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MINES DEPARTMENT

QUEENSTOWN PROSPECT

RESULTS OF EXPLORATION PROGRAMME

LYNCH CREEK AREA

E.L. 47/70 TASMANIA AUSTRALIA

JANUARY TO MARCH 1972

MICROFILMED

CYPRUS MINES CORPORATION

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INTRODUCTION

Cyprus Mines Corporation has entered into an agreement with Fimiston Minerals, whereby Cyprus is presently responsible for all prospecting activities under the Licence.

The scope of this report summarises the activities carried out within E.L. 47/70 during January and February, 1972. Exploration was continued in the Lynch Creek Area, and all data collected this year has been submitted with this report.

A soil auger drilling programme was undertaken and 361 soil samples were collected, as well as 231 rock chip samples. All samples were analysed by Atomic Absorption Spectrometry methods for Copper, Lead & Zinc. The results of this programme are tabulated in Appendix No. (ii), and discussed in the section commencing on page 15.

A ground magnetometer survey was conducted using a McPhar model M700 instrument. Readings were taken at all grid centres. Results are listed in Appendix No. (iii) and discussed on page 17.

An induced Polarisation survey was carried out on seven of the grid lines. The frequency domain, dipole - dipole method was used. All of these lines were surveyed using 300 feet dipole spreads, one using 500 feet spreads and parts of the same line using 100 feet spreads. Results are shown on the section for each line and a plan map has been prepared for each of frequency effect, resistivity and metal factor. The interpretation of the results is discussed on page 19.

To help carry out the above work, up to five local field assistants were employed under the supervision of a project geologist and a company senior field assistant.

The geology of the grid area was mapped by the project geologist. Aerial photographs enlarged to a scale of 1:2400 were used as control for the base map, and to assist in the mapping. The grid area was flown by light aircraft and a series of colour photographs were taken to assist in the interpretation of the geology. A geological map has been produced despite a large area of clay cover and alluvium plus a heavy vegetation growth. Twenty - three representative rock samples were selected for petrographic description. These results are tabled in Appendix (i) and the rock sample locations appear on the geological map accompanying this report.

PHYSIOGRAPHY & GENERAL REMARKS

PHYSIOGRAPHY:

The area of the grid is an undulating erosional surface with a relative relief of 600' above the Queen River which follows the soft Gordon Limestone formation along the western edge of the area. The major creeks draining into the Queen River are distinctly controlled by fault structures, particularly Lynch Creek which cuts through the centre of the gridded area. Minor creeks appear to have no such control. On either side of the Queen River, erosional adjustment to structure has produced hogback ridges in the Cambrian Miners Slate (to the east of the Lynch Creek area) and in Silurian quartzites (to the west of the Lynch Creek area). The Cambrian Volcanics are represented by rounded hills and ridges generally elongated north-south. In the area of deep clay cover, the rounding is marked.

VEGETATION:

The original vegetation of dense rainforest timber has been removed by bush fires and early mining activities at Mt. Lyell. Regeneration has not occurred and the resultant bush is mainly tea-tree scrub, with blackberry bushes and thick undergrowth in creeks. Barer hilltops are covered by thick bracken.

CLIMATE:

Rain falls in every month of the year, but is highest in the winter months (May-September). Average rainfall at Queenstown is 105 inches per year. Higher readings are generally recorded nearby. The dominant wind directions are north-west and south-west. The Mt. Lyell smelters, which operated for over 60 years in the past, are approximately three miles north-east of the Lynch Creek area.

SOILS:

In considering the soil types, several important factors must be considered. Firstly, the West Coast region of Tasmania was subjected to extensive pleistocene glaciation which removed the then existing soil cover. As a result, "A" horizons are

generally poorly developed.

Secondly, the constant high rainfall contributes to rapid erosion, which has been accentuated by the removal of the original forests.

Thirdly, rock type must be carefully considered. Generally, south of Lynch Creek, a deep limonitic clay has developed over Andesitic rocks. In the deepest shaft uncovered in the vicinity of the King Gold Mine, clay is still present at 80 feet. Over the other rock types, the "B" horizon varies from 6" over harder fresh volcanics and as deep as 3' over softer tuffs where the soil type is generally clay or occasionally loam.

WORKINGS:

Gold was discovered at Lynch Creek in 1883 prior to the discovery of copper at Mt. Lyell. The King Gold Mine, which was the richest gold prospect located, has been worked several times since that date, and as late as 1932. The mine consists of a small open cut at the top of a hill just south of Lynch Creek. Two crosscutting tunnels, on the eastern side of the hill, are reported to penetrate the opencut workings. Another short tunnel is open near the crest of the hill, and is more or less parallel to the open cut. Two shafts occur close to the open cut, one 80 feet deep and the other 30 feet deep. It was reported in early literature that a tunnel was driven for a total length of 700 feet, from 200 feet below the crest of the hill. Possibly because vegetation has flourished in the site of the old workings, the location of the tunnel opening was not found. It is also possible that the "tunnel" is now represented by the north-south trending open adit, which is of similar length. The top might have been removed by the later tribute workers or by cave-in.

No evidence of the auriferous reef can be found. Ironstained, pyritic quartz rarely are seen. It is reported that the 700 feet long tunnel was driven on a reef approximately 500 feet long, the width being on the average three feet. The grade of the reef was reported to be patchy, and generally poor on an average. The ore extracted from the open cut consisted of decomposed andesite with veins of quartz and oxides of iron and manganese.

Exploration work has uncovered several other shafts, tunnels and adits, as well as a series of sluicing trenches.

Old miners consistently seem to have followed quartz veins within the limonitic clay cover. Local prospecters have spoken of sulphides (chalcopyrite and galena) associated with

some veins. These particular workings have not as yet been uncovered.

Alluvial gold workings are extensive in Lynch and Specimen creeks, and, in some places, the hills are covered by shallow, infilled pits.

GEOLOGY

A STRATIGRAPHY

The stratigraphic column of rocks in the Lynch Creek area may be summarised briefly:-

Recent	Alluvium Gravels
Siluro-Devonian	Eldon Group Crotty Quartzite
Ordovician	Junee Group Gordon Limestone Jukes Conglomerate
Cambrian	Dundas Group Shales and sandstones Mt. Read Volcanics Acid Volcanics Acid Tuffs Intermediate Crystal Tuffs Andesites

CAMBRIAN

Mt. Read Volcanics

Andesites:

These are dark green, hard rocks. The texture is generally porphyritic with a pilotaxitic matrix. The main minerals contained are sericitised feldspar, chlorite-epidote sometimes replacing a femomagnesium mineral and pyroxene with magnetite, tremolite, and some pyrite as accessories. Epidote, chlorite and tremolite are generally alteration products as a result of mild shearing under conditions of low temperature and pressure. In some outcrops, the rock is strongly sheared (sample "D") and phenocrysts have been brecciated. This rock has been described as "syenite porphry" or "porphyrite" in early literature describing the King Gold Mine.

Olivine basalt was thought to occur in sporadic outcrops although on reference to the petrographic reports, it is probable that olivine may have been mistaken for epidote.

The broad unit of Andesites outcrops south of Lynch Creek. Outcrop exposure is extremely poor as the rocks are covered by a thick layer of clay. Solomon (1960) considers that the clay probably represents tuffs and perhaps lavas that have been altered as a result of gold mineralisation, and later deeply weathered. It is more likely that the clay has developed as a result of the long weathering of the andesites. Although a shallow clay horizon extends north of Lynch Creek, only very deep clay formation develops over the andesites. As will be elaborated in the section relating to structure, the presence of clay is probably related to block faulting. There is no evidence to suggest that the clay has been derived from the distinct units of softer tuffs.

Intermediate Crystal Tuffs:

These are generally dark green, hard rocks. The texture is usually crystal and rock fragments in a fine grained, felsitic matrix. Essential minerals include feldspar, augite and quartz with magnetite and chlorite as accessories. Sericite, tremolite, epidote, chlorite and calcite often occur as alteration products. Fragment size is variable, ranging from several m.m. to several centimetres in length. In the larger fragments, reaction rims are well developed, and magnetite is generally abundant. Pyrite and possibly pyrrhotite are rare.

Generally, this broad unit does not appear to have undergone very much local shearing, or suffered any metamorphism as a result of folding. However, sample "K" shows some shearing. In outcrop this is expressed as small lenses elongated in the direction of shear. The usual outcrop form is generally as massive tors. Soil cover is very shallow.

In summary, earlier workers have had problems classifying this rock genetically, Sedimentary, sill and lava origins have been suggested. In view of present evidence particularly relating to the consistent persistence of variable crystal and rock fragments, and the relation of this unit to overlying units, it is felt that this is a broad unit of crystal tuffs of dacite-andesite composition (closely related to the andesites south of Lynch Creek). Solomon (1960) stresses that the environment in this area during the Cambrian was rapidly changing. Sections of this unit (rock locality "N") are reminiscent of pillow basalts in form, and it is suggested that this unit may be partly submarine in origin.

Acid Tuffs:

The rocks grouped in this classification are strongly ironstained,soft, acid pyroclastics. Rock minerals are generally quartz and strongly altered feldspar (often pink orthoelase), chlorite and muscovite. Magnetite occurs as an accessory. Where discernable, the matrix appears to be fine grained. Sericite and Kaolin occur as predominant alteration products. Hematite is abundant. It would appear that this group have undergone some degree of hydrothermal alteration.

In outcrop, the rocks are strongly weathered and structural information is difficult to obtain from field observations. To the north of the grid, the rock outcrop is more massive with less ironstaining. The outcrop can generally be defined by a distinct, red colour anomaly. Strong shearing is evident close to the contact of the acid volcanics.

Acid Volcanics:

These rocks are a group of whitish grey, soft, sheared rhyolitic volcanics which have been described by other workers as quartz-sericite schists. It is thought that they could be correlated with the Mt. Lyell ore bearing schist sequence. However, as they are representative of a lower grade of metamorphism, they have been classified genetically, that is as "sheared acid volcanics". Rock minerals are generally quartz muscovite, some sericite and rarely chlorite with pyrite and sphene as accessories. Sericite and chlorite occur in random alignments as alteration products of muscovite. The texture is generally porphyritic with either a semi-schistose a fine grained matrix or in a layered micaceous and quartzose matrix. Phenocrysts are occasionally brecciated. The shearing direction is consistent with a strike of 315-325°TN. Ironstaining in these volcanics is minor.
The eastern contact with the underlying acid tuffs seems to correspond with a zone of quartz scree, although this may be coincidental. (See section relating to "quartz scree" on page

Dundas Group Sediments

In the north of the grid area, these beds consist of finely, irregularly alternating bands of coarse siltstone, claystone and laminated shales. The strike of this unit is coincident with that of the volcanics. The southern contact with the Intermediate Crystal Tuffs is difficult to define. It is

thought that the sediments either merge or overlap the volcanics.

A zone of clean, coarse grained, quartzose sandstones and shales, striking 010°TN and dipping 83°E, outcrops to the south-east of the grid area. The relation of this unit to the remainder of the Cambrian rocks is not known. However it is thought that they postdate the Mt. Read Volcanics.

ORDOVICIAN

Junee Group

Jukes Conglomerate:

A narrow zone of grey to purple, sheared conglomeratic rocks outcrop in the west of the area. The actual contacts with the underlying Cambrian sequence is difficult to define. It is not known if a section of Owen Conglomerate occurs in this section.

Gordon Limestone:

The sequence of Gordon Limestone exposed east of the Lynch Creek pig farm, consists mainly of impure dark-grey limestones (weathered to yellow sandstone), shales, grits, yellow friable sandstones and quartzites. It is not typical of the pure massive limestone at Lynchford Quarries. It is considered that the outcropping sequence observed at Lynch Creek is a basal and transitional group deposited immediately after the Owen Conglomerate was deposited.

SILURIAN-DEVONIAN

Eldon Group

Crotty Quartzite:

This sequence of sandstones and shales overlie the Gordon

Limestone and outcrop west of the Queen River. They are of no interest in the present investigations.

DEVONIAN?

Quartz Scree

Quartz scree is a prominent feature of the landscape in the Queenstown area. In places, stoney quartz can be seen filling fractures in folded Eldon Group sediments and they often fill transcurrent fractures in Cambrian rocks at Mt. Lyell. At Lynch Creek, it occurs over the Acid Volcanic - Acid Tuff contact. Very little information has been collected by any worker regarding this feature. Solomon (personal communication) has suggested that most of the surface quartz has been deposited as alluvial wash or perhaps as glacial debris during Pleistocene times. However, no attempt has been made to explain the origin of the quartz. It is the opinion of the writer that during the Tabberraberan Orogeny, quartz was introduced into secondary fold structures and left in place by erosion. This is similar to the extensive quartz veining seen in the Lower Paleozoic of Victoria, although the gold content of the Queenstown area was found to be much poorer.

RECENT

Alluvium, gravels:

Alluvium and post-glacial gravels are common along the beds of Lynch and Specimen Creeks, and have been constantly worked for gold.

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B STRUCTURE

FOLDS

It is considered that the Cambrian sequence at Lynch Creek has been folded into a series of tight anticlines and synclines. Accurate dip measurements, particularly in the Intermediate Crystal Tuff unit, are hard to obtain, and makes interpretation of the actual fold pattern difficult. On reference to the geological map, an anticline and a syncline have been inferred from photo interpretation and field data respectively.

Overturning is known to occur in the Mt. Lyell Section. Also, it is thought that the area has been subjected to two major orogenies, the Jukesian (Late Cambrian) and the Taberraberan (Devonian). For these reasons, caution should be exercised in interpretation of structure without detailed structural data.

FAULTS

Two east-west trending faults with accompanying minor cross faults are the dominating feature in the area under study. Both of these faults are readily identified on aerial photographs and have influenced the stream patterns.

These faults can be directly related to horst and graben-type tectonics which was the normal resultant feature of the Jukesian movement at the end of the Cambrian. Hence, the block south of Lynch Creek was faulted upwards in relation to the block immediately to the north. Similar movement occurred along the northern fault. Resultant erosion of the upper acidic volcanics occurred in the southern block with the accompanying development of a deep clay horizon. The blocks to the north have undergone less erosion.

East-west faults are important in the localization of ore deposits at Mt. Lyell. At Lynch Creek, the King Gold Mine is close to an east-west fault and the gossanous zone to the north is similarly located.

CONTACTS

An unconformity between Dundas and Junee sediments has been reported in many places in West Tasmania. However, Solomon (1966) is of the opinion that a conformity has been established in the Queenstown area. Field evidence at

Lynch Creek supports the latter view.

SECONDARY STRUCTURES

As a result of folding during the Tabberabberan Orogeny, volcanic rocks were deformed according to their competency. The softer acid volcanics and tuffs were strongly sheared with the imprint of a prominent shear direction measured at about 330°TN. The harder, more massive Intermediate Crystal Tuffs and Andesite Volcanics underwent minor shearing, with some jointing evident.

C GEOLOGICAL HISTORY (post PreCambrian)

This section refers specifically to the Lynch Creek area. With the formation of the Mt. Read Volcanic Arc, andesite volcanics were extruded followed by a variety of tuffaceous rocks and finally acid volcanics. The environment of deposition was rapidly changing. Unstable basins were forming with accumulation of volcanic rocks in partly submarine conditions.

At Mt. Lyell, as a result of more intense metamorphism, the sequence of volcanics is difficult to determine, although geologists consider the dark chlorite rich schists to represent more intermediate tuffs and the leucocratic sericite and quartz rich schists to represent acidic volcanics.

At Lynch Creek, the sequence is clearer. By a process of magmatic differentiation, andesitic volcanics are followed by Intermediate Crystal Tuffs, possibly submarine in part, and then by acid tuffs and finally acid volcanics.

Contemparaneous to the accumulation of the volcanics, deposition of flysch type sediments was occurring as represented by the sequence of shales which appear to lense with the Intermediate Crystal Tuffs. Towards the end of the Cambrian, there was a change to more molassic sedimentation as represented by Dundas Group arkoses to the south-east of the area. This change probably coincided with the cessation of volcanism.

Horst and graben type faulting was followed by the formation of rift valleys with the subsequent deposition of the terrestial Jukes Conglomerate as the reworked products of the Mt. Read Volcanics. Terrestrial deposition of the Owen Conglomerate as scree and fanglomerate derived from PreCambrian rocks continued. This was followed by a slow marine transgression with the deposition of the basal units of the Gordon Limestone, as represented at Lynch Creek.

The Siluro-Devonian saw the deposition of a monotonous sequence of quartzites and shales. During the late Devonian, the whole area was subjected to the Tabberabberan Orogeny. Overthrusting and overturning of the Owen Conglomerate, and complex folding and cleavage development in the volcanics occurred. At Mt. Lyell, the most important structures formed were the north-south trending Great Lyell Fault Zone and the west-north-west trending Linda Fault Zone. Earlier formed east-west faults at Lynch Creek were probably reactivated. Sulphide mineralization in the Cambrian Volcanics was remobilised and redeposited in fault zones; generally at the intersection of east-west faults with north-south trending shear zones or faults. At Mt. Lyell, the richest ore shoots occur within the sheared volcanics (and Jukes Conglomerate?) close to the Owen Conglomerate.

Alteration of the volcanic rocks to quartz-sericite-chlorite schists preceded mineralization. Quartz veins were introduced along secondary joints and fractures.

Uplift associated with the Tabberrabberan Orogeny initiated a prolonged phase of erosion which persisted until the late Carboniferous or Permian. At this stage, widespread glaciation ensued, part marine and part terrestrial, and this was followed by deposition of Mesozoic marine and non-marine sediments in grabens to the east of Queenstown and across Tasmania. There are no post-Tabberrabberan sediments preserved in the Queenstown area. Their occurrence in other areas, has only been mentioned for the sake of completeness. Tertiary sedimentation occurred to the west. Pleistocene glaciation and present-day erosion complete this geological history.

D MINERALIZATION

The King Gold Mine and all the gold prospects marked by adits in the Lynch Creek area are similar, in that gold was mined from reef quartz. It has been reported that copper and galena were located at depth in one shaft in Specimen Creek. This shaft has not been uncovered, but, according to local prospectors, the mineralisation was also associated with quartz. The gossanous zone south of line 15000TN is basically pyritic, and is the only discernable outcrop of mineralised rock. It must be stressed that the deep clay cover over a large section of the area has made it extremely difficult to evaluate the extent of mineralization. The persistence of geochemical anomalies in the area is the most promising feature. This will be discussed in a later section of this report.

As referred to in previous sections of this report, ore bodies at Mt. Lyell occur at the intersection of major structures and within the Cambrian volcanics (schists) or the (Jukes Conglomerate?), close to the eastern contact of the Owen Conglomerate.

At Lynch Creek, this eastern contact lies outside and east of the Exploration Licence. The western contact, not known to be a favourable location for orebodies at Mt. Lyell, is represented by the Jukes Conglomerate - Dundas Group conformity at Lynch Creek. Favourable east-west fault structures occur in the area, but intersecting north-south trending structures are absent (except for fold axis, which are not of importance at Mt. Lyell). Hence, chances of finding an orebody with Mt. Lyell type controls are extremely low at Lynch Creek. However, the full potential of Mt. Lyell has not been realised and other favourable relationships may exist at both Lynch Creek and Mt. Lyell.

It could be argued that mineralization originally occurred towards the end or at the beginning of a particular volcanic episode. The various volcanic contacts at Lynch Creek should be reviewed with this in mind, However, the important factor is that mineralization may have been remobilised into structural traps during the Tabberraberan Orogeny. Although mineralization at the King Gold Mine and of the gossanous zone appears to occur close to east-west structures, a favourable north-south structural zone or any similar structural trap is absent.

GEOCHEMISTRY SURVEY

METHOD:

During the literature search, it was noted that Pickands Mather has recognised a large geochemistry anomaly at Lynch Creek. Their sampling method has consisted of collecting a soil sample at a spade depth of about 12 inches. Although they had conducted an orientation survey and concluded there was no smelter fallout contamination, it was decided to consistently sample the top of the "C" horizon as well as collecting a rock sample at the same locality.

It has already been mentioned that glaciation and rapid erosion has stripped the area of a good "A" horizon. For the same reason, it was concluded that sampling weathered rock, where accumulation of metals is likely to occur, would produce a more representative sample. As there was obviously a deep clay cover over a large section of the area, an auger drilling programme was chosen. The hand tool used had a maximum penetration of 9 feet and a bit size of 4 inches. A total of 987 feet was drilled in the programme. It will be noticed that many holes reached nine feet. It is known that at least 80 feet of clay exists in places, and it could not be hoped with the present equipment to consistently reach the "C" horizon. For the nine foot holes, the results should be interpreted accordingly. On the other hand, for holes only 6 inches deep it can be concluded that rock outcrops, and that the soil is a poorly developed "A" horizon. It is unlikely in this instance that the result is meaningful. It is suggested that the 6 inch and 9 foot results could be omitted from the plans, and the resultant anomalies compared with those inferred from all results,

Where possible, a rock chip sample was taken at the surface outcrop. Where outcrop was absent, a sample of the weathered rock from the hole was used. No rockchip or soil samples were collected in swamps and creeks. Two field assistants were employed to carry out this work.

ANALYSIS:

All samples were analysed by Atomic Absorption Spectrometry for copper, lead and zinc. Initially, several lines were also assayed for silver. As gold mineralisation was known in the area, it was considered that silver might be an indicator. However, the analyses showed no indication of anomalous silver values, and silver analysis was ommitted for the remainder of the survey.

STATISTICS:

Histograms were prepared for each metal for each sample type. Frequency was plotted against metal value. From these histograms, the best values for contours were selected for the plans.

Detailed statistical investigations are currently being undertaken. Triangular and ratio diagrams are being studied to assist in the final interpretation of the results.

INITIAL RESULTS:

A broad zone generally defined by soil copper values over 100 ppm is the prominent anomalous feature in the Lynch Creek Area. Within this zone soil copper values reach isolated peaks of 300 - 400 ppm. Rockchip copper values tend to coincide with these soil anomalies. The only copper anomaly of any significance which lies outside the zone is located at the western end of line 15000TN. This is a copper-lead soil anomaly, situated at the base of a steep hill. It could represent secondary dispersion as the rockchip values from the same area are not anomalous.

Lead and zinc values generally form more irregular patterns than do copper values. However high lead and zinc values fall within the soil copper zone of plus 100 ppm.

Another important feature of the area is the striking correlation between high metal values and clay development, both in lateral and vertical directions. Although the clay extends north of Lynch Creek, it is best developed over the andesites south of the Lynch Creek Fault.

It was originally considered that the clay was derived from the results of hydrothermal alteration. The acid tuffs are the only rocks to appear hydrothermally altered, but they lack a clay cover. However field work has failed to find any positive evidence of argillic alteration either in the clays developed on the andesites or in the outcropping andesite rock.

Hence it is difficult to relate the anomalies to primary dispersion phenomena.

Secondary dispersion patterns are in most cases difficult to define. It is hoped that further analysis might delineate more clearly the zones of possible interest.

GROUND MAGNETOMETER SURVEY

METHOD:

Traverses were conducted along the baseline and all grid lines. A total of 9.4 miles was surveyed. Readings were taken at 100 feet intervals. Four base stations were established.

Lines 13500TN, 13000TN and 14000TN were surveyed during the course of one day and regular measurements were taken back at base station "A" to correct for diurnal variations.

On consecutive days, a similar procedure was adopted for lines 12500TN and 12000TN using base station "C"; for lines 14500TN, 15000TN and 15500TN using base station "B"; for lines 16000TN to 19000TN inclusive using base station "D"; and for the baseline utilising all base stations.

For each day, the reading at each station was corrected for diurnal variation. The base stations "B", "C" and "D" were tied in to base station "A", and thence all readings were corrected relative to the base station "A" reading of -120 gammas, which was measured to be equivalent to an absolute reading of -49,050 ($\pm$ 250) gammas. The project geologist conducted the survey.

RESULTS:

The magnetic anomaly map reflects fairly well the geology of Lynch Creek. As representative rock samples were taken, magnetite content is roughly known. In summary, acid volcanics and andesites contain minor quantities of magnetite as accessory minerals; acid tuffs contain a moderate amount and intermediate crystal tuffs contain magnetite as the predominant accessory mineral.

In interpreting the map, increasing negative values indicate an increasing magnetic intensity. Thus andesites and acid volcanics coincide with low readings of between -20 and -100 gammas. Acid tuffs give values of between 0 and -1500 gammas. High fluctuating values of up to -2000 gammas (with odd values reaching -5000 gammas) are obtained for the intermediate crystal tuffs. Variations from positive to negative, particularly near contacts with other rock types could be explained by the variable magnetite content of the individual volcanic extrusions.

The Lynch Creek Fault is identified by the change in the contour line pattern.

This survey has not been corrected for variations due to topography. This should not alter the general pattern greatly. On line 15,500TN at 9000E the large anomaly is probably caused by the high metal content of the neighbouring rubbish dumps.

INDUCED POLARISATION SURVEY

METHOD:

Frequency domain equipment supplied and operated by McPhar Geophysics Australia Pty. Ltd. was used on this project. Two extra field assistants were supplied by Cyprus to assist in this difficult terrain. 300 feet spreads, using dipole - dipole configuration, were chosen as the basic testing of each line chosen for I.P. Line 13500TN was also surveyed with a 500 feet and a series of 100 feet spreads to obtain additional data to assist in the evaluation of the results,

RESULTS:

An area of low resistivity values was detected in the southeastern part of the grid,although corresponding apparent frequency effects were generally uniform and low.

Resistivity was useful for differentiating rock types. High values close to the King Gold Mine probably represent quartz veins.

On line 13500TN, the trends in the 300 feet, 500 feet and 100 feet spreads are similar. This suggests that the I.P. survey has been able to penetrate the conductive? clay horizon. The results although disappointing are thought to be meaningful.

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APPENDIX (I)

PETROGRAPHIC REPORTS AND HAND SPECIMEN DESCRIPTIONS

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SAMPLE NO: "A" IDENTIFICATION: INTERMEDIATE TUFF

PETROGRAPHIC REPORT

CLASSIFICATION:	Pyroclastic
TEXTURE:	Crystal and rock fragments in a felsitic matrix.
CHIEF MINERALS:	Sericitized alkali & plagioclase feldspar; augite; quartz.
ACCESSORY MINERALS:	Magnetite; chlorite, sericite and epidote as alteration products; minor pyrite in included rock fragments; iron staining.
COMMENTS:	This rock is similar to the tuffs Q, N and P. The included rock fragments could be an intrusive type of porphyry.

HAND SPECIMEN FIELD DESCRIPTION

Darkgreen, granular, hard with abundant magnetite and chlorite. Minor limonite ironstaining in vesicles or possible vugs left by corroded pyrite.

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SAMPLE NO: "B" IDENTIFICATION: ANDESITE

PETROGRAPHIC REPORT

CLASSIFICATION:	Igneous Volcanic
TEXTURE:	Porphyritic with a pilotaxitic matrix.
CHIEF MINERALS:	Sericitized feldspar; chlorite-epidote after a ferromagnesium mineral; minor pyroxene.
ACCESSORY MINERALS:	Chlorite; hematite-limonite; magnetite.
COMMENTS:	The feldspar laths of the matrix show some flow texture. The chlorite-epidote alteration is afer a pyroxene (relict shape) and one small piece of pyroxene is evident. These facts together with the absence of quartz indicate that this rock is an andesite.

HAND SPECIMEN FIELD DESCRIPTION

This specimen has been described as "syenite porphyry" or "porphyrite" in early literature describing the king Gold Mine. Darkgreen hand rock. Phenocrysts of irregular feldspar with lapilli of chlorite. Some feldspar replaced by limonite.

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771025

SAMPLE NO: "C" IDENTIFICATION: ANDESITE

PETROGRAPHIC REPORT

CLASSIFICATION:	Igneous Volcanic.
TEXTURE:	Porphyritic with a pilotaxitic matrix.
CHIEF MINERALS:	Sericitized feldspar; pyroxene; chlorite.
ACCESSORY MINERALS:	Quartz; hematite-limonite; magnetite.
COMMENTS:	As with B, this sample is considerably iron-stained. Chlorite development is advanced and some recrystallized quartz indicates recrystallization of the matrix.

HAND SPECIMEN FIELD DESCRIPTION

Pale green, hard with fine grained texture. Fine lapilli of chlorite abundant with "ghost" phenocrysts of feldspar. Similar in composition to "B". Iron-staining minor.

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SAMPLE NO: "D" IDENTIFICATION: SHEARED ANDESITE

PETROGRAPHIC REPORT

CLASSIFICATION:	Igneous volcanic.
TEXTURE:	Brecciated phenocrysts in an altered matrix with some flow texture.
CHIEF MINERALS:	Pyroxene; minor quartz; feldspar altering to tremolite.
ACCESSORY MINERALS:	Epidote; chlorite; tremolite; pyrite; magnetite.
COMMENTS:	This rock has been sheared and the phenocrysts are brecciated. Alteration (with the introduction of epidote and chlorite) has accompanied the shearing. Conversion of the feldspar to tremolite is also a result of the shearing and alteration.

HAND SPECIMEN FIELD DESCRIPTION

Dark green, hard rock. Some shearing apparent. Epidote and a whitish alteration mineral occur as a result of the shearing. Yellowish metallic mineral (chalcopyrite or pyrite) observed in occasional epidote crystal.

026

771027

SAMPLE NO: "E" IDENTIFICATION: SHEARED ACID VOLCANIC

PETROGRAPHIC REPORT

CLASSIFICATION:	Igneous volcanic.
TEXTURE:	Porphyritic with a semi-schistose very fine grained matrix.
CHIEF MINERALS:	Quartz; muscovite.
ACCESSORY MINERALS:	Chlorite; sphene; pyrite; hematite-limonite staining.
COMMENTS:	E,M,F, and J are a closely related series, possibly representing the late phase material from the earlier andesitic tuffs. They appear to be rhyolitic and were probably flow rocks. Development of aligned mica and recrystallized quartz within the matrix indicate shearing with probable addition of silica.

HAND SPECIMEN FIELD DESCRIPTION

Greyish, softish rock, strongly sheared. Chlorite lapilli elongated parallel to shearing direction. Minor limonite staining.

027

771028

SAMPLE NO: "F" IDENTIFICATION: SHEARED ACIDIC VOLCANIC

PETROGRAPHIC REPORT

CLASSIFICATION: Igneous volcanic

TEXTURE: Porphyritic with a layered micaceous and quartzose matrix.

CHIEF MINERALS: Quartz; muscovite

ACCESSORY MINERALS: Minor pyrite

COMMENTS: The phenocrysts in this rock are semi-aligned to the schistose matrix indicating a relatively intense shearing accompanied by recrystallization.

HAND SPECIMEN FIELD DESCRIPTION

Whitish, soft sheared rock. Quartz and sericite? as primary constituents. Minor hematite staining.

028

771029

SAMPLE NO: "G" IDENTIFICATION: INTERMEDIATE CRYSTAL TUFF

PETROGRAPHIC REPORT

CLASSIFICATION:	Pyroclastic.
TEXTURE:	Crystal fragments in a felsitic matrix.
CHIEF MINERALS:	Sericitized alkali & plagioclase feldspar; augite; quartz.
ACCESSORY MINERALS:	Magnetite; chlorite, calcite, sericite and minor epidote as alteration products.
COMMENTS:	A smaller grained variety with a higher percentage of matrix. There are no rock fragments in the slide although they are obvious in the hand specimen.

HAND SPECIMEN FIELD DESCRIPTION

Dark green, hard rock. Occurs massive in outcrop. Phenocrysts of feldspar, chlorite and magnetite. Sericite alteration of larger rock fragments. Minor ironstaining.

SAMPLE NO: "H" IDENTIFICATION: HEMATIZED ACID VOLCANIC

PETROGRAPHIC REPORT

CLASSIFICATION:	Igneous volcanic.
TEXTURE:	Porphyritic with a silicified matrix.
CHIEF MINERALS:	Quartz; chlorite; muscovite.
ACCESSORY MINERALS:	Magnetite; minor pyrite; substantial hematite.
COMMENTS:	This rock resembles E, but is heavily impregnated with hematite.

HAND SPECIMEN FIELD DESCRIPTION

Brick-red, soft rock. Quartz and feldspar inclusions in softer, friable matrix. Prolific hematite staining throughout.

030

771031

SAMPLE NO: "I" IDENTIFICATION: WEATHERED TUFF

PETROGRAPHIC REPORT:

CLASSIFICATION:	Pyroclastic.
TEXTURE:	Crystal fragments in a silicified matrix.
CHIEF MINERALS:	Kaolinized feldspar (mainly alkali); quartz; mica.
ACCESSORY MINERALS:	Magnetite; hematite-limonite, chlorite.
COMMENTS:	A more "dacitic" type of tuff. This rock has been affected by surface weathering and silicification.

HAND SPECIMEN FIELD DESCRIPTION

Greenish, fairly hard rock. Quartz and feldspar phenocrysts with minor chlorite lapilli. Phenocrysts vary in size and shape from angular rhanboidal to lathlike to elongated wisps. Kaolinisation common, with limonite and hematite staining disseminated throughout.

SAMPLE NO: "J"

IDENTIFICATION: SHEARED ACIDIC VOLCANIC

PETROGRAPHIC REPORT

CLASSIFICATION:	Igneous volcanic.
TEXTURE:	Brecciated phenocrysts in a layered quartzose and micaceous matrix.
CHIEF MINERALS:	Quartz; muscovite.
ACCESSORY MINERALS:	Pyrite; sphene; some iron-staining.
COMMENTS:	The phenocrysts are stained and brecciated and not yet recrystallized (as suspect those of sample F may be).

HAND SPECIMEN FIELD DESCRIPTION

Whitish, soft rock, strongly sheared. Quartz fragments lenticular and elongated along shearing direction. Minor hematite staining.

SAMPLE NO: "K" IDENTIFICATION: SHEARED CRYSTAL TUFF

PETROGRAPHIC REPORT

CLASSIFICATION:	Pyroclastic.
TEXTURE:	Crystal fragments in a felsic matrix.
CHIEF MINERALS:	Sericitized feldspar; pyroxene; quartz.
ACCESSORY MINERALS:	Magnetite; chlorite; sericite, epidote as alteration products.
COMMENTS:	This tuff has undergone some shearing. The crystal fragments show some flattening and there is development of aligned chlorite within the felsic matrix.

HAND SPECIMEN FIELD DESCRIPTION

Dark green, hard rock. The chloritic phenocrysts vary in size, and the larger ones appear to be extensively fractured. In outcrop this rock occurs in small lenses formed by shearing. Minor ironstaining.

033

771034

SAMPLE NO: "L" IDENTIFICATION: WEATHERED ACIDIC TUFF

PETROGRAPHIC REPORT

CLASSIFICATION:	Pyroclastic.
TEXTURE:	Crystal fragments in a silicified matrix.
CHIEF MINERALS:	Quartz; alkali feldspar; minor plagioclase.
ACCESSORY MINERALS:	Chlorite; magnetite; limonite; minor pyrite.
COMMENTS:	The weathering and iron-staining of this sample obscure its origins. Although there are no rock fragments in the slide they are obvious in the hand specimen.

HAND SPECIMEN FIELD DESCRIPTION

Yellowish, soft rock. Phenocrysts consist of large fragments of up to 20 mm in length as well as many smaller fragments of up to 1 mm. in length. Composition of fragments is feldspar with alteration to clay in the larger fragments. Unlike other acidic tuffs to the south, this rock is strongly limonite, rather than hematite stained. Massive in outcrop with three prominent joint directions evident.

034

771035

SAMPLE NO: "M" IDENTIFICATION: INTERMEDIATE CRYSTAL TUFF

PETROGRAPHIC REPORT

CLASSIFICATION:	Pyroclastic
TEXTURE:	Crystal and occasional rock fragments in a felsitic matrix.
CHIEF MINERALS:	Sericitized feldspar; augite; quartz; fine-grained rock fragments.
ACCESSORY MINERALS:	Magnetite; chlorite, sericite and minor epidote as alteration products.
COMMENTS:	All the tuffs described belong to the same "group" and are probably closely related lithologically. Only the degree of alteration, grain size and amount of matrix varies slightly from sample to sample.

HAND SPECIMEN FIELD DESCRIPTION

Dark green, hard rock. Chlorite and altered feldspar phenocrysts in fine-grained, chloritic matrix. Abundant magnetite. Minor hematite staining on surface of rock.

035

771036

SAMPLE NO: "N" IDENTIFICATION: INTERMEDIATE CRYSTAL TUFF

PETROGRAPHIC REPORT

CLASSIFICATION:	Pyroclastic
TEXTURE:	Crystal and rock fragments in a felsitic matrix.
CHIEF MINERALS:	Sericitized alkali and plagioclase feldspar; augite; quartz.
ACCESSORY MINERALS:	Magnetite; chlorite, sericite and minor epidote as alteration products.
COMMENTS:	This rock is similar to Q. The rock fragments are very fine-grained and appear to be trachytic.

HAND SPECIMEN FIELD DESCRIPTION

Dark green, hard rock. Massive in outcrop with some resemblance to pillow lava formation.where exposed in cutting. Chlorite phenocrysts with abundant magnetite set in dark chloritic matrix. Minor limonite and hematite staining on surface of otherwise fresh rock.

036

771037

SAMPLE NO: "O" IDENTIFICATION: WEATHERED ACIDIC TUFF

PETROGRAPHIC REPORT

CLASSIFICATION:	Pyroclastic.
TEXTURE:	Crystal and rock fragments in a silicified and chloritized matrix.
CHIEF MINERALS:	Quartz; kaolinized alkali feldspar; minor plagioclase; chlorite.
ACCESSORY MINERALS:	Magnetite; hematite - limonite; pyrite.
COMMENTS:	A very weathered sample with considerable development of chlorite and limonite impregnation.

HAND SPECIMENT FIELD DESCRIPTION

Greenish, soft rock. Keolinised pink orthoclase? feldspar and quartz phenocrysts set in fine-grained matrix. Minor chloritic lapilli. Limonite and hematite staining disseminated throughout.

037

771038

SAMPLE NO: "P" IDENTIFICATION: INTERMEDIATE CRYSTAL TUFF

PETROGRAPHIC REPORT

CLASSIFICATION:	Pyroclastic.
TEXTURE:	Crystal fragments in a felsitic matrix.
CHIEF MINERALS:	Sericitized alkali and plagioclase feldspar; augite; quartz.
ACCESSORY MINERALS:	Magnetite; chlorite; sericite and minor epidote as alteration products.
COMMENTS:	Akin to Q and N with a slightly smaller grain size and higher percentage of matrix.

HAND SPECIMEN FIELD DESCRIPTION

Dark green, hard rock with feldspar and quartz phenocrysts set in chloritic matrix. Magnetite abundant. Trace ironstaining.

038

771039

SAMPLE NO: "Q" IDENTIFICATION: INTERMEDIATE CRYSTAL TUFF

PETROGRAPHIC REPORT

CLASSIFICATION:	Pyroclastic.
TEXTURE:	Crystal fragments and occasional felsitic rock fragments in a felsitic matrix.
CHIEF MINERALS:	Sericitized feldspar; quartz; augite.
ACCESSORY MINERALS:	Magnetite; sericite; chlorite; epidote as alteration products.
COMMENTS:	This rock is a typical pyroclastic product of intermediate composition. Alteration of the feldspar obscuring its nature makes an accurate assessment of rock type impossible. The alteration in this rock is propylitization normally common in the dacite-andesite group.

HAND SPECIMEN FIELD DESCRIPTION

Dark green, hard rock with chlorite quartz and minor altered feldspar abundant. Matrix area is small. Magnetite abundant. Minor ironstaining.

039

771040

SAMPLE NO: "R" IDENTIFICATION: CHLORITIZED ACIDIC TUFF

PETROGRAPHIC REPORT

CLASSIFICATION:	Pyroclastic.
TEXTURE:	Crystal fragments in a chloritized felsitic matrix.
CHIEF MINERALS:	Quartz; sericitized alkali feldspar; minor plagioclase; chlorite (possibly after biotite or hornblende)
ACCESSORY MINERALS:	Magnetite; hematite-limonite.
COMMENTS:	An acidic tuff considerably chloritized. This type possibly represents the acidic end of the tuff suite. Although the bulk of the tuffs are andesitic, there has obviously been excess silica available at the time of their formation.

HAND SPECIMEN FIELD DESCRIPTION

Greenish, fiarly hard rock. Strongly altered feldspar (including pink orthoclase) chlorite and quartz phenocrysts in a fine-grained matrix. Kaolinisation, hematite and limonite staining common throughout. Abundant magnetite.

040

771041

SAMPLE NO: "S" IDENTIFICATION: WEATHERED CRYSTAL TUFF

PETROGRAPHIC REPORT

CLASSIFICATION:	Pyroclastic.
TEXTURE:	Crystal and rock fragments in a felsitic and partly silicified matrix.
CHIEF MINERALS:	Kaolinized feldspar; quartz; minor pyroxene.
ACCESSORY MINERALS:	Magnetite; hematite; chlorite, epidote; kaolin; sericite as alteration products; limonite.
COMMENTS:	This rock is transitional between the andesitic types and the dacitic variant I. Pyroxene is less common and quartz more so. The presence of kaolin (in this instance) and hematite-limonite may indicate both surface weathering and hydrothermal alteration.

HAND SPECIMEN FIELD DESCRIPTION

Darkgreen, hard rock with a variety of sizes of plenocrysts set in a finegrained, siliceous? matrix. Large fragments tend to be strongly kaolinised feldspar, and smaller fragments are predominantly quartz. Abundant magnetite. Yellow to brown limonite disseminations are common.

041

771042

SAMPLE NO: "T" IDENTIFICATION: SILICIFIED VOLCANIC

PETROGRAPHIC REPORT

CLASSIFICATION:	Acidic Volcanic?
TEXTURE:	Recrystallized.
CHIEF MINERALS:	Quartz.
ACCESSORY MINERALS:	Hematite - limonite impregnation; finely divided minor quantities of pyrite.
COMMENTS:	This is an entirely recrystallized silicified rock. In hand-specimen the hematite appears concentrated in relict phenocrysts and this indicates that it was probably a volcanic. There is no evidence of any shearing.

HAND SPECIMEN FIELD DESCRIPTION

Pinkish, hard rock. Finely divided quartz fragments in siliceous matrix. Pink colour as a result of oxidation of a sulphide, probably pyrite. Occasional corroded pyrite vugs visible. Outcrop clase to gossanous zone and at end of long expanse of quartz scree.

042

771043

SAMPLE NO: "U" IDENTIFICATION: GOSSAN

PETROGRAPHIC REPORT

CLASSIFICATION:	Indeterminate
TEXTURE:	Silicified.
CHIEF MINERALS:	Quartz; hematite.
ACCESSORY MINERALS:	Remnant pyrite.
COMMENTS:	This rock appears to be a silicified residual. The only indication of mineralization is the hematite which was probably partially formed from weathered pyrite. Pyrite shaped voids are present. No definite relationship can be determined but an affinity to the rock type "T" and the "rhyolite" group is probable.

HAND SPECIMEN FIELD DESCRIPTION

Strongly altered, gossaneous rock with vugs after pyrite and possibly chalcopyrite. Hematite is dominant oxide present. Occurs along contact of acid volcanics and acid tuffs. Assayed by A.A.S., 220 ppm Copper, 70 ppm Lead and 30 ppm Zinc.

043

771044

SAMPLE NO: "V" IDENTIFICATION: ALTERED INTERMEDIATE TUFF

PETROGRAPHIC REPORT

CLASSIFICATION:	Pyroclastic.
TEXTURE:	Rock and crystal fragments set in a felsitic matrix.
CHIEF MINERALS:	Sericitized alkali and plagioclase feldspar; augite; quartz.
ACCESSORY MINERALS:	Minor magnetite; chlorite; sericite, tremolite, calcite and epidote as alteration products.
COMMENTS:	This as a very altered rock with some replacement of feldspar by tremolite, the appearance of calcite and patches of recrystallized quartz. Rock fragments appear to be a trachytic variety of volcanic rock.

HAND SPECIMEN FIELD DESCRIPTION

Dark green, hard rock. Fragment size up to several hundred m.m. in length, set in a finegrained, siliceous matrix. Feldspar fragments strongly altered with reaction rims common around larger fragments. Outcrop prominent. Minor magnetite and trace ironstaining.

044

771045

SAMPLE NO: "W" IDENTIFICATION: SHEARED ACIDIC VOLCANIC

PETROGRAPHIC REPORT

CLASSIFICATION:	Igneous volcanic.
TEXTURE:	Porphyritic with a recrystallized quartzose and micaceous matrix.
CHIEF MINERALS:	Quartz; brecciated feldspar; muscovite.
ACCESSORY MINERALS:	Pyrite; hematite-limonite staining; minor sphene.
COMMENTS:	Recrystallization of the matrix and the development of layered mica indicates some shearing, although this is the least sheared and altered rock of the group.

HAND SPECIMEN FIELD DESCRIPTION

White, fairly soft rock, strongly kaolinised. Quartz phenoerysts are not fractured. Trace ironstaining. Close to gossaneous zone.

APPENDIX (II)

AUGER DRILLING RESULTS

NOTES OF EXPLANATION

The auger drilling programme involved the systematic sampling of 100 feet centres along the grid lines (including the base line) at Lynch Creek.

A large area of deep clay weathering was recognised, and it was considered necessary to sample, where possible, the top of the "C" soil horizon to obtain meaningful results. Surface sampling in this area would involve the risk of smelter fallout contamination, owing to the close proximity of the Mt. Lyell smelters which were in operation for approximately 70 years. The four inch auger equipment used has a maximum penetration depth of 9 feet. As shafts in the area have shown the clay horizon to extend to greater than 80 feet in places, the holes drilled to 9 feet should be interpreted accordingly.

To supplement the soil samples, outcrop rock samples were taken. Where these were absent, rock chips from the top of the "C" horizon were collected. In many cases, it was not possible to collect this type of sample owing to the extreme weathering of the rock. Where samples are missing in the results, it can be assumed that the presence of a creek or swamp did not facilitate the collection of a representative rock or soil sample.

Field assistants conducted the sampling, so the following field terms are simple and notes listed should be interpreted as broad observations.

SLOPE

"S": Slope greater than 30°.

"M": Slope flat to 30° (Approx.)

"F": Flat.

SOIL TYPE

"S": Sandy

"C": Clayey

"Q": Quartz scree

ROCK TYPE

Where the term"volcanic" is used, it can be assumed that massive volcanics outcrop. Where the term "quartz scree" is used, it infers that the locality is extensively covered by stoney quartz fragments.

GEOCHEMISTRY RESULTS

All samples were analysed by McPhar Geophysics Pty. Ltd. of Adelaide.

Soil samples were dried and the -80 fraction analysed. Rock chips were pulverised.

A hot $HCCO_4$ leach was used for the baseline and lines 12500TN, 13000TN, 13500TN, 14000TN, 14500TN, 15000TN. A hot HCl and HCl/HNO_3 leach was used for lines 15500TN, 16000TN, 17000TN, 18000TN, 19000TN and 12000TN.

All samples were assayed by A.A.S. for Cu, Pb and Zn. Initial lines were tested for Ag. Room has been left in the tables, so that other elements can be entered if further analyses are carried out.

AUGER DRILLING RESULTS

LINE 19000TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
10000E	18"	S		Volcanics?	20	40	70	2	60	80	35	<2
10100	18"	S		do	30	80	60	3	50	60	95	<2
10200	48"	S	C	Granitised Volcanics?	15	70	65	2	25	55	50	<2
10300	30"	S	C	Volcanics	20	60	50	<2	60	65	110	<2
10400	24"	M		Volcanics?	20	50	85	2				
10500	6"	M		Volcanics?	30	70	30	2	20	50	40	<2
10600	12"	M	Q	Sediments	10	25	10	<2				
10700	6"	M		do	10	20	10	<2	10	35	15	<2
10800	36"	S		do	20	45	25	2				
10900	12"	S		Decomposed Sediments	40	90	90	2	35	75	60	<2
11000E	48"	S		do	50	75	40	2				
11100	36"	F		do	95	75	60	3				
11200	18"	S		do	20	120	70	2				
11300	18"	S		Volcanics	20	80	55	2	20	60	80	<2
11400	18"	S		Decomposed Volcanics?	15	75	75	2				
11500	12"	M		Volcanics	310	120	190	4				
11600	30"	S		do	10	40	25	<2				
11700	36"	S		do	10	35	10	<2				
11800E	18"	S		Quartz Scree	10	35	10	2				

77C049

AUGER DRILLING RESULTS

LINE 18000 TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
10000E	18"	S		?	30	45	40	<2				
10100	48"	S		?	20	20	25	<2				
10200	48"	S		?	25	50	50	2				
10300	12"	S		?	25	55	95	<2				
10400	6"	M		Volcanics	35	40	40	<2	15	60	75	2
10500	6"	M		?	30	20	10	<2				
10600	30"	M		?	10	40	10	<2				
10700	18"	S		Sediments?	25	60	55	<2	30	50	20	<2
10800	12"	S		Sediments	80	85	40	<2	65	75	90	<2
10900	18"	S		Shale	10	40	10	<2				
11000E	12"	S		Volcanics?	10	25	5	<2				
11100	18"	S		Volcanics	20	50	40	3	25	60	60	<2
11200	18"	S		Volcanic?	20	60	30	2	20	65	35	<2
11300	18"	S		Volcanic	35	60	35	2	25	50	45	<2
11400	6"	M		Volcanic?	40	85	35	2	20	60	45	<2
11500	18"	M		Volcanic?	30	60	35	<2				
11600	4"	F		Grey Volcanic	75	100	40	<2	25	75	60	<2
11700	12"	M		?	20	40	35	<2				
11800	18"	M		?	65	60	30	2				

771050

AUGER DRILLING RESULTS

LINE 17000TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
10000E	24"	S		Volcanics	15	50	50		35	55	50	
10100	24"	S		Lapilli Tuff	25	55	65		30	55	70	
10200	6"	S		Dark Green Volcanics	190	200	110		20	65	65	
10300	18"	S		do	20	60	130		30	65	50	
10400	24"	S		Volcanics	15	50	35					
10500	6"	S		Dark Green Volcanics	75	100	95		25	45	40	
10600	18"	S		?	25	55	40		20	30	25	
10700	18"	S		?	30	55	40					
10800	18"	M		Volcanics?	30	60	30		25	50	50	
10900	36"	S		?	30	50	20					
11000E	18"	S		Volcanics	30	60	50		25	55	45	
11100	36"	M	C	?	20	60	120					
11200	12"	M		Volcanics	30	60	45		20	30	40	
11300	12"	M		do	35	60	70		25	60	65	
11400	6"	M		do	110	55	45		35	40	55	
11500	12"	M	Q	Quartz Scree	25	40	10					
11600	12"	S	Q	do	45	40	10					
11700	18"	S	Q	do	20	35	10					
11800E	18"	S	Q	do	30	30	10					

77103

AUGER DRILLING RESULTS

LINE 16000TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
9400E	24"	M		Sediment	10	40	20					
9500	12"	M		do	25	40	60		15	40	65	
9600	6"	M		do	35	50	55		45	40	20	
9700	12"	S		Volcanic?	15	40	30					
9800	24"	S		Volcanic	10	45	55		10	40	55	
9900	24"	S		do	10	55	50		10	40	50	
10000E	12"	S		Dark Green Volcanic	45	75	40		25	60	40	
10100	24"	S		?	15	45	25					
10200	24"	S		?	25	50	50					
10300	12"	S		?	45	70	50					
10400	42"	S		?	20	60	45					
10500	12"	M		Sediment	10	50	25		10	40	10	
10600	12"	S		do	40	55	35		20	40	35	
10700	36"	M		do	10	30	45		40	45	35	
10800	6"	M	Q	Quartz Scree	170	100	25					
10900	6"	M	Q	do	15	20	10					
11000E	12"	S	Q	do	10	25	10					
11100E	6"	M	S	do	20	25	10					

27105?

AUGER DRILLING RESULTS

LINE 16000TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
11200E	12"	S	Q	Quartz Scree	20	30	15					
11300	6"	S	Q	do	30	35	15					
11400	12"	S	Q	do	25	35	10					
11500	30"	M	C	do	45	95	30					
11600	12"	M	Q	do	35	50	15					
11700	18"	M		?	180	65	100					
11800E	18"	M		?	200	55	60					

71053

AUGER DRILLING RESULTS

LINE 15500TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
9000E	24"	F		Sediments	25	50	200	<2	10	35	10	<2
9100	18"	S		do	10	20	10	<2	15	20	5	2
9200	12"	M		do	5	20	10	<2	15	20	5	<2
9300	48"	M	C	do	10	20	10	<2				
9400	30"	M	C	Dark Green Volcanics	10	25	25	4	25	40	60	2
9500	36"	F	C	?	10	35	15	<2				
9600	24"	S	C	Volcanic	10	40	30	3	15	50	65	2
9700	18"	S	C	do	15	70	35	<2	35	75	80	2
9800	12"	S	C	do	35	55	30	3	15	75	30	<2
9900	12"	S	C	do	35	70	30	4	20	70	55	2
10000E	12"	S	C	Schist?	20	50	25	3	25	50	55	<2
10100	24"	S	C	Volcanic?	25	60	30	4	40	75	20	2
10200	24"	S	C	do	10	45	25	4	50	75	35	3
10300	12"	S		Schist?	30	55	30	4	30	50	50	2
10400	24"	S		do	20	70	35	7	65	80	70	3
10500	24"	S		do	35	60	45	2	60	65	45	3
10600	18"	S		do	15	70	30	3	45	60	20	3
10700	18"	M		Volcanic?	20	75	60	2	30	80	65	4
10800E	6"	M	Q	Quartz Scree	10	30	15	<2				

741054

AUGER DRILLING RESULTS

LINE 15500TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
10900E	6"	M	Q	Quartz Scree	10	120	10	<2				
11000	6"	F		Sandstone	10	45	60	<2	15	45	65	2
11100	12"	F		Sediment	55	45	100	<2				
11200	9"	F		do	45	85	100	<2				
11300	12"	F		do	110	110	20	<2				
11400	24"	M		Volcanic	180	90	55	4	160	100	40	3
11500	12"	M		do	300	130	180	4	200	160	90	5
11600	12"	F		Alluvials?	30	65	20	2				
11700	18"	M		Volcanic?	210	80	50	2				
11800E	12"	M		do	350	100	120	<2	390	85	140	3

47103

AUGER DRILLING RESULTS

LINE 15000TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
8200E	6"	M		Conglomerate	270	200	35		10	20	5	
8300	6"	M		do	440	270	50		10	20	5	
8400	6"	S		do	260	170	35		10	25	5	
8500	6"	S		Sediment	320	110	45		20	20	10	
8600	6"	S		do	210	100	35		10	80	15	
8700	6"	S		do	70	45	25		50	40	15	
8800	12"	S		do	20	30	10					
8900	24"	S	C & S	?	10	25	15					
9000E	6"	S		Sediment?	55	40	20		10	35	10	
9100	24"	S	S	?	15	30	10					
9200	18"	S	S	?	30	40	10					
9300	36"	M	S	?	30	25	20					
9400	12"	M	C & Q	?	45	55	30		15	40	5	
9500	12"	M	C & Q	?	45	45	25					
9600	30"	M	C & Q	?	20	45	40		10	35	5	
9700	30"	M	C & Q	?	10	40	30					
9800	42"	M	C	Volcanic?	15	45	30		15	45	45	
9900	6"	M		Volcanic	50	70	35		30	90	40	
10000E	6"	M		do	110	70	30		30	80	70	

771059

AUGER DRILLING RESULTS

LINE 15000 TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
10100E	6"	M		Volcanic	200	85	40		70	65	40	
10200	6"	M		do	95	60	30		45	65	30	
10300	18"	M		do	20	55	30		30	80	50	
10400	6"	M		do	80	80	30		15	70	30	
10500	60"	F	red C	?	20	45	30		55	50	30	
10600	24"	F	S	?	10	70	15					
10700	108"	F	C	?	120	65	30					
10800	60"	F	C	?	230	65	30					
10900	36"	S	C	?	80	60	40					
11000E	36"	M	C & Q	?	140	80	30		20	40	10	
11100	48"	M	C & Q	?	180	45	35		35	20	15	
11200	36"	M	C & Q	?	85	50	35					
11300	36"	S	red C	?	130	55	30		150	60	40	
11400	42"	S	C & Q	?	180	50	45					
11500				Alluvial								
11600	18"	M	red C	?	190	65	55		270	65	70	
11700	18"	F	C & Q	?	100	65	25					
11800E	30"	F	C & Q	?	120	45	30		10	25	10	

77105-1

AUGER DRILLING RESULTS

LINE 14500 TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
8400E	6"	M		Sediments?	5	20	10		5	20	10	
8500				Alluvial								
8600	12"	M	C	?	20	30	50		20	40	60	
8700	30"	M	red C	?	10	20	45					
8800	36"	M	red C	?	5	20	45					
8900	18"	M	S	?	5	20	20		20	20	25	
9000	108"	M	C	?	5	20	40					
9100	18"	M		Volcanic	5	25	30		20	40	70	
9200	18"	M		do	10	30	60		10	20	60	
9300	24"	M	C		60	100	100		15	20	40	
9400	48"	M		Volcanic	5	70	110		50	140	160	
9500	54"	M	S	?	5	40	50		200	40	40	
9600	48"	F	C	?	15	30	140					
9700	30"	M	red C	?	15	20	40		40	40	50	
9800	6"	M		Volcanic	20	40	40		50	30	180	
9900	36"	M	red C	do	20	25	55					
10000E	6"	M		Volcanic?	45	30	60		10	40	110	
10100	6"	M		do	90	100	90		10	40	240	
10200E	60"	M	red C	do	180	40	50					

77105

AUGER DRILLING RESULTS

LINE 14500 TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
10300E	54"	M	red C	Volcanic?	320	40	100					
10400	18"	M		Volcanic	180	35	55		140	70	45	
10500	48"	M		do	180	40	40		320	90	120	
10600	48"	M		Volcanic?	140	45	40					
10700	9"	M		Volcanic	210	80	45		160	25	40	
10800	78"	M	red C	do	220	60	20		25	20	50	
10900	102"	S	red C	Volcanic?	140	40	40					
11000E	12"	M		do	125	45	40		40	20	20	
11100	36"	M	C	?	140	90	30		85	20	30	
11200	48"	M	C	?	200	40	50					
11300	36"	M	C	Volcanic	160	40	120		90	30	120	
11400	18"	F	C	?	260	50	210		230	20	260	
11500	18"	F	±	Volcanic?	300	60	100		300	30	90	
11600	54"	F		do	160	35	40					
11700	30"	F		do	140	35	50					
11800E	66"	F	red C	do	180	60	75					

AUGER DRILLING RESULTS

LINE 14000TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
8200E	6"	F		Volcanic	100	270	30		25	100	85	
8300				Alluvial								
8400	12"	S		Volcanic	60	70	40		30	50	55	
8500	42"	S		do	50	50	140		25	50	70	
8600	24"	S		do	40	70	40		35	45	130	
8700	48"	S		do	20	60	40		50	75	70	
8800	18"	S		do	35	60	35		40	110	35	
8900	12"	M		do	40	65	65		35	55	100	
9000E	12"	M		do	100	90	30		25	40	40	
9100	12"	S		do	110	100	40					
9200	30"	S	red C	?	30	70	40					
9300	54"	M	C & Q	?	20	65	50		15	40	20	
9400	24"	M	C & Q	?	25	60	40					
9500	18"	M	C & Q	?	10	65	40		10	40	10	
9600	30"	M	C & Q	?	15	65	40		30	30	10	
9700	24"	M	C & Q	?	10	80	40					
9800	30"	M	C	?	130	75	65					
9900				Alluvial								
10000E				do								

271060

AUGER DRILLING RESULTS

LINE 14000TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
10100	36"	M	C & Q	?	110	75	40					
10200	72"	F	C	?	160	110	50					
10300	24"	F	C	?	120	80	65		70	70	100	
10400	30"	M	C	?	140	70	75		120	70	50	
10500	42"	M	C	?	150	75	55		45	25	15	
10600	42"	M	C	?	180	70	100					
10700				Alluvial								
10800				do								
10900				do								
11000E	6"	F		Volcanic	160	130	50		60	100	60	
11100	60"	M	C	?	240	80	80		190	70	130	
11200	42	M	red C	?	150	65	50					
11300	24"	M	C	?	160	80	35		95	70	75	
11400	18"	M	C	?	150	90	40		110	40	40	
11500	24"	M		Volcanic	140	75	45		170	30	55	
11600	42"	S	C		170	75	50		130	40	40	
11700	30"	S		Volcanic	160	80	45		70	75	45	
11800E	6"	S		do	400	240	55		170	40	65	

AUGER DRILLING RESULTS

LINE 13500 TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
8200E	12"	S		Volcanic	290	50	30		45	40	40	
8300	30"	S		do	95	30	30		50	45	30	
8400	24"	S		do	70	40	50		20	40	50	
8500				Alluvial								
8600	18"	M	C		55	40	45		25	50	70	
8700				Alluvial								
8800				do								
8900	108"	F	C	?								
9000E		F	S	?								
9100	6"	F	S	?	210	110	55		15	30	25	
9200				Alluvial								
9300				do								
9400	48"	M		Volcanic	150	50	55		130	50	110	
9500	18"	M		do	180	55	60		150	45	130	
9600				Alluvial								
9700	12"	S		Volcanic	290	100	65		180	50	60	
9800	48"	M	S		390	65	160					
9900	12"	F		Volcanic	310	640	40		90	60	95	
10000E	54"	M	red C	?	230	35	55					

771062

AUGER DRILLING RESULTS

LINE 13500 TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
10100	48"	S	red C	?	200	35	65					
10200	36"	M	red C	?	130	50	55		160	60	70	
10300	108"	F	C	?	130	40	40					
10400	48"	M	S	?	130	40	30		220	65	40	
10500	30"	S	red C	?	150	35	35		200	45	45	
10600	108"	S	C	?	160	35	35					
10700	30"	F		Volcanic	150	60	30		180	45	100	
10800	108"	M	C	?	190	35	120					
10900	30"	F	C	?	140	70	35					
11000E				Volcanic								
11100	12"	F		do	150	150	40		20	40	10	
11200	48"	M	red C	?	150	80	40		190	70	120	
11300	54"	M	red C	?	210	80	35		130	60	30	
11400	48"	M	red C	?	100	55	30		280	50	130	
11500	18"	F	red C	?	140	65	45		120	45	55	
11600	12"	F		Volcanic	45	65	15		60	80	110	
11700				Alluvial								
11800E	30"	M	red C	?	150	70	50		210	60	180	

77163

AUGER DRILLING RESULTS

LINE 13000TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
8200E	108"	F	S & C	?	30	70	5					
8300	24"	F	Q	?	40	80	15		20	50	10	
8400	48"	M	Q	?	80	120	25		40	40	15	
8500	108"	M	C	?	60	70	10					
8600	36"	F	red C	?	100	380	30					
8700	48"	M	S	?	110	260	25					
8800	108"	M	C	?	250	200	170					
8900	54"	S	C	?	200	130	70		200	110	35	
9000	60"	S	red C	?	190	60	45					
9100	36"	F	C	?	95	120	50		190	60	130	
9200	60"	S	red C	?	120	45	35					
9300	108"	F	C	?	180	90	35					
9400	108"	M	C	?	150	90	40					
9500	30"	F	C & Q	?	110	80	35		90	60	15	
9600	36"	M	red C	?	120	70	35					
9700	36"	M	red C	?	110	70	35					
9800	48"	F	C	?	60	60	20					
9900	48"	F	C	?	80	80	30					
10000E	48"	F	C & S	?	120	50	35					

771064

AUGER DRILLING RESULTS

LINE 13000TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
10100E	108"	M	C	?	150	70	30					
10200	108"	M	C	?	120	50	70					
10300	108"	M	C	?	190	70	55					
10400	18"	S	C	?	300	80	55					
10500	18"	S		Volcanic?	150	90	45		130	70	120	
10600	108"	S	C	?	220	180	70					
10700	18"	M	C	Volcanic?	100	90	35		20	60	10	
10800	12"	S	red C	?	210	100	45					
10900	60"	M	red C	?	160	60	85		130	60	60	
11000E	72"	M	red C	?	200	70	55					
11100	24"	M	C	?	130	90	35					
11200	12"	M		Volcanic	140	110	45		110	70	60	
11300	36"	F	red C	?	150	80	35		200	80	35	
11400	18"	S		Volcanic	180	80	45		150	90	70	
11500	42"	S	C	?	150	70	40		110	70	70	
11600	30"	F	C	?	90	80	40					
11700	18"	M		Volcanic	190	80	55		420	70	150	
11800E	24"	M	red C	?	320	70	95		480	80	160	

71063

AUGER DRILLING RESULTS

LINE 12500TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
8200	6"	S		Volcanic	90	60	40		20	50	90	
8300	6"	S		do	250	170	90		10	90	320	
8400	6"	S		do	360	220	85		20	70	75	
8500	48"	S	C & Q	?	110	110	35		90	100	40	
8600	36"	M	C & Q	?	60	80	25					
8700	24"	F	C & Q	?	60	50	20					
8800	36"	F	C	?	90	100	30		170	100	40	
8900	6"	M		Volcanic	160	120	35		20	50	10	
9000E	12"	M		do	90	100	25		60	70	35	
9100	12"	M		do	170	130	50		240	50	45	
9200	108"	F	C	?	110	80	35					
9300	36"	M	C & Q	?	100	90	35					
9400	18"	M	red C	?	110	90	55		160	80	90	
9500	18"	M	red C	?	170	70	75		200	90	220	
9600	6"	M		Volcanic?	150	100	40		90	80	100	
9700	36"	M	red C		130	90	40		150	70	45	
9800	12"	F		Volcanic	120	100	30		150	90	120	
9900	12"	S		do	250	130	50		110	50	40	
10000E	24"	M		do	250	90	85		230	60	160	

771066

AUGER DRILLING RESULTS

LINE 12500 TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
10000E				Alluvial								
10200	60"	S	C	?	280	80	90		360	80	130	
10300	30"	S	C	?	240	100	100		190	60	60	
10400	24"	M	C	?	150	70	55		190	80	95	
10500	108"	M	C	?	190	60	45					
10600	72"	M	C	?	190	90	50					
10700	60"	S	C & Q	?	180	90	50					
10800	36"	M	red C	?	170	80	35		50	100	10	
10900	72"	M(Ridge)	red C	?	200	90	40					
11000E	36"	F	Q & C	?	120	90	35		30	40	20	
11100	30"	F	red C	?	170	90	35		30	40	10	
11200	18"	F	red C	?	150	90	25		150	60	25	
11300	36"	M	red C	?	120	90	40		140	90	40	
11400	84"	M	red C	?	200	80	50					
11500	48"	S	C	?	190	90	50					
11600	36"	M	Q	?	170	100	50		110	80	15	
11700	24"	M	Alluvial	?	70	90	35		30	50	55	
11800E	36"	S	C	?	160	90	160					

27106

AUGER DRILLING RESULTS

LINE 12000 TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
8200E	18"	S		Schist?	10	20	10	<2				
8300	24"	S		do	10	20	5	<2	5	<20	2	<2
8400	12"	S		do	5	20	5	<2	5	<20	2	<2
8500	24"	S		Volcanic?	50	60	55	<2				
8600	6"	S		Volcanic	120	60	60	2	120	50	75	<2
8700	24"	S		do	180	45	110	2	90	30	30	<2
8800	18"	S		Sheared Tuff?	70	65	75	<2	40	25	15	<2
8900	6"	S		do	130	100	110	<2	10	25	30	<2
9000	18"	S		Schist	210	55	250	2	190	40	260	<2
9100	12"	S		Lapilli Tuff	110	75	90	2	60	40	110	<2
9200	54"	S		Volcanic	220	80	140	2	190	440	240	2
9300	12"	S		?	200	90	270	2				
9400	12"	S		Volcanic?	140	100	95	<2	130	90	170	2
9500	12"	S		do	170	110	190	<2	200	70	320	2
9600	18"	S		Schist?	180	55	130	<2	120	55	220	2
9700	54"	S		Volcanic?	140	120	210	<2				
9800	24"	M	C	do	160	65	95	<2	120	35	85	<2
9900	54"	M	C	?	220	55	85	<2				
10000E	36"	M	C	?	120	55	30	<2				

77168

AUGER DRILLING RESULTS

LINE 12000TN

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
10100E	30"	M	C	?	170	60	35	2				
10200	>72"	M	C	?	260	85	60	2				
10300	66"	M	C	?	210	45	170	2	270	40	220	3
10400	30"	M	C	?	190	120	160	2				
10500	18"	M	C	?	150	70	110	2				
10600	42"	S	C	Volcanic	210	75	130	3	110	60	140	<2
10700	66"	S	C	Volcanics?	190	55	55	2				
10800	30"	S	C	do	110	60	30	<2				
10900	18"	F	C	?	160	45	70	<2				
11000E	>72"	F	C	?	190	45	60	<2				
11100	66"	M	C	?	270	50	130	<2				
11200	>72"	M	C	?	280	50	140	4				
11300	>72"	F	C	?	390	60	110	2				
11400	54"	M	C	?	190	45	45	2				
11500	72"	S	C	?	220	50	60	2				
11600	3"	S		Fine Grn Rock	110	55	30	<2	65	45	90	<2
11700	12"	S		do	70	45	50	<2	85	50	100	<2
11800E	24"	S		do	60	45	80	<2				

7711069

AUGER DRILLING RESULTS

BASE LINE 10000E

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
12100TN	36"	S	C	?	190	45	55					
12200	24"	S	C	?	210	50	80					
12300	6"	S		Volcanic	110	160	85		90	80	90	
12400		F		?	110	60	120					
12600	6"	M	C	?	170	150	100		200	40	100	
12700	30"	M	C	?	65	50	70					
12800	18"	M	C & Q	?	65	70	50					
12900	18"	M	red C	?	140	45	65		50	30	15	
13100	18"	F	C	?	110	100	45		60	50	30	
13200	96"	M		?	110	70	50					
13300	18"	M	red C	?	150	70	45		250	70	30	
13400	60"	M	C	?								
13600	12"	M	C	?	220	50	55		180	60	50	
13700		F		?								
13800		F		Alluvial								
13900		F		Alluvial								
14100	24"	M	C	?	180	100	170					
14200	48"	M	C	?	150	60	75					
14300		F		Alluvial								
14400 TN	18"	S	C	?	40	40	55		20	65	95	

77170

AUGER DRILLING RESULTS

BASE LINE 10000E

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
14600TN	18"	M	C	?	40	70	80		15	40	45	
14700	12"	M	C & Q	?	40	75	70					
14800	42"	M	C & Q	?	25	45	45					
14900	30"	M	C & Q	?	20	45	50					
15100	6"	M		Volcanic	160	90	45		40	85	20	
15200	6"	M	C & Q	?	45	50	25		25	35	10	
15300	12"	S		Volcanic	20	45	40		65	55	40	
15400	18"	S		do	25	50	25		10	40	30	
15600	18"	S		Volcanic	15	50	80		30	35	55	
15700	42"	M	C	?	15	45	55		30	60	140	
15800	30"	S	red C	?	10	45	100					
15900	6"	S		Volcanic	400	140	80		60	65	140	
16100	24"	M		do	10	55	40		160	40	50	
16200	6"	S		do	65	85	40		70	80	90	
16300	24"	M		do	10	40	55		60	80	60	
16400	6"	S		do	200	100	110		30	70	35	
16500	48"	S	red C	?	20	50	65		35	55	60	
16600	18"	M		Volcanic	45	65	100		10	95	120	
16700	18"	M	C	?	30	50	60		15	50	90	
16800	6"	M		Volcanic	170	120	40		30	45	120	
16900 TN	18"	M	red C	?	10	50	60					

77161

AUGER DRILLING RESULTS

BASE LINE 10000E

SAMPLE DESCRIPTION					GEOCHEMICAL ASSAY							
					SOIL SAMPLE VALUES (p.p.m.)				ROCKCHIP SAMPLE VALUES (p.p.m.)			
Coordinate	Depth	Slope	Soil Type	Rock Type	Cu	Pb	Zn	Ag	Cu	Pb	Zn	Ag
17100TN	30"	M	red C	?	10	40	555		10	30	60	
17200	36"	M	C & Q	?	10	40	500					
17300	6"	S		Volcanic	140	80	35		25	40	40	
17400	12"	S		do	85	90	40		20	45	30	
17500	18"	S		do	30	70	65		30	40	65	
17600	18"	M		do	15	50	50		30	30	30	
17700	12"	M		do	130	85	85		25	35	110	
17800	6"	S		do	130	75	55		20	45	65	
17900		F		do	50	75	100					
18100		F		do								
18200	12"	S	C & Q	?	50	75	100		10	20	5	
18300	12"	M	red C	?	60	45	30		40	40	60	
18400	18"	M		Volcanic	95	80	45		30	55	110	
18500	6"	M	S & Q		300	130	50					
18600	12"	M		Volcanic	100	70	40		25	50	65	
18700	6"	M		do	60	50	45		60	70	110	
18800	24"	M	C	?	25	30	45		20	40	60	
18900TN	36"	M	C	?	20	35	40		15	40	50	

21072

771073

APPENDIX (III)

GROUND MAGNETOMETER RESULTS

Coordinate	Line 19000TN	Line 18500TN	Line 18000TN	Line 17500TN	Line 17000TN	Line 16500TN	Line 16000T
9000E							
9100							
9200							
9300			+ 10				
9400			+ 10			- 70	+ 75
9500			+ 10			- 65	+ 40
9600			+ 10			- 25	+ 5
9700			+ 10			- 125	+ 110
9800			+ 10			- 100	- 20
9900			+ 10			- 200	- 370
10000E	- 715	-1695	- 450	- 140	- 275	- 390	- 395
10100	-1005	-1560	- 670	- 90	- 410	- 500	- 975
10200	- 890	-1170	- 365	- 20	- 500	- 555	- 240
10300	-2465	-1090	-1060	- 320	- 770	- 395	-1050
10400	-1505	- 680	- 560	- 445	- 890	- 790	-1080
10500	- 595	- 470	-280	-1030	- 480	-1605	- 825
10600	- 325	- 205	- 190	- 330	-1010	- 800	- 640
10700	- 235	- 185	- 130	- 695	- 730	- 490	- 330
10800	- 195	- 185	- 35	- 755	- 760	- 630	- 670
10900	- 180	- 200	+ 10	- 925	- 450	-1340	- 255
11000E	- 140	- 150	+ 15	- 265	-1125	-1640	- 170
11100	- 100	- 70	+ 305	- 825	-1195	-1160	- 110
11200	- 230	- 170	- 590	-1110	-2475	- 905	- 80
11300	- 390	- 790	- 730	-1360	-1000	- 310	- 50
11400	- 630	-1250	-1490	- 280	-1155	- 190	- 30
11500	- 655	- 575	-1020	-2190	- 390	- 120	- 50
11600	- 250	- 685	-1260	- 560	- 205	- 80	- 40
11700	- 120	-1230	- 560	- 85	- 150	- 50	+ 20
11800E	- 70	- 55	- 435	- 20	- 80	- 25	- 30

074

771075

Coordinate	Line 15500TN	Line 15000TN	Line 14500TN	Line 14000TN	Line 13500TN	Line 13000TN	Line 12500TN
8200E		- 80		+ 70	- 725	- 140	- 135
8300		- 85		- 70	- 650	- 165	- 120
8400		- 90	- 60	- 25	-1000	- 160	- 110
8500		-80	- 80	+ 25	- 710	- 100	- 105
8600		- 75	- 20	+ 20	- 35	- 170	- 140
8700		- 80	+ 80	- 80	- 10	- 320	- 145
8800		- 75	- 40	- 340	+ 10	- 415	- 160
8900		- 75	- 55	- 120	- 5	- 255	- 165
9000	-2030	- 55	+ 10	- 240	- 10	- 165	- 150
9100	- 105	- 40	- 115	- 445	+ 5	- 105	- 135
9200	- 40	- 30	+ 40	- 420	- 25	- 135	- 135
9300	- 15	- 25	- 85	- 375	- 30	- 115	- 120
9400	+ 15	- 55	+ 10	- 230	- 75	- 125	- 125
9500	+ 10	- 70	- 140	- 230	- 95	- 120	- 125
9600	+ 135	- 55	- 465	- 35	- 105	- 105	- 125
9700	+ 90	- 110	- 450	+ 50	- 155	- 125	- 130
9800	- 465	- 190	- 455	- 45	- 140	- 120	- 145
9900	- 435	- 825	- 365	- 65	- 135	- 120	- 155
10000E	- 415	- 735	- 360	- 70	- 110	- 70	- 125
10100	- 780	- 840	- 195	- 75	- 105	- 75	- 65
10200	- 290	- 645	- 105	- 70	- 115	- 80	- 65
10300	- 740	- 760	- 85	+ 5	- 120	- 80	- 75
10400	-1005	- 770	- 100	- 65	- 110	- 75	- 105
10500	- 945	- 410	- 90	- 60	- 105	- 120	- 85
10600	- 885	- 420	- 80	- 60	- 105	- 60	- 80
10700	- 830	- 200	- 85	- 50	- 100	- 60	- 80
10800	- 240	- 125	- 80	- 45	- 55	- 45	- 90
10900	- 145	- 80	- 100	- 55	- 90	- 65	- 65
11000E	- 75	- 40	- 65	- 55	- 90	- 65	- 85
11100	- 60	- 50	- 50	- 70	- 80	- 70	- 75
11200	- 45	- 30	- 60	- 45	- 105	- 65	- 75
11300	- 35	- 40	- 40	- 50	- 80	- 55	- 90
11400	- 50	- 30	- 40	- 60	- 75	- 65	- 85
11500	- 20	- 30	- 50	- 70	- 90	- 65	- 120
11600	- 25	- 20	- 75	- 65	- 80	- 50	- 85
11700	- 45	- 15	- 80	- 55	- 65	- 65	- 85
11800	- 40	- 50	- 85	- 70	- 45	- 70	- 75
11900					- 75		
12000					- 80		
12100					- 50		
12200					- 60		

Coordinate	Line 12000TN
8200E	- 35
8300	- 40
8400	- 60
8500	-135
8600	- 80
8700	- 75
8800	-100
8900	- 95
9000	-115
9100	-120
9200	-115
9300	-100
9400	-105
9500	-115
9600	-115
9700	-120
9800	-120
9900	-120
10000	- 70
10100	- 90
10200	- 75
10300	- 95
10400	- 60
10500	- 65
10600	- 60
10700	- 65
10800	- 60
10900	- 60
11000	- 65
11100	- 65
11200	- 85
11300	- 90
11400	- 75
11500	- 65
11600	- 65
11700	- 65
11800E	- 70

Coordinate	Line 10000E
12100TN	- 110
12200	- 90
12300	- 85
12400	- 75
12500	- 125
12600	- 95
12700	- 75
12800	- 70
12900	- 70
13000	- 70
13100	- 170
13200	- 90
13300	- 85
13400	- 65
13500	- 80
13600	- 80
13700	- 95
13800	- 80
13900	- 75
14000	- 70
14100	- 50
14200	- 60
14300	- 105
14400	+ 15
14500	- 360
14600	- 490
14700	- 40
14800	- 275
14900	- 370
15000	- 755
15100	-1065
15200	- 830
15300	-1090
15400	- 450
15500	- 410
15600	- 130
15700TN	- 365

Coordinate	Line 10000E
15800TN	- 680
15900	- 620
16000	- 395
16100	- 540
16200	- 750
16300	- 735
16400	- 275
16500	- 390
16600	- 675
16700	- 490
16800	- 565
16900	- 555
17000	- 275
17100	- 80
17200	- 360
17300	- 10
17400	- 40
17500	- 140
17600	- 180
17700	- 225
17800	- 280
17900	- 260
18000	- 460
18100	- 160
18200	- 905
18300	-1490
18400	- 830
18500	-1710
18600	-5760
18700	- 980
18800	- 175
18900	- 470
19000TN	- 0

076

771077

APPENDIX (IV)

INDEX OF DRAWINGS AND PLANS

ACCOMPANYING REPORT

Figure 30-003*	Topographical Map showing location of Lynch Creek Area. Scale 1" = 2¼ miles approx.
30-013*	Geological Map of Queenstown Area including Mt. Lyell and Lynch Creek. Scale 1" = 1 mile
30-014	Base Map of Lynch Creek Area Scale 1" = 200'
30-015	Geological Map of Lynch Creek Area. Scale 1" = 200'
30-016	Ground Magnetometer Plan Map. Scale 1" = 200'
30-017	Copper Values, Soil Sample Geochemical Survey Plan of Lynch Creek Area Scale 1" = 200'
30-018	Copper Values, Rock Chip Sample Geochemical Survey Plan of Lynch Creek Area Scale 1" = 200'
30-019	Lead Values, Soil Sample Geochemical Survey Plan of Lynch Creek Area Scale 1" = 200'
30-020	Lead Values, Rock Chip Sample Geochemical Survey Plan of Lynch Creek Area Scale 1" = 200'
30-021	Zinc Values, Soil Sample Geochemical Survey Plan of Lynch Creek Area Scale 1" = 200'
30-022	Zinc Values, Rock Chip Sample Geochemical Survey Plan of Lynch Creek Area Scale 1" = 200'
30-023	Apparent Frequency Effect, (n=1) Induced Polarisation Survey Plan of Lynch Creek Area Scale 1" = 200'
30-024	Resistivity, (n=1) Induced Polarisation Survey Plan of Lynch Creek Area Scale 1" = 200'
30-025	Metal Factor, (n=1) Induced Polarisation Survey Plan of Lynch Creek Area Scale 1" = 200'

* denotes missing plans

078

771079

Figure		Line
30-026	Geological Crossections, Geophysical & Geochemical Profiles Scale 1" = 200'	19000TN 300' dipole I.P. Spreads
30-027	"	18500TN
30-028	"	18000TN
30-029	"	17500TN
30-030	"	17000TN
30-031	"	16500TN
30-032	"	16000TN
30-033	"	15500TN 300' dipole I.P. Spreads
30-034	"	15000TN " " " "
30-035	"	14500TN " " " "
30-036	"	14000TN
30-037	"	13500TN 300' dipole I.P. Spreads
30-038	"	13500TN 500' dipole I.P. Spreads
30-039	"	13500TN 100' dipole I,P. Spreads
30-040	"	13000TN 300' dipole I.P. Spreads
30-041	"	12500TN
30-042	"	12000TN 300' dipole I.P. Spreads
30-043	"	10000E

073

771080

APPENDIX (V)

SOIL AND ROCKCHIP GEOCHEMICAL SURVEY

POPULATION DISTRIBUTION OF COPPER, LEAD AND ZINC VALUES.

080

771081

SOIL & ROCKCHIP GEOCHEMICAL SURVEY

POPULATION DISTRIBUTION OF COPPER, LEAD & ZINC VALUES

VALUE	FREQUENCY					
	COPPER		LEAD		ZINC	
p.p.m.	SOIL	ROCKCHIP	SOIL	ROCKCHIP	SOIL	ROCKCHIP
0	--	--	--	--	--	--
5	9	3	--	--	4	9
10	38	22	1	2	25	16
15	17	15	--	--	9	10
20	32	25	15	14	10	8
25	15	20	9	6	19	4
30	20	20	12	12	43	14
35	9	8	15	8	39	10
40	9	9	31	40	47	22
45	11	5	32	14	26	11
50	5	9	36	25	36	14
55	3	1	22	9	29	9
60	9	11	37	23	14	16
65	4	4	16	11	10	10
70	5	4	38	18	9	11
75	2	--	15	9	6	4
80	5	--	29	17	6	2
85	2	2	7	2	7	2
90	5	7	27	8	5	9
95	5	1	1	1	5	4
100	8	--	21	6	12	6
110	17	6	7	2	7	8
120	13	5	9	--	5	7
130	10	6	6	--	4	7
140	14	2	1	1	4	4
150	20	6	2	--	--	1
160	13	5	11	1	3	3
170	11	3	2	--	3	1
180	16	3	1	--	1	1
190	14	8	--	--	2	--
200	10	8	2	--	1	--

VALUE	FREQUENCY					
	COPPER		LEAD			
p.p.m.	SOIL	ROCKCHIP	SOIL	ROCKCHIP	SOIL	ROCKCHIP
210	10	=1	-1	--	2	--
220	6	1	1	--	--	3
230	2	2	--	--	--	--
240	2	1	1	--	--	2
250	4	1	--	--	1	--
260	3	--	1	--	--	2
270	2	2	2	--	1	--
280	2	1	--	--		--
290	2	--	--	--		--
300	4	1	--	--		--
310	2	--	--	--		--
320	3	1	--	--		2
330	--	--	--	--		
340	--	--	--	--		
350	1	--	--	--		
360	1	1	--	--		
370	--	--	--	--		
380	--	--	1	--		
390	2	1	--	--		
400	2	1	--	--		
410	1	--	--	--		
420	--	1	--	--		
430	--	--	--	--		
440	1	--	--	1		
450		--	--			
460		--	--			
470		--	--			
480		1	1			

CYPRUS MINES CORPORATION

SCALE 1" = 200'	AREA E.L. 47/70 TASMANIA
DATE: MARCH 1971	PROSPECT: LYNCH CREEK
DRAWN R. E. M	
REVISED.	
DRAWING NUMBER 30-014	

BASE MAP OF LYNCH CREEK AREA

72-858

2617

TN

5 cm

77183

RIVER FLATS

QUEENSTOWN

MT LYELL M&R CO. ACCESS 4WD TRACK

GOLF COURSE

ABT RAILWAY FORMATION

QUEEN RIVER

RIVER FLATS

CAR BODY DUMP

MUNICIPAL TIP

PIG FARM

LYNCH CREEK

LYNCHFORD

KING GOLD MINE

DATUM POST

SPECIMEN CREEK

E.L. 47/70 MT. LYELL E.L.

11,100 E

359,000 y E

11,800 E ≡ 358,900 y E

358,300 y E

9,400 E

9000 E

8200 E

19,000 TN

18,500 TN

18,000 TN ≡ 816,100 y N

17,500 TN

17,000 TN

16,500 TN

16,000 TN

15,500 TN

15,000 TN ≡ 815,100 y N

14,500 TN

14,000 TN

13,500 TN

13,000 TN

12,500 TN

12,000 TN

TOPOGRAPHY

- ROAD
- TRACK
- CREEK
- GATE
- BRIDGE
- SHAFT
- OPEN CUT
- PIT (MARKS LOCALITY OF SEVERAL SHALLOW PITS.)
- ADIT (OPEN)
- TUNNEL
- COSTEAN (OWING TO HEAVY UNDERGROWTH EXACT LENGTHS ARE NOT KNOWN.)
- DATUM POST FOR ADDITIONAL AREA OF 92·4 ACRES APPLIED FOR IN NOVEMBER, 1971

CYPRUS MINES CORPORATION

SCALE 1" = 200' | AREA E.L. 47/70 TASMANIA | DRAWN R.E.M
DATE MARCH 1972 | PROSPECT LYNCH CREEK | REVISED

GEOLOGICAL MAP OF LYNCH CREEK AREA

DRAWING NUMBER 30 015

2618

72-858

771084

TN

5 cm

GOLF COURSE

RIVER FLATS

QUEENSTOWN

MT LYELL M&R CO. ACCESS 4WD TRACK

ABT RAILWAY FORMATION

QUEEN RIVER

RIVER FLATS

MUNICIPAL TIP

CAR BODY DUMP

SHEARING

PIG FARM

LYNCH CREEK

LYNCHFORD

FAULTED CONTACT

KING GOLD MINE

POSSIBLE UNCONFORMABLE CONTACT

MINERS RIDGE QUARTZOSE SANDSTONE

DATUM POST

SPECIMEN CREEK

MT LYELL E.L. 47/70

359,000y E

358,300y E

11,100 E

11,800 E ≡ 358,900y E

9,400 E

8,200 E

19,000 TN

18,500 TN

18,000 TN ≡ 816,100y N

17,500 TN

17,000 TN

16,500 TN

16,000 TN

15,500 TN

15,000 TN ≡ 815,100y N

14,500 TN

14,000 TN

13,500 TN

13,000 TN

12,500 TN

12,000 TN

TOPOGRAPHY

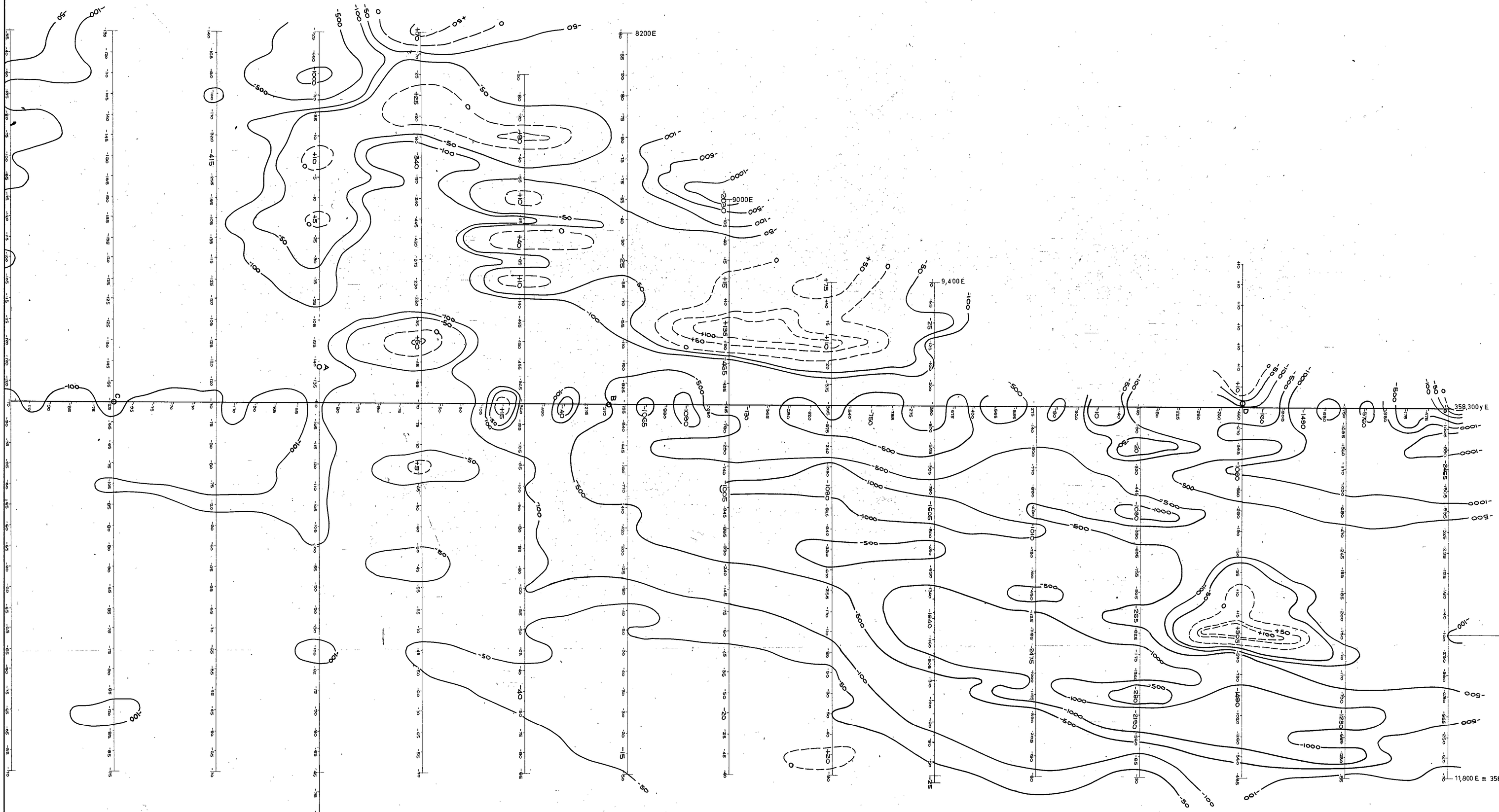
- Road
- Track
- Creek
- Gate
- Bridge
- Shaft
- Open Cut
- Pit (marks locality of several shallow pits.)
- Adit (Open)
- Tunnel
- Costean (owing to heavy undergrowth exact lengths are not known.)
- Datum post for additional area of 92·4 acres applied for in November 1971.

LEGEND

- SILURIAN — Eldon Group – Sandstones, Mudstones
- ORDOVICIAN — Gordon Limestone
- Jukes Conglomerate
- CAMBRIAN — Dundas Group – Poorly exposed section: Mainly finely & regularly banded pale grey shaly sandstone with lenses of paraconglomerate. Also irregularly alternating bands of coarse siltstone & laminated shales (northern section of grid) Quartzone sandstone (Miners Ridge.)
- Acid Volcanics (rhyolitic) – strongly sheared.
- Acid Tuffs
- Intermediate Crystal Tuffs
- Andesites, with associated olivine basalts (?)
- Clay cover
- Gossanous Area
- Quartz Scree area
- Trend lines
- Anticline — Syncline
- Strike & Dip
- Strike & Intermediate Dip
- Geological Contact Mapped
- Geological Contact Inferred
- Geological Contact Unknown
- Fault
- (A) Rock sample location (see accompanying report for explanation)

NOTE

Areas of clay cover & alluvium have been omitted from this map. Geology shown close to major creeks is largely inferred.



E.L 47/70
MT. LYELL E.L.

12,000 TN
12,500 TN
13,000 TN
13,500 TN
14,000 TN
14,500 TN
15,000 TN = 815,100y N
15,500 TN
16,000 TN
16,500 TN
17,000 TN
17,500 TN
18,000 TN = 816,100y N
18,500 TN
19,000 TN

TN

771085

5 cm

72-858

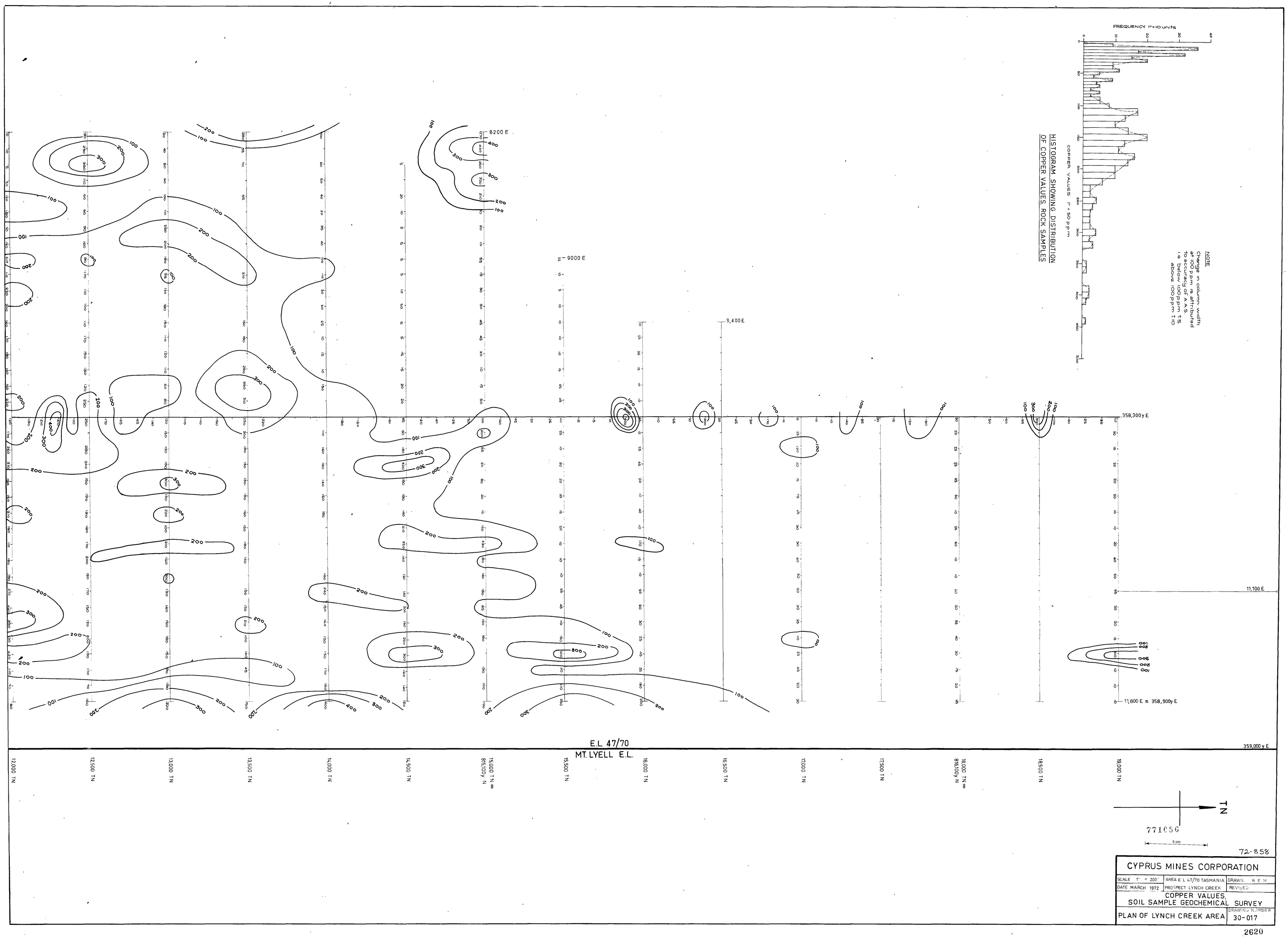
"0" MEASURED AS −49,050 ± 250 GAMMAS ABSOLUTE

CYPRUS MINES CORPORATION

SCALE 1" = 200'	AREA E L 47/70 TASMANIA	DRAWN R E.M
DATE MARCH 1971	PROSPECT LYNCH CREEK	REVISED

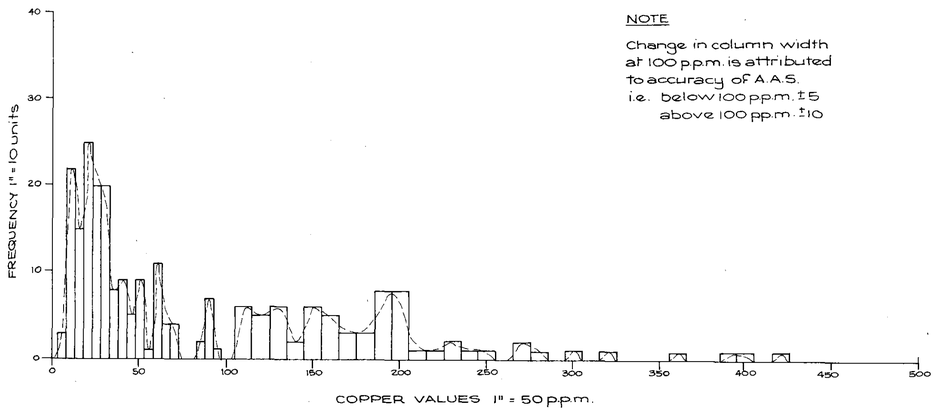
GROUND MAGNETOMETER PLAN MAP

2613 | DRAWING NUMBER 30-016



FREQUENCY 1" = 10 units
COPPER VALUES 1" = 50 ppm
HISTOGRAM SHOWING DISTRIBUTION OF COPPER VALUES, ROCK SAMPLES
NOTE
Change in column width at 100 ppm is attributed to accuracy of A.A.S. i.e. below 100 ppm ±5 above 100 ppm ±10
8200 E
9000 E
9,400 E
11,100 E
11,800 E ≡ 358,900y E
358,300y E
359,000 y E
E.L. 47/70
MT. LYELL E.L.
12,000 TN
12,500 TN
13,000 TN
13,500 TN
14,000 TN
14,500 TN
15,000 TN ≡ 815,100y N
15,500 TN
16,000 TN
16,500 TN
17,000 TN
17,500 TN
18,000 TN ≡ 816,100y N
18,500 TN
19,000 TN
TN
771086
5 cm
72-858
CYPRUS MINES CORPORATION
SCALE 1" = 200'
AREA E L 47/70 TASMANIA
DRAWN R E M
DATE MARCH 1972
PROSPECT LYNCH CREEK
REVISED
COPPER VALUES, SOIL SAMPLE GEOCHEMICAL SURVEY
PLAN OF LYNCH CREEK AREA
DRAWING NUMBER 30-017

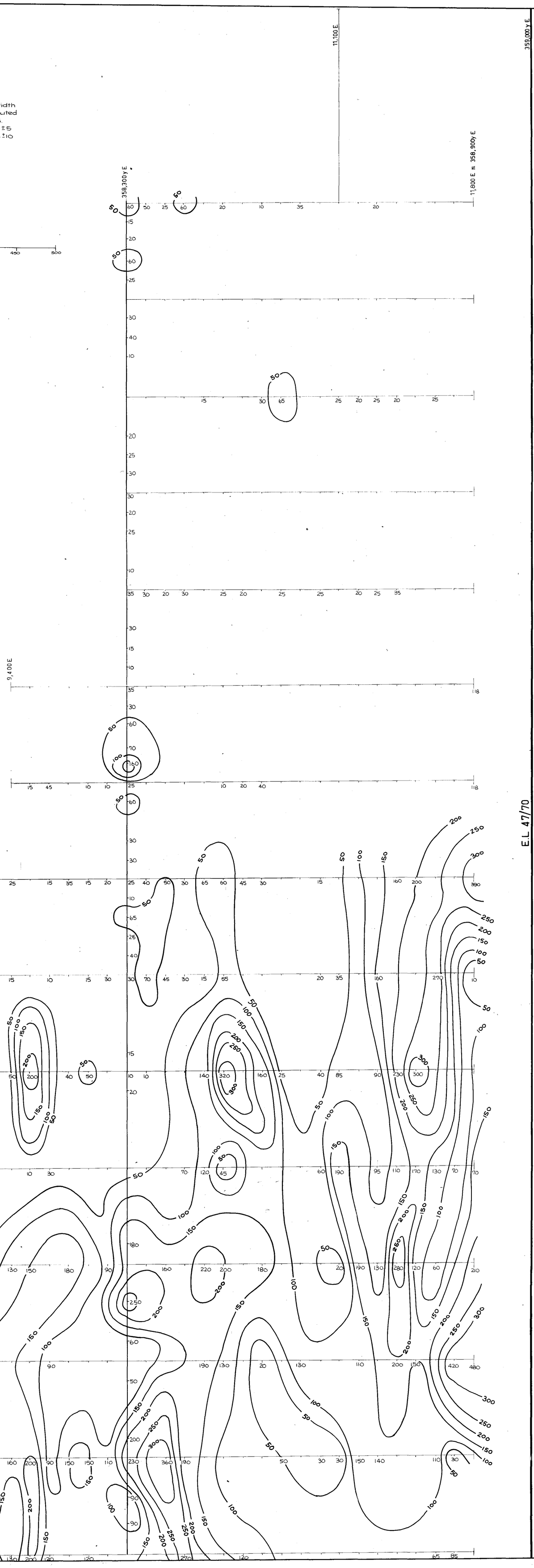
2620



HISTOGRAM SHOWING DISTRIBUTION
OF COPPER VALUES, ROCK CHIP SAMPLES

NOTE

Change in column width at 100 p.p.m. is attributed to accuracy of A.A.S.
i.e. below 100 p.p.m. ±5
above 100 p.p.m. ±10



TN

72-858

77187

5 cm

CYPRUS MINES CORPORATION

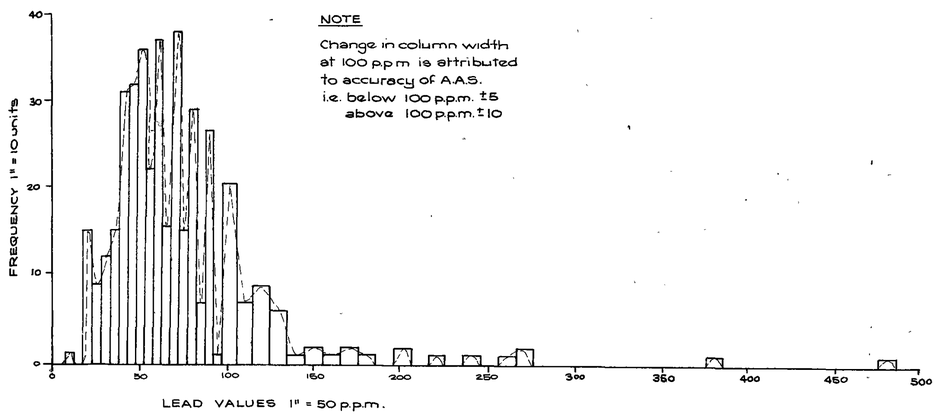
SCALE: 1" = 200'
AREA: E.L. 47/70 TASMANIA
DATE: MARCH 1971
PROSPECT: LYNCH CREEK

DRAWN: R.E.M.
REVISED:

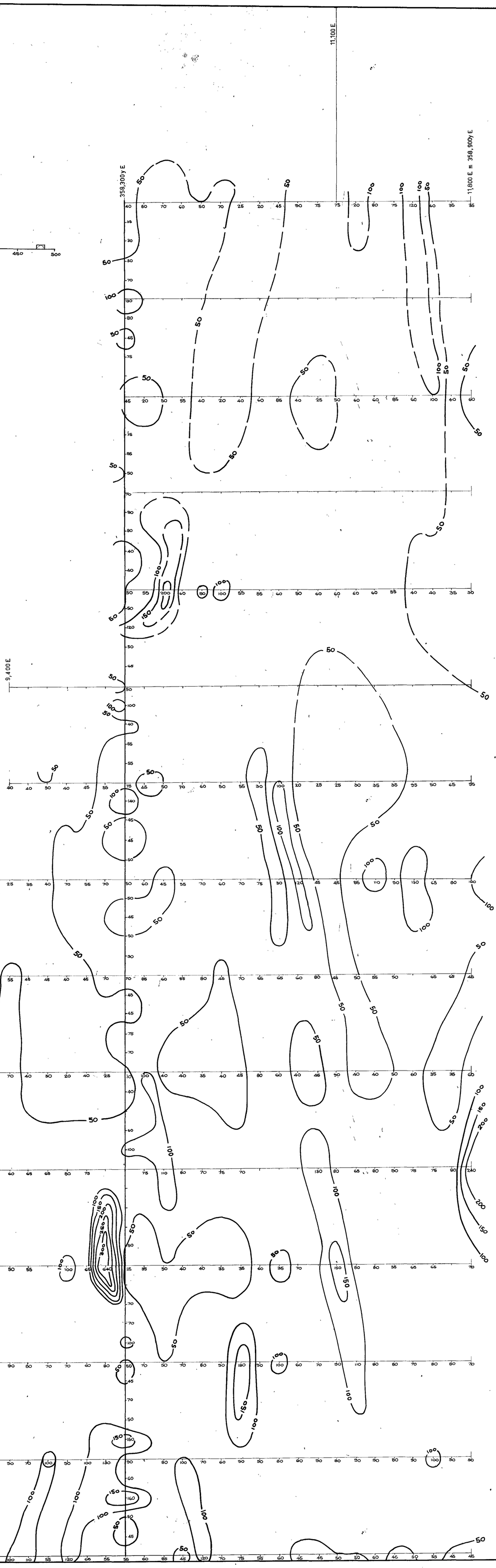
2621
COPPER VALUES,
ROCK CHIP SAMPLE GEOCHEMICAL SURVEY

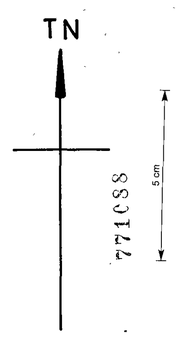
DRAWING NUMBER
30-018

PLAN OF LYNCH CREEK AREA



HISTOGRAM SHOWING DISTRIBUTION OF LEAD VALUES, ROCK SAMPLES





72-858

7711 88

CYPRUS MINES CORPORATION

SCALE 1" = 200' | AREA E.L 47/70 TASMANIA | DRAWN R E M

DATE MARCH 1972 | PROSPECT: LYNCH CREEK | REVISED

LEAD VALUES, 2622

SOIL SAMPLE GEOCHEMICAL SURVEY

PLAN OF LYNCH CREEK AREA | DRAWING NUMBER 30-019

19,000 TN

18,500 TN

18,000 TN ≡ 816,100y N

17,500 TN

17,000 TN

16,500 TN

16,000 TN

E.L 47/70 MT. LYELL E.L.

15,500 TN

15,000 TN ≡ 815,100y N

14,500 TN

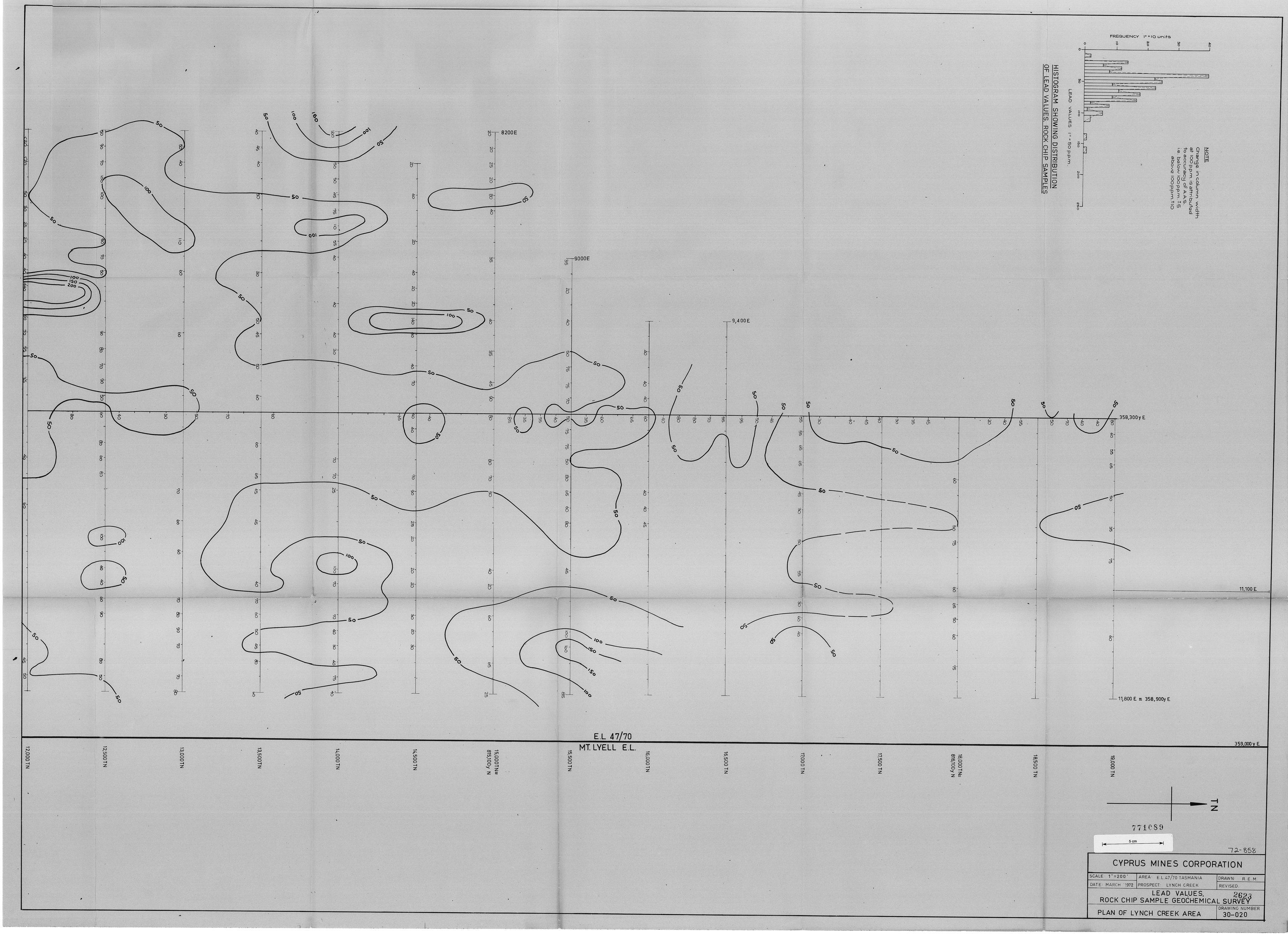
14,000 TN

13,500 TN

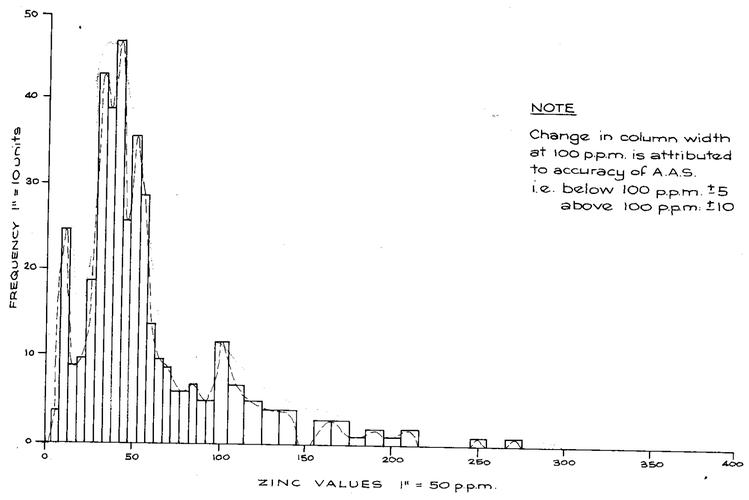
13,000 TN

12,500 TN

12,000 TN



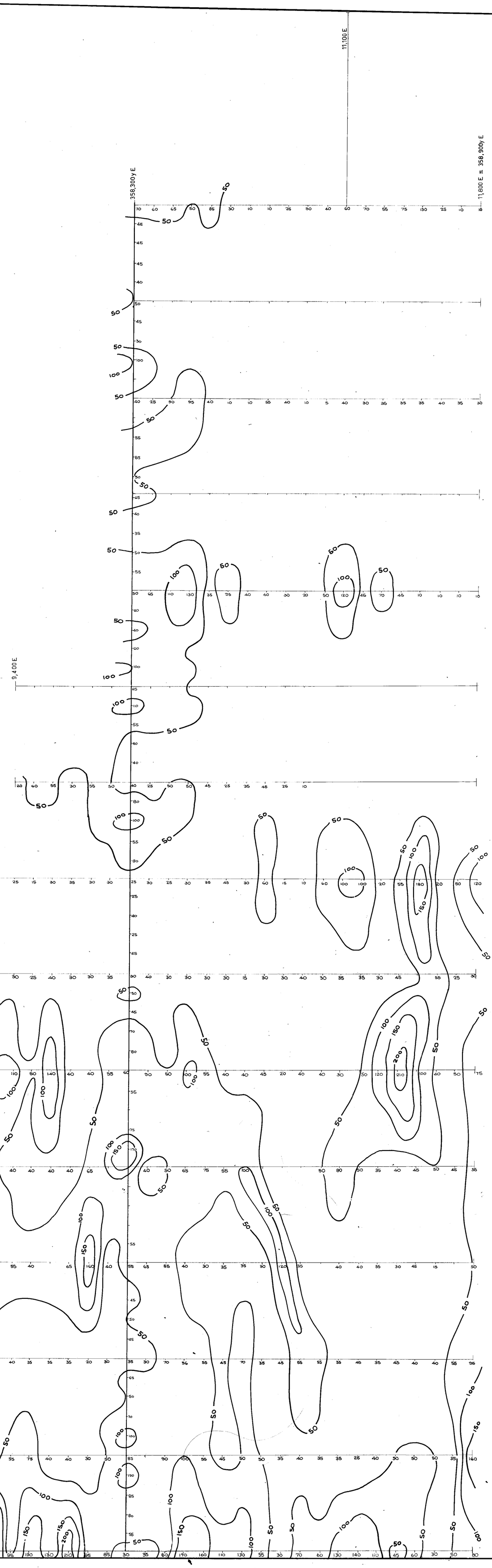
HISTOGRAM SHOWING DISTRIBUTION OF LEAD VALUES, ROCK CHIP SAMPLES
FREQUENCY 1" = 10 units
LEAD VALUES 1" = 50 p.p.m.
NOTE
Change in column width at 100 p.p.m. is attributed to accuracy of A.A.S. i.e. below 100 p.p.m. ±5 above 100 p.p.m. ±10
8200E
9000E
9,400E
358,300 y E
11,100 E
11,800 E ≡ 358,900 y E
359,000 y E
E.L 47/70
MT. LYELL E.L.
12,000 TN
12,500 TN
13,000 TN
13,500 TN
14,000 TN
14,500 TN
15,000 TN ≡ 815,100 y N
15,500 TN
16,000 TN
16,500 TN
17,000 TN
17,500 TN
18,000 TN ≡ 816,100 y N
18,500 TN
19,000 TN
TN
771089
5 cm
72-858
CYPRUS MINES CORPORATION
SCALE: 1" = 200'
AREA: E.L. 47/70 TASMANIA
DRAWN: R.E.M.
DATE: MARCH 1972
PROSPECT: LYNCH CREEK
REVISED:
LEAD VALUES, ROCK CHIP SAMPLE GEOCHEMICAL SURVEY
2623
PLAN OF LYNCH CREEK AREA
DRAWING NUMBER 30-020

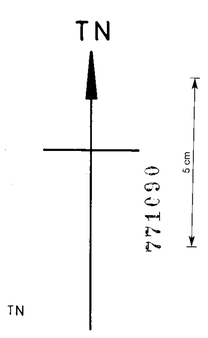


HISTOGRAM SHOWING DISTRIBUTION
OF ZINC VALUES, ROCK SAMPLES

NOTE

Change in column width at 100 p.p.m. is attributed to accuracy of A.A.S.
i.e. below 100 p.p.m. ±5
above 100 p.p.m. ±10





72-858

771090

CYPRUS MINES CORPORATION

SCALE: 1" = 200' | AREA: E.L. 47/70 TASMANIA | DRAWN: REM
DATE MARCH 1972 | PROSPECT: LYNCH CREEK | REVISED:

ZINC VALUES,
SOIL SAMPLE GEOCHEMICAL SURVEY
PLAN OF LYNCH CREEK AREA

DRAWING NUMBER 30-021

262A

359,000y E

19,000 TN

18,500 TN

18,000 TN ≡
816,100y N

17,500 TN

17,000 TN

16,500 TN

16,000 TN

E.L. 47/70
MT. LYELL E.L.

15,500 TN

15,000 TN ≡
815,100y N

14,500 TN

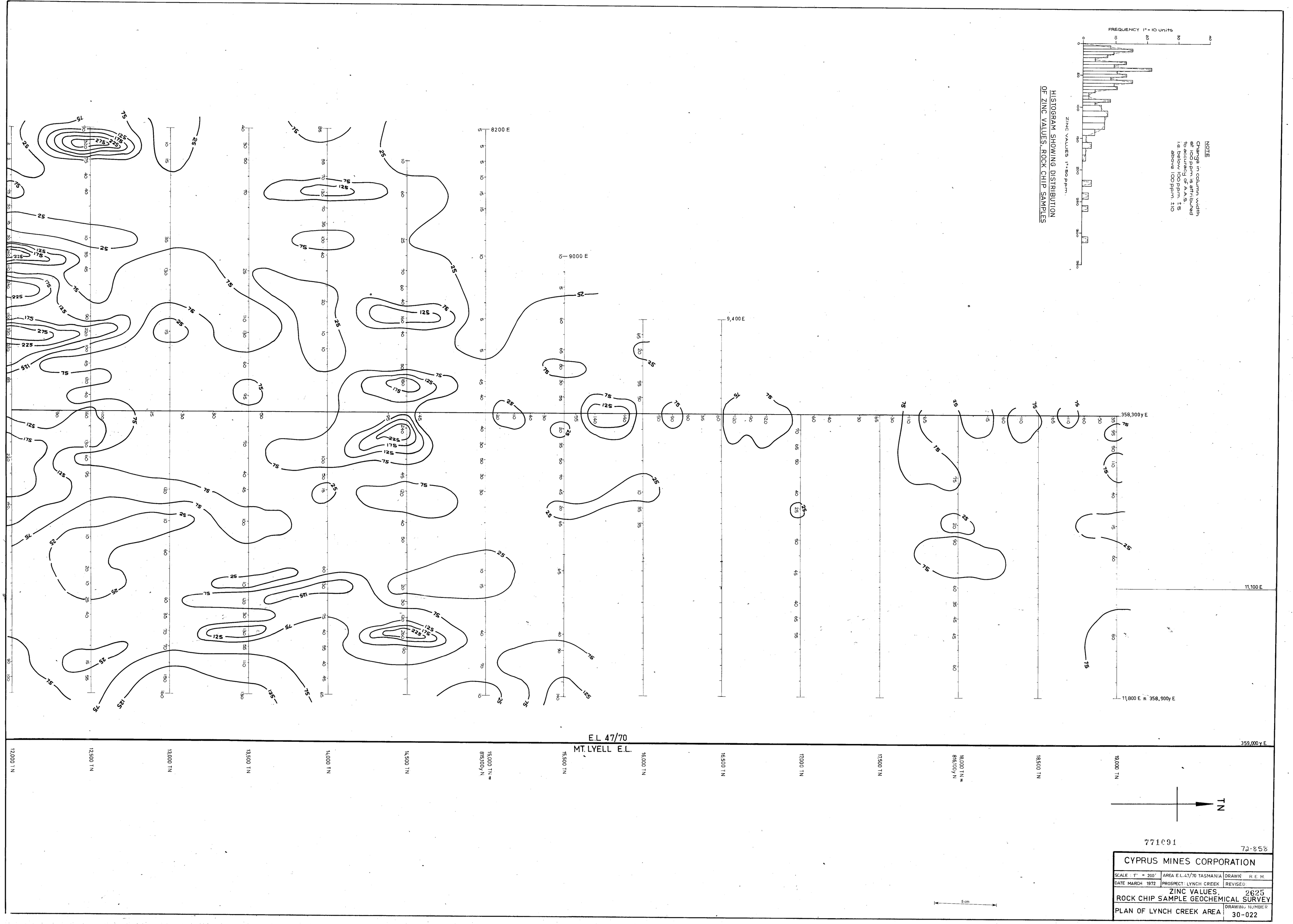
14,000 TN

13,500 TN

13,000 TN

12,500 TN

12,000 TN



771091

72-858

CYPRUS MINES CORPORATION

SCALE : 1" = 200'	AREA E.L. 47/70 TASMANIA	DRAWN R.E.M.
DATE MARCH 1972	PROSPECT: LYNCH CREEK	REVISED:

ZINC VALUES, 2625
ROCK CHIP SAMPLE GEOCHEMICAL SURVEY

PLAN OF LYNCH CREEK AREA

DRAWING NUMBER 30-022

8200E

9000E

9,400E

358,300y E

11,100 E

11,800 E = 358,900y E

359,000 y E

E.L 47/70

MT. LYELL E.L.

12,000 TN

12,500 TN

13,000 TN

13,500 TN

14,000 TN

14,500 TN

15,000 TN = 815,100y N

15,500 TN

16,000 TN

16,500 TN

17,000 TN

17,500 TN

18,000 TN = 816,100y N

18,500 TN

19,000 TN

N

N = 1

771092

72-858

5 cm

CYPRUS MINES CORPORATION

SCALE 1"= 200'	AREA E.L 47/70 TASMANIA	DRAWN R.E.M.
DATE: MARCH 1971	PROSPECT: LYNCH CREEK	REVISED

APPARENT FREQUENCY EFFECT, 2626
INDUCED POLARISATION SURVEY

PLAN OF LYNCH CREEK AREA

DRAWING NUMBER 30-023

8200E

9000E

9,400E

358,300y E

11,100 E

11,800 E ≡ 358,900y E

359,000 y E

E.L 47/70
MT. LYELL E.L.

12,000 TN

12,500 TN

13,000 TN

13,500 TN

14,000 TN

14,500 TN

15,000 TN≡ 815,100y N

15,500 TN

16,000 TN

16,500 TN

17,000 TN

17,500 TN

18,000 TN≡ 816,100y N

18,500 TN

19,000 TN

TN

771093

N = 1

72-868

5 cm

CYPRUS MINES CORPORATION

SCALE 1" = 200'	AREA E L 47/70 TASMANIA	DRAWN R. E. M.
DATE MARCH 1972	PROSPECT LYNCH CREEK 2627	REVISED

RESISTIVITY INDUCED POLARISATION SURVEY

PLAN OF LYNCH CREEK AREA — DRAWING NUMBER 30-024

8200E

9000E

9,400E

358,300y E

11,100 E

11,800 E = 358,900y E

359,000y E

E.L 47/70

MT. LYELL E.L.

12,000 TN

12,500 TN

13,000 TN

13,500 TN

14,000 TN

14,500 TN

15,000 TN = 815,100y N

15,500 TN

16,000 TN

16,500 TN

17,000 TN

17,500 TN

18,000 TN = 816,100y N

18,500 TN

19,000 TN

N

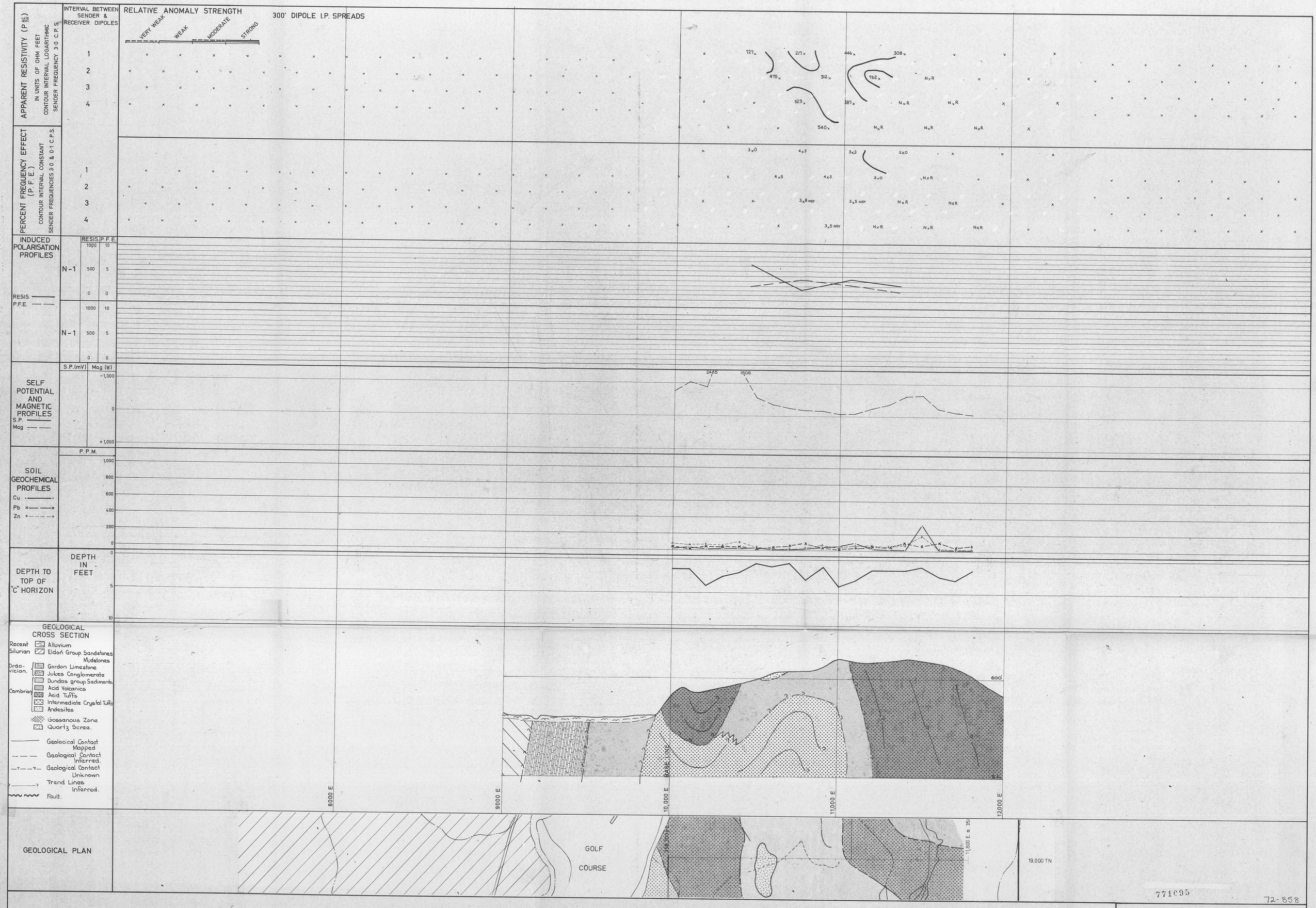
N = 1

771094

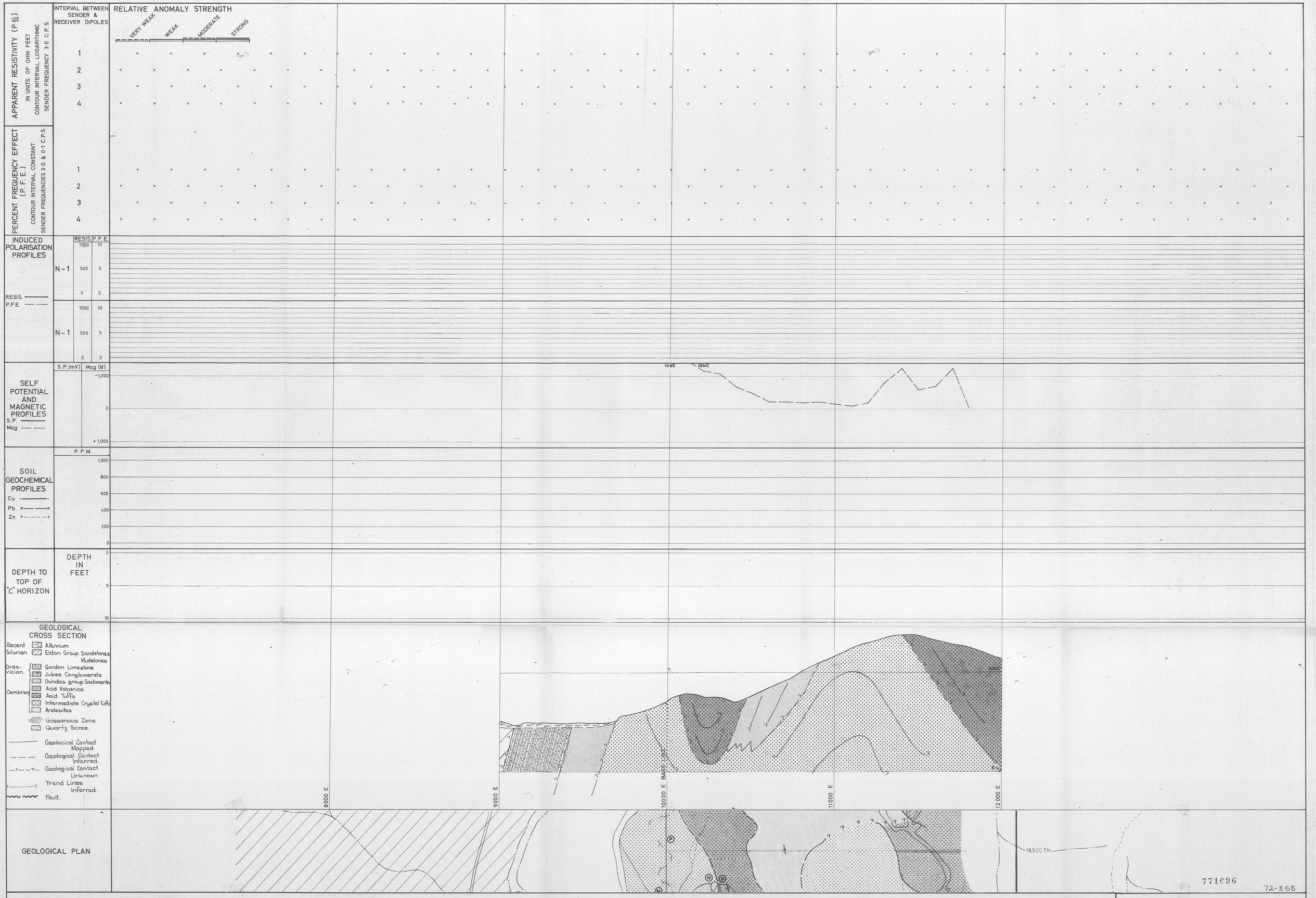
72-0858

CYPRUS MINES CORPORATION		
SCALE : 1" = 200'	AREA : E.L 47/70 TASMANIA	DRAWN : R.E.M.
DATE : MARCH 1972	PROSPECT : LYNCH CREEK	REVISED :
METAL FACTOR, INDUCED POLARISATION SURVEY 2628		
PLAN OF LYNCH CREEK AREA		DRAWING NUMBER 30-025

5 cm



APPARENT RESISTIVITY (P AC/2π)
IN UNITS OF OHM FEET
CONTOUR INTERVAL LOGARITHMIC
SENDER FREQUENCY 3·0 C.P.S.
INTERVAL BETWEEN SENDER & RECEIVER DIPOLES
RELATIVE ANOMALY STRENGTH
VERY WEAK
WEAK
MODERATE
STRONG
300' DIPOLE I.P. SPREADS
PERCENT FREQUENCY EFFECT (P.F.E.)
CONTOUR INTERVAL CONSTANT
SENDER FREQUENCIES 3·0 & 0·1 C.P.S.
INDUCED POLARISATION PROFILES
RESIS.
P.F.E.
N-1
SELF POTENTIAL AND MAGNETIC PROFILES
S.P.
Mag
S.P.(mV)
Mag (γ)
SOIL GEOCHEMICAL PROFILES
Cu
Pb
Zn
P.P.M.
DEPTH TO TOP OF "C" HORIZON
DEPTH IN FEET
GEOLOGICAL CROSS SECTION
Recent
Alluvium
Silurian
Eldon Group. Sandstones Mudstones
Ordovician.
Gordon Limestone
Jukes Conglomerate
Cambrian
Dundas group Sediments
Acid Volcanics
Acid Tuffs
Intermediate Crystal Tuffs
Andesites
Gossanous Zone
Quartz Scree.
Geolocical Contact Mapped
Geological Contact Inferred.
Geological Contact Unknown
Trend Lines Inferred.
Fault.
8000 E
9000 E
10,000 E
11,000 E
12,000 E
BASE LINE
600'
GEOLOGICAL PLAN
GOLF COURSE
19,000 TN
771095
72-858
5 cm
200 0 200 400
SCALE IN FEET
CYPRUS MINES CORPORATION
SCALE: 1" = 200'
AREA: EL. 47/70 TASMANIA
DRAWN: R.E.M.
DATE: MARCH 1972
PROSPECT: LYNCH CREEK
REVISED:
GEOLOGICAL CROSS SECTION & GEOPHYSICAL & GEOCHEMICAL PROFILES
2629
SECTION 19000 TN
DRAWING NUMBER 30-026



771096

72-858

5 cm

200 0 200 400

SCALE IN FEET

CYPRUS MINES CORPORATION		
SCALE: 1" = 200'	AREA: EL. 47/70 TASMANIA	DRAWN: R.E.M.
DATE: MARCH 1972	PROSPECT: LYNCH CREEK	REVISED:
GEOLOGICAL CROSS SECTION & GEOPHYSICAL & GEOCHEMICAL PROFILES		
SECTION 18,500 TN		DRAWING NUMBER 30-027

2630

APPARENT RESISTIVITY ($P\frac{AS}{2a}$)
IN UNITS OF OHM FEET
CONTOUR INTERVAL LOGARITHMIC
SENDER FREQUENCY 3·0 C.P.S.

INTERVAL BETWEEN SENDER & RECEIVER DIPOLES

RELATIVE ANOMALY STRENGTH
VERY WEAK — WEAK — MODERATE — STRONG

1
2
3
4

PERCENT FREQUENCY EFFECT (P. F. E.)
CONTOUR INTERVAL CONSTANT
SENDER FREQUENCIES 3·0 & 0·1 C.P.S.

1
2
3
4

INDUCED POLARISATION PROFILES

RESIS. ——
P.F.E. — —

	RESIS.	P.F.E.
N – 1	1000	10
	500	5
	0	0

	RESIS.	P.F.E.
N – 1	1000	10
	500	5
	0	0

SELF POTENTIAL AND MAGNETIC PROFILES

S.P. ——
Mag — —

S.P.(mV)	Mag (γ)
	−1,000
	0
	+1,000

1490

SOIL GEOCHEMICAL PROFILES

Cu ·——·
Pb ×— —×
Zn +– – –+

P. P. M.
1,000
800
600
400
200
0

DEPTH TO TOP OF "C" HORIZON

DEPTH IN FEET
0
5
10

GEOLOGICAL CROSS SECTION

Recent — Alluvium
Silurian — Eldon Group. Sandstones Mudstones
Ordovician. — Gordon Limestone
Jukes Conglomerate
Cambrian — Dundas group Sediments
Acid Volcanics
Acid Tuffs
Intermediate Crystal Tuffs
Andesites
Gossanous Zone
Quartz Scree.
Geological Contact Mapped
Geological Contact Inferred.
Geological Contact Unknown
Trend Lines Inferred.
Fault.

8000 E
9000 E
10000 E BASE LINE
11000 E
12000 E
S.P.
600

GEOLOGICAL PLAN

18,000 TN ≡
816,100 y N

771097

72-858

5 cm

200 0 200 400
SCALE IN FEET

CYPRUS MINES CORPORATION

SCALE: 1" = 200'	AREA: EL 47/70 TASMANIA	DRAWN: R.E.M.
DATE: MARCH 1972	PROSPECT: LYNCH CREEK	REVISED:

GEOLOGICAL CROSS SECTION & GEOPHYSICAL & GEOCHEMICAL PROFILES 2631

SECTION 18000 TN

DRAWING NUMBER 30-028

APPARENT RESISTIVITY ($\rho_{a/c}$)
IN UNITS OF OHM FEET
CONTOUR INTERVAL LOGARITHMIC
SENDER FREQUENCY 3·0 C.P.S.

INTERVAL BETWEEN SENDER & RECEIVER DIPOLES

RELATIVE ANOMALY STRENGTH
VERY WEAK — WEAK — MODERATE — STRONG

1
2
3
4

PERCENT FREQUENCY EFFECT (P.F.E.)
CONTOUR INTERVAL CONSTANT
SENDER FREQUENCIES 3·0 & 0·1 C.P.S.

1
2
3
4

INDUCED POLARISATION PROFILES

RESIS. ——
P.F.E. — —

	RESIS.	P.F.E.
N-1	1000	10
	500	5
	0	0

	RESIS.	P.F.E.
N-1	1000	10
	500	5
	0	0

SELF POTENTIAL AND MAGNETIC PROFILES

S.P. ——
Mag — —

S.P.(mV)	Mag (γ)
	− 1,000
	0
	+ 1,000

2190

SOIL GEOCHEMICAL PROFILES

Cu ·———·
Pb ×— —×
Zn +– – –+

P.P.M.
1,000
800
600
400
200
0

DEPTH TO TOP OF "C" HORIZON

DEPTH IN FEET
0
5
10

GEOLOGICAL CROSS SECTION

Recent — Alluvium
Silurian — Eldon Group. Sandstones Mudstones
Ordovician — Gordon Limestone
Jukes Conglomerate
Dundas group Sediments
Cambrian — Acid Volcanics
Acid Tuffs
Intermediate Crystal Tuffs
Andesites
Gossanous Zone
Quartz Scree.

Geolocical Contact Mapped
Geological Contact Inferred.
Geological Contact Unknown
Trend Lines Inferred.
Fault.

600'
S.L.
8000 E
9000 E
10000 E BASE LINE
11000 E
12000 E

GEOLOGICAL PLAN

H
I
17500 TN

771098 72-858

5 cm

200 0 200 400
SCALE IN FEET

CYPRUS MINES CORPORATION

SCALE: 1" = 200'	AREA: E.L. 47/70 TASMANIA	DRAWN: R.E.M.
DATE: MARCH 1972	PROSPECT: LYNCH CREEK	REVISED:

GEOLOGICAL CROSS SECTION & GEOPHYSICAL & GEOCHEMICAL PROFILES 2632

SECTION 17500 TN

DRAWING NUMBER 30-029

APPARENT RESISTIVITY ($P_{\frac{AS}{AR}}$)

IN UNITS OF OHM FEET
CONTOUR INTERVAL LOGARITHMIC
SENDER FREQUENCY 3.0 C.P.S.

INTERVAL BETWEEN SENDER & RECEIVER DIPOLES

RELATIVE ANOMALY STRENGTH
VERY WEAK — WEAK — MODERATE — STRONG

1
2
3
4

PERCENT FREQUENCY EFFECT (P.F.E.)

CONTOUR INTERVAL CONSTANT
SENDER FREQUENCIES 3.0 & 0.1 C.P.S.

1
2
3
4

INDUCED POLARISATION PROFILES

RESIS. ——
P.F.E. — —

	RESIS.	P.F.E.
N-1	1000	10
	500	5
	0	0
N-1	1000	10
	500	5
	0	0

SELF POTENTIAL AND MAGNETIC PROFILES

S.P. ——
Mag — —

S.P.(mV)	Mag (γ)
	−1,000
	0
	+1,000

2475

SOIL GEOCHEMICAL PROFILES

Cu ·——·
Pb ×— —×
Zn +– – –+

P.P.M.

1,000
800
600
400
200
0

DEPTH TO TOP OF "C" HORIZON

DEPTH IN FEET

0
5
10

GEOLOGICAL CROSS SECTION

Recent — Alluvium
Silurian — Eldon Group. Sandstones Mudstones
Ordovician. — Gordon Limestone
Jukes Conglomerate
Dundas group Sediments
Cambrian — Acid Volcanics
Acid Tuffs
Intermediate Crystal Tuffs
Andesites
Gossanous Zone
Quartz Scree.

Geolocical Contact Mapped
Geological Contact Inferred.
Geological Contact Unknown
Trend Lines Inferred.
Fault.

8000° E
9000 E
10000 E BASE LINE
11000 E
12000 E
600'
S.L.

GEOLOGICAL PLAN

ABT RAILWAY FORMATION
QUEE
RIVER FLATS
K
J
17,000 TN

771099
72-858

5 cm

200 0 200 400
SCALE IN FEET

CYPRUS MINES CORPORATION

SCALE 1" = 200'	AREA EL 47/70 TASMANIA	DRAWN: R.E.M.
DATE: MARCH 1972	PROSPECT: LYNCH CREEK	REVISED:

GEOLOGICAL CROSS SECTION & GEOPHYSICAL & GEOCHEMICAL PROFILES
2633

SECTION 17000 TN

DRAWING NUMBER 30-030

APPARENT RESISTIVITY ($\frac{P_{AS}}{P_{AR}}$)
IN UNITS OF OHM FEET
CONTOUR INTERVAL LOGARITHMIC
SENDER FREQUENCY 3.0 C.P.S.

INTERVAL BETWEEN SENDER & RECEIVER DIPOLES

RELATIVE ANOMALY STRENGTH
VERY WEAK — WEAK — MODERATE — STRONG

1
2
3
4

PERCENT FREQUENCY EFFECT (P.F.E.)
CONTOUR INTERVAL CONSTANT
SENDER FREQUENCIES 3.0 & 0.1 C.P.S.

1
2
3
4

INDUCED POLARISATION PROFILES

RESIS. ——
P.F.E. — —

	RESIS.	P.F.E.
N-1	1000	10
	500	5
	0	0
N-1	1000	10
	500	5
	0	0

SELF POTENTIAL AND MAGNETIC PROFILES

S.P. ——
Mag — —

S.P.(mV)	Mag (γ)
	−1,000
	0
	+1,000

1605
1640

SOIL GEOCHEMICAL PROFILES

Cu ·———·
Pb ×—— ——×
Zn +– – –+

P.P.M.
1,000
800
600
400
200
0

DEPTH TO TOP OF "C" HORIZON

DEPTH IN FEET
0
5
10

GEOLOGICAL CROSS SECTION

Recent	Alluvium
Silurian	Eldon Group. Sandstones, Mudstones
Ordovician.	Gordon Limestone
	Jukes Conglomerate
	Dundas group Sediments
Cambrian	Acid Volcanics
	Acid Tuffs
	Intermediate Crystal Tuffs
	Andesites
	Gossanous Zone
	Quartz Scree.
———	Geological Contact Mapped
— — —	Geological Contact Inferred.
—?—?—	Geological Contact Unknown
?———?	Trend Lines Inferred.
~~	Fault.

600'
S.L.
8000 E
9000 E
10000 E BASE LINE
11000 E
12000 E

GEOLOGICAL PLAN

9,400 E
16,500 TN

771100
72-858

200 0 200 400
SCALE IN FEET

5 cm

CYPRUS MINES CORPORATION

SCALE 1" = 200'	AREA: EL. 47/70 TASMANIA	DRAWN: R.E.M.
DATE: MARCH 1972	PROSPECT: LYNCH CREEK	REVISED:

GEOLOGICAL CROSS SECTION & GEOPHYSICAL & GEOCHEMICAL PROFILES 2634

SECTION 16500 TN

DRAWING NUMBER 30-031

APPARENT RESISTIVITY ($P_{\frac{AC}{DC}}$)
IN UNITS OF OHM FEET
CONTOUR INTERVAL LOGARITHMIC
SENDER FREQUENCY 3·0 C.P.S.

INTERVAL BETWEEN SENDER & RECEIVER DIPOLES

RELATIVE ANOMALY STRENGTH
VERY WEAK — WEAK — MODERATE — STRONG

1
2
3
4

PERCENT FREQUENCY EFFECT (P. F. E.)
CONTOUR INTERVAL CONSTANT
SENDER FREQUENCIES 3·0 & 0·1 C.P.S.

1
2
3
4

INDUCED POLARISATION PROFILES

RESIS. ——
P.F.E. — —

	RESIS.	P.F.E.
N-1	1000	10
	500	5
	0	0

N-1	1000	10
	500	5
	0	0

SELF POTENTIAL AND MAGNETIC PROFILES

S.P. ——
Mag — —

S.P.(mV) | Mag (γ)
−1,000
0
+1,000

SOIL GEOCHEMICAL PROFILES

Cu ·———·
Pb ×— —×
Zn +— — —+

P. P. M.
1,000
800
600
400
200
0

DEPTH TO TOP OF "C" HORIZON

DEPTH IN FEET
0
5
10

GEOLOGICAL CROSS SECTION

Recent — Alluvium
Silurian — Eldon Group. Sandstones, Mudstones
Ordovician — Gordon Limestone
Jukes Conglomerate
Dundas group Sediments
Cambrian — Acid Volcanics
Acid Tuffs
Intermediate Crystal Tuffs
Andesites
Gossanous Zone
Quartz Scree.

Geolocical Contact Mapped
Geological Contact Interred.
Geological Contact Unknown
Trend Lines Inferred.
Fault.

8000 E
9000 E
10000 E BASE LINE
11000 E
12000 E
600
SL.

GEOLOGICAL PLAN

RIVER
16,000 TN
47/70
L. E.L.

771101
72-858

200 0 200 400
SCALE IN FEET

5 cm

CYPRUS MINES CORPORATION

SCALE: 1" = 200'	AREA: EL. 47/70 TASMANIA	DRAWN: R.E.M.
DATE: MARCH 1972	PROSPECT: LYNCH CREEK	REVISED:

GEOLOGICAL CROSS SECTION & GEOPHYSICAL & GEOCHEMICAL PROFILES 2635

SECTION 16000 TN

DRAWING NUMBER 30-032

APPARENT RESISTIVITY ($\rho \frac{AS}{MN}$)

IN UNITS OF OHM FEET
CONTOUR INTERVAL LOGARITHMIC
SENDER FREQUENCY 3.0 C.P.S.

INTERVAL BETWEEN SENDER & RECEIVER DIPOLES: 1, 2, 3, 4

RELATIVE ANOMALY STRENGTH
VERY WEAK — WEAK — MODERATE — STRONG

300' DIPOLE I.P. SPREADS

241x 312x 263x 386x 275x 196x 305x 177x
444x 390x 315x 436x 306x 341x 286x 215x
495x 644x 325x 421x 469x 282x 414x
685x 960x 346x 425x 381x 470x

PERCENT FREQUENCY EFFECT (P.F.E.)

CONTOUR INTERVAL CONSTANT
SENDER FREQUENCIES 3.0 & 0.1 C.P.S.

INTERVAL BETWEEN SENDER & RECEIVER DIPOLES: 1, 2, 3, 4

2x8 2x5 1x5 2x3 2x8 3x0 2x7 2x8
2x6 1x8 1x5 2x0 2x8 2x3 3x0 3x5
1x8 1x0 2x0 2x8 1x8 2x3 3x0
1x3 0x3 1x3 0x8 2x3 2x3

INDUCED POLARISATION PROFILES

RESIS. ——
P.F.E. — —

	RESIS.	P.F.E.
N-1	1000	10
	500	5
	0	0
N-1	1000	10
	500	5
	0	0

SELF POTENTIAL AND MAGNETIC PROFILES

S.P. ——
Mag — —

S.P.(mV) | Mag (γ)
+1,000
0
-1,000

2030

SOIL GEOCHEMICAL PROFILES

Cu ·——·
Pb ×— —×
Zn +— —+

P.P.M.
1,000
800
600
400
200
0

DEPTH TO TOP OF "C" HORIZON

DEPTH IN FEET
0
5
10

GEOLOGICAL CROSS SECTION

Recent — Alluvium
Silurian — Eldon Group. Sandstones Mudstones
Ordovician. — Gordon Limestone
Jukes Conglomerate
Cambrian — Dundas group Sediments
Acid Volcanics
Acid Tuffs
Intermediate Crystal Tuffs
Andesites
Gossanous Zone
Quartz Scree.
Geolocical Contact Mapped
Geological Contact Interred.
Geological Contact Unknown
Trend Lines Interred.
Fault.

600'
S.L.
8000 E
9000 E
10000 E BASE LINE
11000 E
12000 E

GEOLOGICAL PLAN

MUNICIPAL TIP
CAR BODY DUMP
8000E
E.L.
MT. LYELL
15,500 TN

771102

300' DIPOLE I.P. SPREADS

72-858

5 cm

200 0 200 400
SCALE IN FEET

CYPRUS MINES CORPORATION

SCALE: 1" = 200'	AREA: EL. 47/70 TASMANIA	DRAWN: REM.
DATE: MARCH 1972	PROSPECT: LYNCH CREEK	REVISED:

GEOLOGICAL CROSS SECTION & GEOPHYSICAL & GEOCHEMICAL PROFILES — 2636

SECTION 15500 TN — DRAWING NUMBER 30-033

APPARENT RESISTIVITY ($P_{\frac{AO}{AM}}$)
IN UNITS OF OHM FEET
CONTOUR INTERVAL LOGARITHMIC
SENDER FREQUENCY 3·0 C.P.S.

INTERVAL BETWEEN SENDER & RECEIVER DIPOLES

RELATIVE ANOMALY STRENGTH
VERY WEAK · WEAK · MODERATE · STRONG

300' DIPOLE I.P. SPREADS

PERCENT FREQUENCY EFFECT (P.F.E.)
CONTOUR INTERVAL CONSTANT
SENDER FREQUENCIES 3·0 & 0·1 C.P.S.

INDUCED POLARISATION PROFILES
RESIS. ——
P.F.E. — —

	RESIS.	P.F.E.
N-1	1000	10
	500	5
	0	0

	RESIS.	P.F.E.
N-1	1000	10
	500	5
	0	0

SELF POTENTIAL AND MAGNETIC PROFILES
S.P. ——
Mag — —

S.P.(mV)	Mag (γ)
	−1,000
	0
	+1,000

SOIL GEOCHEMICAL PROFILES
Cu ·——·
Pb ×——×
Zn +– – –+

P.P.M.
1,000
800
600
400
200
0

DEPTH TO TOP OF "C" HORIZON

DEPTH IN FEET
0
5
10

GEOLOGICAL CROSS SECTION

Recent — Alluvium
Silurian — Eldon Group. Sandstones Mudstones
Ordovician. — Gordon Limestone
Jukes Conglomerate
Cambrian — Dundas group Sediments
Acid Volcanics
Acid Tuffs
Intermediate Crystal Tuffs
Andesites
Gossanous Zone
Quartz Scree.
Geolocical Contact Mapped
Geological Contact Inferred.
Geological Contact Unknown
Trend Lines Inferred.
Fault.

SHEARING

600'
S.L.

8000 E · 9000 E · 10000 E BASE LINE · 11000 E · 12000 E

GEOLOGICAL PLAN

SHEARING

15,000TN≡
815,100y N

771103

72-858

200 0 200 400
SCALE IN FEET

5 cm

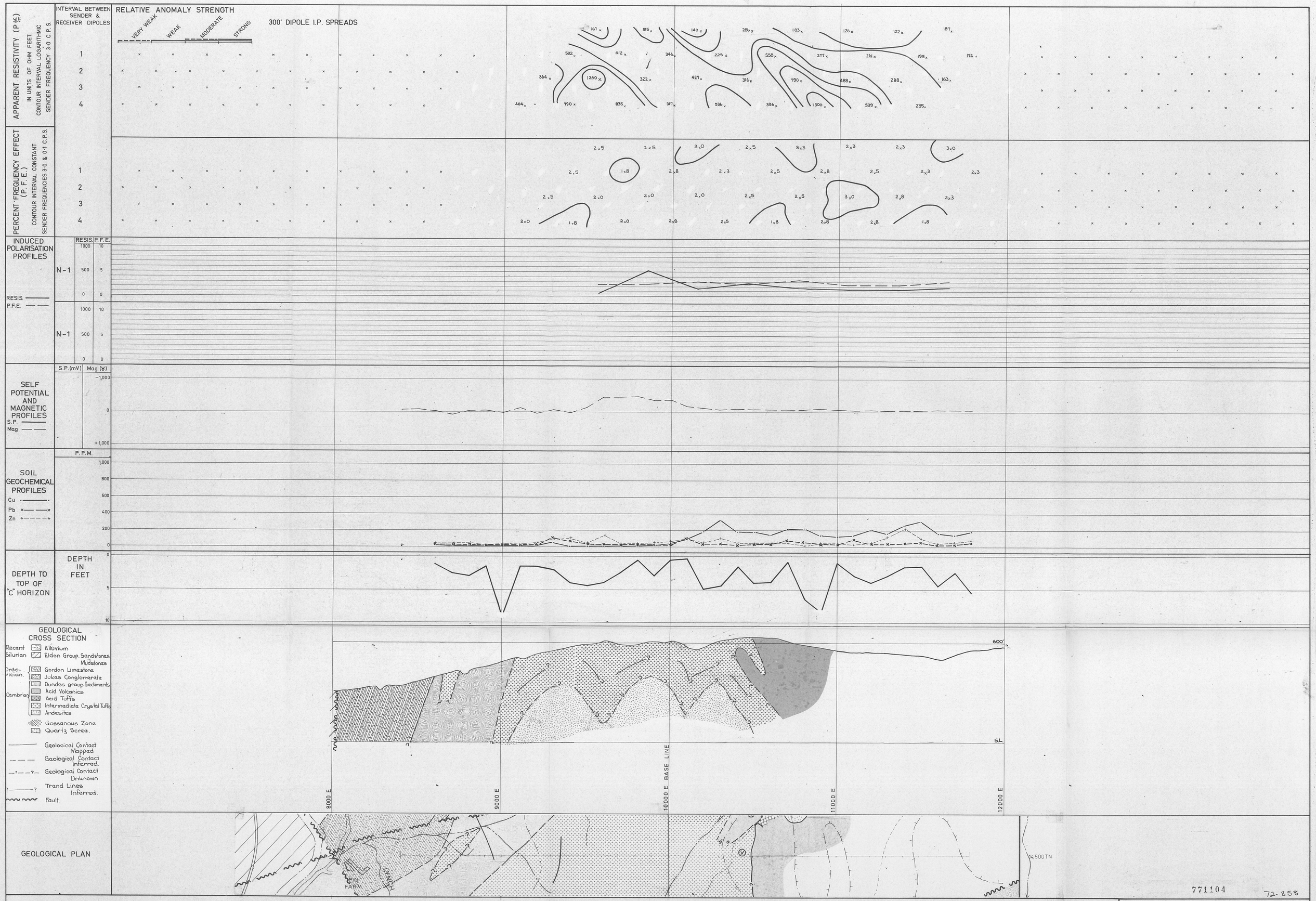
CYPRUS MINES CORPORATION

SCALE: 1" = 200'	AREA: EL. 47/70 TASMANIA	DRAWN: R.E.M.
DATE: MARCH 1972	PROSPECT: LYNCH CREEK	REVISED:

GEOLOGICAL CROSS SECTION & GEOPHYSICAL & GEOCHEMICAL PROFILES 2637

SECTION 15000 TN

DRAWING NUMBER 30-034



771104

72-858

CYPRUS MINES CORPORATION

SCALE: 1" = 200'	AREA: EL. 47/70 TASMANIA	DRAWN: R.E.M.
DATE: MARCH 1972	PROSPECT: LYNCH CREEK	REVISED:

GEOLOGICAL CROSS SECTION & GEOPHYSICAL & GEOCHEMICAL PROFILES 2638

SECTION 14500 TN

DRAWING NUMBER 30-035

200 0 200 400

SCALE IN FEET

5 cm

APPARENT RESISTIVITY ($P\frac{AS}{2A}$)
IN UNITS OF OHM FEET
CONTOUR INTERVAL LOGARITHMIC
SENDER FREQUENCY 3·0 C.P.S.

INTERVAL BETWEEN SENDER & RECEIVER DIPOLES

RELATIVE ANOMALY STRENGTH
VERY WEAK | WEAK | MODERATE | STRONG

1
2
3
4

PERCENT FREQUENCY EFFECT (P. F. E.)
CONTOUR INTERVAL CONSTANT
SENDER FREQUENCIES 3·0 & 0·1 C.P.S.

1
2
3
4

INDUCED POLARISATION PROFILES

RESIS ——
P.F.E. — —

	RESIS	P.F.E.
N-1	1000	10
	500	5
	0	0
N-1	1000	10
	500	5
	0	0

SELF POTENTIAL AND MAGNETIC PROFILES

S.P ——
Mag — —

S.P.(mV)	Mag (γ)
	-1,000
	0
	+1,000

SOIL GEOCHEMICAL PROFILES

Cu ·——·
Pb ×—— ——×
Zn +– – –+

P. P. M.
1,000
800
600
400
200
0

DEPTH TO TOP OF "C" HORIZON

DEPTH IN FEET
0
5
10

GEOLOGICAL CROSS SECTION

Recent — Alluvium
Silurian — Eldon Group. Sandstones Mudstones
Ordovician — Gordon Limestone
Jukes Conglomerate
Dundas group Sediments
Cambrian — Acid Volcanics
Acid Tuffs
Intermediate Crystal Tuffs
Andesites
Gossanous Zone
Quartz Scree.
Geological Contact Mapped
Geological Contact Inferred.
Geological Contact Unknown
Trend Lines Inferred.
Fault.

600'
SL
8000 E
9000 E
10000 E BASE LINE
11000 E
12000 E

GEOLOGICAL PLAN

CRL

771105 72-858

200 0 200 400
SCALE IN FEET

5 cm

CYPRUS MINES CORPORATION

SCALE 1" = 200'	AREA EL 47/70 TASMANIA	DRAWN: R.E.M.
DATE: MARCH 1972	PROSPECT: LYNCH CREEK	REVISED:

GEOLOGICAL CROSS SECTION & GEOPHYSICAL & GEOCHEMICAL PROFILES 2639

SECTION 14000 TN

DRAWING NUMBER 30-036

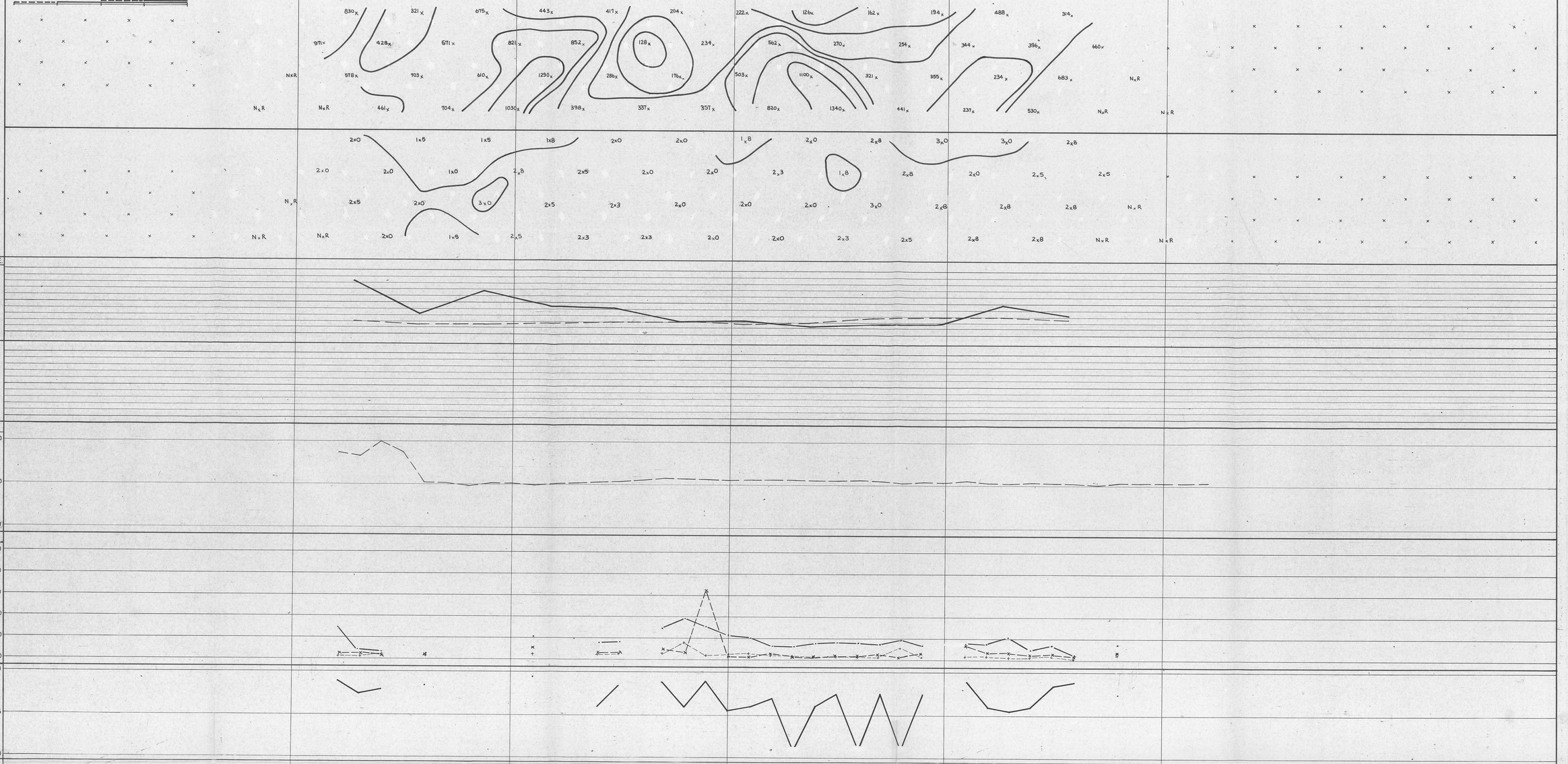
APPARENT RESISTIVITY (P.A.E.)

IN UNITS OF OHM FEET
CONTOUR INTERVAL LOGARITHMIC
SENDER FREQUENCY 3·0 C.P.S.

INTERVAL BETWEEN SENDER & RECEIVER DIPOLES: 1, 2, 3, 4

RELATIVE ANOMALY STRENGTH: VERY WEAK — WEAK — MODERATE — STRONG

300' DIPOLE I.P. SPREADS



PERCENT FREQUENCY EFFECT (P.F.E.)

CONTOUR INTERVAL CONSTANT
SENDER FREQUENCIES 3·0 & 0·1 C.P.S.

INDUCED POLARISATION PROFILES

RESIS. ——— P.F.E. – – –

	RESIS.	P.F.E.
N-1	1000	10
	500	5
	0	0
N-1	1000	10
	500	5
	0	0



SELF POTENTIAL AND MAGNETIC PROFILES

S.P. ——— Mag. – – –

S.P.(mV)	Mag (γ)
	−1,000
	0
	+1,000

SOIL GEOCHEMICAL PROFILES

Cu ·———· Pb ×——× Zn +– – –+

P.P.M.

1,000
800
600
400
200
0

DEPTH TO TOP OF "C" HORIZON

DEPTH IN FEET

0
5
10

GEOLOGICAL CROSS SECTION

- Recent — Alluvium
- Silurian — Eldon Group. Sandstones, Mudstones
- Ordovician — Gordon Limestone
- Jukes Conglomerate
- Dundas group Sediments
- Cambrian — Acid Volcanics
- Acid Tuffs
- Intermediate Crystal Tuffs
- Andesites
- Gossanous Zone
- Quartz Scree.
- ——— Geological Contact Mapped
- – – – Geological Contact Inferred.
- —?—?— Geological Contact Unknown
- ?———? Trend Lines Inferred.
- ~~~ Fault.

GEOLOGICAL PLAN

771106

72-858

5 cm

200 0 200 400
SCALE IN FEET

CYPRUS MINES CORPORATION

SCALE: 1" = 200'	AREA: EL. 47/70 TASMANIA	DRAWN: R.E.M.
DATE: MARCH 1972	PROSPECT: LYNCH CREEK	REVISED:

GEOLOGICAL CROSS SECTION & GEOPHYSICAL & GEOCHEMICAL PROFILES — 2640

SECTION 13500 TN — DRAWING NUMBER 30-037

APPARENT RESISTIVITY ($\rho \frac{AS}{2\pi}$)
IN UNITS OF OHM FEET
CONTOUR INTERVAL LOGARITHMIC
SENDER FREQUENCY 3·0 C.P.S.

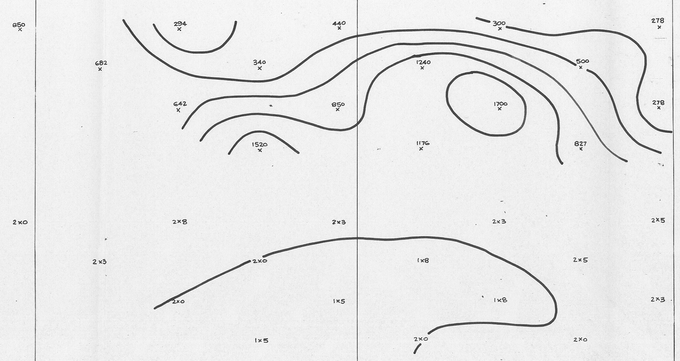
INTERVAL BETWEEN SENDER & RECEIVER DIPOLES

1
2
3
4

RELATIVE ANOMALY STRENGTH

VERY WEAK — WEAK — MODERATE — STRONG

500' DIPOLE I.P. SPREADS
VERTICAL SCALE – 1" = 400"



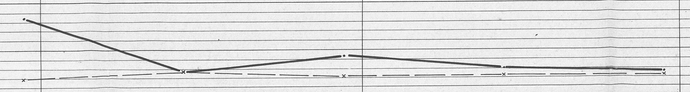
PERCENT FREQUENCY EFFECT (P. F. E.)
CONTOUR INTERVAL CONSTANT
SENDER FREQUENCIES 3·0 & 0·1 C.P.S.

1
2
3
4

INDUCED POLARISATION PROFILES

RESIS. ——
P.F.E. — —

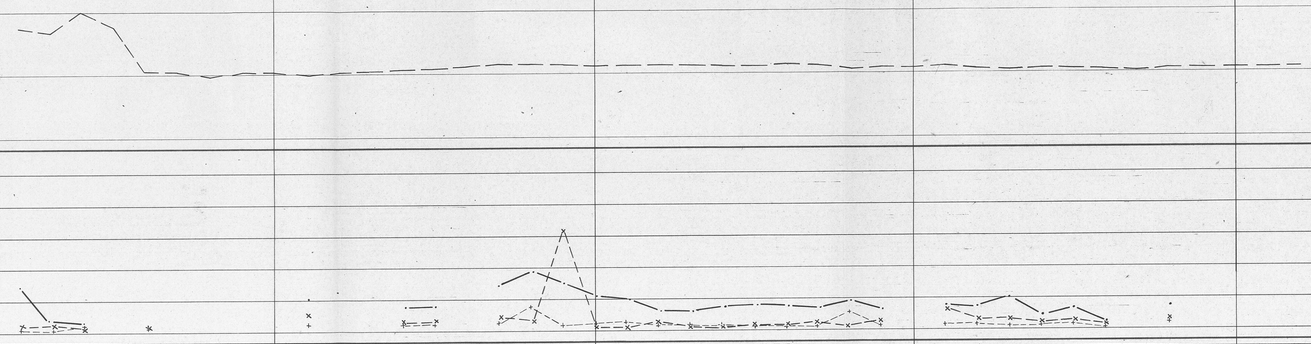
	RESIS.	P.F.E.
N-1	1000	10
	500	5
	0	0
N-1	1000	10
	500	5
	0	0



SELF POTENTIAL AND MAGNETIC PROFILES

S.P. ——
Mag — —

S.P.(mV)	Mag (γ)
	−1,000
	0
	+1,000



SOIL GEOCHEMICAL PROFILES

Cu ·——·
Pb ×——×
Zn +– – –+

P. P. M.

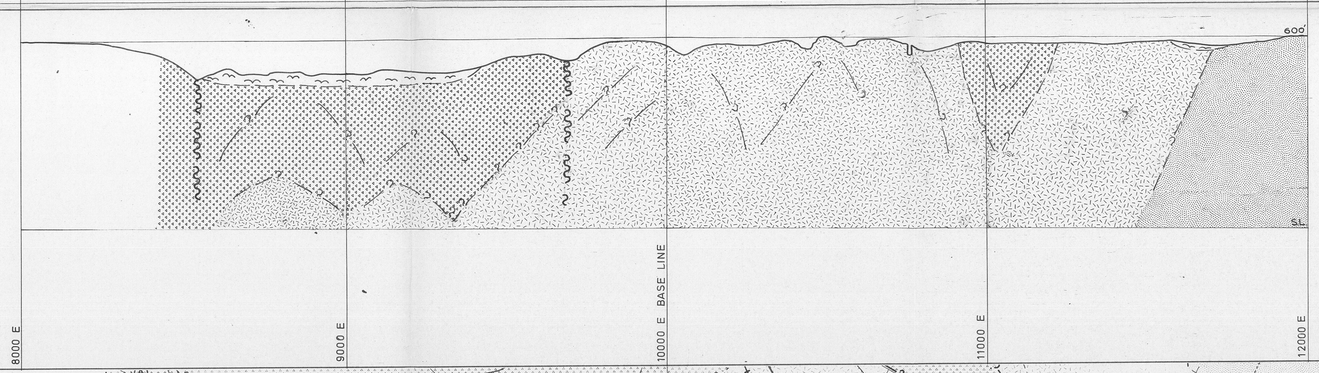
1,000
800
600
400
200
0

DEPTH TO TOP OF "C" HORIZON

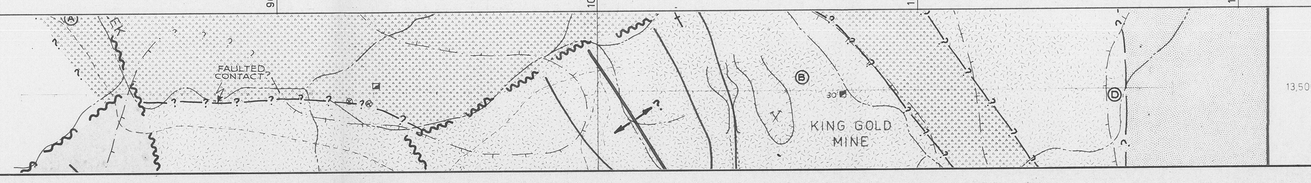
DEPTH IN FEET

0
5
10

GEOLOGICAL CROSS SECTION



GEOLOGICAL PLAN



771107

72-858

200 0 200 400
SCALE IN FEET

5 cm

CYPRUS MINES CORPORATION

SCALE: 1" = 200'	AREA: EL. 47/70 TASMANIA	DRAWN: R.E.M.
DATE: MARCH 1972	PROSPECT: LYNCH CREEK	REVISED: -

GEOLOGICAL CROSS SECTION & GEOPHYSICAL & GEOCHEMICAL PROFILES

2641

SECTION 13500 TN

DRAWING NUMBER 30-038

APPARENT RESISTIVITY ($P_{\frac{AS}{2M}}$)

IN UNITS OF OHM FEET
CONTOUR INTERVAL LOGARITHMIC
SENDER FREQUENCY 3.0 C.P.S.

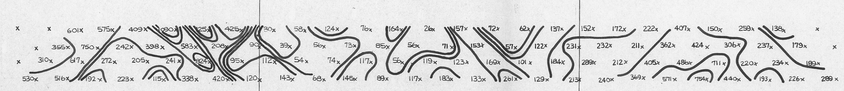
INTERVAL BETWEEN SENDER & RECEIVER DIPOLES

1
2
3
4

RELATIVE ANOMALY STRENGTH

VERY WEAK — WEAK — MODERATE — STRONG

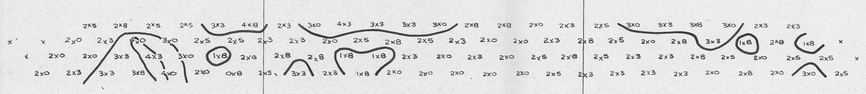
100' DIPOLE I.P. SPREAD



PERCENT FREQUENCY EFFECT (P.F.E.)

CONTOUR INTERVAL CONSTANT
SENDER FREQUENCIES 3.0 & 0.1 C.P.S.

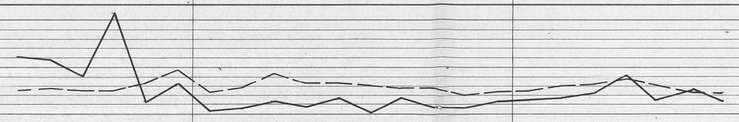
1
2
3
4



INDUCED POLARISATION PROFILES

RESIS. ——— P.F.E. — —

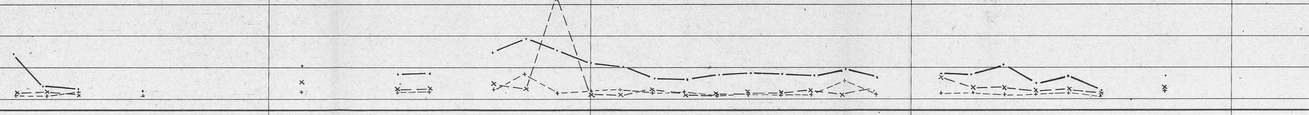
	RESIS.	P.F.E.
N-1	100	10
	50	5
	0	0
N-	100	10
	50	5
	0	0



SELF POTENTIAL AND MAGNETIC PROFILES

S.P. ———
Mag — — —

S.P.(mV)	Mag (γ)
	-1,000
	0
	+1,000



SOIL GEOCHEMICAL PROFILES

Cu ·———·
Pb ×——×
Zn +– – –+

P.P.M.

1,000
800
600
400
200
0

DEPTH TO TOP OF "C" HORIZON

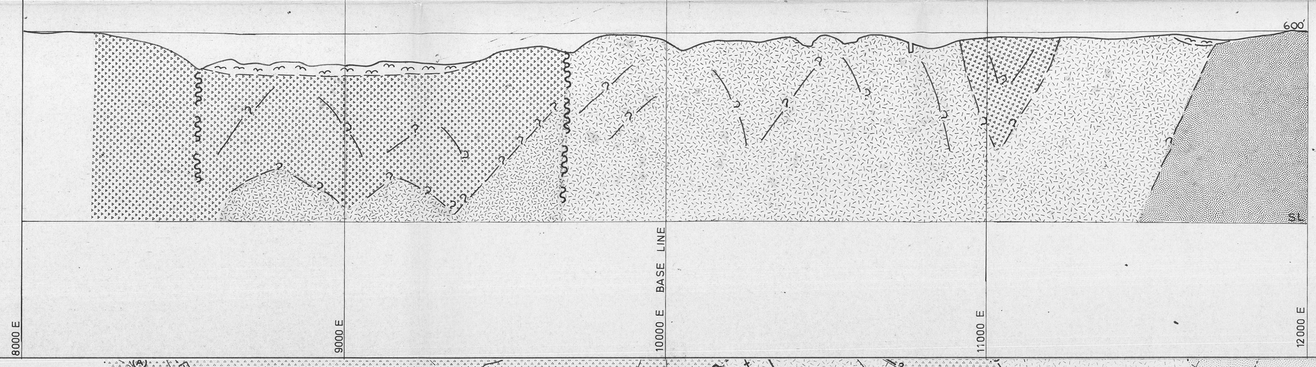
DEPTH IN FEET

0
5
10

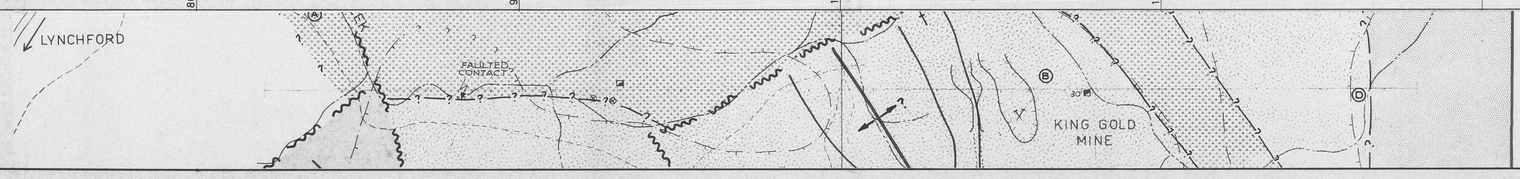
GEOLOGICAL CROSS SECTION

Recent — Alluvium
Silurian — Eldon Group Sandstones Mudstones
Ordovician — Gordon Limestone
Jukes Conglomerate
Dundas group Sediments
Cambrian — Acid Volcanics
Acid Tuffs
Intermediate Crystal Tuffs
Andesites
Gossanous Zone
Quartz Scree.

Geolocical Contact Mapped
Geological Contact Inferred.
Geological Contact Unknown.
Trend Lines Inferred.
Fault.



GEOLOGICAL PLAN



771108

72-858

5 cm

200 0 200 400

SCALE IN FEET

CYPRUS MINES CORPORATION

SCALE: 1" = 200'	AREA: EL. 47/70 TASMANIA	DRAWN: R.E.M.
DATE: MARCH 1972	PROSPECT: LYNCH CREEK	REVISED:

GEOLOGICAL CROSS SECTION & GEOPHYSICAL & GEOCHEMICAL PROFILES

2642

SECTION 13500 TN

DRAWING NUMBER 30-039