
8	152624		60	X	20	0.5				
9	152625		25	X	20	X				
10	152626		25	X	20	0.5				
11	152627		55	X	35	1.0				
12	152628		30	X	20	X				
13	152629		35	X	20	1.0				
14	152630		15	X	10	X				
15	152631		10	5	5	X				
16	152632		15	X	10	1.0				
17	152633		15	5	15	0.5				
18	152634		15	5	10	X				
19	152635		15	75	45	1.0				
20	152636		20	25	45	X				
21	152637		50	25	40	0.5				
22	152638		30	X	20	0.5				
23	152639		20	X	20	0.5				
24	152640		15	X	10	0.5				
25	152641		40	X	15	0.5				

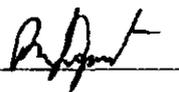
Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED OFFICER



980230

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ANALABS

A division of MacDonal Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

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10.10.85

E 15176

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TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag				
1	152642		25	X	10	0.5				
2	152643		55	X	15	0.5				
3	152644		40	X	15	0.5				
4	152645		60	X	10	1.0				
5	152646		25	X	10	X				
6	152647		40	X	10	0.5				
7	152648		25	X	15	0.5				
8	152649		35	X	10	X				
9	152650		40	5	10	1.0				
10	152651		55	X	15	1.0				
11	152652		40	X	15	0.5				
12	152653		45	X	10	X				
13	152654		45	10	10	0.5				
14	152655		15	X	10	0.5				
15	152656		20	5	10	X				
16	152657		60	X	15	1.0				
17	152658		60	X	15	0.5				
18	152659		35	X	15	0.5				
19	152660		40	X	10	X				
20	152661		35	X	5	0.5				
21	152662		40	X	5	X				
22	152663		70	X	15	X				
23	152664		50	X	15	X				
24	152665		30	X	5	X				
25	152666		50	X	5	0.5				

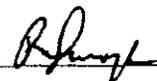
Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

-- = element not determined

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ANALYTICAL DATA

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PAGE

		7.5 08 3301				10.10.85		E 15176		3 OF 5	
TUBE No.	SAMPLE No.		Cu	Pb	Zn	Pg					
1	152667		45	X	5	0.5					
2	152668		70	X	5	X					
3	152669		45	X	5	X					
4	152670		105	X	40	0.5					
5	152671		20	X	5	0.5					
6	152672		30	X	5	X					
7	152673		15	X	X	X					
8	152674		35	X	5	X					
9	152675		60	X	10	X					
10	152676		20	X	25	0.5					
11	152677		20	X	15	X					
12	152678		15	X	20	X					
13	152679		10	X	45	X					
14	152680		10	X	30	0.5					
15	152681		10	X	20	1.0					
16	152682		15	X	20	0.5					
17	152683		15	X	25	X					
18	152684		15	X	5	0.5					
19	152685		15	X	5	X					
20	152686		10	X	X	X					
21	152687		25	X	10	X					
22	152688		25	X	5	0.5					
23	152689		30	X	5	0.5					
24	152690		55	X	10	0.5					
25	152691		70	X	10	X					

Results in ppm unless otherwise specified

Y = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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980233

ANALYTICAL DATA

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10.10.85

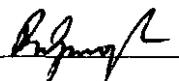
E 15176

4 OF 5

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag				
1	152692		80	X	10	0.5				
2	152693		75	X	55	0.5				
3	152694		85	X	15	0.5				
4	152695		35	X	10	X				
5	152696		35	X	5	X				
6	152697		40	X	25	X				
7	152698		105	5	75	0.5				
8	152699		20	X	20	X				
9	152700		20	X	40	X				
10	152701		40	X	10	X				
11	152702		70	X	20	X				
12	152703		60	X	20	X				
13	152704		25	X	5	X				
14	152705		95	X	10	X				
15	152706		145	X	110	X				
16	152707		60	X	15	X				
17	152708		50	X	20	X				
18	152709		65	X	15	X				
19	152710		50	X	5	X				
20										
21										
22										
23										
24										
25										

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

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TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag				
1	STD 3036		170	590	255	2.5				
2	RPT 152617		25	X	20	X				
3	RPT 152636		20	20	45	X				
4	STD 3036		170	610	255	3.0				
5	RPT 152657		60	X	15	0.5				
6	RPT 152676		20	X	20	0.5				
7	STD 3036		170	620	260	2.5				
8	RPT 152697		40	X	25	X				
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		5	5	5	0.5				
24	DIGESTION									
25	METHOD		101	101	101	101				

Results in ppm unless otherwise specified
 I = element present; but concentration too low to measure
 X = element concentration is below detection limit
 -- = element not determined

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ANALYTICAL DATA

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7.5 08 3301

10.10.85

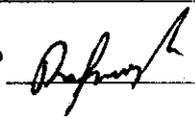
E 15176

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TUBE No.	SAMPLE No.	Au	Au Cks							
1	152617	X								
2	152618	X								
3	152619	X								
4	152620	X								
5	152621	X								
6	152622	X								
7	152623	0.065	0.040							
8	152624	0.05								
9	152625	0.095								
10	152626	X								
11	152627	X								
12	152628	X								
13	152629	X								
14	152630	X								
15	152631	X								
16	152632	0.025								
17	152633	0.01	0.015							
18	152634	0.02								
19	152635	X								
20	152636	0.02								
21	152637	0.01								
22	152638	0.07								
23	152639	0.01								
24	152640	X								
25	152641	0.01								

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

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ANALYTICAL DATA

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E 15176

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TUBE No.	SAMPLE No.	Au	Au Cks							
1	152642	0.01								
2	152643	0.04	0.035							
3	152644	0.01								
4	152645	0.01								
5	152646	X								
6	152647	0.01								
7	152648	X								
8	152649	X								
9	152650	0.045								
10	152651	0.105								
11	152652	0.01								
12	152653	X	X							
13	152654	0.01								
14	152655	X								
15	152656	X								
16	152657	0.01								
17	152658	0.01								
18	152659	0.01								
19	152660	0.015								
20	152661	0.01								
21	152662	0.015								
22	152663	0.025	0.025							
23	152664	0.01								
24	152665	0.01								
25	152666	0.01								

Results in ppm unless otherwise specified

T = element present, but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

7.5 08 3301

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E 15176

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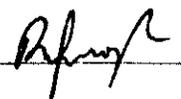
TUBE No.	SAMPLE No.	Au	Au Cks						
1	152667	0.01							
2	152668	0.01							
3	152669	0.025							
4	152670	0.025							
5	152671	0.01							
6	152672	X							
7	152673	0.01	X						
8	152674	X							
9	152675	0.015							
10	152676	0.01							
11	152677	X							
12	152678	X							
13	152679	X							
14	152680	X							
15	152681	X							
16	152682	X							
17	152683	X	X						
18	152684	0.01							
19	152685	0.01							
20	152686	X							
21	152687	X							
22	152688	0.045							
23	152689	X							
24	152690	0.045							
25	152691	0.170							

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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ANALYTICAL DATA

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7.5 08 3301

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E 15176

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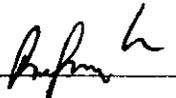
TUBE No.	SAMPLE No.	Au	Au Cks						
1	152692	0.075							
2	152693	0.02	0.01						
3	152694	X							
4	152695	0.01							
5	152696	X							
6	152697	0.015							
7	152698	0.05							
8	152699	X							
9	152700	X							
10	152701	0.03							
11	152702	0.05							
12	152703	X	X						
13	152704	X							
14	152705	0.02							
15	152706	0.055							
16	152707	0.065							
17	152708	0.028							
18	152709	0.075							
19	152710	0.02							
20									
21									
22									
23	DETECTION	0.005	0.005						
24	DIGESTION								
25	METHOD	313	313						

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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ANALYTICAL DATA

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PAGE

			7.5 08 3301	17.10.85	E 15176	10 OF 13	
TUBE No.	SAMPLE No.	µg					
1	152617	8					
2	152618	5					
3	152619	6					
4	152620	12					
5	152621	8					
6	152622	8					
7	152623	19					
8	152624	12					
9	152625	7					
10	152626	6					
11	152627	18					
12	152628	3					
13	152629	2					
14	152630	2					
15	152631	3					
16	152632	8					
17	152633	10					
18	152634	4					
19	152635	7					
20	152636	47					
21	152637	11					
22	152638	10					
23	152639	7					
24	152640	3					
25	152641	7					

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
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980240

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

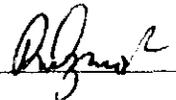
CLIENT ORDER No.

PAGE

			7.5 08 3301	17.10.85	E 15176	11 OF 13				
TUBE No.	SAMPLE No.	Rs								
1	152642	2								
2	152643	7								
3	152644	6								
4	152645	9								
5	152646	1								
6	152647	4								
7	152648	1								
8	152649	6								
9	152650	4								
10	152651	9								
11	152652	4								
12	152653	5								
13	152654	2								
14	152655	X								
15	152656	1								
16	152657	4								
17	152658	5								
18	152659	6								
19	152660	7								
20	152661	7								
21	152662	9								
22	152663	8								
23	152664	5								
24	152665	2								
25	152666	2								

Results in ppm unless otherwise specified
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ANALYTICAL DATA

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PAGE

7.5 08 3301

17.10.85

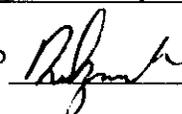
E 15176

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TUBE No.	SAMPLE No.	Rs									
1	152667	1									
2	152668	3									
3	152669	7									
4	152670	X									
5	152671	X									
6	152672	1									
7	152673	X									
8	152674	4									
9	152675	36									
10	152676	7									
11	152677	3									
12	152678	4									
13	152679	6									
14	152680	7									
15	152681	3									
16	152682	9									
17	152683	7									
18	152684	X									
19	152685	X									
20	152686	X									
21	152687	X									
22	152688	5									
23	152689	3									
24	152690	3									
25	152691	4									

Results in ppm unless otherwise specified
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 — = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

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PAGE

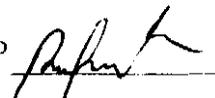
			7.5 00 3301	17.10.85	E 15176	13 OF 13			
TUBE No.	SAMPLE No.	As							
1	152692	20							
2	152693	2							
3	152694	9							
4	152695	11							
5	152696	10							
6	152697	3							
7	152698	48							
8	152699	2							
9	152700	3							
10	152701	5							
11	152702	11							
12	152703	11							
13	152704	5							
14	152705	16							
15	152706	20							
16	152707	42							
17	152708	49							
18	152709	90							
19	152710	70							
20									
21									
22									
23	DETECTION	1							
24	DIGESTION	101							
25	METHOD	114							

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

-- = element not determined

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5 NOV 1985

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A division of MacDonold Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

Phone (09) 458 7999

ANALYTICAL REPORT No. 7.5 08 3311

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Cyprus Minerals
PO Box 493
North Sydney
NSW 2060

ORDER No.	PROJECT
E 15177	Cygnat
DATE RECEIVED	RESULTS REQUIRED
8.10.85	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
		3	20

STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS			
			DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	RO	152851-866 152867-870	1	2		3				Cu Pb Zn Ag As Au Pt	101	101 114 312

RESULTS TO

As Above
Att. Mr. B. Roxburgh

RESULTS TO

Att. Mr. P. Jones
5 Bedford Street
New Town TAS 7008

REMARKS
Despatch No. 2320

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemicals means CHEM
issue TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

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980244

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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			7.5 08 3311	15.10.85	E 15177	1 OF 1	
TUBE No.	SAMPLE No.	Pt	Ru				
1	152851	x	0.032				
2	152852	x	0.008				
3	152853	x	x				
4	152854	x	x				
5	152855	0.008	0.025				
6	152856	x	0.017				
7	152857	x	0.017				
8	152858	x	x				
9	152859	x	0.017				
10	152860	0.008	0.017				
11	152861	x	0.025				
12	152862	0.009	0.025				
13	152863	x	0.032				
14	152864	x	0.075				
15	152865	x	0.117				
16	152866	x	x				
17	152867	0.008	0.592				
18	152868	x	0.017				
19	152869	x	0.040				
20	152870	x	0.032				
21							
22							
23	DETECTION	0.008	0.008				
24	DIGESTION						
25	METHOD	311	309				

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

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980245

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

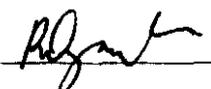
		7.5 08 3311				14.10.85		E 15177		1 OF 2	
TUBE No.	SAMPLE No.		Cu	Pb	Zn	Pg					
1	152851		60	25	30	X					
2	152852		45	20	20	X					
3	152853		10	10	135	X					
4	152854		60	15	140	X					
5	152855		150	20	15	X					
6	152856		345	20	20	X					
7	152857		95	35	85	X					
8	152858		50	20	80	X					
9	152859		175	10	10	X					
10	152860		310	30	25	X					
11	152861		450	30	50	X					
12	152862		660	30	40	X					
13	152863		295	30	25	X					
14	152864		210	25	65	X					
15	152865		315	20	50	X					
16	152866		115	20	750	X					
17	152867		250	15	115	X					
18	152868		145	15	50	X					
19	152869		180	15	5	X					
20	152870		50	10	15	X					
21											
22											
23											
24											
25											

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

AUTHORISED
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A division of MacDonald Hamilton & Co Pty. Ltd.

980246

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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E 15177

2 OF 2

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag				
1	STD 3036		155	575	245	2.0				
2	RPT 152851		65	20	25	0.5				
3	RPT 152870		50	10	15	X				
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		5	5	5	0.5				
24	DIGESTION									
25	METHOD		101	101	101	101				

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX

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REPORT DATE

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E 15177

4 OF 4

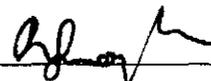
TUBE No.	SAMPLE No.	As								
1	152851	11								
2	152852	5								
3	152853	10								
4	152854	12								
5	152855	160								
6	152856	12								
7	152857	20								
8	152858	18								
9	152859	27								
10	152860	70								
11	152861	110								
12	152862	78								
13	152863	130								
14	152864	12								
15	152865	13								
16	152866	8								
17	152867	66								
18	152868	46								
19	152869	11								
20	152870	20								
21										
22										
23	DETECTION	1								
24	DIGESTION	101								
25	METHOD	114								

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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980248

Phone (09) 458 7999

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No. 7.5 08 3312

RECEIVED

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

5 NOV 1985
PROJECTCyprus Minerals
PO Box 493
North Sydney
NSW 2060

ORDER No.

E 15178

Cygnet

DATE RECEIVED

RESULTS REQUIRED

8.10.85

ASAP

No. OF PAGES
OF RESULTSDATE
REPORTEDNo.
OF COPIES

TOTAL No. OF SAMPLES

3

88

STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS				
			DRY	CRUSH	SPLIT	PUL- VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
SO		152711-798	1			2					Cu Pb Zn Ag As Au	101 101	101 114 313

RESULTS

TO

As Above
Att. Mr. B. Roxburgh

RESULTS

TO

Att. Mr. P. Jones
5 Bedford Street
New Town TAS 7008

REMARKS

Despatch No. 2321

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemicals means CHEM
issue TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

AUTHORISED OFFICER

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

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21.10.85

E 15178

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TUBE No.	SAMPLE No.	RS	AU						
1	152786	7	0.010						
2	152787	11	x						
3	152788	10	0.005						
4	152789	2	x						
5	152790	45	0.015						
6	152791	9	x						
7	152792	21	x						
8	152793	19	0.005						
9	152794	23	x						
10	152795	11	x						
11	152796	10	x						
12	152797	8	x						
13	152798	8	0.015						
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	1	0.005						
24	DIGESTION								
25	METHOD	114	313						

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

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980250

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

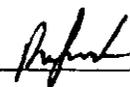
			7.5 08 3312	21.10.85	E 15178	3 OF 4	
TUBE No.	SAMPLE No.	As	AU				
1	152761	220	1.430				
2	152762	10	0.010				
3	152763	17	0.015				
4	152764	24	0.025				
5	152765	7	0.015				
6	152766	10	x				
7	152767	10	0.025				
8	152768	8	0.010				
9	152769	8	x				
10	152770	21	0.010				
11	152771	69	0.005				
12	152772	67	x				
13	152773	67	0.025				
14	152774	130	0.030				
15	152775	45	0.030				
16	152776	21	x				
17	152777	13	0.005				
18	152778	21	0.030				
19	152779	17	0.030				
20	152780	22	0.035				
21	152781	16	0.065				
22	152782	11	0.030				
23	152783	12	0.015				
24	152784	10	x				
25	152785	10	x				

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

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E 15178

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4

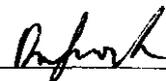
TUBE No.	SAMPLE No.	As	AU						
1	152736	15	x						
2	152737	65	0.130						
3	152738	13	x						
4	152739	22	0.015						
5	152740	30	0.090						
6	152741	12	0.030						
7	152742	11	0.010						
8	152743	18	0.110						
9	152744	8	0.025						
10	152745	7	0.010						
11	152746	4	0.030						
12	152747	9	0.135						
13	152748	8	0.010						
14	152749	29	0.020						
15	152750	57	0.035						
16	152751	39	0.010						
17	152752	23	0.005						
18	152753	20	0.010						
19	152754	6	0.010						
20	152755	17	0.005						
21	152756	25	0.020						
22	152757	16	0.005						
23	152758	22	0.025						
24	152759	38	0.010						
25	152760	40	0.030						

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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980252

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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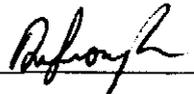
E 15178

1 OF 4

TUBE No.	SAMPLE No.	As	AU						
1	152711	20	0.040						
2	152712	11	0.035						
3	152713	10	0.115						
4	152714	6	0.050						
5	152715	2	0.015						
6	152716	2	0.020						
7	152717	6	0.040						
8	152718	6	0.045						
9	152719	5	0.060						
10	152720	5	0.020						
11	152721	3	0.025						
12	152722	5	0.010						
13	152723	7	0.025						
14	152724	2	0.005						
15	152725	3	x						
16	152726	4	0.020						
17	152727	7	0.050						
18	152728	12	0.040						
19	152729	9	0.060						
20	152730	9	0.030						
21	152731	12	0.040						
22	152732	900	x						
23	152733	260	0.060						
24	152734	90	0.010						
25	152735	33	0.010						

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

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A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

251
Phone (09) 458 7999

RECEIVED

ANALYTICAL REPORT No. 7 5 08 3328

5 NOV 1985

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Cyprus Minerals
PO Box 493
North Sydney
NSW 2060

ORDER No.	PROJECT
15179	CYGNET
DATE RECEIVED	RESULTS REQUIRED
15.10.85	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
		3	95

STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS			
			DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	60	152801-50,71 94,901-21	1			2					Cu Pb Zn Ag As Au	101 114 313

RESULTS TO

Attn: B. Roxburgh

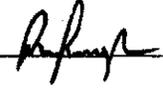
RESULTS TO

Attn: P. Jones
5 Bedford St.
NEWTOWN Hobart

REMARKS

Despatch No. 2322

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration ITN
water WA	HF under pressure A7	other chemicals means CHEM
sludge TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

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980254

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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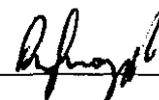
16179

1 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag					
1	152801	205	5	80	x					
2	152802	65	x	40	x					
3	152803	70	x	45	x					
4	152804	80	x	50	x					
5	152805	50	5	45	x					
6	152806	55	x	55	x					
7	152807	55	x	45	x					
8	152808	55	5	100	x					
9	152809	70	10	135	x					
10	152810	20	x	35	x					
11	152811	25	5	25	x					
12	152812	30	5	80	x					
13	152813	30	55	100	x					
14	152814	80	45	110	x					
15	152815	20	5	25	x					
16	152816	30	70	75	x					
17	152817	15	30	45	x					
18	152818	30	30	100	x					
19	152819	20	25	65	x					
20	152820	35	40	105	x					
21	152821	50	60	215	x					
22	152822	20	35	85	x					
23	152823	25	35	130	x					
24	152824	25	40	125	x					
25	152825	60	70	300	x					

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 -- = element not determined

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980255

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ANALYTICAL DATA

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4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag					
1	152826	35	55	225	x					
2	152827	10	30	105	x					
3	152828	20	10	60	x					
4	152829	30	10	45	x					
5	152830	85	5	85	x					
6	152831	80	15	40	x					
7	152832	10	x	15	x					
8	152833	10	5	20	x					
9	152834	35	5	60	x					
10	152835	30	15	75	x					
11	152836	40	10	50	x					
12	152837	40	10	45	x					
13	152838	35	x	35	x					
14	152839	25	x	30	x					
15	152840	25	x	30	x					
16	152841	50	20	30	x					
17	152842	135	20	60	x					
18	152843	75	15	30	x					
19	152844	90	10	55	x					
20	152845	90	40	85	x					
21	152846	125	x	55	x					
22	152847	100	5	40	x					
23	152848	240	5	90	x					
24	152849	130	10	150	x					
25	152850	250	15	145	x					

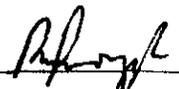
Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

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- = element not determined

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980256

ANALYTICAL DATA

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REPORT NUMBER

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag					
1	152871	370	15	340	x					
2	152872	130	15	190	x					
3	152873	110	15	465	x					
4	152874	155	10	285	x					
5	152875	80	155	390	x					
6	152876	45	55	180	x					
7	152877	15	75	95	x					
8	152878	20	35	115	x					
9	152879	15	30	95	x					
10	152880	30	70	125	x					
11	152881	15	30	75	x					
12	152882	15	60	70	x					
13	152883	15	55	80	x					
14	152884	15	10	85	x					
15	152885	25	15	145	x					
16	152886	15	20	70	x					
17	152887	25	10	145	x					
18	152888	40	10	205	x					
19	152889	70	15	425	x					
20	152890	70	10	150	x					
21	152891	165	15	215	x					
22	152892	185	10	155	x					
23	152893	220	20	515	x					
24	152894	330	5	110	x					
25	152901	20	x	10	x					

Results in ppm unless otherwise specified

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		7.5 08 3328				22.10.85		16179		4 OF 4	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Pg						
1	152902	105	10	80	x						
2	152903	115	x	35	x						
3	152904	275	x	50	x						
4	152905	120	x	40	x						
5	152906	70	x	30	x						
6	152907	70	x	30	x						
7	152908	20	x	25	x						
8	152909	15	x	25	x						
9	152910	45	x	20	x						
10	152911	90	20	330	x						
11	152912	115	20	635	x						
12	152913	40	10	275	x						
13	152914	45	15	200	x						
14	152915	40	20	235	x						
15	152916	25	15	150	x						
16	152917	20	10	190	x						
17	152918	15	5	115	x						
18	152919	30	110	375	x						
19	152920	30	70	190	x						
20	152921	20	35	145	x						
21											
22											
23	DETECTION	5	5	5	0.5						
24	DIGESTION										
25	METHOD	101	101	101	101						

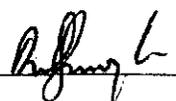
Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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A division of MacDonald Hamilton & Co. Pty. Ltd.

980258

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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1 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au			
1	152801	205	5	80	x	1	x			
2	152802	65	x	40	x	x	x*			
3	152803	70	x	45	x	x	x			
4	152804	80	x	50	x	x	x*			
5	152805	50	5	45	x	x	x			
6	152806	55	x	55	x	x	x*			
7	152807	55	x	45	x	x	x			
8	152808	55	5	100	x	x	x			
9	152809	70	10	135	x	x	x*			
10	152810	20	x	35	x	x	x*			
11	152811	25	5	25	x	x	x			
12	152812	30	5	80	x	x	x*			
13	152813	30	55	100	x	2	x			
14	152814	80	45	110	x	4	0.025*			
15	152815	20	5	25	x	x	0.005			
16	152816	30	70	75	x	2	0.010			
17	152817	15	30	45	x	x	0.010			
18	152818	30	30	100	x	4	0.005			
19	152819	20	25	65	x	2	0.008*			
20	152820	35	40	105	x	4	0.020			
21	152821	50	60	215	x	9	0.020			
22	152822	20	35	85	x	6	0.025			
23	152823	25	35	130	x	8	0.025			
24	152824	25	40	125	x	6	0.030			
25	152825	60	70	300	x	11	0.080			

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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980259

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

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23.10.85

15179

2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au			
1	152826	35	55	225	x	10	0.040			
2	152827	10	30	105	x	5	0.005			
3	152828	20	10	60	x	1	0.010			
4	152829	30	10	45	x	1	0.005			
5	152830	85	5	85	x	4	0.025			
6	152831	80	15	40	x	5	0.010			
7	152832	10	x	15	x	x	0.020			
8	152833	10	5	20	x	x	x			
9	152834	35	5	60	x	x	0.005			
10	152835	30	15	75	x	x	0.005			
11	152836	40	10	50	x	x	x			
12	152837	40	10	45	x	x	x			
13	152838	35	x	35	x	x	x			
14	152839	25	x	30	x	x	x			
15	152840	25	x	30	x	x	x			
16	152841	50	20	30	x	1	x			
17	152842	135	20	60	x	1	x			
18	152843	75	15	30	x	1	x			
19	152844	90	10	55	x	x	x			
20	152845	90	40	85	x	2	x			
21	152846	125	x	55	x	x	0.005			
22	152847	100	5	40	x	x	x			
23	152848	240	5	90	x	x	0.005			
24	152849	130	10	150	x	1	x			
25	152850	250	15	145	x	1	0.005			

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED OFFICER

R. Singh

258

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

980260

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		7.5 08 3328				23.10.85		15179		3 OF 4	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au				
1	152871	370	15	340	x	1	0.015				
2	152872	130	15	190	x	X	x				
3	152873	110	15	465	x	2	x				
4	152874	155	10	285	x	1	0.020				
5	152875	80	155	390	x	2	00.060				
6	152876	45	55	180	x	7	0.035				
7	152877	15	75	95	x	4	X*				
8	152878	20	35	115	x	6	0.010				
9	152879	15	30	95	x	6	0.005				
10	152880	30	70	125	x	8	0.020				
11	152881	15	30	75	x	3	0.005				
12	152882	15	60	70	x	9	0.010				
13	152883	15	55	80	x	6	0.025				
14	152884	15	10	85	x	4	0.010				
15	152885	25	15	145	x	2	0.015				
16	152886	15	20	70	x	1	X				
17	152887	25	10	145	x	1	0.010				
18	152888	40	10	205	x	1	0.020				
19	152889	70	15	425	x	3	0.030				
20	152890	70	10	150	x	1	0.030				
21	152891	165	15	215	x	2	0.050				
22	152892	185	10	155	x	2	0.070				
23	152893	220	20	515	x	2	0.040				
24	152894	330	5	110	x	1	0.020				
25	152901	20	x	10	x	X	X				

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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A division of Macdonald Hamilton & Co. Pty. Ltd.

980261

ANALYTICAL DATA

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CLIENT ORDER No.

PAGE

		7.5 08 3328				23.10.85		15179		4 OF 4	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au				
1	152902	105	10	80	x	2	x				
2	152903	115	x	35	x	1	x				
3	152904	275	x	50	x	1	0.020				
4	152905	120	x	40	x	1	0.020				
5	152906	70	x	30	x	2	0.035				
6	152907	70	x	30	x	3	0.020				
7	152908	20	x	25	x	x	0.010				
8	152909	15	x	25	x	3	x				
9	152910	45	x	20	x	3	0.030				
10	152911	90	20	330	x	3	0.030				
11	152912	115	20	635	x	5	0.035				
12	152913	40	10	275	x	1	0.040				
13	152914	45	15	200	x	5	0.030				
14	152915	40	20	235	x	5	0.060				
15	152916	25	15	150	x	1	0.030				
16	152917	20	10	190	x	3	0.032*				
17	152918	15	5	115	x	x	0.015				
18	152919	30	110	375	x	3	0.040*				
19	152920	30	70	190	x	5	0.050				
20	152921	20	35	145	x	3	0.020				
21											
22											
23	DETECTION	5	5	5	0.5	1	0.005				
24	DIGESTION										
25	METHOD	101	101	101	101	114	313				

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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Phone (09) 458 7999

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

5 NOV 1985 92560

ANALYTICAL REPORT No. 7.5 08 3340

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Cyprus Minerals
PO Box 493
North Sydney
NSW 2060

ORDER No.	PROJECT
E 15183	CYGNET
DATE RECEIVED	RESULTS REQUIRED
22.10.85	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
		3	55

STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS			
			DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	60	152922-976	1			2					Cu Pb Zn Ag As Au	101 114 313

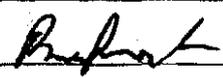
RESULTS TO RESULTS TO

Attn: B. Roxburgh

Attn: P. Jones

REMARKS
Deapatch No. 2323

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemicals means CHEM
tissue TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

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A division of MacDonald Hamilton & Co. Pty. Ltd.

980263

ANALYTICAL DATA

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REPORT NUMBER

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28.10.85

E 15183

1 Of 4

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Au		
1	152922		45	55	125	X	12	0.030		
2	152923		60	60	75	X	22	0.035		
3	152924		55	5	115	X	13	0.030		
4	152925		70	X	105	X	7	0.010		
5	152926		60	X	80	X	9	0.040		
6	152927		10	X	15	X	6	X		
7	152928		10	X	10	X	1	0.035		
8	152929		15	X	20	X	3	0.010		
9	152930		30	5	40	X	4	0.010		
10	152931		30	X	45	X	3	0.005		
11	152932		20	X	50	X	3	0.010		
12	152933		35	120	200	X	8	0.010		
13	152934		50	X	40	X	6	X		
14	152935		25	X	40	X	1	X		
15	152936		25	X	70	X	3	0.005		
16	152937		35	X	65	X	5	0.010		
17	152938		30	X	45	X	5	0.010		
18	152939		25	X	30	X	3	X		
19	152940		70	100	50	X	4	0.010		
20	152941		35	5	25	X	4	0.020		
21	152942		30	X	30	X	11	0.005		
22	152943		30	X	35	X	5	0.010		
23	152944		10	X	25	X	2	0.010		
24	152945		65	10	135	X	16	0.015		
25	152946		20	X	30	X	4	0.010		

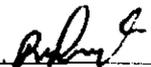
Results in ppm unless otherwise specified

T = element present: but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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262

980264

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A division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

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E 15183

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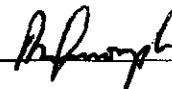
TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Au		
1	152947		35	25	30	X	5	0.020		
2	152948		35	X	50	X	2	0.005		
3	152949		20	X	25	X	2	X		
4	152950		40	X	50	X	8	X		
5	152951		20	X	20	X	3	X		
6	152952		30	X	20	X	3	X		
7	152953		60	60	105	X	3	0.010		
8	152954		20	X	15	X	2	X		
9	152955		20	X	25	X	5	0.005		
10	152956		35	50	40	X	6	0.005		
11	152957		20	X	25	X	2	0.005		
12	152958		35	X	25	X	15	0.030		
13	152959		20	X	10	X	1	X		
14	152960		15	X	10	X	2	0.005		
15	152961		40	X	25	X	4	0.010		
16	152962		30	X	15	X	8	0.015		
17	152963		25	X	15	X	5	0.020		
18	152964		45	X	40	X	8	0.015		
19	152965		30	X	20	X	4	0.015		
20	152966		40	25	30	X	5	0.025		
21	152967		20	X	20	X	4	0.045		
22	152968		40	40	40	X	3	0.015		
23	152969		20	X	45	X	5	X		
24	152970		20	X	20	X	4	0.010		
25	152971		25	X	40	X	1	X		

Results in ppm unless otherwise specified

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X = element concentration is below detection limit

— = element not determined

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A division of MacDonald Hamilton & Co. Pty. Ltd.

980265

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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28.10.85

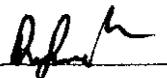
E 15183

3 OF 4

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Au		
1	152972		50	135	455	X	14	0.015		
2	152973		90	315	950	X	8	0.010		
3	152974		105	X	35	X	4	0.005		
4	152975		50	5	25	X	3	0.035		
5	152976		100	90	80	X	5	0.020		
6										
7										
8										
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23										
24										
25										

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

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A division of MacDonald Hamilton & Co. Pty. Ltd.

980266

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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E 15183

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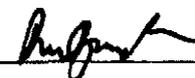
TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Au		
1	STD 3036		175	580	260	2.5	460			
2	RPT 152922		45	65	130	X	12			
3	RPT 152941		35	X	25	X	3			
4	STD 3036		185	600	250	2.5	390			
5	RPT 152962		30	X	15	X	6			
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		5	5	5	0.5	1	0.005		
24	DIGESTION						101			
25	METHOD		101	101	101	101	114	313		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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980267

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Phone (09) 458 7999

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

Tel: 4402640

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ANALYTICAL REPORT No. 7.5 08 3342

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

6 NOV 1985

Cyprus Minerals
PO Box 493
North Sydney
NSW 2060

ORDER No.

PROJECT

E 15184

Cygnat

DATE RECEIVED

RESULTS REQUIRED

24.10.85

ASAP

No. OF PAGES OF RESULTS

DATE REPORTED

No. OF COPIES

TOTAL No. OF SAMPLES

3

49

STATE OF SAMPLES	REFER FLOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS				
			DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
	SO	152977-153000 161001-161025	1			2					Cu Pb Zn Ag As Au	101 101	101 114 313

RESULTS

TO

As Above
Att. Mr. B. Roxburgh

RESULTS

TO

Mr. F. Jones
5 Bedford Street
New Town TAS 7008

REMARKS

Despatch No. 2324

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
pit core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
biting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
ck	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
ssue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
eam sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

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[Signature]

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A Division of MacDonald Hamilton & Co. Pty. Ltd.

980268

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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30.10.85

E15184

1 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Pg	As				
1	152977	70	X	40	1.0	5				
2	152978	80	20	75	1.5	20				
3	152979	40	10	30	0.5	11				
4	152980	30	80	70	0.5	10				
5	152981	155	630	370	1.0	24				
6	152982	65	15	105	0.5	5				
7	152983	85	190	520	0.5	12				
8	152984	55	100	105	0.5	8				
9	152985	90	120	110	1.5	7				
10	152986	30	20	50	0.5	4				
11	152987	65	120	100	1.0	7				
12	152988	80	85	95	1.0	4				
13	152989	90	55	80	1.5	7				
14	152990	75	40	105	1.0	12				
15	152991	110	55	165	1.5	21				
16	152992	85	10	135	1.0	12				
17	152993	35	X	50	0.5	7				
18	152994	35	50	70	1.0	4				
19	152995	15	65	45	0.5	3				
20	152996	10	20	20	0.5	4				
21	152997	45	50	45	0.5	5				
22	152998	20	30	45	0.5	4				
23	152999	15	40	15	X	4				
24	153000	25	20	15	1.0	3				
25	161001	35	45	15	0.5	4				

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

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A division of MacDonald Hamilton & Co. Pty. Ltd.

980269

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

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E15184

2 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Pg	As				
1	161002	35	30	15	0.5	3				
2	161003	55	140	60	1.0	7				
3	161004	45	25	100	1.0	4				
4	161005	25	20	25	1.0	7				
5	161006	95	50	70	1.5	3				
6	161007	110	110	85	1.0	4				
7	161008	25	20	15	0.5	1				
8	161009	100	X	20	0.5	4				
9	161010	40	5	20	1.0	7				
10	161011	85	5	35	1.5	9				
11	161012	100	80	125	1.0	11				
12	161013	100	30	110	1.5	10				
13	161014	105	10	55	1.0	12				
14	161015	35	15	55	1.0	2				
15	161016	70	40	65	1.0	7				
16	161017	50	45	170	0.5	9				
17	161018	50	40	115	0.5	20				
18	161019	145	50	140	1.0	22				
19	161020	70	40	100	1.0	4				
20	161021	15	5	15	X	2				
21	161022	35	20	20	0.5	10				
22	161023	30	25	30	1.0	15				
23	161024	85	75	125	1.5	7				
24	161025	70	60	50	1.0	14				
25										

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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A division of MacDonald Hamilton & Co. Pty. Ltd.

980270

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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E15184

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As				
1	Std3036	170	580	250	3.5	530				
2	152977	70	5	40	1.5	6				
3	152996	10	20	20	0.5	7				
4	Std3036	165	575	255	3.5	510				
5	161017	50	50	170	0.5	9				
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	1				
24	DIGESTION									
25	METHOD	101	101	101	101	114				

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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A division of MacDonald Hamilton & Co. Pty. Ltd.

980271

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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1.11.85

E 15184

1 of 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au			
1	152977	70	X	40	1.0	5	X			
2	152978	80	20	75	1.5	20	0.025			
3	152979	40	10	30	0.5	11	X			
4	152980	30	80	70	0.5	10	X			
5	152981	155	630	370	1.0	24	0.005			
6	152982	65	15	105	0.5	5	X			
7	152983	85	190	520	0.5	12	0.015			
8	152984	55	100	105	0.5	8	X			
9	152985	90	120	110	1.5	7	0.005			
10	152986	30	20	50	0.5	4	X			
11	152987	65	120	100	1.0	7	0.015			
12	152988	80	85	95	1.0	4	X			
13	152989	80	55	80	1.5	7	X			
14	152990	75	40	105	1.0	12	X			
15	152991	110	55	165	1.5	21	0.005			
16	152992	85	10	135	1.0	12	0.010			
17	152993	35	X	50	0.5	7	X			
18	152994	35	60	70	1.0	4	X			
19	152995	15	65	45	0.5	3	X			
20	152996	10	20	20	0.5	4	X			
21	152997	45	50	45	0.5	5	X			
22	152998	20	30	45	0.5	4	X			
23	152999	15	40	15	X	4	X			
24	153000	25	20	15	1.0	8	X			
25	161001	35	45	15	0.5	4	X			

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER

Refined

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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E 15184

2 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au			
1	161002	35	30	15	0.5	3	X			
2	161003	55	140	60	1.0	7	0.015			
3	161004	45	25	100	1.0	4	X			
4	161005	25	20	25	1.0	7	0.005			
5	161006	95	50	70	1.5	3	X			
6	161007	110	110	85	1.0	4	X			
7	161008	25	20	15	0.5	1	X			
8	161009	100	X	20	0.5	4	X			
9	161010	40	5	20	1.0	7	X			
10	161011	85	5	35	1.5	9	X			
11	161012	100	80	125	1.0	11	X			
12	161013	100	30	110	1.5	10	X			
13	161014	105	10	55	1.0	12	X			
14	161015	35	15	55	1.0	2	X			
15	161016	70	40	65	1.0	7	X			
16	161017	50	45	170	0.5	9	X			
17	161018	50	40	115	0.5	20	X			
18	161019	145	50	140	1.0	22	X			
19	161020	70	40	100	1.0	4	X			
20	161021	15	5	15	X	2	X			
21	161022	35	20	20	0.5	10	X			
22	161023	30	25	30	1.0	15	X			
23	161024	85	75	125	1.5	7	X			
24	161025	70	60	50	1.0	14	X			
25										

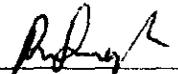
Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

AUTHORISED OFFICER



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271

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

7.5 08 3342

1.11.85

E 15184

3 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au			
1	Std3036	170	580	250	3.5	530				
2	152977	70	5	40	1.5	6				
3	152996	10	20	20	0.5	7				
4	Std3036	165	575	255	3.5	510				
5	161017	50	50	170	0.5	9				
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	1	0.005			
24	DIGESTION									
25	METHOD	101	101	101	101	114	313			

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER



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980274

Phone (09) 458 7999

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No. 7.5 08 3358

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

RECEIVED

Cyprus Minerals
PO Box 493
North Sydney
NSW 2060

22 NOV 1985

ORDER No.	PROJECT
E15190	Cygnat
DATE RECEIVED	RESULTS REQUIRED
5.11.85	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES								
		3	3								
STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS			
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
Ro	52895-97		1		2				CuPbZnAg As Au		101 114 313

RESULTS TO

Att. B Roxburgh

RESULTS TO

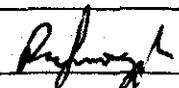
Att. P Jones

REMARKS

DESPATCH NO 2325

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemicals means CHEM
issue TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

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980275

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

7.5 08 3358B

19.11.85

E15190

3 OF 3

TUBE No.	SAMPLE No.	Flu							
1	152895	0.055							
2	152896	0.190							
3	152897	0.055							
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	0.005							
24	DIGESTION								
25	METHOD	313							

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

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P. [Signature]

274

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980276

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

7.5 08 3358

7.11.85

E15190

1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As				
1	152895	100	150	150	0.5	14				
2	152896	120	110	100	x	85				
3	152897	50	15	45	x	18				
4										
5										
6										
7										
8										
9										
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20										
21										
22										
23										
24										
25										

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

7.5 08 3358

7.11.85

E15190

2 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As				
1	Std3036	170	595	255	2.5	630				
2	152895	100	140	145	0.5	16				
3										
4										
5										
6										
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15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	1				
24	DIGESTION									
25	METHOD	101	101	101	101	114				

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER 

ANALABS

980278

276
Phone (09) 458 7999

A division of MacDonald Holt & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

ANALYTICAL REPORT No. 7.5 88 3588

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Cyprus Minerals
PO Box 493
North Sydney
NSW 2060

ORDER No. E16970	PROJECT <i>CYBNET</i>
DATE RECEIVED 11.3.86	RESULTS REQUIRED ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES 3	TOTAL No. OF SAMPLES 102
-------------------------	---------------	--------------------	-----------------------------

STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS			
			DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SS		161393-493 Odd Nos Only	1				2				Cu Pb Zn Ag As Au	101 114 310
PC		161394-494 Even Nos Only	1			2					Cu Pb Zn Ag As Au	101 114 310

RESULTS

TO

As Above
Attn: B Roxburgh

RESULTS

TO

Philip Jones
Cyprus Minerals
"Ocean View"
Saddle Rd.,
Kettering

REMARKS

Despatch No.
2332

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock RO	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemicals means CHEM
tissue TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

AUTHORISED OFFICER *[Signature]*

277

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980279

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

ODD NUMBERS		7.5 08 3588			19.3.86		E 16970		1 OF 4	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au			
1	161393	5	5	60	x	1	x			
2	161395	10	10	75	x	1	x			
3	161397	5	x	50	0.5	x	x			
4	161399	x	x	25	x	x	x			
5	161401	10	x	25	x	x	x			
6	161403	10	x	45	x	x	x			
7	161405	10	x	90	x	x	x			
8	161407	20	x	40	x	6	x			
9	161409	5	x	15	x	1	x			
10	161411	5	x	45	x	x	x			
11	161413	10	x	45	x	x	x			
12	161415	5	x	30	x	x	x			
13	161417	5	x	35	x	x	x			
14	161419	5	5	55	x	x	x			
15	161421	10	5	110	x	x	x			
16	161423	25	x	60	x	x	x			
17	161425	15	5	70	x	1	x			
18	161427	15	x	45	x	x	x			
19	161429	5	x	50	x	x	x			
20	161431	20	5	40	x	1	x			
21	161433	10	5	50	x	x	x			
22	161435	15	x	35	x	3	x			
23	161437	25	10	75	x	4	x			
24	161439	15	10	95	x	14	x			
25	161441	25	15	35	x	x	x			

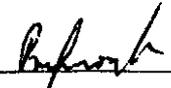
Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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278

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980280

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

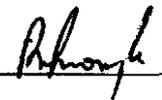
REPORT DATE

CLIENT ORDER No.

PAGE

ODD NUMBERS		7.5 08 3588				19.3.86		E 16978		2 OF 4	
TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Au			
1	161443		5	x	35	x	x	x			
2	161445		5	x	45	x	3	x			
3	161447		x	x	40	x	x	x			
4	161449		x	x	70	x	x	x			
5	161451		15	5	135	x	x	x			
6	161453		15	x	55	x	x	x			
7	161455		x	x	50	x	5	x			
8	161457		10	10	115	x	3	x			
9	161459		5	15	40	x	x	x			
10	161461		5	x	80	x	x	x			
11	161463		x	x	60	x	17	x			
12	161465		x	15	70	x	3	x			
13	161467		5	x	55	x	x	x			
14	161469		x	x	90	x	x	x			
15	161471		x	x	50	0.5	1	x			
16	161473		x	5	60	x	1	x			
17	161475		5	x	60	x	x	x			
18	161477		10	15	20	x	5	x			
19	161479		35	5	50	x	4	x			
20	161481		10	20	30	x	11	x			
21	161483		10	15	65	x	x	x			
22	161485		5	5	35	x	2	x			
23	161487		5	10	65	x	x	x			
24	161489		5	10	30	x	x	x			
25	161491		10	5	40	x	2	x			

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER 

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A division of MacDonald Hamilton & Co. Pty. Ltd.

980281

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

ODD NUMBERS		7.5 08 3588				19.3.86		E 16970		3 OF 4	
TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Au			
1	161493		5	x	40	x	x	x			
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
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19											
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21											
22											
23											
24											
25											

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
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 — = element not determined

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980282

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

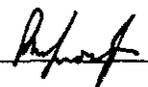
ODD NUMBERS		7.5 08 3588			19.3.86		E 16970		4 OF 4	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au			
1	STD 3036	160	595	260	2.5	500				
2	RPT 161393	5	x	65	x	2				
3	RPT 161431	15	x	40	x	x				
4	STD 3036	160	570	230	2.0	490				
5	RPT 161473	5	x	60	x	x				
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	1	0.005			
24	DIGESTION									
25	METHOD	101	101	101	101	114	313			

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

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— = element not determined

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A division of MacDonald Hamilton & Co. Pty. Ltd.

980283

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

EVEN NUMBERS		7.5 08 3588B			19.3.86		E 16970		5 OF 8	
TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Au		
1	161394		5	5	35	x	5	x		
2	161396		10	10	45	x	2	x		
3	161398		10	20	65	x	7	0.21		
4	161400		5	x	20	x	3	x		
5	161402		15	x	15	x	x	x		
6	161404		10	x	30	x	x	x		
7	161406		20	10	75	x	3	x		
8	161408		20	x	30	x	x	x		
9	161410		10	x	20	0.5	x	x		
10	161412		5	5	55	x	x	x		
11	161414		5	5	30	x	7	x		
12	161416		5	5	30	x	x	x		
13	161418		x	x	30	x	x	x		
14	161420		x	5	30	x	10	x		
15	161422		5	5	70	x	x	x		
16	161424		45	15	110	x	1	x		
17	161426		30	5	95	x	x	x		
18	161428		25	10	85	x	2	x		
19	161430		10	10	45	x	4	x		
20	161432		20	10	35	x	8	x		
21	161434		15	10	25	x	5	x		
22	161436		25	5	20	x	x	x		
23	161438		20	1300	30	x	3	x		
24	161440		5	5	30	x	4	x		
25	161442		30	10	25	x	1	x		

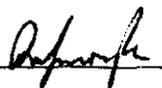
Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

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— = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

EVEN NUMBERS

7.5 08 3588E

19.3.86

E 16970

6 OF 8

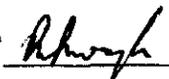
TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Au		
1	161444		15	5	35	x	x	x		
2	161446		10	5	55	x	x	x		
3	161448		5	25	60	x	6	x		
4	161450		10	5	120	x	1	x		
5	161452		5	x	90	x	1	x		
6	161454		20	x	40	x	x	x		
7	161456		5	x	70	x	3	x		
8	161458		15	10	90	x	x	x		
9	161460		30	5	35	x	1	x		
10	161462		5	x	20	x	5	x		
11	161464		10	5	70	x	13	x		
12	161466		5	10	65	x	x	x		
13	161468		25	5	55	x	10	x		
14	161470		5	x	125	x	16	x		
15	161472		5	x	35	x	16	x		
16	161474		15	10	60	x	x	x		
17	161476		5	x	65	x	15	0.03		
18	161478		45	170	120	x	13	0.03		
19	161480		35	40	70	x	25	x		
20	161482		10	15	40	x	6	x		
21	161484		5	55	35	x	5	x		
22	161486		5	5	40	x	21	x		
23	161488		5	x	30	x	x	x		
24	161490		10	10	120	x	2	x		
25	161492		25	20	35	0.5	21	x		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED
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A division of MacDonald Hamilton & Co. Pty. Ltd.

980285

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

EVEN NUMBERS

7.5 08 3588B

19.3.86

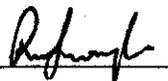
E 16970

7 of 8

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Au		
1	161494		5	x	35	x	x	x		
2										
3										
4										
5										
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8										
9										
10										
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25										

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

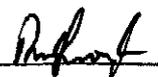
CLIENT ORDER No.

PAGE

EVEN NUMBERS		7.5 08 35888				19.3.86		E 16970		8 OF 8	
TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Flu			
1	STD 3036		160	605	225	2.0	560				
2	RPT 161394		5	10	40	x	6				
3	RPT 161432		20	15	35	x	9				
4	STD 3036		155	580	225	2.0	580				
5	RPT 161474		15	5	60	x	x				
6											
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18											
19											
20											
21											
22											
23	DETECTION		5	5	5	0.5	1	0.005			
24	DIGESTION										
25	METHOD		101	101	101	101	114	313			

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 — = element not determined

AUTHORISED OFFICER



ANALABS

980287

285
Phone (09) 458 7999

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

TLX: AA 59224
ANALYTICAL REPORT No. 7.5.08.03794

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

B. Roxburgh
Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

ORDER No.	E17000	PROJECT	CYGNET
DATE RECEIVED	18/07/86	RESULTS REQUIRED	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
4	29/07/86	1	74

STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS			
			DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
		169030/169103	RC	Prep: 006,009,013,018						Cu, Pb, Zn, Ag/101, As/114		
		169030/169103	PU							Au/329		
		169030/169103	PU							Au/310		

RESULTS TO	B. Roxburgh Cyprus Minerals P.O. Box 493 North Sydney N.S.W. 2060
	RESULTS TO
REMARKS	

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core	perchloric acid A1	atomic absorption AAS
split core	hydrochloric acid A2	x-ray fluorescence XRF
cutting	nitric acid A3	spectrophotometry SPEC
rock	aqua regia A4	colorimetry COL
soil	nitric-perchloric A5	chromatography CHR
pulp	HF mixture A6	titration TTN
water	HF under pressure A7	other chemical means CHEM
issue	fusion A8	miscellaneous MISC
stream sediment		fluorescence FLUOR
heavy mineral		inductively coupled plasma ICP

AUTHORISED OFFICER *[Signature]*

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

980288

ANALYTICAL DATA

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CLIENT ORDER No.

PAGE

		7.5.08.03794				29/07/86		E17000		1 OF 4	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	AuChk			
1	169030	60	<5	15	<0.5	81	<0.01	-			
2	169031	115	<5	20	<0.5	102	0.02	-			
3	169032	170	<5	15	<0.5	420	0.08	0.055			
4	169033	125	<5	15	<0.5	190	<0.01	-			
5	169034	105	<5	15	<0.5	94	0.04	-			
6	169035	80	<5	15	<0.5	31	0.04	-			
7	169036	60	<5	15	<0.5	21	0.05	-			
8	169037	55	<5	10	<0.5	20	0.03	-			
9	169038	65	<5	20	<0.5	29	0.01	-			
10	169039	40	<5	10	<0.5	34	<0.01	-			
11	169040	45	<5	10	<0.5	29	<0.01	-			
12	169041	75	5	15	<0.5	21	0.02	-			
13	169042	95	5	15	<0.5	15	0.15	0.260			
14	169043	90	<5	15	<0.5	10	0.06	-			
15	169044	65	<5	15	<0.5	5	0.05	-			
16	169045	90	5	10	<0.5	13	0.01	-			
17	169046	135	5	15	<0.5	24	0.13	0.120			
18	169047	45	5	15	<0.5	7	0.10	0.140			
19	169048	75	10	25	<0.5	3	0.32	0.235			
20	169049	65	5	35	<0.5	<1	0.47	0.036			
21	169050	115	10	10	<0.5	21	0.32	0.385			
22	169051	55	<5	25	<0.5	3	0.63	0.705			
23	169052	75	<5	15	<0.5	2	0.16	0.155			
24	169053	75	5	20	<0.5	<1	0.16	0.175			
25	169054	175	5	25	<0.5	32	0.62	0.530			

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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ANALABS

A division of MacDonald Hamill & Co. Pty. Ltd.

980289

ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

7.5.08.03794

29/07/86

E17000

2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	AuChk		
1	169055	110	<5	30	<0.5	2	0.60	0.590		
2	169056	95	5	25	<0.5	1	0.88	0.910		
3	169057	90	<5	25	<0.5	18	0.28	0.235		
4	169058	75	<5	20	<0.5	27	0.24	0.160		
5	169059	45	5	165	<0.5	15	0.27	0.290		
6	169060	120	10	30	<0.5	8	0.22	0.235		
7	169061	60	<5	30	<0.5	11	0.31	0.280		
8	169062	130	5	15	<0.5	33	0.05	-		
9	169063	90	5	10	<0.5	20	0.04	-		
10	169064	90	<5	15	<0.5	11	0.12	0.135		
11	169065	95	<5	10	<0.5	30	0.03	-		
12	169066	30	<5	10	<0.5	13	0.03	-		
13	169067	50	5	10	<0.5	17	0.01	-		
14	169068	60	5	15	<0.5	26	0.04	-		
15	169069	75	5	15	<0.5	28	0.11	0.055		
16	169070	75	<5	10	<0.5	58	0.03	-		
17	169071	35	<5	10	<0.5	14	0.01	-		
18	169072	75	<5	40	<0.5	21	0.08	0.085		
19	169073	40	<5	20	<0.5	20	<0.01	-		
20	169074	50	<5	25	<0.5	13	<0.01	-		
21	169075	60	<5	35	<0.5	23	0.05	-		
22	169076	40	<5	40	<0.5	21	0.01	-		
23	169077	55	<5	55	<0.5	16	0.01	-		
24	169078	65	25	50	<0.5	31	0.01	-		
25	169079	50	5	95	<0.5	15	0.03	-		

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
- = element not determined

AUTHORISED OFFICER 

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980290

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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PAGE

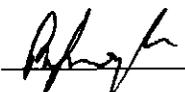
		7.5.08.03794				29/07/86	E17000		3 OF 4	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	AuChk		
1	169080	45	25	75	<0.5	14	<0.01	-		
2	169081	45	5	60	<0.5	14	<0.01	-		
3	169082	65	20	30	<0.5	13	0.01	-		
4	169083	40	10	15	<0.5	9	0.04	-		
5	169084	90	15	20	<0.5	27	0.12	0.145		
6	169085	45	5	15	<0.5	10	0.09	0.135		
7	169086	40	<5	10	<0.5	8	0.09	0.065		
8	169087	30	<5	15	<0.5	5	0.06	-		
9	169088	40	<5	10	<0.5	5	0.18	0.180		
10	169089	35	<5	15	<0.5	3	<0.01	-		
11	169090	125	<5	10	<0.5	5	<0.01	-		
12	169091	120	<5	15	<0.5	17	<0.01	-		
13	169092	40	<5	15	<0.5	6	<0.01	-		
14	169093	65	<5	15	<0.5	9	<0.01	-		
15	169094	65	<5	15	<0.5	24	0.01	-		
16	169095	90	<5	20	<0.5	16	<0.01	-		
17	169096	180	<5	20	<0.5	13	<0.01	-		
18	169097	190	<5	40	<0.5	24	0.05	-		
19	169098	60	<5	25	<0.5	6	0.04	-		
20	169099	80	<5	25	<0.5	5	0.17	0.175		
21	169100	95	<5	25	<0.5	4	0.01	-		
22	169101	130	<5	25	<0.5	1	0.05	-		
23	169102	110	10	25	<0.5	7	0.09	0.085		
24	169103	85	<5	30	<0.5	3	<0.01	-		
25										

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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980291

ANALYTICAL DATA

SAMPLE PREFIX

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7.5.08.03794

29/07/86

E17000

4 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	AuChk		
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22	DETECTION	5	5	5	0.5	1	0.01	0.005		
23	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
24	METHOD	101	101	101	101	114	329	310		
25										

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

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980292

Phone (09) 458 7999

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224

Telex AA92560

ANALYTICAL REPORT No. 7.5.08.03800

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

B. Roxburgh
Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

ORDER No.	PROJECT
E18752	CYBNET
DATE RECEIVED	RESULTS REQUIRED
28/07/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
3	08/08/86	1	55

STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS				
			DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
		169106/169130,169156/169185	RD								Cu,Pb,Zn,Ag/101,As/114		
		169106/169130,169156/169185	PU								Au/329		
		169106/169130,169156/169185	RD								Pb,Zn,Ag/104		
		169106/169130,169156/169185	PU								Au/313		
		169106/169130,169156/169185	PU								AuChk/313		

RESULTS

TO

B. Roxburgh
Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

RESULTS

TO

P. Jones
Cyprus Minerals
"Ocean View"
Saddle Rd.,
Kettering 7155

REMARKS

DESPATCH No: 2339.

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemicals means CHEM
tissue TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

AUTHORISED OFFICER *[Signature]*

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A division of MacDonald Hamilton & Co. Pty. Ltd.

980293

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

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		7.5.08.03800				08/08/86		E18752		1 OF 3	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au	AuChk		
1	169106	35	50	295	<0.5	27	-	0.06	-		
2	169107	35	60	235	<0.5	19	-	0.04	-		
3	169108	50	55	240	<0.5	22	-	0.05	-		
4	169109	65	90	400	<0.5	47	-	0.07	-		
5	169110	105	55	280	<0.5	44	-	0.08	-		
6	169111	105	45	290	<0.5	43	0.100	0.27	-		
7	169112	90	50	370	<0.5	17	-	0.05	-		
8	169113	95	55	400	<0.5	53	-	0.06	-		
9	169114	85	35	355	<0.5	35	-	0.14	-		
10	169115	85	45	365	<0.5	38	-	0.05	-		
11	169116	85	80	960	<0.5	98	-	0.17	-		
12	169117	95	85	780	<0.5	42	-	0.13	-		
13	169118	145	390	1300	<0.5	68	0.780	0.75	-		
14	169119	170	400	1850	<0.5	35	0.420	0.34	-		
15	169120	100	145	1600	<0.5	10	-	0.12	-		
16	169121	70	95	1150	<0.5	9	-	0.23	-		
17	169122	90	130	1250	<0.5	9	0.135	0.24	-		
18	169123	80	75	1400	<0.5	5	-	0.16	-		
19	169124	65	85	925	<0.5	6	-	0.09	-		
20	169125	80	80	800	<0.5	8	0.120	0.09	-		
21	169126	75	55	575	<0.5	4	-	0.13	-		
22	169127	55	45	560	<0.5	6	0.100	0.24	-		
23	169128	80	55	415	0.5	5	-	0.06	-		
24	169129	30	90	520	<0.5	7	-	0.02	-		
25	169130	20	35	330	<0.5	7	-	0.04	-		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

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A division of MacDonald Hamilton & Co. Pty. Ltd.

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ANALYTICAL DATA

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08/08/86

E18752

2 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au	AuChk
1	169156	95	160	1045	<0.5	6	-	0.13	-
2	169157	115	160	1450	<0.5	8	-	0.11	-
3	169158	100	115	1350	<0.5	9	-	0.12	-
4	169159	90	100	1300	1.0	6	-	0.19	-
5	169160	120	220	2250	<0.5	17	-	0.21	-
6	169161	140	360	3450	0.5	48	0.400	0.33	-
7	169162	110	330	2600	0.5	25	0.520	0.45	-
8	169163	135	3000	1400	2.0	420	2.900	2.41	2.430
9	169164	70	350	795	1.0	39	0.410	0.31	-
10	169165	70	270	985	1.0	40	-	0.11	-
11	169166	50	65	585	1.0	6	-	0.15	-
12	169167	50	75	685	<0.5	3	-	0.07	-
13	169168	60	70	715	<0.5	5	-	0.12	-
14	169169	75	80	1100	<0.5	7	-	0.23	-
15	169170	80	165	750	<0.5	38	0.350	0.31	-
16	169171	80	510	840	<0.5	4	0.450	0.40	-
17	169172	90	590	870	<0.5	7	0.480	0.40	-
18	169173	80	320	900	<0.5	5	0.900	0.97	-
19	169174	90	250	1350	<0.5	7	0.520	0.43	-
20	169175	70	5	1150	<0.5	4	-	0.07	-
21	169176	45	10	760	<0.5	4	-	0.02	-
22	169177	100	10	680	<0.5	4	-	0.05	-
23	169178	225	1250	790	4.0	3	-	0.19	-
24	169179	290	1875	680	4.5	2	0.310	0.34	-
25	169180	175	1450	985	2.0	3	-	0.14	-

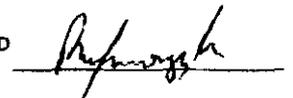
Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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A division of MacDonald Hamilton & Co. Pty. Ltd.

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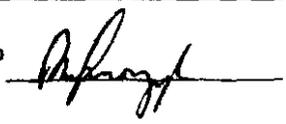
ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

7.5.08.03800 08/08/86 E18752 3 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au	AuChk
1	169181	95	195	2000	<0.5	3	-	0.04	-
2	169182	45	60	545	<0.5	3	-	0.06	-
3	169183	45	40	520	<0.5	2	-	0.05	-
4	169184	40	35	465	<0.5	5	-	0.08	-
5	169185	45	35	385	<0.5	2	-	0.14	-
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	5	5	5	0.5	1	0.005	0.01	0.005
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	114	313	329	313

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

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ANALABS

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Phone (09) 458 7999

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224

26 AUG 1986

Telex AA92560

ANALYTICAL REPORT No. 7.5.08.03806

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

B. Roxburgh
Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

ORDER No.	PROJECT
E18755	CYBNET
DATE RECEIVED	RESULTS REQUIRED
07/08/86	ASAF

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	21/08/86	1	33

STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS					
			DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD		
		169131/169155,169186/169193	RD									Cu,Pb,Zn,Ag/101,As/114		
		169131/169155,169186/169193	PU									Au/329		
		169131/169155,169186/169193	PU									Au/313		

RESULTS TO

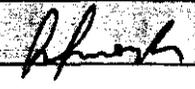
B. Roxburgh
Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

RESULTS TO

P. Jones
Cyprus Minerals
"Ocean View"
Saddle Rd.,
Kettering 7155

REMARKS

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core	perchloric acid A1	atomic absorption AAS
split core	hydrochloric acid A2	x-ray fluorescence XRF
cutting	nitric acid A3	spectrophotometry SPEC
rock	aqua regia A4	colorimetry COL
soil	nitric-perchloric A5	chromatography CHR
pulp	HF mixture A6	titration TTN
water	HF under pressure A7	other chemicals means CHEM
issue	fusion A8	miscellaneous MISC
stream sediment		fluorescence FLUOR
heavy mineral		inductively coupled plasma ICP

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A division of MacDonald Hamilton & Co. Pty. Ltd.

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ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

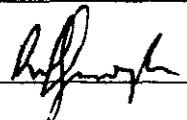
CLIENT ORDER No.

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		7.5.08.03806				21/08/86		E18755		1 of 2	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au			
1	169131	60	375	960	0.5	103	0.08	-			
2	169132	55	660	950	1.0	75	0.08	-			
3	169133	75	475	1350	0.5	78	0.12	-			
4	169134	110	910	1250	1.0	101	0.07	-			
5	169135	140	2625	1200	0.5	58	0.57	0.700			
6	169136	105	3950	1250	0.5	96	1.81	2.300			
7	169137	260	7300	1375	2.5	420	2.02	3.100			
8	169138	70	1200	870	0.5	55	0.90	1.000			
9	169139	70	150	665	0.5	29	0.14	-			
10	169140	70	160	665	0.5	32	0.13	-			
11	169141	60	120	585	0.5	7	0.07	-			
12	169142	50	140	550	0.5	7	0.04	-			
13	169143	50	95	485	1.0	6	0.05	-			
14	169144	50	75	545	1.0	8	0.04	-			
15	169145	40	50	500	0.5	4	0.04	-			
16	169146	40	60	500	1.0	5	0.05	-			
17	169147	40	80	275	0.5	6	0.04	-			
18	169148	30	65	230	1.0	8	0.04	-			
19	169149	30	45	310	0.5	7	0.03	-			
20	169150	40	70	385	<0.5	4	0.05	-			
21	169151	35	60	430	0.5	6	0.04	-			
22	169152	40	35	505	0.5	10	0.04	-			
23	169153	40	70	540	0.5	10	0.04	-			
24	169154	65	35	1000	0.5	7	0.05	-			
25	169155	50	40	1150	1.0	6	0.05	-			

Results in ppm unless otherwise specified
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 X = element concentration is below detection limit
 - = element not determined

AUTHORISED OFFICER



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A division of MacDonald Hamilton & Co. Pty. Ltd.

980298

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		7.5.08.03806				21/08/86		E18755		2 OF 2	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au			
1	169186	95	1950	800	0.5	170	0.51	0.520			
2	169187	120	1450	2075	1.0	170	4.03	4.900			
3	169188	70	345	685	0.5	28	0.48	0.510			
4	169189	40	75	465	1.0	14	0.10	-			
5	169190	65	120	350	1.0	32	0.15	-			
6	169191	50	125	410	0.5	41	0.23	-			
7	169192	75	140	700	0.5	74	0.09	-			
8	169193	40	50	390	1.0	10	0.05	-			
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23	DETECTION	5	5	5	0.5	1	0.01	0.005			
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM			
25	METHOD	101	101	101	101	114	329	313			

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED OFFICER



ANALABS

980299

297
Phone (09) 458 7999

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224

Telex AA92560

ANALYTICAL REPORT No. 7.5.08.03218

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

B. Roxburgh
Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

ORDER No.	E18757	PROJECT	CYGNET
DATE RECEIVED	15/08/86	RESULTS REQUIRED	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
3	26/08/86	1	52

STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS				
			DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
		169194/169245	RC	Prep: 006,009,013,016	018						Cu,Pb,Zn,Ag/101,As/114		
		169194/169245	PU								Au/329		
		169194/169245	PU								AuChk/313		

RESULTS

TO

B. Roxburgh
Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

RESULTS

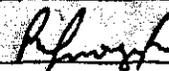
TO

F. Jones
Cyprus Minerals
"Ocean View"
Saddle Rd.,
Kettering 7155

REMARKS

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemicals means CHEM
issue TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

AUTHORISED OFFICER



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980300

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		7.5.08.03818				26/08/86	E18757		1 OF 3	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	AuChk		
1	169194	35	85	155	<0.5	38	0.01	-		
2	169195	90	1200	385	0.5	650	0.10	-		
3	169196	55	470	360	<0.5	210	0.04	-		
4	169197	45	140	315	<0.5	46	0.03	-		
5	169198	25	140	105	<0.5	21	0.04	-		
6	169199	30	140	115	<0.5	21	0.05	-		
7	169200	35	125	205	<0.5	19	0.05	-		
8	169201	40	160	170	<0.5	11	<0.01	-		
9	169202	20	155	125	<0.5	14	0.41	<0.005		
10	169203	20	135	95	<0.5	11	<0.01	-		
11	169204	25	240	100	<0.5	18	<0.01	-		
12	169205	20	215	115	<0.5	34	<0.01	-		
13	169206	60	935	500	<0.5	120	0.04	-		
14	169207	55	250	420	<0.5	90	<0.01	-		
15	169208	35	165	235	<0.5	55	<0.01	-		
16	169209	35	285	100	<0.5	230	0.02	-		
17	169210	65	175	220	<0.5	48	1.49	1.300		
18	169211	95	70	155	<0.5	27	0.37	0.490		
19	169212	40	50	85	1.0	9	0.07	-		
20	169213	90	45	90	<0.5	20	0.05	-		
21	169214	45	45	85	<0.5	13	<0.01	-		
22	169215	10	40	70	<0.5	6	0.04	-		
23	169216	15	50	100	<0.5	7	0.02	-		
24	169217	45	65	110	<0.5	9	<0.01	-		
25	169218	30	105	190	<0.5	16	<0.01	-		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

980301

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

7.5.08.03818

26/08/86

E18757

2 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	AuChk		
1	169219	45	60	210	<0.5	26	0.02	-		
2	169220	45	60	185	<0.5	35	0.04	-		
3	169221	50	40	140	<0.5	9	<0.01	-		
4	169222	60	75	115	<0.5	23	0.06	-		
5	169223	95	80	100	<0.5	15	0.24	-		
6	169224	145	675	190	1.0	31	0.40	0.480		
7	169225	55	205	160	<0.5	14	0.13	-		
8	169226	95	130	210	<0.5	20	0.04	-		
9	169227	60	670	180	<0.5	26	0.22	-		
10	169228	10	45	60	<0.5	12	0.06	-		
11	169229	15	90	90	<0.5	66	0.05	-		
12	169230	10	65	100	<0.5	24	0.01	-		
13	169231	10	65	105	<0.5	11	<0.01	-		
14	169232	10	180	100	<0.5	45	0.01	-		
15	169233	10	115	115	<0.5	17	<0.01	-		
16	169234	10	105	150	<0.5	15	<0.01	-		
17	169235	15	190	140	<0.5	20	<0.01	-		
18	169236	10	55	180	<0.5	22	<0.01	-		
19	169237	10	135	145	<0.5	40	<0.01	-		
20	169238	10	100	80	<0.5	7	0.08	-		
21	169239	40	45	115	<0.5	28	<0.01	-		
22	169240	10	45	70	<0.5	10	0.26	-		
23	169241	10	60	80	<0.5	9	0.01	-		
24	169242	15	70	125	<0.5	12	<0.01	-		
25	169243	25	45	135	<0.5	9	<0.01	-		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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A division of MacDonald Hamilton & Co. Pty. Ltd.

980302

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

SAMPLE PREFIX		REPORT NUMBER				REPORT DATE	CLIENT ORDER No.		PAGE	
		7.5.08.03818				26/08/86	E18757		3 of 3	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	AuChk		
1	169244	35	35	95	<0.5	7	0.02	-		
2	169245	55	35	75	<0.5	7	<0.01	-		
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22	NOTE: The Second Au Check Result for Sample No. 169221 = 0.55ppm									
23	DETECTION	5	5	5	0.5	1	0.01	0.005		
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
25	METHOD	101	101	101	101	114	329	313		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED
OFFICER

301

ANALABS

980303

Phone (09) 458 7999

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224

Telex AA92560

ANALYTICAL REPORT No. 7.5.08.03840

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

B. Roxburgh
Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

ORDER No.	18758	PROJECT	CYBNET
DATE RECEIVED	27/08/86	RESULTS REQUIRED	ASAP

No. OF PAGES OF RESULTS	4	DATE REPORTED	05/09/86	No. OF COPIES	1	TOTAL No. OF SAMPLES	82
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STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS			
			DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
		169246/327	SD	Prep: 006,009,013,018						Cu, Pb, Zn, Ag/101, As/114		
		169246/327	PU							Au/329		
		169275	PU							Au/313		

RESULTS

TO

B. Roxburgh
Cyprus Minerals
P.O. Box 493
North Sydney
N.S.W. 2060

RESULTS

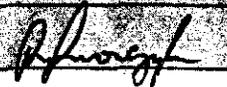
TO

P. Jones
Cyprus Minerals
"Ocean View"
Saddle Rd.,
Kettering 7155

REMARKS

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core	perchloric acid A1	atomic absorption AAS
split core	hydrochloric acid A2	x-ray fluorescence XRF
cutting	nitric acid A3	spectrophotometry SPEC
rock	aqua regia A4	colorimetry COL
soil	nitric-perchloric A5	chromatography CHR
pulp	HF mixture A6	titration TTN
water	HF under pressure A7	other chemicals means CHEM
sludge	fusion A8	miscellaneous MISC
stream sediment		fluorescence FLUOR
heavy mineral		inductively coupled plasma ICP

AUTHORISED OFFICER



302

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A division of MacDonald Hamilton & Co. Pty. Ltd.

980304

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		7.5.08.03840				05/09/86	18758		1 OF 4	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au		
1	169246	15	15	70	<0.5	3	0.10	-		
2	169247	15	20	135	<0.5	7	0.08	-		
3	169248	10	30	75	<0.5	6	0.09	-		
4	169249	10	30	60	<0.5	3	0.02	-		
5	169250	20	70	285	<0.5	16	0.10	-		
6	169251	5	15	100	<0.5	7	0.03	-		
7	169252	10	30	120	<0.5	13	0.08	-		
8	169253	10	50	105	<0.5	9	0.09	-		
9	169254	10	25	125	<0.5	12	0.12	-		
10	169255	20	35	185	<0.5	17	0.09	-		
11	169256	20	5	70	<0.5	3	0.05	-		
12	169257	20	20	40	<0.5	5	0.07	-		
13	169258	15	15	40	<0.5	6	0.04	-		
14	169259	15	25	40	<0.5	3	0.08	-		
15	169260	15	50	65	<0.5	7	0.02	-		
16	169261	15	10	45	<0.5	3	0.01	-		
17	169262	15	5	50	<0.5	4	<0.01	-		
18	169263	15	5	55	<0.5	3	0.03	-		
19	169264	10	<5	45	<0.5	5	0.06	-		
20	169265	10	10	35	<0.5	7	0.02	-		
21	169266	20	10	150	<0.5	8	0.07	-		
22	169267	10	5	160	<0.5	4	0.12	-		
23	169268	15	<5	130	<0.5	6	0.04	-		
24	169269	20	10	145	<0.5	31	0.07	-		
25	169270	5	55	70	<0.5	9	0.08	-		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED
OFFICER

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

980305

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

7.5.08.03840

05/09/86

18758

2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au		
1	169271	5	30	60	<0.5	6	0.09	-		
2	169272	5	30	25	<0.5	9	0.08	-		
3	169273	15	35	90	<0.5	8	0.09	-		
4	169274	15	35	80	<0.5	39	0.36	-		
5	169275	25	30	145	<0.5	31	0.53	1.100		
6	169276	30	20	225	<0.5	15	0.10	-		
7	169277	10	10	75	<0.5	9	0.03	-		
8	169278	5	15	35	<0.5	7	0.03	-		
9	169279	15	10	20	<0.5	4	0.06	-		
10	169280	15	10	20	<0.5	4	0.04	-		
11	169281	10	5	25	<0.5	3	0.09	-		
12	169282	10	10	20	<0.5	12	0.07	-		
13	169283	15	55	120	<0.5	11	0.07	-		
14	169284	10	30	60	<0.5	14	0.06	-		
15	169285	15	45	90	<0.5	33	0.10	-		
16	169286	10	15	40	<0.5	10	0.07	-		
17	169287	20	10	35	<0.5	9	0.06	-		
18	169288	20	15	40	<0.5	7	0.12	-		
19	169289	20	30	30	<0.5	9	0.15	-		
20	169290	20	10	25	<0.5	5	0.13	-		
21	169291	15	10	60	<0.5	8	0.14	-		
22	169292	20	15	120	<0.5	5	0.17	-		
23	169293	10	15	35	<0.5	4	0.09	-		
24	169294	15	15	50	<0.5	5	0.23	-		
25	169295	15	40	60	<0.5	19	0.24	-		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED OFFICER



304

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

980306

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		7.5.08.03840				05/09/86		18758		3 OF 4	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au			
1	169296	5	35	50	<0.5	11	0.15	-			
2	169297	5	15	40	<0.5	8	0.15	-			
3	169298	15	25	110	<0.5	13	0.12	-			
4	169299	15	30	160	<0.5	13	0.16	-			
5	169300	10	40	130	<0.5	13	0.14	-			
6	169301	20	115	335	<0.5	19	0.14	-			
7	169302	10	90	90	<0.5	22	0.16	-			
8	169303	35	220	390	<0.5	52	0.11	-			
9	169304	5	45	60	<0.5	26	0.11	-			
10	169305	10	20	75	<0.5	13	0.09	-			
11	169306	20	50	355	<0.5	13	0.16	-			
12	169307	10	450	310	<0.5	34	0.14	-			
13	169308	30	140	685	<0.5	48	0.14	-			
14	169309	15	50	385	<0.5	23	0.11	-			
15	169310	10	<5	10	<0.5	6	0.09	-			
16	169311	15	15	40	<0.5	8	0.24	-			
17	169312	20	15	35	<0.5	11	0.15	-			
18	169313	15	5	30	<0.5	6	0.15	-			
19	169314	10	5	25	<0.5	5	0.09	-			
20	169315	10	5	20	<0.5	7	0.08	-			
21	169316	5	20	20	<0.5	6	0.13	-			
22	169317	10	10	30	<0.5	7	0.09	-			
23	169318	5	10	35	<0.5	6	0.09	-			
24	169319	5	20	40	<0.5	7	0.11	-			
25	169320	10	15	40	<0.5	3	0.08	-			

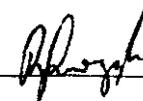
Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED OFFICER



305

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

980307

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		7.5.08.03840				05/09/86		18758		4 OF 4	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au			
1	169321	10	20	70	<0.5	3	0.09	-			
2	169322	10	85	70	<0.5	12	0.10	-			
3	169323	5	40	135	<0.5	10	0.12	-			
4	169324	5	40	80	<0.5	10	0.10	-			
5	169325	15	155	150	<0.5	11	0.14	-			
6	169326	10	50	100	<0.5	17	0.13	-			
7	169327	20	115	220	<0.5	43	0.16	-			
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23	DETECTION	5	5	5	0.5	1	0.01	0.005			
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM			
25	METHOD	101	101	101	101	114	329	313			

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED OFFICER



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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

980308

ANALYTICAL DATA

CYQUET

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

7.5.08.03840

12/09/84

18758

1 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au	AuRpt
1	169246	15	15	70	<0.5	3	0.10	-	-
2	169247	15	20	135	<0.5	7	0.08	-	-
3	169248	10	30	75	<0.5	6	0.09	-	-
4	169249	10	30	60	<0.5	3	0.02	-	-
5	169250	20	70	285	<0.5	16	0.10	-	-
6	169251	5	15	100	<0.5	7	0.03	-	-
7	169252	10	30	120	<0.5	13	0.08	-	-
8	169253	10	50	105	<0.5	9	0.09	-	-
9	169254	10	25	125	<0.5	12	0.12	-	-
10	169255	20	35	185	<0.5	17	0.09	-	-
11	169256	20	5	70	<0.5	3	<0.01	-	-
12	169257	20	20	40	<0.5	5	0.07	-	-
13	169258	15	15	40	<0.5	6	0.04	-	-
14	169259	15	25	60	<0.5	3	0.08	-	-
15	169260	15	50	65	<0.5	7	0.02	-	-
16	169261	15	10	45	<0.5	3	0.01	-	-
17	169262	15	5	50	<0.5	4	<0.01	-	-
18	169263	15	5	55	<0.5	3	0.03	-	-
19	169264	10	5	45	<0.5	5	0.05	-	-
20	169265	10	10	35	<0.5	7	0.02	-	-
21	169266	20	10	150	<0.5	8	0.07	-	-
22	169267	10	5	160	<0.5	4	0.12	-	-
23	169268	15	45	130	<0.5	6	0.04	-	-
24	169269	20	10	145	<0.5	31	0.07	-	-
25	169270	5	55	70	<0.5	9	0.08	-	-

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED OFFICER



307

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

980309

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

7.5.08.03840

12/09/86

1875B

2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au	AuRpt
1	169271	5	30	60	<0.5	6	0.09	-	-
2	169272	5	30	25	<0.5	9	0.08	-	-
3	169273	15	35	90	<0.5	8	0.09	-	-
4	169274	15	35	80	<0.5	39	0.36	-	0.160
5	169275	25	30	145	<0.5	31	0.53	1.100	1.410
6	169276	30	20	225	<0.5	15	0.10	-	0.065
7	169277	10	10	75	<0.5	9	0.03	-	-
8	169278	5	15	35	<0.5	7	0.03	-	-
9	169279	15	10	20	<0.5	4	0.06	-	-
10	169280	15	10	20	<0.5	4	0.04	-	-
11	169281	10	5	25	<0.5	3	0.09	-	-
12	169282	10	10	20	<0.5	12	0.07	-	-
13	169283	15	55	120	<0.5	11	0.07	-	-
14	169284	10	30	60	<0.5	14	0.06	-	-
15	169285	15	45	90	<0.5	33	0.10	-	-
16	169286	10	15	40	<0.5	10	0.07	-	-
17	169287	20	10	35	<0.5	9	0.06	-	-
18	169288	20	15	40	<0.5	7	0.12	-	-
19	169289	20	20	30	<0.5	9	0.15	-	-
20	169290	20	10	25	<0.5	5	0.13	-	-
21	169291	15	10	60	<0.5	8	0.14	-	-
22	169292	20	15	120	<0.5	5	0.17	-	-
23	169293	10	15	35	<0.5	4	0.09	-	-
24	169294	15	15	50	<0.5	5	0.23	-	0.075
25	169295	15	40	60	<0.5	19	0.24	-	0.050

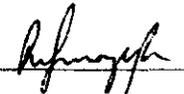
Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED OFFICER



308

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

980310

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

7.5.08.03840

12/09/86

1875E

3 OF 4

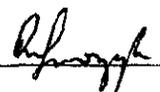
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au	AuRpt
1	169296	5	35	50	<0.5	11	0.15	-	-
2	169297	5	15	40	<0.5	8	0.15	-	-
3	169298	15	25	110	<0.5	13	0.12	-	-
4	169299	15	30	160	<0.5	13	0.16	-	-
5	169300	10	40	130	<0.5	13	0.14	-	-
6	169301	20	115	335	<0.5	19	0.14	-	-
7	169302	10	90	90	<0.5	22	0.16	-	-
8	169303	35	220	390	<0.5	52	0.11	-	-
9	169304	5	45	60	<0.5	26	0.11	-	-
10	169305	10	20	75	<0.5	13	0.09	-	-
11	169306	20	50	355	<0.5	13	0.16	-	-
12	169307	10	450	310	<0.5	34	0.14	-	-
13	169308	30	140	685	<0.5	48	0.14	-	-
14	169309	15	50	385	<0.5	23	0.11	-	-
15	169310	10	<5	10	<0.5	6	0.09	-	-
16	169311	15	15	40	<0.5	8	0.24	-	0.000
17	169312	20	15	35	<0.5	11	0.15	-	-
18	169313	15	5	30	<0.5	6	0.15	-	-
19	169314	10	5	25	<0.5	5	0.09	-	-
20	169315	10	5	20	<0.5	7	0.08	-	-
21	169316	5	20	20	<0.5	6	0.13	-	-
22	169317	10	10	30	<0.5	7	0.09	-	-
23	169318	5	10	35	<0.5	6	0.09	-	-
24	169319	5	20	40	<0.5	7	0.11	-	-
25	169320	10	15	40	<0.5	3	0.08	-	-

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

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- = element not determined

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A division of MacDonal Hamilton & Co. Pty. Ltd.

980311

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

7.5.08.03840

12/09/86

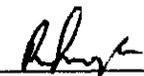
18758

4 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Au	Au	AuRpt
1	169321	10	20	70	<0.5	3	0.09	-	-
2	169322	10	85	70	<0.5	12	0.10	-	-
3	169323	5	40	135	<0.5	10	0.12	-	-
4	169324	5	40	80	<0.5	10	0.10	-	-
5	169325	15	155	150	<0.5	11	0.14	-	-
6	169326	10	50	100	<0.5	17	0.13	-	-
7	169327	20	115	220	<0.5	43	0.16	-	-
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	5	5	5	0.5	1	0.01	0.005	0.005
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	114	329	313	313

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

AUTHORISED OFFICER



980312

 **COMLABS Pty. Ltd.**
COMPUTERISED ANALYTICAL LABORATORIES

Head Office and
Central Laboratory
305 SOUTH ROAD,
MILE END SOUTH
STH. AUST. 5031
TEL.: (08) 43 5722
TELEX: AA89323

CYGNET



NATA REGISTERED No. 1526

OUR REF.: COM 821750

YOUR REF.:

Mr. P. Jones,
Amoco Minerals Aust Co,
70 Counsel Street,
ZEEHAN TAS 7469,

10.9.82

Dear Phil,

RE: JOB COM 821750

Enclosed are the assays for the samples delivered to our
laboratory on the 6th September 1982.

Yours sincerely,

Phillip Harvey
Laboratory Manager

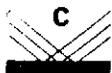
c.c.: Mr. S. Fowler

Queensland Preparation Laboratory: 172 Lavarack Ave., Eagle Farm, Queensland. 4007 Tel.: (07) 268 4748

Western Australia Preparation Laboratory: 52 Fairbrother St., Belmont, W.A. 6104 Tel.: (09) 47 81336

Northern Territory Preparation Laboratory: 3 Bishop Street, Darwin, N.T. 5790 Tel.: (089) 81 3961

311



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COMPUTERISED ANALYTICAL LABORATORIES

980313



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ANALYTICAL REPORT

JOB COM821750

CYANET.

Results in ppm

SAMPLE	Cu	Pb	Zn	Ag	Au1	Sn	W	Au2	
78784	460	4200	1600	54	15.3	8	10	17.9	Mount Mary Loche rock
78785	75	18	630	<1	0.10	<4	<10	-	Western Wkgs
78786	210	1300	310	29	10.0	38	20	10.6	Westu Roof Wkgs

Method of Analysis : Cu Pb Zn : AAS1
 Ag : AAS3
 Au1 : AAS5A
 Au2 : Fire Assay
 Sn W : XRF1

312



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

NATA CERTIFICATE

3/786/0 - AC 3495/86
SPT 87/86

20 February 1986

CYBNET

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

REPORT AC 3495/86

YOUR REFERENCE:

Despatch Number 2929
Order Number E16957

REPORT COMPRISING:

Cover Sheet
Page 1
Pages G1 - G2

DATE RECEIVED:

17 February 1986

D. Patterson
Manager, Quality Control
& Methods Development
Applied Sciences Group

cc Mr. B. Roxburgh,
Cyprus Minerals Australia Company,
P.O. Box 493,
NORTH SYDNEY NSW 2060

ij



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Telex: Amdel AA20053
Townsville
Queensland 4814
Telephone (077) 75 1377

Report AC 3495/86
Page 1

ANALYSIS
g/tonne

SAMPLE MARK	GOLD Au	SAMPLE MARK	GOLD Au	SAMPLE MARK	GOLD Au
161272	0.025	161293	0.020	161314	0.045
273	0.030	294	0.010	315	0.040
274	0.110	295	0.020	316	0.035
275	0.065	296	0.010	317	0.84
276	0.100	297	0.010	318	0.025
277	0.065	298	0.010	319	0.070
278	0.065	299	0.015	320	0.040
279	0.120	300	0.025	321	0.020
280	0.25	301	0.020	322	0.070
281	0.45	302	0.015	323	0.035
282	1.08	303	0.030	324	0.025
283	0.82	304	0.040	325	0.025
284	0.065	305	0.025	326	0.015
285	0.095	306	0.035	327	0.025
286	0.055	307	0.045	328	0.025
287	0.045	308	0.035	329	0.070
288	0.085	309	0.055	330	0.090
289	0.040	310	0.010	331	0.030
290	0.065	311	0.015	332	0.030
291	0.030	312	0.030	333	0.020
292	0.010	313	0.20	334	0.045
				335	0.025

Method: A7/2

314

980316

Analysis code A1/1,2,X3

Report AC 3495/86

Page G1

NATA Certificate

Order No. E 16957

Results in ppm

Sample	Cu	Zn	Ag	As	Pb
161272	16	48	1	40	305
161273	42	54	<1	14	74
161274	17	125	<1	42	135
161275	14	105	<1	48	135
161276	19	175	<1	34	205
161277	21	220	<1	25	125
161278	17	110	<1	19	115
161279	14	82	<1	72	490
161280	26	185	<1	12	130
161281	20	160	<1	15	190
161282	60	470	<1	37	2100
161283	78	780	<1	9	180
161284	42	425	<1	68	440
161285	44	345	<1	18	92
161286	54	830	<1	46	410
161287	38	315	<1	21	115
161288	25	155	<1	17	92
161289	22	105	<1	13	72
161290	38	84	<1	14	86
161291	27	100	<1	21	86
161292	13	32	<1	39	190
161293	39	45	<1	27	140
161294	29	32	<1	14	86
161295	22	28	<1	15	82
161296	14	19	<1	10	100
161297	14	32	<1	28	160
161298	15	36	<1	8	26
161299	17	54	<1	19	68
161300	20	64	<1	18	100
161301	15	52	<1	12	48
161302	18	140	<1	13	42
161303	20	125	<1	37	185
161304	35	235	<1	48	255
161305	27	125	<1	13	92
161306	14	78	<1	30	150
161307	26	150	<1	29	140
161308	12	72	<1	37	230
161309	12	58	<1	13	66
161310	6	46	<1	23	82
161311	8	35	<1	34	120
Detn limit	(2)	(2)	(1)	(2)	(4)

315

980317

Analysis code A1/1,2,X3 Report AC 3495/86

Page G2

NATA Certificate

Order No. E 16957

Results in ppm

Sample	Cu	Zn	Ag	As	Pb
161312	30	365	<1	64	74
161313	40	385	<1	285	450
161314	33	220	<1	76	350
161315	29	175	<1	37	94
161316	18	240	<1	30	76
161317	49	245	1	105	2760
161318	36	335	<1	23	96
161319	28	260	<1	25	88
161320	9	60	<1	26	130
161321	13	54	<1	30	120
161322	16	78	<1	26	115
161323	20	100	<1	14	34
161324	25	82	<1	23	105
161325	20	66	<1	11	28
161326	32	52	<1	45	180
161327	25	235	<1	19	74
161328	25	320	<1	28	125
161329	46	435	<1	74	120
161330	21	145	<1	24	140
161331	17	175	<1	39	135
161332	14	105	<1	17	44
161333	54	285	<1	62	235
161334	105	970	<1	27	80
161335	28	325	<1	13	60
Detn limit	(2)	(2)	(1)	(2)	(4)

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The Australian Mineral Development Laboratories

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South Australia 5063
Phone Adelaide (08) 79 1662
Telex AA82520

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

980318

amdel

NATA CERTIFICATE

3/786/0 - AC 3578/86
SPT 91/86

6 March 1986

CYGNET

Mr. Philip Jones,
Cyprus Minerals Australia Company,
C/- Saddle Road,
KETTERING TASMANIA 7155

REPORT AC 3578/86

YOUR REFERENCE: Despatch No. 2330
Order Number 16958

REPORT COMPRISING: Cover Sheet
Page 1
Pages X1 - X2

DATE RECEIVED: 20 February 1986

D. Patterson
Manager, Quality Control
& Methods Development
Applied Sciences Group

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

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Telephone (02) 439 7735
Telex: Amdel AA20053
Townsville
Queensland 4814
Telephone (077) 75 1377

ANALYSIS
g/tonne

SAMPLE MARK	GOLD Au	SAMPLE MARK	GOLD Au	SAMPLE MARK	GOLD Au
161336	0.065	161356	0.025	161376	0.015
37	0.100	57	0.040	77	0.020
38	0.030	58	0.025	78	0.010
39	0.025	59	0.005	79	0.010
40	0.030	60	0.010	80	0.020
41	0.035	61	0.015	81	0.030
42	0.050	62	0.020	82	0.010
43	0.045	63	0.010	83	0.020
44	0.75	64	0.020	84	0.010
45	0.010	65	0.010	85	0.060
46	0.030	66	0.015	86	0.040
47	0.065	67	0.030	87	0.070
48	0.035	68	0.025	88	0.040
49	0.010	69	0.015	89	0.25
50	0.005	70	0.045	90	0.020
51	0.010	71	0.035	91	0.020
52	0.065	72	0.075	92	0.010
53	0.020	73	0.025		
54	0.045	74	0.005		
55	0.035	75	0.030		

Method: A7/2

318

980320

Analysis code A1/1,2,X3

Report AC 3578/86

Page X1

NATA Certificate

Results in ppm

Sample	Cu	Zn	Ag	As	Pb
161336	21	185	<1	16	68
161337	25	185	<1	21	60
161338	20	105	<1	7	46
161339	37	115	<1	12	44
161340	18	78	<1	8	36
161341	25	180	<1	15	68
161342	16	54	<1	23	70
161343	29	86	<1	16	26
161344	22	68	<1	9	38
161345	12	45	<1	7	28
161346	17	36	<1	13	32
161347	9	30	<1	7	16
161348	25	105	<1	11	16
161349	9	43	<1	14	18
161350	7	19	<1	6	26
161351	10	45	<1	13	34
161352	26	465	<1	29	52
161353	21	345	<1	29	30
161354	21	450	<1	52	225
161355	21	385	<1	19	70
161356	11	165	<1	56	255
161357	16	185	<1	35	78
161358	19	170	<1	30	62
161359	25	13	<1	5	16
161360	44	23	<1	2	26
161361	48	35	<1	8	28
161362	27	50	<1	4	32
161363	27	18	<1	8	30
161364	21	31	<1	4	36
161365	21	46	<1	10	36
161366	15	27	<1	6	50
161367	17	34	<1	6	38
161368	21	66	<1	7	52
161369	20	100	<1	8	46
161370	19	160	<1	8	110
161371	22	120	<1	12	56
161372	50	620	<1	18	475
161373	21	235	<1	14	54
161374	7	29	<1	4	32
161375	13	86	<1	10	30
Detn limit	(2)	(2)	(1)	(2)	(4)

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980321

Analysis code A1/1,2,X3

Report AC 3578/86

Page X2

NATA Certificate

Results in ppm

Sample	Cu	Zn	Ag	As	Pb
161376	9	52	<1	4	24
161377	7	42	<1	11	48
161378	7	39	<1	6	28
161379	8	48	<1	9	18
161380	15	54	<1	7	26
161381	18	66	<1	8	40
161382	10	31	<1	11	24
161383	19	72	<1	17	42
161384	10	45	<1	24	100
161385	19	140	<1	5	22
161386	33	305	<1	8	28
161387	26	330	<1	16	110
161388	52	970	<1	9	145
161389	29	475	<1	27	265
161390	28	660	<1	7	36
161391	42	700	<1	16	98
161392	64	530	<1	18	18
Detn limit	(2)	(2)	(1)	(2)	(4)

320



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Sydney, N.S.W.
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Townsville
Queensland 4814
Telephone (077) 75 1377

9803221

Cygnus

amdel

3/786/0 - AC 4713/85
SPT 32/85
20 June 1985

NATA CERTIFICATE

CYGNUS

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

REPORT AC 4713/85

YOUR REFERENCE: Order Number E 14738

REPORT COMPRISING: Cover sheet
Page 1
Page G1

DATE RECEIVED: 23 May 1985

D. Patterson
Chief Chemist
Analytical Chemistry Division

cc Mr. B. Roxburgh
Amoco Minerals Australia Company
P.O. Box 949
NORTH SYDNEY N.S.W. 2060

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Analysis code A1/2

Report AC 4713/85

Page G1

NATA Certificate

Order No. E 14738

Results in ppm

Cygnat

Sample	Ag
113711	<1
113712	<1
113713	<1
113714	<1
113715	<1
113716	<1
113717	<1
113718	<1
113719	<1
113720	<1
113721	<1
113724	<1
113727	<1
113729	<1
113732	<1
113738	2
113739	<1
113740	<1
113741	<1
113761	<1
113762	<1
113763	<1
113764	<1
113765	<1
113769	<1
113770	<1
152186	2

Detn limit (1)

Report AC 4713/85
Page 1

ANALYSIS
g/tonne

SAMPLE MARK	GOLD Au
113711	tr
12	tr
13	tr
14	tr
15	tr
16	tr
71	tr
18	tr
19	tr
20	tr
21	tr
24	tr
27	tr
29	tr
32	tr
38	tr
39	tr
40	tr
41	N.D.
61	0.26
62	tr
63	tr
64	tr
65	tr
69	0.62
11370	tr
15286	1.39
↑	

Method: A7/1