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GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LIMITED

ANNUAL REPORT - E.L. 27/76

1981 - 1982 FIELD SEASON

ELLIOTT BAY

VOL. 1 of 5 volumes

P.A. WILSON et.al.
DEVONPORT

SEPTEMBER, 1982

82-1882 (1)

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GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD

PROGRESS REPORT E.L. 27/76

ELLIOTT BAY TASMANIA

1981-1982 FIELD SEASON

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J.D.H. Sumpton
J. Pemberton
R. Perring

DEVONPORT
SEPTEMBER, 1982

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additional maps received 4.2.83:

Sample location maps for Voyager 29W, 33834

in ~~Manila folder~~ back pocket of 82-188R(A)

Sample location Plans Voyager 19

29

see letter of 7-3-84 29W

(2273/84) 31

33

34 added to map folders

plan 10 V9 mag profiles also

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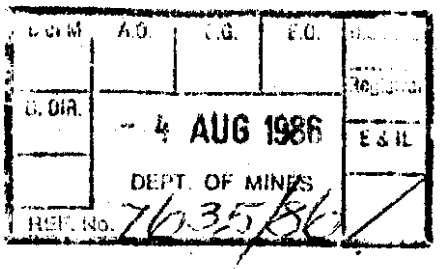
663015

P.O. BOX 217, GORDON, N.S.W., 2072. TELEX AA24622

GEOPEKO

25 MERRIWA STREET, GORDON, N.S.W., AUSTRALIA. PHONE (02) 498 4566

30 July 1986



P.C.

The Director of Mines
Department of Mines
Gordon's Hill Road
ROSNY PARK TAS 7018

Dear Sir

REF: REPORT NOS TCR 78-1317, 81-1555, 82-1745 AND 82-1882

In answer to your request for copies of maps to complete the above reports for microfilming, we offer the following:

1. Report TCR 78-1317

   Geological Map Sheet KT27/76-7A - Tracing has been located; supplying paper print.

2. Report TCR 81-1555

   (a) TS27/76-41 Aeromagnetic Total Intensity Contours

   Tracing is missing from our plan files but we do have a poor quality paper copy in our library.

   Suppling a paper print of the map from which TS27/76-41 was derived vis aeromagnetic contours produced for BHP by GEOEX at a scale of 1:50,000. The scale difference should not affect your microfilming and the data quality is far superior.

   (b) TS27/76-V12-10

   Tracing is missing from our plan files. Supplying a photocopy of a paper print from our library.

3. Report TCR 82-1745

   Gold Exploration Plan 82a Drainage Sample Location Map

   This map is not in our plan files nor are there prints in our copies of the report. Most probably the map was not compiled.

   Supplying paper prints of maps of the same region showing geochemical values against sample points. These should allow any subsequent explorer to relocate the sample points and re-sample if necessary.

...../2

4. Report TCR 82-1882

(a) Voyager 9 Plan 10 Profiles of Total Magnetic Intensity 11450N

This plan was not drafted and no preliminary can be found in our plan files.

I refer you to your letter of 1/3/84 and our reply (copy enclosed), copies of which I came across towards the end of several days fruitless search for the missing data. Presumably the plan supplied by Mr Herrmann in lieu of Plan 10 was not put in your copy of the report. To save further search at this end might I suggest that you take 2 copies of the appropriate plan from the 1979-80 report when microfilming and place one in Report TCR 82-1882.

(b) Voyager 33 Plan 76 C-Horizon Soil Geochemistry Ba Contours

This plan was not drafted. Mr Herrmann's letter explains the situation.

In view of the small quantity of data, and the deal of subjectivity involved in contouring geochemical data, we consider it unwise to have someone unfamiliar with the prospect undertake the contouring now. We request that you accept the listed Ba results as sufficient to fulfill future needs of explorers wishing to view the results of our exploration work.

(c) Voyager 33 Plan 77 C-Horizon Geochemistry Ag Contours

This plan was not drafted. See also Mr Herrmann's letter.

Supplying our (only) copy of the preliminary contour plan.

(d) Voyager 34 Plan 80 C-Horizon Geochemistry Cu Contours

This plan was not drafted. Mr Herrmann suggests that decisions were made not to contour some elements because of lack of significance of recorded values. Cu values are printed on Plans 82 and 83 and a visual inspection indicates to me that so many of the values are near detection limit as to make any contouring meaningless. We request that you accept the Cu values as drawn on Plans 82 and 83 and listed in the report as sufficient record of the work.

(e) Voyager 34 Plan 83 C-Horizon Geochemistry for Fe Contours

This plan was not drafted. Mr Herrmann's letter explains the situation.

As for Voyager 33 - Ag contours, we are supplying our copy of the preliminary plan.

...../3

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(f) Voyager 29 Plan 42 VLF-EM Profiles

This plan was not drafted. We have, however, located the original computer plots of the data and are supplying photocopies.

Yours sincerely

B T Williams
General Manager - Exploration

GEOPEKO

OLD COAST ROAD, QUOIBA, VIA DEVONPORT, TAS., 7310. PHONE (004) 24 4931
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7-3-84 663018

Director of Mines,
Department of Mines,
P.O. Box 56,
ROSNY PARK.....7018
Tasmania

Dear Sir,

In reply to your letter of 1-3-84 (your reference: 82-1882).

Please accept our apology for the omission of some plans from the 1981-82 Annual Report on E.L. 27/76.

It seems that the 'List of Plans' given in the report was of a preliminary nature and subsequent decisions to exclude certain plans were made on the basis that they did not present data of exploration significance. In fact, following visual inspection of geochemical data, some plans (such as V-33 Silver Contours) were ultimately not drafted.

However, the geochemical information is accessible by entering the 'Geochemical and Assay Result Listings' (presented as an appendix to the 1981-82 Report for E.L. 27/76) and relating the Sample Numbers to the Sample Location Plans.

Samples Location Plans for some of the prospects (Voyagers 19, 29, 29 West, 31, 33 and 34) were inadvertently omitted from the report. These are herewith enclosed for inclusion with the report.

With respect to specific plans mentioned in your letter, the following notes may assist in finding the data required:

- Plan 10: V9 Profiles of Total Magnetic Intensity 11450N
  *Originals of this plan cannot be found. A sheet showing V9-TMI profiles (including 11450N) taken from the 1979-80 Annual Report, is enclosed.

- Plan 76: V33, C-Horizon Barium Contours
  *Only a small group of V33 soil samples were analysed for Barium and the results were not plotted.
  Ba data can be found in the 'Geochemical Listings".

Yours faithfully,
GEOPEKO

W. HERRMANN
Senior Geologist.

1. INTRODUCTION

E.L. 27/76 occupies an area of 329km^2 and is centred on the Elliott Bay area of South West Tasmania (fig 1). The licence extends over the southerly most outcrop of the highly prospective Mt Read Volcanics and was first granted to Geopeko in January 1977.

Exploration by Geopeko has been directed towards the discovery of a 'Rosebery style' volcanic hosted massive sulphide deposit. This exploration culminated in the 1980/1981 field season with the discovery two lenses of massive sulphide mineralization hosted in acid pyroclastic rocks on the western limb of the Mt Osmund syncline. For details of the previous exploration the reader is referred to the reports by Strickland (1978, 1979), Large (1981) and Wilson et. al. (1981).

This report details the exploration which was completed between November 1981 and March 1982 and which included:

1. Drilling of 6 diamond drill holes on targets generated both during the current and preceeding field season. Total metreage was 1193m.

2. Approximately 60 line km of gridding was completed in the Wart Hill Pyroclastics flanking the Mt Osmund syncline.

3. Detailed geological mapping was completed on all new grids to a 1:2500 scale (c 15 sq km).

4. Collection of approximately 2700 C horizon soil samples by Jacro and 'Mate' power augers along the grid lines.

5. Excavation of 8 costeans and 3 pits over areas having significant soil geochemistry.

6. A bank sampling survey (101 samples) was completed to try and locate points of gold input into the stream systems.

7. Geophysical surveys were completed on all grids and included:

Method	Quantity
Gravity	1655 stations (25m)
IP	7 line km (50m dipole)
SP	3.9km
VLF-EM	82 line km (25m)
Magnetics	56.5 line km (12.5m)

8. Plotting, compilation of maps and reporting.

9. Repairs to the Wanderer River bridge, camp construction and logistics.

This report follows the format of the preceeding year with Voyager prospects being described according to their position in the stratigraphy rather than numerically. Some overlap exists because of the definition of the 'Western Sequence', a new lithostratigraphic unit which consists of sandstones, breccias, reworked tuffs and shales. Rocks of the Western Sequence separate the Wart Hill Pyroclastics from the Mainwaring Group. The V29W, V31 and V33 grids extend from the Wart Hill pyroclastics into the Western Sequence and consequently have been included in the section on the Wart Hill Pyroclastics.

Field work was conducted from the Wart Hill base camp and involved four geologists a geophysicist and up to ten field officers. Contributions to the progress report are as follows:

Section	Author
V29W, V31, V33	J. Pemberton
V16, V20, V30 Au, Sn and W	R.J. Perring
Geophysics in General	J.D.H. Sumpton
V9, V19, V29, V22, V34 Compilation and Editing	P.A. Wilson
V22, V34 geology	D. Moore

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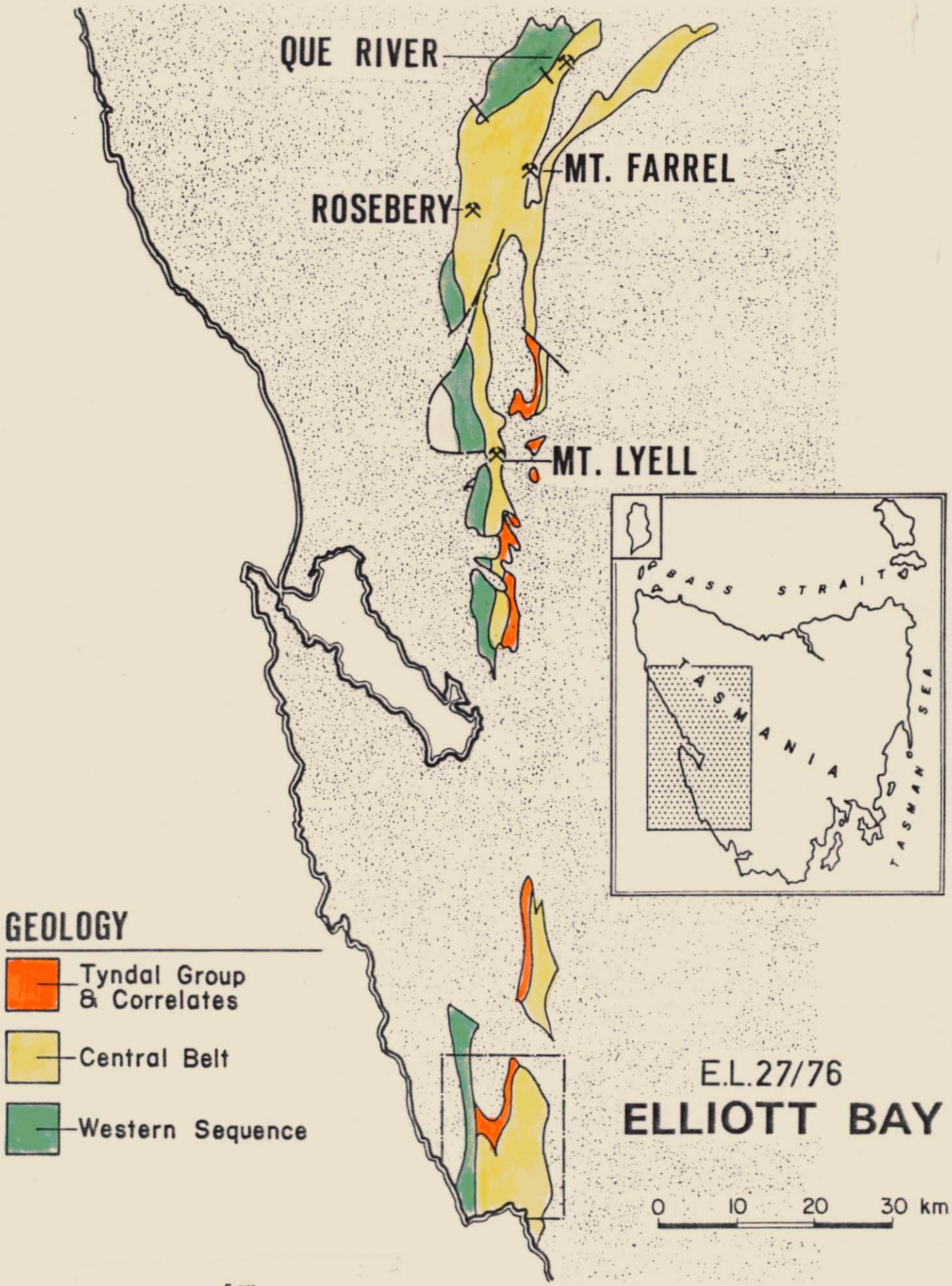


FIG.1

2. SUMMARY CONCLUSIONS AND RECOMMENDATIONS

2.1 SUMMARY

Exploration in the Elliott Bay licence E.L. 27/76 in the 1981-82 field season has concentrated on the further evaluation of the economic potential of the Wart Hill Pyroclastics along the limbs of the Mt Osmund syncline.

Two lenses of massive sulphide mineralization were located on the Voyager 19 grid during the preceding field season. Geochemical values from 1m channel samples over the southern lense averaged 13.94%Pb, 21.9%Zn, 0.2%Cu, 680ppm Ag and 0.84ppm Au over 3m adopting a 10% Pb/Zn cut off. The two sulphide lenses were tested by drilling of 3 shallow diamond drill holes. The drilling failed to intersect significant mineralization and showed the lenses to be podiform in nature and related to the contact between a porphyritic rhyolite lava and a dacitic tuff.

A detailed gravity survey was completed on the Voyager 19 grid but did not outline any significant residual anomalies and therefore negated the possibility of a high tonnage, near surface, massive sulphide deposit. However a discrete gravity anomaly ($4ums^2$) was found to be coincident with the main zone of hydrothermal alteration on Wart Hill. This anomaly was drilled but the hole failed to intersect any significant mineralization. A fifth hole was drilled to test a broad zone of coincident IP and soil geochemistry on the southern slopes of Wart Hill, also on the Voyager 19 grid. This hole intersected weakly pyritic dacite lavas but was not targetted to test the best zone of soil geochemistry.

Areas adjacent to the Voyager 19 grid having comparable stratigraphy were also gridded. The areas include the Voyager 29, Voyager 29W, Voyager 31 and Voyager 33 areas on the western limb of the Mt Osmund Syncline and Voyagers 22 and 34 on the eastern limb. Exploration was completed to the soil sampling and geological mapping stages on all these grids with geophysical surveys and costeaning over selected areas. Numerous high order (3-10 x background) soil geochemical anomalies were recorded and often correspond to the contact between porphyritic lavas and crystal tuff lithologies. A few of the anomalies were examined by excavating shallow costeans and by IP surveys, but all remain untested by drilling.

The most significant Pb-Zn anomaly on the Voyager 29 grid covers an area of 100m x 500m with values up to 0.38%Zn and 0.165%Pb. Dipole-dipole IP and gravity features are coincident with the geochemistry.

On the Voyager 9 area a geometric modelling study of the large aeromagnetic anomaly was aided by the completion of a gravity survey. The top of the main magnetic body is believed to be some 500m below surface and constitutes a large magnetic target comprising about 20vol% magnetite. A large granite stock was mapped on the western extremity of the Voyager 9 grid and this is probably related genetically to the magnetic anomaly. Panning of creeks adjacent to the granite has shown the existence of a moderate tin and gold halo in the surrounding volcanic country rocks. This finding suggests the potential for magnetite skarn carrying tin or gold adjacent to the granite.

An IP anomaly was drilled on the north-eastern part of the Voyager 9 grid and was explained by a thick sequence of black pyritic shales, pyrrhotite bearing cherty siltstones-sandstones with interbedded quartz chlorite crystal tuffs. The sequence represents a good host rock for a stratiform massive sulphide body.

It is along strike from a significant Pb-Zn soil anomaly on the central-eastern part of the Voyager 9 grid which has yet to be tested by IP and drilling.

Exploration in the 6km long gold drainage anomaly in the upper part of the Wart Hill Pyroclastics concentrated on the Voyager 24-30 gridded areas. Two costeans were excavated on the Voyager 24 grid. One over a black shale horizon which proved to be devoid of gold mineralization. The second costean was excavated over the zone of best Au soil geochemistry and samples of altered agglomeratic tuff from the costean returned values of up to 4.01ppm Au. DDH Voyager 24-1 was extended to a depth of 281m from the 129m drilled the preceding season. The hole was terminated in a porphyritic lava unit. Gold values in the lower part of the hole ranged from 8-100ppb compared with the upper silicified agglomerate, 50-400ppb.

Electron microprobe studies of the gold particles collected from streams on the Voyager 24 grid show they have a high and uniform silver content, locally up to 27%. This factor combined with the morphological characteristics of the grains implies the gold has moved mechanically from a nearby source.

Further gridding, sampling, mapping and geophysical surveys were completed over the southern part of the gold drainage anomaly at Voyager 30. Here the soil samples anomalous in gold correspond with a silicified, locally agglomeratic, lithic tuff horizon. Similar to the unit mapped on the Voyager 24 grid. It is speculated that the gold is of fumarolic origin and occurs disseminated in the quartz lithic tuff-agglomerate horizon.

Base metal anomalies in soil samples from the Voyager 30 grid correspond to hydrothermally altered granite (Cu, Pb, Zn) and to pyritic tuffs and quartz-sulphide veins. Three zones having significant IP response are present across the Voyager 30 grid one of these has coincident magnetic and VLF-EM anomalies.

The soil geochemical/geophysical anomalies are open to the north, south and west and remain untested by drilling.

Sampling along Copper Creek (Voyager 31) showed that Pb-Zn-As mineralization occurred over at least a 1.5km strike interval. The mineralization is confined to vein and breccia systems in silicified tuffaceous sandstones adjacent to the Copper Creek fault. Values of up to 1.6%Pb, 2.85%Zn and 18ppm Ag over a 5m strike chip sample were recorded. A grab sample of semi-massive arsenopyrite mineralization furnished a value of 1.34ppm Au. The mineralization is of limited width and occurs in a volcano-sedimentary sequence which overlies the Wart Hill Pyroclastics and probably correlates with the Western Sequence of the Rosebery area (Corbett, 1981).

A significant Pb-Zn-Ag soil geochemical anomaly with a peak value of 3.3% Pb/Zn and 66ppm Ag was recorded in a pyritic black shales member within this western sequence on the western margin of the Voyager 33 grid. To date this anomaly has not been followed up but highlights the economic significance of these sedimentary units at the top of the volcanic pile. Although of limited width, the Copper Creek mineralization could represent a feeder zone to stratiform mineralization higher in the sequence, the Voyager 33 anomaly being a case in point.

Exploration in the Hudson River Volcanics during the 1981/82 field season was restricted to two areas, Voyager 16 and Voyager 20. Detailed investigations on the Voyager 16 aeromagnetic anomaly involved infill geochemical soil sampling. A number of Pb-Zn soil anomalies on the south western part of the grid are recommended for follow up work. At Voyager 20 a reconnaissance grid was cut over a broad zone of anomalous Pb-Zn drainage geochemistry on the Wanderer River. Soil sampling and mapping of these grid lines showed a high background of Zn and Pb to be present in a massive porphyritic lava unit. The sample most anomalous in lead (2.25%), zinc (0.24%) and silver (20.5ppm) occur near the top of the lava in contact with an overlying quartz rich crystal tuff.

This tuff unit is anomalous in silver (2ppm-5.5ppm Ag) but is devoid of significant lead and zinc geochemistry. Geophysical surveys have yet to be completed on the grid which extends over two airborne electromagnetic anomalies.

2.2 CONCLUSIONS

The results of the 1981-82 field season once again illustrate the economic importance of the Wart Hill Pyroclastics and have contributed to a better understanding of the stratigraphic parallels with the Rosebery area to the north. This correlation is reinforced by the mapping of volcano-sedimentary sequences which overlie the Wart Hill Pyroclastics immediately to the west of the Voyager 19 grid.

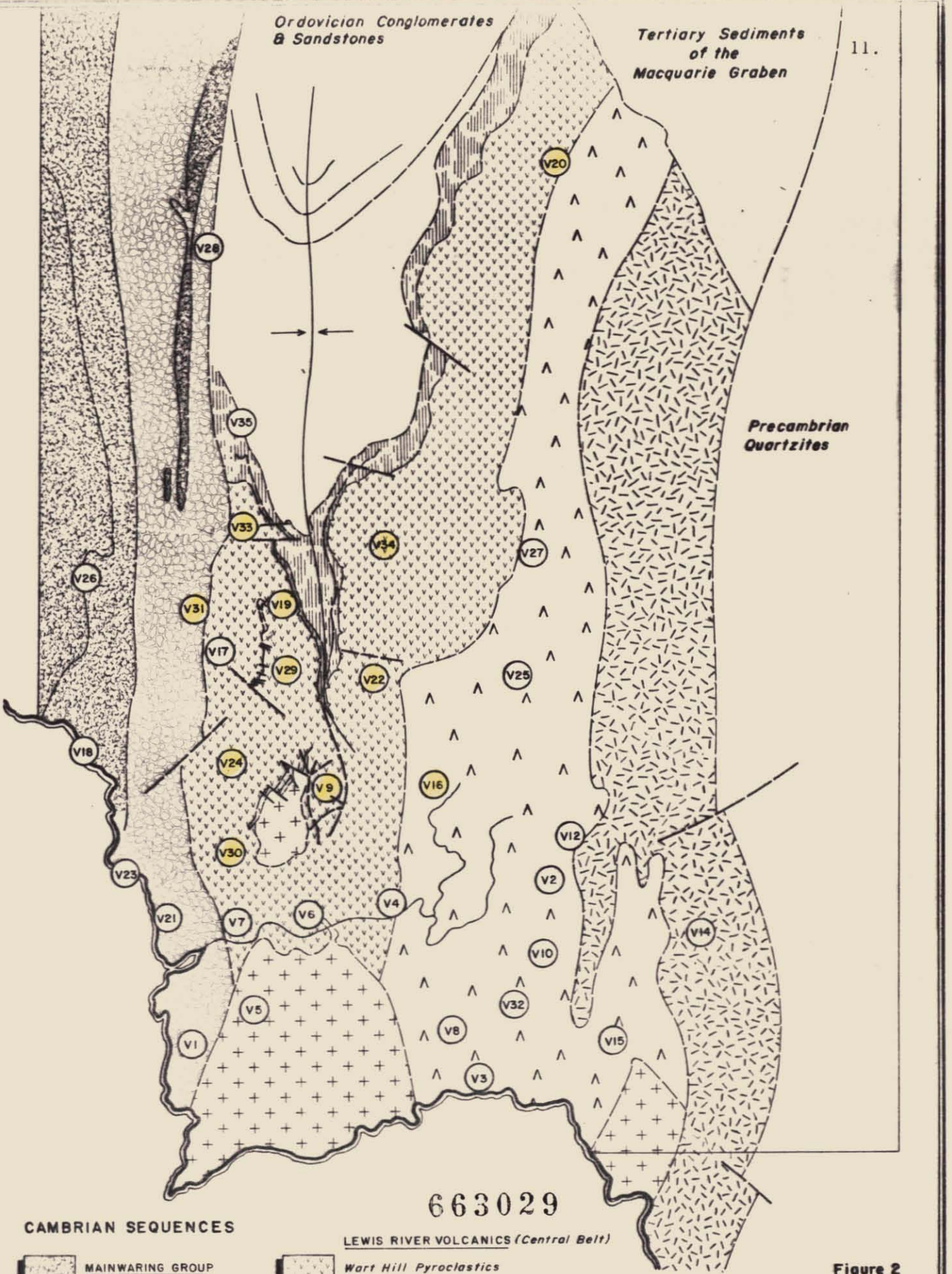
Although the massive sulphide mineralization on the Voyager 19 grid is of limited extent and the gravity survey precludes the existence of a major, near surface orebody on the grid, these findings cannot be extended to adjacent areas which still remain untested. Indeed the bedded sulphide mineralization at Voyager 19 testifies to the existence of active oreforming processes in this part of the Mt Read Volcanics and the likelihood of a major massive sulphide deposit being present, either at depth on the Voyager 19 grid or at the same stratigraphic level around the Osmund Syncline remains high.

2.3 RECOMMENDATIONS

It is recommended that exploration continue in the Wart Hill Pyroclastics on a systematic basis. This work should include further infill gridding of areas not yet sampled or mapped and systematic coverage of the grids with a deep penetration electrical geophysical technique (e.g. Sirotem or EM 37). Follow up work should include costeaning to help in the grading of resulting anomalies for drilling. Much of this work extends across the gold drainage anomaly which could well be related genetically to the base metal mineralization. This still remains a highly attractive target and further work should be aimed at defining an economic

resource in the best areas of the Voyager 24 - Voyager 30 grids.

These recommendations are further detailed in the concluding parts of each section of the report.



CAMBRIAN SEQUENCES

MAINWARING GROUP

MT. READ CORRELATES

Western Sequence

Tyndal Group Correlates

LEWIS RIVER VOLCANICS (Central Belt)

Wart Hill Pyroclastics

Hudson River Pyroclastics

Elliott Point Porphyry

V19 Voyager Prospect Location

5 cm

Figure 2

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

0 1 2 3 4
KILOMETRES

GEOPEKO-DEVONPORT BASE

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3. PROSPECT DEVELOPMENT IN THE WART HILL PYROCLASTICS

3.1 VOYAGER 9

(i) Introduction - Previous Work

Voyager 9 is located in the central part of the Wart Hill Pyroclastics immediately to the south of the Mt Osmund syncline (AMG 380000N, 5244000E) (fig 2). The area was initially gridded in order to examine the northern part of the pronounced aeromagnetic anomaly which was outlined by the Geoex survey.

Geological mapping of the 900m x 1450m V9 grid by Large (1981) resulted in the recognition of extensive hydrothermal alteration in the varied volcaniclastic lithologies. Subsequent work has included soil geochemistry, magnetic, VLF-EM, gradient array IP and Dipole-Dipole IP surveys. In addition two drill holes were completed. The first a 60m Jacro drill hole, was targetted on the peak of the magnetic anomaly on line 10950N. A second hole was completed in the 1980/1981 season to explain the linear Cu soil anomaly and IP zone centred on the line 11550N. Details of this work can be found in reports by Large (1981) and Wilson et. al. (1981).

The area is considered to have high potential for a stratiform Cu-Pb-Zn or Cu-Au ore body. A drilling program was proposed for the 1981-1982 field season with two holes designed to test the Pb/Zn geochemical zone on the eastern part of the grid and secondly a deep hole to assess the economic potential of the magnetic anomaly (fig 3). As a precursor to any drilling it was decided to infill the soil sampling to a 50m x 25m density over the Pb/Zn anomaly. Secondly, to complete a detailed gravity survey over the central part of the V9 grid to see if a near surface mineralized body was present and to aid in the modelling of the magnetic body. Financial constraints did not permit the drilling of either the Pb/Zn or magnetic anomalies.

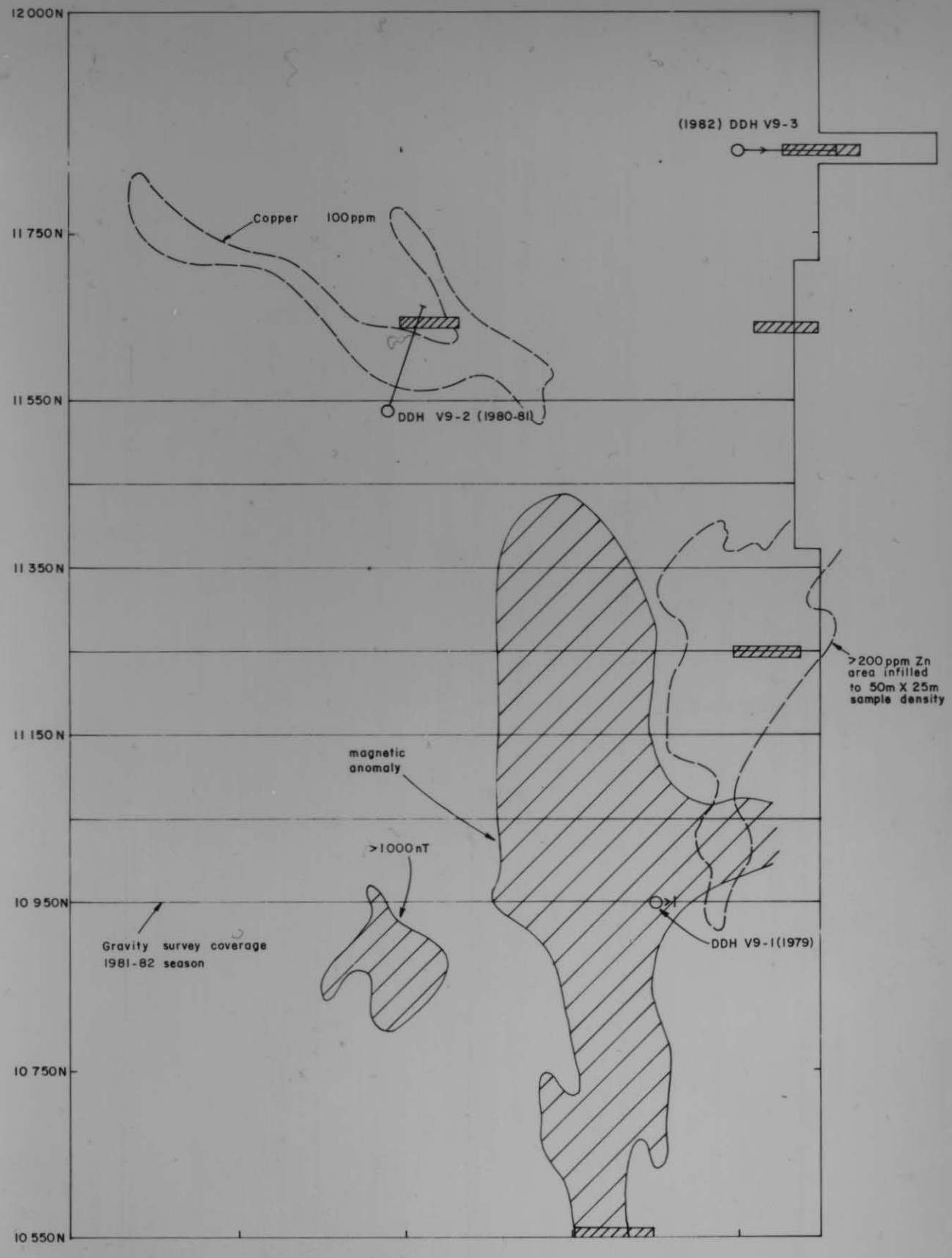

FIG. 3,

5 cm

ANOMALY SUMMARY MAP

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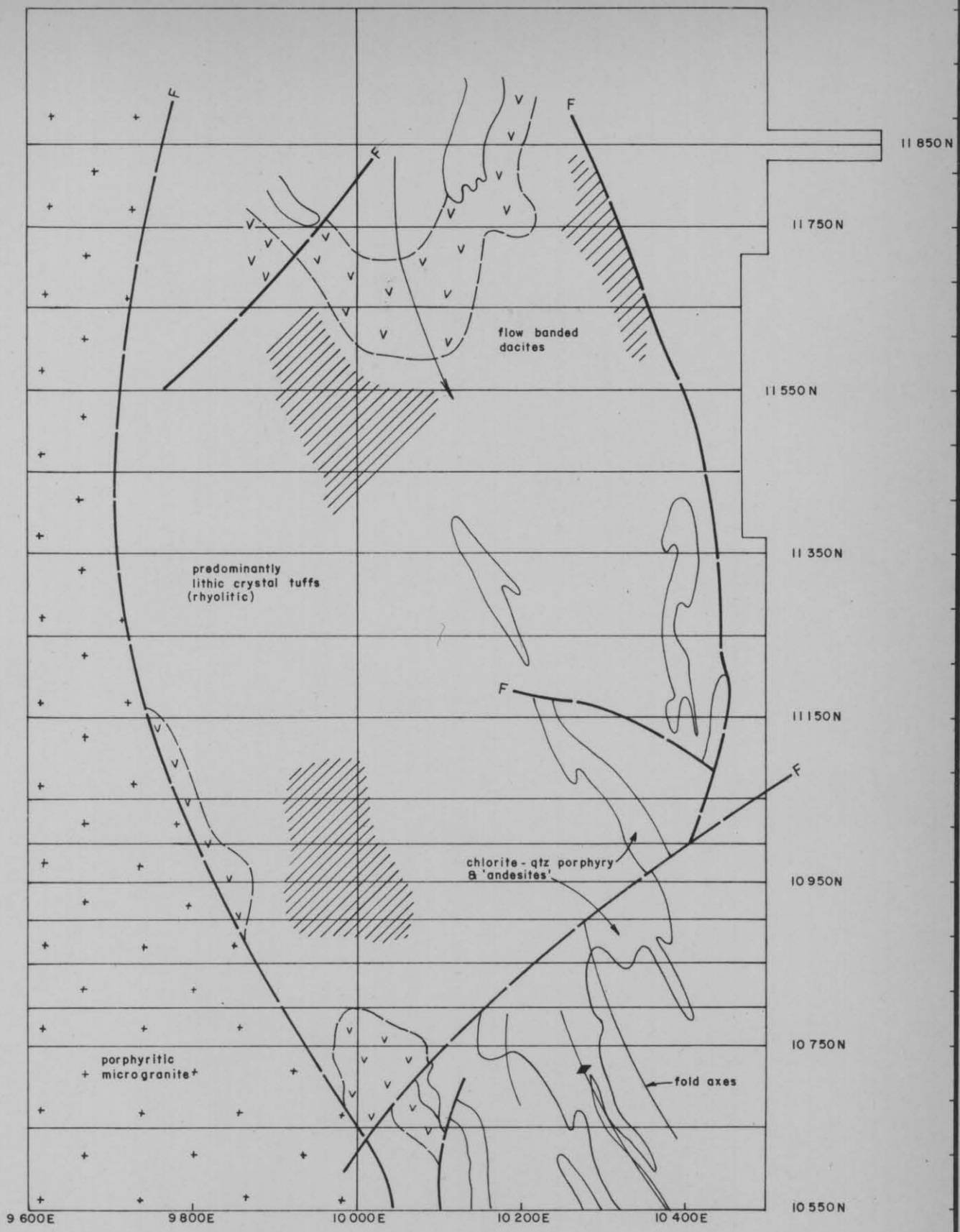
031



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4

5 cm

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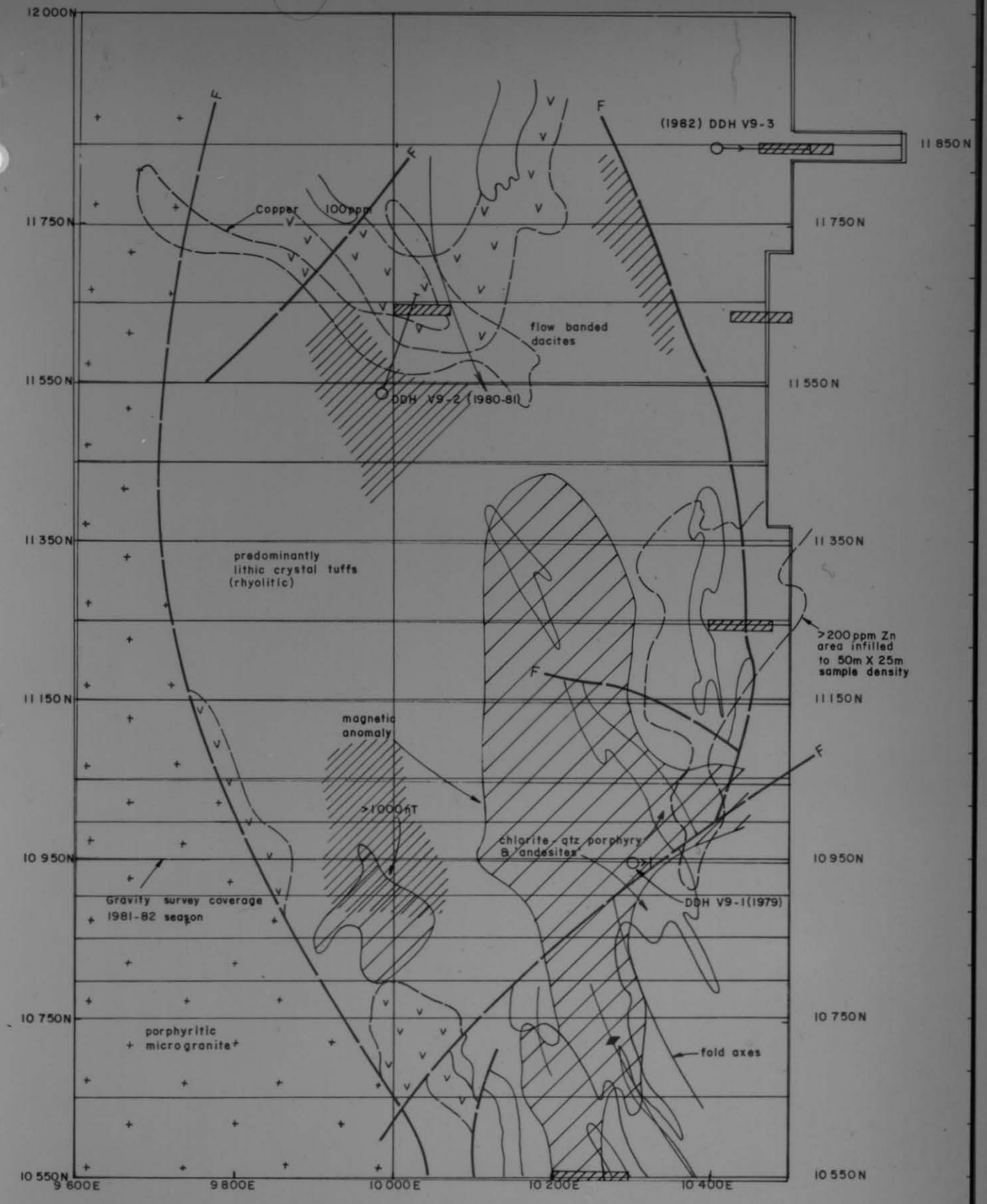
GEOL P.A.W
DWN R.Tog
CHKD

VOYAGER 9

SUMMARY GEOLOGICAL & GRID MAP

031



Gradient array IP Anomalies

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FIG. 3, 4

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VOYAGER 9

SUMMARY GEOLOGICAL & GRID MAP

ANOMALY SUMMARY MAP

The final component of the field work on V9 was the drilling of a 150m hole into the IP anomaly on the NE part of the grid.

(ii) Geochemistry

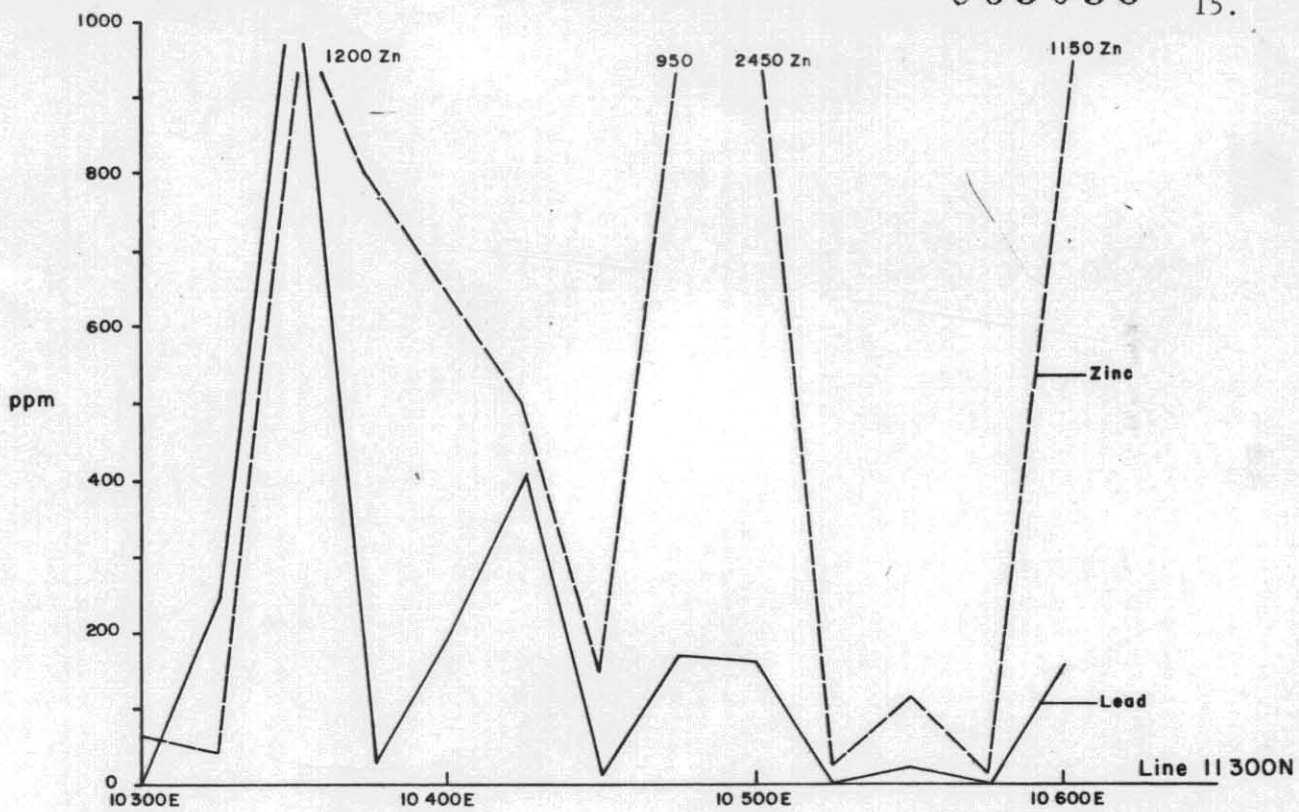
Lines 11300N and 11200N were gridded for 300m between 10300E and 10600E and line 11250N was extended another 200m east to 10700E.

C horizon samples were collected at 25m intervals along these lines which resulted in a sampling density of 50m x 25m across the main part of the Pb-Zn anomaly. The extension of the lines to 10600E showed the main anomaly to close off to the east. However a second anomaly is shaping up on line 10300E centred on 10600E. The results are presented as profiles in figure 5.

(iii) Geophysics

Gravity Survey

A gravity survey with stations on a 100m x 25m grid was carried out between lines 10950N and 11550N inclusive (fig 3). Line 11850N was read to aid in the siting of drill hole V9/3 and line 10850N was read with a station spacing of 100m to aid in reliable regional interpretation. In all, 310 stations were occupied. The residual Bouguer Gravity contours are presented on plan 2 and detailed description of the survey can be found in Sumpton (1982). The results were disappointing with no significant residual anomalies being detected.



Voyager 9 Pb-Zn anomaly infill geochemistry.

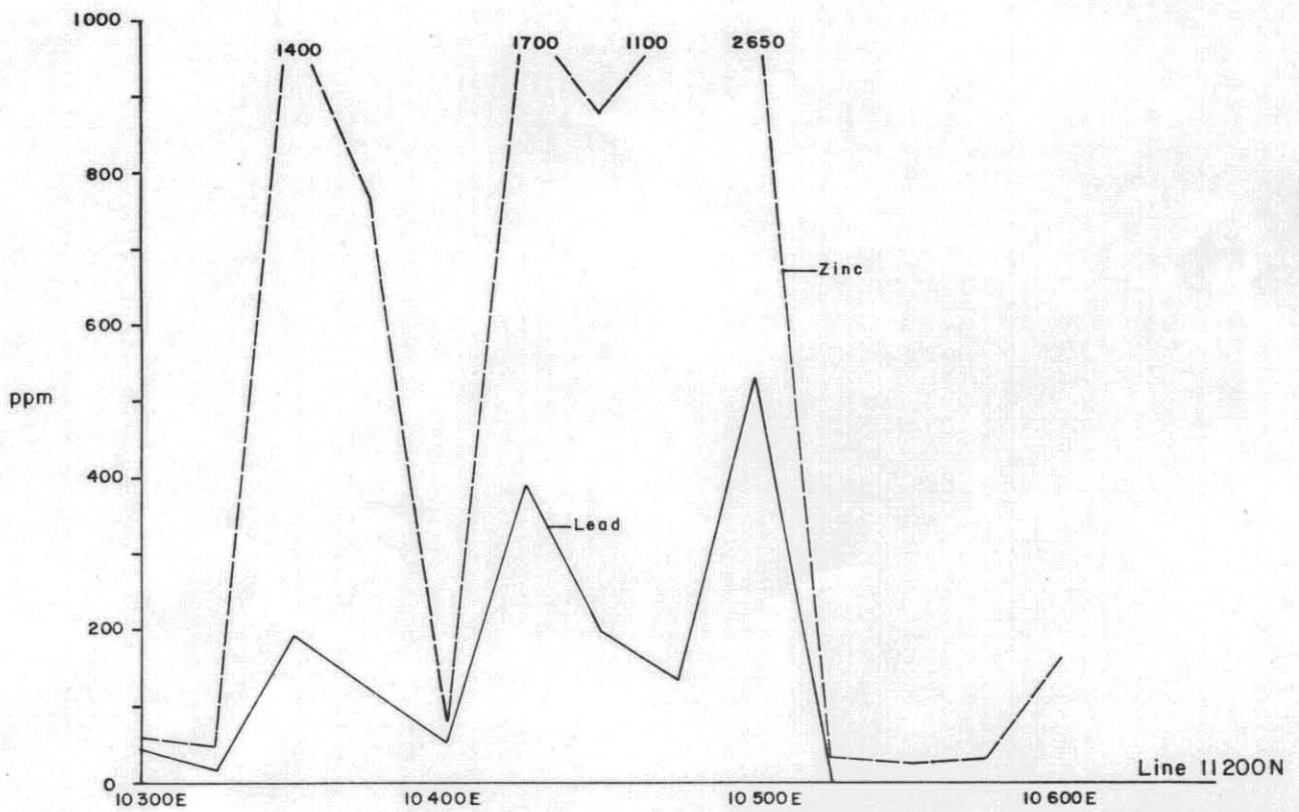


FIG. 5

5 cm

	GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD
DATE 5/8/82	VOYAGER 9
GEOL P.A.W	Pb-Zn ANOMALY INFILL GEOCHEMISTRY
DWN R.Tog	LINES 11 200N & 11 300N
CHKD	

Magnetic Survey

The Voyager 9 magnetic anomaly is actually a complex aggregate of responses from sources at depths ranging from near outcropping to many hundreds of metres. In order to better assess the geometry of the deeper sourced component of the anomaly, several lines (10850N, 11050N and 11250N) were resurveyed for total magnetic intensity to a distance of about 1km each side of the magnetic peak. The profiled data is presented on plans 7-10. A best fit two dimensional body modelled by inversion is shown on plan 11. The line chosen for this modelling exercise was line 11250N as it seems largely free of very near surface features. The reader is reminded of the fundamental ambiguity of potential field data and that this solution, though the fit is good, is in no sense unique. The model shows a near surface body (about 50m to top) with a fairly small susceptibility contrast, with a deep (about 550m) body beneath it with a much higher susceptibility contrast.

(iv) Drilling

Hole	DDH V9-3
Collar	11850N 10400E
Azimuth	090° Magnetic
Dip	-45°
Final Depth	158.55m
Machine	Warman Scout

DDH V9-3 was targeted on the good Dipole-Dipole IP anomaly on the NE part of the grid. The area has no coincident soil geochemical response apart from one isolated value of 1700ppb Pb and 330ppm Zn. Examination of the magnetic map of the grid showed an elevation in the magnetic contours in this area and consequently 3 lines were (11750N - 11850N - 11950N) re-read with magnetics. The profile of total magnetic intensity show a 200nT anomaly to be coincident with the IP (plan 13).

The hole was drilled to a depth of 158.55m and intersected quartz-feldspar, chloritic, crystal tuffs interbedded with a sequence of sediments comprising fine sandstones, siltstones, cherty siltstones and black pyritic shales. In all, 13 separate black pyritic shale units are present and vary in thickness from a maximum of 1.5m to narrow disrupted bands of 1-2cm thickness. Pyrite content varies from 2-5 vol%. The arenaceous sediments interbedded with the black shales are well graded varying from fine, grey-brown sandstones to pale, cherty siltstones. The fine-grained units contain orange-brown, pyrrhotite along bedding planes and are the principal cause of the magnetic anomaly at surface. The black shales always overlie the cherty siltstones and have a sharp contact against them.

Four units of dark grey, medium-coarse grained, porphyritic, crystal tuff occur in the hole and appear to be concordant with bedding in the sediments. In the upper unit clasts and schlieren of fine siltstone are present suggesting scouring and erosion of the underlying sediment during deposition. In thin section the tuffs comprise of 5-10%, 3-5mm diameter, euhedral, partially embayed, quartz phenocrysts often with a glomeroporphyritic habit. Partially sericitized lath shaped feldspars showing pronounced carsblad twinning (orthoclase?), are present as 2-4mm long phenocrysts. They have an exsolved opaque phase which leads to a pseudo 'perthitic' texture. Smaller 1-2mm lath shaped feldspar phenocrysts, with a well defined albite twinning, also occur. These are contained within a fine-grained groundmass consisting predominantly of sericitized feldspar. Calcite and pyrite are the principal accesory minerals and pale green chlorite rich lamellae transgress the rock defining the cleavage and imparting the green colouration.

Geochemistry

Geochemical values from 1m samples of split core are presented below:

	Range ppm	
Cu	X -	440
Pb	X -	965
Zn	20 -	1600
Ag	X -	2.5
Fe	0.58%-	4.9%

X denotes below the detection limit

The highest copper value of 440ppm corresponds to the black pyritic shale between 27 and 28m. This also has an anomalous zinc value of 200ppm. Locally the zinc values in the black shales are highly anomalous especially in the disrupted shale unit between 94 - 95m where a value of 1600ppm Zn is reported.

(iv) Conclusions

DDH V9-3 has proven the existence of a thick sequence of weakly pyritic sediments on the north-east margin of the V9 grid. In view of the fact these sediments represent marine sedimentation under reducing conditions, with intermittant vulcanicity, then they represent a very favourable ore-forming environment. Their responsiveness to IP and magnetic surveys means the horizon is easily recognisable and additional work is recommended to follow the horizon along strike and to drill any coincident geochemical/IP targets which may emerge. The Pb/Zn anomaly on the central-eastern part of the V9 grid could perhaps be classified in this category.

The gravity survey failed to detect any near surface bodies of dense material over the central part of the V9 grid. However, the magnetics indicate a significant mass of magnetic rock at a depth of about 500m. This body could be quite high in its magnetic mineral concentration and may represent magnetite dykes related to the Cambrian granite which crops out on the western margin of the V9 grid.

It is worth noting that gravity and magnetic data are consistent. A computer model of the gravity profile generated by the geometry of the magnetic model, with a density contrast ascribed to it such as one might expect from the implied magnetite concentrations is shown on plan 12. Such a response could be present in the total Bouguer gravity data*, taking into account geological and instrumental noise levels.

* Such a profile shape would not be evident on the residual profiles as its wavelength (related to depth of source) is greater than that for which the regional/residual filter was designed.

3.2 VOYAGER 19

(i) Introduction

The Voyager 19 grid covers an area of 1.3km x 1.8km on the western flank of the Mt Osmond syncline (fig 2). Originally defined as an alteration zone having anomalous rock chip geochemistry (Large, 1981) the area was the focus of a detailed exploration program in the 1980/1981 field season (Wilson et. al. 1981) which included the following:

- Geological mapping 1:2500 scale
- C horizon soil sampling survey 100x25m density
- Gradient array IP survey
- Dipole - Dipole IP surveys
- Magnetic survey (100m x 12.5m density)
- Moving source Turam (MST)
- Costeaning
- SP survey

Much of this work was systematic coverage of the whole grid and led to the discovery of massive sulphide mineralization in a Jacro hole on line 13300N. The IP, SP and MST surveys and costeaning were centred on this mineralized area at the close of the 1981 field season.

The following work was completed during the 1981/1982 field season and is detailed in this section of the report:

- Gravity survey of the V19 grid
- Infill gridding and soil sampling
- Costeaning
- Dipole-Dipole IP surveys
- Drilling of 5 diamond holes

(ii) Geophysics

Gravity Survey

A detailed gravity survey consisting of some 1100 stations was conducted. The stations were spaced initially on a 100m x 25m grid with infill stations as required. For a full description of this survey see Sumpton (1982).

The principal aim of the survey was to detect any relatively shallow deposits of massive sulphide material, which, if large enough to be of economic interest, should generate a detectable gravity response. No response which could be reliably attributed to such a body was detected. The bulk of the residual gravity features which may have as their source discrete, dense bodies are so small in amplitude as to be impossible to accurately resolve from the geological/instrumental noise envelope.

Although not attributable to a compact dense source, there is a broad residual high of about $4ums^{-2}$ covering the northern part of Wart Hill (refer plan 14). This anomaly was of some interest as it was thought that it may be caused by a marked increase in sulphide content within a particular stratigraphic zone. DDH V19/3 was designed to test this anomaly.

IP Surveys

Five lines of IP/Resistivity were carried out during the field season, four on the geochemically anomalous zone south of Wart Hill, and one on line 12700N as follow up to a residual gravity high. The Dipole-dipole array was used throughout with a dipole spacing of 50m. The data is presented in pseudosection form on plans 15-19. In the southern area, the east-west lines 11900N, 12000N and 12100N all show a distinct chargeability high centred near 10350E. This feature is best developed on line 12000N where the source appears relatively narrow and discrete, with a shallow depth to top. On line 11900N, the anomaly is much broader and less well defined, whilst on line 12100N the response

cannot be properly resolved from that attributable to the pyritic carbonaceous shale to the east. The north-south line 10375E shows a diffuse pattern of high chargeabilities indicative of the traverse direction lying close to that of the strike of the anomalous source.

Line 12700N, positioned to cover a residual gravity high, shows no significant anomalous response.

SP Surveys

Self Potential was measured on lines 12000N and 12100N, only background readings were recorded.

VLF-EM Survey

The prospect was covered by a VLF-EM survey on a line spacing of 100m with a station spacing along these lines of 25m. A contour map of the inphase data filtered according to the method of Fraser (1969) is presented on plan 20. The technique was used as an aid to geological mapping as its ability to resolve relatively small conducting bodies such as massive lead-zinc accumulations in this environment is small. A strong 'conductor' is generated by the carbonaceous shale on the east of the grid. The responses on 12600N and 12700N about 10200E are most likely terrain effects produced by Wart Hill.

041

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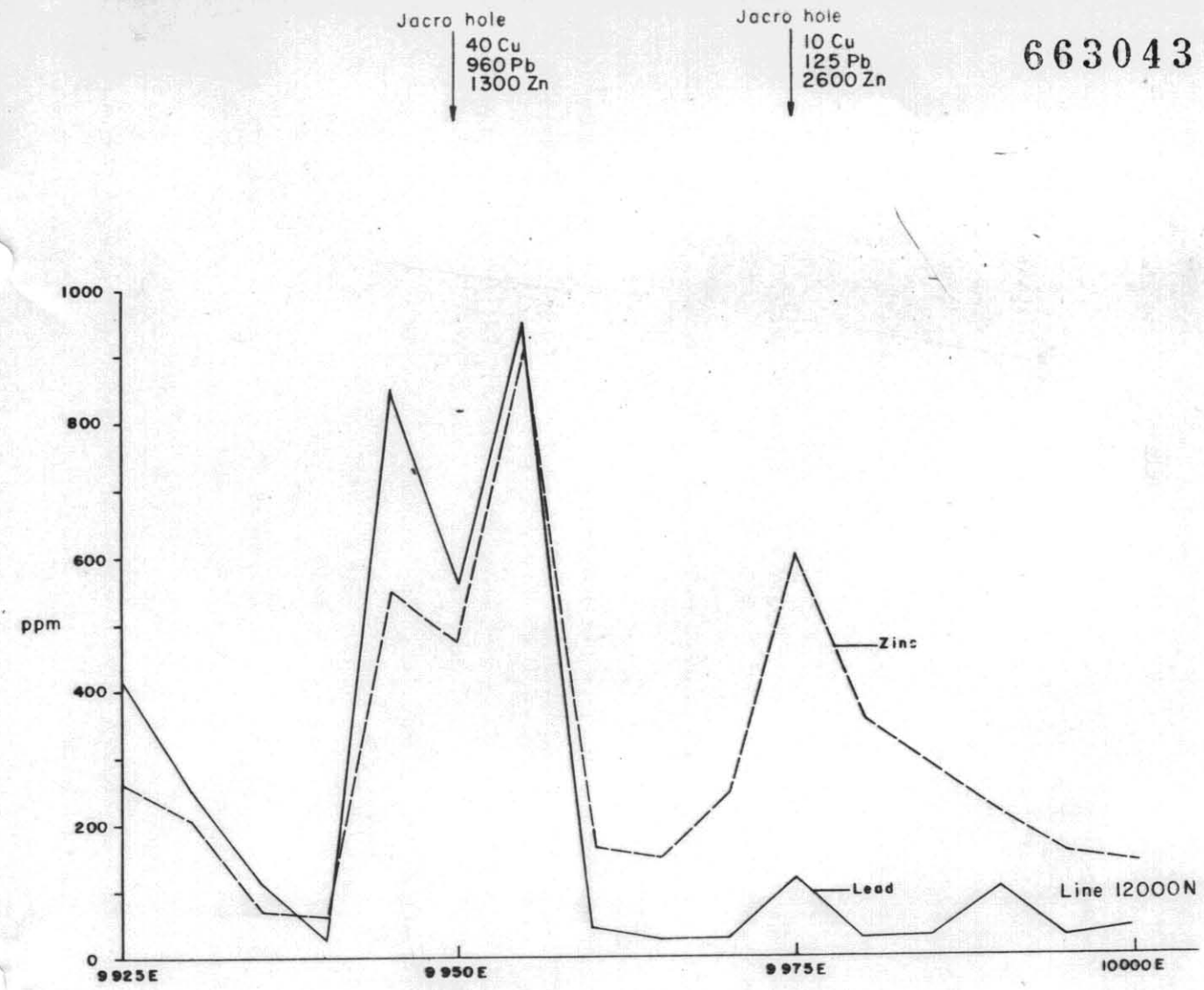

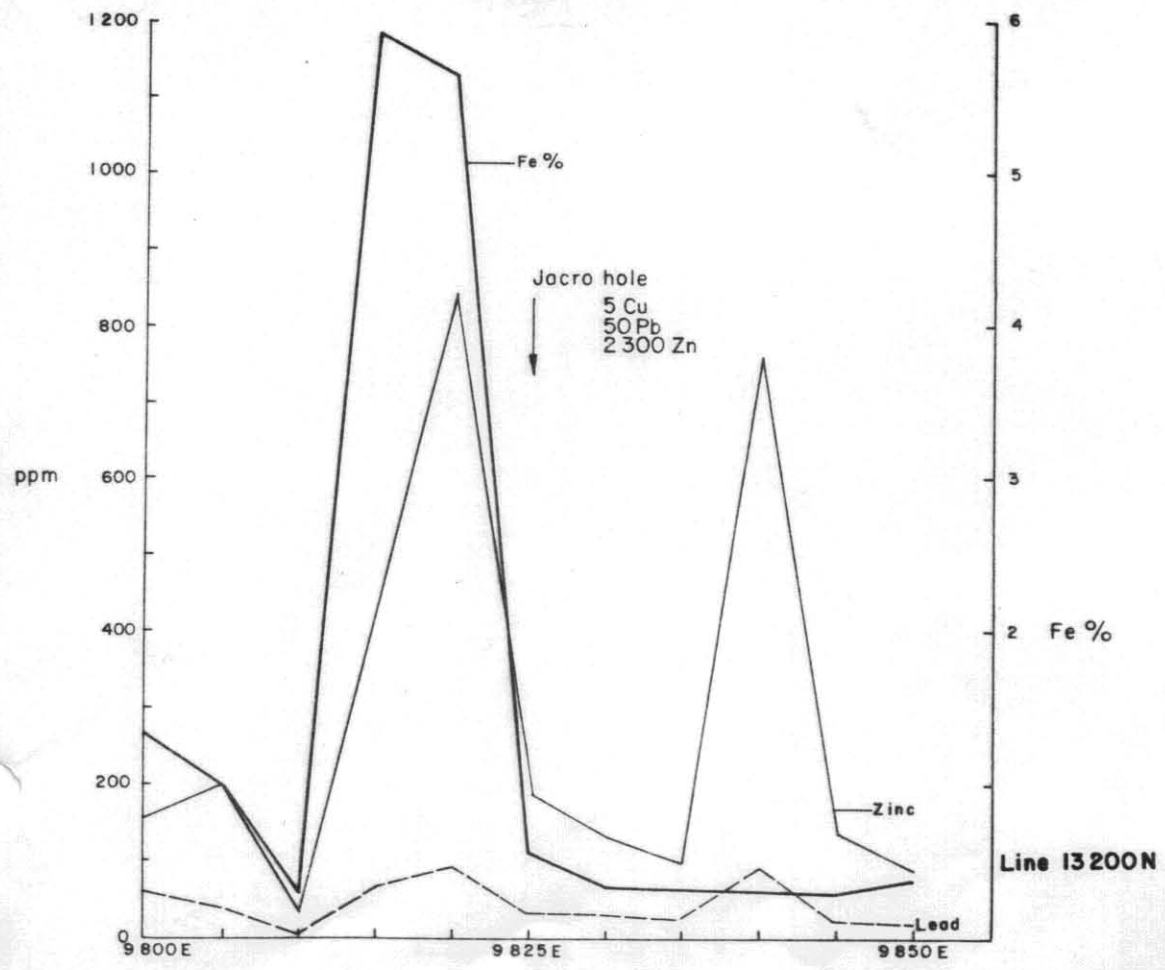

Voyager 19, Fig. 6

(iii) Geochemistry

Infill Geochemical Sampling (50m x 25m)

Four intermediate lines were surveyed between 11800N-12200N on the V19 grid corresponding with the area of high, but erratically dispersed, Pb-Zn geochemistry. This resulted in a sample density of 50m x 25m which has proved quiet effective elsewhere for delineating mineralization more accurately (Wilson, 1981). Contouring of the resulting data are however still very irregular and emphasise the variability of metal dispersion in this area. Results are presented in plans 21 to 24.

Anomaly 12000N 9925E - 10000E

This Pb-Zn anomaly was re-sampled by the Jacro rig at 5m intervals, over 75m corresponding with the peak of the initial soil anomaly (960ppm Pb, 1300ppm Zn and 125ppm Pb, 2600ppm Zn). According to the contouring convention adopted the zinc values should all exceed 200ppm and the Pb values 100ppm over the 75m interval.

The findings are plotted in profile form and confirm the existence of two anomalous horizons (fig 6) one 20m in apparent width with Pb/Zn values averaging 800ppm and 600ppm respectively.

Anomaly 12300N - 9775E

The central part of this wide Pb-Zn anomaly was sampled by the Jacro rig at 5m centres. Zinc values as shown in figure 7 which are consistently above 400ppm and peak at 2450ppm at 9760E. Lead values are much lower falling within the range 50 - 300ppm. Iron values follow those of zinc and are anomalously high (3-4%) probably reflecting pyrite content of the bedrock.

043

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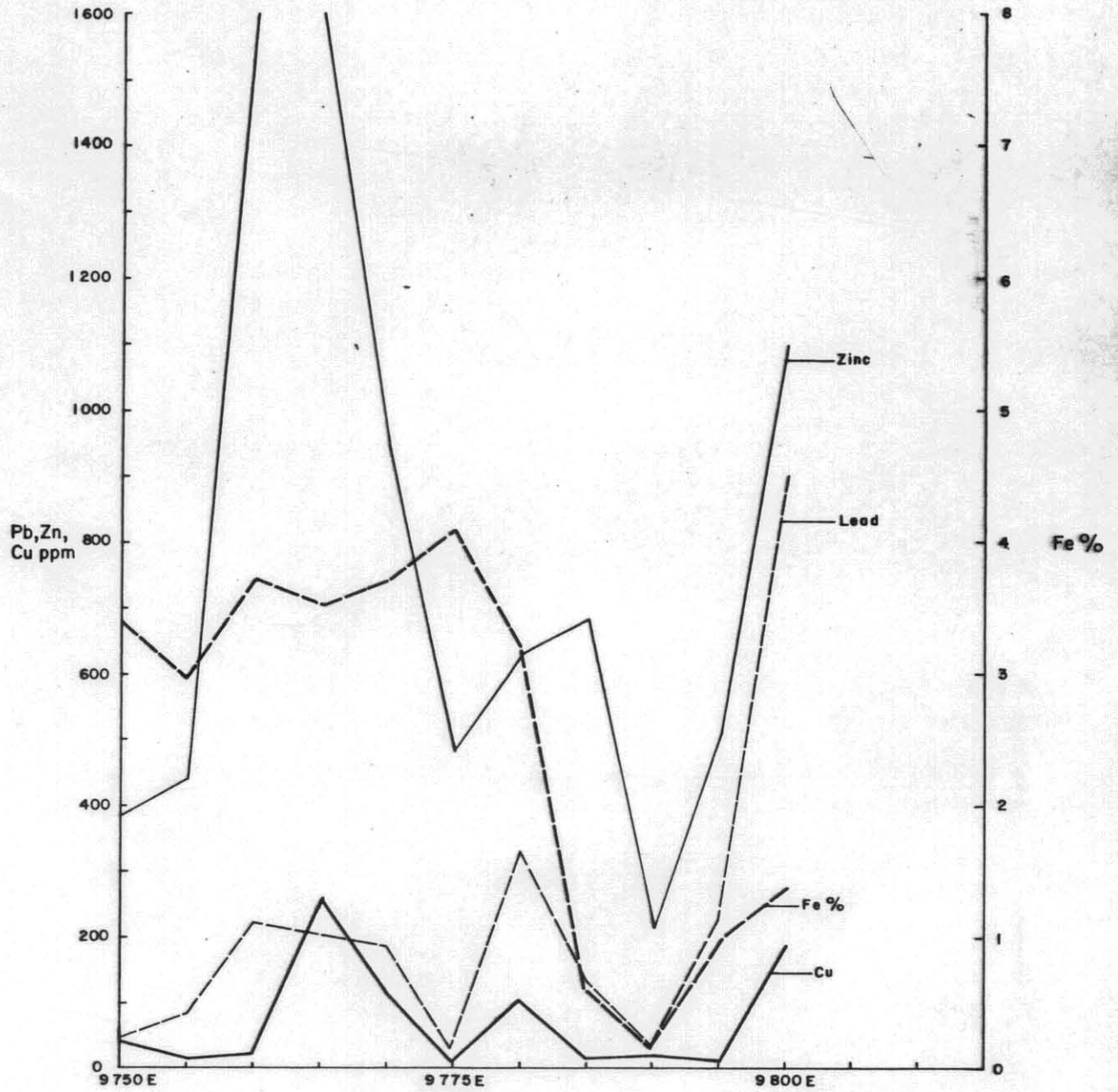

FIG.7

	GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD
DATE 5/8/82	**VOYAGER 19**
GEOL P.A.W	JACRO INFILL SAMPLING (5m)
DWN R.Tog	GEOCHEMICAL RESULTS
CHKD	

Anomaly 13200N 9825E

This single station anomaly had a peak value of 2300ppm zinc but with only background copper (5ppm) and lead (50ppm). C horizon soil samples were collected from a 50m wide zone centred on 9825E (fig6). A 10m wide zone having anomalous zinc (> 400ppm) and high iron (> 5%) was outlined. A second isolated anomalous zinc value of 750ppm is present 20m to the east of this zone.

On the basis of the high iron content and narrowness of the anomaly, it is likely to represent a black shale or basic dyke.

(iv) Costeans

Two costeans were excavated during the field season, the first was centred on the small 'hand specimen' size outcrop of massive sulphide at 13045N 10060E. A second costean was exacavated as an eastern extension to the costean (No 2) on line 13400N of the previous season.

Costean 13400N 10059E - 10099E

The costean was excavated in the flat-lying, marshy, button grass plain 100m north of the massive sulphide mineralization on line 13300N. A conductive zone was outlined in this area resulting from the VLF-EM survey and provided a secondary reason for the costean. (see plan 20.)

Average depth to weathered bedrock was 60cm through a cover of water logged peat and quartz scree. An orange - buff coloured, homogeneous quartz-eye crystal tuff was exposed along the length of the costean. Sampling proved difficult due to the 'clayey' and friable nature of the rock. Consequently chip samples were collected over 2m samples width and the results are tabulated below.

Sample Number	Co ordinates	Geochemistry				
		Cu	Pb	Zn	Ag	Fe%
KR 9367	10063 - 65	10	15	130	X	.54
KR 9368	65 - 67	10	10	120	.5	.54
KR 9369	67 - 69	15	20	85	X	.68
KR 9370	69 - 71	10	20	135	.5	.67
KR 9371	71 - 73	15	30	85	X	.64
KR 9372	73 - 75	15	25	100	X	.59
KR 9373	75 - 77	15	30	110	X	.68
KR 9374	77 - 79	15	45	290	X	.58
KR 9375	79 - 81	10	10	230	X	.65
KR 9376	81 - 83	10	20	165	X	.53
KR 9377	83 - 85	10	10	175	X	.43
KR 9378	85 - 87	10	15	225	.5	.41
KR 9379	87 - 89	15	30	370	.5	.47
KR 9380	89 - 91	10	35	80	.5	.40
KR 9381	91 - 93	10	140	450	X	.41
KR 9382	93 - 95	10	135	585	.5	.32
KR 9383	95 - 97	10	95	365	1.0	.32
KR 9384	97 - 99	10	60	70	X	.315

TABLE 1 Costean 13400N
Geochemical values from 2m 'chip' samples.

Apart from slightly anomalous zinc values the results are disappointing and negate the possibility of strike continuation of the sphalerite - galena mineralization. Similarly there is no obvious explanation for the VLF-EM anomaly on the eastern part of the costean.

Costean 12045N - 10060E

A small sub-outcropping massive sulphide was observed during infill sampling of the northern part of the V19 grid at the end of the 1980/81 field season (Wilson et. al. 1981). A 16m long costean was excavated normal to the strike of the sulphide outcrop, further excavations also exposed the sulphide lense along strike (see fig 8).

The massive sulphide attains a maximum thickness of 2m and is exposed over a minimum strike length of 8m. It is faulted abruptly to the north but is open to the south in a series of podiform discontinuous outcrops. The lense stands out from the more incompetent enclosing tuffs. Principal microstructures are a strong lineation with variable ($\pm 35^{o}$) plunge to the south and a pronounced near vertical cleavage which is reflected in the mineral banding. Locally isolated tight slump folds were noted in sandy layers in cut hand specimens.

The mineralization consists of narrow 1-3mm wide bands of honey-gold coloured, fine-grained sphalerite which alternate with $\pm$ 1 cm grey bands of coarsely crystalline galena which locally form transgressive stringers and rounded clots. Quartz is the principal gangue and is present as 'augen' or narrow lenses which parallel the sulphide banding. Baryte is a minor accesory.

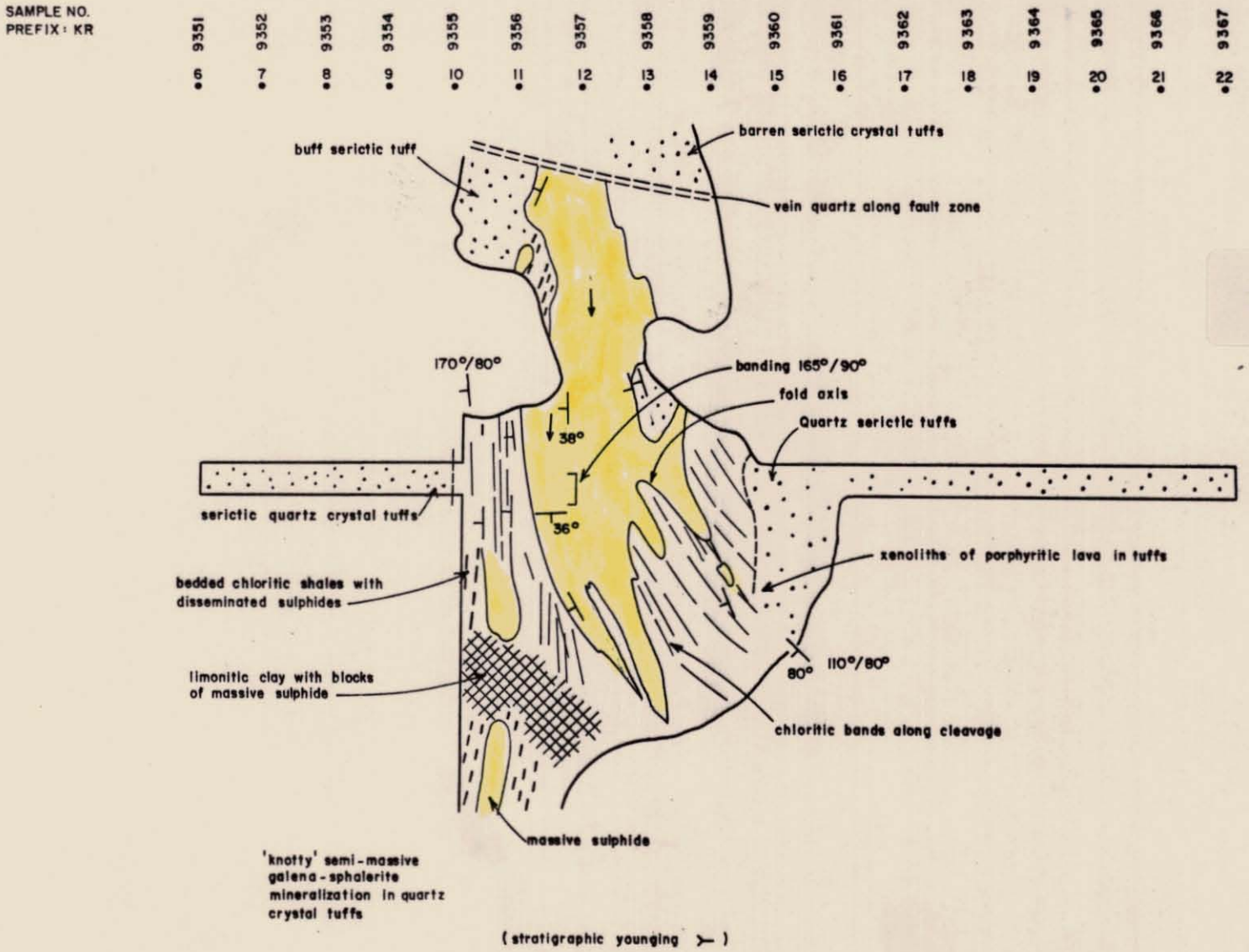

FIG. 8

Details of Geology of Costean on Line 13045mN, 10060mE

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The sulphide is 'overlain' to the west by a $\pm$ 1m thick, thinly bedded, dark grey chloritic shale which contains disseminated to semi-massive galena-pyrite-sphalerite mineralization. Occasional 10-15cm wide lenses of massive sulphides were also noted. Bedding dips at 80° to the west and the unit is overlain by sericitic, quartz-eye crystal tuffs.

The massive sulphide is influenced by a second nearly E-W cleavage on its eastern margin and mobilization of sulphide into this cleavage is in evidence (fig 8). A yellow-brown weathering, homogeneous quartz-sericite tuff is in contact with the sulphide at its eastern margin.

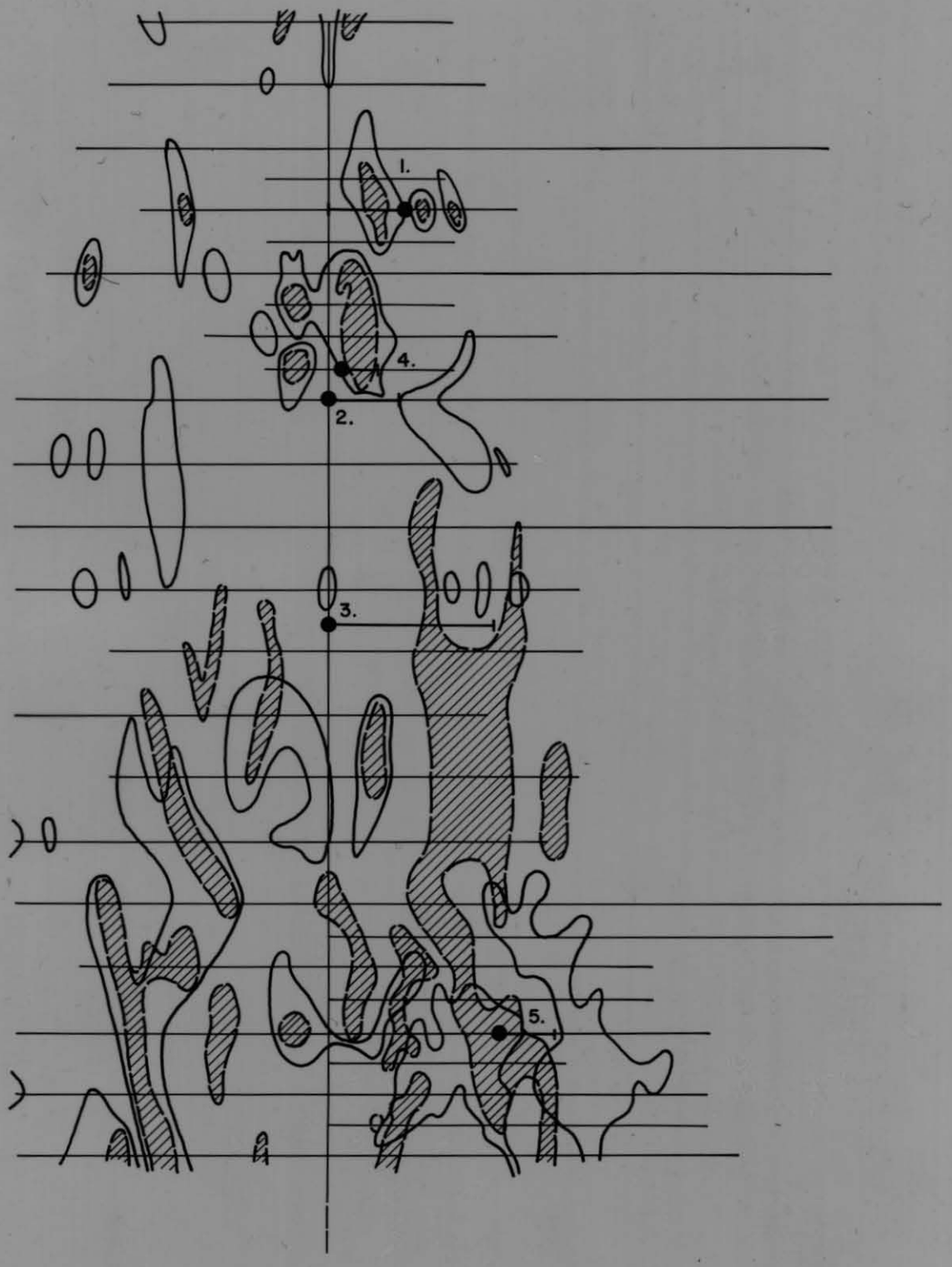
Geochemical values from 1m channel samples are tabulated. The best value of 0.28% Cu, 17.3% Pb, 25.4% Zn, 990ppm Ag and 1.15ppm Au occurs at the centre of the lense. Average values for the mineralized zone adopting a 10% Pb/Zn cut off over 3m are:-

Pb%	Zn%	Cu%	Ag(ppm)	Au(ppm)
13.94	21.9	0.2	680	0.84

A striking feature brought out by the geochemistry is the low Fe content of the mineralization which is between 0.4% and 1%. The presence of chloritic shale (footwall) with good base metal geochemistry and the abrupt metal cut offs to the east (hanging wall?) suggest an easterly facing for the mineralization and local overturning of the succession in this area. The mineralization is 250m south of the sulphide lense on 13300N and has similar setting, morphology and grade. Notable differences however are the higher average silver content (> 880ppm vs 200ppm) gold content (1.0ppm vs 0.7ppm) and Pb/Zn ratio (0.72 vs 0.44) of the southern lense. These chemical dissimilarities could be significant in terms of proximity to source.

Sample Number	Interval (m) (Eastings)	Cu	Pb	Zn	Ag	Fe%	Au ppm	As	Ba
KR 9351	10056-57	90	1950	160	9	0.56	.075	8	540
KR 9352	10057-58	75	2450	630	4.5	0.71	.038	10	730
KR 9353	10058-59	20	950	120	1.5	0.61	X	3	710
KR 9354	10059-60	30	1.08%	1550	22	0.46	.05	9	710
KR 9355	10060-61	80	1.66%	1.07%	58	0.67	0.1	17	700
KR 9356	10061-62	1750	15.5%	20.3%	770	0.3	0.9	200	4450
KR 9357	10062-63	2800	17.3%	25.4%	990	0.43	1.15	160	830
KR 9358	10063-64	1500	9.01%	20.0%	279	0.27	0.48	130	660
KR 9359	10064-65	195	2.25%	3.36%	92	0.99	0.21	46	860
KR 9360	10065-66	45	3550	1700	8.0	0.65	0.02	10	740
KR 9361	10066-67	195	3950	2100	16.0	1.25	.038	16	660
KR 9362	10067-68	10	555	175	3.0	0.47	.012	3	400
KR 9363	10068-69	10	715	315	3.5	0.46	.025	2	420
KR 9364	10069-70	30	860	1150	2.0	0.61	.012	4	270
KR 9365	10070-71	15	340	310	2.0	0.44	.012	6	650
KR 9366	10071-72	30	255	210	1.5	0.59	.012	4	850

TABLE 2: Geochemical results from 1m channel samples, costean 13045W 10060E. Sample locations and geology are shown in figure 8.



COLLAR POSITION
DDH 1-5

DDH 1—200·4m
DDH 2—160·2m
DDH 3—301·2m
DDH 4—70·6m
DDH 5—150·2m

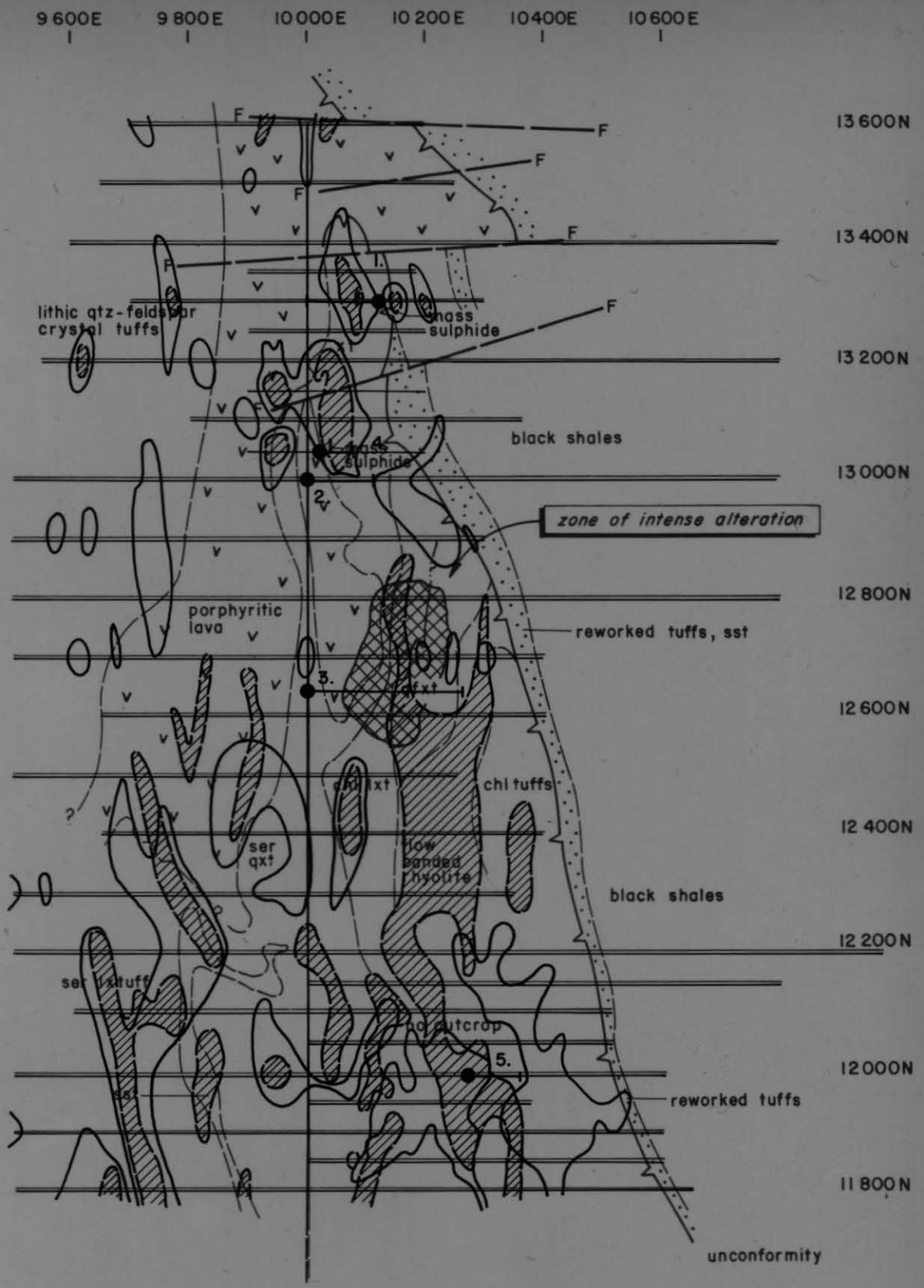
SOIL GEOCHEMISTRY
Pb >200 ppm
Zn >200 ppm

5 cm

663052

V-19 Geochemistry

Fig. 9,



COLLAR POSITION
DDH 1-5

DDH 1—200·4m
DDH 2—160·2m
DDH 3—301·2m
DDH 4—70·6m
DDH 5—150·2m

SOIL GEOCHEMISTRY
Pb >200 ppm
Zn >200 ppm

5 cm

663054

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PROSPECT SUMMARY DIAGRAM

Fig. 9, 11

V-19 Geochemistry

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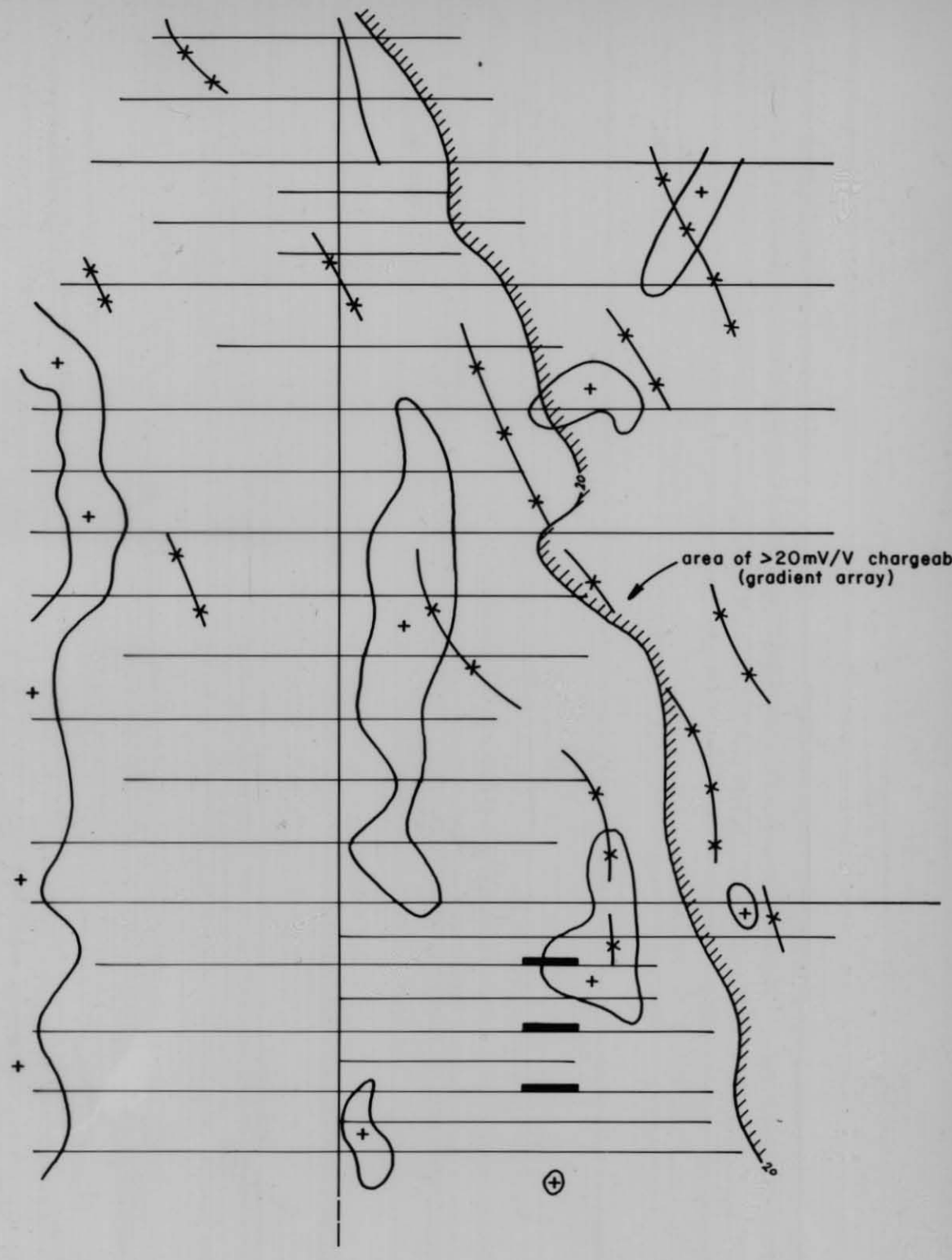
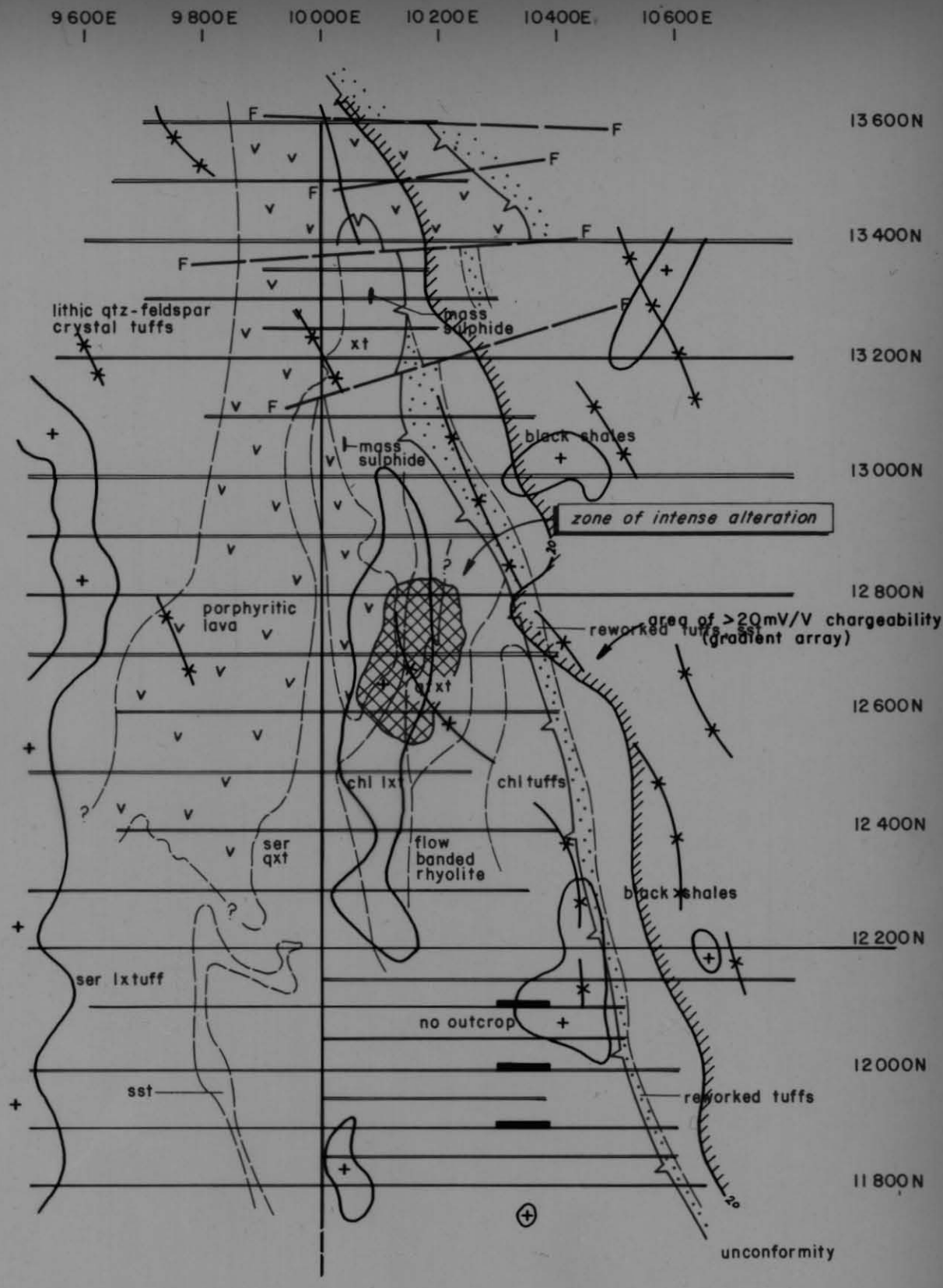


LEGEND:
- Dipole - Dipole I.P. anomaly centres
- Bouger - Gravity zone 1 gravity unit
- V.L.F. - E.M. conductor axis

5 cm

663053



LEGEND:
- Dipole - Dipole I.P. anomaly centres
- Bouger - Gravity zone 1 gravity unit
- V.L.F. - E.M. conductor axis

5 cm

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PROSPECT SUMMARY DIAGRAM

V-19 Geophysics

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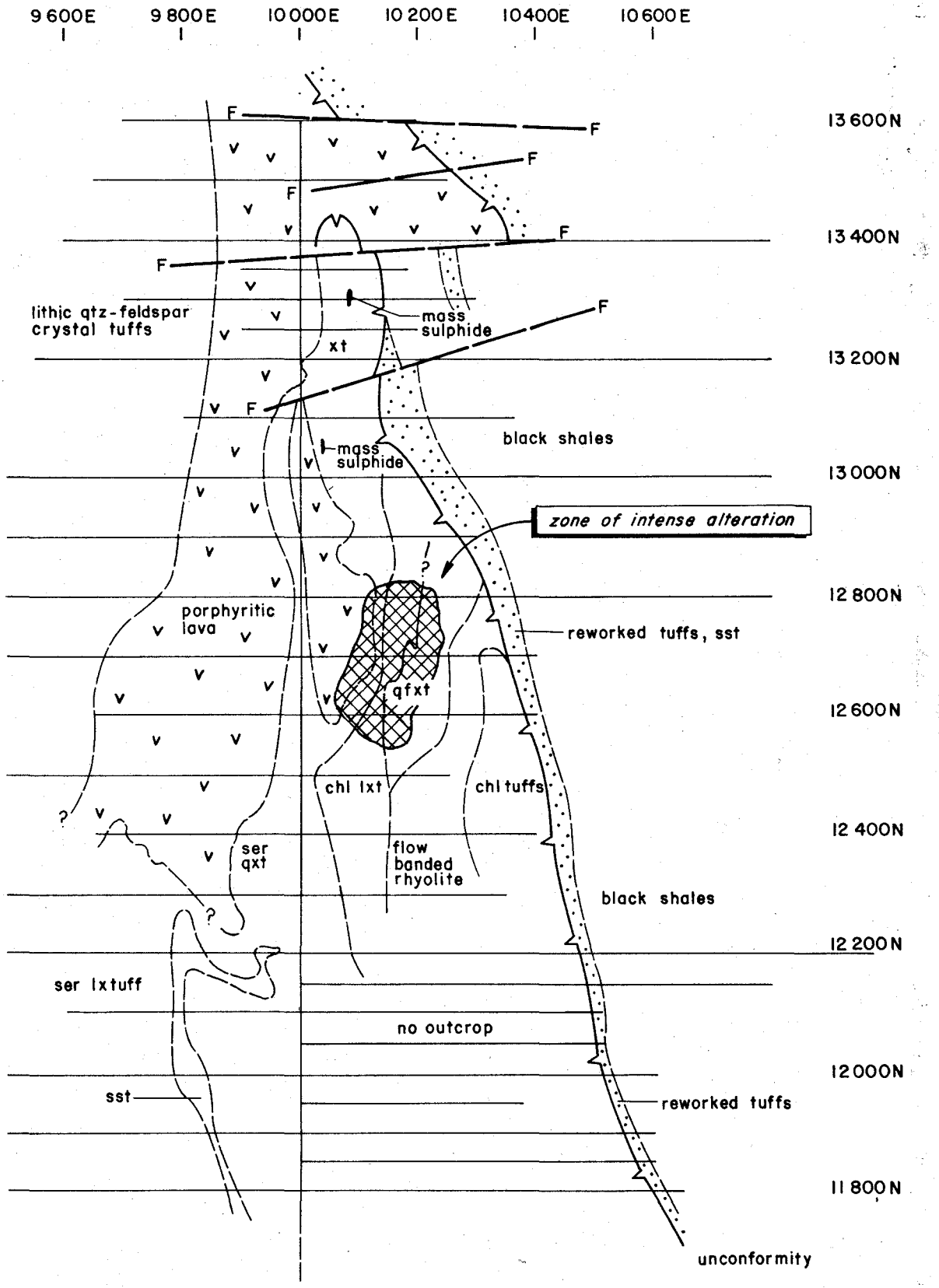

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1:10 000

PROSPECT SUMMARY DIAGRAM

11 050

(v) DIAMOND DRILLING

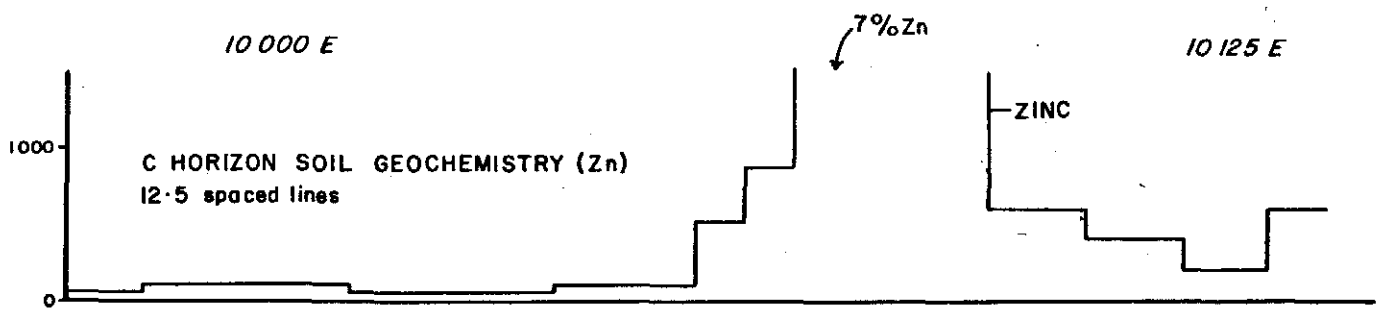
Introduction

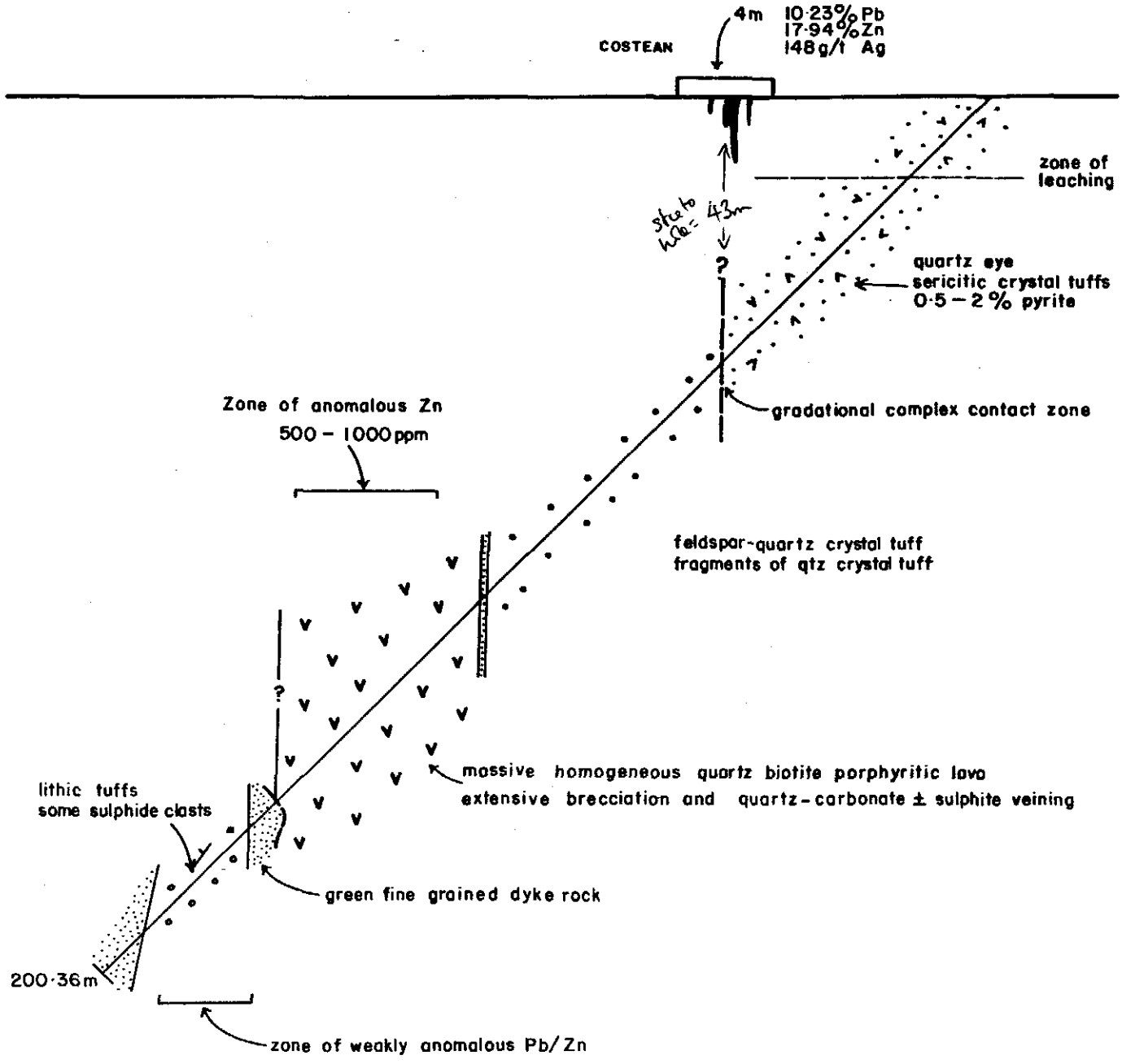
Five diamond drill holes, totalling 884m, were drilled during the 1981/82 field season. Three holes were designed to intersect the subsurface continuation of the massive sulphide mineralization exposed in the two costeans on lines 13300N and 13045N (DDH 1, 2, and 4). A fourth hole (DDH 3) was drilled into the side of the Wart Hill to test a broad gravity feature which corresponds with the sequence of highly altered pyroclastics. The final hole was drilled as the first phase of a 2-3 hole program to test the irregular zone of Pb-Zn geochemistry and coincident IP zone on the SE part of the grid (fig 9). Profiles showing geology of the drill holes are presented in plans 25-28 detailed geological logs, analytical results and geochemical profiles are presented in appendices 2-6.

DDH 1

Collar Position	13300N 10125E
Azimuth	270°T
Dip	-45°
Final Depth	200.36m
Recovery	99%
Date Commenced	December 1981
Date Completed	December 1981
Rig	Mindrill F30

This hole was drilled to intersect the down dip extension of the massive sulphide lense centred on 13300N 10085E. Target depth was between 65 and 75m to give an intersection 50m vertically below the costean on the assumption of a vertical or steep easterly dip (plan 25 and figure 12).





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SUMMARY LOG

DDH V19/1

5 cm

Fig. 12

A sequence of buff coloured, fine-medium grained, quartz-eye, sericitic crystal tuffs were intersected in the first 60m. They comprise of 25-30 modal% quartz crystals which are present in two forms. Firstly as glomeroporphyritic clusters of 1-2mm diameter crystals having euhedral and embayed margins. A second distinct population of ± 1mm broken and fractured subhedral crystals is present in the granular fine-grained, quartzo-feldspathic groundmass.

Patchy pervasive carbonate alteration of the groundmass is related to a series of close spaced fractures through the rock. Pyrite is disseminated throughout but rarely exceeds more than 1vol%. The cleavage is generally at 45° to long core axis and parallels bedding where the latter is visible. Weathering occurs to a depth of 25m above which the rocks are very leached and porous, the porosity being attributed to dissolving of carbonates.

This unit grades into a sequence of medium to coarse grained, lithic, crystal tuffs. Angular highly irregular pervasive fragments of a green weathering, feldspar-quartz crystal tuff are enclosed in a fine-grained, buff coloured, sericitic crystal tuff. The unit is pyritic throughout. Brecciation of lithic fragments and infilling by siderite veinlets is common. Further down the hole the fragment/host rock relationship changes and the green-yellow, feldsparphyric tuff forms the groundmass to angular fragments of buff coloured quartz crystal tuffs.

A 1m thick, dark green, very fine-grained rock separates the lithic tuffs from a massive homogeneous porphyritic lava. This unit is interpreted to be a basic dyke and in thin section is an altered assemblage of carbonate and sericite. Textural evidence suggests some of the carbonate pseudomorphs a phenocrystic assemblage of plagioclase laths. Black opaque minerals, having circular outlines, form about 10 vol% of the rock and occur in clusters probably after an early ferromagnesian mineral.

A massive porphyritic lava extends from 115-155m. It is buff-pale green in colour and contains about 25 vol% phenocrysts principally of euhedral and embayed quartz crystals. Phenocrysts of bleached biotite and plagioclase, the latter totally pseudomosphed by calcite, also occur. The groundmass is a very fine grained recrystallized 'granular' quartzofeldspathic aggregate with carbonate.

The lava is extensively brecciated and net veined by quartz-calcite ± sulphide veins. Pyrite, sphalerite and galena mineralization can be observed in the centre and margins of the veins.

Like the upper contact, the base of the lava unit is intruded by a fine-grained carbonate altered dyke rock. A thick bed of lithic crystal tuff, containing upwards of 1 vol % disseminated pyrite and galena-sphalerite mineralization in calcite-quartz veins, is present from 159-189.4m. Here the lithic fragments include black 'cherts', porphyritic lava and rare rounded clasts of massive pyrite-sphalerite mineralization.

The hole was terminated in a dark grey-green very fine-grained mottled rock similar to the 'dykes' which form the margin of the porphyritic lava.

The core was split and 1m lenths analysed for Cu, Pb, Zn, Ag and Fe. The results are presented in profile format and raw analytical data in the field logs in Appendix 2. The zinc values in particular reflect the geology very well and highlight two anomalous areas which correspond to the sericitic tuffs at the top of the hole which have backgrounds of 150ppm Zn. The highest zinc values correspond to the porphyritic lava unit and underlying lithic crystal tuff. Here values over 1000ppm Zn are common and are attributed to the sulphide clasts in the tuff and the calcite-quartz ± sulphide veins.

Lead essentially follows zinc whilst iron shows a stepwise increase down the hole corresponding with the major lithological breaks at 35m (> 4000ppm) 110m (> 1%) 190m (2%).

Summary statistics are presented below:

Metal	Range	Mean (ppm) (Arithmetic)	Standard Deviation
Cu	5 - 110	24	27
Pb	5 - 6150	202	890
Zn	25 - 3450	499	608
Fe	0.29% - 7.1%	1.56%	1.25%
Ag	X - 6.5	0.5ppm	N.L.

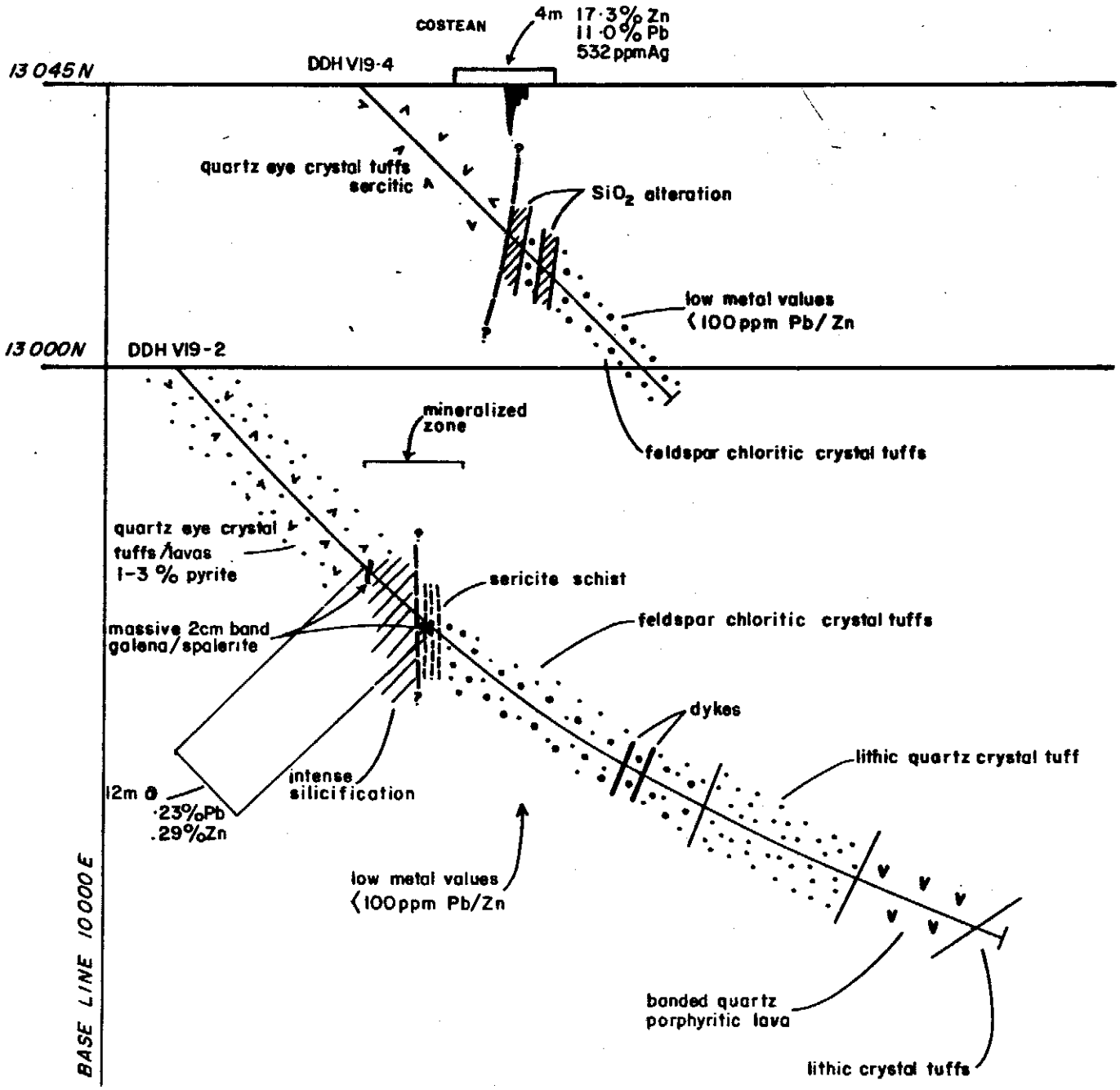
DDH VI9-2

Collar Postion	13000N 10010E
Azimuth	90°T
Dip	-45°
Final Depth	160.20m
Core Recovery	95%
Date Commenced	17-1-82
Date Completed	27-1-82
Rig	Mindrill F30

This hole was collared to intersect the down plunge extension of the massive sulphide mineralization exposed in the costean on line 13040N. Target depth was calculated to be between 70m and 80m on the basis of a 35° southerly plunge based on cleavage/bedding intersection (plan 26 and figure 13).

Difficulties were encountered due to bad ground and deflection of the hole between 38 and 56m. Reaming through this zone resulted in straightening of the hole and re-coring of the interval.

The hole penetrated a varied sequence of grey-buff coloured sericitic quartz porphyrys. They contain 10-35 vol % euhedral - subhedral, embayed, 1-3mm diameter quartz crystals contained within an aphanitic groundmass of quartz and sericite. The sericite shows a preferred orientation paralleling and defining the principal cleavage which is commonly 38-40° to long core axis. Occasional tabular sericite 'crystals' were observed in thin section and probably represent feldspar pseudomorphs. Alteration of the groundmass of this rock precludes a meaningful genetic identification but the clastic nature of many of the quartz grains suggests a pyroclastic, probable ash flow origin.



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SUMMARY LOG

DDH VI9-2+4

5 cm

Fig. 13

Carbonate veinlets with disseminated galena are present at intervals throughout this unit. A narrow 2cm wide band of bedded massive sulphide was observed at 57.2m. Alteration becomes quite intense over the interval 45-94m. Disseminated pyrite is present between 45-57m and ranges from 1-3 vol % and partly coincides with a zone of intense silicification. The silica replaces the groundmass of the tuff but preserves the porphyritic texture. Grains of disseminated galena are present in this zone especially in quartz-calcite veins which transgress the silicified zone.

The silica rich zone is underlain by a highly altered 'schistose' sericite (feldspar) crystal tuff. These distinctive, medium grained, green-yellow coloured rocks extend from 62-106m. They contain 20 vol % yellow albite-oligoclase? euhedra now totally replaced by sericite. The sericitized feldspar phenocrysts are 5mm x 2mm in size and have their long axes aligned with the cleavage. Quartz crystals comprise 15 modal % and are 2-3mm in diameter. The groundmass is composed of very fine grained quartz crystals and fine sericite-chlorite intergrowths. Remnants of a 'perlitic' texture to the groundmass are visible in thin section.

From 106-123m a complex relationship exists between the feldspathic 'dacites' and quartz rich sericitic tuffs. Irregular bands and 'pods' of the dacite are enclosed by a sericitic quartz crystal tuff. Often the relationships are too nebulous to enable a clear distinction to be made between host rock and 'xenolith'. Like the sequence in V19 DDH 1 it appears the dacites are present as xenoliths in a sericitic quartz tuff which would suggest an easterly younging. These grade into lithic crystal tuffs which extend from 123 - 140.4m and contain 1 - 3cm long fragments of massive pyrite mineralization and porphyritic tuff.

A fine-grained rock consisting of 5 vol % 1 - 2mm quartz euhedra, with embayed margins, in distinct bands separated by septae of sericite occurs from 140.4 - 154.8m and is interpreted to be a flow banded porphyritic rhyolite. A sharp contact at 90° to the long core axis separates this lava from a mottled quartz eye lithic crystal tuff. Alteration is intense due to a network of yellow carbonate-quartz-veins. The quartz crystals are zoned and have clear cores of 1 - 2mm diameter which are mantled by fine-grained granular quartz forming a sphere up to 5mm in diameter.

Geochemical values from split core samples are presented in appendix 3 and are summarised below:

	Range (ppm)	Arithmetic mean	Standard deviation
Cu	5 - 590	25	64
Pb	5 - 6500	349	853
Zn	25 - 11500	601	1303
Ag	0.5 - 19.5	N.D.	N.D.
Fe	0.5% - 2.95%	N.D.	N.D.

Two zones having elevated base metal geochemistry are present in the intervals 42m - 62m and 124 - 144m. The first zone corresponds with the basal part of the quartz-sericite tuffs immediately above the zone of silicification. Here zinc values peak at 1.15% with 0.65% Pb, 475ppm Cu and 9.5ppm Ag over 1m. A 2cm wide band of massive sulphide was recorded in this interval.

The second anomalous zone is associated with lithic crystal tuffs below the dacites the latter having a low background in Pb and Zn.

DDH V19-4

Collar Position	13045N 10040E
Azimuth	90°T
Dip	-45°
Final Depth	70.6m
Core Recovery	100%
Date Commenced	31-1-82
Date Completed	3-2-82
Rig	Mindrill F30

After completion of DDH V19-2 and failure to intersect significant mineralization it was decided to drill under the costean on line 13045N for an intersection 30m vertically below the costean. The aim of the hole was to core the mineralization for geological-geochemical information, target depth was 35m - 60m. The hole was terminated at 70.6m having passed under the costean without intersecting any mineralization (plan 26 and figure 13).

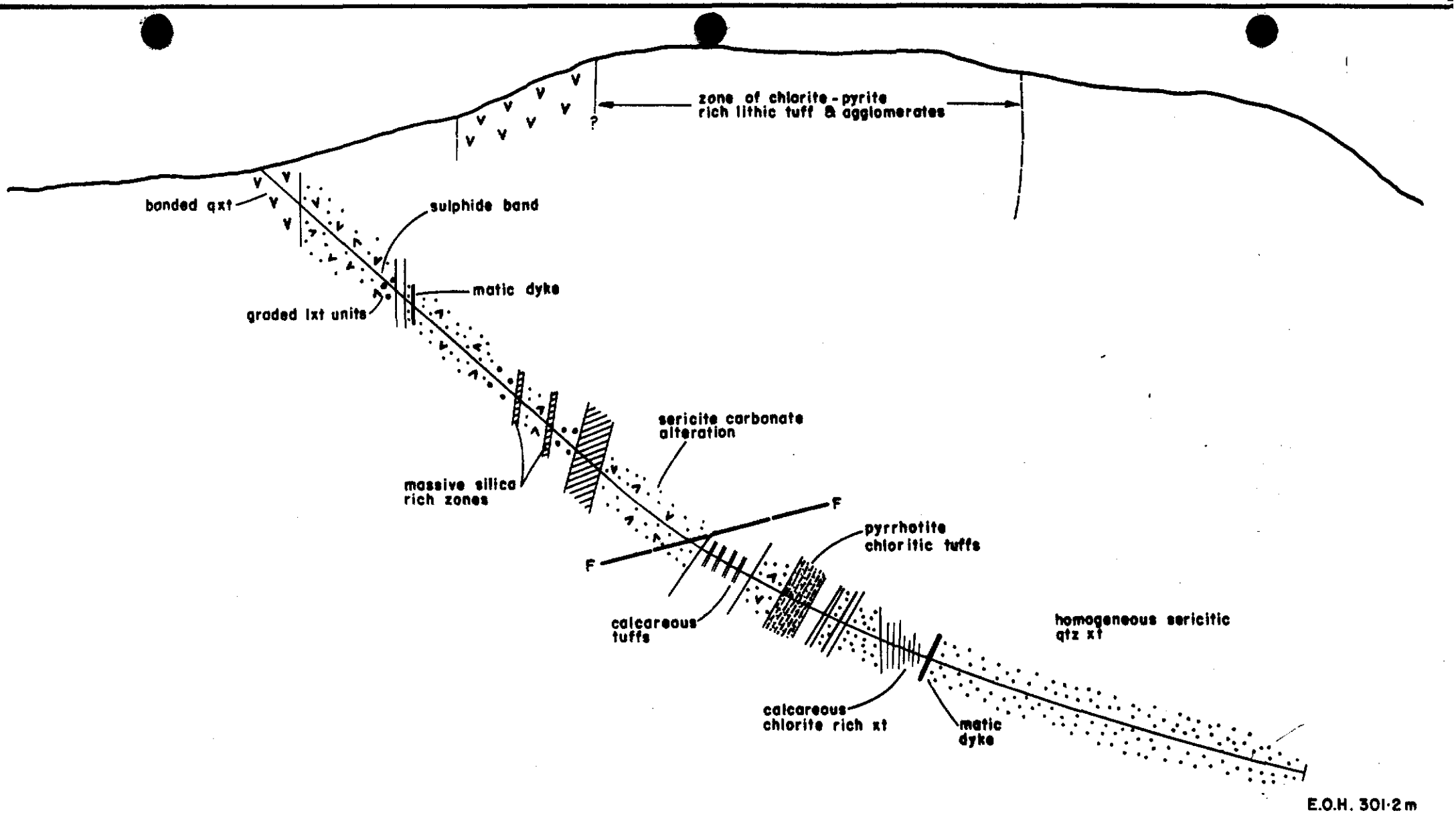
The lithotypes intersected correlate with the upper 100m of DDH 2. Variable buff-pale grey coloured, quartz-sericite, crystal tuffs with interbedded porphyritic rhyolites and lithic tuff bands, occur in the first 34m. Bedding is present in this sequence especially in the lithic tuff horizons which contain flattened ovoid porphyritic lava clasts measuring 10mm x 3mm. A few pyritic-chlorite rich fragments were observed at 24m.

Between 34m and 38m the unit is intensely silicified and has a gradational contact with a medium-grained, feldspar-quartz porphyritic rock which correlates with the 'dacite' of DDH 2 and extends to the bottom of the hole.

Geochemical results from split core were disappointing in view of the proximity of the massive sulphide mineralization. The results are presented graphically in appendix 5. Both lead and zinc values are higher in the sericitic rhyolite tuff (within 300ppm and 500ppm respectively) compared with the porphyritic dacite (20ppm and 30ppm respectively). Copper values average 10ppm in the upper zone and fall below 5ppm in the porphyritic dacite.

DDH V19-3

Collar Position	12650N 10006E
Azimuth	90°T
Dip	-45°
Final Depth	301.20m
Core Recovery	99%
Date Commenced	17-1-82
Date Completed	1-2-82
Rig	Warman Scout



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DDH - V19-3

Fig. 14

DDH 3 was collared on the western slopes of Wart Hill and was drilled to 301.2m to try and explain the broad N-S trending 4ums^2 gravity anomaly. The gravity anomaly coincides with the main zone of hydrothermal alteration on Wart Hill which is in contact with the porphyritic rhyolite lavas to the west. The hole therefore afforded the opportunity of testing the favourable stratigraphy another 300m to the south of the massive sulphide lense exposed on line 13045N.

A sequence of lithic crystal tuffs extends from surface to 53m. The unit is extremely sericitic and consists of fragments of porphyritic lava in a medium grained quartz crystal tuff groundmass. Microscopic examination of the tuff showed the presence of cuspate glass shards in the groundmass. The base of the unit is strongly silicified but the xenoliths are still recognisable.

A similar 'graded' ash flow unit occurs between 54m and 113m and has three massive zones of silicification. The widest silica zone is 8m thick and marks the base of the lithic crystal tuff.

Carbonate rich fine-medium grained quartz crystal tuffs occur below the silicified zone and extend to 150m where they are faulted against a lithologically complex sequence. This sequence commences with banded crystal tuffs. The bands are 90° to the core axis and represent carbonate rich layers alternating with sericite rich layers. This unit grades into fine-grained chloritic tuffs which contain 10 - 15% green chlorite fiamme. Disseminated orange-brown pyrrhotite is also present in this unit.

A fine grained green-grey mafic unit (dyke?) separates this sequence from a thick homogeneous medium-grained, quartz-sericite tuff which extends from 219m to the end of the hole. Notable feature of this rock is the pseudomorphing of alkali feldspar phenocrysts by carbonate.

Correlation with the surface geology of Wart Hill is possible in a broad sense. The porphyritic lava unit recognised extensively at the surface is not recognised in the hole. However the preponderance of porphyritic lava xenoliths and the quartzphyric nature of the tuffs from 0 - 150m suggests they are possible facies equivalents. The varied and predominantly chloritic lithologies between 150m and 219m presumably correlate with the chlorite-pyrite rich lithic tuffs and agglomerates of Wart Hill. Similarly the homogeneous crystal tuffs in the bottom of the hole reflect the more homogeneous lithologies which outcrop on the eastern slopes of Wart Hill.

With the exception of three zones of geological interest, the core was sampled by continuous grinding of 2m lengths. In three zones of interest the core was split and sampled every metre, the zones are:

39 - 52m		Broad zone of massive silicification (Au)
112 - 120m		Massive silicified zone (Au)
183 - 191m		Chloritic unit with disseminated sulphide

Base metal values are presented in graphical format in Appendix 4. The best value of 1% Zn, 0.52% Pb and 0.1% Cu, 30ppm Ag and 0.95ppm Au occurs in the silicified lithic tuff between 46 and 47m. Here a 2cm wide zoned quartz-carbonate vein had a core of massive pyrite-galena-sphalerite mineralization. Elsewhere in the hole, base metal values are low with the exception of the higher copper background (c 175ppm) between 160 - 300m compared to the upper part of the hole (25ppm). Average values are presented below:

Metal	Arithmetic mean (ppm)	Standard deviation
Cu	96	114
Pb	118	326
Zn	474	496

Gold values in the principal silicified zones are distributed erratically and generally fall below the detection limit of 8ppb. The following samples are excepted:

From (m)	to (m)	Au (ppm)
44	45	0.009
46	47	0.955
48	49	0.052
49	50	0.016
116	117	0.013
117	118	0.016

The gravity anomaly corresponds spatially to the interval between 150 and 210m down the hole. Here the lithologies are finer grained and have a higher colour index than the quartzphyric lithologies higher up the hole. Density measurements were carried out on core at intervals down the hole:

Sample depth (m)	Lithology	Density	Average
38.5	Crystal lithic tuff	2.60, 2.63	2.61
139.9	Quartz crystal tuff	2.68, 2.74	2.71
152.6	Porphyritic lava	2.72, 2.71	2.71
212.15	Chloritic 'dacite'	2.81, 2.85	2.83

The results show a small increase in density within 0.1 - 0.2g/cc for the chloritic tuffs. It is theoretically feasible for this density contrast to explain the weak gravity anomaly recorded on the surface.

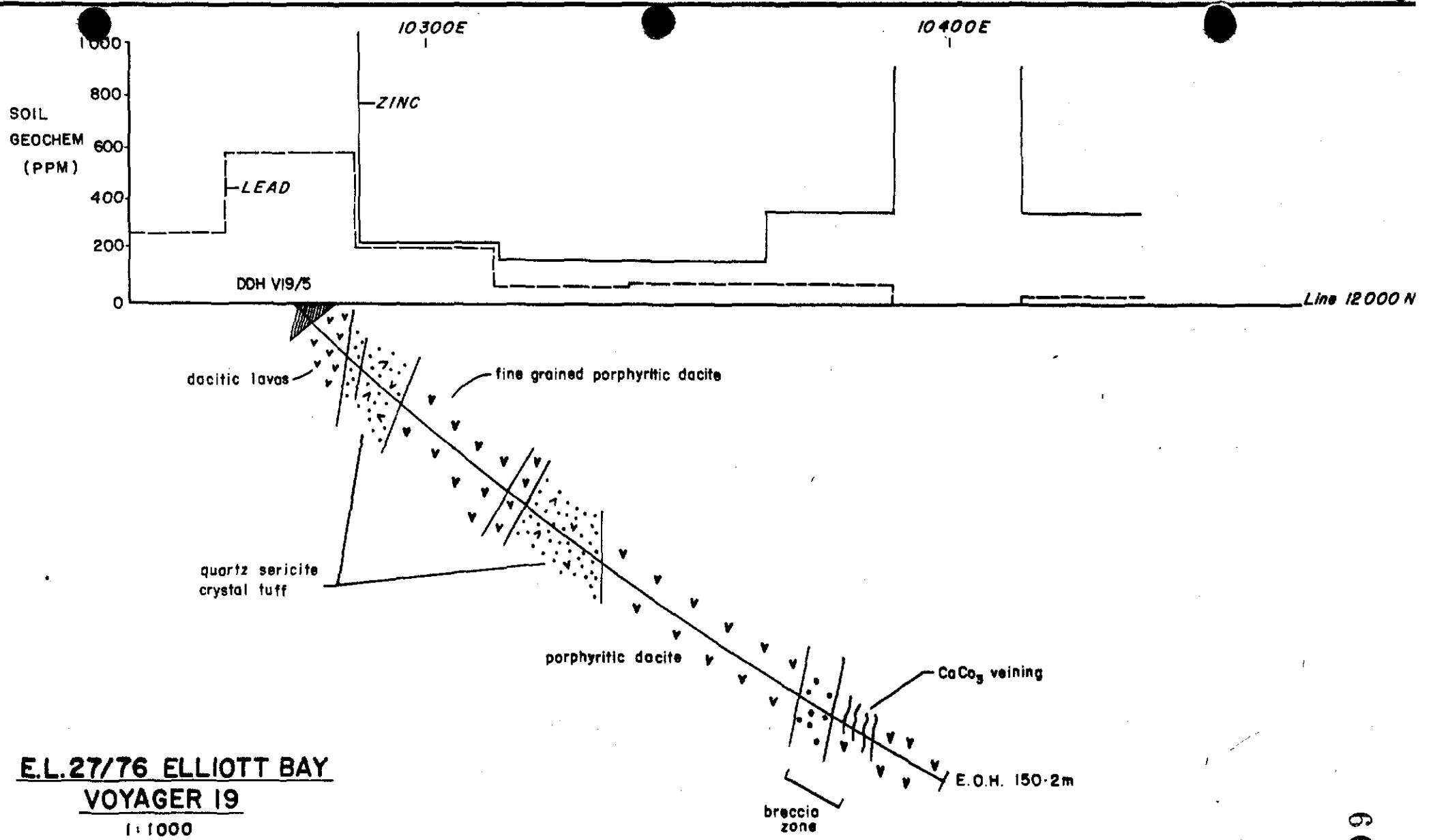
DDH V19-5

Collar	12000N 10275E
Azimuth	90°T
Dip	-45°
Final Depth	150.20m
Recovery	100%
Date Commenced	3-3-82
Date Completed	11-3-82

DDH V19-5 was collared on the southern slopes of Wart Hill and drilled as the first of two holes to test the broadly coincident chargeability-geochemical zone. A second hole was proposed, collared at 10125E, to include the best area of Pb/Zn geochemistry and lower part of the chargeable zone.

Outcrop in the area is lacking and the rock types intersected in the hole are distinctly different from their counterparts north of Wart Hill. Overall, the lithologies in DDH 5 are very fine-grained porphyritic lavas of probable dacitic composition with two tuffaceous interbeds. Notable is the scarcity of phenocrystic quartz and almost ubiquitous occurrence of fine spherulites of albite? commonly making up to 60% vol of the rock (KR 11655). The spherulites are usually 0.5mm across and contain radiating fibrous textures which may display sectional extinction under crossed polars. They are partially sericitized and are separted by a fine sericitic meshwork. Sericite also occurs as broad bladed crystals (5mm x 2mm) aligned parallel to cleavage. Black, fine-grained opaque minerals are visible in hand specimen and occur evenly disseminated throughout the rock or as fine aggregates associated with bladed sericite. The origin of the variolitic texture of the lavas is problematic and devitrification of an alkali rich volcanic glass is favoured by the writer at this stage.

Medium-grained quartz-sericite crystal tuffs are interbedded with the lavas and display sharp to gradational contacts. They contain 2-3mm diameter subhedral-anhedral quartz phenocrysts with embayed margins comprising 10 vol% - 15% contained in a strongly sericitized groundmass of angular quartz fragments. In hand specimen dark grey fiamme are visible and give the rock a flattened 'eutaxitic' texture but in thin section they are difficult to discern in the sericitic groundmass.



E.L.27/76 ELLIOTT BAY
VOYAGER 19

1:1000

SUMMARY LOG

DDH V19/5

5 cm

Fig. 15

663069

Primary alteration of the rocks is apparent, the lavas have breccia zones which are extensively veined by silica-carbonate the latter sometimes containing galena. As already mentioned, sericitization is commonplace especially in the coarser grained pyroclastic units. Sulphides however are scarce. Pyrite was observed forming narrow veinlets and disseminations in the crystal tuff unit (within 60 - 67m) and in the porphyritic dacite at 108 - 111m, in both instances forming less than 1 vol % of the rock. A conspicuous black non magnetic opaque mineral, possibly ilmenite is commonly present in the dacites.

Due to the absence of visible mineralization in the hole the core was only sampled by grinding 2m runs. This method reduces both sampling and analytical costs and provides a semi-quanitative cross-check for any anomalies. Contamination problems are however introduced from the galvanised core trays (Zn) which is significant when values are below 500ppm Zn.

Element	Range
Copper	10 - 125ppm
Lead	25 - 1050ppm
Zinc	375 - 2000ppm
Iron	0.97 - 2.95%

Little can be said about distribution of metal content with particular lithologies because of the erratic distribution of values down the hole. Both Pb and Zn values are distinctly anomalous especially in the lower crystal tuff unit (i.e. 70 - 72m 700ppm Pb, 1950ppm Zn) and in the alteration zone in the dacitic lava at 130 - 134m(320ppm Pb, 2075ppm Zn).

(vi) Summary and Conclusions

Massive sulphide mineralization has been traced by costeaning and soil geochemistry over a strike length of nearly 300m. The three holes (DDH 1, 2 and 4) which were drilled into this area of massive sulphide mineralization on V19 north failed to intersect the mineralization at depth. Given the near vertical attitude of bedding and main fold axes in the V19 area, it is unlikely the mineralization was missed due to fold complexity. In fact DDH V19-1 was drilled to the west, because of the influence of the Mt Osmund syncline, whereas V19-2 and 4 were drilled to the east. In all three holes the degree of silicification and sericitization and the occurrence of sulphide rich clasts in lithic tuffs, suggest the stratigraphic equivalent of the mineralization was in fact intersected.

The influence of deformation on the sulphide lenses can be observed in the costeans on lines 13300N and 13045N. On line 13300N boudin-like pods or 'augen' of resistive siliceous 'sinter' are present in the sulphide lense and a southerly plunging synclinal fold closure was observed west of the main mineralized horizon. A strong lineation also indicates a southerly plunge to the fold hinges. Likewise comparable features are visible in the costean on line 13045N.

The apparent lack of continuity of mineralization down dip could be explained by:

1. The massive sulphide in the costeans represent tectonically thickened hinge zones of tight synclinal folds with moderate southerly plunges. DDH V19-2 was designed to test this possibility with the mineralization exposed in the costean on line 13045N.

2. The massive sulphides have an original lensoid shape possibly reflecting a primary 'ponding' effect controlling their distribution.

3. The sulphides have slumped downslope from the centre of exhalation a possibility which is reinforced by the absence of a major footwall alteration zone.

The results of the gravity survey show that a large sulphide body is unlikely to occur within a depth of say 50m on the V19 grid. Similarly the lack of response of IP and EM (Turam) over the mineralized lenses reflect the absence of a significant pyritic halo and the absence of a conductive zone.

On a more positive note the sulphide lenses represent a favourable stratigraphic horizon at which ore forming processes were active. It seems likely the ore generating mechanism was terminated,or at least diluted,by active vulcanicity as reflected by the coarse pyroclastics which host the mineralization. This favourable horizon can be recognised due to the close association of the porphyritic lava units which also extend into the V29 area to the south.

DDH V19-3 was drilled into the side of Wart Hill in order to explain the gravity anomaly which coincides broadly with the Wart Hill alteration zone. Correlation between surface geology and core proved to be difficult and there was no obvious correlation with the geology further to the north. It seems the density increase could reflect a change of rock type from rhyolitic to more andesitic lithologies.

DDH V19-5 was drilled principally on an IP zone on the southern slope of Wart Hill. Trace sulphides were observed at two zones in the hole but below 1 vol % of the rock. The area is also a resistivity high which is understandable given the massive nature of the fine grained lavas. Background values of Pb/Zn are sufficiently high to account for the soil geochemistry at surface.

(vii) Recommendations

A systematic EM survey of the Voyager 19 grid is recommended as a method of testing for massive conductive mineralization to depths of up to 200m below surface. The absence of a surficial conductive overburden makes the area ideal for EM technique such as SIROTEM. The conductivity of the mineralization is sensitive to the amount of sphalerite present but a large tonnage body is likely to have a chalcopyrite rich zone and therefore be responsive to EM techniques. At Que River the conductivity of the eastern S lense provided the signature which led to the discovery of the orebody (Webster and Skey, 1979).

3.3 VOYAGER 22

(i) Introduction

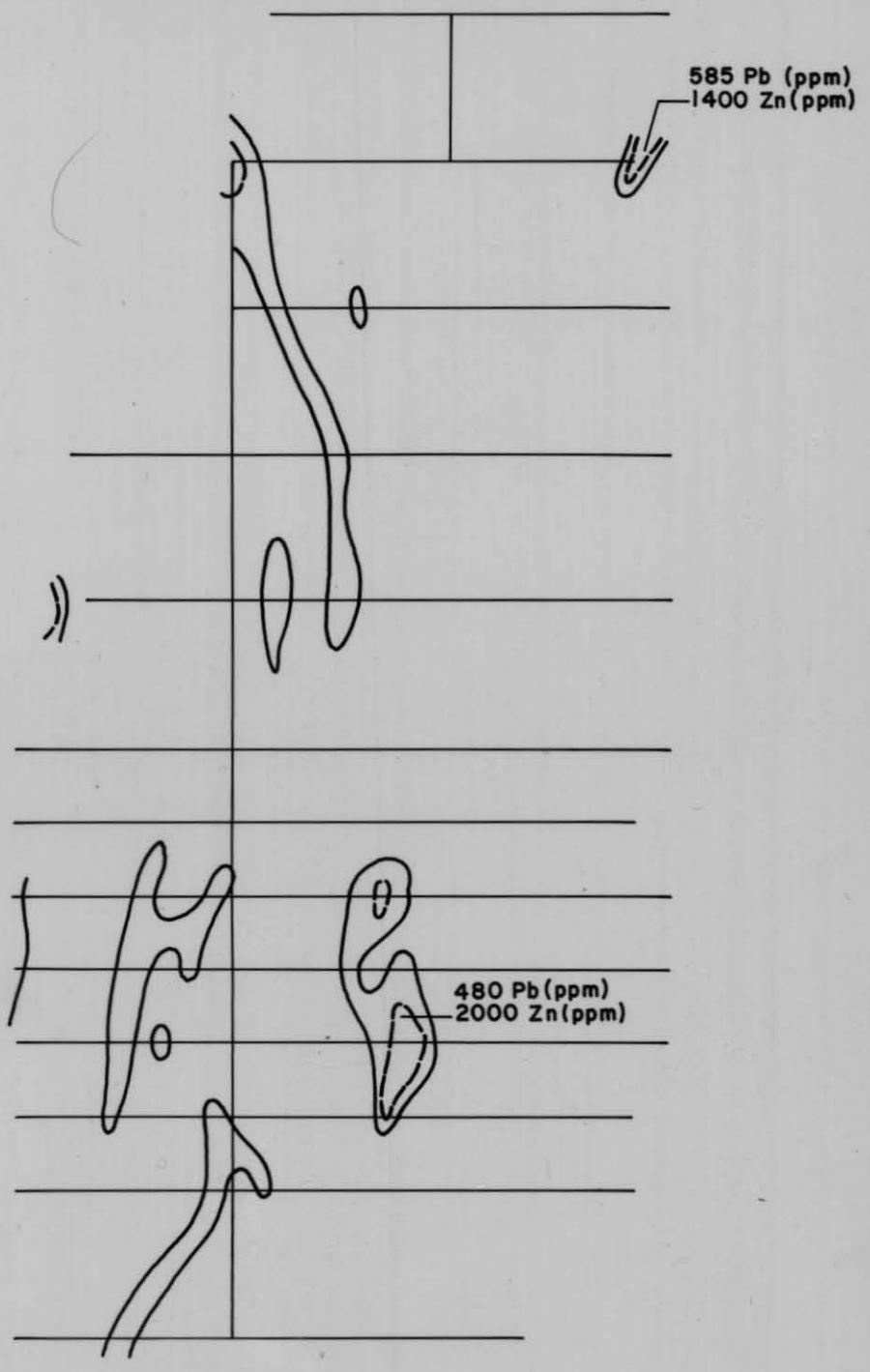
Voyager 22 is defined as the area of hydrothermally altered Wart Hill pyroclastic rocks on the south-eastern flank of the Mt Osmund syncline (fig 2). Previous work on the area has included reconnaissance geological mapping (1:10000 scale), rock chip sampling, gridding (1800m x 900m) and soil sampling. This work outlined three Pb-Zn soil geochemical anomalies which were recommended for follow up work in the 1981/82 field season. The field work consisted of:

1. Infill gridding and soil sampling (100m x 25m density)
2. Detailed geological mapping to a 1:2500 scale
3. Magnetics
4. Extension of the grid to the north along the eastern lines of the Mt Osmund syncline the area referred to as V34

(ii) Geology

The V22 grid consists of a northwesterly trending series of (in order of volume) rhyolitic lavas, crystal lithic tuffs, breccias and ash flows (plan 30 and figure 17).

The most westerly and least deformed unit is a fine to coarse grained, reworked crystal tuff and conglomeratic lithic tuff which correlates with the Tyndall Group. This unit strikes almost due north, and is conformable with the overlying black shales, siltstone, and quartz arenites of the Mt Osmund syncline. In outcrop these rocks are frequently iron stained and grade from coarsely conglomeratic lithic tuffs to fine-grained, reworked, sericitic quartz-feldspar tuffs. The westward fining of grain size where bedding is visible indicates these rocks are dipping and younging to the west.



LEGEND:

>200 ppm Zn in soils

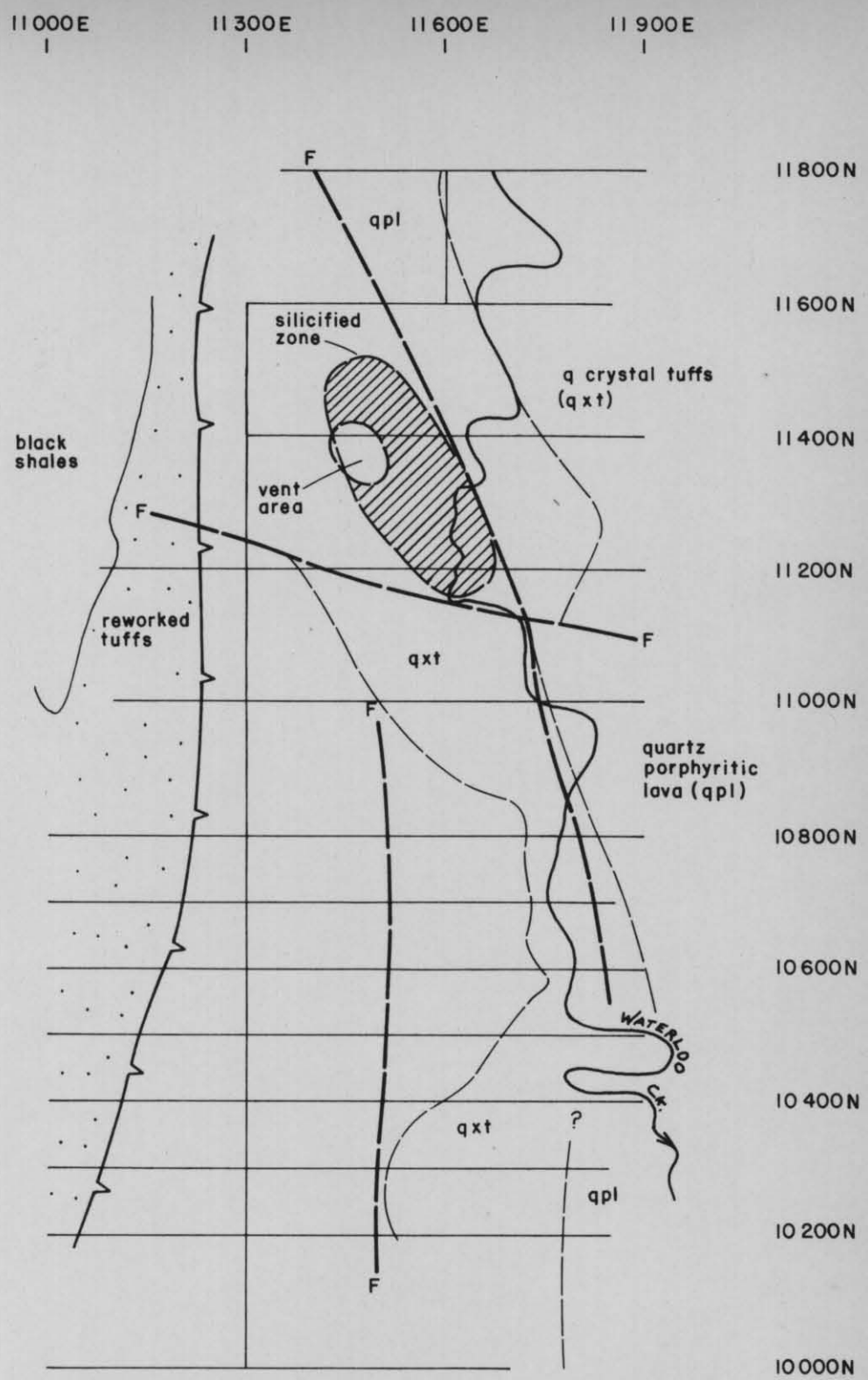
>200 ppm Pb in soils

5 cm

663075.

V-22 Geochemistry

Fig. 16,



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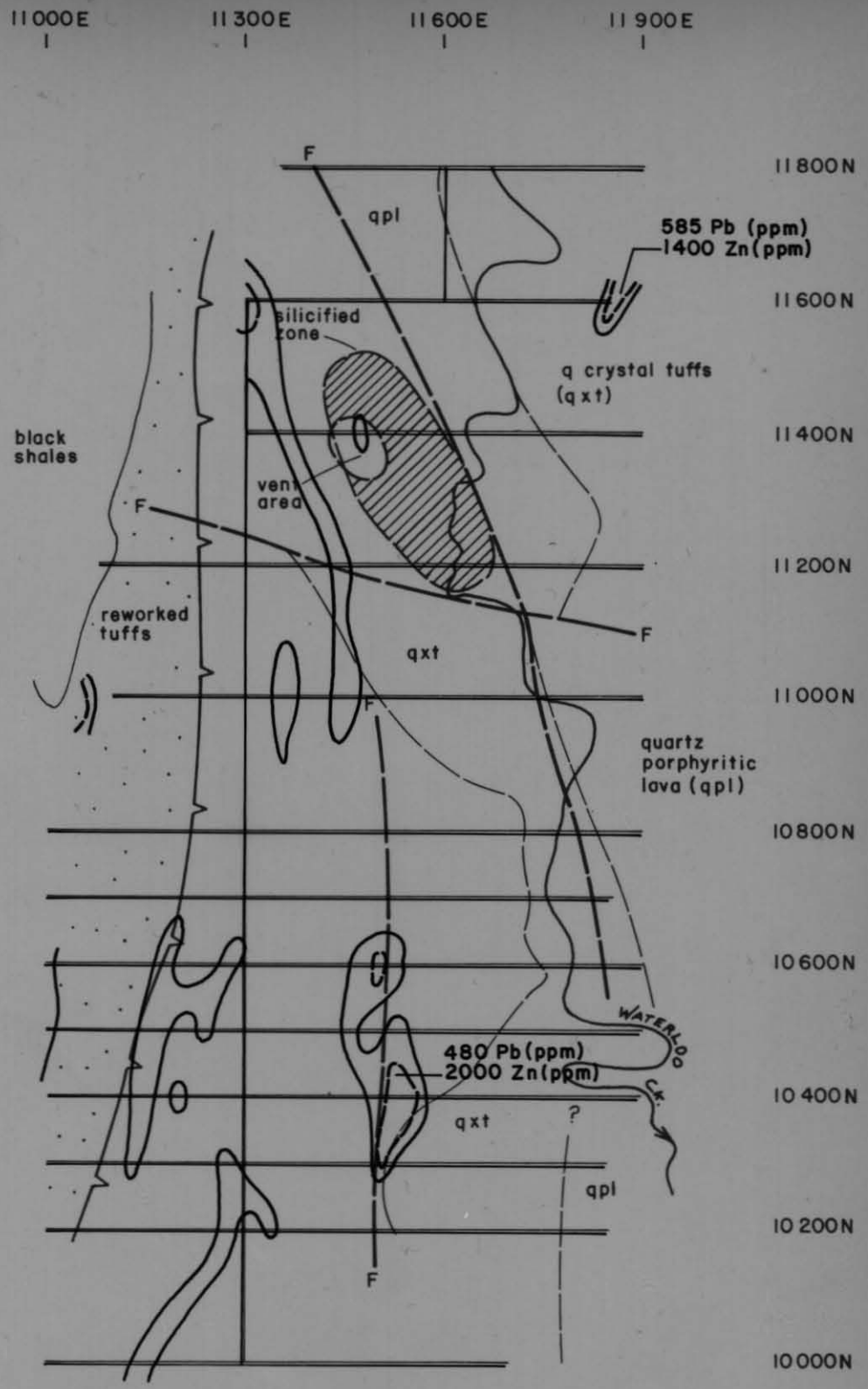
E.L.27/76 ELLIOTT BAY

VOYAGER 22

1:10000

PROSPECT SUMMARY DIAGRAM

070



LEGEND:

>200 ppm Zn in soils

>200 ppm Pb in soils

663076

E.L.27/76 ELLIOTT BAY

VOYAGER 22

1:10000

PROSPECT SUMMARY DIAGRAM

5 cm

663075.

V-22 Geochemistry

Fig. 16, 17

In the southern area of V22, directly east of the Tyndal is a flat lying area with little or no outcrop. At several locations in this area (10600N, 11525E and 11600N, 11350E) very chloritic feldspathic tuffs are exposed. This unit rarely outcrops and only occurs under topographic lows, its strike extent is therefore uncertain.

East of the feldspathic tuffs are smooth weathered, flat lying outcrops of sheared quartz-phyric lavas. They are very similar to the quartz-biotite lavas which occur to the north and east, except that in the former the biotite is not as readily observable and the rocks appear more strongly sheared.

Flow banded quartz biotite lavas outcrop on the south-central part of the grid where they form massive outcrops, which contain euhedral-subhedral quartz and biotite in a very fine grained feldspar matrix. Chloritic alteration with accompanying iron staining is common on the eastern and western margins of this belt. The chlorite alteration appears to be hydrothermal and predates the regional cleavage.

Conformably underlying the quartz biotite lavas to the east is one of the most continuous and easily recognized units in the volcanics. It consists of coarse grained lithic tuffs and interbedded finer-grained tuffs and tuffaceous sediments. They are easily recognisable by moderate amounts of sericitized feldspar and by the very course nature of the lithic fragments which are mostly porphyritic lava with subordinate amounts of tuff fragments.

This pyroclastic unit is less resistant than the surrounding lavas, and the contact with the quartz biotite lavas marks the western edge of a large trough in which Waterloo Creek flows. Most outcrops occur on the steep scarp slope which forms the western valley wall. Bedding can be seen in some of the finer grained tuffs and tuffaceous sediments and generally strikes 330 - 345° with dips ranging from 90°-60°W.

Outcropping on the eastern edge of the grid is another quartz porphyry lava unit. This lava is massive, is not as strongly cleaved as other rocks and displays little or no flow banding. It contains about 10 - 15% feldspar and 15% quartz phenocrysts in a very fine-grained, feldspathic matrix. The western boundary of the porphyry appears to be faulted against extremely altered, chloritic tuffaceous sediments and lithic tuffs. This fault (orientation approx. 340°) is easily recognized as a photolineament and controls the Waterloo Creek drainage system.

A major E-W fault (approx. 110°) intersects the NW trending fault (11130N, 11720E), and separates the major lithologic units. On the southern side of this fault the aforementioned lithic tuffs and tuffaceous sediments outcrop. On the north side of the fault the most interesting rocks in the grid outcrop. These rocks are extremely variable and are thought to represent a volcanic vent. The lithologies include breccias, agglomerates, lavas enclosing large blocky xenoliths, lithic tuffs and tuffaceous sediments. The main features which endorse the idea of a vent area are:

1) large blocks (up to 75m) of lava enclosed in a very fine grained quartz-ash matrix.
2) the highly variable number and distribution of lithologies.
3) strong alteration compared with surrounding rocks

What abt graded breccias
→ W facing ?

In the northern part of the V22 grid, the eastern most porphyritic lava is conformably overlain (?) (bounded on the eastern side) by a fine grained, lightgreen, strongly sericitized, quartz tuff which resembles the porphyritic lava in outcrop. These rocks are less resistant than the lavas and occupy a subdued topography.

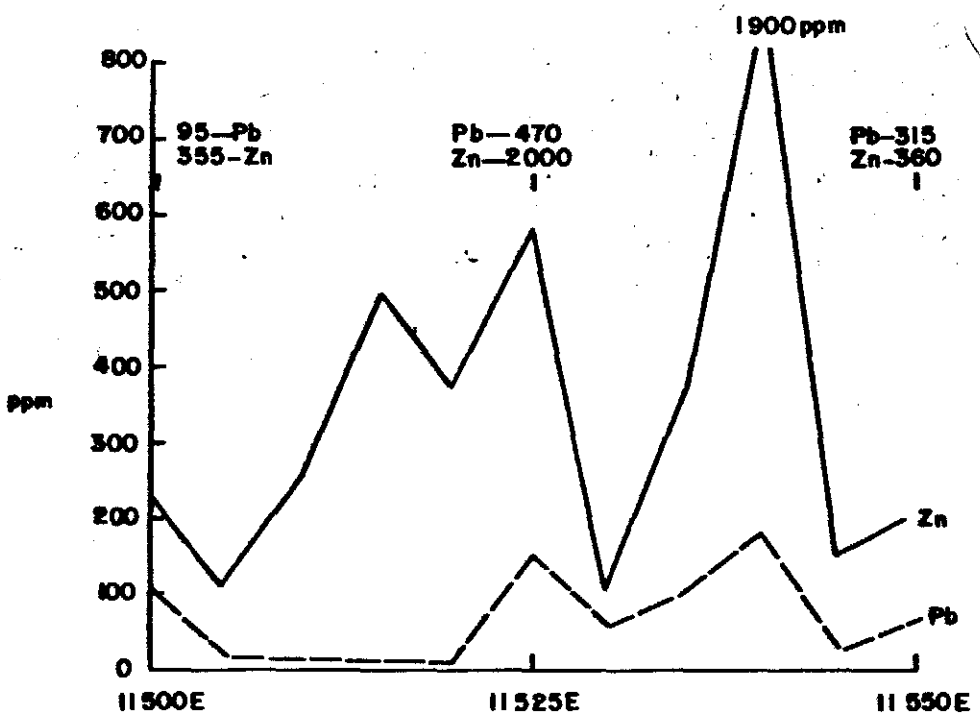
(iii) Geochemistry

The C horizon soil sampling program was completed on a 200m x 25m density with the collection of 262 samples in the preceeding field season (see Wilson, 1981). Three Zn (Pb) anomalies emerged and were designated for infill work in the 1981/82 field season. Accordingly, lines 10300mN, 10500mN and 10700mN were gridded and sampled at 25m centres (105 samples) leading to a density of 100 x 25m. This sampling confirmed the linearity of the anomalies which correlate broadly with the poorly exposed quartz porphyritic lava units underlying the Tyndal. Results are presented in plans 31-34.

The best Pb-Zn anomaly is 400m x 50m in extent and occurs along a negative N-S feature in the quartz porphry lavas on 11500E. The anomaly was re-sampled by 'Mate' power auger at 5m intervals over a width of 50m. The results are presented as line profiles in figure 18 together with close spaced follow up of the single sample anomaly centred on 11600mN/11850E.

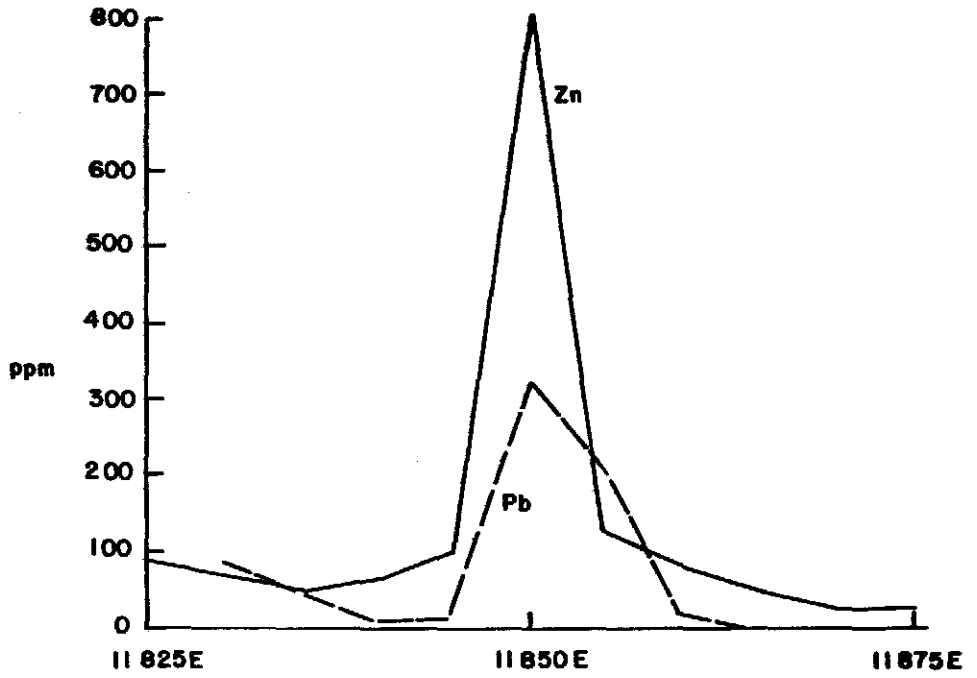
(iv) Geophysics

Total field magnetic intensity was measured on the V22 grid from lines 10000N and 11000N inclusive. The profiles are presented in plan 35 and show the generally flat magnetic character of the area.



Original Jacro Sample

LINE 10400N



Original Jacro Sample
585— Pb
1400— Zn

LINE 11600N

VOYAGER 22

INFILL SOIL GEOCHEMISTRY

1:500

5 cm

Fig. 18

(v) Conclusions

Detailed mapping of the V22 grid has outlined many similarities with the V19 area notable of which is the occurrence of a possible volcanic centre and the altered nature of the volcanic pile surrounding it. Soil sampling of the grid has outlined a number of narrow linear zinc anomalies only one of which has significant lead support. Close spaced sampling across the peak of this anomaly shows it to be a narrow zone having above background values of zinc and with lead values falling in the range 50 - 150ppm.

The excellent outcrop on the V22 grid and the moderate bedrock geochemistry results downgrade the prospectivity of the area for the occurrence of a suboutcropping sulphide body. However geophysical coverage of the grid is incomplete and it is recommended that two broad spreads of Dipole - Dipole IP be completed across lines 10400mN and 11400mN. Any subsequent work should be controlled by the outcome of that survey.

3.4 VOYAGER 29

(i) Introduction

Voyager 29 is defined by a gridded area of 1km x 1.6km which lies immediately south of Voyager 19 and has an eastern boundary marked by the axis of the Mt Osmund Syncline. Previous work over this flat lying area has included gridding (200m line spacing), soil sampling, geological mapping and a gradient array IP survey. The results of this initial exploration are summarised in the 1980/81 annual report (Wilson et. al. 1981).

A high priority was allocated to the area due to its favourable stratigraphic setting and the occurence of good soil geochemistry, with one isolated value of 3.2% Zn (10400N 10750E).

The work program for the 1981/82 field season was designed to complete the first stage exploration to a level where the potential could be fully assessed and any drilling targets defined. This work firstly involved completion of the geochemical sampling to the south to line 10000N and infill gridding and sampling to achieve a 100m x 25m density over areas of interest. Magnetic and VLF-EM surveys were completed over the whole grid and IP surveys completed over designated areas of interest.

(ii) Geochemistry

Soil sampling of the V29 grid was initially completed by the sampling of lines 10200N and 10000N at the start of the season. Subsequently the southern part of the grid between 10000N - 10800N was closed up for a 100m x 25m sampling density. Contours for Cu, Pb, Zn and Fe are presented in plans 36 to 39.

Base metal dispersion on the V29 grid appears to reflect lithology, for example the northern part of the grid between 10800N - 11600N is characterised by very low background for Cu, Pb, Zn and Fe, as reflected by values below 100ppm. Geochemical values pick up significantly in the southern part of the grid. This disparity is explained by the volume of unmineralized leucocritic porphyritic lava on the northern part of the grid.

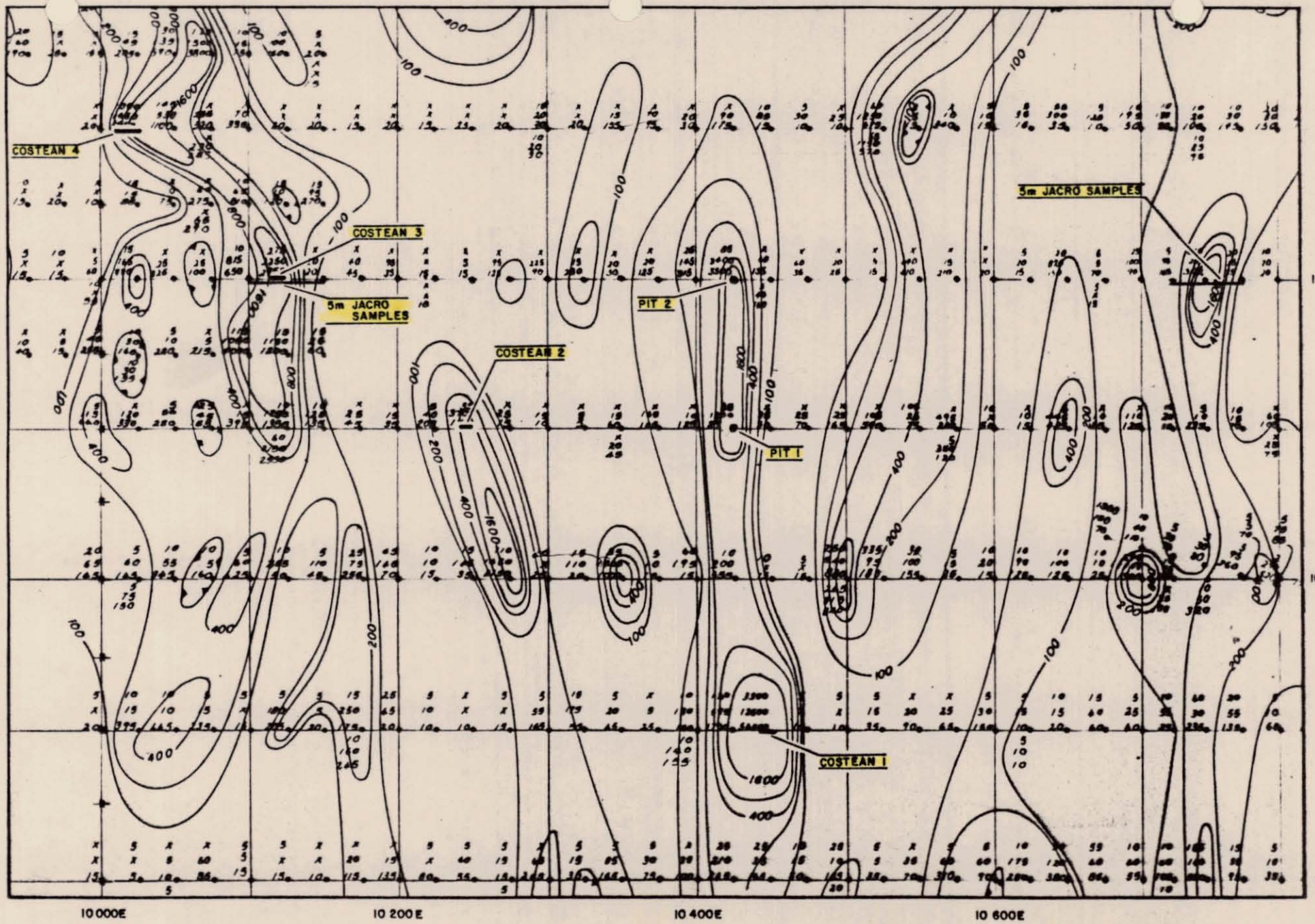
Two base metal anomalies on the southern part of the grid are noteworthy. Firstly a broad 500m x 150m wide anomaly (> 400ppm Zn) occurs on the south western margin of the grid centred on 10400 10100E. Peak values range up to 0.5% combined Pb/Zn and a coincident iron anomaly is apparent with values over 4% Fe.

A second more linear anomaly (400m x 50m) is centred on 10425E and extends from 10000N - 10400N. Here a peak value of 1.25% Pb, 5.45% Zn and 0.33% Cu was recorded.

Other Pb-Zn anomalies are present but are more inconsistent in nature being either spot values or linear N-S trending zones presumably reflecting lithologies with above average background metal values.

(iii) Detailed Geochemical Sampling and Costeaning

Two different techniques were adopted as preliminary follow up over the aforementioned areas of anomalous soil geochemistry. Close spaced infill C horizon samples were collected at 5m centres using power augers to assess the range and continuity of the anomaly. This method gives little information on the specific cause of each anomaly and consequently the more high intensity anomalies were exposed by pitting/ costeaning with a mechanical backhoe.



VOYAGER 29 ZINC GEOCHEMISTRY & POSITION OF COSTEANS, PITS & INFILL SAMPLING.

FIG 19

663084

Anomaly 10400E (10100N - 10500E)

This linear Pb-Zn anomaly has a maximum width of 75m and continues for 400m along strike (fig 19).

A costean (C1) was excavated over the southern part of the anomaly centred on a spot value of 0.33% Cu, 1.25% Pb and 5.45% Zn. Details of the geology and geochemical results from 1m channel samples are presented in figure 20.

The cause of the high spot value was shown to be a 30cm wide unit of fine-grained grey sericite 'shale'. The rock has a schistose texture due to the alignment of sericite in the cleavage. Occasional quartz crystals are present and attain a maximum diameter of 3mm. Euhedral pyrite cubes are disseminated throughout the rock (locally 10 vol %) and grey-black galena crystals are rodded and streaked into the cleavage. The unit is part of a broad sequence of fine-grained quartz crystal tuffs which contain disseminated pyrite.

Geochemical values drop off rapidly from the mineralized zone (1.15% Zn, 0.17% Pb/1m)to 100ppm Pb/Zn in the stratigraphic hangingwall and are only slightly elevated in the footwall.

Vertical channel samples were also collected along the costean wall above the mineralized zone to illustrate the effect of leaching in ths soil profile.

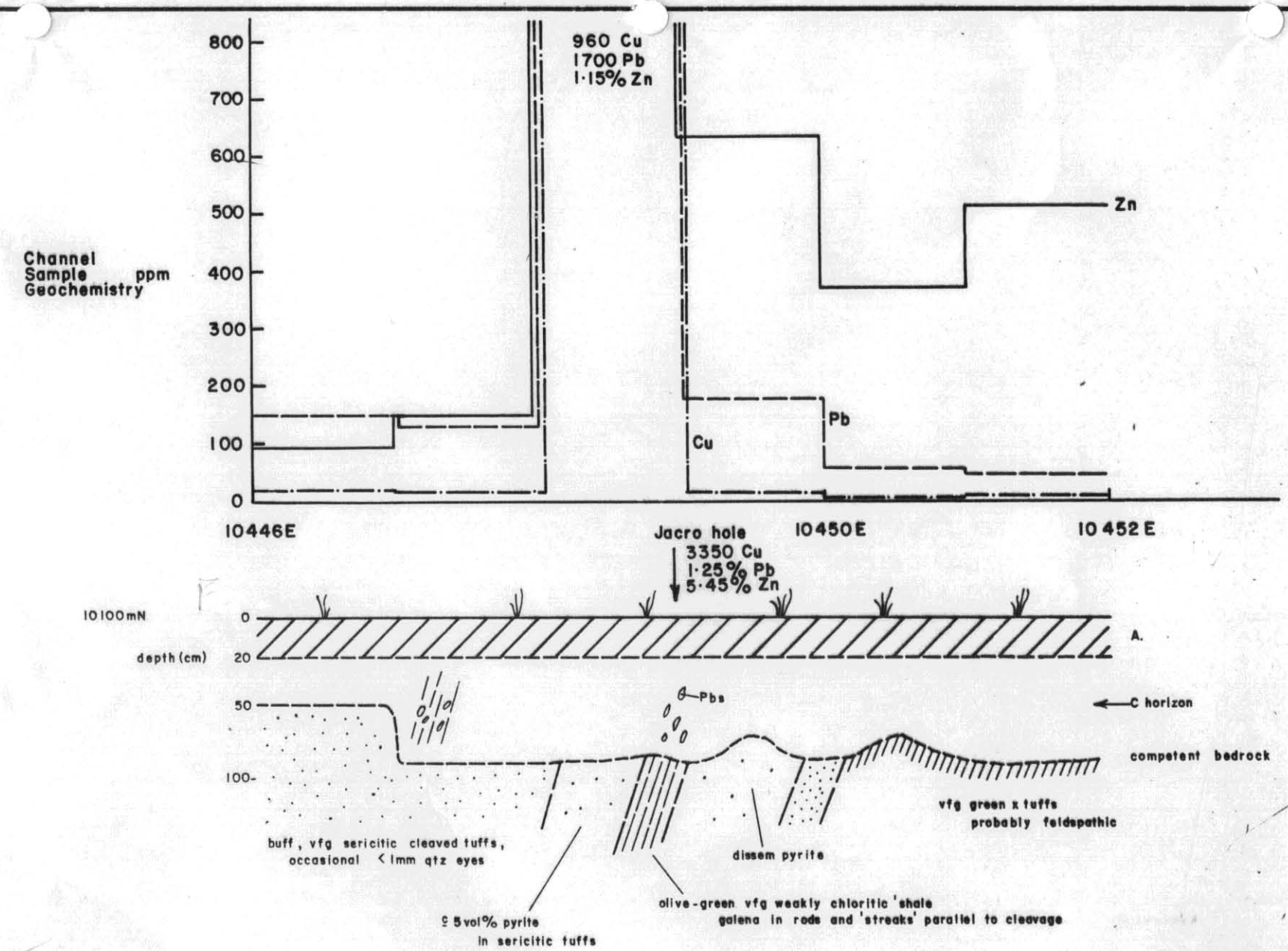


Fig. 20

VOYAGER 29

COSTEAN 10100N, 10450E

663086

Fraction - 10 + 80 mesh

Horizon	Depth (cm)	Cu	Pb	Zn	Ag	Fe%
Ao	0 - 44	5	5	15	X	0.36
A	44 - 70	X	5	5	0.5	0.3
C1	70 - 100	705	1200	.55%	2	0.94
C2	100 - 132	1950	2150	2.05%	3.5	1.45
Bedrock	132	7950	2800	9.2%	10.0	0.38

Fraction -80 mesh

15	55	80	0.5	0.59
10	15	20	0.5	0.51
1400	3050	1%	3	1.35
1450	2900	2.4%	3	2.0
6700	2450	6.2%	3	0.54

The inferred northern extension of the same anomaly was examined and sampled by pitting on lines 10300N and 10400N (fig 19).

Pit 1 10300N 10425E

A pit was excavated to a depth of 1.5m from 10423E - 10426E. Weathered, medium-grained, quartz crystal tuffs were exposed. The rocks are extensively sericitized and contain grey lithic fragments of shaley tuff. Pyrite (1-2%) was observed disseminated throughout the groundmass of the tuffs together with subordinate galena.

Three samples were collected from the dump adjacent to the pit and are representative of 1m chip samples.

Sample Number	Interval	Cu	Pb	Zn	Ag	Fe%
KR 9396	10423-4E	15	520	1150	1.5	0.5
KR 9397	10424-5E	55	965	1400	2.5	0.75
KR 9398	10425-6E	15	810	1400	1.0	0.58

Pit 2 10400N 10425E

This shallow (50cm) pit was excavated on the edge of a quartz terrace. Quartz gravel scree rested directly on a well indurated Fe rich duricrust of quartz crystal tuffs. The quartz eyes ranged from 3 - 4mm diameter and constitued 60% of the rock and were set in a brown competent groundmass with disseminated pyrite euhedra.

Grab samples from the pit furnished the following values:

		Cu	Pb	Zn	Ag	Fe
KR 9399	10424 - 10425E	10	300	75	0.5	0.57
KR 9400	10425 - 10426E	115	1900	615	0.5	0.64

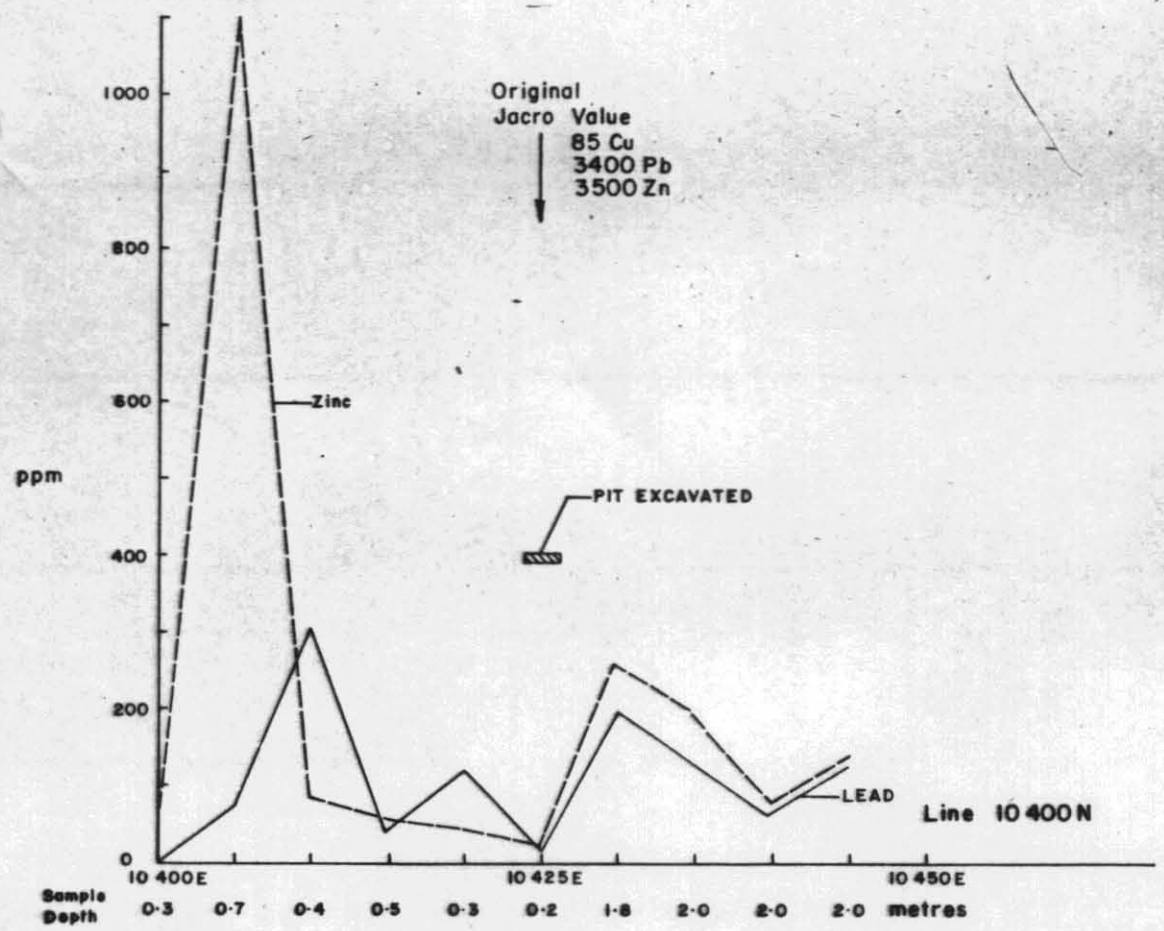
The same anomaly was sampled at 5m intervals between 10400E - 10450E by the 'Mate' power auger. Geochemical results from the C horizon soil samples are presented graphically in fig 21. The spikey and erratic nature of the Pb and Zn values are attributed to the intensive variability in continuity of mineralization and as a function of depth of sampling. The Mate auger did not reproduce the values of 0.34%Pb and 0.35%Zn from the Jacro survey at 10425E. This major discrepancy (15ppm and 25ppm respectively) is probably due to the shallower depth of the Mate sample (0.2m compared with 1m).

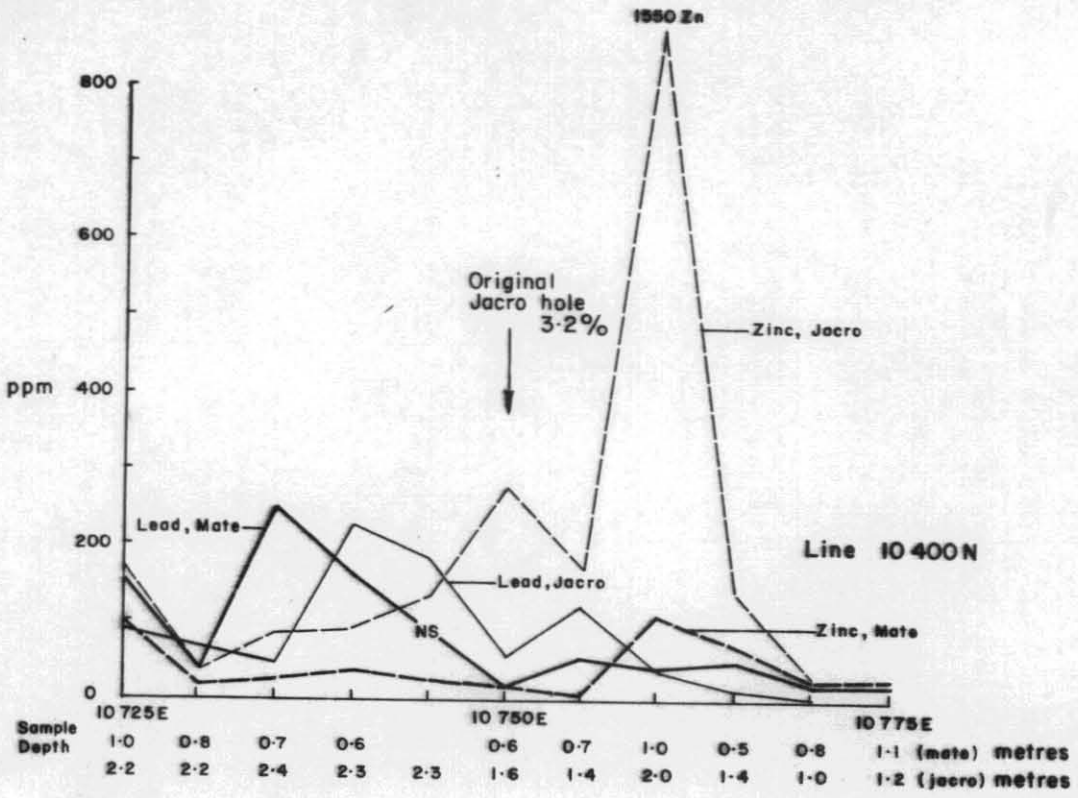
Anomaly 10400N 10750E

This single station anomaly with a peak value of 3.2% Zn, 810ppm Cu and 2600ppm Pb occurs within a linear zone of weakly anomalous zinc geochemistry (100 - 200ppm) on the eastern margin of the grid adjacent to the Tyndal unconformity.

084

663089





Voyager 29 , Fig. 21

The anomalous zone was sampled at 5m centres by both the Mate and Jacro power augers across a 50m zone between 10725E and 10775E. In both instances the power augering failed to reproduce the high value recorded from the previous seasons sampling (fig 21). Depth of sampling appears not to be the principal controlling factor since the Mate hole (0.6m) and Jacro hole (1.6m) clearly bracketed the original Jacro hole depth (1m) which mitigates the effect of any vertical leaching. A more likely explanation is either a 'nugget' effect produced by lithic fragments or a narrow bed intersected only in the first hole. Elevated Zn values of 280 - 1600ppm Zn do occur in fresh bedrock at a $\pm$ 1.5m depth between 10750 - 10780E.

Costean 2 10300N 10250E

A 5m long costean was excavated on the northern part of a narrow but high grade Pb-Zn anomaly which extends from 10300N (10250E) to 10200N (10275E). The costean was centred on the peak value of 0.37% Pb and 0.115% Zn. Details of the geology and geochemistry as reflected by 1m channel sampling are presented in fig 22.

Dark, ferruginous-stained, quartz-eye crystal tuffs were exposed in the costean which had an irregular profile due to the variable competence of the bedrock. A true C horizon was virtually absent in the eastern part of the costean where the thin quartz scree rested directly on competent, medium-grained, quartz-eye, crystal tuffs. Mineralization was recorded throughout the costean as disseminated pyrite which comprised locally up to 10 vol % of the tuffs. 'Streaky' rods of galena were observed in the altered tuffs between 10250E - 10252E. This observation is reflected in the geochemical results which range from 770ppm - 4950ppm Pb.

Surprisingly, zinc concentration is lower than Pb and Fe values of 0.6% - 1.55% rather downgrade the writers visual estimate of pyrite content, unless only partial extracion of iron has occurred.

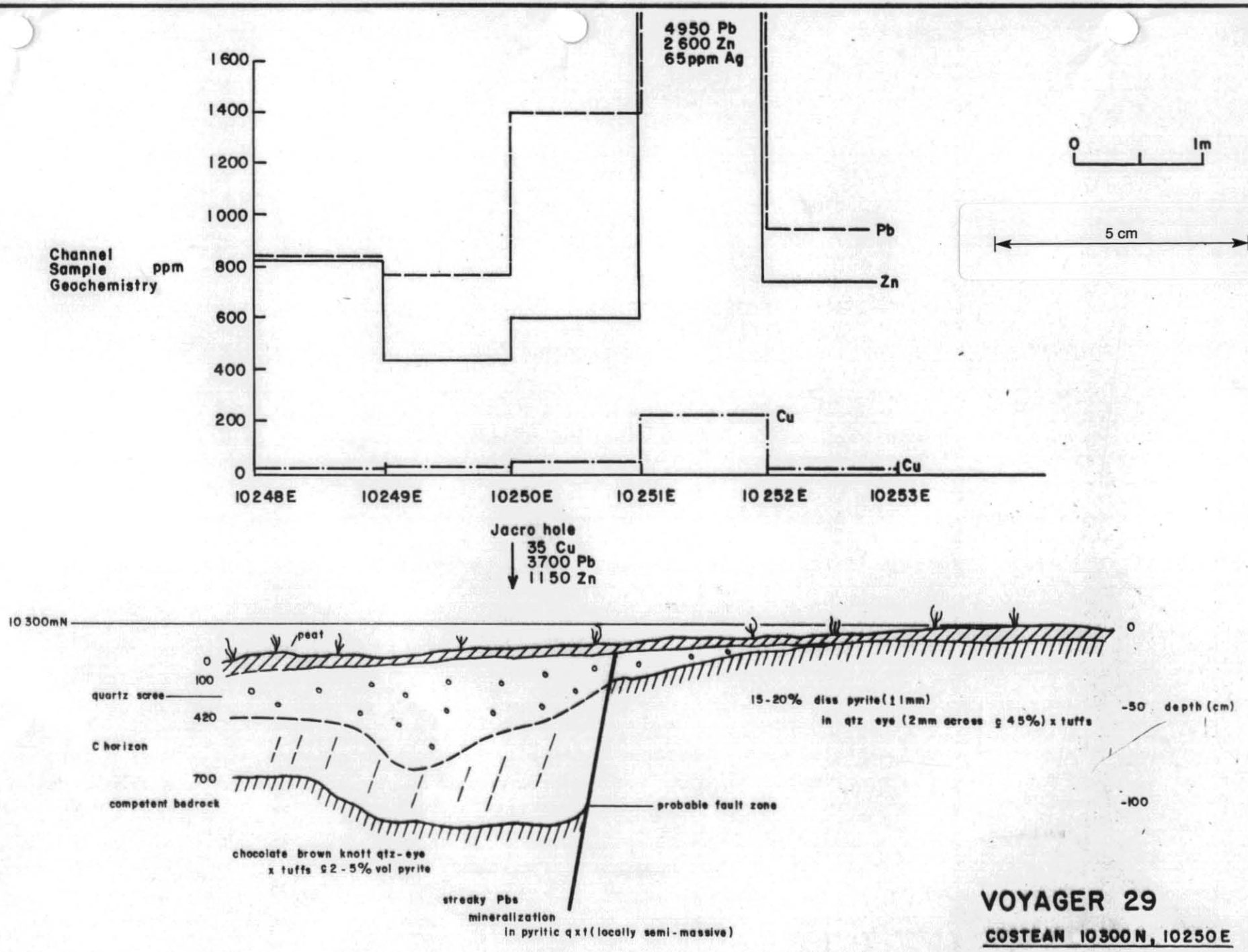


Fig. 22

VOYAGER 29

COSTEAN 10300N, 10250E

6630091

Anomaly 10400N 10100E - 10150E

One line of 5m spaced Mate power auger samples was collected on line 10400N between 10100E and 10150E. Geochemical results are presented in profile form (fig 23) and show that the initial Jacro value was not repeated.

A 2.5m long costean (C3) was subsequently excavated on the peak of a Jacro soil anomaly of 0.225%Pb and 0.295% Zn. The costean was only excavated to 0.35m depth due to the competence of the bedrock. A coarse-grained chloritic quartz crystal tuff was exposed. The subhedral quartz grains varied in size from 0.5 - 1.0cm in a leached leucocratic groundmass. Chip samples collected along the costean furnished the following results:

		Cu	Pb	Zn	Ag	Fe%
KR 9401	10124 - 10125E	35	175	230	X	2.25
KR 9402	10125 - 10126E	35	170	225	X	2.15

It appears the 5m spaced sampling has downgraded this particular anomaly. However, the original Jacro sample was collected from a depth of 0.6m which compares with a costean and Mate sample depth of 0.3 - 0.35cm respectively. Surface leaching is the likely cause of this ambiguity.

088

663093

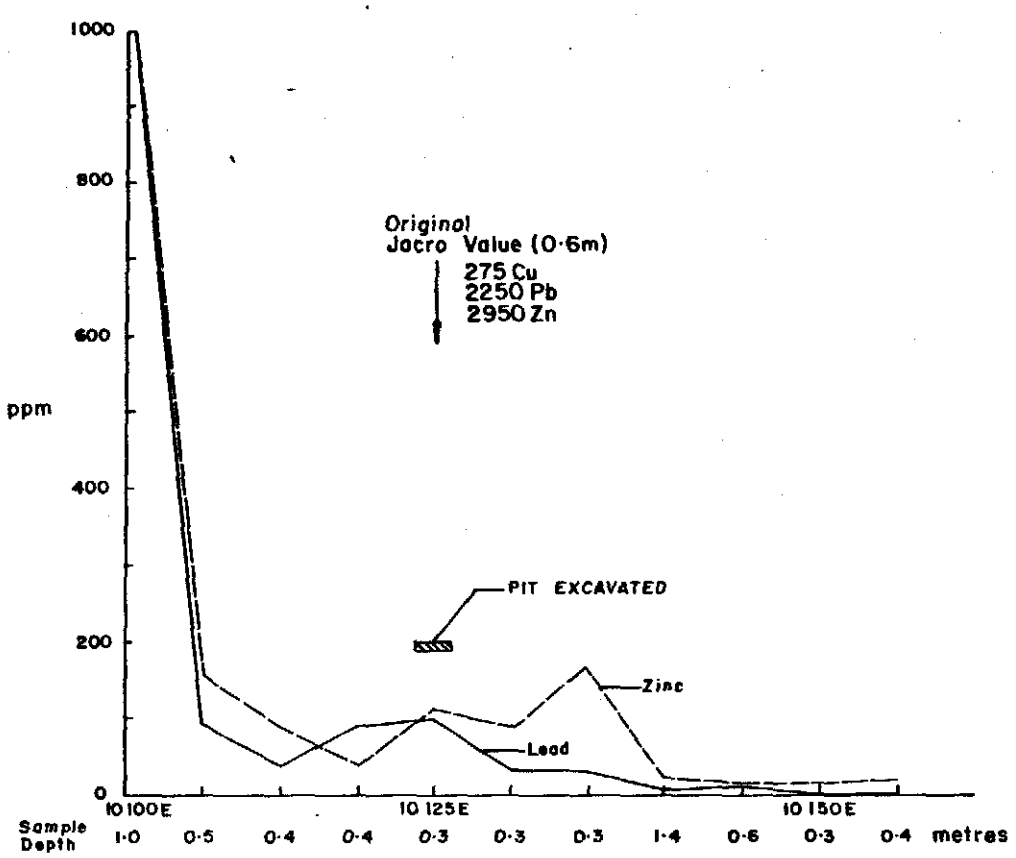


Fig. 23

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VOYAGER 29

LINE 10400N 5m 'MATE' POWER

AUGER SAMPLING

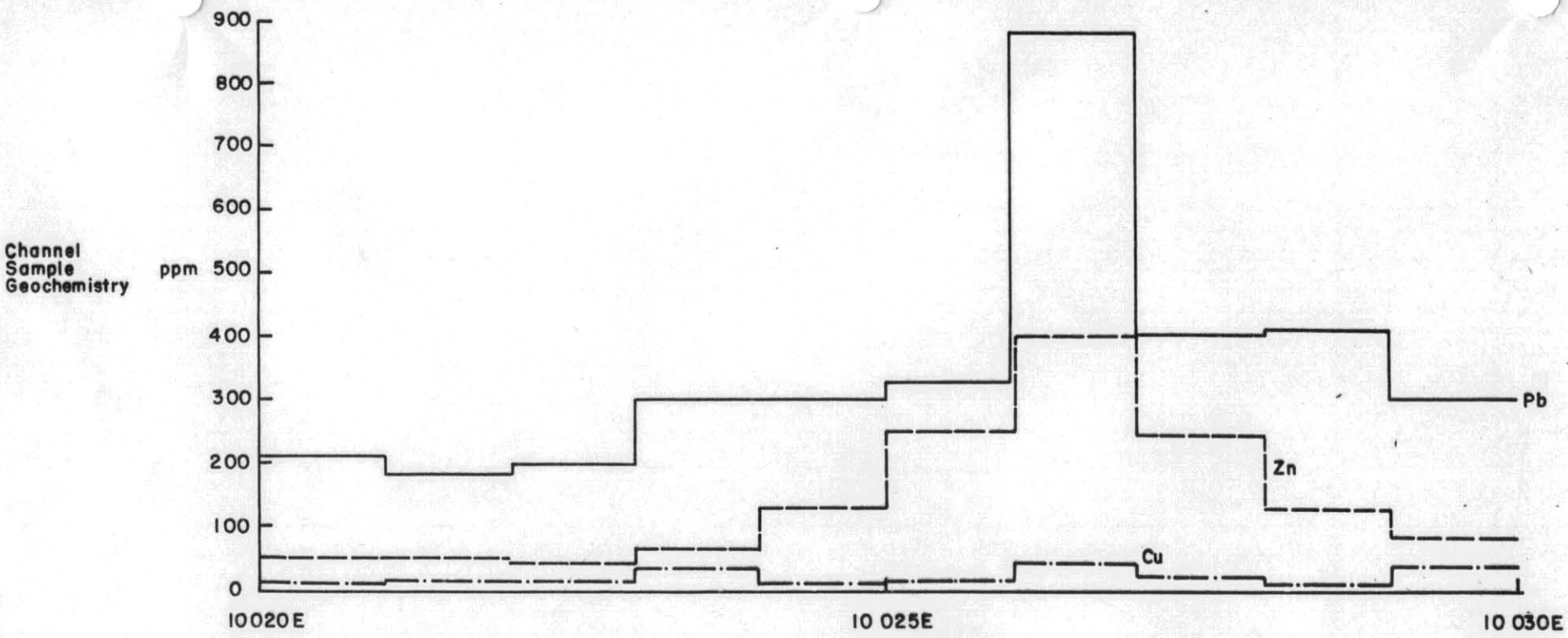
Costean 4 10500N 10020E - 10030E

Another costean was excavated on the northern part of the same anomaly on line 10500N centred on 10025E corresponding with the value 0.165%Pb, 0.35%Zn. The depth of the costean varied with the competence of the bedrock and ranged from 130cm - 30cm. Exposed within the costean from W-E were an extremely massive and competent unit of chloritic, quartz crystal tuffs which has a sharp contact against clayey altered, feldspathic quartz crystal tuffs containing approximately 2 vol % disseminated pyrite. The latter is cut by narrow anastamosing chlorite veinlets. This incompetent unit has a sharp contact with course-grained, pyritic, quartz crystal tuffs which contain veinlets of red hematitic material. Galena was observed disseminated throughout this unit.

Geochemical values are presented as profiles in fig 24. Both Zn and Pb are distinctly anomalous with ranges of 45-400ppm and 185-880ppm respectively. Copper values from the channel samples are surprisingly low (10ppm - 45ppm) given the high value in the Jacro hole. Fe values range from 1.5% - 3.15%.

Mercury analysis

A test line of soil samples was analysed for mercury. Both B and C horizon samples were analysed. The results are presented in figure 25 and range from 5 - 20ppb.



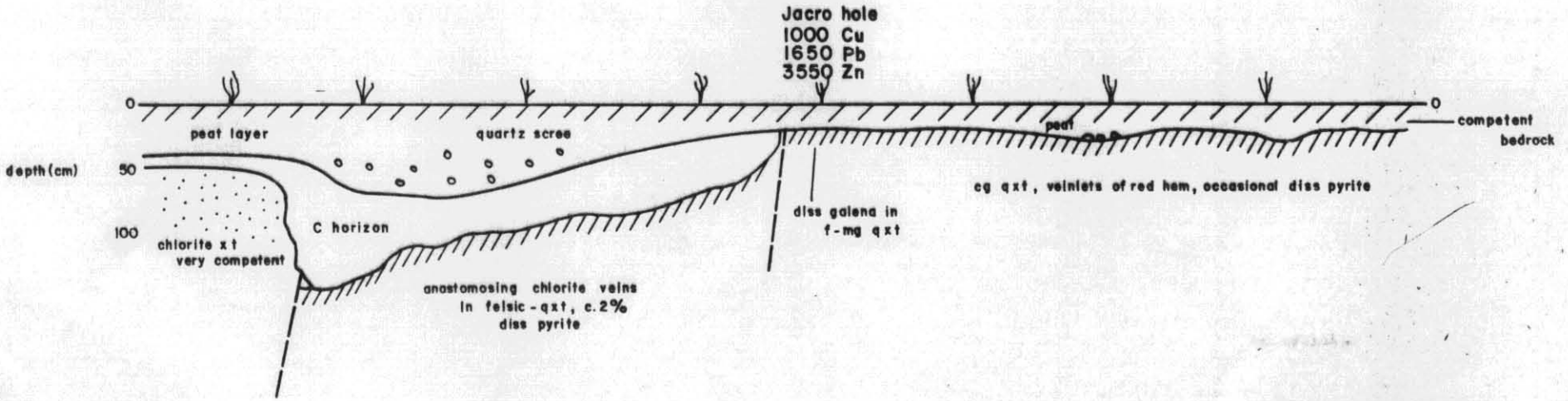


Fig. 24

5 cm

VOYAGER 29

COSTEAN 10 500N, 10025 E

663095

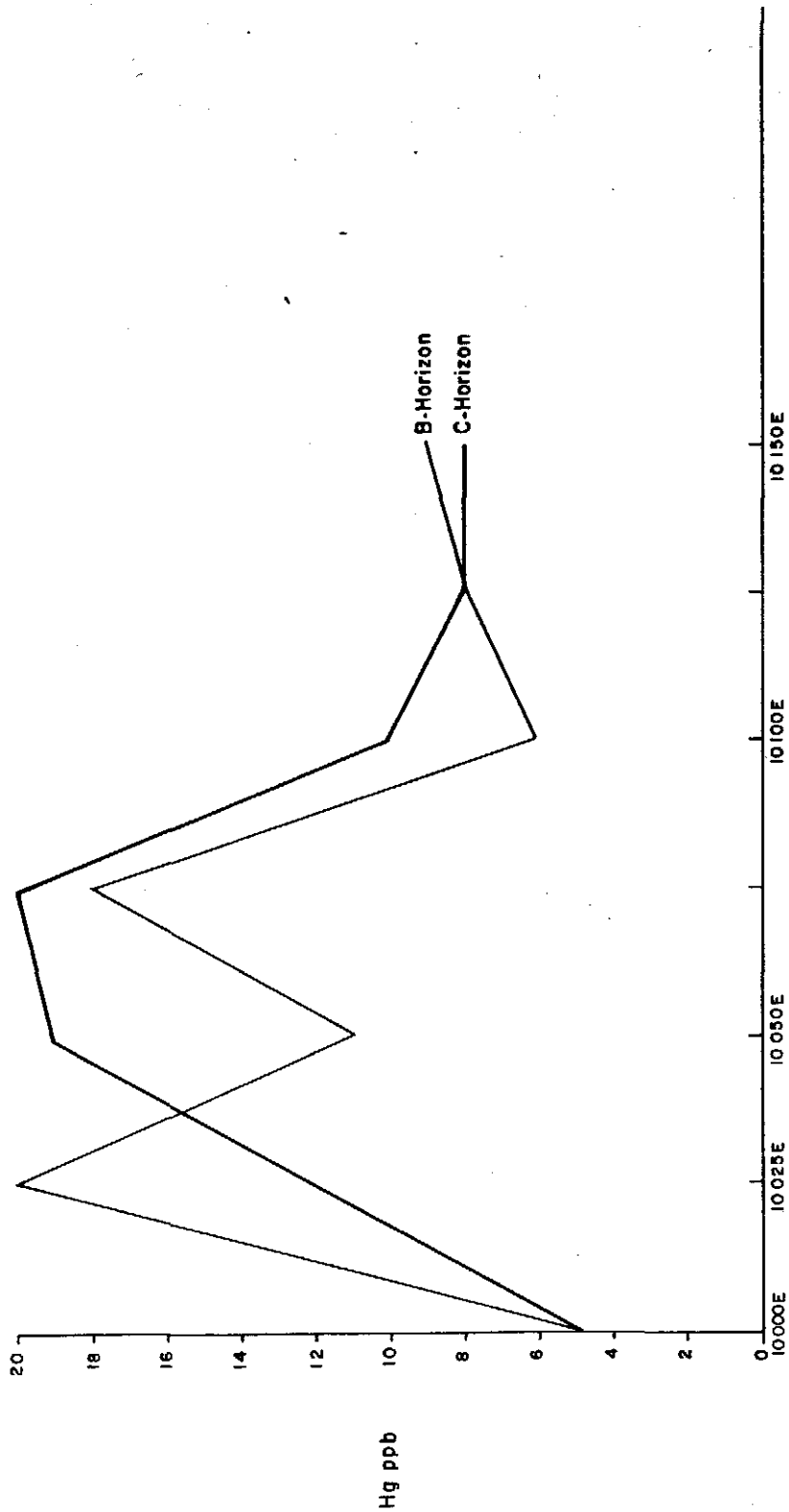


Fig. 25

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LINE 10500N, Hg ANALYSIS

(iv) Geophysics

Magnetics

Total field magnetic intensities were read at 12.5m centres along the grid lines (1040 readings) using a Geometrics G816 proton procession magnetometer held at a constant 2m sensor height. The results are presented in profile form in plan 40 and show the flat magnetic character of the area.

VLF-EM

A VLF-EM survey was completed over the V29 grid principally as a supplement to geological mapping over this poorly exposed area. Readings were taken at 25m centres. Results are presented both in profile and contour form in plans 41 - (42.)

The major feature of interest is the linear conductive zone on the south central margin of the grid which reflects black siltstones of the Osmund Syncline. Other weaker conductive zones are apparent but have little relationship with the soil geochemistry.

IP

The gradient array IP survey, which was completed during the previous field season, outlined a moderately chargeable zone on line 10600N. The centres of the zones of interest occur at 10250E and 10100E roughly coincident with the Pb/Zn geochemistry.

Six spreads of Dipole-Dipole IP were completed, the pseudosections are presented in plans 43 to 48. The southern most spread on line 10100N was centred on the geochemical anomaly (peak of 6.7% Pb + Zn) at 10425E. No significant response is evident.

The 5 traverses covering the anomalous base metal geochemistry adjacent to the base line define a zone of high chargeability best developed on lines 10500N and 10600N, detectable on line 10400N, and absent on lines 10700N to the north and 10300N to the south. The anomalies are centred under about 10050E. Even on the two best lines the response is rather diffuse and difficult to interpret, though it appears that 10500N the source is somewhat deeper and more compact. The weak chargeability anomaly of 10400N has a resistivity low associated with it. Though these anomalies are rather too nebulous to be likely to have as there source a near surface massive sulphide occurrence, they are neverthless an encouraging indication of a broad zone of mineralization close to surface.

Gravity

Gravity was read along line 10300N - 10700N as a method of determining whether a large near surface massive sulphide body was related to the Pb-Zn-Fe geochemical zone. The residual gravity contour map is presented in plan 49. A detailed description of the survey may be found in Sumpton (1982). A relatively narrow, elongate high was defined, with a maximum amplitude of about $3ums^{-2}$. This zone extended from line 10600N to the south (and open in that direction) centred on an easting of about 10050N. This zone is therefore coincident with the chargeable zone described above.

The fundamental ambiguity implicit in potential field data and the small amplitude of the anomaly makes it impossible to assess the source of this response. Nevertheless it seems likely that its source is either a marked increase in the density of the rock in this area (possibly due to sulphide concentration) or a more discrete dense body at a depth of about 50m or more.

The chargeability data tends to support the former explanation, but the electrical anomalies are by no means well enough defined to rule out the latter.

SP — SP was read on selected lines on the south-western part of the grid:

10600N	9900E	-	10200E
10500N	9950E	-	10300E
10400N	9900E	-	10200E
10300N	9950E	-	10700E
10100N	10300E	-	10500E

No significant anomalies emerged from the survey the profiles are presented in plans 50.

(v) Summary and Recommendations

Pictorial summaries of the geology, prospecting techniques and principal anomalies on the V29 grid are presented in figures 26 - 28 respectively. The area has a very good potential for a volcanogenic hosted massive sulphide deposit on the following counts:

1. A favourable stratigraphic setting with respect to the V19 north area, for example the occurrence of large units of porphyritic lava within a sequence of altered pyroclastics.

2. An episode of marine sedimentation as represented by the micaceous sandstone unit which overlies the V29 pyroclastics to the west.

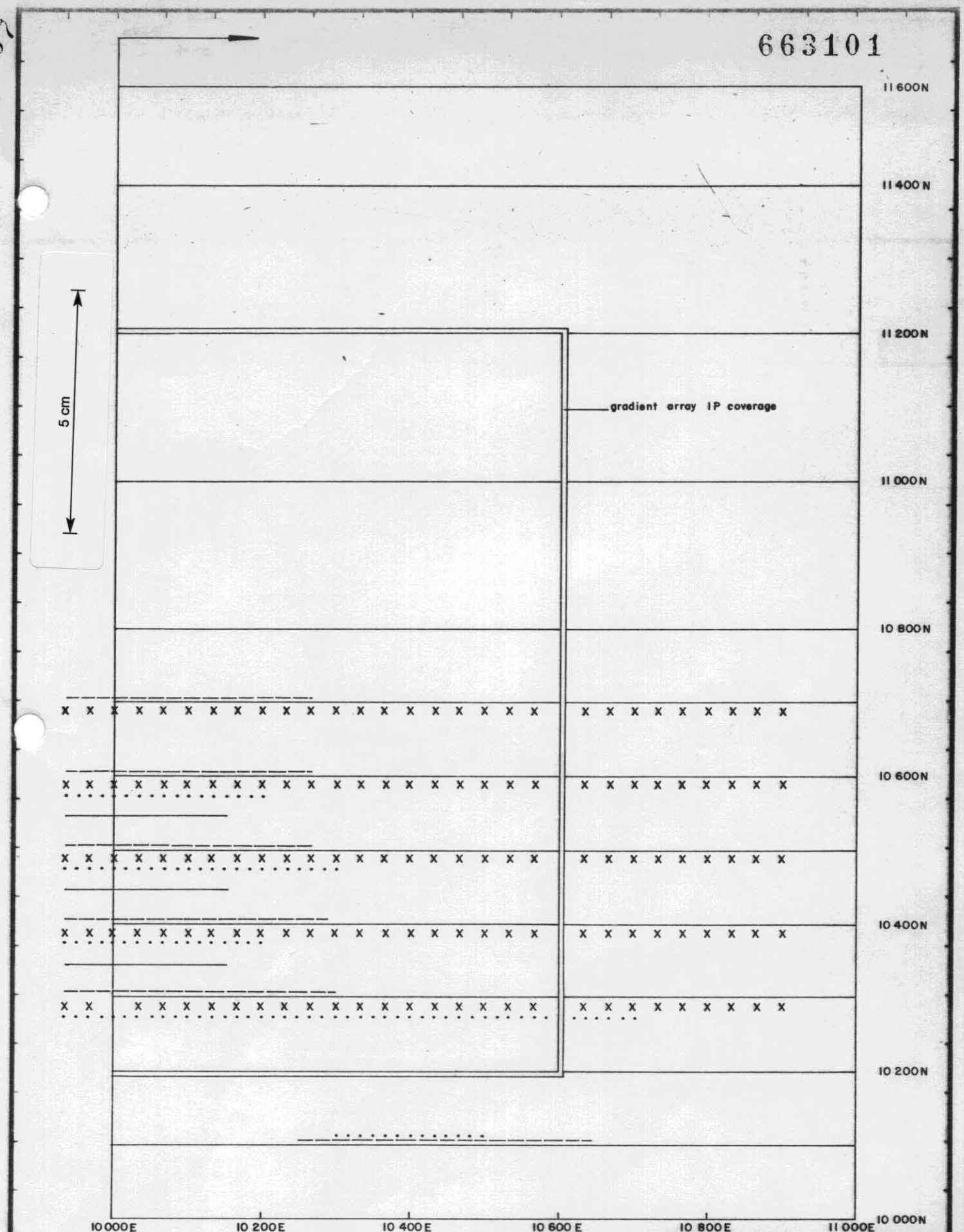
3. Good bedrock geochemistry with visible mineralization at a number of localities.

4. Moderate chargeability response over an area having anomalous Pb, Zn, and Fe with a coincident weak gravity anomaly.

It is recommended that the coincident geochemical, IP, gravity anomaly on lines 10300N - 10500N be drilled during the forthcoming season. The good response of the VLF-EM on the grid suggests that coverage by a more sophisticated deep penetration technique could highlight conductive zones suitable for drilling given points 1-4 above.

097

663101



grid line geochem sampled, magnetics & VLF-EM surveys completed

dipole-dipole IP

gravity

SP

Scale 1:12500

TN

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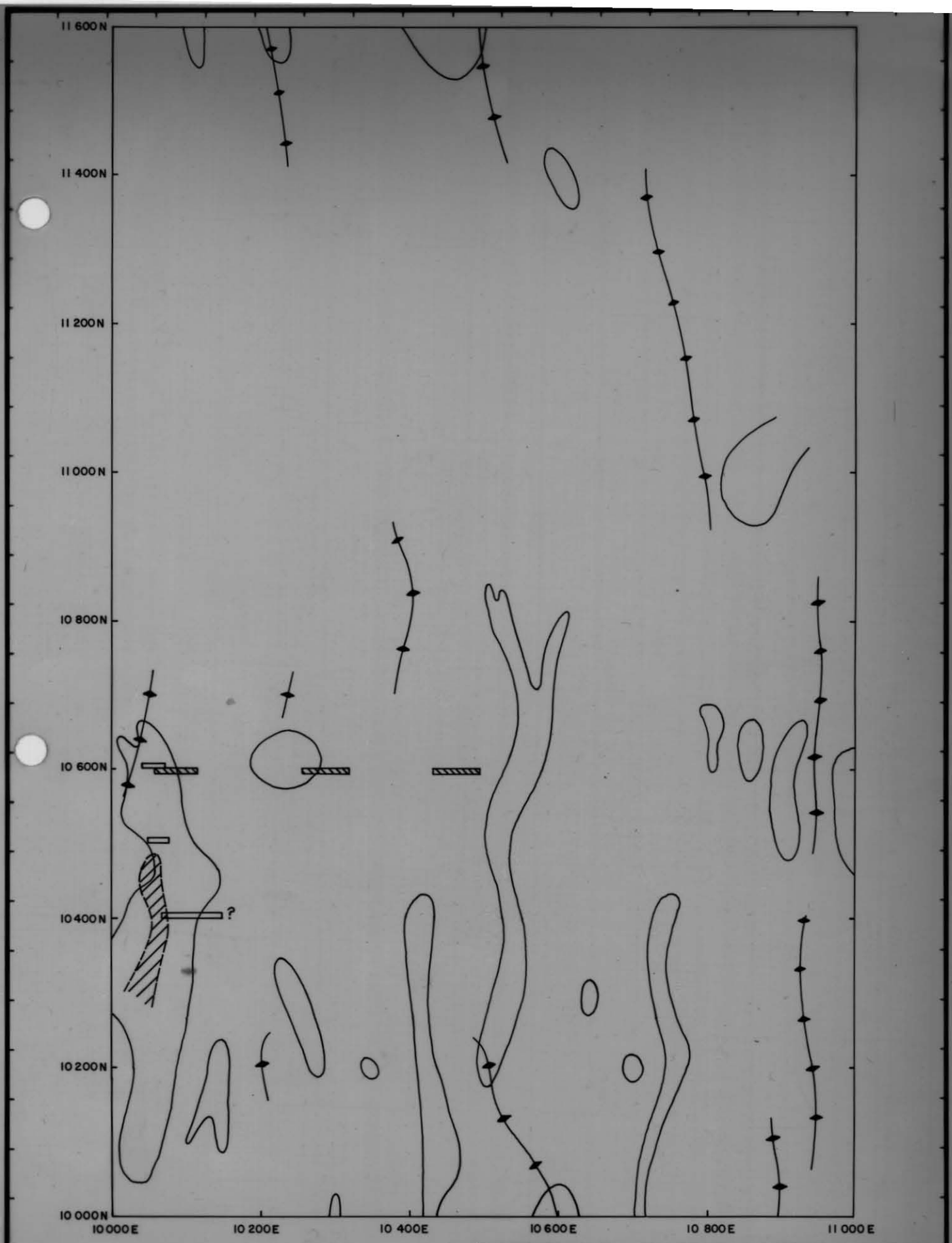
VOYAGER 29

PROSPECT SUMMARY MAP

Fig. 26 ~~27~~



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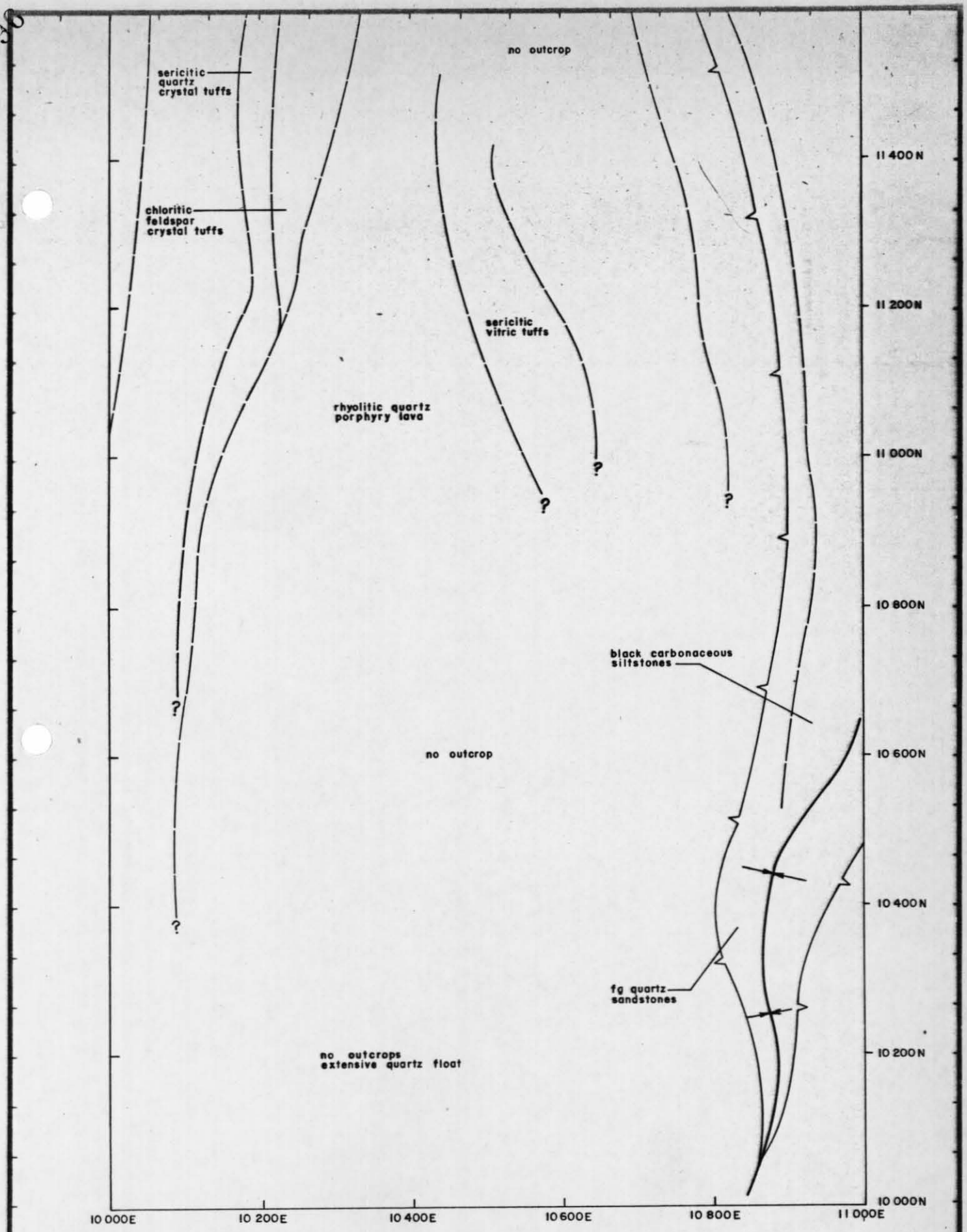
PROSPECTING SUMMARY MAP

28

Fig. 26



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DATE 5/8/82	VOYAGER 29
GEOL P.A.W	GEOLOGICAL SUMMARY MAP
DWN R. Tog	Fig 27
CHKD	

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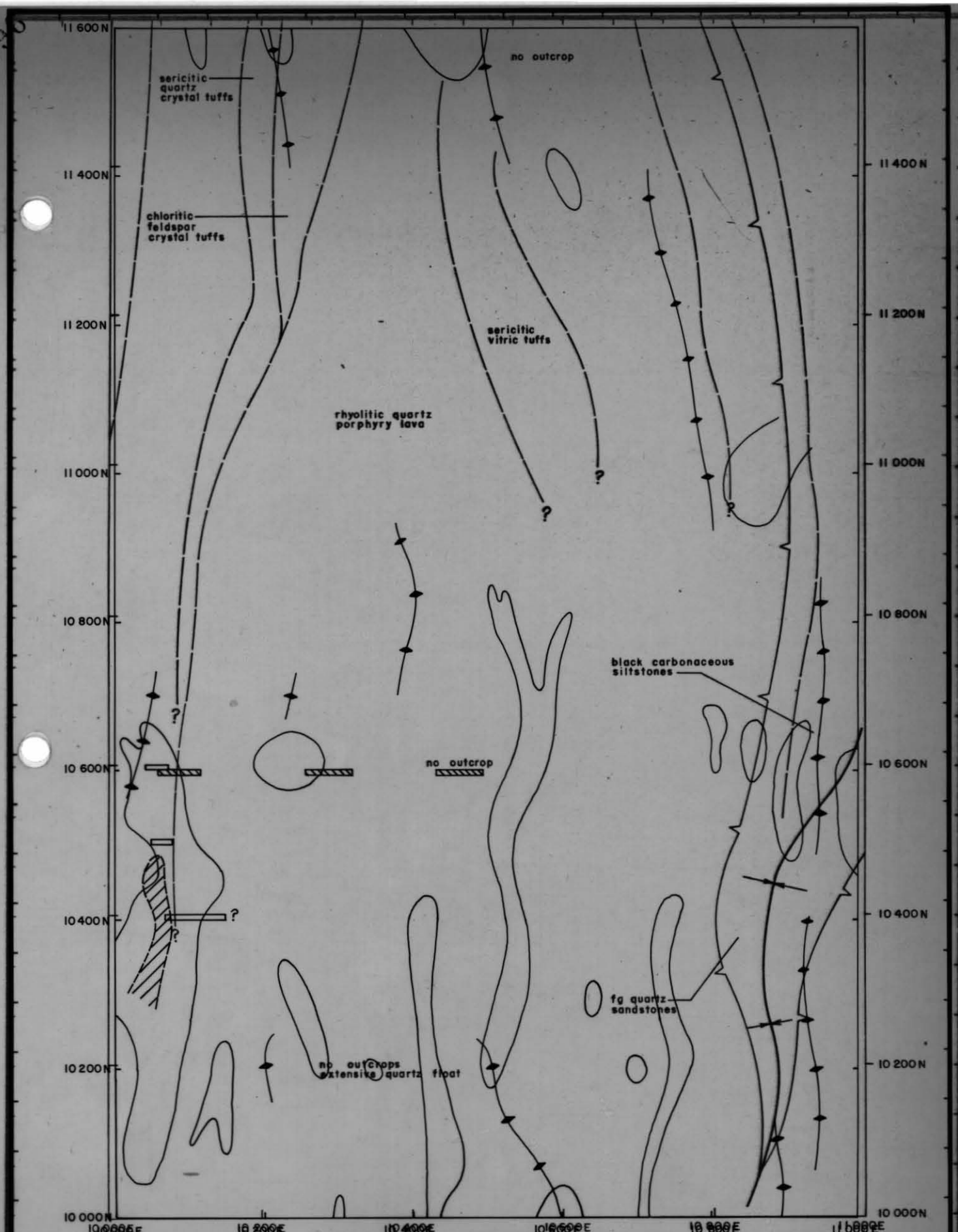

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VOYAGER 29

PROSPECTING SUMMARY MAP
GEOLOGICAL SUMMARY MAP

Fig. 26

3.5 VOYAGER 29 WEST

(i) Introduction

The Voyager 29 West grid was established following the encouraging geochemical results from Voyager 19/29 grids and the gold in stream sediments draining the area (see P.A. Wilson et. al. 1981). Voyager 29 West is bounded by the baseline 10000E, 8800E as the western boundary and extends from 10000N to 11800N (fig 2). Lines were cut at 200 metre intervals.

The eastern half of the grid is in open country covered by buttongrass and low scrub. The rest of the grid is covered by bauera, banksia and rain forest. In these latter areas geological data was obtained by logging auger chips and mapping stream sections.

Geological mapping was completed at a 1:2500 scale. C horizon geochemical samples were taken at 25m intervals. Routine magnetics and VLF-EM were read over the grid. Infill gridding was done on lines 10300N, 10500N and 10700N to allow a westerly extension of gravity data obtained over the Voyager 29 grid (see 3.4 (iv)).

(ii) Geology

The lithologies of Voyager 29 West form the top ± 1000 metres of the Wart Hill Pyroclastics (see plan 51). A micaceous sandstone/siltstone unit with associated black shales has been used to delineate the top of the Wart Hill Pyroclastics and the start of the Western Sequence. These sediments do not outcrop but were penetrated by the auger during sampling of the western boundary of the grid (8850E).

In an attempt to group the discontinuous varieties of pyroclastic and flow rock types divisions have been drawn at two sedimentary marker horizons. The lower most is a westerly facing micaceous quartz sandstone/siltstone with the clastic component indicating a Precambrian Tyennan Block provenance. This unit will be referred to as the Marker Sandstone horizon. Approximately 350 metres up in the succession is a pyritic black shale which was discovered while digging the Wart Hill Camp rubbish pit. It has been informally named the Camp Black Shale.

The Marker Sandstone proved useful in delineating the possible number of unrecognizable faults present in the volcanics. Two major faults have been interpreted on Voyager 29 West. In the south east the Marker Sandstone allowed the recognition of a strike-slip fault with sinistral movement and displacement of some 230 metres on a bearing of 315°. The north western fault has been interpreted from aerial photo's and the possible displacement of the basal micaceous sandstone of the Western Sequence by some 250 metres. Other minor faults have displacements of less than 50 metres.

Two cleavages are recognizable across the grid. In the southern half an azimuth of 0°- $\pm 10^{o}$ predominates with a near vertical dip. The northern part of the grid has a cleavage of $320^{o} \pm 10^{o}$ with a steep dip to the west. Occasionally both these cleavages are present in outcrop or manifest themselves as a rodding or lineation with a southerly plunge of 40° or more.

The first grouping of rock types comprises the sequence from the baseline to the Marker Sandstone. Chloritic quartz feldspar crystal lithic tuffs of varying grain sizes are the predominant lithologies. A volcanic breccia outcrops at 10530N, 9770E with a siliceous iron stained fine grained outcrop along strike to the north. Rock chips from this outcrop recorded anomalous geochemistry i.e. KR 9860 - 65ppm Cu, 1350ppm Pb, 2750ppm Zn and 2ppm Ag. Approximately 50 metres to the east of this outcrop

a pyritic black shale was present in an auger hole which returned anomalous geochemistry (310ppm Pb, 650ppm Zn and 2ppm Ag). This area is adjacent to the Voyager 29 geochemically anomalous zone. Further to the north (11570N, 9910E) a small area of chlorite/pyrite alteration was noted with KR 9865 returning 325ppm Zn and 3.95% Fe. A fine to medium grained sericitic tuff unit outcrops sporadically from the south to the north of the grid on an easting of 9950E. This unit has been reworked in phases and could be termed an epiclastic siltstone between 11200N and 11300N.

The second grouping of lithologies comprises the sequence between the Marker Sandstone and Camp Black Shale. A variety of volcanic rock types outcrop in this group with the sequence appearing to thicken to the north by some 150 metres. South of the major fault the succession is dominated by the prominent outcrop of chloritic volcanic breccia with lithic blocks averaging 10 to 20cm in size. This unit is underlaid by a well bedded, medium to coarse grained, crystal lithic tuff which is cross bedded and scoured by the breccia. It faces to the west. A very similar rock type overlies the breccia and can be traced to the north (9750E, 10850N and 10950N). Directly below the Camp Black Shale a medium grained pyritic quartz feldspar lithic crystal tuff outcrops with interbedded fine grained tuffaceous siltstone. The pyrite appears to be a lithic component of the tuff and this unit has been found outcropping at 9400E, 11400N.

Between 11100N and 11500N on an easting of 9600E to 9700E a well bedded epiclastic siltstone-sandstone unit outcrops. It has interbedded crystal tuff bands and crossbedding indicates a westerly facing. To the west and north of this unit porphyritic rhyolite predominates with quartz as the phenocrystic component is a sericited-quartz groundmass. It is probable that feldspar was present as a phenocryst but subsequent sericitization reduced it's visibility against the groundmass.

At co-ordinates 9800E, 11700N a flow banded and auto-brecciated rhyolite shows contact relationship with a medium grained lithic crystal tuff. The tuff has a pinkish red alteration and pyrite boxworks. In the area to the east of this outcrop the Marker Sandstone disappears for approximately 250 metres along it's projected strike before reappearing on the southern part of Voyager 19. This disappearance could be as a result of the disruptive influence of the lavas described above.

The final grouping of rock types falls between the Camp Black Shale and base of the Western Sequence. This area is covered by scrub and rain forest. Auger chip logging and mapping of stream sections show a predominance of chloritic tuffs. An epiclastic siltstone outcrops in Boyles Creek (10600N) and is cut by pyritic quartz veining. Chloritic tuffs in this creek section are pyritic. Auger chips in the north western part of the grid appear to be dominated by sericitic tuffs.

(iii) Geochemistry

Voyager 29 West was sampled by power hand auger in the forest/scrub area and on steep slopes while the Muskeg mounted Jacro 200 rig was used on the button grass (see plans 52-54). A total of 436 C horizon auger samples was taken at 25 metre intervals and analysed for Cu, Pb, Zn, Ag and Fe.

The sequence from the baseline to the Marker Sandstone is anomalous in Zn, Pb and Fe over the chloritic breccia, chloritic tuffs and black shale. The sericitic tuffs and epiclastic siltstones in this group are marked by an absence of anomalous geochemistry. As these anomalous lithologies are adjacent to the Voyager 29 geochemically anomalous zone they should be viewed as one prospective horizon.

The second grouping of lithologies have anomalous geochemistry over the Camp Black Shale with an auger value of 140ppm Pb, 305ppm Zn, 1.5ppm Ag, 1.5% Fe and a hand specimen assaying 85ppm Cu, 840ppm Pb, 480ppm Zn, 2ppm Ag and 1% Fe. On line 11400N above the Marker Sandstone a pyritic, chloritic crystal tuff had a high point of 160ppm Cu, 1200ppm Pb and 1250ppm Zn. To the west of this anomaly below the epiclastic siltstone/sandstone unit a Zn anomaly has a high point of 685ppm. Occasional outcrop in this area and high Fe values indicate a chloritic lithic crystal tuff as the source of the anomaly.

The third grouping of rock types from the Camp Black Shale to the base of the Western Sequence show their higher chlorite content by being anomalous in Fe. Apart from a number of low order anomalies and single point anomalies (e.g. 8950E, 11200N - 285ppm Pb and 3500ppm Zn, 9250E, 10200N - 1300ppm Zn) this unit is not regarded as worth following up at this stage.

Panned concentrate sampling in 1980/81 indicated anomalous gold values in streams draining the volcanic lithologies between the Marker Sandstone and the Camp Black Shale. Selected analysis of previous soil samples for Au and As is recommended for this area.

(iv) Geophysics

All grid lines were read for magnetics and VLF-EM. The magnetics was read every 12.5 metres using a Geometrics G-816 magnetometer (see plan 55). A 400nT anomaly is developed over the volcanic breccia on lines 10200N, 10300N, 10400N and 10500N. On the western edge of the grid a noisy low order anomaly coincides with the base of the Western Sequence. Lines 11200N and 11400N have a large double peaked anomaly of some 1000nT on the western edge. It is probable that this anomaly is the start of the broad aeromagnetic anomaly known as Voyager 17 (see Large, 1981). A 200nT anomaly on line 11200N 9700E coincides with the geochemical anomaly below the epiclastic siltstone/sandstone unit.

A Geonics EM-33 receiver was used to read VLF-EM over the grid (see plan 56). The data was filtered using Frasers algorithm and the resulting anomalies were contoured. Anomalies overlie the volcanic breccia east of the camp, the Camp Black Shale and the chloritic crystal lithic tuff below the Marker Sandstone.

The iron rich rock type within the forest have VLF anomalies as well as areas of low swampy ground and quartz gravel. The large magnetic anomalies on lines 11200N and 11400N have coincident VLF anomalies and could be related to the black shale sub-outcropping in the auger hole. A VLF anomaly is also coincident with the magnetic anomaly on line 11200N 9700E.

(v) Conclusions

The geology and geochemistry of the area adjacent to the Voyager 29 anomaly support the encouraging results obtained to date and suggest these anomalous rock types persist to the north. This anomalous area on Voayger 29 West should be included in the Voyager 29 anomaly as one prospect in the future.

Anomalous gold in the streams extending north from Voyager 24 needs to be appraised in the overall context of gold potential of the Wart Hill Pyroclastics.

3.6 VOYAGER 30

(i) Introduction

The Voyager 30 prospect defines an area of anomalous gold drainage geochemistry and copper, lead, zinc and gold C horizon soil geochemistry within the upper part of the Wart Hill Pyroclastics (fig 2).

The area has evolved from a gold prospect to become a significant base metal prospect resulting from follow up work on a zone of anomalous gold and tin drainage geochemistry.

In the 1980/81 field season three east-west grid lines 1000 metres along and 200 metres apart were pegged and sampled for C horizon soil geochemistry. Soils near the eastern end of 7400N were shown to be anomalous in Cu, Pb and Zn.

In the 1981/82 field season the existing grid was infilled to give a 100 metre line spacing and three extra lines 1100 metres long and 200 metres apart were pegged to the north. All lines were sampled for C horizon soil geochemistry, mapped geologically, and surveyed for magnetics and VLF-EM. Selected northern lines were surveyed for SP and Dipole-Dipole IP response. An area 500 metres x 600 metres centred on 8050N 9350E was infilled with lines 50 metres apart and surveyed for magnetics and VLF-EM. This section presents the results of all field work undertaken in the Voyager 30 area however only results related to base metal mineralization are discussed. Gold is discussed in section 5 as a separate commodity.

(ii) Geology

The geology of Voyager 30 was mapped at 1:2500 scale and is presented in plan 57. Outcrop in the northeastern quarter of the gridded area is fair and the geology is reasonably well known. Outcrop in the remainder of the area is too poor to define any lithological contacts except for the granite contact which was mapped from auger cuttings.

The topography is flat to slightly undulating and forms an open button grass plain. Soils are poorly drained and vary in depth from 10 centimetres to 2.5 metres.

Voyager 30 encompasses a sequence of quartz pebble conglomerates, rhyolitic and dacite lavas and rhyolite tuffs and agglomerates within the Wart Hill Pyroclastics. This sequence mantles the western margin of a porphyritic microgranite which has been informally named the Stoney Creek Granite. The sequence strikes at approximately 210°T and dips in a westerly direction at 70°. Outcrops exhibit a poor fracture cleavage which strikes at 200°T and dips in a westerly direction at between 30° and 70°. The bed of quartz pebble conglomerate has been offset up to 100 metres by faulting. The most prominent fault direction is 125°T.

Five distinctive rock types have been mapped within the gridded area. Details of each rock type working up the sequence are given below.

Dacitic lava and quartz porphyritic lava

A sequence of fine to medium grained light brown rocks which have eroded to give negative relief. Quartz phenocryst content ranges from zero to 15 vol %. Dacitic lava is strictly a field term originally used by Large, (1981) in the Voyager 24 area to indicate lack of phenocrystic quartz and presence of abundant

fine albitic feldspar in a chlorite feldspathic matrix. Flow banding has been highlighted on weathering surfaces. There is a zone of relatively strong chlorite and limonite alteration near the top of this unit north of line 8100N.

Sandstone, pebble conglomerate

This lithology outcrops as two prominent ridges in the north of the gridded area. The unit consists of pebble and minor cobble size quartz fragments interbedded with a well sorted quartz sandstone. The conglomerate fragments are almost exclusively milky quartz or sugary quartzite, ranging from angular to subrounded and have low to high sphericity. Matrix commonly constitutes less than 5% of the conglomerates. Tabular fragments are typically alligned with cleavage and some show possible imbrication. Large(1981)concluded the source of the pebbles to be the Precambrian rocks of the Tyennan block.

Quartz porphyritic lava

A smooth weathering, relatively resistant lithology approximately 60 metres thick. The rock contain between 15 and 20% quartz phenocrysts from 2mm to 5mm in diameter. The unit is relatively massive and poorly cleaved. A two metre thick fine grained quartz porphyritic lava occurs at the top of the unit. This finer grained unit contains rare subrounded fragment of crystal tuff up to 8cm in diameter. An excellent ropy flow texture has been highlighted on the weathering surface.

Quartz lithic crystal tuffs and agglomerates

The distribution of outcrop is greatly effected by faulting. In the centre of the gridded area a block of tuffs and agglomerates at least 300m x 300m has been faulted towards the W - SW, faulting off the dacitic lavas and conglomerates (see plan 57). The unit generally grades upwards over 200 metres from agglomerates and coarse grained lithic quartz crystal tuffs, through quartz lithic crystal tuffs to medium grained quartz crystal tuff near the top. The agglomerate fragments are typically subangular, range in size from 4cm to 15cm and consist of rhyolitic quartz porphyritic lava. The matrix is composed of quartz and feldspar crystals and sericite. Most outcropping rock is vesicular, consisting of up to 10% void possibly caused by leaching of carbonate during weathering. Samples of tuff excavated from a pit at 7800N 9200E contained up to 10% disseminated and podded fine grained pyrite. Coarse grained euhedral pyrite occured in bands of silicified tuff adjacent to irregular fractures.

Porphyritic microgranite (Stoney Creek Granite)

The Stoney Creek Granite subcrops along the eastern third of the gridded area and forms a low rise which slopes gently to the south. Outcrop is very poor, however a distinctive coarse grained, angular quartz sand loam has developed over the granite and appears to define the areal extent of the granite body. The granite weathers to give grey, gritty surfaced outcrops which usually only protrude a couple of centimetres above the soil surface. Outcrop in the northeast corner of the gridded area is of very weathered porphyritic granite. Tabular euhedral phenocrysts of altered feldspar up to 15mm long and constituting approximately 5% of the rock occur in a groundmass of fine grained quartz (45 vol %) sericite, muscovite and minor biotite.

No feldspar remains in the groundmass. The feldspar phenocrysts are oriented in the one direction. Strongly chloritized porphyritic granite was excavated in a costean on line 7400N. This chloritized granite contained stringers of pyrite and was anomalous in copper. Channel samples of the less altered granite were anomalous in lead, zinc and arsenic.

Quartz veining

Two styles of quartz veining have been identified within the gridded area.

a) Narrow, steeply dipping, milky quartz veins often with a saccharoidal texture. These veins are from 5mm to 15cm thick and form regular parallel sheets. The strike of these veins is 125°T, the same as the major fault direction. This style of veining has only been observed within the crystal lithic tuffs. Rock chip samples of these veins were anomalous in gold.

b) Veins of milky quartz which were observed in the north west corner of the grid and are expressed at the surface as long, low ridges of quartz rubble. Outcrop is very poor. These veins appear to be up to two metres thick and are continuous for over 30 metres. One of these veins excavated in a pit at 8000N 8800E contained galena and sphalerite mineralization. This vein was 20cm thick, vertical, and had a strike of 090°T.

(iii) C Horizon Soil Geochemistry

Three hundred and eighty (380) C horizon soil samples were taken on the Voyager 30 grid in the 1980/81 and 1981/82 field seasons. Samples were taken from along 7 grid lines at 25 metre intervals, and one line (7400N) at 12.5 metre intervals. A total of 8.3 line kilometres was sampled. Details of analytical techniques used are given in table 3. The results of lead, zinc and iron geochemistry have been plotted and are presented at scale 1:2500 on plans 59 - 61 respectively. A number of strong soil anomalies have been outlined:

a) Zinc geochemistry east of line 9400E.

Samples taken east of line 9400E came from over the granite or within 100 metres of the granite contact. Forty five percent (45%) of all samples taken over the granite returned over 100ppm Zn. The 200ppm Zn contour closely follows the 100ppm Pb contour. The two highest zinc values were 1200ppm and 1100ppm Zn. The style of mineralization causing these anomalies is probably similar to that observed in the costean on line 7400N, i.e. pods and strings of sulphides in strongly chloritized granite.

Zinc geochemistry west of line 9400E

Samples taken west of line 9400E came from over the volcanics. The anomalies are narrower and stronger than those in the granite. The three highest assays were 5900ppm, 1800ppm, and 1700ppm. All have strong coincident lead geochemistry. A pit excavated on the 1700ppm soil value exposed a 20cm wide quartz vein containing podded galena and sphalerite mineralization. One grab sample assayed 2.82% Pb, 7.75% Zn, 108 ppm Ag, and 839 ppb Au.

LINE	YEAR SAMPLED	SAMPLING METHOD	SAMPLING INTERVAL	FRACTION ANALYSED	ELEMENTS ANALYSED	METHOD	LAB
7 200N 7 600N	1980/81	JACRO RIG	25 m	-80#	Cu, Pb, Zn, Ag Au Sn, W	Al-I AAS LG 40 XRF	ANALABS
7 400N	1980/81	JACRO RIG	12·5 m	-80#	Cu, Pb, Zn, Ag Au Sn, W As	Al-I AAS LG 40 XRF ?	ANALABS
7 300N 7 500N 7 800N 8 000N	1981/82	JACRO RIG	25m	-80#	Cu, Pb, Zn, Ag, Fe Au As	AAS Carbon Rod / AAS ?	ALS
8 200N	1981/82	JACRO RIG	25m	-80#	Cu, Pb, Zn, Ag, Fe Au As	AAS Fire assay 114, vapour hydride generation	ANALABS

Table 3

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DWN R.Tog
CHKD

VOYAGER 30

DETAILS OF SOIL SAMPLING & ANALYSES

b) Lead geochemistry can be grouped in the same way as zinc geochemistry. Anomalies over the granite are broader than those over the volcanics. The highest value of 5200ppm Pb occurs over the granite.

c) There is a reasonable correlation between iron and base metal soil geochemistry. Generally all strong lead-zinc geochemistry has coincident or adjacent iron geochemistry.

d) There is good negative correlation between gold and base metal-iron soil geochemistry. Soils anomalous in gold generally contain less than 1% Fe and have no coincident base metal geochemistry (see section 5).

(iv) Costeans and Pitting

Costean 1

A costean 22 metres long was excavated on line 7400N between 9698E and 9720E to investigate the cause of anomalous copper geochemistry in soils sampled during the 1980/81 field season. A strongly altered porphyritic microgranite was exposed, Channel samples were taken along 2 metre intervals and analysed for Cu, Pb, Zn, As, Ag, Au, Fe, Ba, W and Sn. A bar graph of geochemical results and geological section of the costean are given in figure 27. The sample which corresponds to the zone of strong chlorite alteration returned 920ppm Cu, 135ppm Pb, and 70ppm Zn. Generally all samples were slightly anomalous in base metals, while As, Au, Sn and W were at or below the lower limits of detection, and Ba averaged 497ppm. Pyrite as stringers and pods was the only sulphide mineralization observed.

663118

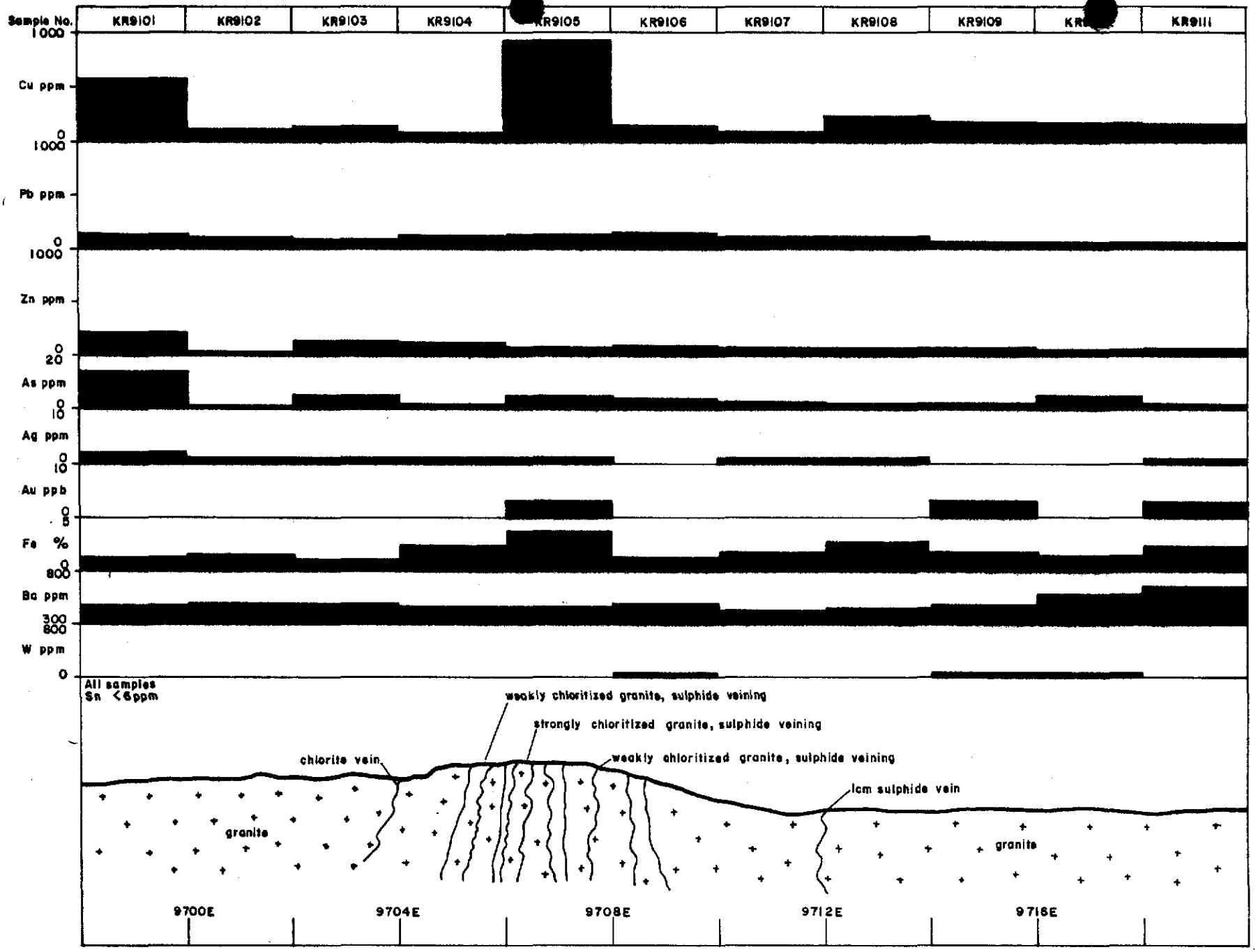

Fig. 29

GEOPEKO
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VOYAGER 30
COSTEAN 1, LINE 7400N

DATE 4/8/82
GEOL R.J.P
DWN R.Tog
CHKD

Pit 3

A pit was excavated at 8000N 8800E to investigate anomalous Pb-Zn soil geochemistry. A 20cm wide quartz vein containing galena and sphalerite mineralization was exposed. The analytical results for three grab samples from the pit are given below.

Galena and sphalerite mineralization in quartz vein:

	Cu ppm	Pb %	Zn %	Ag ppm	Au ppb	As ppm	Ba ppm	W ppm	Sn ppm
KR 8659	1850	2.82	7.75	108	839	10	10	X	X
KR 8661	1150	2.64	3.89	85	2260	31	20	130	6

Quartz crystal tuff adjacent to quartz vein:

KR 8660	15	0.15	0.08	0.5	8	410	135	X	X

Outcrop rockchip samples

Twenty one (21) rock chip samples were collected in the course of mapping and were analysed for Cu, Pb, Zn, Ag, Fe, Mn, As and Au. The results are given in table 4.

(v) Geophysics

Magnetic, VLF-EM, and reconnaissance Dipole-Dipole IP, SP, and gravity surveys were undertaken on the Voyager 30 grid. Figure 30 gives a summary of geophysical prospecting and anomalies outlined.

Total magnetic field intensity was measured at 12.5 metre intervals along all grid lines. The central part of the northern half of the gridded area was infilled with lines 50 metres apart and also read for magnetics. Contoured data is presented at scale 1:2500 on plan 63 and at scale 1:5000 in figure 31.

663120

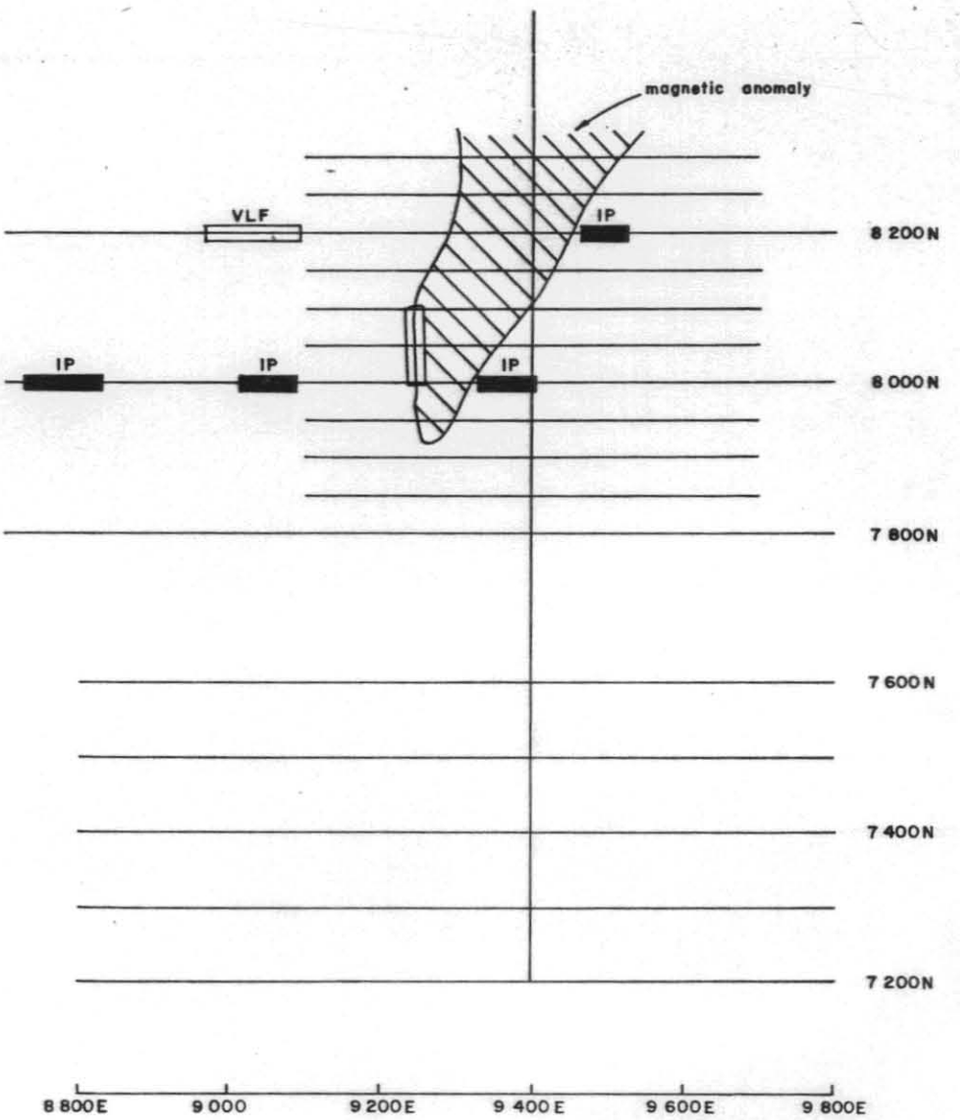
VOYAGER 30 ROCK SAMPLE ANALYSES TABLE 4

Sample No	Rock Type	Cu	Pb	Zn	Ag	Fe%	Mn	As	Au ppb	North	East
KR 9119	hem altered dac	2	20	15	1	1.46	50	2	10	8200	9425
KR 9120	fg qpl	10	20	10	1	2.60	10	1	3	8200	9283
KR 8651	cgqlxt	5	15	15	X	0.505	55	1	X	7940	8800
KR 8652	chloritic qpl	5	5	40	X	1.60	75	1	X	8150	9350
KR 8653	vesicular agglomerate	10	30	15	X	0.44	55	1	X	7825	9325
KR 8654	vesicular qlxt	10	25	20	X	0.31	45	1	X	7780	9270
KR 8655	quartz pebble conglomerate	5	20	10	0.5	0.425	65	1	X	8060	9500
KR 8659	galena & sphalerite in vein qtz	1850	2.82%	7.75%	108	0.68	435	10	839	8000	8800*
KR 8660	cg qxt (adjacent to qtz vein	15	1550	760	0.5	0.585	50	410	8	8000	8800*
KR 8661	galena & sphalerite in vein qtz	1150	2.64%	3.89%	85	0.86	85	31	2260	8000	8800*
KR 8662	chloritic feldspar tuff	10	30	105	X	4.15	610	25	9	8000	9100
KR 8663	chloritic feldspar tuff	5	35	140	X	4.25	615	26	7	8000	9100
KR 8664	chloritic eg qpl	5	20	70	X	1.45	105	5	X	8000	9284
KR 8665	chloritic eg qpl	X	35	65	X	1.25	95	4	X	8000	9300
KR 8666	pyritic eg qlxt	15	15	10	X	0.445	-	24	41	7800	9200
KR 8667	oxidized pyritic cg qlxt	5	30	10	1.0	0.41	-	13	45	7800	9200
KR 8668	oxidized pyritic cg qlxt	5	15	15	1.5	0.445	-	13	44	7800	9205
KR 8669	sheeted quartz vein	10	20	10	0.5	0.825	-	7	60	7795	9205
KR 8670	Sheeted quartz vein	5	15	10	0.5	0.52	-	7	495	7780	9205
KR 8671	sheeted quartz vein	10	25	5	2.0	0.795	-	5	12	7745	9200
KR 8672	pyritic cg qlxt	15	25	10	1.5	0.765	-	24	107	7775	9200

* Pit 3

\- Not analysed for this element

663121



Magnetometer	All lines, station spacing 12·5 m
VLF-EM	All lines, station spacing 25 m
Dipole-dipole IP	8 200N, 9 050E - 9 550E 8 000N, 8 700E - 9 800E
Self Potential	8 000N, 8 650E - 9 600E
Gravity	7 400N, 8 800E - 10 100E, station spacing 50m

0 100 200 400 m

1 : 10 000

5 cm

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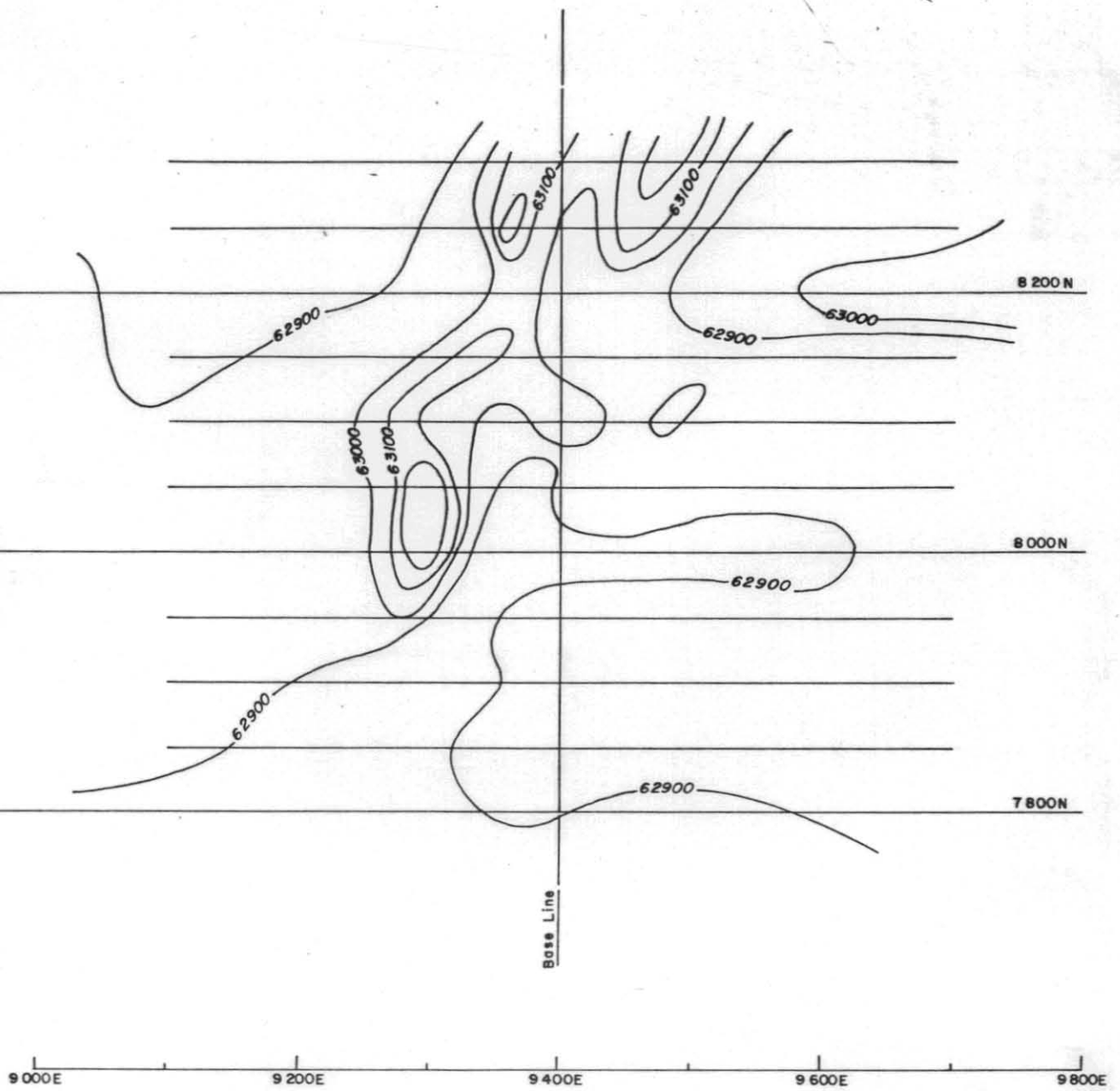
VOYAGER 30

SUMMARY OF GEOPHYSICAL PROSPECTING & ANOMALIES GENERATED

Fig.30

663122



CONTOUR INT. 100nT

0 50 100 200 m

1 : 5000

5 cm

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DATE 2/8/82	**VOYAGER 30**
GEOL R.J.P	CONTOURS OF TOTAL MAGNETIC INTENSITY
DWN R.Tog	Fig. 31
CHKD	

Vert. Scale 1cm = 25 mV (exaggerated), Hor. Scale 1 : 2500

Line 8000N

+25 0 -25 mV

9700E 9600E 9500E 9400E 9300E 9200E

9200E 9100E 9000E 8900E 8800E 8700E

+25 0 -25 mV

Fig. 32

	GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD
DATE 4/8/82	**VOYAGER 30**
GEOL R.J.P	LINE 8000N, SELF POTENTIAL PROFILE
DWN R.Tog	
CHKD	

A weak (300nT) magnetic anomaly occurs in quartz porphyritic lava within 100 meters of the granite contact. It is speculated the anomaly is caused by a slight increase in the magnetite content of the lava. The anomaly trends 210°T, the same as the strike of the rocks.

VLF-EM response was measured at 25 metre intervals along all grid lines. The data was 'smoothed' using Frasers Algorithm and contoured (see plan 64). A number of strong anomalies have been outlined in the north of the gridded area.

A small IP/Resistivity survey consisting of about 1.5kms using the Dipole-Dipole array was conducted. The bulk of this coverage was on line 8000N, the remainder on line 8200N. Pseudosections of the data are given on plan 65-66. The dipole spacing was 50m. Although it is difficult to assess on the small amount of data gathered to date, IP sources appear in this area to be amongst the strongest and most prolific so far encountered within the licence. Line 8000N shows three distinct anomalous zones along its length.

a) A broad chargeability high with associated resistivity low centred near 8775E. This response is not closed on its western side. The anomaly coincides with a quartz vein containing galena-sphalerite mineralization crossing the survey line at a low angle. A number of these veins, coupled with the 'smearing' affect of a poor angle of intersection could well be responsible for this anomaly.

b) A well defined chargeability high, again with associated resistivity low centred under 9150E. This is a broad anomaly, the source of which appears to be shallow and of limited depth extent. The resistivity picture supports this.

It may be that the source dips at a low angle and/or is surficial in nature. From geological considerations and companison with IP data elsewhere within the licence this response may well be due to a pyritic, graphitic black shale unit.

c) The most discrete anomaly on this traverse is centred under 9375E. The source here seems narrower and of greater depth extent, though the depth to the top is still likely to be small. There is no clearly defined resistivity expression associated with this source. This is the most attractive of these three responses in terms of likely response to a horizon containing concentrations of economic sulphides.

Line 8200N shows a chargeability high developing on its eastern extremity, however it has not been well enough covered to be reliably interpreted. It is likely that it is centred somewhere near 9500E. Given the geological strike and the trend of the magnetic anomaly this anomaly probably correlates with that on line 8000N at 9375E.

In general the IP signature of the area is complex, however even on the small amount of data gathered thus far, results have been encouraging.

(vi) Recommendations

1. Peg proposed infill and extension grid lines set out in figure 33. This will involve 7.9 line kms of gridding. Sample all lines for soil geochemistry, magnetics and VLF-EM. Map the grid in detail at scale 1:2500.

This will result in

a) better definition of soil geochemical anomalies with lines 100 metres apart.

b) further coverage of tuff sequence to the west and north of the present gridded area.

c) continuity of detailed geological-mapping from Voyager 30 north into Voyager 24.

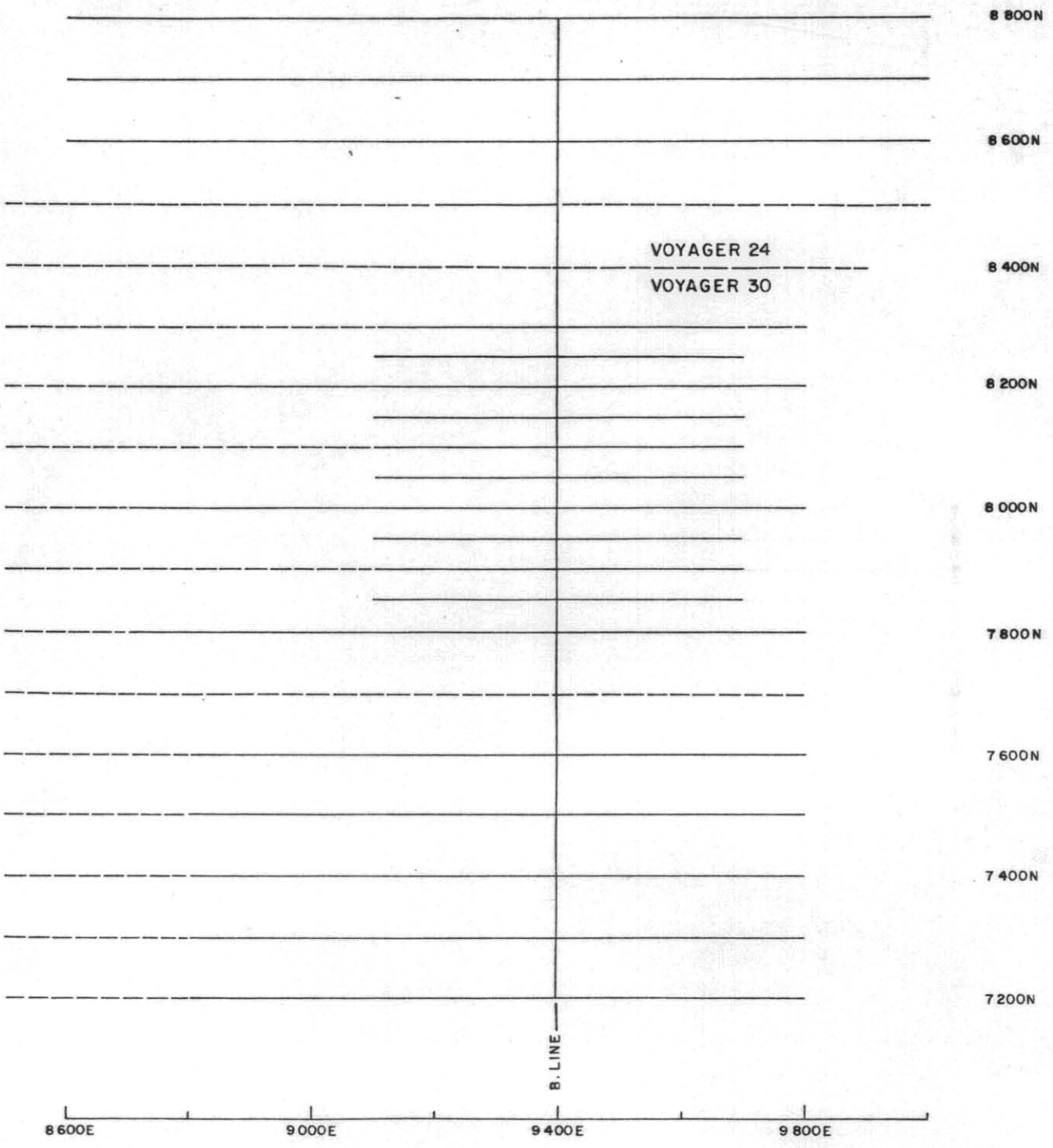
2. Excavate:

a) a costean over the granite centred on 8000N 9750E, the site of highly anomalous coincident lead-zinc soil geochemistry, to determine the style of mineralization.

b) a costean over the tuff-lava sequence centred on 7300N 7200E to follow up highly anomalous coincident lead-zinc soil geochemistry.

3. Increase Dipole-Dipole IP coverage. Survey line 7800N from 8500N to 9400N, line 7900N from 8500N to 9200N and line 7300N from 8800N to 9800N.

4. Drill a short diamond core hole into the IP anomaly beneath the galena-sphalerite-quartz vein style mineralization at 8000N, 8800E. Drilling should occur after results have been assessed from infill soil geochemistry and increased Dipole-Dipole IP coverage.



0 100 200 400m
1:10 000

——— Existing Grid
– – – – Proposed Extensions

5 cm

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DATE 2/8/82
GEOL R.J.P
DWN R.Tog
CHKD

VOYAGER 30

PROPOSED GRID EXTENSIONS

Fig. 33

3.7 VOYAGER 31

(i) Introduction

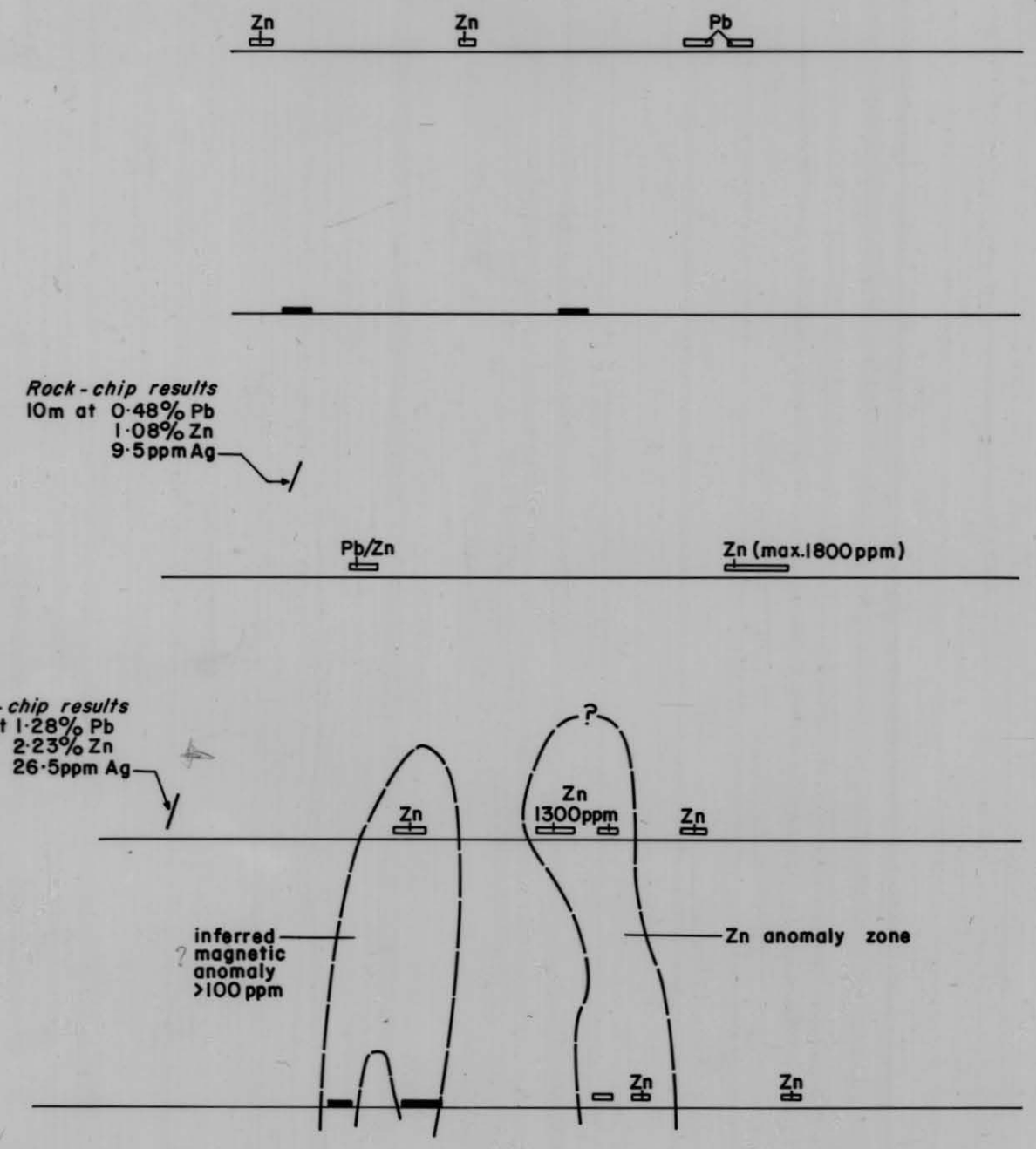
The Voyager 31 grid is a westerly extension of Voyager 19 into the rain forest (fig 2). During the 1980/81 season Copper Creek was sampled and mapped by W. Herrmann. He found outcropping galena-sphalerite mineralization in the creek and the stream sediments were anomalous in zinc (see Wilson et. al. 1981).

Five grid lines were cut at 400 metre intervals to cross Copper Creek and extend into the Sassy Creeek Argillites at least 100 metres. Thick rain forest and bauera cover the entire grid. Copper Creek is incised approximately 80 - 100 metres below the surrounding areas with very steep ($\pm 45^{\circ}$) slopes. The grid was mapped using auger chips and taped traverses up Copper and Pleasant Creek. C Horizon soil samples were taken every 25 metres by power hand auger. Magnetics and VLF-EM were read along the grid lines. Results are summarised in figures 34-35.

The outcropping mineralization was sampled along Copper Creek using a combined chip sample over five metres.

(ii) Geology

Mapping of Voyager 31 allowed the definition of the boundary between the Wart Hill Pyroclastics and the Western Sequence to be drawn (see plan no 67). The Pleasant Creek succession is used as the informal name for the epiclastic sediments overlying the Wart Hill Pyroclastics and underlying the Sassy Creek Argillites and thus the Western Sequence is divided into two units. This sequence would correspond stratigraphically to the Penders Tuff to the south and acid pyroclastics and sediments to the north.



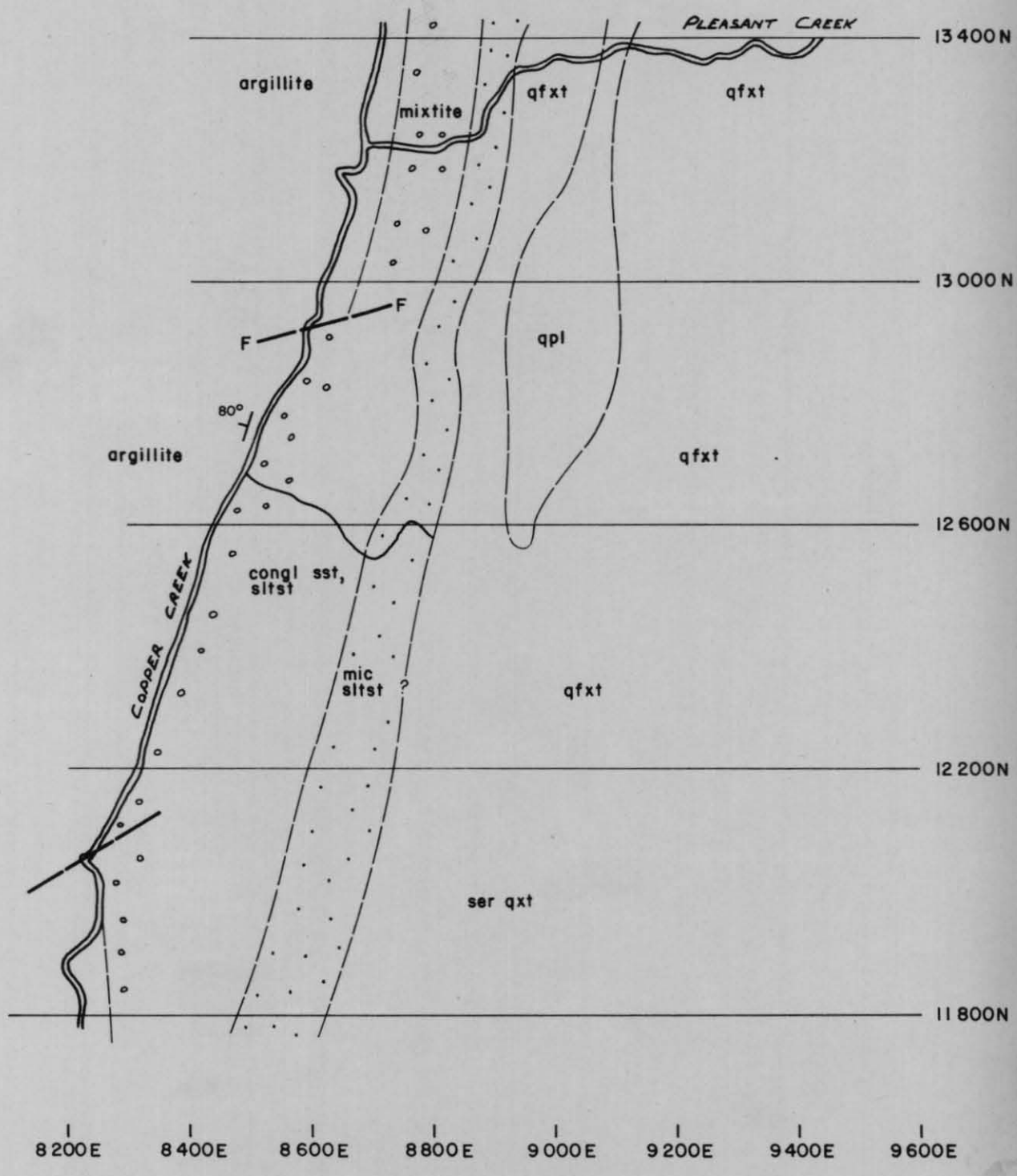
LEGEND:

- Soil geochemistry >200ppm Pb/Zn
- Magnetic anomaly >100nT
- Inferred anomaly boundary

5 cm

663129

Fig. 34



663130

E.L.27/76 ELLIOTT BAY

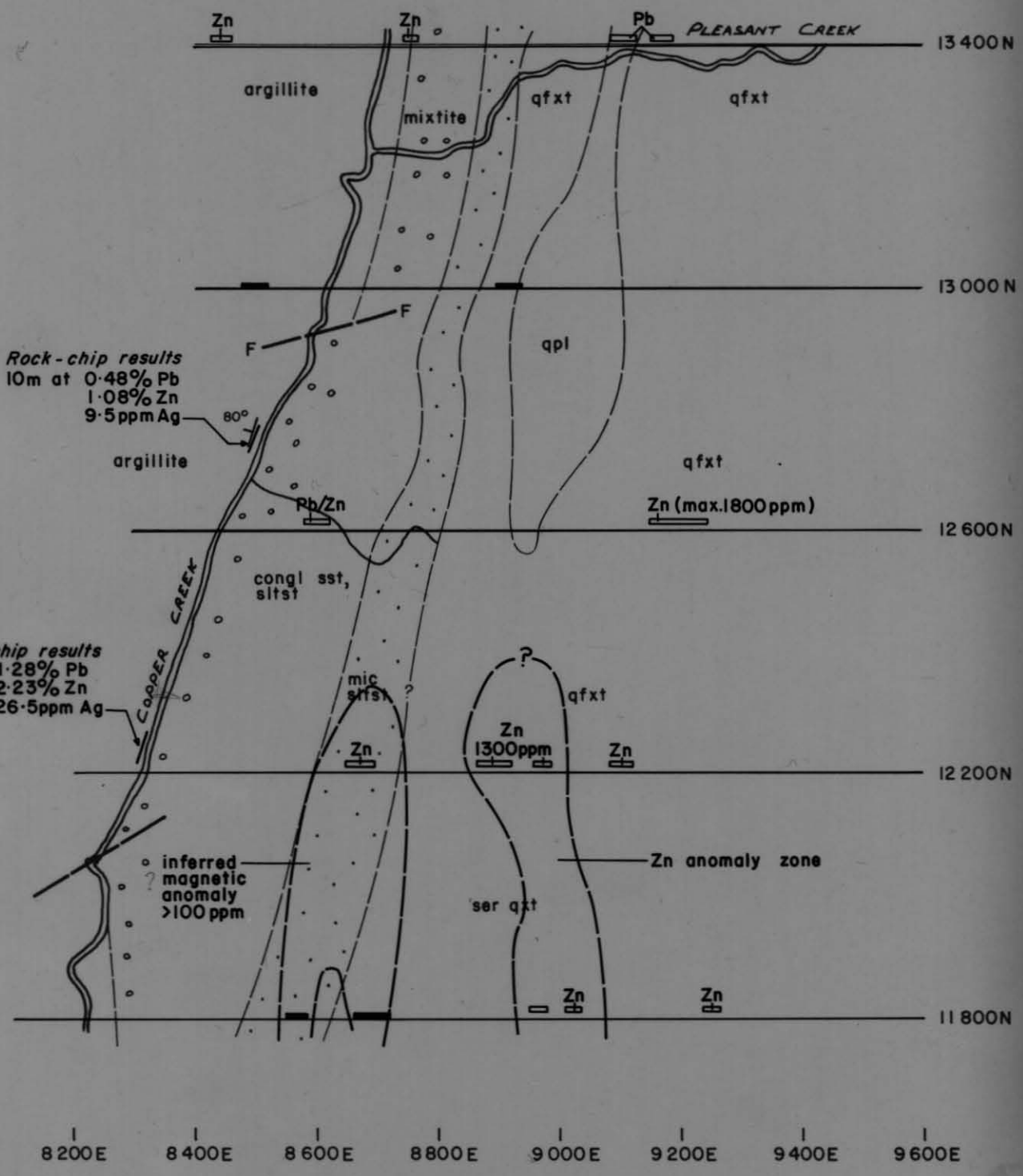
VOYAGER 31

1:10000

PROSPECT SUMMARY DIAGRAM

5 cm

123



LEGEND:
- Soil geochemistry >200ppm Pb/Zn
- Magnetic anomaly >100nT
- Inferred anomaly boundary

663130

E.L.27/76 ELLIOTT BAY

VOYAGER 31

1:10000

PROSPECT SUMMARY DIAGRAM

5 cm

663129

V-31 Geochemistry, Geophysics

Fig. 34,35

The upper part of the Wart Hill Pyroclastics on the Voyager 31 grid is dominated by sericitic crystal tuffs. A sheared lava unit was mapped in Pleasant Creek and on lines 13000N and 12600N. A chloritic tuff mapped on the western edge of Voyager 19 continues to 9200E on Voyager 31.

In Pleasant Creek the contact between the Wart Hill Pyroclastics and Western Sequence is taken at the first appearance of a black shale which has been disrupted and injected into a sericitic quartz crystal tuff (13400N 9050E). Overlying this unit is an interbedded epiclastic sandstone-siltstone with graded beds and tight folding on a ± 20 metre wavelength. Between the sandstone-siltstone and the Sassy Creek Argillite is a rapidly variable unit with black-shales, siltstones, conglomerates, tuffs and mixtites. The mixtites are comprised of blocks and fragments derived from the surrounding rock types and upper part of the Wart Hill Pyroclastics. As they have a crosscutting relationship with the other sediments but are confined to this position in the stratigraphy they are regarded as having their origin as intraformational mass flow breccias.

The Sassy Creek Argillites overlay the Pleasant Creek succession on the western side of Copper Creek and appear indistinguishable from the coastal outcrops to the south. They are isoclinally folded with asymmetrical limbs and a well developed slaty cleavage cut by kink bands. On the aerial photograph the contact of the Argillites and Pleasant Creek succession is marked by the major Copper Creek lineament.

The outcropping galena-sphalerite-arsenopyrite-pyrite mineralization was traced along Copper Creek from 11950N to 13200N. It occurs as veins and dissemination in the silicified upper part of the Pleasant Creek succession. The change in rock type and deformation style across the lineament are regarded as being key factors in the development of the mineralization.

As the Sassy Creek Argillite responded to deformation by folding isoclinally the Pleasant Creek succession was silicified and fractured. The subsequent mineralization was confined to fractural infilling as a 'vein style' during and probably after deformation. Results from the sampling program are discussed in the following section on the geochemistry.

(iii) Geochemistry

A total of 275 C horizon samples was taken along the grid lines at 25 metre intervals by hand held power auger and assayed for Cu, Pb, Zn, Ag and Fe. The outcropping mineralization was examined by taking a continuous chip sample over five metres at shoulder height. A total of 65 samples were assayed for Cu, Pb, Zn, Ag, Fe and As. Au was assayed for on approximately half the samples with no anomalous results.

Results from the auger sampling are presented in profile form on plans 68 - 69. Within the Wart Hill Pyroclastics the best anomaly is developed on line 12200N centred on 8900E with 1300 ppm Zn and 200 ppm Pb. On line 12400N a four point anomaly has a peak of 815 ppm Zn. An area of geochemical quiet overlies the quartz porphyry lava.

The Pleasant Creek succession is geochemically noisy and has outcropping disseminated pyrite. A good three point anomaly is developed on line 12200N over the micaceous sandstone - siltstone with a peak of 1050 ppm Zn, 175 ppm Pb and 6.45% Fe. An erratic increase in Fe distinguishes the Sassy Creek Argillite with line 13400N having two anomalous Zn values of 840 ppm and 520 ppm.

The Copper Creek mineralization was not detected in the auger sampling. This probably resulted from the 25 metre spacing of samples and narrow outcrop within the creek bed. Results from the sampling of the outcropping mineralization are presented on the geological plan no 67. Outcrop No 4 had the best result with KR 9562 giving a five metre sample along strike of 1.60% Pb, 2.85% Zn and 18gm/t Ag. The majority of samples from outcrop 1 to 5 along strike were anomalous in Pb, Zn and Ag. Crosscutting streams at outcrops 1 and 5 illustrate the limited width of the mineralization. At Outcrop 7 a thin quartz vein with galena and pyrite was present in silicified Sassy Creek Argillite. This style of mineralization was seen at 13090N and 13180N in Copper Creek.

(iv) Geophysics

The grid was read for magnetics using a Geometrics G-816 magnetometer with a reading being taken every 12.5 metres (see plan no 70). On lines 12200N, 12600N and 13400N there is a correlation between a series of low order magnetic anomalies and the base of the Western Sequence. The magnetics from Voyager 29 West also showed this relationship. A 300nT anomaly on line 12200N 86875E is coincident with the geochemical anomaly discussed above. Line 13400N has a 200nT anomaly on its western end which probably correlates with anomalies to the north on Voyager 31.

VLF-EM was reach every 25 metres using a Geonics EM-33 receiver. The data was filtered using Frasers algorithm and plotted up in profile form on plan no 71. There is a VLF response on either side of Copper Creek which could be due to the topography of the area or lithological. On line 12200N there is an anomaly over the sandstone-siltstone coincident with the geochemical and magnetic anomaly.

(v) Conclusion and Recommendation

The outcropping mineralization in Copper Creek is erratic along strike and has limited width. It is possible that the Copper Creek lineament is mineralized down dip but topographic problems limit the use of geochemical and geophysical exploration tools. At this stage of the development of exploration in the licence, this type of mineralization does not have high priority but will be examined further during work to the north and south. This contact zone between the primary rhyolite volcanics of the Wart Hill Pyroclastics and the marine sedimentary dominated lithologies of the Western Sequence represents a similar facies environment to that at the Rosebery and must be rated as some of the most prospective stratigraphy in the Exploration Licence.

Although the vein style of Pb-Zn mineralized is not prospective, it may represent an along strike/down dip stringer style associated with stratiform mineralization developed within the Sassy Creek Argillites. This possibility needs to be followed along strike to the south where high order zinc-lead drainage anomalies are associated with airborne EM anomalies in the area of 5248000N 377000E. . This region can be accessed by western extension from the Voyager 24 grid.

The stratigraphy of Voyager 31 as exposed in Pleasant Creek shows a gradation from a shallow water environment dominated by acid volcanics at the top of the Wart Hill sequence to a deeper water sedimentary environment with basic volcanics increasing to the west.

3.9 - VOYAGER 33

(i) Introduction

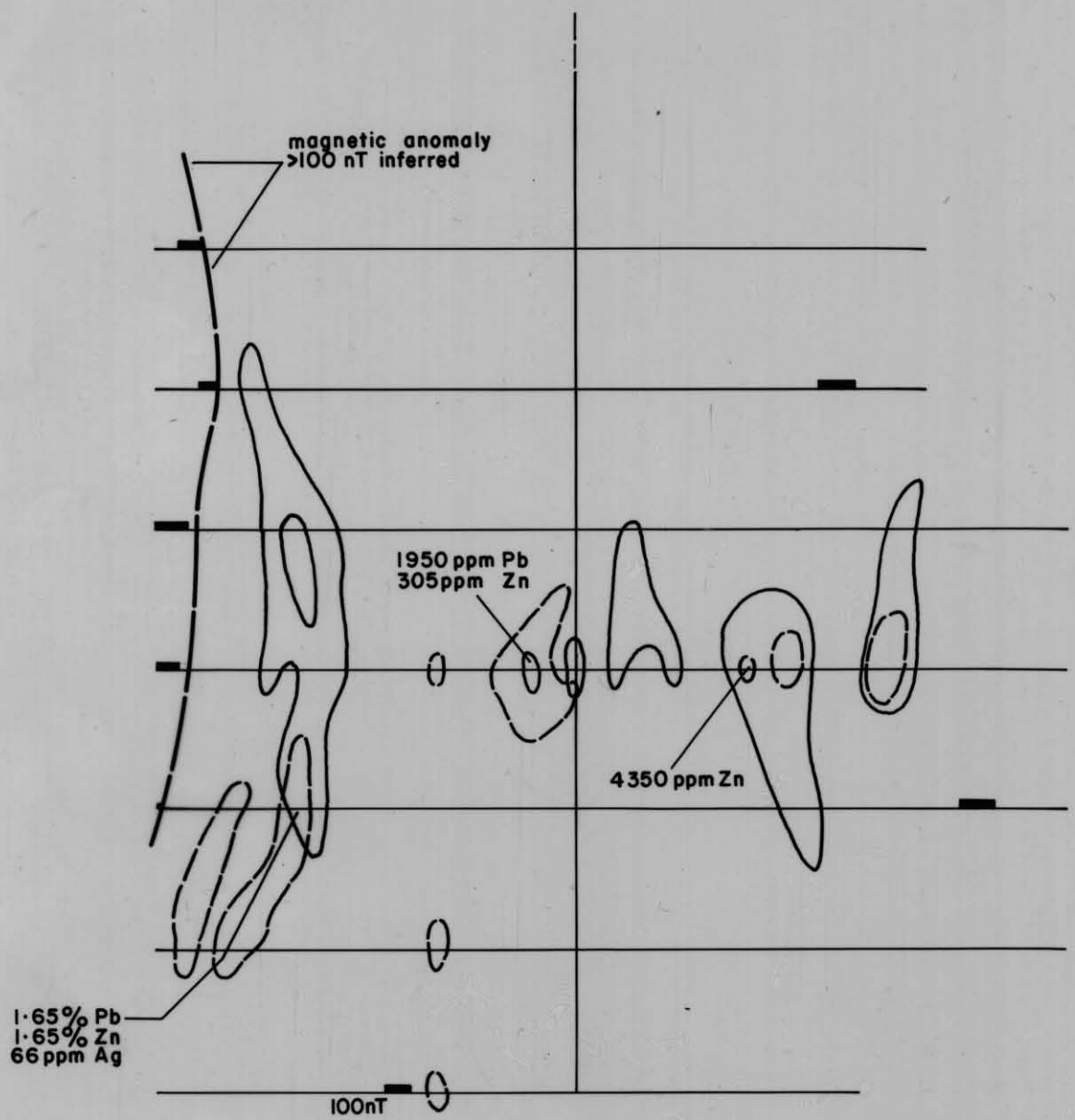
The Voyager 33 grid is a northerly extension of Voyager 19 (fig 2) and was cut to cover the favourable stratigraphy in the upper part of the Wart Hill Pyroclastics. A baseline was established on 9300E extending from 13600N to 14800N. Lines were cut on 200 metre spacing from 10000E to 8700E and decreased in length by 200 metres on the top two lines of the grid

Outcrop is limited on the grid to the Tyndal Correlates on the eastern and northern parts. Low scrub, eucalypt and tea tree forest grow on the Wart Hill Pyroclastics while the Western Sequence and black shales of the Tyndal have rain forest cover.

The grid was mapped at 1:2500 scale using auger chips in areas of no outcrop. C horizon samples were taken with a hand held power auger. Ground magnetics was read on the grid.

(ii) Geology

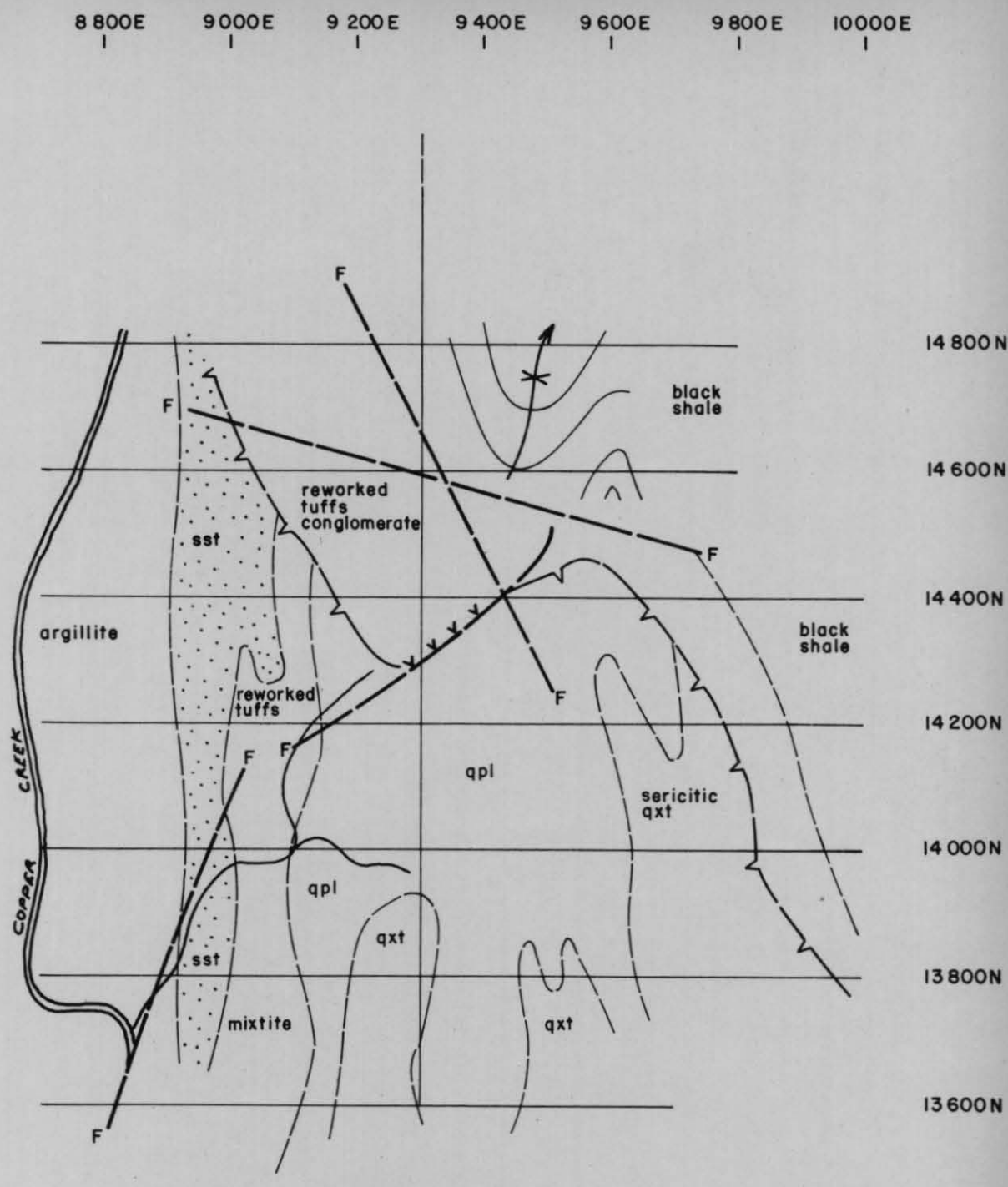
The geology of Voyager 33 covers the upper part of the Wart Hill Pyroclastics, the Pleasant Creek succession, Sassy Creek Argillite and Tyndal Correlates (see plan no 72). Rain forest marks the western limit of the Wart Hill Pyroclastics while a steep ridge in the east corresponds with the unconformity. A quartz biotite porphyry is the most common rock type in the Wart Hill Pyroclastics although the geochemistry and thin sections suggest that the tuffs are more extensive than the auger chips indicated.



LEGEND:
- Zinc anomaly soils >200ppm
- Lead anomaly soils >200ppm
- Magnetic anomaly >100 nT

5 cm

663136



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E.L.27/76 ELLIOTT BAY

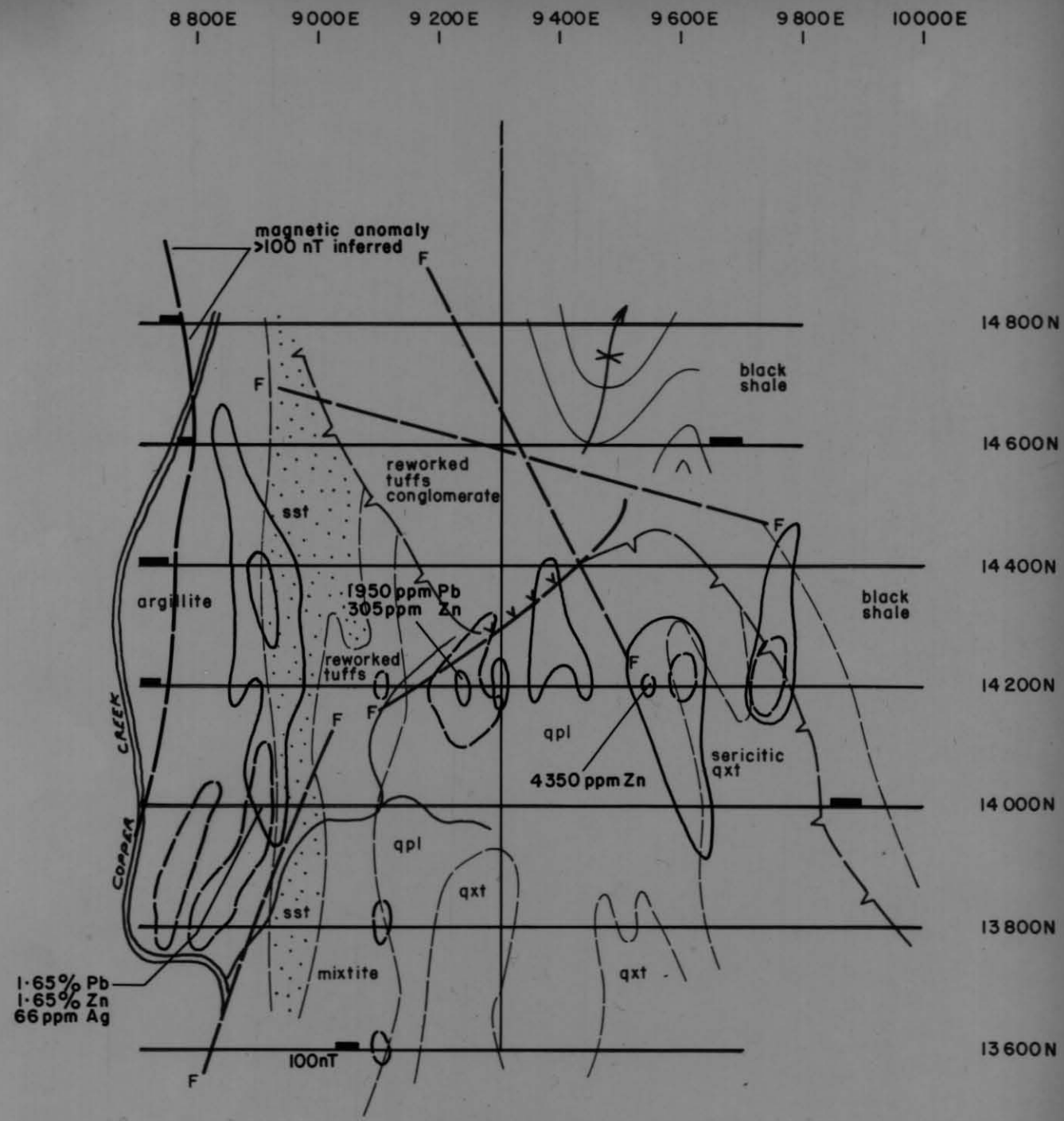
VOYAGER 33

1:10 000

PROSPECT SUMMARY DIAGRAM

Fig. 36

5 cm



LEGEND:

- Zinc anomaly soils >200ppm
- Lead anomaly soils >200ppm
- Magnetic anomaly >100 nT

663137

E.L.27/76 ELLIOTT BAY

VOYAGER 33

1:10 000

PROSPECT SUMMARY DIAGRAM

Fig. 36,37

5 cm

663136

On line 13800N a sericitic quartz crystal tuff outcrops at 9720E while further to the north a chloritic quartz feldspar crystal lithic tuff outcrops at 14000N 9810E. To the west sericitic crystal tuffs were logged from auger chips on eastings of 9500E and 9300E.

The base of the Western Sequence on Voyager 33 is taken as a mixtite unit with interbedded epiclastic sediments and tuffs. Overlying the mixtite unit is the epiclastic sandstone and siltstone which was mapped on Voyagers 29 West and 31. On line 13600N a mixtite, siltstone and black shale were logged between the sandstone-siltstone and Sassy Creek Argillite. This unit wedges out to the north with sandstone siltstone coming into contact with the Sassy Creek Argillite. The argillite is pyritic and in thin section has finely laminated chert beds alternating with black carbonaceous matter. On the western edge of the grid, orange, yellow and green clays, with a quartz crystal component were logged. One outcrop of this unit on line 14000N at 8700E was sampled and a hand specimen and thin section proved to be a medium grained reworked quartz feldspar crystal tuff.

The Tyndall Correlates unconformably overlie and crosscut the underlying Wart Hill Pyroclastics and Western Sequence. Complex steep strike-slip faulting in the north of the grid has resulted in the duplication of a synclinal structure. The lowermost 100 meters of Tyndal stratigraphy is comprised of epiclastic siltstones, sandstones and conglomerates. Hematitic and jasper clasts distinguish these rocks from the underlying volcanics. Overlying these epiclastic sediments is a sequence of pyritic black shales. At 14300N 9780E iron staining and pyrite boxworks were noted in the epiclastic conglomerate.

(iii) Geochemistry

A total of 379 C horizon samples were taken every 25 metres by hand held power auger. All samples were analysed for Cu, Pb, Zn, Ag and Fe (see plans 73 - 77).

The best anomaly in the Wart Hill Pyroclastics is on line 14200N on or close to the contact between the quartz biotite lava and chloritic tuff. This is in a similar stratigraphic position to the outcropping mineralization on Voyager 19. The anomaly is 125 metres wide on line 14200N with the highest value at 9550E of 285 ppm Pb and 4350 ppm Zn. It extends to the south with two anomalous values on line 14000N of 735 ppm Pb and 780 ppm Zn.

Approximately 100 metres to the east of this anomaly is a two point anomaly (935 ppm Pb, 530 ppm Zn and 435 ppm Pb) which extend to the north across the alteration noted in the Tyndal. On the eastern side of the baseline on line 14200N is a good Zn anomaly while to the west is a Pb anomaly (1950 ppm).

The chloritic and sericitic tuff in the east of the prospect is marked by increased values for Fe which suggest a larger area of subcrop than that logged from the auger chips.

The Sassy Creek Argillite has a complex Pb-Zn anomaly of substantial dimension and values with a high point at 14000N 8900E of 1.65% Pb, 1.65% Zn and 66 ppm Ag. To the north of this high point the Zn anomaly extends for 600 metres while the Pb anomaly is developed to the south on line 13800N. A small pit dug over the high spot revealed black shales with slightly anomalous Zn and Ag values. The displacement of the Pb anomaly south of the Zn anomaly is curious as Zn is usually more dispersed than Pb in the Elliott Bay environment. Both Pb and Zn have a central low zone and are flanked to the east by an Fe anomaly.

Both As and Ba were also found to be anomalous over the Pb, Zn highs.

(iv) Geophysics

The grid was read for ground magnetics using a Geometrics G-816 magnetometer. On line 13600N the base of the Western Sequence has a 125nT response which corresponds to the anomalies on Voyager 31. A 200nT to 300nT anomaly marks the western edge of the grid and corresponds with the bright coloured clays and tuffs of the unit overlying the Sassy Creek Argillite. The Tyndall Correlate has increased magnetic noise on the epiclastic conglomerate.

(v) Conclusions and Recommendations

The Voyager 33 grid has two anomalies which warrant a second phase of exploration. In the western area the Pb, Zn anomaly over the Sassy Creek Argillites is significant in that it suggests potential for sedimentary hosted deposits in the Western Sequence and Mainwaring Group.

Follow-up work on the Sassy Creek Argillite Pb-Zn anomaly will be difficult as the rain forest restricts access by Bombardier. It is recommended that infill grid lines be cut on 100 metre line spacing from 13600N to 14600N with a north-south control and access line on 8900E. C horizon geochemical samples should be taken on these lines at 12.5 metre intervals and infilled on existing lines. A trial IP survey should be run over the anomaly.

The follow-up work on the soil anomaly in the Wart Hill Pyroclastics will be facilitated by the use of the Bombardier. Three infill grid lines will be cut (14300N, 14100N and 13900N) and C horizon samples taken at 12.5 metre intervals. The results of this sampling program will dictate the positioning of costeans and geophysical follow up.

				Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	As ppm
KR	9623	13600N	9050E	X	X	105	.5	.76	1
KR	9624	13800N	8910E	X	X	10	X	.48	3
KR	9625	13800N	9580E	X	X	10	X	.62	X
KR	9626	13800N	9720E	X	X	X	X	.20	X
KR	9627	14000N	8900E	X	20	115	25	.27	4
KR	9628	14200N	9550E	40	45	230	X	.80	4
KR	9629	14000N	9130E	5	5	20	.5	.40	X
KR	9630	14000N	8960E	5	15	145	X	5.55	4
KR	9631	14000N	8700E	X	X	20	X	.90	3
KR	9634	14000N	9810E	20	60	105	X	.86	15
KR	9636	14015N	9300E	15	25	250	X	2.30	2
KR	9637	14200N	9142E	X	X	10	X	.37	X

Table 5 Rock chip analytical results from the Voyager 33 prospect.

3.9 VOYAGER 34

(i) Introduction

Voyager 34 is the name given to the area of Wart Hill Pyroclastics on the eastern limb of the Mt Osmund syncline and immediately north of the Voyager 22 (see fig 2). A grid was placed over the area and extends for 2km N - S (lines 11800N - 13800N inclusive) with a 200m line spacing. The eastern boundary is defined by easting 11900 and the western grid boundary is delineated by the rainforest which conforms with the black siltstones of the Tyndall Group.

The primary rationale for the examination of this low-lying, undulatory button grass area was to see if the mineralization of V19N is repeated on the eastern limb of the syncline. Ground work completed during the field season included geological mapping (1:2500 scale), collection of 330 C horizon soil samples (200m x 25m sample density) and partial completion of a magnetic survey (see figures 38-39).

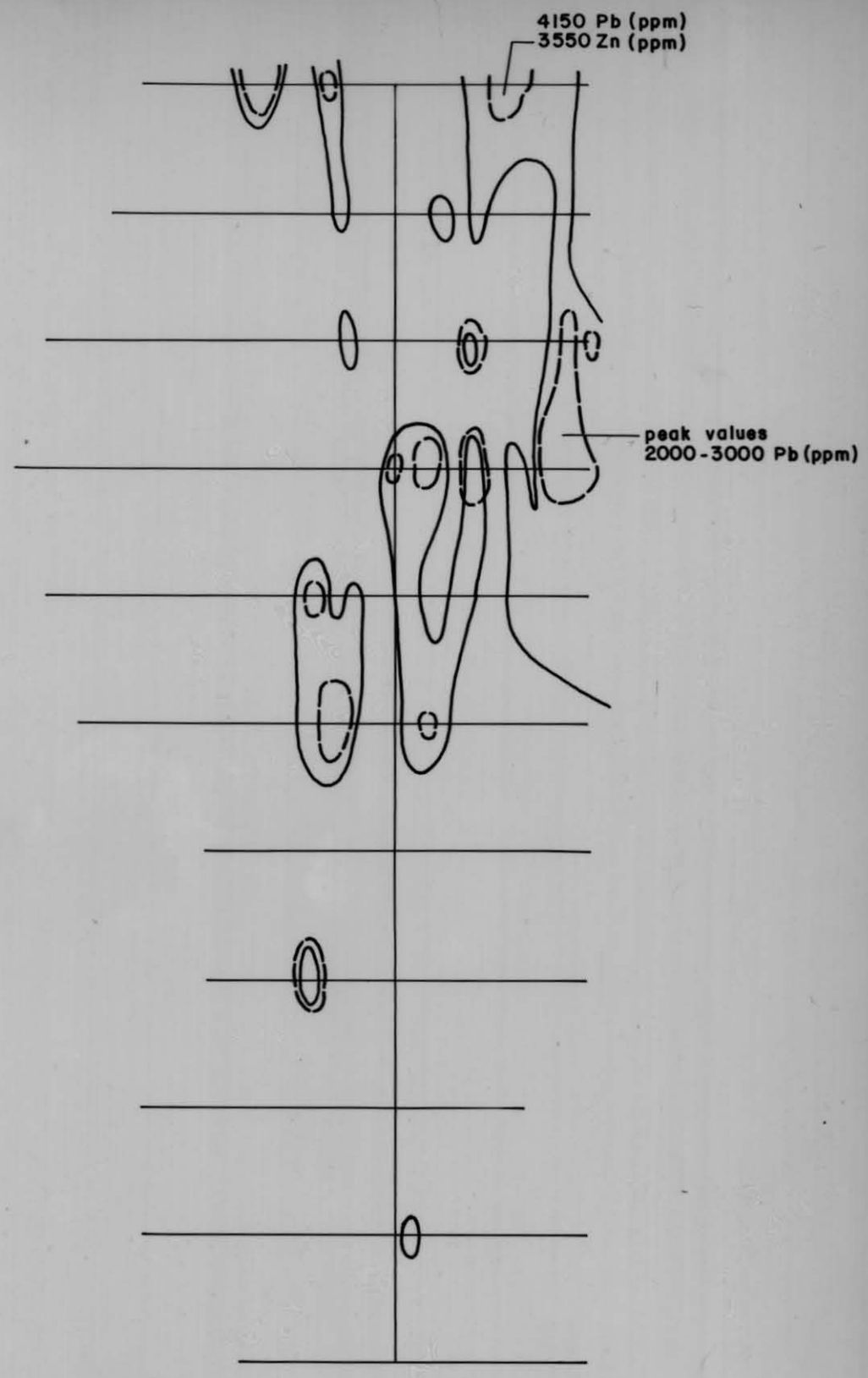
(ii) Geology

Outcrop on the gridded area is very poor, the rocks which are exposed are a northern continuation of those mapped on the V22 grid (see 3.3 (ii)). The rocks strike in a NNW direction and assuming a westerly younging the grid therefore extends over progressively older units to the north (see plan 79).

The most easterly quartz porphyritic lava unit of the V22 grid outcrops in the southwestern part of the V34 grid where it is underlain by a 300m thick, fine-grained quartzo-feldspathic crystal tuff.

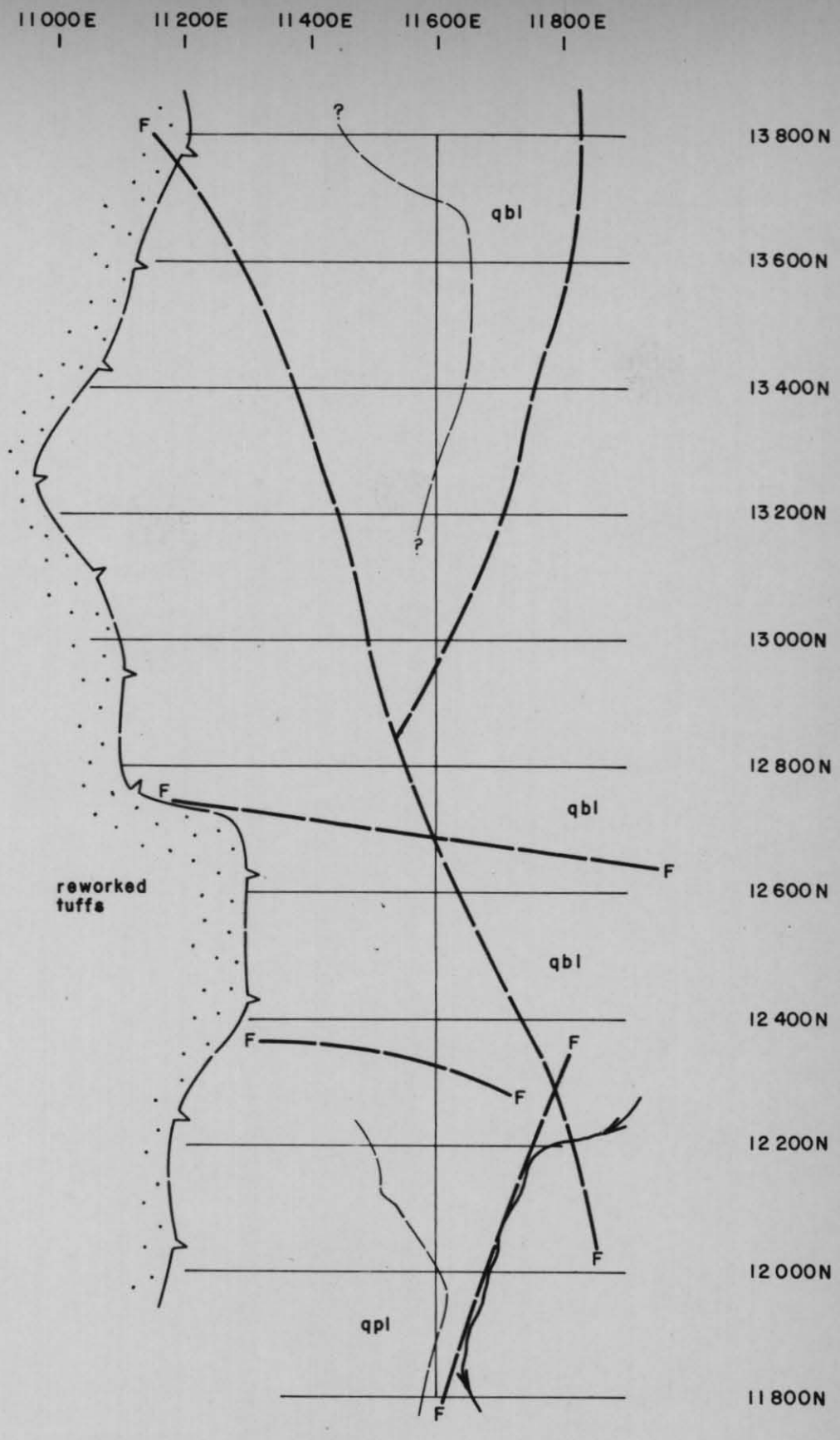
To the east of these tuffs is another belt of quartz biotite lavas occuring on the eastern margin of the grid between 12200N and 12800N. The outcrops are less resistant compared with their counterparts to the south consequently they are more strongly weathered and occupy areas of low relief. Whethe these two lava units are the same belt folded on a large scale, or are two separate belts, is not discernible. This is due to the very strong ubiguitous 340° cleavage, which overprints most structural markers.

Between 12400N and 12600N the Tyndal rocks are block faulted to the east. The fault trough is occupied by the fine grained quartz tuffs and further outcrops of lava are not found unitl 13200N. Here the lavas are very similar to the quartz porphyritic lavas except that they have a higher proportion of phenocrystic feldspar.
In the far northern part of the grid, these quartz-feldspar lavas grade into, or are interfingered with, fine to medium grained tuffs interpreted to be ash flows. These are peculiar rocks. in which much of the groundmass is devitrified or crystallized. North of these ash flows, but not in direct contact with them, are fine to medium grained light green sericitic, subhedral to euhedral quartz rich lithic tuffs. These rocks appear similar to the lavas, especially in regard to their greenish colour and euhedral quartz grains, but they have a large variation in grain size, a somewhat disrupted texture, are only moderatly indurated and contain lithic fragments. These rocks occur at 13250N, 11700E and also at the extreme northern end of the grid at 13800N.



663144

Fig. 38



663145

E.L.27/76 ELLIOTT BAY

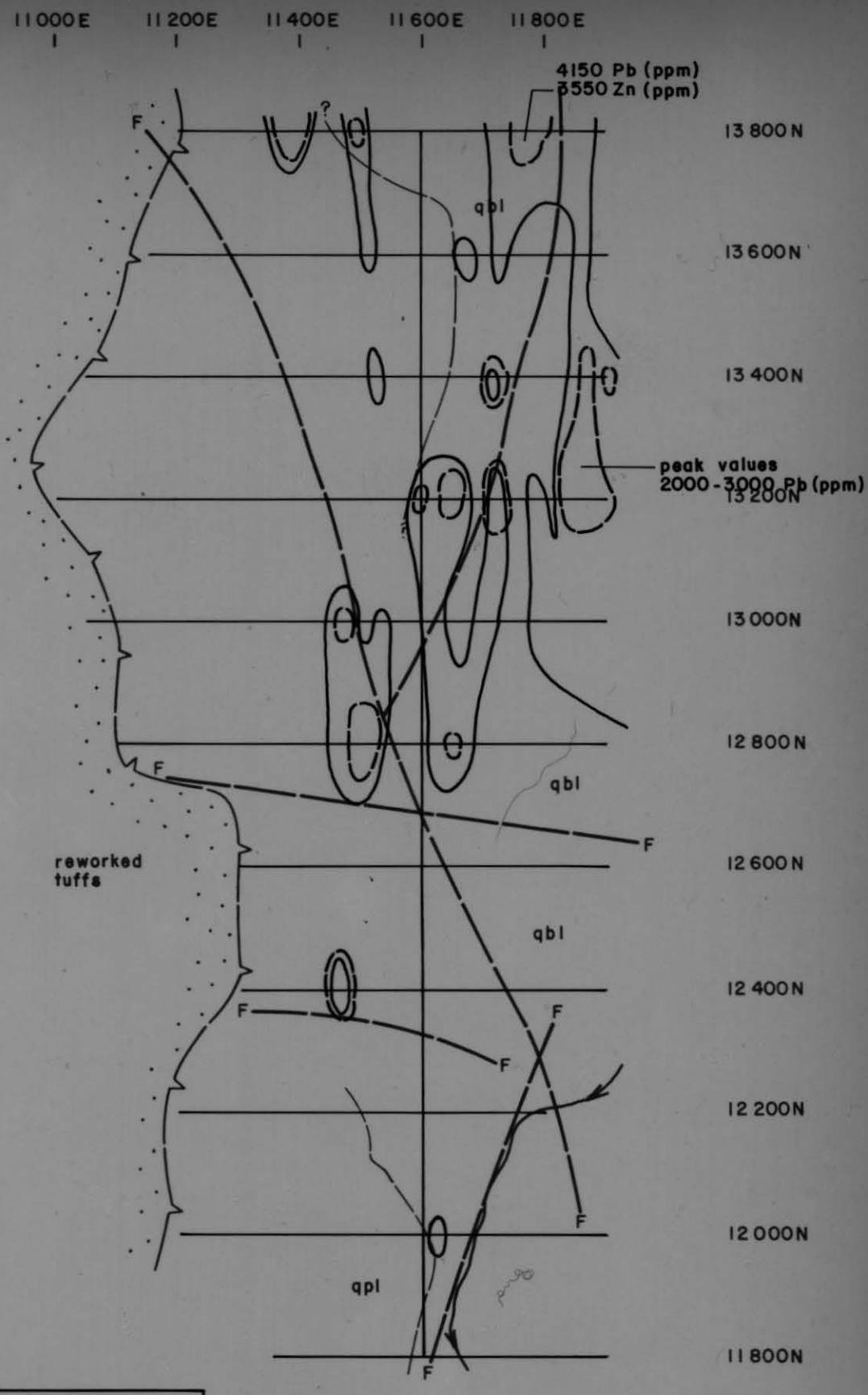
VOYAGER 34

1:10000

PROSPECT SUMMARY DIAGRAM

5 cm

136



LEGEND:
>100 ppm Zn in soils
>200 ppm Pb in soils

663145

E.L. 27/76 ELLIOTT BAY

VOYAGER 34

1 : 10 000

PROSPECT SUMMARY DIAGRAM

Fig. 38, 39

5 cm

663144

(iii) Geochemistry (fig 38)

Geochemical results from the C horizon soil sampling program are presented in plans 80 - 83. A moderate to strong N-S linear anomaly is present in the northwestern area of the grid. The anomaly extends from 12800N to 13800N, and roughly from 11700E to 11900E (11600E - 11700E on line 12800N) and is open to the North and the East. The highest values of 4150ppm Pb and 3550ppm Zn occur at 13800N 11775E, and are supported by values 650ppm Pb,450ppm Zn 25m to the west 130ppm Pb,435ppm Zn 25m to the east. They occur in an area of moderately low relief having little or no outcrop. Rock Chips from the Jacro hole contain a quartz rich sericitic rock with disseminated galena and sphalerite.

Further high values of 1700ppm Pb/1800ppm Zn, 3050ppm Pb/820ppm Zn occur on line 13400N at 11850E and 11900E respectively. Line 13200N contains the greatest number of anomalous values: 1800ppm Pb/1500ppm Zn, 3950ppm Pb/1900ppm Zn and 2000ppm Pb/710ppm Zn at 11650E, 11725E and 11825E respectively. These anomalies are located in gently undulating drainage areas where disseminated galena was observed in the Jacro hole chips.

A gossanous (secondary?) rock sample KR 8612, found in a stream near 13200N 11700E returned values of 1850ppm Pb and 960ppm Zn further enhancing the above anomaly. Rock sample KR 8613 a very chloritic tuff collected where the lighthouse road crossess Waterloo Creek, (11625N, 11375E) returned values of 625ppm Pb and 1200ppm Zn.

(iv) Geophysics

Total field magnetic intensities were read 12.5m centres on lines 13000N - 13800N inclusive, profiles are presented in plan 84. A broad wavelength 100nT anomaly is present centred on line 13000N at 11450E. Elsewhere the magnetic character of the area is flat.

(v) Conclusions and Recommendations

A sequence of thick porphyritic lavas and ash flow tuffs with anomalous base metal geochemistry continue along the eastern flank of the Mt Osmund syncline. So far it has not been possible to correlate the lithologies across the syncline due to absence of a reliable marker unit. Nevertheless the soil geochemical response from the NE part of V34 provides encouragement and the following follow up is recommended:

- To close off the geochemical anomaly on the NE part of the grid by gridding and soil sampling to a 100m x 25m density.

- Carry out a Dipole - Dipole IP survey on line 13800N an 13200N across the extent of the grid from the Tyndal unconformity.

- Costeaning of the best geochemical anomaly and IP zones.

- Re evaluate the regional mapping, stream sediment sampling program to the north of V34.

4. EXPLORATION DEVELOPMENT IN THE HUDSON RIVER VOLCANICS

4.1 VOYAGER 16

(i) Introduction - Previous Work

The Voyager 16 prospect is situated immediately to the north of the confluence of the Hudson River with Waterloo Creek (fig 2). The prospect defines a relatively strong circular aeromagnetic anomaly. Coincident with this anomaly is an area of anomalous Pb-Zn stream geochemistry. Reconnaissance mapping in the vicinity of Voyager 16 during the 1980 field season led to recognition of chloritic alteration in a sequence of rhyolitic agglomerates (Large, 1981).

Field work in the 1980/81 season was conducted under contract to the Poltock Bros. Geological mapping, soil sampling and a magnetic survey were completed along four 400m spaced E-W lines, (fig 40).

A broad zone of anomalous Pb/Zn soil geochemistry and magnetics on the western end of line 8800N was selected for detailed follow up field work in the 1981/82 season. One kilometre E-W lines, centred around 8800N 9500E, were pegged to the north and south of the anomalous zone, (see fig 40). This involved 3.5km of gridding. These lines were sampled for soil geochemistry, mapped geologically, and surveyed for magnetics and VLF-EM. Streams draining the gridded area were also sampled. This report presents the results of all follow up field work completed in the 1981/82 field season in the area delineated in figure 40.

10 900E
10 000E
9 300E
10 000 N
9 600 N
9 200 N
8 800 N
8 LINE
Pb/Zn Geochemistry
Pb/Zn
Zn
Area selected for detailed field work in the 1981/82 field season.
------ grid extensions 1981/82
Scale 1:10 000
30006
8 900N
8 800N
8 700N
8 600N
Pb/Zn Geochemistry

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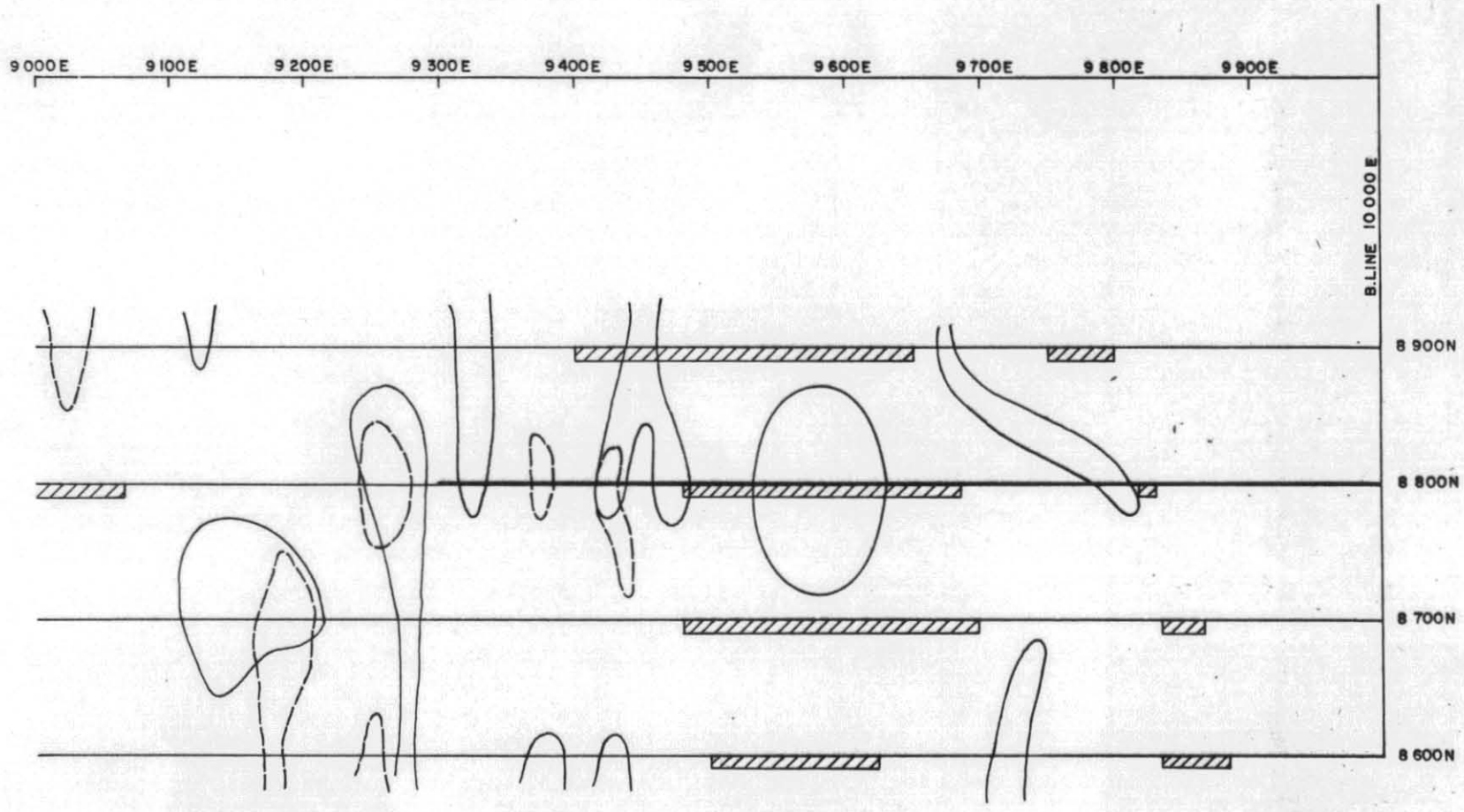
VOYAGER 16
RECONAISSANCE GRID SURVEYED 1980/81
BY POLTOCK BROS.

Fig. 40



Line pegged & sampled for soil geochemistry & magnetics Poltock Bros. 1980/81 field season.

Lines pegged & sampled for soil geochemistry, magnetics & VLF-EM 1981/82 field season to better define geochemical & magnetic anomalies indicated from 1980/81 field seasons work.

Anomalous magnetics (>200nT)

Pb soil geochemistry >400 ppm

Zn soil geochemistry >400 ppm

SCALE 1:5000

DATE 5/8/82
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VOYAGER 16

PROSPECTING SUMMARY MAP

Fig. 41

663150

(ii) Geology

Outcrop in the western half of the gridded area is very poor due to the gently easterly sloping topography, and surface cover of quartz rubble. The eastern half of the area is well incised and there is some scattered outcrop. Voyager 16 encompasses a sequence of rhyolitic crystal lithic tuffs within the Hudson River Volcanics, which strike from 170°m to 180°m and dip to the west at between 70° to 80°. Two very steep easterly dips were also recorded. The rocks are generally poorly cleaved probably due to their high crystal content. A widely spaced fracture cleavage strikes between 150° and 180°m and dips steeply to the west at 80°. Cuttings from auger holes indicate the subcropping tuffs are all moderately chloritic whereas outcropping tuffs are mildly chloritic and appear to have been leached of their iron and magnesium.

A thick unit of ropy quartz porphyritic lava overlies the tuffs to the east of the gridded area. Five similar tuffaceous lithologies can be recognized in the field and have been differentiated on varying amounts of quartz and feldspar crystal, lithic fragments, and grain size. The sequence generally fines upward to the west. Details of each, rock type working up the sequence are given below:

Quartz Crystal Tuff

A grey brown weathering rock with good outcrop to the east of Waterloo Creek. This lithology is coarse grained, massive, and contains between 40 vol% and 55 vol% equigranular subhedral phenocrystic quartz crystal. Some outcrops contain minor phenocrystic feldspar. The fine grained quartzo feldspathic groundmas exhibits weak pervasive chlorite alteration and patchy epidote alteration.

Feldspar Quartz Lithic Crystal Tuff

A medium grained sequence of crystal lithic tuffs with variable amounts of quartz and feldspar crystal and rhyolitic fragments. The sequence generally grades upwards through a quartz crystal tuff with one metre interbeds of light grey tuffaceous shale through quartz feldspar lithic crystal tuffs to feldspar quartz lithic crystal tuffs near the top. Phenocryst content varies from 50 to 60 vol % and lithic fragment content from 5 to 10 vol %. Lithic fragments consist of rhyolitic tuffs and lavas, subrounded to subangular, and up to 2cm in diameter. Beds containing lithic fragments are generally poorly sorted. Minor epidote and more commonly weak chlorite alteration occurs throughout the sequence.

Quartz Feldspar Crystal Tuff

A light grey weathering rock, conspicuous in the field due to the prominence of up to 10 vol % black manganese? wisps from 1mm to 2cm long. Equal amounts of quartz and feldspar crystal constitute approximately 30 vol % of the rock. Feldspar crystals are always more rounded and better sorted than quartz crystals. The matrix is fine grained and predominantly feldspathic.

Feldspar Quartz Crystal Tuff

A medium grained sequence of feldspar quartz crystal tuff and minor lithic crystal tuff. The lithologies are dominantly feldspathic with up to 55 vol % feldspar crystal and between 15-20% quartz crystal. The sequence becomes finer grained near the top.

Quartz Crystal Tuff

A grey brown weathering rock with very poor outcrop. The lithology is fine grained and contains up to 5% quartz crystal, and minor feldspar crystal. Chips from auger holes are dark green with chlorite although outcrops exhibit little or no chlorite alteration resulting from surface leaching of iron and magnesium.

Quartz Veining

Two styles of quartz veining occur in the western half of the gridded area where there is almost no outcrop of volcanics.

a) Massive steeply dipping veins of milky quartz up to 50cm wide and up to 5 metres long. These veins have an orientation almost identical to major photo lineaments and are most likely fault controlled. The veins are oblique to cleavage by 20°.

b) Narrow (10mm), steeply dipping quartz chlorite veins which form irregular network systems and appear to be controlled by joints and fractures unrelated to regional scale faulting or cleavage.

(iii) Geochemistry

C Horizon Soil Sampling

One hundred and sixty two (162) C horizon soil samples were taken on the grid, 29 of which were taken by the Poltock Brothers during the 1980/81 field season. Samples were taken using a power auger at 25 metre intervals along the four grid lines. The -80 mesh fraction was analysed by AAS for Cu, Pb, Zn, Ag, Fe and Mn

Results have been contoured for lead and zinc and are presented at a scale of 1:2500 on plans 86-87. A number of base metal soil anomalies have been outlined, (see fig 41). The statistics of lead-zinc C horizon soil geochemistry are given in table 6. Cumulative graphs were plotted from this data and background and threshold levels determined.

The following conclusions can be made:

a) Zinc background is 155ppm and threshold 820ppm assuming there is only one population. This gives three anomalies all of which occur in the western half of the grid. The strongest anomaly, centred on 8700N 9200E peaks at 930ppm Zn and has strong coincident lead geochemistry.

b) Lead background is 43ppm and threshold 500ppm. This gives four anomalies all of which occur in the western half of the grid where there is poor outcrop. The strongest anomaly, centred on 8800N 9425E peaks at 1950ppm Pb and has coincident zinc geochemistry (760ppm Zn).

c) Almost all lead-zinc soil anomalies occur over tuff in the upper part of the Voyager 16 sequence while the magnetic anomalies fall lower in the sequence.

d) In the western half of the gridded area, the sites of C horizon samples which assayed less than 100ppm Zn correlate well with low quartz rubble mounds and ridges. This suggests a sampling problem.

TABLE 6

663155

VOYAGER 16 - STATISTICS OF LEAD AND ZINC C HORIZON SOIL GEOCHEMISTRY

	LEAD			ZINC		
Class	Frequency	%Frequency	Σ% F	Frequency	%Frequency	%F
0 -50ppm	106	65.43	100	47	29.01	100
51 -100ppm	20	12.35	34.58	28	17.28	71.01
101-150ppm	12	7.41	22.23	14	8.64	53.73
151-200ppm	6	3.70	14.82	15	9.26	45.09
201-250ppm	3	1.85	11.12	15	9.26	35.83
251-300ppm	3	1.85	9.27	10	6.17	26.57
301-350ppm	3	1.85	7.42	6	3.70	20.40
351-400ppm	2	1.24	5.53	5	3.09	16.70
401-450ppm	3	1.85	4.33	2	1.24	13.61
451-500ppm	0	0.0	2.48	6	3.70	12.37
501-550ppm	0	0.0	2.48	2	1.24	8.67
551-600ppm	0	0.0	2.48	2	1.20	7.43
601-650ppm	0	0.0	2.48	0	0.0	6.19
651-700ppm	0	0.0	2.48	2	1.24	6.19
701-750ppm	0	0.0	2.48	1	0.62	4.95
751-800ppm	0	0.0	2.48	4	2.47	4.95
751-800ppm	0	0.0	2.48	4	2.47	4.33
801-850ppm	0	0.0	2.48	0	0.0	1.86
851-900ppm	0	0.0	2.48	1	0.62	1.86
901-950ppm	2	1.24	2.48	2	1.24	1.24
951-1000ppm	1	0.62	1.24			
1901-1950ppm	1	0.62	0.62			

162 *C Horizon Soil Samples*

Stream Sediment and Panned Concentrate Samples

Stream sediment and panned concentrate samples were collected from five streams which drain through the gridded area and analysed for gold by Analabs using a fire assay - AAS technique. All streams except Waterloo Creek have a source within or just outside the grid area. Sample locations, and analytical results are presented with geology on plan 85. Four of the pan concentrate samples contained between 2 and 5 grains of visible fine gold. Although pan concentrate analytical results for gold were as high as 23.6ppm when the concentration factor was taken into account the sediments contained between 10 and 50ppb Au and are not considered anomalous.

Rock Samples

Seven rock chip samples were collected in the course of mapping and analysed for Cu, Pb, Zn, Ag, Au, As, Fe and Mn. Results are given in table 7.

(iv) Geophysics

Total magnetic intensity was measured at 12.5m intervals along four grid lines. Contoured data is presented at scale 1:2500 on plan 88. A broad magnetic anomaly is interpreted to be caused by a conformable magnetic horizon striking 150°m and dipping steeply to the west. Spikes are caused by thin near surface beds of magnetite tuff and may subcrop below the soil and peat horizon. Individual spikes can be followed from line to line indicating the magnetite tuff beds are continous along strike for at least the 400m covered by the survey.

VLF-EM was read at 25m intervals along all the four grid lines. Stacked line profiles are presented at 1:2500 scale on plan 89.

(iv) Conclusions and Recommendations

- No further gridding or soil geochemistry is warranted
- Four costeans should be excavated to investigate the style of mineralization causing the coincident lead-zinc C Horizon soil anomalies. Costeaning should be centred on:
  1. 8800N 9525E
  2. 8800N 9425E
  3. 8800N 9250E
  4. 8700N 9200E
- Further work should await the outcome of drilling in the vicinity of the magnetic anomaly on the Voyager 9 prospect; which may relate to the Voyager 16 magnetics.

4.2 VOYAGER 20

(i) Introduction - Previous Work

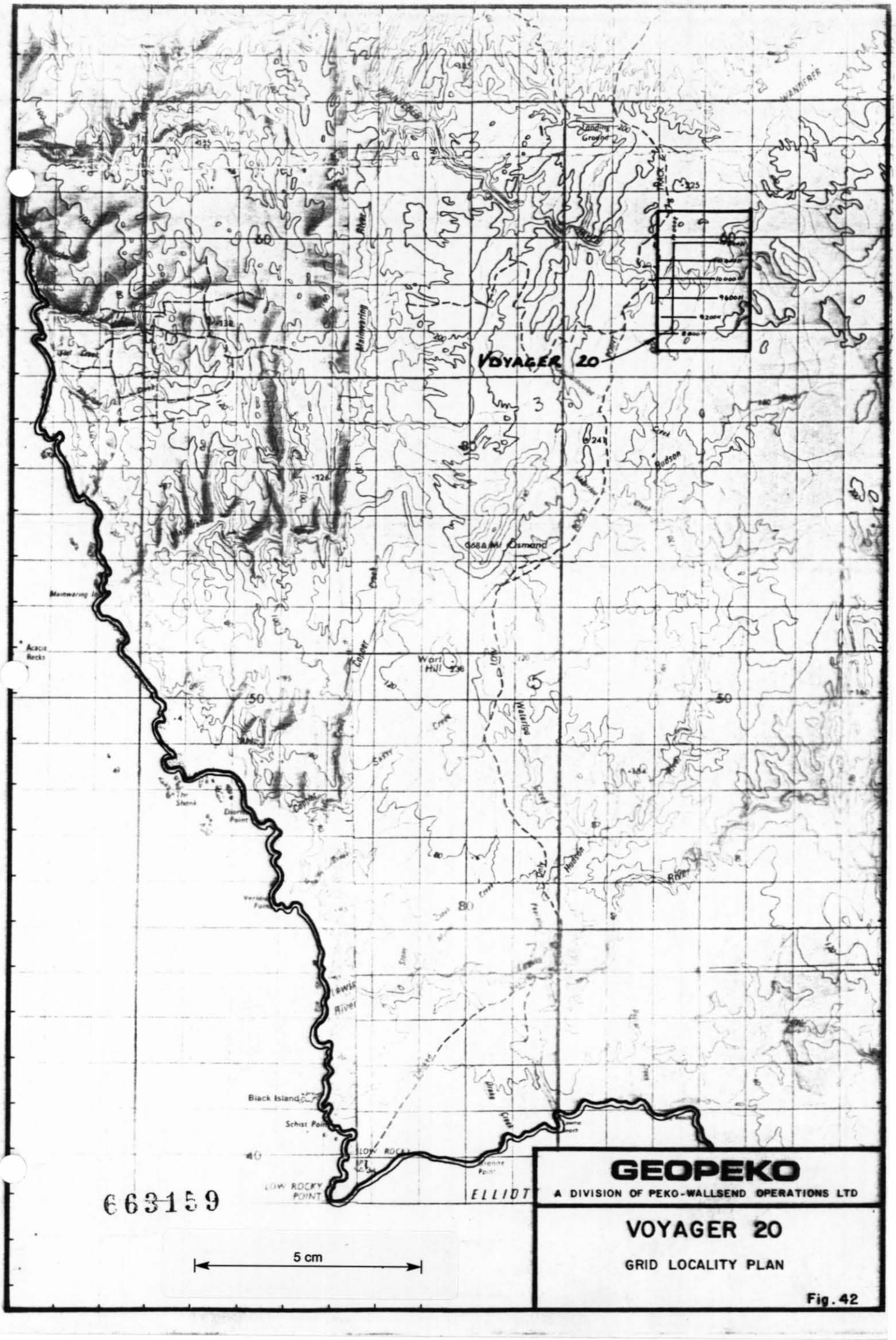
The Voyager 20 prospect is located on the Wanderer River in the north-central part of E.L. 27/76 (see fig 42) within the Hudson River Volcanics and hematitic Wanderer River Tuff.

In 1975 B.H.P. had the E.L. flown for Airborne Electromagnetics as part of a regional program, and delineated two EM anomalies in the Voyager 20 area (see fig 43). Anomaly 90 was interpreted as poorly defined, and typical of anomalies due to surface conductors. Anomaly 99 is a broad anomaly having a low conductivity ratio (Haigh, 1975). Both anomalies were given low priority for ground follow up.

Results from a regional drainage sampling program in the Wanderer River area is 1980 indicated that sediments in streams draining a 2sq km area north and south of the Wanderer River, centred on AMG co-ordinates 5259300N 384500E, were anomalous in lead, zinc and iron. These drainage anomalies were weak reaching peaks of only 55ppm lead, 80ppm zinc and 1.04% iron, which is barely twice background. A sub gossanous zone was discovered outcropping in the Wanderer River during the regional geological mapping of the area in January 1980 (Large, 1981).

A grid was established in February 1982 to cover the gossanous zone, A.E.M. anomalies and area of anomalous drainage geochemistry (see fig 41). A two kilometre N-S (True) baseline and six E-W lines 400 metres apart were pegged which involved 9.4 kilometres of gridding. These lines were sampled for C horizon soil geochemistry, and surveyed for magnetics and VLF-EM. The gridded area was mapped geologically. This report presents the results of all field work completed on the Voyager 20 area to date.

150



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VOYAGER 20

GRID LOCALITY PLAN

Fig. 42

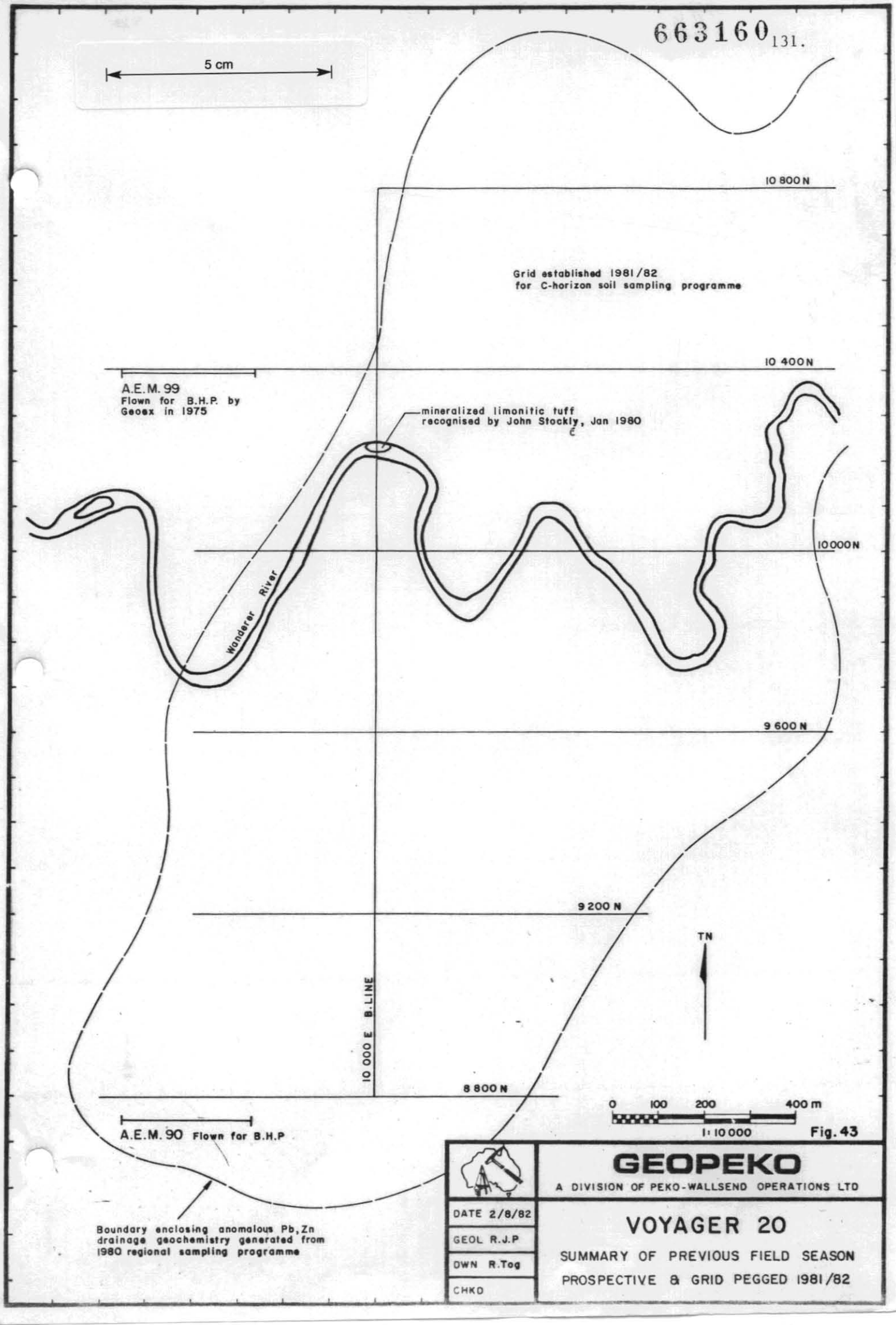

Fig. 43

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VOYAGER 20

SUMMARY OF PREVIOUS FIELD SEASON
PROSPECTIVE & GRID PEGGED 1981/82

(ii) Geology

The geology of the Voyager 20 area was mapped onto 1:10000 scale photographs and then enlarged to 1:5000 scale for data presentation (see plan 97). All faults have been interpreted from aerial photographs. Outcrop is fair and the deeply incised Wanderer River provided good exposure of the sequence.

Voyager 20 encompasses a sequence of rhyolitic tuffs and lavas within the Lewis River Volcanics which strike at approximately 205°T and dip to the west at between 30° and 70°. The Lewis River Volcanics has been divided into four major units (Large, 1981). Two of the units, the Hudson River Pyroclastics and Wanderer River Tuffs outcrop in the gridded area. At Voyager 20 the Hudson River Volcanics has been subdivided into three broad lithologies; a quartz porphyritic lava, quartz biotite porphyritic lava, and rhyolitic crystal tuff. The hematitic Wanderer River Tuff overlies the Hudson River volcanics to the west. Ten percent of the gridded area is covered by Tertiary quartz pebble conglomerates.

Quartz porphyritic lavas

A white weathering rock with poor outcrop occurring in the south east outside the gridded area. An infertile sandy soil lightly vegetated with button grass has developed over this lithology. This contrasts with the heavily vegetated soils developed over lithologies further up the sequence. The lithology is massive, and contains approximately 20 vol % coarse grained subhedral to euhedral phenocrystic quartz in a fine grained well foliated sericitized matrix. Hexagonal monopyramidal phenocrysts of quartz are common and usually zoned.

Chloritic quartz biotite porphyritic lavas

A sequence of medium grained chloritic rhyolite lavas with occasional interbeds of quartz biotite crystal tuff. The poorly outcropping tuffs are interpreted to be from 10 to 15 metres thick and divide the lava flows which tend to be an order of magnitude thicker. The tuffs are well cleaved in contrast to the poorly cleaved more competent lavas.

The lavas weather to give grey green rounded; smooth surfaced outcrops. They contain up to 25 vol % equigranular, medium grained phenocrystic quartz and between 5 and 10 vol % biotite in a fine grained chloritic quartzo feldspathic matrix. Perfect hexagonal bipyramidal quartz phenocrysts are common.

Rhyolitic crystal tuff

A bedded sequence of medium grained rhyolitic quartz crystal tuff. Subrounded quartz crystals constituting approximately 20 vol % of the rock occur in a fine grained quartz sericite groundmass. Weathering has highlighted bedding on some outcrop surfaces.

Hematitic quartz crystal tuffs

A purple brown weathering rock with good outcrop in the northwest of the gridded area. The unit consists dominantly of medium grained quartz crystal tuffs and quartz biotite crystal tuffs. The quartz crystal is commonly pink, subrounded with medium to high sphericity and constitutes between 15 and 20% of the rock. The biotite is usually well oxidized and rarely constitutes more than 5% of the rock. The matrix is fine grained, and mottled brown and green resulting from the strong hematite and lesser chlorite alteration. Minor lithologies mapped include a 10 centimetre wide agglomeratic bed consistency of subangular clasts of dark grey vitric tuff within a hematitic tuff matrix, and two 5 metre wide flows of medium grained quartz biotite porphyritic lava, one of which could be traced from patchy outcrop for 300 metres along strike.

The hematitic tuff was commonly vesicular with up to 5% void. This may have been caused by the leaching of carbonate from the tuffs during weathering.

Tertiary conglomerates

Unconsolidated deposits of quartz and quartizite pebble and cobble conglomerates up to 4 metres thick outcrop in the Wanderer River valley. Pebbles are well rounded and have a medium to high sphericity. The matrix is a medium grained well sorted quartz sand.

Structure

A penetrative close spaced fracture cleavage is well developed in the tuffs and poorly developed in the more competent quartz biotite porphyritic lava. This cleavage has resulted in the alignment of platy minerals such as biotite, rotation and milling of quartz crystals and the formation of pressure shadows around the crystals. The strike of cleavages recorded varied from 130°T to 215°T with a westerly dip of between 30° and 80°. When the poles defining these cleavage planes were plotted on a Wulff stereonet, 45% of the poles clustered around a point which defined a plane dipping at 75° to 300°T, 20% clustered around a point which defined a plane dipping at 45° to 280°T. The remaining 35% of points were scattered.

Major faults in the Voyager 20 area have been interpreted from aerial photographs and are expressed mostly by linear drainage. All obvious photo lineaments (60) were anotated and their orientation measured. The results have been plotted on an orthographic net (fig 44). There are two groups of lineaments. Group 1 with 80% of the population is centred on 340°T with a 40° spread either side. A smaller group (2) with 20% of the population has a strike centred on 060°T with a 20° spread either side.

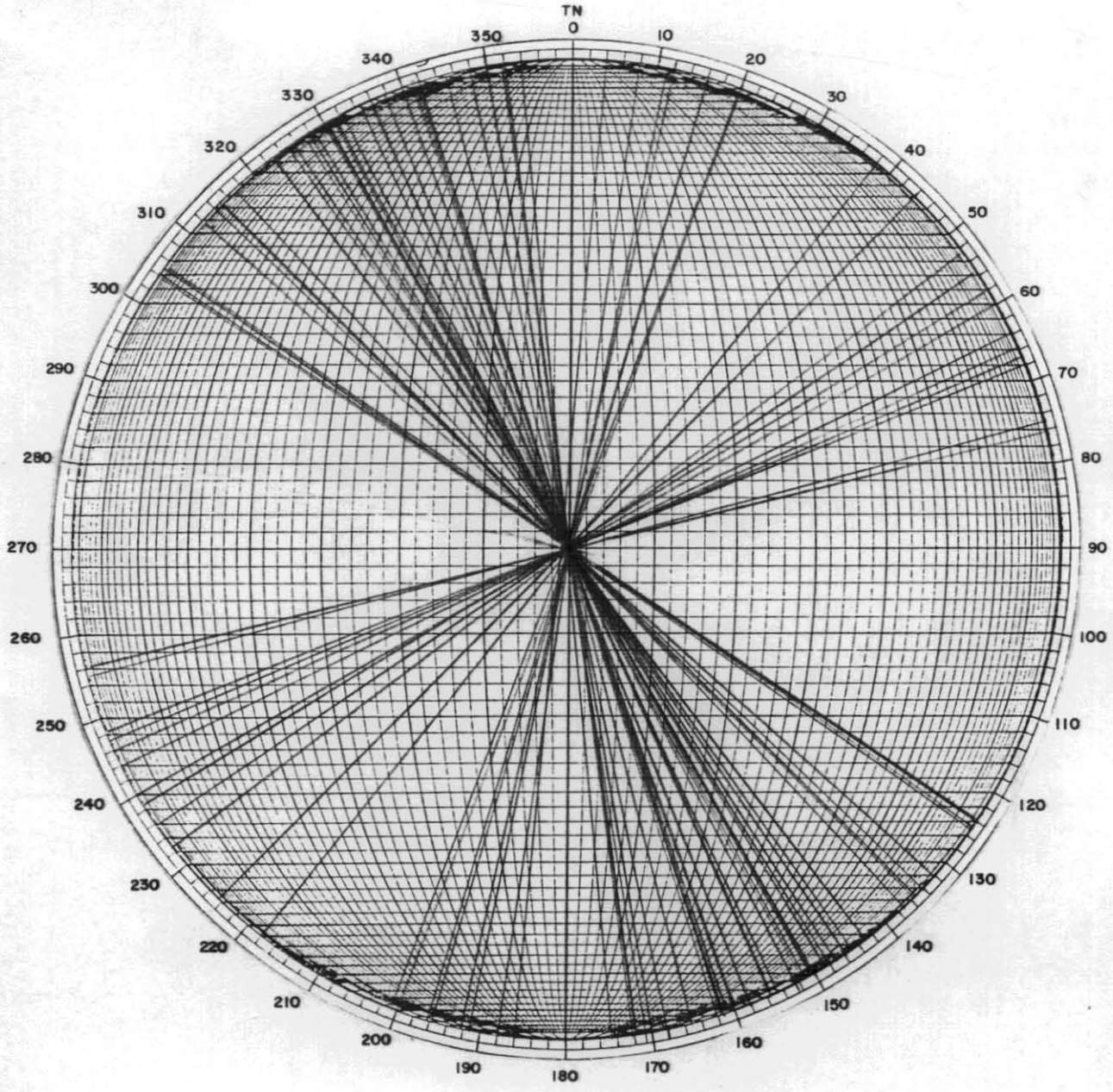

Fig. 44

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VOYAGER 20
ORIENTATION OF PHOTO LINEAMENTS
(60 MEASUREMENTS)

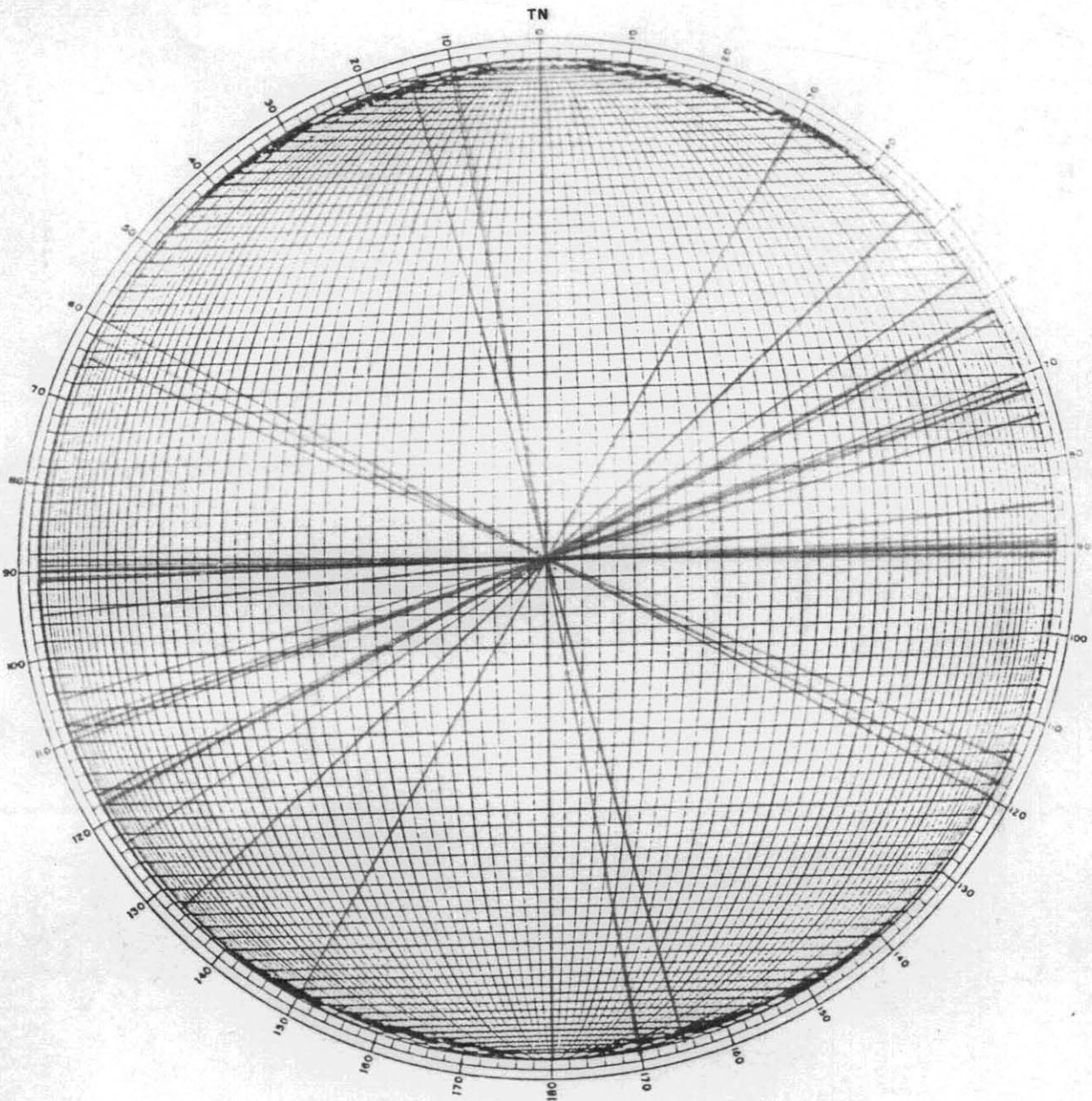


Fig. 45

	GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD
DATE 20/8/82	VOYAGER 20
GEOL R.J.P	ORIENTATION OF QUARTZ VEINS
DWN R.Tog.	
CHKD	

Quartz veining

Massive milky quartz veins from 2 to 5 metres wide and up to 50 metres long occur in the gridded area predominantly within the lavas. The orientation of 23 of these veins were measured and plotted on an onthographic net (fig 45). Fifty percent of veins have an orientation which falls within the limits of group 2 photo lineaments (faults) and their orientation is possibly influenced by this fault direction.

(iii) Geochemistry

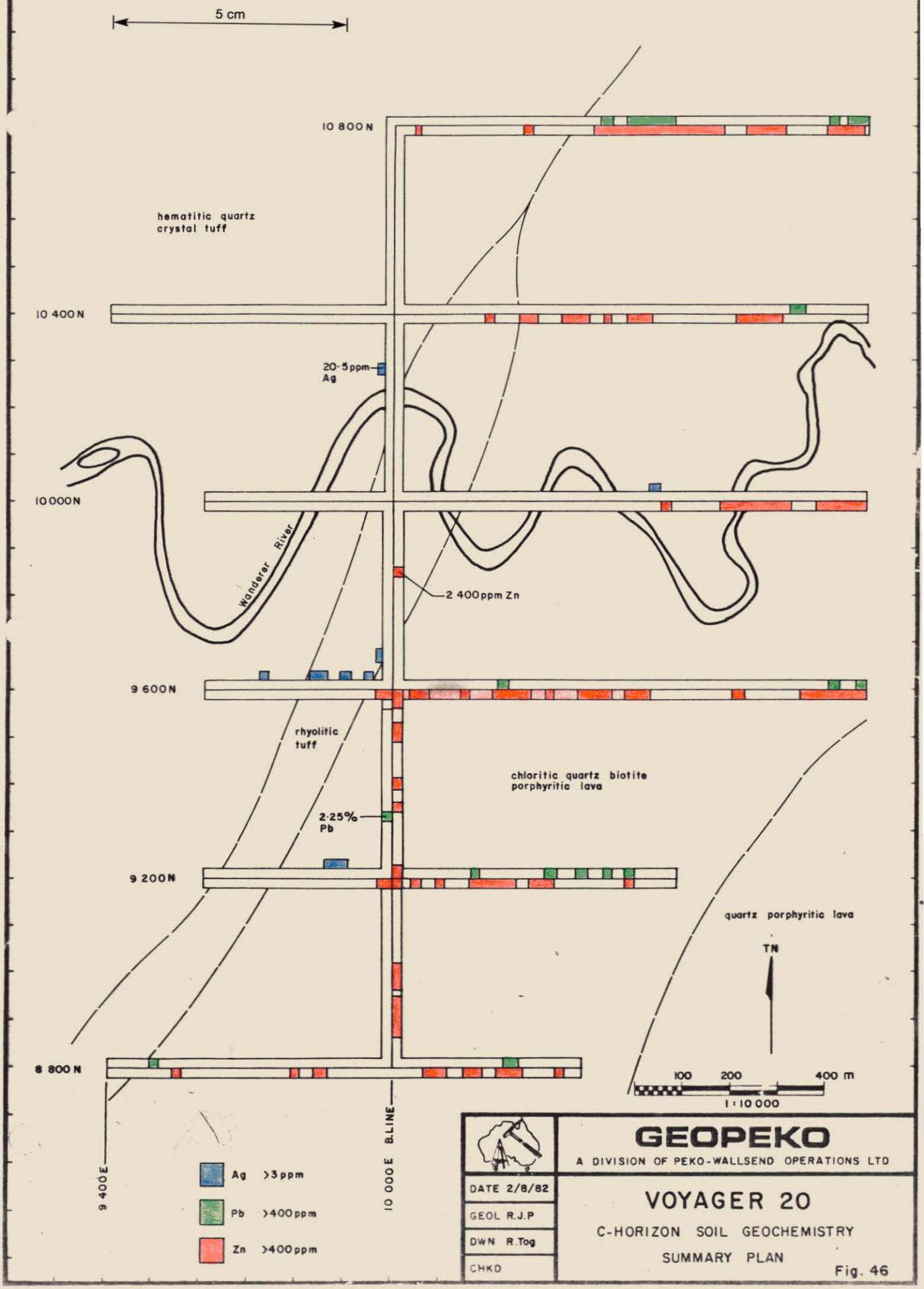
C horizon soil geochemistry

Three hundred and thirty (330) C horizon soil samples were taken on the Voyager 20 grid in February, 1982. Samples were taken using a combination of Jacro rig and power auger at 25 metre intervals along 9.4 kilometres of grid line. The Jacro rig broke down before the completion of the sampling program and the power auger had to be used. The power auger was unable to penetrate the Tertiary gravels along the Wanderer River valley and consequently line 9600N from 9600E to 10000E, and line 10000N from 10000E to 10700E will have to be resampled next season with the Jacro rig.

The -80 mesh fraction was analysed by A.A.S. for Cu, Pb, Zn, Ag and Fe. Results for Pb, Zn and Ag have been plotted in plan and are presented at scale 1:5000 on plans 93-95.

158

663167


5 cm
10 800 N
hematitic quartz crystal tuff
10 400 N
20·5 ppm Ag
10 000 N
Wanderer River
2 400 ppm Zn
9 600 N
rhyolitic tuff
chloritic quartz biotite porphyritic lava
2·25% Pb
9 200 N
quartz porphyritic lava
TN
8 800 N
100 200 400 m
1:10 000
9 400 E
10 000 E B.LINE
Ag >3 ppm
Pb >400 ppm
Zn >400 ppm
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CHKD
VOYAGER 20
C-HORIZON SOIL GEOCHEMISTRY
SUMMARY PLAN
Fig. 46

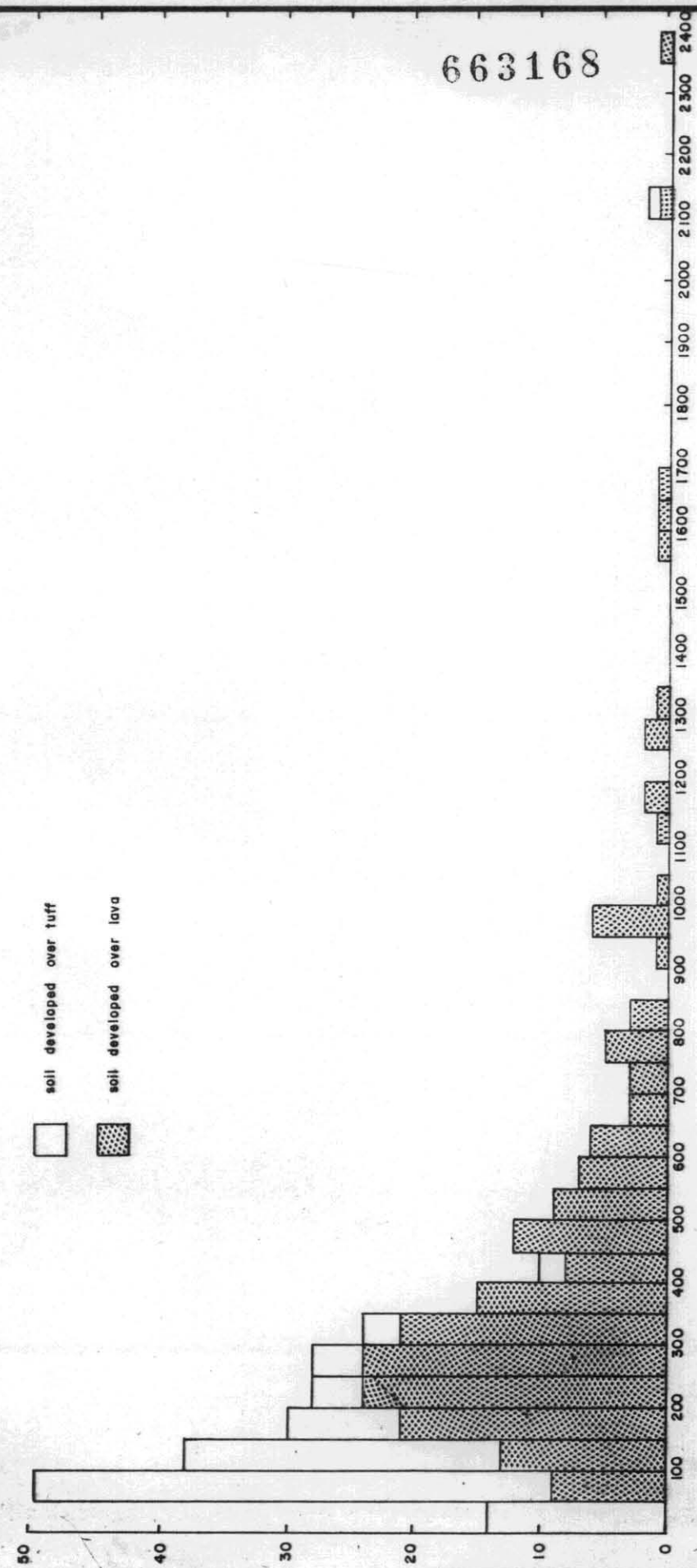

Fig. 47

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HISTOGRAM - Zn C-HORIZON

SOIL GEOCHEMISTRY

160

663169

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HISTOGRAM, Pb C-HORIZON GEOCHEMISTRY

Fig. 48

A summary of results are given in figure 46 at scale 1:10,000

a) Zinc background and threshold for the total population was calculated to be 250ppm and 1300ppm respectively. Figure 47 illustrates the contribution of the geochemistry of soils developed over tuffs to the total range of values. Soils developed over tuffs have a much lower background and threshold than soils developed over the lavas. Background and threshold levels for soils developed over tuffs were calculated to be 90ppm and 420ppm respectively. Data from line 10000N was not used in calculations because of poor sample quality.

The contact area between the lava and tuff sequences is anomalous in zinc geochemistry. Values over 1600ppm Zn have been detected on three grid lines 400 metres apart. Two of these anomalies fall within the tuffs and one within the lava. A strong zinc anomaly with peaks at 1600ppm and 2150ppm occurs near the middle of the quartz-biotite porphyritic lava sequence on line 9200N.

b) Lead background and threshold for the total population was calculated to be 76ppm and 650ppm respectively. Five anomalies with peaks over 1600ppm Pb have been detected over the quartz biotite porphyritic lava sequence, three of which occur within 125 metres (estimated true thickness) of the tuff-lava contact.
Two anomalies with peaks at 1700ppm and 1950ppm occur within the quartz-biotite porphyritic lava sequence on line 9200N adjacent to strong zinc geochemistry.

c) A broad silver anomaly with soil geochemistry ranging from 2.0 to 5.5ppm Ag occurs over the rhyolitic tuffs on line 9600N. There is no coincident lead or zinc soil geochemistry. Also one soil sample taken from near the subgossanous outcrop identified by John Stockley in the bed of the Wanderer River assayed 20.5ppm Ag.

d) Eleven soil samples with highly anomalous Pb, Zn or Ag soil geochemistry were analysed for gold. All samples contained less than 23ppb Au.

Rock chip geochemistry

Nine rock chip samples were collected for analysis in the course of mapping and analysed for Cu, Pb, Zn, Ag, Fe, Mn, Ba, Au and As. The results are given in table 8.

(iv) Geophysics

VLF-EM was read at 25 metre intervals along all grid lines. Stacked line profiles are presented at 1:5000 scale in plan 89. A magnetometer survey was commenced but instrument failure prevented the survey from being completed. Data collected before failure is considered unreliable. The grid should be resurveyed for magnetics in the 1982/83 field season.

(v) Conclusions and Recommendations

1. Numerous lead and zinc soil anomalous are indicated within the quartz biotite porphyritic lava sequence. The samples most anomalous in lead 2.25%, zinc 2400ppm, and silver 20.5ppm occurring near the contact between the quartz biotite porphyritic lava sequence and tuff sequence within both the quartz biotite porphyritic lava and tuff.

TABLE 8

V 20 ROCK CHIP ANALYTICAL RESULTS

Sample	Rock Type	Cu	Pb	Zn	Ag	Fe%	Mn	Ba	Au ppb	As	North	East
KR 9142	qtz vein containing pyrite	10	15	50	X	2.05	1100	5	X	3	10750	10575
KR 9143	stringers of pyrite in qf bpl	5	40	660	0.5	7.10	1300	35	X	4	10700	10610
KR 9144	subgossan	25	125	250	X	8.90	315	230	X	6	10070	10235
KR 9145	chloritic tuff diss galena	10	125	35	X	0.875	85	125	X	4	10150	10150
KR 9146	hematitic qtz vein	5	5	10	0.5	0.52	120	5	X	2	9500	10000
KR 9147	chloritic biotite lava	5	60	295	0.5	2.55	1400	85	X	2	10250	10900
KR 9148	quartz chlorite vein	10	30	120	X	2.30	1250	90	X	2	10350	10700
KR 9149	vuggy chlorite tuff	5	5	175	X	2.95	1050	165	X	2	10000	10300
KR 9150	agglom. in hem tuff	5	20	25	X	0.86	60	50	X	2	10650	10250

2. The infill grid proposed in figure 49 involving 11.2 line km of gridding should be pegged in the 1982/83 field season.

This grid covers:

a) The contact between the lavas and tuffs

b) The silver anomaly over the rhyolitic tuffs on line 9600

c) The strong coincident lead-zinc anomaly within the quartz biotite porphyritic lava on line 10800N

d) The strong adjacent lead and zinc anomalies within the quartz biotite porphyritic lava on line 9200N

e) The coincident lead-zinc and AEM anomaly at the contact between the tuffs and lavas on line 8800N

3. Sample all lines for soil geochemistry, magnetics and VLF-EM. Map the grid in detail at scale 1:2500.

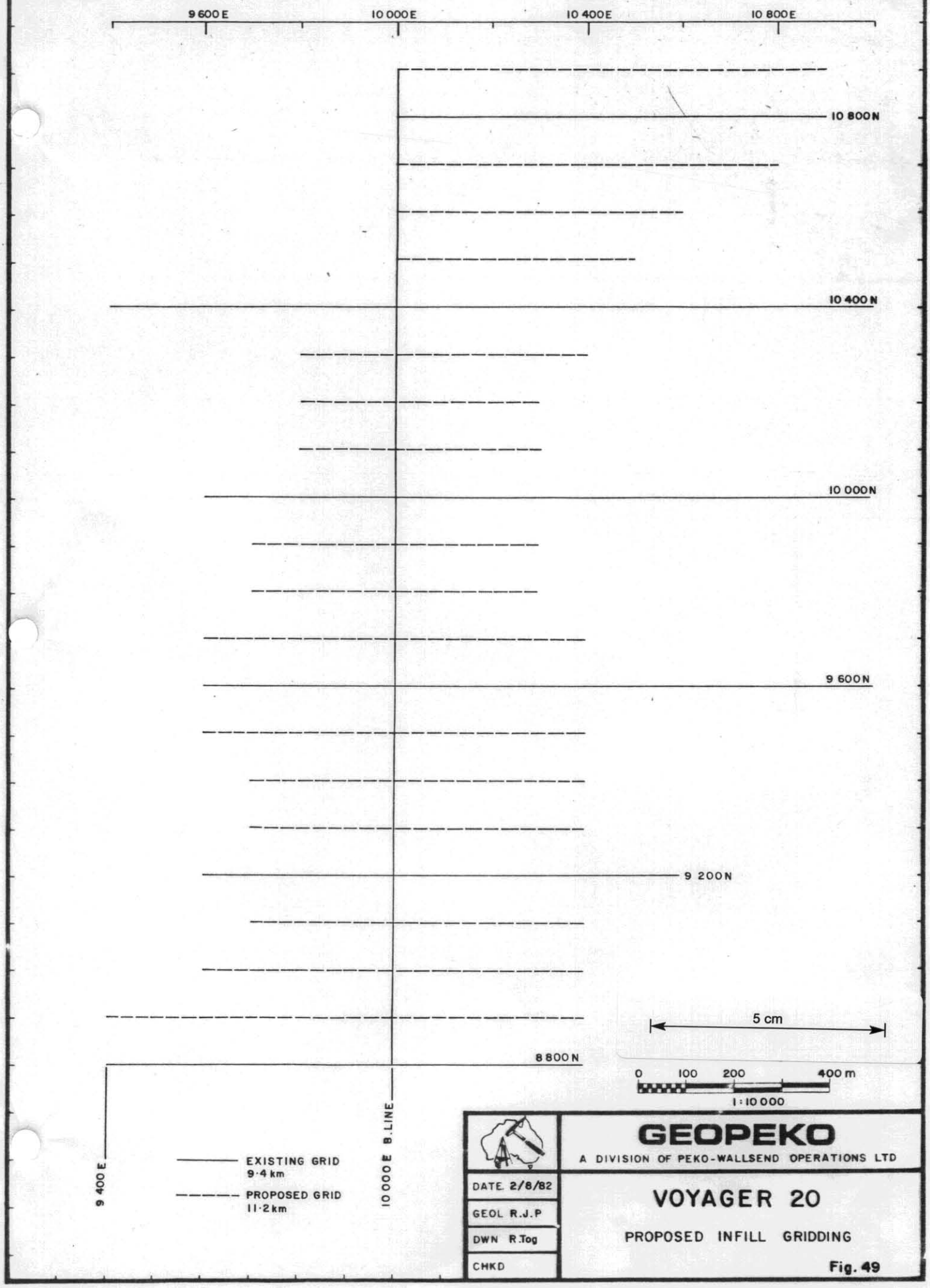
4. Survey every second east-west line (200 metres apart) on the proposed grid with Dipole-Dipole IP.

5. Resample line 9600N from 9600E to 10000E, and line 10000N from 10000E to 10700E for soil geochemistry using only the Jacro rig.

6. Survey all existing grid for magnetics.

7. Excavate a pit, or costean if required, on the peaks of the following anomalies.

Co ordinates	Soil geochemistry
9325N 1000E	2.25% Pb
9200N 10325E	1700ppm Pb, 2150ppm Zn
10800N 10575E	4500ppm Pb, 1700ppm Zn
9850N 10000E	340ppm Pb, 2400ppm Zn



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PROPOSED INFILL GRIDDING

Fig. 49

5. GOLD EXPLORATION

5.1 Introduction

Drainage sampling over the upper (western) portion of the Wart Hill pyroclastics in 1979/80 and 1980/81 field seasons resulted in the definition of a zone of anomalous gold geochemistry. Panned concentrate sample values over 50ppb Au fall into an elongate zone 300-800 metres wide extending north to south for over six kilometres (see fig 50). Two areas designated Voyager 24 and Voyager 30 (see fig 51) were selected for prospect development. At Voyager 24 gold values in the minus 80 mesh fraction of stream sediment samples ranged from 50 to 3000ppb Au, and in the panned concentrate samples from 292ppb to 99500ppb Au. A gold particle 2mm in diameter was observed in one dish. At Voyager 30 gold values in panned concentrate samples ranged from 8ppb to 3360ppb Au.

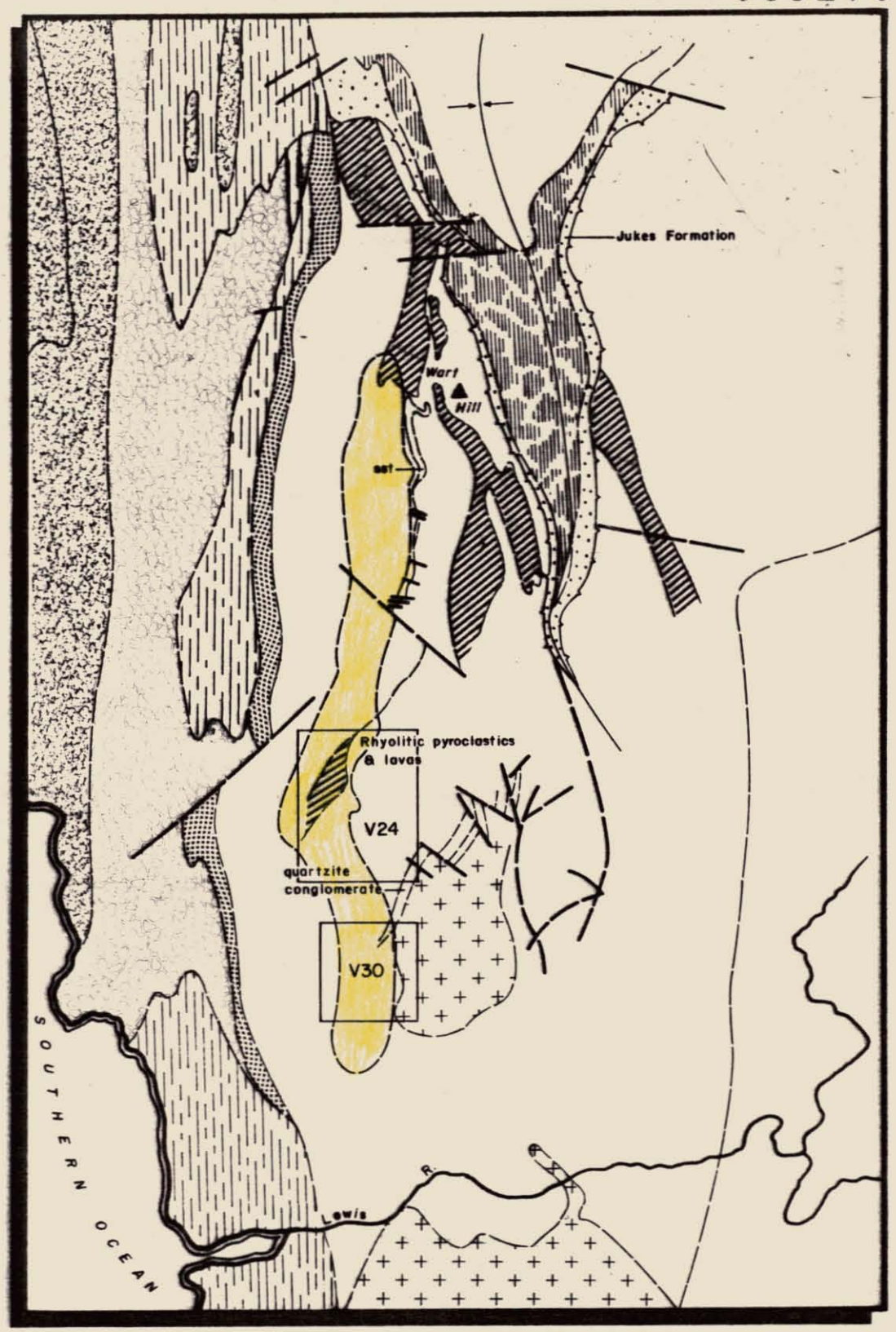
A summary of field work undertaken at Voyagers 24 and 30 in the 1980-81 field season and work carried out in the 1981/82 season is listed below.

Voyager 24

a) An area 1.3km x 1.0km was gridded with lines 100 metres apart.

b) The geology within the gridded area was mapped at scale 1:2500 A detailed description of the geology is given by Large,(1982) in the Progress Report for E.L. 27/76. 1980-81 Field Season.

c) B horizon soil samples were taken with a hand auger along grid lines to determine the distribution of Cu, Pb, Zn and Au. A series of irregular gold soil anomalies were shown to occur between lines 9300N and 9500N from 8900E to 9100E. Two weak Pb-Zn soil anomalies were also defined, one with coincident gold geochemistry.



Legend:

zone of anomalous Au drainage geochemistry (>0·5 gm/t in panned concentrate)

5 cm

MAINWARING GROUP

MT. READ CORRELATES

Western Sequence

- Argillite
- Rhyolite tuff
- Sandstone - conglomerate

Central Belt

- Rhyolite tuffs & lavas
- Quartz porphyritic lava
- Granite

Tyndal Group

- Reworked tuff
- Blackshale / sandstone

Figure 50

E.L.27/76
ELLIOTT BAY, TASMANIA
GEOLOGY of MT. OSMUND SYNCLINE

0 1 2 3
KILOMETRES

GEOPEKO-DEVONPORT BASE

d) Nineteen (19) rock chip samples were analysed. A sample of quartz vein float from Gerrard Creek assayed 5.92ppm Au, and a sample of outcropping pyritic black shale from Steele Creek assayed 2.77ppm Au.

e) Trail surveys of Dipole-Dipole IP, magnetics, and SP were completed along lines 9200N and 9400N. Results were generally featureless.

f) A 129.3m stratigraphic hole was drilled to determine the distribution, frequency and mineralogy of quartz veining within the lithic tuff-agglomerate unit. A significant interval of silicification and primary brecciation was intersected. The core assayed between 8ppb and 392ppb Au. Core was also analysed for Cu, Pb, Zn, Ag, As and Sb.

The following programme was completed in the 1981/82 field season.

a) Investigation of the morphology and geochemistry of gold particles from Gerrard Creek (Voyager 24).

b) Excavation of a costean into the pyritic black shale horizon in Steel Creek (V24).

c) Excavation of a costean to investigate a coincident Pb-Zn-Au B Horizon soil anomaly. DDH 24-1 was extended to 281.15m to drill under this anomaly.

d) A bank sampling program to determine the points of gold input into streams.

e) A trial mercury survey to determine if Hg could be used as an indirect indication of gold mineralization.

Voyager 30

a) Three east-west grid lines 1000 metres long and 200 metres apart were pegged over the area of highest gold drainage geochemistry.

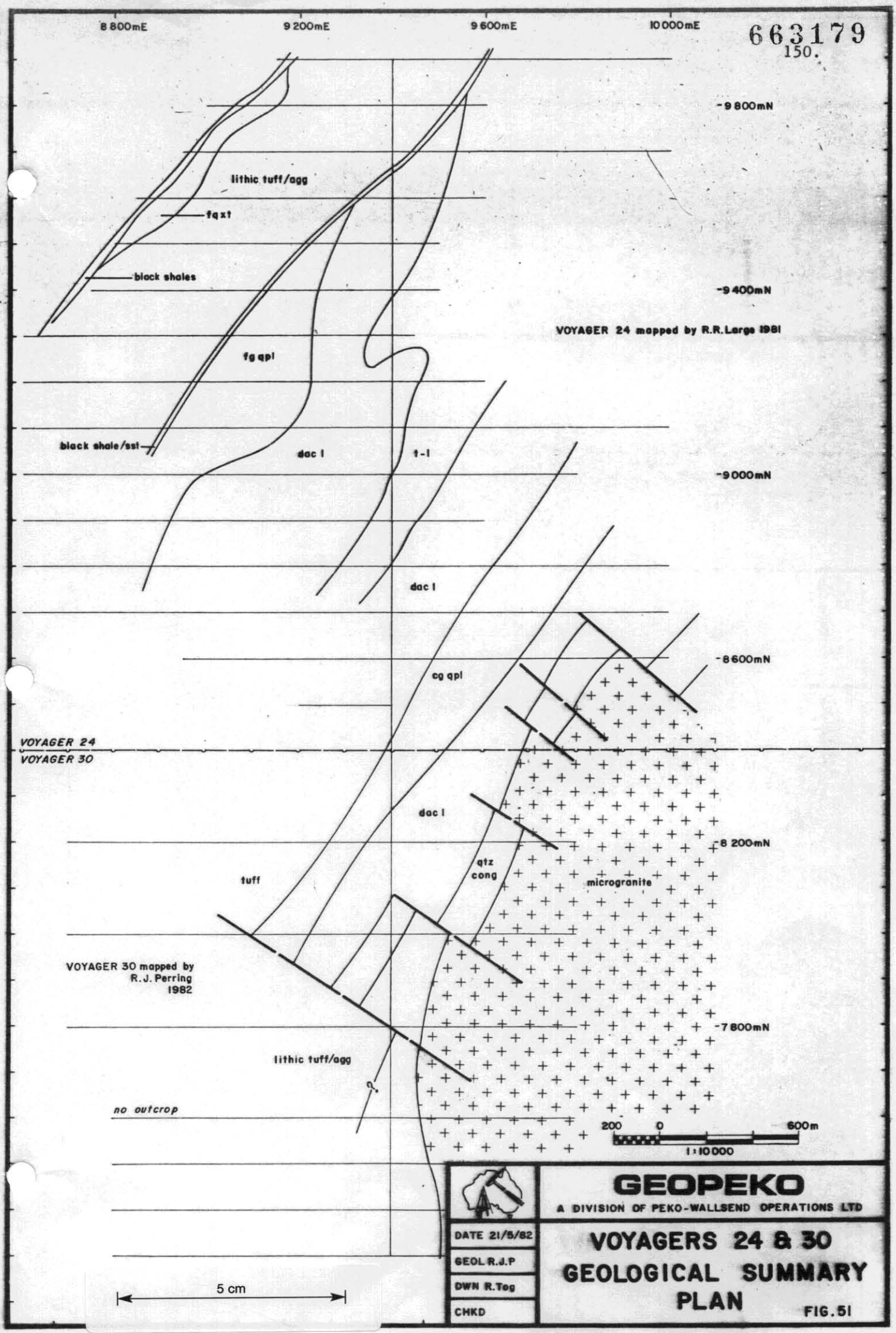
b) C horizon soil samples were taken with a Jacro rig along grid lines to determine the distribution of Cu, Pb, Zn and Au. Only four samples assayed above 8ppb Au. The highest value was 112 ppb Au. A weak coincident Cu-Pb-Zn anomaly was shown to occur at the eastern end of line 7400N.

The following work was completed at V30 in the 1981/82 season:

- Gridding of an area 1.0km x 1.0km.
- Detailed geological mapping of the gridded area
- C Horizon soil geochemistry on the grid to determine the distribution of Cu, Pb, Zn, Ag, Fe, Au, As.
- Magnetometer and VLF-EM surveys on all grid lines.
- Trial lines of gravity, Dipole-Dipole IP, and SP.
- Costeaning, pitting and rock-chip sampling.

5.2 Summary of Geology in the Voyager 24 and Voyager 30 Area

The Voyager 24 and 30 grid is located over the upper part of the Wart Hill Pyroclastics, and covers the western margin of the Stoney Creek granite and a sequence of rhyolitic tuffs, agglomerates, lavas and minor sediments. A detailed description of the Voyager 24 geology is given by Large (1981) and of the Voyager 30 area in this report (see section 3.5). A summary plan of the interpretive geology at scale 1:10000 is given in figure 51. The stratigraphic units generally strike NE-SW and dip steeply to the north west.



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VOYAGERS 24 & 30 GEOLOGICAL SUMMARY PLAN

FIG. 51

The lowest unit in the sequence is a quartz pebble conglomerate and sandstone which is mostly in contact with granite and has been offset by a series of dextral faults. This unit is overlain by a sequence of dacitic lavas, quartz porphyritic lavas and tuff lavas. In the Voyager 24 area this sequence is up to 800 metres thick but in the Voyager 30 area intrusion of the granite and major sinistral faulting has displaced most of this sequence from the gridded area. Overlying the lava sequence at V24 is a metre thick grey shale which facies into a sandstone along strike to the northeast. This shale is overlain by a sequence of siliceous crystal lithic tuffs and agglomerates approximately 250 metres thick. The geological profile of hole DDH 24-1 (plan 98) gives a detailed section through the lower half of this tuff-agglomerate sequence. The tuff-agglomerate unit has been offset by major sinistral faulting and detailed mapping is required west of the grid to better understand the structure.

Rock chip samples of this unit consistantly assay between 40 and 120ppb Au. A carbonaceous and pyritic black shale approximately 5 metres thick marks the top of the Voyager 24 sequence and probably occurs within the Voyager 30 area but does not outcrop.

Extensive quartz veining of sheeted and massive types occur within the gridded area. The massive type occurs mainly within the granite and in the southeast portion of the Voyager 24 grid within the dacitic lavas and are probably related to the granite. The sheeted type occur in patchy zones up to 40 metres wide within the tuff-agglomerate horizon. One rock chip sample sheeted quartz vein from the Voyager 30 area assayed 495ppb Au.

5.3 VOYAGER 24

(i) Gold Particle Morphology and Geochemistry

The morphology and geochemistry of gold particles panned from Gerrard Creek were investigated to try and determine whether gold was being leached by acid (organic) ground waters from rocks with a high gold background, transported and reprecipitated in the soil or peat horizon in nugget form, or whether the coarse gold was being shed into Gerrard Creek from an eroding host. Gerrard Creek follows a two metre thick grey shale and sandstone horizon at the contact between a siliceous lithic crystal tuff-agglomerate unit and underlying quartz porphyritic lava (see fig 51). The creek has a source 200 metres to the north of the Voyager 24 grid and as the gold was panned near 9150N 8950E the maximum distance the gold could have travelled is 1.4km. Although the quality of heavy mineral trapsite varies significantly along the length of Gerrard Creek, the highest yield of gold was panned from gravels 100 metres either side of 9150N 8950E and it is likely the input point of gold into the stream is near. Although Gerrard Creek drains three very different lithologies; based on the distribution of gold drainage geochemistry the main source of the gold appears to be the siliceous lithic crystal tuff-agglomerate unit. This has been confirmed by rock chip geochemistry.

It had been speculated that the particles of gold found in the stream at Elliott Bay had grown in the soil. Acid (organic) ground waters could have leached background concentrations of gold from the lithic crystal tuff-agglomerate horizon found near the top of the Wart Hill Pyroclastics and reprecipitated the gold in a less acidic environment in nugget form. It was necessary to try and prove a disprove whether this was the case or whether there is an eroding host shedding the coarse gold into the streams.

Ground waters in the peat horizon at Elliott Bay are relatively acid having a pH between 3.5 and 4 and the oxidation potential (Eh) must be very low to leave sulphides at the peat-bedrock interface unoxidized (V19). Although gold is sparingly soluble in solutions with low pH and high Eh it is effectively insoluble in solutions having low Eh and low pH.

To confirm the gold was primary, over 200 particles of gold ranging in size from 200um to 3000um were panned from the gravels in Gerrard Creek. Normally all primary native gold contains some silver, generally in the range 5-15 percent Ag (Boyle, 1979). If the gold is secondary and has precipitated and grown from an aqueous solution in the soil then silver content should be less than 0.5 percent Ag. Even if the original source of gold had a high silver content, simultaneous deposition of gold with small amounts of silver seems unlikely because silver has a much higher solubility in aqueous solutions at low temperatures. It would require extreme reducing conditions to reprecipitate silver as the metal alloyed with gold (Denborough, 1970).

A selection of gold grains giving a range of sizes, shapes, colours and textures were mounted in resin on glass slides and despatched to the C.S.I.R.O., North Ryde to have their composition determined by election microprobe analysis.

Twenty grains of gold were analysed. A summary of the results are given in tables 9 and 10. The report by Kinealy and Ramsden, (1982) from the C.S.I.R.O. is given in Appendix 8. Gold and silver were the only major elements in the grains and minor constituents included palladium, tellurium, copper and possibly mercury. Silver content ranged from 1.6 to 27wt%. Kenealy and Ramsden concluded the wide range in silver content, including the presence of electrum (argentian,gold Ag 20wt%) would suggest the gold is not the result of growth during surface transport.

The presence of included galena in one grain of gold suggests that at least some of the gold has its origins in sub-volcanic base metal mineralization.

Gold particles panned from Gerrard Creek exhibit a number of textural features. The shapes vary from jagged and irregular particles to particles with highly polished surfaces through to rare equant particles with characteristics of crystallinity. The diameter of the particles varies from about 100 microns to 3000 microns with the largest nuggest found being 10mm long.

Table 9 gives the dimensions, descriptions and fineness of ten gold grains selected from over 200 grains to give a range of sizes and morphologies. The largest grain is $2.72mm^3$ and the smallest $0.009mm^3$. The morphological differences, as well as the greatly varying fineness from 715 to 982 points to two genetically different types of gold. Jagged and irregular particles with medium to high spherecities and flakey grains tend to have fineness greater than 960.

The majority of gold in Gerrard Creek couldn't have travelled far along the stream. The coarse gold must have stayed near the source as it would quickly breakdown upon transportation in the high energy stream environment of Gerrard Creek. Experiments have shown that stream velocity is a more important factor in abrasion of gold than distance travelled. (Yeend, 1975). The delicate particles of gold observed under the microscope could not have survived any bed load transportion and must have been panned close to the source.

Five percent (5%) of gold panned from Gerrard Creek had grey quartz embodied within the particle which appears to have crystallized at the same time as the gold. This quartz has a saccharoidal texture characteristic of silica found associated with silicification or possibly the quartzose groundmass of a tuff and not of the vein forming milky quartz variety.

TABLE 9

COMPOSITION OF GOLD GRAINS IN SLIDE KR 8674

Grain	Au wt%	Ag wt%	Pd wt%	Te wt%	Cu wt%	Total wt%	
1	94.39 94.40	1.78 1.65	0.18 0.18	0.16 0.03	0.25 0.05	96.76 96.31	Centre Edge
2	91.99 92.39	3.55 3.63	0.13 0.16	nd 0.03	0.15 nd	95.82 96.21	Centre Edge
3	83.54 83.30	11.30 11.64	0.18 0.36	0.13 nd	nd nd	95.15 95.30	Centre Edge
4	92.93 93.82	2.63 2.32	0.13 0.01	nd nd	0.11 0.09	95.80 96.61	Centre Edge
5	75.83 75.02	19.61 19.15	0.23 0.10	0.22 0.20	0.15 0.03	96.04 94.50	Centre Edge
6	86.17 86.12	8.77 8.68	0.05 0.11	0.11 nd	0.05 nd	95.68 94.91	Centre Edge
7	93.63 92.69	1.88 1.93	nd 0.23	0.12 0.06	0.23 nd	95.86 94.90	Centre Edge
8	92.37 91.93	2.97 2.83	0.31 nd	nd 0.05	0.18 nd	95.84 94.82	Centre Edge
9	91.21 91.04	3.98 3.30	0.18 0.02	nd nd	0.14 0.08	95.51 94.45	Centre A Centre B
10	67.78 67.26	27.02 27.27	0.17 nd	0.25 0.18	0.06 0.14	95.28 94.85	Centre Edge

nd = not detected

Analysed by the CSIRO using a Cambridge Microscan V electron microprobe equipped with an energy dispersive spectrometer and wavelength dispersive spectrometer.

GEOCHEMICAL AND MORPHOLOGICAL CHARACTERISTICS OF GOLD PARTICLES PANNED FROM GERRARD CREEK - VOYAGER 24 SLIDE KR 8674

GRAIN	DIMENSIONS	DISCRIPTION	Au*ut%	Ag*ut%	Finer
1	1.0x1.7x1.6mm	granular, well rounded, medium sphericity. Contains inclusions of a dark mineral with submetallic lustre	94.39	1.78	982
2	2.0x2.0x0.5mm	low sphericity, medium to well rounded. Dough-like micro texture. Polished surfaces. Inclusions of quartz	91.99	3.55	963
3	3.0x1.5x1.0mm	long rod-like grain. Contains 15% quartz, some of which are clear euhedral crystals	83.54	11.30	881
4	1.0x1.0x1.0mm	medium sphericity, poorly rounded. Cryptocrystalline nature and spongy texture	92.93	2.63	973
5	0.8x0.8x0.8mm	angular grain, low sphericity Delicate wire texture, pale gold colour. Undergone little or no transportation	75.83	19.61	795
6	0.8x0.5x0.5mm	medium-low sphericity, well rounded. Polished surfaces. Minor quartz inclusions	86.71	8.77	908
7	0.5x0.5x0.1mm	flaky gold grain, highly polished surfaces	93.63	1.88	980
8	0.5x0.5x0.3mm	flaky gold grain, highly polished surfaces	92.37	2.97	969
9	0.6x1.3x1.0	low sphericity, well rounded. Dough-like micro texture	91.21	3.98	958
10	0.3x0.3x0.1	poorly rounded, low sphericity. Spongy texture Pale gold colour probably due to high silver content	67.78	27.02	715

* Analysed by the CSIRO using a Cambridge Microscan V electron microprobe equipped with an energy dispersive spectrometer and wavelength dispersive spectrometer.

$$\text{Fineness} = \frac{\text{Au}}{\text{Au} + \text{Ag}} \times 1000$$

COMPOSITION OF GOLD GRAINS IN SLIDE KR 8673

TABLE

Slide KR 8673 contains about 100 grains graded into three sizes categories -

1) Coarse: with an average minimum cross-section of about 650pm
2) Medium: with an average minimum cross-section of about 370pm
3) Fine: with an average minimum cross-section of about 280pm

Element	COARSE wt%				MEDIUM wt%				FINE wt%	
Au	94.45	90.01	87.95	57.57	93.53	85.87	79.64	91.86	91.44	91.00
Ag	1.63	6.34	8.07	7.82	2.75	11.44	16.45	4.22	4.03	5.54
Pd	0.25	0.05	0.27	0.16	0.02	0.19	0.04	0.18	0.15	0.20
Te	0.03	0.09	0.02	0.20	nd	0.18	nd	nd	0.11	0.03
Cu	0.08	0.17	0.03	0.05	0.09	0.04	0.04	0.03	0.03	0.02
Total	96.44	96.67	96.35	95.80	96.39	97.73	96.18	96.30	95.78	96.79

nd = not detected

(ii) Trial Mercury Survey

A trial soil mercury survey was undertaken on line 9700N to determine whether mercury soil geochemistry could be used to better define gold soil anomalies. Analyses of soils containing coarse gold gives erratic results, and reproducibility is almost impossible when analysing only 30grams of sample. Mercury content of soils should be more homogeneous and give more reliable, geochemical data and dispersion could be greater increasing the chances of detecting a narrow zone of gold mineralization through soil geochemistry. Arsenic, a traditional gold pathfinder was also included as part of the survey.

Line 9700N was selected for the survey because a previous soil survey had defined a gold anomaly which did not have coincident basemetal geochemistry. Samples were taken using a Jacro auger rig at 25 metre intervals from 9050E to 9500E. The B and C horizons were sampled. Portion of each sample was analysed for mercury by Mercury Detection Systems in Sydney. The remainder of the sample was analysed for Cu, Pb, Zn, Ag, Fe, Au and As by Australian Laboratory Services, Brisbane. The total sample was pulped and split. The analytical technique used by A.L.S. for gold was AAS - Carbon rod furnace (method 120A).

Line profiles of analytical results for gold, mercury and arsenic geochemistry have been plotted. Figure 52 gives profiles for the B horizon and figure 53 for the C horizon.

There is no correlation between gold, mercury and arsenic soil geochemistry in the samples taken. The coincident Au, Ag and As anomaly at 9700N 9450E occurs over grey shale and is probably caused by higher backgrounds of arsenic and mercury in this sample.

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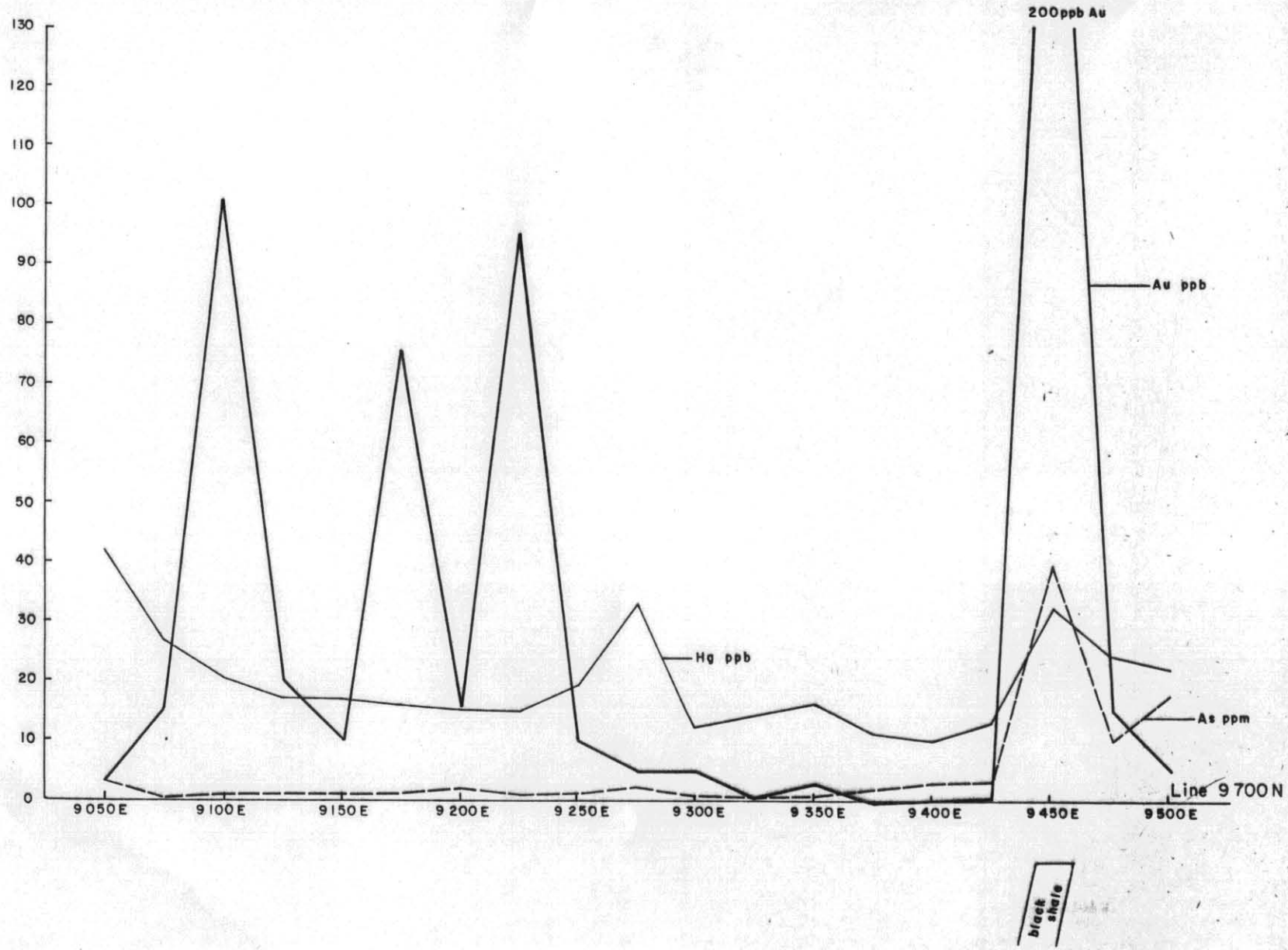
Au, Hg, As B-HORIZON SOIL GEOCHEMISTRY

TRIAL SURVEY LINE 9700N

Fig. 52



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DATE 6/8/82
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DWN R.Tog
CHKD

VOYAGER 24

Au, Hg, As C-HORIZON SOIL GEOCHEMISTRY

TRIAL SURVEY LINE 9700N

Fig. 53

Figure 52 and 53 illustrate the advantages in sampling the C horizon. Mercury analyses of C horizon samples give a smooth profile whereas the B horizon data is erratic. Peaks in the gold C horizon geochemistry between 9050E and 9250E do not have corresponding peaks in the B horizon.

(iii) Costean Sampling

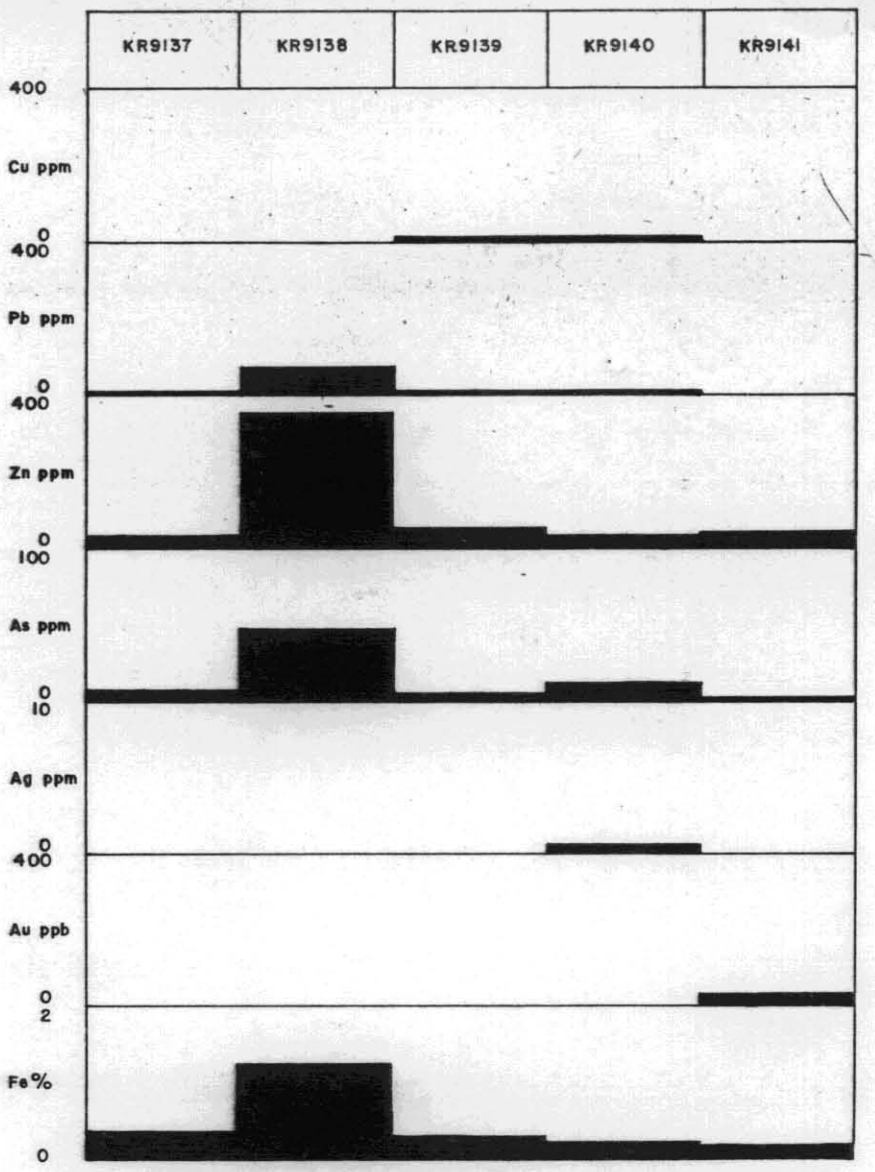
Two costeans were excavated by backhoe at Voyager 24. Costean 1 was excavated into the pyritic black shale horizon in Steel Creek to follow up results of a rock chip sample from the same horizon which assayed 2.77ppm Au. Costean 2 was excavated to investigate a coincident Pb-Zn-Au B horizon soil anomaly. DDH 24-1 was extended to 281.15m to drill under this anomaly.

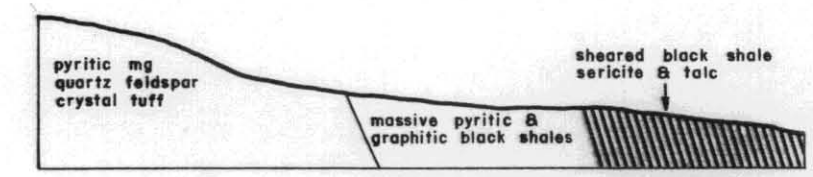
Costean 1 Line 9600N 8940E to 8935E

This costean was excavated adjacent to and into Steel Creek. Because of water in the creek only the basal three metres of the shale horizon could be exposed and sampled. One metre channel samples were taken and analysed for Cu, Pb, Zn, Ag, As, Au and Fe. The results are given in figure 54 . The top metre of the tuff was anomalous in lead, zinc and arsenic geochemistry. No samples were anomalous in gold.

Costean 2 Line 9300N 8988E to 9012E

This costean was excavated on the side of a ridge into the quartz lithic crystal tuff and agglomerate unit which is thought to host the gold mineralization. The costean was centred at 9300N 9000E on a coincident Pb 345ppm, Zn 260ppm, Au 365ppb B horizon soil anomaly. A sequence of quartz lithic crystal tuffs and agglomerates which contained up to 5% pyrite were exposed in the costean. The agglomerate was composed of angular fragments of quartz porphyry lava.





8 940E 8 939E 8 938E 8 937E 8 936E 8 935E

Fig. 54

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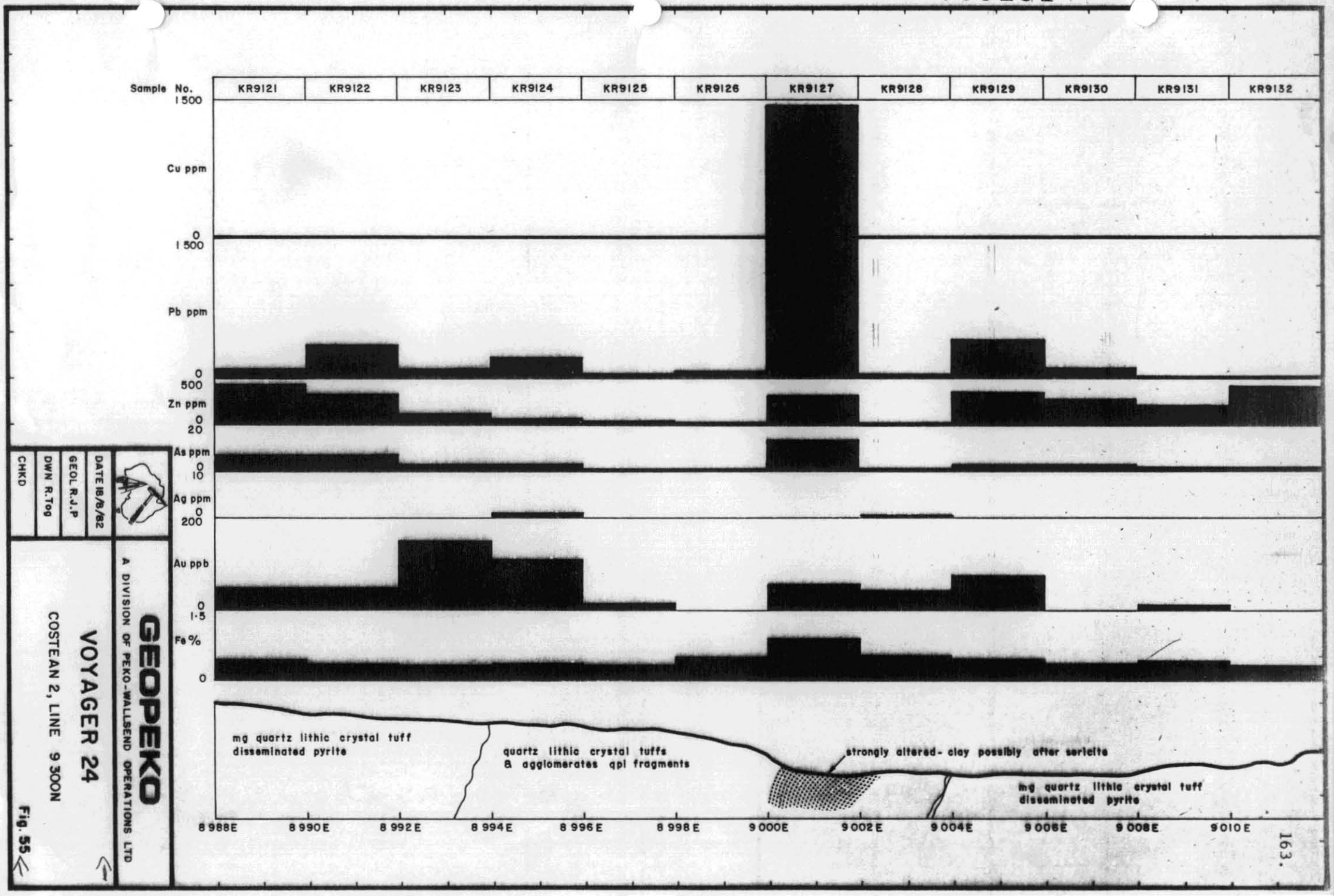
VOYAGER 24
COSTEAN 1, LINE 9 600N

663191



CHKD

DWN R.Tog

GEOL R.J.P

DATE 18/8/82

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VOYAGER 24

COSTEAN 2, LINE 9 300N

Fig. 55

Two metre channel samples were taken and analysed for Cu, Pb, Zn, Ag, As, Au and Fe. The best geochemistry coincided with light brown clay rich zone within the tuff agglomerate sequence. The geochemical results are given in figure 55.

The range of channel chip geochemistry along the costean is given below:

Element	Range
Copper	5ppm to 1450ppm
Lead	5ppm to 1550ppm
Zinc	10ppm to 455ppm
Silver	0.5ppm to 1.0ppm
Arsenic	1ppm to 13ppm
Gold	5ppb to 150ppb
Iron	0.19% to 1.25%

The poor gold geochemistry in the interval 9000E to 9002E was disappointing considering the anomalous copper and lead geochemistry and alteration. The interval was resampled. Two grab samples each weighing over 1kg were taken. Both samples proved to be anomalous in gold. The results are given below:

Element	Result	
	KR 8657	KR 8658
Copper	20ppm	45ppm
Lead	95ppm	195ppm
Zinc	15ppm	25ppm
Silver	0.5ppm	0.5ppm
Arsenic	2ppm	3ppm
Gold	4.01ppm	1.25ppm
Iron	0.365%	0.395%
Barium	95ppm	90ppm

This zone of alteration and the anomalous gold geochemistry requires further investigation. A short diamond drill hole is recommended. The hole should be planned to intersect the zone of alteration at approximately 20 metres below the surface. Samples of relatively fresh rock containing gold mineralization are required to better understand the style of mineralization. HQ diameter core should be taken to maximize size of sample for geochemistry.

(iv) Drilling

In March 1981 a stratigraphic hole, V24-1 was drilled to a depth of 129.3 metres to determine the distribution, frequency and mineralogy of quartz veining within the lithic tuff-agglomerate unit and underlying quartz porphyritic lava unit. A siliceous and pyritic series of agglomerates and volcanic breccias carrying minor sphalerite and galena mineralization and anomalous gold values were interesected. This hole was extended to 281.15m in December, 1981 to test a coincident Au-Pb-Zn soil anomaly and drill through into the underlying quartz porphyritic lavas. A graphic log of the drill hole and gold, zinc and iron assays are shown in figure 56. An eight metre sequence of black shales, tuffs and laminated shales were intersected at the base of the lithic tuff agglomerate sequence. This was underlain by a cream brecciated lava. The core was split from 145.0m to 281.15m and sampled at 1 metre intervals. Samples were analysed by Analabs for Cu, Pb, Zn, Ag, As, Au and Sb.

180
663194

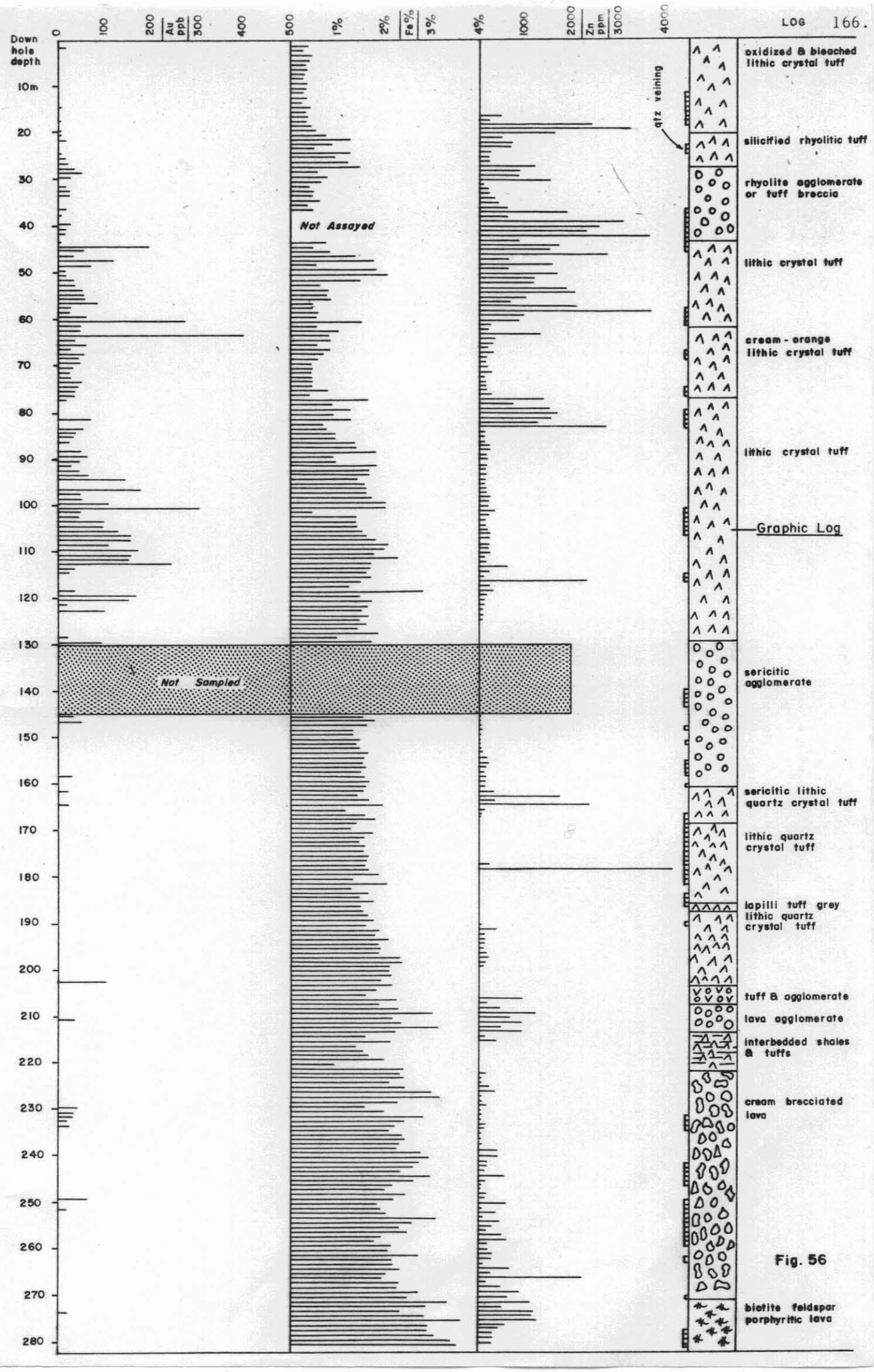
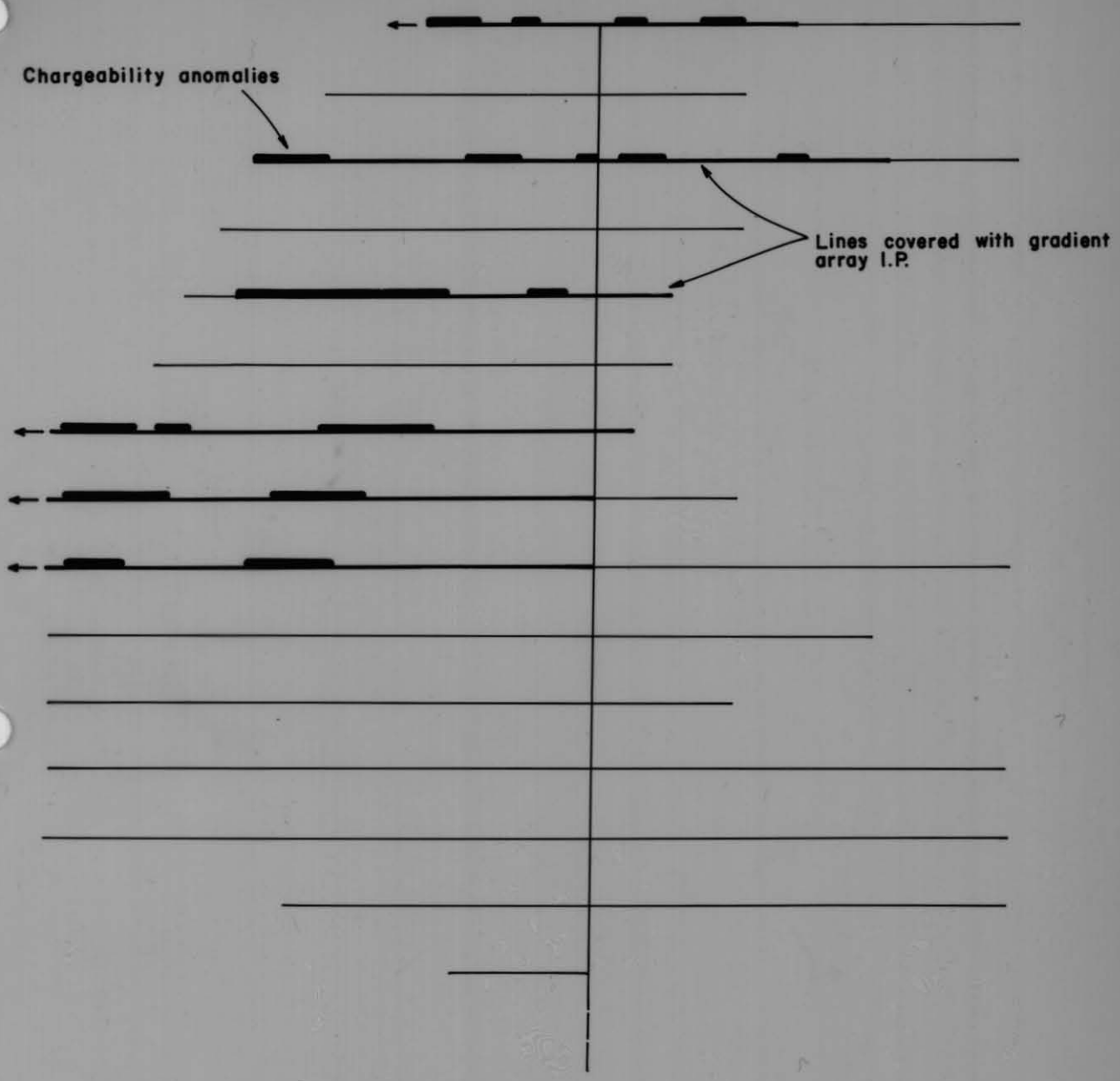


Fig. 56

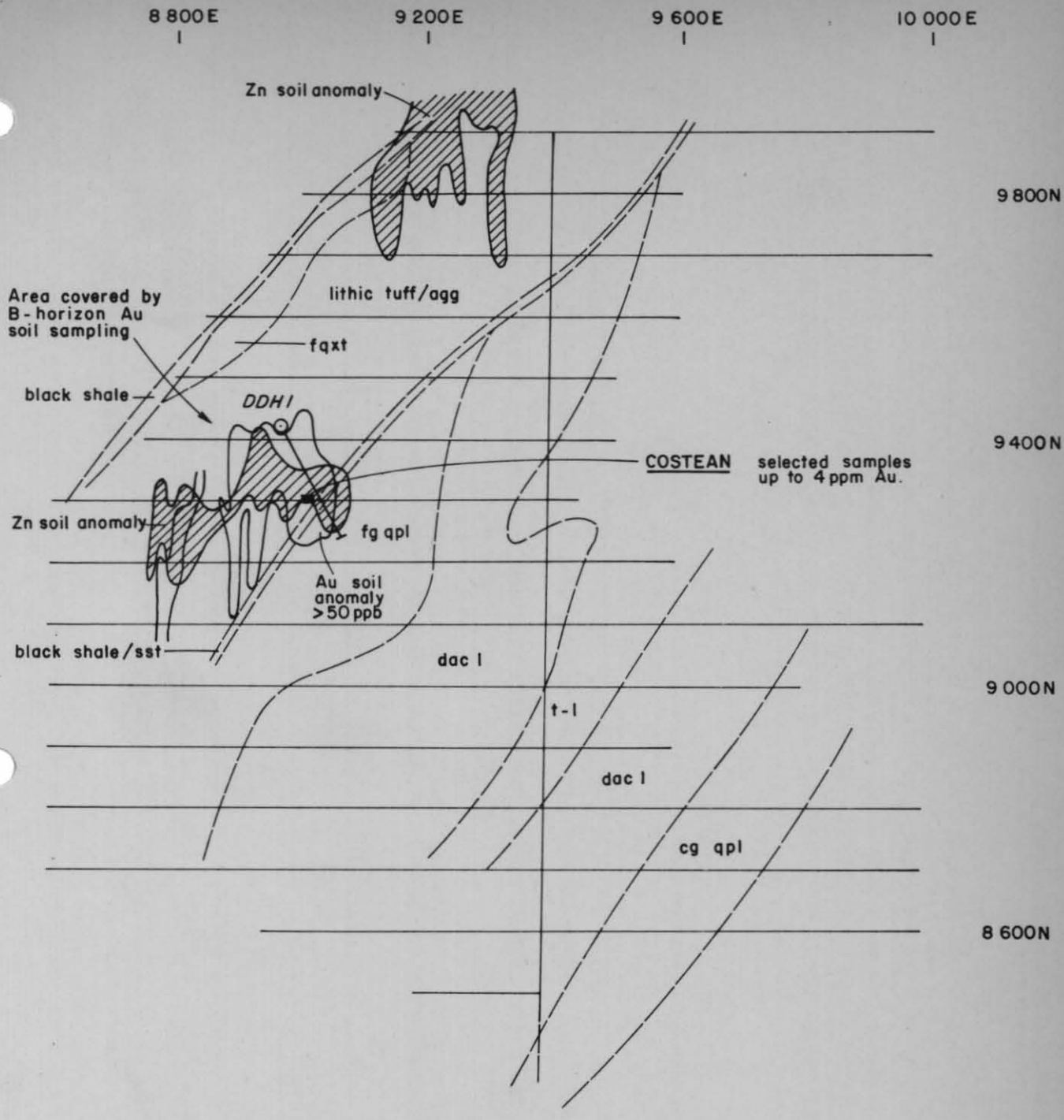


5 cm

663195

Fig. 57

187



663196

E.L.27/76 ELLIOTT BAY

VOYAGER 24

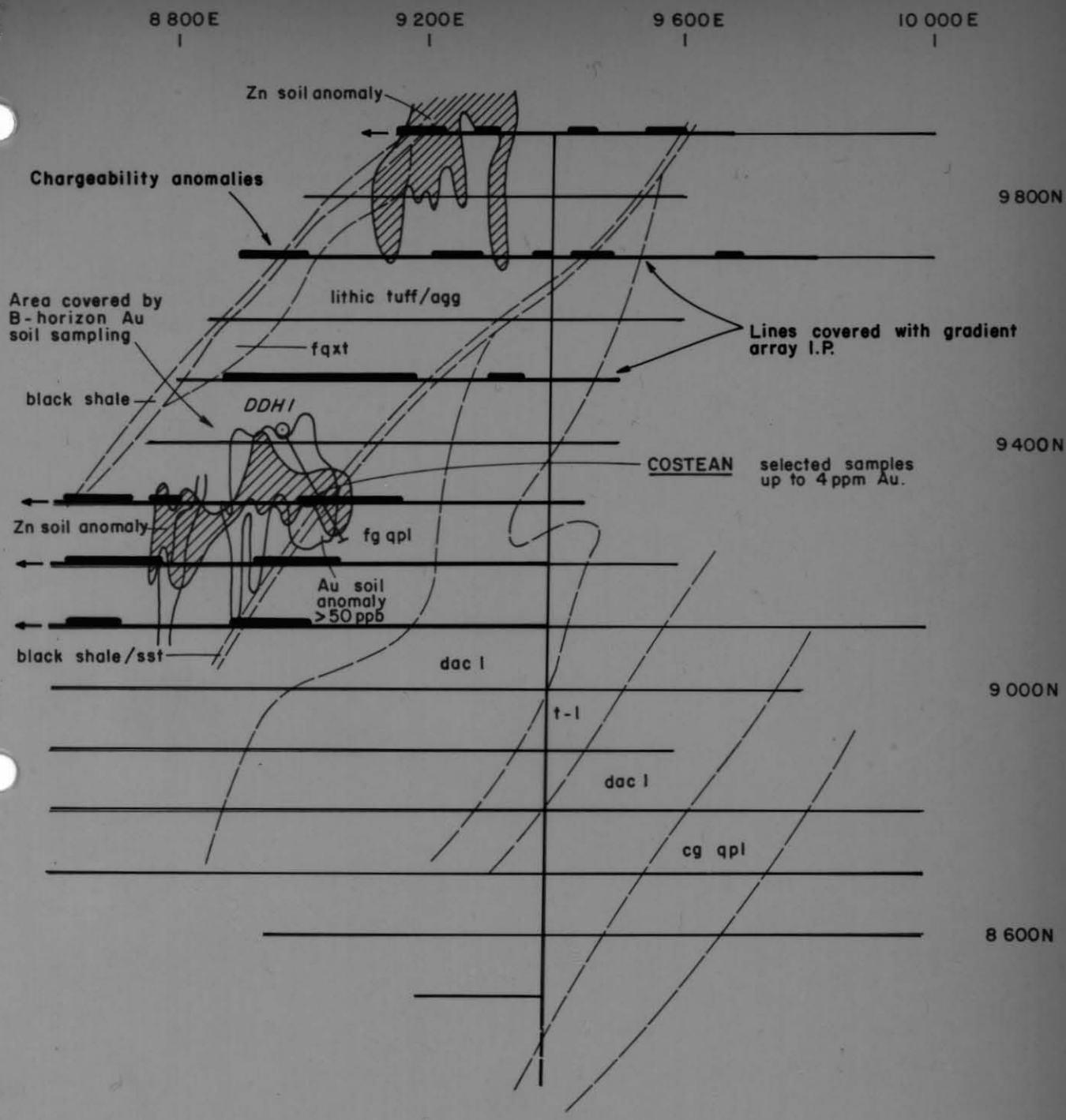
1 : 10 000

PROSPECT SUMMARY DIAGRAM

5 cm

,58

187



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E.L.27/76 ELLIOTT BAY

VOYAGER 24

1 : 10 000

PROSPECT SUMMARY DIAGRAM

Fig. 57, 58

5 cm

V-24 Geophysics

663195

The range of geochemistry for the interval 145.0 to 281.15m is given below:

Element	Range
Copper	5ppm to 210ppm
Lead	5ppm to 1950ppm
Zinc	25ppm to 4150ppm
Gold	8ppb to 100ppb
Silver	0.1ppm to 1.2ppm
Antimony	1.0ppm to 6ppm
Arsenic	1.0ppm to 140ppm

These values are considerably less than for the section of hole drilled in March, 1981.

(v) Bank Sampling

One hundred and one (101) bank samples were taken at approximately 100 metre intervals along Steel, Gerrard and Trebilco Creeks in the western half of Voyager 24 (see plan 100). This technique was used to locate points of gold input into the streams. The samples were collected by shovel at a depth of 20-50cm and consisted of the soil sitting on bedrock plus chips of bedrock. The samples were despatched to the Australian Laboratory Services and an AAS - Carbon rod furnace method was used to analyse for gold. Results ranged from 3ppb to 25ppb. No points of gold input into the streams could be established. Because of the coarse nature of the gold at Voyager 24 it is possible gold was missed when splitting off a portion of the original sample for analyses. Panning of bank samples to concentrate the gold before analysis may overcome some of the problems of analysing samples which contain coarse gold, however close spaced (50 metre intervals) panned concentrate sampling of streams may give a better indication of points of gold input into a stream so long as care is taken when chosing a sample site.

(vi) Summary and Conclusions

1. The wide range in silver content, including the presence of electrum would suggest the gold panned from Gerrard Creek is not the result of growth during surface transport. The presence of included galena in one grain of gold suggests that at least some of the gold has its origins in sub-volcanic base metal mineralization. (Kinealy and Ramsden, 1982).

2. The morphological differences, as well as the greatly varying fineness of 715 to 982 possibly points to two genetically different types of gold in Gerrard Creek.

3. The quartz found embodied within some gold grains appears to have crystallized at the same time as the gold and texturally, this quartz appears to be like the saccharoidal looking silica associated with silicification or possibly the siliceous groundmass of a tuff, and not like vein forming milky quartz.

4. There is no correlation between gold, mercury and arsenic soil geochemistry.

5. The zone of alteration and anomalous gold geochemistry exposed in Costean 2 warrants further investigation.

6. Bank sampling does not appear to be a suitable technique of determining points of gold input into streams.

7. It is speculated the gold has a fumarolic origin and occurs as disseminations in the quartz lithic tuff horizon at a number of stratigraphic levels which represent the rock-sea water interface at the time of fumarolic activity.

RECOMMENDATIONS

1. Plan and drill a short diamond hole to intersect the zone of anomalous gold geochemistry and alteration in Costean 2 at approximately 20 metres below the surface. HQ diameter core should be taken to maximize size of sample for geochemistry. A series of short holes may be required.

2. Excavate 2 E-W costeans 25 metres either side and along strike from Costean 2 to investigate the possibility of stratigraphic control of gold mineralization.

3. Excavate a costean across the black shale intersected in an auger hole at 9700N 9450E. Channel sample the shale and enclosing tuff and lava.

5.4 VOYAGER 30

(i) Introduction

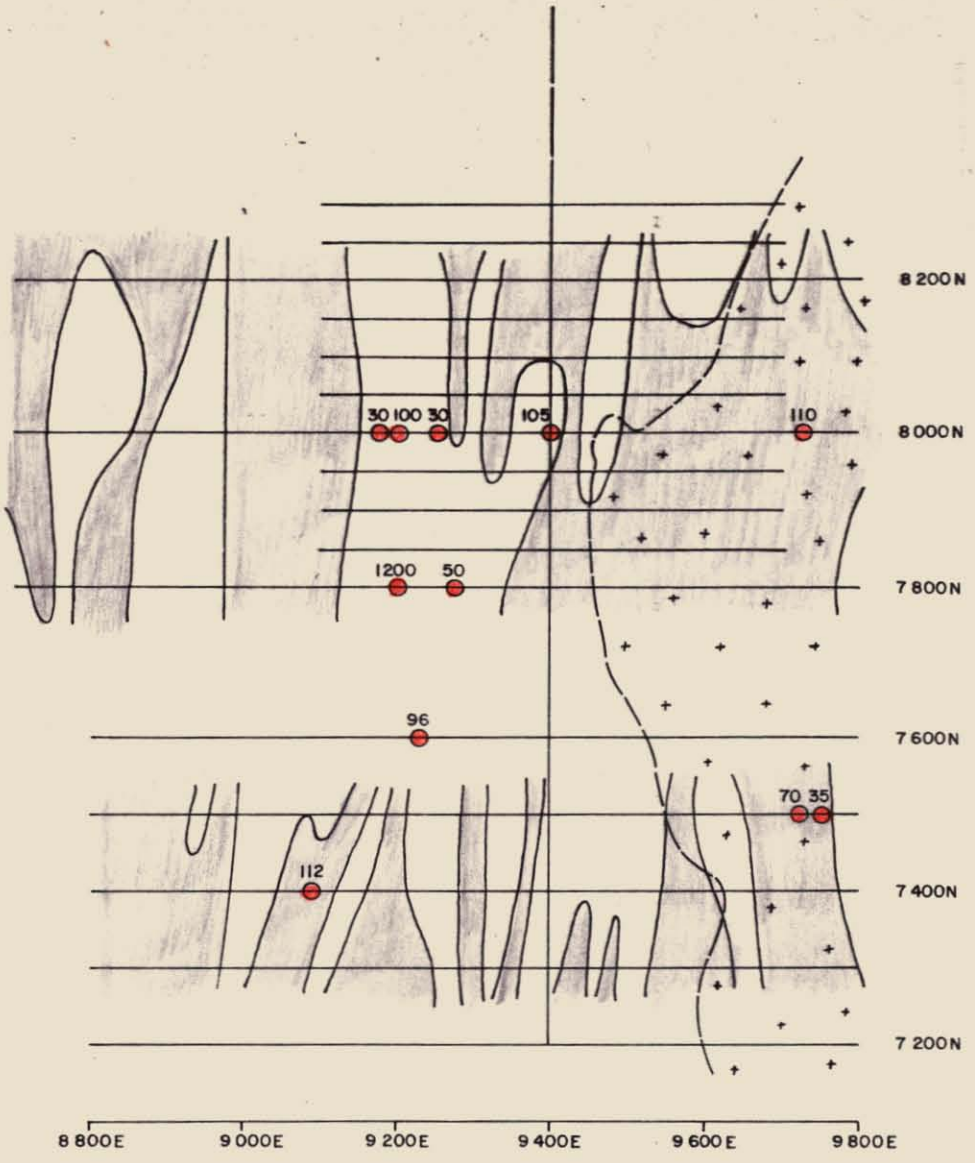
Voyager 30 has evolved from originally being a gold prospect defined by drainage geochemistry into a significant base metal prospect. Gold and basemetal soil geochemistry over the volcanics appears to be unrelated and the styles of mineralization different. Results from Voyager 24 point to a disseminated style of gold mineralization in rhyolitic tuffs. It has not been determined whether this gold mineralization is syn or epigenetic. This section presents the results of soil and rock gold geochemistry on the Voyager 30 grid. Base metal data is presented in section

(ii) Soil Geochemistry

Three hundred and eighty (380) C horizon soil samples were taken on the Voyager 30 grid in the 1980/81 and 1981/82 field seasons. The result of Pb, Zn, Fe, Ag, As and Au geochemistry have been plotted and are presented at scale 1:2500 on plans 101-102 respectively.

Background is estimated to be 5ppb Au for samples from over the volcanics and less than 3ppb Au for samples from over the granite. Threshold is estimated to be 75ppb Au. Eleven samples assayed over 25ppb Au. Details of these samples are given in table A summary plan showing the relationship between gold and iron geochemistry is given in figure 59.
The following conclusions can be made:

a) Anomalous gold soil geochemistry is not restricted to samples from over one rock type. Values above threshold (75ppb) came from quartz crystal tuff, quartz porphyritic lava, quartz conglomerate and granite.



volcanics

granite

96 gold > 25 ppb in C-horizon soil samples

Fe > 1% in C-horizon soil samples

0 100 200 400 m

1 : 10 000

Fig. 59

5 cm

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DATE 16/8/82

GEOL R.J.P

DWN R.Tog

CHKD

VOYAGER 30

SUMMARY OF Au & Fe C-HORIZON SOIL GEOCHEMISTRY

VOYAGER 30 SAMPLES WITH SOIL GEOCHEMISTRY GREATER THAN 25ppb Au

Sample Number	Gold ppb	Host Lithology	North	East
TS 16717	110	Granite	8000	9725
TS 16794	70	Granite	7500	9725
TS 16793	35	Granite	7500	9750
TS 16701	105	Quartz conglomerate	8000	9400
TS 16724	30	Quartz porphyritic lava	8000	9250
TS 16726	100	Quartz porphyritic lava	8000	9200
TS 16727	30	qpl (or tuff?)	8000	9175
TS 16763	1200	Quartz crystal tuff	7800	9200
TS 16766	50	Quartz crystal tuff	7800	9275
TS 10019	96	Unknown	7600	9225
TS 9897	112	Unknown	7400	9087.5

b) Two weak gold anomalies occur within the granite and are characterized by coincident relatively strong lead-zinc geochemistry, and iron geochemistry greater than 1% Fe.

c) A number of weak gold anomalies occur within the volcanics in the central part at the Voyager 30 grid and are characterized by very weak lead-zinc geochemistry, and iron geochemistry less than 1% Fe.

d) There is no correlation between arsenic and gold in the minus 80 mesh C horizon soil geochemistry.

e) The sample from 7800N 9200E assayed 1200ppb Au. Excavation of a pit and further soil and rock chip sampling at the same site failed to show any anomalous gold. The original sample must have contained a relatively coarse grain of gold which biased the results.

(iii) Rock Chip Sampling

Twenty-one rock chip samples were collected in the course of mapping and were analysed for Cu, Pb, Zn, Fe, Mn, As and Au. The results are given in table 4.
The most significant gold mineralization encountered was associated with galena and sphalerite mineralization in a quartz vein at 8000N 8800E. The highest result was 2260ppb Au. One sample of a sheeted quartz vein within coarse grained quartz lithic crystal tuffs assayed 495ppb Au. Quartz lithic crystal tuff gold assays ranged from 41ppb to 107ppb.

(iv) Recommendations

1. Undertake a geochemical orientation survey on the soil samples from line 7800N. Analysis of the following fractions are recommended.
(U.S.A. Sieve Series) Mesh No:

+20
-20 to +40
-40 to +60
-60 to +80
-80

2. Continue to analyse soil sample taken as part of the base metal program for gold.

3. All additional work should await the results of the investigation into the style of gold mineralization at Voyager 24.

6 TIN AND TUNGSTEN EXPLORATION

6.1 Introduction

Panned concentrate stream sediment sampling of streams draining the upper (western) portion of the Wart Hill pyroclastics in the 1980/81 field season resulted in the definition of two anomalous areas (see fig 60).

At Voyager 29 west, 1km SSW of Wart Hill, two samples from Boyles Creek contained anomalous tungsten (110ppm and 750ppm W).

At Voyager 30, 4km south of Wart Hill, an area of anomalous tin over two kilometres long has been outlined from 18 samples which assayed over 100ppm Sn (see plan 105).

6.2 Tungsten - Voyager 29 West

Boyles Creek was resampled in March 1982 to check tungsten levels in the stream and further isolate the source of the tungsten. Panned concentrate stream sediment samples were taken at approximately 100 metre intervals along upper Boyles Creeks and in tributaries just above there confluence with Boyles Creek (see plan 104). A full dish of unsieved gravel with an average weight of 8.0kg wet (7.5kg dry) was panned down to give a concentrate with an average weight of 24 grams. The original sample was unseived to prevent dissimilar prepanning concentration resulting from one sample contained more coarse fraction than another. Average concentration by panning was 320 times. Samples were selected from similar quality trapsites. The fifteen samples taken were analysed for Au, Sn and W. Results ranged from 28.0ppm to < 5ppb for Au, 8ppm to < 3ppm for Sn, and 25ppm to 10ppm for W. All samples contained background levels of Sn and W. The tungsten anomaly indicated from 1980/81 sampling was not reproduced. The 1980/81 sample which assayed 750ppm W was taken from an excellent heavy mineral trapsite, far better than any other trapsite along the stream. The anomalous level of tungsten in this sample is considered to be the results of background levels of tungsten being concentrated in a very efficient heavy mineral trapsite.

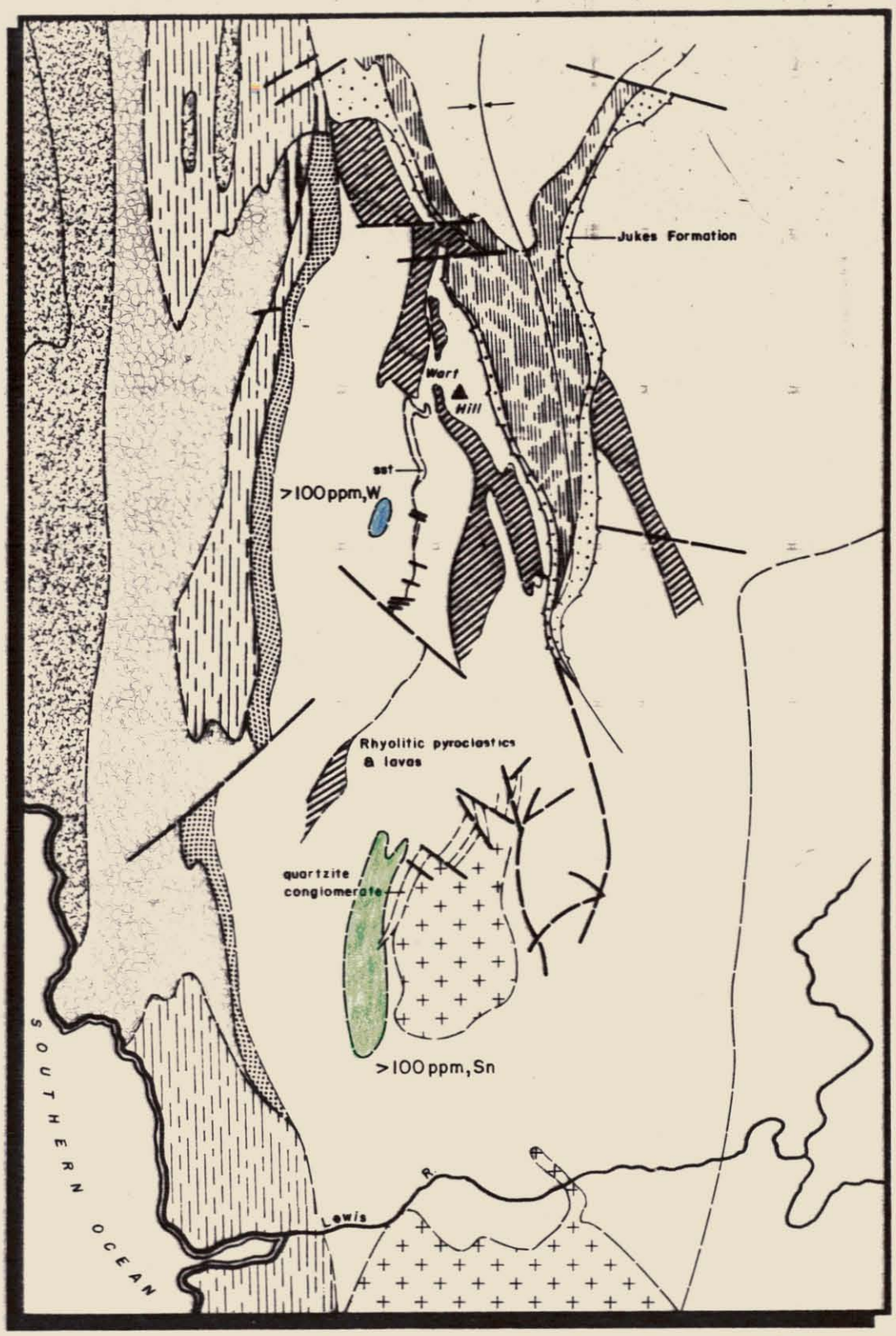

FIGURE: Areas of anomalous Sn & W stream sediment (panned concentrate) geochemistry

Legend:

MAINWARING GROUP

MT. READ CORRELATES

Western Sequence
- Argillite
- Rhyolite tuff
- Sandstone - conglomerate

Tyndal Group
- Reworked tuff
- Blackshale / sandstone

Central Belt
- Rhyolite tuffs & lavas
- Quartz porphyritic lava
- Granite

5 cm

Figure 60

E.L.27/76
ELLIOTT BAY, TASMANIA
GEOLOGY of MT. OSMUND SYNCLINE

0 1 2 3
KILOMETRES

GEOPEKO-DEVONPORT BASE

TIN - VOYAGER 30

Recognition of the granite on the eastern margin of Voyager 30 has helped to explain the cause of the anomalous tin drainage geochemistry in the area. Plan 105 gives the limits of the drainage anomaly and the areal extent of the granite. The following conclusions can be made.

a) Streams draining Wart Hill pyroclastics adjacent to the granite contain anomalous levels of tin (> 100ppm Sn in panned concentrate sample).

b) Streams draining the granite contain only background levels of tin (. 34ppm Sn in pan. con. sample).

c) Streams draining Wart Hill pyroclastics north of Voyager 30 away from the granite contain very low levels of tin (< 10ppm Sn in pan. con. samples).

d) Results of preliminary drainage sampling at Voyager 9, on the eastern margin of the granite have indicated anomalous tin in the streams (> 100ppm Sn in pan. con. sample).

e) Tertiary gravel deposits do not occur within the catchment of the creek at Voyager 30 which is anomalous in tin and therefore could not be contributing to the anomaly.

The style of mineralization causing the drainage anomalies is not known, however it is speculated that a tin halo completely surrounds the granite.

a) The granite may have mineralized the surrounding pyroclastics producing small skarn type deposits in the pyroclastics which contained sufficient carbonate. Carbonate or evidence of carbonate has been observed in tuffs at Elliott Bay. Tuffs cored at Voyager 19 contained up to 20% carbonate. Numerous quartz carbonate veins were intersected

in drill core at V9, and at V30 the vesicular nature of the weathering tuffs is though to be caused by depletion of carbonate. The potential for the strong linear aeromagnetic anomaly fringing the eastern margin of the granite being the magnetic expression of a skarn deposit should not be over looked.

b) The source of the tin may be stanniferous quartz veins which were injected into the pyroclastics from the granite.

c) Intrusion of the granite may have provided a heat source for the generation of solutions which concentrated background levels of tin within the pyroclastics, producing a tin halo around the granite.

The extent of anomalous, tin drainage geochemisty should be determined by sampling all stream previously unsampled within 1.5km of the granite contact. A panned concentrate sample and -80 mesh sample should be taken at 200 metre intervals along the streams.

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APPENDICES

1. SURVEY DATA FROM WART HILL GRIDDED AREAS

2. DDH V19 - 1 GEOLOGICAL LOGS AND ASSAYS

3. DDH V19 - 2 GEOLOGICAL LOGS AND ASSAYS

4. DDH V19 - 3 GEOLOGICAL LOGS AND ASSAYS

5. DDH V19 - 4 GEOLOGICAL LOGS AND ASSAYS

6. DDH V19 - 5 GEOLOGICAL LOGS AND ASSAYS

7. DDH V24 - 1 GEOLOGICAL LOGS AND ASSAYS

8. REPORT BY KINEALY AND RAMSDEN (1982) ON GOLD MICROPROBE ANALYSIS AT VOYAGER 24.

9. DDH V9 - 3 GEOLOGICAL LOG AND ASSAYS

APPENDIX : 1

SURVEY DATA FROM WART HILL GRIDDED AREAS

Co ordinates are Local Grid Co ordinates Based On
10,000N Origin
10,000E

Azmith Used For Area is AMG From Mt Osmund - Wart Hill

VOYAGER 19

Bearing of VOYAGER 19 BASELINE is 00° 27' 47"

VOYAGER 9

Bearing of VOYAGER 9 BASELINE is
To NORTH from 11,300N
10,000E is 11° 35' 47"

To SOUTH from 11,300N
10,000E is 191° 07' 22"

Station 11,300N Appears to be where the Voyager 9 baseline bends.
10,000E Bearings are approximate and were derived by sighting to the ends of the baseline.

The following are stations which are established with a little more accuracy than the origional co ordinates.

Station Name		Actual Coordinates	Elevation Above Sea Level
Wart Hill		12,465.97N 10,261.92E	239.53
Origin	10,000N 10,000E	10,000N 10,000E	130.834
Voyager 19	12,000N 10,000E	11,991.95N 10,016.10E	151.31
Voyager 9	11,300N 10,000E	8,621.35N 10,827.77E	106.68

APPENDIX 2

DDH V19 - 1 GEOLOGICAL LOGS AND ASSAYS

logged by T.A. WILSON — AZIMUTH — 270° True — ELLIOTT BAY EL 27/76 — 206

9.01.1982 — INCLINATION = -50° — SHEET 1 OF 6

RIG — Mindrill - F3

GEOPEKO TASMANIA DRILL LOG

663215

HQ 2.38 → 15.60m 17.35 / NQ 15.08 / NQ 17.35m →

Prospect VOYAGER 19 Hole no. DDH V19-1

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS Sb	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION gal	MINERALISATION sph.	MINERALISATION chalcp.	Fracturing No per m.	Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab: AMDEL) Cu	Pb	Zn (ppm)	Ag	Fe%	Ba	Mg
0	1				(NO core)								2.38									
1	2				(NO core)																	
2	3		2.38m-20.35		Medium grained QUARTZ CRYSTAL - TUFFS							KR 8851	2.38	3.0	0.62	10	45	145	0.5	0.45	80	3400
3	4					strong	✓					KR 8852	3.0	4.0	1.00	40	30	150	x	0.46	115	4500
4	5			30°	cream-buff coloured, streaky textured "porphyritic"	sericitic	✓					KR 8853	4.0	5.0	1.00	10	40	225	x	0.45	55	4200
5	6				crystal tuff. c 20% modal quartz grains up to	'growth' along	✓	weakly pyrite	vfg (±0.1-2mm)			KR 8854	5.0	6.0	0.81	10	35	195	x	0.29	5	4150
6	7				1-2mm in size angular-subrounded white v.f.g	cleavage	✓					KR 8855	6.0	7.7	1.00	10	30	415	x	0.4	x	4950
7	8		45°	35°	feldspathic matrix. 'Cut' by pale green	planes.	✓				8pm 90° to LCA.											
8	9		parallel		sericitic bands 2-20mm apart defining cleavage	Core very	✓					KR 8856	7.7	9.0	1.10	10	25	265	x	0.43	15	4450
9	10				Darker "green" more porphyritic bands (50 modal %	weathered	✓					KR 8857	9.0	10.00	1.00	5	10	405	x	0.48	15	4900
10	11				quartz) do not retain cleavage, possibly LAVAS	and friable	✓					KR 8858	10.0	11.30	0.67	10	35	845	x	0.43	x	4000
11	12		qvein		define bedding also ±1% v.f.g pyrite cubes.		✓						11.30									
12	13		38° qvein	40°	grain porphyritic tuff band defining S_0.		✓		13.7m ±1cm band of semi-mass py		4pm 45°	KR 8859	11.30	13.00	1.43	5	5	170	x	0.42	15	4350
13	14		py.		Finer grained grey non-porph tuff bands 1-5cm wide.		✓		✓?		normal to S_1	KR 8860	13.0	14.0	0.83	10	100	0465	0.5	0.59	5	3500
14	15						T	vfg Q	1mm size dissem euhedra.		very broken core	KR 8861	14.0	15.0	0.98	5	15	205	x	0.40	x	4050
15	16		mm py vein		parallel to S_1		T				10pm // S_1	KR 8862	15.0	16.0	1.0	10	20	225	x	0.44	75	5350
16	17		45°	45°			T				5pm.	KR 8863	16.0	17.35	TD							
17	18		core loss		probably here - no drillers blocks for 6m									17.35	1.35	10	10	310	0.5	0.41	95	4400
18	19				Change down to NQ								17.35	19.17	NIL							
19	20		broken qtz vein		as above med grain xtal tuff.							KR 8864	19.17	20.0	0.83	5	45	240	x	0.425	45	4300
20	21				Quartz-feldspar Crystal tuffs 20.2-28	pale green	T					KR 8865	20.0	21.0	1.0	5	5	260	x	0.44	90	5000
21	22			40°	Compositionally similar to above but finer grained	sericitic	T		(x20)			KR 8866	21.0	22.0	1.0	5	5	115	x	0.4	110	5050
22	23				2mm with feldspar crystals distinct, flattened into	bands along	T		qtz vein top			KR 8867	22.0	23.0	1.0	5	15	145	x	0.37	70	4550
23	24				cleavage rather than groundmass. White feldsp encloses	S_1	T		grain type flow aligned along S_1			KR 8868	23.0	24.0	1.0	10	15	155	x	0.38	115	5000
24	25				qtz crystals				(flattened) feldsp			KR 8869	24.0	25.0	1.0	10	10	195	x	0.39	125	5700
25	26										8pm // S_1	KR 8870	25.0	26.0	0.95	10	20	335	x	0.90	1650	5400
26	27				med gd quartz-feld crystal tuff c.70% Q-fsp crystals ±2mm						and 1st LCA.	KR 8871	26.0	27.0	1.0	10	20	145	x	0.54	435	4750
27	28				very fine grained grey-white crystal VITRIC TUFF	yellowish streaks define						KR 8872	27.0	28.0	1.0	5	10	210	x	0.37	120	4600
28	29		46°	35° 45° S_2	(pos lava) Qtz-fsp crystals 0.5mm in grey-wh matrix	S_1 cut by lower angle S_2 ±?		✓ in qtz veinlet.				KR 8873	28.0	29.0	1.0	10	30	125	0.5	0.29	155	3250
29	30		qtz veins in gr.		Med-gd SHEARED QTZ-CRYSTAL TUFF	very sericitic	✓				very fractured broken core	KR 8874	29.0	30.0	1.0	15	515	665	0.5	0.44	85	6150
30	31				weakly banded pyrite & 2 generations - granular pre S_1	flattened	✓ k 0.5%					KR 8875	30.0									
31	32										v broken core			32.0	1.3	10	5	205	0.5	0.33	160	5650
32	33				Possible lithic fragment 4cm or long ovoid of Qp lava							KR 8876	32.0	33.0	1.0	15	5	110	x	0.31	180	5000
33	34	oxidation level			OXIDATION Leucocratic egg-white lithic crystal vitric tuff	— oxid level ↓	oxidation	)				KR 8877	33.0	34.0	1.0	x 5	5	165	x	0.29	180	3500
34	35		45° structurally	35°	v.f.g. q-fsp specks. Banded and angular fragments in med gd crystal	tuff.						KR 8878	34.0	35.0	1.0	x	10	140	x	0.64	1100	4950
35	36				Medium grained CRYSTAL-LITHIC TUFF	sericite						KR 8879	35.0	36.0	1.0	x	20	115	x	0.53	150	4700
36	37				fragments - angular & possible grey porphyritic	along S_1					10 bpm // S_1	KR 8880	36.0	37.0	1.0	5	5	245	x			
37	38				lava up to 3cm long in qtz X tuff. well																	
38	39				cleaved. (look like the vitric tuff unit, possibly brecciated contact)																	

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SHEET 2 OF 6

EOPEKO TASMANIA DRILL LOG

Prospect VOYAGER 19. Hole no. DDH V19-1

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION gal	MINERALISATION sph	MINERALISATION chlc	Fracturing	Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab:) Cu	Pb	Zn	Ag	Fe%	Ca	Mg
37	38				Crystal Tuffs. med gd crystal tuffs with. Streaky	FeCO3? orange vein					good	KR 8881	37	38	1.0	X	10	335	X	1.35	1000	5200
38	39			35	interbedded finer-grained variant, complex c 15%	Veinlets & spots around	✓	tr			Core c	KR 8882	38	39	1.0	X	10	120	X	1.25	7500	3500
39	40				orange siderite staining feldsps in narrow veinlets	Qtz veins	✓		disseminated vfg		4 bpm	KR 8883	39	40	1.0	X	15	80	0.5	1.25	0.95	0.71
40	41				parallel to Si.							KR 8884	40	41	1.0	X	15	75	X	0.99	0.63	0.67
41	42				white vfg qtz porphyritic lava, poorly cleaved. Fine grained mottled quartz-feldspar							KR 8885	41	42	1.0	5	10	60	X	0.90	0.64	0.53
42	43				CRYSTAL TUFFS (lithic) c 10% orange siderite							KR 8886	42	43	1.0	X	80	50	X	0.69	0.42	0.51
43	44		40	40	spots and irregular veinlets, in contact with							KR 8887	43	44	1.0	X	15	65	X	1.2	0.57	0.68
44	45				angular coarse-med gd qtz crystal tuffs (lithic?)						good core	KR 8888	44	45	1.0	X	X	60	X			
45	46				defines irregular colour banding (textural)	Carbonate-Sericite					few fractures	KR 8889	45	46	1.0	X	15	45	X	0.88	0.55	0.59
46	47				parallel - bedding.	fg					2pm	KR 8890	46	47	1.0	5	X	40	X	0.84	0.56	0.57
47	48				defined angular contacts between mg xt tuff and xt (porphyritic lava?)	orange clo spots and irregular						KR 8891	47	48	1.0	X	X	45	X	0.87	0.65	0.65
48	49			38	streaky texture due to sericite along cleavage possible Breccia locally	veins						KR 8892	48	49	1.0	X	10	60	X	0.87	0.77	0.68
49	50		65		Breccia (complex)		✓	✓?	peppery Sulphides in qtz vein			KR 8893	49	50	1.0	X	15	95	X	0.73	1.15	0.52
50	51				As above, green weathering angular blocks of							KR 8894	50	51	1.0	5	25	60	X	0.53	0.98	0.75
51	52		44	35	mg qtz-fsp porphyritic tuff (sericitic) enclosed in							KR 8895	51	52	1.0	10	20	50	X	1.15	0.77	0.96
52	53				orange mottled f.g. porphyritic lava probably rhyolite							KR 8896	52	53	1.0	5	25	40	X	1.10	1.15	0.78
53	54				Qtz phenocrysts c. 20% < 1mm across, orange siderite							KR 8897	53	54	1.0	5	5	40	X	1.15	0.82	0.83
54	55		py banded		veins streaks and spots, also med gd X tuff bands (blocks also)		✓	✓	occasional Sulphide clusts aligned			KR 8898	54	55	1.0	10	20	65	X	1.65	0.89	0.82
55	56		45	30			✓	✓	into cleavage c. 3mm x 1mm			KR 8899	55	56	1.0	10	5	30	X	1.10	0.73	0.67
56	57				Med grain mottled Quartz-feldspathic crystal	Sericite in matrix along S1 and pseud feldsp.	✓					KR 8900	56	57	1.0	5	10	25	X	0.79	0.89	0.74
57	58				lithic tuffs, fragments up to 8x3cm of grn		✓					KR 8901	57	58	1.0	10	10	20	X	1.10	1.15	0.71
58	59				mg qtz-fsp (biotite?) x tuff.		✓		weakly disseminated vfg. 0.1-0.5mm			KR 8902	58	59	1.0	10	10	25	X	1.1	0.95	0.86
59	60				"		✓		sulphides - grey (Pb?)			KR 8903	59	60	1.0	10	20	25	X	0.82	1.05	0.76
60	61				"		✓		locally concentrated along cleavage veins			KR 8904	60	61	1.0	5	10	35	X	0.98	1.8400	.9550
61	62				"		✓					KR 8905	61	62	1.0	X	15	40	X	0.94	0.93	0.87
62	63		0-60°	45°	Blotchy texture, pervasive to sharp contacts between med gd qtz-feldsp (sericitic) crystal tuffs and	orange Sericite	✓		very fine grained			KR 8906	62	63	1.0	X	5	35	X	0.79	0.57	0.80
63	64				f.g. felsic lithic tuffs	Streaks and spots c 10% of rock	✓		peppery sulphides			KR 8907	63	64	1.0	X	X	35	X	0.9	1.6	1.65
64	65		30	35	as above with variation in quantity of quartz phenocrysts		✓					KR 8908	64	65	1.0	X	X	35	X	0.82	3.10	0.90
65	66				generally 2mm well rounded to subhedral, and alteration of pinkish feldspar (albite?) phenocrysts to shades		✓					KR 8909	65	66	1.0	5	10	55	X	0.94	3.25	0.90
66	67		calcite veining		very well pronounced cleavage giving streaky texture	10cm calcite veins	40°/09					KR 8910	66	67	1.0	5	X	35	X	0.82	1.3	0.88
67	68		10		to groundmass.						breaks along cleavages c. 3pc.	KR 8911	67	68	1.0	10	X	30	X	0.72	0.69	0.75
68	69			52								KR 8912	68	69	1.0	5	X	40	X	0.86	0.76	0.86
69	70		45									KR 8913	69	70	1.0	X	10	55	X	0.82	1.0	0.79
70	71				porphyritic lava fragment? or bed in quartz-feldsp. tuffs	calcite veining and siderite spots	✓	associated with veining ✓?				KR 8914	70	71	1.0	5	10	50	X	0.79	1.45	0.72
71	72		55		mg feldspathic qtz x tuff. dk grey in colour good textured with							KR 8915	71	72	1.10	X	5	45	X	0.91	0.93	0.98
72	73				more felsenthic tuffs							KR 8916	72	73	1.0	X	5	55	X	1.0	0.95	1.25
73	74						✓		minor pyrite veinlets in central zone along bands // Si			KR 8917	73	74	1.0	X	10	30	X	0.82	0.81	0.84
74	75		42			white calcite veins and						KR 8918	74	75	1.0	X	X	30	X	0.825	0.785	0.87
75	76			60	mottled mg qtz feldspathic qq-qp Lithic x tuffs well cleaved with sericite after feldspars	siderite/ calcite streaks	✓	py clusters adjacent to alteration and veins				KR 8919	75	76	1.0	X	X	25	X	0.80	0.77	0.94

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ZEOPEKO TASMANIA DRILL LOG

Prospect V19 Hole No. DDH 1

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION gal.	MINERALISATION sph	MINERALISATION chp	Fracturing	Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab:) Cu	Pb	Zn	Ag	Fe	Ca	Mg
76	77		shale bed	pl	complex breccia cut by young veins (siderite veins +qtz)		✓	sporadic sulphide				KR 8920	76	77	1.0	X	X	25	X	10.84	0.71	0.95
77	78		60	60	Sharp contact between greenish fsp-qtz crystal tuffs (matrix is green) and grey fg-mg tuffs irregular bedding	siderite/sideritic	✓	crystals, mainly pyrite disseminated				KR 8921	77	78	1.0	5	35	75	X	0.89	1.90	0.82
78	79				more homogeneous crystal lithic tuffs. fsp-qtz ~1-2mm with finer grained matrix and veinlet contacts.		✓	in matrix or in clasts				KR 8922	78	79	1.0	5	X	60	X	1.05	1.10	1.0
79	80						✓				3pm.	KR 8923	79	80	1.0	5	X	35	X	1.0	0.9	0.95
80	81					irregular siderite veining	✓	micrographic				KR 8924	80	81	1.0	5	15	35	X	1.0	1.0	0.80
81	82		35	35			✓	& fg pyrite. (locally up to 0.5%)				KR 8925	81	82	1.0	X	25	80	X	0.97	0.8	0.89
82	83						✓					KR 8926	82	83	1.0	X	20	70	X	0.97	0.95	0.89
83	84				fragments of crystal lithic tuff? up to 5cm in fsp-qtz	sericite-carbonate	✓					KR 8927	83	84	1.0	X	25	70	X	0.99	2.45	0.98
84	85				tuff matrix very irregular contacts diffuse - sharp		✓					KR 8928	84	85	0.74	X	30	80	X	1.15	2.8	1.1
85	86				some brecciation of the lithic units by siderite veins		✓					KR 8929	85	86	1.0	X	30	75	X	1.0	3.0	1.05
86	87						✓					KR 8930	86	87	1.0	5	30	30	X	0.9	0.77	1.05
87	88		gal		brown 'oily' siderite forms up to 10% of rock patchily fine-med-crystalline galena? also 6cm narrow	10cm wide irregular silicic alteration	✓	✓ along 2cm gr // LCA			very broken core	KR 8931	87	88	1.0	5	190	315	X	1.0	2.15	1.05
88	89				unobtrusive veinlets in lithic fragments sometimes terminating at its margin		✓				good core	KR 8932	88	89	1.0	15	95	360	X	1.1	1.2	0.96
89	90				No indication of bedding over this interval.		✓				"	KR 8933	89	90	1.0	5	65	250	X	0.81	1.05	0.98
90	91						✓				"	KR 8934	90	91	1.0	10	80	185	X	1.0	0.91	0.89
91	92				brecciation of fg xtuff lithic fragments and patchy by hematite siliceous veinlets, not as evident in mg xt. groundmass		✓				broken core	KR 8935	91	92	1.0	X	25	70	X	0.89	0.7	0.88
92	93				brecciated porphyritic (qtz) lava cut by 3mm brn carbonate	vein lets.					20 bpm irregular	KR 8936	92	93	1.0	X	35	120	0.5	0.81	0.49	0.82
93	94				green, feldspar phyric x tuffs, yellow sericitised feldsp 30% modal						good core	KR 8937	93	94	1.0	10	50	300	X	0.96	2.85	1.15
94	95			35	qtz phenocrysts abundant but subordinate to feldspars. aligned defining cleavage.						"	KR 8938	94	95	1.0	10	90	460	X	0.94	1.8	1.15
95	96										"	KR 8939	95	96	1.0	10	65	265	X	0.76	0.70	0.98
96	97		sideritic mixing of fragments		irregular angular contact, variable streaky textured	brn siderite veining of siliceous tuffs not in matrix					"	KR 8940	96	97	1.0	5	50	170	X	0.88	0.42	0.64
97	98				tuffs pale white to green (feldspathic) brecciated						"	KR 8941	97	98	1.0	5	75	210	X	0.80	0.66	0.855
98	99				siliceous bands (lithics)			Tr			vitric	KR 8942	98	99	1.0	5	45	195	0.5	0.775	0.81	0.915
99	100		30		strong banding, alignment of lithic fragments, pyrite rich band in vfg porphyry dk grey			✓ ← ~2% py along tuff band.			30° LCA	KR 8943	99	100	1.0	10	60	145	X	1.0	0.4	0.93
100	101			30°	mg green feldsp-q xt. irregular contact with gy qtz xtuff	sericite qtz veins with cb					very broken core irregular.	KR 8944	100	101	1.0	10	55	245	X	1.15	0.95	0.94
101	102				gy pl unit brecciated by qtz-cb veinlets.			Tr in pl matrix.				KR 8945	101	102	1.0	5	345	195	X	1.0	1.45	0.95
102	103		70/15	30°	bedding of lithic fragment very irregular.	minor qtz veining with sideritic cracks.					breaks along S, 30°	KR 8946	102	103	1.0	5	95	220	X	0.97	1.2	0.85
103	104				(alignment of feldspars)							KR 8947	103	104	1.0	5	140	600	X	0.96	0.34	0.88
104	105			30	mottled gy green mg fsp(yell) qtz xtuff aligned xtals	sericite						KR 8948	104	105	1.0	10	115	475	X	0.94	0.38	0.96
105	106				Predominantly gy-grn mottled fsp-qtz xt mod gd.						5 bpm 60° LCA	KR 8949	105	106	1.0	x	105	325	X	0.735	0.34	0.95
106	107					overall increase in quantity of veining qtz-sericite.					3 bpm. 80°	KR 8950	106	107	1.0	10	180	720	X	0.96	0.81	0.98
107	108				as above but with bands of gy qtz xt more fine grained, sharp - irregular contacts						broken core	KR 8951	107	108	1.0	15	200	560	X	1.05	2.4	0.86
108	109		qtz-cb veins			orange cb veins both brecciated & S1 and normal		gy sulphide blebs in qtz veins.			5pm 30° LCA LS.	KR 8952	108	109	1.0	5	75	135	X	0.99	1.7	0.82
109	110				banding on 1cm scale, pervasive grn qtz(recrystal) fsp porphyry and gy qtz xtuff.							KR 8953	109	110	1.0	10	170	345	X	0.74	0.92	0.755
110	111		56	33	complex brecciated contact							KR 8954	110	111	1.0	<5	<150	310	X	0.89	1.35	0.88
111	112				qtz p. lava	intensive colloidal/sid veining in bx plane						KR 8955	111	112	1.0	15	370	425	X	1.95	3.05	1.45
112	113				vfg olive gn rock, pass vf feldsp laths in groundmass patchily sericitised. no banding							KR 8956	112	113	1.0	15	105	610	X	4.65	4.35	2.05
					very homogeneous occasional qtz veinlets. adopts orange colour down hole																	

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COPEKO TASMANIA DRILL LOG — Prospect V19 — Hole No. DDH-1

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION g	MINERALISATION sph	MINERALISATION chalco	Fracturing
	114		~43		strong carbonate rich felsic vfg rock dk green "porphyritic" colours to contact qtz vein lam parallel contact. V. sharp. ALTERED QTZ PHENYRITIC LAVAS	orange cb Spots locally 30% vol	✓	along calcite veins.	white veins.	✓	good core 2 per
	115	v v									
	116	v			Generally homogeneous qtz-porphyritic rock, buff -	orange sidelite					fractures coated to calcite veins
	117	v			pale green in colour, subtabular qtz crystals up to	veins 32° LCA 2-3 mm apart also cross-cutting and irregular					
	118	v			5mm across form c 20 vol %. Set in vfg 'mottled'						
	119	v v			groundmass. Orange colouration due to peppering of		✓			✓	
	120	v			'sidelite'? and hair line discontinuous veinlets also	calcite (sid?) cuts interval	veining down hole as calculated				with sulphide
	121	v			rimming or cutting qtz phenocrysts. weak preffered orientation	zone of orange veinlets					
	122				massive carbonate breccia - cut by qtz veins and later calcite vein	more cb here?		✓	in qtz veins		
	123	v			Porphyritic lava as above, orange carbonate veining decreasing away from carbonate breccia unit	weak veining	✓	weak	sulphide	✓	5pm 45-30°
	124	v			Inequigranular porphyritic lava		✓	in carbonate veins		✓	good wire fw breaks
	125	v			carbonate veining early phase of lam	veins 30°	✓			✓	
	126	v			Sideritic ? cut by younger white calcite.						
	127	v			carbonate brecciating lavas	narrow breccia zone		weak	mineralisation		
	128	v		CaCO3				in vein systems			good massive core.
	129	v									
	130	v			brecciation of pl by orange carbonate veinlets		✓				
	131				c 25% carbonate, angular p.lava blocks up to 3cm			✓	along 2mm wide fractures		massive
	132	v			grey p.lavas better alteration						core 5 bpm
	133	v			orange-pink mottled, essentially homogeneous porphyry lava phenocrysts of glassy subtabular - subedral	carbonate ? alteration of matrix and feldspar					normal to LCA axis
	134	v			yellow blebs of pyrite (after sulphide? phenocrysts)						
	135	v				Veining		weak	mineralisation		
	136	v				2mm - 1cm yellow-orange cb veins	✓	associated with veining		✓	
	137		calcite		some local loss of pl and infilling by carbonate.						
	138	v		---	as above fg porph lava orange-pink mottled						good core 10 bpm c 80° to LCA
	139	v			colour due to 10-25% orange carbonate in matrix - skeletal						
	140	v			outlines						
	141		70		10-20cm calcite veins with cyclasts on margins, xenoliths of porp lava			✓ along margins of calcite veins			
	142	v				white calcite					
	143	v			mottled pinkish colour tending to chloritic green	Veining 1 to 0.5cm normal - 30° to core axis					
	144	v			p.lavas, due to 'replacement' of groundmass by						
	145	v	veins	5LCA	sideritic? locally up to 30% by volume						
	146	v			green elongate 'glassy' phenocrysts possibly SHARDS? in vfg						
	147	v			Siliceous p.lava.						
	148	v			Various degrees of carbonate alteration of lava from						
	149	v			fracturing and lining of qtz phenocrysts by brown-red carbonate to						
	150	v			replacement of other minerals (feldspars?) and narrow anastomosing cb veinlets						
	151	v			coarse white calcite veins 45° LCA			✓ veins			
	152	v									

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab:) Cu	Pb	Zn	Ag	Fe	Ca	Mg
KR 8957 *	113	114		1030	18570	520	x			
KR 8958	114	115		10	185	655	0.5	2.20	3.90	1.90
KR 8959	115	116		10	175	500	x	2.25	4.9	2.15
KR 8960 *	116	117		5	50	610	x			
KR 8961	117	118		5	155	985	x	2.2	2.7	1.30
KR 8962	118	119		10	130	565	x	2.0	2.25	1.20
KR 8963	119	120		10	350	915	x	2.0	2.6	1.45
KR 8964	120	121		15	575	1200	x	2.05	3.75	1.85
KR 8965	121	122		10	730	2800	x	3.45	13.5	4.6
KR 8966	122	123		45	1400	1400	0.5	2.15	5.25	2.2
KR 8967	123	124		15	630	950	x	1.85	3.25	1.75
KR 8968	124	125		90	2350	2600	6.5	2.75	4.8	2.35
KR 8969	125	126		65	1100	1600	2.0	2.0	2.8	1.65
KR 8970	126	127		10	710	955	x	2.2	5.0	2.55
KR 8971	127	128		15	1150	1150	2.0	1.95	4.35	2.10
KR 8972	128	129		85	3400	2650	8.0	1.65	3.70	1.95
KR 8973	129	130		15	1200	1000	0.5	2.45	5.85	2.70
KR 8974	130	131		65	6150	1550	6.5	1.85	2.80	1.15
KR 8975	131	132		45	2550	1650	2.5	1.65	2.15	1.05
KR 8976	132	133		60	425	1500	1.5	2.0	2.8	1.35
KR 8977	133	134		60	115	1200	x	1.95	4.45	1.65
KR 8978	134	135		40	75	1200	0.5	1.8	2.95	1.40
KR 8979	135	136		40	60	1650	x	1.5	4.05	1.65
KR 8980	136	137		30	60	1150	0.5	2.1	3.70	1.65
KR 8981	137	138		40	80	2250	x	2.15	2.85	1.40
KR 8982	138	139		40	185	1150	1.0	2.05	2.5	1.35
KR 8983	139	140		35	315	670	1.0	1.85	3.55	1.80
KR 8984	140	141		85	660	830	1.5	1.95	14.0	1.55
KR 8985	141	142		100	330	1250	5.0	2.1	5.85	1.60
KR 8986	142	143		20	70	900	x	2.3	1.65	1.05
KR 8987	143	144		20	55	890	0.5	1.85	4.0	1.35
KR 8988	144	145		20	95	760	x	1.95	4.9	1.75
KR 8989	145	146		25	45	1350	x	1.45	2.60	1.2
KR 8990 *	146	147		5	10	1050	x			
KR 8991	147	148		20	65	1250	0.5	1.75	3.90	1.0
KR 8992	148	149		30	55	1550	0.5	2.15	4.75	1.3
KR 8993	149	150		25	20	1000	0.5	1.45	2.55	1.15
KR 8994	150	151		40	600	1800	0.5	2.05	6.80	1.25
KR 8995	151	152		20	90	700	0.5	1.85	4.45	1.35

GEOPEKO TASMANIA DRILL LOG

663219

SHEET 5 OF 270

Prospect Hole no.

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION gal.	MINERALISATION sph.	MINERALISATION chp.	Fracturing
152	153				10cm massive qtz-calcite vein 30° to LCA - possible decrease in phenocryst frq			✓ appears at vein			good core approx 2 bpm at 35° to LCA.
153	154										
154	155				Intense brecciation of volcanics by veins. crescent shaped carbonate veins down hole and weak chlorite alteration.			✓			
155	156		c 90		Complex carbonate veining, 'clasts' are veining in pl, but is brecciated and seemingly block veined by the plagioclase.	chlorite - carbonate.	✓	along cb veinlets.		✓	
156	157		30°		green v/g rock dk matic phenocrysts.		✓				
157	158		Veins 30° to LCA.		strong silicification to rock due to carbonate in matrix up to 30%. Sharp contact along cb veinlet.	highly altered rock, cb.					
158	159				very dark green (siliceous) chlorite rock v/g on fresh surface						
159	160		45°		displacement of chlorite veinlet along x sharp contact		✓	pyrite in		✓	
160	161				Pyclsp clasts up to 6mm long in f-mg crystal tuffs see lithic fragments mainly	sporadic	✓	clasts within sequence of tuffs			good core no breaks
161	162		35		of grey porphyritic lavas up to 2cm across aligned	strong carbonate alteration	✓				
162	163				35° to LCA.		✓	< 1% by vol.			
163	164				Altered mod qtz-feldspathic (lithic) crystal tuffs	minor carbonate veining					
164	165		Streaky texture		strong mottling (up to 25%) of carbonate alteration						
165	166				due to inclusions of feldspar porphyry tuffs 35° to LCA.						
166	167		80°					carbonate vein centre of fg unit			c. 6pm 30-90° to LCA.
167	168				strong weathering v/fg homogeneous rock, c 30% quartz bom carbonate spots in with qtz rounded crystals? Fg xt? (lava?)		✓	✓		✓	
168	169				Streaky textured variable qtz-feldspathic	carbonate alteration					
169	170				crystal tuffs, ard examined with occasional	carbonate veining with weak					
170	171				recognisable lithic fragments (base of pyrite). Replacement	sulphide mineralization.					
171	172				? by bown-orange carbonate, locally 30% of rock.						
172	173					occasional					
173	174			30	zone of more intense yellow carbonate veins with Cy/Py c // cleavage in rock	carbonate	✓	✓		✓	
174	175				Lithic qtz-fsp crystal tuffs, gy-gn matrix	vein/vein selvedge					
175	176				texture f-mg	along cleavages					
176	177										
177	178				rounded black v/g clast 4cm x 2cm containing			in 2-4mm clasts/ veinlets			breaks @ bottom of core 25° LCA.
178	179		16	16		carbonate -	✓	in tuffs ✓			
179	180				sporadic 2-8mm clasts fractured, of sulphides.	sericite alteration	✓	✓ locally 1%	✓	✓	
180	181				in mixed lithic crystal tuffs. Also py band in						
181	182				tuff groundmass			pyrite disseminated			
182	183				generally an about		✓	in matrix and as			
183	184						✓	"clasts" up to 1cm			
184	185				yellow sandy mass cb band.		✓	✓	sphalerite occurs on boundaries of carbonate veins and clasts		
185	186										
186	187										
187	188										
188	189										

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab) Cu	Pb	Zn	Ag	Fe	Ca	Mg
KR 8996	152	153	1.0	20	670	875	1.5	1.2	4.0	9750
KR 8997	153	154	1.0	40	2100	1400	4.0	1.95	5.15	2.5
KR 8998	154	155	1.0	50	435	620	1.0	2.5	4.9	2.6
KR 8999	155	156	1.0	90	200	900	x	3.75	4.4	2.9
KR 9000*	156	157	1.0	30	180	1450	x			
KR 9001	157	158	1.0	65	185	575	0.5	4.55	7.25	2.5
KR 9002	158	159		60	70	315	0.5	4.5	7.35	2.55
KR 9003	159	160		45	45	260	x	3.8	6.4	2.75
KR 9004	160	161		60	345	650	1.0	2.2	3.2	1.75
KR 9005	161	162		50	245	490	1.0	2.0	2.75	1.60
KR 9006	162	163		30	50	265	1.0	1.6	2.35	1.40
KR 9008	163	164		30	20	195	x	2.0	3.05	1.90
KR 9008	164	165		70	35	295	x	2.15	4.75	2.45
KR 9009	165	166		70	30	550	0.5	2.1	2.9	1.85
KR 9010	166	167		40	50	345	x	1.7	2.65	1.65
KR 9011	167	168		40	395	360	0.5	3.1	6.3	3.0
KR 9012	168	169		50	45	190	0.5	1.35	1.70	1.35
KR 9013	169	170		90	180	710	0.5	1.55	2.6	1.5
KR 9014	170	171		55	40	615	x	1.5	3.4	1.8
KR 9015	171	172		45	15	295	0.5	2.25	5.45	2.6
KR 9017B	172	173		55	50	380	x	2.25	6.65	2.8
KR 9017	173	174		40	25	140	x	1.9	3.3	1.8
KR 9018	174	175		35	35	175	x	1.85	3.35	1.80
KR 9019	175	176		35	50	200	x		2.35	1.50
KR 9020*	176	177		20	310	375	0.5			
KR 9021	177	178		125	520	3800	2.0	1.95	3.05	1.65
KR 9022	178	179		70	410	840	2.0	1.8	3.0	1.65
KR 9023	179	180		50	145	620	1.5	1.65	2.35	1.55
KR 9024	180	181		55	175	265	3.0	2.25	2.4	1.75
KR 9025	181	182		105	255	1300	3.0	2.4	2.55	1.55
KR 9026	182	183		110	450	1450	2.5	1.2	1.5	0.99
KR 9027	183	184		60	265	635	2.0	1.7	2.5	1.25
KR 9028	184	185		25	180	360	1.0	2.5	6.5	2.85
KR 9029	185	186		35	120	3450	1.5	1.2	1.2	1.0
KR 9030	186	187		50	105	335	1.0	1.85	2.35	1.40
KR 9031	187	188		40	50	215	1.0	2.2	3.95	2.0

663220

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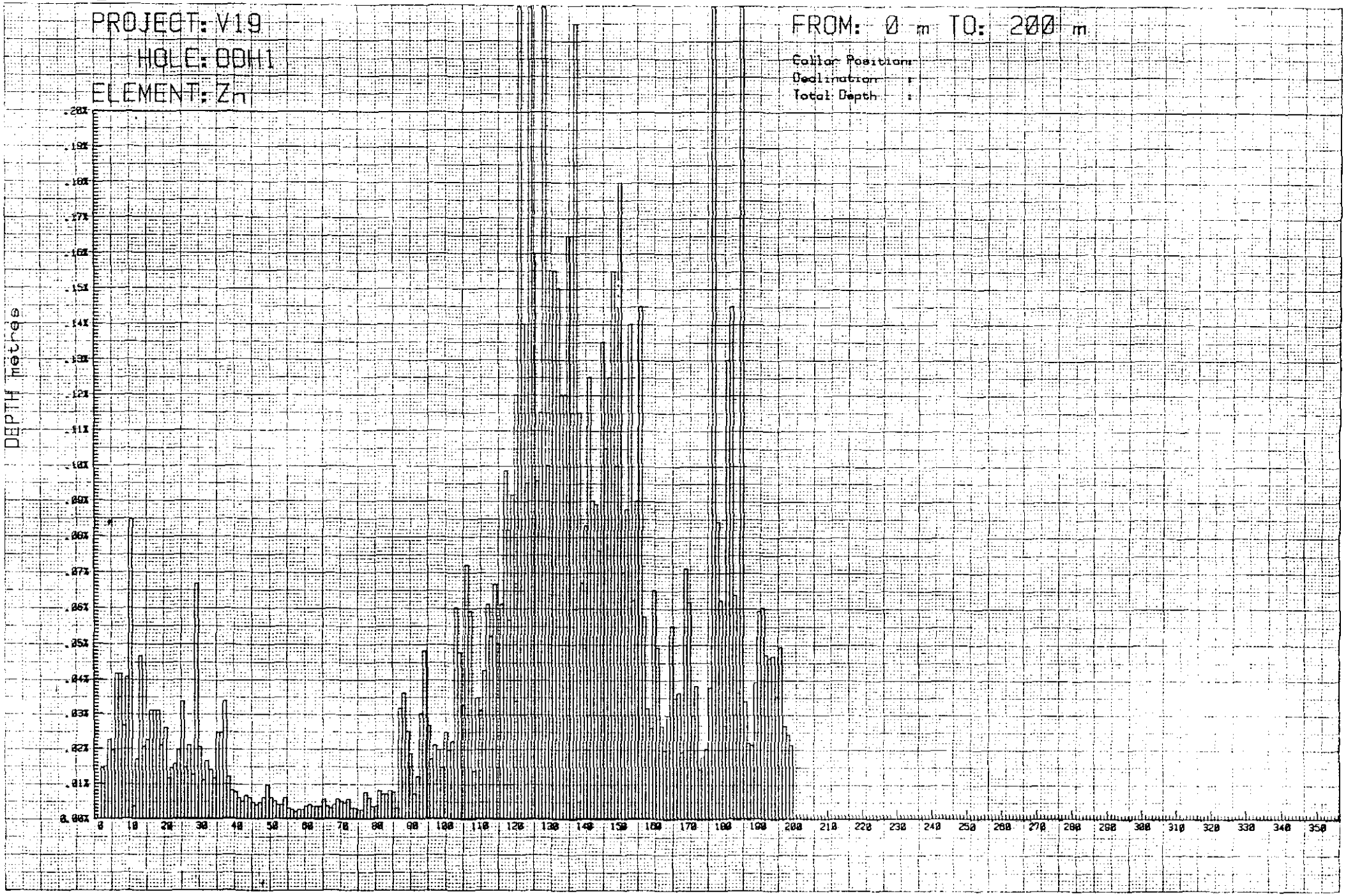
OLOPEKO TASMANIA DRILL LOG

Prospect V19 Hole No. DDH V19-1

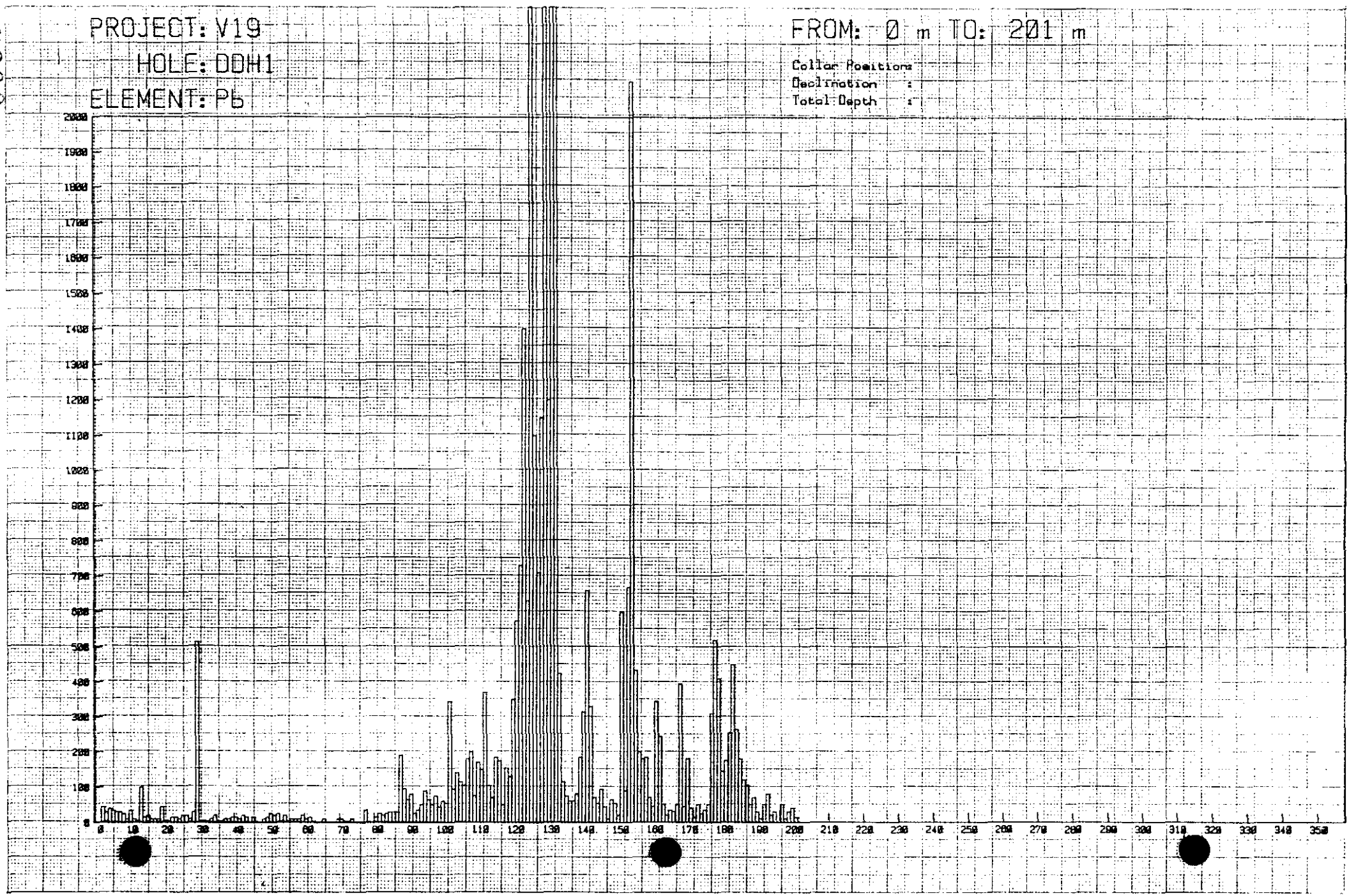
DEPTH (m) from	to	GRAPHIC LOG	ANGLE TO CORE AXIS So	Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	gal	sph	chp	Fracturing	Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab:) Cu	Pb	Zn	Ag	Fe %	Ca %	Mg %
8	189				greenish qtz-feldsp Lithic crystal tuff, sulph clasts	Cb-sericite	✓	dissem. & clast.		✓		KR 9032	188	189	1.0	90	70	210	0.5	2.55	3.90	1.95
9	190		50		slickensiding and chl along sharp contact.							KR 9033	189	190	1.0	45	30	390	0.5	4.85	5.05	2.20
0	191		grn wthg		fine-grained pale green chloritic rock, vfg groundmass of bwn alteration increases in magnitude imparting	chlorite along				✓	along bwn sid	KR 9034 *	190	191	1.0	30	10	590	x			
1	192				colour change to pale orange	cleavages and carbonate				✓	veins principally	KR 9035	191	192	1.0	30	50	600	0.5	5.95	6.25	2.15
2	193				Veins 15° to LCA ± 4mm wide and c 8 per metre	veins				✓		KR 9036	192	193	1.0	25	80	470	0.5	6.0	5.85	2.20
3	194		orange wthg.			intense black				✓	6 pm c	KR 9037	193	194	1.0	55	20	460	x	5.7	6.10	2.25
4	195		increase in carbonate in groundmass.			chlorite along cleavage on				✓	20° to LCA but oblique	KR 9038	194	195	1.0	35	30	465	x	6.1	6.05	2.30
5	196				mottled gn-orange vfg rock	fresh surface				✓	to main cleavage.	KR 9039 *	195	196	1.0	35	x	350	0.5			
6	197				cb vein							KR 9040	196	197	1.0	35	50	490	x	7.1	4.65	2.35
7	198		grey-white unit		band of qtz x tuff lithic very veined, altered.	sericite carbonate	extensive sericitic carbonate					KR 9041	197	198	1.0	40	10	265	x	5.5	3.15	1.90
8	199		80°		bwn mass cb vein 60° to LCA.	veining				✓		KR 9042	198	199	1.0	75	30	240	x	4.9	4.80	2.50
9	200				vfg gy-orange unit, bwn cb specks (30%)							KR 9043	199	200	1.0	50	40	210	x	5.5	4.35	2.30
00	200.36				sericitised qtz-fsp groundmass							KR 9044	200	200.36	1.36	60	15	210	x	6.2	5.4	2.75
												~~KR 9045~~										
												~~KR 9046~~										

EOH 200.36m

Sampling notes KR 8974 - 9044 grind of core sampled only
KR 8851 - 8973 split 1/2 core analysed


PROJECT: V19
HOLE: DDH1
ELEMENT: Zn
FROM: 0 m TO: 200 m
Collar Position:
Declination :
Total Depth :
DEPTH metres
0.00%
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350

663222


PROJECT: V19
HOLE: DDH1
ELEMENT: Pb
FROM: 0 m TO: 201 m
Collar Position:
Declination :
Total Depth :
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350

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663223

PROJECT: V19 "DDH1"

HOLE: DDH1

ELEMENT: Fe

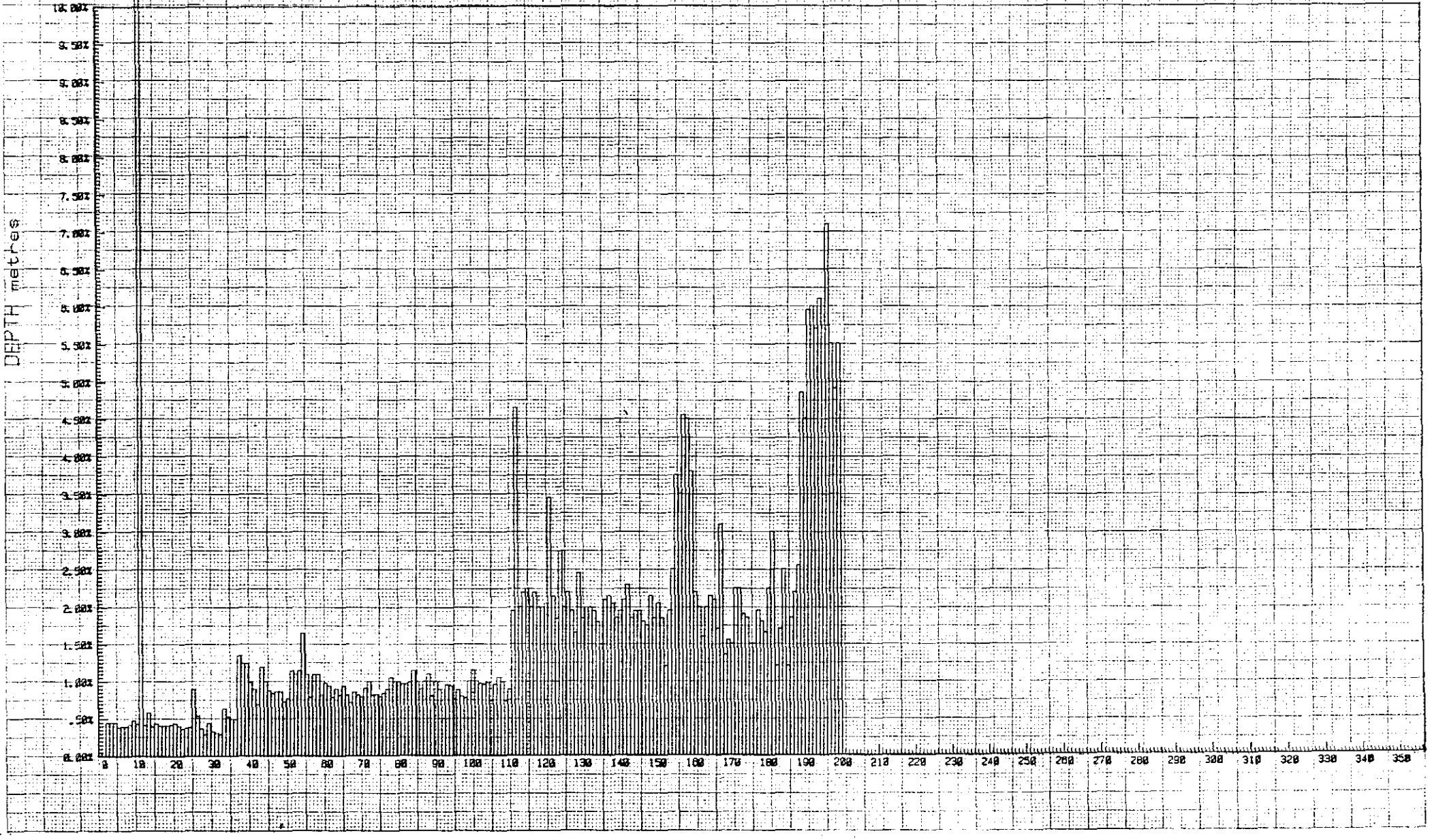
FROM: 0 m TO: 200 m

Collar Position:

Declination :

Total Depth :

DEPTH metres



APPENDIX 3

DDH V19 - 2 GEOLOGICAL LOGS AND ASSAYS

DDH N V19-2
logged 10/2/1982 -
P.A Wilson

HQ → 15m
NQ → 39.1m
BQ → 39.1 from

663225

COLLAR 13000N | 10010E -45° TEast.

SHEET 1 OF 5

P16

GEOPEKO TASMANIA DRILL LOG

Prospect V19 Hole no. DDH 2

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION gal	MINERALISATION sph	MINERALISATION chp	Fracturing
0	1				Crmy buff highly porous (leached) Quartz crystal	Anastomosing		gossh like	unit lies		
1	2				tuffs. (medium - coarse grained)	siliceous vein network up to		at top of hill			
2	3				Rounded - subrounded qtz phenocrysts up to 5mm	1cm across		after carbonate	??		
3	4				locally up to 15% by volume in creamy friable groundmass.	locally to 5% by volume of rock.					
4	5		40°		So rich veinlets parallel & oblique to S_1						
5	6		poor banding.		also transposed by S_1 So per decrease in cap.						
6	7				Green colouration, fresher with depth c. 40% qtz & 2 sizes.						
7	8				As above homogeneous buff meod qtz X tuff	Siliceous bleaching along vein veinlets. locally intense.					
8	9		qtz subhedra		groundmass of altd feldsps, possible feldspar						
9	10		fsp phenos		phenocryst phase (kaolinised)						
10	11				mm (base of ... leaching could be scarce rock types)						to LCA ×15
11	12				... massive qtz. P.f.xt. good qtz embedm	weak chl veining in massive unit.					broken core
12	13				Massive homogeneous grey fg. rock. c 15%.						bad ground
13	14				qtz X (re-sorbed) in grey qtz-fsp matrix.						
14	15										very broken core
15	16				- no structures very homogeneous						good core runs
16	17										
17	18										good core 4 bpm
18	19		top qtz ...		Mottled P.l ... introduction of yellow cb pseudomorphs after feldspar phenocrystic phase	sericitic alteration	✓	yellow disseminations up to 2mm.			
19	20		silicified		fg ... silicified zone here	broken core	✓	"			
20	21		... develops		Friable broken altd p.l. carbonate extensive causing porosity, some SiO_2 and disseminated sulphides	sericite along S_1	✓				broken core
21	22		38		Fine grained yellow-green qtz (yell. fsp) x tuffs? banded, 2-3% sulphides in 1cm wide silver bands	(...) chalcedonic.	✓	✓	c 1% bands	systems per S_1	in fc.
22	23		cb veins.				✓	✓			12 bpm
23	24				Mottled grey-brown fg. qtz fsp (yellow) crystal tuffs	soapy sericite along					35° to LCA ...
24	25				very homogeneous	cleavage planes					
25	26										
26	27		40°		General increase in grain size ... and presence of carbonate rich blebs up to 1cm	carbonate bleaching extensive					
27	28		cb veins								
28	29				fine-grey mg. qtz-(fsp) xt. green sericite along cleavage planes	sericite on S_1 cb blebs and veinlets.	V. minor disseminated py.				
29	30										
30	31										
31	32				banding in tuffs or sulphide layers	carbonate bleaching	✓	✓	locally 10%		
32	33			45	locally 30% yellow cb alteration assoc with sulphide bands	Veining	✓	✓			
33	34						✓	✓			
34	35		40°		sulphide vein		✓	✓			
35	36				Mottled f-mg qtz (f) xt weakly altered	Locally Sericitic					
36	37					Carbonate veins & blebs					
37	38		cb vein								
38	39										

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (ppm) (Lab:) Cu	Pb	Zn	Ag	Fe %	Ba
	0								
KR 10055		3.4	0.99	30	175	120	0.5	0.52	320
	3.4								
KR 10056		5.10	1.47	5	95	70	7.0	0.52	380
	5.10								
KR 10057		6.7	1.42	10	205	300	x	0.6	360
KR 10058	6.7	8.0	0.98	10	140	195	x	0.66	385
KR 10059	8.0	9.0	1.0	10	80	145	x	0.55	295
KR 10060	9.0	10.0	1.0	x	85	105	0.5	0.56	325
KR 10061	10.0		1.0	5	60	70	x	0.54	260
KR 10062	11.5	11.5							
KR 10062		12.80	1.13	5	75	85	x	0.625	250
KR 10063	12.80	14.0	1.2	x	70	80	x	0.67	305
KR 10064	14	15	1.0	x	175	215	x	0.75	330
KR 10065	15	16	0.95	x	100	225	x	0.65	300
KR 10066	16	17	1.0	x	35	190	6.0	1.25	245
KR 10067	17	18	1.0	x	20	175	x	1.2	360
KR 10068	18	19	1.0	x	35	185	0.5	0.76	265
KR 10069	19	20	1.0	x	25	135	0.5	0.535	300
KR 10070	20	21	1.0	x	15	105	0.5	0.525	320
KR 10071	21	22	0.76	80	1400	5150	6.5	0.80	290
KR 10072	22	23	1.0	45	580	2050	5.5	1.55	295
KR 10073	23	24	1.0	5	170	1300	1.0	0.95	250
KR 10074	24	25	1.0	5	55	85	0.5	0.85	230
KR 10075	25	26	1.0	x	45	215	0.5	0.83	200
KR 10076	26	27	1.0	15	80	130	1.0	0.66	190
KR 10077	27	28	1.0	10	115	295	1.5	0.76	250
KR 10078	28	29	1.0	5	155	340	1.5	0.70	225
KR 10079	29	30	1.0	10	175	255	1.5	.62	200
KR 10080	30	31	1.0	x	105	85	0.5	0.64	215
KR 10081	31	32	1.0	25	665	320	2.0	0.69	460
KR 10082	32	33	1.0	25	3150	4650	7.5	0.84	1250
KR 10083	33	34	1.0	15	165	305	1.5	0.77	535
KR 10084	34	35	1.0	x	135	205	1.0	0.83	320
KR 10085	35	36	1.0	x	75	160	1.0	0.80	400
KR 10086	36	37	1.0	10	75	150	1.0	0.81	305
KR 10087	37	38	1.0	10	55	150	0.5	0.73	350
KR 10088	38	39	1.0	5	75	220	1.0	0.8	290

15/2/1982
RJ Wilson

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SHEET 3 OF

GEOPEKO TASMANIA DRILL LOG

Prospect V19 Hole no. DDH V19-2

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION sph	Fracturing
62	63				mg-cg q fsp xt. (ser) yellow feldsp. enhedra	sericitic patchy SiO_2			very broken core
63	64				cg. q xt. green in colour c. 40%. 5mm qtz phenocrysts	sericite on S_1			30 bpm 45° to CA
64	65			45°	md. gd streaky textured pale grey-grn fsp-qtz xtuffs v. homogeneous, retain good cleavage, soapy texture sericite (chl.?) along cleavage surface. Lineation & long feldspar axes along S_1	Sericite with chlorite wisps at 67-30m	✓	✓	py in veins up to 5mm across
65	66								
66	67								
67	68					narrow ab $CaCO_3$ veinlets			
68	69			50°					
69	70								very broken core
70	71				'Banded' mgd streaking qtz-fsp-chl (L) xtuffs black specks of biotite/chlorite mac sil fg. bands up to 1cm wide, alter beds or lithic fragments, wealthy pyritic in green chl rich bands, occ qtz veinlets	sericite	✓	Trace	poor recovery
71	72		50	50°		chl. speckled	✓		// S_1
72	73					SiO_2	✓		
73	74				qtz vein	weakly chloritic	✓		
74	75						✓		20 bpm
75	76					soapy texture along S_1			10 bpm
76	77				decrease in grain size & increase in homogeneity				
77	78		60		qtz 'veins' // So				
78	79				SiO_2 'replacement' zone.	SiO_2 zone with yellow $CaCO_3$ veinlets	✓		6 bpm
79	80				'Spotted-porphyritic' feldspar (30%) qtz (25%) course-grained chloritic	chlorite			
80	81				crystal tuff. essentially homogeneous	some alteration to yellow feldspars			poor fractured core
81	82				'dacites" green porphyrits q fsp "enhedra" lava!!				
82	83				mgd qtz-fsp xt. chl (after biotite?) fraimar (5%) occasional bands of c.g. fsp xtuff. overall yellow-green colour. extensive sericite on cleavage surfaces	sericite alteration			good core
83	84					soapy texture			c. 10 bpm
84	85								
85	86								at c. 80°
86	87		80°			sericite			to CA.
87	88								
88	89				qtz				
89	90				green mg fsp chl 'dacites' vfg green matrix to q-fsp enhedra	sericite			
90	91								
91	92				Mg. felds-qtz-bio (chl) (L)? x tuffs	soapy texture			
92	93				green-grey colour yellow feldspar flattened into S_1	sericitised feldspar intense			very broken rotten core
93	94		90°		feldspar phyric dacitic tuffs				
94	95								
95	96								
96	97		70°						
97	98		45°		fine grained green chloritic 'dacite' marked texture occ qtz feldsp 'phenocrysts' darker color to		trace in veins		
98	99								
99	100				eg fsp-q-bio (chl) x tuffs				

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS ppm (Lab:) Cu	Pb	Zn	Ag	Fe %	Ba
KR 10124	62	63	0.84	10	115	485	0.5	0.605	435
KR 10125	63	64	0.9	15	55	285	0.5	0.72	710
KR 10126	64	65	1.0	10	85	185	x	0.58	450
KR 10127	65	66	1.0	10	65	235	x	0.56	335
KR 10128	66	67	1.0	15	160	370	0.5	0.62	410
KR 10129	67	68	1.0	15	120	375	x	0.77	505
KR 10130	68	69	1.0	30	50	250	0.5	0.72	495
KR 10131	69	69.75	0.4	15	45	125	x	0.66	490
KR 10132	69.75	71.05	0.36	85	1100	1550	2.5	0.93	685
KR 10133	71.05	72.10	0.60	230	580	1250	4.5	1.2%	430
KR 10134	72.08	73.05	0.60	55	375	875	1.5	0.885	420
KR 10135	73.05	74.05	0.42	20	165	835	0.5	1.00%	515
KR 10136	74.05	75	0.78	20	30	165	0.5	0.79	430
KR 10137	75	76	1.0	10	25	110	x	0.81	445
KR 10138	76	77.15	0.84	5	30	65	0.5	0.74	440
KR 10139	77.15	78	0.85	5	30	45	x	0.78	265
KR 10140	78	79	1.0	5	65	70	0.5	0.69	225
KR 10141	79	80	1.0	5	35	65	x	0.71	295
KR 10142	80	81	0.82	5	30	55	x	0.84	330
KR 10143	81	82	1.0	5	30	40	0.5	0.945	385
KR 10144	82	83	1.0	10	20	60	0.5	0.89	255
KR 10145	83	84	1.0	5	10	35	0.5	0.79	280
KR 10146	84	85	1.0	5	35	25	x	0.71	200
KR 10147	85	86	1.0	5	15	30	x	0.9	250
KR 10148	86	87	1.0	10	5	25	0.5	0.74	300
KR 10149	87	88	1.0	5	x	25	x	0.79	275
KR 10150	88	89	1.0	15	10	30	0.5	0.78	335
KR 10151	89	90	1.0	5	5	25	0.5	0.96	365
KR 10152	90	91	1.0	5	10	25	x	0.85	310
KR 10153	91	92	1.0	5	5	30	x	0.73	375
KR 10154	92	93	1.0	5	5	35	x	0.78	335
KR 10155	93	94	1.0	5	5	25	x	0.66	280
KR 10156	94	95.35	0.73	5	10	30	x	0.68	465
KR 10157	95.35	96	0.65	5	5	35	x	0.75	355
KR 10158	96	97	1.0	5	30	45	x	0.78	355
KR 10159	97	98	1.0	25	5	225	x	4.65	420
KR 10160	98	99	1.0	10	5	75	x	1.40	465
KR 10161	99	100	1.0	5	15	55	x	0.78	325

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GEOPEKO TASMANIA DRILL LOG

Prospect VOYAGER 19 Hole no. DDH-2

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION	MINERALISATION	MINERALISATION	Fracturing
100	101				Sericitic fsp-qtz-biotite crystal tuffs (: qtz crystals often show good euhedral outlines up to 4mm across. feldspars yellow sericitic always weakly aligned. Biotite (chlorite?) books up to 3mm across	chloritic					
101	102										
102	103				103m - 106.86m Spotted mg-cg, green						
103	104				fsp-bio-qtz crystal tuffs (clastic lavas?)						
104	105				good euhedral micas, qtz. c. 70% crystals						
105	106				in fg sericitic matrix.	Soapy sericitic alteration adjacent to fracture in feldspar rich zone.					
106	107				107.35 - Spotty green v fg. rock, yellow aligned feldspars and black (biotite?) specks in greenish groundmass. Irregular contact very sharp						
107	108		80°			SiO_2					
108	109				107.35 - 115.6 banded (SiO_2) qtz-fsp x tuffs						Very good core 3 bpm
109	110				grey-greenish siliceous f-mg qtz-(fsp) x t.	sericite					
110	111		85		shredding texture due to sericite along many						
111	112				decavage. Crystal phases not easily discernible						Very good core.
112	113				but occasional biotite (chlorite) books and qtz						
113	114				feldspar crystals up to 3mm across. Irregular "bands"						4 bpm c. 85° to LCA.
114	115				up to 6cm of fsp-qtz-bio porphyry (lava texture)						
115	116		gradational		similar to above (ie 103m) both probably representing						
116	117				blocks or fragments (?) Essentially homogeneous lithology						
117	118				115.6 - 123m fine grained sericite qtz	sericite					
118	119				crystal tuffs, c 30% is qtz-fsp-biotite porphyry	local vein type.	✓	✓	✓		chloritic alteration
119	120				greenish in colour. irregular angular but v. sharp						
120	121				contacts. implying blocks or fragments rather than						
121	122		80°	80°	bands. (If so then rocks are inverted !! young down hole)						
122	123					chlorite					
123	124				123 - 140.40 Grey-green fine-grained	Very weak carbonate veining	✓	✓	in calcite-qtz veins		core breaks parallel to LCA axis
124	125				sericitic tuff. Streaky diffuse texture						
125	126				containing abundant lithic fragments or	sericitically altered	✓	trace only			8 bpm irregular 90°
126	127				disrupted bedding? occasional pyritic		✓	" "			
127	128		80°		fragments or elongate disrupted beds. 1-3cm		✓	narrow py bands cutting lithic fragments			
128	129				across showing breccia features. in greenish fsp-qtz						
129	130				xt. groundmass						
130	131										
131	132										
132	133										
133	134						✓	10cm band of py mineralization in SiO_2 zone			
134	135										
135	136										
136	137										
137	138										

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS ppm (Lab:) Cu	Pb	Zn	Ag	Fe %	Ba
KR 10162	100	101	1.0	5	15	60	x	0.9	330
KR 10163	101	102	1.0	5	20	50	0.5	0.775	340
KR 10164	102	103	1.0	30	10	210	x	2.95%	320
KR 10165	103	104	0.86	10	30	105	x	0.915	395
KR 10166	104	105	1.0	5	15	60	0.5	0.79	295
KR 10167	105	106	1.0	15	10	145	x	1.35	370
KR 10168	106	107	1.0	10	5	80	0.5	1.35	375
KR 10169	107	108	1.0	20	5	160	0.5	0.785	380
KR 10170	108	109	1.0	10	15	135	x	0.805	285
KR 10171	109	110	1.0	10	30	140	0.5	0.695	235
KR 10172	110	111	1.0	5	15	185	0.5	0.74	205
KR 10173	111	112	1.0	x	20	145	0.5	0.68	305
KR 10174	112	113	1.0	5	30	215	x	0.76	270
KR 10175	113	114	1.0	20	35	350	x	0.72	305
KR 10176	114	115	1.0	10	25	255	0.5	0.64	265
KR 10177	115	116	1.0	10	65	230	x	0.64	225
KR 10178	116	117	1.0	5	70	155	1.0	0.68	245
KR 10179	117	118	1.0	10	90	355	0.5	0.8	265
KR 10180	118	119	1.0	10	95	245	0.5	0.675	245
KR 10181	119	120	1.0	5	50	130	x	0.76	200
KR 10182	120	121	1.0	15	80	205	x	0.66	275
KR 10183	121	122	1.0	10	65	110	x	0.75	310
KR 10184	122	123	1.0	10	125	235	0.5	0.55	305
KR 10185	123	124	1.0	15	345	520	1.0	0.56	210
KR 10186	124	125	1.0	15	1950	3550	2.0	0.51	345
KR 10187	125	126	1.0	15	1350	3600	1.5	0.5	245
KR 10188	126	127	1.0	35	580	745	0.5	0.62	160
KR 10189	127	128	1.0	25	390	455	x	0.59	290
KR 10190	128	129	1.0	15	225	460	0.5	0.58	310
KR 10191	129	130	1	20	165	475	0.5	0.48	300
KR 10192	130	131	1	20	210	245	x	0.55	290
KR 10193	131	132	1	25	230	310	x	0.55	290
KR 10194	132	133	1	155	1900	2750	2.5	0.57	340
KR 10195	133	134	1	85	1150	1400	2.0	0.53	285
KR 10196	134	135	1	35	240	625	0.5	1.0	310
KR 10197	135	136	1	20	145	265	0.5	0.60	305
KR 10198	136	137	1	25	170	245	x	0.595	275
KR 10199	137	138	1	15	150	175	0.5	0.615	355

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GEOPEKO TASMANIA DRILL LOG

Prospect VOYAGER 19 Hole no. DDH N°2

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION g	MINERALISATION	MINERALISATION	Fracturing
138	139										
139	140										
140	141				140.4 → 154.8 med grained yellow-grey quartz crystal	Sericitic					
141	142				tuffs. orange mottled colouration due to 'siderite'	with occasional					
142	143				possibly pseudomorphising feldspars.	carbonated					
143	144					veinlets.					very broken
144	145		q.v. qtl (ps)				✓				core
145	146										
146	147										
147	148										
148	149										
149	150										
150	151										
151	152			90°	very fine-grained grey sericitic vitric tuff band						4 bpm.
152	153										
153	154										
154	155				154.5 - 164.20						
155	156				Mottled, streaky textured rock, white bands of	Not veined					
156	157				SiO2 broken and disrupted qtz eye crystal tuffs.	by yellow carbonate					
157	158				(lithic tuff ?)	siliceous material					
158	159				Changes to mottled qtz eye crystal tuff. The	"					
159	160				quartz crystals are rounded and mantled, subedral	"					
160	161				clear ones up to 2mm with a rim of milling white.						
161	162				quartz up to 4mm. forming c 30% of the rock.	local chlorite					
162	163				Green fg. Sericitised matrix.	alteration					
163	164						✓	✓	in qtz-carbonate vein.		

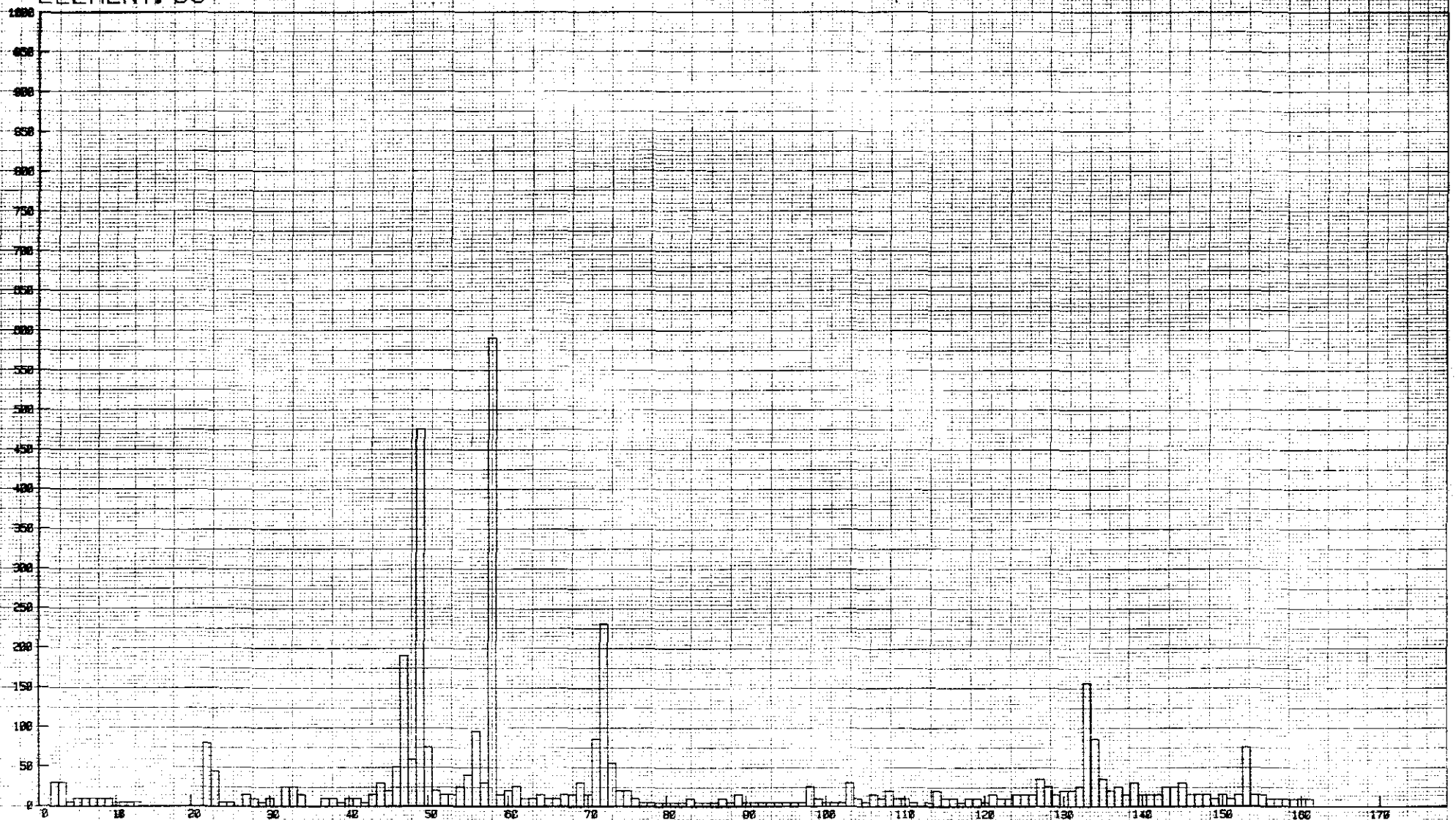
Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab:)					
									Ba
KR 10200	138	139	1.0	30	220	190	0.5	0.595	295
KR 10201	139	140	1.0	15	150	215	1.0	0.61	275
KR 10202	140	141	1.0	15	190	160	0.5	0.495	275
KR 10203	141	142	1.0	15	155	185	0.5	0.50	320
KR 10204	142	143	1.0	25	235	335	0.5	0.48	295
KR 10205	143	144	0.79	25	270	345	1.0	0.5	325
KR 10206	144	145	0.63	30	95	335	X	0.99	340
KR 10207	145	146	0.75	15	50	280	0.5	0.94	365
KR 10208	146	147	1	15	125	305	0.5	0.60	300
KR 10209	147	148	1	15	65	285	X	0.885	290
KR 10210	148	149	0.87	10	100	300	X	0.435	315
KR 10211	149	150	1	15	75	265	X	0.83	295
KR 10212	150	151	1	10	85	635	X	0.53	350
KR 10213	151	152	1	15	125	405	X	0.67	320
KR 10214	152	153	1	75	215	2000	X	1.55	490
KR 10215	153	154	1	15	140	230	0.5	0.785	275
KR 10216	154	155	1	15	180	750	0.5	0.69	340
KR 10217	155	156	1	10	50	305	X	1.35	310
KR 10218	156	157	1	10	90	315	X	1.45	335
KR 10219	157	158	1	10	45	235	X	1.3	330
KR 10220	158	159	1	10	45	230	X	0.65	355
KR 10221	159	160	1	10	60	150	X	0.64	410
KR 10222	160	161	1	10	55	215	0.5	0.80	305
KR 10223	161	162	1	5	55	125	X	0.84	395
KR 10224	162	163	1	10	70	185	X	0.94	325
KR 10225	163	164.2	1.20	10	95	155	X	1.35	355

EOH 164.20m

PROJECT: V19DH2
HOLE: DDH2
ELEMENT: Co

FROM: 0 m TO: 162 m

Collar Positions
Declination :
Total Depth :



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PROJECT: V19

HOLE: DDH2

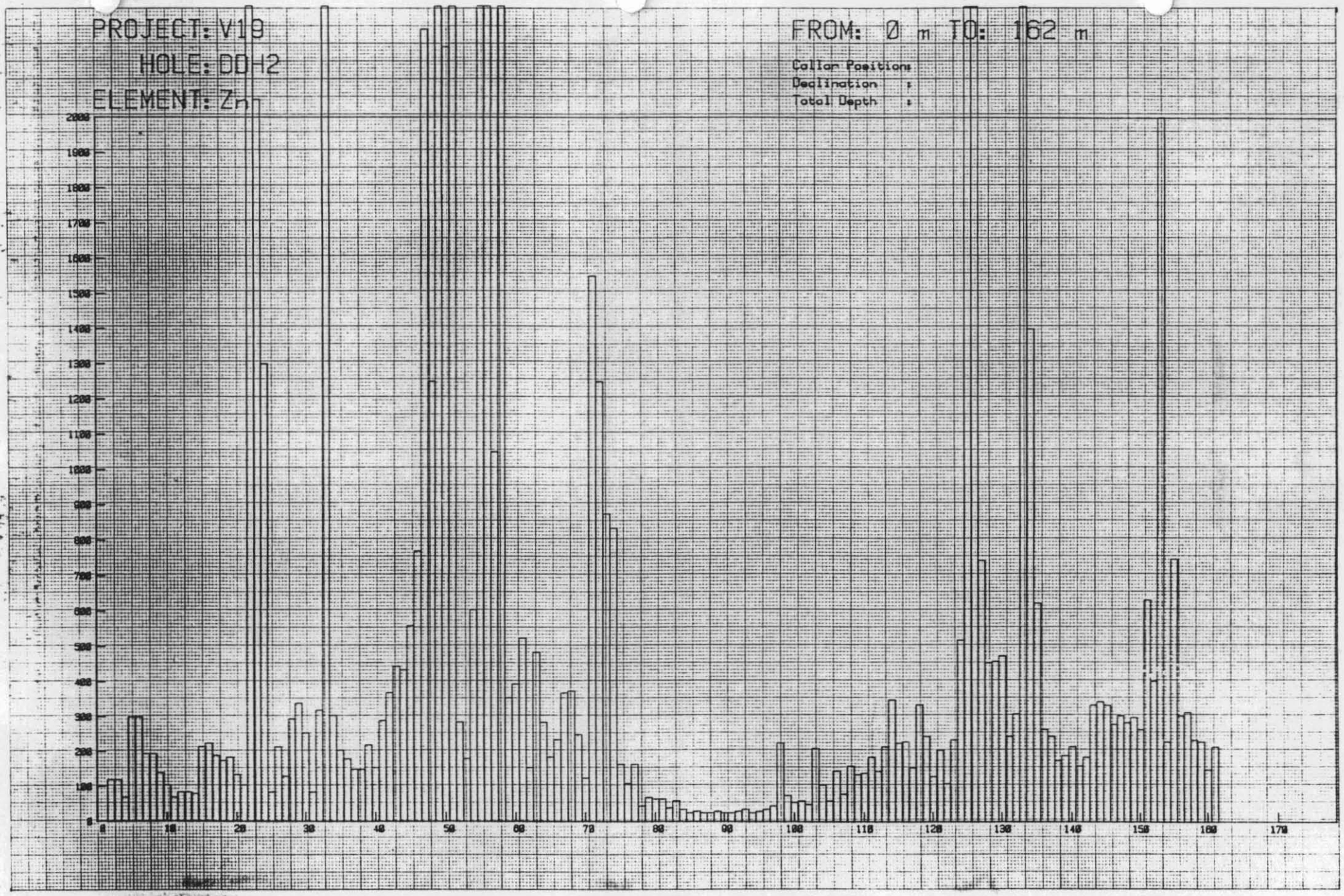
ELEMENT: Zn

FROM: 0 m TO: 162 m

Collar Position:

Declination :

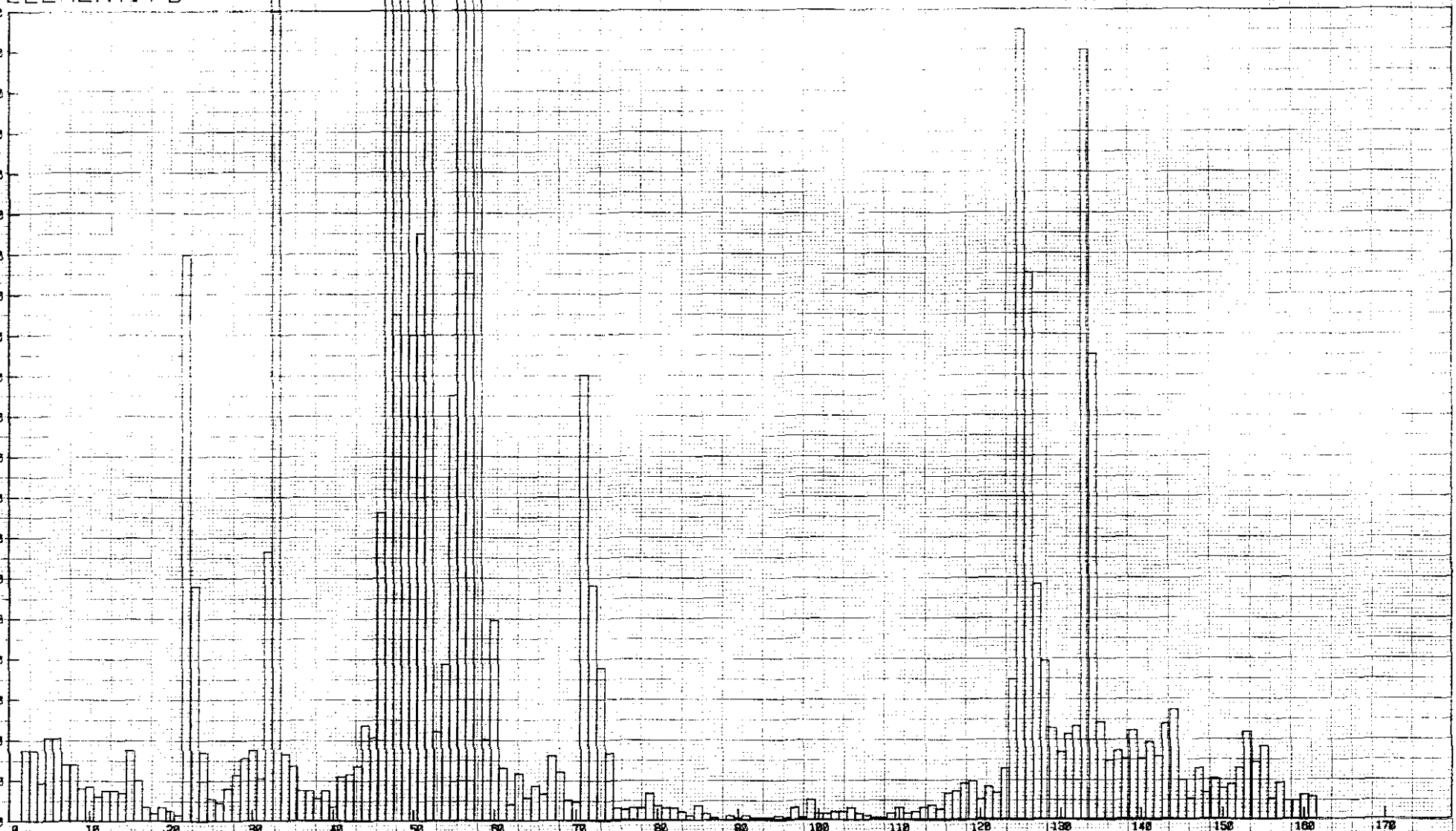
Total Depth :



PROJECT: V19
HOLE: DDH2
ELEMENT: Pb

FROM: 0 m TO: 162 m

Collar Position:
Declination :
Total Depth :



APPENDIX 4

DDH V19 - 3 GEOLOGICAL LOGS AND ASSAYS

HQ - 13.10m

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GEOPEKO TASMANIA DRILL LOG

Prospect VOYAGER 19 Hole no. V19/3

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION gal	MINERALISATION sph	MINERALISATION chalp.	Fracturing
0	1										
1	2	no cor									
2	3				3m - 10.2m						
3	4				Banded, weak bedded cleaved, porous, buff-coloured, qtz	streaky yellow	(fsp)				
4	5		35	38	crystal tuffs. Buff-yellow porous sericite	sericite parallels					
5	6				mod tuffs with bands from 1-10cm of greenish	bedding, drusy					
6	7				more competent course-grained qtz porphyry with	porous cavities					
7	8		45	45	good euhedral qtz up to 3mm and forming 30% vol.	after carbonates?					
8	9				Variable weathering in bands depending on feldspar content.						
9	10				base of leached zone						
10	11				competent, vtg phenocrystic lavas c.20% qtz euhedra max	2mm.					
11	12				Med-grd qtz-feldspar-sericite, crystal-tuffs with		weak	carbonate veining at 12.60m.			
12	13				occasional beds (lithic blocks?) of distinctive grey porphyritic lavas						
13	14				13m - 29m med-grd, qtz-fsp x tuffs, buff-yellow						
14	15				in colour very sericitic. Yellow carbonate	sericite - carbonate					
15	16				'patches' up to 1x3cm enclosing qtz crystals						
16	17				(after feldspars) occasional lithic fragments of						
17	18				p.lavas						
18	19					occasional carbonate veinlets					
19	20										
20	21		40°	40°	Alignment of long axes of feldspars (Flattening?)						
21	22				blotchy textured	sericite					
23	23				Pale green-yellow feldspar phyric qtz crystal	and up to					
23	24				tuffs as above. General increase in	20% carbonate					
24	25				number of lithic fragments down hole.	after feldspars.					
25	26						Trace				
26	27				(Feldspar pseudomorphed by calcite and dominant)		Trace	in S1			
27	28				29-						
28	29				fg-mg orange "mottled" felsic qtz x tuffs (lithic!)	weak					
29	30				less carbonate. Increase in granularity of alt	SiO_2					
30	31				grey siliceous angular lithic fragments (10% ovw)	carb vein qtz central 70° to LCA					
31	32				(some with spotty yellow) Sericite along		✓	✓ Trace in lithic fragments			good core blyn
32	33				cleavage giving yellow colouration. No		✓	V. finely disseminated			py (<0.1mm)
33	34				crystals visibly discernable.		✓	in tuff matrix			and
34	35					SiO_2 band	✓	occ PbS in qtz vns			
35	37				interbed of green qtz-fsp crystal tuff medium grained		✓	lithics			
37	38				Large volume (7%) of angular f.g siliceous		✓				
38	38				fragments possibly in situ brecciation.		✓	Trace on cb-qtz vein			
38	39										

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab:) Cu	Pb	Zn	Ag	Fe %	Ca	Mg
KR 10226	3	4	0.93	30	25	300	x	0.38	100	8000
KR 10227	4	5	1	~~30~~	~~10~~	~~235~~	~~x~~	0.41		
KR 10228	5	6	0.97	30	10	235	x	0.41	150	8000
KR 10229	6	7	0.80							
KR 10230	7	8	1	30	10	170	x	0.35	400	7750
KR 10231	8	9	1							
KR 10232	9	10	1	45	25	175	0.5	0.31	x	5700
KR 10233	10	11	1							
KR 10234	11	12	1	30	55	440	x	0.77	1250	8500
KR 10235	12	13.10	1.10							
KR 10236	13.10	14	0.90	30	70	435	x	0.67	3400	8150
KR 10237	14	15	1							
KR 10238	15	16	1	25	65	275	x	0.70	9800	8300
KR 10239	16	17	1							
KR 10240	17	18	1	80	20	410	x	0.61	8100	8400
KR 10241	18	19	1							
KR 10242	19	20	1	25	35	910	x	0.58	7900	8300
KR 10243	20	21	1							
KR 10244	21	22	1	35	45	730	0.5	0.7	2.4	8950
KR 10245	22	23	1							
KR 10246	23	24	1	25	105	560	x	0.74	1.3	9250
KR 10247	24	25	1							
KR 10248	25	26	1	35	75	425	0.5	0.6	9400	8650
KR 10249	26	27	1							
KR 10250	27	28	1	25	55	425	x	0.68	5500	8350
KR 10251	28	29	1							
KR 10252	29	30	1	35	125	365	x	0.71	1.25	7900
KR 10253	30	31	1							
KR 10254	31	32	1	30	80	720	x	0.66	2900	5800
KR 10255	32	33	1							
KR 10256	33	34	1	55	65	355	x	0.68	1550	3650
KR 10257	34	35	1							
KR 10258	35	36	1	65	40	580	0.5	0.72	1500	4250
KR 10259	36	37	1							
KR 10260	37	38	1	80	65	580	x	0.89	1900	3900
KR 10261	38	39	1							

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SHEET 2 OF 8

GEOPEKO TASMANIA DRILL LOG

Prospect VOYAGER 19. Hole no. V19/3

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION sph	MINERALISATION qtz	Fracturing
39	40		massive		Grey-yellow silicified quartz crystal lithic	Silicification intense local zones			√ in veins	good core c. 6 bpm 90° to LCA.
40	41		no bedding		tuffs. Groundmass sericitic, medium grained quartz crystals c. 20%. lithic fragments					
41	42				dark grey colour siliceous (locally glassy) angular	qtz veins				
42	43				cleavage 1-2cm, fractured veined with $CaCO_3$		√	narrow 1cm bands parallel to S_1		
43	44				note silicification pre-dates cleavage which has					
44	45				yellow sericite along cl. (original fabric recognisable)					
45	46							2cm	vein of mass py/sph/cb in qtz/cb	
46	47		30° vein		brecciated qtz cb vein → sulphide core		√	√	√	
47	48				47.7m - 50.39m massive silicified zone	sharp contact	√		1-2%	in veins and disseminated in silicified groundmass
48	49				grey mottled texture, total loss of any pre-existing	massive SiO_2	√		"	
49	50				structure. apart from vague lithic fragments. cut by	alteration younger	√		"	
50	51				1cm qtz-cb veins with py-sph minerals.	qtz-cb veins	√		"	
51	52		veins sharp at 35°		50.39m - 52.10m silicified lithic crystal tuffs	SiO_2 qtz veins				
52	53				Dark green spotted v.f.g. rock. extensive brown-orange spots 1mm (20 vol%) in f.g. groundmass. spotted vitric tuff. (possibly a dyke)	chlorite				
53	54				52.10 - 60.80 fine-medium grained qtz	SiO_2 with younger qtz cb veining				
54	55		40°	40°	crystal tuffs grey-green colours, weakly					
55	56				bedded with mixed fsp-qtz xt bands. Silicified	"				
56	57				very few lithic fragments. Some SiO_2 pre-dates	"				
57	58		green qtz/fsp xt.		cb sericitic cleavage. 1cm wide qtz (± carbonate)	locally intense silicification				
58	59				veins almost parallel to L.C.A.					
59	60		80		bedding from green mixed qtz-fsp porphyritic tuff band.		√	py in strong	veins to cleavage	
60	61				60.8m - green qtz_2 xtuff ± leucocratic	SiO_2	√			
61	62				grey rounded mass siliceous	intense				
62	63				fragments up to 5x2cm in breccia complex					
63	64				lithic fragments; lithics are intensely brecciated	and in cracks				
64	65				infilled by anastomosing calcite veinlets					
65	66									
66	67									
67	68									
68	69									
69	70									
70	71									
71	72				72.46 - 73.4					
72	73									
73	74									
74	75									
75	76									
76	77									
77	78									

ASSAYS (Lab: Analabs)

Sample No.	From (m)	To (m)	Rec (m)	Cu	Pb	Zn	Ag	Fe%	Au ppb.
KR 10262	39	40	1	10	45	200	x	0.79	x
KR 10263	40	41	1	15	45	135	x	0.73	x
KR 10264	41	42	1	15	120	125	0.5	0.76	x
KR 10265	42	43	1	10	245	150	2.5	0.75	x
KR 10266	43	44	1	15	195	95	1.0	0.85	x
KR 10267	44	45	1	20	350	160	1.0	0.99	0.009
KR 10268	45	46	1	20	70	75	0.5	0.82	x
KR 10269	46	47	1	1000	5250	1.0%	30.0	1.35	0.955
KR 10270	47	48	1	50	220	150	x	0.7	x
KR 10271	48	49	1	265	2050	4250	5.5	0.93	0.052
KR 10272	49	50	1	295	2300	3050	10.0	0.85	0.016
KR 10273	50	51	1	40	570	915	1.0	0.75	x
KR 10274	51	52	1	30	50	120	x	1.25	x
KR 10275	52	53	1						
KR 10276	53	54	1	75	80	370	x	1.95	
KR 10277	54	55	1	75	145	320	x	0.64	
KR 10278	55	56	1	75	145	320	x	0.64	
KR 10279	56	57	1						
KR 10280	57	58	1	50	50	460	x	0.88	
KR 10281	58	59	1						
KR 10282	59	60	1	75	130	425	x	0.48	
KR 10283	60	61	1						
KR 10284	61	62	1	50	50	325	x	1.0	
KR 10285	62	63	1						
KR 10286	63	64	1	80	65	320	0.5	0.79	
KR 10287	64	65	1						
KR 10288	65	66	1	55	35	435	0.5	0.78	
KR 10289	66	67	1						
KR 10290	67	68	1	60	45	555	x	0.84	
KR 10291	68	69	1						
KR 10292	69	70	1	60	140	640	x	0.62	
KR 10293	70	71	1						
KR 10294	71	72	1	40	190	510	x	1.0%	
KR 10295	72	73	1						
KR 10296	73	74	1	35	30	565	x	3.9%	
KR 10297	74	75	1						
KR 10298	75	76	1	35	30	605	x	0.63	
KR 10299	76	77	1						
KR 10300	77	78		45	30	535	x	0.77	

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SHEET 3 OF 8

GEOPEKO TASMANIA DRILL LOG

Prospect Voyager 19 Hole no. V19/3

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION gal	MINERALISATION	MINERALISATION	Fracturing	Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab:)					
78	79				pale-grey, medium grained quartz eye crystal	zone of extensive carbonate alteration, pervasive amorphous qtz net veining					good core	KR 10301	78	79	1						
79	80				tuffs. extensively veined by qtz-carbonate						clean breaks 35° LCA and 90° c. 3pm.	KR 10302	79	80	1	30	95	415	x	1.0	
80	81		50°	50°	and younger carbonate veinlets. Notable							KR 10303	80	81	1	80	1300	1200	3.0	0.83	
81	82				brecciation of fg. siliceous 'bands'.							KR 10304	81	82	1	"	"	"	"	"	
82	83											KR 10305	82	83	1						
83	84				c83.60 - 87.16m homogeneous grey-green							KR 10306	83	84	1	460	900	565	11.0	0.83	
84	85			35°	lithic tuffs fine-medium grained, good cleavage	Weakly silicified	✓	✓	trace	in qtz vein		KR 10307	84	85	1						
85	86				by alignment of sericite veinlets. mottled siliceous	"						KR 10308	85	86	1	1050	1650	960	19.5	0.86	
"	87				texture no crystal phases visible	"						KR 10309	86	87	1						
87	88				87.16 - 101 buff homogeneous v. fine grained	"						KR 10310	87	88	1	35	110	815	x	1.0	
88	89				sucheroidal tuffs. Small occasional qtz lithics							KR 10311	88	89	1						
89	90				blue competent silicified zone with yellow carbonate patches, cut by qtz-cb veins.	intense silicification						KR 10312	89	90	1	75	180	685	1.5	1.65	
90	91				91.2 - 101							KR 10313	90	91	1						
91	92				essentially massive (no prefered fabric)	Mainly					core breaks normal to LCA. no structures c. 15 bpm	KR 10314	91	92	1	40	105	555	x	0.67	
92	93				homogeneous lime grey/green mottled, medium	Weak sericitization						KR 10315	92	93	1						
93	94				grained quartz crystal tuffs c 30%.	"						KR 10316	93	94	1	40	105	525	x	1.0	
94	95				1-2mm qtz phenocrysts in yellowish feldspathic?	"						KR 10317	94	95	1						
95	96				matrix v weak cleavage developed by	"						KR 10318	95	96	1	60	85	485	x	0.82	
96	97				flattening of sericites. Occasional ± 1cm	"						KR 10319	96	97	1						
97	98				rounded grey silica (?) lithic fragments.	local SiO_2 alteration and cb. veining	✓	✓				KR 10320	97	98	1	20	60	815	x	0.72	
98	99				101 - 102.25m							KR 10321	98	99	1						
99	100				Silicified zone brecciated & cut by creamy $CaCO_3$							KR 10322	99	100	1	45	420	1250	x	0.69	
100	101				& veins, then bx again and intruded by mg. qtz-fp							KR 10323	100	101	1						
101	102		85°		feldspathic tuffs !!	mass SiO_2 cb bx zone	—	✓	disseminated in chloritic rock.			KR 10324	101	102	1	30	130	295	x	0.76	
102	103				dk green chlorite rich vfg porphyritic rock (dyke?)							KR 10325	102	103	1						
103	104				102.5m - 112.3m							KR 10326	103	104	1	15	20	340	x	2.0	
104	105				mottled buff mg sericitic tuffs with abundant	sericite/ carbonate						KR 10327	104	105	1						
105	106				carbonate veining ~~small~~ after feldspars?							KR 10328	105	106	1	20	480	335	x	1.55	
106	107				with narrow 1-6cm bands of qtz eye mg	porous zone after carbonate?	—					KR 10329	106	107	1						
107	108				crystal tuff (greenish) 5% rounded qtz crystals	porous zone after carbonate						KR 10330	107	108	1	35	100	300	1.0	0.92	
108	109											KR 10331	108	109	1						
109	110		90°			109.4 —	tr					KR 10332	109	110	1	30	130	375	x	0.69	
110	111						tr					KR 10333	110	111	1						
111	112				112.3m -							KR 10334	111	112	1	20	75	350	x	0.9	
112	113				massive grey-black SiO_2 rich rock well banded.	SiO_2						KR 10335	112	113	1	10	50	180	x	1.25%	x
113	114				pale grey carbonate veined unit, bx by dk grey							KR 10336	113	114	1	10	40	160	x	0.97%	x
114	115		90°		unit with carbonate cubes after feldspars (rhyolites?)							KR 10337	114	115	1	10	30	130	x	0.98%	x
					medgd qtz xl bands with rounded qtz crystals (Q)																

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SHEET 4 OF 8

GEOPEKO TASMANIA DRILL LOG

Prospect

Hole no. V19/3

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION	MINERALISATION	MINERALISATION	Fracturing
115	116		60		as above. banded SiO_2 cherty rock, pale grey siliceous units net veined by yellow $CaCO_3$	Silicification or exhalite Zone?					
116	117		SiO_2 rich		dark grey bands of porphyritic (alb overgrowths) vitric tuffs. Brecciation of siliceous (exhalite) units very apparent.	in situ brecciation?					
117	118		55		matrix.						
118	119		tuffaceous								
119	120				120 - 121.2 m green-brown medium grained quartz						
120	121				chlorite (pseudomorphs after feldspar) crystal tuffs. disseminated pyrite. (lava?)		✓ ✓				
121	122				121.2 - 149.4 leucocratic grey fine-grained / massive	$CaCO_3$ vein (55°)					close 1cm fractures c. 80° to LCA
122	123				quartz (feldspar?) crystal tuffs, very homogeneous	sericite + carbonate alteration intense	vein				
123	124				non-bedded.						
124	125				carbonate white, surrounds quartz crystals possibly pseudomorphing feldspars.	sericitic alteration.					
125	126										good core c. 6 bpm c. 80°
126	127					sericite -					
128	128			80°	Very weak cleavage, alignment of greenish/yellow	carbonate -					
128	129				sericite.						
129	130										
130	131										
131	132					sericite					
132	133					carbonate					
133	134				V homogeneous mottled core, greenish-orange						
134	135			85°	colour extensively sericitised with lineation on						
135	136				cleavage planes. Orange mottling is due to						
136	137				weathering of patchy carbonate (alt. feldspar) which						
137	138				is locally c. 15 vol % of the rock.						
138	139				Qtz phenocrystic phase occasionally recognisable						
139	140										
140	141					sericite -		✓ quartz veinlets along S_1			
141	142					carbonate					
142	143					overall increase in					
143	144					carbonate content					
144	145										
145	146							disseminated pyrite			
146	147						✓	v.f.g. in groundmass			
147	148				(possible E dip & contact if oriented by S_1)		✓				
148	149		(opposite)				✓	✓			
149	150		45°	75°	149.4 - 154 Brown weathering, porphyritic rock (LAVA?)	sericite carbonate alteration intense	✓				
150	151				V fg pale groundmass, 15% rounded alb phenocrysts (< 1mm)						
151	152				(banding parallel LCA and is displaced by faulting	45° to LCA.)					
152	153		90°		Elongated ∥ LCA Occ lithic fragments up to 1m.						
					Very carbonate altered.						

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab: ANALABS.) Cu	Pb	Zn	Ag	Fe %	As
KR 10338	115	116	1	10	55	110	x	1.31	x
KR 10339	116	117	1	10	60	235	x	0.95	0.013
KR 10340	117	118	1	10	45	145	x	1.15	0.016
KR 10341	118	119	1	10	50	205	x	1.2	x
KR 10342	119	120	1	10	105	200	x	2.10	x
KR 10343	120	121	1						
KR 10344	121	122	1	15	75	395	x	2.0	
KR 10345	122	123	1						
KR 10346	123	124	1	15	50	155	x	0.74	
KR 10347	124	125	1						
KR 10348	125	126	1	25	30	195	x	0.55	
KR 10349	126	127	1						
KR 10350	127	128	0.75	10	35	260	x	0.7	
KR 10351	128	129	1						
KR 10352	129	130	1	15	20	275	x	0.83	
KR 10353	130	131	1						
KR 10354	131	132	1	10	60	245	x	0.93	
KR 10355	132	133	1						
KR 10356	133	134	1	15	65	220	x	0.72	
KR 10357	134	135	1						
KR 10358	135	136	1	15	45	245	x	0.94	
KR 10359	136	137	1						
KR 10360	137	138		30	45	235	0.5	1.0	
KR 10361	138	139							
KR 10362	139	140		15	50	260	0.5	0.72	
KR 10363	140	141							
KR 10364	141	142		15	40	275	x	0.78	
KR 10365	142	143							
KR 10366	143	144		15	45	225	x	0.83	
KR 10367	144	145							
KR 10368	145	146		15	85	340	x	1.15	
KR 10369	146	147							
KR 10370	147	148		15	125	355	x	0.88	
KR 10371	148	149							
KR 10372	149	150		70	305	400	x	1.0	
KR 10373	150	151							
KR 10374	151	152		35	70	320	x	1.7	
KR 10375	152	153							

GEOPEKO TASMANIA DRILL LOG

663237 Prospect

SHEET 5 OF 8

Hole no. V19|3

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION sph	MINERALISATION gal	MINERALISATION chp	Fracturing
53	154				154-167.8 Banded tuffs (mottled CO_3 rich)	sericitic					
54	155				green coloured, mottled orange-white rock, vague	intense					9 bpm
55	156	qV			colour banding green/orange-white on a 1-5cm scale	carbonate					c. 90°
56	157				90°-35° to LCA. Due to qtz-carbonate alteration &	alteration 30%					to LCA axis
57	158				greenish sericitised qtz-(chlorite) crystal-tuffs	by vol.					
58	159				fine grained						
59	160										
60	161										
61	162				orange weathering carbonate (siderite?) forms diffuse						
62	163				"vein" network c. 30% of rock.						
63	164					sericite					3 bpm
64	165					intense					85° LCA
65	166		45 90		165.2-165.7 ch.qtz-fsp fg.xt. with mottled texture due to orange carbonate. Disseminated sulphides	carbonate alteration of feldspathic groundmass	✓	✓			
66	167				sericitised (locally schistose) fabric c 90° to LCA		✓	disseminated pyrite			
67	168			90°	appears to crosscut the carbonate alteration (pre f.)		✓				
68	169				c.169m — 177.6 fine grained qtz-sericite tuffs (feldsp)		✓				V. good
69	170				irregular brown cb matrix also qtz-cb bx vein	system	✓				core
70	171										3 bpm
71	172				green chlorite rich sulphides c 2% vnt qtz rich irregular possibly inclusion	green chlorite predates cb.	✓			✓	c. 90° LCA.
72	173										
73	174				olive green, mod-coarse fsp-qtz crystal tuffs. inclusions of Pl ± 1cm cut by yellow sericite veinlets (90° LCA)	Sericite carbonate locally 40% by volume		Occasional clusters ±		Pyrite 0.5 cm across	
74	175	qtz vein			Orange weathering - carbonate in matrix		✓				
75	176				brown carbonate veins ± 1cm causing brecciation		✓				
76	177			80°	of host rock		✓				
77	178		chlorite		177.68 — As above f.g. tuffs	carbonate					
78	179			75°	alignment of chlorites dark green chlorite "flamme"?	alteration in crude bands					
79	180		b		in bands 2-3mm long, yellow <1mm feldsp phenocrysts olive-green matrix.	aligned c 90° to LCA ± 1cm across					
80	181										
81	182				narrow qtz ± Py± veinlet (4mm) transgresses alteration	increase in chlorite V control					
82	183				GRADATIONAL INTACT	groundmass 30% xal					
83	184				★ green						
84	185				Green fg. "chloritic dacite" flattened "intrusive"	extensive CaCO3 vein		✓	crown-cut aggregates		
85	186			90°	texture - alignment of chlorite flamme 10-5% (2mm long)	system, sharp contacts		✓	disseminated		
86	187				chlorite, yellow feldspathic blocks vfg. sort cb	c. 20-30% by volume		✓	c. 1-2 Vol%		6 bpm
87	188				cavitation, olive green vfg groundmass.			✓			at 80°
88	189				Sphalerite disseminated with chlorite.			✓			
89	190				gradational no sharp contacts	carbonate vein system 5-15% also overprinting in groundmass				✓	blocks assoc with calcite vein
90	191				fine-grained green/grey sericitic tuff						

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab:)						
KR 10376	153	154	1.0	15	105	365	x	1.95		
KR 10377	154	155	1.0							
KR 10378	155	156	1.0	15	25	335	x	2.5		
KR 10379	156	157	1.0							
KR 10380	157	158	1.0	45	10	290	x	2.45		
KR 10381	158	159	1.0							
KR 10382	159	160	1.0	20	15	380	x	2.6		
KR 10383	160	161	1.0							
KR 10384	161	162	1.0	105	85	470	x	3.2		
KR 10385	162	163	1.0							
KR 10386	163	164	1.0	175	35	460	x	3.0		
KR 10387	164	165	1.0							
KR 10388	165	166	1.0	180	30	465	x	3.0		
KR 10389	166	167	1.0							
KR 10390	167	168	1.0	155	40	485	x	2.4		
KR 10391	168	169	1.0							
KR 10392	169	170	1.0	160	95	555	x	2.3		
KR 10393	170	171	1.0							
KR 10394	171	172	1.0	205	120	530	x	2.95		
KR 10395	172	173	1.0							
KR 10396	173	174	1.0	445	75	460	x	2.35		
KR 10397	174	175	1.0							
KR 10398	175	176	1.0	85	30	450	x	2.55		
KR 10399	176	177	1.0							
KR 10400	177	178	1.0	105	45	400	x	2.05		
KR 10401	178	179	1.0							
KR 10402	179	180	1.0	80	35	485	x	2.45		
KR 10403	180	181	1.0							
KR 10404	181	182	1.0	15	270	190	x	3.3		
KR 10405	182	183	1.0	5	10	135	x	3.25		
KR 10406	183	184	1.0	10	x	150	x	3.3		
KR 10407	184	185	1.0	15	10	175	x	3.0		
KR 10408	185	186	1.0	40	5	270	x	3.4		
KR 10409	186	187	1.0	10	15	275	x	3.4		
KR 10410	187	188	1.0	45	25	335	x	3.8		
KR 10411	188	189	1.0	20	15	465	x	3.5		
KR 10412	189	190	1.0	45	10	370	x	3.4		
KR 10413	190	191	1.0	290	20	610	x	4.1		

GEOPEKO TASMANIA DRILL LOG

663238

Prospect

Hole no. V19-3229

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION	MINERALISATION	MINERALISATION	Fracturing
191	192				Orange brown carbonate bands, mottled texture ? 1cm normal to LCA cut displaced along shears						
192	193		sharp contact		Veining absent.						
193	194		decrease		med gd. qtz-chlorite-carbonate rock. schistose contact.	intense chlorite	✓				
194	195		about contact		chlorite specks in qtz x.tuff. 194.5 – 206.2	alteration faster carbonate					
195	196		90°		Qtz-feldspathic carbonate banding crystal tuffs fine grained ore chloride specks	mottling					
196	197				Orange weathering carbonate mottled mag bands	sericite					
197	198				c 20% of the rock. (no veining)	carbonate.					
198	199				Very homogeneous massive rock no bedding						
199	200				3cm zone of narrow carbonate veins c.80° to LCA axis	sericite - carbonate.					
200	201										
201	202				Very homogeneous mottled (carbonate) fg. qtz-fsp x tuffs (sericitic).	homogeneous in nature					
202	203										
203	204										
204	205										
205	206										
206	207		63°		206.2 – 211m chlorite present	carbonate					
207	208				fine-grained banded tuffs. carbonation	alteration in deformed					
208	209		65°	35°	cores with zone "front". forms definite bands	clear-cut					
209	210				Hatching of crystals 2 – 10cm across sharp	bands with chlorite					
210	211				planar to irregular contacts	fissure.					
211	212		overall coarsening grain size		oblique to decrease in places. 211 – 218	carbonate					
212	213				chlorite fissure flattened in x tuff. between zones of	in bands and					
213	214				carbonate alteration.	stringers also					
214	215				Qtz crystal tuff fg-mg. greenish colour due to	mottled through					
215	216				chlorite flecks. c	groundmass					
216	217										
217	218						✓				
218	219				V.f.g dark grey chloritic rock sharp contacts – INTRUSIVE "DYKE" pyrite at contacts.	weak	✓		V. weakly mag		
219	220			219	medium grained quartz (35%) chloride cb	chloritic alteration	✓				
220	221				felsic tuffs Very homogeneous mottled	mainly					
221	222				texture	sericite - carbonate.					
222	223										
223	224										
224	225										
225	226										
226	227				sericite bands normal to LCA						
227	228										
228	229				Gradational decrease in grain size (f-g xtuffs)						
229	230				last degree of carbonate alteration chloride disappears						

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab:)						
KR 10414	191	192	1.0	310	60	560	x	13.3%		
KR 10415	192	193	1.0							
KR 10416	193	194	1.0	215	10	800	x	4.5		
KR 10417	194	195	1.0							
KR 10418	195	196	1.0	115	10	705	0.5	2.85		
KR 10419	196	197	1.0							
KR 10420	197	198	1.0	120	45	745	x	3.95		
KR 10421	198	199	1.0							
KR 10422	199	200	1.0	180	50	595	x	2.15		
KR 10423	200	201	1.0							
KR 10424	201	202	1.0	185	25	465	x	1.85		
KR 10425	202	203	1.0							
KR 10426	203	204	1.0	170	20	680	x	2.4		
KR 10427	204	205	1.0							
KR 10428	205	206	1.0	145	15	405	x	2.3		
KR 10429	206	207	1.0							
KR 10430	207	208	1.0	155	60	650	x	2.65		
KR 10431	208	209	1.0							
KR 10432	209	210	1.0	85	25	580	x	2.65		
KR 10433	210	211	1.0							
KR 10434	211	212	1.0	130	55	480	x	2.90		
KR 10435	212	213	1.0							
KR 10436	213	214	1.0	120	90	575	x	4.80		
KR 10437	214	215	1.0							
KR 10438	215	216	1.0	80	75	540	x	3.15		
KR 10439	216	217	1.0							
KR 10440	217	218	1.0	150	10	665	x	2.0		
KR 10441	218	219	1.0							
KR 10442	219	220	1.0	85	20	500	x	4.05		
KR 10443	220	221	1.0							
KR 10444	221	222	1.0	135	20	770	x	2.55		
KR 10445	222	223	1.0							
KR 10446	223	224	1.0	160	15	615	x	1.45		
KR 10447	224	225	1.0							
KR 10448	225	226	1.0	190	25	605	x	1.6		
KR 10449	226	227	1.0							
KR 10450	227	228	1.0	120	20	555	x	1.7		
KR 10451	228	229	1.0							
KR 10452	229	230	1.0	140	25	440	x	1.15		

663239

SHEET 7 OF 230

GEOPEKO TASMANIA DRILL LOG

Prospect

Hole no. V19-3

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS Sa	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION	MINERALISATION	MINERALISATION	Fracturing	Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab:)						
230	231				Very homogeneous medium-grained	Sericite					4 pm	KR10452	230	231	1.0							
231	232				quartz-sericite crystal tuff	alteration						KR 10454	231	232	1.0	150	40	390	x	0.79		
232	233			90°	grey-green in colour with sericitic	-carbonate					very good	KR 10455	232	233	1.0							
233	234				'streaks' normal to LC Axis	universal					unbroken	KR 10456	233	234	1.0	175	35	345	x	0.78		
234	235				c. 1% carbonate alteration of						core.	KR 10457	234	235	1.0							
235	236				feldspars in groundmass							KR 10458	235	236	1.0	175	35	405	x	0.72		
236	237											KR 10459	236	237	1.0							
237	238											KR 10460	237	238	1.0	180	15	420	x	0.9		
238	239											KR 10461	238	239	1.0							
239	240											KR 10462	239	240	1.0	230	30	455	x	0.78		
240	241											KR 10663	240	241	1.0							
241	242											KR 10464	241	242	1.0	185	15	415	x	0.73		
242	243											KR 10465	242	243	1.0							
243	244											KR 10466	243	244	1.0	145	20	390	x	0.78		
244	245											KR 10467	244	245	1.0							
245	246										4 bpm	KR 10468	245	246	1.0	160	25	345	x	0.83		
246	247			90°							normal	KR 10469	246	247	1.0							
247	248										to LCA.	KR 10470	247	248	1.0	180	20	365	x	0.91		
248	249											KR 10471	248	249	1.0							
249	250				as above, mcg qtz (fsp) sericite crystal							KR 10472	249	250	1.0	125	140	375	x	0.86		
250	251				tuffs carbonate in groundmass probably							KR 10473	250	251	1.0							
251	252				after feldspars. Occasional ± 5mm							KR 10474	251	252	1.0	100	15	320	x	0.93		
252	253				diameter lithic-siliceous fragments but							KR 10475	252	253	1.0							
253	254				insufficient to form lithic tuff.							KR 10476	253	254	1.0	115	15	340	0.5	0.87		
254	255											KR 10477	254	255	1.0							
255	256											KR 10478	255	256	1.0	130	15	370	x	0.83		
256	257											KR 10479	256	257	1.0							
257	258											KR 10480	257	258	1.0	120	35	360	x	0.77		
258	259											KR 10481	258	259	1.0							
259	260											KR 10482	259	260	1.0	115	410	600	x	0.89		
260	261											KR 10483	260	261	1.0							
261	262											KR 10484	261	262	1.0	90	25	370	0.5	0.86		
262	263											KR 10485	262	263	1.0							
263	264											KR 10486	263	264	1.0	90	40	335	x	0.89		
264	265										4	KR 10487	264	265	1.0							
265	266											KR 10488	265	266	1.0	90	20	285	1.0	0.83		
266	267											KR 10489	266	267	1.0							
267	268										4	KR 10490	267	268	1.0	95	20	315	0.5	0.91		
268	269											KR 10491	268	269	1.0							

663240

GEOPEKO TASMANIA DRILL LOG

Prospect

Hole no. V19-3

DEPTH (m) from	to	GRAPHIC LOG	ANGLE TO CORE AXIS So	Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py				Fracturing	Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab:						
269	270					sericite -					4 pm	KR10492	269	270	1.0	90	10	245	0.5	0.93		
270	271					carbonate						KR 10493	270	271	1.0							
271	272				Qtz vein c 1cm wide with coarse calcite	(after feldspars)						KR 10494	271	272	1.0	130	10	305	x	0.96		
272	273				on margins parallel to LC Axis							KR 10495	272	273	1.0							
273	274											KR 10496	273	274	1.0	180	35	385	x	0.83		
274	275				homogeneous grey-green sericitic quartz feldspar							KR 10497	274	275	1.0							
275	276				(calcite) crystal tuff medium-grained							KR 10498	275	276	1.0	140	20	380	x	0.86		
276	277											KR 10499	276	277	1.0							
277	278											KR 10500	277	278	1.0	165	15	300	x	0.94		
278	279				Qtz-carbonate vein ± 2cm c. 10° to LC Axis.							KR 9433	278	279	1.0							
279	280											KR 9434	279	280	1.0	225	10	395	x	0.91		
280	281				mg qtz-felds crystal tuffs sericitic						6 pm.	KR 9435	280	281	1.0							
281	282				'burn weathering' carbonate pseudomorphing							KR 9436	281	282	1.0	160	25	400	x	0.85		
282	283				feldspars? c 5-7% by volume forming							KR 9437	282	283	1.0							
283	284				isolated grains in otherwise very homogeneous							KR 9438	283	284	1.0	125	20	395	x	1.0		
284	285				rock							KR 9439	284	285	1.0							
285	286											KR 9440	285	286	1.0	95	15	245	x	0.84		
286	287											KR 9441	286	287	1.0							
287	288											KR 9442	287	288	1.0	110	30	315	0.5	0.86		
288	289											KR 9443	288	289	1.0							
289	290											KR 9444	289	290	1.0	105	20	275	x	0.71		
290	291											KR 9445	290	291	1.0							
291	292					carbonate						KR 9446	291	292	1.0	130	20	355	x	0.81		
292	293					sericite.					6pm	KR 9447	292	293	1.0							
293	294				gradual decrease in grain size							KR 9448	293	294	1.0	125	30	330	x	0.81		
294	295											KR 9449	294	295	1.0							
295	296				fine-grained qtz-fep (cb) x tuffs							KR 9450	295	296	1.0	115	35	280	x	0.76		
296	297											KR 11601	296	297	1.0							
297	298											KR 11602	297	298	1.0	120	25	325	x	0.74		
298	299											KR 11603	298	299	1.0							
299	300											KR 11604	299	300	1.0	115	35	275	x	0.81		
300												KR 11605	300	301.2	1.2	185	30	385	x	0.84		

NB Sampling note: Split core KR 10262 - 10274 (39-52m)
10404 - 10413 (183-191m)
10335 - 10342 (112-120m)

Remainder 2m grinds only

663241

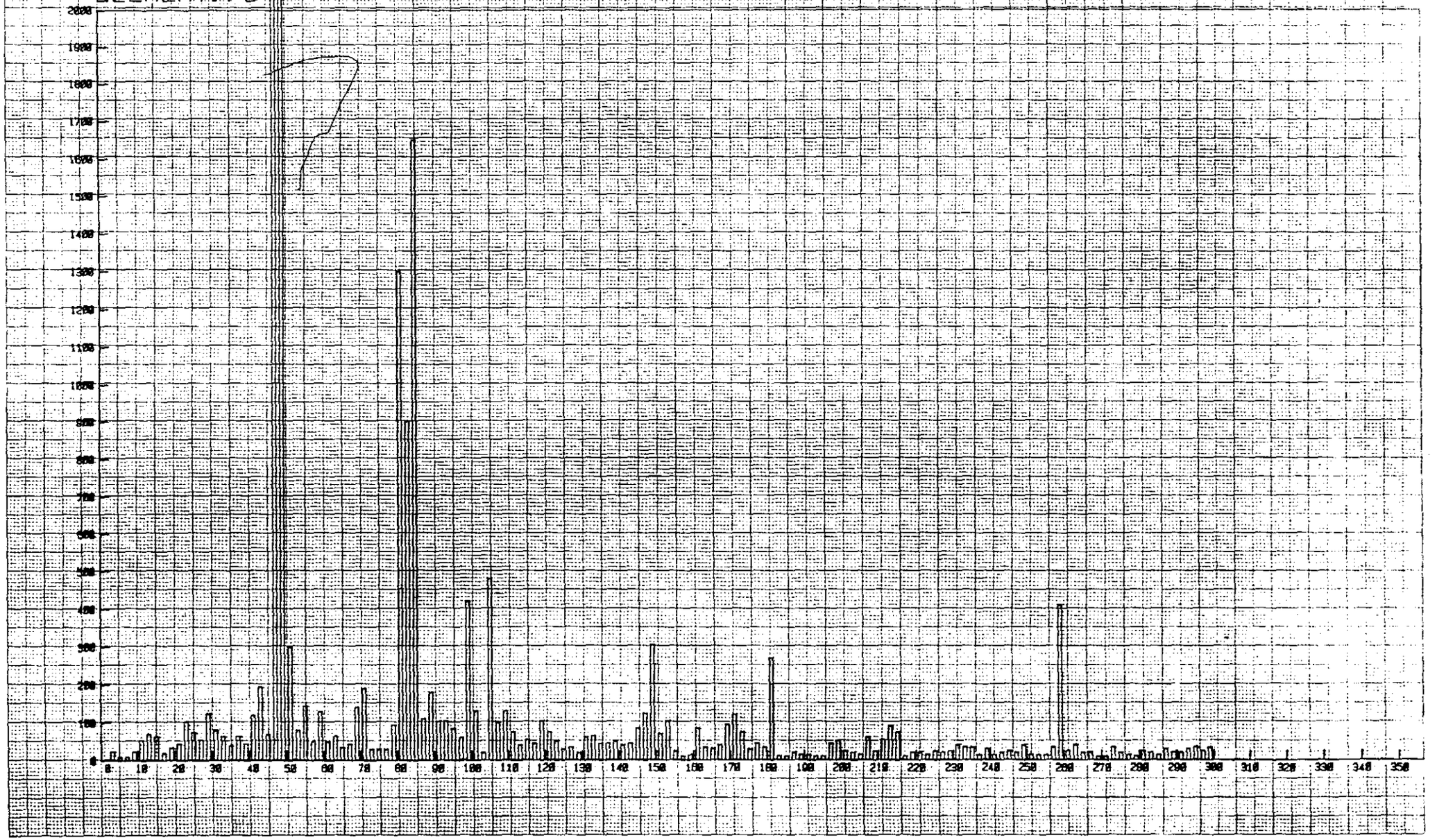
PROJECT: V19

HOLE: DDH3

ELEMENT: Pb

FROM: 0 m TO: 301 m

Collar Positions :
Declination :
Total Depth :



HEWLETT-PACKARD 9270-1024

663242

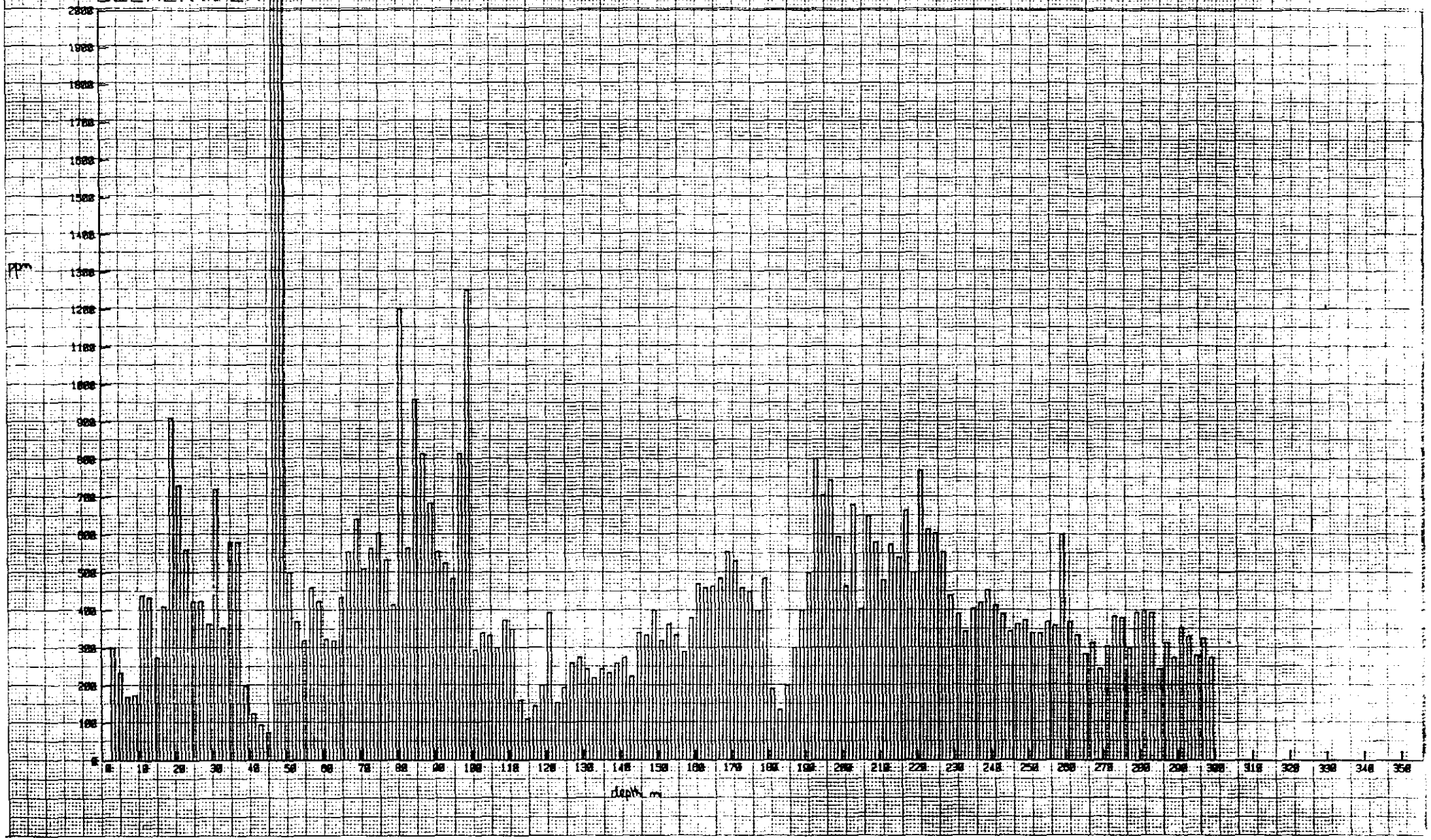
PROJECT: V19

HOLE: DDH8

ELEMENT: Zn

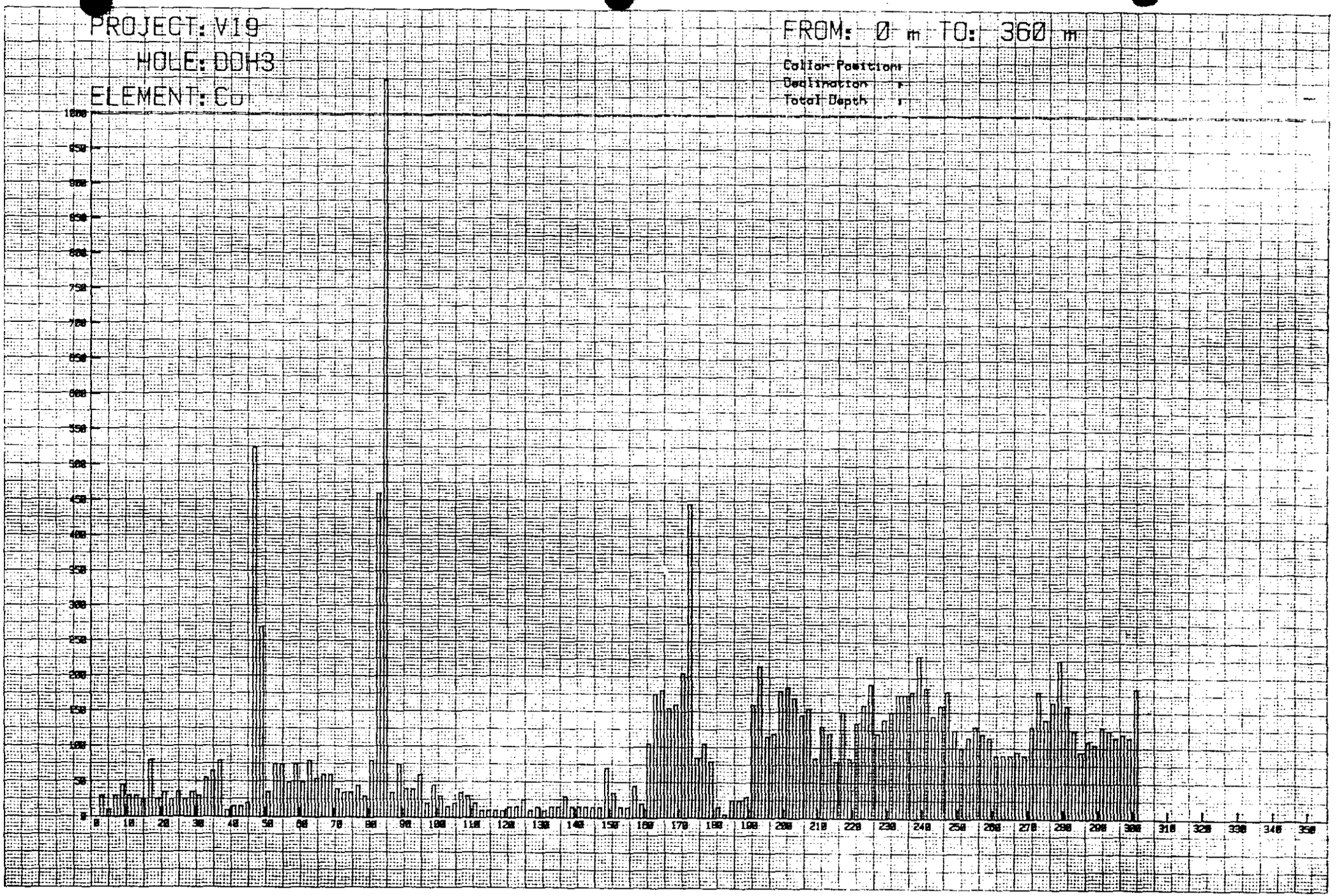
FROM: 0 m TO: 301 m

Collar Position:
Declination :
Total Depth :



HEWLETT-PACKARD 92/0-1024

663243



NEWLETT-PACKARD 9270-1024

APPENDIX 5

DDH V19 - 4 GEOLOGICAL LOGS AND ASSAYS

OLLAR

13045N 10040E

663245

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SHEET 1 OF 2

GEOPEKO TASMANIA DRILL LOG

Prospect V19 Hole no. DDH N°4

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION sph	MINERALISATION gal	MINERALISATION chp.	Fracturing	Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab: Analabs Cooee) Cu	Pb	Zn	Ag	Fe	Ba	Ca
4.5	5.0				Buff - cream coloured, highly porous (30% porosity)						broken	KR 10001	3.5	5.0	1.15	X	5	35	0.5	0.64	410	
5.0	6.0				leached, homogeneous mg quartz crystal	Leaching					core	KR 10002	5.0	7.05	1.10	10	340	120	X	0.6	445	
6.0	7.0				tuffs (lavas?) occasional (2) lithic fragments	of possible					poor		7.05									
7.0	8.0				& green chlorite/pyrite material.	carbonate					recovery	KR 10003										
8.0	9.0					(after					very											
	10					feldspars)					friable					20	310	385	x	0.67	590	
10	11				Banding towards the base & f.g. grey						and			10.75	1.3							
	12				more siliceous unit 5mm scale.						porous	KR 10034	10.75									
	13															5	230	560	x	0.57	545	
	14													13.6								
	15		parallel		M-fg buff coloured homogeneous tuffs with	leaching kaolinised						KR 10005	13.6		1.0							
15	16		40°	40°	lithic fragments, fg 1mm qtz crystals and white more siliceous ovoid pl. clasts		✓	good py in 1cm	bed	minor in chlorite	chlorite band					10	820	1500	x	0.88	625	
	17													16.7								
17	18				porous 1x2cm cavities after carbonates (lithics)	highly sericitised						KR 10006	16.7		1.5	15	510	1200	1.0	0.62	665	
18	19	pl		mm	approx base of main zone of leaching ??	schistose pl. band.								18.45								
	20				Banded qtz-feldsp lithic crystal tuffs								18.45									
	21		42	42	med-gd. alignment and flattening of whitish	sericite alteration	✓	sulphides (py) bands 2mm wide in			S0||S1	KR 10007			1.53	10	175	625	0.5	0.61	590	
	22				feldspathic rich 'bands' ⟹ some calcite along	along S_1								21.0								
	23				constituents	schistose "	tedc	textures				KR 10008	21.0	22.0	1.0	10	95	420	0.5	0.82	585	
23	24				increase in number of lithics to base							KR 10009	22	23	1.0	5	40	150	x	0.58	490	
	24				STRIPED LITHIC X TUFFS							KR 10010	23	24	1.0	5	130	640	0.5	0.77	635	
24	25		35°	35	flattened sil. (pl?) clasts 10mm x 3mm along S0||S1	Sericite	✓	10cm wide				KR 10011	24	25	1.0	15	265	645	0.5	0.89	665	
	26				ovoid in shape. In qtz xtal tuff. occasional sulphide rich layers c 2mm.							KR 10012	25									
	27				coarse qtz crystal tuffs, colouring white porous	locally					core breaks			27	1.53	15	400	880	x	0.53	475	
27	28				located at top - silicified base	silicified unit.					parallel to S_1	KR 10013	27	28	1.0	20	195	725	0.5	0.58	525	
28	29		50°		striped Lxt, major sulphide clasts (1mm x 3mm)	weakly chloritic	✓	fragments up to 3cm x 1cm				KR 10014	28	29	1.0	30	270	950	1.0	0.98	565	
	30				c 20% qtz in X tuffs. white-grey felsic matrix streaky							KR 10015	29	30	1.0	5	10	165	x	0.54	360	
	31				textures c 2% greenish possibly chloritic crystals							KR 10016	30	31	1.0	5	5	200	x	0.52	325	
	32				weak 'banding' of qtz rich unit and greenish							KR 10017	31	32	1.0	10	5	100	0.5	0.55	335	
	33				chl rich qtz poor - very vague 1-2cm scale.							KR 10018	32	33	1.0	5	x	145	0.5	0.73	325	
	34				silicification to base of unit. below a distinct							KR 10019	33	34	1.0	10	15	420	x	0.55	535	
	35				white leached porous zone	Silicified						KR 10020	34	35	0.81	5	x	95	x	0.73	330	
35	36				~~weakly chloritic~~ qtz crystal tuffs ranging	zone						KR 10021	35	36	1.0	x	10	75	0.5	0.63	190	
36	37				silicified (porous cavities in qtz after cb.)?	tedc - sericite						KR 10022	36	37	1.0	5	20	40	x	0.6	200	
37	38		70°	46		on cleavage						KR 10023	37	38	1.0	5	15	65	x	0.6	180	
38	39				feldsp-qtz-chl? porphyry m-cg 35% fsps (1x4mm)	S_1 / S_0					8 bpm	KR 10024	38	39	1.0	5	5	125	x	0.68	310	
39	40				flattened ∥ S_1						35° LCA	KR 10025	39	40	1.0	5	15	150	x	0.8	250	
40	41				transitional to qtz p.xtal x-ty sg matrix ox grn							KR 10026	40	41	1.0	5	5	45	x	0.87	355	
41	42				chlorite colour)	yellow						KR 10027	41	42	1.0	10	x	35	x	0.68	250	
42	43				mottled greenish qtz x tuffs with feldsps	carbonate veins						KR 10028	42	43	1.0	10	5	20	x	0.48	70	
					occasional silicification locally intense from 41.5m	and cavities in qtz.																
						silicification																

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GEOPEKO TASMANIA DRILL LOG

Prospect VOYAGER 19 Hole no. V19-4

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION	MINERALISATION	MINERALISATION	Fracturing
43	45				Silicified feldspar - phyric crystal tuffs. occasional massive qtz veins parallel to banding in the tuffs and weathering yellow carbonate rich patches.	SiO_2 massive					In core loss v. broken
45	46										
46	47										
47	48		40°		weakly silicified Qtz-feldsp (porphyry) crystal tuffs		✓	lacey qtz veins cubic 1cm³ cavities after Py & SiO_2 zone			
48	49										
49	50				massive silicification yellow porous carbonate "cavities" in quartz	intense silicification					
4950	50				Medium grained, grn weathering grn Feldspar (relicts?) qtz crystal tuffs fg chlorite speckled matrix c. 60% phenocrysts dominated by yellow-white feldspar 1x3mm flattened ovoid into clevavage	minor qtz veining & silicification intense chlorite	✓	last vein noted on core			
50	52										
52	53										
53	54					"					
54	55				weakly banded texture flattened feldspars	"					
55	56		35	35	defin So/S. ?	"					
56	57										
57	58		40		Dominantly silicified fsp-qtz-chlorite crystal tuffs. good banding, occasional texturing and alteration to intensely massive qtz tuffs.	chlorite silicification later SiO_2					
58	59										
59	60			35	banding of 'silica' parallel to tubi qtz tuffs Streaky textures, finer grain sizes (weak $CaCO_3$ in some qtz veins).						
60	60										
60	62										
62	63						√	in qtz-$CaCO_3$ vein			
63	64				massive SiO_2 with qtz phenocrysts						
64	65				Streaky textured qtz-feld tuffs, weakly						
65	66				chlorite, SiO_2 rich paler bands, weak carbonate		✓	in Silicon zones disseminated specks			
66	67				veining & more siliceous beds.						
67	69										
69	69				Green weathering Feld-qtz-chlorite porphyry mod crystal tuffs	chlorite.					
69	70		10°		Lithic fragment SiO_2						
70	70				irregular contact between f-q-ch xt and fg SiO_2 rich bed ?						
70					EOH 70.6m						

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab: ANALABS) Cu	Pb	Zn	Ag	Fe	Ba
KR 10029	43	45	1.0	10	5	20	x	0.48	325
KR 10030	45	46	1.0	5	x	35	x	0.74	300
KR 10031	46	47	1.0	5	x	35	x	0.88	385
KR 10032	47	48	1.0	10	x	30	x	0.73	515
KR 10033	48	49	1.0	5	5	60	x	0.89	335
KR 10034	49	50	1.0	x	20	45	x	0.915	555
KR 10035	50	50	1.0	x	10	30	x	0.92	550
KR 10036	50	52	1.0	5	20	30	x	1.0	695
KR 10037	52	53	1.0	5	20	30	x	0.9	870
KR 10038	53	54	1.0	5	5	30	x	0.88	390
KR 10039	54	55	1.0	x	10	40	x	1.0	600
KR 10040	55	56	1.0	5	30	35	x	1.25	575
KR 10041	56	57	1.0	x	20	35	x	0.89	635
KR 10042	57	58	1.0	5	30	55	x	0.78	400
KR 10043	58	59	1.0	x	25	100	x	0.95	440
KR 10044	59	60	1.0	5	10	55	x	0.91	605
KR 10045	60	61	1.0	x	10	40	x	0.78	505
KR 10046	61	62	1.0	x	5	40	x	0.86	640
KR 10047	62	63	1.0	5	10	40	x	0.99	405
KR 10048	63	64	1.0	x	20	35	x	0.91	400
KR 10049	64	65	1.0	x	5	35	x	0.82	425
KR 10050	65	66	1.0	5	10	35	x	0.98	325
KR 10051	66	67	1.0	x	25	35	x	0.87	350
KR 10052	67	68	1.0	x	25	25	x	0.76	390
KR 10053	68	69	1.0	x	10	40	x	0.91	420
KR 10054	69	70.6	1.6	x	25	45	x	0.96	380

PROJECT: V19

HOLE: DDH4

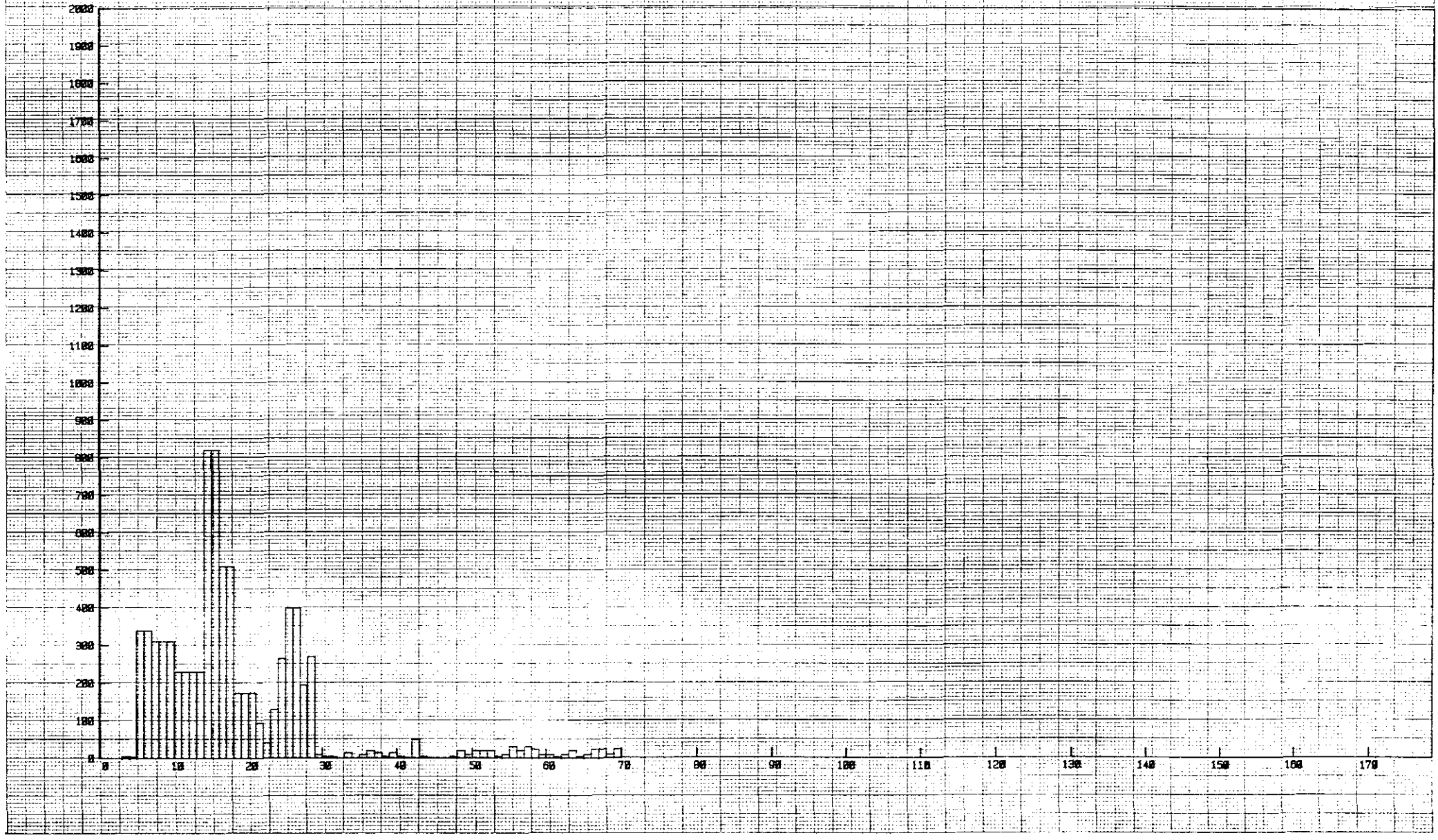
ELEMENT: Pb

FROM: 0 m TO: 70 m

Collar Positions

Declination

Total Depth



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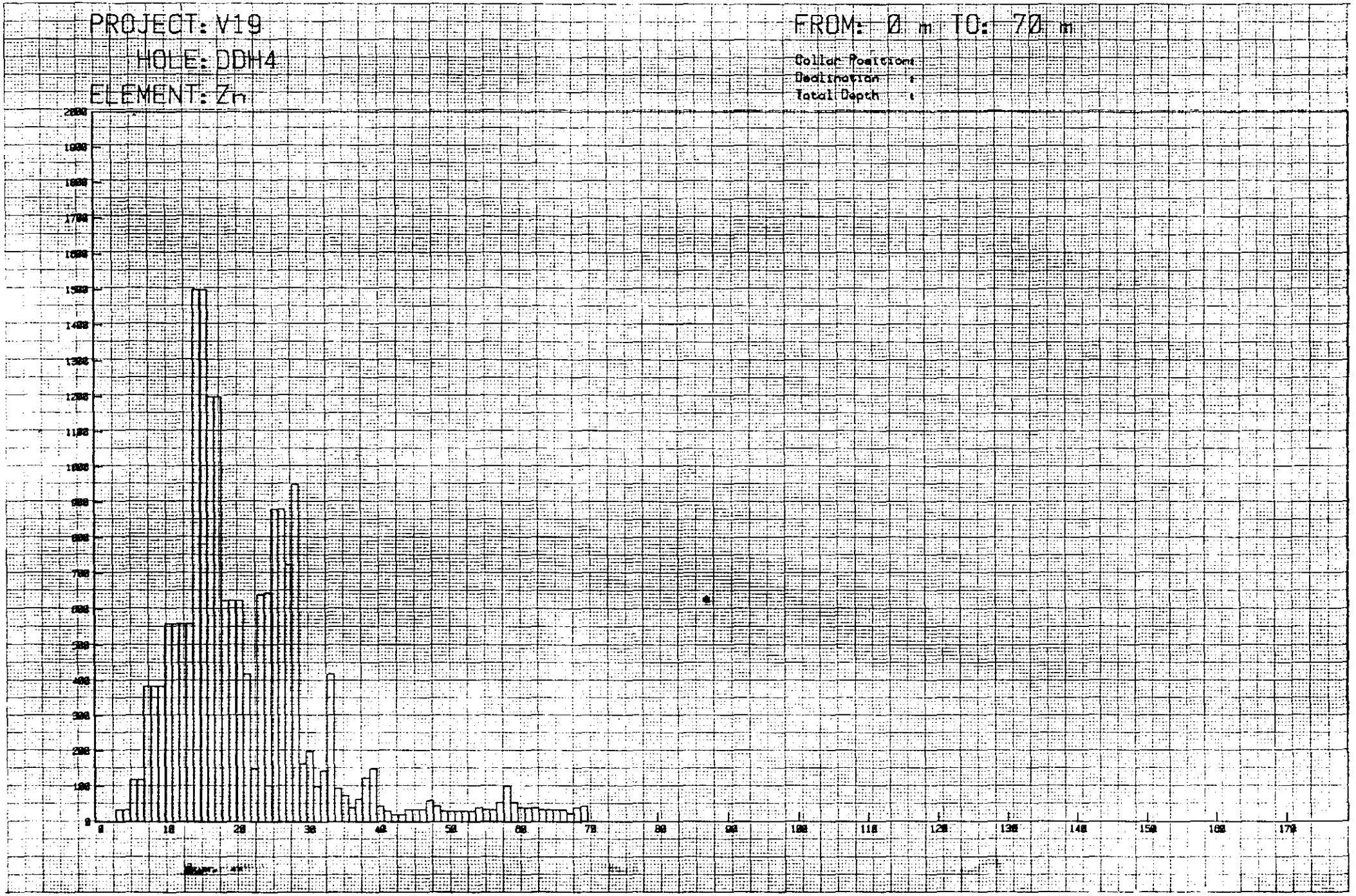
663248


PROJECT: V19
HOLE: DDH4
ELEMENT: Zn
FROM: 0 m TO: 70 m
Collar Position:
Declination :
Total Depth :
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170

663249

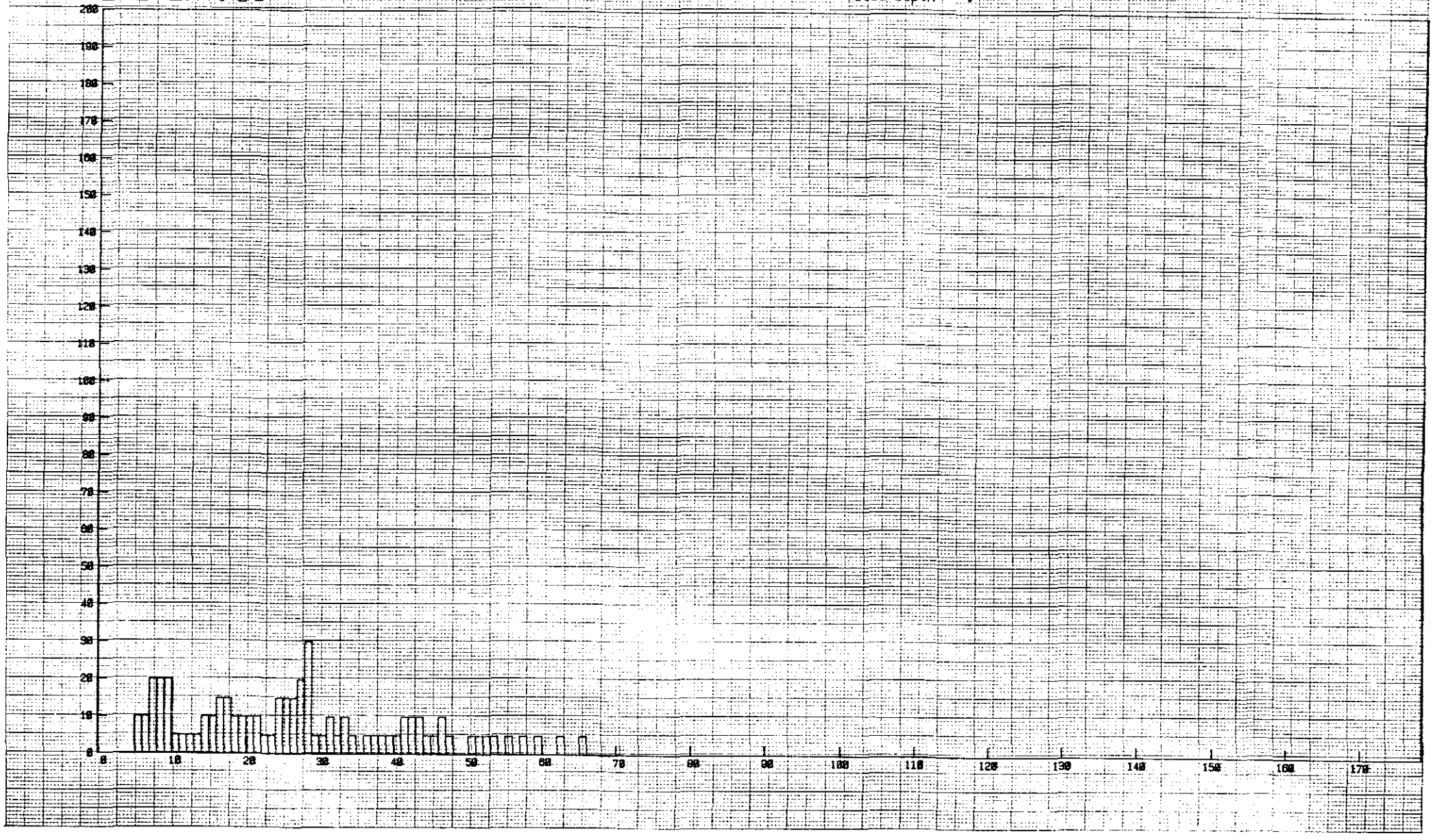
PROJECT: V19

HOLE: DDH4

ELEMENT: Cu

FROM: 0 m TO: 70 m

Collar Position :
Declination :
Total Depth :



HEWLETT-PACKARD 9270-1024

APPENDIX 6

DDH V19 - 5 GEOLOGICAL LOGS AND ASSAYS

663251

SHEET 1 OF 2 2

GEOPEKO TASMANIA DRILL LOG

Prospect [illegible] Hole no. V19-5

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION mag?	Fracturing	Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab: Cu	Pb	Zn	As	Fe %
0	1		no core															
1	2				3.55-4.70 Dacitic tuff - dark grey vfg													
2	3				sericitic rock, rock banding defines So. porous beds													
3	4				up to 1cm after carbonates? flattened buff lath-shaped					KR 11606	3.55							
4	5				minerals in green vfg. groundmass.							5.0	1.45	40	200	1400	x	0.97
5	6		54		4.7 - 14.48m V.f.g green-grey reddish sericitic DACITE ✓				20	KR 11607	5.0	6.0	1.0					
6	7				rock. Spots (<1mm c 2%) of biotite flattened in cleavage?				16	KR 11608	6.0	7.0	1.0	10	75	900	x	1.25
7	8				faint banding, thin chlorite laminae define S_1?			✓	45° LCAx.	KR 11609	7.0	8.0	0.9					
8	9			65				✓		KR 11610	8.0	9.0	0.87	10	80	1600	x	1.25
9	10				black specks ± 1mm of disseminated mineral magnetite?? biotite ?✓			✓		KR 11611	9.0	10.05	0.78					
10	11				small cavities probably after ~~feldspar~~ carbonate	(sericite)				KR 11612	10.05	11.0	1.0	15	125	600	x	1.45
11	12				pseudomorphing a feldspar phenocryst.					KR 11613	11.0	12.0	1.0					
12	13			72						KR 11614	12.0	13.0	1.0	10	35	710	0.5	1.15
13	14				14.48 - 17.05m banded lithic tuffs,					KR 11615	13.0	14.0	1.0					
14	15		porous		ovoid grey fragments 2x1cm in streaky chlorite					KR 11616	14.0	15.0	1.0	10	85	110	x	1.10
15	16				groundmass. fragments same as 'clouds' in above interval					KR 11617	15.0	16.0	1.0					
16	17		60		possible 'autobrecciation'. Very porous bands carbonate clasts ??					KR 11618	16.0	17.0	1.0	15	45	730	0.5	1.15
17	18				17.05 - 22.7m well bedded fine grained variably					KR 11619	17.0	18.0	1.0					
18	19		58°	45°	rocks, grey orange - grey-green colours. Qtz phenocrystic					KR 11620	18.0	19.0	1.0	10	25	350	x	2.05
19	20			45°	+ feldspar flecks phase good LINEATION fabric					KR 11621	19.0	20.0	1.0					
20	21		bx?		more siliceous? brecciated beds with hairline chlorite infilled fractures. grey vfg zone to base.					KR 11622	20.0	21.0	1.0	10	110	640	0.5	2.45
21	22		qv 10°							KR 11623	21.0	22.0	1.0					
22	23		vfs		22.7 - 24.10 massive drusy quartz vein					KR 11624	22.0	23.0	1.0	45	115	1500	x	1.2
23	24				milky white, hollows probably after leached					KR 11625	23.0	24.05	0.75					
24	25		15°		carbonate horizon. Low angle contact with LCAxis					KR 11626	24.05	25.0	0.95	80	110	700	x	1.45
25	26			± 1m	vfg-grey lava, feldspar - chlorite interlocking groundmass, +lithic fgmts qtz phenocrysts in carbonate-chlorite altered base - with mottled	carbonate (dolomite) replacement and veining strong late interval texture.				KR 11627	25.0	26.0	1.0					
26	27				27.2 - massive, vfg grey	sericite along S_1				KR 11628	26.0	27.0	1.0	60	730	1200	x	2.85
27	28		massive		homogeneous, vfg dark grey rock, v faint					KR 11629	27.0	28.0	1.0					
28	29				mafics (biotite, sulphides ?) in mottled grey-white groundmass					KR 11630	28.0	29.0	1.0	40	240	670	x	1.45
29	30		50°					✓	dk vfg	KR 11631	29.0	30.0	1.0					
30	31				pale grey vfg rock black specks mafic (non magnetic ?)			✓	ppg	KR 11632	30.0	31.0	1.0	25	40	480	0.5	1.85
31	32		q-dill + Pbs		vein			✓	mottled fg ppg	KR 11633	31.0	32	1.0					
32	33		bx		brecciated zone over 1m	for dolomite veins		✓		KR 11634	32.0	33.0	1.0	20	70	510	x	2.85
33	34				stripy textured homogeneous massive grey rock, vfg			✓		KR 11635	33.0	34.0	1.0					
34	35		70°		occasional black mafic specks aligned flattened probably			✓	12	KR 11636	34.0	35.0	1.0	20	90	670	x	1.85
35	36				feldspar rich LAVA	dolomite veins		✓	9 bpm	KR 11637	35.0	36.0	1.0					
36	37				brecc grey vfg phase qtz mafic alignment occasional	qtz (sericite)		✓		KR 11638	36	37	1.0	30	120	1000	x	2.0
37	38				phenocrysts			✓		KR 11639	37	38	1.0					
38	39							✓		KR 11640	38	39	1.0	30	160	730	x	1.5

663252

SHEET 2 OF 243

GEOPEKO TASMANIA DRILL LOG

Prospect

Hole no. V19-5

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION black matrix	MINERALISATION	MINERALISATION	Fracturing	Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab:					
39	40							✓				KR 11641	39	40	1.0	25	95	900	x	1.75	
40	41		80					✓			10	KR 11642	40	41	1.0	3					
41	42							✓				KR 11643	41	42	1.0	2					
42	43							✓				KR 11644	42	43	1.0	20	140	1050	x	2.35	
43	44				gradual increase in qtz phenocryst phase gradational			✓			8	KR 11646	43	44	1.0						
44	45							✓				KR 11646	44	45	1.0	15	330	870	0.5	3.55	
45	46							✓			very broken porous core	KR 11647	45	46	1.0						
46	47		85	~5 fabric	flattening of elongate mafics (2%) defines S, So?			✓			8	KR 11648	46	47	1.0	20	315	1000	x	1.75	
47	48							✓				KR 11649	47	48	1.0						
48	49		brown dol. veins		coarse ± 1cm pyrite cubes associated with brown "vein" system	dolomite?	✓	✓				KR 11650	48	49	1.0	25	95	680	x	2.60	
49	50				qtz phenocrysts present ± 1mm in v.fg grey-green matrix.			in veins			8	KR 11651	49	50	1.0						
50	51				approximate limit of leaching of carbonate							KR 11652	50	51	1.0	35	175	1150	x	2.35	
51	52					leucoxene						KR 11653	61	52	1.0						
52	53				homogeneous massive grey-green v.f.g. rock.	carbonate						KR 11654	52	53	1.0	30	230	700	x	1.95	
53	54				white feldspars mottled in green matrix.	vein system					X	KR 11655	53	54	1.0						
54	55		CaCO3	LCA		± 5mm across						KR 11656	54	55	1.0	35	265	880	x	1.65	
55	56											KR 11657	55	56	1.0						
56	57				breccia zone " rounded fragments < 5mm closely packed v.fg grey green rock. extensively cut by drusy quartz veins.							KR 11658	56	57	1.0	25	290	850	x	1.40	
57	58											KR 11659	57	58	1.0						
58	59				v.fg 'eyes' up to 5mm (10%) within carb veinlets.	carbonate chlorite veins						KR 11660	58	59	1.0	30	125	720	x	1.50	
59	60		rounded clasts		crystal tuffs occasional lithic fragments to base		✓	pyrite				KR 11661	59	60	1.0						
60	61				57.60 - 73.3 homogeneous fg qtz crystal	chlorite	✓	in narrow				KR 11662	60	61	1.0	100	110	930	x	2.45	
61	62				tuffs, grey in colour with blue-grn chlorite	fracture	✓	veins and				KR 11663	61	62	1.0						
62	63		60°		stretched fracture flattened <60° to LCA (10%)	external carbonate	✓	possibly bedded			<1% vol.	KR 11664	62	63	1.0	75	250	1050	x	1.85	
63	64				occasional pyritic lenses (± 1cm - 0.5cm)		✓					KR 11665	63	64	1.0						
64	65				white carbonate replacing feldspars? and in qtz narrow veins		✓					KR 11666	64	65	1.0	85	305	1400	x	2.14	
65	66		pyrite bed?				✓					KR 11667	65	66	1.0						
66	67					chloritic veining	✓					KR 11668	66	67	1.0	60	200	780	x	3.15	
67	68					oxidation						KR 11669	67	68	1.0						
68	69											KR 11670	68	69	1.0	45	220	1000	x	2.95	
69	70				dk grey-green groundmass to	zone of high CaCO3 veining						KR 11671	69	70	1.0						
70	71				qtz phenocrystic phase							KR 11672	70	71	1.0	55	700	1950	0.5	2.25	
71	72				gradational change decrease in qtz phenocrysts and grain size of groundmass							KR 11673	71	72	1.0						
72	73											KR 11674	72	73	1.0	30	355	1100	x	1.90	
73	74		55°		73.3 - very fine-grained porphyritic lava?							KR 11675	73	74	1.0						
74	75				Quartz (1mm rounded 5%) and white feldspar? phenocrysts							KR 11676	74	75	1.0	25	120	380	x	1.55	
75	76				in dark grey v.fg groundmass pyrite bearing? contact							KR 11677	75	76	1.0						
76	77											KR 11678	76	77	1.0	30	80	470	x	1.55	

increase in chlorite content and colour index

GEOPEKO TASMANIA DRILL LOG

663253

Prospect

Hole no. V19-5

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS Sa	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION	MINERALISATION	MINERALISATION	Fracturing
	78				pale - medium grey coloured vfg porphyry						6
	79				generally feldspathic ± Qtz phenocrystic phas. DAC	TE LAVA?					5
	80					Carbonate					6
	81				carbonate veins 75° to LCA	veining very irregular.					good core
	82										4
	83										
	84				as above very homogeneous						
	85										7
	86										
	87				white pl pseudomorphs of carbonate after feldspar (s.l.)	and Qtz					
	88				phenocrysts in medium grained porphyry						
	89				alteration zone, brecciated extensively veined chlorite and brown? (dolomite?) AGGREGATED BASE??						7
	90		50°		striped siliceous bed, 5mm - 15mm wide grey bands separated by greenish bands		✓	galena specks			
	91										7
	92				90m -						
	93				VF g medium grey homogeneous rocks, probably occasional quartz phenocrysts ± 1mm grd white - yellow specks after feldspar phenocrysts, also	LAVAS?					
	94					narrow carbonate veining					
	95				"peppery" black mineral blebs??	Carbonate veinlets occasional drusy cavities lined by					
	96										
	97										10
	98				mottling due to carbonate alteration and veining	Silicic					7
	99				veins 1-4mm @ 70°-90° to LCA axis	clay					
	100				local bx zone with pyrite stringers between volcanic	moderate cleavage	✓				
	101				klash, also intensive carbonate alteration bx.						6
	102										
	103		5		very homogeneous medium grey lavas?						4
	104										
	105										
	106					Carbonate alteration.					
	107				blotchy carbonate alteration bands marked "breccia complex texture"	veining					
	108		gradational		pale grey (yellow) vfg rocks, irregular	Silicic -		finely disseminated pyrite <1% v/v			
	109				yellow carbonate veinlets and occasional	Carbonate	✓				
	110				chloritic carbonate rich bands.		✓				
	111						✓	pyrite in matrix of blebs			
	112										
	113				113.40 - 119.0m						
	114				'breccia' & 'lava' and extensive alteration	Extensive					
	115		70°		clash! 1cm - 0.5m ovoid in fine grained groundmass	Carbonate					
	116				with ch veins, fine Qtz eyes possibly tuffaceous	Veining and chlorite stringers					

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab)					
KR 11679	77	78	1.0	30	120	1200	X	2.2	
KR 11680	78	79	1.0	~~25~~	~~40~~	~~550~~	~~X~~	~~1.8~~	
KR 11681	79	80	1.0						
KR 11682	80	81	1.0	25	40	550	X	1.8	
KR 11683	81	82	1.0						
KR 11684	82	83	1.0	20	105	870	X	1.55	
KR 11685	83	84	1.0	"	"	"	"	"	
KR 11686	84	85	1.0	20	40	520	X	1.80	
KR 11687	85	86	1.0	"					
KR 11688	86	87	1.0	30	105	330	0.5	195	
KR 11689	87	88	1.0	"					
KR 11690	88	89	1.0	15	180	375	X	2.45	
KR 11691	89	90	1.0	"					
KR 11692	90	91	1.0	25	185	415	1.0	1.25	
KR 11693	91	92	1.0	"					
KR 11694	92	93	1.0	15	80	250	X	2.10	
KR 11695	93	94	1.0	"					
KR 11696	94	95	1.0	20	140	325	X	1.55	
KR 11697	95	96	1.0	"					
KR 11698	96	97	1.0	30	130	1250	X	1.85	
KR 11699	97	98	1.0	"					
KR 11700	98	99	1.0	10	175	1300	0.5	1.55	
KR 11701	99	100	1.0	"					
KR 11702	100	101	1.0	10	90	735	X	1.40	
KR 11703	101	102	1.0	"					
KR 11704	102	103	1.0	10	80	460	1.0	1.75	
KR 11705	103	104	1.0	"					
KR 11706	104	105	1.0	15	75	475	X	1.55	
KR 11707	105	106	1.0	"					
KR 11708	106	107	1.0	15	80	455	X	1.65	
KR 11709	107	108	1.0	"					
KR 11710	108	109	1.0	125	1050	845	1.5	1.70	
KR 11711	109	110	1.0	"					
KR 11712	110	111	1.0	20	165	540	1.0	1.60	
KR 11713	111	112	1.0	"					
KR 11714	112	113	1.0	35	130	550	0.5	1.45	
KR 11715	113	114	1.0	"	"	"	"	"	
KR 11716	114	115	1.0	15	265	495	0.5	1.55	
KR 11717	115	116	1.0	"	"	"			

GEOPEKO TASMANIA DRILL LOG

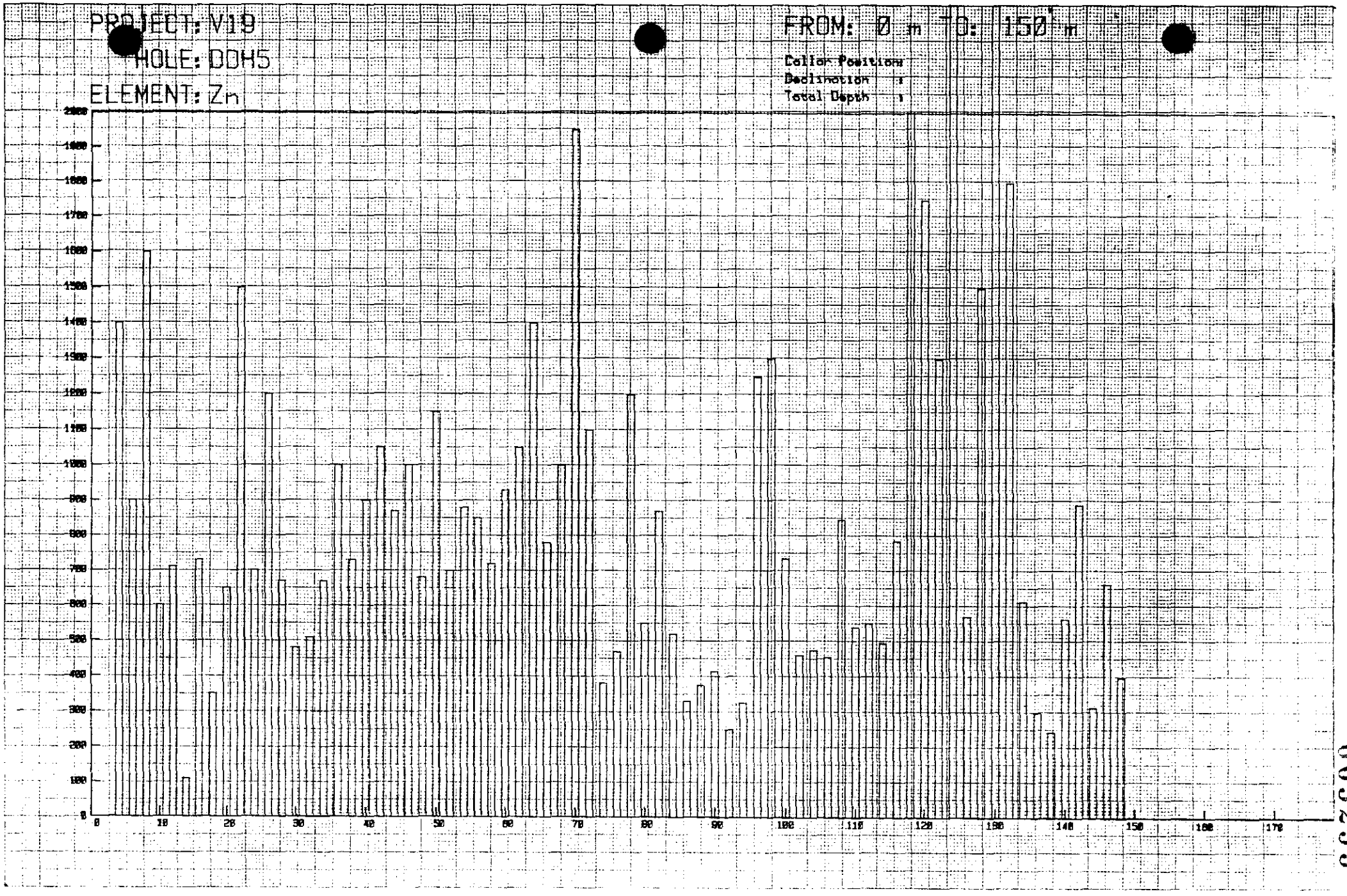
663254

Prospect

Hole no. VI9-52

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS Sa	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION	MINERALISATION	MINERALISATION	Fracturing
116	117				silicified band with pyrite cut by later lesser qtz veins	Sil? intense bx and cb alteration. Chlorite	✓				
117	118				Calcite veinlets		✓				
118	119				118- homogeneous vfg						
119	120				Silicious rock (lava?) cut by yellow cb veins						
120	121										
121	122										10
122	123					carbonate in groundmass					
123	124				porosity increases, after carbonate veins						
124	125					as wedges veins					
125	126										
126	127				cb veins external.						6
127	126				occasional qtz phenocrysts? clasts visible						
128	129				fine-grained greenish-grey qtz feldspathic rock.						
129	130				narrow carbonate veins						
130	131				← Gradational. chloritic enclaves? angular between fragments	qtz		altered zone extending			
131	132				qvein with xcleavg 10° to CA brecciated lava? possible			irregular carbonate veins			
132	133				silicification btn bx and cb veining			brecciation qtz host. grey vfg lava, multigenerous			
133	134				fine-grained green grey mottled rock	Pos ✓ in margin of qtz-cb vein		Groundmass to this.			
134	135				← sporadic qtz veins c. 35% rol qtz vein						
135	136				nb qtz veins postdate cb veinlets						
136	137			90°	vfg green-grey mottled rock, feldspar						
137	138				laths visible in groundmass with interlocking						
138	139				quartz meshworks. 'RHYOLITE?'						
139	140					yellow cb streaks and vein-like units					
140	141										
141	142				massive 5cm qtz carbonate vein 90° to CA						
142	143										
143	144				qtz cb vein style						
144	145										
145	146										
146	147										
147	148				1480 - EOH (150.70)						
148	149				Grey green porphyritic lava, yellow cb						
149	150				pseudomorphs after feldspar phenocrysts with						
150	151				rounded quartz crystals (1-2mm) in						
					vfg greenish grey groundmass						

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab:						
KR 11718	116	117	1.0	10	350	785	1.5	1.65		
KR 11719	117	118	1.0							
KR 11720	118	119	1.0	60	690	2900	2.0	1.75		
KR 11721	119	120	1.0							
KR 11722	120	121	1.0	20	225	1750	1.0	1.65		
KR 11723	121	122	1.0							
KR 11724	122	123	1.0	30	240	1300	0.5	2.30		
KR 11725	123	124	1.0							
KR 11726	124	125	1.0	70	915	2350	2.0	2.0		
KR 11727	125	126	1.0							
KR 11728	126	127	1.0	30	125	570	0.5	1.75		
KR 11729	127	128	1.0							
KR 11730	128	129	1.0	35	355	1500	0.5	1.90		
KR 11731	129	130	1.0							
KR 11732	130	131	1.0	15	340	2350	1.0	2.5		
KR 11733	131	132	1.0							
KR 11734	132	133	1.0	15	310	1800	x	1.95		
KR 11735	133	134	1.0							
KR 11736	134	135	1.0	40	75	615	x	1.75		
KR 11737	135	136	1.0							
KR 11738	136	137	1.0	60	15	300	x	1.55		
KR 11739	137	138	1.0							
KR 11740	138	139	1.0	25	25	245	x	1.35		
KR 11741	139	140	1.0							
KR 11742	140	141	1.0	20	245	565	x	1.65		
KR 11743	141	142	1.0							
KR 11744	142	143	1.0	15	180	890	x	1.5		
KR 11745										
KR 11746				10	45	315	x	1.2		
KR 11747										
KR 11748				15	205	665	x	1.7		
KR 11749										
KR 11750				10	85	400	x	1.65		

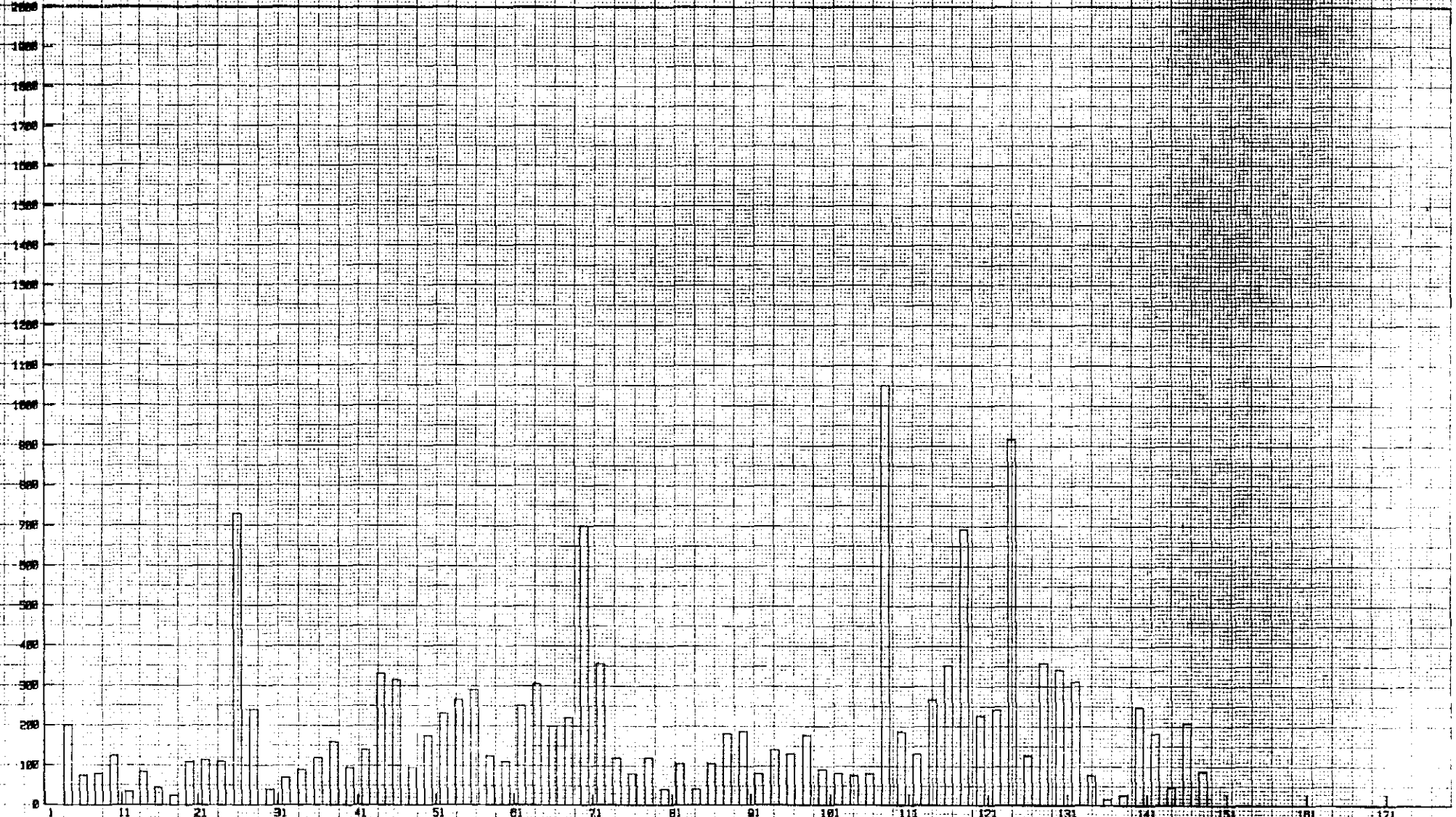

PROJECT: V19
HOLE: DDH5
ELEMENT: Zn
FROM: 0 m TO: 150 m
Collar Position :
Declination :
Total Depth :
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170

663255

PROJECT: V19
HOLE: DDH5
ELEMENT: Pb

FROM: 1 m TO: 150 m

Collar Positions
Declination :
Total Depth :



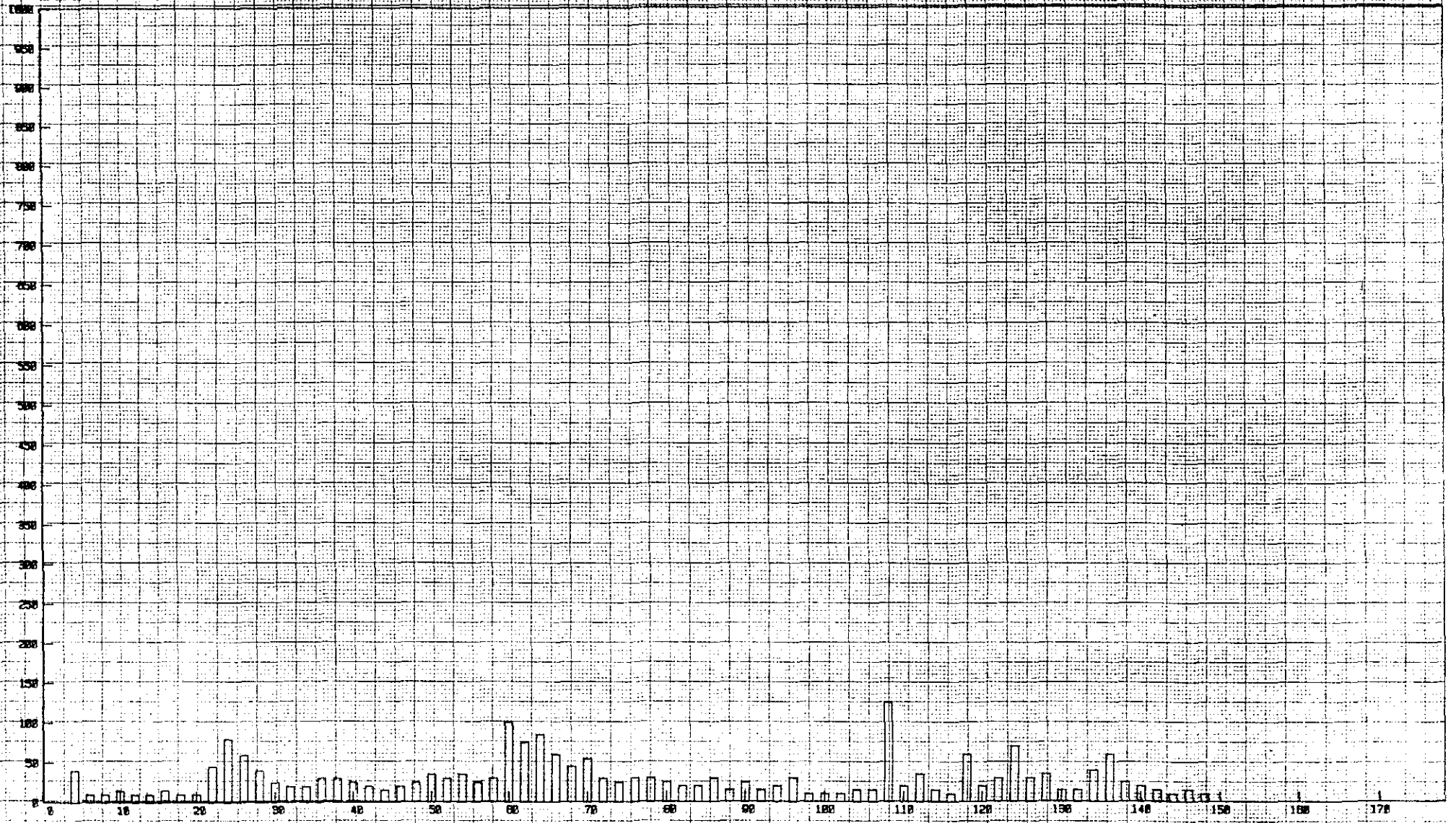
PROJECT: V19

HOLE: DDH5

ELEMENT: Co

FROM: 0 m TO: 150 m

Collar Position:
Declination :
Total Depth :



APPENDIX 7

DDH V24 - 1 GEOLOGICAL LOGS AND ASSAYS

GEOPEKO TASMANIA DRILL LOG

663259

Prospect Elliott Bay Hole no. V24-1250

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	Quartz %	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION % py	MINERALISATION % cpy	MINERALISATION % gal	MINERALISATION % Sph	Fracturing
0	1					0 to 0.5m NO CORE						
1	2					0.5m to 20.4m LITHIC CRYSTAL TUFF						
2	3			50°		Oxidized and bleached white-cream rhyolitic coarse grained lithic-crystal tuff with bands of coarse crystal tuff and agglomerates. Very minor narrow	bleached	patchy ~2%				
3	4											
4	5											
5	6							PY				
6	7					2-5mm qtz veins about 1/metre, typically						
7	8					normal to c.a. Fine disseminated						
8	9					oxidized pyrite (2-3%) occurs from						
9	10					5.2 to 5.5m, 10.6 to 10.8m and also in						
10	11					narrow fracture controlled bands (3)		PY				
11	12					between 16.8 and 17.3m, and 18.9 to 19.1m Iron						
12	13				qtz veins 1/m to 2.5/m	staining occurs with some of the qtz veins						
13	14					suggesting a sulphide association.						
14	15					The dominant fragments in the tuffs						
15	16					are (1) rounded white qpl (2) elongate wispy						
16	17					green chloritic qxt? Many fragments				minor	minor	
17	18					are alligned parallel to foliation S_1. Average				minor	minor	
18	19					size of lithics is 0.5 to 2cm.						
19	20											
20	21					20.4 to 27.8 m SILICIFIED RHYOLITIC TUFFS						
21	22					with a trace of disseminated galena.	silicification					
22	23					The silicification of this zone is pervasive						
23	24				5mm to 2cm	and has led to a fine grained grey						
24	25					recrystallized lithic tuff with bands of						
25	26					crystal tuff. Some of the fragments are						
26	27					grey silicified pyritic pumice types.						
27	28											
28	29					28.3 to 43.5m MINERALIZED RHYOLITIC						
29	30					AGGLOMERATE OR TUFF BRECCIA	silicification	2-5%		very minor	very minor	
30	31					Minor 2-5% disseminated and very minor stringer		"		"	"	
31	32					occurs throughout. Silicified pyritic grey		"		"	"	
32	33					pumice fragments from 2 to 100mm across		"		"	"	
33	34					are common. The rounded shape and		"		"	"	
34	35					fragmentalized nature suggests a possible		"		"	"	
35	36					vent breccia origin. Concentrated qtz veins		"		"	"	
36	37					37.5 - 42.5 m, 2 veins 5-2% 2cm thick, 5/metre		"		"	"	
37	38					Carry minor gal, sph. and pyrite		"		"	"	
38	39							"		"	"	

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab: ANALABS) Au ppb	Cu ppm	Pb ppm	Zn ppm	Sb ppm	Ag ppm	Fe %
KR 8228	0.5	2	1.5	17	x	10	30	x	x	0.34
29	2	3	1	x	x	5	20	x	x	0.27
30	3	4	1	x	5	10	15	x	x	0.44
31	4	5	1	x	x	x	20	x	x	0.4
32	5	6	1	x	5	x	15	x	x	0.335
33	6	7	0.9	x	5	x	25	x	x	0.375
34	7	8	0.95	x	x	5	25	x	x	0.295
35	8	9	1	x	x	10	20	x	x	0.255
36	9	10	0.9	x	x	10	25	x	x	0.35
37	10	11	1	x	5	10	30	1.0	x	0.365
38	11	12	0.9	x	5	45	25	x	x	0.285
39	12	13	0.95	x	10	45	45	x	x	0.33
40	13	14	0.75	x	5	35	30	x	x	0.25
41	14	15	1	8	20	40	40	x	x	0.42
42	15	16	1	x	5	25	30	x	x	0.31
43	16	17	1	x	55	165	430	1.0	x	0.385
44	17	18	1	8	40	210	210	2.0	x	0.375
45	18	19	1	x	75	910	2400	2.0	x	0.485
46	19	20	1	8	140	1150	3250	1.0	x	0.535
47	20	21	1	8	40	450	1550	1.0	x	0.76
48	21	22	1	17	35	490	465	3.0	x	1.25
49	22	23	1	x	45	420	690	2.0	x	0.8
50	23	24	1	x	20	165	620	2.0	x	0.49
KR 7451	24	25	1	8	15	55	220	1.0	x	1.25
52	25	26	1	17	10	45	215	1.0	x	0.92
53	26	27	1	25	10	85	260	2.0	x	1.2
54	27	28	1	33	30	230	1150	7.0	x	1.45
55	28	29	1	50	30	735	830	5.0	x	0.59
56	29	30	1	25	15	280	840	3.0	x	0.75
57	30	31	1	x	20	235	1500	2.0	x	1.67
58	31	32	1	17	20	205	120	4.0	x	0.39
59	32	33	1	25	15	230	240	2.0	x	0.44
60	33	34	1	25	10	235	250	3.0	x	0.45
61	34	35	1	x	5	225	375	IS	x	0.59
62	35	36	1	x	35	285	405	2.0	x	1.36
63	36	37	1	17	10	470	605	3.0	x	6.45
64	37	38	1	8	15	780	1950	4.0	x	NS
65	38	39	1	x	20	415	650	2.0	x	NS

GEOPEKO TASMANIA DRILL LOG

663260

Prospect Elliott Bay Hole no. VZ4-1

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	Lithology	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION % py	MINERALISATION % cpy	MINERALISATION % gal	MINERALISATION % sph	Fracturing
39	40					Logged by R R Large.						
40	41					Silicification and mineralization of this unit resembles the mineralized Main Lode outcrop at Mt Chambers and the silicified footwall at Mt Morgan						
41	42											
42	43											
43	44					43.5 to 58.0m ALTERED LITHIC-CRYSTAL						
44	45				qms	TUFF, sericitized and weakly silicified with 1-3% pyrite. The most common lithic fragments are wispy flattened white rhyolite porphyry. Silicified grey porphyry fragments are rare.	sericitized and weakly silicified	1-3%	<0.1%	<0.5%		
45	46											
46	47			50°								
47	48											
48	49											
49	50											
50	51											
51	52											
52	53											
53	54											
54	55											
55	56											
56	57											
57	58											
58	59				qtz veins	58.0 to 62.0m ZONE OF INTENSE QUARTZ VEINING, within moderately silicified crystal-lithic tuff. Veins vary from 0.2 to 15cm at 40° to 90° tca with majority at 75-90° tca. A total of 57 veins occur over the zone and amount to 12% of the rock. Minor ga, sp, cpy and py is present in the veins. The most intense veining is from 60.2 - 61.6m.	silicification	1-2%	minor	minor	minor	
59	60											
60	61											
61	62											
62	63											
63	64											
64	65											
65	66											
66	67											
67	68				qtz veins	62.0 to 75.5m ALTERED CREAM-ORANGE LITHIC CRYSTAL TUFF. The orange colouration is probably due to iron leaving sericite as an alteration mineral. Qtz veining average 1-2/m						
68	69						Fe sericite					
69	70											
70	71											
71	72											
72	73											
73	74											
74	75											
75	76				qtz	75.5 to 77.0 STRONGLY QUARTZ VEINED LITHIC-CRYSTAL TUFF	sericite					
76	77											
77	78											

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab: ANALABS) Au ppb	Cu ppm	Pb ppm	Zn ppm	Sb ppm	As ppm	Fe %
KR 7466	39	40	1	25	60	1650	3100	17.0	X	NS
67	40	41	1	17	25	700	2550	6.0	X	NS
68	41	42	1	17	20	725	2300	3.0	X	NS
69	42	43	1	X	20	1150	3700	2.0	X	NS
70	43	44	1	8	10	485	835	1.0	X	0.76
71	44	45	1	129	15	280	1700	X	X	0.47
72	45	46	1	58	15	625	1500	3.0	X	0.82
73	46	47	1	33	10	630	2750	5.0	X	1.35
74	47	48	1	117	5	200	650	2.0	X	1.73
75	48	49	1	67	5	375	1550	3.0	X	0.545
76	49	50	1	17	5	205	670	1.0	X	1.85
77	50	51	1	17	5	535	1650	2.0	X	2.05
KR 8201	51	52	1	33	15	735	1200	2.0	45	1.4
02	52	53	1	33	45	370	1150	24.0	65	0.57
03	53	54	1	50	80	655	1900	25.0	95	0.81
04	54	55	1	58	60	640	2030	4.0	22	0.735
05	55	56	1	58	80	5300	1000	19.0	13	0.85
06	56	57	1	83	40	285	670	6.0	54	0.47
07	57	58	0.85	25	35	400	2050	2.0	21	0.43
08	58	59	1	25	85	1200	3700	6.0	19	0.51
09	59	60	1	58	40	440	960	1.0	65	0.515
10	60	61	1	275	2750	280	880	1750	190	1.5
11	61	62	1	50	95	105	295	28.0	120	0.505
12	62	63	1	42	50	65	200	25.0	20	0.98
13	63	64	1	392	125	250	1300	23.0	15	0.78
14	64	65	1	33	40	155	335	21.0	11	0.82
15	65	66	1	58	15	45	280	4.5	14	0.54
16	66	67	1	33	5	25	170	1.5	10	0.83
17	67	68	1	58	10	40	170	2.0	22	0.70
18	68	69	1	42	10	55	315	X	8	0.47
19	69	70	1	42	5	35	125	X	11	0.38
20	70	71	1	33	5	135	190	X	29	0.40
21	71	72	1	25	15	70	250	X	96	0.45
22	72	73	1	25	5	25	130	X	10	0.45
23	73	74	1	50	5	15	130	X	21	0.46
24	74	75	1	42	15	30	170	X	1500	0.47
25	75	76	1	33	20	195	180	X	400	0.77
26	76	77	1	33	10	140	230	X	440	0.495
27	77	78	1	17	45	285	1300	X	13	1.16

GEOPEKO TASMANIA DRILL LOG

663261

Prospect Elliott Bay Hole no. VZ4-1

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	% veining	GEOLOGICAL DESCRIPTION
78	79					77.0 to 129.84m MEDIUM TO COARSE
79	80					ALTERED LITHIC-CRYSTAL RHYOLITE
80	81				1 qv	TUFFS.
81	82				1 qv	Fragment types are generally
82	83				1 qv	porphyritic rhyolite varying from
83	84				1 qv	0.3 cm to 2.8 cm. Less common are
84	85					larger fragments of grey silicified
85	86					and weakly pyritic quartz
86	87					porphyry identical to the fragments
87	88					within the breccia zone from
88	89					28.3 to 43.5 m. These fragments are
89	90					angular to subrounded and up
90	91					to 5 cm across. Groundmass of
91	92					the tuff consists of recrystallized
92	93					0.5 to 1.0 mm quartz crystals
93	94					and aligned sericite with
94	95					quartz vein material. On the
95	96					core surface the sericite has
96	97					oxidized to give a distinct brown
97	98					colouration.
98	99					
99	100					
100	101					
101	102				1 qv	
102	103				1 qv	
103	104				1 qv	
104	105					
105	106				1 qv	
106	107				1 qv	
107	108					
108	109					
109	110					
110	111					
111	112					
112	113					
113	114					
114	115					
115	116					
116	117				numerous qv	

Alteration	MINERALISATION % py	cpy	gal	sph	Fracturing
Fe sericite and silica	minor diss		minor diss	minor diss	
	〃		〃	〃	
	〃		〃	〃	
	〃		〃	〃	
	〃		〃	〃	
	〃		〃	〃	

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab: ANALABS) Au ppb	Cu ppm	Pb ppm	Zn ppm	Sb ppm	As ppm	Fe %
KR 7478	78	79	1	X	45	600	760	X	14	1.75
79	79	80	1	X	80	840	1450	3	8	0.88
80	80	81	1	X	85	440	1650	X	5	1.25
81	81	82	1	67	65	420	1550	X	5	0.89
82	82	83	1	X	65	420	1250	X	7	1.3
83	83	84	1	50	130	610	2750	X	7	0.65
84	84	85	1	33	25	170	185	X	9	0.77
85	85	86	1	33	15	85	145	1	9	0.92
86	86	87	1	25	35	185	165	X	9	1.35
87	87	88	1	X	135	415	225	X	12	1.48
88	88	89	1	50	65	210	230	X	9	1.87
89	89	90	1	67	10	15	125	3	7	0.9
90	90	91	1	42	10	10	160	1	8	0.96
91	91	92	1	25	10	25	195	1	9	1.85
92	92	93	1	42	10	40	95	1	6	1.65
93	93	94	1	67	15	25	130	1	7	1.65
94	94	95	1	142	10	60	125	1	5	1.35
95	95	96	1	X	15	340	160	X	4	1.55
96	96	97	1	175	10	150	140	X	5	1.66
97	97	98	1	50	15	145	125	X	6	1.55
98	98	90	1	50	10	325	170	X	5	1.70
99	99	100	1	108	15	115	240	X	5	2.00
KR 7500	100	101	1	308	5	195	225	X	7	2.00
01	101	102	1	50	5	125	200	X	6	0.445
02	102	103	1	42	15	390	365		6	1.41
03	103	104	1	100	10	95	220	X	6	1.40
04	104	105	1	92	5	75	150	X	6	1.4
05	105	106	1	125	5	70	115	X	5	1.50
06	106	107	1	150	5	105	205	X	4	1.6
07	107	108	1	158	5	100	210	X	4	1.7
08	108	109	1	108	10	65	215	X	6	2.5
09	109	110	1	175	10	130	240	X	5	1.9
10	110	111	1	158	5	165	230	X	5	1.7
11	111	112	1	150	10	145	130	X	6	2.25
12	112	113	1	242	5	130	180	X	5	1.70
13	113	114	1	33	15	275	615	X	6	1.65
14	114	115	1	25	10	130	215	X	5	1.4
15	115	116	1	X	10	125	165	X	17	1.65
16	116	117	1	X	20	290	2300	X	12	1.35

663262

GEOPEKO TASMANIA DRILL LOG

Prospect Elliott Bay Hole no. V24-1

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	% vein/qtz	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION % py	cpy	gal	sph	Fracturing
						Logged by RR Large (to 130m) and RJ Perring						
117	118				1% qtz		fe sericite and silica					
118	119											
119	120											
120	121											
121	122											
122	123											
123	124											
124	125											
125	126											
126	127											
127	128											
128	129						strong silic. carbonate/chlorite					
129	130			60°		129.44m to 160.20m SERICITIC AGGLOMERATE	1% 2cm light green sericite	0.5				
130	131					Subrounded to subangular fragments		"				
131	132					of light and dark grey quartz		"				
132	133			50°		porphyritic lapilli from 1 to 5 cm in dia.		"				
133	134					constitute 40% of the interval. Fragments	3-4% (fg) sericite	"				
134	135					have been flattened and alligned parallel		"				
135	136					to cleavage. Dark grey fragments contain		"				
136	137			50°		up to 1% pyrite. There are occasional		"				
137	138			50°		quartz chlorite foames. The groundmass		"				
138	139					consists of subrounded quartz		"		qtz veinlets		
139	140			55°		crystals anastomosed by light		"				
140	141				2cm qtz vein 60°	green sericite. Carbonate has replaced		"				
141	142			45°		feldspars and has also infilled		"				
142	143				2cm qtz vein 60°	few irregular fractures	0.5% to 1% carbonate	"		in qtz carb. vein		
143	144			50°	5cm qtz vein 60°			"				
144	145							"				
145	146							"				
146	147							"				
147	148						1% to 3% sericite	"				
148	149				2cm qtz vein 60°			"				
149	150							"				
150	151							"				
151	152				1cm qtz vein 60°			"				
152	153							"				
153	154							"				
154	155							"				
155	156			50°	1cm qtz vein 60°			"				

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab: ANALABS) Au ppb	Cu ppm	Pb ppm	Zn ppm	Sb ppm	As ppm	Fe %
KR7517	117	118	1	X	10	185	205	9	31	1.25
18	118	119	1	33	10	135	350	8	21	2.80
19	119	120	1	167	10	165	160	7	20	1.45
20	120	121	1	150	5	145	130	3	14	1.70
21	121	122	1	17	5	40	100	3	15	1.60
22	122	123	1	100	5	30	90	2	11	1.50
23	123	124	1	X	5	35	105	3	12	1.65
24	124	125	1	X	5	25	90	2	11	1.40
25	125	126	1	X	5	20	85	5	7	1.60
26	126	127	1	X	5	20	70	4	14	1.30
27	127	128	1	X	20	25	80	2	13	1.80
28	128	129	1	17	5	25	65	2	10	1.85
KR7529	129	130	0.3	92	15	15	65	2	9	1.65
NOT SAMPLED	–	–	–	NO RESULT	NO RESULT	NO RESULT	NO RESULT	NO RESULT	NO RESULT	NO RESULT
NS	–	–	–	NR	NR	NR	NR	NR	NR	NR
NS	–	–	–	NR	NR	NR	NR	NR	NR	NR
NS	–	–	–	NR	NR	NR	NR	NR	NR	NR
NS	–	–	–	NR	NR	NR	NR	NR	NR	NR
NS	–	–	–	NR	NR	NR	NR	NR	NR	NR
NS	–	–	–	NR	NR	NR	NR	NR	NR	NR
NS	–	–	–	NR	NR	NR	NR	NR	NR	NR
NS	–	–	–	NR	NR	NR	NR	NR	NR	NR
NS	–	–	–	NR	NR	NR	NR	NR	NR	NR
NS	–	–	–	NR	NR	NR	NR	NR	NR	NR
NS	–	–	–	NR	NR	NR	NR	NR	NR	NR
KR8701	145	146	1	33	25	5	55	Y	76	1.55
02	146	147	1	50	10	X	55	X	19	1.75
03	147	148	1	8	10	15	50	Y	23	1.60
04	148	149	1	X	10	20	75	Y	24	1.30
05	149	150	1	X	10	10	60	Y	15	1.35
06	150	151	1	X	10	10	75	X	18	1.45
07	151	152	1	X	10	10	60	X	19	1.40
08	152	153	1	X	10	5	85	X	18	1.45
09	153	154	1	8	10	5	100	X	19	1.65
10	154	155	1	X	10	140	160	X	11	1.55
11	155	156	1	X	10	95	200	X	10	1.55

GEOPEKO TASMANIA DRILL LOG

663263

Prospect Elliott Bay Hole no. VZ4-1 254

Logged by R J Perring

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION % py	MINERALISATION % cpy	MINERALISATION % gal	MINERALISATION % sph	Fracturing	Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab: ANALABS) Au ppb	Cu ppm	Pb ppm	Zn ppm	Sb ppm	As ppm	Fe
156	157			40°		2 to 30% light green sericite; 1 to 2% carbonate	0.5					KR87 12	156	157		X	10	85	195	X	7	1.61
157	158						=					13	157	158		33	10	70	115	X	8	1.5
158	159						=					14	158	159		X	10	1100	185	X	7	1.5
159	160						=					15	159	160		X	5	50	185	X	9	1.6
160	161				160.20m to 168.50m SERICITIC LITHIC		=					16	160	161		X	5	55	145	X	10	1.6
161	162				QUARTZ CRYSTAL TUFF		=					17	161	162		25	20	75	385	X	3	1.5
162	163				Rounded fragments of cream feldspathic		=				20 breaks/m	18	162	163		8	10	205	1700	X	4	1.4
163	164			60°	lava up to 1.5cm in diameter occur		=				20 breaks/m	19	163	164		X	5	240	335	X	2	1.6
164	165				in a quartz crystal sericite groundmass		=				> 20 breaks/m	20	164	165		25	15	530	2350	X	3	1.9
165	166				Fragments have been elongated along		=				> 20 breaks/m	21	165	166		X	5	15	125	X	11	1.15
166	167				cleavage and enveloped by		=				minor	22	166	167		8	10	10	75	X	8	1.5
167	168				sericite. Feldspars are strongly		=					23	167	168		X	10	X	55	X	7	1.85
168	169			60°	altered and constitute 15% of the rock.	6%	=					24	168	169		X	5	X	55	X	7	1.46
169	170			50°	There is an occasional agglomerate		=					25	169	170		X	5	X	85	X	10	1.30
170	171				fragment of dark grey pyritic qpl.	1 to 2% sericite; 1 to 2% carbonate	=				minor	26	170	171		X	10	X	55	X	9	1.75
171	172				Carbonate alteration occurs as disseminations		=					27	171	172		X	5	X	45	X	11	1.55
172	173				and less commonly as fracture fillings		=					28	172	173		X	5	X	40	X	9	1.45
173	174				168.5m to 185.5m LITHIC QUARTZ		=					29	173	174		X	10	5	40	X	9	1.55
174	175				CRYSTAL TUFF		=					30	174	175		X	5	X	25	X	6	1.55
175	176			60°	Appears slightly more siliceous than		=					31	175	176		X	10	35	70	X	5	1.65
176	177				unit above. Carbonate less and		=					32	176	177		X	20	340	80	X	5	1.65
177	178				better sorted lithic fragments.		=					33	177	178		X	240	195	285	X	3	1.60
178	179			60°	Slightly darker in colour and	5%	=	fracture filling cpy gal sph			minor	34	178	179		X	950	650	4450	X	2	1.65
179	180				contains no agglom. fragments.		=					35	179	180		X	20	5	100	X	2	1.90
180	181						=					26	180	181		X	45	70	70	X	1	1.30
181	182					2% sericite; 1 to 2% carb	=	fracture filling cpy			minor	37	181	182		X	205	70	95	X	1	2.05
182	183						2					38	182	183		X	15	10	80	X	1	1.75
183	184						1					39	183	184		X	45	140	95	X	7	1.65
184	185						=					40	184	185		X	5	X	55	X	5	1.45
185	186				185.50m to 187.50m LAPILLI QUARTZ		=					41	185	186		X	40	15	95	X	9	1.85
186	187				CRYSTAL TUFF		=					42	186	187		X	10	5	45	X	10	1.50
187	188				Moderately well sorted qtz crystal tuff		2					43	187	188		X	5	20	55	X	9	1.55
188	189				with occasional qpl frag. 1cm in dia.	3% carb	=					44	188	189		X	5	15	60	X	10	1.65
189	190				187.5m to 203.5m GREY LITHIC		=					45	189	190		X	15	20	40	X	11	1.80
190	191				QUARTZ CRYSTAL TUFF		=					46	190	191		X	10	25	25	X	9	1.60
191	192				Subrounded fragments of light green	1 to 2% carb	=					47	191	192		X	5	80	205	X	9	1.85
192	193			65°	feldspathic quartz porphyritic lavas		=					48	192	193		X	5	25	125	X	8	1.75
193	194				altered along cleavage and constituting		=					49	193	194		X	10	20	165	X	8	2.10
194	195				40% of the rock occur as groundmass		=					KR87 50	194	195		X	5	150	110	X	8	1.92

GEOPEKO TASMANIA DRILL LOG

663264

Prospect Elliott Bay Hole no. UZ4-1

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	% vein	GEOLOGICAL DESCRIPTION
						Logged by R J Perring
195	196					of dark grey lithic silica and quartz
196	197					crystal. Carbonate alteration is centred
197	198					on an assured qpl fragments. These frags
198	199			60°		are subangular, and up to 1cm thick.
199	200					194.85m - first bleich stale clast. Average
200	201			65°		ore/metre from 194.85 to 201.5m. Pyrite
201	202					clasts become more abundant down hole.
202	203					Tuff becoming less sorted from 194m.
203	204					203.5m to 207.5m LITHIC QUARTZ
204	205					CRYSTAL TUFF AND AGGLOMERATE
205	206			65°		Scattered rounded fragments of dark
206	207					grey qpl up to 9cm in diameter occur
207	208					throughout poorly sorted lithic quartz
208	209					crystal tuff
209	210					207.5m to 213.4m LAVA AGGLOMERATE
210	211					Poorly sorted well rounded fragments
211	212					of light and dark grey fine grained
212	213					qpl constituting up to 90% of the rock
213	214	SILTSTONE GREY SHALE	65°	65°		and occasionally mixed with fine pyrite
214	215	TUFF				occurs with interstitial qfxt.
215	216					213.4m to 221.7m INTERBEDDED SHALES
216	217					AND TUFFS.
217	218					A sequence of interbedded, well sorted
218	219					quartz crystal tuff, reworked tuff and
219	220					laminated bleich and grey shales.
220	221					
221	222		65°	65°		221.7 to 271.0m CREAM BRECCIATED
222	223					LAVA
223	224					Subangular fragments of light green-
224	225					cream quartz feldspar porphyritic
225	226					lava constituting up to 95% of the
226	227					rock with pyrite and sericite between
227	228					breccia fragments. All feldspar has
228	229			65°		been altered to carbonate. Irregular
229	230					fine carbonate veins occur throughout.
230	231					The lava appears to have been
231	232					hydrothermally brecciated in situ as
232	233					adjacent subangular fragments have
233	234				20cm LINE 45°	equal and offsetting shapes

Alteration	MINERALISATION % py	cpy	gal	sph	Fracturing
3% carbonate	2-3%				
10%	=				
3%	=				
2%	=				
12% sericite	=				
3% carbonate	=				
	=				
40% carbonate	=				
	=				
	=				irregular fracturing filled with carbonate and quartz
	=				
2%	=				
	0.5%				
	=				
4% carbonate	=				
	=				minor
	=				minor
	=				minor
1-8% carbonate	=				shear zone
	3-4%				minor
	=		gal	sph?	
1%	=				
	=				
3% carbonate	=				
	=				
	2%				
silicification	=				
	=				

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab: ANALABS) Au ppb	Cu ppm	Pb ppm	Zn ppm	Sb ppm	As ppm	Fe %
FR8751	195	196		X	5	55	100	X	7	1.95
52	196	197		X	5	85	130	X	7	1.90
53	197	198		X	10	90	215	X	7	2.35
54	198	199		X	5	45	145	X	5	2.45
55	199	200		X	5	15	105	X	6	1.90
56	200	201		X	5	5	85	X	6	2.10
57	201	202		X	5	X	85	X	6	2.15
58	202	203		100	5	10	65	X	6	1.90
59	203	204		X	5	5	65	X	5	2.15
60	204	205		X	5	5	55	X	5	1.75
61	205	206		X	5	X	55	X	4	1.55
62	206	207		X	35	650	920	X	7	2.25
63	207	208		X	15	80	135	X	11	1.85
64	208	209		X	25	210	1450	1	20	2.50
65	209	210		X	40	450	1200	X	18	3.00
66	210	211		33	30	300	645	1	28	2.45
67	211	212		X	30	260	900	1	20	2.35
68	212	213		X	40	115	485	2	23	3.15
69	213	214		8	115	940	920	5	37	2.10
70	214	215		X	30	40	100	1	9	1.55
71	215	216		X	20	170	405	3	29	2.10
72	216	217		8	10	10	55	2	14	1.35
73	217	218		4	5	X	50	X	6	1.55
74	218	219		8	5	X	50	2	22	1.70
75	219	220		X	10	25	45	3	37	2.00
76	220	221		X	5	X	35	X	10	0.90
77	221	222		8	15	20	45	4	140	2.40
78	222	223		X	10	85	120	3	36	2.35
79	223	224		X	10	5	85	2	27	2.45
80	224	225		X	5	5	85	2	22	2.15
81	225	226		X	5	1300	265	1	7	2.45
82	226	227		X	10	170	310	2	17	3.00
83	227	228		X	10	100	125	5	34	3.20
84	228	229		X	10	85	395	6	56	2.20
85	229	230		42	5	35	75	1	13	1.50
86	230	231		33	10	70	90	2	21	2.00
87	231	232		33	10	110	195	4	27	2.80
88	232	233		17	10	435	75	6	41	2.45
FR8752	233	234		25	15	160	85	2	10	2.20

GEOPEKO TASMANIA DRILL LOG

Prospect Elliott Bay **Hole no.** V24-1

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS Sa	ANGLE TO CORE AXIS Si	Quartz %
234	235				2-5% 10-20%
235	236				
236	237				
237	238				
238	239				
239	240				
240	241				
241	242				
242	243				4/m
243	244				2 main 10mm dia 90-85 +ca 60 at
244	245				
245	246				
246	247				
247	248				
248	249				
249	250				
250	251				minor quartz
251	252				40% qv
252	253				10% qv
253	254				
254	255				5% qv
255	256				
256	257				6/m
257	258				
258	259				50% qv
259	260				5% qv
260	261				
261	262				
262	263				4/m
263	264				4/m
264	265				
265	266				
266	267				
267	268				
268	269				
269	270				
270	271				
271	272				
272	273				

GEOLOGICAL DESCRIPTION

Logged by R J Perring

There is a solution channelway from 126.5m to 127.25 which has been altered to 40% carbonate Feldspar phenocrysts and feldspathic groundmass of lava fragments are altered to carbonate. Carbonate also occurs as irregular crosscutting veins sometimes with quartz. The degree of brecciation is variable over 30 to 40cm. Some sections show shattering of the lava without the intrusion of sericite and pyrite into the fractures. Some sections are finely brecciated others coarsely brecciated. A few breccia fragments have been rounded as they have been flowed in the intruding pyrite & sericite.

Alteration

- 2-4% sericite
- 3% carbonate
- 1% 2% 1% sericite
- 3% carbonate
- 2% sericite
- 3% carbonate silicified
- silicified
- 2% carb

MINERALISATION %

py	cpy	gal	sph
2%			
"			
"			
"

GEOPEKO TASMANIA DRILL LOG

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Prospect Elliott Bay Hole no. V24-1

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS Sa	ANGLE TO CORE AXIS Si	Surveys	GEOLOGICAL DESCRIPTION
						Logged by R J Perring
273	274					271.0m to 281.15m EOH
274	275					BIOTITE FELDSPAR PORPHYRITIC LAVA
275	276					Dark grey biotite, feldspar now altered to carbonate in a fine grained lava.
276	277					Disseminated sphalerite.
277	278					
278	279				3/m	
279	280				60° tcc	
280	281.15					
	EOH					

Alteration	MINERALISATION % py	cpy	gal	sph	Fracturing
sericite 20% carbonate 20%	3%			fine disseminated sphalerite	1
	"				
	"				
	"				
	"				

Sample No.	From (m)	To (m)	Rec (m)
KR8829	273	274	
30	274	275	
31	275	276	
32	276	277	
33	277	278	
34	278	279	
35	279	280	
KR8836	280	281.15	
Analytical methods			
Detection Limit			
Arsenic	analysed		0 to 5m

ASSAYS (Lab: ANALABS)

Au ppb	Cu ppm	Pb ppm	Zn ppm	Sb ppm	As ppm	Fe %
17	25	1250	1050	2	1	2.3
X	20	1700	1050	1	1	2.9
X	15	210	1200	2	3	3.2
X	10	145	405	2	3	2.9
X	5	75	340	2	4	2.8
X	10	105	210	2	6	3.1
X	10	60	255	X	5	3
8	10	20	295	1	4	3.0
Fire Assay	AAS	AAS	AAS	AAS	AAS	AAS
RG50	A1/1	A1/1	A1/1	A1/1	A1/3	A1/1
8	5	5	5	1	50/1.0	0.01
	technique A1/1		detection limit		5ppm	

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APPENDIX 8

REPORT BY KINEALY AND RAMSDEN (1982) ON GOLD MICROPROBE ANALYSIS AT VOYAGER 24

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RESTRICTED INVESTIGATION REPORT 1321R

RESTRICTED
CIRCULATIO

CSIRO

INSTITUTE OF ENERGY AND EARTH RESOURCES

ELECTRON MICROPROBE ANALYSES OF GOLD AND ELECTRUM GRAINS FROM THE VOYAGER 24 PROSPECT, ELLIOTT BAY, S.W. TASMANIA

K. KINEALY AND A.R. RAMSDEN

DIVISION OF MINERALOGY
PO BOX 136
NORTH RYDE, NSW 2113
AUSTRALIA

MAY, 1982

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1. INTRODUCTION

At the request of Geopeko Limited, the compositions of several grains of gold and electrum from the Voyager 24 Prospect, Elliot Bay, S.W. Tasmania, have been determined by electron microprobe analysis. The grains were panned from a system of streams draining a unit of thin siliceous rhyolite agglomerate at the top of the Mount Read Volcanics. Particular interest was expressed in knowing the silver content of the grains and the distribution of silver and other metals within the grains.

2. SAMPLES

Two polished slides containing miscellaneous individually embedded grains have been investigated.

Slide KR 8673 contains about 100 grains graded into three size categories -

1) Coarse : with an average minimum cross-section of about 650 µm
2) Medium : with an average minimum cross-section of about 370 µm
3) Fine : with an average minimum cross-section of about 280 µm

Slide KR 8674 contains ten individually identified grains -

1) A rounded yellow grain about 1500 µm in diameter
2) An irregular yellow grain about 1800 x 1300 µm in cross-section
3) An elongate yellow grain about 2600 x 830 µm in cross-section
4) A yellow spongy grain about 1000 x 750 µm in cross-section
5) An irregular white grain about 830 x 650 µm in cross-section
6) A yellow silver about 740 x 180 µm in cross-section
7) A rounded yellow grain about 550 µm in diameter
8) An equant yellow grain about 650 µm in cross-section
9) Two irregular yellow grains each about 275 µm in cross-section
10) An irregular white grain about 740 x 370 µm in cross-section.

In both slides the thickness of the grains is considerably less than their cross-sections; probably not more than a few tens of microns.

3. METHOD OF ANALYSIS

Each slide was carbon-coated to provide a conductive film and analyzed in a Cambridge Microscan V electron microprobe equipped with an energy dispersive spectrometer (EDS) and wavelength dispersive spectrometers (WDS).

Because EDS analysis is considerably faster than element by element WDS analysis, all quantitative data were obtained by this method using a LINK Systems 860 multichannel analyzer and ZAF correction programme. This method of analysis also offers the advantage of simultaneous acquisition of X-ray data from all elements in the sample so that no major constituents are likely to be missed. Table 1 lists 95% confidence levels for minor elements in gold under the EDS conditions used. Figures below these values are quoted in Table 2 and Figure captions. These should be regarded as semi-quantitative, but they indicate the element can be detected. WDS analysis would be required where more accurate determination of minor element concentrations is sought.

The microprobe was operated at 20 KV with a beam current of 5 nano-amps. Pure elements were used as calibration standards and a counting time of 100 seconds (livetime) adopted for all analyses.

4. RESULTS

Gold and silver are the only major elements in the grains. Minor constituents include palladium, tellurium, copper and (possibly) mercury. Palladium is present in all the analyzed grains, typically at a level of about 0.2 wt%, but tellurium and/or copper occur only in some. Mercury is a difficult element to determine (by either EDS or WDS analysis) because of the close proximity of major gold lines in the X-ray spectra. However, close inspection of the energy spectra in the region of the Au_L X-ray lines (Fig.1) suggests that minor mercury may be present in some grains. Minor bismuth (about 0.4 wt%) was recorded from Grain 4 in Slide KR 8774.

The results of ten analyses from Slide KR 8673 (4 coarse, 3 medium and 3 fine) are given in Table 2. Each analysis was carried out at the centre of a grain. The silver content ranges from 1.6 to 16.4 wt% and appears to be highest in the medium size grade. One fine grain contains an inclusion (Fig.2) identified as a galena by qualitative WDS analysis. Semi-quantative EDS analysis of this inclusion shows that the galena contains about 1 wt% Ag.

The results of twenty analyses from Slide KR 8674 (2 from each grain) show that the silver content ranges from about 2 wt% to 27 wt% (Fig.3) but there is no significant variation within individual grains. The analyses are summarized in Figs. 4 to 13. The circled areas indicate the locations (but not the size) of the regions analyzed in each grain.

5. DISCUSSION

The data are too limited to permit detailed discussion of the origins of the grains. However, the presence of included galena in one grain suggests that at least some of the gold has its origins in sub-volcanic base metal mineralization. The wide range in silver content, including the presence of electrum, would also suggest that the gold is not the result of growth during surface transport.

The minor element concentrations are to be regarded only as semi-quantitative orders of magnitude (see Table 1). Accurate determination of the levels, distribution and associated detection limits of Pd, Te, Cu and (?)Hg would require more extensive investigation using element by element WDS analysis.

The low totals (about 96%) that characterize all the analyses are probably due to the thinness of the embedded grains. Analysis of X-rays generated in thin particles is not always amenable to routine ZAF correction procedures as there may be a loss of X-ray intensity if the volume excited by the probe exceeds the thickness of the target. Since the EDS system provides a visual display of the entire X-ray spectrum, it is impossible that any major metallic or non-metallic constituent has been missed. It would be permissible to normalize all totals to 100%, if desired for comparative purposes.

TABLE 1: 95% CONFIDENCE LEVELS FOR TRACE ELEMENTS IN GOLD BY EDS ANALYSIS

	wt%
Ag	0.46
Pd	0.42
Te	0.28
Cu	0.27

Values below these limits must be regarded as semi-quantitative only.

TABLE 2: COMPOSITION OF GOLD GRAINS IN SLIDE KR 8673

Element	COARSE wt%				MEDIUM wt%				FINE wt%	
Au	94.45	90.01	87.95	87.57	93.53	85.87	79.64	91.86	91.44	91.00#
Ag	1.63	6.34	8.07	7.82	2.75	11.44	16.45	4.22	4.03	5.54
Pd	0.25	0.05	0.27	0.16	0.02	0.19	0.04	0.18	0.15	0.20
Te	0.03	0.09	0.02	0.20	nd	0.18	nd	nd	0.11	0.03
Cu	0.08	0.17	0.03	0.05	0.09	0.04	0.04	0.03	0.03	0.02
Total	96.44	96.67	96.35	95.80	96.39	97.73	96.18	96.30	95.78	96.79

#Note: this grain contains an inclusion of galena (see Fig.2).

nd = not detected

For trace elements, see cautionary note in Table 1. See text also for comment on low totals.

Fig. 1 : X-ray energy spectrum in the region of the Au_L lines showing the presence of suspected Hg_L lines.

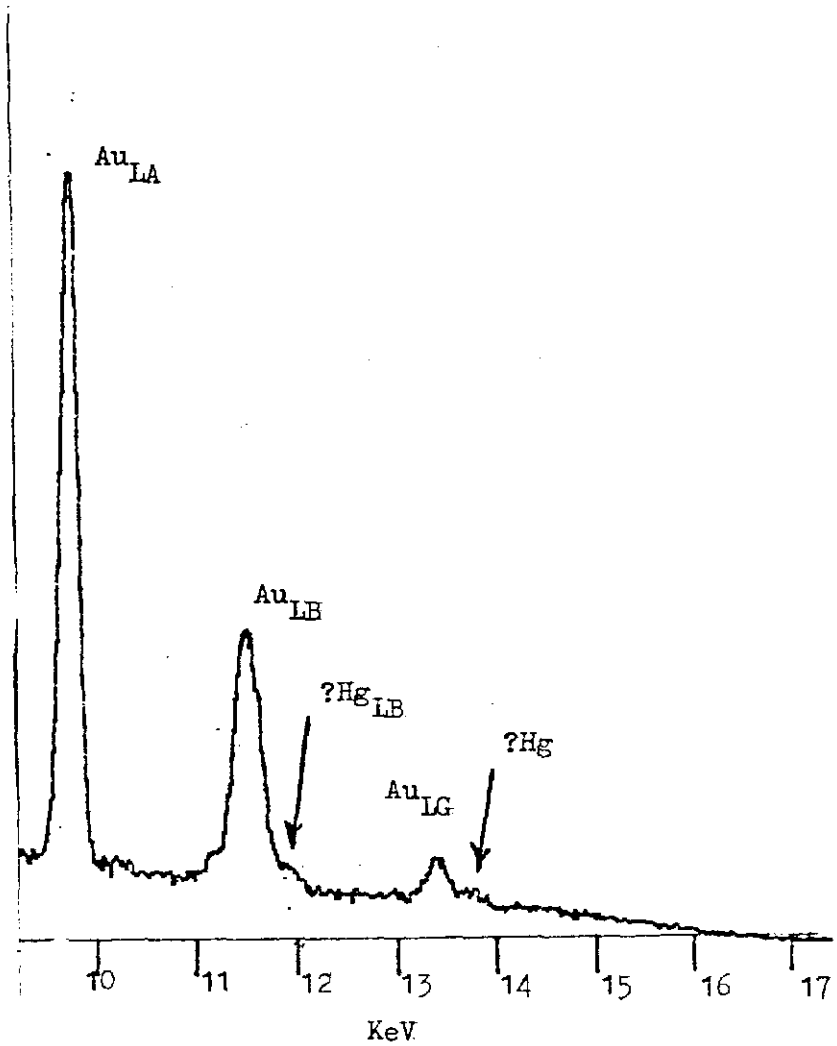

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Figure 2: Back scattered electron image of a fine gold grain (Slide KR 8673) containing an inclusion of galena.

Magnification X2000

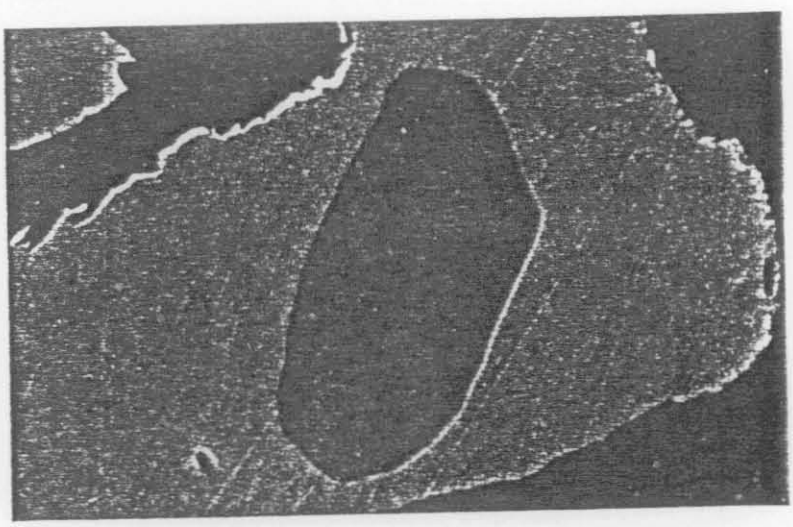


Fig. 3 : X-ray energy spectra of gold grains from Slide KR 8674 showing the range in observed silver-content.

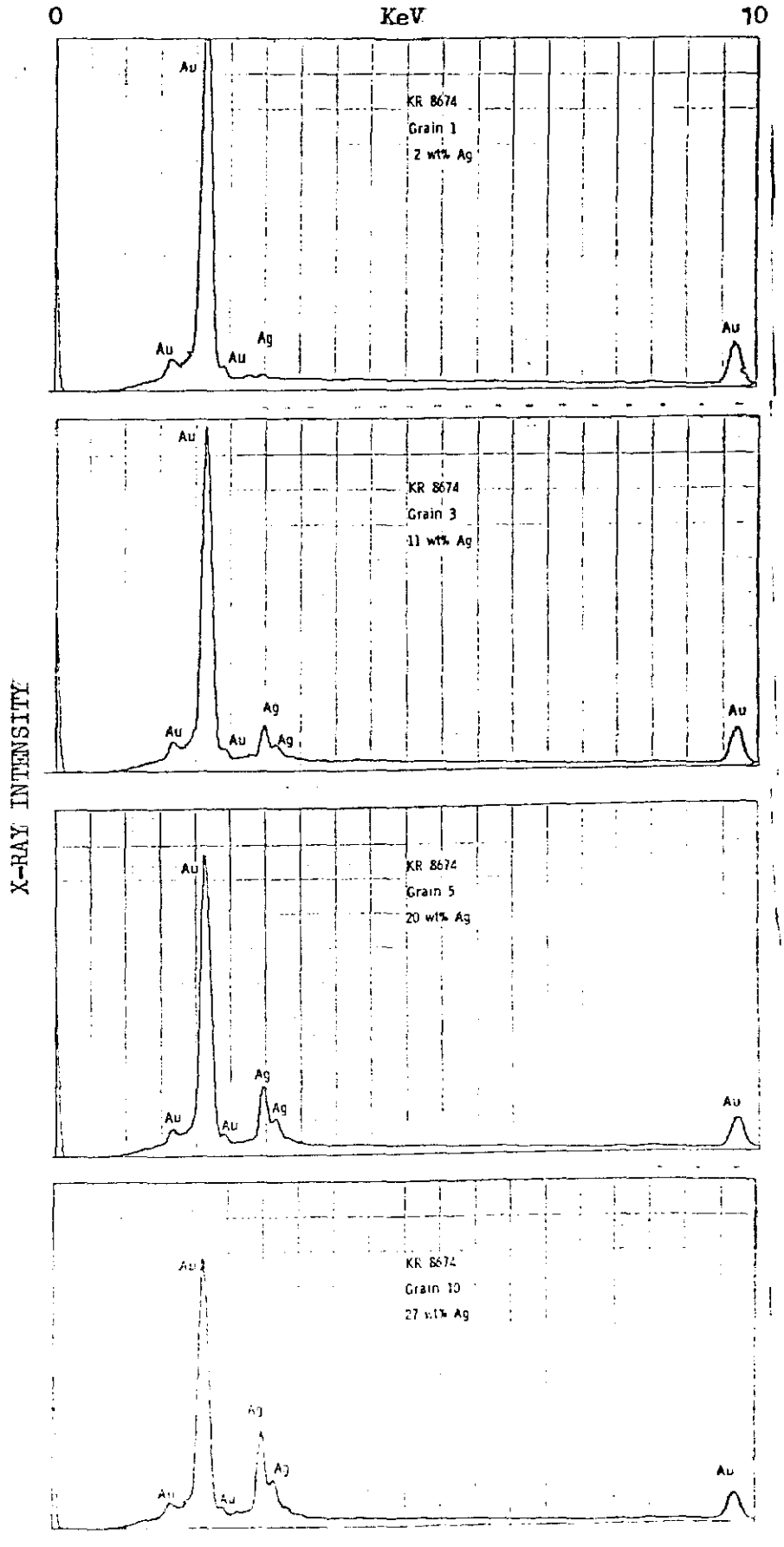
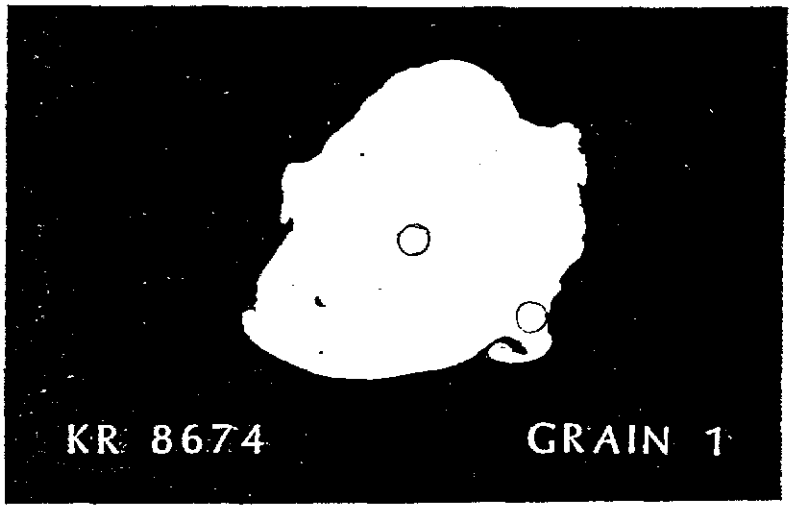


Figure 4: BSE image and analyzed compositions of Grain 1 (Slide KR 8674).

Magnification X100



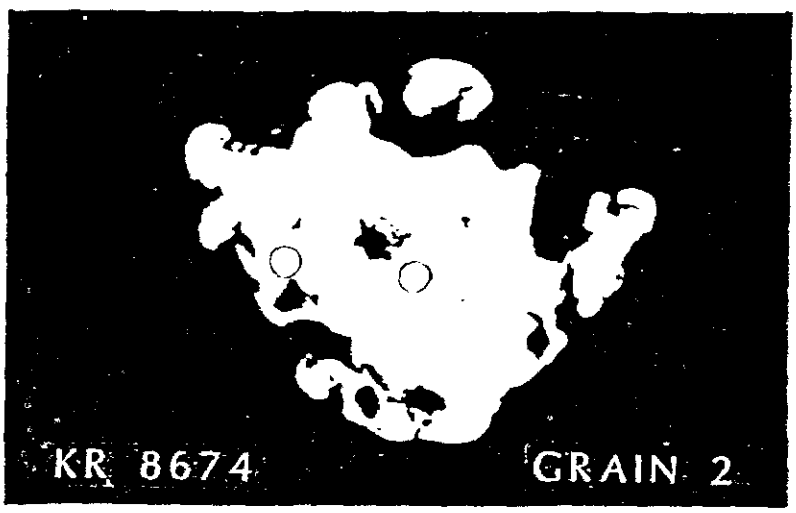
wt%

Au	Ag	Pd	Te	Cu	Total	
94.39	1.78	0.18	0.16	0.25	96.76	Centre
94.40	1.65	0.18	0.03	0.05	96.31	Edge

See Table 1 regarding trace elements.

Figure 5: BSE image and analyzed compositions of Grain 2 (Slide KR 8674)

Magnification X100



wt%

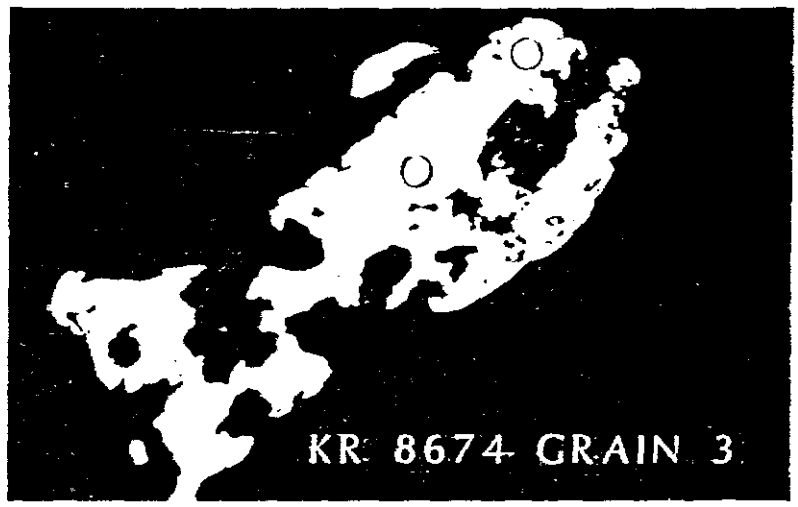
Au	Ag	Pd	Te	Cu	Total	
91.99	3.55	0.13	nd	0.15	95.82	Centre
92.39	3.63	0.16	0.03	nd	96.21	Edge

nd = not detected

See Table 1 regarding trace elements

Figure 6: BSE image and analyzed compositions of Grain 3 (Slide KR 8674)

Magnification X100



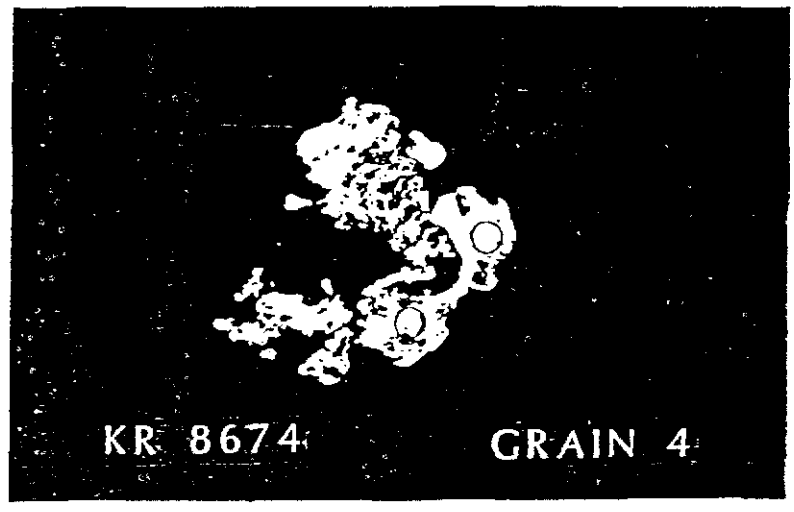
wt%						
Au	Ag	Pd	Te	Cu	Total	
83.54	11.30	0.18	0.13	nd	95.15	Centre
83.30	11.64	0.36	nd	nd	95.30	Edge

nd = not detected

See Table 1 regarding trace elements

Figure 7: BSE image and analyzed compositions of Grain 4 (Slide KR 8674)

Magnification X100



wt%

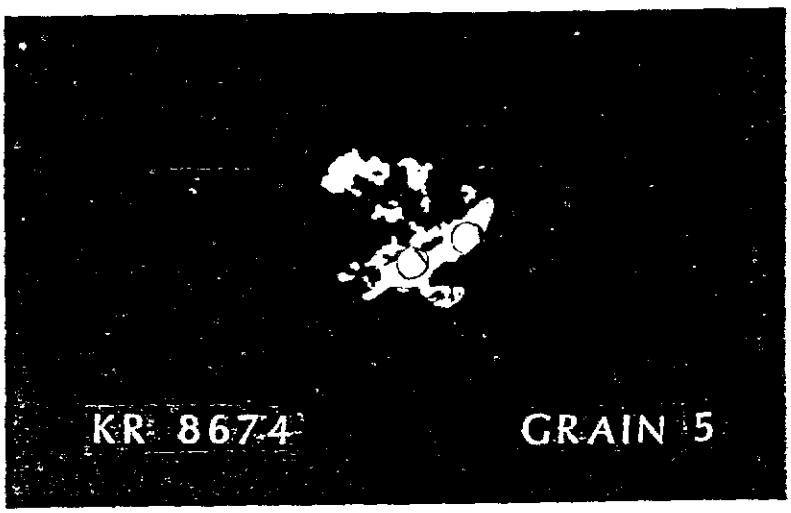
Au	Ag	Pd	Te	Cu	Bi	Total
92.93	2.63	0.13	nd	0.11	nd	95.80
93.82	2.32	0.01	nd	0.09	0.37	96.61

nd = not dectected

See Table 1 regarding trace elements

Figure 8: BSE image and analyzed compositions of Grain 5 (Slide KR 8674)

Magnification X100

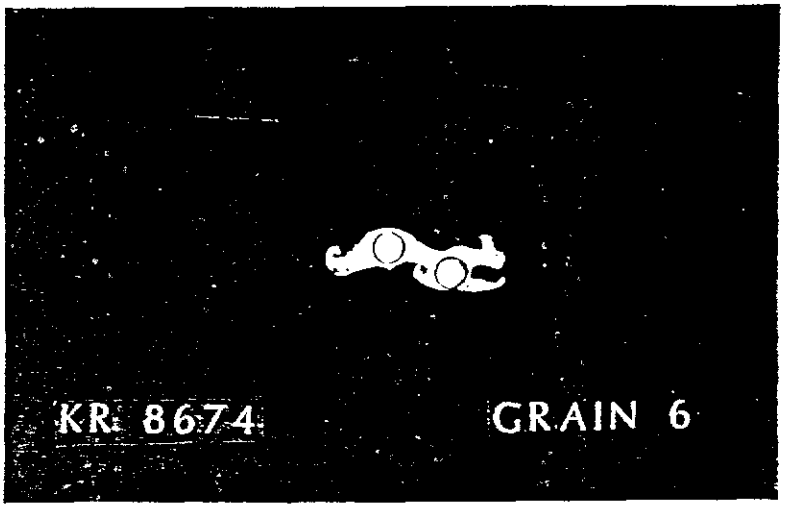


wt%					
Au	Ag	Pd	Te	Cu	Total
75.83	19.61	0.23	0.22	0.15	96.04
75.02	19.15	0.10	0.20	0.03	94.50

See Table 1 regarding trace elements

Figure 9: BSE image and analyzed compositions of Grain 6 (Slide KR 8674)

Magnification X100



wt%

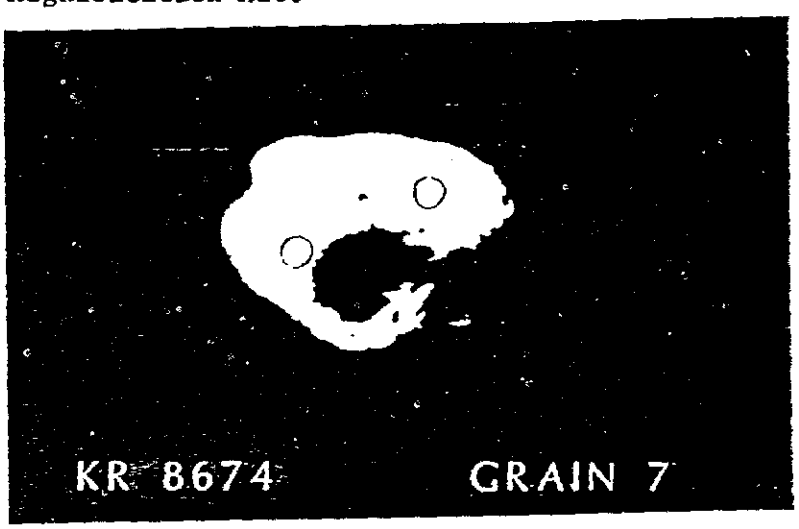
Au	Ag	Pd	Te	Cu	Total
86.71	8.77	0.05	0.11	0.05	95.68
86.12	8.68	0.11	nd	nd	94.91

nd = not detected

See Table 1 regarding trace elements

Figure 10: BSE image and analyzed compositions of Grain 7 (Slide KR 8674)

Magnification X200



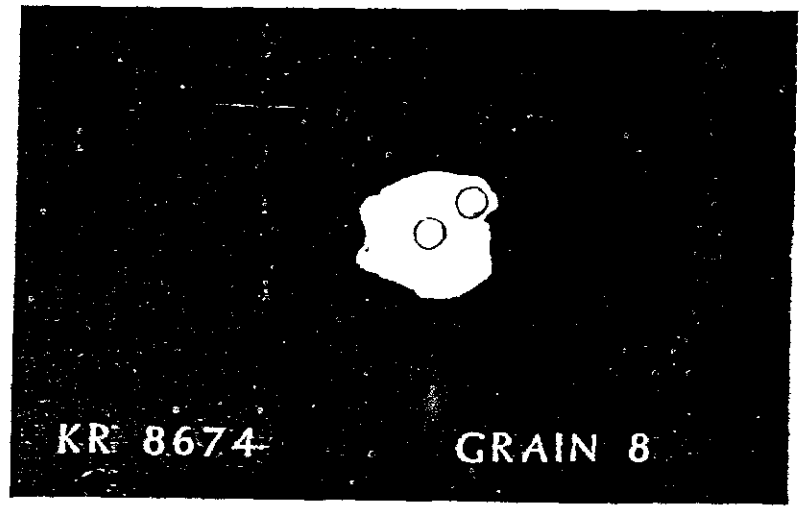
		wt%			
Au	Ag	Pd	Te	Cu	Total
93.63	1.88	nd	0.12	0.23	95.86
92.69	1.93	0.23	0.06	nd	94.90

nd = not detected

See Table 1 regarding trace elements

Figure 11: BSE image and analyzed compositions of Grain 8 (Slide KR 8674)

Magnification X100



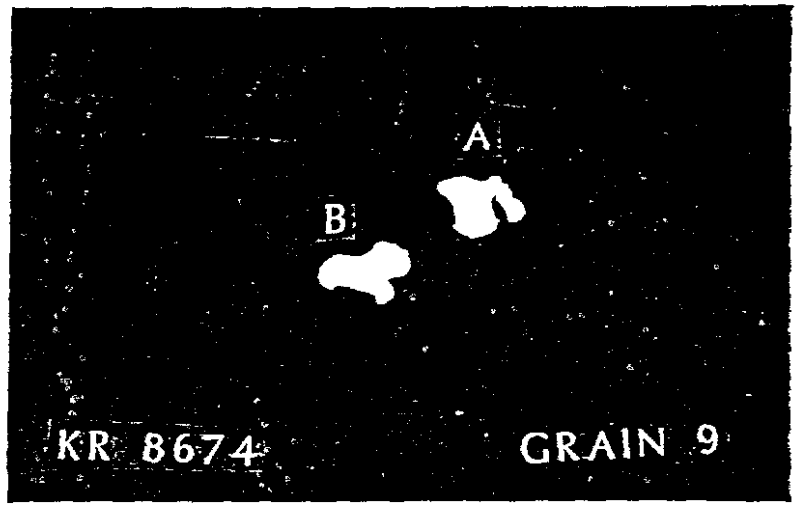
			wt%			
Au	Ag	Pd	Te	Cu	Total	
92.37	2.97	0.31	nd	0.18	95.84	Centre
91.93	2.83	nd	0.05	nd	94.82	Edge

nd = not detected

See Table 1 regarding trace elements

Figure 12: BSE image and analyzed compositions of Grain 9 (Slide KR 8674)

Magnification X100



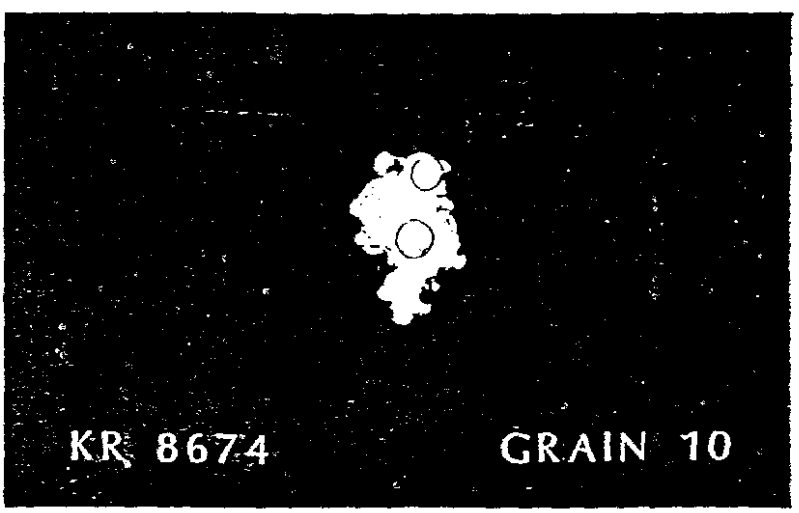
		wt%				
Au	Ag	Pd	Te	Cu	Total	
91.21	3.98	0.18	nd	0.14	95.51	Grain A
91.04	3.30	0.02	nd	0.08	94.45	Grain B

nd = not detected

See Table 1 regarding trace elements

Figure 13: BSE image and analyzed compositions of Grain 10 (Slide KR 8674)

Magnification X100



wt%

Au	Ag	Pd	Te	Cu	Total	
67.78	27.02	0.17	0.25	0.06	95.28	Centre
67.26	27.27	nd	0.18	0.14	94.85	Edge

nd = not detected

See Table 1 regarding trace elements

280

663289

APPENDIX 9

DDH V9 - 3 GEOLOGICAL LOG AND ASSAYS

663290

SHEET 1 OF 281

GEOPEKO TASMANIA DRILL LOG

Prospect VOYAGER 9. Ho[illegible] no. V9-3

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION chp	MINERALISATION py-po spk	MINERALISATION qtz-chl	Fracturing
0	1				0-3m NO CORE						
1	2				coarse [illegible]ed feldspar (20% 2-5mm euhedral) qtz	qtz					
2	3				3-8m crystal [illegible] with flattening fabric, chlorite matrix grey v.f.g siliceous bands as beds and fragments.	matrix		occasional (coarse)	pyrite ± 5mm		
3	4		50°	50°	Cg. xtalline		✓				15
4	5				irregular contact — banded f.g. tuffs	chloritic along Si	✓				12
5	6				"schistose "porphyroblastic" textures.	fracturing in v.fg units	✓				V. broken
6	7										V. broken core.
7	8		qtz vein		qtz vein rubble, poor core, possible fault zone						V. broken
8	9		qtz vein		8m - 10.8m. Coarse conglomerate (breccia) ~30% fragments						
9	10		55°		cg. qtz x tuff with chlorite groundmass containing	disrupted	✓	also 30% py in clasts with band disseminated outside clasts <1%			
10	11				altered beds of fg. silts?: (same as bedded unit at 6m)						
11	12				Irregular dk green chlorite rich altered zones through	c.g. xtuff					
12	13		50°		transgresses bedding	chlorite		c 10% pyrite in			
13	14				bedded pyrite in lithic fragments 2x10cm maximum	rich siliceous	✓ 2%	green v.fg lithic clasts			fragments in shears
14	15		lithics		c.g. xtuffs porphyroidal? texture						
15	16		50°		Coarse grained qtz (5mm rounded) chlorite crystal	chlorite streaks // Si also carbonates after feldsp.					
16	17				lithic tuffs Bedding due to lithic beds - disrupted						
17	18		chlorite		f.grey fg rock & dk black chlorite rich irregular						
18	19				bands? (locally striped flattened texture)		✓	✓ trace	✓		
19	20				V.f.g. grey homogeneous rock siliceous massive "RHYOLITE"?						
20	21						✓		✓		
21	22				21.5 - 26.8m Complex sequence of qtz crystal tuffs	tuffs	✓		✓		
22	23				mg/cg brecciated, siliceous v.fg rocks with black-grey		✓		✓		
23	24		ripup clasts		cuffaceous shale beds or inclusions Eutaxinitic texture		✓		✓	bedded in tuffaceous shales	sphalerite
24	25				dissimicated pyrite throughout, bedded sphalerite ≤1%	rhyolites	✓				
25	26				blk shale units (Possibly welded base to qtz unit above?)		✓				
26	27		sphalerite streaks		26.9m - 28.05 Black pyritic shale		✓				
27	28				chloritic pyrite in narrow veins, bands now porous bird pyrite textures (carbonate leach?? boxwork structure)	with sericite	2%				
28	29										
29	30				28.05 - 33m whole - pale grey	alteration					
30	31				v.f.g banded rocks, graded bedded pyritic tuffaceous sst?		Very fine grained				
31	32				units up to 5cm, more siliceous v.fg hard rock	carbonate	Sulphides, parallel S.				
32	33				siltstone? rhyolites?	after feldsp phenocrysts					
33	34		43°		33 - 42 qtz eye crystal tuffs	sericite along S.					
34	35				org-cg rounded granular qtz crystals ± 3-4mm	(35 vol%)		pyrite disseminated			
35	36				in qtz-feldspathic groundmass, narrow chlorite veinlets		✓	used in bands			
36	37				carbonate rims to qtz crystal						
37	38				Generally homogeneous to 39m						
38	39										

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab: Amdel ABS) Cu	Pb	Zn	Ag	Fe %
KR 11752	3.0	4.0	1.0	10	10	80	x	2.9
KR 11753	4.0	5.0	1.0	10	10	200	x	2.85
KR 11754	5.0	6.0	0.8	10	10	55	x	1.9
KR 11755	6.0	6.7	0.70	5	20	90	x	2.3
KR 11756	6.7	8.0	0.60	5	20	70	x	2.05
KR 11757	8.0	9.0	1.0	15	30	65	x	2.65
KR 11758	9.0	10.0	1.0	5	10	60	x	2.7
KR 11759	10.0	11.0	1.0	5	10	55	x	2.05
KR 11760	11.0	12.0	1.0	10	15	60	x	2.55
KR 11761	12.0	13.10	0.82	5	25	50	x	2.6
KR 11762	13.10	14.0	0.90	5	25	40	x	3.5
KR 11763	14.0	15.0	1.0	5	20	70	x	3.5
KR 11764	15.0	16.0	1.0	30	20	65	x	3.0
KR 11765	16.0	17.0	1.0	10	25	70	x	3.0
KR 11766	17.0	18.0	1.0	10	25	60	x	2.45
KR 11767	18.0	19.0	1.0	5	25	70	x	3.10
KR 11768	19	20.0	1.0	30	15	55	x	2.15
KR 11769	20	21.0	1.0	15	20	60	x	2.8
KR 11770	21.0	22.0	1.0	10	20	60	x	2.75
KR 11771	22.0	23.0	1.0	10	10	70	x	2.3
KR 11772	23.0	24.0	1.0	15	20	100	x	2.1
KR 11773	24.0	25.0	1.0	60	25	165	x	3.2
KR 11774	25.0	26.0	1.0	10	15	40	x	2.45
KR 11775	26.0	27.0	1.0	40	20	90	x	2.15
KR 11776	27.0	28.0	1.0	440	60	200	x	2.1
KR 11777	28.0	29	0.9	15	20	40	x	0.74
KR 11778	29.0	30.0	1.0	10	25	70	x	0.58
KR 11779	30.0	31.0	1.0	5	30	55	x	0.59
KR 11780	31.0	32.0	1.0	5	15	35	x	0.65
KR 11781	32	33	1.0	10	15	10	x	0.72
KR 11782	33	34	1.0	10	15	70	x	2.45
KR 11783	34	35	1.0	5	15	110	x	2.65
KR 11784	35	36	1.0	5	30	100	x	2.65
KR 11785	36	37	1.0	5	15	115	x	2.55
KR 11786	37	38	1.0	5	40	160	x	1.65
KR 11787	38	39	1.0	x	5	70	x	2.15

GEOPEKO TASMANIA DRILL LOG

663291

Prospect

Hole no. 282

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION	MINERALISATION	MINERALISATION	Fracturing	Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab: Ancelab) Cu	Pb	Zn	Ag	Fe%
39	40				Grey banded qtz eye crystal tuff - cd - vfg	Chlorite -						KR 11788	39	40	1	10	5	70	x	2.2
40	41				Grey siliceous (vitric tuff/lavas) - striped texture	carbonate alteration	✓					KR 11789	40	41	1	5	5	45	x	2.2
41	42		50°		mm scale with pyrite rich laminae (flow texture or bedding?)	cb in veinlets & qtz x bands	✓					KR 11790	41	42	1	10	10	50	x	2.1
42	43				good So	and in cross cutting veins						KR 11791	42	43	1	30	10	40	x	1.9
43	44				44.20 - 58.55m Course-grained qtz		✓	pyrite schlieren parallel to So				KR 11792	43	44	1	30	15	55	0.5	2.3
44	45		45°	45°	chlorite tuff qtz eyes 5-10mm ovoid, diffuse contacts						good competent core	KR 11793	44	45	1	10	x	50	x	2.7
45	46				in dk green-grey chlorite matrix	carbonate veins qtz eyes						KR 11794	45	46	1	5	x	45	x	2.6
46	47		chlorite variable		homogeneous massive, qtz porphyritic rocks	cb+ chl veins	✓	disseminated				KR 11795	46	47	1	x	10	50	x	2.8
47	48		dark	S1	dk grey colour, 10 vol% qtz granular eyes/pheno		✓	pyrite			6bpm // S1	KR 11796	47	48	1	x	30	50	x	2.8
48	49			50°	rounded 2-5mm in fg green groundmass with chlorite							KR 11797	48	49	1	5	10	50	x	2.75
49	50				chlorite 'shreds'. Brown carbonates rim the qtz	carbonate						KR 11798	49	50	1	5	15	45	x	2.4
50	51				cystals cut at high in fractured qtz in veins							KR 11799	50	51	1	x	20	50	x	2.75
51	52				(Porphyritic lava? or crystal tuff?)			weakly disseminated				KR 11800	51	52	1	x	10	50	x	2.7
52	53						✓	pyrite			8bpm	KR 11801	52	53	1	x	15	50	x	2.9
53	54						✓					KR 11802	53	54	1	5	5	45	0.5	3.2
54	55				Carbonate rich finer-grained facies to base	extensive carbonate replacement	✓					KR 11803	54	55	1	5	5	40	0.5	2.75
55	56				cross cutting chlorite veins with pyrite.		✓					KR 11804	55	56	1	x	5	40	x	2.3
56	57		85°		56.65 - 58m banded grey qtz x tuffs, chlorite vfg. bands with occ qtz phenocrysts (ws 35-mm)		✓	in bands and streaks				KR 11805	56	57	1	10	10	50	0.5	2.95
57	58						✓					KR 11806	57	58	1	25	20	90	x	2.35
58	59				pyrite clasts or disrupted bed of black siltstone? 58 - 61.60m grey fg homogeneous top	chlorite alteration	✓					KR 11807	58	59	1	5	10	20	x	1.10
59	60				banded texture, increase in qtz phenocrysts and grain	carbonate veining	✓					KR 11808	59	60	1	5	10	50	x	1.90
60	61				size to base = GRADED TUFF?? scoured base??		✓	extensive py veinlets				KR 11809	60	61	1	5	5	40	x	2.55
61	62		55°	λ	61.6 → 67m massive, strong, fg siliceous	chlorite veins cb veins						KR 11810	61	62	1	x	30	45	x	3.7
62	63				lava? with x tuff bands striped rock flattening							KR 11811	62	63	1	x	5	30	x	2.85
63	64		63°		qtz x tals into bands parallel to S.	chlorite						KR 11812	63	64	1	x	5	30	x	2.40
64	65				vfg pale grey unformable unit		✓	pyrite rich unit				KR 11813	64	65	1	x	5	45	x	2.05
65	66					increase of C. index with chlorite	✓	containing textures, pyrite bands massive.				KR 11814	65	66	1	x	5	75	x	4.9
66	67											KR 11815	66	67	1	x	5	30	x	1.7
67	68		grain size	A?	67 - 77.0 course-grained ophitic - qtz porphyry qtz = 5mm recrystal (ws absent)							KR 11816	67	68	1	5	x	50	x	3.2
68	69											KR 11817	68	69	1	10	10	50	x	2.15
69	70			5	porous qtz carbonate vein 80° to CA							KR 11818	69	70	1	20	20	50	0.5	2.2
70	71				qtz-cb breccia 30 vol% brecc chlorite rock	qtz-cb infill breccia zone; mass destroyed chlorite						KR 11819	70	71	1	15	10	75	1.0	3.40
71	72		70°		massive qtz-cb vein							KR 11820	71	72	1	5	10	45	x	2.05
72	73				Course-g qtz-chlorite tuff host rock	qtz-cb veinlets 30° to CA axis						KR 11821	72	73	1	5	5	85	x	3.70
73	74				brecciated by qtz-cb & massive chlorite rock							KR 11822	73	74	1	10	x	45	1.0	2.05
74	75											KR 11823	74	75	1	5	x	155	0.5	2.10
75	76		60°		mass, green chlorite - carbonate 'dyke'							KR 11824	75	76	1	10	5	100	1.0	4.25
76	77				mass (<5 qtz chl xl)							KR 11825	76	77	1	5	x	70	0.5	2.2
77	78		qtz		gradational contact - conformable							KR 11826	77	78	1	10	10	65	x	3.4

GEOPEKO TASMANIA DRILL LOG

663292 Prospect Hole no. 283

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS Sa	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION	MINERALISATION	MINERALISATION sph	Fracturing
8	79				77 - 78.96m banded vfg grey sediment? with qtz buff laminae 5mm - 5cm scale.		✓			✓	
79	80		50°		78.96 - 80.5 black shale with silty bands laminae buff bed sharp base diffuse top		✓		in 2cm wide band 5 vol-%		
80	81				striped chlorite x buff fg. py rich bands possible sedimentary units		✓		2-5% pyrite		
81	82										
82	83		1.05m core loss · 80.5 - 86.5		Coarse-grained lumpy						
83	86				qtz chlorite buff. Wk xtals 4mm - 10mm rounded granular						
84	85				aggregates 10% in grey sheared groundmass. Chlorite in						
85	86				veinlets parallel to S_1 Banded Unit	Turbidites shales, siltstones					
86	87		55°		sharp contact conformable. 86.5 - 106m		✓				
87	88		70°		massive qtz vein, enclaves of country rock at contacts		✓				
88	89				green vfg chlorite rich alteration margin						
89	90		wk shale								
90	91		75°		massive qtz vein with cb country rock inclusions		✓		in qtz vein		
91	92				gradational blkish irregular contact						
92	93		qtz vein								
93	94		45°		pyrite black shale		✓				
94	95				black shale laminae contorted in S_1		✓	2%	pyrite		6 v spaced
95	96				fg grey siliceous "silt" with buff matrix						core breaks 70° to L_1
96	97				narrow crystal beds 1-5cm of qtz-chl xtals.						
97	98		47°			predominantly chlorite rich assemblages, some cb chlorite alteration and replacement of felsic veins and patches					
98	99		60°								
99	100		b.sh		tuffaceous siltstones, black shale partings					sphalerite	
100	101				1 bedded qtz eye buff chlorite groundmass.		✓			✓ blue	
101	102		b.sh								
102	103										
103	104		70°		black shale siltstone thinly bedded mm scale						
104	105				grading in qtz eye buff unit						
105	106										
106	107				106 - 113.4m						
107	108				qtz vein intruded laminated black shale unit						
108	109				homogeneous massive grey fg siltstone		✓	c 1%	vfg		
109	110				occasional bedding - grading, slump structures		✓		disseminated pyrite		
110	111				thin shale laminae, more silicified beds in		✓				
111	112				places pyrite throughout & along S_1		✓				
112	113		60°								
113	114				113.4m - 114.55m grey very siliceous vfg		✓	strong alteration & pervasive	in		
114	115		80°		banded siltstones/cherts						
115	116				qtz-ch vein irregular inclusions of country rock						
116	117										

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab)					
KR 11827	78	79	1	60	5	55	0.5	2.6	
KR 11828	79	80		120	30	55	0.5	2.6	
KR 11829	80	81		50	35	55	0.5	2.3	
KR 11830	81	82		15	5	45	x	1.65	
KR 11831	82								
		84	0.9	5	5	45	0.5	3.4	
KR 11832	84	85	1	5	x	50	x	3.4	
KR 11833	85	86	1	5	x	55	0.5	3.6	
KR 11834	86	87	1	5	10	60	x	3.05	
KR 11835	87	88	1	15	15	45	x	1.75	
KR 11836	88	89	1	15	x	45	x	1.55	
KR 11837	89	90	1	20	10	60	0.5	2.3	
KR 11838	90	91	1	45	70	45	1.0	2.55	
KR 11839	91	92	1	55	65	130	1.0	2.6	
KR 11840	92	93	1	20	10	55	0.5	2.0	
KR 11841	93	94	1	40	20	55	x	2.35	
KR 11842	94	95	1	70	40	1600	0.5	3.3	
KR 11843	95	96	1	40	x	65	1.0	2.95	
KR 11844	96	97	1	15	10	95	x	2.45	
KR 11845	97	98	1	55	5	95	x	2.3	
KR 11846	98	99	1	10	5	55	x	1.95	
KR 11847	99	100	1	25	310	255	2.5	3.15	
KR 11848	100	101	1	10	15	60	x	2.25	
KR 11849	101	102	1	60	25	145	1.0	3.20	
KR 11850	102	103	1	55	30	135	0.5	3.15	
KR 11851	103	104	1	40	70	265	1.0	2.75	
KR 11852	104	105	1	20	15	115	x	3.05	
KR 11853	105	106	1	35	5	60	1.0	2.55	
KR 11854	106	107	1	15	5	40	0.5	2.0	
KR 11855	107	108	1	60	30	75	1.0	3.10	
KR 11856	108	109	1	20	20	70	0.5	1.3	
KR 11857	109	110	1	15	10	50	x	1.3	
KR 11858	110	111	1	15	15	55	0.5	1.50	
KR 11859	111	112	1	10	10	65	x	1.45	
KR 11860	112	113	1	10	10	45	x	1.25	
KR 11861	113	114	1	15	15	55	x	1.1	
KR 11862	114	115	1	70	30	90	x	1.15	
KR 11863	115	116	1	15	10	35	x	1.05	
KR 11864	116	117	1	5	15	35	x	1.35	

GEOPEKO TASMANIA DRILL LOG 663293 Prospect Hole no. 281

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py	MINERALISATION fg disp	MINERALISATION fgd	MINERALISATION fg sph	Fracturing
117	118				olive brown-grey vf-g cherty 'siltstone?'		✓				20pm
118	119		diffuse contact		massive homogeneous		✓				(80° CA
119	120				119–124.10m homogeneous grey f-g siltstones, grain size decrease down hole						
120	121										
121	122				pyrrhotite						
122	123				disrupted, slumped sphalerite rich lam band.					✓	
123	124				124.1–124.5 black py-carbonaceous shale		✓				
124	125				med gd qtz-ksp band below black shales.		✓				
125	126				banded silicified siltstones (lavas?) with black shaley		✓				
126	127				partings.						
127	128			c	127 – 130.65, fg siliceous unit (lava?)						20pm
128	129				disrupted by hairline chlorite fill fracture system, qtz eyes - chl	chl					
129	130				tuff as lenses or fiamme.						
130	131				@ 130.65 – 134.70 vvfg grey-green					✓	
131	132	v v			siliceous homogeneous rock (probable lava?)					✓	
132	133	v v	46°		weak colour banding due qtz eyes in thin bands.					✓	
133	134		sphalerite		laminae py. 50/5,						
134	135				possible argillite bed						
135	136		chl		qtz vein, most green chlorite 'fragments' restites younger yellow carbonate veinlets						
136	137				135.80 – massive essentially homogeneous	chlorite					
137	138				qtz-chlorite tuffs. med gd. qtz crystals						
138	139		qv qv		anhedral - rounded ± 3mm across (30% vol)						
139	140				in green groundmass cut by dk green chl rich						
140	141				veinlets, dk yellow carbonate 'schlieren'						
141	142		chl–qtz bx zone		patchy quartz veining	silic chl ± veinbx zone					
142	143					chlorite	✓	disseminated			
143	144				as above but coarser grain size 4-5mm qtz		✓	pyrite < 1%			
144	145				fragmental matrix dk blue-grey chlorite		✓				
145	146				massive homogeneous dense vf-g inclusions or beds		✓				
146	147		qv/qtz								
147	148										
148	149					chlorite					
149	150										
150	151										
151	152			qtz	grains 4-5mm < 35 vol%						
152	153			50°	chl veining along S_1						
153	154		50°		S_0 given by lithic bed/fragment.						

Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab')						
KR 11865	117	118	1	15	10	25	x	0.87		
KR 11866	118	119	1	15	15	45	x	0.55		
KR 11867	119	120	1	15	5	40	x	1.25		
KR 11868	120	121	1	15	5	45	x	1.05		
KR 11869	121	122	1	25	5	55	x	1.05		
KR 11870	122	123	1	70	25	55	x	1.35		
KR 11871	123	124	1	75	40	85	0.5	1.45		
KR 11872	124	125	1	130	965	625	5.0	2.55		
KR 11873	125	126	1	55	330	425	1.0	1.95		
KR 11874	126	127	1	20	275	235	1.0	~~21.5~~	2.15	
KR 11875	127	128	1	15	50	200	x	3.0		
KR 11876	128	129	1	15	40	175	0.5	2.0		
KR 11877	129	130	1	25	70	215	x	2.2		
KR 11878	130	131	1	20	20	115	x	1.85		
KR 11879	131	132	1	15	10	65	x	0.91		
KR 11880	132	133	1	30	40	75	0.5	0.85		
KR 11881	133	134	1	260	215	380	2.5	1.55		
KR 11882	134	135	1	35	35	135	x	2.85		
KR 11883	135	136	1	15	15	70	x	2.15		
KR 11884	136	137	1	5	10	100	x	2.6		
KR 11885	137	138	1	5	5	110	x	3.1		
KR 11886	138	139	1	5	5	95	x	2.50		
KR 11887	139	140	1	10	15	100	x	2.7		
KR 11888	140	141	1	10	10	105	x	3.10		
KR 11889	141	142	1	15	45	145	x	4.0		
KR 11890	142	143	1	10	15	100	0.5	2.75		
KR 11891	143	144	1	10	5	115	x	3.3		
KR 11892	144	145	1	5	10	95	x	3.3		
KR 11893	145	146	1	5	5	95	x	2.95		
KR 11894	146	147	1	5	10	100	x	3.35		
KR 11895	147	148	1	5	5	70	x	3.0		
KR 11896	148	149	1	5	10	75	x	3.05		
KR 11897	149	150	1	10	10	90	x	3.60		
KR 11898	150	151	1	10	10	90	x	2.80		
KR 11899	151	152	1	10	15	60	x	3.70		
KR 11900	152	153	1	10	60	110	0.5	3.75		
KR 11901	153	154	1	10	20	75	x	3.55		
KR 11902	154	155	1	10	20	110	x	3.55		

663294

[redacted]OPEKO TASMANIA DRILL[redacted]LOG Prospect H[redacted]no.

285

DEPTH (m) from	DEPTH (m) to	GRAPHIC LOG	ANGLE TO CORE AXIS So	ANGLE TO CORE AXIS Si	GEOLOGICAL DESCRIPTION	Alteration	MINERALISATION py				Fracturing	Sample No.	From (m)	To (m)	Rec (m)	ASSAYS (Lab:)						
154	155											~~KR 11903~~	~~154~~	~~155~~		1						
155	156											KR 11903	155	156		10	65	160	X	3.9		
156	157				157.20 – EOH							KR 11904	156	157		10	20	130	X	3.6		
157	158				f.g. banded tuffs grey-grn colour hornig							~~KR 11905~~	157			10	20	105	X	2.5		
158	159				~~no crystal phase porphyry~~ chlorite bands									158.55								
					0.5-1mm parallel to Si																	
					few isolated and in bands, qtz crystals																	
					in darker green chlorite rich units							E.O.H.	158.55m									

663295

D of M | A.O. | C.G. | E.O. | D.S.M.E
Registrar
Received 16 DEC 1982
Answered
DEPT. OF MINES
REF. NO: 10,615/82

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LIMITED

ANNUAL REPORT - E.L. 27/76

1981 - 1982 FIELD SEASON

82-1882(2)

PLANS 1-52

P.A. WILSON et. al.
DEVONPORT
SEPTEMBER, 1982

OPEN FILE

N 950 N

11050 N

11150 N

11250 N

11350 N

11450 N

11550 N

255

9800 E

250

9900 E

245

10000 E

10100 E

240

10200 E

235

10300 E

230

10400 E

230

230

10500 E

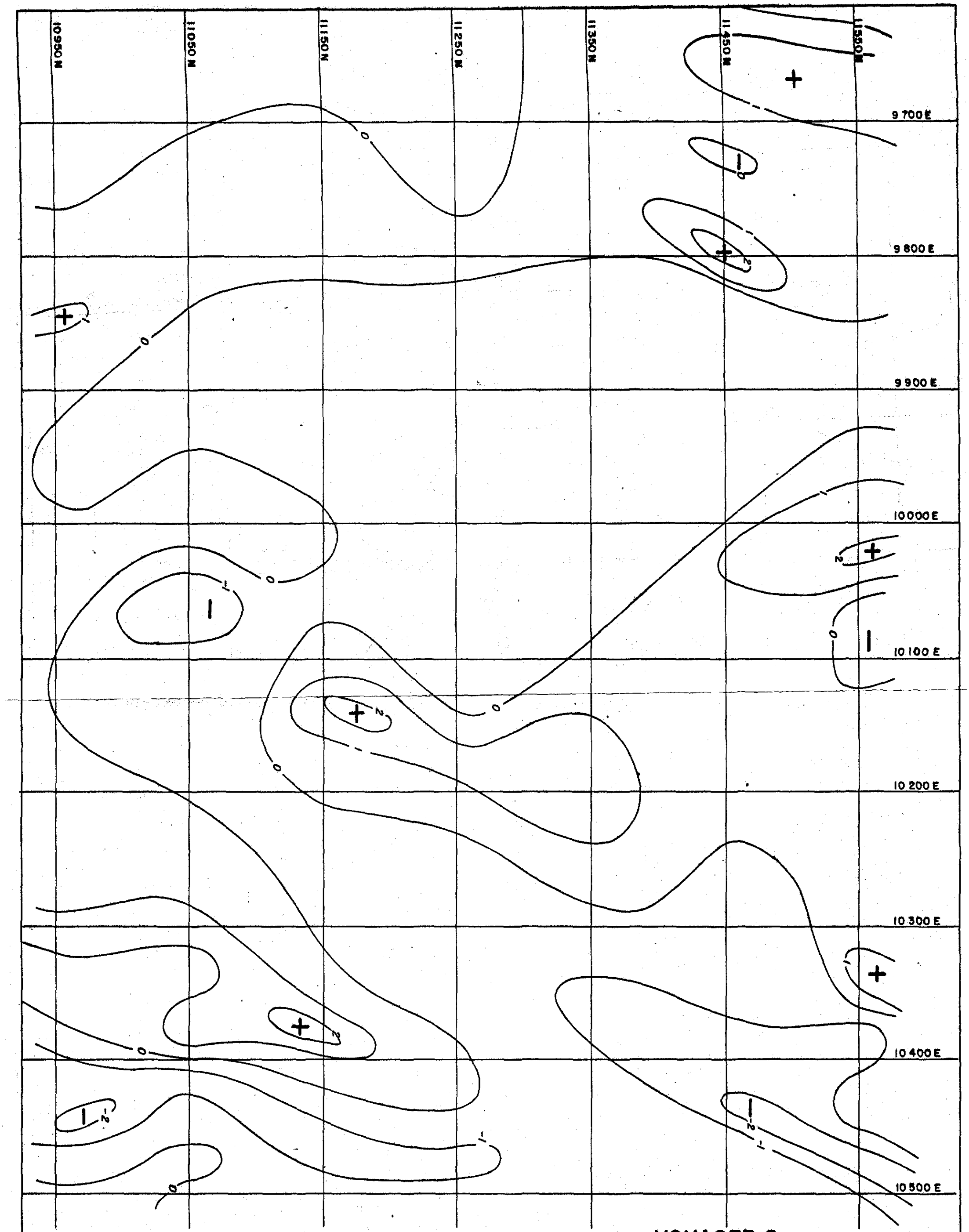
HORZ SCALE 1:2500
CONT. INT. 2·5 μms^{-2}
INSTRUMENT Worden No 592
OBSERVER R. Goodwin
DATE November 1981
BOUGUER DENSITY 2·52 gm cm^{-3}
NOT TERRAIN CORRECTED

5 cm

VOYAGER 9
EL 27/76 ELLIOTT BAY, TASMANIA
CONTOURS OF BOUGUER GRAVITY

663296 154

PLAN 1



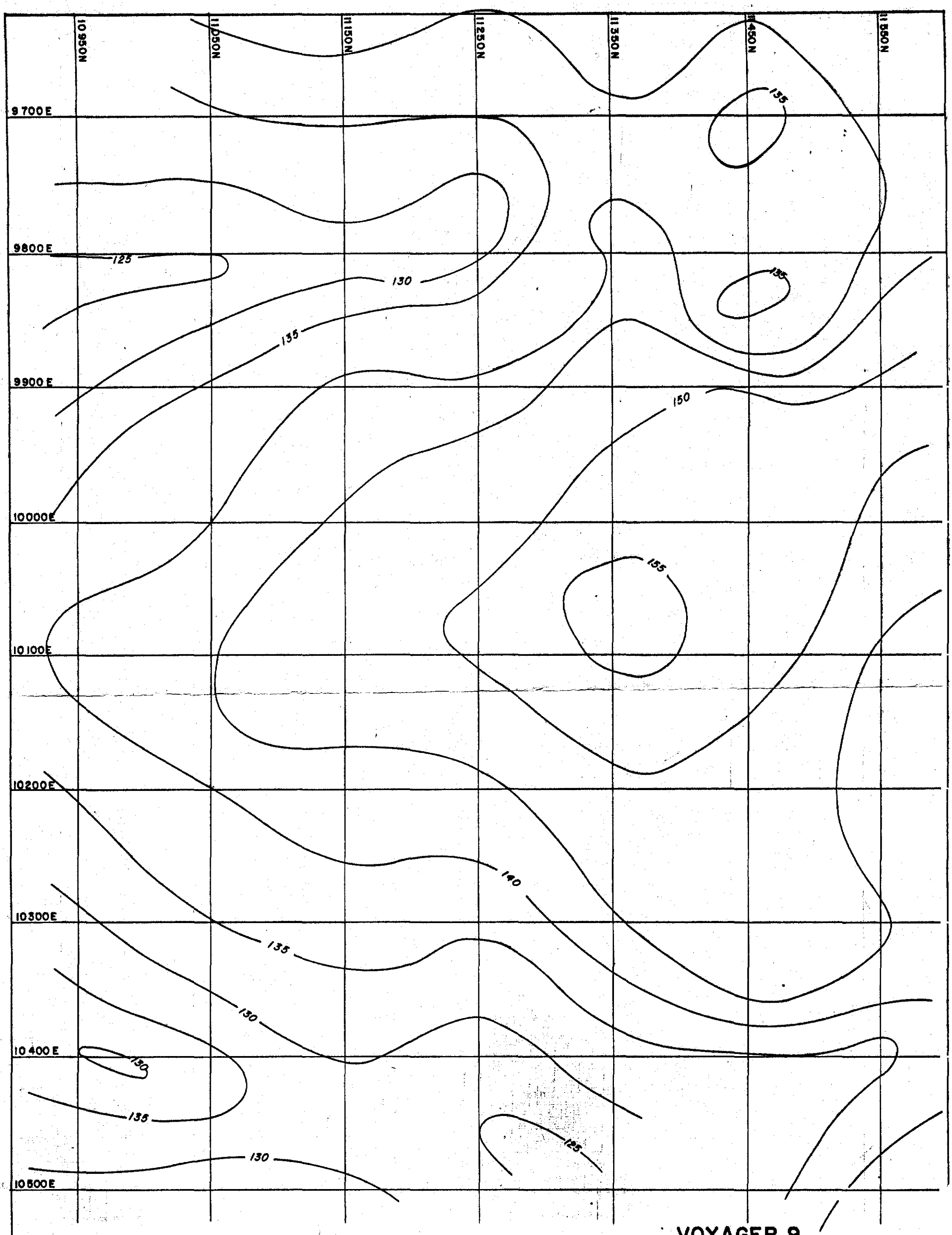
HORZ SCALE 1:2500
CONT. INT. 1 μms^{-2}
INSTRUMENT Worden No 592
OBSERVER R.Goodwin
DATE November 1981
BOUGUER DENSITY 2·52 gm cm^{-3}
REGIONAL DETERMINED USING MODIFIED SINE FUNCTION 20 FILTER

663297

VOYAGER 9
EL 27/76 ELLIOTT BAY, TASMANIA
CONTOURS OF RESIDUAL BOUGUER GRAVITY

5 cm

155 PLAN 2



HORZ SCALE 1:2500
CONT. INT. 5 m
OBSERVER B Steadman
DATE November 1981
DATUM ARBITARY 11350N, 10000E assumed =150·000m.

5 cm

VOYAGER 9
EL 27/76 ELLIOTT BAY, TASMANIA
TOPOGRAPHIC CONTOURS

663298

156 PLAN 3

82-1882 2/5

663299

PLAN 4

VOYAGER 9

E.L. 27/76 ELLIOTT BAY, TASMANIA

LINE 10 850 N

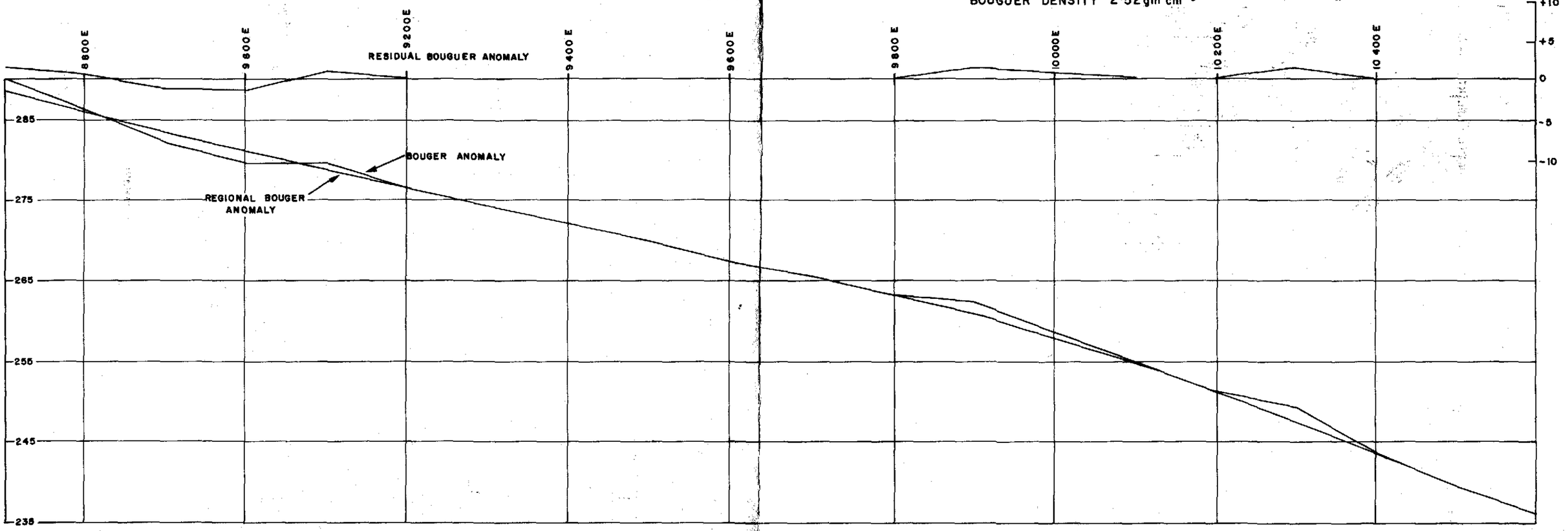
Note Terrain corrected

REGIONAL Determined using modified sine function 20 filter.

PROFILES OF BOUGUER GRAVITY , REGIONAL BOUGUER GRAVITY , RESIDUAL BOUGUER GRAVITY

HORZ SCALE 1 : 5000
VERT SCALE 1 cm = 5 μms^{-2}
DATUM 0 μms^{-2}
290 μms^{-2}

INSTRUMENT Warden No 592
OBSERVER R. Goodwin
DATE November 1981
BOUGUER DENSITY 2·52 gm cm^{-3}



11 850 N

11 550 N

11 450 N

11 350 N

11 250 N

11 150 N

11 050 N

10 950 N

9800 E

9900 E

10 000 E

10 100 E

10 200 E

10 300 E

10 400 E

10 500 E

11 850 N

11 550 N

11 450 N

11 350 N

11 250 N

11 150 N

11 050 N

10 950 N

INSTRUMENT: Worden 592
OBSERVER: R. Goodwin
DATE: November 1981

BOUGUER DENSITY: 2·52 gm cm^{-3}
DATUM: 252·5 μms^{-2}
VERT. SCALE: 1cm = 2·5 μms^{-2}

Not Terrain Corrected

5 cm

663300

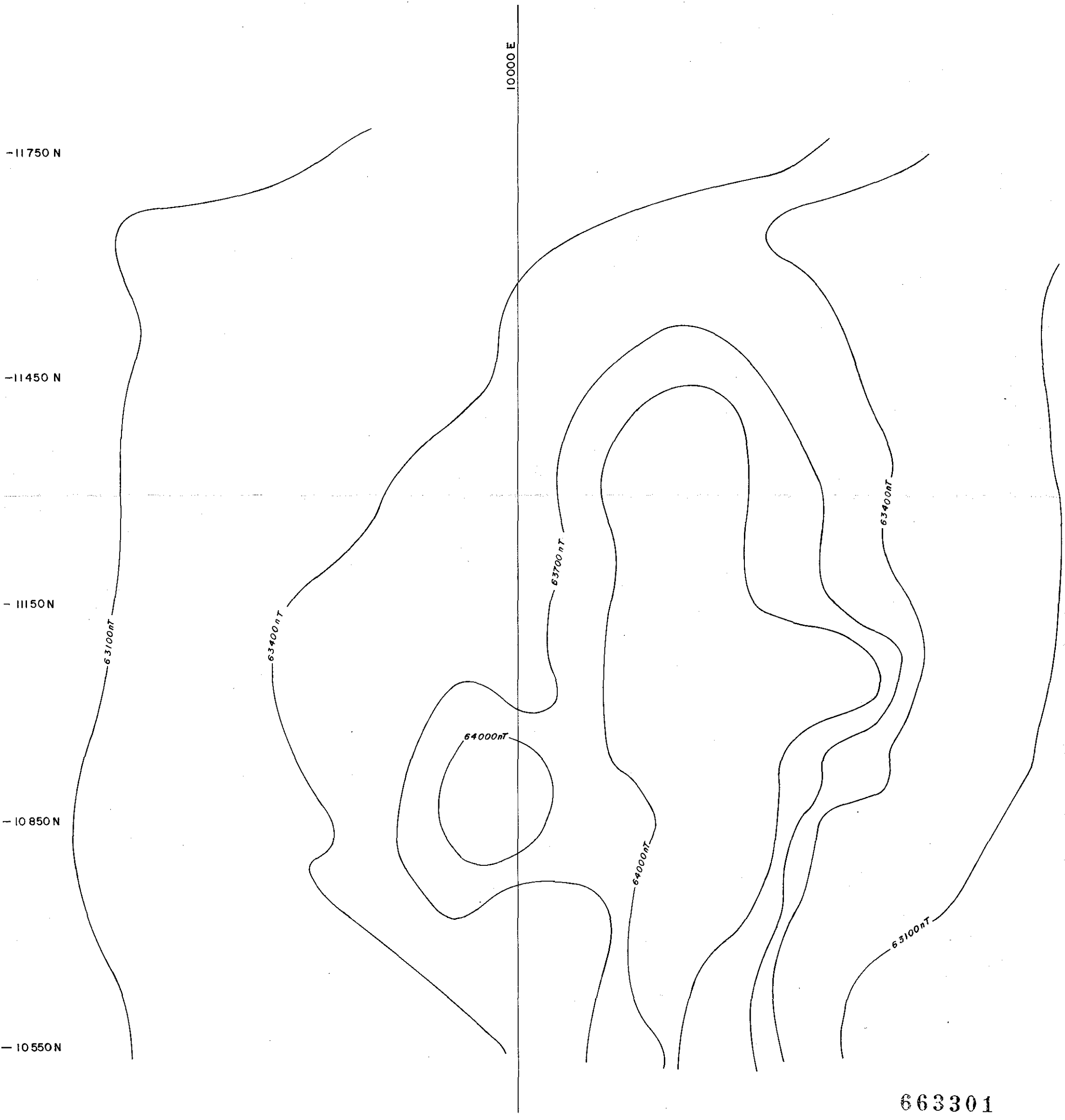
DATE 26-8-82
GEOL J.S
DRAWN M.vdS
CHECKED

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

SCALE 1 : 2500 | No. TS 27/76-V9-21 | PLAN No. 5

E.L. 27/76 ELLIOTT BAY, TAS
VOYAGER 9
PROFILES OF BOUGUER GRAVITY

02-1882 2/5 158



5 cm

82 - 1882 2/5

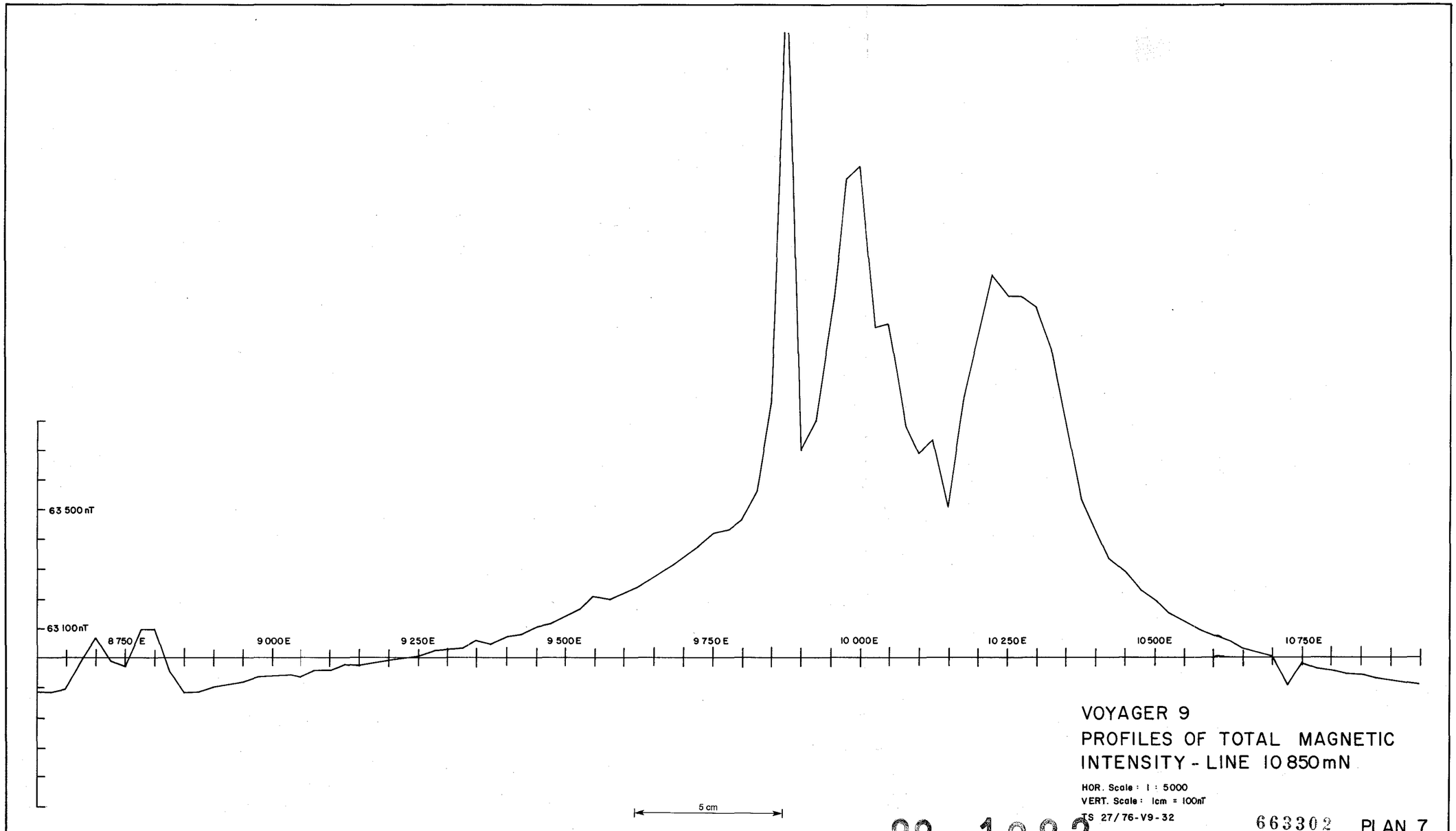
663301

EL.27/76 ELLIOTT BAY TAS

VOYAGER 9

TOTAL MAGNETIC INTENSITY CONTOURS

159 SCALE 1:5000 PLAN 6



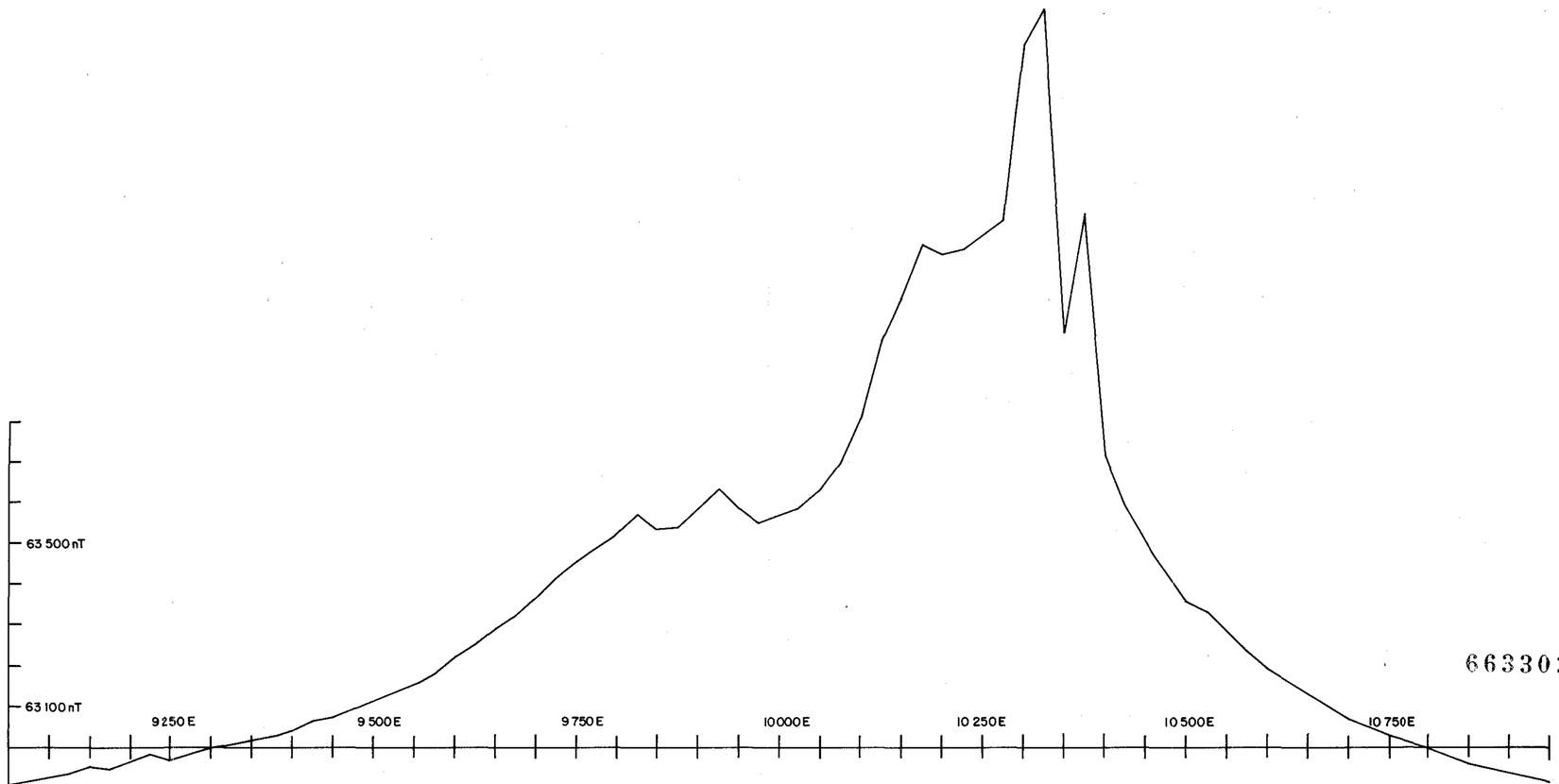
VOYAGER 9
PROFILES OF TOTAL MAGNETIC INTENSITY - LINE 10 850mN

HOR. Scale : 1 : 5000
VERT. Scale : 1cm = 100nT
TS 27/76-V9-32

82-1882 2/5

663302 PLAN 7

160



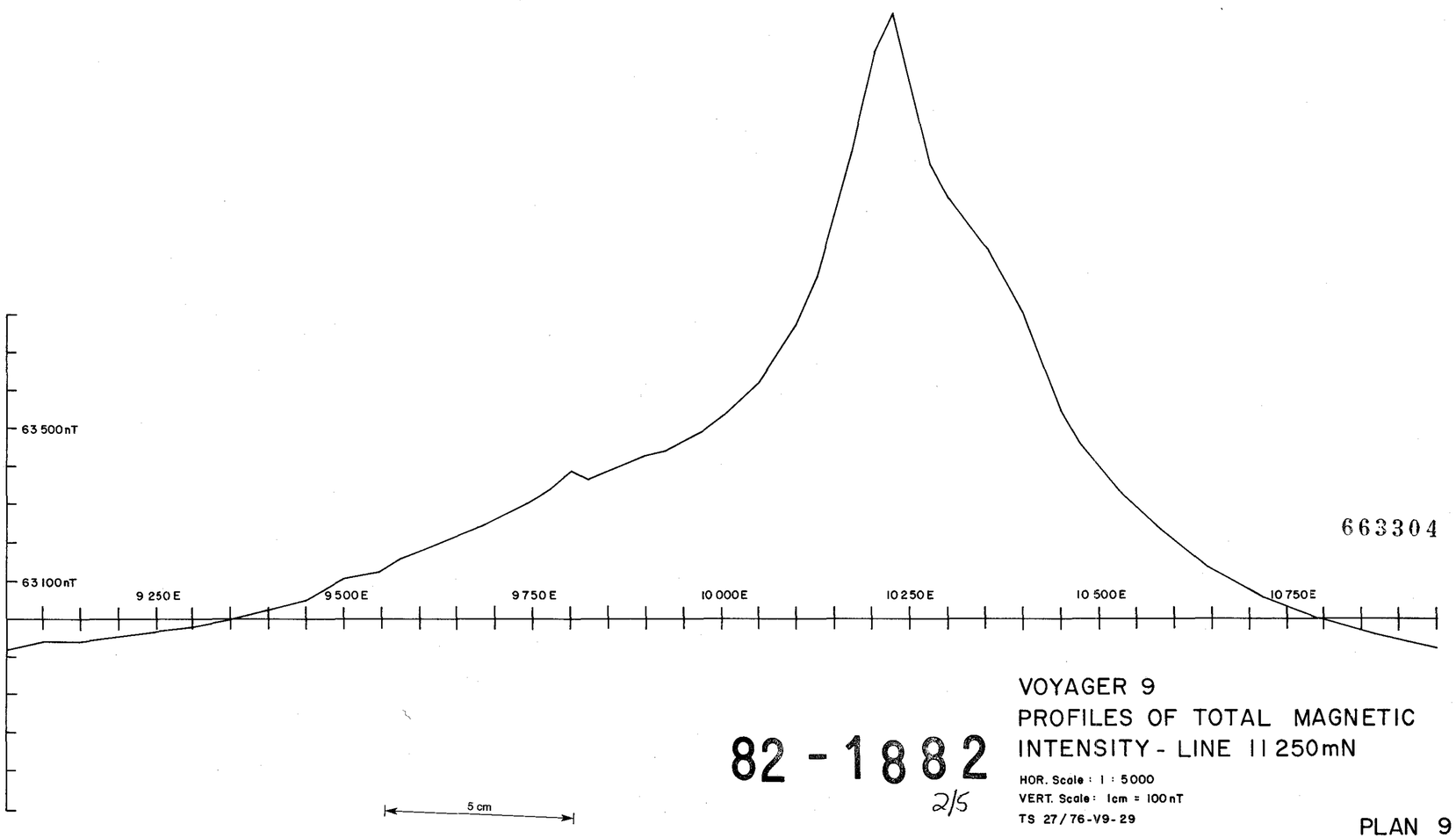
663303

VOYAGER 9
PROFILES OF TOTAL MAGNETIC INTENSITY - LINE 11050mN

HOR. Scale : 1 : 5000
VERT. Scale: 1cm = 100nT
TS 27/76-V9-28

PLAN 8

82-1882 25



663304

82 - 1882

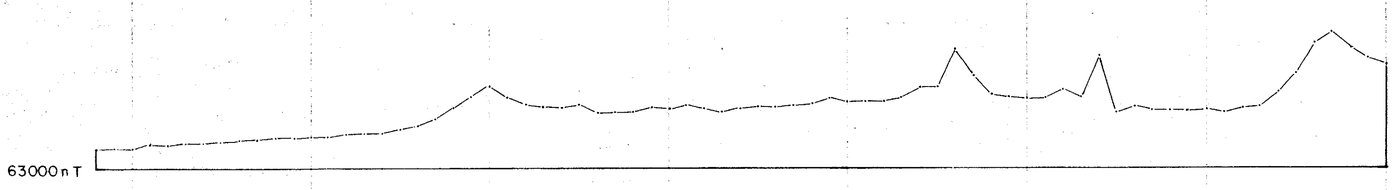
2/5

VOYAGER 9
PROFILES OF TOTAL MAGNETIC INTENSITY - LINE 11 250mN

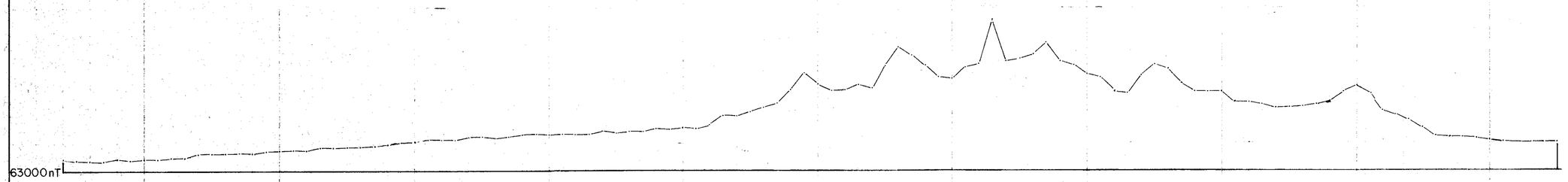
HOR. Scale : 1 : 5000
VERT. Scale : 1cm = 100nT
TS 27/76-V9-29

PLAN 9

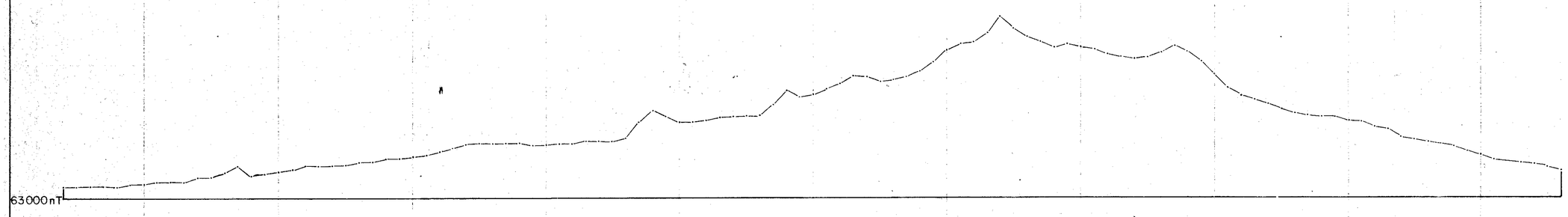
9 300E — 9 400E — 9 500E — 9 600E — 9 700E — 9 800E — 9 900E — 10000E — 10 100E — 10 200E — 10 300E — 10400E — 10 500E — 10600E — 10 700E — 10 800E



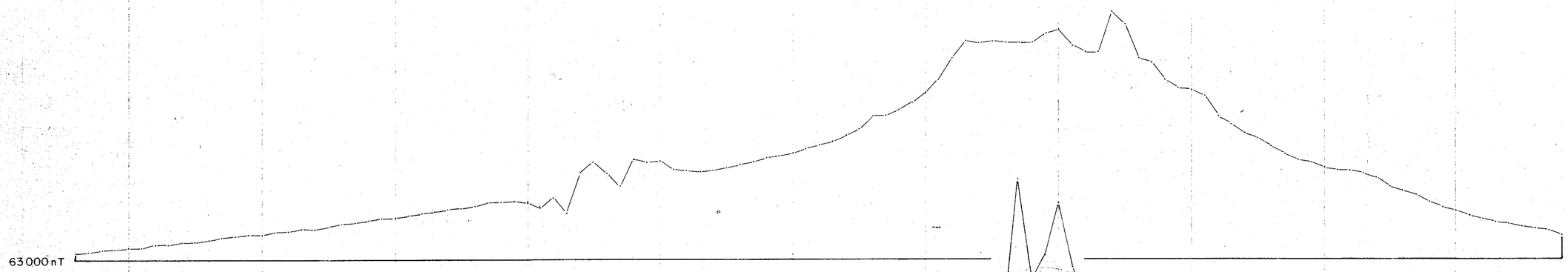
Line 11 700N



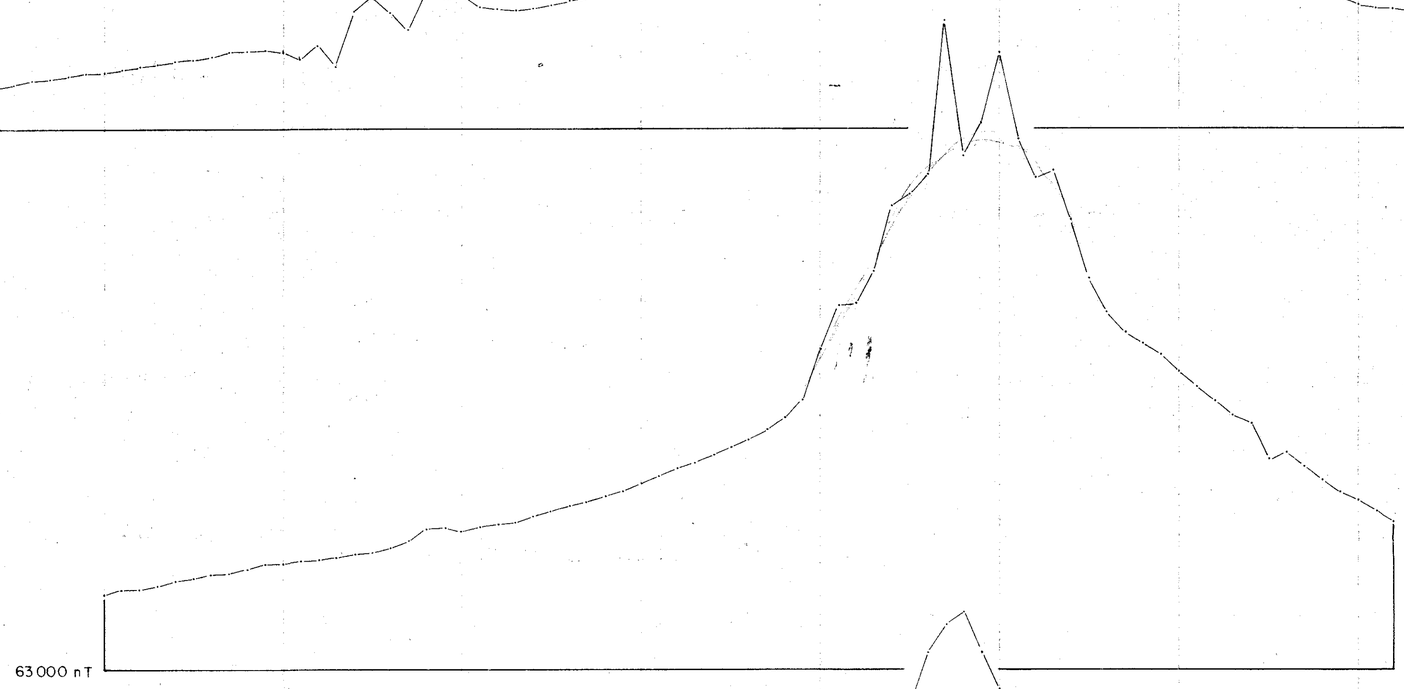
Line 11 650N



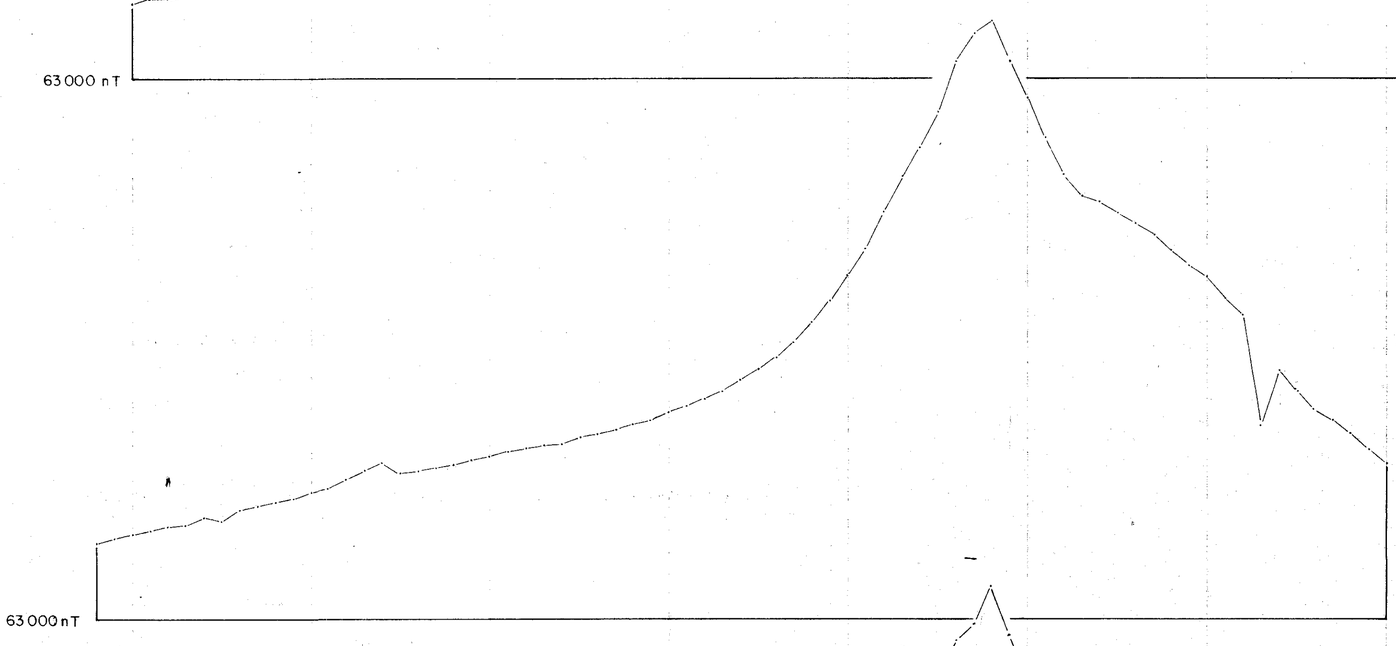
Line 11 550N



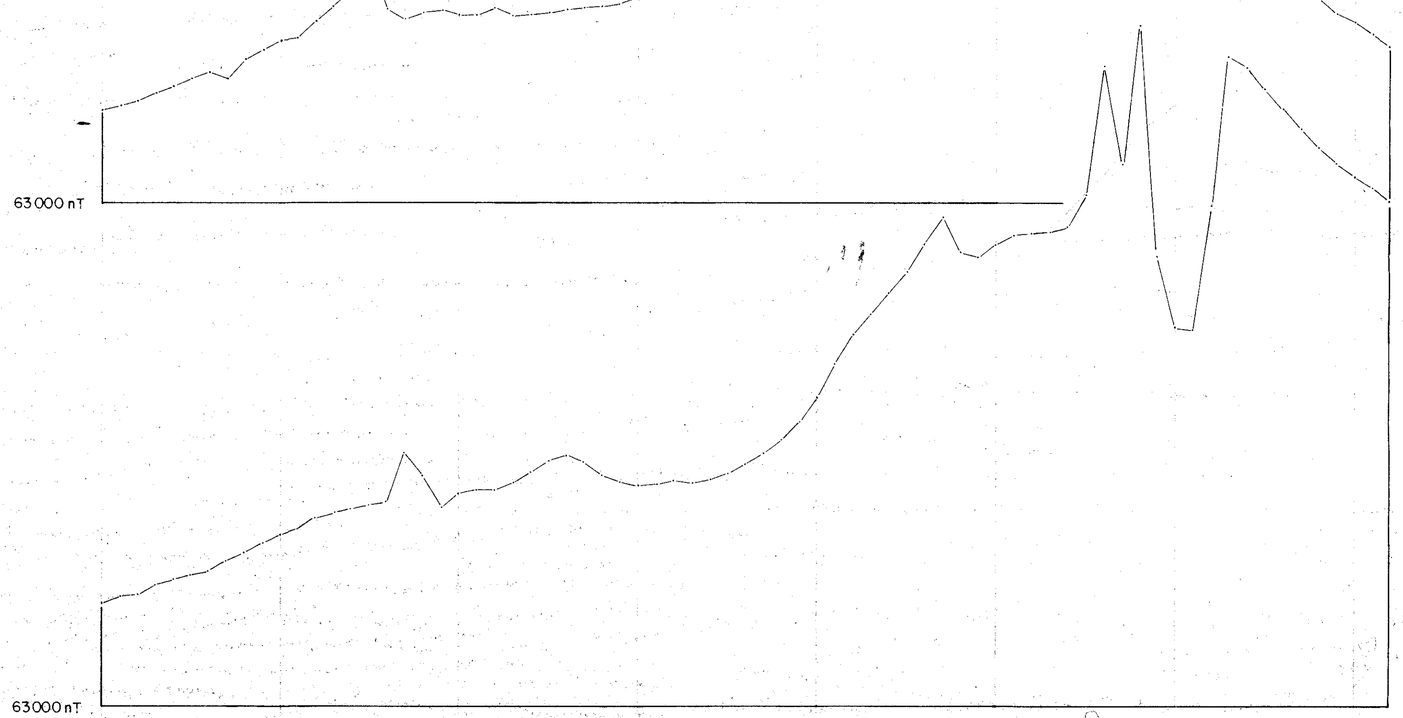
Line 11 450N



Line 11 350N



Line 11 250N



Line 11 150N

Line 11 050N

9 300E — 9 400E — 9 500E — 9 600E — 9 700E — 9 800E — 9 900E — 10000E — 10 100E — 10 200E — 10 300E — 10 400E — 10 500E — 10 600E — 10 700E — 10 800E

663305

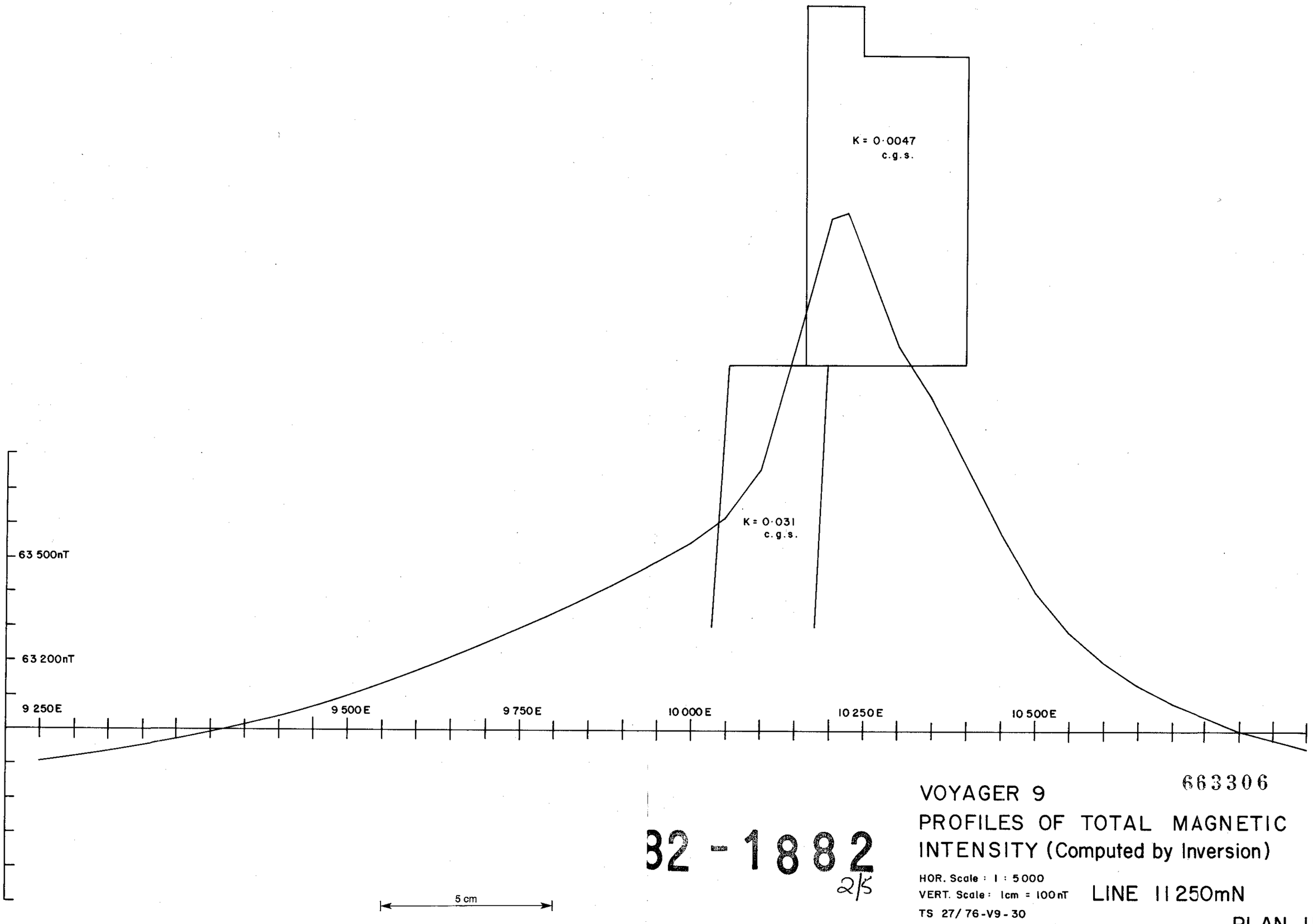
Sheet 1
Sheet 2
Sheet 3

PLAN-10

GEOPEKO LTD.		Instrument	Geometrics G 816 Chemtron GB	Datum	63000 nT	Hor Scale	1cm = 25 m	AREA	Elliott Bay Tasmania
Geophysical Surveys	5 cm	Observer		Base Reg		Vert Scale	1cm = 100 nT	PROSPECT	VOYAGER 9
Plan No. 5151 S/B		Scale Fact		Date	February 1980	Cont Int		PLAN SHOWS	Profiles of Total Magnetic Intensity Sheet 1

OPEKO — 1882 2/5

162 A.



663306

82-1882

2/5

VOYAGER 9

PROFILES OF TOTAL MAGNETIC INTENSITY (Computed by Inversion)

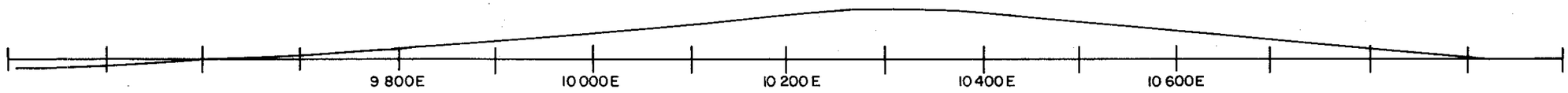
HOR. Scale : 1 : 5000

VERT. Scale : 1cm = 100nT

LINE 11250mN

TS 27/76-V9-30

PLAN 11



82-1882 2/5

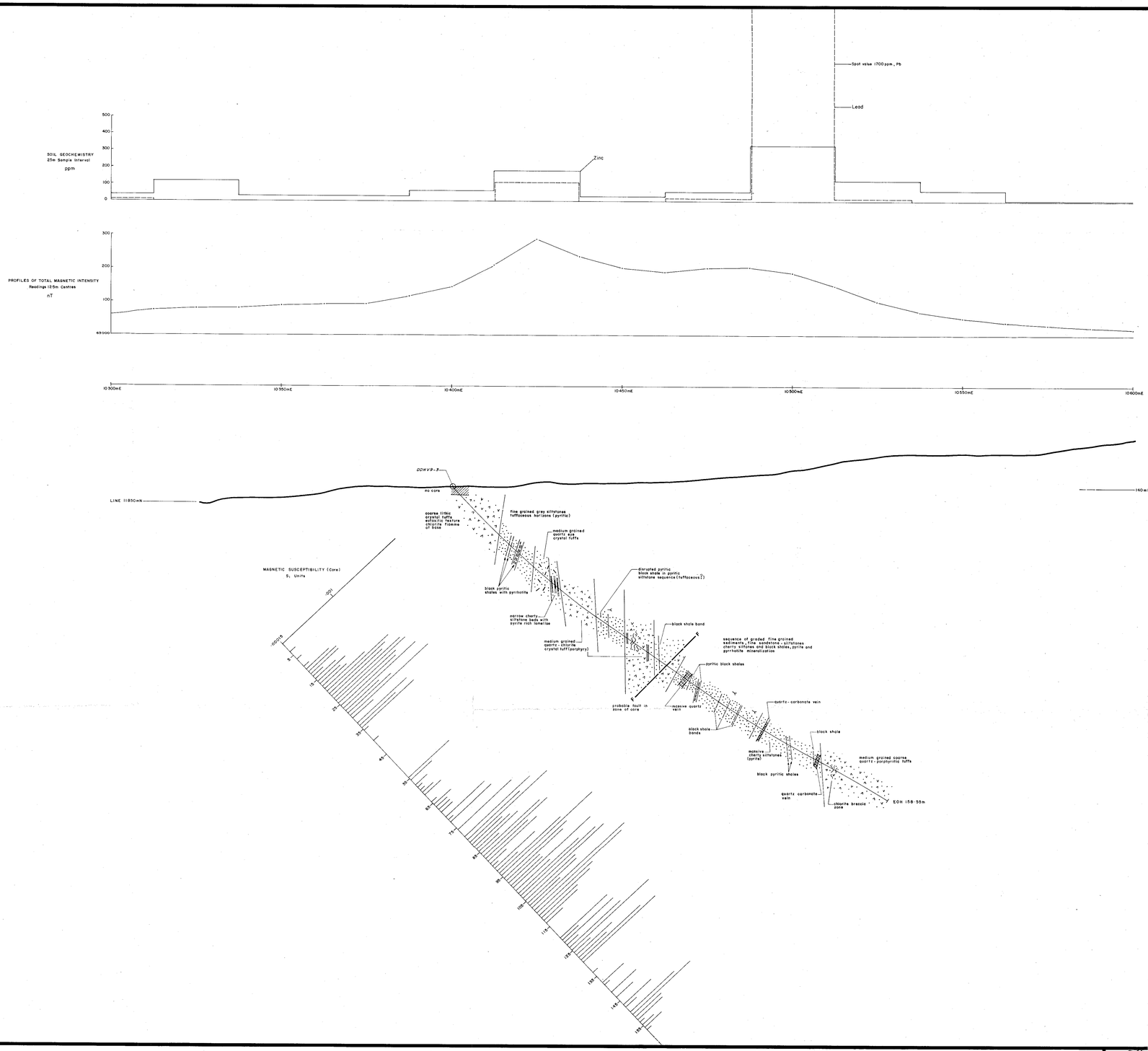
VOYAGER 9

663307

THEORETICAL GRAVITY RESPONSE
FROM MAGNETIC MODEL

HOR. Scale : 25m/cm
VERT. Scale : 1cm = 2·5μms^{-2} LINE 11250mN
TS 27/76-V9-31 PLAN 12

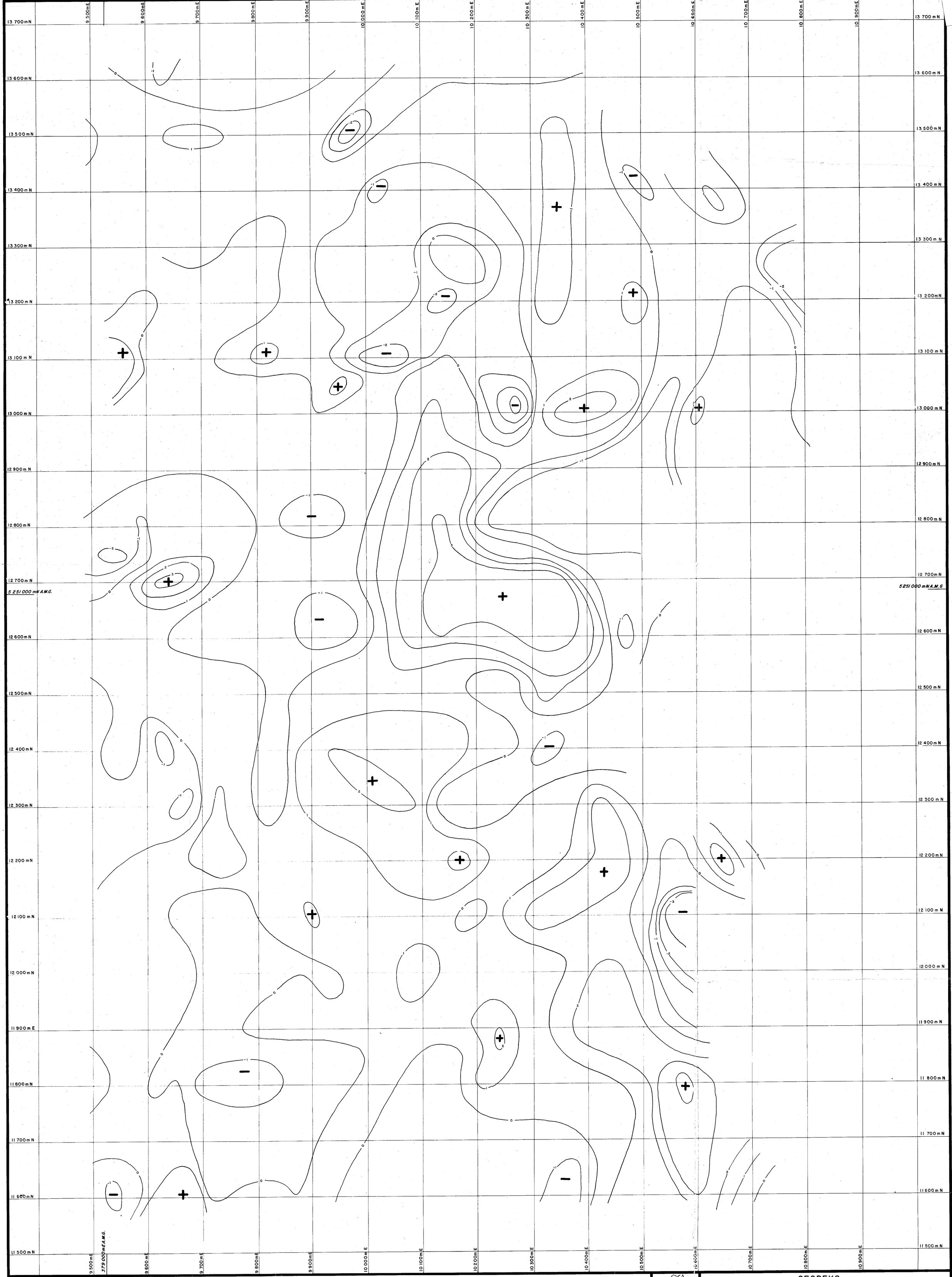
5 cm



66330S

82-1882 2/5

	GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT
SCALE: 1:500	FILE No TS — PLAN No 13
DATE: 30/7/82	E.L.27/76 ELLIOTT BAY, TAS. DDH V9-3 GEOLOGY
GEOL: P.A.W	5 cm
DRAWN: R.Top	
CHECKED:	



LEGEND:

Contour Interval 1 μms^{-2}

Bouguer Density 2·52 $gm\,cm^{-3}$

Instruments:- Worden No. 592 (Obs. R. Goodwin)
La Coste & Romberg G326 (Obs. T. Walbrun)

Terrain Corrected to 4·5 km

Note:- Regional Determined using hand smoothing techniques.

5 cm

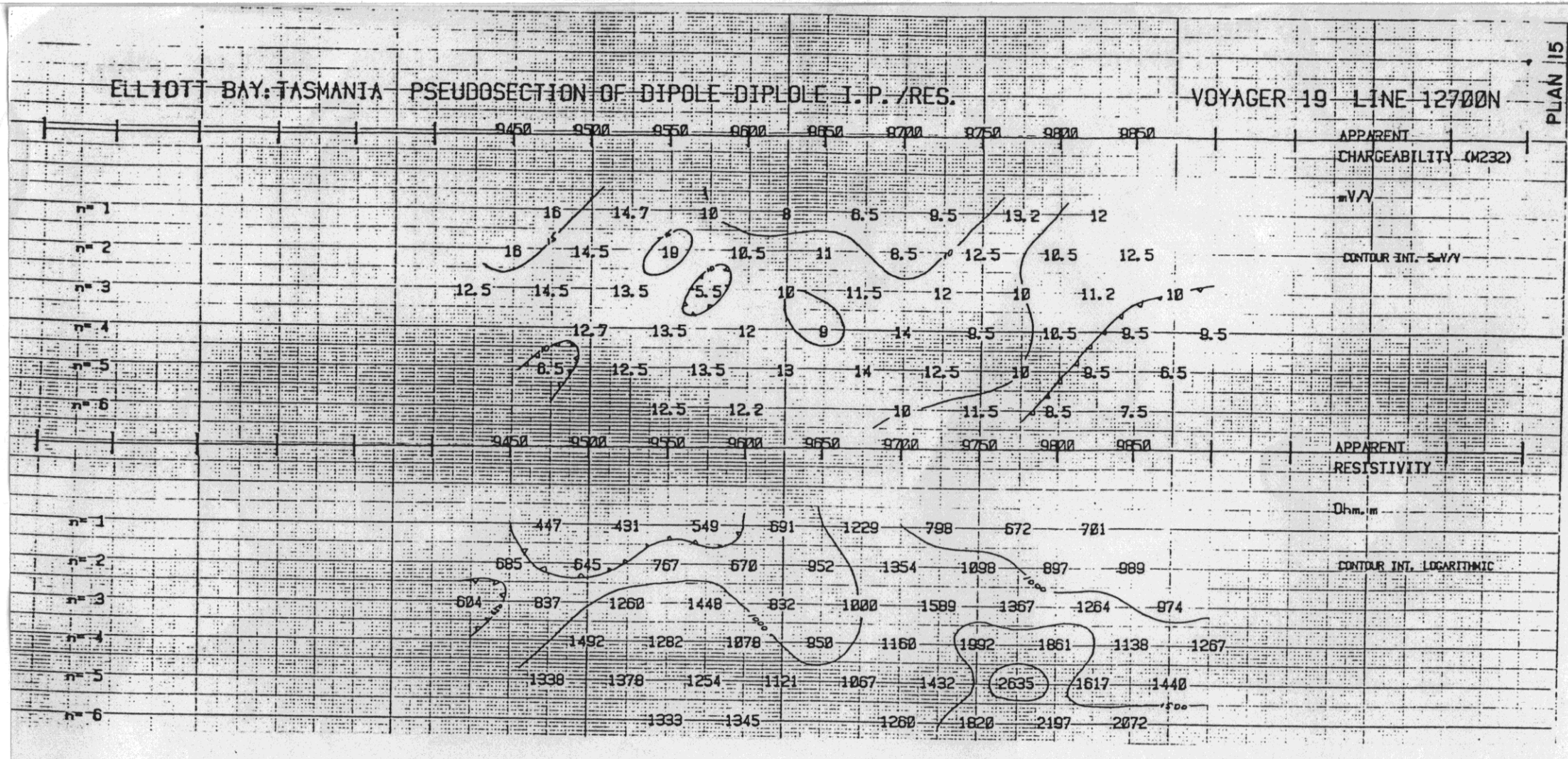
GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No.	TS 27/76-V31-1	PLAN No.	14

SCALE: 1:2500
DATE: MARCH 82
GEOL: J.S
DRAWN: M.vdS.
CHECKED:

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 19
663309
CONTOURS OF RESIDUAL BOUGUER ANOMALY

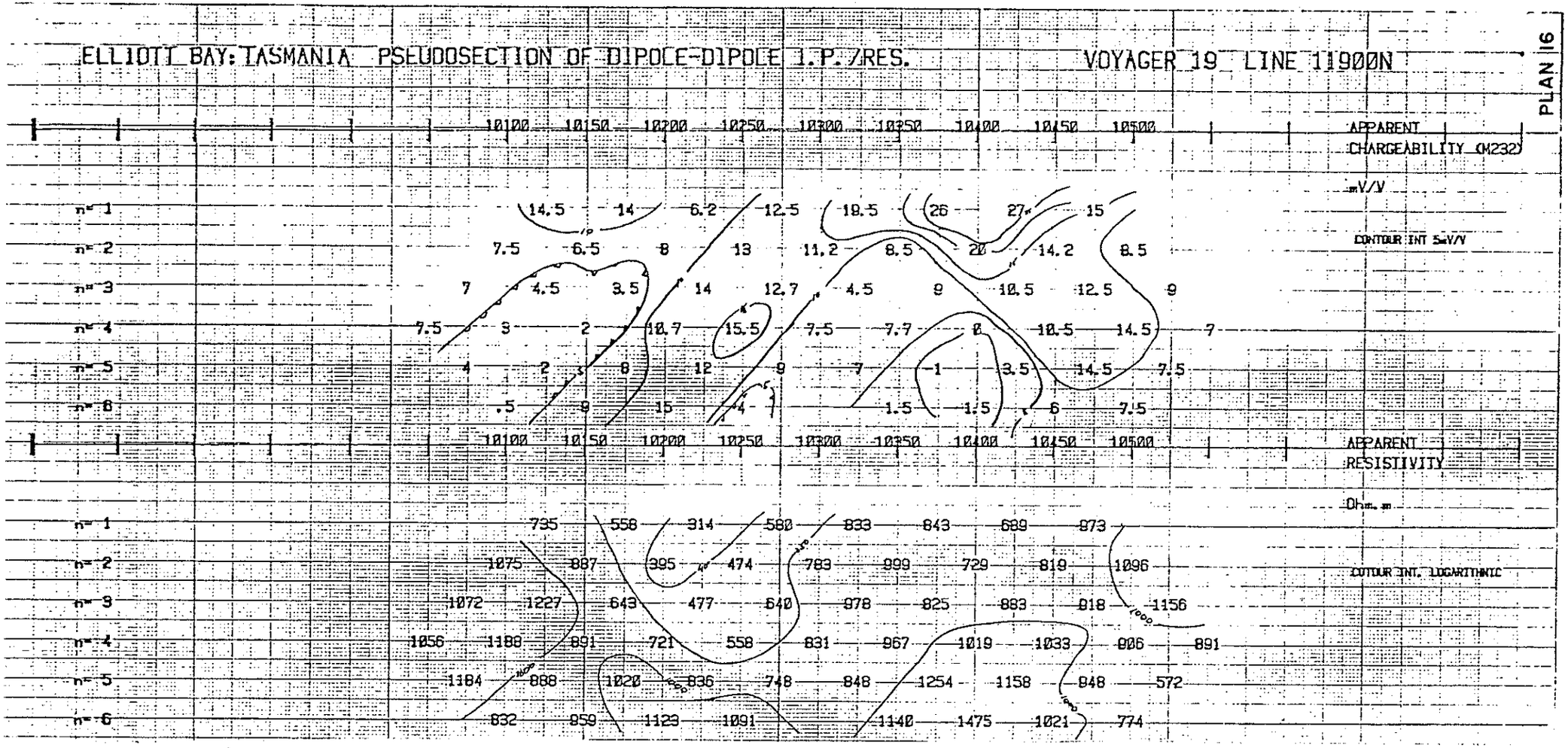
82-1062 215 . 0 166.



82-1882 2/5

663310

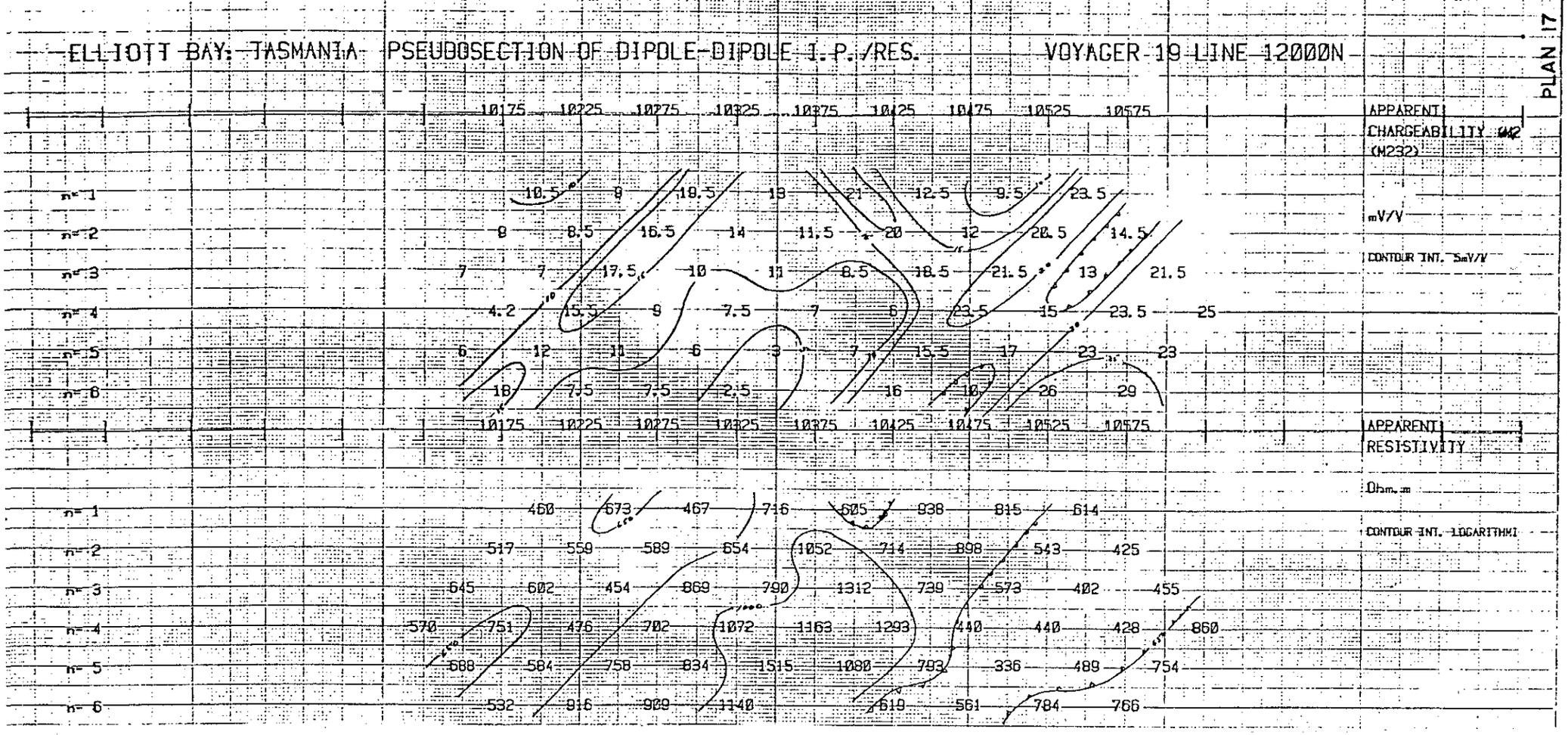
001



82 - 1882 2/5

663311

002



82-1882 2/5

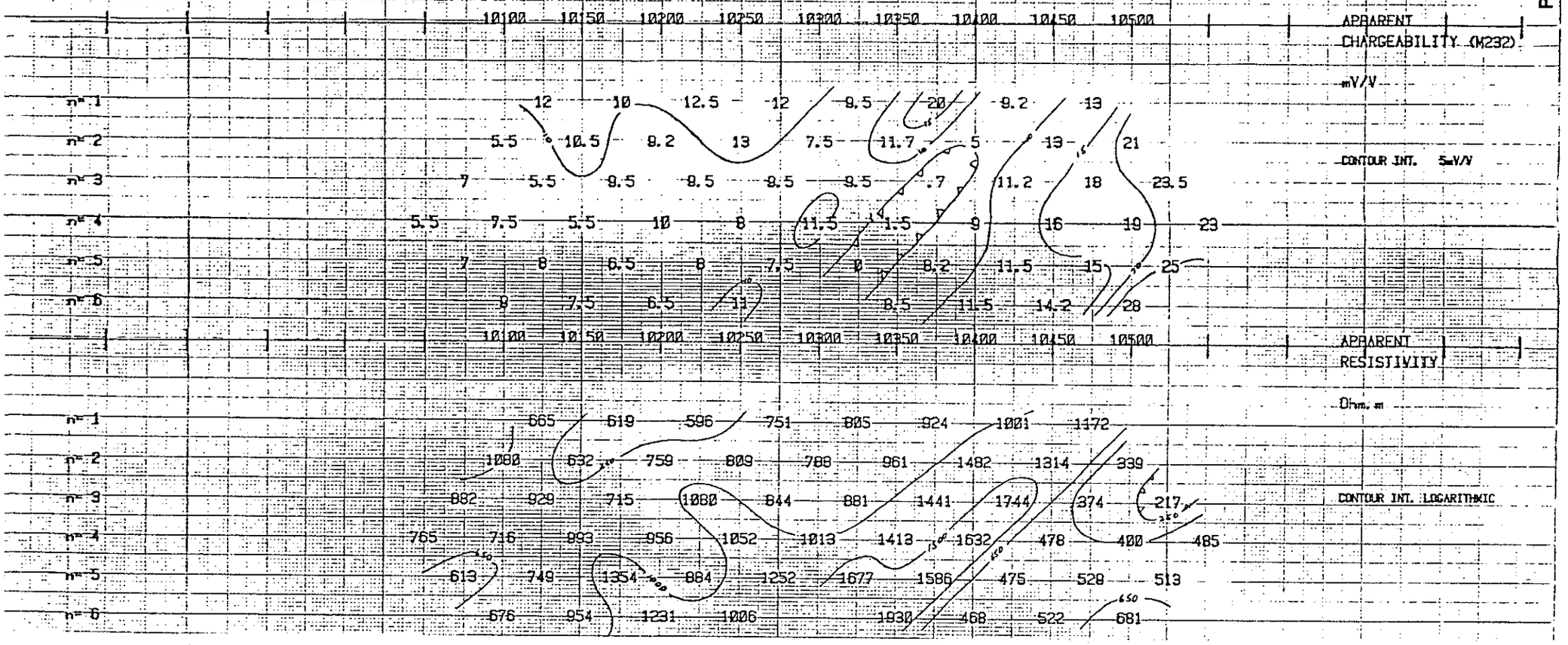
5 cm

663312

003

ELLIOTT BAY, TASMANIA PSEUDOSECTION OF DIPOLE-DIPOLE I.P./RES. VOYAGER 19 LINE 12100N

PLAN 18

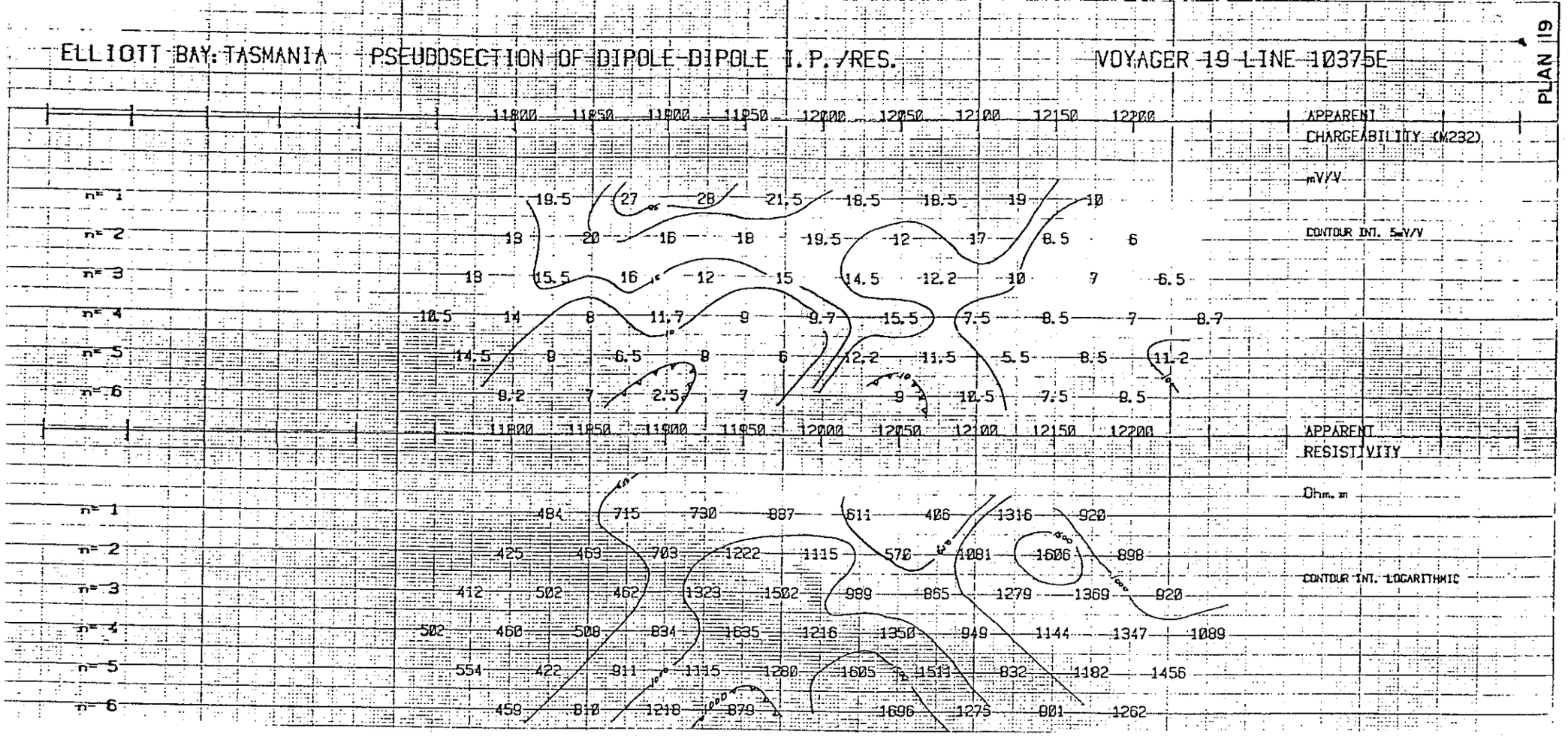


663313

5 cm

82 - 1982 2/5

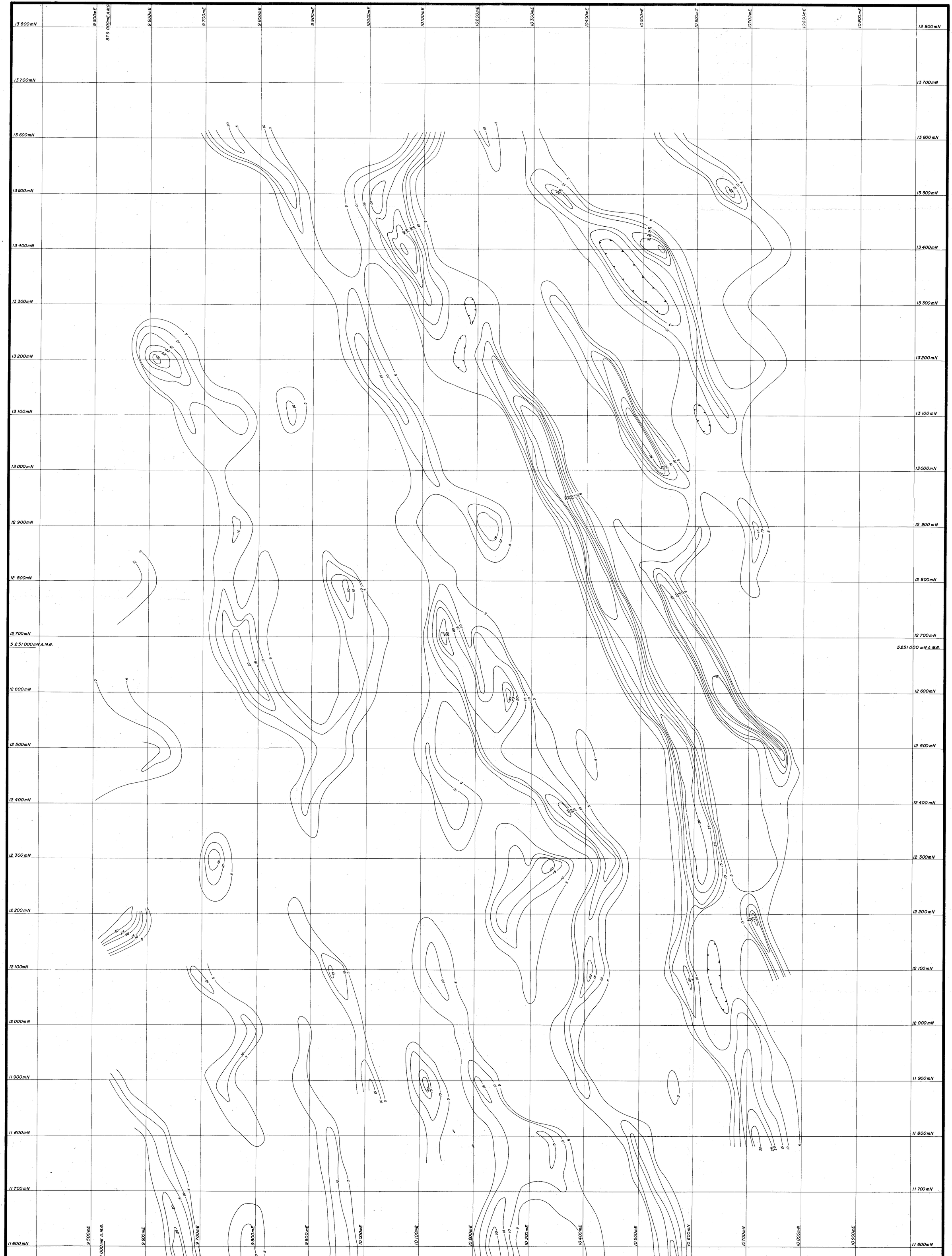
004



82-1882 2/5

663314

005



LEGEND:

5 cm

GN MN
13°00'

SCALE: 1 : 2500	
DATE: 27/8/82	
GEOL: P.A.W	
DRAWN: R.Tog.	
CHECKED:	

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

PLAN No	TS 27/76-V19-21	REP. No	20

E.L. 27/76 ELLIOTT BAY, TASMANIA
VOYAGER 19

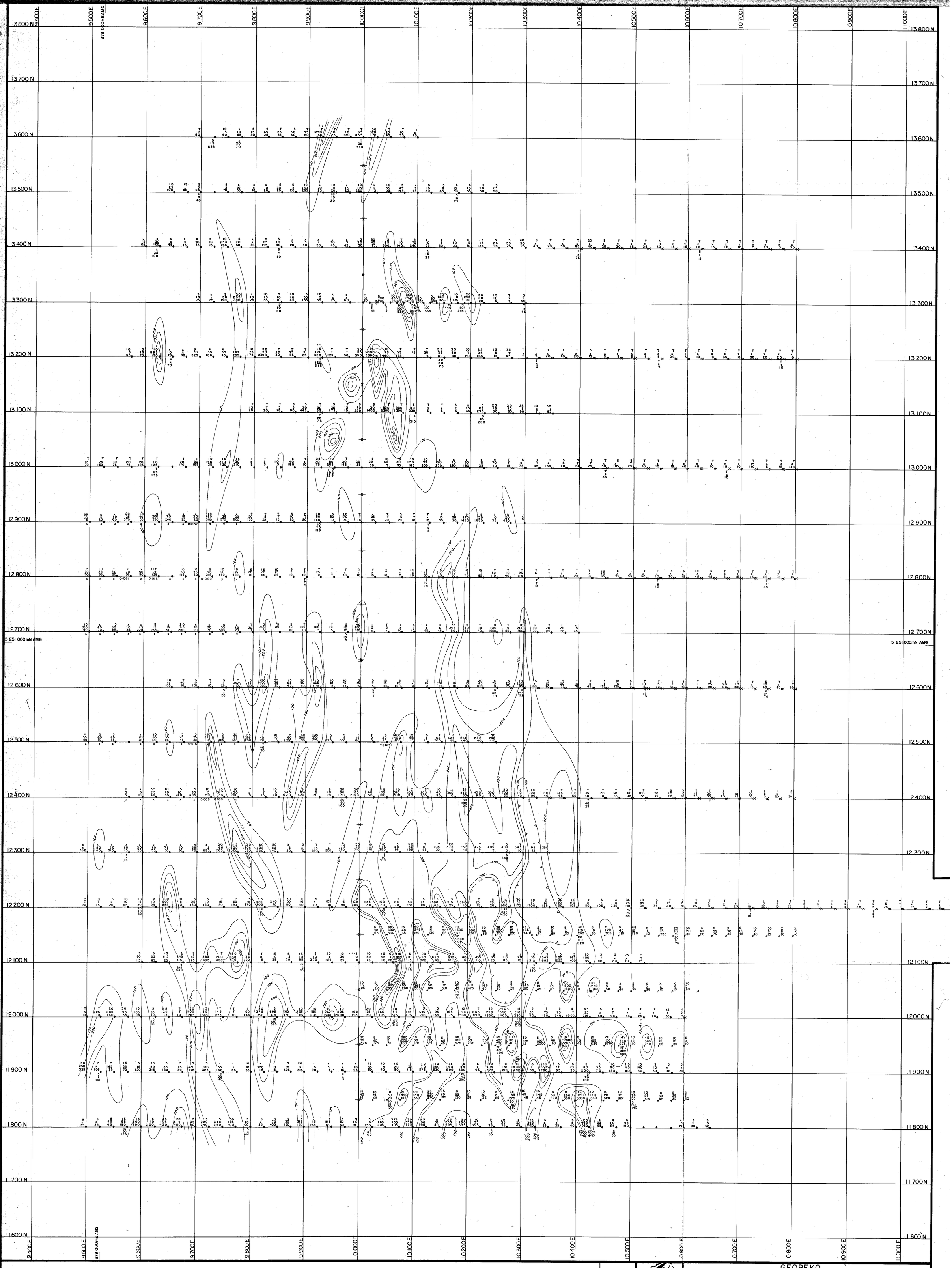
VLF-EM CONTOURS

663315

82 - 1882 215

9400E 9500E 379 000mE AMG 9600E 9700E 9800E 9900E 10000E 10100E 10200E 10300E 10400E 10500E 10600E 10700E 10800E 10900E 11000E

13800N 13700N 13600N 13500N 13400N 13300N 13200N 13100N 13000N 12900N 12800N 12700N 5 251 000mN AMG 12600N 12500N 12400N 12300N 12200N 12100N 12000N 11900N 11800N 11700N 11600N



LEGEND:

- ⊣ ..... Grid Position
- ● ..... Power Auger Hole (Jacro)
- ○ ..... Hand Auger Hole
- ○ ..... Power Hand Auger. (Mate)

Cu — x
Pb — 55
Zn — 160
● Original Sample Position

Cu — x
Pb — 55
Zn — 140
Duplicate Sample

NOTE: All values in ppm

CONTOUR INTERVAL
Pencil No:
100 ppm
200 ppm
400 ppm
800 ppm
1600 ppm

5 cm

GN MN
-13°00'

DATE: FEB 1981
UPDATED MAY 1982
GEOLOGIST: W.H.
DRAWN: R. TOGNONI M.vdS.
CHECKED:

GEOPEKO
DEVONPORT BASE, TASMANIA
663316

SCALE: 1:2 500

No. T.S 27/76-V19-11

E.L. 27/76 ELLIOTT BAY, TASMANIA
VOYAGER 19
82 - 1882 2/5
C-HORIZON GEOCHEMISTRY RESULTS
LEAD CONTOURS

163 PLAN 21

9.400E 9.500E 379 000mE AMG 9.600E 9.700E 9.800E 9.900E 10.000E 10.100E 10.200E 10.300E 10.400E 10.500E 10.600E 10.700E 10.800E 10.900E 11.000E

13.800N 13.700N 13.600N 13.500N 13.400N 13.300N 13.200N 13.100N 13.000N 12.900N 12.800N 12.700N 12.600N 12.500N 12.400N 12.300N 12.200N 12.100N 12.000N 11.900N 11.800N 11.700N 11.600N

5 251 000mN AMG

5 251 000mN AMG

LEGEND:

- ..... Grid Position
- ..... Power Auger Hole (Jacro)
- ..... Hand Auger Hole
- ..... Power Hand Auger. (Mate)

Cu — x
Pb — 55
Zn — 160
Original Sample

Sample Position

Cu — x
Pb — 55
Zn — 140
Duplicate Sample

NOTE: All values in ppm

CONTOUR INTERVAL

100 ppm
200
400
800
1600

5 cm

GN MN
13°00'

DATE: FEB 1981
UPDATED MAY 1982
GEOLOGIST: W.H.
DRAWN: R.TOGNONI
CHECKED:

GEOPEKO
DEVONPORT BASE, TASMANIA
663317

SCALE 1:2 500

No T.S 27/76-V19-7

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 19
C-HORIZON GEOCHEMISTRY RESULTS
Cu, Pb, Zn Results

169

82-1882 2K PLAN 22

9.400E | 9.500E | 379 000mE AMG | 9.600E | 9.700E | 9.800E | 9.900E | 10.000E | 10.100E | 10.200E | 10.300E | 10.400E | 10.500E | 10.600E | 10.700E | 10.800E | 10.900E | 11.000E

13.800N | 13.700N | 13.600N | 13.500N | 13.400N | 13.300N | 13.200N | 13.100N | 13.000N | 12.900N | 12.800N | 12.700N | 5 251 000mN AMG | 12.600N | 12.500N | 12.400N | 12.300N | 12.200N | 12.100N | 12.000N | 11.900N | 11.800N | 11.700N | 11.600N

LEGEND:

- ✳ ..... Grid Position
- ● ..... Power Auger Hole (Jacro)
- ⊙ ..... Hand Auger Hole
- ⊛ ..... Power Hand Auger. (Mate)

Cu — x
Pb — 55
Zn — 160
Original Sample

● Sample Position

Cu — x
Pb — 55
Zn — 140
Duplicate Sample

NOTE: All values in ppm

CONTOUR INTERVAL ppm

Pencil No.			
19-6	<50	19-28	<800
19-10	100-199		
19-15	200-399		
19-22	400-799		

5 cm

GN MN
13°00'

DATE: FEB 1981
UPDATED MAY 1982
GEOLOGIST W.H.
DRAWN R.TOGNONI
CHECKED

GEOPEKO
DEVONPORT BASE, TASMANIA
663318

SCALE 1:2 500

NO T.S 27/76-VI9-7

E.L. 27/76 ELLIOTT BAY, TASMANIA
VOYAGER 19 82-1882
C-HORIZON GEOCHEMISTRY RESULTS
Cu, Pb, Zn Results
COPPER CONTOURS 170 PLAN 23

2/5

9.400E | 9.500E | 379 000E A.M.G. | 9.600E | 9.700E | 9.800E | 9.900E | 10.000E | 10.100E | 10.200E | 10.300E | 10.400E | 10.500E | 10.600E | 10.700E | 10.800E | 10.900E | 11.000E

13.800 N
13.700 N
13.600 N
13.500 N
13.400 N
13.300 N
13.200 N
13.100 N
13.000 N
12.900 N
12.800 N
12.700 N
5 251 000 N A.M.G.
12.600 N
12.500 N
12.400 N
12.300 N
12.200 N
12.100 N
12.000 N
11.900 N
11.800 N
11.700 N
11.600 N

LEGEND:

- Grid Position
- Power Auger Hole (Jacro)
- Hand Auger Hole
- Power Hand Auger. (Mate)

Ag 1·5, Mn 10, Fe 17% — Original Sample
Sample Position
Ag 1·5, Mn 10, Fe 17% — Duplicate Sample
— Element not analysed

CONTOUR INTERVAL

Pencil No.	
19–6	0·5%
19–10	1·0%
19–15	2·0%
19–22	4·0%

5 cm

GN MN
-19°00'

DATE FEB 1981
UPDATED MAY 1982
GEOLOGIST W.H.
DRAWN: B.J.S, M.vdS.
CHECKED: HKO

GEOPEKO
DEVONPORT BASE, TASMANIA
663319

SCALE 1:2 500

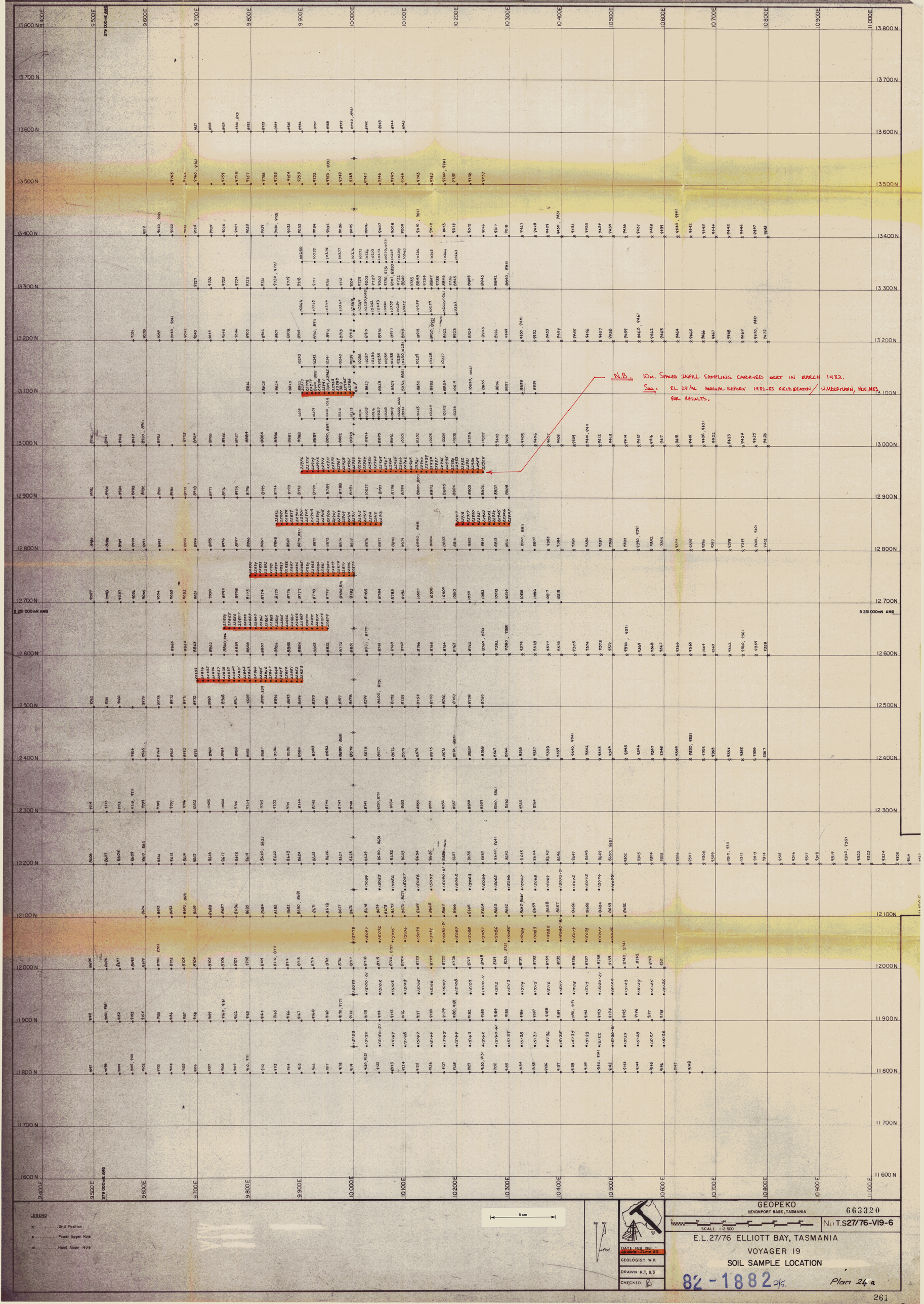
No T.S27/76-V19-

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 19
C-HORIZON GEOCHEMISTRY RESULTS
Fe CONTOURS

82 1882

25

171 PLAN 24


N.B. 10m. SPACED INFILL SAMPLING CARRIED OUT IN MARCH 1983.
See: EL 27/76 ANNUAL REPORT 1982-83 FIELD SEASON / W.HERRMANN, NOV. 1983 FOR RESULTS.
379 000mE AMG
5 251 000mN AMG
LEGEND:
Grid Position
Power Auger Hole
Hand Auger Hole
5 cm
GEOPEKO
DEVONPORT BASE, TASMANIA
663320
SCALE: 1:2 500
No T.S27/76-V19-6
E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 19
SOIL SAMPLE LOCATION
DATE: FEB 1981
Update: June 83
GEOLOGIST: W.H.
DRAWN: R.T, B.S
CHECKED:
82-1882 2/5.
Plan 24.a

10000 ppm

SOIL GEOCHEMISTRY

1000
800
600
400
200
0

C HORIZON SOIL GEOCHEMISTRY
12·5m Spaced Jacro Holes

Zinc
Lead

Zinc
Lead

9 950mE

10 000mE
Base Line

10 050mE

10125mE

LINE 13 300 mN

quartzo-feldspathic crystal tuffs

green "chloritic" rock on surface

Costean

4m
10·23% Pb
17·94% Zn
148 g/t Ag

mineralized chloritic shale

massive sphalerite-galena mineralization

no core

sericite rich bands parallel to cleavage

80°

"porous", friable, quartz-eye, sericitic crystal tuff
fine-medium grained c. 0·5-1% disseminated pyrite

fine grained porphyritic rhyolite

zone of leaching

lithic fragments of pale-green feldspar-quartz crystal tuff
flattend "eutaxitic" texture in fine grained quartz-carbonate crystal tuff

calcite veining

gradational change, albite-quartz crystal tuff becoming more dominant groundmass to qst lithic fragments c. 1% disseminated pyrite

medium grained feldspar(albite) quartz crystal tuffs with lithic fragments of quartz crystal tuffs & fine grained porphyritic lavas.

extensively carbonate altered intermediate lava or dyke?

pyrite galena along calcite-quartz vein system

quartz porphyritic lava

zone of patchy pervasive silicification leaching & destruction of texture

massive carbonate filled breccia zone with galena

transgressive contact

homogeneous quartz-biotite-feldspar, porphyritic lava

extensive carbonate alteration of fine-grained groundmass, notably pseudomorphing of plagioclase.
also extensive brecciation & veining by quartz-calcite ± sulphides locally up to 25 vol %

green weathering feldspar (sanidine?) magnetite phenocrysts in carbonate altered feldspathic groundmass, intermediate-basic dyke

sulphide clasts

increase in lithic fragments

green, pyritic f.g carbonate rich altered intermediate basic ava-dyke

quartz xenocrysts 0·5-1·5mm from up to 40 vol % of crystal tuff.
extensive carbonate alteration of groundmass
lithic fragments of quartz-biotite porphyry (lava?)
& sulphide clasts to base

E.O.H 200·36 m

PLAN PROJECTION BASED ON SURVEY DATA

10 000mE
10 050mE
10 100mE
10 150mE

663321
02-1882

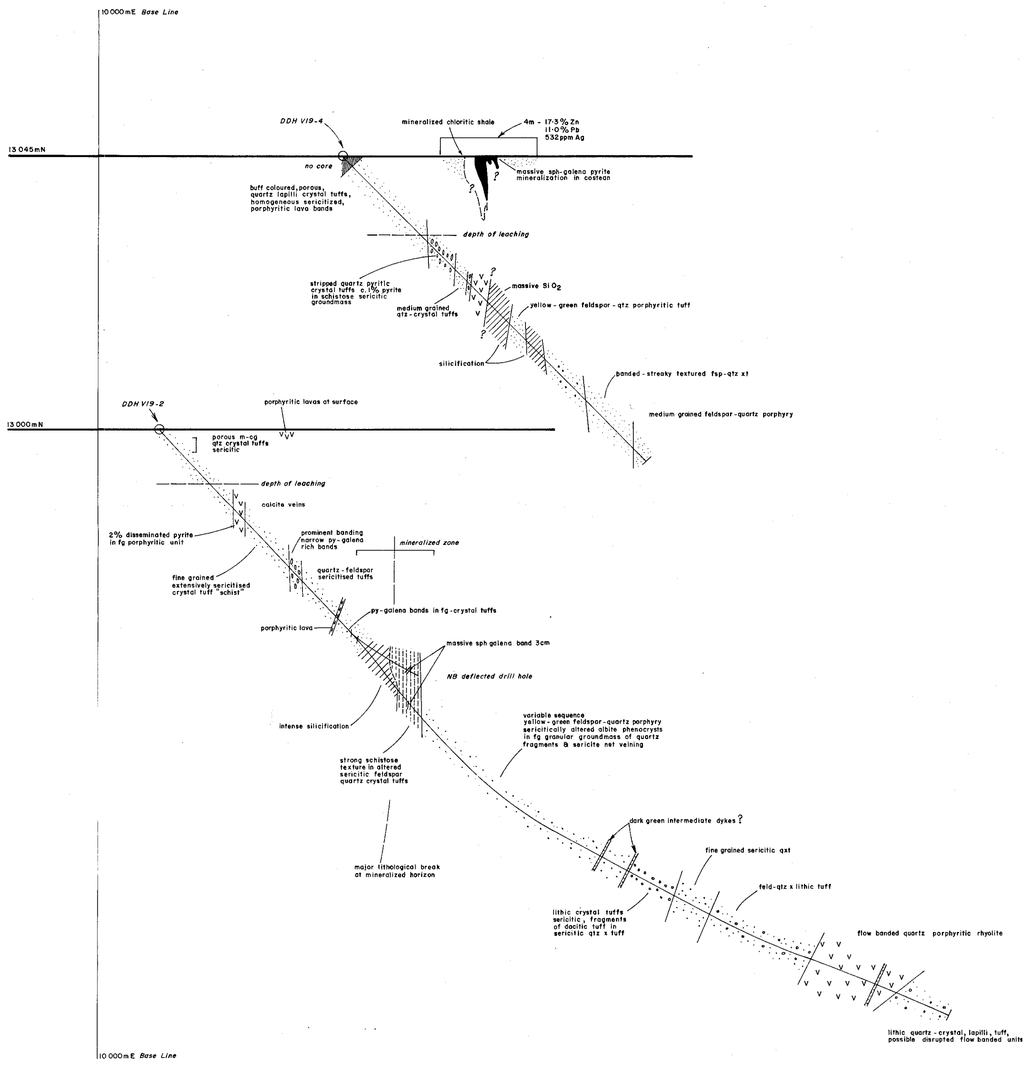
5 cm

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

SCALE	No. TS	PLAN No. 25
1:500		

E.L. 27/76 ELLIOTT BAY, TASMANIA
VOYAGER 19
Geology along D.D.H. 1

DATE 26/5/82
GEOL R.A Wilson
DRAWN R.Tog
CHECKED



5 cm

82-1882 b/s 663322

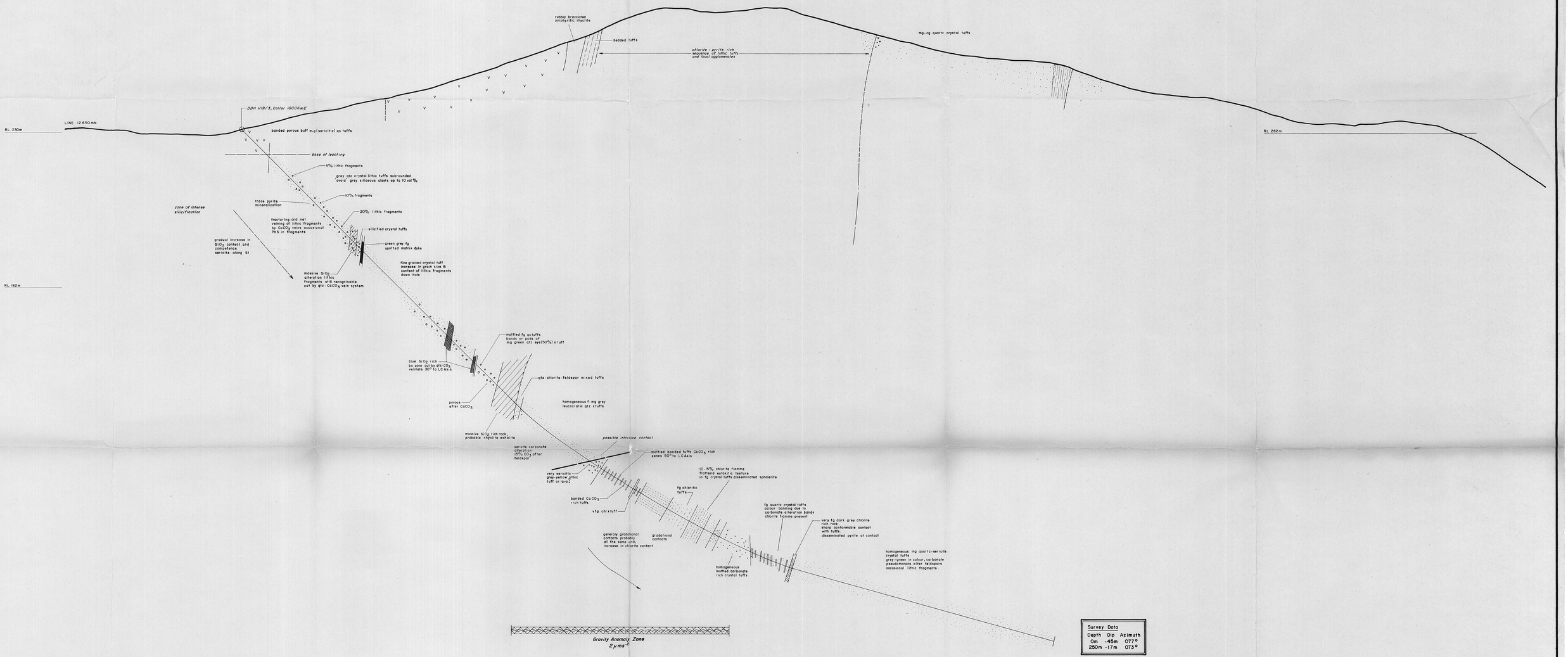
GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

SCALE	No. TS	REP. No. 26
1:500		

E.L. 27/76 ELLIOTT BAY, TASMANIA
VOYAGER 19
Geology along D.D.H 2 & 4

DATE 27/5/82
GEOL P.A. Wilson
DRAWN R. Tog
CHECKED TRV

The Wart



Survey Data		
Depth	Dip	Azimuth
0m	-45m	077°
250m	-17m	073°

663323

02-1882 2/5

5 cm

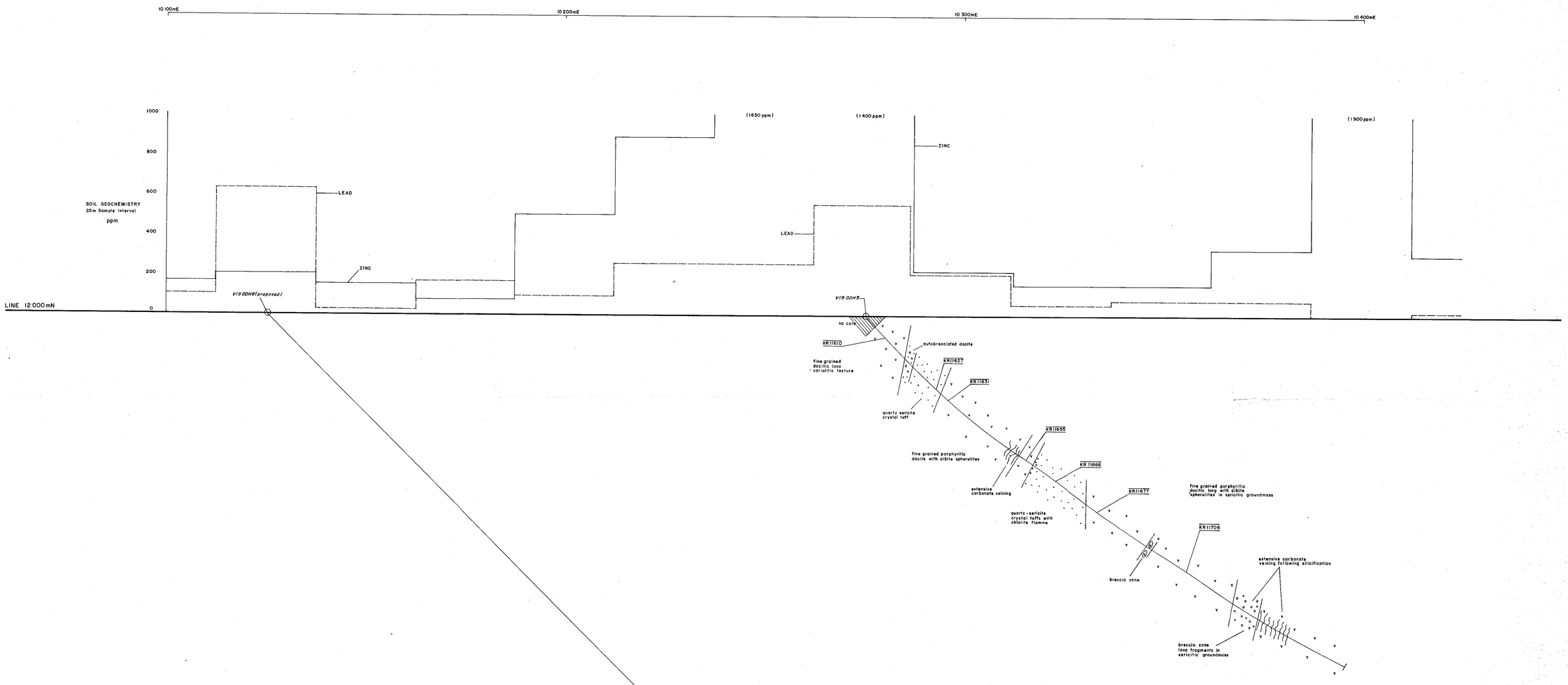
GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD

SCALE: 1:500 | No. TS | PLAN No. 27

DATE: 8/6/82
GEOLOGIST: P.A.W
DRAWN: R. Tog
CHECKED:

E.L.27/76 ELLIOTT BAY, TASMANIA
DDH V19/3
LINE 12 650mN, 10 006mE
Geological Section

174



BOREHOLE SURVEY DATA		
Depth	Azimuth	Dip
0	78°M	45°
64·2	88°M	36°
100·2	68°M	33°
148·2	63°M	28°

KR 11666 denotes Thin Section taken for petrographic description

663324

82-1882

5 cm

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

SCALE	No. TS	REP. No.
1:500		28

DATE: 22/7/82
GEOLOGIST: P.A.W
DRAWN: R.Tog.
CHECKED:

E.L.27/76 ELLIOTT BAY, TAS.
DDH V19-5 GEOLOGY

175

379 000mE A.M.G

13 600mN

13 500mN

13 400mN

13 300mN

13 200mN

13 100mN

13 000mN

12 900mN

12 800mN

5 251 500mN A.M.G.

COSTEAN 2.

qxt

E.O.H

white gy sericitic qxt

gy, fg qxt (pt?)

qxt, 3mm qtz eyes

felsic qtz xt

56°

COSTEAN 1.

V19/1

massive sulphide

F

blk shale

negative feature

gy xt

86°

79°

80°

qxt

massive porphry rhyolite

blk py-shale

green py mud

COSTEAN 3.

buff q-f xt

blk graph shale

blk shales

85°

rubbly p.lava

massive sulphide

low swampy area

lithic tuff bands

75°

reworked tuffs

dissem sulphides in costean

COSTEAN 4.

agglomerate

Fe staining

70°

chalcopyrite in crystal tuffs

gy volc sst

p. rhy

gn chl sh

V19/4

massive sulphide

V19/2

massive sulphide

green qxtt

p.lava?

white fg q(s) xt

65°

rubbly rhy lxt

green vfg chl. dyke

mg lxt

mg(ser) lxt

COSTEAN 5.

9 800mE

379 000mE A.M.G

9 900mE

10 000mE

10 100mE

10 200mE

10 300mE

663325

82 - 1882

• Power Auger

GEOLOGICAL FACT MAP BASED ON OUTCROP & DRILL HOLE DATA (DDH V19/1/2/4.)

5 cm

GN MN

13°00'

DATE 29/11/82

GEOL P.W.

DRAWN R.Tog

CHECKED

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

SCALE 1:1250

No.TS 27/76-V19N-8

PLAN No. 29

E.L. 27/76 ELLIOTT BAY, TASMANIA

VOYAGER 19 North

Geological Compilation

176

BUSH & BLACK SHALES + SILTSTONES.

Tyndall conglomeratic bands in lxt

f-cg rewkd qfxlt

scarp

f-mg qfxlt

f-mg rewkd qfxt

m-cg conglomeratic tuff sed

m-cg conglomeratic tuff sed frags wh rnded fg siliceous tuff or lava.

massive qfixt

mass f-cg qfxt

areas of quartz scree

fg chloritic fg qfxt rewkd KR 8611 Ti 625 1200 0·5 5%

fg qfxt.

ZONE OF MOD-STRONG SILICEOUS ALT

scarp

klinky indur m-cg detex agglomeratic lxt

(64) welded agglomerate

POSSIBLE VOLCANICS VENT

f-mg agglomeritic (59) xlt

(63) KR 8614 Ti 60 180 1·0 80%

Xenolith qpl in vfg felsic lava.

welded agglomerate/breccia (60)

vf-fg internal texture.

vf-fg v ser qxt contains some shards

f-mg sheared qtz phyric lava

f-mg qtz rich qfxt.

agglomeritic fgqfxt

qtz phyric lava

klinky qfxt jasper

mostly mg qtz rich qfxt w/1 bed fg fgxt (rewkd

cg angular breccia

limeonent

fgser fgxt

qtz physic lava

qtz rich strongly alt dense siliceous f-mg qxt ?

fg qxt?

m-cg lxt

qfxt

f-cg qfxlt

mg qfxt

fg qfxt

qtz veins

lava

qtz (bio) lava

KR8609 jasper veins

KR8608

f-mg bio lava

biotite lavas

fg qtz lava

qtz lava

fg lithic tuffs(qf)

(chloritic) lavas

KR8607

80°

fg (ser) qxt

KR 8606 KR 8605

fg (ser) qxt

qtz porphyry

fg qtz xt

fg(ser)xt

KR 8613 KR 8602 KR8601 KR8603 KR 8604

fg(ser) qxt

f-mg qfxt chlorite fiamme

qtz

ser qfxt

fg ser fgxlt

qpl

TD 6701,02,03

fis vfg ser detex qfxt

vf-fg wh qfxt

fg wh ser qfxt (65)

vf-fg wh qf(?)xt

fg wh qfxt few lithics

vf-fg white some what detectured ser qfxt-sim to # 9

vf-fg wh qfxt.

wthrd fg qpl

vf fg wh indur qfxt.

70

smooth fg qfxt (32)

grading of lithic frags in qxt

LEGEND:

5 cm

GN MN 13°00'

SCALE: 1:2500
DATE: 4-3-82
GEOL: D.J.M.
DRAWN: M.vdS.
CHECKED:

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

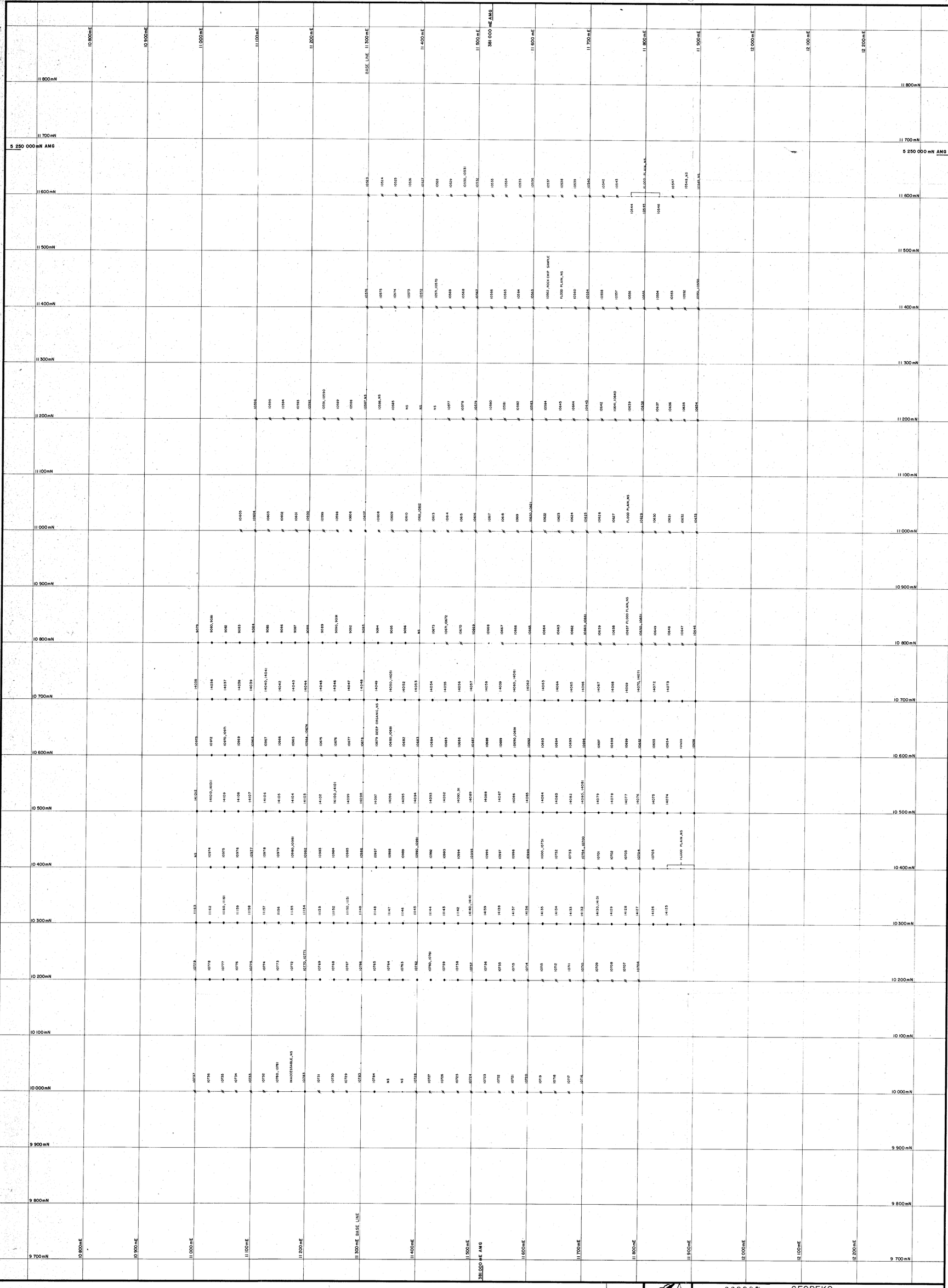
FILE No TS 27/76-V 22 | PLAN No 30

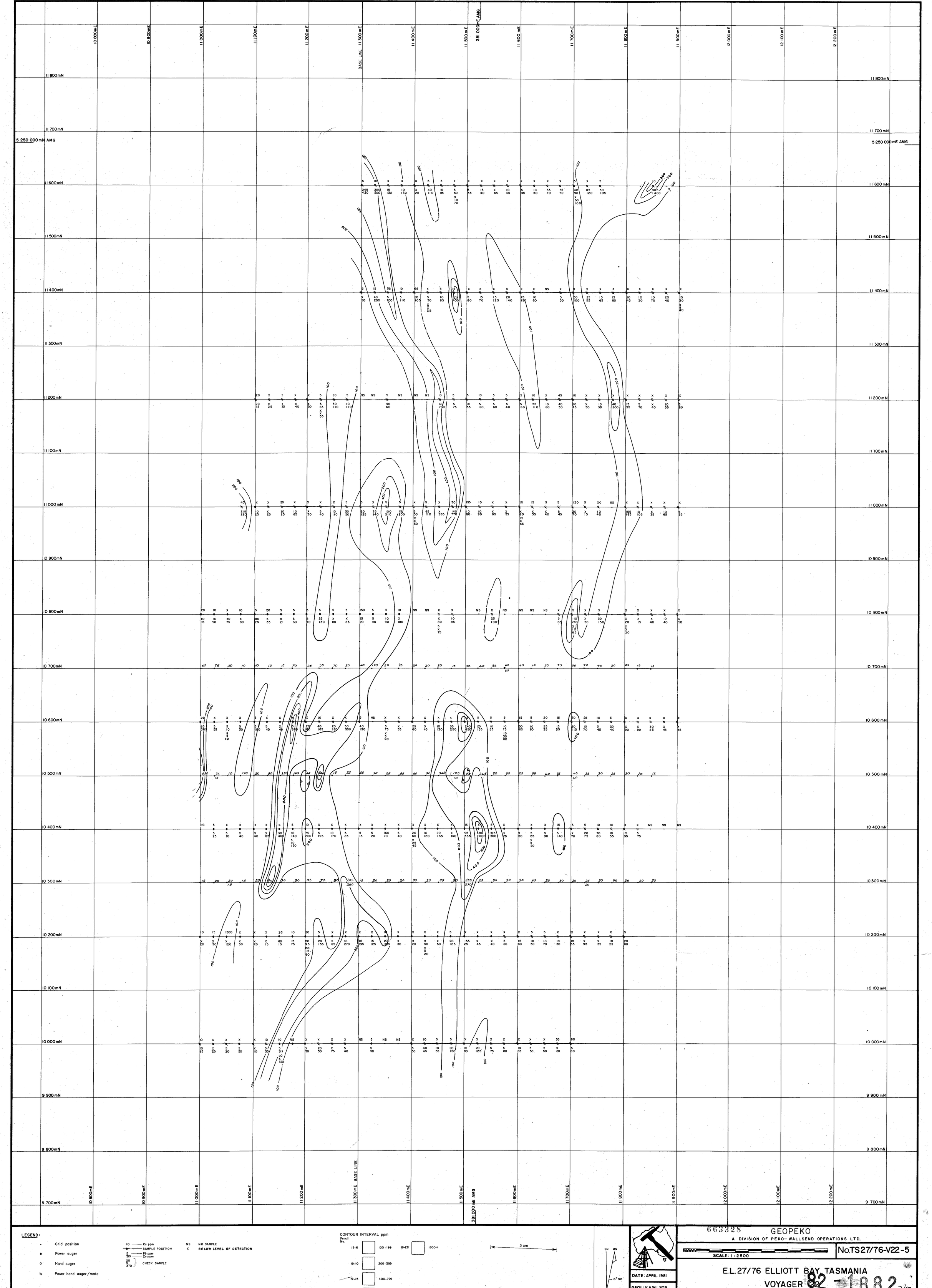
E.L.27/76 ELLIOTT BAY TASMANIA
VOYAGER 22
GEOLOGY

663326

82 - 1882 2/5

177


10 800mE
10 900mE
11 000mE
11 100mE
11 200mE
BASE LINE 11 300mE
11 400mE
11 500mE
381 000 mE AMG
11 600mE
11 700mE
11 800mE
11 900mE
12 000mE
12 100mE
12 200mE
11 800mN
11 700mN
5 250 000mN AMG
11 600mN
11 500mN
11 400mN
11 300mN
11 200mN
11 100mN
11 000mN
10 900mN
10 800mN
10 700mN
10 600mN
10 500mN
10 400mN
10 300mN
10 200mN
10 100mN
10 000mN
9 900mN
9 800mN
9 700mN
FLOOD PLAIN,NS
FLOOD PLAIN, NS
FLOOD PLAIN,NS
FLOOD PLAIN,NS
FLOOD PLAIN,



LEGEND:

- Grid position
- Power auger
- Hand auger
- Power hand auger/mate
- 10 — Cu ppm
- SAMPLE POSITION
- 5 — Pb ppm
- 315 — Zn ppm
- 320 / 370 — CHECK SAMPLE
- NS NO SAMPLE
- X BELOW LEVEL OF DETECTION

CONTOUR INTERVAL ppm

Pencil No.		Pencil No.	
19-6	100-199	19-28	1600+
19-10	200-399		
19-15	400-799		
19-22	800-1599		

5 cm

GN MN 13°00'

DATE: APRIL 1981
GEOL: P.A.WILSON
DRAWN: R.TOGNONI UPDATE J.P.M.
CHECKED:

663328

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

SCALE: 1:2500

No.TS27/76-V22-5

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER
C-HORIZON GEOCHEMISTRY RESULTS
Zn Contours

PLAN 32

82-1882 2/5

10 800mE | 10 900mE | 11 000mE | 11 100mE | 11 200mE | BASE LINE 11 300mE | 11 400mE | 11 500mE | 381 000mE AMG | 11 600mE | 11 700mE | 11 800mE | 11 900mE | 12 000mE | 12 100mE | 12 200mE

11 800mN

11 700mN

5 250 000mN AMG

11 600mN

11 500mN

11 400mN

11 300mN

11 200mN

11 100mN

11 000mN

10 900mN

10 800mN

10 700mN

10 600mN

10 500mN

10 400mN

10 300mN

10 200mN

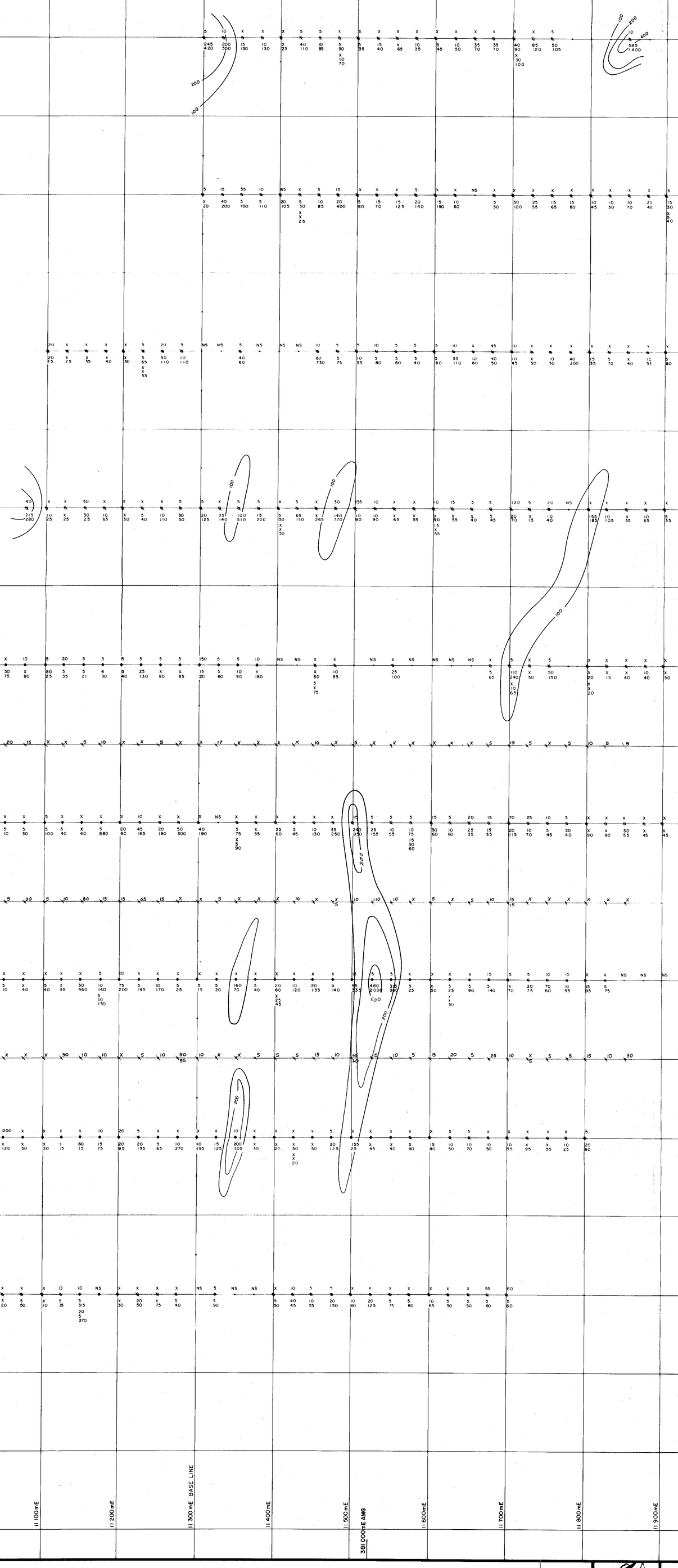
10 100mN

10 000mN

9 900mN

9 800mN

9 700mN



LEGEND:

- Grid position
- Power auger
- Hand auger
- Power hand auger / mate

10 — Cu ppm
SAMPLE POSITION
5 / 315 — Pb ppm / Zn ppm
20 / 370 CHECK SAMPLE

NS NO SAMPLE
X INSUFFICENT SAMPLE

CONTOUR INTERVAL ppm

Pendl No.	
19-6	100 - 199
19-15	200 - 399
19-28	400 +

5 cm

GN MN 13°00'

DATE: APRIL 1981
GEOL: P.A.WILSON
DRAWN: R.TOGNON
CHECKED: RJ

663329 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

SCALE: 1:2500

No.TS 27/76-V22-4

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 82-1882 2/5
C-HORIZON GEOCHEMISTRY RESULTS
Pb Contours

PLAN 33

181

663330 GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

No. TS 27/76-V22-10

SCALE: 1:2500

E.L. 27/76 ELLIOTT BAY, TASMANIA

VOYAGER 22

C-HORIZON GEOCHEMISTRY RESULTS

Fe CONTOURS

PLAN 34

CHECKED:

DRAWN: R. TOGNONI

GEOL: P.A. WILSON

DATE: APRIL 1981

GN 13°00' MN

5 cm

CONTOUR INTERVAL

Pencil No. 19-6 0.5 - 1%

19-10 1 - 2%

19-15 2% +

Ag ppm
Pb %
Mn ppm
5
1·15
30

Duplicate sample 5 105 30

LEGEND:

- Grid position
- Power auger
- Hand auger
- Power hand auger/mate

381 000 mE. A.M.G.

5 250 000 mN. A.M.G.

BASE LINE

10 000 mN
9 900 mN
9 800 mN
9 700 mN
10 800 mE
10 900 mE
11 000 mE
11 100 mE
11 200 mE
11 300 mE
11 400 mE
11 500 mE
11 600 mE
11 700 mE
11 800 mE
11 900 mE
12 000 mE
12 100 mE
12 200 mE
11 800 mN
11 700 mN
11 600 mN
11 500 mN
11 400 mN
11 300 mN
11 200 mN
11 100 mN
11 000 mN
10 900 mN
10 800 mN
10 700 mN
10 600 mN
10 500 mN
10 400 mN
10 300 mN
10 200 mN
10 100 mN
10 000 mN
9 900 mN
9 800 mN
9 700 mN

10 800mE | 10 900mE | 11 000mE | 11 100mE | 11 200mE | BASE LINE 11 300mE | 11 400mE | 11 500mE | 381 000mE A.M.G. | 11 600mE | 11 700mE | 11 800mE | 11 900mE | 12 000mE | 12 100mE | 12 200mE

11 800mN — 11 800mN

11 700mN — 11 700mN

5 250 000m N A.M.G. — 5 250 000m N. A.M.G.

11 600mN — 11 600mN

11 500mN — 11 500mN

11 400mN — 11 400mN

11 300mN — 11 300mN

11 200mN — 11 200mN

11 100mN — 11 100mN

11 000mN — 11 000mN

10 900mN — 10 900mN

10 800mN — 10 800mN

10 700mN — 10 700mN

10 600mN — 10 600mN

10 500mN — 10 500mN

10 400mN — 10 400mN

10 300mN — 10 300mN

10 200mN — 10 200mN

10 100mN — 10 100mN

10 000mN — 10 000mN

9 900mN — 9 900mN

9 800mN — 9 800mN

9 700mN — 9 700mN

10 800mE | 10 900mE | 11 000mE | 11 100mE | 11 200mE | BASE LINE 11 300mE | 11 400mE | 11 500mE | 381 000mE A.M.G. | 11 600mE | 11 700mE | 11 800mE | 11 900mE | 12 000mE | 12 100mE | 12 200mE

LEGEND:

- Grid position
- Power auger
- Hand auger
- Power hand auger/mate

Horz Scale 1:2500

Vert Scale 1cm=100gammas

Datum 62 800 nT

(Incompleted Lines 11100 N to 12 200 not read).

5 cm

GN MN

13°00'

DATE: 12-8-82

GEOL: P.A.W

DRAWN: M.vdS.

CHECKED:

663331 GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

SCALE: 1:2500

No.TS 27/76-V22-8

E.L.27/76 ELLIOTT BAY, TASMANIA

VOYAGER 22

MAGNETIC PROFILES

82-1882

2/5

182 PLAN 35

380 000mE AMG

5 250 000mN AMG

11800 N
11700 N
11600 N
11500 N
11400 N
11300 N
11200 N
11100 N
11000 N
10900 N
10800 N
10700 N
10600 N
10500 N
10400 N
10300 N
10200 N
10100 N
10000 N
9900N
9800N
9700N
9600N

9400E 9500E 9600E 9700E 9800E 9900E 10000E 10100E 10200E 10300E 10400E 10500E 380 000mE AMG 10600E 10700E 10800E 10900E

40700

LEGEND

- Grid Position
- Power Auger Hole

Cu X
Pb 40
Zn 135

X
40
160

Original Sample
Sample Position
Duplicate Sample

NOTE All values in ppm

CONTOUR INTERVAL ppm
Pencil No

19-6	50-100
19-10	100-200
19-15	200-400
19-22	400 +

5 cm

GN MN
13°00'

DATE APRIL 1981
Update april 1982
GEOLOGIST W.H. P.A.W.
DRAWN B.STEDMAN J.P.M.
CHECKED

663332 GEOPEKO
DEVONPORT BASE, TASMANIA

0 50 100 150 200 250
SCALE 1:2500

NOTS 27/76-V29-5

E.L. 27/76 ELLIOTT BAY, TASMANIA
VOYAGER 29
C-HORIZON GEOCHEMISTRY RESULTS
COPPER CONTOURS

82-1882
2/5
183 PLAN 36

11800N
11700N
5 250 000mN AMG
11600N
11500N
11400N
11300N
11200N
11100N
11000N
10900N
10800N
10700N
10600N
10500N
10400N
10300N
10200N
10100N
10000N
9900N
9800N
9700N
9600N
9400E
9500E
9600E
9700E
9800E
9900E
10000E
10100E
10200E
10300E
10400E
10500E
380 000mE AMG
10600E
10700E
10800E
5 250 000mN AMG

LEGEND

Grid Position

Power Auger Hole

Cu X
Pb 40
Zn 135
X
40
160

Original Sample

Sample Position

Duplicate Sample

NOTE All values in ppm

CONTOUR INTERVAL ppm
Pencil No

19-6 100-200
19-10 200-400
19-15 400-800
19-22 800-1600
19-28 1600 +

5 cm

GN MN
13°00'

DATE APRIL 1981
update april 1982
GEOLOGIST W.H. P.A.W.
DRAWN B.STEDMAN
CHECKED

663333 GEOPEKO
DEVONPORT BASE, TASMANIA

0 50 100 150 200 250
SCALE 1:2500

NO.TS27/76-V29-

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 2
82 - 1882 2/8
C-HORIZON GEOCHEMISTRY RESULTS
LEAD CONTOURS

184 PLAN 37

11800N
11700N
5 250 000mN AMG
11600N
11500N
11400N
11300N
11200N
11100N
11000N
10900N
10800N
10700N
10600N
10500N
10400N
10300N
10200N
10100N
10000N
9900N
9800N
9700N
9600N
9400E
9500E
9600E
9700E
9800E
9900E
10000E
10100E
10200E
10300E
10400E
10500E
380 000mE AMG
10600E
10700E
10800E
10900E
11000E
5 250 000mN AMG
380 000mE AMG

LEGEND

Grid Position

Power Auger Hole

Cu X
Pb 40
Zn 135

X
40
160

Original Sample

Sample Position

Duplicate Sample

NOTE: All values in ppm

CONTOUR INTERVAL ppm

Pencil No.		
19-6	100-199	19-28 1600+
19-10	200-399	
19-15	400-799	
19-22	800-1599	

5 cm

GN MN
13°00'

DATE APRIL 1981
update april 1982

GEOLOGIST W.H.
P.A.W.

DRAWN B.STEDMAN
J.P.M.

CHECKED

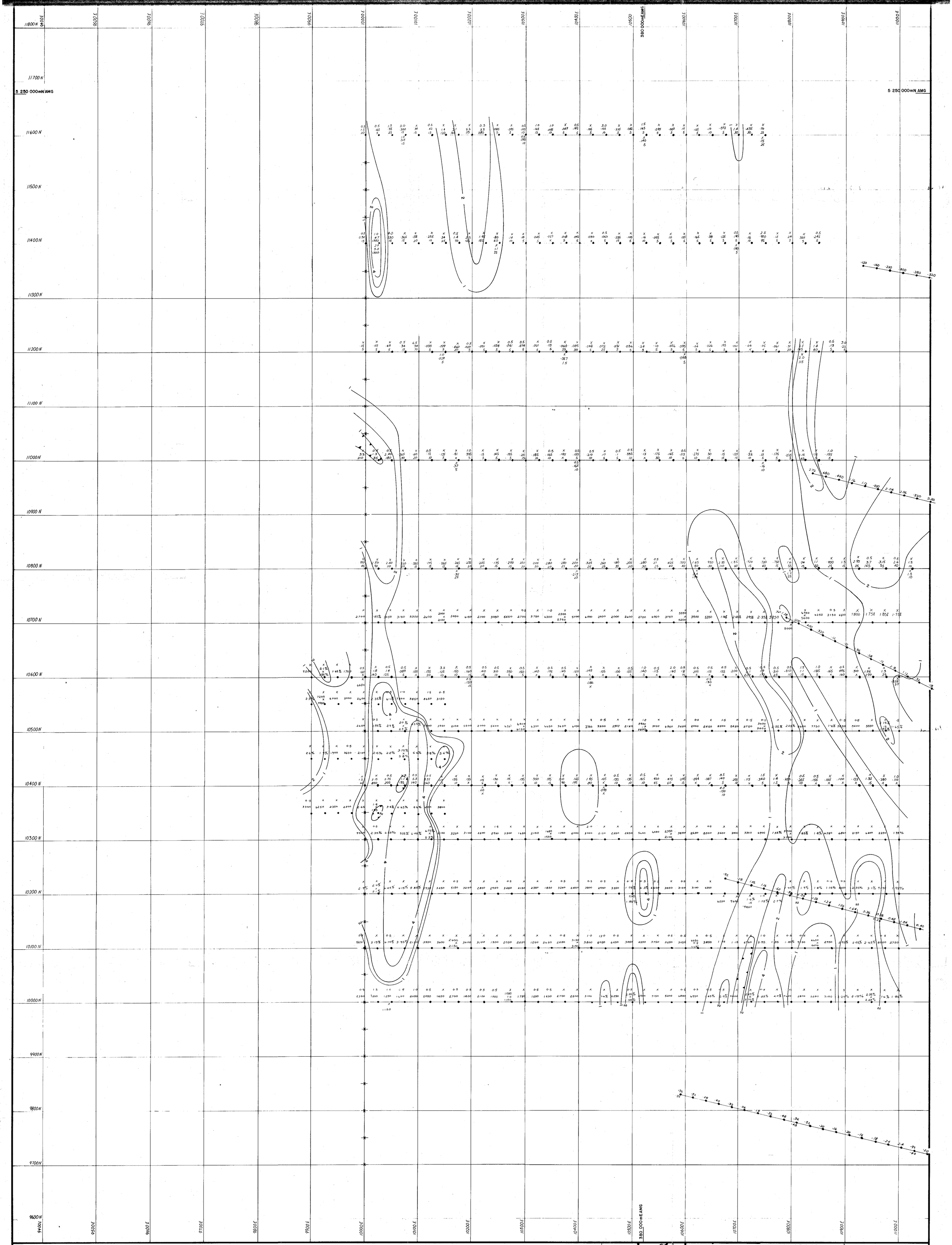
663334 GEOPEKO
DEVONPORT BASE, TASMANIA

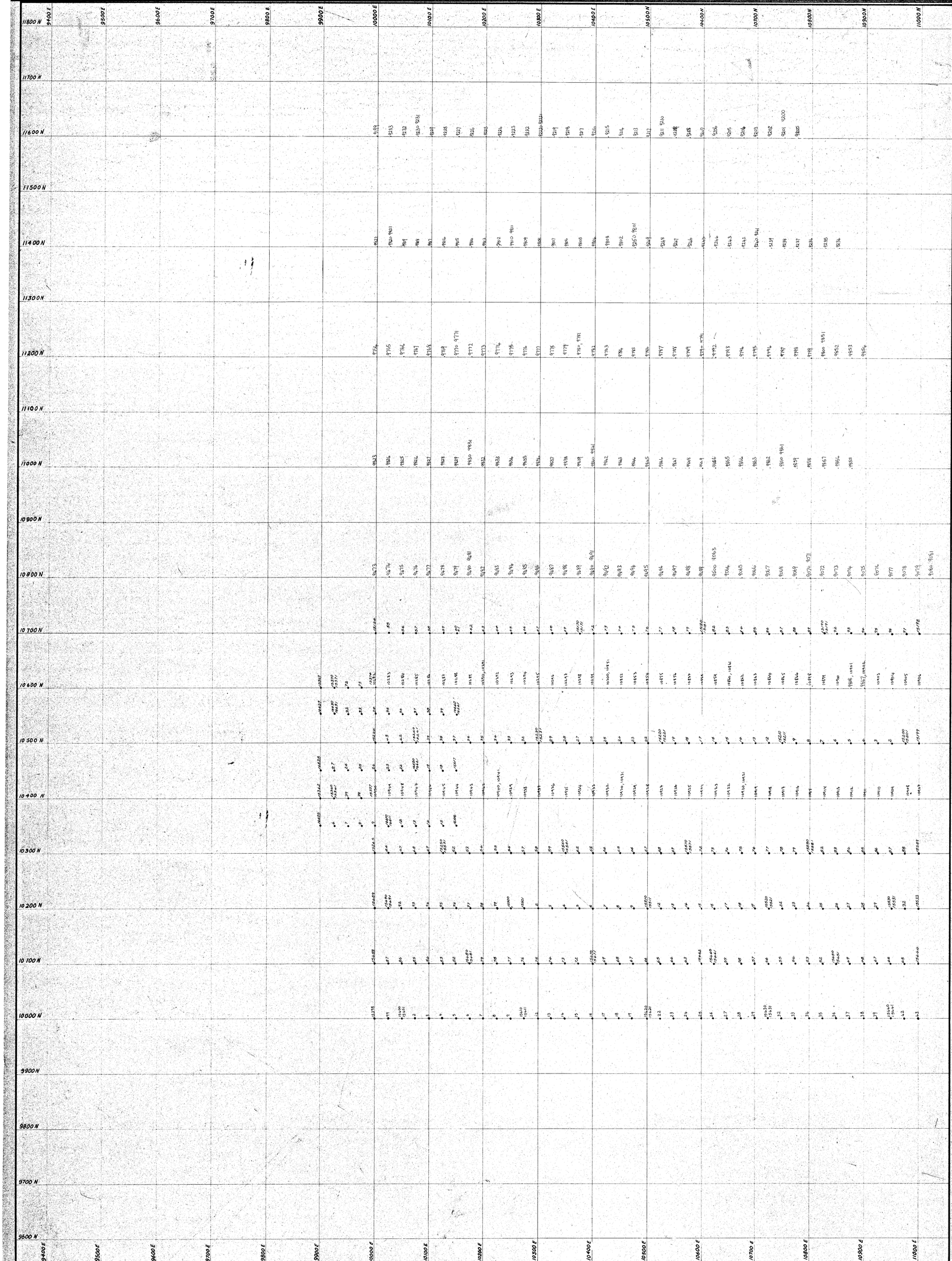
0 50 100 150 200 250
SCALE 1:2500

NoTS 27/76-V29-5

E.L. 27/76 ELLIOTT BAY, TASMANIA
VOYAGER 2
C-HORIZON GEOCHEMISTRY RESULTS
Zn CONTOURS 185 PLAN 38

82-1882 2/5


11800N
11700N
11600N
11500N
11400N
11300N
11200N
11100N
11000N
10900N
10800N
10700N
10600N
10500N
10400N
10300N
10200N
10100N
10000N
9900N
9800N
9700N
9600N
9400E
9500E
9600E
9700E
9800E
9900E
10000E
10100E
10200E
10300E
10400E
10500E
380 000mE AMG
10600E
10700E
10800E
10900E
11000E
5 250 000mN AMG
LEGEND
Grid Position
Power Auger Hole
Original Sample
Sample Position
Duplicate Sample
NOTE: All values in ppm
CONTOUR INTERVAL
Pencil No
19-6 1 – 2%
19-15 2 – 4%
19-28 > 4%
5 cm
GN MN
13°00'
DATE: APRIL 1981
update april 1982
GEOLOGIST W.H. P.A.W.
DRAWN B.STEDMAN J.P.M.
CHECKED
663335 GEOPEKO
DEVONPORT BASE, TASMANIA
SCALE: 1:2 500
No.T.S27/76-V29-4
E.L.27/76 ELLIOTT BAY TASMANIA
VOYAGER
82-1882 2/5
C-HORIZON GEOCHEMISTRY RESULTS
Fe CONTOURS 186
PLAN 39



5 cm

GN MN

13°00'

DATE: APRIL 1981

GEOLOGIST: W.H

DRAWN: B. STEDMAN

CHECKED: RB

663336 GEOPEKO
DEVONPORT BASE, TASMANIA

0 50 100 150 200 250
SCALE: 1:2 500

No. TS27/76-V29-3

E.L 27/76 ELLIOTT BAY, TASMANIA

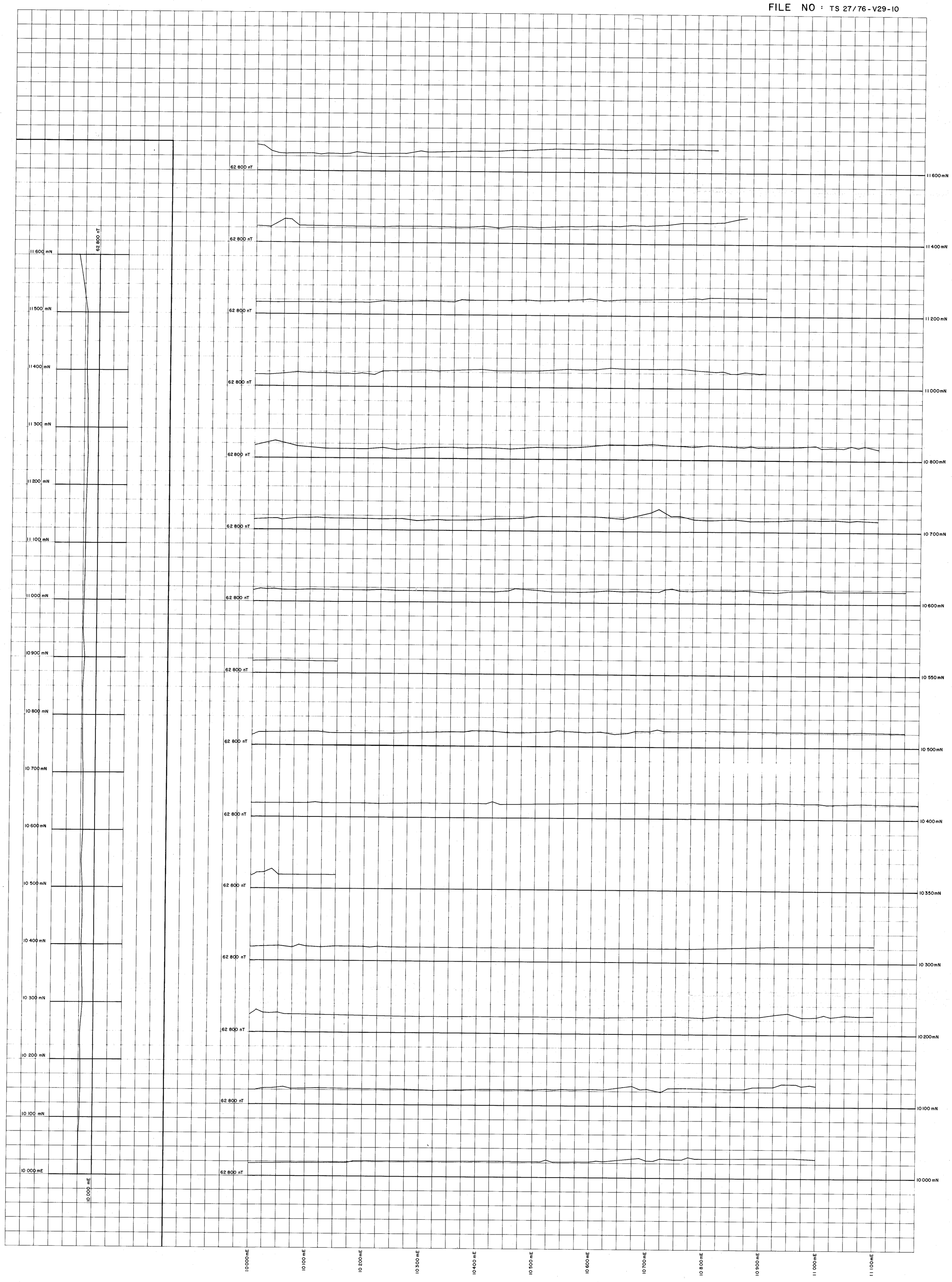
VOYAGER 29

SOIL SAMPLE LOCATION

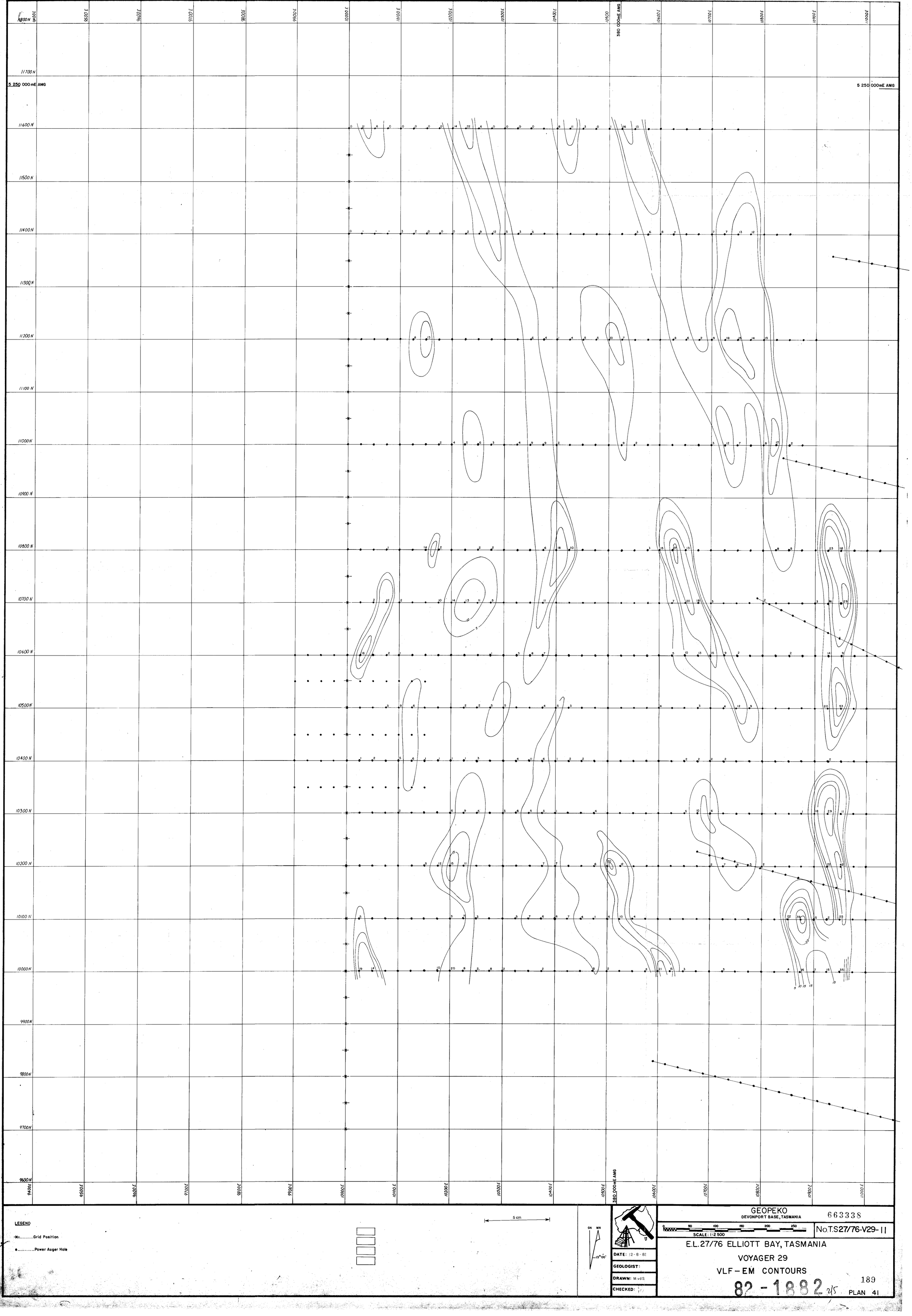
187

82-1082 PLAN 39a

FILE NO : TS 27/76-V29-10



GEOPHYSICAL LEGEND		663337 **GEOPEKO**
		A DIVISION OF PEKO-WALLSEND OPERATIONS LTD - DEVONPORT
		25 0 25 50 75 100 125 metres — SCALE : 1 : 2 500 — PLAN NO : 40
VERT. SCALE: 1cm = 100 nT	LIB BOOK NO. :	E.L. 27/76 ELLIOTT BAY TASMANIA
DATUM: 62 800 nT	DATE : 4/12/82	VOYAGER 29 82-1882
	GEOL : J. Sumpton	PROFILES OF TOTAL MAGNETIC INTENSITY
	DRAWN : R. Tog	
	CHECKED :	



LEGEND

✳.....Grid Position

•.....Power Auger Hole

5 cm

GN MN 13°00'

DATE: 12-8-82

GEOLOGIST:

DRAWN: M.vdS.

CHECKED:

GEOPEKO
DEVONPORT BASE, TASMANIA

663338

SCALE: 1:2 500

No.T.S27/76-V29-11

E.L.27/76 ELLIOTT BAY, TASMANIA

VOYAGER 29

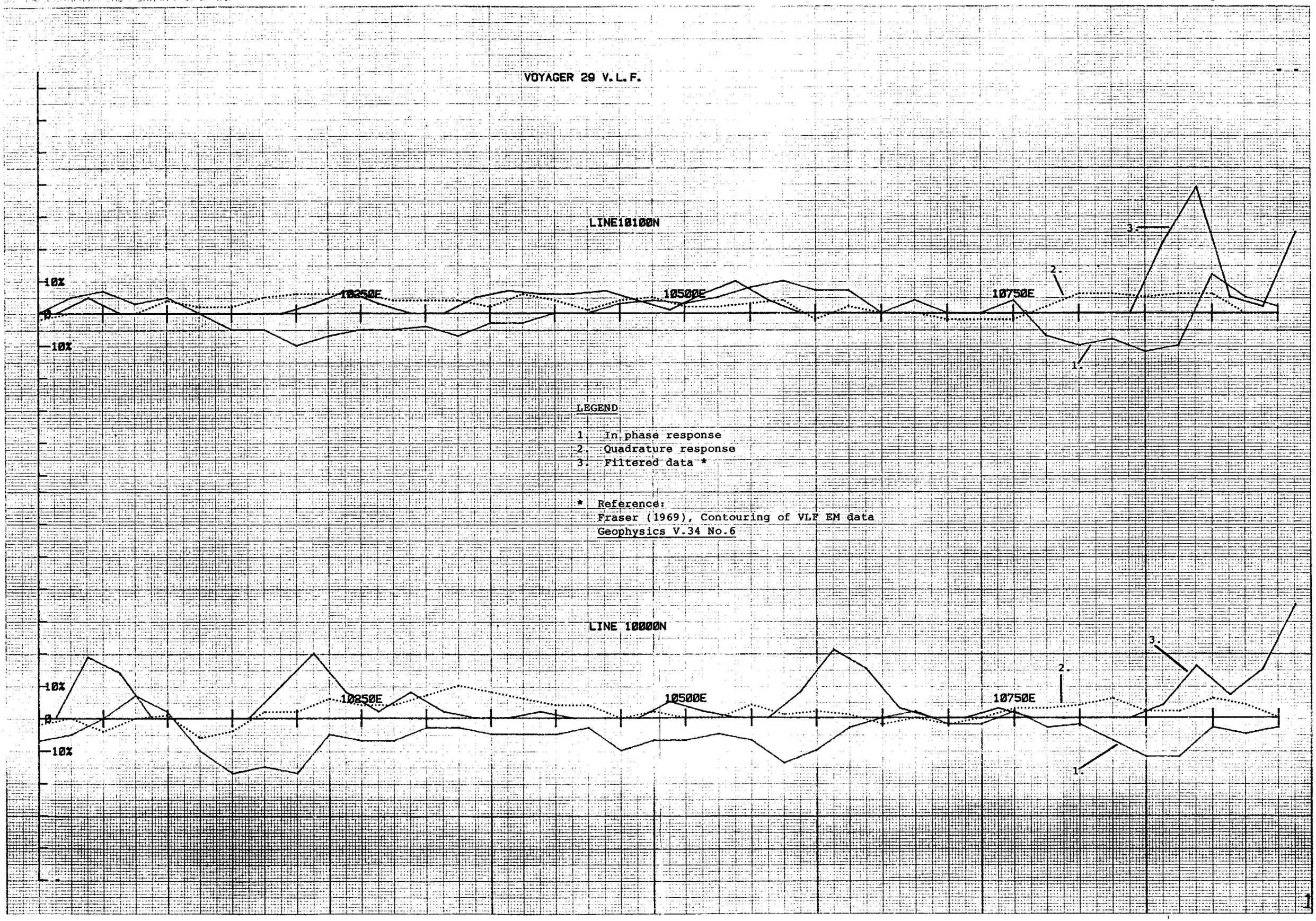
VLF – EM CONTOURS

82 - 1882 2/5

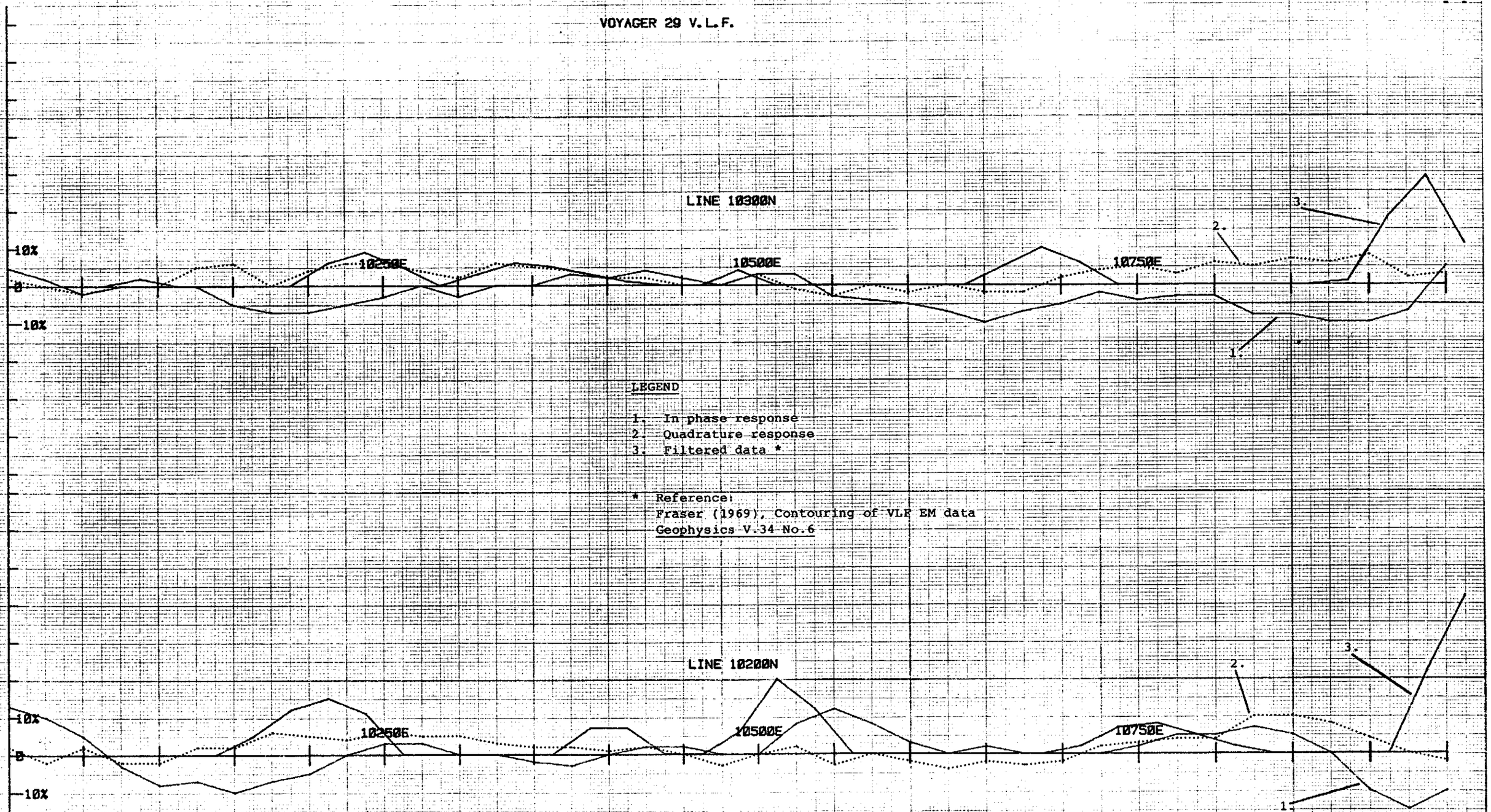
189

PLAN 41

663339


VOYAGER 29 V.L.F.
LINE10100N
10%
0
-10%
10250E
10500E
10750E
1.
2.
3.
LEGEND
1. In phase response
2. Quadrature response
3. Filtered data *
* Reference:
Fraser (1969), Contouring of VLF EM data
Geophysics V.34 No.6
LINE 10000N
10%
0
-10%
10250E
10500E
10750E
1.
2.
3.

VOYAGER 29 V.L.F.



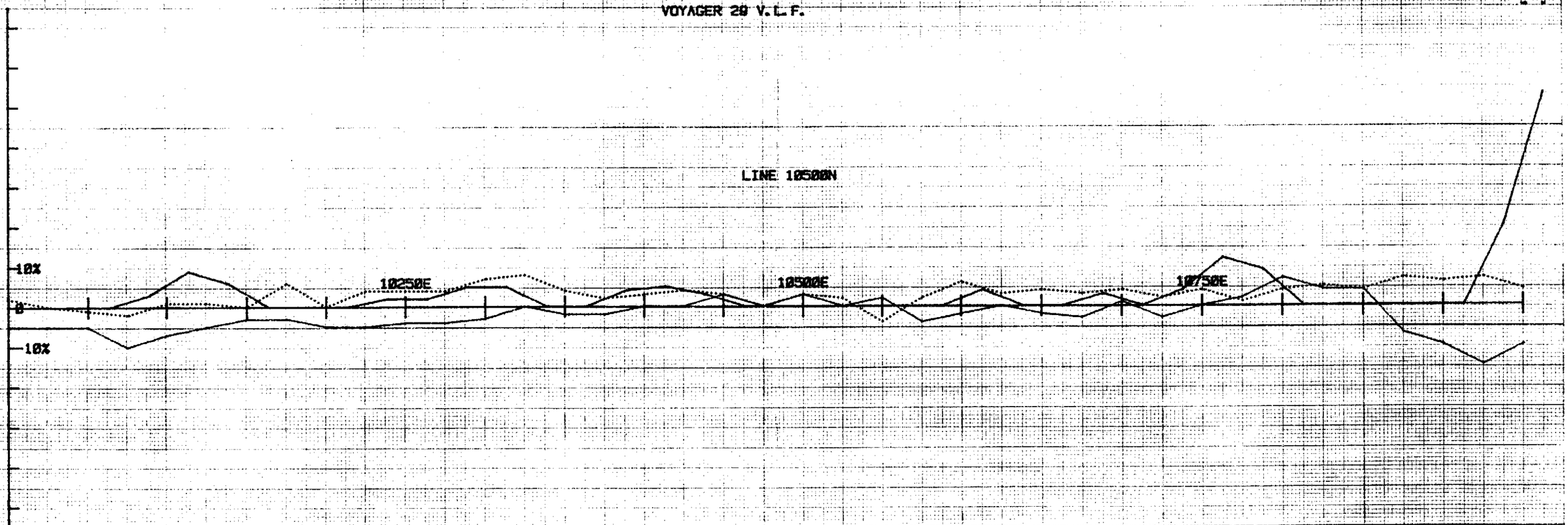
LEGEND

1. In phase response
2. Quadrature response
3. Filtered data *

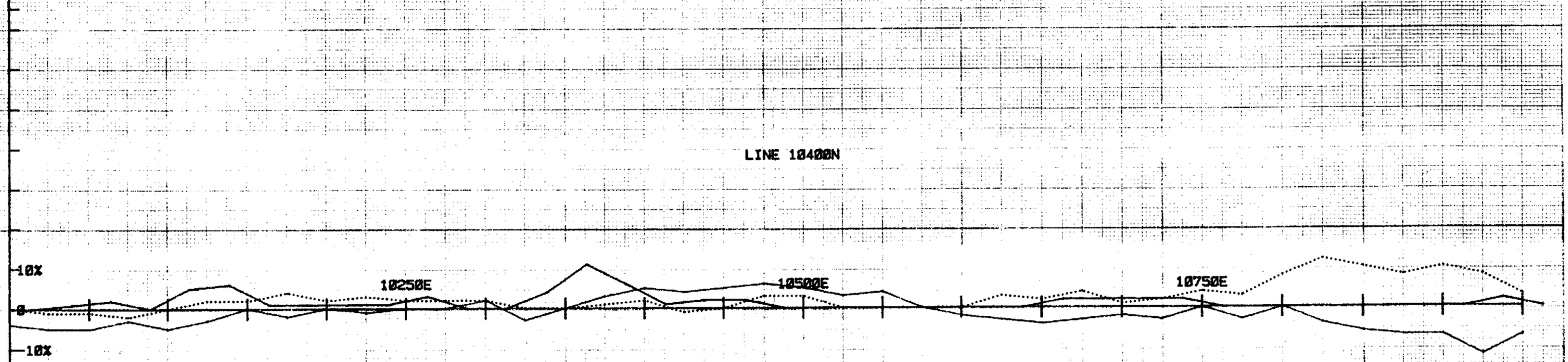
* Reference:
Fraser (1969), Contouring of VLF EM data
Geophysics V.34 No.6

VOYAGER 2B V.L.F.

LINE 10500N



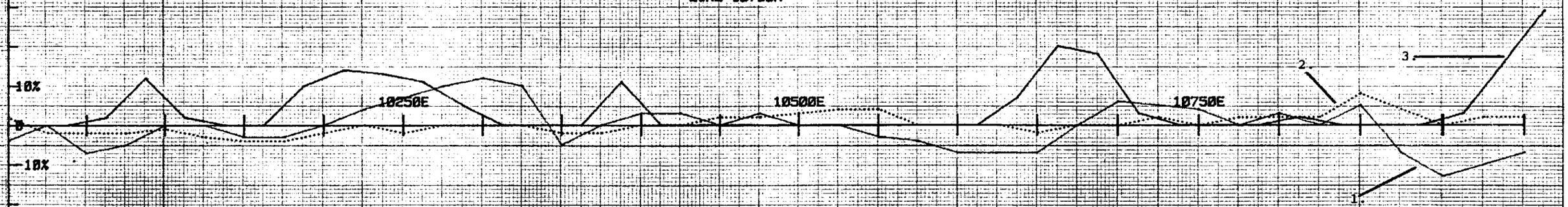
LINE 10400N



GURMACK GRAPH PAPERS CHRISTCHURCH N.Z.

VOYAGER 20 V.L.F.

LINE 10700N

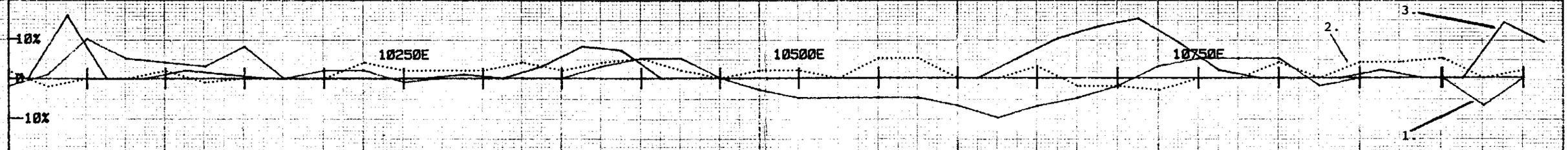


LEGEND

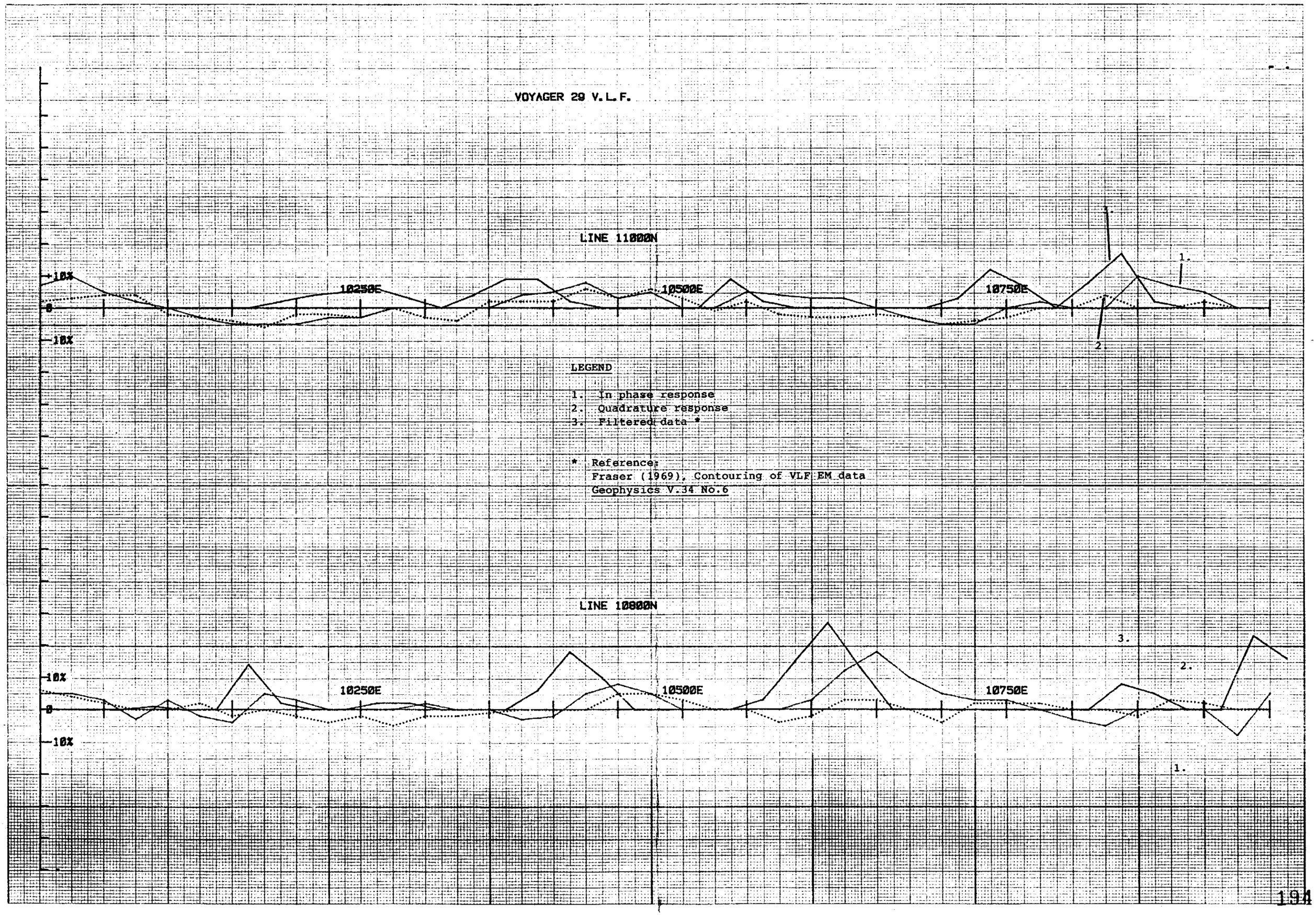
1. In phase response
2. Quadrature response
3. Filtered data *

* Reference:
Fraser (1969), Contouring of VLF EM data
Geophysics V.34 No.6

LINE 10600N



PLAN 42D

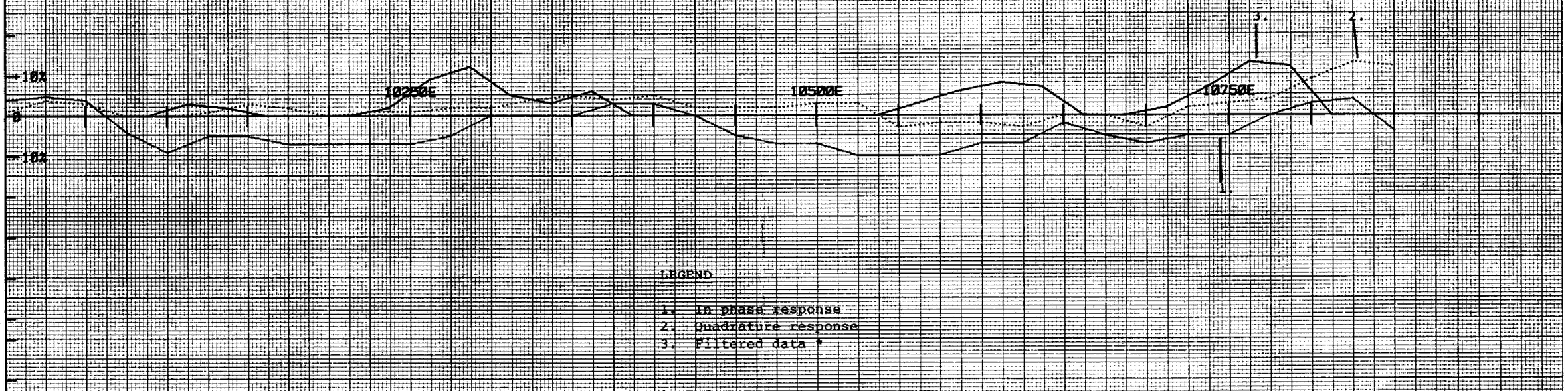

VOYAGER 29 V.L.F.
LINE 11000N
+10%
0
-10%
10250E
10500E
10750E
1.
2.
3.
LEGEND
1. In phase response
2. Quadrature response
3. Filtered data *
* Reference:
Fraser (1969), Contouring of VLF EM data
Geophysics V.34 No.6
LINE 10800N
10%
0
-10%
10250E
10500E
10750E
3.
2.
1.

PLAN 42E

HEWLETT-PACKARD 9270-1024

VOYAGER 29 V.L.F.

LINE 11400 N

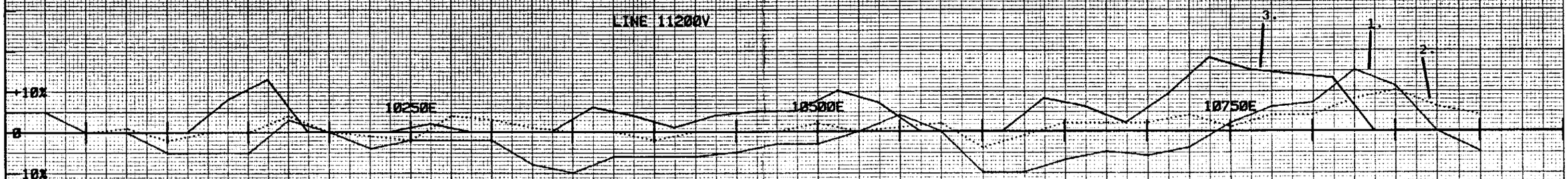


LEGEND

1. In phase response
2. Quadrature response
3. Filtered data *

* Reference:
Fraser (1969), Contouring of VLF EM data
Geophysics V.34 No.6

LINE 11200N



PLAN 42F

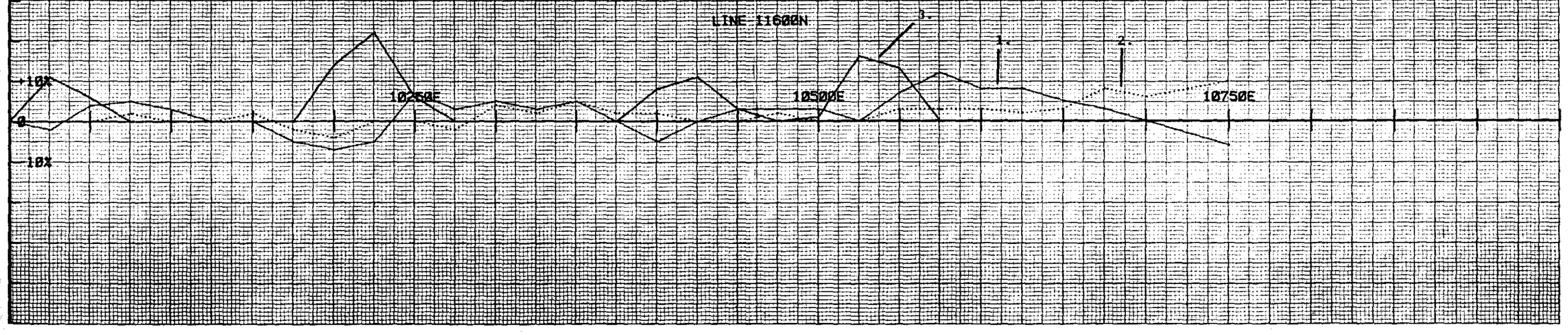
HEWLETT-PACKARD 9270-1024

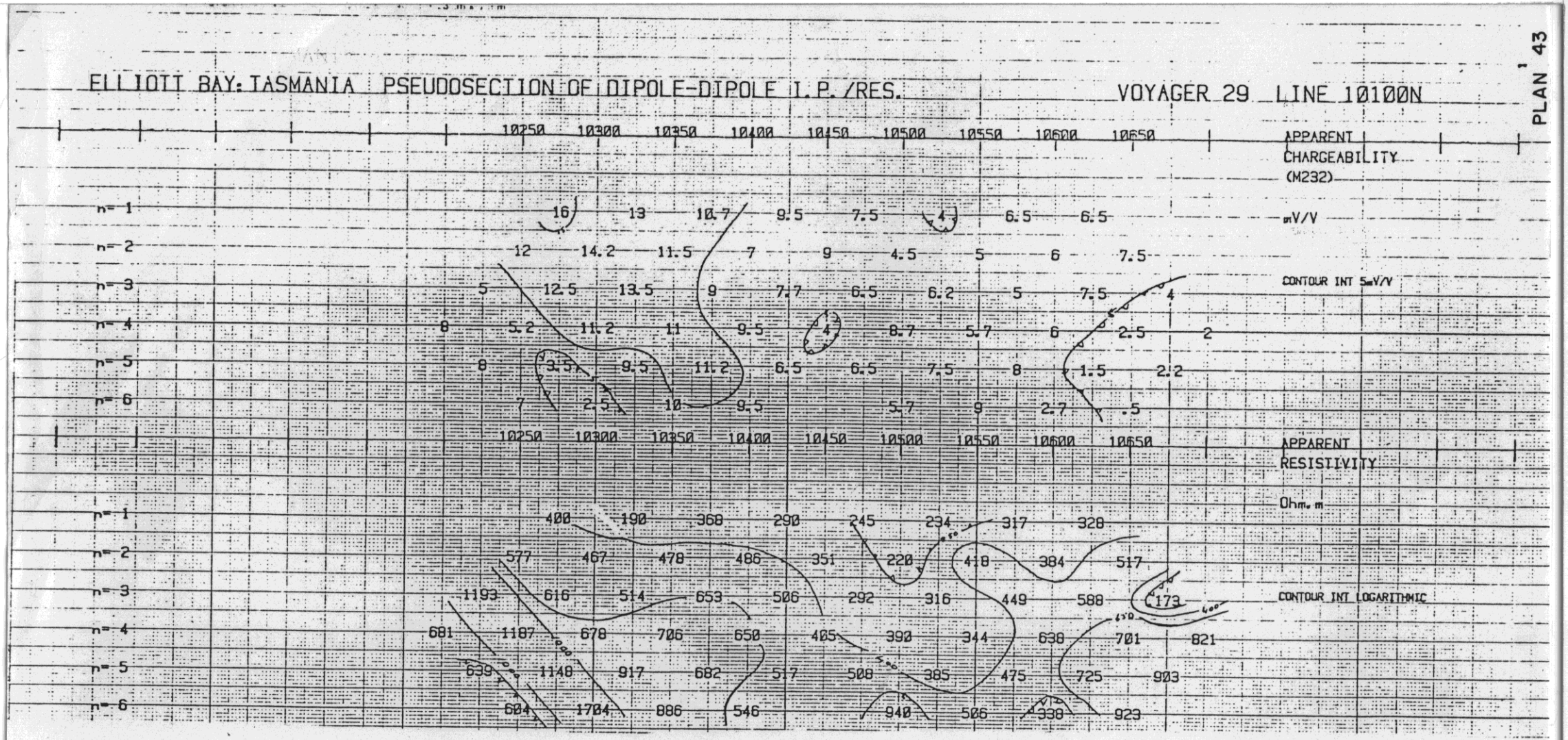
VOYAGER 29 V.L.F.

LEGEND

1. In phase response
2. Quadrature response
3. Filtered data *

* Reference:
Fraser (1969), Contouring of VLF EM data
Geophysics V.34 No.6

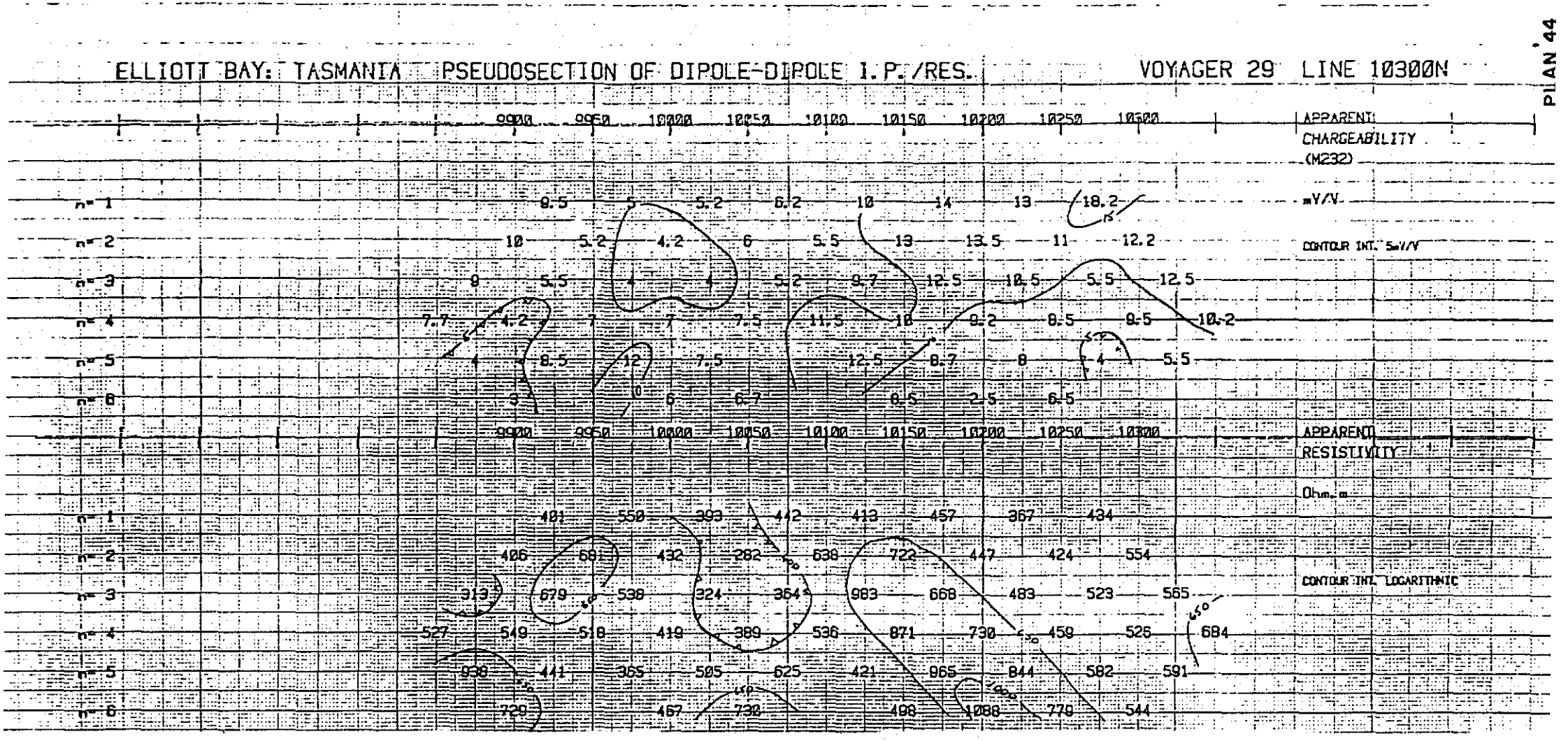




82 - 1882] 215

663346

006



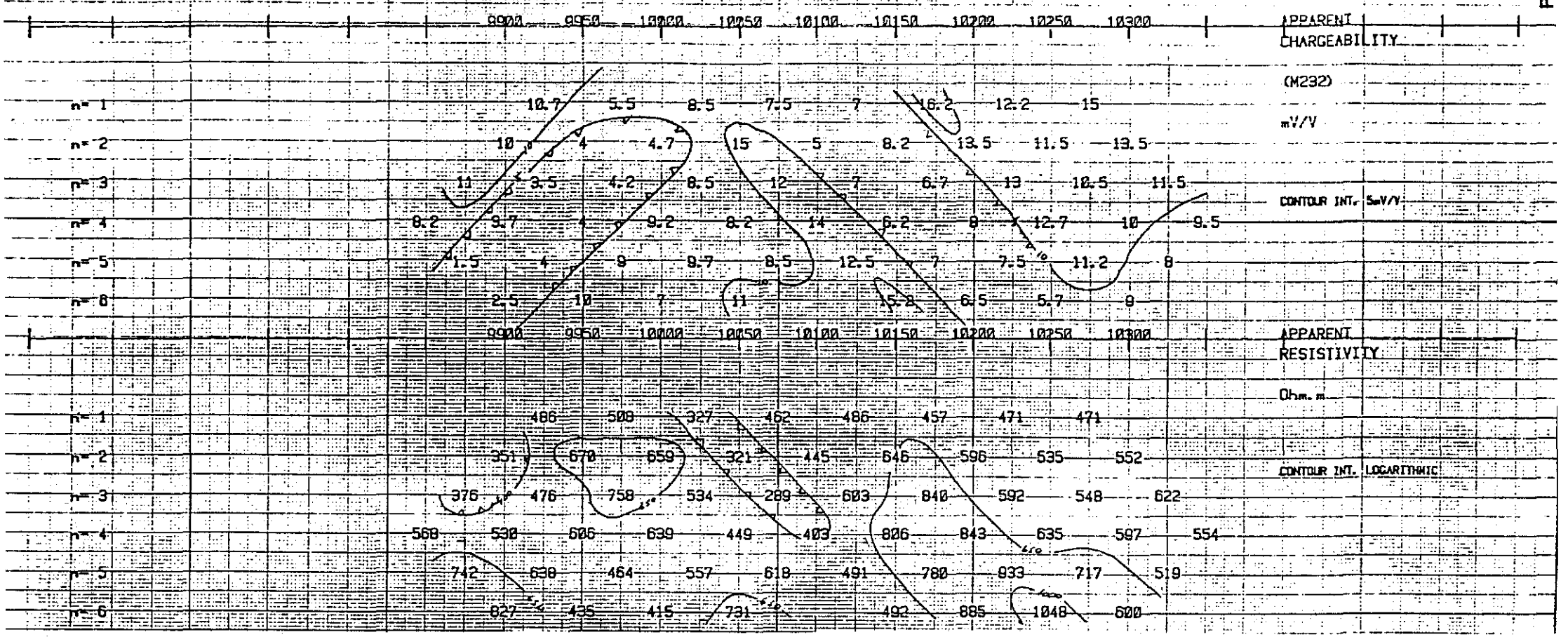
82-1882 1 2/5

663347

007

ELLIOTT BAY: TASMANIA PSEUDOSECTION OF DIPOLE-DIPOLE I.P./RES. VOYAGER 29 LINE 10400N

PLAN 45



5 cm

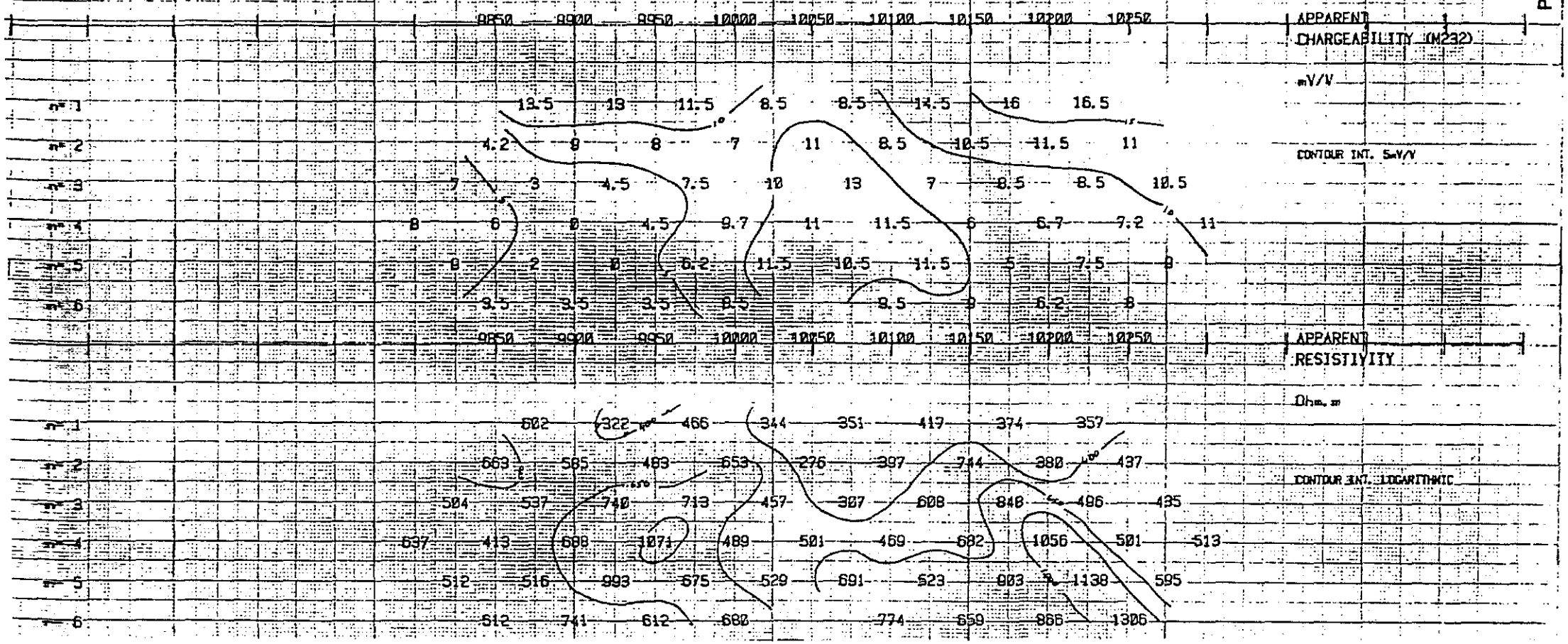
82-1882 1 2/5

003

663348

ELLIOTT BAY: TASMANIA PSEUDOSECTION OF DIPOLE-DIPOLE I.P./RES. VOYAGER 29 LINE 10500N

PLAN 46

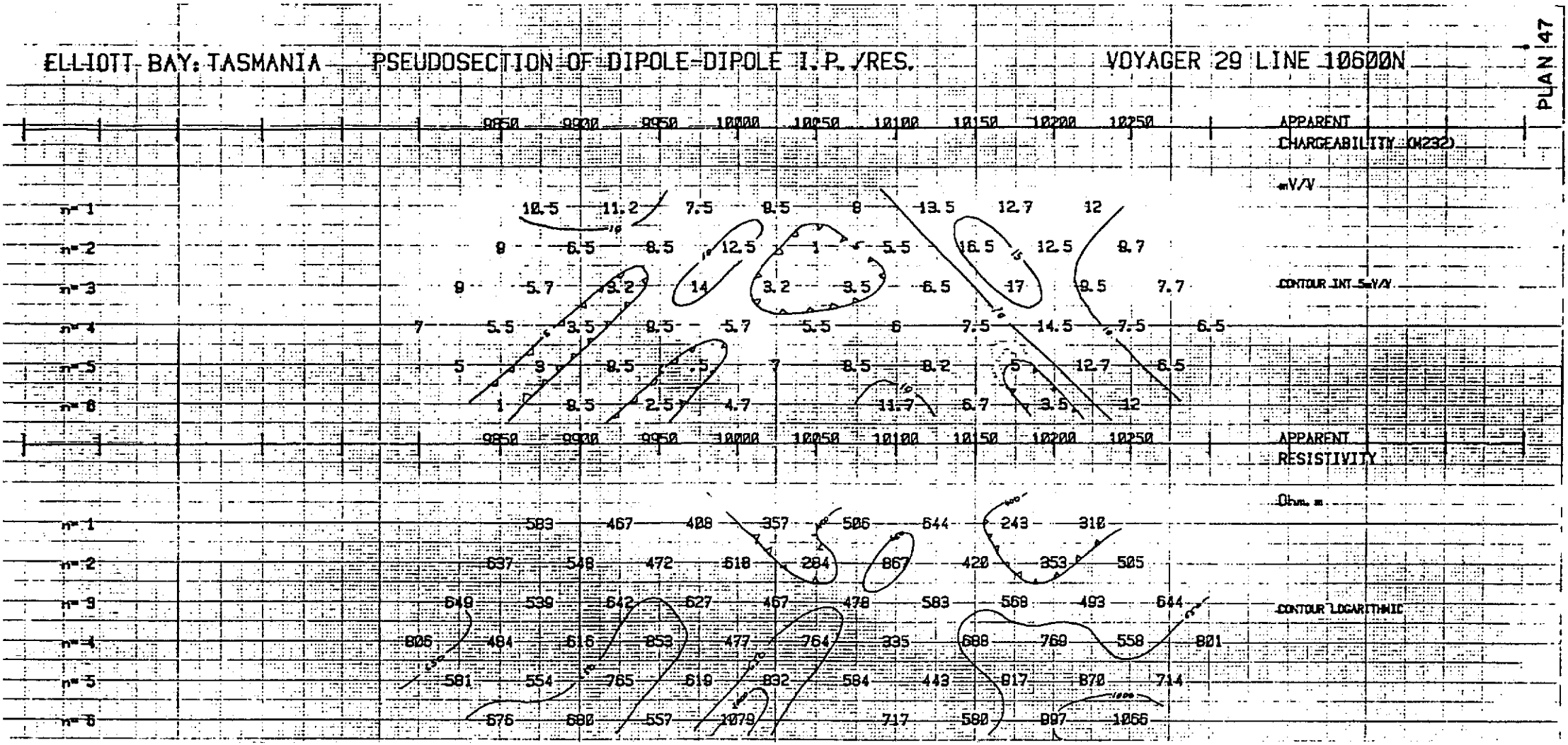


5 cm

82 · 1882 2/5

663349

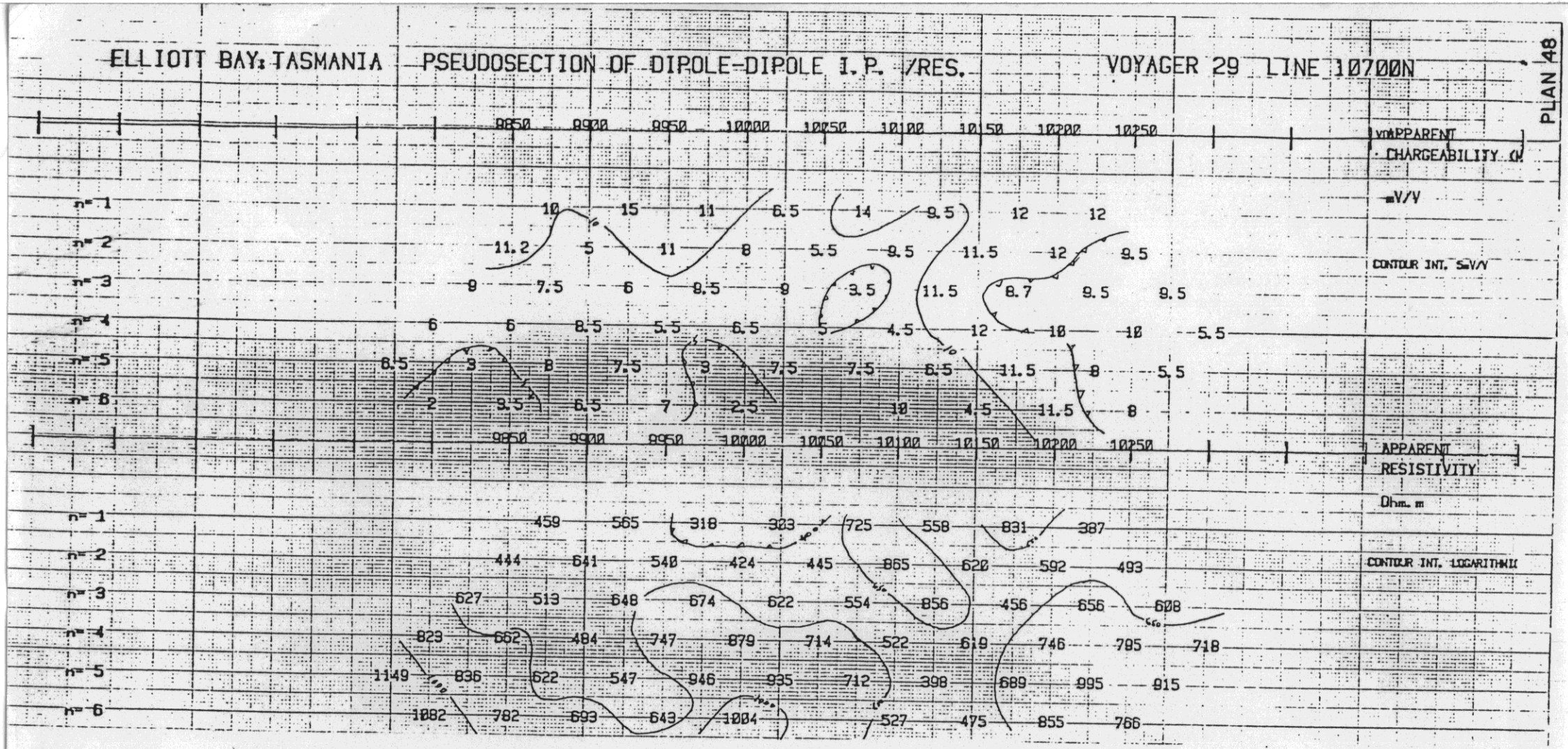
009



02 - 1882 1 2/5

663350

010



82-1882

663351

011

380 000mE AMG

5 250 000mE AMG

INSTRUMENT : Worden H 592
OBSERVER : R. Goodwin
DATE : Nov. 1981

BOUGUER DENSITY : 2·52 gm cm^{-3}
CONT. INTERVAL : 1 ums^{-2}

Not Terrain Corrected

5 cm

GN MN
13°00'

DATE : APRIL 1981
GEOLOGIST W.H.
DRAWN B.STEDMAN
CHECKED

GEOPEKO
DEVONPORT BASE, TASMANIA

0 50 100 150 200 250
SCALE. 1:2 500

No T.S 27/76-V29-18

E.L. 27/76 ELLIOTT BAY, TASMANIA

VOYAGER 29

663352

CONTOURS OF Residual Bouguer Anomaly

197

82-1882

2/5

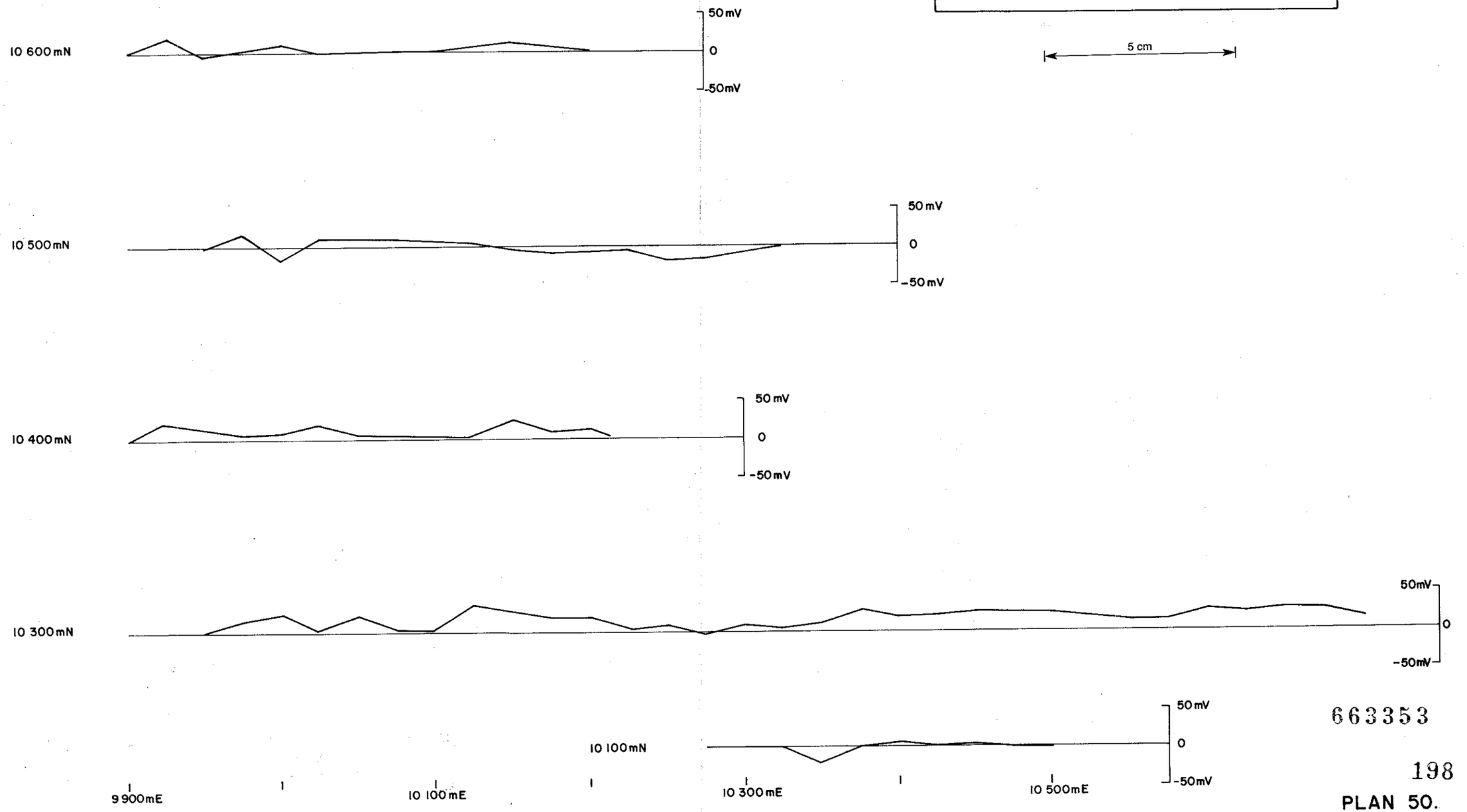
PLAN 49

82-1882 2/5

VOYAGER 29
PROFILES OF SELF POTENTIAL

HOR. SCALE : 1 : 2 500
VERT. SCALE : 1cm = 50mV

5 cm



663353

198

PLAN 50.

Rock Chip Geochemistry

KR.No.	Co-ords	Cu	Pb	Zn	Ag	Fe%
9858	9375E,10400N	15	15	40	X	1·85
9859	9030E,10400N	5	25	20	X	0·78
9860	9760E,10400N	65	1350	2750	2	0·88
9862	9150E,10600N	10	5	55	X	1·60
9865	9920E,11520N	10	X	325	X	3·95
9871	9410E,11385N	20	25	210	X	1·40
9874	9800E,11580N	15	20	320	X	3·70
9875	9800E,11740N	10	125	35	X	1·00
9876	9620E,11230N	5	10	40	X	0·32
9877	9600E,11000N	5	40	65	X	0·46
9878	9670E,10720N	15	10	105	X	1·55
9879	9625E,10550N	5	15	110	X	0·68
9880	9780E,10775N	5	15	55	X	1·40
9881	9960E,10775N	10	5	370	X	4·0
9882	9925E,10650N	5	10	20	X	0·4
9883	9725E,10575N	15	15	205	X	4·50
9884	9760E,10420N	5	X	20	X	0·75
9885	9925E,10410N	10	10	120	X	1·25
9886	9950E,10400N	X	10	20	X	0·20
9887	9660E,10125N	10	X	15	X	0·46
9888	9370E,10010N	5	75	150	X	1·05
9889	9370E,10010N	10	X	20	X	0·49
9890	9640E,10360N	10	10	60	X	2·05
9891	9650E,10355N	15	10	35	X	1·30
9892	9635E,10360N	15	15	55	X	2·05
9893	9500E,10345N	85	840	480	2	1·00
9894	9506E,10345N	15	20	50	X	1·00
9895	9450E,11180N	10	X	70	X	1·00
9896	9375E,11145N	20	10	75	X	2·30
9897	9300E,10980N	10	15	80	X	2·10
9898	9180E ,10730N	5	10	15	X	0·43
9899	9160E ,10650N	10	5	25	X	0·89
9900	9150E,10350N	10	45	90	X	1·45
9638	9800E,11600N	X	5	10	X	0·38
9051	9225E,10350N	20	55	160	X	2·05

LEGEND:

- drainage channel
- geological boundary
- F — fault line
- outcrop
- float
- bombardier track

5 cm

GN MN 13°00'

SCALE: 1:2 500

DATE: 23/2/82

GEOL: J. Pemberton

DRAWN: R. Tog.

CHECKED:

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

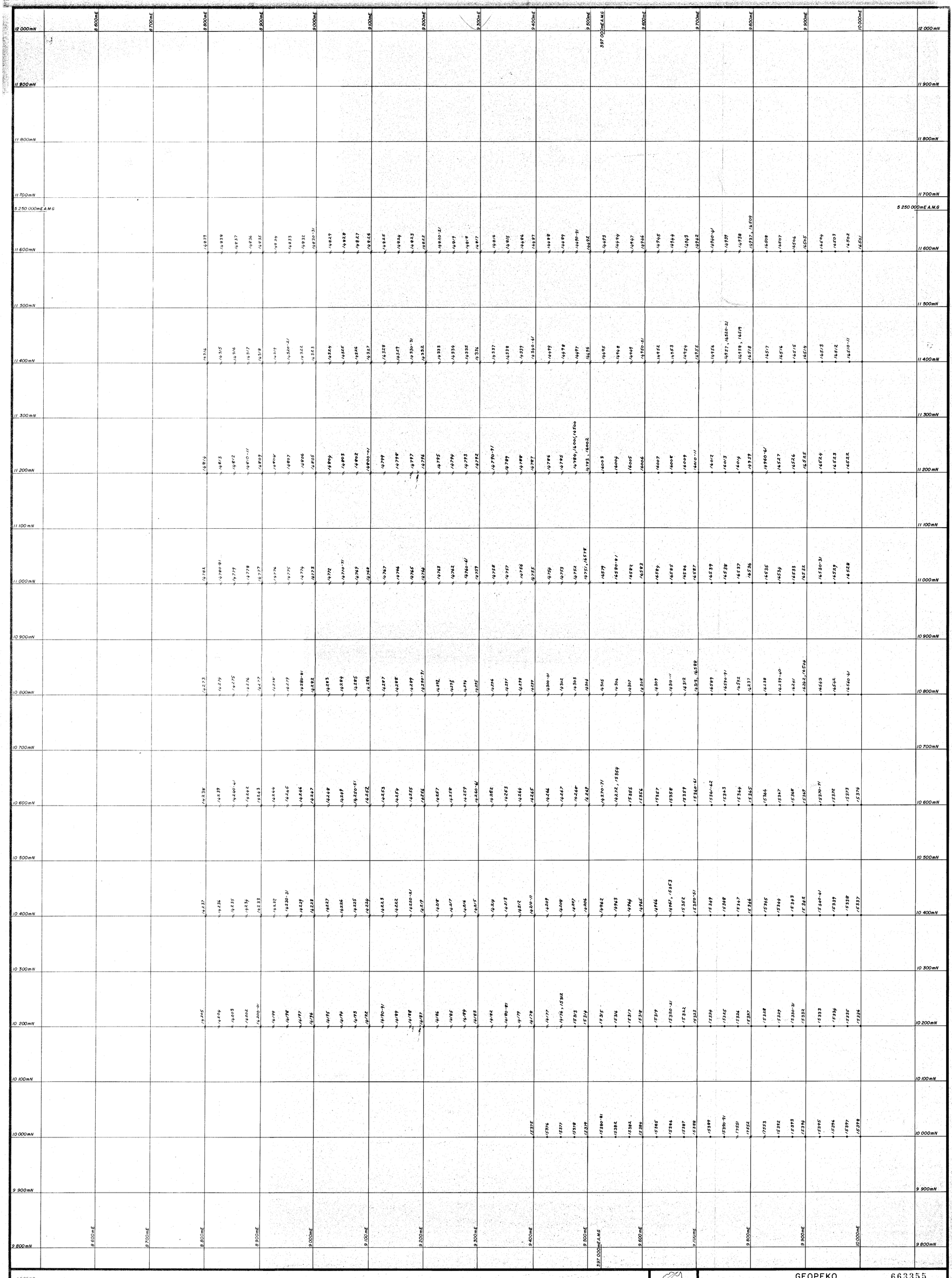
FILE No | TS 27/76-V29W-2 | PLAN No | 51

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 29W
Geological Plan

663354

32-1982 2/5

199



LEGEND

o Power Auger

ø Mole

SAMPLE PREFIX - TS

5 cm

SCALE: 1:2500

DATE: 10/1/83

GEOL: J.P.

DRAWN: R.Tog

CHECKED:

GEOPEKO 663355

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No | TS 27/76-V29W-9 | PLAN No | 51a

E.L.27/76 ELLIOTT BAY, TASMANIA

VOYAGER 29W 200

SAMPLE LOCATIONS

82 1882 28

8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 9 100mE | 9 200mE | 9 300mE | 9 400mE | 9 500mE | 397 000mE A.M.G | 9 600mE | 9 700mE | 9 800mE | 9 900mE | 10 000mE

12 000mN
11 900mN
11 800mN
11 700mN
5 250 000mE A.M.G
11 600mN
11 500mN
11 400mN
11 300mN
11 200mN
11 100mN
11 000mN
10 900mN
10 800mN
10 700mN
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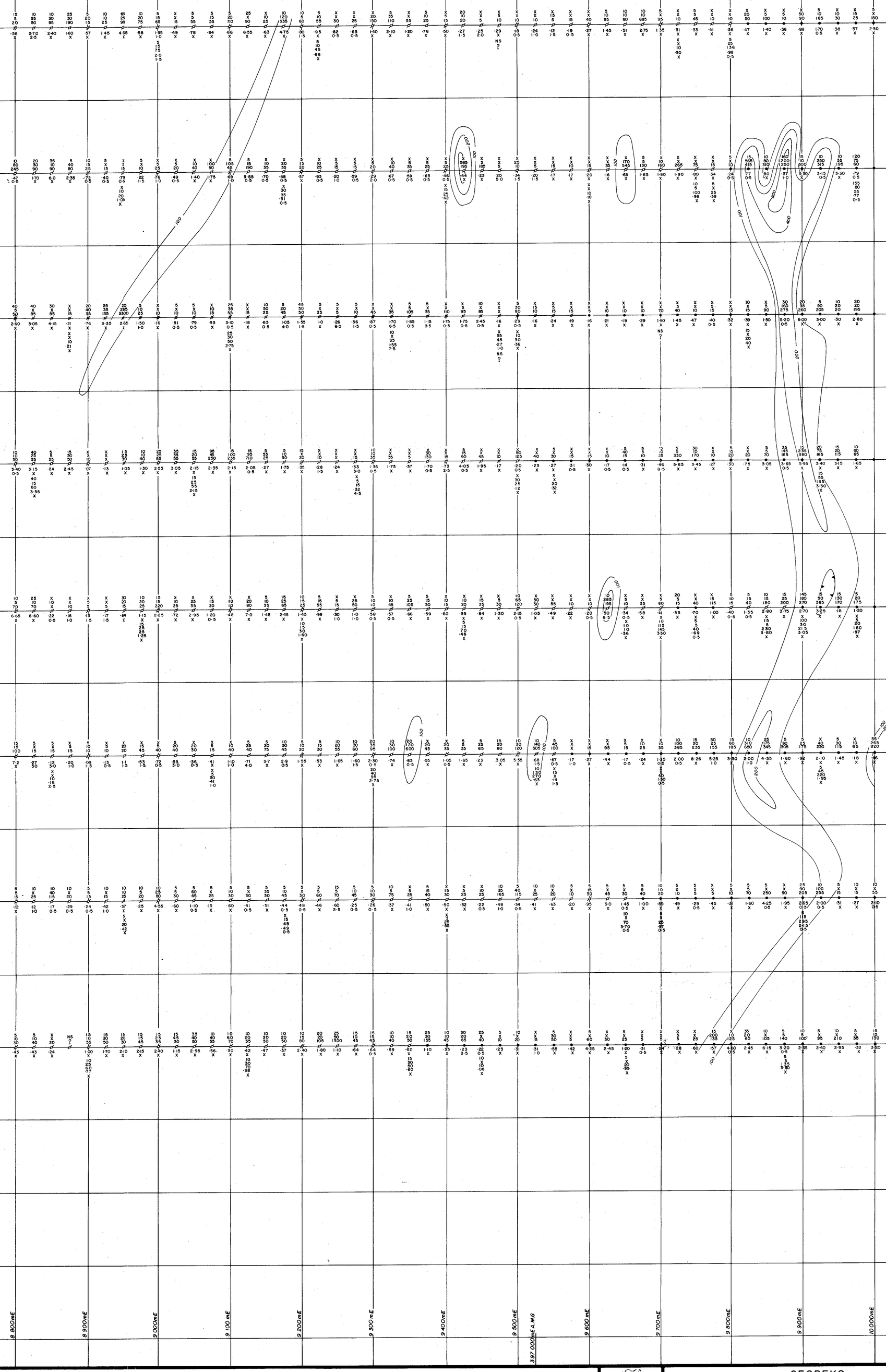
10 300mN
10 200mN
10 100mN
10 000mN
9 900mN
9 800mN



LEGEND:

- Power auger
- Mate auger

10 — Cu ppm
10 — Pb ppm
25 — Zn ppm
SAMPLE POSITION
37 — Fe (%)
0·5 — Ag gm/t
DUPLICATE SAMPLE

NS? NOT SUBMITTED
X BELOW LEVEL OF DETECTION

CONTOUR INTERVAL ppm

Pencil No.		
19-6		100-199
19-10		200-399
19-15		400-799
19-22		800 <

5 cm

SCALE: 1:2 500
DATE: 10/6/82
GEOL: J.Pemberton
DRAWN: R.Tog
CHECKED:

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT
663356

FILE No | TS27/76-V29W-5 | PLAN No | 52

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 29W
201
Geochemical Results
Cu, Pb, Zn, Fe, Ag

82 - 1882
2/5

663357

D of M | A.O. | C.G. | E.O. | D.S.M.E.
Registrar
Answered 16 DEC 1982
DEPT. OF MINES
REF. No. 10,615/52

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LIMITED

ANNUAL REPORT - E.L. 27/76

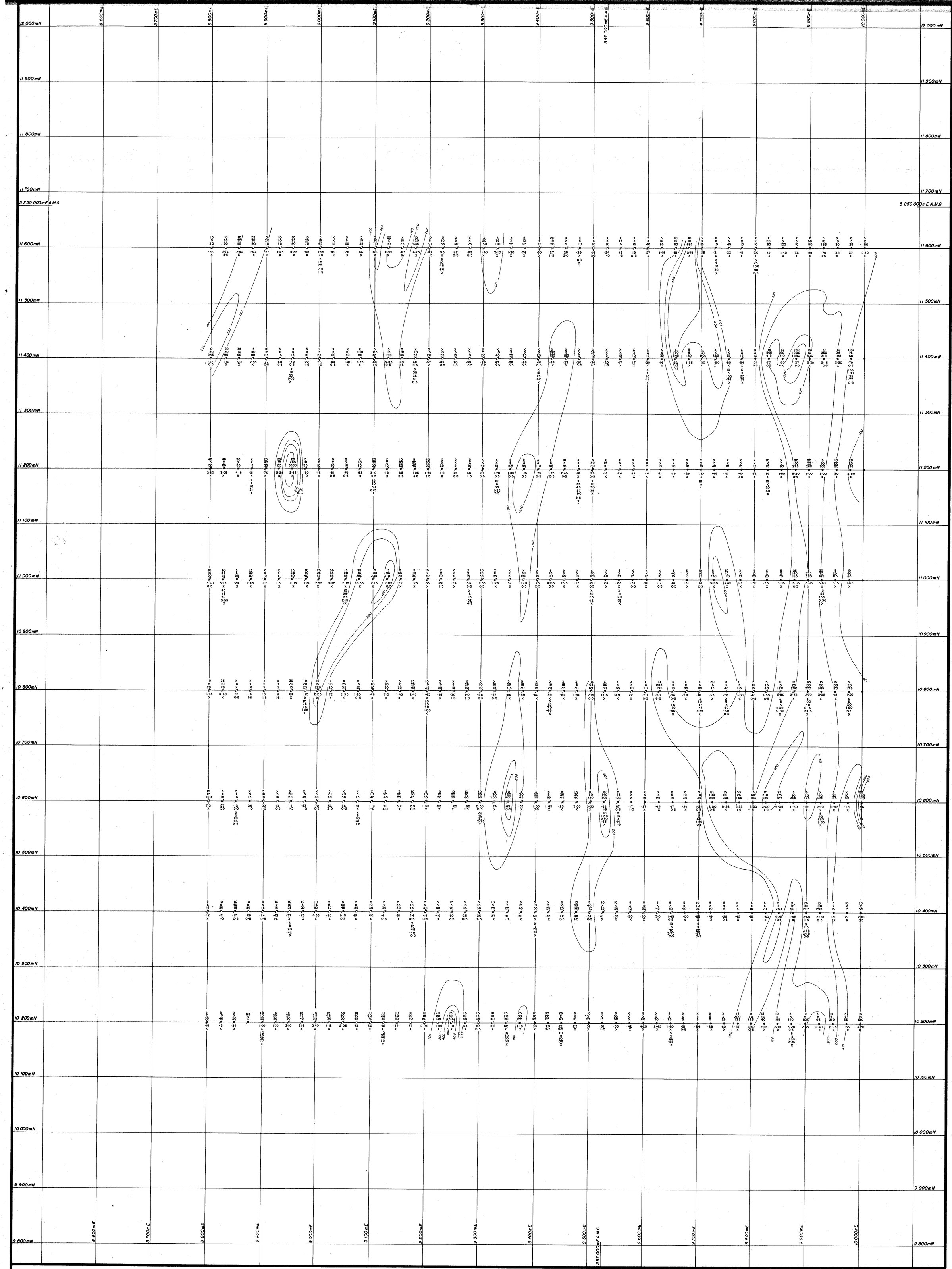
1981 - 1982 FIELD SEASON

82-1882(3)

PLANS 53-80

P.A. WILSON et. al.
DEVONPORT
SEPTEMBER, 1982

(PLAN 76 MISSING)



LEGEND:

- Power auger
- Mate auger

10 —— Cu ppm
20 —— Pb ppm
25 —— Zn ppm
—+— —— SAMPLE POSITION
·37 —— Fe (%)
05 —— Ag gm/t
3
28 ×
42
X —— DUPLICATE SAMPLE

NS? NOT SUBMITTED
X BELOW LEVEL OF DETECTION

CONTOUR INTERVAL ppm

Pencil No.	
19-6	100-199
19-10	200-399
19-15	400-799
19-22	800<

5 cm

663358 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

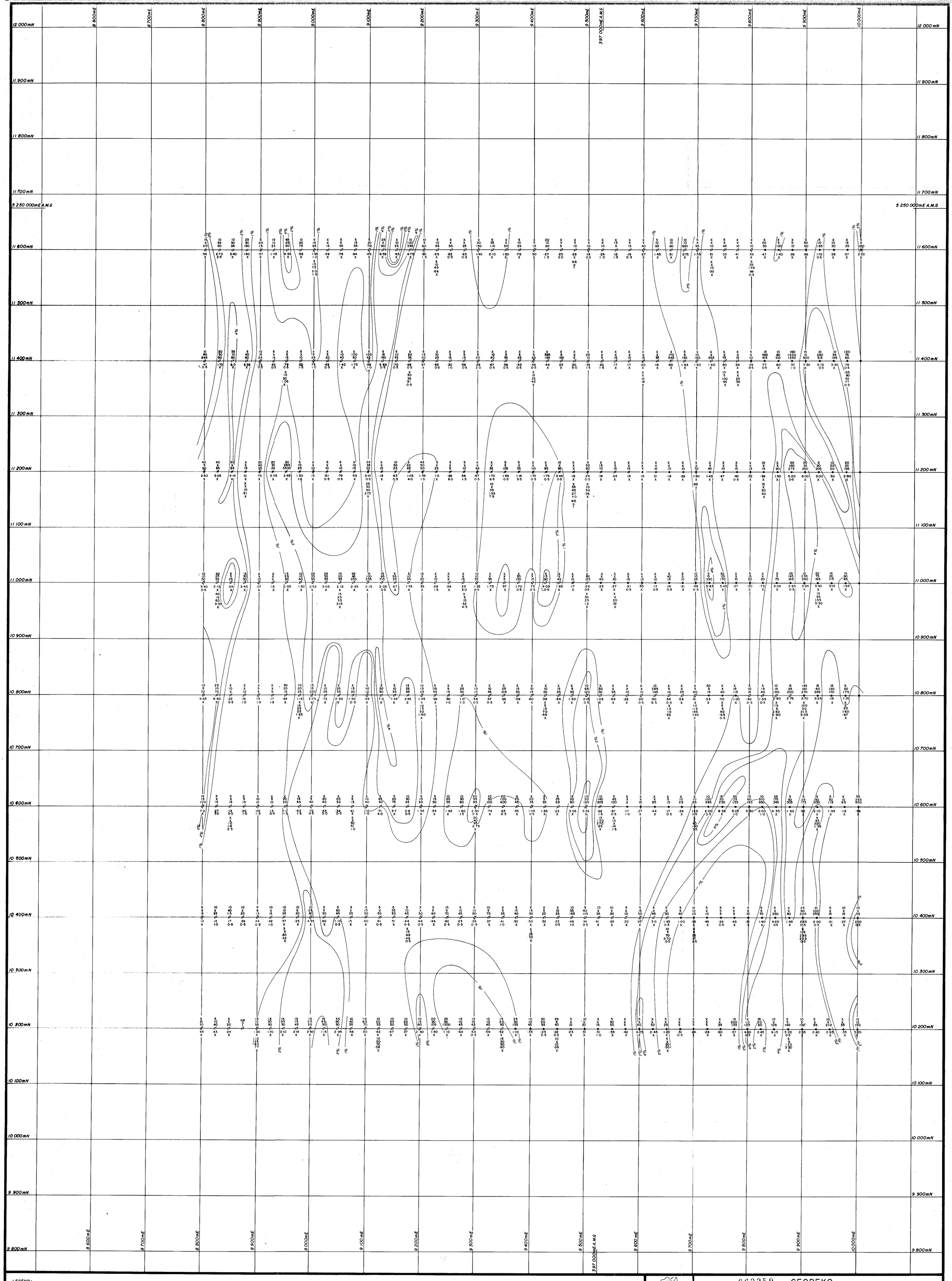
FILE No	TS 27/76-V29W-6	PLAN No	53

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 29W
Geochemical Results
Cu, Pb, Zn, Fe, Ag.

202

SCALE: 1:2 500
DATE: 11/6/82
GEOL: J. Pemberton
DRAWN: R.Tog
CHECKED: RJ

OL 1882 3/5



LEGEND:

- Power auger
- Mate auger

10 — Cu ppm
10 — Pb ppm
25 — Zn ppm
— SAMPLE POSITION
37 — Fe (%)
05 — Ag gm/t
DUPLICATE SAMPLE

NS? NOT SUBMITTED
X BELOW LEVEL OF DETECTION

CONTOUR INTERVAL ppm

Pencil No.	
19-10	1-1·99%
19-15	2-3·99%
19-22	4-7·99%
19-28	8%<

5 cm

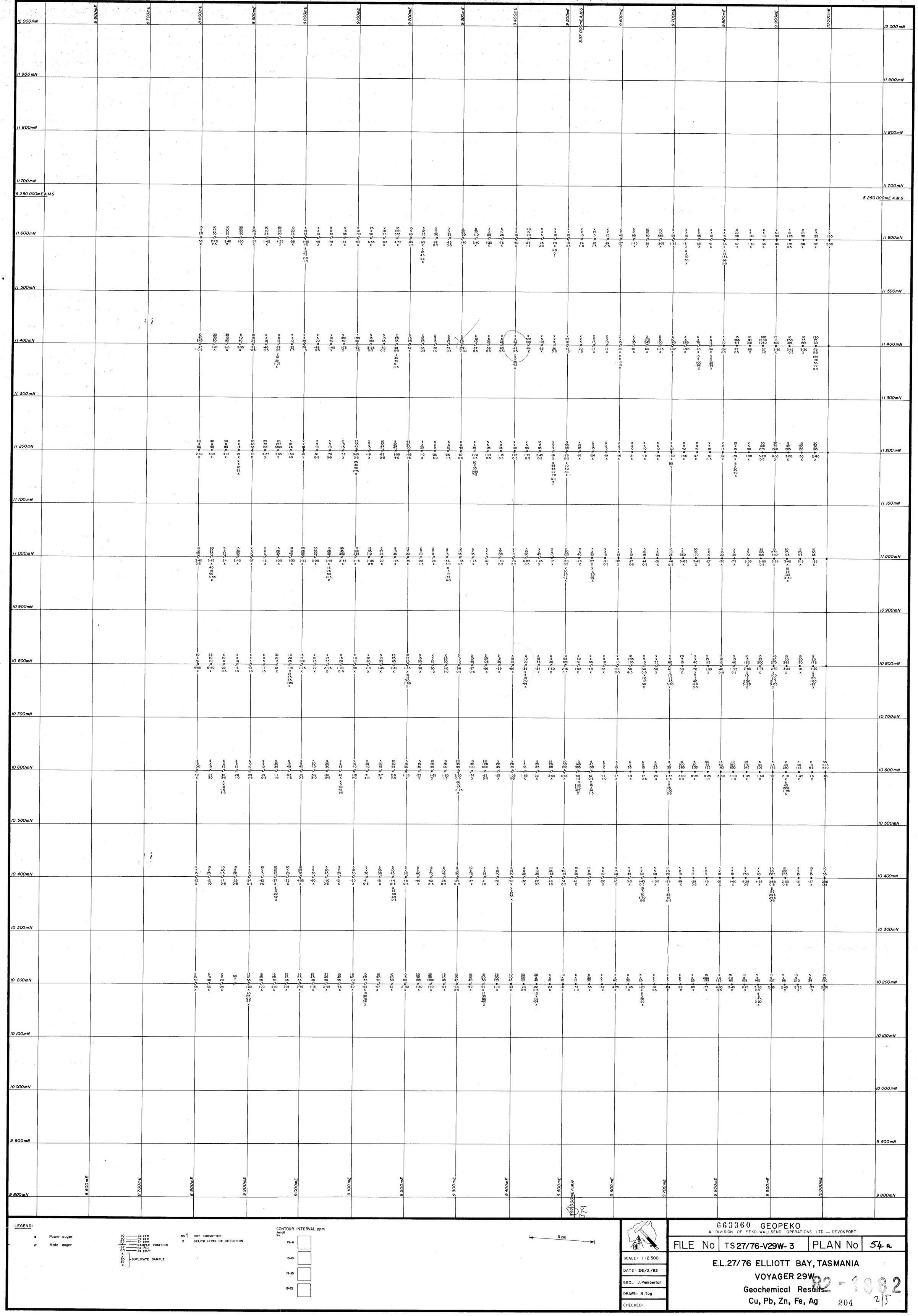
663359 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V29W-4	PLAN No	54

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 29W
Geochemical Results
Cu, Pb, Zn, Fe, Ag

SCALE: 1:2 500
DATE: 10/6/82
GEOL: J.Pemberton
DRAWN: R.Tog
CHECKED:

82-1882
203 3/5



LEGEND:

- Power auger
- Mate auger

10 — Cu ppm
10 — Pb ppm
25 — Zn ppm
SAMPLE POSITION
·37 — Fe (%)
0·5 — Ag gm/t
DUPLICATE SAMPLE

NS? NOT SUBMITTED
X BELOW LEVEL OF DETECTION

CONTOUR INTERVAL ppm
Pencil No.
19-6
19-10
19-15
19-22

5 cm

SCALE: 1:2 500
DATE: 26/2/82
GEOL: J. Pemberton
DRAWN: R. Tog
CHECKED:

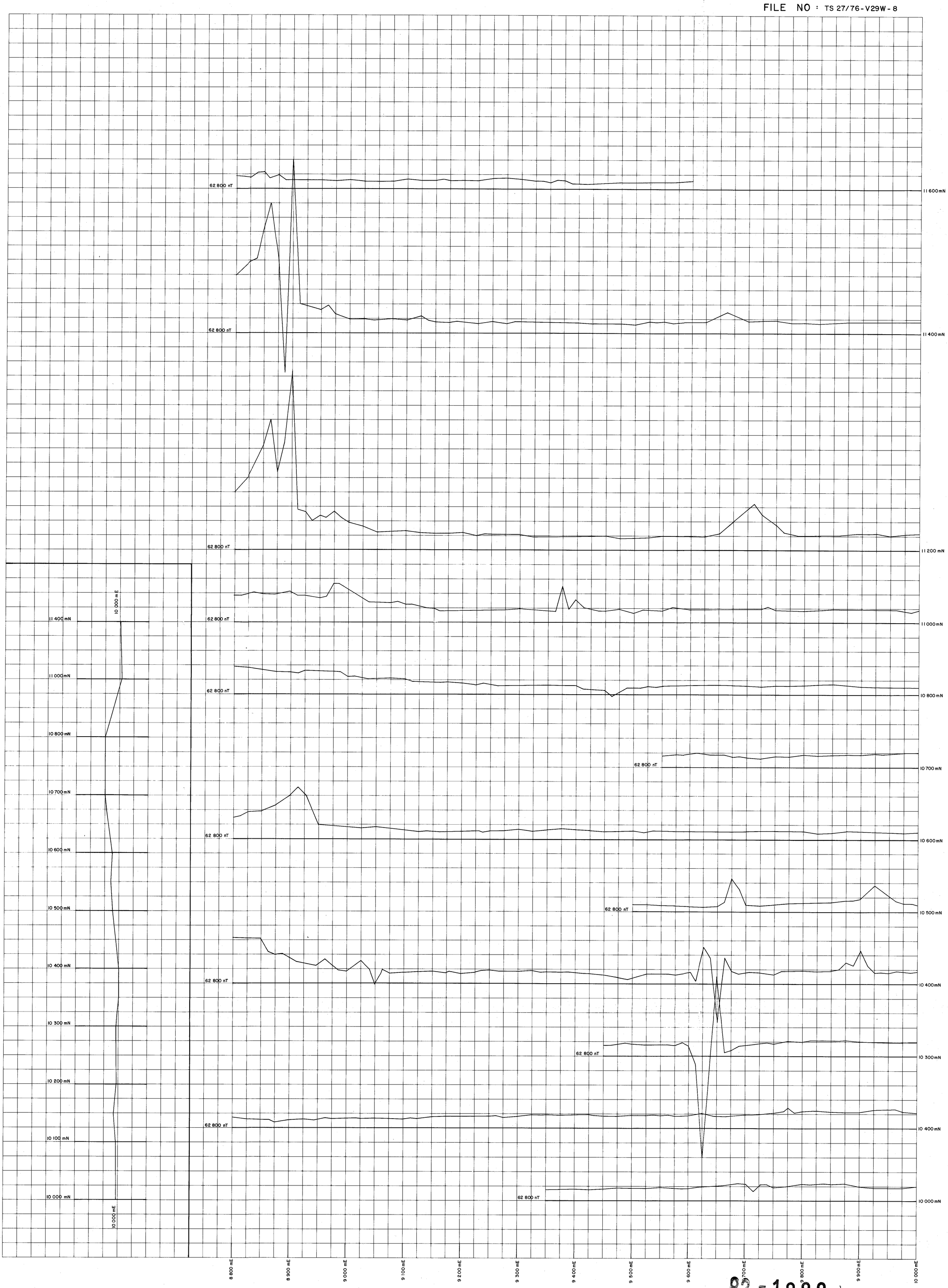
663360 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V29W-3	PLAN No	54a

E.L. 27/76 ELLIOTT BAY, TASMANIA
VOYAGER 29W
Geochemical Results
Cu, Pb, Zn, Fe, Ag

82-1882
204
2/5

FILE NO : TS 27/76-V29W-8



GEOPHYSICAL LEGEND		GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD - DEVONPORT
		25 0 25 50 75 100 125 metres — SCALE : 1 : 2 500 — PLAN NO : 55
VERT. SCALE : 1cm = 100nT	LIB BOOK NO. :	E.L. 27/76 ELLIOTT BAY, TASMANIA
DATUM : 62 800 nT	DATE : 3/12/82	VOYAGER 29W
	GEOL : J. Sumpton	PROFILES OF TOTAL MAGNETIC INTENSITY
	DRAWN : R. Tog	
	CHECKED :	

82-1882 3K
663361

205

8 600mE 8 700mE 8 800mE 8 900mE 9 000mE 9 100mE 9 200mE 9 300mE 9 400mE 9 500mE 397 000mE A.M.G 9 600mE 9 700mE 9 800mE 9 900mE 10 000mE

12 000mN

11 900mN

11 800mN

11 700mN

5 250 000mE A.M.G

11 600mN

11 500mN

11 400mN

11 300mN

11 200mN

11 100mN

11 000mN

10 900mN

10 800mN

10 700mN

10 600mN

10 500mN

10 400mN

10 300mN

10 200mN

10 100mN

10 000mN

9 900mN

8 600mE 8 700mE 8 800mE 8 900mE 9 000mE 9 100mE 9 200mE 9 300mE 9 400mE 9 500mE 397 000mE A.M.G 9 600mE 9 700mE 9 800mE 9 900mE 10 000mE

9 800mN

LEGEND

CONTOUR INTERVAL

Pencil No.		ppm	Pencil No.		ppm
19-6		5-10	19-22		20-25
19-10		10-15	19-28		25-30
19-15		15-20	19-33		30+

5 cm

SCALE: 1 : 2 500

DATE: 1 / 12 / 82

GEOL: J. P

DRAWN: R. Tog

CHECKED:

663362 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

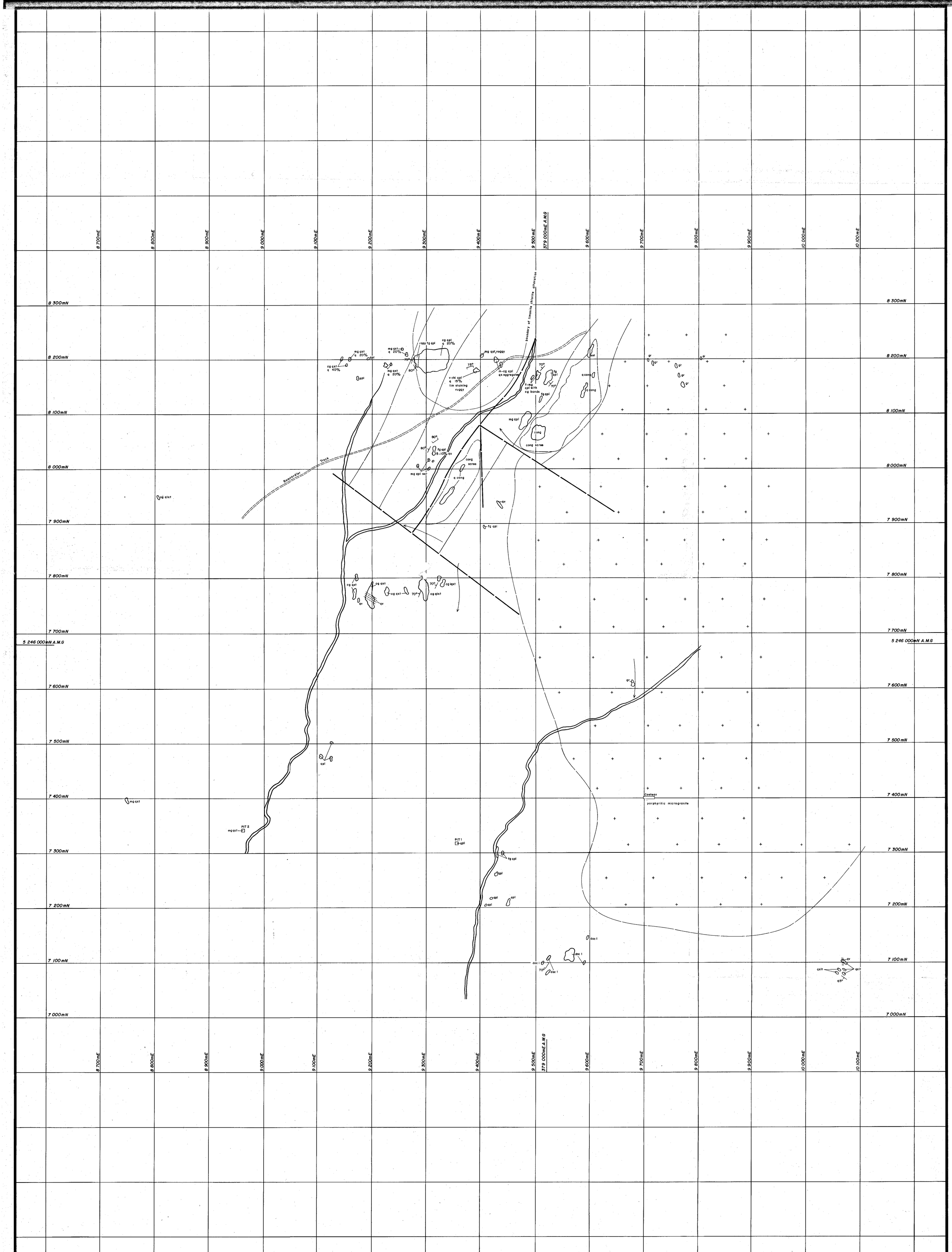
FILE No	TS 27/76-V29W-7	PLAN No	56

E.L.27/76 ELLIOTT BAY, TASMANIA

VOYAGER 29 West

CONTOURS OF VLF-EM

82-1882 3/5
206



LEGEND:

STRATIGRAPHY

19-37	quartz lithic crystal tuffs & agglomerates.	19-14	porphyritic microgranite
19-11	course grained quartz porphyritic lava.		
19-60	quartz pebble conglomerates & sandstones.		
19-48	dacitic lavas & medium grained quartz porphyritic lava.		

STRUCTUAL LEGEND

- 30° cleavage
- bedding
- jointing
- outcrop
- fault
- geological boundary
- bombardier track
- drainage channel
- minor water course

5 cm

GN MN 13°00'

SCALE: 1:2 500
DATE: 28/4/32
GEOL: R.J. Perring
DRAWN: R.J. Tog.
CHECKED:

663363 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V30-2	PLAN No	57

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 30
Geological Plan

207

82-1882 3/5

8 600mE 8 700mE 8 800mE 8 900mE 9 000mE 9 100mE 9 200mE 9 300mE 9 400mE 9 500mE 379 000mE A.M.G. 9 600mE 9 700mE 9 800mE 9 900mE 10 000mE 10 100mE 10 220mE

8 700mN
8 600mN
8 500mN
8 400mN
8 300mN
8 200mN
8 100mN
8 000mN
7 900mN
7 800mN
7 700mN
5 246 000mN A.M.G.
7 600mN
7 500mN
7 400mN
7 300mN
7 200mN
7 100mN
7 000mN
6 900mN
6 800mN
6 700mN

LEGEND:

- Power auger hole
- Geophysical sample
- Base line

5 cm

GN MN
-13°00'

663364 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V30-3	PLAN No	58

SCALE: 1:2 500
DATE: 5/5/82
GEOL: R.J. Perring
DRAWN: R.J. Tog
CHECKED: R.J.P.

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 30
Soil Sample Locations

203
82 - 1882 3/5

8 600mE 8 700mE 8 800mE 8 900mE 9 000mE 9 100mE 9 200mE 9 300mE 9 400mE 9 500mE 379 000mE A.M.G 9 600mE 9 700mE 9 800mE 9 900mE 10 000mE 10 100mE 10 200mE

8 700mN 8 600mN 8 500mN 8 400mN 8 300mN 8 200mN 8 100mN 8 000mN 7 900mN 7 800mN 7 700mN 7 600mN 7 500mN 7 400mN 7 300mN 7 200mN 7 100mN 7 000mN 6 900mN 6 800mN 6 700mN

5 246 000mN A.M.G — 5 246 000mE A.M.G



LEGEND:

- Power auger hole
- Geophysical sample
- Base line
- Pb value, ppm
- Sample location
- Duplicate sample
- NS No sample
- X Below level of detection

CONTOUR INTERVAL ppm

Pencil No.			
19-6	100-199	19-22	800-1599
19-10	200-399	19-28	1600 <
19-16	400-799		

GN MN 13°00'

SCALE: 1:2500
DATE: 4/3/82
GEOL: R.J. Perring
DRAWN: R.J. Tog
CHECKED:

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No TS 27/76-V30-4 | PLAN No 59

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 30 209
Pb ppm C-Horizon Soil Geochemistry
Contours

82-1882

8 700mE 8 800mE 8 900mE 9 000mE 9 100mE 9 200mE 9 300mE 9 400mE 9 500mE 379 000mE A.M.G 9 600mE 9 700mE 9 800mE 9 900mE 10 000mE 10 100mE 10 200mE

8 700mN
8 600mN
8 500mN
8 400mN
8 300mN
8 200mN
8 100mN
8 000mN
7 900mN
7 800mN
7 700mN
5 246 000mN A.M.G
7 600mN
7 500mN
7 400mN
7 300mN
7 200mN
7 100mN
7 000mN
6 900mN
6 800mN
6 700mN

LEGEND :

- Power auger hole
- Geophysical sample
- Base line
- Zn value, ppm
- Sample location
- Duplicate sample
- NS No sample
- X Below level of detection

CONTOUR INTERVAL ppm

Pencil No.					
19-6		100-199	19-22		800-1599
19-10		200-399	19-28		1600+
19-16		400-799			

GRID N MN 15°00'

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V30-5	PLAN No	60

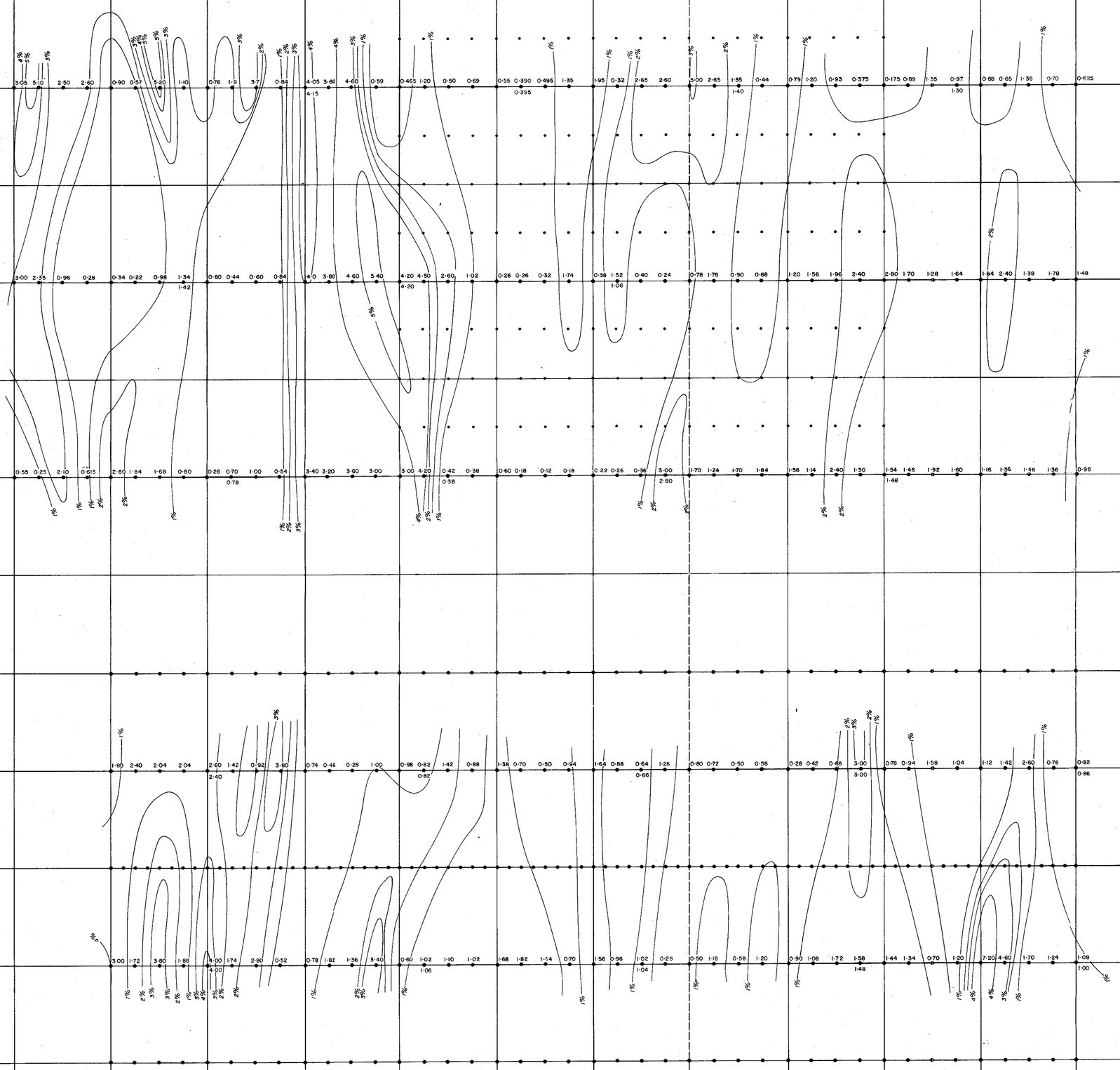
E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 30 210
Zn ppm: C-Horizon Soil Geochemistry
Contours

SCALE: 1:2 500
DATE: 5/5/82
GEOL: R.J. Perring
DRAWN: R.J. Tag
CHECKED:

82-1882

8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 9 100mE | 9 200mE | 9 300mE | 9 400mE | 9 500mE | 379 000mE A.M.G | 9 600mE | 9 700mE | 9 800mE | 9 900mE | 10 000mE | 10 100mE | 10 200mE

8 700mN
8 600mN
8 500mN
8 400mN
8 300mN
8 200mN
8 100mN
8 000mN
7 900mN
7 800mN
7 700mN
5 246 000mN A.M.G
7 600mN
7 500mN
7 400mN
7 300mN
7 200mN
7 100mN
7 000mN
6 900mN
6 800mN
6 700mN



LEGEND:

- Power auger hole
- Geophysical sample
- Base line

20 — Fe value, %
20 — Sample location
20 — Duplicate sample

NS No sample
X Below level of detection

CONTOUR INTERVAL

Pencil No.

19-6	1-1-99%	19-22	4-4-99%
19-10	2-2-99%	19-28	5%+
19-16	3-3-99%		

ANALYTICAL METHOD Analabs Code 101 AAS
Lines 7 200mN, 7 600mN not analysed for Iron(Fe).

5 cm

GN MN 13°00'

663366 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V30-6	PLAN No	61

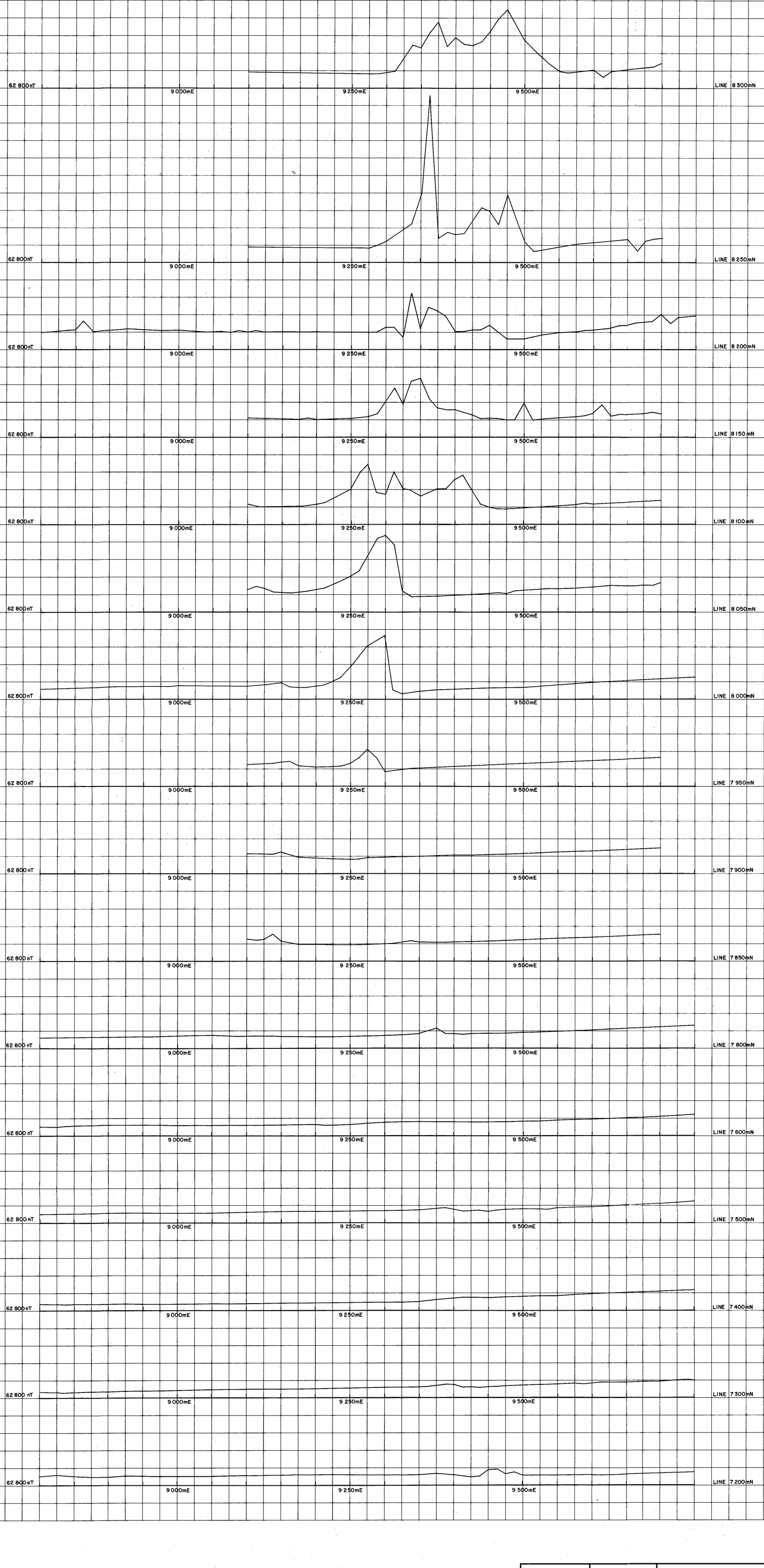
SCALE: 1:2 500
DATE: 6/5/82
GEOL: R.J. Perring
DRAWN: R.J. Tog
CHECKED:

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 30
Fe % C-Horizon Soil Geochemistry
Contours

211

82-1882 3/5

File No. TS 27/76-V30-13



5 cm

GEOPHYSICAL LEGEND		663367 GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD - DEVONPORT
VERT. SCALE : 1cm = 100nT	LIB BOOK NO.:	25 0 25 50 75 100 125 metres — SCALE : 1 : 2 500 — PLAN NO : 62
DATUM : 62 800nT	DATE : 3 / 2 / 82	E.L.27/76 ELLIOTT BAY, TASMANIA VOYAGER 30 212 PROFILES OF TOTAL MAGNETIC INTENSITY
	GEO : J. Simpton	
	DRAWN : R. Fog	
	CHECKED :	

82-1882

8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 9 100mE | 9 200mE | 9 300mE | 9 400mE | 9 500mE | 379 000mE A.M.G | 9 600mE | 9 700mE | 9 800mE | 9 900mE | 10 000mE | 10 100mE | 10 200mE

8 700mN
8 600mN
8 500mN
8 400mN
8 300mN
8 200mN
8 100mN
8 000mN
7 900mN
7 800mN
7 700mN
5 246 000mN A.M.G
7 600mN
7 500mN
7 400mN
7 300mN
7 200mN
7 100mN
7 000mN
6 900mN
6 800mN
6 700mN



8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 9 100mE | 9 200mE | 9 300mE | 9 400mE | 9 500mE | 379 000mE A.M.G | 9 600mE | 9 700mE | 9 800mE | 9 900mE | 10 000mE | 10 100mE | 10 200mE

LEGEND:

- Power auger hole
- Geophysical sample
- Base line

CONTOUR INTERVAL 100nT

5 cm

GN MN
13°00'

SCALE: 1:2 500
DATE: 21/5/82
GEOPH: J. Sumpton
DRAWN: R.J. Tog
CHECKED: T.S.

663368 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS

FILE No	TS 27/76-V30-10	PLAN No	63

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 30
Contours of Total Magnetic Intensity

213

82-1882 3/5

8600mE 8700mE 8800mE 8900mE 9000mE 9100mE 9200mE 9300mE 9400mE 9500mE 379 000mE A.M.G 9600mE 9700mE 9800mE 9900mE 10000mE 10100mE 10200mE

8700mN 8600mN 8500mN 8400mN 8300mN 8200mN 8100mN 8000mN 7900mN 7800mN 7700mN

5 246 000mN A.M.G

7600mN 7500mN 7400mN 7300mN 7200mN 7100mN 7000mN 6900mN 6800mN 6700mN

5 246 000mE A.M.G

8600mE 8700mE 8800mE 8900mE 9000mE 9100mE 9200mE 9300mE 9400mE 9500mE 379 000mE A.M.G 9600mE 9700mE 9800mE 9900mE 10000mE 10100mE 10200mE

LEGEND:

- Power auger hole
- Geophysical sample
- Base line

5 cm

GN MN 13°00'

SCALE: 1:2500

DATE: 23/7/82

GEOL: R.J. Perring

DRAWN: R.J. Tog

CHECKED: RJP 24-7-82

663369 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V30-11	PLAN No	64

E.L.27/76 ELLIOTT BAY, TASMANIA

VOYAGER 30

VLF-EM CONTOURS

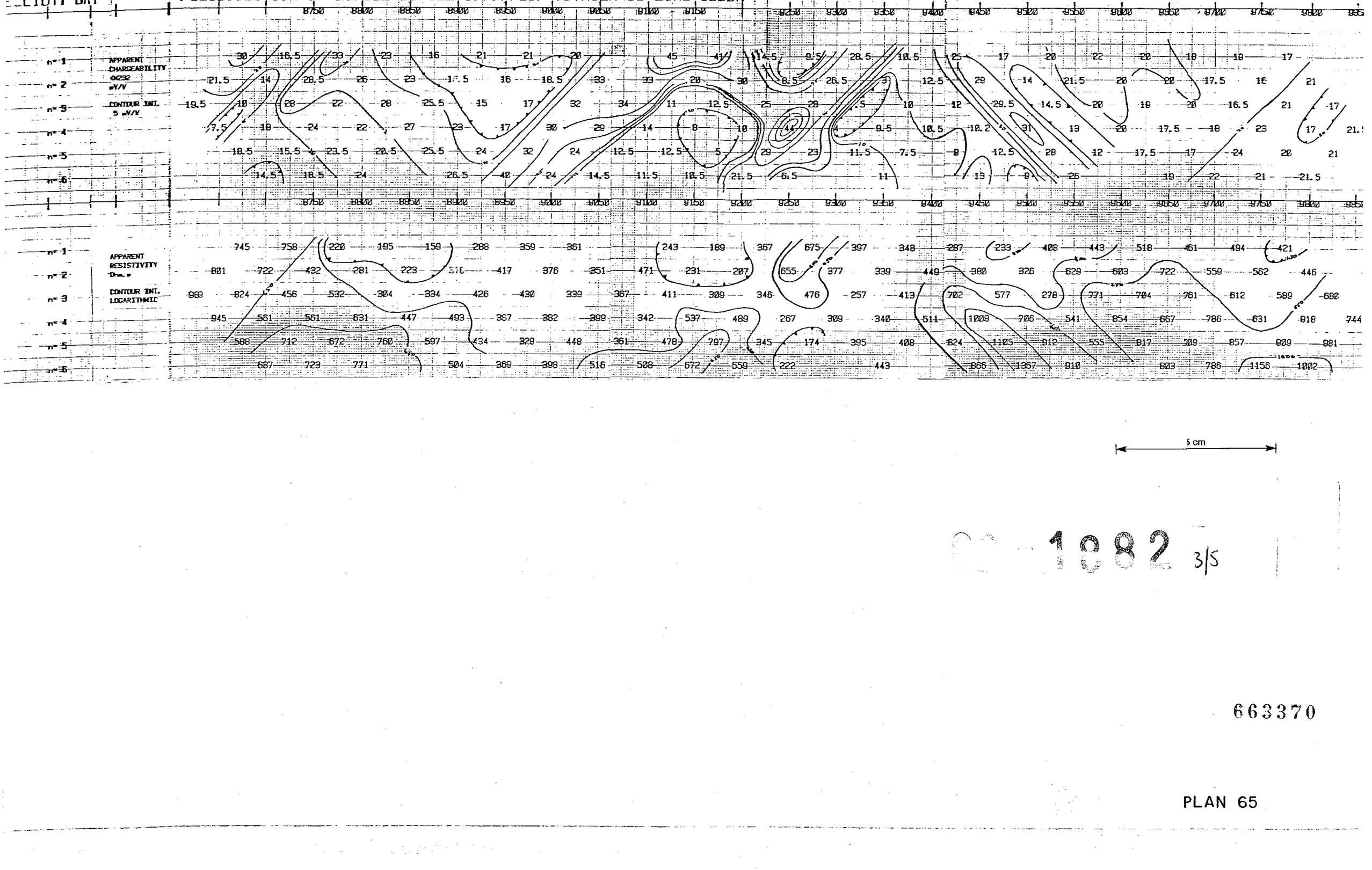
Data manipulated using Frasers algorithm

214

82-1882

LIOTT BAY

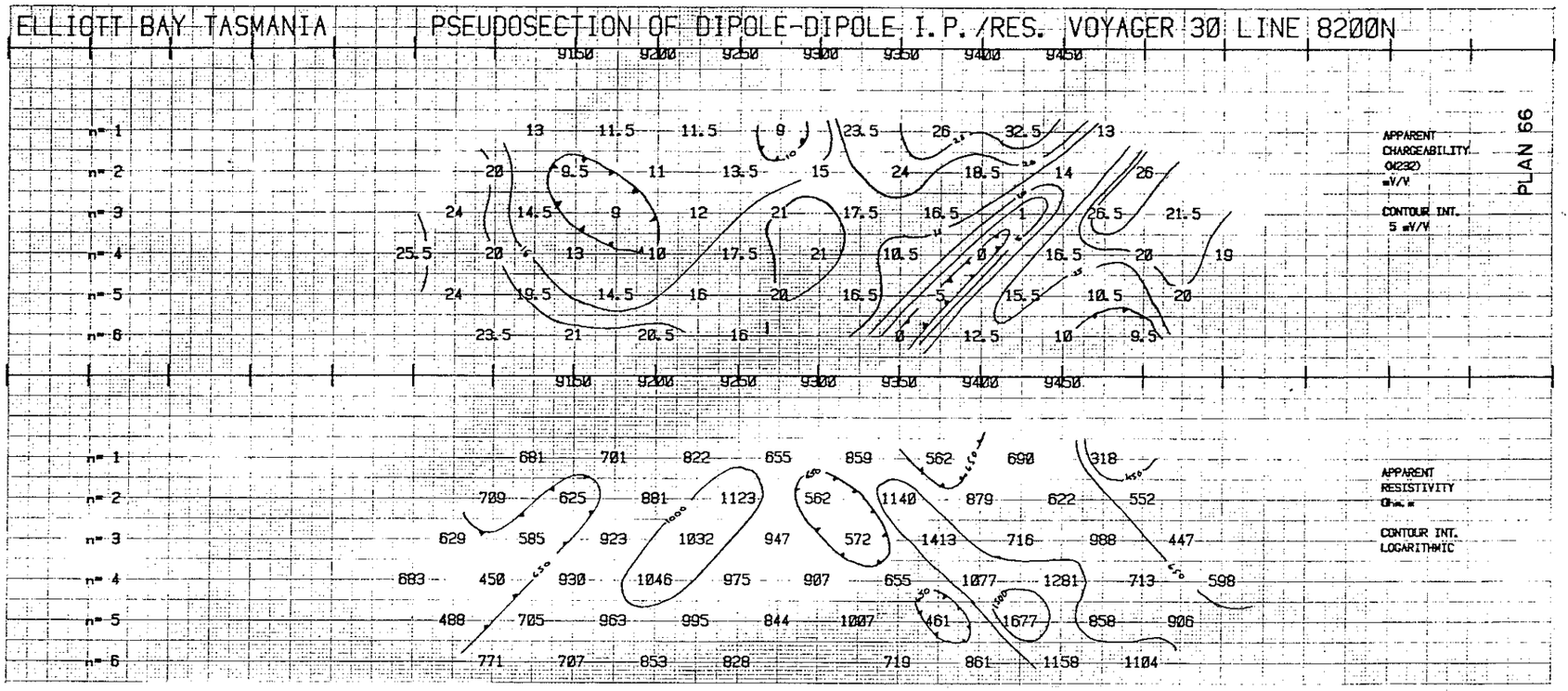
PSEUDOSECTION OF DIPOLE-DIPOLE I.P./RES. VOYAGER 30 LINE 8000N



1982 3/5

663370

PLAN 65


ELLIOTT BAY TASMANIA — PSEUDOSECTION OF DIPOLE-DIPOLE I.P./RES. VOYAGER 30 LINE 8200N
PLAN 66
APPARENT CHARGEABILITY (0232) mV/V
CONTOUR INT. 5 mV/V
APPARENT RESISTIVITY Ohm.m
CONTOUR INT. LOGARITHMIC
9150 9200 9250 9300 9350 9400 9450
n=1
n=2
n=3
n=4
n=5
n=6
5 cm

8E-1882 3/5

8 000mE | 8 100mE | 8 200mE | 8 300mE | 8 400mE | 8 500mE | 8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 378 000mE A.M.G | 9 100mE | 9 200mE | 9 300mE | 9 400mE

14 000 mN
13 900 mN
13 800 mN
13 700 mN
13 600 mN
13 500 mN
13 400 mN
13 300 mN
13 200 mN
13 100 mN
13 000 mN
12 900 mN
12 800 mN
12 700 mN
5 251 000 mN A.M.G
5 251 000 mE A.M.G
12 600 mN
12 500 mN
12 400 mN
12 300 mN
12 200 mN
12 100 mN
12 000 mN
11 900 mN
11 800 mN

Sassy Ck Argillites

START | reworked mg chl qfxlt/sst | reworked fg b xt/cong sst | R.C t slt + sst | R.C blk shl | mg chl q mic fxt/l | R.C mg qfxt | R.C mg ser qfxt | R.C f-mg ser qxt | R.C f-mg ser qxt | R.C mg chl qfxt

R.C mg qfxt | sil xt diss py | blk sh | blk sh as inj. brec | blk sh inject | brec qpl in chl qxt | sil chl vt diss py | mg qxt | mg qfxt | brec. vt with chl vn | mg ser qfxt

KR9058 sil qxt brec with blk sh injection dis py + possible ga/as py

slt/sst

55° 85° 70° 80° 10°

interbedded slt/sst(xt), scour and grodding facing W.

parasitic folds strike 85° plunge 80°E

slt + arg diss py | sil mixtite tr py | graded sl/arg | reworked m-c.g qfxlt (chl) | rounded to subrounded cong - clasts 0-5-1cm sil green matrix vol + sed clasts.

Int. by mixtite with arg matrix

John's swim hole

KR9051 sil/qv. arg with py

sil. S.Ck. arg.

sil. S.Ck. arg qvn. - py + ga.

leached + sil. S.Ck. arg qvn - fe stain

Sassy Ck. Argillites

DESCENT TO Cu CK START

R.C argl | mg chl qflt | mic sst | mg chl qlxt/agg | mg mic qpl | mg qmic pl | fg qvt/l | mg. chl qfxlt

Pb	Zn	Ag	Sample No
			KR9621
20	20	0-5	KR9620

sil - q x - tr dis py | sil. S.Ck. arg - q vn with py, ga + as py

KR9619 q.vn + py, gal + ar

Outcrop 7

Pb	Zn	Ag	Sample No
290	80	0-5	KR9618

sil - qvn, pebbles visible - fe stain

Outcrop 6

Pb	Zn	Ag	Sample No
255	270	X	KR9617
55	50	X	KR9616
35	100	X	KR9615
5	70	0-5	KR9614
15	145	0-5	KR9613
15	70	0-5	KR9612

slt + brec t sst, slt + cong + py and ga along fractures

F?

KR9611

KR9610

Outcrop 5

Pb	Zn	Ag	Sample No.
60	45	1-0	KR9609
10	320	X	KR9608
80	70	0-5	KR9607
370	980	1-5	KR9606
1100	5650	2-0	KR9605
8400	1-6%	17-0	KR9604
770	380	1-5	KR9603
85	60	0-5	KR9602
25	40	0-5	KR9601
X	50	X	KR9600
750	2900	1-5	KR9599

sil t sst, slt + cong - brec with py qvn + tr ga + as py

slt + t sst competent sst brec with slt flowage around blocks - tr py vn // to bedding - scour + grading indicate W facing cong - rounded to subrounded vols + sed clasts from Wart Hill Pyroclastics - no matrix - clasts ± 1cm blk sh mixtite - angular clasts vols + sed up to 20cm melange type deposit?

Sample No.	KR9589	KR9590	KR9591	KR9592	KR9593	KR9594	KR9595	KR9596	KR9597	KR9598
Ag	0-5	X	X	X	0-5	X	0-5	X	1-0	X
Zn	85	80	45	X	55	45	45	100	40	40
Pb	30	15	30	60	20	25	30	20	85	15

DESCENT TO Cu CK START

KR9551 chl cong/agg. rounded pl tuff pebbles in partly sil chl matrix - tr ga/as py on fracturing

mg chl qfxlt fe stain | R.C m.g sil qxt py bx | R.C mg chl fxt to py | mg chl fxt | R.C qpl | Bauera - Swamp q gravel | R.C f - mg chl qfxt | BANK SAMPLE + q phenocryst in gr clay | BANK SAMPLE + mg chl qfxt | R.C mg qfxt

mic slt + well bedded slt as float

scree of sil cong

Sassy Ck. Argillites

Pb	Zn	Ag	Sample No:
20	80	X	KR9552
30	40	X	KR9553
50	35	X	KR9554
185	205	X	KR9555
1550	4200	4-5	KR9556
6300	5400	11-0	KR9557
985	2250	1-5	KR9558
115	180	0-5	KR9559
210	315	X	KR9560
895	2300	1-0	KR9561
1-60%	2-85%	18-0	KR9562
9600	1-60%	35-0	KR9563
55	70	X	KR9564

Outcrop 4

sil cong slt, sst, xt highly min zone massive to dis + vn as 15 cm wide, 3m long

sil scree tr ga/as

DESCENT TO Cu CK START

R.C mg. chl qfxt | R.C mg qfxt mn + chl | R.C mus bio slt | R.C mg ser qxt | R.C mg ser qxt | R.C mg ser qxt | Bauera Banksia - Swamp q gravel | R.C mg ser qxt | R.C fg ser fqxt | R.C mg ser qfxt | R.C mg ser qfxt | Bauera, Banksia - Swamp

R.C mus bio slt | R.C mg ser qxt | R.C mg ser qxt

Sassy Ck. Argillites

Pb	Zn	Ag	Sample No:
290	260	0-5	KR9565
390	1700	3-0	KR9566
165	570	2-0	KR9567
1600	2750	37-0	KR9568
3050	3650	17-5	KR9569
210	375	0-5	KR9570
5	35	X	KR9571
15	55	X	KR9572

Outcrop 3

sil + brec cong pebble sst + slt vn + diss py, ga + ar

Pb	Zn	Ag	Sample No:
2100	2700	9-0	KR9573
560	440	3-0	KR9574
780	760	12-0	KR9575
275	510	1-0	KR9576
			KR9577
35	70	X	KR9578

Outcrop 2

sil pebble sst ga/as as float

sil fgvt/slt + cong/pebble sst vn + ar ± 0-1%

Pb	Zn	Ag	Sample No:
15	25	X	KR9586
125	40	0-5	KR9587
630	280	2-0	KR9588

Sample No.	KR9579	KR9580	KR9581	KR9582	KR9583	KR9584	KR9585
Ag	0-5	X	X	X	X	X	X
Zn	50	25	30	20	60	20	30
Pb	215	20	20	10	35	X	10

Outcrop 1

sil cong (sil decreases up creek)

START OF DESCENT TO Cu CK | KR9052 | mg chl qfxt | R.C mg chl qfxt | R.C mnr mic | R.C mic slt | R.C mic slt | R.C mic slt brm | R.C f-mg ser qxt | R.C mg ser qxt | R.C mg fqxt mnr chl flakes | Bauera Banksia

R.C mg chl qfxt | R.C mic slt | R.C mic slt | R.C mic slt | R.C mus bio slt | R.C mg ser qxt | R.C mg ser qxt | R.C mg ser qxt | Bauera, Banksia - Swamp q gravel | R.C mg ser qfxt | Bauera, Banksia - Swamp q gravel

R.C mg ser qxt | R.C fg ser qxt | R.C mg ser qxt | R.C mic slt | R.C mic slt brm | R.C mic slt | R.C f-mg ser qxt

R.C S.Ck arg

LEGEND:

Sample Location
R.C mg ser qxt — Rock Chip, Description

GN MN 13° 00'

663372 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V31-2	PLAN. No	67

SCALE: 1 : 2 500
DATE: 18/2/82
GEOL: J. Pemberton
DRAWN: R. Tog.
CHECKED:

E.L. 27/76 ELLIOTT BAY, TASMANIA
VOYAGER 31
Geology along Copper Ck.

82-1882 2/5

216

8100m E | 8200m E | 8300m E | 8400m E | 8500m E | 8600m E | 8700m E | 8800m E | 8900m E | 9000m E | 378 500m E A.M.G. | 9100m E | 9200m E | 9300m E | 9400m E | 9500m E | 9600m E | 9700m E

13 800m N

13 700m N

13 600m N

13 500m N

13 400m N

13 300m N

13 200m N

13 100m N

13 000m N

12 900m N

12 800m N

12 700m N

5 251 000m N A.M.G.

12 600m N

12 500m N

12 400m N

12 300m N

12 200m N

12 100m N

12 000m N

11 900m N

11 800m N

11 700m N

11 600m N

8100m E | 8200m E | 8300m E | 8400m E | 8500m E | 8600m E | 8700m E | 8800m E | 8900m E | 9000m E | 378 500m E A.M.G. | 9100m E | 9200m E | 9300m E | 9400m E | 9500m E | 9600m E | 9700m E

LEGEND:

5 cm

663373 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V31-3	PLAN No	67a

E.L. 27/76 ELLIOTT BAY TASMANIA
VOYAGER 3

82 - 1682

SAMPLE LOCATION NUMBERS 3/5

SCALE: 1:2500
DATE: 26-7-82
GEOL: J.M.P.
DRAWN: M.vdS.
CHECKED:

217

8 100 mE · 8 200 mE · 8 300 mE · 8 400 mE · 8 500 mE · 8 600 mE · 8 700 mE · 8 800 mE · 8 900 mE · 9 000 mE · 378 500 mE A.M.G. · 9 100 mE · 9 200 mE · 9 300 mE · 9 400 mE · 9 500 mE · 9 600 mE · 9 700 mE

13 800 mN

13 700 mN — 840 ppm

13 600 mN

13 500 mN — (ppm) 0 · 50 · 100 · 150 · 200 · 250 · 300 · 350 · 400 · 450 · 500

13 400 mN

13 300 mN

13 200 mN — (ppm) 0 · 50 · 100 · 150 · 200 · 250 · 300 · 350 · 400 · 450 · 500 · 600

13 100 mN

13 000 mN

12 900 mN — 815 ppm

12 800 mN — (ppm) 0 · 50 · 100 · 150 · 200 · 250 · 300 · 350 · 400 · 450 · 500

12 700 mN

5 251 000 mN A.M.G.

12 600 mN

12 500 mN — 1050 ppm · 1300 ppm

12 400 mN — (ppm) 0 · 50 · 100 · 150 · 200 · 250 · 300 · 350 · 400 · 450 · 500

12 300 mN

12 200 mN

12 100 mN

12 000 mN — 0 · 50 · 100 · 150 · 200 · 250 · 300 · 350 · 400 · 450 · 500

11 900 mN

11 800 mN

11 700 mN

11 600 mN

8 100 mE · 8 200 mE · 8 300 mE · 8 400 mE · 8 500 mE · 8 600 mE · 8 700 mE · 8 800 mE · 8 900 mE · 9 000 mE · 378 500 mE A.M.G. · 9 100 mE · 9 200 mE · 9 300 mE · 9 400 mE · 9 500 mE · 9 600 mE · 9 700 mE

LEGEND:

Power Hand Auger (Mate)

Sample location — X Cu – ppm; 15 Pb – ppm; 10 Zn – ppm; 61 Fe – % (Duplicate sample); X Ag – %

NS No sample

X Below level of detection.

5 cm

TN MN 13° 00'

SCALE: 1 : 2500

DATE: 26-7-82

GEOL: J.M.P.

DRAWN: M.vdS.

CHECKED:

663375 GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No TS 27/76-V31-6 | PLAN No 69

E.L. 27/76 ELLIOTT BAY TASMANIA

VOYAGER 31

C HORIZON SOIL GEOCHEMISTRY 219

ZINC PROFILES

EL 1882 3/5

8 100 mE | 8 200 mE | 8 300 mE | 8 400 mE | 8 500 mE | 8 600 mE | 8 700 mE | 8 800 mE | 8 900 mE | 9 000 mE | 378 500 mE A.M.G. | 9 100 mE | 9 200 mE | 9 300 mE | 9 400 mE | 9 500 mE | 9 600 mE | 9 700 mE

13 800 mN

13 700 mN

13 600 mN

13 500 mN

13 400 mN

13 300 mN

13 200 mN

13 100 mN

13 000 mN

12 900 mN

12 800 mN

12 700 mN

5 251 000 mN A.M.G.

12 600 mN

12 500 mN

12 400 mN

12 300 mN

12 200 mN

12 100 mN

12 000 mN

11 900 mN

11 800 mN

11 700 mN

11 600 mN

8 100 mE | 8 200 mE | 8 300 mE | 8 400 mE | 8 500 mE | 8 600 mE | 8 700 mE | 8 800 mE | 8 900 mE | 9 000 mE | 378 500 mE A.M.G. | 9 100 mE | 9 200 mE | 9 300 mE | 9 400 mE | 9 500 mE | 9 600 mE | 9 700 mE

LEGEND :

Power Hand Auger (Mate)

Sample location

X Cu – ppm
15 Pb – ppm
10 Zn – ppm
61 Fe – %
X Ag – %
10
10
15
60
X
Duplicate sample

NS No sample
X Below level of detection.

5 cm

TN MN
13° 00'

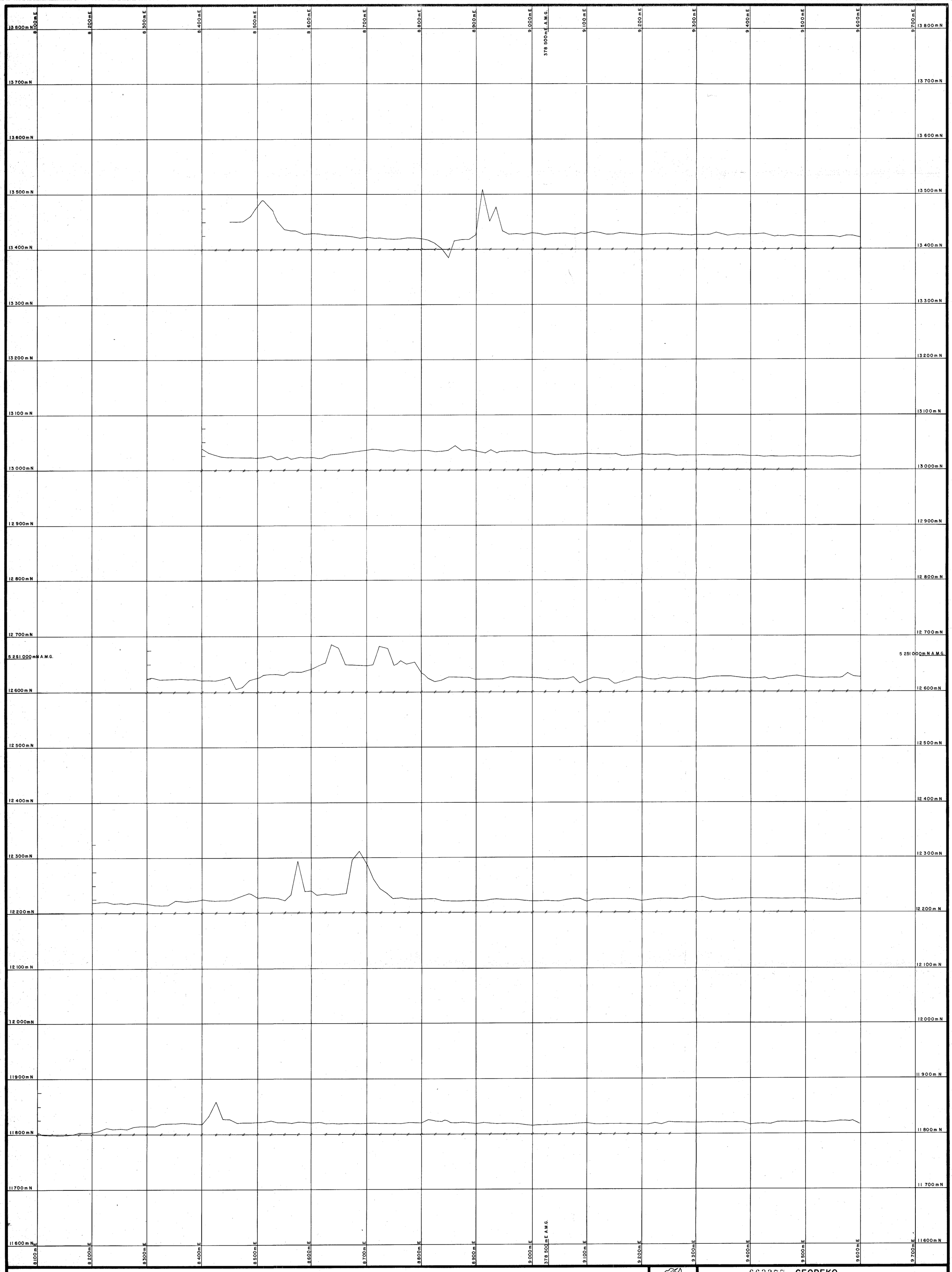
663376 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No | TS 27/76-V31-4 | PLAN No | 69a

E.L. 27/76 ELLIOTT BAY TASMANIA
VOYAGER 31 220
C HORIZON SOIL GEOCHEMISTRY

SCALE 1: 2500
DATE: 10-6-82
GEOL: J.M.P.
DRAWN: M.vdS.
CHECKED:

82 - 1882 35



LEGEND:

Horz. Scale 1:2500

Vert. Scale 1cm = 100nt

5 cm

663377 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V31-9	PLAN No	70

E.L. 27/76 ELLIOTT BAY TASMANIA

VOYAGER 31

MAGNETIC PROFILES

SCALE: 1:2500

DATE: 10-6-82

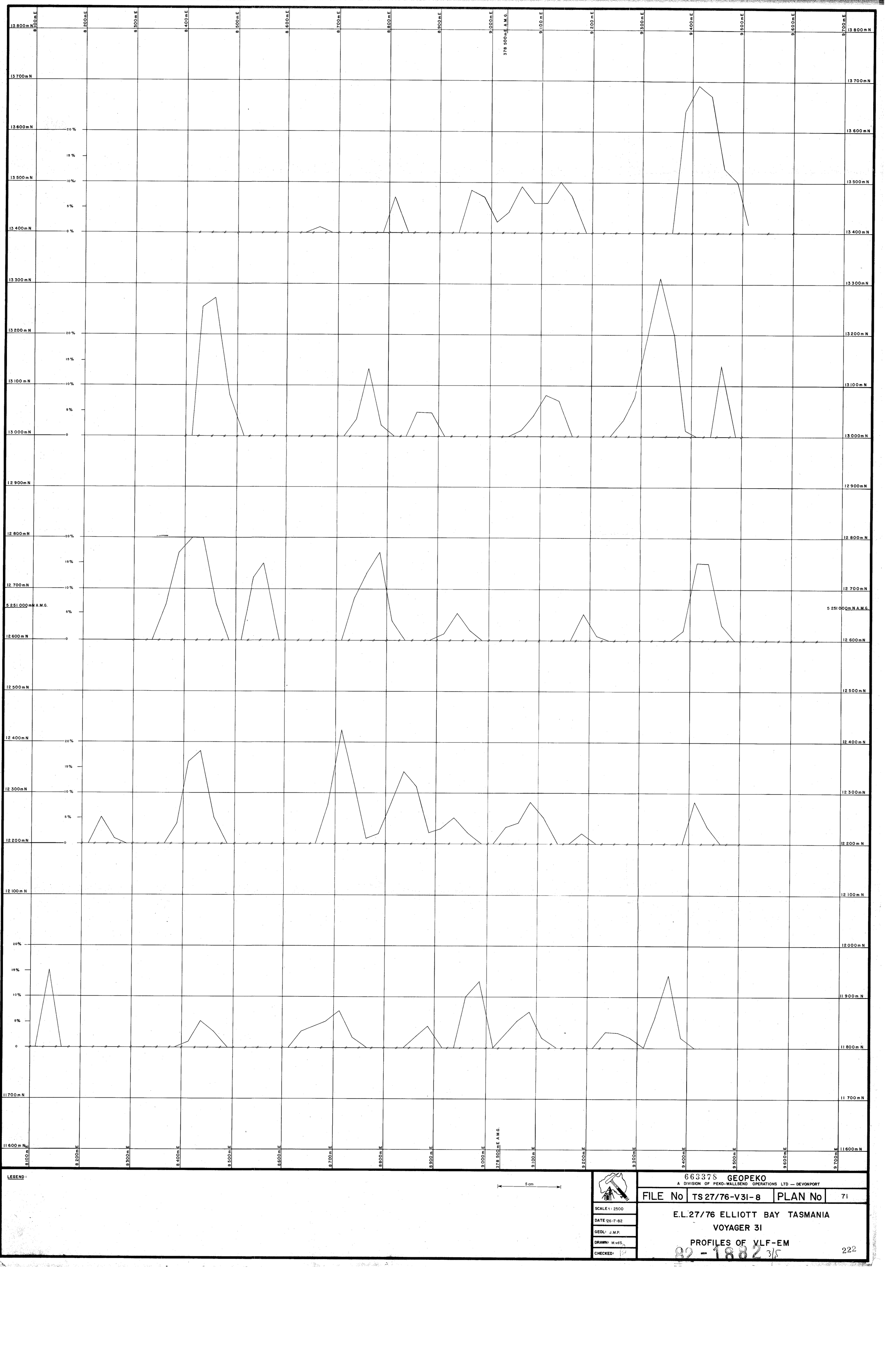
GEOL: J.M.P.

DRAWN: M.vdS.

CHECKED:

82 1002 3/5

221



LEGEND:

5 cm

663378 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V31-8	PLAN No	71

SCALE: 1 : 2500
DATE: 26-7-82
GEOL: J.M.P.
DRAWN: M.vdS.
CHECKED:

E.L. 27/76 ELLIOTT BAY TASMANIA
VOYAGER 31
PROFILES OF VLF-EM

82 - 1882 3/5

222

8 500 mE | 8 600 mE | 8 700 mE | 8 800 mE | 8 900 mE | 9 000 mE | 378 000mE A.M.G. | 9 100 mE | 9 200 mE | 9 300 mE | 9 400 mE | 9 500 mE | 9 600 mE | 9 700 mE | 9 800 mE | 9 900 mE | 10 000 mE | 10 100 mE

15 400 mN

15 300 mN

15 200 mN

15 100 mN

15 000 mN

14 900 mN

14 800 m N

14 700 m N

5 253 000 m N A.M.G.

14 600 mN

14 500 m N

14 400 m N

14 300 m N

14 200 m N

14 100 m N

14 000 m N

13 900 m N

13 800 m N

13 700 m N

13 600 m N

13 500 m N

13 400 m N

13 300 m N

13 200 m N

Orange to green clay with qf pheno.

brown clay with q pheno.

reworked m-cg qfxlt.

argl tr py

argl (cleaved)

argl tr py

argl

lt sst reworked qfxlt

reworked mg qfxlt.

tsst

tsst tslt

lt cong

lt cong hm clasts

lt sst

blk.sh tr py

blk.sh.

blk.sh py

green/orange mgqfxlt

argl.

mg-cg qfxlt reworked?

brown to green clay

tslt + tsst

lt sst reworked mgqfxlt.

reworked mg x t

tsst

blk.sh.

Ladder qvn

lt congl

blk.sh. tr py

blk.sh.

slt

yellow green clay

yellow clay

orange clay

orange +green clay

qtf pheno

argl

tsst

t slt +sst

tsst +slt

reworked qfxt

slt + reworked qfxt

q gravel

tsst

tsst

qmpl

brec? qmpl

qmpl

qpl

lt sst

slt

mic slt

blk.sh tr py

blk.sh tr py

leached blk.sh.

blk.sh

blk.sh +slt

omg qfxt

obrec qpl

oqm pl

lt congl

Fe staining

RAIN FOREST

COPPER CREEK

PLEASANT CREEK

reworked? qfxt

qtfx in clay

orange yellow clay

argl

argl tr py

leached argl.

tsst

tsst

float reworked qfxt

tslt

RAIN FOREST

qvn slixt

qmpl

qpl

qpl

qpl

qmpl

KR9628 PIT

f-mg chl qxt

qmpl

mg chl qfxt

mg qfxt

slt

blk sh

blk sh tr py

mg qfxt chl? KR 9637+lxt

RAIN FOREST

qpl/vt? pl?

Mn on fracture

pl?

qpl

KR9635

KR9636

EUCALYPT + BAUERA

brown matrix q+m pheno

mg chl qfxt tr py

q gravel

mg qfxlt tr py

mg chl qfxlt.

KR9634

RAIN FOREST

slt

blk sh tr py

KR9631 mg xt

orange clay

KR9632 mgxt?

argl.

leached argl.

argl k py

KR9630 tsst

reworked qfxt

f-mg qxt

KR 9629 qmpl

qpl

qmpl

qmpl

qmpl

qpl

qm pl

RAIN FOREST

KR9633 qm pl

qmpl

qmpl

qmpl

qmpl

RAIN FOREST

orange clay

leached argl

Orange clay

argl

leached argl qvn.

KR 8674

tsst

drop off

t sst + slt

t slt

q gravel

t slt mg ser qxt + mixtite

qmpl

mg ser qxt

mg ser qxt

mg qfxt

qmpl

qm pl

RAIN FOREST

qmpl

mg q fxt

mg qfxt

qmpl

qmpl

KR 9625

qmpl

qmpl

mg chi qfxt

KR9626

f-mg ser qxt

mg ser qxt

qpl

qmpl

qpl

qmpl

m-cg lxt/agg/cong.

FOREST

argl

75

leached argl slt-qvn mnr py

slt blk sh. qmpl. +mixtite

drop off

tsst

tsst

mixtite

mixtite

KR9623

Lxt t slt+ ser + mixtite

RAIN FOREST

mg ser qxt

mg ser qxt

qx- brown matrix

qvn pl

f-mg ser qxt.

mg ser qxt

EUCALYPT + TEA TREE

8 500 mE | 8 600 mE | 8 700 mE | 8 800 mE | 8 900 mE | 9 000 mE | 378 000mE A.M.G. | 9 100 mE | 9 200 mE | 9 300 mE | 9 400 mE | 9 500 mE | 9 600 mE | 9 700 mE | 9 800 mE | 9 900 mE | 10 000 mE | 10 100 mE

13 200 m N

LEGEND:

VOLCANIC ROCKS

lt	lithic tuff
xt	crystal tuff
vt	vitric tuff
xlt	crystal lithic tuff
agg	agglomerate rounded clasts 32mm.
fr	fragmental angular clasts 32mm.
ut	undifferentiated tuffs
t	tuff
qp	quartz porphyry
qfp	quartz feldspar porphyry
qfbp	quartz feldspar biotite porphyry
l	as a suffix denotes lava
lap	lapilli

PREFIXES (no prefix indicates acid composition)

a	acid
i	intermediate
rhy	rhyolite or rhyolitic
dac	dacite or dacitic
and	andesite or andesitic
b	basalt or basaltic
bs	basic

SEDIMENTARY ROCKS

sh	shale
sl	siltstone
blksh	blackshale
sst	sandstone
qtz	quartzite
gwk	greywacke
ct	chert
lmst	limestone
dol	dolomite
bx	breccia
congl	conglomerate
vs	volcaniclastic sediment

METAMORPHIC ROCKS

phy	phyllite
sch	schist
gns	gneiss
hfs	hornsfels
mb	marble

INTRUSIVE ROCKS

gr	granite
gd	granodiorite
ad	adamellite
di	dolerite
lp/lamp	lamprophyre
bd	basic dyke
ap	aplite
pg	pegmatite
qv	quartz veins

STRUCTURAL AND TEXTURAL

p	porphyritic
clvd	strongly cleaved
shd	sheared
ox	oxidized
vns	veined
lam	laminated
bx	brecciated
sch	schistose
vug	vugular (vughy, vug)
cren	crenulated

MINERALOGICAL PREFIXES (only use if diagnostic)

sil	siliceous
chl	chloritic
ser	sericitic
cal	calcareous
fe	ferruginous
py	pyritic
hem,hm	hematitic
goss	gossanous
lim	limonitic
arg	argillic
feld	feldspathic
ep	epidote

GRAIN SIZE

fg	fine grained	0 — 3 mm fragments
mg	medium grained	3 — 10 mm fragments
cg	coarse grained	10 — 32 mm fragments
agg	agglomerate or volc breccia.	> 32

AGE DESIGNATION PREFIXES

Q	Quaternary
T	Tertiary
J	Jurassic
TR	Triassic
P	Permian
D	Devonian
S	Silurian
O	Ordovician
€	Cambrian
Pre€	Precambrian

STRUCTURAL

- outcrop
- float
- bedding
- strike/dip of flow layering in volcanic rocks
- " " "schistosity (metamorphic foliation)
- fault
- interpretive contact
- jointing
- cleavage
- fold axis
- vertical cleavage

5 cm

GN MN 13° 00'

SCALE: 1:2500

DATE: May '82

GEOL: J.M.P.

DRAWN: M.vdS.

CHECKED:

663379 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No | TS 27/76-V33-2 | PLAN No | 72

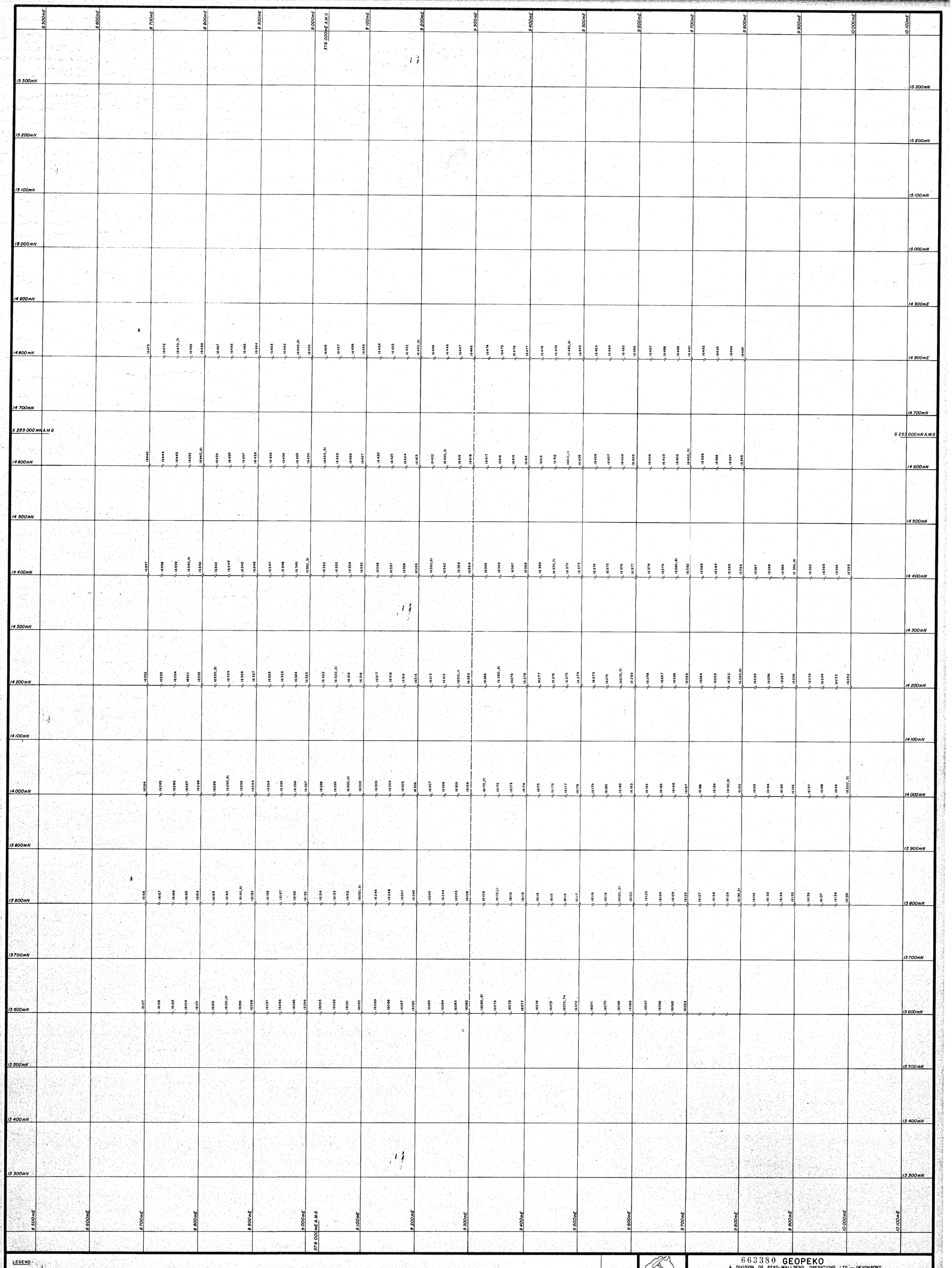
E.L. 27/76 ELLIOTT BAY TASMANIA

VOYAGER 33

GEOLOGICAL PLAN

223

D - 1882 3/5



LEGEND:

- Grid position
- Mole auger hole
- Base line (9 300mE)

Sample prefix - TS

5 cm

GN MN 13°00'

SCALE: 1:2 500
DATE: 10/1/83
GEOL: J. Pemberton
DRAWN: R. Tog.
CHECKED:

663380 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No TS 27/76-V33-4 | PLAN No 72a

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 33
SAMPLE LOCATIONS

82-1082 3/5

8 500mE | 8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 378 000mE A.M.G | 9 100mE | 9 200mE | 9 300mE | 9 400mE | 9 500mE | 9 600mE | 9 700mE | 9 800mE | 9 900mE | 10 000mE | 10 100mE

18 300mN — 15 300mN
18 200mN — 15 200mN
18 100mN — 15 100mN
18 000mN — 15 000mN
14 900mN — 14 900mE
14 800mN — 14 800mE
14 700mN — 14 700mN
5 253 000mN A.M.G — 5 253 000mN A.M.G
14 600mN — 14 600mN
14 500mN — 14 500mN
14 400mN — 14 400mN
14 300mN — 14 300mN
14 200mN — 14 200mN
14 100mN — 14 100mN
14 000mN — 14 000mN
13 900mN — 13 900mN
13 800mN — 13 800mN
13 700mN — 13 700mN
13 600mN — 13 600mN
13 500mN — 13 500mN
13 400mN — 13 400mN
13 300mN — 13 300mN

8 500mE | 8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 378 000mE A.M.G | 9 100mE | 9 200mE | 9 300mE | 9 400mE | 9 500mE | 9 600mE | 9 700mE | 9 800mE | 9 900mE | 10 000mE | 10 100mE

LEGEND:

- Grid position
- Mate auger hole
- Base line (9 300mE)

5 — Cu sample, ppm
35 — Pb sample, ppm
25 — Zn sample, ppm
sample position
22 — Fe sample, %
0·5 — Ag sample, ppm
5 / 35 / 20 / 25 / 0·5 — Duplicate samples
X — Sample below level of detection
NS — No sample

CONTOUR INTERVAL ppm

Rencil No.			
19-6	100–199	19-22	800–1599
19-10	200–399	19-28	1600 >
19-16	400–799		

5 cm

GN MN 13°00'

663381 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V33-5	PLAN No	73

SCALE: 1:2 500
DATE: 28-5-82
GEOL: J. Pemberton
DRAWN: MvdS.
CHECKED:

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER
82 - 1882 3/5
C HORIZON SOIL GEOCHEMISTRY
LEAD CONTOURS

225

8 500mE | 8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 378 000mE A.M.G | 9 100mE | 9 200mE | 9 300mE | 9 400mE | 9 500mE | 9 600mE | 9 700mE | 9 800mE | 9 900mE | 10 000mE | 10 100mE

18 300mN — 15 300mN
18 200mN — 15 200mN
18 100mN — 15 100mN
18 000mN — 15 000mN
14 900mN — 14 900mE
14 800mN — 14 800mE
14 700mN — 14 700mN
5 253 000mN A.M.G — 5 253 000mN A.M.G
14 600mN — 14 600mN
14 500mN — 14 500mN
14 400mN — 14 400mN
14 300mN — 14 300mN
14 200mN — 14 200mN
14 100mN — 14 100mN
14 000mN — 14 000mN
13 900mN — 13 900mN
13 800mN — 13 800mN
13 700mN — 13 700mN
13 600mN — 13 600mN
13 500mN — 13 500mN
13 400mN — 13 400mN
13 300mN — 13 300mN

8 500mE | 8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 378 000mE A.M.G | 9 100mE | 9 200mE | 9 300mE | 9 400mE | 9 500mE | 9 600mE | 9 700mE | 9 800mE | 9 900mE | 10 000mE | 10 100mE

LEGEND:

- Grid position
- Mate auger hole
- Base line (9 300mE)

5 — Cu sample, ppm
35 — Pb sample, ppm
25 — Zn sample, ppm
sample position
22 — Fe sample, %
0·5 — Ag sample, ppm

5
35
20
22
0·5
Duplicate samples

X — Sample below level of detection
NS — No sample

CONTOUR INTERVAL ppm

Pencil No.			
19-6	100-199	19-22	800-1599
19-10	200-399	19-28	1600 >
19-16	400-799		

5 cm

GN MN 13°00'

GEOPEKO 663382
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V33-	PLAN No	74

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 33
82 - 1882
C HORIZON SOIL GEOCHEMISTRY
ZINC CONTOURS

SCALE: 1:2 500
DATE: 26-5-82
GEOL: J.Pemberton
DRAWN: M.vdS.
CHECKED:

226

8 500mE | 8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 378 000mE A.M.G | 9 100mE | 9 200mE | 9 300mE | 9 400mE | 9 500mE | 9 600mE | 9 700mE | 9 800mE | 9 900mE | 10 000mE | 10 100mE

18 300mN — 15 300mN
18 200mN — 15 200mN
18 100mN — 15 100mN
18 000mN — 15 000mN
14 900mN — 14 900mE
14 800mN — 14 800mE
14 700mN — 14 700mN
5 253 000mN A.M.G — 5 253 000mN A.M.G
14 600mN — 14 600mN
14 500mN — 14 500mN
14 400mN — 14 400mN
14 300mN — 14 300mN
14 200mN — 14 200mN
14 100mN — 14 100mN
14 000mN — 14 000mN
13 900mN — 13 900mN
13 800mN — 13 800mN
13 700mN — 13 700mN
13 600mN — 13 600mN
13 500mN — 13 500mN
13 400mN — 13 400mN
13 300mN — 13 300mN

8 500mE | 8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 378 000mE A.M.G | 9 100mE | 9 200mE | 9 300mE | 9 400mE | 9 500mE | 9 600mE | 9 700mE | 9 800mE | 9 900mE | 10 000mE | 10 100mE

LEGEND:

- Grid position
- Mate auger hole
- Base line (9 300mE)
- 5 — Cu sample, ppm; 35 — Pb sample, ppm; 25 — Zn sample, ppm; sample position; 22 — Fe sample, %; 0·5 — Ag sample, ppm
- Duplicate samples
- X — Sample below level of detection
- NS — No sample

CONTOUR INTERVAL ppm

Pencil No.

19-6 | 19-10 | 19-16 | 19-22 | 19-28

5 cm

GN MN — 13°00'

SCALE: 1:2 500
DATE: 24-5-82
GEOL: J. Pemberton
DRAWN: M. vd S, J.P.M.
CHECKED:

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

663383

FILE No | TS 27/76-V33- | PLAN No | 75

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 33
Fe CONTOURS

82-1882 3/5

227

14 800N

14 700N

5 253 000N AMG

14 600N

14 500N

14 400N

14 300N

14 200N

14 100N

14 000N

13 900N

13 800N

13 700N

5 252 000 N AMG

13 600N

13 500N

13 400N

13 300N

13 200N

13 100N

13 000 N

12 900N

12 800N

12 700N

12 600N

B.L.

379 000 E AMG

8700 E

8800 E

8900 E

9000 E

9100 E

9200 E

9300 E

9400 E

9500 E

9600 E

9700 E

9800 E

9900 E

10000 E

o Grid position

pl Mate auger hole

B.L. Base Line

5 — Cu sample, ppm
35 — Pb sample, ppm
25 — Zn sample, ppm
22 — sample position
0·5 — Fe sample, %
Ag sample, ppm

5 / 35 / 210 / 23 / 0·5 — Duplicate samples

X Sample below level of detection

NS No sample

CONTOUR INTERVAL ppm

Pencil No.			
19-33	2-4	19-10	16-32
19-46	4-8	19-14	32 >
19-16	8-16		

5 cm

KT 27/76-3
1: 10000

KT 27/76-5
1: 10000

GEOPEKO

PRELIMINARY COPY ONLY

DATE

GN MN

13°00'

Interpreted By	J.P.
Drawn By	P.R.S.
Date	Mar 83
Approved By	
Revision By	Date
Revision By	Date
Revision By	Date

GEOPEKO 663384

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

Scale 1:2500

25 0 25 50 75 100 125 150 175 200 225 250

metres

DRAWING NO.

SHEET NO. 3SE3-Ag

E.L.27/76 ELLIOTT BAY, TASMANIA

C-HORIZON GEOCHEMICAL RESULTS

Ag CONTOURS

228

TCR 82-1882

3/5

Plan 77

8 500mE | 8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 378 000mE A.M.G | 9 100mE | 9 200mE | 9 300mE | 9 400mE | 9 500mE | 9 600mE | 9 700mE | 9 800mE | 9 900mE | 10 000mE | 10 100mE

15 300mN
15 200mN
15 100mN
15 000mN
14 900mN
14 800mN
14 700mN
5 253 000mN A.M.G
14 600mN
14 500mN
14 400mN
14 300mN
14 200mN
14 100mN
14 000mN
13 900mN
13 800mN
13 700mN
13 600mN
13 500mN
13 400mN
13 300mN

BASE LINE 9 300 E
(OFF SET)

8 500mE | 8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 378 000mE A.M.G | 9 100mE | 9 200mE | 9 300mE | 9 400mE | 9 500mE | 9 600mE | 9 700mE | 9 800mE | 9 900mE | 10 000mE | 10 100mE

LEGEND:

- Grid position
- Mate auger hole
- Base line (9 300mE)

5 cm

GN MN
13°00'

SCALE: 1:2 500
DATE: 5-8-82
GEOL: J. Pemberton
DRAWN: M.vdS.
CHECKED:

663385 GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V33-	PLAN No	78

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 33
MAGNETIC PROFILES

82 - 1882 35

229

BLACK SHALES + SILTSTONES

BLACK SHALES + SILTSTONES IN FOREST

PROBABLE BLACKSHALE CONTACT MARKED BY EDGE OF FOREST.

BLACK SHALES +SILTSTONES

LIGHTHOUSE ROAD

AREA OF SUB OUTCROPPING QTZ VEINS.

fg rewkd qfxt

fg qf lava

fg pinkish qf lavas

fg qf lavas? rhyolites?

CREEK

f-mg, greenish qslts.

qtz scree

F

FAULT

V wthrd grn f-mg qxt?

vf-fg qf lava

fg qf lava?

rhyolitic ash flows + lavas.

sil qf ash flow

sil fgqf (rhyolitic) ash flow

fg qf rhyolitic lava.

fg qf (rhyolitic lava

Area of contact? between lava + qfxlt.

TD 6716,6717

TD 6714, 6715

fg ser qfxt.

fg rhyolitic lava

f-mg qfxlt+

LIGHTHOUSE ROAD

fg wh qfxt (lava like)

fg qfxlt + minor lava

v silic. alt. qtz biotite? lava

wthrd tuff?

fg qf (rhyolitic) lava

wthrd smooth fg qfxt

qtz veins

fg ser grn qfxt.

fg qfxt

smooth wfg wh qxt.

fg qtz biotite lava

w indur vf fg wh qfxt

vf fg smooth ser qfxt

mg qxt or qpl

wthrd smooth qfxt

vfg wh qfxt

f-fg qtz rich qfxt.

vfg-qfxt

qtz lava

f-mg qtz Fe st.

f-mg ser qtz biotite lava.

f-mg qtz phyric lava

wthrd qtz phyric lava?

wthrd qtz physlot.

42 vfg qpl like qfxt?

vf fg qfxt

TRACK

BOMBARDIER

vfg qfxt

37 v silicified fg qfxt w/pink K spar? + rounded qtz

ser qfxt.

qfxt

smooth fg qfxt

qtz

fg chloritic qtz

f-mg grn.

69 f-mg grn. qtz biotite lava.

qtz biotite lava. wf qtz veining.

58 f-mg ser qtz-biotite lava

v vfqxt unit

qpl

63 vf-fg ser qpl

vf-fg ser qfxt (poss reworked)

69 vf-fg ser qfxt

qfxt

vf fg ser qtxt

WATERLOO Ck

fg wh qfxt

66

massive qtz.

strongly sil qfxt ?

vf-fg ser/sil qfxt.

53 biotite lava.

vf-fg qfxt

5 cm

GN MN 13°00'

LEGEND:

- Tyndall-f-cg reworked qfxlts.
- vf-fg variable qxts + qfxlt.
- fg euhedral quartz biotite lava.
- fg quartz feldspar lava – very similar to QPL except it contains greater % phenocrysts and slightly higher propotion of feldspar xtalls.
- quartz veins + ridges.
- f-mg, very crowded, unusual siliceous quartz feldspar ash flow (?).
- mg euhedral – subhedral greenish qfxlt.
- massive fg quartz porphyry lava.

Lineament – fault (?).

Approximate contact.

69 Field Sample Location Numbers

SCALE: 1:2500
DATE: 4-3-82
GEOL: D.J.M.
DRAWN: M.vdS.
CHECKED:

GEOPEKO 663386
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V34-2	PLAN No	79

E.L. 27/76 ELLIOTT BAY TASMANIA
VOYAGER 34
GEOLOGY

- 1882 3/5

230

10 600m E | 10 700m E | 10 800m E | 10 900m E | 11 000m E | 11 100m E | 11 200m E | 11 300m E | 11 400m E | 11 500m E | 381 000m E AMG | 11 600m E | 11 700m E | 11 800m E | 11 900m E | 12 000m E | 12 100m E | 12 200m E

13 900m N
13 800m N
13 700m N
13 600m N
13 500m N
13 400m N
13 300m N
13 200m N
13 100m N
13 000m N
12 900m N
12 800m N
12 700m N
5 251 000m N A.M.G.
12 600m N
12 500m N
12 400m N
12 300m N
12 200m N
12 100m N
12 000m N
11 900m N
11 800m N
11 700m N

LEGEND:

SAMPLE PREFIX - TS.

5 cm

GN MN 13°00'

SCALE: 1:2500
DATE: 10//83
GEOL: D.J.M.
DRAWN: R.Tod.
CHECKED:

GEOPEKO 663387
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No | TS 27/76-V34-3 | PLAN No | 79a

E.L.27/76 ELLIOTT BAY TASMANIA
VOYAGER 34 - 1882
SAMPLE LOCATIONS 3/5

231

10 600mE | 10 700mE | 10 800mE | 10 900mE | 11 000mE | 11 100mE | 11 200mE | 11 300mE | 11 400mE | 11 500mE | 381 000mE A.M.G. | 11 600mE | 11 700mE | 11 800mE | 11 900mE | 12 000mE | 12 100mE | 12 200mE

13 900mN
13 800mN
13 700mN
13 600mN
13 500mN
13 400mN
13 300mN
13 200mN
13 100mN
13 000mN
12 900mN
12 800mN
12 700mN
5 251 000mN A.M.G.
12 600mN
12 500mN
12 400mN
12 300mN
12 200mN
12 100mN
12 000mN
11 900mN
11 800mN
11 700mN

LEGEND :

- Grid position
- Power auger
- Hand auger
- Power hand auger/mate

Sample Position — X: Cu ppm; 35: Pb ppm; 90: Zn ppm; X: Ag ppm; 41: Fe %; X 35 110 X :27 — Duplicate Sample

NS No Sample
X Below Level of Detection

5 cm

GN MN 13°00'

GEOPEKO 663388
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No TS 27/76-V34-4 | PLAN No 80

E.L.27/76 ELLIOTT BAY TASMANIA

VOYAGER 34

SCALE: 1:2500
DATE: 4-3-82
GEOL: D.J.M.
DRAWN: M.vdS.
CHECKED:

- 1882 -

3/5

232

663389

D of M | A.G. | G.S. | E.G. | B.S.M.E
Received 10 DEC 1982
Answered
DEPT. OF MINES
REF. No. 10645/82

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LIMITED

ANNUAL REPORT - E.L. 27/76

1981 - 1982 FIELD SEASON

82-1882(4)
PLANS 81-105

P.A. WILSON et. al.
DEVONPORT
SEPTEMBER, 1982

10 600mE | 10 700mE | 10 800mE | 10 900mE | 11 000mE | 11 100mE | 11 200mE | 11 300mE | 11 400mE | 11 500mE | 381 000mE A.M.G. | 11 600mE | 11 700mE | 11 800mE | 11 900mE | 12 000mE | 12 100mE | 12 200mE

13 900mN
13 800mN
13 700mN
13 600mN
13 500mN
13 400mN
13 300mN
13 200mN
13 100mN
13 000mN
12 900mN
12 800mN
12 700mN
5 251 000mN A.M.G.
12 600mN
12 500mN
12 400mN
12 300mN
12 200mN
12 100mN
12 000mN
11 900mN
11 800mN
11 700mN

LEGEND:

- Grid position
- Power auger
- Hand auger
- Power hand auger/mate

Sample Position — X: Cu ppm; 35: Pb ppm; 90: Zn ppm; X: Ag ppm; 41: Fe %. Duplicate Sample: X 35 110 X 27

NS No Sample
X Below Level of Detection

CONTOUR INTERVAL Pencil No.	ppm
19-6	100-199
19-10	200-399
19-16	400-799
19-22	800-1599
19-28	>1600

5 cm

GN MN 13°00'

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

663390

FILE No	TS 27/76-V34-5	PLAN No	81

SCALE: 1:2500
DATE: 4-3-82
GEOL: D.J.M.
DRAWN: M.vdS.
CHECKED:

E.L. 27/76 ELLIOTT BAY TASMANIA
VOYAGER 34
C HORIZON SOIL GEOCHEMISTRY
LEAD CONTOURS

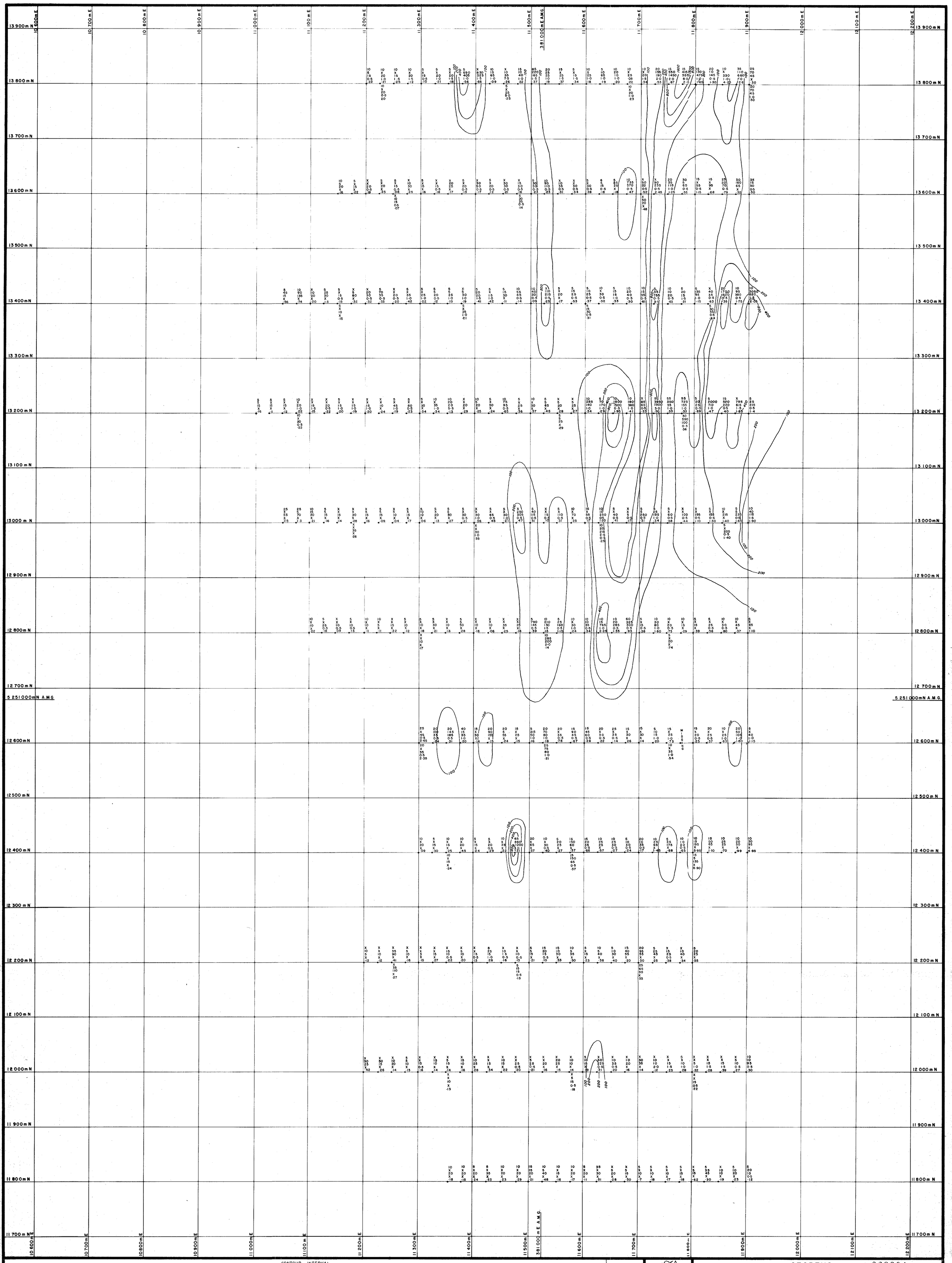
233

82-1887

45

10 600m E | 10 700m E | 10 800m E | 10 900m E | 11 000m E | 11 100m E | 11 200m E | 11 300m E | 11 400m E | 11 500m E | 381 000m E A.M.G. | 11 600m E | 11 700m E | 11 800m E | 11 900m E | 12 000m E | 12 100m E | 12 200m E

13 900m N
13 800m N
13 700m N
13 600m N
13 500m N
13 400mN
13 300mN
13 200m N
13 100m N
13 000m N
12 900m N
12 800m N
12 700m N
5 251 000mN A.M.G
12 600mN
12 500m N
12 400m N
12 300 m N
12 200m N
12 100m N
12 000mN
11 900m N
11 800m N
11 700m N



LEGEND:

- Grid position
- Power auger
- Hand auger
- Power hand auger/mate

Sample Position: X — Cu ppm; 35 — Pb ppm; 90 — Zn ppm; X — Ag ppm; 41 — Fe %; 110 — Duplicate Sample; 27

NS No Sample
X Below Level of Detection

CONTOUR INTERVAL

Pencil No.	ppm
19-6	100–199
19-10	200–399
19-16	400–799
19-22	800–1599
19-28	>1600

5 cm

GN MN 13°00'

GEOPEKO 663391
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

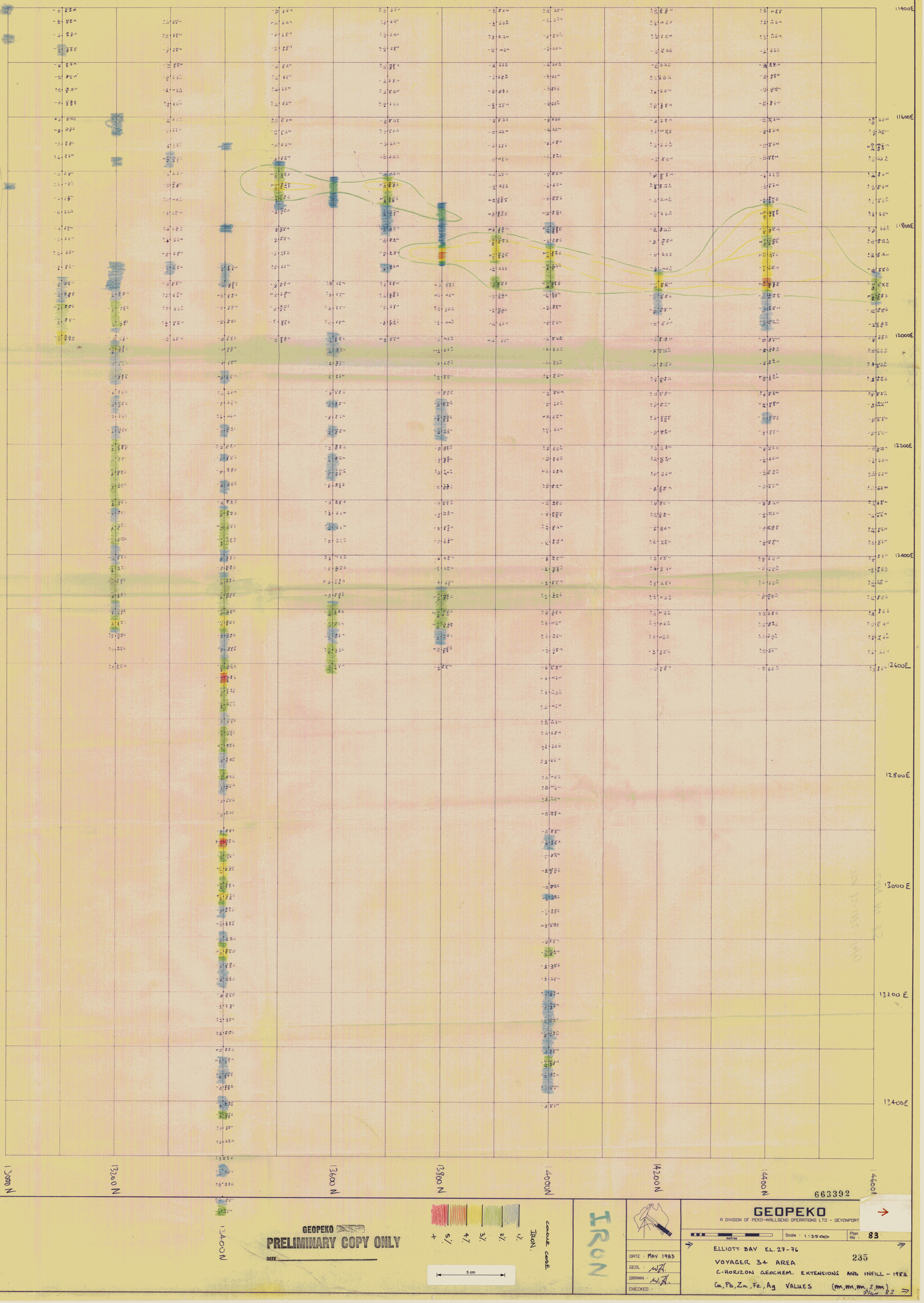
FILE No	TS 27/76-V34-6	PLAN No	82

E.L.27/76 ELLIOTT BAY TASMANIA
VOYAGER 34
C HORIZON SOIL GEOCHEMISTRY
ZINC CONTOURS

SCALE: 1:2500
DATE: 4-3-82
GEOL: D.J.M.
DRAWN: M.vdS.
CHECKED:

OD-1882
234
4/5

FILE NO:



663392

GEOPEKO
PRELIMINARY COPY ONLY
DATE

IRON. COLOUR CODE
+ 5% 4% 3% 2% 1%
5 cm

IRON

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD - DEVONPORT

Scale 1:2500 | Plan No. 83

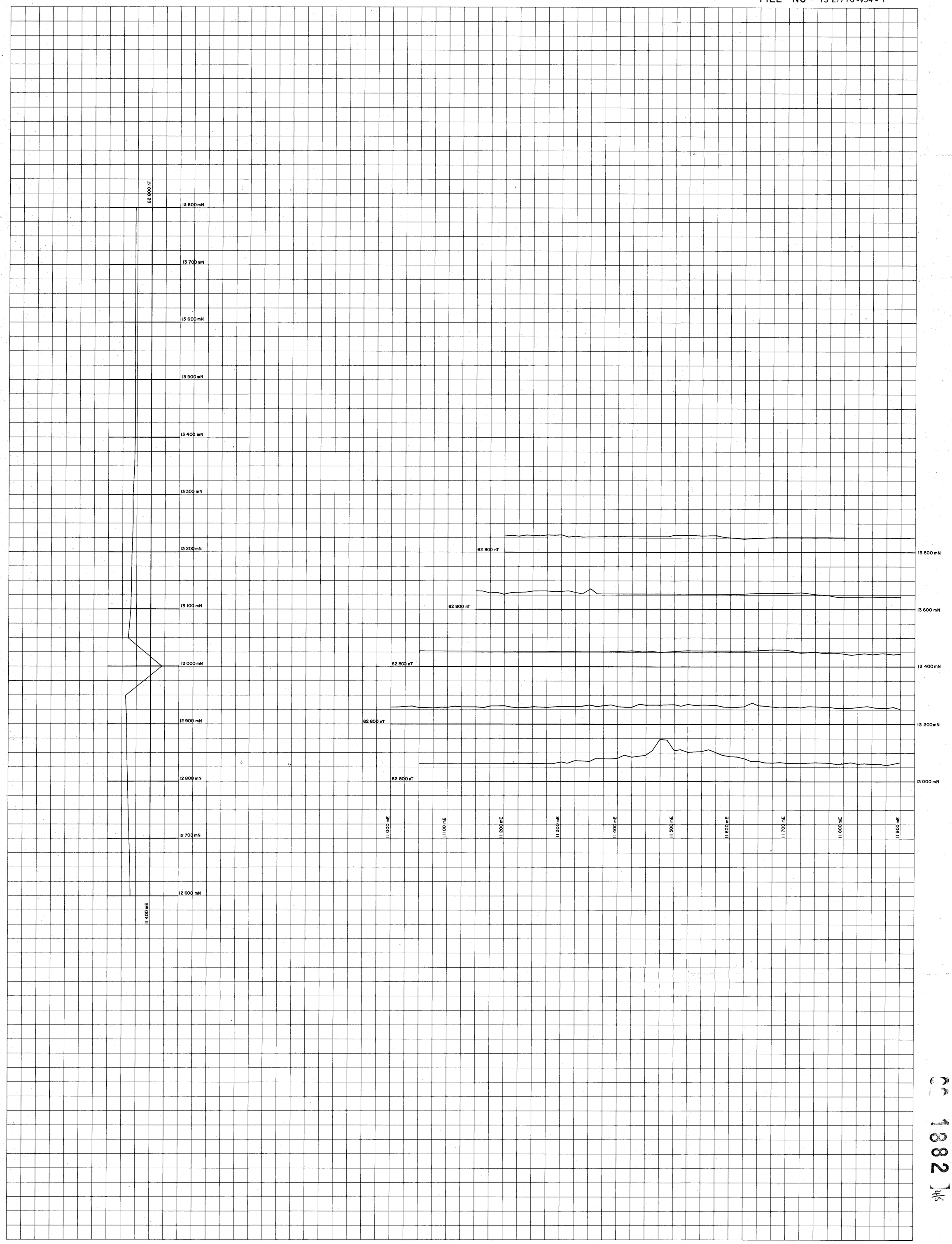
DATE : MAY 1983
GEOL : W.T.
DRAWN : W.T.
CHECKED :

ELLIOTT BAY EL. 27-76
VOYAGER 34 AREA
C-HORIZON GEOCHEM. EXTENSIONS AND INFILL - 1983
Cu, Pb, Zn, Fe, Ag VALUES (ppm, ppm, ppm, %, ppm)

235

83

FILE NO : TS 27/76-V34 - 7



5 cm

GEOPHYSICAL LEGEND	
VERT. SCALE: 1cm=100 nT	LIB BOOK NO. :
DATUM: 62 800 nT	DATE : 6/12/82
	GEOL : J. Sumpton
	DRAWN : R. Tog
	CHECKED

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD - DEVONPORT

25 0 25 50 75 100 125 metres

SCALE : 1 : 2 500

PLAN NO : 84

E.L. 27/76 ELLIOTT BAY, TASMANIA

VOYAGER 34

PROFILES OF TOTAL MAGNETIC INTENSITY

236

663393

1882 (TS)

8 800m E | 8 900m E | 9 000m E | 9 100m E | 9 200m E | 9 300m E | 9 400m E | 382 000m E A.M.G. | 9 500m E | 9 600m E | 9 700m E | 9 800m E | 9 900m E | 10 000m E | 10 100m E | 10 200m E | 10 300m E

10 000m N
9 900m N
9 800m N
9 700m N
9 600m N
9 500m N
9 400m N
9 300m N
9 200m N
9 100m N
9 000m N
8 900m N
8 800m N
5 247 000m N A.M.G.
8 700m N
8 600m N
8 500m N
8 400m N
8 300m N
8 200m N
8 100m N
8 000m N
7 900m N
7 800m N

KR 9116
mg qxt
KR 9117
q rubble

q rubble
q rubble
qv

TD6371S 10ppb
TD6372P 6·6ppm
4 Colours

mg chl qflx
qflxt
fq qxt

q rubble
q rubble
qv
HD chl fg qxt

q rubble
mg chl qfxt
qv
KR 9118
chl qfxt

HD chl fg ut

rg qfxt 9~5%

TD6369S 10ppb
TD6370P 23·6 ppm
5 Colours
KR 9115
mg qfxt 9~20%

chl fg-mg qxt f~35% 9~13%
mgfqxt
fgfqxt
Cu,Pb,Zn anomaly
HD qfxt
chl fg qfxt

TD6367S 35 ppb
TD6368P 5·3ppm
3 Colours
KR 9116
mg qfxt block wispy extensive qv
mgfqxt
mg qfxt block wisps
mg qfxt 9~15% f~5% bk wisps~15%
KR 9112
chl mg qfxt
mgfqxt
chl mg ser qxt 9~10%
mgfqxlt f~55%

KR 9113
mg qxt
mg qxt vt interbeds
mgqflxt 9~50%
mgqflxt
mgqfixt
mgfqlxt
HD fgfqxt

TD6365S 5ppb
TD6366P 30ppb
cg qxt min fg chl 75 9~40%
cgqxt
cg qxt min f 9~55%
cgqfxt
cg qxt epi blotches
TD6363P 68ppb
TD6364P 20ppb
5 Colours
HD fgut
fgqxt 9~1%

LEGEND:

CAMBRIAN HUDSON RIVER VOLCANICS

- Quartz crystal tuff, fine grained.
- Feldspar quartz crystal tuff, fine to medium grained.
- Quartz feldspar crystal tuff, medium grained.
- Feldspar quartz lithic crystal tuff, medium grained.
- Quartz crystal tuff, coarse grained

TD6371S / TD6372P / 4 Colours — Drainage sample (sediment) / Drainage sample (pan concentrate) / Visible gold in pan concentrate.
Geological boundary
Cleavage
Bedding
Quartz veining
Boundary of quartz rubble.
HD — Hand drill hole, Geology from cuttings
KR 9118 — Outcrop sample site and number.
Outcrop.
Creek
Major water course
Minor water course
5 cm

GN MN 13°00'

SCALE: 1:2500
DATE: 1·2·82
GEOL: R.J.P.
DRAWN: M.vdS.
CHECKED:

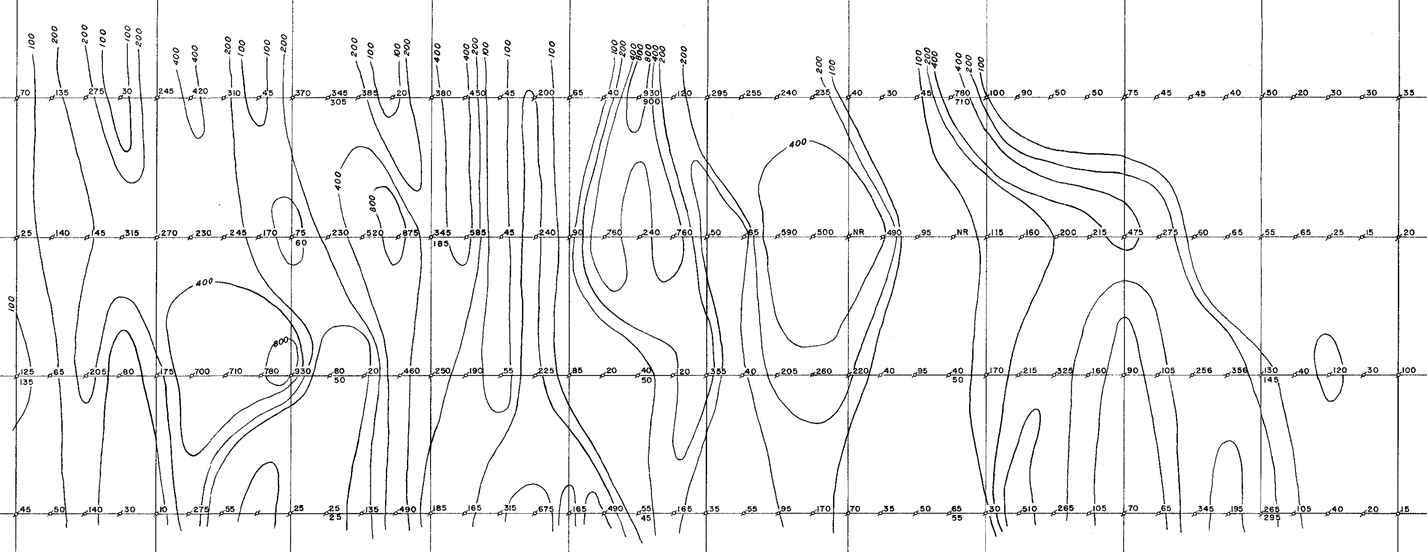
GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT
663394

FILE No | TS 27/76-V16-10 | PLAN No | 85

E.L. 27/76 ELLIOTT BAY TASMANIA
V16 GEOLOGICAL PLAN
AND GOLD PAN CONCENTRATE RESULTS

3C - 1882 LHS

237



LEGEND

- Grid position
- Power auger
- Hand auger
- Power hand auger/mate

100 — Zinc ppm — Sample Position
95 — Duplicate Sample.

NR No Result
NS No Sample
X Below Level of Detection

CONTOUR INTERVAL

- 100–199 ppm
- 200-399 ppm
- 400-799 ppm
- 800-1599ppm

ANALYTICAL METHOD

Code: Analabs 101

Perchloric acid digestion followed by AAS.

5 cm

GN MN 13°00'

GEOPEKO 663395
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

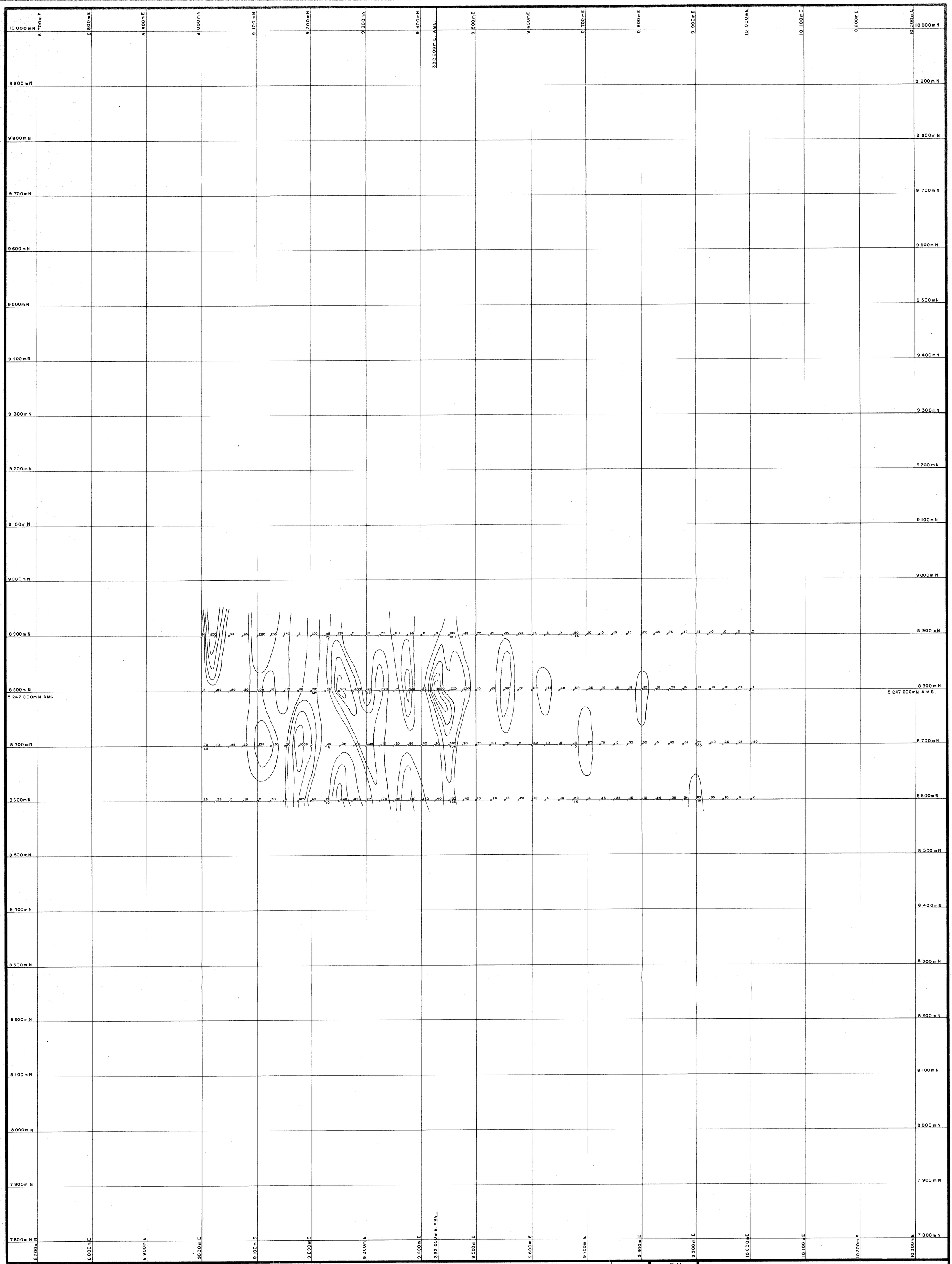
FILE No	TS 27/76-V16-12	PLAN No	86

SCALE: 1:2500
DATE: FEB '82
GEOL: R.J.P.
DRAWN: M.vdS
CHECKED:

E.L.27/76 ELLIOTT BAY TASMANIA
VOYAGER 16
C HORIZON SOIL GEOCHEMISTRY
ZINC CONTOURS

12 1982 45

233



LEGEND:

- Grid position
- Power auger
- Hand auger
- Power hand auger/mate

100 — Zinc ppm — Sample Position.
95 — Duplicate Sample.

NR No Result
NS No Sample
X Below Level of Detection

CONTOUR INTERVAL

- 100 – 199 ppm
- 200 – 399 ppm
- 400 – 799 ppm
- 800 – 1599 ppm
- > 1600

ANALYTICAL METHOD

Code: Analabs 101

Perchloric acid digestion followed by AAS.

5 cm

GN MN
13° 00'

GEOPEKO 663396
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

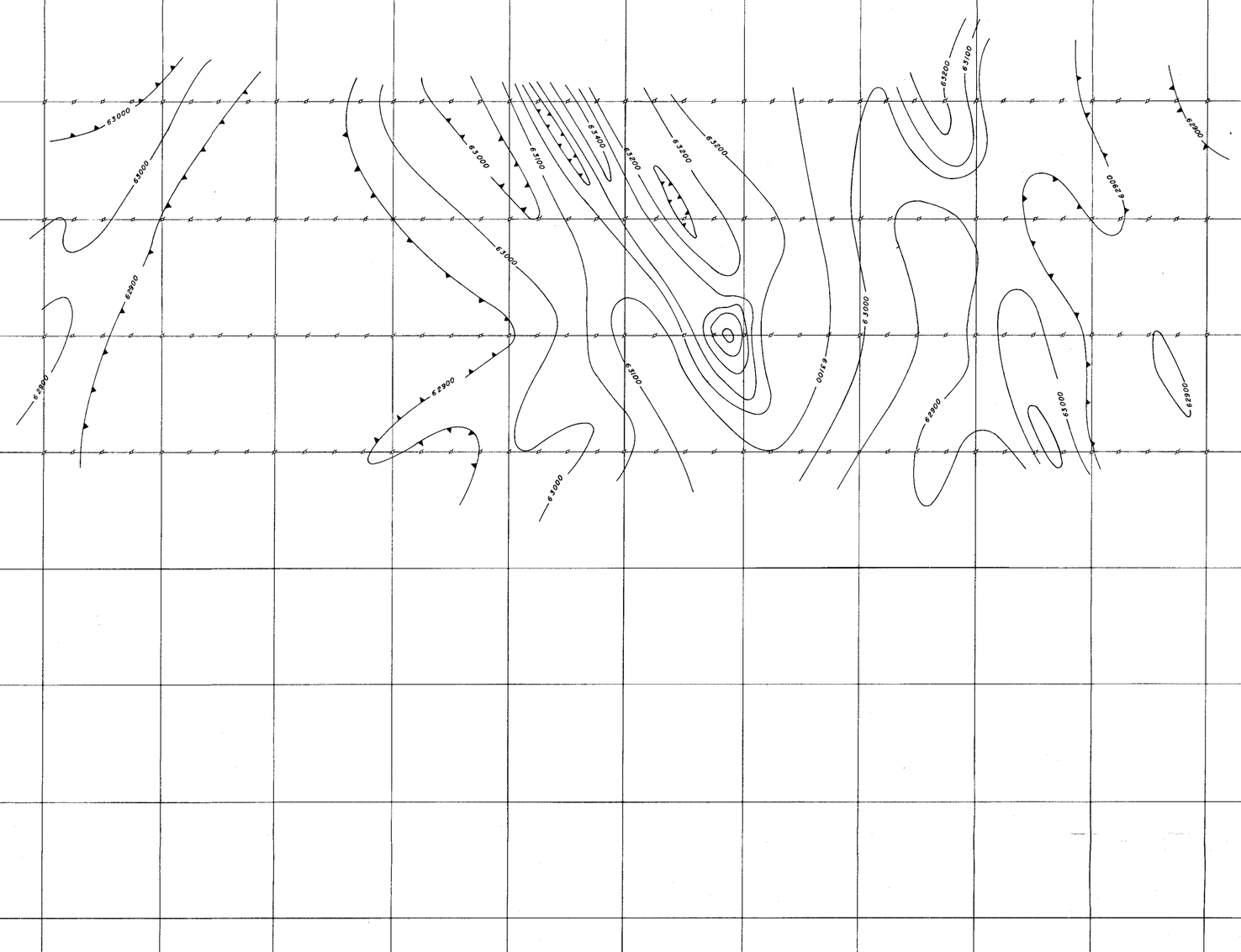
FILE No	TS 27/76-V16-13	PLAN No	87

SCALE: 1:2500
DATE: FEB '82
GEOL: R.J.P.
DRAWN: M.vdS
CHECKED:

E.L.27/76 ELLIOTT BAY TASMANIA
VOYAGER 16
C HORIZON SOIL GEOCHEMISTRY
LEAD CONTOURS

82 - 1882 45

239



10 000 m N
9 900 m N
9 800 m N
9 700 m N
9 600 m N
9 500 m N
9 400 m N
9 300 m N
9 200 m N
9 100 m N
9000 m N
8 900 m N
8 800 m N
8 700 m N
8 600 m N
8 500 m N
8 400 m N
8 300 m N
8 200 m N
8 100 m N
8 000 m N
7 900 m N
7 800 m N

8 700 m E
8 800 m E
8 900 m E
9 000 m E
9 100 m E
9 200 m E
9 300 m E
9 400 m E
382 000 m E. AMG.
9 500 m E
9 600 m E
9 700 m E
9 800 m E
9 900 m E
10 000 m E
10 100 m E
10 200 m E
10 300 m E

5 247 000 m N. AMG.
5 247 000 m N. A.M.G.

LEGEND:

Contour interval 100 nT

5 cm

GN MN
13°00'

SCALE: 1:2500
DATE: 10 June 82
GEOL: J Sumpton
DRAWN: M.vdS
CHECKED: RJP 2 Aug 82

GEOPEKO 663397
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No | TS 27/76-V16-17 | PLAN No | 88

E.L.27/76 ELLIOTT BAY TASMANIA
VOYAGER 16
Contours of Total Magnetic Intensity

240

99-1382 4/5

8 700 m E | 8 800 m E | 8 900 m E | 9 000 m N | 9 100 m N | 9 200 m N | 9 300 mN | 9 400 m N | 382 000 m E. AMG. | 9 500 m E | 9 600 m E | 9 700 m E | 9 800 m E | 9 900 m E | 10 000 m E | 10 100 m E | 10 200 m E | 10 300 m E

10 000 m N / 9 900 m N / 9 800 m N / 9 700 m N / 9 600 m N / 9 500 m N / 9 400 m N / 9 300 m N / 9 200 m N / 9 100 m N / 9000 m N / 8 900 m N / 8 800 m N / 8 700 m N / 8 600 m N / 8 500 m N / 8 400 m N / 8 300 m N / 8 200 m N / 8 100 m N / 8 000 m N / 7 900 m N / 7800 m N

5 247 000 m N. AMG. — 5 247 000 m N. AMG.

+10% -10% +10% -10% +10% -10%

LEGEND:

5 cm

GN MN
13° 00'

GEOPEKO 663398
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

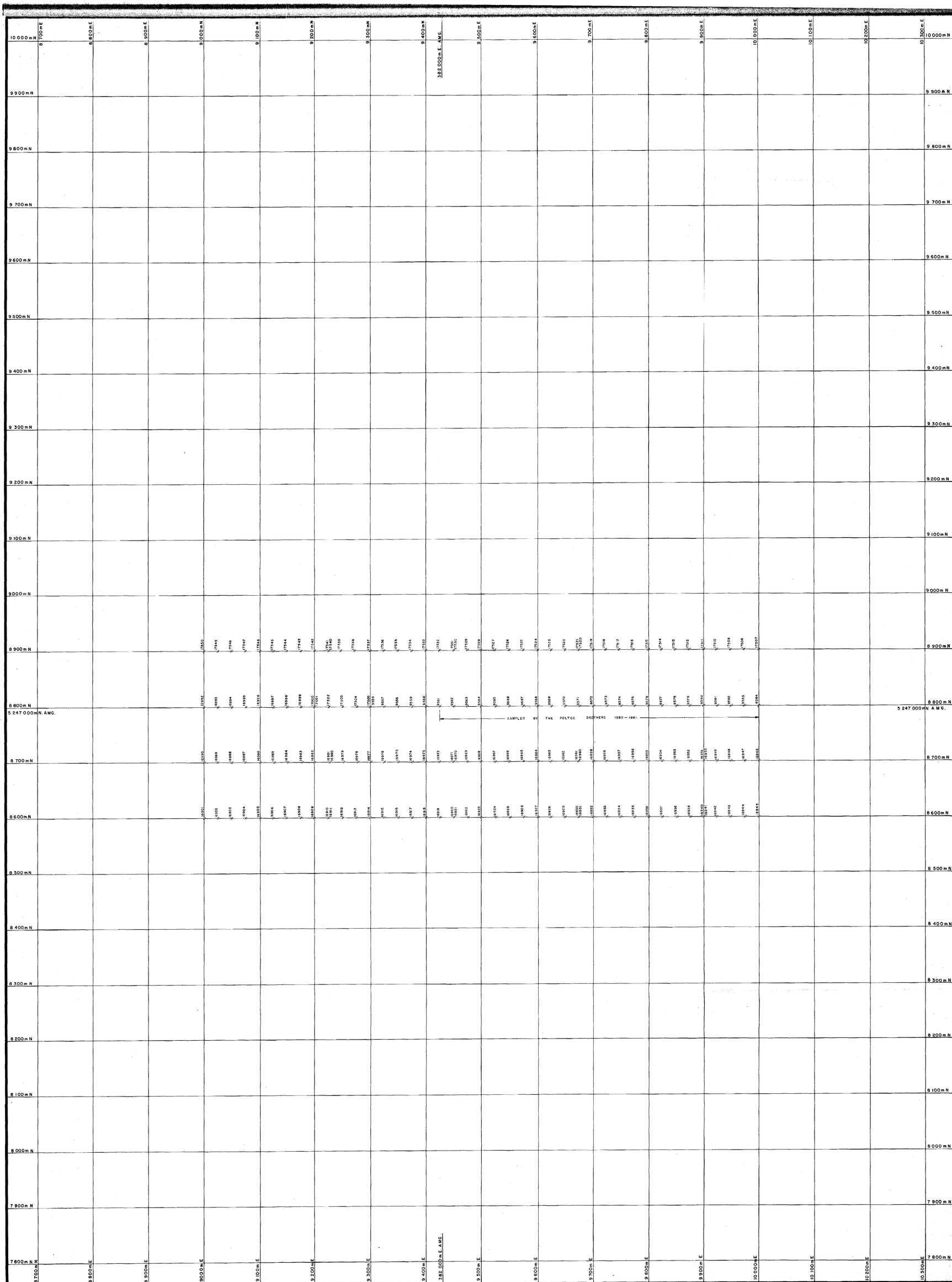
FILE No	TS 27/76-V16-15	PLAN No	89

SCALE: 1:2500
DATE: 2/8/82
GEOL: R.J.P.
DRAWN: R.Tog.
CHECKED: RJP 2 Aug

E.L.27/76 ELLIOTT BAY TASMANIA
VOYAGER 16
VLF-EM PROFILES

82 - 1882 45

241



LEGEND:

C Horizon Soil Samples.

16990 — Sample number & Position

Mate sampling

Samplers R.C., J.N.

5 cm

GN MN

13°00'

SCALE: 1:2500

DATE: FEB '82

GEOL: R.J.P.

DRAWN: M.vdS

CHECKED:

GEOPEKO 663399

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V16-14	PLAN No	90

E.L.27/76 ELLIOTT BAY TASMANIA

VOYAGER 16

SOIL SAMPLE LOCATION MAP

82-1882 4/5

2A2

DATA MANIPULATED USING FRASERS ALGORITHM

V.L.F — EM 30% 20% 10%

TOTAL MAGNETIC INTENSITY nT 1100 1000 900 800 700 600 500 400 300 200 100 0

ZINC ppm 750 500 250 0

LEAD ppm 750 500 250 0

IRON % 7.5 5.0 2.5 0

MANGANESE ppm 4000 3000 2000 1000 0

GEOLOGY

NO OUTCROP

q RUBBLE

FINE GRAINED QUARTZ CRYSTAL TUFF

FINE TO MEDIUM GRAINED FELDSPAR QUARTZ CRYSTAL TUFF

MEDIUM GRAINED QUARTZ FELDSPAR CRYSTAL TUFF

MEDIUM GRAINED FELDSPAR QUARTZ LITHIC CRYSTAL TUFF

COARSE GRAINED QUARTZ CRYSTAL TUFF.

8700 N 8800 N 8900 N 9000 N 9100 N 9200 N 9300 N 9400 N 9500 N 9600 N 9700 N 9800 N 9900 N 10000 N 10100 N 10200 N 10300 N

LEGEND:

5 cm

SCALE: 1:2500

DATE: 9th JUNE 82

GEOL: R.J.P.

DRAWN: M.vdS.

CHECKED: RJP 4-8-82

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

663400

FILE No	TS 27/76-V16-16	PLAN No	91

E.L.27/76 ELLIOTT BAY TASMANIA
VOYAGER 16
GEOCHEMICAL AND GEOPHYSICAL PROFILES

82-1882 45

243

8 600mE | 8 800mE | 9 000mE | 9 200mE | 9 400mE | 9 600mE | 9 800mE | 10 000mE | 10 200mE | 10 400mE | 10 600mE | 10 800mE | 11 000mE | 11 200mE | 11 400mE | 11 600mE | 11 800mE

12 000mN

11 800mN

11 600mN

11 400mN

11 200mN

11 000mN

10 800mN

10 600mN

10 400mN

10 200mN

10 000mN

9 800mN

9 600mN

9 400mN

9 200mN

9 000mN

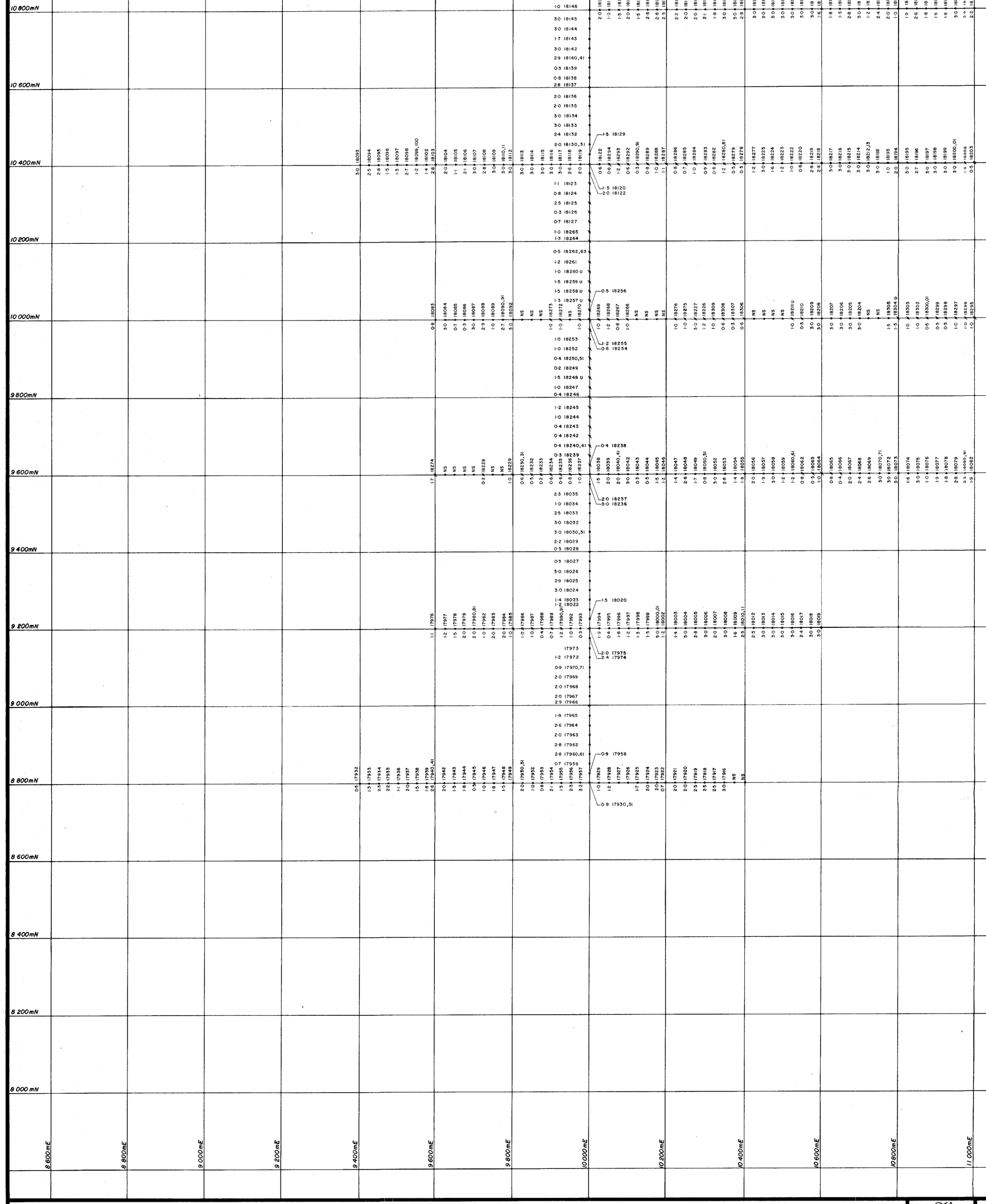
8 800mN

8 600mN

8 400mN

8 200mN

8 000mN



LEGEND:

- • Jacro power auger
- ↘ Mate power auger
- 18258 U Sample not from C-horizon (unreliable)

2·0 ↘ 17916—Sample no.
Sample position
Sample depth, metres
Sample no. prefix, TS.
NS, no sample taken. (power auger unable to penetrate river gravels)

5 cm

SCALE: 1:5000
DATE: 29/7/82
GEOL: R.J. Perring
DRAWN: R. Tog.
CHECKED: RJP 29·7·82

GEOPEKO 663401
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V20-3	PLAN No	92

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 20
Sample Locality Plan

82-1882 4K

244

8 600mE | 8 800mE | 9 000mE | 9 200mE | 9 400mE | 9 600mE | 9 800mE | 10 000mE | 10 200mE | 10 400mE | 10 600mE | 10 800mE | 11 000mE | 11 200mE | 11 400mE | 11 600mE | 11 800mE

12 000mN

11 800mN

11 600mN

11 400mN

11 200mN

11 000mN

10 800mN

10 600mN

10 400mN

10 200mN

10 000mN

9 800mN

9 600mN

9 400mN

9 200mN

9 000mN

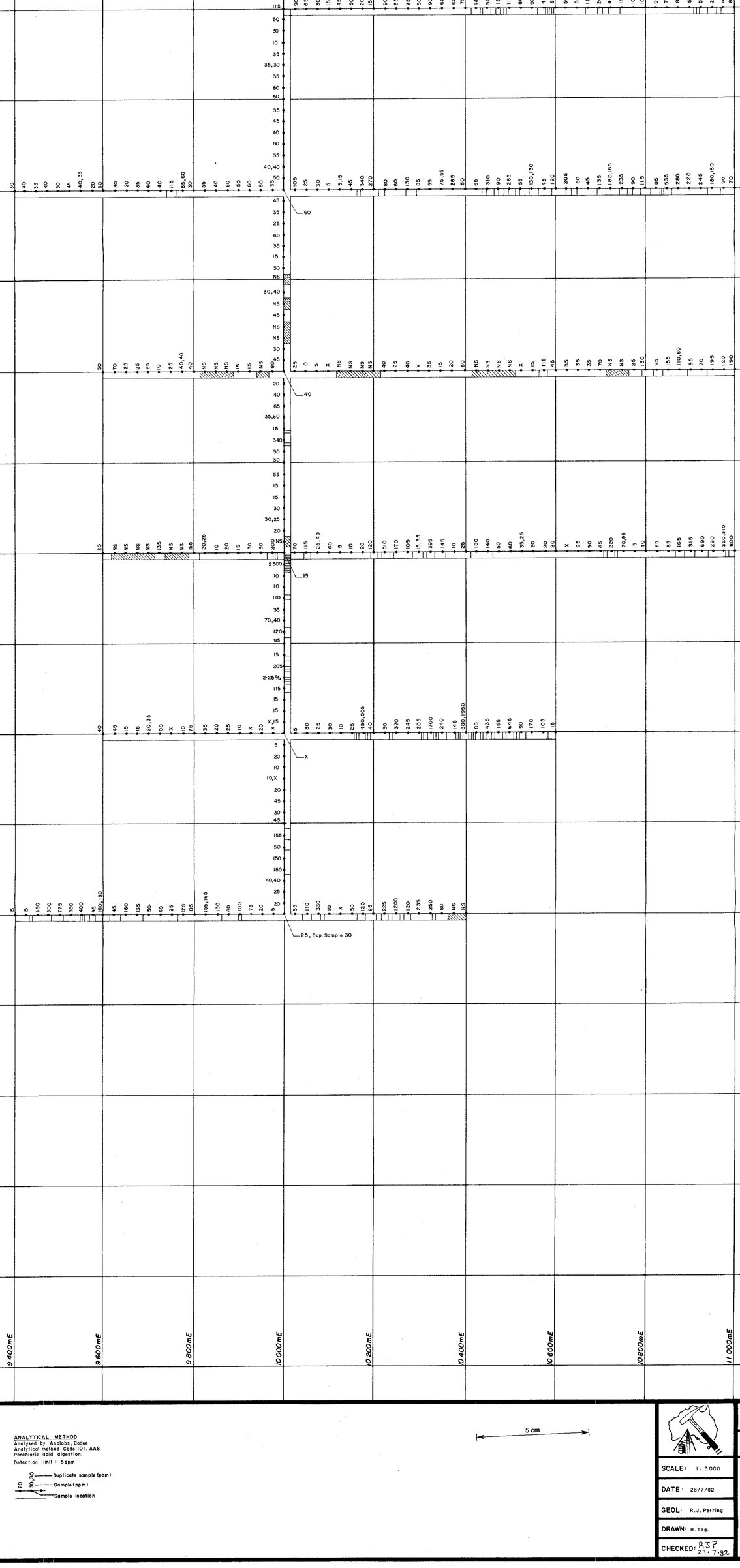
8 800mN

8 600mN

8 400mN

8 200mN

8 000mN



8 600mE | 8 800mE | 9 000mE | 9 200mE | 9 400mE | 9 600mE | 9 800mE | 10 000mE | 10 200mE | 10 400mE | 10 600mE | 10 800mE | 11 000mE | 11 200mE | 11 400mE | 11 600mE | 11 800mE

LEGEND:

- Auger hole
- 19-6 100-199 ppm
- 19-10 200-399 ppm
- 19-15 400-799 ppm
- 19-22 800-1599 ppm
- 19-28 > 1600 ppm

ANALYTICAL METHOD
Analysed by Analabs, Cooee.
Analytical method: Code 101, AAS
Perchloric acid digestion.
Detection limit: 5ppm

20 / 30,30 — Duplicate sample (ppm) / Sample (ppm) / Sample location

5 cm

SCALE: 1:5000
DATE: 28/7/82
GEOL: R.J. Perring
DRAWN: R. Tog.
CHECKED: RJP 29·7·82

GEOPEKO 663402
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

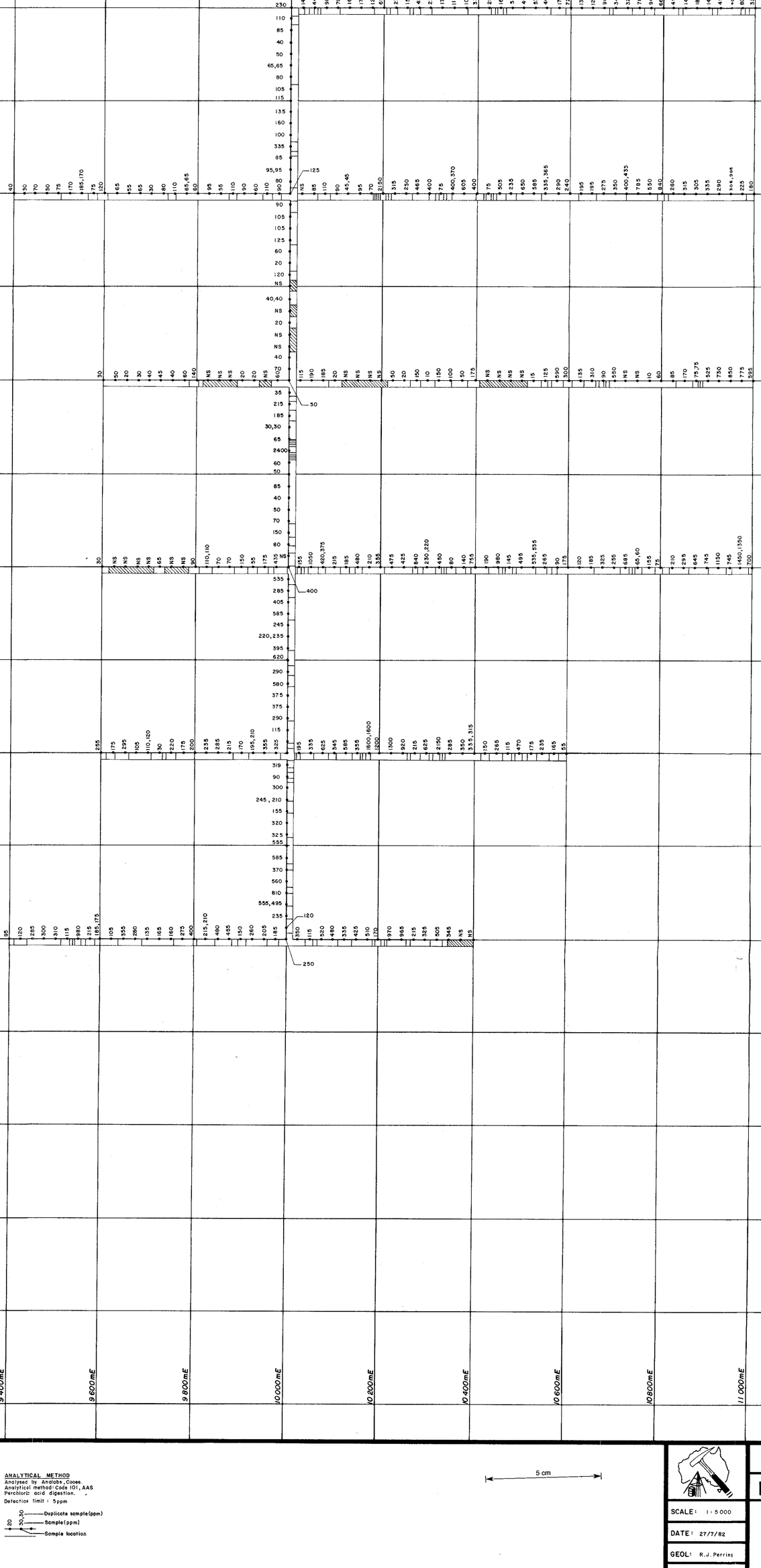
FILE No	TS 27/76-V20-4	PLAN No	93

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 20
Pb ppm C Horizon Soil Geochemistry

EC - 18824

8 600mE | 8 800mE | 9 000mE | 9 200mE | 9 400mE | 9 600mE | 9 800mE | 10 000mE | 10 200mE | 10 400mE | 10 600mE | 10 800mE | 11 000mE | 11 200mE | 11 400mE | 11 600mE | 11 800mE

12 000mN
11 800mN
11 600mN
11 400mN
11 200mN
11 000mN
10 800mN
10 600mN
10 400mN
10 200mN
10 000mN
9 800mN
9 600mN
9 400mN
9 200mN
9 000mN
8 800mN
8 600mN
8 400mN
8 200mN
8 000mN



LEGEND :

- Auger hole
- 19-6 100-199ppm
- 19-10 200-399 ppm
- 19-15 400-799 ppm
- 19-22 800-1599ppm
- 19-28 > 1600 ppm

ANALYTICAL METHOD
Analysed by Analabs, Cooee.
Analytical method Code 101, AAS
Perchloric acid digestion.
Detection limit : 5ppm

20 30,30 — Duplicate sample(ppm)
Sample(ppm)
Sample location

5 cm

SCALE: 1:5000
DATE: 27/7/82
GEOL: R.J. Perring
DRAWN: R. Tog.
CHECKED: RJP 28-7-82

GEOPEKO 663403
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No | TS 27/76-V20-5 | PLAN No | 94

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 20
Zn ppm C-Horizon Soil Geochemistry

EC-1882/5

246

8 600mE | 8 800mE | 9 000mE | 9 200mE | 9 400mE | 9 600mE | 9 800mE | 10 000mE | 10 200mE | 10 400mE | 10 600mE | 10 800mE | 11 000mE | 11 200mE | 11 400mE | 11 600mE | 11 800mE

12 000mN

11 800mN

11 600mN

11 400mN

11 200mN

11 000mN

10 800mN

10 600mN

10 400mN

10 200mN

10 000mN

9 800mN

9 600mN

9 400mN

9 200mN

9 000mN

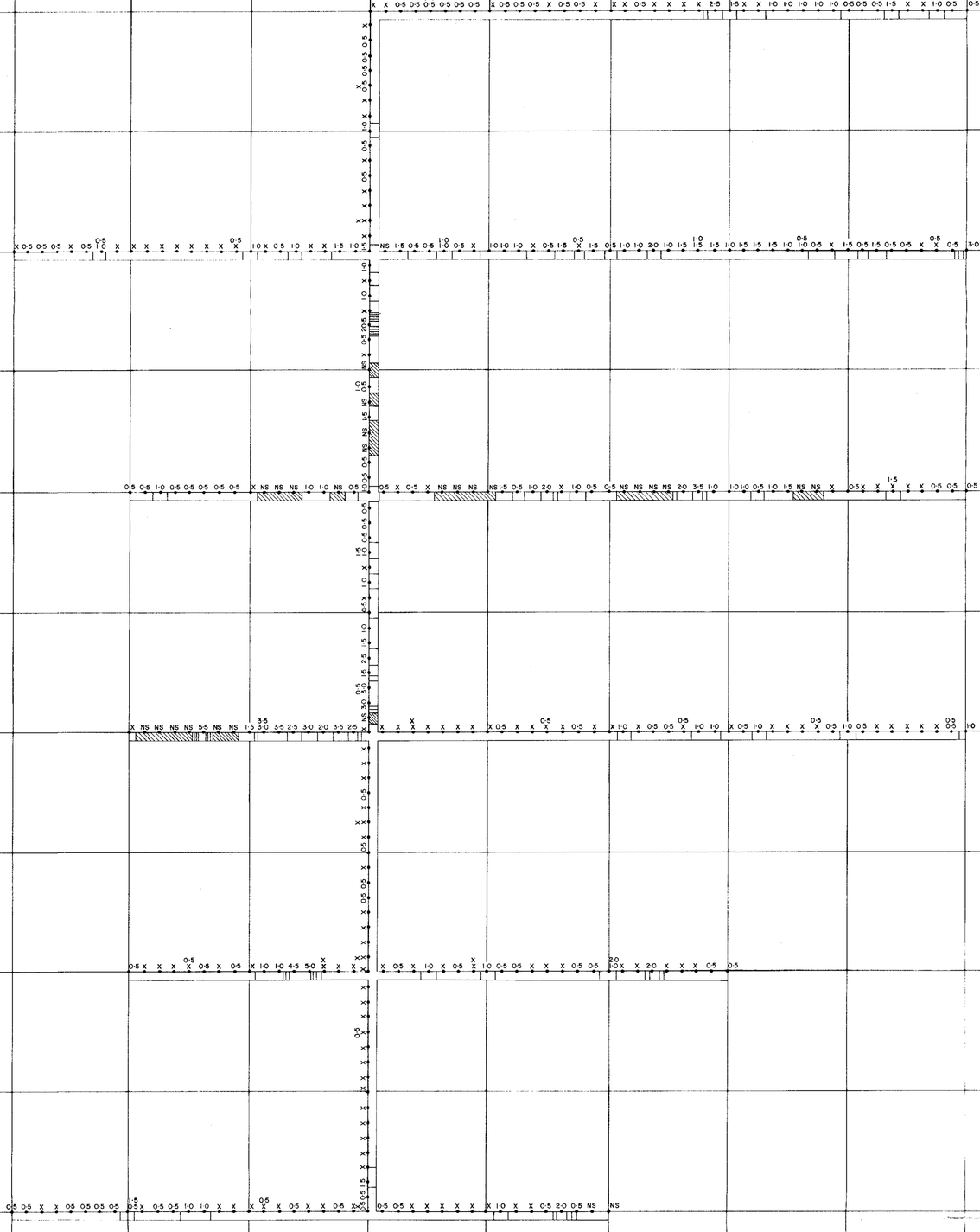
8 800mN

8 600mN

8 400mN

8 200mN

8 000mN



LEGEND:

- Auger hole

19-6		1·0-1·99 ppm
19-10		2·0-2·99 ppm
19-15		3·0-3·99 ppm
19-22		4·0-5·99 ppm
19-28		< 6·0 ppm

ANALYTICAL METHOD
Analysed by Analabs, Cooee.
Analytical method: Code 101, AAS
Perchloric acid digestion.
Detection limit : 0·5 ppm

1·5 3·0 — Duplicate sample (ppm)
1·5 3·0 — Sample (ppm)
Sample location

5 cm

GEOPEKO 663404
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V20-6	PLAN No	95

SCALE: 1:5000
DATE: 27/7/82
GEOL: R.J. Perring
DRAWN: R. Tog.
CHECKED:

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 20
Ag ppm C-Horizon Soil Geochemistry

82-1882 45

247

8 600mE | 8 800mE | 9 000mE | 9 200mE | 9 400mE | 9 600mE | 9 800mE | 10 000mE | 10 200mE | 10 400mE | 10 600mE | 10 800mE | 11 000mE | 11 200mE | 11 400mE | 600 | 800mE

12 000mN

11 800mN

11 600mN

11 400mN

11 200mN

11 000mN

10 800mN

10 600mN

10 400mN

10 200mN

10 000mN

9 800mN

9 600mN

9 400mN

9 200mN

9 000mN

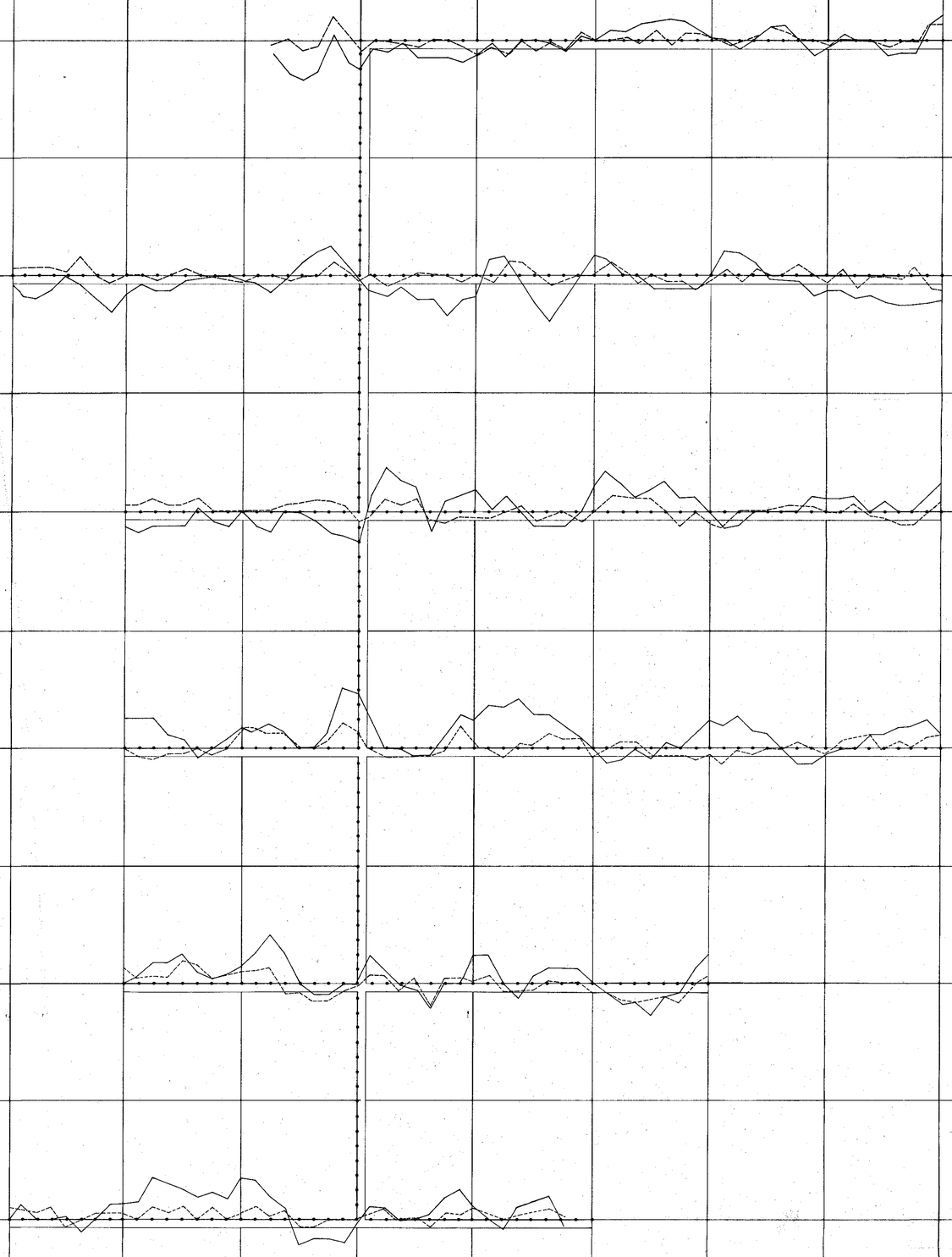
8 800mN

8 600mN

8 400mN

8 200mN

8 000 mN



8 600mE | 8 800mE | 9 000mE | 9 200mE | 9 400mE | 9 600mE | 9 800mE | 10 000mE | 10 200mE | 10 400mE | 10 600mE | 10 800mE | 11 000mE | 11 200mE | 11 400mE | 11 600mE | 800 mE

LEGEND :

• Auger hole

5 cm

SCALE: 1:5000

DATE: 6/12/82

GEOL: R.J. Perring

DRAWN: R. Tog.

CHECKED:

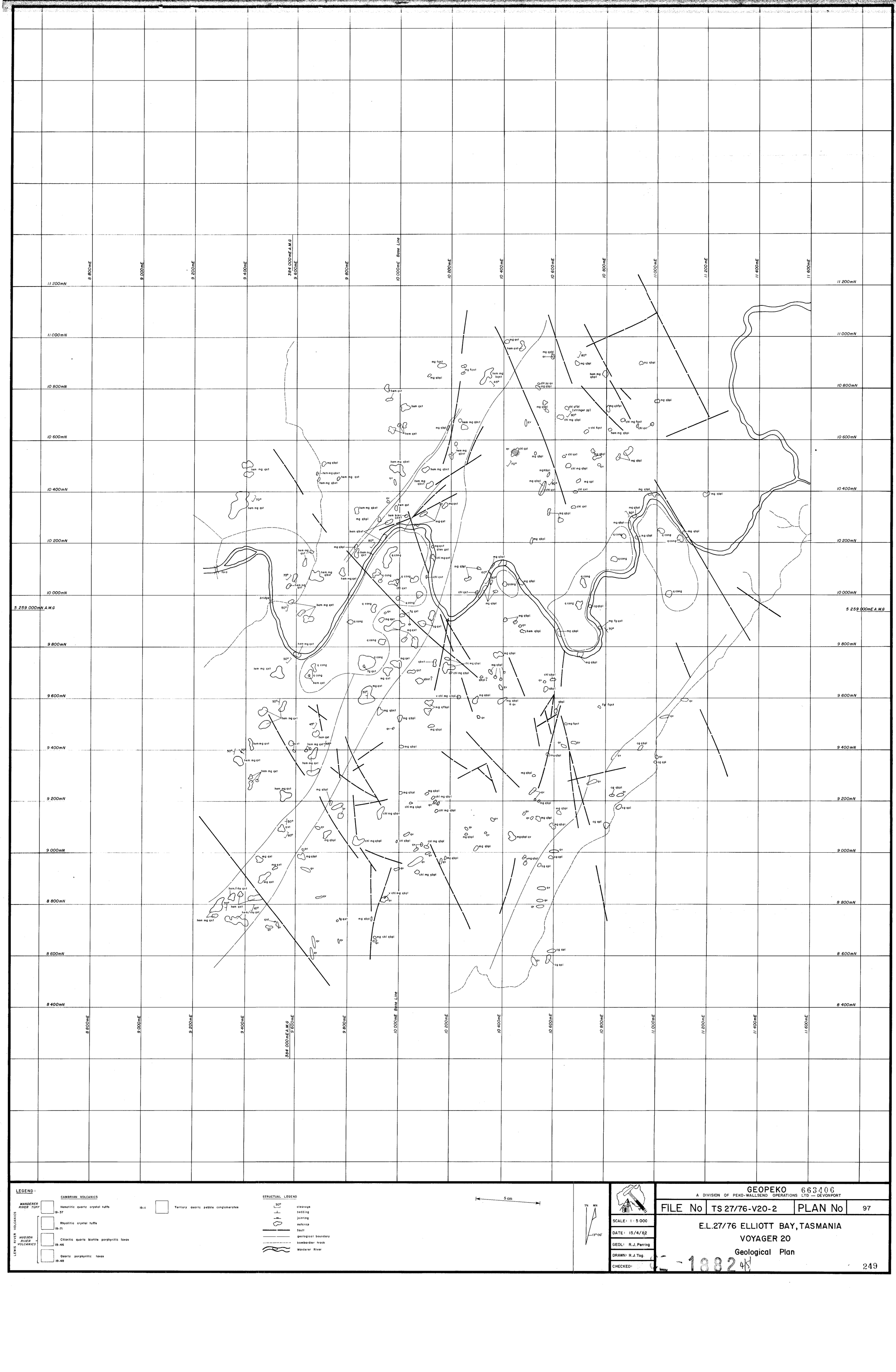
GEOPEKO 663405
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

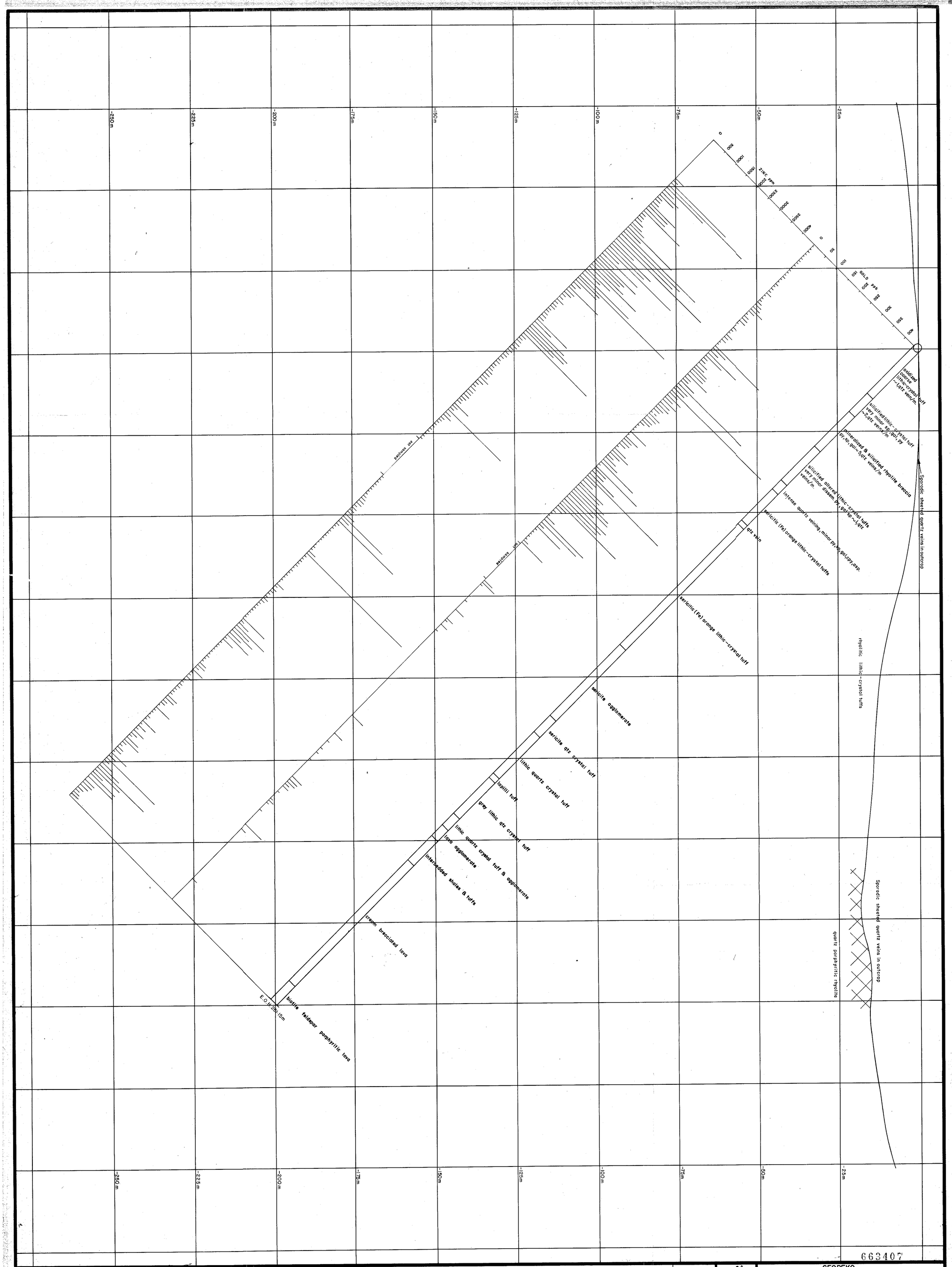
FILE No	TS 27/76-V20-7	PLAN No	96

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 20
VLF-EM PROFILES

82-1882 45

248


8 800mE
9 000mE
9 200mE
9 400mE
384 000mE A.M.G
9 600mE
9 800mE
10 000mE Base Line
10 200mE
10 400mE
10 600mE
10 800mE
11 000mE
11 200mE
11 400mE
11 600mE
11 200mN
11 000mN
10 800mN
10 600mN
10 400mN
10 200mN
10 000mN
5 259 000mN A.M.G
9 800mN
9 600mN
9 400mN
9 200mN
9 000mN
8 800mN
8 600mN
8 400mN
5 259 000mE A.M.G
mg qxt
hem qxt
hem mg qxt
mg qbpl
hem mg qbxt
hem mg qbpl
hem mg qbpl
hem mg qxt
hem mg qbxt
hem qxt
hem mg qxt
hem mg qxt
hem mg



663407

LEGEND:

DRILL HOLE DATA

Proposed	R.R. Large
Final depth	281·15m
Collar Cordinates	9418mN, 8952mE
Collar Inclination	45°
Collar Azimuth	135° Magnetic

Hole drilled to 129·3m in the 1980/81 field season.
Extended to 281·15m in the 1981/82 field season.

5 cm

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

SCALE 1:500 | No. TS 98

ELLIOTT BAY, TASMANIA
VOYAGER 24
PROFILE DDH V24/1 250

DATE: FEB 82
GEOL: R.R.L.
DRAWN: M.v.d.S
CHKD:

1983/473

VOYAGER 24 GEOLOGY
STRATIGRAPHY

- Black shale
- Fine grained Crystal tuffs and conglomeratic tuffs.
- Coarse quartz–feldspar lithic crystal tuffs and agglomerates.
- Sandstone
- Fine to medium grained quartz porphyritic lava (white to light green)
- Fine grained light green dacite lavas. (Generaly hon. porphyritic but may contain up to 5% phenocrystic quartz.)
- Mixed tuff-lavas and dacite lavas, some crystal tuffs?
- Coarse chloritic quartz porpyritic lava.
- Sand stone, pebble conglomerate
- Sheated quartz veining Veins 5mm to 30mm in a ladder or network pattern – may be source of gold
- Massive quartz veins
- Massive quartz vein float
- Panned concentrate gold value in ppb (X means less than 8ppb)

STRUCTURAL

- layering (or bedding)
- cleavage
- flow layering (extrusive)
- plunge of lineation
- possible unconformity
- inferred fault
- geological contact, mapped or inferred(?)
- drainage channel

5 cm

GN MN −13°00'

GEOPEKO 663408
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

SCALE: 1:2500 — No. TS 27/76-V24-2

E.L27/76 ELLIOTT BAY, TASMANIA
VOYAGER 24
GEOLOGICAL PLAN 251

PLAN 99

DATE: 11/81
GEOLOGIST: R.R.L
DRAWN: M.vdS.
CHECKED: RLO

GC-1082

374 000 E
375 000 E
376 000 E
377 000 E
378 000 E
379 000 E
380 000 E
381 000 E
382 000 E

5 250 000 N
5 249 000 N
5 248 000 N
5 247 000 N
5 246 000 N
5 245 000 N

E.L. 27/76 BOUNDARY

400
200

TD6647 TD6599 TD6601 TD6609 TD6611 TD6612 TD6614 TD6616 TD6618 TD6620 TD6622 TD6624 TD6626 TD6628 TD6629 TD6630 TD6631 TD6633 TD6635 TD6638 TD6536 TD6537 TD6538 TD6539 TD6631 TD6526 TD6527 TD6528 TD6529 TD6530

5 cm

82-1882
445

GEOPEKO 663409
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD

SCALE: 1:10,000

No. KT27/76-5

E.L. 27/76
ELLIOTT BAY, TASMANIA
BANK SAMPLING 1982.
252
PLAN 100

DATE: 3-7-82
GEOLOGIST: R.J.P.
DRAWN: M.vdS.
CHECKED:

KT27/76-1	KT27/76-2
KT27/76-3	KT27/76-4
KT27/76-5	KT27/76-6
KT27/76-7	KT27/76-8

8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 9 100mE | 9 200mE | 9 300mE | 9 400mE | 9 500mE | 379 000mE A.M.G | 9 600mE | 9 700mE | 9 800mE | 9 900mE | 10 000mE | 10 100mE | 10 200mE

8 700mN
8 600mN
8 500mN
8 400mN
8 300mN
8 200mN
8 100mN
8 000mN
7 900mN
7 800mN
7 700mN
5 246 000mN A.M.G
7 600mN
7 500mN
7 400mN
7 300mN
7 200mN
7 100mN
7 000mN
6 900mN
6 800mN
6 700mN

8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 9 100mE | 9 200mE | 9 300mE | 9 400mE | 9 500mE | 379 000mE A.M.G | 9 600mE | 9 700mE | 9 800mE | 9 900mE | 10 000mE | 10 100mE | 10 200mE

LEGEND :

- Power auger hole
- Geophysical sample
- Base line

ANALYTICAL METHODS
TS18310 to TS18366
Analabs Code 114
As by vapour hydride generation.

TS 9878 to TS 9958
TS 16701 to TS 16881
Australian Laboratory Service, Brisbane.

5 cm

GN MN
13°00'

SCALE : 1 : 2 500
DATE : 26/7/82
GEOL : R.J. Perring
DRAWN : R.J. Tog
CHECKED : RJP 26-7-82

GEOPEKO 663410
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No | TS 27/76-V30-12 | PLAN No | 101

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 30
As ppm C-Horizon Soil Geochemistry

C - 10824

253

8 500mE 8 700mE 8 800mE 8 900mE 9 000mE 9 100mE 9 200mE 9 300mE 9 400mE 9 500mE 379 000mE A.M.G 9 600mE 9 700mE 9 800mE 9 900mE 10 000mE 10 100mE 10 200mE

8 700mN 8 600mN 8 500mN 8 400mN 8 300mN 8 200mN 8 100mN 8 000mN 7 900mN 7 800mN 7 700mN 5 246 000mN A.M.G 7 600mN 7 500mN 7 400mN 7 300mN 7 200mN 7 100mN 7 000mN 6 900mN 6 800mN 6 700mN

LEGEND:

- Power auger hole
- Geophysical sample
- Base line
- Au value, ppb
- Sample location
- Duplicate sample
- NS No sample
- X Below level of detection

ANALYTICAL METHOD Lines 7200mN, 7400mN, 7600mN
LG40 AAS 40gm sample.
Analabs 1980/81 Jacro samples.

Lines 8200mN
309 fire assay fusion/AAS 30gm sample.
Analabs 1981/82 Jacro samples.

ALL VALUES in ppb (parts per billion).

Lines 7800mN & 8000mN, 7300mN, 7500mN /Carbon Rod AAS
/ALS Brisbane, 1981/82 Jacro samples.

GN MN 13°00'

SCALE: 1:2500
DATE: 7/5/82
GEOL: R.J. Perring
DRAWN: R.J. Tog
CHECKED:

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No TS 27/76-V30-7 | PLAN No 102

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 39
Au C-Horizon Soil Geochemistry
Assay Results & Bar Graph

82-1882 4/5

254

8 600mE 8 700mE 8 800mE 8 900mE 9 000mE 9 100mE 9 200mE 9 300mE 9 400mE 9 500mE 379 000mE A.M.G. 9 600mE 9 700mE 9 800mE 9 900mE 10 000mE 10 100mE 10 200mE

8 700mN 8 600mN 8 500mN 8 400mN 8 300mN 8 200mN 8 100mN 8 000mN 7 900mN 7 800mN 7 700mN 5 246 000mN A.M.G. 7 600mN 7 500mN 7 400mN 7 300mN 7 200mN 7 100mN 7 000mN 6 900mN 6 800mN 6 700mN

coarse grained quartz porphyritic lava

medium grained quartz porphyritic lava.

quartz conglomerate

medium grained quartz lithic crystal tuffs.

1980 Sample
Au 33·6
Sn 660
W 80

TD 4026/76-79
Cu <2
Pb <20
Zn 10
Au <5
Sn <5
W <10

Rock chip sample KR8655
Cu 5
Pb 20
Zn 10
Ag 0·5
Fe 0·425%
Au X

TD4024/76-79
Cu <2
Pb 20
Zn 15
Au 1·11
Sn 190
W 15

PIT5

PIT3 20cm wide quartz sulphide vein.

KR8659		KR8661	
Cu	1850	Cu	1150
Pb	2·82%	Pb	2·64%
Zn	7·75%	Zn	3·89%
Ag	108	Ag	85
Fe	0·68%	Fe	0·86%
As	10	As	31
Au	0·839	Au	2·26

quartz lithic crystal tuff

PIT4
pyrite chlorite feldspar tuff.
KR 8663
Cu 5
Pb 35
Zn 140
Ag X
Fe 4·25%
Mn 615
As 26
Au 7

TD4023/76-79
Cu <2
Pb 20
Zn 15
Au <0·008
Sn <3
W <10

1980 Sample
Au 21·5
Sn 1400
W 510

TD4022/76-79
Cu <2
Pb 20
Zn 10
Au 0·667
Sn 120
W <10

coarse grained quartz lithic crystal tuffs & agglomerates.

PIT6

KR8672
pyritic qtz
Cu 15
Pb 25
Zn 10
Ag 1·5
Fe 0·765%
As 24
Au 0·107

KR8670 sheated quartz vein
Cu 5
Pb 15
Zn 10
Ag 0·5
Fe 0·52%
Ag 7
Au 0·495

TD4020/76-79
Cu <2
Pb <20
Zn 15
As 0·258
Sn 5
W <10

Doc's Creek

CHARLES CRK.

TD 6377/82
Cu 15
Pb 5
Zn 25
Au 0·087
Sn 34
W 4
Ag X

TD 6376/82
Cu 10
Pb 5
Zn 10
Au 0·318
Sn 24
W 4
Ag X

TD6375/82
Cu 5
Pb 15
Zn 25
Au 5·05
Sn 45
W 4
Ag 11

TD 4019/76-79
Cu <2
Pb <20
Zn 20
Au 18·33
Sn 1900
W 45

quartz crystal luff

PIT2

PIT1

TD6374/82
Cu 45
Pb 15
Zn 795
Au 33·7
Sn 110
W 3·5
Ag X

TD6373/82
Cu 5
Pb 5
Zn 130
Au 101
Sn 855
W 4
Ag 1

quartz porphyritic lava & dacitic lavas.

porphyritic microgranite

VOYAGER 30 Costean
1cm wide qtz sulphide veins in strongly chloritized granite.
Best results, 2m channel sample

Cu	920
Pb	135
Zn	70
As	5
Au	0·003
Ag	1
Sn	<5
W	<10
Fe	3·60%
Ba	460

LEGEND:
- Power auger hole
- Geophysical sample
- Base line
- Drainage sample
- PIT6 Pit grab sample
- Costean channel sample
- Outcrop rock chip sample

1976-79 STREAM SAMPLES
Samp.No. Yrs.
TD 4023/76-79

Cu	<2	Analysed by AAS
Pb	20	ACS Lab.
Zn	15	Stream Sediment Sample
Au	0·008	Pan.Con. Sample
Sn	<3	
W	<10	

1980 STREAM SAMPLES
Au, Sn, W — Pan.Con Sample

1982 STREAM SAMPLES
Samp.No. Yrs.
TD 6373/82

Cu	5	Pan.Con.Samples Cu,Pb,Zn & Ag-Method 101
Pb	5	
Zn	130	
Au	101	Method 309
Sn	855	Method 402
W	4	Method 401
Ag	1	

Sample concentrated approx. 600 X

Rock Samples analysed by ANALABS, Cooee.
METHODS
Cu, Pb, Zn, As, Ag & Fe — Code 101
Ba — Code 120
Sn — Code 118
W — Code 124
Au — Code 309

All results except Fe(%) in ppm.

GN MN 13°00'

SCALE: 1:2 500
DATE: 10/5/82
GEOL: R.J. Perring
DRAWN: R.J. Tog
CHECKED:

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No TS 27/76-V30-8 | PLAN No 103

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 30
Stream Sediment, Pan.Con, Rock Chip, Pit grab Sample & Costean Channel Sample Geochemical Results. 255

82-187 AS

Drainage resampled March, 1982

Pan concentrate survey.

Sample weight before paning 8·0 kg wet

Average concentration 320 times.

Samples were selected from similar traps ites.

Sample by R.J. RERRING.

BOYLES Ck

CAMP Ck

NS

LEGEND

Au ppb
Sn ppm
W ppm

IS insufficent
NS no sample

5 cm

SCALE: 1:2 500

DATE: 24/2/82

GEOL: J.Pemberton

DRAWN: R.Tog

CHECKED: Peter J Perring 24th May 1982

GEOPEKO 663412
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No | TS 27/76-V29W- | PLAN No | 104

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 29W
Panned Concentrate Drainage Results
Au, Sn, W

256

82-1082 45

374 000 E
375 000 E
376 000 E
377 000 E
378 000 E
379 000 E
380 000 E
381 000 E
382 000 E

5 250 000 N
5 249 000 N
5 248 000 N
5 247 000 N
5 246 000 N
5 245 000 N

E.L. 27/76 BOUNDARY

Feb 1982 Samples

Feb 1982 Sample

Feb 1982 Sample

DEC. 1980 Sample

Granite

82-1882

Zone of anomalous Sn (>100ppm)
W (>100ppm)
Au (>500ppb)

Au ppb
Sn ppm
W ppm

5 cm

GN MN
13°00'

DATE: 10/5/82
GEOLOGIST: R.J.P.
DRAWN: R.J.Tog.
CHECKED:

GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

663413

SCALE: 1:10,000

No. KT27/76-9

E.L. 27/76
ELLIOTT BAY, TASMANIA
PANNED CONCENTRATE DRAINAGE
RESULTS, Au, Sn & W
PLAN 105

KT27/76-1	KT27/76-2
KT27/76-3	KT27/76-4
KT27/76-5	KT27/76-6
KT27/76-7	KT27/76-8

8 500mE | 8 600mE | 8 700mE | 8 800mE | 8 900mE | 9 000mE | 9 100mE | 9 200mE | 9 300mE | 9 400mE | 9 500mE | 9 600mE | 9 700mE | 9 800mE | 9 900mE | 10 000mE | 10 100mE

378 000mE A.M.G.

15 300mN
15 200mN
15 100mN
15 000mN
14 900mN
14 800mN
14 700mN
5 253 000mN A.M.G
14 600mN
14 500mN
14 400mN
14 300mN
14 200mN
14 100mN
14 000mN
13 900mN
13 800mN
13 700mN
13 600mN
13 500mN
13 400mN
13 300mN

16425 16472 16470_71 16469 16468 16467 16466 16465 16464 16463 16462 16460_61 16459 16458 16457 16456 16455 16454 16453 16452 16450_51 16449 16448 16447 16446 16476 16475 16476 16477 16478 16479 16480_81 16482 16483 16484 16485 16486 16487 16488 16489 16490 16492 16493 16494 16495

16445 16444 16443 16442 16440_41 16439 16438 16437 16436 16434 16434 16433 16434 16450_31 16429 16428 16427 16420 16425 16424 16423 16422 16420_21 16419 16418 16417 16416 16415 16414 16413 16412 16410_11 16409 16408 16407 16406 16405 16404 16403 16402 16400_01 16399 16398 16397 16396

16337 16338 16339 16340_41 16342 16343 16344 16345 16346 16347 16348 16349 16350_51 16352 16353 16354 16355 16356 16357 16359 16360_61 16362 16363 16364 16365 16366 16367 16369 16369 16370_71 16372 16373 16374 16375 16376 16377 16378 16379 16380_81 16382 16383 16384 16385 16386 16387 16389 16390_91 16392 16393 16394 16395

16336 16335 16334 16333 16332 16330_31 16329 16328 16327 16326 16325 16324 16323 16322 16320_21 16319 16318 16317 16316 16315 16314 16313 16312 16310_11 16283 16282 16280_81 16279 16278 16277 16276 16275 16274 16273 16272 16270_71 16269 16268 16267 16266 16265 16264 16263 16262 16260_61 16259 16258 16257 16256 16255 16254 16253 16252

16284 16285 16286 16287 16288 16289 16290_91 16292 16293 16294 16295 16296 16297 16298 16299 16300_01 16302 16303 16304 16305 16306 16307 16309 16309 16170_71 16172 16173 16174 16175 16176 16177 16178 16179 16180 16182 16183 16184 16185 16186 16187 16188 16189 16190_91 16192 16193 16194 16195 16196 16197 16198 16199 16200_51

16168 16167 16166 16165 16164 16163 16162 16160_61 16159 16158 16157 16156 16155 16154 16153 16152 16250_51 16249 16248 16247 16246 16245 16244 16243 16108 16109 16110_11 16112 16113 16114 16115 16116 16117 16118 16119 16120_21 16122 16123 16124 16125 16126 16127 16128 16129 16130_31 16132 16133 16134 16135 16136 16137 16138 16139

16107 16106 16105 16104 16103 16102 16100_01 16099 16098 16097 16096 16095 16094 16093 16092 16091 16090 16089 16088 16090_81 16079 16078 16077 16076 16075 16075_74 16072 16071 16070 16069 16068 16067 16066 16065 16064

LEGEND:

- Grid position
- Mote auger hole
- Base line (9 300mE)

Sample prefix - TS

5 cm

GN MN 13°00'

SCALE: 1:2 500
DATE: 10/1/83
GEOL: J.Pemberton
DRAWN: R.Tog.
CHECKED:

663414

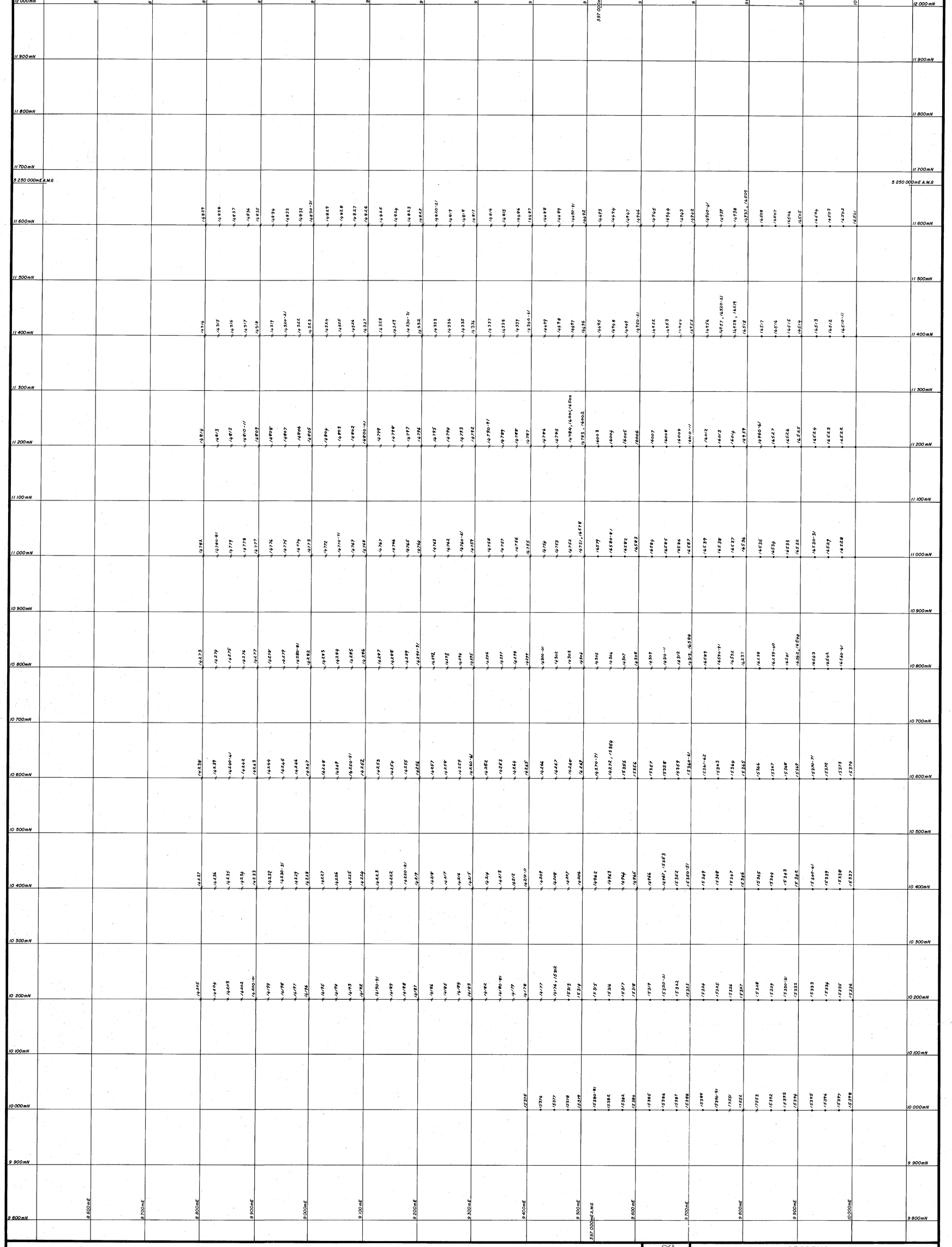
GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No TS 27/76-V33-4 | PLAN No 106

E.L.27/76 ELLIOTT BAY, TASMANIA
VOYAGER 33
SAMPLE LOCATIONS

RC-1682 45

258



LEGEND:

o Power Auger

ø Mate

SAMPLE PREFIX - TS

5 cm

SCALE: 1:2500

DATE: 10/1/85

GEOL: J.P.

DRAWN: R. Tag

CHECKED:

663415 GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V29W-9	PLAN No	107

E.L.27/76 ELLIOTT BAY, TASMANIA

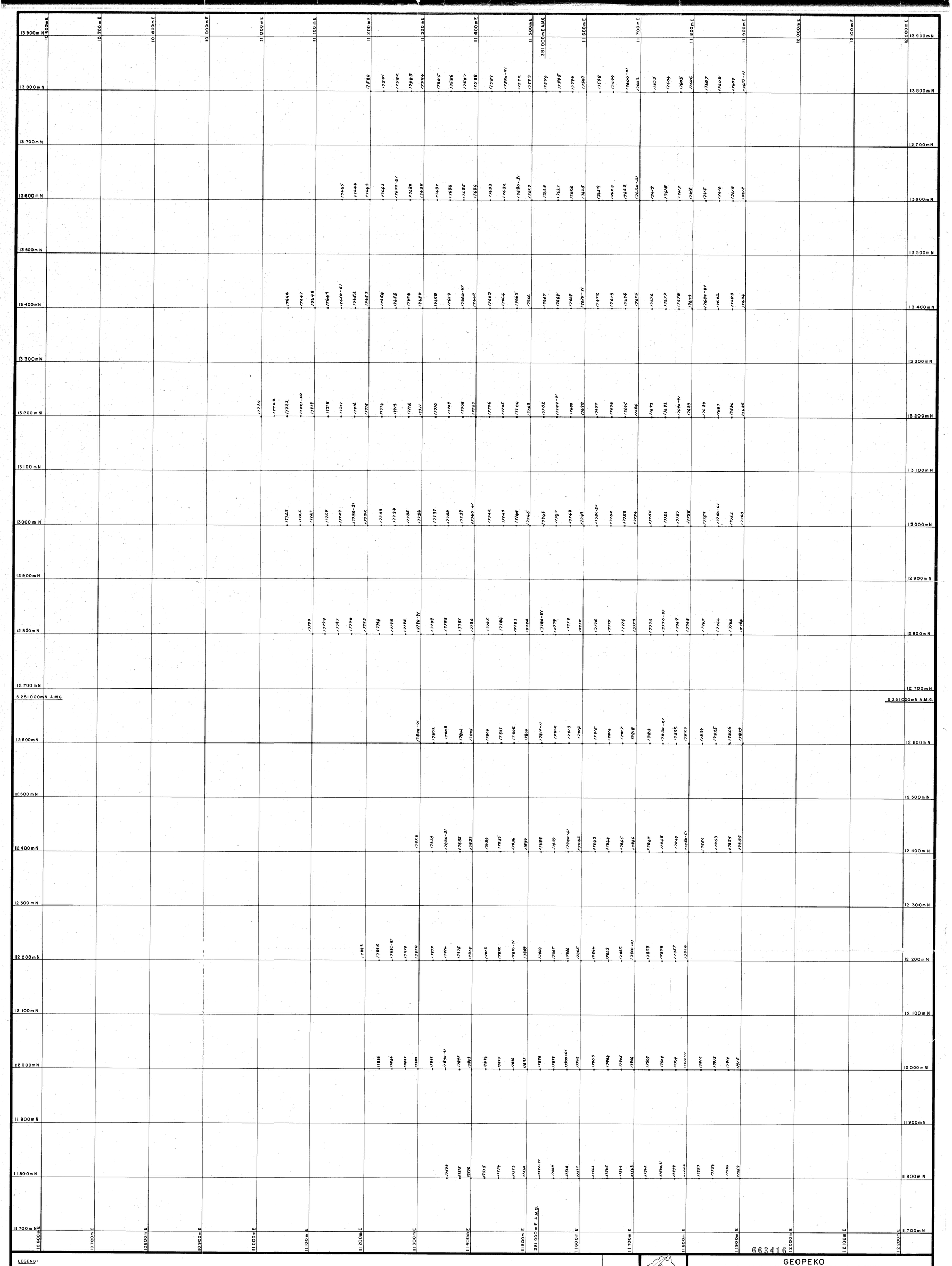
VOYAGER 29W

SAMPLE LOCATIONS

1882

4/5

253



663416

LEGEND:

SAMPLE PREFIX - TS.

5 cm

GN MN

13°00'

SCALE: 1:2500

DATE: 10/1/83

GEOL: D.J.M.

DRAWN: R.Tod.

CHECKED:

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD — DEVONPORT

FILE No	TS 27/76-V34-3	PLAN No	108

E.L.27/76 ELLIOTT BAY TASMANIA

VOYAGER 34

SAMPLE LOCATIONS

82 - 1862 4/5

260

000

663417

PROGRESS REPORT E.L. 27/76 1981-1982 FIELD SEASON

D of M. | A.O. | C.G. | E.O. | D.S.M.E.
Registrar
Received 16 DEC 1982
Answered
DEPT. OF MINES
REF. No. 10,615/82

APPENDIX 9

GEOCHEMICAL AND ASSAY RESULT LISTINGS

82-1882(5)

TS - Prefix for Soil Samples

TD - Prefix for Drainage Samples

KR - Prefix for Rcok and Core Samples

Voyager 9
16
19
20
22
24
29
29W
30
31
32
33
34

663418

NOTE

SOME OF THE GEOCHEMICAL AND ASSAY DATA CONTAINED IN THIS APPENDIX IS NOT OF SUFFICIENT PRINT QUALITY FOR MICRO-FILMING, BUT THE INFORMATION IN THIS LISTING MAY BE FOUND ON PLANS ACCOMPANYING THIS REPORT.

THE FULL LISTING HAS BEEN MICROFILMED, FOR COMPLETENESS, BUT USERS MAY FIND SOME SECTIONS ARE ILLEGIBLE.

DEPARTMENT OF MINES

AUGUST, 1986.

001

663419

VOYAGER 9.

002 Voyager 9. Eliot.

ANALABS

663420

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1262

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
	K 707

DATE RECEIVED	RESULTS REQUIRED
4.6.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	15.6.82	3	89

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SC	KR 11817-905		1	3	2 4				Cu Pb Zn Ag Fe Ca Mg K Na	101 103	101 103

RESULTS TO: As Above

RESULTS TO:

REMARKS

DRILL CORE VOYAGER 9

DDH V9-3

(Samples 0-160m)

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

AUTHORISED OFFICER B Dan

003

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663421

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1262	16.6.82	KP 3076	1 OF 5

TUBE No.	SAMPLE No.	Na(%)	Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Pb
1	11817	1.95	9150	3.60	7950	2.45%	10	50	X	10
2	11818	1.65	6450	2.80	2.50%	2.20%	20	50	0.5	20
3	11819	1.60	1.10%	2.50	7.60%	3.40%	15	75	1.0	10
4	11820	1.10	9000	3.60	9.95%	2.05%	5	45	X	10
5	11821	1.85	1.30%	2.55	6.00%	3.70%	5	85	X	5
6	11822	2.65	8400	4.00	1.25%	2.05%	10	45	1.0	X
7	11823	2.65	7550	3.25	6150	2.10%	5	155	0.5	X
8	11824	2.10	1.40%	2.60	3.90%	4.25%	10	100	1.0	5
9	11825	2.10	7200	3.60	2.40%	2.20%	5	70	0.5	X
10	11826	2.25	1.40%	1.95	1.75%	3.40%	10	65	X	10
11	11827	2.10	1.15%	1.95	1.25%	2.60%	60	55	0.5	5
12	11828	0.29	1.15%	3.45	2.20%	2.60%	120	55	0.5	30
13	11829	0.89	9950	3.65	1.75%	2.30%	50	55	0.5	35
14	11830	1.90	6450	2.85	2.80%	1.65%	15	45	X	5
15	11831	2.40	1.45%	2.40	1.85%	3.40%	5	45	0.5	5
16	11832	2.20	1.35%	2.55	1.85%	3.20%	5	50	X	X
17	11833	2.35	1.50%	2.60	1.05%	3.60%	5	55	0.5	X
18	11834	2.90	1.20%	2.30	1.55%	3.05%	5	60	X	10
19	11835	1.35	6950	2.10	2.40%	1.75%	15	45	X	15
20	11836	1.40	3550	1.80	1.50%	1.55%	15	45	X	X
21	11837	1.25	1.10%	3.20	9400	2.30%	20	60	0.5	10
22	11838	0.88	1.05%	4.50	1.10%	2.55%	45	45	1.0	70
23	11839	1.20	8000	2.15	2.30%	2.60%	55	130	1.0	65
24	11840	2.75	8250	1.30	1.70%	2.00%	20	55	0.5	10
25	11841	2.20	8650	2.45	1.05%	2.35%	40	55	X	20

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

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004

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663422

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1262	16.6.82	KP 3076	2 OF 5

TUBE No.	SAMPLE No.	Na(%)	Mg	K(%)	Ca	Fe	Cu	Zn	Mo	Pb
1	11842	1.55	1.35%	3.60	6850	3.30%	70	1600	0.5	40
2	11843	2.95	1.00%	1.95	1.35%	2.95%	40	65	1.0	X
3	11844	1.90	8800	3.10	1.50%	2.45%	15	95	X	10
4	11845	2.75	9350	2.85	9100	2.30%	55	95	X	5
5	11846	3.00	7700	2.05	8300	1.95%	10	55	X	5
6	11847	1.80	1.40%	3.00	9900	3.15%	25	255	2.5	310
7	11848	3.30	1.00%	2.20	1.45%	2.25%	10	60	X	15
8	11849	2.05	1.50%	2.70	1.05%	3.20%	60	145	1.0	25
9	11850	1.25	1.30%	3.90	8100	3.15%	55	135	0.5	30
10	11851	1.55	8850	2.15	1.60%	2.75%	40	265	1.0	70
11	11852	2.10	1.10%	3.75	9200	3.05%	20	115	X	15
12	11853	2.10	8750	3.35	8850	2.55%	35	60	1.0	5
13	11854	3.60	6900	2.50	9500	2.00%	15	40	0.5	5
14	11855	1.45	9400	4.25	9300	3.10%	60	75	1.0	30
15	11856	3.00	4450	2.30	7850	1.30%	20	70	0.5	20
16	11857	3.25	4600	2.50	8950	1.30%	15	50	X	10
17	11858	2.90	5000	4.05	4200	1.50%	15	55	0.5	15
18	11859	3.05	4850	3.55	5400	1.45%	10	65	X	10
19	11860	3.10	3800	4.05	8350	1.25%	10	45	X	10
20	11861	2.75	4250	2.95	5850	1.10%	15	55	X	15
21	11862	2.80	4350	2.90	5400	1.15%	70	90	X	30
22	11863	2.50	3450	3.05	1.15%	1.05%	15	35	X	10
23	11864	2.70	5150	3.95	1.75%	1.35%	5	35	X	15
24	11865	3.30	2750	2.20	9000	8700	15	25	X	10
25	11866	3.35	3400	2.80	3750	5500	15	45	X	15

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

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663423

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1262	16.6.82	KP 3076	3 OF 5

TUBE No.	SAMPLE No.	Na(%)	Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Pb
1	11867	2.60	5400	4.35	5100	1.25%	15	40	X	5
2	11868	3.55	3900	2.85	8750	1.05%	15	45	X	5
3	11869	2.75	4800	4.35	8750	1.05%	25	55	X	5
4	11870	3.05	5050	3.25	6650	1.35%	70	55	X	25
5	11871	3.25	5100	2.15	4750	1.45%	75	85	0.5	40
6	11872	0.87	1.15%	3.75	1.05%	2.55%	130	625	5.0	965
7	11873	2.20	9400	2.45	1.10%	1.95%	55	425	1.0	330
8	11874	2.00	9950	3.20	6250	2.15%	20	235	1.0	275
9	11875	2.50	1.25%	2.75	9050	3.00%	15	200	X	50
10	11876	3.30	8350	1.90	1.55%	2.00%	15	175	0.5	40
11	11877	2.30	9200	2.65	1.20%	2.20%	25	215	X	70
12	11878	2.15	7900	2.90	1.05%	1.85%	20	115	X	20
13	11879	2.65	4050	2.50	6300	9100	15	65	X	10
14	11880	2.70	4400	3.10	7900	8500	30	75	0.5	40
15	11881	1.45	7250	2.95	1.35%	1.55%	280	380	2.5	215
16	11882	2.40	1.25%	1.75	7650	2.85%	35	135	X	35
17	11883	1.85	9600	1.55	1.10%	2.15%	15	70	X	15
18	11884	3.15	1.25%	1.80	1.40%	2.60%	5	100	X	10
19	11885	2.75	1.45%	2.85	8600	3.10%	5	110	X	5
20	11886	2.15	1.15%	2.25	1.10%	2.50%	5	95	X	5
21	11887	3.25	1.30%	1.60	7700	2.70%	10	100	X	15
22	11888	3.55	1.45%	1.65	6800	3.10%	10	105	X	10
23	11889	0.79	1.65%	1.70	1.45%	4.00%	15	145	X	45
24	11890	3.45	1.25%	2.15	9700	2.75%	10	100	0.5	15
25	11891	3.55	1.45%	1.35	5350	3.30%	10	115	X	5

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

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ANALABS

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

663424

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1262	16.6.82	KP 3076	4 OF 5

TUBE No.	SAMPLE No.	Na(%)	Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Pb
1	11892	3.20	1.55%	1.60	7900	3.30%	5	95	X	10
2	11893	3.45	1.40%	1.40	8250	2.95%	5	95	X	5
3	11894	3.50	1.55%	1.50	7000	3.35%	5	100	X	10
4	11895	3.55	1.50%	1.45	9000	3.00%	5	70	X	5
5	11896	3.20	1.50%	2.15	9550	3.05%	5	75	X	10
6	11897	3.25	1.45%	1.75	1.10%	3.60%	10	90	X	10
7	11898	3.25	1.40%	1.60	1.15%	2.80%	10	90	X	10
8	11899	3.30	1.40%	1.35	8550	3.70%	10	60	X	15
9	11900	3.45	1.50%	1.55	8750	3.75%	10	110	0.5	60
10	11901	3.35	1.40%	1.70	1.05%	3.55%	10	75	X	20
11	11902	3.25	1.30%	1.60	8400	3.55%	10	110	X	20
12	11903	2.85	1.50%	2.35	7950	3.90%	10	160	X	65
13	11904	2.90	1.45%	2.40	7900	3.60%	10	130	X	20
14	11905	2.40	8900	3.00	1.30%	2.50%	10	105	X	20
15										
16										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER

007

ANALABS

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

663425

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1262	16.6.82	KP 3076	5 OF 5

TUBE No.	SAMPLE No.	Na(%)	Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Pb
1	STD FS4					7.90%	350	800	1.0	105
2	RPT 11817					2.35%	10	50	X	5
3	RPT 11836					1.50%	10	35	X	X
4	STD FS4					7.80%	270	740	1.0	100
5	RPT 11857					1.45%	15	55	X	5
6	RPT 11876					1.95%	15	165	X	40
7	STD FS4					8.05%	315	780	0.5	105
8	RPT 11897					3.70%	10	90	X	10
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5		5	50	5	5	0.5	5
24	DIGESTION	103	103	103	103	101	101	101	101	101
25	METHOD	103	103	103	103	101	101	101	101	101

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

AUTHORISED OFFICER B Dorn

003

ANALABS

663426

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
Telex AA92560

ANALYTICAL REPORT No.

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

	ORDER No.	PROJECT

DATE RECEIVED	RESULTS REQUIRED

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	26.87		

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

RESULTS TO

RESULTS TO

REMARKS

VOYAGER 9

DDH V9-3

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

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ANALABS

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

663427

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
XF	83.1 08 1249	8.6.82	K 3073	1 OF 4

TUBE No.	SAMPLE No.	Na(%)	Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Pb
1	11752	1.15	1.40%	3.25	1.05%	2.90%	10	80	X	10
2	11753	2.15	1.30%	2.30	1100	2.85%	10	200	X	10
3	11754	2.85	7550	1.50	850	1.90%	10	55	X	10
4	11755	2.70	9600	1.55	1000	2.30%	5	90	X	20
5	11756	1.55	9250	2.55	800	2.05%	5	70	X	20
6	11757	2.65	9900	1.60	950	2.65%	15	65	X	30
7	11758	2.85	1.10%	1.65	1050	2.70%	5	60	X	10
8	11759	2.25	6900	2.20	750	2.05%	5	55	X	10
9	11760	2.40	9050	2.10	950	2.55%	10	60	X	15
10	11761	2.35	1.00%	2.50	1200	2.60%	5	50	X	25
11	11762	2.80	1.10%	1.70	3000	3.50%	5	40	X	25
12	11763	2.60	1.05%	2.30	6000	3.55%	5	70	X	20
13	11764	2.45	1.05%	2.65	4400	3.00%	30	65	X	20
14	11765	2.35	1.05%	2.60	3800	3.00%	10	70	X	25
15	11766	2.75	8300	2.30	6750	2.45%	10	60	X	25
16	11767	2.70	1.25%	2.15	7150	3.10%	5	70	X	25
17	11768	2.65	8750	2.15	2300	2.15%	30	55	X	15
18	11769	2.95	9700	1.85	6600	2.80%	15	60	X	20
19	11770	2.20	8950	2.40	4550	2.75%	10	50	X	20
20	11771	1.50	7850	3.15	5950	2.30%	10	70	X	10
21	11772	0.98	6750	3.10	1.55%	2.10%	15	100	X	20
22	11773	1.95	9250	2.85	1.50%	3.20%	60	165	X	25
23	11774	1.85	8400	3.05	4050	2.45%	10	40	X	15
24	11775	1.65	8100	2.90	1250	2.15%	40	90	X	20
25	11776	0.09	8750	3.30	700	2.10%	440	200	X	60

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

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

663428

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
K	83.1 08 1249	8.6.82	K 3073	2 OF

TUBE No.	SAMPLE No.	Na(%)	Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Pb
1	11777	1.70	4500	3.05	350	7400	15	40	X	20
2	11778	1.05	5350	3.75	870	5800	10	70	X	25
3	11779	1.60	3800	2.85	2850	5900	5	55	X	30
4	11780	1.90	3650	2.60	1.00%	6500	5	35	X	15
5	11781	1.90	4400	2.70	1.30%	7200	10	10	X	15
6	11782	2.00	9550	2.15	1.90%	2.45%	10	70	X	15
7	11783	2.30	1.05%	1.80	1.15%	2.65%	5	110	X	15
8	11784	2.40	1.00%	1.95	1.20%	2.65%	5	100	X	30
9	11785	2.15	1.05%	3.15	1.65%	2.55%	5	115	X	15
10	11786	0.96	7400	3.10	2.05%	1.65%	5	160	X	40
11	11787	1.95	8700	2.20	1.50%	2.15%	X	70	X	5
12	11788	1.65	8350	2.30	1.85%	2.20%	10	70	X	5
13	11789	1.75	7900	2.30	1.80%	2.20%	5	45	X	5
14	11790	1.60	7450	2.60	1.75%	2.10%	10	50	X	10
15	11791	1.35	6950	2.60	1.95%	1.90%	30	40	X	10
16	11792	1.50	8750	2.70	1.45%	2.30%	30	55	0.5	15
17	11793	2.00	9750	2.45	1.10%	2.70%	10	50	X	X
18	11794	1.45	9600	3.10	1.75%	2.60%	5	45	X	X
19	11795	2.30	1.00%	2.70	1.00%	2.80%	X	50	X	10
20	11796	2.35	9600	2.75	9750	2.80%	X	50	X	30
21	11797	2.35	1.00%	3.05	9550	2.75%	5	50	X	10
22	11798	1.75	8900	3.35	1.35%	2.40%	5	45	X	15
23	11799	2.45	8950	2.90	9700	2.75%	X	50	X	20
24	11800	2.35	9700	3.15	8800	2.70%	X	50	X	10
25	11801	2.70	1.05%	1.20	1.10%	2.90%	X	50	X	15

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

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663429

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
AK	83.1 08 1249	8.6.82	K 3073	3 OF 4

TUBE No.	SAMPLE No.	Na(%)	Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Pb
1	11802	2.30	9400	3.00	1.15%	3.20%	5	45	0.5	5
2	11803	2.25	9000	2.90	1.25%	2.75%	5	40	0.5	5
3	11804	2.40	8850	2.40	1.60%	2.30%	X	40	X	5
4	11805	2.45	1.00%	2.10	1.40%	2.95%	10	50	0.5	10
5	11806	2.50	7650	2.00	1.55%	2.35%	25	90	X	20
6	11807	2.65	4350	2.60	1.20%	1.10%	5	20	X	10
7	11808	2.30	7300	2.30	1.15%	1.90%	5	50	X	10
8	11809	1.95	9450	2.65	1.85%	2.55%	5	40	X	5
9	11810	2.65	1.05%	1.85	1.70%	3.70%	X	45	X	30
10	11811	2.60	8300	1.80	7900	2.85%	X	30	X	5
11	11812	2.25	8150	2.35	1.35%	2.40%	X	30	X	5
12	11813	2.45	8800	4.85	1.45%	2.05%	X	45	X	5
13	11814	2.55	1.10%	2.75	1.45%	4.90%	X	75	X	5
14	11815	2.05	8400	4.50	4750	1.70%	X	30	X	5
15	11816	1.40	1.25%	5.90	3050	3.20%	5	50	X	X
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999
Telex AA92560

663430

ANALYTICAL REPORT No. 83-1-02-FP

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2851	PN/EB/V9/1

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	5.1.82	3	174

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	IS 19231-3/4 IB 19231-698	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 9
VOYAGER 29W
(SOILS)

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

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013

ANALABS

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663431

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83-1 163 773	5.1.83	11 2851	1 OF 3

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	19201	2.85%	5	275	0.5	150				
2	19202	3.65%	X	195	X	120				
3	19203	10.0%	25	938	1.0	465				
4	19204	1.0%	5	135	X	135				
5	19205	1.0%	5	26	X	30				
6	19206	2.0%	325	4850	X	3900				
7	19207	0.5%	10	660	X	725				
8	19208	4.0%	70	1850	X	995				
9	19209	1.5%	5	95	X	105				
10	19210	3.0%	5	1000	X	410				
11	19211	1.0%	5	1750	X	1150				
12	19212	1.0%	5	195	X	30				
13	19213	0.5%	5	320	X	20				
14	19214	2.0%	5	1300	X	285				
15	19215	1.0%	5	1900	X	1000				
16	19216	2.0%	5	590	X	10				
17	19217	1.5%	10	940	X	40				
18	19218	0.5%	5	110	X	35				
19	19219	0.5%	5	60	X	20				
20	19220	0.5%	5	565	X	180				
21	19221	0.5%	5	405	X	200				
22	19222	1.0%	10	120	X	30				
23	19223	5.0%	10	360	0.5	1020				
24	19224	0.5%	5	305	X	10				
25	19225	0.5%	5	295	X	130				

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

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014

ANALABS

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

663432

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
				OF

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

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

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

663433

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 773	5.1.82	KP 2651	3 OF 3

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	[illegible]	3650	15	80	0.5	30				
2	[illegible]	3.50%	5	670	X	195				
3	[illegible]	3.50%	X	[illegible]	X	400				
4	[illegible]	4.70%	5	145	X	15				
5	[illegible]	4.40%	X	[illegible]	X	170				
6	[illegible]	1.70%	10	2450	X	160				
7	[illegible]	2150	X	[illegible]	X	X				
8	[illegible]	3600	375	115	X	25				
9	[illegible]	1.20%	5	20	1	X				
10	[illegible]	2.90%	[illegible]	1050	X	245				
11	[illegible]	2.10%	15	1050	0.5	160				
12	[illegible]	[illegible]	10	10	X	X				
13	[illegible]	[illegible]	[illegible]	10	X	X				
14	[illegible]	3100	10	20	X	X				
15	[illegible]	3050	X	15	1.0	X				
16	[illegible]	3450	5	[illegible]	X	[illegible]				
17	[illegible]	4.00	X							
18	[illegible]	4.25%	5	60	X	X				
19	[illegible]	2.45%	X	50	X	X				
20	[illegible]	1.20%	5	35	X	X				
21	[illegible]	2300	5	[illegible]		X				
22	[illegible]	3650	[illegible]	[illegible]	0.5	X				
23	[illegible]	[illegible]	[illegible]		X	5				
[illegible]	[illegible]	[illegible]	[illegible]			[illegible]				
25	[illegible]	[illegible]	[illegible]			[illegible]				

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

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016

ANALABS

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663434

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 773	5.1.82	KP 2851	4 OF 8

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15326	5.00	15	135	X	200				
2	15327	4.60%	X	125	0.5	10				
3	15328	2.45%	5	60	X	20				
4	15329	6.15%	10	105	X	X				
5	15330	3.20%	5	140	0.5	5				
6	15331	3.80%	5	135	X	5				
7	15332	2.65%	10	100	X	5				
8	15333	2.40%	5	95	X	X				
9	15334	2.95%	10	210	X	X				
10	15335	[illegible]	5	[illegible]	X	X				
11	[illegible]	[illegible]	10	130	X	15				
12	[illegible]	[illegible]	[illegible]	[illegible]	0.5	X				
13	[illegible]	[illegible]	[illegible]	15		X				
14	[illegible]	[illegible]	[illegible]	15	X	X				
15	[illegible]	[illegible]	10	[illegible]	0.5	100				
16	[illegible]	[illegible]	5	[illegible]	0.5	115				
17	[illegible]	[illegible]	[illegible]	[illegible]	0.5	90				
18	[illegible]	[illegible]	X	[illegible]	X	X				
19	[illegible]	[illegible]	[illegible]	[illegible]	0.5	X				
20	[illegible]	[illegible]	5	[illegible]	X	5				
21	[illegible]	[illegible]	[illegible]	10	X	X				
22	[illegible]	[illegible]	X	[illegible]	X	X				
23	[illegible]	[illegible]	[illegible]	[illegible]	0.5	5				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	X	X				
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10				

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

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ANALABS

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663435

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
[illegible]	[illegible]	5.1.82	KP 2851	5 OF 8

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15351	8700	5	25	0.5	5				
2	15352	1.00%	5	40	X	5				
3	15353	3.70%	10	70	0.5	5				
4	15354	1350	X	X	1.5	15				
5	15355	[illegible]	X	X	1.0	X				
6	15356	2700	X	15	X	X				
7	15357	4350	X	95	X	X				
8	15358	1650	X	15	0.5	5				
9	15359	2350	X	20	X	10				
10	15360	1.95%	X	95	0.5	10				
11	15361	[illegible]	X	40	0.5	X				
12	15362	[illegible]	10	[illegible]	0.5	100				
13	15363	8.20%	15	295	X	20				
14	15364	5.25%	50	150	1.0	25				
15	15365	3.30%	15	105	X	60				
16	15366	2.00%	10	650	1.0	310				
17	15367	4.35%	25	345	X	175				
18	15368	1.50%	5	300	X	90				
19	15369	2200	5	175	X	35				
20	15370	2.10%	X	280	X	40				
21	15371	1.95%	5	320	X	45				
22	15372	1.45%	5	115	X	30				
23	15373	1750	X	65	X	10				
24	[illegible]	[illegible]	85	[illegible]	X	[illegible]				
25	[illegible]	[illegible]	[illegible]	[illegible]	X	[illegible]				

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

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663436

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 773	5.1.82	KP 2851	6 OF

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15552	2100	10	135	X	125				
2	15553	2350	X	45	X	25				
3	15554	2100	X	35	X	15				
4	15555	2200	5	205	X	40				
5	15556	2950	35	1150	1.5	3700				
6	15557	3500	X	15	X	25				
7	15558	1450	X	10	X	15				
8	15559	2100	X	5	X	[illegible]				
9	15560	[illegible]	X	60	X	[illegible]				
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]					
11	[illegible]	[illegible]	X	105	X	165				
[illegible]	[illegible]	[illegible]	X	[illegible]	X	10				
13	[illegible]	[illegible]	[illegible]	2900	[illegible]	1200				
14	[illegible]	2150	X	50	X	35				
15	[illegible]	2350	X	20	X	25				
16	[illegible]	[illegible]	X	165	X	25				
17	[illegible]	[illegible]	X	540	X	100				
18	[illegible]	[illegible]	[illegible]	[illegible]	X	25				
19	[illegible]	[illegible]	X	220	X	495				
20	[illegible]	2100	5	120	X	350				
21	[illegible]	[illegible]	[illegible]	[illegible]	X	[illegible]				
22	[illegible]	[illegible]	X	[illegible]	X	10				
23	[illegible]	[illegible]	5	[illegible]	[illegible]	[illegible]				
24	[illegible]	[illegible]	X	[illegible]	X	[illegible]				
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				

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

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ANALABS

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

663437

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83 773	5.1.83	HP 2851	OF

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Hg	Pb				
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER

020

663438

VOYAGER 16

ANALABS

663439

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999
Telex AA92560

ANALYTICAL REPORT No. 83.1 08 911

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2883	K 583

DATE RECEIVED	RESULTS REQUIRED
9.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	18.2.82	3	149

STATE OF SAMPLES REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
30	TS 16901-17000 TS 17501-17504 TS 17506-17550	1				2			Cu Pb Zn Fe Ag Mn	101 101	101 101

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 16

SOILS

STATE OF SAMPLES

whole core	WC
split core	SC
cutting	CU
[illegible]	Ro
	SO
	PU
[illegible] water	WA
tissue	TI
stream sediment	SS
heavy mineral	HM

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Mo
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TTR
other chemical methods	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

AUTHORISED OFFICER

ANALABS

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

663440 V16

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 911	18.2.82	KP 2883	1 OF 8

TUBE No.	SAMPLE No.	Mn	Fe	Cu	Zn	Mo	Pb			
1	16901	275	1.20%	X	45	0.5	25			
2	16902	115	1.35%	5	50	1.0	25			
3	16903	750	2.45%	X	140	1.0	5			
4	16904	80	4900	X	30	X	10			
5	16905	10	1150	5	10	2.0	X			
6	16906	575	2.50%	10	275	0.5	70			
7	16907	80	7600	X	55	0.5	5			
8	16908	160	1.80%	210	110	1.5	425			
9	16909	60	4900	5	25	0.5	40			
10	16910	45	3800	10	25	1.0	20			
11	16911	50	3500	X	25	1.5	10			
12	16912	145	9.10%	5	135	1.5	440			
13	16913	145	4.00%	20	495	X	160			
14	16914	515	3.30%	X	185	X	65			
15	16915	1550	4.45%	10	165	0.5	175			
16	16916	1300	3.75%	5	315	X	45			
17	16917	1700	4.05%	5	645	0.5	310			
18	16918	270	1.90%	45	165	1.0	120			
19	16919	2000	4.55%	10	490	1.5	40			
20	16920	125	7800	15	55	10.0	150			
21	16921	105	7100	10	45	6.5	125			
22	16922	155	2.00%	10	165	0.5	40			
23	16923	45	6300	X	35	0.5	10			
24	16924	590	7900	X	55	3.5	20			
25	16925	1450	1.40%	X	95	0.5	15			

VOYAGER 16

SOILS

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

AUTHORISED OFFICER

ANALABS

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

663441 VIC

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 911	18.2.82	KP 2883	2 OF 3

TUBE No.	SAMPLE No.	Mn	Fe	Cu	Zn	Ag	Pb			
1	16926	1600	1.85%	X	170	0.5	20			
2	16927	300	9500	X	70	1.0	10			
3	16928	340	7400	X	35	0.5	5			
4	16929	295	6600	5	50	1.5	10			
5	16930	250	7000	X	65	0.5	20			
6	16931	240	6550	X	55	1.0	10			
7	16932	115	4350	X	30	X	5			
8	16933	1700	2.80%	X	510	0.5	15			
9	16934	750	3.45%	X	265	1.0	35			
10	16935	575	1.45%	X	105	0.5	15			
11	16936	450	1.25%	10	70	0.5	10			
12	16937	400	1.20%	X	65	1.0	50			
13	16938	1650	4.15%	10	395	0.5	25			
14	16939	525	1.45%	5	195	0.5	30			
15	16940	595	4.85%	20	265	X	110	VOYAGER 16		
16	16941	800	5.40%	10	295	X	110		SOILS	
17	16942	515	2.15%	X	105	X	50			
18	16943	175	2.00%	X	40	0.5	10			
19	16944	180	1.35%	X	20	X	5			
20	16945	175	1.35%	X	15	0.5	X			
21	16946	230	7.25%	10	100	X	150			
22	16947	190	1.15%	X	30	X	25			
23	16948	290	5.00%	10	120	X	35			
24	16949	320	1.35%	10	40	X	20			
25	16950	1100	3.45%	5	145	1.0	20			

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

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ANALABS

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

663442

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 911	18.2.82	KP 2883	3 OF 8

TUBE No.	SAMPLE No.	Mn	Fe	Cu	Zn	Ag	Pb			
1	16951	950	3.05%	X	130	0.5	35			
2	16952	605	3.30%	5	355	X	35			
3	16953	780	3.00%	10	255	X	40			
4	16954	415	1.90%	X	105	X	5			
5	16955	400	1.55%	X	90	1.5	90			
6	16956	420	2.90%	X	160	1.0	35			
7	16957	860	2.90%	X	325	0.5	15			
8	16958	465	1.95%	5	215	0.5	70			
9	16959	410	7050	5	170	1.5	175			
10	16960	205	5450	X	50	0.5	15			
11	16961	190	4950	5	40	0.5	15			
12	16962	285	8200	X	95	0.5	5			
13	16963	1450	8250	X	40	0.5	10			
14	16964	1450	2.25%	X	220	1.0	60			
15	16965	1250	2.95%	X	260	1.0	5	VOYAGER 16		
16	16966	1150	2.90%	X	205	X	20		SOILS	
17	16967	245	1.15%	5	40	1.0	60			
18	16968	3900	4.20%	5	355	0.5	35			
19	16969	540	3.60%	5	120	0.5	70			
20	16970	190	1.00%	X	50	1.0	375			
21	16971	165	8350	X	40	1.0	345			
22	16972	205	1.40%	X	20	0.5	30			
23	16973	155	1.55%	X	85	0.5	40			
24	16974	535	2.75%	5	225	0.5	85			
25	16975	85	1.60%	5	55	0.5	20			

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

AUTHORISED OFFICER

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

663443

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 911	18.2.82	KP 2883	4 OF 8

TUBE No.	SAMPLE No.	Mn	Fe	Cu	Zn	Ag	Pb			
1	16976	95	8800	5	190	0.5	115			
2	16977	500	2.60%	15	250	0.5	305			
3	16978	2200	4.85%	X	460	0.5	80			
4	16979	90	3400	X	20	1.5	20			
5	16980	175	9500	X	50	X	5			
6	16981	195	8800	5	80	X	15			
7	16982	2750	3.70%	40	930	0.5	410			
8	16983	2300	5.35%	10	780	1.0	1000			
9	16984	1450	4.20%	X	710	X	30			
10	16985	1100	5.70%	5	700	X	255			
[illegible]	16986	620	3.90%	20	175	0.5	215			
12	16987	160	1.35%	X	80	X	20			
13	16988	395	2.30%	X	205	1.0	85			
14	16989	155	1.55%	X	65	X	10			
15	16990	250	2.05%	X	125	X	65	VOYAGER 16		
16	16991	250	1.75%	X	135	X	70		SOILS	
[illegible]	16992	385	7700	X	25	0.5	5			
18	16993	565	2.25%	25	140	4.5	95			
19	16994	345	1.50%	X	145	2.5	20			
20	16995	1200	3.85%	X	315	X	20			
21	16996	715	3.10%	X	270	X	160			
22	16997	605	3.65%	X	230	X	15			
23	16998	595	4.15%	10	245	X	110			
[illegible]	16999	295	3.80%	X	170	0.5	45			
25	17000	45	7300	10	75	X	150			

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

AUTHORISED OFFICER [signature]

ANALABS

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

663444

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 911	18.2.82	KP 2883	5 OF 8

TUBE No.	SAMPLE No.	Mn	Fe	Cu	Zn	Ag	Pb			
1	17501	30	6100	10	60	X	145			
2	17502	595	3.55%	5	230	X	25			
3	17503	165	1.30%	5	520	X	910			
4	17504	1350	5.25%	15	875	X	400			
5	17506	340	5.15%	15	345	X	20			
6	17507	220	7700	X	35	0.5	X			
7	17508	320	9300	X	30	0.5	X			
8	17509	315	1.30%	X	30	0.5	X			
9	17510	95	2800	X	20	X	10			
10	17511	195	2.45%	X	50	1.0	15			
[illegible]	17512	155	4.40%	X	40	0.5	40			
12	17513	75	3.60%	X	45	X	75			
13	17514	220	2.05%	X	45	X	35			
14	17515	410	1.95%	X	75	1.0	20			
15	17516	235	8100	X	50	0.5	15	V [illegible] 16		
16	17517	280	1.15%	X	50	0.5	15		[illegible]	
[illegible]	17518	325	1.60%	X	90	2.0	10			
18	17519	450	1.60%	X	100	1.0	10			
19	17520	1600	4.15%	X	710	0.5	45			
20	17521	1800	4.50%	X	780	X	50			
21	17522	70	8000	X	45	0.5	X			
22	17523	90	4650	30	30	0.5	5			
23	17524	115	4600	10	40	X	15			
[illegible]	17525	575	4.05%	10	235	X	30			
25	17526	625	2.15%	10	240	1.0	95			

Results in [illegible] specified.
T = element present, but concentration too low to [illegible]
X = element concentration is below detection limit
[illegible] = element not determined

AUTHORISED OFFICER

ANALABS

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

663445

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 911	18.2.82	KP 2883	6 OF 8

TUBE No.	SAMPLE No.	Mn	Fe	Co	Zn	Ag	Pb			
1	17527	1150	1.55%	5	255	0.5	15			
2	17528	1100	2.35%	10	295	X	55			
3	17529	255	1.75%	20	120	X	45			
4	17530	3850	8.60%	10	900	X	180			
5	17531	3750	8.50%	10	930	X	185			
6	17532	40	5500	X	40	X	X			
7	17533	105	1.70%	X	65	X	X			
8	17534	405	2.45%	15	200	X	195			
9	17535	25	6900	30	45	0.5	110			
10	17536	125	9.70%	20	450	0.5	25			
11	17537	1500	4.65%	X	380	X	15			
12	17538	30	4100	X	20	0.5	X			
13	17539	1450	4.15%	20	285	X	125			
14	17540	1400	4.65%	15	305	0.5	75			
15	17541	1600	4.80%	20	345	X	95			
16	17542	3550	5.80%	5	370	X	120			
17	17543	65	9500	X	45	0.5	5			
18	17544	1600	3.90%	15	310	X	170			
19	17545	240	3.55%	10	420	0.5	235			
20	17546	520	3.25%	X	245	X	280			
21	17547	55	9500	X	30	0.5	65			
22	17548	1800	5.60%	25	275	X	60			
23	17549	100	1.05%	30	135	X	950			
24	17550	285	2.10%	X	70	0.5	15			
25	17551	195	1.95%	X	85	0.5	25			

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

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ANALABS

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

663446

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 911	18.2.82	KP 2883	7 OF 8

TUBE No.	SAMPLE No.	Mn	Fe	Cu	Zn	Ag	Pb			
1	17552	85	8200	X	35	0.5	5			
2	17553	165	1.90%	X	55	X	20			
3										
4										
5										
6										
7										
8										
9										
10										
[illegible]										
12										
13										
14										
15										
16										
[illegible]										
18										
19										
20										
21										
22										
23										
[illegible]										
25										

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

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

66344

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 911	18.2.82	KP 2883	8 OF 8

TUBE No.	SAMPLE No.	Mn	Fe	Cu	Zn	Ag	Pb			
1	STD FS4	615	8.80%	300	710	1.0	100			
2	RPT 16901	275	1.40%	X	50	0.5	25			
3	RPT 16920	110	7700	10	55	10.0	145			
4	STD FS4	645	8.85%	245	730	0.5	100			
5	RPT 16941	815	5.70%	15	320	X	120			
6	RPT 16960	195	5350	X	30	0.5	15			
7	STD FS4	800	8.45%	265	820	0.5	100			
8	RPT 16981	200	8650	10	75	0.5	20			
9	RPT 17000	55	7200	6	80	0.5	150			
10	STD FS4	615	9.35%	325	750	1.0	100			
11	RPT 17522	70	8050	10	55	0.5	X			
12	RPT 17541	1550	4.45%	15	350	X	85			
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	50	5	5	0.5	5			
24	DIGESTION	101	101	101	101	101	101			
25	METHOD	101	101	101	101	101	101			

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

AUTHORISED OFFICER

030

663448

VOYAGER 19

ANALABS

663449

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999
Telex AA92560

ANALYTICAL REPORT No. 83.1 08 771

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2849	PW/EB/V19/4

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	4.1.82	3	35

STATE OF SAMPLES: REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 14932-42 TS 14944-67	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

V19
(SOIL SAMPLES)

STATE OF SAMPLES

whole core	WC
split core	SC
cutting	CU
rock	Ro
soil	SO
pulp	PU
water	WA
tissue	TI
stream sediment	SS
heavy mineral	HM

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Ma
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TTN
other chemicals means	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

AUTHORISED OFFICER

ANALABS

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

663450

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 771	6.1.82	KP 2849	1 OF 3

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14932	3900	5	35	X	X				
2	14933	1750	X	10	X	X				
3	14934	1700	X	10	X	X				
4	14935	2.15%	20	65	X	5				
5	14936	2400	5	10	X	X				
6	14937	3600	X	10	X	X				
7	14938	4100	X	10	X	X				
8	14939	3250	10	45	X	5				
9	14940	3100	X	10	X	X				
10	14941	3000	X	10	X	X				
11	14942	1.35%	5	95	X	X				
12	14943	2.75%	10	685	X	10				
13	14944	5100	10	60	X	10				
14	14945	1.45%	5	95	X	10				
15	14946	2650	X	40	X	X				
16	14947	1900	X	15	0.5	X				
17	14948	1650	X	15	X	X				
18	14949	1650	X	10	X	X				
19	14950	1950	X	15	X	X				
20	14951	1800	X	10	X	X				
21	14952	1550	X	35	X	X				
22	14953	6900	X	545	X	170				
23	14954	1.65%	5	130	X	5				
24	14955	1.80%	X	160	X	10				
25	14956	1.90%	X	265	X	X				

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

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ANALABS

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

663451

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 771	6.1.82	KP 2849	2 OF 3

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14957	8000	X	75	X	X				
2	14958	3400	X	15	X	X				
3	14959	3200	X	15	X	X				
4	14960	3850	10	15	X	X				
5	14961	3950	15	20	X	X				
6	14962	4050	10	25	X	X				
7	14963	6250	10	20	X	X				
8	14964	2000	5	10	X	X				
9	14965	9500	5	30	X	15				
10	14966	3.00%	5	45	X	X				
11	14967	1.45%	5	30	0.5	X				
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
25										

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

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ANALABS

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

663452

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 771	6.1.82	KP 2849	3 OF 3

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	STD FS4	7.95%	325	765	0.5	90				
2	RPT 14932	4150	10	40	X	X				
3	RPT 14951	1850	5	15	X	X				
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
24	DIGESTION	A1	A1	A1	A1	A1				
25	METHOD	A1/1	A1/1	A1/1	A1/1	A1/1				

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

AUTHORISED OFFICER

ANALABS

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663453

ANALYTICAL REPORT No. 83.1 08 775

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2842	PW/EB/V19W/

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	5.1.82	3	63

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 14423-85	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

27
VOYAGER 19
2
(SOILS)

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
[illegible]	Cu	nitric acid	A3	other mixed acids	Mo	spectrophotometry	SPEC
[illegible]	Rb	aqua regia	A4	alkaline attack	AA	colorimetry	COL
[illegible]	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
[illegible]	RD	HF mixture	A6	ignition	IG	titration	TIT
[illegible]	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER [signature]

ANALABS

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

663454

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 775	6.1.82	KP 2842	1 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14423	5.65%	45	30	X	45				
2	14424	2.90%	15	25	X	25				
3	14425	4.65%	40	55	X	50				
4	14426	1.00%	10	15	X	15				
5	14427	7900	5	20	X	30				
6	14428	3550	X	15	X	5				
7	14429	1750	X	10	X	20				
8	14430	5700	X	155	X	50				
9	14431	5300	X	160	X	50				
10	14432	4450	X	60	X	X				
[illegible]	14433	3450	X	5	X	X				
12	14434	1.05%	X	65	X	10				
13	14435	6950	X	30	0.5	70				
14	14436	6750	X	45	X	10				
15	14437	2000	X	15	2.0	X				
16	14438	1.00%	X	25	X	X				
17	14439	2550	X	10	X	X				
18	14440	2400	X	10	X	X				
19	14441	2650	X	10	X	X				
20	14442	3300	X	5	X	X				
21	14443	6700	10	25	X	X				
22	14444	3550	X	10	X	X				
23	14445	6400	X	10	X	X				
[illegible]	14446	7200	15	105	X	35				
25	14447	7500	5	10	X	X				

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

AUTHORISED OFFICER

ANALABS

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

663455

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 775	6.1.82	KP 2842	2 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14448	6900	5	15	X	X				
2	14449	1950	5	5	X	X				
3	14450	8950	X	20	X	5				
4	14451	7700	X	25	X	5				
5	14452	5150	X	15	X	X				
6	14453	5600	5	10	X	X				
7	14454	7350	5	15	X	X				
8	14455	5850	5	15	X	X				
9	14456	5300	5	10	X	X				
10	14457	6350	X	20	X	15				
11	14458	3450	X	10	X	X				
12	14459	2450	X	5	X	X				
13	14460	2400	X	X	X	X				
14	14461	2250	X	X	X	X				
15	14462	3300	5	15	X	10				
16	14463	3650	X	15	X	5				
17	14464	4100	5	20	0.5	50				
18	14465	2.20%	5	95	X	45				
19	14466	5500	X	25	0.5	5				
20	14467	3700	10	20	X	50				
21	14468	3.60%	10	85	X	30				
22	14469	1.15%	10	25	X	10				
23	14470	1.75%	10	50	X	30				
24	14471	2.85%	15	80	X	30				
25	14472	8.15%	15	120	X	40				

Results in ppm unless otherwise specified

T = element present, but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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

663450

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 775	6.1.82	KP 2842	3 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14473	3.25%	5	50	X	45				
2	14474	3900	5	25	X	35				
3	14475	3100	10	5	0.5	10				
4	14476	2.25%	30	20	X	40				
5	14477	2.90%	45	30	X	35				
6	14478	1500	X	5	0.5	5				
7	14479	1.40%	5	25	X	10				
8	14480	3550	X	10	X	X				
9	14481	2800	X	5	X	X				
10	14482	1.30%	X	30	X	5				
11	14483	9050	10	105	X	10				
12	14484	7200	X	15	0.5	5				
13	14485	2250	X	10	X	X				
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER B. Das

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

663457

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 775	6.1.82	KP 2842	4 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	STD FS4	8.70%	315	760	X	105				
2	RPT 14423	5.55%	50	30	X	45				
3	RPT 14442	3200	X	10	X	X				
4	STD FS4	8.50%	315	710	1.0	95				
5	RPT 14463	3600	X	10	X	X				
6	RPT 14482	1.25%	5	30	X	X				
7										
8										
9										
10										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
	DIGESTION	A1	A1	A1	A1	A1				
25	METHOD	A1/1	A1/1	A1/1	A1/1	A1/1				

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

AUTHORISED OFFICER

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663458

ANALYTICAL REPORT No. 83.1 08 772

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
kp 2850	PW/EB/V19/S

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	4.1.82		92

STATE OF SAMPLES	PRE TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL VERISE	SIEVE	OTHER SEE REMARKS	ASHE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 14840-931	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19
SOILS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	AD	cold acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	HCl	specific sulphide	SS	x-ray fluorescence	XRF
chips	CH	nitric acid	HNO	other mixed acids	Mo	spectrophotometry	SPEC
pulp	PU	aqua regia	AR	alkaline attack	AA	colorimetry	COL
powder	PO	nitric perchloric	NP	solubilisation	VO	chromatography	CHR
fire assay	FA	HF acid	HF	ignition	IG	titration	TIT
fire assay cupel	FAC	fire assay fusion	FAF	fire assay cupellation	FAC	gravimetric	GRAV
					PB		
					GF		

ANALABS

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

663459

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
[illegible]	83.1 08 772	5.1.82	KP 2850	1 OF 5

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14840	3.90%	10	355	X	25				
2	14841	4.10%	20	360	X	20				
3	14842	6650	5	60	X	25				
4	14843	8000	X	20	0.5	X				
5	14844	6400	5	15	X	X				
6	14845	4650	5	15	0.5	X				
7	14846	2950	5	5	0.5	X				
8	14847	1.85%	10	35	X	15				
9	14848	1.90%	5	45	X	20				
10	14849	1.40%	10	35	X	15				
[illegible]	14850	6.75%	5	455	X	20				
12	14851	7.25%	10	480	X	20				
13	14852	2.85%	10	80	X	25				
14	14853	4.00%	20	325	0.5	10				
15	14854	6700	10	60	0.5	35				
16	14855	7700	10	25	1.5	10				
17	14856	N/S	N/S	N/S	N/S	N/S				
18	14857	5450	5	15	1.0	10				
19	14858	5900	5	20	0.5	10				
20	14859	2200	X	10	X	X				
21	14860	6950	5	15	X	5				
22	14861	6350	X	15	X	X				
23	14862	4500	5	10	0.5	30				
[illegible]	14863	8300	X	15	X	X				
25	14864	1.55%	20	100	X	115				

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

AUTHORISED OFFICER B. Dan

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

663460

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 772	5.1.82	KP 2850	2 OF 5

TUBE No.	SAMPLE No.	Fe %	Cu	Zn	Mo	Pb				
1	14865	6850	X	20	X	10				
2	14866	7300	5	15	X	5				
3	14867	2350	X	10	X	X				
4	14868	6750	X	25	X	5				
5	14869	6600	5	20	X	10				
6	14870	5500	X	10	1.5	5				
7	14871	5650	X	15	X	10				
8	14872	5150	5	15	X	15				
9	14873	6350	X	15	X	10				
10	14874	5650	X	15	X	15				
11	14875	4000	X	10	X	10				
12	14876	1.60%	10	55	X	40				
13	14877	3.60%	5	375	X	70				
14	14878	1.35%	10	75	X	15				
15	14879	5000	X	15	X	5				
16	14880	2650	X	20	X	10				
17	14881	3150	X	15	X	15				
18	14882	3800	5	30	X	20				
19	14883	3.05%	X	330	X	45				
20	14884	1.50%	X	85	X	160				
21	14885	2.15%	5	235	X	55				
22	14886	4.10%	X	1300	X	200				
23	14887	1.00%	20	105	X	40				
24	14888	1.45%	10	120	X	55				
25	14889	1.95%	X	60	X	20				

Notes: 1 Upper limit of determination specified
2 = interference present but concentration too low to measure
X = element concentration is below detection limit
- = element not determined

AUTHORISED OFFICER

ANALABS

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

663461

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 772	5.1.83	KP 2850	3 OF 5

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Hg	Pb				
1	14890	1550	X	10	X	5				
2	14891	1850	X	5	X	10				
3	14892	1400	X	10	X	X				
4	14893	3150	X	10	X	5				
5	14894	1450	X	X	X	5				
6	14895	7.15%	10	145	X	15				
7	14896	6.45%	10	1050	X	175				
8	14897	7000	X	95	X	25				
9	14898	2000	X	20	X	X				
10	14899	3300	X	10	X	X				
11	14900	2800	X	10	X	X				
12	14901	3300	10	10	X	5				
13	14902	1850	X	5	X	X				
14	14903	1.95%	10	30	X	X				
15	14904	3650	X	10	X	5				
16	14905	N/S	N/S	N/S	N/S	N/S				
17	14906	2800	X	10	X	10				
18	14907	6100	X	10	X	5				
19	14908	1.25%	X	45	X	15				
20	14909	7800	X	30	X	35				
21	14910	2400	10	15	X	5				
22	14911	2550	X	10	X	10				
23	14912	6450	15	10	X	5				
24	14913	3.10%	20	15	X	20				
25	14914	3.95%	40	20	X	10				

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

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ANALABS

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

66346

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 772	5.1.82	KP 2850	4 OF 5

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Mo	Pb				
1	14915	3.05%	10	10	X	30				
2	14916	3250	X	10	X	10				
3	14917	5800	X	20	X	30				
4	14918	1900	X	10	2.0	X				
5	14919	5900	15	735	X	15				
6	14920	6550	20	75	X	5				
7	14921	7450	25	40	X	10				
8	14922	8300	15	30	X	10				
9	14923	6850	15	20	X	40				
10	14924	3450	5	70	X	55				
11	14925	2400	X	35	X	30				
12	14926	3600	5	45	X	15				
13	14927	6700	10	40	X	X				
14	14928	1.15%	55	15	X	5				
15	14929	2100	X	10	X	5				
16	14930	2350	X	X	X	X				
17	14931	2450	X	X	X	X				
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER

ANALABS

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

ANALYTICAL DATA

663463

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 772	5.1.82	KP 2850	5 OF 5

TUBE No.	SAMPLE No.	Fe %	Cu	Zn	Pb	Ag				
1	STD FS4	8.75%	325	765	0.5	90				
2	RPT 14840	3.95%	10	375	X	30				
3	RPT 14859	2100	5	10	X	X				
4	STD FS4	8.75%	315	725	0.5	105				
5	RPT 14880	2500	X	20	X	10				
6	RPT 14899	3200	X	10	X	X				
7	STD FS4	8.90%	315	770	0.5	105				
8	RPT 14920	6800	20	75	X	10				
9										
10										
11										
12										
13										
14										
15										
16										
17										
18	Note : N/S means Sample was not Submitted									
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
24	DIGESTION	A1	A1	A1	A1	A1				
25	METHOD	A1/1	A1/1	A1/1	A1/1	A1/1				

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

AUTHORISED OFFICER

ANALABS

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

663464

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 763

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2838	PW/EB/V19/1

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	4.1.82	3	118

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL. VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 15001-118	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19
(SOILS)

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
chips	CU	nitric acid	A3	other mixed acids	Mix	spectrophotometry	SPEC
	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
	RO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
	CU	HF mixture	A6	ignition	IG	titration	TITR
	DU	bromine-methanol	A7	fusion	FU	other chemical methods	CHEM
	Ba	fusion	A8	aqua regia-HF (open)	AR	miscellaneous	MISC
	Sed			glove bag (HF)	GL	fluorimetry	FLUOR
	Min					inductively coupled plasma	ICP

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

663465

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 763	5.1.82	KP 2838	1 OF 6

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15001	4000	15	95	X	20				
2	15002	3050	10	140	X	25				
3	15003	3350	10	765	X	95				
4	15004	3450	10	100	X	25				
5	15005	3650	10	135	X	30				
6	15006	5350	10	195	X	35				
7	15007	5.70%	30	850	X	90				
8	15008	5.90%	40	465	X	70				
9	15009	3450	10	30	X	5				
10	15010	1.00%	10	150	X	35				
11	15011	1.05%	10	195	X	45				
12	15012	1.35%	10	165	X	60				
13	15013	3.40%	40	290	X	40				
14	15014	3.00%	15	435	X	70				
15	15015	3.70%	25	2450	0.5	225				
16	15016	3.55%	260	1800	0.5	210				
17	15017	3.75%	125	950	X	190				
18	15018	4.10%	15	490	X	35				
19	15019	3.25%	105	635	X	330				
20	15020	6350	20	685	X	145				
21	15021	6250	15	740	X	160				
22	15022	2000	25	215	0.5	40				
23	15023	1.00%	15	510	X	230				
24	15024	1.40%	195	1100	1.5	900				
25	15025	3000	10	50	X	X				

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

AUTHORISED OFFICER

ANALABS

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

ANALYTICAL DATA

663466

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 763	5.1.82	KP 2838	2 OF 6

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15026	4850	45	80	X	45				
2	15027	2350	5	555	X	X				
3	15028	3200	5	900	X	50				
4	15029	2800	15	225	X	80				
5	15030	2950	5	40	X	35				
6	15031	2850	5	25	X	40				
7	15032	1.65%	10	205	X	65				
8	15033	1.40%	190	2000	3.0	4050				
9	15034	1.30%	20	760	0.5	375				
10	15035	9500	10	390	X	X				
11	15036	2.05%	25	610	0.5	295				
12	15037	1.90%	20	710	X	370				
13	15038	2.35%	15	540	X	155				
14	15039	1.50%	30	1100	3.0	485				
15	15040	1.55%	10	205	X	95				
16	15041	1.50%	10	200	X	90				
17	15042	7600	5	700	X	15				
18	15043	9500	5	1600	0.5	30				
19	15044	1.05%	10	710	X	60				
20	15045	9000	5	220	X	5				
21	15046	6000	5	440	X	25				
22	15047	9500	5	850	X	30				
23	15048	8200	5	30	X	10				
24	15049	2950	5	210	X	210				
25	15050	2500	10	50	X	65				

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

AUTHORISED OFFICER

ANALABS

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

663467

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 763	5.1.82	KP 2838	3 OF 6

TUBE No.	SAMPLE No.	Pb	Cu	Zn	Ag	Pb1				
1	15051	2200	10	50	X	60				
2	15052	1750	10	20	X	55				
3	15053	4.95%	10	405	X	10				
4	15054	1.65%	5	65	0.5	50				
5	15055	3650	45	310	1.0	680				
6	15056	1.75%	15	335	X	40				
7	15057	1.25%	60	160	X	245				
8	15058	2.15%	10	130	X	10				
9	15059	1.30%	5	85	X	90				
10	15060	3500	10	30	X	1500				
11	15061	3550	10	30	X	1500				
12	15062	4100	5	20	0.5	890				
13	15063	4350	10	35	X	50				
14	15064	3800	10	35	X	200				
15	15065	5800	10	100	0.5	15				
16	15066	8500	15	740	0.5	165				
17	15067	3750	5	25	X	75				
18	15068	2750	10	85	X	5				
19	15069	3450	5	30	X	X				
20	15070	2800	30	250	0.5	110				
21	15071	3050	25	225	0.5	110				
22	15072	3400	5	30	X	10				
23	15073	5250	5	305	X	170				
24	15074	4000	5	110	X	45				
25	15075	2850	45	130	X	15				

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

AUTHORISED OFFICER

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

663468

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 763	5.1.82	KP 2838	4 OF 6

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15076	3300	5	35	X	5				
2	15077	4350	5	65	X	5				
3	15078	2550	5	50	X	5				
4	15079	4000	10	1000	0.5	250				
5	15080	2100	5	70	X	X				
6	15081	3400	10	105	X	15				
7	15082	6200	15	1500	0.5	500				
8	15083	2500	5	65	X	15				
9	15084	1900	5	45	X	10				
10	15085	1.40%	10	215	X	145				
11	15086	5000	5	25	6.0	X				
12	15087	4100	5	75	3.0	55				
13	15088	3700	5	45	2.5	165				
14	15089	1.20%	40	475	2.0	175				
15	15090	4000	10	40	0.5	45				
16	15091	3600	10	30	0.5	35				
17	15092	1.25%	5	310	1.0	75				
18	15093	8000	5	125	0.5	50				
19	15094	3.25%	15	355	X	355				
20	15095	1.60%	10	280	0.5	50				
21	15096	7700	5	65	1.0	935				
22	15097	2.00%	5	210	0.5	10				
23	15098	2800	10	25	1.0	15				
24	15099	4700	30	325	0.5	75				
25	15100	1.45%	5	175	X	60				

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

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663469

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 763	5.1.82	KP 2838	5 OF 6

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Hg	Pb				
1	15101	1.40%	5	180	0.5	65				
2	15102	5800	10	35	X	5				
3	15103	4300	260	100	0.5	255				
4	15104	2.25%	15	170	0.5	30				
5	15105	1.35%	55	950	4.0	1700				
6	15106	5600	5	45	0.5	65				
7	15107	2.95%	35	575	1.0	120				
8	15108	1.60%	15	230	0.5	30				
9	15109	3.75%	5	170	0.5	25				
10	15110	3.10%	30	690	X	430				
11	15111	3.10%	35	700	X	405				
12	15112	5600	10	40	1.0	35				
13	15113	5150	30	65	1.0	275				
14	15114	9000	5	2000	X	310				
15	15115	5000	5	160	X	40				
16	15116	6800	15	2650	1.5	2000				
17	15117	4700	5	45	0.5	15				
18	15118	4700	15	625	0.5	155				
19										
20										
21										
22										
23										
24										
25										

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

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663470

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 763	5.1.82	KP 2838	6 OF 6

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pt				
1	STD FS4	8.50%	305	760	0.5	100				
2	RPT 15001	4000	15	80	X	15				
3	RPT 15020	6100	15	680	X	140				
4	STD FS4	8.10%	310	720	1.0	100				
5	RPT 15041	1.40%	5	200	X	85				
6	RPT 15060	3150	10	30	X	1500				
7	STD FS4	8.50%	295	760	0.5	100				
8	RPT 15081	3000	5	105	X	10				
9	RPT 15100	1.40%	10	160	0.5	60				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
24	DIGESTION	A1	A1	A1	A1	A1				
25	METHOD	A1/1	A1/1	A1/1	A1/1	A1/1				

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

AUTHORISED OFFICER

ANALABS

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663471

ANALYTICAL REPORT No. 83.1 08 765

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2843	PW/EB/V19,2

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	4.1.82	3	67

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 15119-85	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19
(SOILS)

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
[illegible]	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
[illegible]	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
[illegible]	PU	HF mixture	A6	ignition	IG	titration	TIN
[illegible]	WA	HF under pressure	A7	pressed pellet (XRF)	PP	[illegible]	[illegible]
[illegible]	TI	fusion	A8	glass bead (XRF)	GF	misc. [illegible]	MISC
[illegible] sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

ANALABS

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

663472

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 765	5.1.82	KP 2843	1 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15119	5850	20	3750	0.5	120				
2	15120	1.65%	14	675	0.5	740				
3	15121	1.60%	15	650	0.5	820				
4	15122	3400	10	30	X	15				
5	15123	4050	45	740	0.5	345				
6	15124	4800	10	55	X	15				
7	15125	4100	10	30	X	10				
8	15126	4350	5	30	X	5				
9	15127	4500	5	25	X	25				
10	15128	5050	10	45	0.5	30				
11	15129	2650	15	315	X	85				
12	15130	3700	10	55	X	35				
13	15131	3700	5	140	X	60				
14	15132	4600	10	85	X	35				
15	15133	5000	10	520	0.5	20				
16	15134	4450	10	330	X	170				
17	15135	5250	15	5000	1.0	1150				
18	15136	7200	10	380	X	290				
19	15137	6200	10	280	X	50				
20	15138	3700	10	45	X	145				
21	15139	3000	10	145	X	45				
22	15140	4250	20	215	X	160				
23	15141	4400	25	275	0.5	185				
24	15142	4150	5	25	X	5				
25	15143	2.35%	10	135	X	30				

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

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ANALABS

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

663173

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 765	5.1.82	KP 2843	2 OF 4

TUBE No.	SAMPLE No.	Fe %	Cu	Zn	Ag	Pb				
1	15144	3350	10	25	X	5				
2	15145	2.75%	15	130	0.5	35				
3	15146	1.50%	25	185	0.5	70				
4	15147	1.75%	25	370	X	225				
5	15148	3.65%	40	330	X	130				
6	15149	2.55%	10	165	1.0	440				
7	15150	3650	10	70	1.5	50				
8	15151	3250	10	30	2.0	15				
9	15152	5600	10	95	X	50				
10	15153	5350	15	80	X	45				
11	15154	2700	10	25	X	15				
12	15155	1.85%	5	110	X	20				
13	15156	3650	5	40	X	10				
14	15157	3150	15	30	X	10				
15	15158	5300	10	20	X	5				
16	15159	2400	5	20	X	10				
17	15160	2000	5	20	X	5				
18	15161	2100	X	15	X	5				
19	15162	3650	15	30	X	10				
20	15163	4150	X	30	X	20				
21	15164	2700	10	60	X	20				
22	15165	3050	10	20	X	10				
23	15166	6650	15	65	X	135				
24	15167	2700	X	20	0.5	15				
25	15168	3750	10	20	X	20				

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

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

663474

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 765	5.1.82	KP 2843	3 OF 4

TUBE No.	SAMPLE No.	Fe %	Cu	Zn	Ag	Pb				
1	15169	4300	5	65	1.0	15				
2	15170	2300	10	20	X	X				
3	15171	2350	10	20	X	5				
4	15172	5000	X	20	X	X				
5	15173	4000	5	20	X	10				
6	15174	2900	5	15	X	20				
7	15175	2000	5	15	X	10				
8	15176	2400	5	15	X	10				
9	15177	2700	10	15	X	35				
10	15178	4050	10	65	X	50				
11	15179	3750	5	25	X	10				
12	15180	5550	10	650	X	60				
13	15181	5200	5	800	X	50				
14	15182	3900	5	55	X	25				
15	15183	5350	10	320	X	70				
16	15184	1.10%	5	240	X	115				
17	15185	2.65%	10	125	X	60				
18										
19										
20										
21										
22										
23										
24										
25										

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

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

663475

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 765	5.1.82	KP 2843	4 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	STD FS4	7.90%	300	750	1.0	100				
2	RPT 15119	6100	15	3650	0.5	120				
3	RPT 15138	3900	10	30	X	140				
4	STD FS4	8.15%	300	780	X	105				
5	RPT 15159	2350	10	25	X	5				
6	RPT 15178	4250	10	65	X	50				
7										
8										
9										
10										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
	DIGESTION	A1	A1	A1	A1	A1				
25	METHOD	A1/1	A1/1	A1/1	A1/1	A1/1				

Results in parts per million otherwise specified.
T = element present but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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058-1

ANALABS

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663476

ANALYTICAL REPORT No. 82 08 779

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
kp 2348	PW/EB/V19.2

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	4.1.82	3	65

STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	MET
SO	TS 15186-250	1				2			Cu Pb Zn Fe Ag	A1	HF

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19
SOILS

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

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059

ANALABS

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

663477

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 770	5.1.82	KP 2848	1 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15186	2.95%	5	85	X	30				
2	15187	2.35%	X	115	X	7				
3	15188	3750	X	15	X	10				
4	15189	5000	X	15	X	X				
5	15190	4950	30	575	0.5	15				
6	15191	5600	45	710	X	20				
7	15192	4250	5	85	X	20				
8	15193	3150	10	10	0.5	10				
9	15194	4400	X	10	X	5				
10	15195	7800	100	45	X	35				
11	15196	1.75%	55	75	X	10				
12	15197	1.85%	15	75	X	10				
13	15198	1.75%	10	75	X	10				
14	15199	1.45%	20	645	0.5	135				
15	15200	2.15%	20	65	X	10				
16	15201	1.95%	20	65	0.5	5				
17	15202	5550	10	80	X	10				
18	15203	5600	10	315	0.5	75				
19	15204	3850	55	320	0.5	65				
20	15205	1.60%	5	165	X	20				
21	15206	7750	10	15	X	15				
22	15207	5400	245	115	X	210				
23	15208	2.25%	20	150	X	80				
24	15209	2.55%	10	145	X	30				
25	15210	3400	10	100	0.5	25				

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

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060

ANALABS

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

663478

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 770	5.1.82	KP 2848	2 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15211	3600	10	95	X	25				
2	15212	2750	10	80	0.5	130				
3	15213	5650	10	50	X	195				
4	15214	2500	5	10	1.5	125				
5	15215	2650	55	35	X	300				
6	15216	5000	5	15	0.5	35				
7	15217	3650	5	15	X	10				
8	15218	4950	X	340	X	10				
9	15219	3050	X	15	X	5				
10	15220	5900	60	675	1.0	1250				
11	15221	6400	65	570	1.0	1150				
12	15222	2150	X	10	0.5	25				
13	15223	2900	5	10	X	30				
14	15224	3500	10	15	0.5	85				
15	15225	2750	X	175	X	90				
16	15226	4050	X	30	X	20				
17	15227	3450	X	95	X	70				
18	15228	4450	X	155	X	15				
19	15229	4350	X	20	X	X				
20	15230	4000	10	30	X	20				
21	15231	4050	10	30	X	20				
22	15232	4350	X	20	X	X				
23	15233	5600	X	25	X	X				
24	15234	2000	X	15	X	X				
25	15235	5500	X	20	X	X				

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

AUTHORISED OFFICER

061

ANALABS

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

663479

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 770	5.1.82	KP 2848	3 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15236	2100	X	15	X	X				
2	15237	3950	X	20	X	X				
3	15238	3600	X	40	X	X				
4	15239	5.35%	5	335	X	70				
5	15240	2.00%	X	320	X	255				
6	15241	2.30%	X	285	X	230				
7	15242	2.90%	145	1100	X	530				
8	15243	2.95%	1000	3550	0.5	1650				
9	15244	2450	X	20	X	X				
10	15245	9500	5	440	X	115				
11	15246	2.35%	X	330	0.5	120				
12	15247	4.55%	5	280	X	50				
13	15248	5.25%	25	155	X	45				
14	15249	4.05%	X	395	X	15				
15	15250	5.30%	10	1350	X	1750				
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER B Dove

062

ANALABS

663480

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
Telex AA92560

ANALYTICAL REPORT No. 83.1 08 835

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2861	K 571

DATE RECEIVED	RESULTS REQUIRED
19.1.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	25.1.82	3	27

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SC	KR 8851-77		1	3	2 4				Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

DDH V19-1

CORE

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

AUTHORISED OFFICER B Dow

ANALABS

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

663481

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 835	25.1.82	KP 2861	1 OF 3

TUBE No.	SAMPLE No.	Fe %	Cu	Zn	Mo	Pb				
1	8851	4500	10	145	0.5	45				
2	8852	4650	10	150	X	30				
3	8853	4550	10	225	X	40				
4	8854	3950	10	195	X	35				
5	8855	4050	10	415	X	30				
6	8856	4350	10	265	X	25				
7	8857	4850	5	405	X	10				
8	8858	4300	10	845	X	35				
9	8859	4250	5	170	X	5				
10	8860	5950	10	465	0.5	100				
11	8861	4050	5	205	X	15				
12	8862	4450	10	225	X	20				
13	8863	4100	10	310	0.5	10				
14	8864	4250	5	240	X	45				
15	8865	4550	5	260	X	5				
16	8866	4050	5	115	X	5				
17	8867	3750	5	145	X	15				
18	8868	3850	10	155	X	15				
19	8869	3950	10	195	X	10				
20	8870	9050	10	335	X	20				
21	8871	5450	10	145	X	20				
22	8872	3750	5	210	X	10				
23	8873	2950	10	125	0.5	30				
24	8874	4450	15	665	0.5	515				
25	8875	3950	10	205	0.5	5				

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

AUTHORISED OFFICER

ANALABS

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

663482

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 835	25.1.82	KP 2861	2 OF 3

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	8876	3100	15	110	X	5				
2	8877	2950	5	165	X	5				
3										
4										
5										
6										
7										
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23										
24										
25										

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

AUTHORISED OFFICER

065

ANALABS

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

663483

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 835	25.1.82	KP 2861	3 OF 3

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	STD FS4	7.30%	285	720	X	85				
2	RPT 8851	4450	10	135	X	45				
3	RPT 8870	8850	10	320	X	20				
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
24	DIGESTION	A1	A1	A1	A1	A1				
25	METHOD	A1/1	A1/1	A1/1	A1/1	A1/1				

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

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Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663484

ANALYTICAL REPORT No. 83.1 08 844

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2871	K 576

DATE RECEIVED	RESULTS REQUIRED
22.1.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	27.1.82	3	14

STATE OF SAMPLES

REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SC	KR 8878,79,	1	2		3				Cu Pb Zn Fe Ag	A1	AAS
	KR 8881-87			4	5						
	KR 8889-93										

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19
DDH-1
(CORE)

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

AUTHORISED OFFICER B Da[illegible]

ANALABS

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

663485

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 844	27.1.82	KP 2871	1 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	8878	6400	X	140	X	10				
2	8879	5300	X	115	X	20				
3	8881	1.35%	X	335	X	10				
4	8882	1.25%	X	120	X	10				
5	8883	1.25%	X	80	0.5	15				
6	8884	9900	X	75	X	15				
7	8885	9000	5	60	X	10				
[redacted]	8886	6900	X	50	X	20				
9	8887	1.20%	X	65	X	15				
10	8889	8800	X	45	X	15				
[redacted]	8890	8400	X	40	X	5				
12	8891	8700	X	45	X	X				
13	8892	8700	X	60	X	10				
14	8893	7300	X	95	X	15				
15										
16										
[redacted]										
18										
19										
20										
21										
22										
23										
[redacted]										
25										

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

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ANALABS

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

663486

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 844	27.1.82	KP 2871	2 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	STD FS4	7.70%	250	730	1.0	105				
2	RPT 8878	6350	X	140	X	10				
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
24	DIGESTION	A1	A1	A1	A1	A1				
25	METHOD	A1/1	A1/1	A1/1	A1/1	A1/1				

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

AUTHORISED OFFICER

Voyager 19 DDH 1

ANALABS

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663487

ANALYTICAL REPORT No. 83.1 08 881

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.: KP 2876 — PROJECT: K653

DATE RECEIVED: 2.2.82 — RESULTS REQUIRED:

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	10.2.82	3	10

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	KR 8894-8903		1	3	2 4				Cu Pb Zn Ag Fe	101	101

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19
DDH-1 CORE

STATE OF SAMPLES

whole core	WC
split core	SC
	CU
	Ro
	SO
	PU
	WA
	TI
stream sediment	SS
heavy mineral	HM

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Ma
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TTN
other chemicals means	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

B.M.

ANALABS

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

663488

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1/ 08 881	11.2.82		1 OF 2

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	KR 8894		7800	5	60	X	25			
2	KR 8895		1.15%	10	50	X	20			
3	KR 8896		1.10%	5	40	X	25			
4	KR 8897		1.15%	5	40	X	5			
5	KR 8898		1.65%	10	65	X	20			
6	KR 8899		1.10%	10	30	X	5			
7	KR 8900		7900	5	25	X	10			
8	KR 8901		1.10%	10	20	X	10			
9	KR 8902		1.10%	10	25	X	10			
10	KR 8903		8200	10	25	X	20			
11										
12										
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15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER

ANALABS

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

663489

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 881	11.2.82		2 OF 2

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	STD FS4		7.50%	295	725	0.5	110			
2	RPT KR 8894		7800	5	60	X	20			
3										
4										
5										
6										
7										
8										
9										
10										
[illegible]										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		50	5	5	0.5	5			
[illegible]	DIGESTION		101	101	101	101	101			
25	METHOD		101	101	101	101	101			

Results [illegible] otherwise specified
I = element present, but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

ANALABS

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663490

ANALYTICAL REPORT No. 83.1 08 882

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2876	K653.

DATE RECEIVED	RESULTS REQUIRED
2.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	11.2.82	3	135

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	KR 8904-9044 (Not Continuous)				1				Cu Pb Zn Ag Fe	101	101

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19 CORE

DDH 1

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
[illegible]	Ra	aqua regia	A4	alkaline attack	AA	colorimetry	COL
[illegible]	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
[illegible]	PL	HF mixture	A6	ignition	IG	titration	TTN
[illegible]	W	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	[illegible]
[illegible]	T	fusion	A8	glass fusion (XRF)	GF	miscellaneous	[illegible]
[illegible] sediment	S					fluorescence	[illegible]
heavy mineral	[illegible]					inductively coupled plasma	[illegible]

AUTHORISED OFFICER: B. [illegible]

ANALABS

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

663491

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 882	11.2.82	KP 2876	1 OF

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	8904	1.00%	20	100	X	10				
2	8905	9000	40	190	0.5	15				
3	8906	7600	25	150	0.5	10				
4	8907	8000	40	150	X	20				
5	8908	9500	25	135	0.5	20				
6	8909	9000	25	140	X	15				
7	8910	9000	40	120	X	10				
8	8911	7600	50	135	X	20				
9	8912	8300	45	280	X	15				
10	8913	7500	25	135	X	10				
[illegible]	8914	7700	35	130	X	10				
12	8915	1.15%	35	125	X	15				
13	8916	9000	20	160	0.5	10				
14	8917	9000	20	80	X	15				
15	8918	9500	30	170	0.5	25	VOYAGER 19		CORE	
16	8919	9000	20	100	X	15	DDH 1			
17	8920	8500	25	200	X	10				
18	8921	9000	25	275	X	25				
19	8922	9000	35	140	X	15				
20	8923	9000	70	325	0.5	10				
21	8924	8400	30	130	X	15				
22	8925	9500	25	145	X	15				
23	8926	1.05%	25	150	0.5	25				
[illegible]	8927	8500	20	140	X	25				
25	8928	1.30%	30	185	X	15				

Results in ppm [illegible] otherwise specified
[illegible] = element [illegible] but concentration too [illegible] pressure
X = element [illegible] concentration is below detection [illegible]
— = element [illegible] determined

AUTHORISED OFFICER

ANALABS

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

663492

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 882	11.2.82	KP 2876	2 OF

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	8929	1.10%	30	290	X	20				
2	8930	1.05%	30	250	0.5	15				
3	8931	1.10%	35	445	0.5	75				
4	8932	9000	35	365	X	65				
5	8933	6900	30	370	0.5	35				
6	8934	9500	30	325	X	45				
7	8935	1.20%	35	295	X	35				
8	8936	7900	40	2000	X	45				
9	8937	8300	45	1950	X	80				
10	8938	9500	35	930	X	90				
11	8939	9000	35	660	0.5	65				
12	8940	8000	35	410	0.5	40				
13	8941	9000	30	230	X	55				
14	8942	8200	30	270	X	40				
15	8943	1.50%	25	300	0.5	40	VOYAGER 19	CORE		
16	8944A	1.10%	60	690	0.5	125	DDH 1			
17	8944B	1.10%	20	310	X	60				
18	8945	1.05%	40	680	X	100				
19	8946	7400	35	270	0.5	60				
20	8947	1.05%	40	810	1.0	120				
21	8948	8000	25	500	X	65				
22	8949	7500	25	355	X	60				
23	8950	7400	35	700	0.5	110				
24	8951	1.00%	50	1150	0.5	145				
25	8952	7400	40	395	X	45				

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

AUTHORISED OFFICER

ANALABS

A division of MacDonald Hamilton & Co. (W.I.) Ltd.

663493

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 882	11.2.82	KP 2876	3 OF 7

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	8953	7250	195	610	1.0	110				
2	8954	7450	170	740	0.5	85				
3	8955	1.80%	40	565	0.5	335				
4	8956	4.10%	60	1100	X	65				
5	8958	2.50%	30	1000	0.5	375				
6	8959	2.25%	25	1100	0.5	270				
7	8961	2.25%	30	1400	X	125				
8	8962	1.95%	20	690	0.5	60				
9	8963	1.90%	60	1700	0.5	225				
10	8964	2.20%	55	1250	1.0	480				
11	8965	3.90%	35	2800	1.5	360				
12	8966	2.50%	65	1600	2.5	1150				
13	8967	2.70%	30	1200	2.5	620				
14	8968	2.20%	40	1800	3.5	1600				
15	8969	2.05%	325	2550	7.5	2750	VOYAGER II COPPER DRILL			
16	8970	2.40%	75	1000	1.5	475				
17	8971	2.10%	40	1450	3.0	955				
18	8972	1.85%	80	2500	5.0	2500				
19	8973	2.80%	50	1300	3.5	1000				
20	8974	1.85%	65	1550	6.5	6150				
21	8975	1.65%	45	1550	2.5	2550				
22	8976	2.00%	60	1500	1.5	425				
23	8977	1.95%	60	1200	X	115				
24	8978	1.80%	40	1200	0.5	75				
25	8979	1.50%	40	1650	X	60				

Results in ppm unless otherwise specified
N = element present, but concentration too low to measure
X = element not present above detection limits
- = element not determined

AUTHORISED OFFICER

ANALABS

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

663494

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 882	11.2.82	KP 2876	4 OF 7

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	8980	2.10%	30	1150	0.5	60				
2	8981	2.15%	40	2250	X	80				
3	8982	2.05%	40	1150	1.0	185				
4	8983	1.85%	25	670	1.0	315				
5	8984	1.95%	85	830	1.5	660				
6	8985	2.10%	100	1250	5.0	330				
7	8986	2.30%	20	900	X	70				
8	8987	1.85%	20	890	0.5	55				
9	8988	1.95%	20	760	X	95				
10	8989	1.95%	25	1350	X	45				
[illegible]	8991	1.75%	20	1250	0.5	65				
12	8992	2.15%	30	1550	0.5	55				
13	8993	1.85%	25	1000	0.5	40				
14	8994	2.05%	40	1800	0.5	600				
15	8995	1.85%	20	700	0.5	90				
16	8996	1.20%	20	875	1.5	670				
17	8997	1.95%	50	1400	4.0	2100				
18	8998	2.50%	40	620	1.0	435				
19	8999	3.75%	90	900	X	200				
20	9001	4.55%	65	575	0.5	185				
21	9002	4.50%	50	315	0.5	70				
22	9003	3.80%	45	260	X	45				
23	9004	2.20%	60	650	1.0	345				
[illegible]	9005	2.00%	50	490	1.0	245				
25	9006	1.60%	30	265	1.0	50				

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

AUTHORISED OFFICER

ANALABS

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

663495

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 882	11.2.82	KP 2876	5 OF 7

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	9007	2.00%	30	195	X	20				
2	9008	2.15%	70	295	X	35				
3	9009	2.10%	70	550	0.5	30				
4	9010	1.70%	40	345	X	50				
5	9011	3.10%	40	360	0.5	395				
6	9012	1.35%	50	190	0.5	45				
7	9013	1.55%	90	710	0.5	180				
8	9014	1.50%	55	615	0.5	40				
9	9015	2.25%	45	295	X	15				
10	9016	2.25%	55	380	0.5	50				
11	9017	2.25%	40	140	X	25				
12	9018	1.90%	35	175	X	35				
13	9019	1.85%	35	200	X	50				
14	9021	1.95%	125	3800	2.0	520				
15	9022	1.80%	70	840	2.0	410				
16	9023	1.65%	50	620	1.5	145				
17	9024	2.25%	55	265	3.0	175				
18	9025	2.40%	105	1800	3.0	255				
19	9026	1.20%	110	1450	2.5	450				
20	9027	1.70%	60	635	2.0	265				
21	9028	2.30%	25	360	1.0	180				
22	9029	1.20%	35	3450	1.5	120				
23	9030	1.85%	50	335	1.0	105				
24	9031	2.20%	40	215	1.0	50				
25	9032	2.55%	90	210	0.5	70				

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

AUTHORISED SIGNATURE

ANALABS

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

663496

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 882	11.2.82	KP 2876	6 OF 7

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	9033	4.85%	45	390	0.5	30				
2	9035	5.95%	30	600	0.5	50				
3	9036	6.00%	25	470	0.5	80				
4	9037	5.70%	55	460	X	20				
5	9038	6.10%	35	465	X	30				
6	9040	7.10%	35	490	X	50				
7	9041	5.55%	40	265	X	10				
8	9042	4.90%	75	240	X	30				
9	9043	5.55%	50	210	X	40				
10	9044	6.20%	60	210	X	15				
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Results in ppm unless otherwise specified
T = element present, but below detection limit
X = element not determined

AUTHORISED OFFICER

ANALABS

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

66349

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 882	11.2.82	KP 2876	7 OF 7

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	STD FS4	7.90%	320	700	0.5	100				
2	RPT 8904	9500	20	95	X	10				
3	RPT 8923	9000	70	355	X	10				
4	STD FS4	7.45%	310	730	1.0	100				
5	RPT 8944A	1.15%	70	700	0.5	125				
6	RPT 8964	2.20%	65	1250	1.0	495				
7	STD FS4	6.50%	315	715	0.5	100				
8	RPT 8985	1.95%	105	1250	5.0	325				
9	RPT 9006	1.65%	30	260	0.5	40				
10	STD FS4	7.50%	305	670	0.5	95				
11	RPT 9028	2.30%	30	350	1.0	180				
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
24	DIGESTION	101	101	101	101	101				
25	METHOD	101	101	101	101	101				

Results in ppm unless otherwise specified
T = present but concentration too low to measure
N = not detected at the lower detection limit
* = present but interfered

AUTHORISED OFFICER

ANALABS

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

663498

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 845

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2872	K 577

DATE RECEIVED	RESULTS REQUIRED
22.1.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	28.1.82	3	9

STATE OF SAMPLES (ENTER BELOW)	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER (SEE REMARKS)	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SC	KR 8957,60,90	1	2		3				Cu Pb Zn Ag As	A1	AAS
	KR 9000,20,34,39			4	5				Ba	A1	AAS
	KR 8880,88								Au		RG5M
									SilicateAnalysis		XRF

RESULTS TO: As Above

RESULTS TO:

REMARKS

✓

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
	RC	aqua regia	A4	alkaline attack	AA	colorimetry	COL
	SP	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
	BR	HF mixture	A6	ignition	IG	titration	TTN
	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemical methods	CHEM
		fusion	A8	glass fusion (XRF)	GFU		

ANALABS

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

663499 (Core)

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 845	17.2.82	KP 2872	1 OF 2

TUBE No.	SAMPLE No.	Na2O	Cu	Zn	As	Ag	Ba	Au	Pb	
1	8957	9974	30	520	53	X	310	X	70	
2	8960	7346	5	610	7	X	350	X	50	
3	8990	1314	5	1050	3	X	460	X	10	
4	9000	1584	30	1450	33	X	420	X	180	
5	9020	876	20	375	12	0.5	400	X	310	
6	9034	1078	30	590	2	X	430	0.052	10	
7	9039	1213	35	350	3	0.5	370	0.012	X	
8	8880	1.32%	5	245	8	X	200	0.012	5	
9	8888	2.42%	X	60	3	X	160	0.008	X	
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

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

B63500 (CORE)

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 845	17.2.82	KP 2872	2 OF 2

TUBE No.	SAMPLE No.	Na2O	Cu	Zn	As	Ag	Ba	Au	Pb	
1	STD FS4		260	710	21	0.5	370		95	
2	RPT 8957		30	500	58	X	300		70	
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	25	5	5	1	0.5	10	0.008	5	
24	DIGESTION		101	101	101	101			101	
25	METHOD	104	101	101	114	101	120	309	101	

Results in ppm unless otherwise specified

† = element present, but concentration too low to measure

X = element concentration is below detection limit

– = element not determined

AUTHORISED OFFICER

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

663601 (Core)

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 845	17.2.82	KP 2872	1 OF 1

TUBE No.	SAMPLE No.	MgO	Al2O3	SiO2	K2O	CaO	TiO2	MnO	Fe2O3	L.O.I.
1	8957	3.5	14.2	39.3	3.95	9.85	0.96	0.15	10.5	15.6
2	8960	1.9	11.8	67.3	4.15	3.25	0.46	0.07	3.65	6.8
3	8990	2.6	12.1	67.5	4.35	2.95	0.46	0.07	3.60	6.3
4	9000	4.3	14.4	42.0	4.55	8.90	0.91	0.18	9.35	15.1
5	9020	3.0	11.0	59.3	3.85	6.70	0.44	0.17	4.70	11.2
6	9034	3.5	13.8	42.7	4.65	9.15	1.10	0.14	10.0	14.8
7	9039	3.7	14.3	42.5	4.90	8.80	1.10	0.15	10.1	14.4
8	8880	0.9	11.3	79.4	3.10	0.01	0.21	0.02	1.15	1.9
9	8888	1.5	11.0	77.5	2.60	0.90	0.20	0.04	1.70	2.6
10										
12										
13										
14										
15										
16	NOTE: Results Expressed as Percentages									
17	Silicate Analysis									
18										
19										
20										
21										
22										
23	DETECTION									
	DIGESTION									
25	METHOD	408	408	408	408	408	408	408	408	408

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

... AUTHORISED OFFICER

084

ANALABS

Elliott

663502

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

Phone (09) 458 7999 | 52 Murray Road, Welshpool, W.A. 6106 | Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1572

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2918	K 716

DATE RECEIVED	RESULTS REQUIRED
14.10.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
		3	66

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	KR 8974-89,91-99	1	2		3				Cu Pb Zn Ag Fe	101	101
	KR 9001-19,21-33			4	5				Au		304
	KR 9035-38,40-44										

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19
CORE
DDH V19-1

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

ANALABS

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

663503

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1572	27.10.82	KP 2918	1 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Fe(%)	Mn			
1	8974	10	5850	1400	8.5	2.20	X			
2	8975	35	3200	1350	6.0	1.55	X			
3	8976	10	295	680	X	1.70	X			
4	8977	5	60	470	X	1.70	X			
5	8978	X	60	820	X	1.65	X			
6	8979	X	45	920	X	1.75	X			
7	8980	X	15	960	X	1.75	X			
8	8981	X	25	690	X	1.95	X			
9	8982	5	145	520	X	2.00	X			
10	8983	20	355	640	1.0	1.75	X			
11	8984	200	990	980	6.0	1.60	X			
12	8985	10	540	1300	1.0	2.15	X			
13	8986	X	35	880	0.5	1.85	X			
14	8987	X	35	410	X	1.75	X			
15	8988	X	70	780	X	1.70	X			
16	8989	X	50	1600	X	2.10	X			
17	8990	N/S	N/S	N/S	N/S	N/S	N/S			
18	8991	10	85	1300	X	1.75	X			
19	8992	X	40	1250	X	2.00	X			
20	8993	X	50	1150	X	1.80	X			
21	8994	X	65	1350	X	1.90	X			
22	8995	X	115	710	X	1.75	X			
23	8996	15	1250	960	2.5	1.45	X			
24	8997	15	1900	1050	4.0	2.00	X			
25	8998	30	555	660	1.0	2.70	X			

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

AUTHORISED OFFICER

ANALABS

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

663504

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1572	27.10.82	KP 2918	2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Fe(%)	Au			
1	8999	60	345	1200	1.0	5.40	X			
2	9000	N/S	N/S	N/S	N/S	N/S	N/S			
3	9001	35	225	750	X	5.50	X			
4	9002	40	190	320	X	5.50	X			
5	9003	45	65	230	X	5.10	X			
6	9004	20	465	480	0.5	2.40	0.012			
7	9005	30	315	300	0.5	1.90	X			
8	9006	10	60	130	X	1.70	X			
9	9007	5	15	100	X	2.70	X			
10	9008	10	15	140	X	2.40	X			
11	9009	10	20	120	X	2.00	X			
12	9010	20	60	300	0.5	1.80	X			
13	9011	30	65	250	X	3.70	X			
14	9012	10	75	150	X	1.30	X			
15	9013	10	225	590	0.5	1.20	X			
16	9014	10	30	70	X	1.30	X			
17	9015	15	15	120	X	2.50	X			
18	9016	10	50	170	X	2.65	0.008			
19	9017	10	25	60	X	2.20	0.008			
20	9018	10	20	80	X	2.65	0.008			
21	9019	20	140	360	1.0	2.50	0.041			
22	9020	N/S	N/S	N/S	N/S	N/S	N/S			
23	9021	30	340	1050	0.5	2.00	0.011			
24	9022	50	560	1600	1.5	1.90	0.011			
25	9023	65	315	1250	2.0	2.30	0.020			

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

AUTHORISED OFFICER

ANALABS

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

663505

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1572	27.10.82	KP 2918	3 OF

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Fe(%)	Au			
1	9024	20	185	310	1.5	2.90	0.016			
2	9025	50	305	940	3.0	2.50	0.015			
3	9026	10	575	800	2.0	1.20	0.014			
4	9027	20	245	335	X	1.70	0.021			
5	9028	10	225	240	X	2.25	0.011			
6	9029	15	240	350	0.5	1.05	X			
7	9030	40	145	230	X	1.45	X			
8	9031	30	65	125	0.5	2.30	X			
9	9032	80	170	180	X	2.35	X			
10	9033	20	25	340	X	4.50	X			
11	9034	N/S	N/S	N/S	N/S	N/S	N/S			
12	9035	15	35	460	X	5.90	0.011			
13	9036	20	130	470	X	5.90	X			
14	9037	15	90	450	X	5.55	X			
15	9038	30	20	430	X	6.50	0.008			
16	9039	N/S	N/S	N/S	N/S	N/S	N/S			
17	9040	30	30	490	X	7.50	X			
18	9041	20	10	165	X	5.20	X			
19	9042	20	15	140	X	4.75	X			
20	9043	30	5	150	X	5.10	X			
21	9044	30	10	140	X	6.50	X			
22										
23										
24										
25										

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

AUTHORISED OFFICER

ANALABS

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

ANALYTICAL DATA

663506

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1572	27.10.82	KP 2918	4 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Fe(%)	Au			
1	STD FS4	305	100	750	0.5	7.50				
2	RPT 8974	10	5850	1450	8.5	2.20				
3	RPT 8994	X	65	1300	X	1.80				
4	STD FS4	305	100	680	0.5	7.50				
5	RPT 9016	10	50	165	X	2.70				
6	RPT 9037	15	100	450	X	6.00				
7										
8										
9										
10										
11										
12										
13										
14	NOTE: N/S - Sample Not Submitted									
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	50	0.008			
24	DIGESTION	101	101	101	101	101				
25	METHOD	101	101	101	101	101	304			

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

AUTHORISED OFFICER

089-17 ← 110T

ANALABS

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663507

ANALYTICAL REPORT No. 83.1 08 1212

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3066	

DATE RECEIVED	RESULTS REQUIRED
17.5.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	3.6.82	3	118

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
PU	Various							1	Ca Mg K Na	103	103

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19

DDH V19-1

CORE

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

AUTHORISED SIGNATORY

ANALABS

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

663508

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1212	3.6.82	KP 3066	1 OF 5

TUBE No.	SAMPLE No.	Na	Mg	K (%)	Ca					
1	8894	7900	7500	2.95	5350					
2	8895	7550	9600	3.85	7750					
3	8896	7900	7800	2.75	1.15%					
4	8897	8300	8350	3.00	8250					
5	8898	6750	8200	3.20	8900					
6	8899	1.15%	6750	2.75	7350					
7	8900	1.05%	7400	3.10	8950					
8	8901	9000	7100	2.80	1.15%					
9	8902	7200	8800	3.00	9500					
10	8903	7250	7600	3.40	1.05%					
11	8851	X 1150	3400	3.10	80					
12	8852	100	4500	4.20	115					
13	8853	400	4200	3.65	55					
14	8854	400	4150	3.70	5					
15	8855	300	4950	4.20	X		VOYAGER 9			
16	8856	400	4450	4.40	15					
17	8857	500	4900	4.85	15		DDH V19-1			
18	8858	400	4000	4.05	X		CORE			
19	8859	400	4350	4.05	15					
20	8860	450	3500	3.20	5					
21	8861	500	4050	3.85	X					
22	8862	1700	5350	4.75	75					
23	8863	3400	4400	3.90	95					
24	8864	1300	4300	3.90	45					
25	8865	2400	5000	4.30	90					

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

AUTHORISED OFFICER

ANALABS

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

663509

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1212	3.6.82	KP 3066	2 OF 5

TUBE No.	SAMPLE No.	Na	Mg	K(%)	Ca					
1	8866	5150	5050	4.20	110					
2	8867	2800	4550	3.65	70					
3	8868	3800	5000	3.95	115					
4	8869	3850	5700	4.25	125					
5	8870	6250	5400	3.80	1650					
6	8871	3500	4750	3.65	435					
7	8872	3600	4600	3.65	120					
8	8873	4550	3250	2.80	155					
9	8874	700	6150	4.90	85					
10	8875	1550	5650	5.25	160					
[illegible]	8876 X	2650	5000	3.80	180					
12	8877	5150	3500	1.65	180					
13	8878	7250	4950	3.35	1100					
14	8879	6800	4700	3.40	150					
15 X	8881	5200	5200	3.40	1000		VOYAGER	19		
16	8882	5300	7500	3.45	7500					
17	8883	1.20%	7100	2.30	9500		ODH	V19-1		
18	8884	9500	6700	3.05	6350			CORE		
19	8885	1.40%	5350	2.50	6450					
20	8886	1.10%	5100	2.70	4200					
21	8887	8250	6850	3.05	5700					
22	8889	1.40%	5950	3.80	5550					
23	8890	1.45%	5700	2.75	5650					
[illegible]	8891	1.05%	6500	3.25	6550					
25	8892	1.15%	6850	3.15	7700					

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

AUTHORISED OFFICER

ANALABS

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

663510

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1212	3.6.82	KP 3066	3 OF 5

TUBE No.	SAMPLE No.	Ba	Mg	K2O	Ca					
1	8893	1.95%	5250	2.40	1.15%					
2	8974	750	1.15%	3.15	2.80%					
3	8975	850	1.05%	3.85	2.15%					
4	8976	2000	1.35%	3.70	2.80%					
5	8977	6000	1.65%	3.10	4.45%					
6	8978	7250	1.40%	3.30	2.95%					
7	8979	1.10%	1.65%	3.00	4.05%					
8	8980	5500	1.65%	3.30	3.70%					
9	8981	8250	1.40%	3.00	2.85%					
10	8982	1.00%	1.35%	3.00	2.50%					
11	8983	6450	1.80%	3.20	3.55%					
12	8984	1100	1.55%	2.20	14.0%					
13	8985	1400	1.60%	3.05	5.85%					
14	8986	4350	1.05%	3.70	1.65%					
15	8987	4650	1.35%	3.40	4.00%		VOYAGER			
16	8988	2150	1.75%	3.15	4.90%					
17	8989	1550	1.20%	3.15	2.60%		DDH VG-1			
18	8991	750	1.00%	3.45	3.90%		CORE			
19	8992	850	1.30%	3.30	4.75%					
20	8993	850	1.15%	3.40	2.55%					
21	8994	850	1.25%	2.90	6.80%					
22	8995	800	1.35%	3.45	4.45%					
23	8996	650	9750	3.50	4.00%					
24	8997	800	2.50%	3.80	5.15%					
25	8998	900	2.60%	3.85	4.90%					

Results apply to sample(s) as received.
* = Insufficient sample. Not carried through to final measure.
X = See Interpretative Report. Not to be used for Certification.
— = Element not determined.

AUTHORISED OFFICER

ANALABS

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

663511

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
[redacted]	83.1 08 1212	3.6.82	KP 3066	4 OF 5

TUBE No.	SAMPLE No.	Na	Mg	K(%)	Ca					
1	8999	1150	2.90%	2.70	4.40%					
2	9001	2350	2.50%	3.50	7.25%					
3	9002	2000	2.55%	3.50	7.35%					
4	9003	1250	2.75%	3.80	6.40%					
5	9004	850	1.75%	3.65	3.20%					
6	9005	750	1.60%	4.15	2.75%					
7	9006	650	1.40%	3.70	2.35%					
8	9007	800	1.90%	4.60	3.05%					
9	9008	800	2.45%	3.80	4.75%					
10	9009	800	1.85%	5.45	2.90%					
[redacted]	9010	800	1.65%	4.90	2.65%					
12	9011	1050	3.00%	4.35	6.30%					
13	9012	700	1.35%	4.70	1.70%					
14	9013	700	1.50%	4.40	2.60%					
15	9014	750	1.80%	3.75	3.40%					
16	9015	900	2.60%	4.10	5.45%					
17	9016	850	2.80%	3.70	6.85%					
18	9017	800	1.80%	3.30	3.30%					
19	9018	800	1.80%	5.00	3.35%					
20	9019	850	1.50%	4.80	2.35%					
21	9021	750	1.65%	4.15	3.05%					
22	9022	800	1.65%	4.50	3.00%					
23	9023	750	1.55%	4.80	2.35%					
[redacted]	9024	950	1.75%	4.90	2.40%					
25	9025	850	1.55%	4.15	2.55%					

Results as printed unless otherwise specified
T = Trace present but concentration not determinable
X = Element present but concentration is below detection limit
— = Element not determined

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

663512

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1212	3.6.82	KP 3066	5 OF 5

TUBE No.	SAMPLE No.	Na	Mg	K(%)	Ca					
1	9026	650	9950	4.15	1.50%					
2	9027	700	1.25%	3.90	2.50%					
3	9028	800	2.85%	3.60	6.50%					
4	9029	650	1.00%	4.75	1.20%					
5	9030	700	1.40%	4.75	2.35%					
6	9031	800	2.00%	4.85	3.95%					
7	9032	850	1.95%	4.45	3.90%					
8	9033	1400	2.20%	3.95	5.05%					
9	9035	3000	2.15%	3.55	6.25%					
10	9036	4800	2.20%	3.50	5.85%					
11	9037	4400	2.25%	3.70	6.10%					
12	9038	2450	2.30%	3.95	6.05%					
13	9040	1600	2.35%	4.25	4.65%					
14	9041	1400	1.90%	5.10	3.15%					
15	9042	1250	2.50%	3.95	4.80%					
16	9043	2150	2.30%	4.85	4.35%					
17	9044	1500	2.75%	4.55	5.40%					
18										
19										
20										
21										
22										
23	DETECTION	50	5		5					
24	DIGESTION	103	103	103	103					
25	METHOD	103	103	103	103					

AUTHORISED OFFICER

ANALABS

663513

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1191

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3055	

DATE RECEIVED	RESULTS REQUIRED
11.5.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	28.5.82	3	14

REFER BELOW	SAMPLE NUMBERS	STATE OF SAMPLES	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
RO	KR 9623-31,34,36 KR 9637,39,40		1		3	2 4				Cu Pb Zn Ag Fe Ba	101	101 120

RESULTS TO: As Above

RESULTS TO:

REMARKS

STATE OF SAMPLES

whole core	WC
split core	SC
cutting	CU
	RO
	SO
	PU
	WA
	TI
	SS
heavy mineral	HM

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Ma
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TTR
other chemicals (name)	OTHER
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

ANALABS

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

663514

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1191	28.5.82	KP 3055	1 OF 2

TUBE No.	SAMPLE No.		Fe	Cu	Zn	As	Ag	Ba	Pb	
1	9623		7600	X	105	1	0.5	600	X	
2	9624		4800	X	10	3	X	680	X	
3	9625		6200	X	10	X	X	315	X	
4	9626		1950	X	X	X	X	390	X	
5	9627		2650	X	115	4	2.5	1165	20	
6	9628		7950	40	230	4	X	260	45	
7	9629		3950	5	20	X	0.5	145	5	
8	9630		5.55%	5	145	4	X	330	15	
9	9631		9000	X	20	3	X	40	X	
10	9634		8600	20	105	15	X	580	60	
[redacted]	9636		2.30%	15	250	2	X	365	25	
12	9637		3650	X	10	X	X	245	X	
13	9639		3000	X	10	1	X	420	X	
14	9640		4450	X	10	1	X	385	5	
15										
16										
17										
18										
19										
20										
21										
22										
23										
[redacted]										
25										

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

AUTHORISED OFFICER

ANALABS

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

663515

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1191	28.5.82	KP 3055	2 OF 2

TUBE No.	SAMPLE No.		Fe	Cu	Zn	As	Ag	Ba	Pb	
1	STD FS4		7.30%	320	755	24	0.5	415	100	
2	RPT KR 9623		8500	X	110	1	X	620	5	
3										
4										
5										
6										
7										
8										
9										
10										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		50	5	5	1	0.5	5	5	
	DIGESTION		101	101	101		101		101	
25	METHOD		101	101	101	114	101	120	101	

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

AUTHORISED OFFICER

ANALABS

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

52 Murray Road, Welshpool, W.A. 6106

Phone (09) 458 7999 — Telex AA92560

1/2 core

663516

8904 - 73

60 - 130m ✓

~~grid~~ split core

ANALYTICAL REPORT No. 83.1 08 1149

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3045	K 701

DATE RECEIVED	RESULTS REQUIRED
27.4.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	5.5.82	3	70

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SC	KR 8904-73		1		2				Cu Pb Zn Ag Fe	101	101
				3	4				Ca Mg K Na	103	103

DDH V19-1
60-130m 1/2 core

RESULTS TO: As Above

RESULTS TO:

REMARKS

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

ANALABS

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

ANALYTICAL DATA

66351

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KP30m	83.1 08 1149	6.5.82	KP 3045	1 OF 4

TUBE NUMBER	SAMPLE No.	Na	Mg	K%	Ca	Fe	Cu	Zn	Hg	Pb
Split for	8904	7550	9550	3.50	8400	9800	5	35	X	10
2	8905	5650	8700	3.30	9300	9400	X	40	X	15
3	8906	7850	8000	4.10	5700	7950	X	35	X	5
4	8907	1.75%	1.65%	7.35	1.60%	9050	X	35	X	X
5	8908	3950	9050	2.95	3.10%	8250	X	35	X	X
6	8909	3800	9000	3.10	3.25%	9450	5	55	X	10
7	8910	9050	8850	3.35	1.30%	8250	5	35	X	X
8	8911	9650	7550	3.10	6900	7200	10	30	X	X
9	8912	8200	8650	3.30	7650	8650	5	40	X	X
10	8913	6850	7950	3.45	1.00%	8250	BDH	V30-1	X	10
11	8914	1.25%	7200	2.75	1.45%	7950	5	60-50m	Ba cr	10
12	8915	5400	9800	3.60	9350	9150	X	45	X	5
13	8916	2350	1.25%	5.25	9500	1.00%	X	55	X	5
14	8917	5400	8450	4.00	8100	8200	X	30	X	10
15	8918	6750	8750	3.50	7850	8250	X	30	X	X
16	8919	4500	9450	3.80	7750	8050	X	25	X	X
17	8920	3700	9500	3.90	7150	8400	X	25	X	X
18	8921	1.15%	8200	3.05	1.90%	8950	5	75	X	35
19	8922	4700	1.00%	3.25	1.10%	1.05%	5	60	X	X
20	8923	2900	9500	3.85	9000	1.00%	5	35	X	X
21	8924	8000	8050	3.50	1.00%	1.00%	5	35	X	15
22	8925	6400	8900	3.35	8000	9700	X	80	X	25
23	8926	2350	8900	3.55	9500	9700	X	70	X	20
24	8927	1450	9800	4.00	2.45%	9950	X	70	X	25
25	8928	1250	1.10%	3.65	2.80%	1.15%	X	80	X	30

Results reported to limits of determination specified.
* = Interference present, but concentration not less than limit shown.
X = Element concentration is below detection limit.
— = Element not determined.

AUTHORISED OFFICER

ANALABS

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

ANALYTICAL DATA

663518

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR 3045	83.1 00 1149	6.5.82	KP 3045	2 OF 4

TUBE No.	SAMPLE No.	Na	Mg	K (%)	Ca	Fe	Cu	Zn	Ag	Pb
1	8929	2950	1.05%	3.60	3.00%	1.00%	X	75	X	30
2	8930	725	1.05%	4.20	7750	9050	5	30	X	30
3	8931	1600	1.05%	3.75	2.15%	1.00%	5	315	X	190
4	8932	2050	9650	3.55	1.20%	1.10%	15	360	X	95
5	8933	2650	9800	4.25	1.05%	8100	5	250	X	65
6	8934	3550	8900	3.25	9100	1.00%	10	185	X	80
7	8935	1850	8850	3.80	7000	8900	X	70	X	25
8	8936	3950	8250	4.00	4950	8150	X	120	0.5	35
9	8937	8500	1.15%	3.45	2.85%	9650	10	300	X	50
10	8938	5550	1.15%	4.50	1.80%	9400	10	480	X	90
11	8939	2800	9800	4.80	7050	7650	10	265	X	65
12	8940	1300	6400	3.15	4250	8850	5	170	X	50
13	8941	3200	8550	4.00	6650	8050	5	210	X	75
14	8942	5150	9150	2.65	8100	7750	5	195	0.5	45
15	8943	2200	9300	4.15	4000	1.00%	10	145	X	60
16	8944	2200	9400	3.75	9550	1.15%	10	245	X	55
17	8945	4400	9500	2.95	1.45%	1.00%	5	195	X	345
18	8946	710	8550	3.65	1.20%	9750	5	220	X	95
19	8947	900	8850	4.45	3450	9650	5	600	X	140
20	8948	1050	9600	4.85	3850	9850	10	475	X	115
21	8949	1500	9500	4.75	3450	7350	X	325	X	105
22	8950	1900	9800	4.70	8150	9650	10	720	X	180
23	8951	2300	8600	3.60	2.40%	1.05%	15	590	X	200
24	8952	3300	8200	2.80	1.70%	9950	5	135	X	75
25	8953	2500	7550	3.60	9250	7400	10	345	X	170

Results in ppm unless otherwise specified
T = sample received in tarnished condition, may affect results
X = element not detected in excess of detection limit
— = element not determined

AUTHORISED OFFICER

ANALABS

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

663519

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1149	6.5.82	KP 3045	3 OF 4

TUBE No.	SAMPLE No.	Na	Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Pb
1	8954	825	8850	4.00	1.35%	8950	5	310	X	150
2	8955	950	1.45%	3.75	3.05%	1.95%	15	425	X	370
3	8956	3000	2.05%	4.10	4.35%	4.65%	15	610	X	105
4	8958	1550	1.90%	3.60	3.90%	2.20%	10	655	0.5	185
5	8959	2650	2.15%	3.40	4.90%	2.25%	10	500	X	175
6	8961	3900	1.30%	3.55	2.70%	2.20%	5	985	X	155
7	8962	4850	1.20%	3.65	2.25%	2.00%	10	565	X	130
8	8963	4450	1.45%	3.45	2.60%	2.00%	10	915	X	350
9	8964	2900	1.85%	3.00	3.75%	2.05%	15	1200	X	575
10	8965	950	4.60%	2.05	13.5%	3.45%	10	2800	X	730
11	8966	755	2.20%	3.25	5.25%	2.15%	45	1400	0.5	1400
12	8967	715	1.75%	3.45	3.25%	1.85%	15	950	X	630
13	8968	900	2.35%	3.25	4.80%	2.75%	90	2600	6.5	2350
14	8969	655	1.65%	3.35	2.80%	2.00%	65	1600	2.0	1100
15	8970	755	2.55%	3.05	5.00%	2.20%	10	955	X	710
16	8971	735	2.10%	3.05	4.35%	1.95%	15	1150	2.0	1150
17	8972	650	1.95%	3.40	3.70%	1.65%	85	2650	8.0	3400
18	8973	755	2.70%	2.90	5.85%	2.45%	15	1000	0.5	1200
19										
20										
21										
22										
23										
24										
25										

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

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102

ANALABS

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

663520

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1149	6.5.82	KP 3045	4 OF 4

TUBE No.	SAMPLE No.	Na	Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Pb
1	STD FS4					7.25%	285	710	X	85
2	RPT 8904					9700	5	35	X	10
3	RPT 8923					1.00%	5	35	X	5
4	STD FS4					7.30%	290	740	X	105
5	RPT 8944					1.15%	10	225	X	50
6	RPT 8963					2.05%	10	800	X	330
7										
8										
9										
10										
[illegible]										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	50	5	50	5	5	0.5	5
[illegible]	DIGESTION					101	101	101	101	101
25	METHOD	103	103	103	103	101	101	101	101	101

Results in [illegible] otherwise specified
T = [illegible] but concentration too [illegible] measure
X = [illegible] concentration is below detection limit
[illegible] = element not determined

AUTHORISED OFFICER [signature]

103 Costean Voyager 19

ANALABS

663521

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 842

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2868	K 573

DATE RECEIVED	RESULTS REQUIRED
22.1.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	28.1.82	3	16

STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHO
RO	KR 9351-66		1		2				Cu Pb Zn Fe Ag	A1	AA
				3	4				As Ba	A1	AA
									Au		RG

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19

Costean chip samples

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

AUTHORISED OFFICER

104

ANALABS

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

663522

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 842	3.2.82	KP 2868	1 OF 2

TUBE No.	SAMPLE No.		Fe	Cu	Zn	As	Ag	Ba	Au	Pb
1	KR 9351		5600	90	160	8	9.0	540	0.075	1950
2	KR 9352		7150	75	630	10	4.5	730	0.038	2450
3	KR 9353		6150	20	120	3	1.5	710	X	950
4	KR 9354		4600	30	1550	9	22	710	0.050	1.08%
5	KR 9355		6750	80	1.07%	17	58	700	0.100	1.66%
6	KR 9356		3000	1750	20.3%	200	770	4450	0.900	15.5%
7	KR 9357		4300	2800	25.4%	160	990	830	1.15	17.3%
8	KR 9358		2750	1500	20.0%	130	279	660	0.484	9.01%
9	KR 9359		9950	195	3.36%	46	92	860	0.212	2.25%
10	KR 9360		6500	45	1700	10	8.0	740	0.025	3550
11	KR 9361		1.25%	195	2100	16	16.0	660	0.038	3950
12	KR 9362		4700	10	175	3	3.0	400	0.012	555
13	KR 9363		4600	10	355	2	3.5	420	0.025	715
14	KR 9364		6100	30	1150	4	2.0	270	0.012	860
15	KR 9365		4400	15	310	6	2.0	650	0.012	340
16	KR 9366		5900	30	210	4	1.5	870	0.012	255
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER

ANALABS

663523

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

Elliott

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 ud 1573

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2916	K 708

DATE RECEIVED	RESULTS REQUIRED
14.10.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
1		3	47

STATE OF SAMPLES (REFER BELOW)	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	KR 10106,107							1	Au		3B4
	KR 10108-122							1			
	KR 10020-032										
	KR 10033,034										
	KR 8958-8973										

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19

DRILL CORE

DDH V19-1

STATE OF SAMPLES

whole core	WC
split core	SC
cutting	CU
rock	Ro
soil	SO
pulp	PU
water	WA
tissue	TI
stream sediment	SS
heavy mineral	HM

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Mo
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TTN
other chemicals means	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

AUTHORISED SIGNATURE

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

663524

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1573	28.10.82	KP 2916	1 OF 3

TUBE No.	SAMPLE No.	Au									
1	10106	0.008									
2	10107	0.029									
3	10108	0.057									
4	10109	0.033									
5	10110	0.086									
6	10111	0.057									
7	10112	0.055									
8	10113	0.076									
9	10114	0.032									
10	10115	0.015									
11	10116	0.019									
12	10117	0.035									
13	10118	0.013									
14	10119	0.055									
15	10120	0.013									
16	10121	0.017									
17	10122	0.042									
18	10020	X									
19	10021	X									
20	10022	X									
21	10023	X									
22	10024	X									
23	10025	X									
24	10026	X									
25	10027	X									

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

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

663825

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1573	28.10.82	KP 2916	2 OF 3

TUBE No.	SAMPLE No.	Mo								
1	10028	X								
2	10029	X								
3	10030	X								
4	10031	X								
5	10032	X								
6	10033	X								
7	10034	X								
8	8958	X								
9	8959	0.008								
10	8960	N/S								
11	8961	X								
12	8962	X								
13	8963	X								
14	8964	X								
15	8965	X								
16	8966	0.008								
17	8967	X								
18	8968	X								
19	8969	X								
20	8970	X								
21	8971	X								
22	8972	X								
23	8973	X								
25										

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

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

083526

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1573	28.10.82	KP 2916	3 OF 3

TUBE No.	SAMPLE No.	Pb%								
1	DETECTION									
2	DIGESTION									
3	METHOD	304								
4										
5										
6										
7										
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9										
10										
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22										
23										
25										

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

AUTHORISED OFFICER

Voyager 19 DDH 2

ANALABS

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

52 Murray Road, Welshpool, W.A. 6106

Phone (09) 458 7999 Telex AA92560

A03527

ANALYTICAL REPORT No. 83.1 08 1005

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3016	K 598

DATE RECEIVED	RESULTS REQUIRED
8.3.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	23.3.82	3	53

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SC	KR 10055-107		1	3	2 4				Cu Pb Zn Fe Ag Ba Ca Mg K	101 103	101 120 103

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19 DDH V19-2

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cuttings	CU	nitric acid	A3	other mixed acids	Mix	spectrophotometry	SPEC
[illegible]	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
[illegible]	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
[illegible]	PU	HF mixture	A6	ignition	IG	titration	TTN
[illegible]	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemistry means	CHEM
[illegible]	[illegible]	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
[illegible]	[illegible]					fluorescence	FLUOR
[illegible]	[illegible]					inductively coupled plasma	ICP
[illegible]	[illegible]						

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

663528

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1005	23.3.82	KP 3016	1 OF 4

TUBE No.	SAMPLE No.	Mg	K	Ca	Fe	Cu	Zn	Ag	Ba	Pb
1	10055	4050	3.85%	X	5200	30	120	0.5	320	175
2	10056	3550	2.40%	75	5200	5	70	7.0	380	95
3	10057	4050	3.05%	125	6000	10	300	X	360	205
4	10058	4000	3.20%	225	6600	10	195	X	385	140
5	10059	3600	3.35%	275	5500	10	145	X	295	80
6	10060	4900	4.40%	325	5600	X	105	0.5	325	85
7	10061	3400	3.40%	275	5400	5	70	X	260	60
8	10062	2750	3.90%	150	6250	5	85	X	250	75
9	10063	3000	4.65%	100	6700	X	80	X	305	70
10	10064	2900	4.90%	150	7500	X	215	X	330	175
[illegible]	10065	3150	4.90%	200	6500	X	225	X	300	100
12	10066	2550	4.45%	400	1.25%	X	190	6.0	245	35
13	10067	3350	6.50%	150	1.20%	X	175	X	360	20
14	10068	3300	4.10%	1550	7650	X	185	0.5	265	35
15	10069	2750	4.95%	225	5350	X	135	0.5	300	25
16	10070	3400	4.95%	250	5250	X	105	0.5	320	15
17	10071	7900	6.90%	985	8000	80	5150	6.5	290	1400
18	10072	1.50%	6.30%	1.20%	1.55%	45	2050	5.5	295	580
19	10073	8550	4.45%	6950	9500	5	1300	1.0	250	170
20	10074	9500	4.25%	1.05%	8500	5	85	0.5	230	55
21	10075	9400	4.15%	1.05%	8300	X	215	0.5	200	45
22	10076	6050	3.95%	5650	6600	15	130	1.0	190	80
23	10077	6000	4.65%	5250	7600	10	295	1.5	250	115
[illegible]	10078	5100	4.35%	5700	7000	5	340	1.5	225	155
25	10079	4600	3.90%	5300	6250	10	255	1.5	200	175

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

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

663529

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1005	23.3.82	KP 3016	2 OF

TUBE No.	SAMPLE No.	Mg	K	Ca	Fe	Cu	Zn	Ag	Ba	Pb
1	10080	5600	6.15%	5550	6400	X	85	0.5	215	105
2	10081	6500	6.50%	1.20%	6950	25	320	2.0	460	665
3	10082	6400	3.95%	2.75%	8400	25	4850	7.5	1250	3150
4	10083	5100	4.70%	1.45%	7750	15	305	1.5	535	165
5	10084	5350	4.90%	6500	8300	X	205	1.0	320	135
6	10085	5300	3.80%	9400	8600	X	180	1.0	400	75
7	10086	7900	3.85%	1.60%	8100	10	150	1.0	305	75
8	10087	5250	3.80%	7600	7300	10	150	0.5	350	55
9	10088	9550	3.65%	1.70%	8000	5	220	1.0	290	75
10	10089	7400	4.10%	7100	8000	10	155	1.5	405	35
11	10090	7200	4.15%	5950	8000	10	290	2.0	405	110
12	10091	8100	4.75%	7450	9100	5	370	1.0	360	115
13	10092	7950	4.25%	1.20%	1.15%	15	445	2.5	410	135
14	10093	7850	4.35%	7500	9000	30	435	2.5	505	235
15	10094	8050	4.45%	6050	8900	20	500	2.0	395	200
16	10095	8550	4.35%	7600	9200	70	1450	2.5	400	1300
17	10096	3250	2.20%	1.05%	5900	260	1750	4.0	330	1900
18	10097	5900	2.95%	1.05%	5100	40	690	13.0	355	1200
19	10098	4200	2.40%	8600	5100	450	1.20%*	10.5*	330	7850*
20	10099	3800	2.85%	2650	4800	45	310	1.0	370	522
21	10100	4900	1.70%	1.55%	7400	30	3800	2.5	1100	1650
22	10101	4100	2.65%	4400	7400	25	1800	5.0	8350	4250
23	10102	6950	2.45%	1.50%	8200	20	395	2.5	2650	695
24	10103	2.40%	2.25%	4.60%	1.65%	25	315	1.0	330	155
25	10104	4.15%	7.30%	7.70%	1.05%	70	3150	5.5	390	1800

Results in ppm unless otherwise stated.
* = above detection limit but concentration too low for accurate determination
X = element not detected or below detection limit
- = element not determined

AUTHORISED OFFICER

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

663530

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1005	23.3.82	KP 3016	3 OF

TUBE No.	SAMPLE No.	Mg	K	Ca	Fe	Cu	Zn	Ag	Ba	Pb
1	10105	5800	1.55%	3.50%	9000	600	3.27%*	28.0*	165	1.37%*
2	10106	8550	4.20%	1.05%	9200	20	560	1.5	500	205
3	10107	8900	3.85%	1.15%	7700	50	770	2.0	400	760
4										
5										
6										
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21										
22										
23										
24										
25										

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

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

663531

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1005	23.3.82	KP 3016	4 OF

TUBE No.	SAMPLE No.	Mg	K	Ca	Fe	Cu	Zn	Ag	Be	Pb
1	STD FS4				9.20%	315	830	0.5	380	110
2	RPT 10055				6000	40	125	0.5	330	185
3	RPT 10074				8500	5	100	1.0	205	55
4	STD FS4				8.50%	310	730	1.0	400	110
5	RPT 10095				9200	70	1450	3.5	415	1300
6										
7										
8										
9										
10										
11										
12										
13										
14	NOTE: * Analysed by Method 104									
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	50	5	50	5	5	0.5	5	5
24	DIGESTION	103	103	103	101	101	101	101		101
25	METHOD	103	103	103	101	101	101	101	120	101

Results in ppm unless otherwise specified

T = element present, but concentration too low to measure

N = element concentration is below detection limit

— = element not determined

AUTHORISED OFFICER

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663532

ANALYTICAL REPORT No. 83.1 00 1178

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3053	K 702

DATE RECEIVED	RESULTS REQUIRED
6.5.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	13.5.82	3	146

STATE OF SAMPLES:

REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	% SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
GC	KR 10226-11605 (Not Continuous)				1				Cu Pb Zn Ag Fe Ca Mg K Na	101	101 10

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19

DDH-3

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

ANALABS

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

663533

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1178	31.5.82	KP 3053	1 OF 7

TUBE No.	SAMPLE No.	Na	Mg	K	Ca	Fe	Cu	Zn	Ag	Pb
1	10226	2000	8000	4.00%	100	3800	30	300	X	25
2	10228	2300	8000	4.25%	150	4100	30	235	X	10
3	10230	1900	7750	3.95%	400	3500	30	170	X	10
4	10232	9400	5700	3.00%	X	3100	45	175	0.5	25
5	10234	6600	8500	4.20%	1250	7700	30	440	X	55
6	10236	1.05%	8150	3.80%	3400	6700	30	435	X	70
7	10238	1.20%	8300	3.75%	9800	7050	25	275	X	65
8	10240	8000	8400	3.85%	8100	6100	80	410	X	20
9	10242	9400	8300	3.90%	7900	5850	25	910	X	35
10	10244	5300	8950	4.15%	2.40%	7000	35	730	0.5	45
11	10246	3900	9250	4.60%	1.30%	7450	25	560	X	105
12	10248	3900	8650	4.50%	9400	6000	35	425	0.5	75
13	10250	3900	8350	4.65%	5500	8850	25	425	X	55
14	10252	3900	7900	4.45%	1.25%	7150	35	365	X	125
15	10254	5300	5800	4.65%	2900	6600	30	720	X	80
16	10256	9400	3650	4.75%	1550	6850	55	355	X	65
17	10258	7800	4250	5.35%	1500	7250	65	580	0.5	40
18	10260	1.10%	3900	4.85%	1900	8950	80	580	X	65
19	10262	4200	4200	5.45%	2000	7950	70	460	X	45
20	10264	2300	4150	2.65%	2000	5650	55	500	X	95
21	10266	1500	3150	5.70%	2100	5850	50	310	0.5	185
22	10268	1100	2700	6.15%	1000	5600	105	420	0.5	815
23	10270	900	1800	5.20%	500	9100	1950	2.05%*	68*	5.81%*
24	10272	1.05%	2150	6.05%	6100	8650	410	3100	9.0	1950
25	10274	950	2450	6.00%	1.05%	9550	75	350	X	260

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

AUTHORISED OFFICER

116

ANALABS

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

663534

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1178	31.5.82	KP 3053	2 OF 7

TUBE No.	SAMPLE No.	Na	Mg	K	Ca	Fe	Cu	Zn	Ag	Pb
1	10276	1400	8850	6.10%	4800	1.95%	75	370	X	80
2	10278	2000	5200	6.00%	3200	6400	75	320	X	145
3	10280	2300	4750	5.95%	2200	8850	50	460	X	50
4	10282	2500	4200	6.10%	2800	4850	75	425	X	130
5	10284	1900	6200	5.65%	7250	1.00%	50	325	X	50
6	10286	1100	5700	5.15%	4250	7900	80	320	0.5	65
7	10288	800	7000	5.30%	6950	7800	55	435	0.5	35
8	10290	1100	4500	4.65%	1.05%	8400	60	555	X	45
9	10292	900	3900	4.70%	2000	6200	60	640	X	140
10	10294	1500	5050	4.45%	1.75%	1.00%	40	510	X	190
[illegible]	10296	6700	1.80%	4.80%	2.25%	3.90%	35	565	X	30
12	10298	1.85%	8500	5.40%	5400	6350	35	605	X	30
13	10300	400	5950	4.60%	5900	7750	45	535	X	30
14	10302	700	7700	4.70%	1.30%	1.00%	30	415	X	95
15	10304	1400	6000	5.40%	1.85%	8350	80	1200	3.0	1300
16	10306	1200	6500	5.30%	8350	8350	460	565	11.0	900
17	10308	1700	6150	4.05%	1.60%	8600	1050	960	19.5	1650
18	10310	1300	4100	5.70%	2000	1.00%	35	815	X	110
19	10312	2300	4450	5.05%	1.35%	1.65%	75	685	1.5	180
20	10314	2000	3250	5.60%	2500	6700	40	555	X	105
21	10316	3000	3250	5.05%	4400	1.00%	40	525	X	105
22	10318	3800	3950	4.75%	2050	8200	60	485	X	85
23	10320	2000	4400	5.20%	1700	7250	20	815	X	60
[illegible]	10322	1500	4100	5.00%	1650	6900	45	1250	X	420
25	10324	3000	4100	4.70%	4250	7650	30	295	X	130

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

AUTHORISED OFFICER B. [illegible]

ANALABS

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

663535

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
[redacted]	83.1 08 1178	31.5.82	KP 3053	3 OF 7

TUBE No.	SAMPLE No.	Na	Mg	K	Ca	Fe	Cu	Zn	Ag	Pb
1	10326	2300	8650	4.20%	9850	2.00%	15	340	X	20
2	10328	1600	5750	3.95%	2900	1.55%	20	335	X	480
3	10330	3100	4350	3.95%	2000	9200	35	300	1.0	100
4	10332	4500	4200	3.45%	850	6900	30	375	X	130
5	10334	2200	5100	3.55%	3000	9000	20	350	X	75
6	10336	600	7150	3.85%	1.05%	9850	25	405	X	45
7	10338	600	7150	4.20%	1.45%	9500	20	420	X	45
8	10340	200	2850	8500	4850	9750	25	540	1.0	65
9	10342	700	6250	4.10%	8800	1.75%	25	570	X	95
10	10344	1200	5900	2.85%	5.50%	2.00%	15	395	X	75
11	10346	600	2400	3.60%	1.35%	7400	15	155	X	50
12	10348	600	1800	3.75%	1.65%	5500	25	195	X	30
13	10350	700	2200	3.30%	1.90%	7000	10	260	X	35
14	10352	900	2400	3.70%	2.20%	8300	15	275	X	20
15	10354	900	2450	3.75%	2.25%	9300	10	245	X	60
16	10356	1100	3250	2.95%	2.10%	7200	15	220	X	65
17	10358	1000	3250	2.85%	2.25%	9400	15	245	X	45
18	10360	1100	2400	3.80%	1.65%	1.00%	30	235	0.5	45
19	10362	1200	2650	3.90%	2.10%	7200	15	260	0.5	50
20	10364	1000	2650	4.40%	1.90%	7800	15	275	X	40
21	10366	1200	2800	4.40%	2.05%	8300	15	225	X	45
22	10368	1300	2900	4.35%	2.25%	1.15%	15	340	X	85
23	10370	1100	3450	4.05%	1.75%	8850	15	355	X	125
24	10372	1300	3050	4.10%	1.30%	1.00%	70	400	X	305
25	10374	1400	6150	4.20%	2.35%	1.70%	35	320	X	70

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

AUTHORISED OFFICER [redacted]

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

663536

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1178	31.5.82	KP 3053	4 OF 7

TUBE No.	SAMPLE No.	Na	Mg	K	Ca	Fe	Cu	Zn	Ag	Pb
1	10376	1200	6150	3.80%	2.50%	1.95%	15	365	X	105
2	10378	2000	7300	4.10%	4.65%	2.50%	15	335	X	25
3	10380	1900	6200	5.05%	2.40%	2.45%	45	290	X	10
4	10382	1800	8950	4.80%	3.50%	2.60%	20	380	X	15
5	10384	1600	1.35%	3.55%	5.15%	3.20%	105	470	X	85
6	10386	2100	7550	4.10%	3.40%	3.00%	175	460	X	35
7	10388	1700	5300	3.80%	2.80%	3.00%	180	465	X	30
8	10390	2100	6700	4.05%	3.05%	2.40%	155	485	X	40
9	10392	2300	6650	3.65%	2.90%	2.30%	160	555	X	95
10	10394	1900	9100	3.60%	3.60%	2.95%	205	530	X	120
[illegible]	10396	1900	8950	3.85%	3.55%	2.35%	445	460	X	75
12	10398	1700	1.15%	3.65%	4.60%	2.55%	85	450	X	30
13	10400	2100	7550	3.95%	2.75%	2.05%	105	400	X	45
14	10402	2200	1.30%	4.05%	4.15%	2.45%	80	485	X	35
15	10403	1900	9550	3.85%	3.00%	2.50%	130	500	X	10
16	10414	2300	1.10%	2.75%	4.45%	3.30%	310	560	X	60
17	10416	2600	3.55%	2.85%	9600	4.50%	215	800	X	10
18	10418	2600	2.75%	3.15%	5850	2.85%	115	705	0.5	10
19	10420	3400	2.85%	2.60%	5300	3.95%	120	745	X	45
20	10422	1600	2.85%	3.40%	3300	2.15%	180	595	X	50
21	10424	1300	2.90%	3.55%	2950	1.85%	185	465	X	25
22	10426	2200	3.45%	3.40%	3800	2.40%	170	680	X	20
23	10428	3000	3.25%	3.40%	6250	2.30%	145	405	X	15
[illegible]	10430	3200	4.30%	3.10%	9550	2.65%	155	650	X	60
25	10432	3100	3.20%	3.55%	9050	2.65%	85	580	X	25

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

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663537

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1178	31.5.82	KP 3053	5 OF 7

TUBE No.	SAMPLE No.	Na	Mg	K	Ca	Fe	Cu	Zn	Ag	Pb
1	10434	4700	2.95%	3.65%	8000	2.90%	130	480	X	55
2	10436	3300	4.05%	2.95%	8850	4.80%	120	575	X	90
3	10438	4100	3.00%	3.50%	6000	3.15%	80	540	X	75
4	10440	1500	1.65%	3.15%	4000	2.00%	150	665	X	10
5	10442	2000	9250	4.45%	6600	4.05%	85	500	X	20
6	10444	1600	2.40%	3.20%	8200	2.55%	135	770	X	20
7	10446	1400	2.10%	3.30%	3500	1.45%	160	615	X	15
8	10448	1300	2.50%	3.20%	1850	1.60%	190	605	X	25
9	10450	1300	2.50%	3.35%	2250	1.70%	120	555	X	20
10	10452	3100	2.15%	3.25%	1750	1.15%	140	440	X	25
11	10454	5600	2.20%	3.00%	1550	7950	150	390	X	40
12	10456	6200	2.60%	3.00%	1500	7800	175	345	X	35
13	10458	5300	2.60%	3.00%	1500	7250	175	405	X	35
14	10460	6000	2.05%	3.00%	1500	9000	180	420	X	15
15	10462	6600	2.00%	3.10%	1700	7800	230	455	X	30
16	10464	6500	1.55%	3.20%	1550	7350	185	415	X	15
17	10466	7100	1.75%	3.15%	1800	7850	145	390	X	20
18	10468	7100	1.80%	2.95%	1450	8300	160	345	X	25
19	10470	5400	1.90%	3.00%	1850	9100	180	365	X	20
20	10472	5100	1.75%	3.00%	1700	8600	125	375	X	140
21	10474	5400	1600	2.95%	1.90%	9350	100	320	X	15
22	10476	6200	1900	2.95%	2.15%	8700	115	340	0.5	15
23	10478	5800	1500	3.15%	1.75%	8300	130	370	X	15
24	10480	8400	1550	2.95%	1.85%	7700	120	360	X	35
25	10482	9000	1600	2.80%	1.95%	8950	115	600	X	410

Results in parts per million otherwise stated.
I = element present but concentration below limit of detection.
X = element not present in above detection limit.
N = element not determined.

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663538

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1178	31.5.82	KP 3053	6 OF 7

TUBE No.	SAMPLE No.	Na	Mg	K	Ca	Fe	Cu	Zn	Hg	Pb
1	10484	7100	1450	2.90%	1.75%	8600	90	370	0.5	25
2	10486	5400	1500	3.00%	1.80%	8950	90	355	X	40
3	10488	4500	1650	3.15%	2.05%	8350	90	285	1.0	20
4	10490	4500	1300	3.35%	2.05%	9100	95	315	0.5	20
5	10492	4500	1500	3.35%	2.00%	9350	90	245	0.5	10
6	10494	4100	1200	3.45%	1.85%	9600	130	305	X	10
7	10496	4200	1250	3.00%	2.40%	8300	180	385	X	35
8	10498	4700	1500	3.30%	1.75%	8650	140	380	X	20
9	10500	4300	1100	3.10%	1.90%	9450	165	300	X	15
10	9434	4700	1350	3.05%	2.05%	9150	225	395	X	10
11	9436	3800	1300	3.35%	1.85%	8500	160	400	X	25
12	9438	5200	1600	3.05%	1.95%	1.00%	125	395	X	20
13	9440	6900	1900	3.15%	1.65%	8400	95	245	X	15
14	9442	8100	1900	3.25%	1.85%	8600	110	315	0.5	30
15	9444	6400	1800	3.55%	1.85%	7100	105	275	X	20
16	9446	6000	2250	3.15%	1.85%	8100	130	355	X	20
17	9448	7200	2100	3.15%	2.00%	8150	125	330	X	30
18	9450	7400	1700	3.25%	1.90%	7650	115	280	X	35
19	11602	8200	1950	3.25%	2.05%	7400	120	325	X	25
20	11604	8400	1600	3.25%	1.80%	8100	115	275	X	35
21	11605	7100	2200	3.45%	1.95%	8400	185	385	X	30
22										
23										
24										
25										

Results in parts per million unless otherwise specified.
T = element present but concentration too low to measure.
X = element concentration is below detection limit.
N.D. = element not determined.

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663539

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1178	31.5.82	KP 3053	7 OF 7

TUBE No.	SAMPLE No.	Na	Mg	K	Ca	Fe	Cu	Zn	Ag	Pb
1	STD FS4					760	320	775	0.5	100
2	RPT 10226					3950	35	310	X	30
3	RPT 10264					5550	60	500	0.5	100
4	STD FS4					775	340	795	0.5	105
5	RPT 10306					8450	465	570	9.0	915
6	RPT 10344					2.10%	20	405	X	70
7	STD FS4					6.60%	320	775	1.0	110
8	RPT 10386					2.95%	165	420	X	35.
9	RPT 10432					2.65%	85	605	X	25
10	STD FS4					7100	310	775	1.0	100
11	RPT 10474					9200	100	295	X	15
12	RPT 9444					7000	110	300	X	15
13										
14										
15										
16										
17	NOTE: * Analysed by Method 104									
18										
19										
20										
21										
22										
23	DETECTION					50	5	5	0.5	5
24	DIGESTION					101	101	101	101	101
25	METHOD	103	103	103	103	101	101	101	101	101

Results in ppm unless otherwise specified
T = sample insufficient for confirmation of detection limit
X = element not detected above detection limit
— = element not determined

AUTHORISED OFFICER

Voyager 19 DDH V19-2

ANALABS

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663540

ANALYTICAL REPORT No. 83.1 08 1033

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
	K 600

DATE RECEIVED	RESULTS REQUIRED
15.3.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	2.4.82	3	118

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
RO	KR 10108-10225		1		2				Cu Pb Zn Ag Fe	101	101
	108			3	4				K Ca Mg	103	103
	117								Ba		120

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19
DDH V19-2
CORE

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

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ANALYTICAL DATA

663541

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1033	1.4.82	KP 3019	1 OF 12

TUBE No.	SAMPLE No.		2 Mg	3 K(%)	1 Ca	Fe	Cu	Zn	Ag	Ba
1	KR 10108		4500	2.40	1.25%	7300	190	2250	4.0	525
2	KR 10109		9050	3.05	2.00%	1.35%	60	1250	3.0	420
3	KR 10110		5850	2.50	1.05%	6500	475	1.15%	9.5	495
4	KR 10111		4900	3.65	6900	5400	75	2200	1.5	475
5	KR 10112		6100	2.50	1.95%	7800	20	3050	2.0	1200
6	KR 10113		4350	3.55	5750	6950	15	285	4.5	4550
7	KR 10114		7550	3.70	1.20%	6650	15	180	1.5	5200
8	KR 10115		1.70%	4.05	2.65%	9900	25	605	2.0	620
9	KR 10116		1.35%	5.50	2.25%	8000	40	2550	2.5	600
10	KR 10117		1.65%	3.60	4.10%	1.25%	95	5350	8.0	390
11	KR 10118		7650	3.20	2.45%	5550	30	1050	2.5	255
12	KR 10119		9500	4.25	2.45%	9400	590	5300	19.5	605
13	KR 10120		8500	4.55	1.90%	5850	15	355	1.0	465
14	KR 10121		7100	3.50	1.55%	5800	20	395	2.0	460
15	KR 10122		4350	3.60	1.80%	5000	25	525	1.5	455
16	KR 10123		5400	4.45	8900	6250	10	155	1.0	525
17	KR 10124		5000	4.25	1.25%	6050	10	485	0.5	435
18	KR 10125		6050	3.95	8200	7250	15	285	0.5	710
19	KR 10126		4800	3.05	9450	5850	10	185	X	450
20	KR 10127		3650	2.30	9750	5600	10	235	X	335
21	KR 10128		6250	3.55	1.00%	6300	15	370	0.5	410
22	KR 10129		6850	3.30	6400	7700	15	375	X	505
23	KR 10130		7650	3.45	7000	7200	30	250	0.5	495
24	KR 10131		7400	3.50	8000	6550	15	125	X	490
25	KR 10132		7600	2.00	3.20%	9300	85	1550	2.5	685

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

AUTHORISED OFFICER

DDH VM - 2

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

603542

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1033	1.4.82	KP 3019	2 OF 12

TUBE No.	SAMPLE No.		Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Ba
1	KR 10133		1.15%	2.05	3.50%	1.20%	230	1250	4.5	430
2	KR 10134		6150	2.00	4.45%	8550	55	875	1.5	420
3	KR 10135		7200	3.10	6.80%	1.00%	20	835	0.5	515
4	KR 10136		6700	3.40	3200	7950	20	165	0.5	430
5	KR 10137		8000	4.00	3650	8100	10	110	X	445
6	KR 10138		7500	3.90	5100	7400	5	265 ?	0.5	440
7	KR 10139		5100	2.65	8600	7800	5	45	X	265
8	KR 10140		3800	3.40	9050	6950	5	70	0.5	225
9	KR 10141		5800	4.70	6650	7100	5	65	X	295
10	KR 10142		8050	4.05	2700	8450	5	55	X	330
11	KR 10143		8900	3.55	1.00%	9450	5	40	0.5	385
12	KR 10144		8750	3.75	9000	8950	10	60	0.5	255
13	KR 10145		7900	4.20	6250	7900	5	35	0.5	280
14	KR 10146		6000	2.45	9050	7100	5	25	X	200
15	KR 10147		7250	2.85	6200	9050	5	30	X	250
16	KR 10148		6800	2.90	5350	7450	10	25	0.5	300
17	KR 10149		7000	2.20	7200	7950	5	25	X	275
18	KR 10150		6750	2.30	1.55%	7800	15	30	0.5	335
19	KR 10151		9350	3.35	4700	9600	5	25	0.5	365
20	KR 10152		8600	3.50	4150	8500	5	25	X	310
21	KR 10153		7900	3.55	2800	7300	5	30	X	375
22	KR 10154		8300	3.65	5400	7800	5	35	X	335
23	KR 10155		6800	3.55	6750	6650	5	25	X	280
24	KR 10156		6900	3.35	1.10%	6850	5	30	X	465
25	KR 10157		7050	3.65	1.10%	7500	5	35	X	355

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603543

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1033	1.4.82	KP 3019	3 OF 13

TUBE No.	SAMPLE No.		Mg %	K (%)	Ca	Fe	Cu	Zn	Ag	Ba
1	KR 10158		7050	3.50	1.65%	7800	5	45	X	355
2	KR 10159		1.95%	3.10	1.10%	4.65%	25	225	X	420
3	KR 10160		8700	4.50	1.00%	1.40%	10	75	X	465
4	KR 10161	X	6450	3.40	1.30%	7850	5	55	X	325
5	KR 10162		7250	3.55	1.20%	9000	5	60	X	330
6	KR 10163		5900	3.35	1.40%	7750	5	50	0.5	340
7	KR 10164		9450	3.50	8250	2.95%	30	210	X	320
8	KR 10165		7650	4.75	8550	9150	10	105	X	395
9	KR 10166		8900	3.75	1.25%	7950	5	60	0.5	295
10	KR 10167		6650	4.25	5750	1.35%	15	145	X	370
11	KR 10168		6500	4.15	5450	1.35%	10	80	0.5	375
12	KR 10169		9700	4.45	7850	7850	20	160	0.5	380
13	KR 10170		6000	3.60	1.05%	8050	10	135	X	285
14	KR 10171		5750	3.15	1.40%	6950	10	140	0.5	235
15	KR 10172		5150	3.20	1.20%	7400	5	185	0.5	205
16	KR 10173		2600	6500	1.10%	6850	X	145	0.5	305
17	KR 10174		5200	3.20	1.45%	7650	5	215	X	270
18	KR 10175		5700	3.15	1.25%	7250	20	350	X	305
19	KR 10176		4950	3.95	9850	6450	10	255	0.5	265
20	KR 10177		5150	3.40	9350	6400	10	230	X	225
21	KR 10178		5050	3.40	7350	6850	5	155	1.0	245
22	KR 10179		4150	2.40	6200	8000	10	335	0.5	265
23	KR 10180		5300	3.25	1.15%	6750	10	245	0.5	245
24	KR 10181		4950	3.25	1.50%	7650	5	130	X	200
25	KR 10182		4400	3.10	1.65%	6600	15	205	X	275

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

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663544

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1033	1.4.82	KP 3019	4 OF 12

TUBE No.	SAMPLE No.		Mg	K(%)	Ca	Fe	Cu	Zn	Hg	Ba
1	KR 10183		3950	3.00	1.45%	7550	10	110	X	310
2	KR 10184		4600	3.65	1.65%	5500	10	235	0.5	305
3	KR 10185		4200	3.65	2.00%	5600	15	520	1.0	210
4	KR 10186	X	4750	4.95	9450	5100	15	3550	2.0	345
5	KR 10187		3550	3.50	1.25%	5050	15	3600	1.5	245
6	KR 10188		3250	3.15	4450	6200	35	745	0.5	180
7	KR 10189		3050	3.05	1.10%	5950	25	455	X	290
8	KR 10190		3250	3.45	7400	5850	15	460	0.5	310
9	KR 10191		3150	3.25	1.50%	4850	20	475	0.5	300
10	KR 10192		3650	3.35	1.95%	5500	20	245	X	290
[illegible]	KR 10193		3800	3.75	1.35%	5550	25	310	X	290
12	KR 10194		4000	3.95	1.00%	5750	155	2750	2.5	340
13	KR 10195		3850	3.70	1.65%	5300	85	1400	2.0	285
14	KR 10196		3900	3.50	1.95%	1.00%	35	625	0.5	310
15	KR 10197		3450	3.45	1.05%	6050	20	265	0.5	305
16	KR 10198		3450	3.30	1.10%	5950	25	245	X	275
X 17	KR 10199		3450	3.25	9600	6150	15	175	0.5	355
18	KR 10200		3450	3.40	1.10%	5950	30	190	0.5	295
19	KR 10201		3950	3.05	1.30%	6100	15	215	1.0	275
20	KR 10202		3400	3.50	2950	4950	15	160	0.5	275
21	KR 10203		3200	3.30	2050	5050	15	185	0.5	320
22	KR 10204		2950	3.30	450	4800	25	335	0.5	295
23	KR 10205		3100	3.50	405	5000	25	345	1.0	325
[illegible]	KR 10206		3700	2.70	2400	9950	30	335	X	340
25	KR 10207		4250	4.00	3000	9400	15	280	0.5	365

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

AUTHORISED OFFICER

ANALABS

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

663545

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1033	1.4.82	KP 3019	5 OF 12

TUBE No.	SAMPLE No.		Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Ba
1	KR 10208		4100	4.10	1400	6050	15	305	0.5	300
2	KR 10209		3650	4.30	950	8850	15	285	X	290
3	KR 10210		2950	3.70	795	4350	10	300	X	315
4	KR 10211		3000	3.30	4650	8300	15	265	X	295
5	KR 10212		3350	3.95	2700	5350	10	635	X	350
6	KR 10213		3900	3.75	3300	8350	15	405	X	320
7	KR 10214		5600	5.25	4250	1.55%	75	2000	X	490
8	KR 10215		3500	4.00	2600	7850	15	230	0.5	275
9	KR 10216		4300	3.40	5950	6900	15	750	0.5	340
10	KR 10217		7400	4.10	1.65%	1.35%	10	305	X	310
[illegible]	KR 10218		8000	4.35	1.75%	1.45%	10	315	X	335
12	KR 10219		5500	4.25	8900	1.30%	10	235	X	330
13	KR 10220		4850	4.30	4650	8500	10	230	X	855
14	KR 10221		5200	4.80	2650	8450	10	150	X	410
15	KR 10222		5000	4.75	3700	8050	10	215	0.5	305
16	KR 10223		5150	3.75	4800	8400	5	125	X	395
17	KR 10224		4950	4.00	3200	9450	10	185	X	325
18	KR 10225		5850	3.80	4750	1.35%	10	155	X	355
19										
20										
21										
22										
23										
[illegible]										
25										

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

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

66354C

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1033	1.4.82	KP 3019	6 OF 12

TUBE No.	SAMPLE No.		Mg	K (%)	Ca	Fe	Cu	Zn	Ag	Ba
1	STD FS4					8.25%	300	750	0.5	390
2	RPT KR 10108					7500	185	2150	4.0	515
3	RPT KR 10127					5800	10	235	0.5	330
4	STD FS4					7.85%	295	730	1.0	415
5	RPT KR 10148					7750	5	25	X	245
6	RPT KR 10167					1.35%	15	145	0.5	395
7	STD FS4					8.15%	300	735	1.0	385
8	RPT KR 10188					6000	25	725	0.5	190
9	RPT KR 10207					9300	15	275	X	320
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		5	50	5	50	5	5	0.5	5
24	DIGESTION		103	103	103	101	101	101	101	
25	METHOD		103	103	103	101	101	101	101	120

* Results in this report have been corrected as specified
X - Element present but too low to quote
X - Element concentration is beyond detection limits
- Element not determined

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663547

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 00 1033	1.4.82	KP 3019	7 OF 12

TUBE No.	SAMPLE No.		Pb							
1	KR 10108		2300							
2	KR 10109		1250							
3	KR 10110		6500							
4	KR 10111		1200							
5	KR 10112		1450							
6	KR 10113		5250							
7	KR 10114		220							
8	KR 10115		385							
9	KR 10116		1050							
10	KR 10117		3950							
11	KR 10118		1350							
12	KR 10119		2900							
13	KR 10120		200							
14	KR 10121		495							
15	KR 10122		130							
16	KR 10123		40							
17	KR 10124		115							
18	KR 10125		55							
19	KR 10126		85							
20	KR 10127		65							
21	KR 10128		160							
22	KR 10129		120							
23	KR 10130		50							
24	KR 10131		45							
25	KR 10132		1100							

Results in ppm unless otherwise specified
T = element present but concentration too low to determine
N = element/interference is below detection limit
- = element not determined

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

663548

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1033	1.4.82	KP 3019	8 OF 12

TUBE No.	SAMPLE No.		Pb							
1	KR 10133		580							
2	KR 10134		375							
3	KR 10135		165							
4	KR 10136		30							
5	KR 10137		25							
6	KR 10138		30							
7	KR 10139		30							
8	KR 10140		65							
9	KR 10141		35							
10	KR 10142		30							
[illegible]	KR 10143		30							
12	KR 10144		20							
13	KR 10145		10							
14	KR 10146		35							
15	KR 10147		15							
16	KR 10148		5							
17	KR 10149		X							
18	KR 10150		10							
19	KR 10151		5							
20	KR 10152		10							
21	KR 10153		5							
22	KR 10154		5							
23	KR 10155		5							
[illegible]	KR 10156		10							
25	KR 10157		5							

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

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663549

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1033	1.4.82	KP 3019	9 OF 12

TUBE No.	SAMPLE No.		Pb							
1	KR 10158		30							
2	KR 10159		5							
3	KR 10160		5							
4	KR 10161		15							
5	KR 10162		15							
6	KR 10163		20							
7	KR 10164		10							
8	KR 10165		30							
9	KR 10166		15							
10	KR 10167		10							
[illegible]	KR 10168		5							
12	KR 10169		5							
13	KR 10170		15							
14	KR 10171		30							
15	KR 10172		15							
16	KR 10173		20							
17	KR 10174		30							
18	KR 10175		35							
19	KR 10176		25							
20	KR 10177		65							
21	KR 10178		70							
22	KR 10179		90							
23	KR 10180		95							
[illegible]	KR 10181		50							
25	KR 10182		80							

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

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663550

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1033	1.4.82	KP 3019	10 OF 12

TUBE No.	SAMPLE No.		Pb							
1	KR 10183		65							
2	KR 10184		125							
3	KR 10185		345							
4	KR 10186		1950							
5	KR 10187		1350							
6	KR 10188		580							
7	KR 10189		390							
8	KR 10190		225							
9	KR 10191		165							
10	KR 10192		210							
[illegible]	KR 10193		230							
12	KR 10194		1900							
13	KR 10195		1150							
14	KR 10196		240							
15	KR 10197		145							
16	KR 10198		170							
17	KR 10199		150							
18	KR 10200		220							
19	KR 10201		150							
20	KR 10202		190							
21	KR 10203		155							
22	KR 10204		235							
23	KR 10205		270							
[illegible]	KR 10206		95							
25	KR 10207		50							

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

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

663551

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1033	1.4.82	KP 3019	11 OF 12

TUBE No.	SAMPLE No.		Pb							
1	KR 10208		125							
2	KR 10209		65							
3	KR 10210		100							
4	KR 10211		75							
5	KR 10212		85							
6	KR 10213		125							
7	KR 10214		215							
8	KR 10215		140							
9	KR 10216		180							
10	KR 10217		50							
[illegible]	KR 10218		90							
12	KR 10219		45							
13	KR 10220		45							
14	KR 10221		60							
15	KR 10222		55							
16	KR 10223		55							
17	KR 10224		70							
18	KR 10225		95							
19										
20										
21										
22										
23										
[illegible]										
25										

Results in parts per [illegible] otherwise specified
T = element present, but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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663552

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1033	1.4.82	KP 3019	12 OF 12

TUBE No.	SAMPLE No.		Pb							
1	STD FS4		110							
2	RPT KR 10108		2300							
3	RPT KR 10127		60							
4	STD FS4		95							
5	RPT KR 10148		X							
6	RPT KR 10167		5							
7	STD FS4		120							
8	RPT KR 10188		585							
9	RPT KR 10207		45							
10										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		5							
	DIGESTION		101							
25	METHOD		101							

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

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ANALABS

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

663553

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 978

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
	K 595

DATE RECEIVED	RESULTS REQUIRED
25.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	8.3.82	3	22

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
RO	KR 10033-54		1	3	2 4				Cu Pb Zn Ag Fe Ba Ca Mg K	101	101 120 103

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19
DDH 2 (CORE)

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
	RE	aqua regia	A4	alkaline attack	AA	colorimetry	COL
	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
	PU	HF mixture	A6	ignition	IG	titration	TTN
	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
	PL	fusion	A8	glass fusion (XRF)	GF	fire assay	FA
	SS					flame photometry	FLAME
	HM					fluorescence	FLUOR
						inductively coupled plasma	ICP

ANALABS

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

663554

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 978	9.3.82	KP 3008	1 OF 2

TUBE No.	SAMPLE No.	Mg	K	Ca	Fe	Cu	Zn	Ag	Ba	Pb
1	10033	2300	2900	2750	8950	5	60	X	335	5
2	10034	9500	3.70%	6950	9150	X	45	X	555	20
3	10035	8700	3.15%	7750	9250	X	30	X	550	10
4	10036	1.00%	3.45%	7100	1.00%	5	30	X	695	20
5	10037	1.00%	3.05%	6900	9050	5	30	X	870	20
6	10038	9700	3.05%	7550	8850	5	30	X	390	5
7	10039	1.15%	4.25%	1750	1.00%	X	40	X	600	10
8	10040	1.20%	3.45%	4650	1.25%	5	35	X	575	30
9	10041	1.05%	3.85%	700	8950	X	35	X	635	20
10	10042	7200	2.35%	1250	7850	5	55	X	400	30
11	10043	1.05%	2.80%	1100	9050	X	100	X	440	25
12	10044	1.20%	3.95%	1350	9150	5	55	X	605	10
13	10045	8850	3.65%	1050	7800	X	40	X	505	10
14	10046	9200	3.40%	1350	8650	X	40	X	640	5
15	10047	9600	2.65%	3000	9550	5	40	X	405	10
16	10048	1.10%	3.75%	3050	9100	X	35	X	400	20
17	10049	6950	2.00%	6150	8200	X	35	X	425	5
18	10050	1.05%	3.00%	2850	9850	5	35	X	325	10
19	10051	1.00%	3.55%	3650	8750	X	35	X	350	25
20	10052	7850	2.85%	5150	7600	X	25	X	390	25
21	10053	1.15%	4.75%	2300	9150	X	40	X	420	10
22	10054	1.15%	4.55%	3150	9650	X	45	X	380	25
23										
25										

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

AUTHORISED OFFICER

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

663555

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 978	9.3.82	KP 3008	2 OF 2

TUBE No.	SAMPLE No.	Mg	K	Ca	Fe	Cu	Zn	Ag	Ba	Pb
1	STD FS4				8.20%	305	820	0.5	385	100
2	10033				9150	5	65	X	345	X
3	10052				7450	X	30	X	350	15
4										
5										
6										
7										
8										
9										
10										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	50	5	50	5	5	0.5	5	5
	DIGESTION	103	103	103	101	101	101	101		101
25	METHOD	103	103	103	101	101	101	101	120	101

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

AUTHORISED OFFICER

Eliot

ANALABS

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

663556

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1211

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3033	

DATE RECEIVED	RESULTS REQUIRED
17.5.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	3.6.82	3	225

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
PU	Various							1	Na	103	103
									Ba		120

RESULTS TO: As above

RESULTS TO:

REMARKS

VOYAGER 19

DDH-2

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

AUTHORISED OFFICER

139

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

ANALYTICAL DATA

663557

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1211	3.6.82	KP 3033	1 OF 8

TUBE No.	SAMPLE No.	Na								
1	10033	2.85%								
2	10034	8850								
3	10035	9650								
4	10036	7350								
5	10037	9400								
6	10038	1.05%								
7	10039	9100								
8	10040	7350								
9	10041	1.55%								
10	10042	1.65%								
[illegible]	10043	1.15%								
12	10044	1.05%								
13	10045	1.00%								
14	10046	1.00%								
15	10047	1.60%								
16	10048	1.05%								
17	10049	1.90%								
18	10050	1.05%								
19	10051	1.20%								
20	10052	1.05%								
21	10053	6000								
22	10054	6100								
23	10055	550								
[illegible]	10056	550								
25	10057	850								

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

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

603558

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1211	3.6.82	KP 3033	2 OF 8

TUBE No.	SAMPLE No.	Na								
1	10058	1850								
2	10059	7600								
3	10060	4500								
4	10061	7350								
5	10062	3500								
6	10063	2450								
7	10064	2200								
8	10065	2700								
9	10066	3250								
10	10067	3000								
[illegible]	10068	5850								
12	10069	3050								
13	10070	3100								
14	10071	3800								
15	10072	2000								
16	10073	2450								
17	10074	2600								
18	10075	2650								
19	10076	4200								
20	10077	3500								
21	10078	5250								
22	10079	5200								
23	10080	5250								
[illegible]	10081	8150								
25	10082	1.05%								

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

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ANALYTICAL DATA

663559

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1211	3.6.82	KP 3033	3 OF 6

TUBE No.	SAMPLE No.	Na
1	10083	5700
2	10084	3800
3	10085	4100
4	10086	5100
5	10087	7200
6	10088	6500
7	10089	1300
8	10090	950
9	10091	650
10	10092	500
11	10093	900
12	10094	550
13	10095	7050
14	10096	1.75%
15	10097	1.55%
16	10098	1.45%
17	10099	1.65%
18	10100	1.60%
19	10101	8800
20	10102	7900
21	10103	3700
22	10104	2200
23	10105	3500
24	10106	950
25	10107	5900

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

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

ANALYTICAL DATA

663560

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1211	3.6.82	KP 3033	4 OF 8

TUBE No.	SAMPLE No.	Na									
1	10108	1.90%									
2	10109	1.75%									
3	10110	1.65%									
4	10111	1.60%									
5	10112	1.65%									
6	10113	9750									
7	10114	5200									
8	10115	2100									
9	10116	2200									
10	10117	4800									
11	10118	2750									
12	10119	3900									
13	10120	3800									
14	10121	3000									
15	10122	4050									
16	10123	3300									
17	10124	2750									
18	10125	3600									
19	10126	4150									
20	10127	6950									
21	10128	1800									
22	10129	2300									
23	10130	2500									
24	10131	3050									
25	10132	4150									

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ANALYTICAL DATA

663561

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1211	3.6.82	KP 3033	5 OF 9

TUBE No.	SAMPLE No.	Hg.								
1	10133	5200								
2	10134	4600								
3	10135	1600								
4	10136	6200								
5	10137	2750								
6	10138	1150								
7	10139	1.00%								
8	10140	1.90%								
9	10141	5900								
10	10142	4400								
[illegible]	10143	7200								
[illegible]2	10144	3350								
13	10145	6150								
14	10146	1.60%								
15	10147	1.15%								
16	10148	1.25%								
17	10149	1.55%								
18	10150	1.35%								
19	10151	7050								
20	10152	4850								
21	10153	7550								
22	10154	6900								
23	10155	2950								
[illegible]	10156	4950								
25	10157	2850								

Results in ppm unless otherwise specified

T = element present, but concentration too low to measure

* = element concentration is below detection limit

— = element not determined

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ANALYTICAL DATA

663562

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1211	3.6.82	KP 3033	6 OF 8

TUBE No.	SAMPLE No.	Na								
1	10158	2900								
2	10159	3600								
3	10160	3750								
4	10161	3000								
5	10162	3050								
6	10163	2950								
7	10164	1650								
8	10165	3000								
9	10166	2750								
10	10167	1700								
11	10168	900								
12	10169	850								
13	10170	3850								
14	10171	2400								
15	10172	4300								
16	10173	4300								
17	10174	3400								
18	10175	3550								
19	10176	4350								
20	10177	3700								
21	10178	4750								
22	10179	3900								
23	10180	3950								
24	10181	4600								
25	10182	4300								

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

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ANALYTICAL DATA

663563

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1211	3.6.82	KP 3033	7 OF 8

TUBE No.	SAMPLE No.	Na								
1	10183	3800								
2	10184	1000								
3	10185	1700								
4	10186	1600								
5	10187	1800								
6	10188	1850								
7	10189	3250								
8	10190	2850								
9	10191	4350								
10	10192	3400								
[illegible]	10193	2700								
12	10194	3400								
13	10195	3150								
14	10196	3250								
15	10197	3150								
16	10198	3150								
17	10199	3250								
18	10200	3100								
19	10201	3650								
20	10202	4300								
21	10203	7650								
22	10204	1100								
23	10205	550								
[illegible]	10206	400								
25	10207	600								

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

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ANALYTICAL DATA

663564

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1211	3.6.82	KP 3033	8 OF 8

TUBE No.	SAMPLE No.	Na								
1	10208	500								
2	10209	500								
3	10210	350								
4	10211	550								
5	10212	400								
6	10213	400								
7	10214	550								
8	10215	400								
9	10216	500								
10	10217	600								
[illegible]	10218	650								
12	10219	600								
13	10220	500								
14	10221	600								
15	10222	800								
16	10223	450								
17	10224	400								
18	10225	450								
19										
20										
21										
22										
23	DETECTION	50								
[illegible]	DIGESTION	103								
25	METHOD	103								

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

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663565

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1211	3.6.82	KP 3033	1 OF 3

TUBE No.	SAMPLE No.	Ba
1	10001	410
2	10002	445
3	10003	590
4	10004	545
5	10005	625
6	10006	665
7	10007	590
8	10008	585
9	10009	490
10	10010	635
11	10011	665
12	10012	475
13	10013	525
14	10014	565
15	10015	360
16	10016	325
17	10017	335
18	10018	325
19	10019	535
20	10020	330
21	10021	190
22	10022	200
23	10023	180
24	10024	310
25	10025	250

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

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ANALYTICAL DATA

663566

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KP	83.1 08 1211	3.6.82	KP 3033	2 OF 3

TUBE No.	SAMPLE No.	Ba								
1	10026	355								
2	10027	250								
3	10028	70								
4	10029	325								
5	10030	300								
6	10031	385								
7	10032	515								
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Results in ppm unless otherwise specified

T = element present but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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

ANALYTICAL DATA

603567

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1211	3.6.82	KP 3033	3 OF 3

TUBE No.	SAMPLE No.	Sb								
1	STD FS4	415								
2	RPT 10001	400								
3	RPT 10020	340								
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5								
24	DIGESTION									
25	METHOD	120								

Results in parts per million unless otherwise specified
T = element present but concentration too low to measure
< = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

Date

Voyager 19

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — 663568 Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1177

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3052	K 703

DATE RECEIVED	RESULTS REQUIRED
6.5.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
		3	10

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SC	KR 10404-13		1	3	2 4				Cu Pb Zn Ag Fe Au K Ca Mg Na	101	101 304 103

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19

DDH-3.

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

ANALABS

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

663569

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1177	31.5.82	KP 3052	1 OF 1

TUBE No.	SAMPLE No.	Na	Mg	K	Ca					
1	10404	900	1.25%	3.15%	4.25%					
2	10405	400	1.25%	3.50%	4.00%					
3	10406	1800	1.25%	3.15%	4.25%					
4	10407	1700	1.15%	3.50%	4.05%					
5	10408	1600	9500	3.30%	4.00%					
6	10409	1900	1.10%	3.45%	4.15%					
7	10410	2400	9950	3.25%	4.25%					
8	10411	2400	8950	3.45%	4.00%					
9	10412	800	9350	3.70%	4.20%					
10	10413	900	1.25%	3.25%	6.95%					
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	50	5					
	DIGESTION									
25	METHOD	103	103	103	103					

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

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

663570

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1177	31.5.82	KP 3052	1 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Au	Pb			
1	10404	3.30%	15	190	X	X	270			
2	10405	3.25%	5	135	X	X	10			
3	10406	3.30%	10	150	X	X	X			
4	10407	3.00%	15	175	X	X	10			
5	10408	3.45%	40	220	X	X	5			
6	10409	3.40%	10	225	X	0.010	15			
7	10410	3.80%	45	335	X	0.008	25			
8	10411	3.50%	20	465	X	X	15			
9	10412	3.40%	45	370	X	X	10			
10	10413	4.10%	290	610	X	X	20			
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

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

663571

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1177	31.5.82	KP 3052	2 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Au	Pb			
1	STD FS4	8.05	310	785	0.5		100			
2	RPT 10404	3.20%	15	190	X		270			
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	0.008	5			
24	DIGESTION	101	101	101	101		101			
25	METHOD	101	101	101	101	304	101			

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

AUTHORISED OFFICER

½ core VM-3

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999
663572 Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1176

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3051	K 704

DATE RECEIVED	RESULTS REQUIRED
6.5.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	14.5.82	3	22

STATE OF SAMPLES		PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SC	KR 10262-74		1		2				Cu Pb Zn Ag Fe	101	101
	KR 10335-42			3	4				Au		304

RESULTS TO: As Above

RESULTS TO:

REMARKS

plotted

VOYAGER 19

CORE

DDH VM-3

STATE OF SAMPLES

whole core	WC
split core	SC
[illegible]	CU
	Ro
	SO
	PU
	WA
	TI
[illegible] sediment	SS
[illegible]	HM

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Ma
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorbtion	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TTN
other chemicals methods	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

ANALABS

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

663578

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1176	17.5.82	KP 3051	1 OF 2

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Au	Pb		
1	KR 10262		7900	10	200	X	X	45		
2	KR 10263		7350	15	135	X	X	45		
3	KR 10264		7600	15	125	0.5	X	120		
4	KR 10265		7550	10	150	2.5	X	245		
5	KR 10266		8500	15	95	1.0	X	195		
6	KR 10267		9900	20	160	1.0	0.009	350		
7	KR 10268		8200	20	75	0.5	X	70		
8	KR 10269		1.35%	1000	1.00%	30.0	0.955	5250		
9	KR 10270		7000	50	150	X	X	220		
10	KR 10271		9300	265	4250	5.5	0.052	2050		
11	KR 10272		8500	295	3050	10.0	0.016	2300		
12	KR 10273		7500	40	915	1.0	X	570		
13	KR 10274		1.25%	30	120	X	X	50		
14	KR 10335		1.25%	10	180	X	X	50		
15	KR 10336		9700	10	160	X	Ploiled.	40		
16	KR 10337		9850	10	130	X	X	30		
17	KR 10338		1.30%	10	110	X	X	55		
18	KR 10339		9500	10	235	X	0.013	60		
19	KR 10340		1.15%	10	145	X	0.016	45		
20	KR 10341		1.20%	10	205	X	X	50		
21	KR 10342		2.10%	10	200	X	X	105		
22										
23										
25										

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

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

ANALYTICAL DATA 663574

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1176	17.5.82	KP 3051	2 OF 2

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Au	Pb		
1	STD FS4		8.10%	325	800	0.5		110		
2	RPT KR 10262		8250	10	210	X		45		
3	RPT KR 10341		1.20%	10	205	X		45		
4										
5										
6										
7										
8										
9										
10										
12										
13										
14										
15							Plotted.			
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		50	5	5	0.5	0.008	5		
	DIGESTION		101	101	101	101		101		
25	METHOD		101	101	101	101	304	101		

Results in [illegible] otherwise specified
[illegible] = element [illegible] but concentration too low to measure
X = element concentration is below detection limit
[illegible] = element not determined

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663575

V19 DDH 4

ANALYTICAL REPORT No. 83.1 08 957

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3006	K 593

DATE RECEIVED	RESULTS REQUIRED
19.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	25.2.82	3	32

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SC	KR 10001-32		1	3	2 4				Cu Pb Zn Fe Ag K Na Ca Mg	101	101 103

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19
DDH 4
CORE

STATE OF SAMPLES

whole core	WC
split core	SC
[illegible]	CU
[illegible]	RO
[illegible]	SO
[illegible]	PU
[illegible]	WA
[illegible]	TI
stream sediment	SS
[illegible] mineral	HM

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Mx
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TTN
other chemicals means	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

AUTHORISED OFFICER

ANALABS

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

ANALYTICAL DATA

663576

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 957	2.3.82	KP 3006	1 OF

TUBE No.	SAMPLE No.	Na	Mg	K	Ca	Fe	Cu	Zn	Ag	Pb
1	10001	200	6100	3.60%	35	6400	X	35	0.5	5
2	10002	X	5950	3.50%	20	6000	10	120	X	340
3	10003	500	7150	4.25%	240	6750	20	385	X	310
4	10004	600	7500	3.95%	X	5750	5	560	X	230
5	10005	300	1.04%	4.75%	X	8850	10	1500	X	820
6	10006	300	1.06%	4.95%	X	6250	15	1200	1.0	510
7	10007	300	8500	3.90%	X	6100	10	625	0.5	175
8	10008	400	1.18%	4.65%	30	8200	10	420	0.5	95
9	10009	500	1.07%	4.35%	X	5850	5	150	X	40
10	10010	400	1.17%	4.65%	15	7750	5	640	0.5	130
11	10011	350	1.06%	4.60%	15	8900	15	645	0.5	265
12	10012	7600	7100	3.60%	15	5350	15	880	X	400
13	10013	1900	9150	4.70%	70	5850	20	725	0.5	195
14	10014	1250	1.05%	4.50%	250	9800	30	950	1.0	270
15	10015	8250	9050	3.85%	65	5400	5	165	X	10
16	10016	1.05%	7800	3.30%	90	5150	5	200	X	5
17	10017	1.55%	7250	2.90%	110	5550	10	100	0.5	5
18	10018	2.25%	7500	2.25%	145	7300	5	145	0.5	X
19	10019	1.20%	8550	4.10%	135	5550	10	420	X	15
20	10020	2.70%	5800	1.85%	115	7300	5	95	X	X
21	10021	3.35%	4850	1.10%	110	6300	X	75	0.5	10
22	10022	2.85%	3850	1.35%	80	6000	5	40	X	20
23	10023	2.90%	5300	1.45%	100	6100	5	65	X	15
24	10024	1.70%	8650	2.80%	110	6850	5	125	X	5
25	10025	2.00%	8600	2.50%	125	8050	5	150	X	15

Results in parts per million unless otherwise specified
* = element present but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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

ANALYTICAL DATA

663577

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 957	2.3.82	KP 3006	2 OF 3

TUBE No.	SAMPLE No.	Mn	Mg	K	Ca	Fe	Cu	Zn	Ag	Pb
1	10026	1.55%	1.08%	3.15%	1700	8700	5	45	X	5
2	10027	2.35%	6950	2.05%	2500	6850	10	35	X	X
3	10028	3.50%	2700	5200	2250	4800	10	20	X	5
4	10029	2.80%	5550	1.85%	240	6550	5	30	X	X
5	10030	3.60%	6250	1.65%	850	7400	5	35	X	X
6	10031	2.30%	7950	2.35%	300	8800	5	35	X	X
7	10032	1.25%	9400	3.50%	445	7350	10	30	X	X
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Results in ppm unless otherwise specified

T = element present but in concentration too low to measure

X = element concentration is below detection limit

* = element not determined

AUTHORISED OFFICER

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

ANALYTICAL DATA

663578

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 957	2.3.82	KP 3006	3 OF 3

TUBE No.	SAMPLE No.	Na	Mg	K	Ca	Fe	Cu	Zn	Ag	Pb
1	STD FS4					8.25%	310	780	0.5	110
2	RPT 10001					6600	X	40	0.5	10
3	RPT 10020					7200	10	90	X	10
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	50	5	50	5	5	0.5	5
24	DIGESTION	103	103	103	103	101	101	101	101	101
25	METHOD	103	103	103	103	101	101	101	101	101

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

AUTHORISED OFFICER

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663579

ANALYTICAL REPORT No. 83.1 08 1206

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
	K 660,705

DATE RECEIVED	RESULTS REQUIRED
14.5.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	21.5.82	3	74

STATE OF SAMPLES (REFER BELOW)	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER (SEE REMARKS)	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
RO	KR 8519,		1	3	2 4				Sn		402
GC	11606-751 (Even Numbers)				1				Cu Pb Zn Ag Fe K,Na,Ca,Mg,	101 103	101 103

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19.
DDH V19-5

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	X-ray fluorescence	XRF
[illegible]	CU	nitric acid	A3	other mixed acids	Mo	spectrophotometry	SPEC
[illegible]	RA	aqua regia	A4	alkaline attack	AA	colorimetry	COL
[illegible]	SP	nitric-perchloric	A5	volatilisation	VO	chromatography	CHR
[illegible]	RE	HF mixture	A6	ignition	IG	titration	TTN
[illegible]	DRA	HF under pressure	A7	pressed powder (XRF)	PP	other chemical methods	CHEM
[illegible]	DT	fusion	A8	glass fusion (XRF)	GR	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

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663580

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1206	31.5.82		1 OF 4

TUBE No.	SAMPLE No.	Na	Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Pb
1	11606	1300	1450	4.9	205	9700	40	1400	X	200
2	11608	1400	2400	4.25	380	1.25%	10	900	X	75
3	11610	1450	1850	4.55	535	1.25%	10	1600	X	80
4	11612	850	2250	4.35	525	1.45%	15	600	X	125
5	11614	900	2750	4.25	815	1.15%	10	710	0.5	35
6	11616	750	2750	4.15	735	1.10%	10	110	X	85
7	11618	800	3450	4.65	900	1.15%	15	730	0.5	45
8	11620	2000	3000	3.65	1250	2.05%	10	350	X	25
9	11622	1150	3500	3.55	1150	2.45%	10	640	0.5	110
10	11624	1000	3350	4.20	600	1.20%	45	1500	X	115
[illegible]	11626	650	2800	3.00	620	1.45%	80	700	X	110
12	11628	1100	3350	3.95	2000	2.85%	60	1200	X	730
13	11630	1100	3300	420	1000	1.45%	40	670	X	240
14	11632	1000	3100	4.25	1500	1.85%	25	480	0.5	40
15	11634	1250	3100	4.20	2250	2.85%	20	510	X	70
16	11636	950	2800	4.00	1350	1.85%	20	670	X	90
17	11638	1000	3450	4.05	4500	2.00%	30	1000	X	120
18	11640	1150	2950	4.15	1500	1.50%	30	730	X	160
19	11642	1150	2900	4.05	1350	1.75%	25	900	X	95
20	11644	1100	2700	3.90	2150	2.35%	20	1050	X	140
21	11646	1100	2800	3.60	3900	3.55%	15	870	0.5	330
22	11648	1050	3400	4.55	1800	1.75%	20	1000	X	315
23	11650	1150	3550	3.90	7000	2.60%	25	680	X	95
[illegible]	11652	1000	3250	3.90	3950	2.35%	35	1150	X	175
25	11654	800	3600	4.00	5900	1.95%	30	700	X	230

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

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663581

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1206	31.5.82		2 OF 4

TUBE No.	SAMPLE No.	Na	Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Pb
1	11656	600	3200	3.45	2.55%	1.65%	35	880	X	265
2	11658	800	3500	4.00	6750	1.40%	25	850	X	290
3	11660	850	3450	4.10	2350	1.50%	30	720	X	125
4	11662	1200	4450	4.00	1.25%	2.45%	100	930	X	110
5	11664	3200	4200	3.85	1.90%	1.85%	75	1050	X	250
6	11666	3700	4350	3.80	2.25%	2.40%	85	1400	X	305
7	11668	2800	4750	3.60	2.55%	3.15%	60	780	X	200
8	11670	2000	4800	3.65	1.35%	2.95%	45	1000	X	220
9	11672	1000	4700	4.25	1.45%	2.25%	55	1950	0.5	700
10	11674	900	4650	4.10	2.10%	1.90%	30	1100	X	355
[illegible]	11676	900	3750	3.95	1.35%	1.55%	25	380	X	120
12	11678	550	3350	3.85	1.15%	1.55%	30	470	X	80
13	11680	750	4250	3.90	1.15%	2.20%	30	1200	X	120
14	11682	600	4350	3.45	1.85%	1.80%	25	550	X	40
15	11684	550	3750	3.80	2.90%	1.55%	20	870	X	105
16	11686	600	3500	3.85	2.60%	1.80%	20	520	X	40
17	11688	1050	3200	3.75	1.70%	1.95%	30	330	0.5	105
18	11690	950	3900	4.10	1.75%	2.45%	15	375	X	180
19	11692	1100	3150	3.90	6200	1.25%	25	415	1.0	185
20	11694	850	2950	3.35	8450	2.10%	15	250	X	80
21	11696	650	3100	3.45	2.25%	1.55%	20	325	X	140
22	11698	700	3450	3.60	1.80%	1.85%	30	1250	X	130
23	11700	850	3550	4.20	1.50%	1.55%	10	1300	0.5	175
[illegible]	11702	700	3500	3.75	1.35%	1.40%	10	735	X	90
25	11704	850	3250	3.45	1.80%	1.75%	10	460	1.0	80

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

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66358

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1206	31.5.82		3 OF 4

TUBE No.	SAMPLE No.	Na	Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Pb
1	11706	600	3700	3.65	2.00%	1.55%	15	475	X	75
2	11708	1000	3700	3.75	2.25%	1.65%	15	455	X	80
3	11710	700	3550	3.65	1.50%	1.70%	125	845	1.5	1050
4	11712	600	3350	3.55	1.20%	1.60%	20	540	1.0	185
5	11714	600	3550	3.40	1.55%	1.45%	35	550	0.5	130
6	11716	1000	4450	4.25	1.55%	1.55%	15	495	0.5	265
7	11718	2700	4400	3.75	1.30%	1.65%	10	785	1.5	350
8	11720	650	4650	3.75	1.05%	1.70%	60	2000	2.0	690
9	11722	750	3900	3.20	1.20%	1.65%	20	1750	1.0	225
10	11724	750	3850	3.30	1.45%	2.30%	30	1300	0.5	240
11	11726	750	3900	3.55	1.50%	2.00%	70	2350	2.0	915
12	11728	550	3550	3.70	1.70%	1.75%	30	570	0.5	125
13	11730	600	4300	3.70	1.75%	1.90%	35	1500	0.5	355
14	11732	700	4900	3.10	1.75%	2.50%	15	2350	1.0	340
15	11734	800	5000	4.05	1.80%	1.95%	15	1800	X	310
16	11736	700	4400	4.00	1.55%	1.75%	40	615	X	75
17	11738	700	4250	4.15	1.35%	1.55%	60	300	X	15
18	11740	650	3950	4.10	2.35%	1.35%	25	245	X	25
19	11742	800	4000	3.95	1.65%	1.65%	20	565	X	245
20	11744	800	3750	4.05	1.25%	1.50%	15	890	X	180
21	11746	600	3400	3.75	1.85%	1.20%	10	315	X	45
22	11748	1100	4150	4.50	1.05%	1.70%	15	665	X	205
23	11750	1600	3800	3.40	1.95%	1.65%	10	400	X	85
24										
25										

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

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

663582

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
NR	83.1 08 1206	31.5.82		4 OF 4

TUBE No.	SAMPLE No.	Mn	Mg	K(%)	Ca	Fe	Cu	Zn	As	Pb
1	STD FS4					7.60%	320	810	0.5	100
2	RPT 11606					1.00%	40	1350	X	195
3	RPT 11644					2.20%	15	1000	X	135
4	STD FS4					7.40%	310	785	0.5	100
5	RPT 11686					1.60%	20	525	X	40
6	RPT 11724					2.35%	30	1250	0.5	235
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	50	5	50	5	5	0.5	5
	DIGESTION	103	103	103	103	101	101	101	101	101
25	METHOD	103	103	103	103	101	101	101	101	101

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

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ANALYTICAL DATA

663584

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1206	31.5.82		1 OF 1

TUBE No.	SAMPLE No.	Sn								
1	8519	3.45%								
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12	NOTE: Acid Soluble Tin 0.39%									
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION									
	DIGESTION									
25	METHOD	403								

Results in % unless otherwise specified
L = element present but concentration too low to measure
X = Element concentration is below detection limit
— = Element not determined

AUTHORISED OFFICER

167

Eliot

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A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999
Telex AA92560

663585

ANALYTICAL REPORT No. 83.1 MB 1249

PAGE 1 OF 2

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
K 3073	K 706

DATE RECEIVED	RESULTS REQUIRED
28.5.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	2.6.82	3	55

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
RD	KR 11752-816	1	2	4	3 5				Cu Pb Zn Ag Fe K Mg Na Ca		101 103

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19

DDH-1

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

AUTHORISED OFFICER

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

663586

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1249	8.6.82	K 3073	1 OF 4

TUBE No.	SAMPLE No.	Na(%)	Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Pb
1	11752	1.15	1.40%	3.25	1.05%	2.90%	10	80	X	10
2	11753	2.15	1.30%	2.30	1100	2.85%	10	200	X	10
3	11754	2.85	7550	1.50	850	1.90%	10	55	X	10
4	11755	2.70	9600	1.55	1000	2.30%	5	90	X	20
5	11756	1.55	9250	2.55	800	2.05%	5	70	X	20
6	11757	2.65	9900	1.60	950	2.65%	15	65	X	30
7	11758	2.85	1.10%	1.65	1050	2.70%	5	60	X	10
8	11759	2.25	6900	2.20	750	2.05%	5	55	X	10
9	11760	2.40	9050	2.10	950	2.55%	10	60	X	15
10	11761	2.35	1.00%	2.50	1200	2.60%	5	50	X	25
11	11762	2.80	1.10%	1.70	3000	3.50%	5	40	X	25
12	11763	2.60	1.05%	2.30	6000	3.55%	5	70	X	20
13	11764	2.45	1.05%	2.65	4400	3.00%	30	65	X	20
14	11765	2.35	1.05%	2.60	3800	3.00%	10	70	X	25
15	11766	2.75	8300	2.30	6750	2.45%	10	60	X	25
16	11767	2.70	1.25%	2.15	7150	3.10%	5	70	X	25
17	11768	2.65	8750	2.15	2300	2.15%	30	55	X	15
18	11769	2.95	9700	1.85	6600	2.80%	15	60	X	20
19	11770	2.20	8950	2.40	4550	2.75%	10	50	X	20
20	11771	1.50	7850	3.15	5950	2.30%	10	70	X	10
21	11772	0.98	6750	3.10	1.55%	2.10%	15	100	X	20
22	11773	1.95	9250	2.85	1.50%	3.20%	60	165	X	25
23	11774	1.85	8400	3.05	4050	2.45%	10	40	X	15
24	11775	1.65	8100	2.90	1250	2.15%	40	90	X	20
25	11776	0.09	8750	3.30	700	2.10%	440	200	X	60

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

AUTHORISED OFFICER B. Doran

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ANALYTICAL DATA

663587

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1249	8.6.82	K 3073	2 OF 4

TUBE No.	SAMPLE No.	Na(%)	Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Pb
1	11777	1.70	4500	3.05	350	7400	15	40	X	20
2	11778	1.05	5350	3.75	870	5800	10	70	X	25
3	11779	1.60	3800	2.85	2850	5900	5	55	X	30
4	11780	1.90	3650	2.60	1.00%	6500	5	35	X	15
5	11781	1.90	4400	2.70	1.30%	7200	10	10	X	15
6	11782	2.00	9550	2.15	1.90%	2.45%	10	70	X	15
7	11783	2.30	1.05%	1.80	1.15%	2.65%	5	110	X	15
8	11784	2.40	1.00%	1.95	1.20%	2.65%	5	100	X	30
9	11785	2.15	1.05%	3.15	1.65%	2.55%	5	115	X	15
10	11786	0.96	7400	3.10	2.05%	1.65%	5	160	X	40
11	11787	1.95	8700	2.20	1.50%	2.15%	X	70	X	5
12	11788	1.65	8350	2.30	1.85%	2.20%	10	70	X	5
13	11789	1.75	7900	2.30	1.80%	2.20%	5	45	X	5
14	11790	1.60	7450	2.60	1.75%	2.10%	10	50	X	10
15	11791	1.35	6950	2.60	1.95%	1.90%	30	40	X	10
16	11792	1.50	8750	2.70	1.45%	2.30%	30	55	0.5	15
17	11793	2.00	9750	2.45	1.10%	2.70%	10	50	X	X
18	11794	1.45	9600	3.10	1.75%	2.60%	5	45	X	X
19	11795	2.30	1.00%	2.70	1.00%	2.80%	X	50	X	10
20	11796	2.35	9800	2.75	9750	2.80%	X	50	X	30
21	11797	2.35	1.00%	3.05	9550	2.75%	5	50	X	10
22	11798	1.75	8900	3.35	1.35%	2.40%	5	45	X	15
23	11799	2.45	8950	2.90	9700	2.75%	X	50	X	20
24	11800	2.35	9700	3.15	8600	2.70%	X	50	X	10
25	11801	2.70	1.05%	1.20	1.10%	2.90%	X	50	X	15

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

AUTHORISED OFFICER

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

663588

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 1249	8.6.82	K 3073	3 OF 4

TUBE No.	SAMPLE No.	Na(%)	Mg	K(%)	Ca	Fe	Cu	Zn	Ag	Pb
1	11802	2.30	9400	3.00	1.15%	3.20%	5	45	0.5	5
2	11803	2.25	9000	2.90	1.25%	2.75%	5	40	0.5	5
3	11804	2.40	8850	2.40	1.60%	2.30%	X	40	X	5
4	11805	2.45	1.00%	2.10	1.40%	2.95%	10	50	0.5	10
5	11806	2.50	7650	2.00	1.55%	2.35%	25	90	X	20
6	11807	2.65	4350	2.60	1.20%	1.10%	5	20	X	10
7	11808	2.30	7300	2.30	1.15%	1.90%	5	50	X	10
8	11809	1.95	9450	2.65	1.85%	2.55%	5	40	X	5
9	11810	2.65	1.05%	1.85	1.70%	3.70%	X	45	X	30
10	11811	2.60	8300	1.80	7900	2.85%	X	30	X	5
11	11812	2.25	8150	2.35	1.35%	2.40%	X	30	X	5
12	11813	2.45	8800	4.85	1.45%	2.05%	X	45	X	5
13	11814	2.55	1.10%	2.75	1.45%	4.90%	X	75	X	5
14	11815	2.05	8400	4.50	4750	1.70%	X	30	X	5
15	11816	1.40	1.25%	5.90	3050	3.20%	5	50	X	X
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER

663589

VOYAGER 20

ANALABS

663590

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1104

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2899	b86

DATE RECEIVED	RESULTS REQUIRED
5.4.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	13.4.82	3	31

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
PU	TS 18220-50, TS 18126								Cu Pb Zn Ag	101	101

RESULTS TO: As Above

RESULTS TO:

REMARKS

Check analyses
Ag Voyager 20

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

AUTHORISED OFFICER

173

ANALABS

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

663591

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1104	13.4.82	KP 2899	1 OF

TUBE No.	SAMPLE No.		Cu	Zn	Mo	Pb				
1	TS 18220		40	345	1.0	125				
2	TS 18221		40	365	0.5	125				
3	TS 18222		15	300	0.5	50				
4	TS 18223		15	680	0.5	250				
5	TS 18224		20	220	1.0	90				
6	TS 18225		20	535	0.5	290				
7	TS 18226		10	10	1.0	10				
8	TS 18227		15	165	0.5	35				
9	TS 18228		10	70	5.5	140				
10	TS 18229		15	60	0.5	145				
11	TS 18230		20	105	3.5	30				
12	TS 18231		20	100	5.0	30				
13	TS 18232		5	50	3.0	15				
14	TS 18233		10	60	1.5	10				
15	TS 18234		15	135	2.5	15				
16	TS 18235		15	45	2.0	30				
17	TS 18236		10	180	2.5	35				
18	TS 18237		15	450	1.5	180				
19	TS 18239		15	70	2.5	20				
20	TS 18240		10	140	3.5	30				
21	TS 18241		15	155	1.5	35				
22	TS 18242		10	65	1.0	30				
23	TS 18243		10	50	3.5	20				
24	TS 18244		10	50	1.5	20				
25	TS 18245		10	90	1.0	55				

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

AUTHORISED OFFICER B Don

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

663532

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 00 1104	13.4.82	KP 2899	2 OF

TUBE No.	SAMPLE No.		Cu	Zn	Ag	Pb				
1	TS 18246		10	55	1.0	30				
2	TS 18247		10	70	0.5	60				
3	TS 18248		10	2400	1.0	320				
4	TS 18249		10	75	0.5	30				
5	TS 18250		10	25	0.5	70				
6	TS 18126		15	50	20.5	40				
7										
8										
9										
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23										
24										
25										

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

AUTHORISED SIGNATURE

ANALABS

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

663593

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1104	13.4.82	KP 2899	3 OF

TUBE No.	SAMPLE No.		Cu	Zn	Ag	Pb				
1	STD FS4		300	790	1.0	100				
2	RPT TS 18220		40	350	0.5	125				
3	RPT TS-18239		10	65	3.5	30				
4										
5										
6										
7										
8										
9										
10										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		5	5	0.5	5				
	DIGESTION		101	101	101	101				
25	METHOD		101	101	101	101				

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

AUTHORISED OFFICER

ANALABS

663594

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1096

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3030	K 687

DATE RECEIVED	RESULTS REQUIRED
2.4.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	6.4.82	3	11

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS			
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE		REFER TO ANALYSIS SECTION	PREPARATION	METHOD
PU	Various							1	Au			309

RESULTS TO: As Above

RESULTS TO:

REMARKS

Check analyses

Au Voyager 20

STATE OF SAMPLES

whole core	WC
split core	SC
[illegible]	CU
Ro	Ro
SO	SO
PU	PU
WA	WA
[illegible]	[illegible]
[illegible]	SS
[illegible]	HM

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Mix
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TTN
other chemical means	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

[illegible]

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

663595

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1096	6.4.82	KP 3030	1 OF 1

TUBE No.	SAMPLE No.	Au									
1	TS 17920	0.019									
2	TS 17988	0.023									
3	TS 17989	0.007									
4	TS 18002	X									
5	TS 18025	0.007									
6	TS 18039	X									
7	TS 18080	0.009									
8	TS 18126	X									
9	TS 18172	0.012									
10	TS 18228	0.005									
11	TS 18248	0.008									
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23	DETECTION	0.008									
24	DIGESTION										
25	METHOD	309									

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

AUTHORISED OFFICER B Dan

Voyager 30

ANALABS

Voyager 29

663596

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1004

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3017	K 597

DATE RECEIVED	RESULTS REQUIRED
8.3.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	15.3.82	3	223

STATE OF SAMPLES		PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER - SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
So	TS 18083-309	1				2			Cu Pb Zn Ag Fe	101	101

RESULTS TO: As Above

RESULTS TO:

REMARKS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
[illegible]	CU	nitric acid	A3	other mixed acids	Mo	spectrophotometry	SPEC
[illegible]	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
[illegible]	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
[illegible]	PU	HF mixture	A6	ignition	IG	titration	TIT
[illegible]	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
[illegible] core	Di	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					sight/sequence	SIGHT
heavy mineral	HMC					inductively coupled plasma	ICP

VOYAGE 20

ANALABS

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

663597

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1004	15.3.82	KP 3017	1 OF 10

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	TS 18083		5250	15	30	0.5	50			
2	TS 18084		7200	40	50	0.5	70			
3	TS 18085		5950	10	20	1.0	25			
4	TS 18086		6300	15	30	0.5	25			
5	TS 18087		8200	10	40	0.5	25			
6	TS 18088		8000	10	45	0.5	10			
7	TS 18089		6100	15	40	0.5	25			
8	TS 18090		8400	15	60	0.5	40			
9	TS 18091		7900	15	55	X	40			
10	TS 18092		8100	15	140	0.5	40			
[illegible]	TS 18093		1.45%	20	40	X	30			
12	TS 18094		8350	20	30	0.5	40			
13	TS 18095		1.05%	35	70	0.5	35			
14	TS 18096		1.15%	15	50	0.5	40			
15	TS 18097		1.00%	20	75	X	50			
16	TS 18098		2.10%	10	170	0.5	45			
17	TS 18099		1.75%	15	185	1.0	40			
18	TS 18100		1.65%	15	170	0.5	35			
19	TS 18101		1.15%	20	80	X	20			
20	TS 18102		1.20%	15	75	0.5	20			
21	TS 18103		1.35%	10	120	X	30			
22	TS 18104		1.65%	15	65	X	30			
23	TS 18105		1.60%	10	55	X	20			
[illegible]	TS 18106		1.55%	10	65	X	35			
25	TS 18107		3250	10	30	X	40			

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

AUTHORISED OFFICER

VOYAGER 20

ANALABS

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

663598

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1004	15.3.82	KP 3017	2 OF 10

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	TS 18108		1.10%	10	80	X	40			
2	TS 18109		1.35%	15	110	X	115			
3	TS 18110		7400	20	65	X	55			
4	TS 18111		7800	20	65	0.5	60			
5	TS 18112		8000	10	60	1.0	30			
6	TS 18113		1.15%	10	95	X	55			
7	TS 18114		6500	10	55	0.5	40			
8	TS 18115		1.20%	10	110	1.0	60			
9	TS 18116		1.65%	5	90	X	50			
10	TS 18117		6600	20	60	X	60			
[illegible]	TS 18118		8300	10	110	1.5	60			
12	TS 18119		5900	10	90	1.0	35			
13	TS 18120		6150	60	125	1.5	60			
14	TS 18121		5600	45	105	0.5	50			
15	TS 18122		7900	30	115	0.5	45			
16	TS 18123		9000	5	105	X	35			
17	TS 18124		1.00%	35	105	1.0	25			
18	TS 18125		7400	15	125	X	60			
19	TS 18126		9500	15	60	20.5	35			
20	TS 18127		3950	10	20	0.5	15			
21	TS 18128		1.15%	20	90	1.0	45			
22	TS 18129		8300	10	80	X	30			
23	TS 18130		1.45%	15	95	X	40			
[illegible]	TS 18131		1.50%	15	95	X	40			
25	TS 18132		7000	10	85	X	35			

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

AUTHORISED OFFICER

ANALABS

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

663699

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1004	15.3.82	KP 3017	3 OF 10

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	TS 18133		1.25%	45	335	X	80			
2	TS 18134		7650	15	100	0.5	40			
3	TS 18135		9800	10	160	X	45			
4	TS 18136		1.30%	20	135	0.5	35			
5	TS 18137		1.50%	30	115	1.0	50			
6	TS 18138		9150	15	105	X	80			
7	TS 18139		8200	15	80	X	35			
8	TS 18140		7350	10	65	0.5	35			
9	TS 18141		7650	10	65	X	30			
10	TS 18142		5250	10	50	0.5	35			
[redacted]	TS 18143		7100	10	40	0.5	10			
[redacted]	TS 18144		9800	10	85	0.5	30			
13	TS 18145		1.10%	10	110	X	50			
14	TS 18146		1.30%	15	230	X	115			
15	TS 18147		1.20%	10	140	X	90			
16	TS 18148		2.20%	35	440	0.5	65			
17	TS 18149		9700	15	90	0.5	30			
18	TS 18150		6000	10	70	0.5	15			
19	TS 18151		5700	10	75	0.5	20			
20	TS 18152		8300	15	160	0.5	45			
21	TS 18153		6500	15	170	0.5	50			
22	TS 18154		9000	15	120	0.5	20			
23	TS 18155		1.00%	10	65	X	15			
[redacted]	TS 18156		1.75%	20	235	0.5	90			
25	TS 18157		8000	10	150	0.5	25			

Results in ppm unless otherwise specified

X = determined to be of no significance or not detected in concentration tested for in sample

< = element present but concentration too low to measure

> = element present in excess of upper detection limit

— = element not determined

AUTHORISED SIGNATURE

ANALABS

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

663600

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1004	15.3.82	KP 3017	4 OF 10

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	TS 18158		1.15%	10	425	0.5	35			
2	TS 18159		1.20%	10	220	X	50			
3	TS 18160		1.10%	10	175	0.5	90			
4	TS 18161		1.20%	5	175	0.5	85			
5	TS 18162		6650	10	115	0.5	60			
6	TS 18163		7100	X	100	X	60			
7	TS 18164		1.50%	X	330	X	75			
8	TS 18165		1.15%	X	250	X	135			
9	TS 18166		3.00%	5	1650	0.5	505			
10	TS 18167		3.00%	10	550	X	185			
[illegible]	TS 18168		2.30%	20	490	X	1150			
12	TS 18169		2.35%	5	535	X	885			
13	TS 18170		2.75%	10	405	X	935			
14	TS 18171		2.65%	15	370	X	905			
15	TS 18172		3.55%	355	1700	2.5	4500			
16	TS 18173		2.10%	25	720	1.5	85			
17	TS 18174		3.45%	X	1300	X	50			
18	TS 18175		3.65%	5	1200	X	50			
19	TS 18176		2.45%	10	960	1.0	125			
20	TS 18177		9100	10	345	1.0	205			
21	TS 18178		1.25%	10	320	1.0	40			
22	TS 18179		2.60%	20	780	1.0	115			
23	TS 18180		3.00%	5	960	1.0	100			
[illegible]	TS 18181		3.25%	5	1100	X	115			
25	TS 18182		2.85%	5	665	0.5	100			

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

AUTHORISED OFFICER

ANALABS

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

663601

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1004	15.3.82	KP 3017	5 OF 10

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	TS 18183		3.20%	10	495	0.5	95			
2	TS 18184		1.10%	10	145	0.5	70			
3	TS 18185		1.35%	25	180	1.5	80			
4	TS 18186		7400	5	145	X	50			
5	TS 18187		2.70%	5	450	X	550			
6	TS 18188		1.15%	10	405	1.0	260			
7	TS 18189		2.45%	10	800	0.5	850			
8	TS 18190		1.20%	10	320	0.5	875			
9	TS 18191		1.20%	X	355	X	560			
10	TS 18192		3.60%	5	785	0.5	235			
[redacted]	TS 18193		3.85%	15	550	X	90			
[redacted]	TS 18194		3.80%	35	840	1.5	115			
13	TS 18195		1.25%	5	260	0.5	85			
14	TS 18196		1.50%	480	315	1.5	535			
15	TS 18197		1.75%	30	305	0.5	280			
16	TS 18198		1.95%	15	335	0.5	220			
17	TS 18199		2.45%	10	295	X	245			
18	TS 18200		1.50%	5	305	X	180			
19	TS 18201		1.40%	5	295	0.5	180			
20	TS 18202		1.35%	5	225	0.5	90			
21	TS 18203		1.25%	10	180	3.0	70			
22	TS 18204		2.15%	10	550	1.5	70			
23	TS 18205		1.20%	15	90	1.0	35			
[redacted]	TS 18206		1.55%	35	310	0.5	35			
25	TS 18207		8400	20	135	1.0	35			

Results in grams per tonne unless otherwise specified.
- = element present but too low to be accurately estimated
X = element absent or is below detection limit

AUTHORISED OFFICER

184

ANALABS

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

663602

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1004	15.3.82	KP 3017	6 OF 10

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	TS 18208		2.05%	15	300	1.0	45			
2	TS 18209		3.45%	15	590	1.0	115			
3	TS 18210		1.05%	5	125	3.5	15			
4	TS 18211		1700	5	15	2.0	X			
5	TS 18212		2.85%	15	400	0.5	165			
6	TS 18213		2.90%	15	435	1.0	180			
7	TS 18214		3.40%	10	350	1.0	135			
8	TS 18215		2.80%	15	275	1.5	45			
9	TS 18216		1.25%	15	195	1.5	80			
10	TS 18217		7800	10	195	1.5	205			
[illegible]	TS 18218		1.20%	40	240	1.0	120			
12	TS 18219		2.55%	10	290	1.5	45			
13	TS 18220		1.15%	35	335	1.5	130			
14	TS 18221		1.30%	40	365	1.0	130			
15	TS 18222		1.25%	10	285	1.5	55			
16	TS 18223		2.80%	10	650	1.0	265			
17	TS 18224		2.30%	15	235	2.0	90			
18	TS 18225		2.35%	15	505	1.0	310			
19	TS 18276		1400	5	10	2.0	X			
20	TS 18227		2.30%	10	150	1.0	40			
21	TS 18228		1.60%	10	65	5.5	135			
22	TS 18229		3800	10	90	1.5	155			
23	TS 18230		4200	15	110	3.0	20			
[illegible]	TS 18231		4200	15	110	3.5	25			
25	TS 18232		5000	10	70	3.5	10			

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

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

663603

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1004	15.3.82	KP 3017	7 OF 10

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	TS 18233		4550	X	70	2.5	20			
2	TS 18234		4550	5	150	3.0	15			
3	TS 18235		4000	10	55	2.0	30			
4	TS 18236		9400	5	175	3.5	30			
5	TS 18237		1.55%	10	435	2.5	200			
6	TS 18238		N/S	N/S	N/S	N/S	N/S			
7	TS 18239		7900	5	80	3.0	20			
8	TS 18240		1.30%	5	145	3.0	25			
9	TS 18241		1.35%	5	150	0.5	30			
10	TS 18242		7900	5	70	1.5	30			
[illegible]	TS 18243		4150	5	50	2.5	15			
12	TS 18244		3500	5	40	1.5	15			
13	TS 18245		5150	5	85	1.0	55			
14	TS 18246		4250	5	50	0.5	30			
15	TS 18247		2350	5	60	X	50			
16	TS 18248		8400	10	2400	1.0	340			
17	TS 18249		3900	5	65	X	15			
18	TS 18250		2100	5	30	1.0	60			
19	TS 18251		2150	5	30	1.5	35			
20	TS 18252		5300	30	185	0.5	65			
21	TS 18253		8150	20	215	0.5	40			
22	TS 18254		2450	10	35	0.5	20			
23	TS 18255		3650	10	50	1.0	40			
[illegible]	TS 18256		5300	10	70	0.5	45			
25	TS 18257		2300	5	40	0.5	30			

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

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

663604

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1004	15.3.82	KP 3017	8 OF 10

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	TS 18260		1550	5	20	1.5	45			
2	TS 18262		3650	10	40	1.0	40			
3	TS 18263		3650	5	40	0.5	30			
4	TS 18265		7700	5	120	X	30			
5	TS 18266		2600	5	20	X	X			
6	TS 18267		2.50%	10	185	0.5	5			
7	TS 18268		5550	5	190	X	10			
8	TS 18269		8150	10	115	0.5	25			
9	TS 18270		2400	10	60	0.5	80			
10	TS 18271		2300	10	55	X	70			
[illegible]	TS 18272		750	10	20	1.0	15			
12	TS 18273		400	10	20	1.0	15			
13	TS 18274		3200	5	30	X	20			
14	TS 18275		1750	5	20	0.5	25			
15	TS 18276		5250	10	50	1.5	40			
16	TS 18277		8400	5	75	1.0	65			
17	TS 18278		1.90%	20	400	0.5	50			
18	TS 18279		2.15%	20	605	1.5	265			
19	TS 18280		2.70%	10	400	X	75			
20	TS 18281		2.55%	10	370	0.5	55			
21	TS 18282		5500	5	95	1.5	55			
22	TS 18283		1.85%	5	400	0.5	85			
23	TS 18284		2.35%	5	465	X	130			
[illegible]	TS 18285		2.05%	10	250	1.0	60			
25	TS 18286		2.20%	10	315	1.0	80			

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

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

663605

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1004	15.3.82	KP 3017	9 OF 10

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	TS 18287		2.20%	15	2150	1.0	270			
2	TS 18288		6500	15	70	X	340			
3	TS 18289		5.65%	5	95	0.5	45			
4	TS 18290		7250	X	45	1.0	15			
5	TS 18291		7000	X	45	1.0	5			
6	TS 18292		6350	5	90	0.5	5			
7	TS 18293		5800	10	110	0.5	30			
8	TS 18294		6200	5	95	1.5	25			
9	TS 18295		2.55%	15	595	0.5	190			
10	TS 18296		2.65%	10	775	0.5	120			
[illegible]	TS 18297		2.50%	10	850	0.5	195			
12	TS 18298		2.05%	5	730	X	70			
13	TS 18299		2.25%	5	525	X	95			
14	TS 18300		5000	10	75	X	60			
15	TS 18301		4950	10	75	1.5	110			
16	TS 18302		7400	5	170	X	155			
17	TS 18303		6700	5	85	X	95			
18	TS 18304		4950	5	60	0.5	130			
19	TS 18305		1000	5	10	X	25			
20	TS 18306		2.20%	10	175	0.5	50			
21	TS 18307		5600	5	50	0.5	20			
22	TS 18308		6350	5	100	1.0	15			
23	TS 18309		1.80%	5	150	X	35			
25										

Results in [illegible] specified.
[illegible]
X = [illegible]
[illegible]

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

663600

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1004	15.3.82	KP 3017	10 OF 10

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb			
1	STD FS4	8.15%	320	740	1.5	115			
2	RPT TS 18083	4950	15	25	1.5	30			
3	RPT TS 18102	1.35%	15	80	0.5	20			
4	STD FS4	8.40%	290	750	1.0	105			
5	RPT TS 18123	8700	X	105	0.5	30			
6	RPT TS 18142	5000	10	40	X	20			
7	STD FS4	8.50%	305	775	X	125			
8	RPT TS 18163	7500	X	100	X	65			
9	RPT TS 18182	2.85%	5	635	X	95			
10	STD FS4	8.40%	305	735	0.5	105			
11	RPT TS 18203	1.30%	10	190	2.5	50			
12	RPT TS 18222	1.75%	10	275	1.5	55			
13	STD FS4	7.50%	290	690	0.5	105			
14	RPT TS 18243	3500	5	45	2.5	10			
15	RPT TS 18266	2150	5	40	X	X			
16	STD FS4	8.30%	275	725	0.5	110			
17	RPT TS 18287	2.25%	15	2150	1.5	260			
18	RPT TS 18306	2.15%	10	165	X	45			
19									
20									
21	NOTE: N/S - Sample Not Submitted								
22									
23	DETECTION	50	5	5	0.5	5			
24	DIGESTION	101	101	101	101	101			
25	METHOD	101	101	101	101	101			

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

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A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663607

VOYAGER 2°
SOIL

ANALYTICAL REPORT No. 83.1 08 979

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
	K 596

DATE RECEIVED	RESULTS REQUIRED
26.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	5.3.82	3	167

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS			
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE		REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 17916-18082	1				2			Cu Pb Zn Ag Fe		101	101

RESULTS TO: As Above

RESULTS TO:

REMARKS

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

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

663608

Voyager 20 Soils

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 979	9.3.82	KP 3003	1 OF 8

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	17916		8050	5	345	0.5	80			
2	17917		2.20%	40	505	2.0	250			
3	17918		3.25%	15	325	0.5	235			
4	17919		2.80%	10	215	X	120			
5	17920		4.25%	5	965	X	1200			
6	17921		5.25%	10	970	1.0	225			
7	17922		1.65%	15	170	X	85			
8	17923		3.40%	15	510	X	120			
9	17924		2.75%	10	425	X	50			
10	17925		3.15%	5	335	X	X			
[illegible]	17926		3.75%	5	480	X	10			
12	17927		3.45%	5	520	X	330			
13	17928		1.70%	10	115	0.5	110			
14	17929		3.85%	5	350	0.5	35			
15	17930		1.35%	5	230	0.5	25			
16	17931		1.35%	5	250	X	30			
17	17932		5050	20	95	0.5	15			
18	17933		4300	10	120	0.5	15			
19	17934		1.45%	10	285	X	350			
20	17935		9500	10	300	X	300			
21	17936		9550	5	310	0.5	775			
22	17937		6250	10	115	0.5	355			
23	17938		1.75%	5	980	0.5	400			
[illegible]	17939		1.90%	5	215	0.5	95			
25	17940		1.45%	35	185	0.5	150			

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

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

Voyager 23
Soils

ANALYTICAL DATA 663609

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 979	9.3.82	KP 3003	2 OF 8

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	17941		1.20%	10	175	1.5	180			
2	17942		9650	10	105	X	45			
3	17943		1.35%	15	355	0.5	160			
4	17944		1.90%	5	280	0.5	135			
5	17945		1.85%	10	135	1.0	50			
6	17946		3.20%	5	165	1.0	60			
7	17947		1.75%	5	160	X	25			
8	17948		3.05%	10	275	X	120			
9	17949		2.90%	5	400	X	105			
10	17950		7750	10	215	X	155			
11	17951		8000	10	210	0.5	165			
12	17952		3.85%	5	480	X	130			
13	17953		2.25%	5	455	0.5	60			
14	17954		7650	5	150	X	100			
15	17955		1.25%	5	260	X	75			
16	17956		5250	20	205	0.5	35			
17	17957		2.05%	5	185	X	50			
18	17958		9450	5	120	0.5	20			
19	17959		1.65%	10	235	1.5	25			
20	17960		1.65%	5	555	X	40			
21	17961		1.55%	X	495	X	40			
22	17962		2.65%	X	810	X	180			
23	17963		2.10%	5	560	X	150			
24	17964		1.75%	10	370	X	50			
25	17965		1.90%	10	565	X	155			

- No results in percentages unless otherwise specified
- X = element present but not detected at the lower limit of detection
- A = element concentration is below detection limit
- N = element not determined

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ANALABS

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

VOYAGER 20 SOILS

ANALYTICAL DATA 663610

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 979	9.3.82	KP 3003	3 OF 8

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	17966		2.65%	10	555	X	45			
2	17967		2.05%	10	325	X	30			
3	17968		2.20%	10	320	X	45			
4	17969		1.70%	115	155	X	20			
5	17970		2.25%	15	245	0.5	10			
6	17971		1.85%	15	210	X	X			
7	17972		1.45%	15	300	X	10			
8	17973		4550	5	90	X	20			
9	17974		1.60%	10	310	X	5			
10	17975		9300	15	455	X	X			
[illegible]	17976		9250	15	255	0.5	40			
[illegible]	17977		6150	15	175	X	45			
13	17978		8050	15	295	X	15			
14	17979		7150	5	105	X	15			
15	17980		4550	10	110	X	20			
16	17981		3900	15	120	0.5	35			
17	17982		3550	10	30	0.5	80			
18	17983		8800	5	220	X	X			
19	17984		1.25%	5	175	0.5	10			
20	17985		1.40%	5	200	X	75			
21	17986		2.25%	15	235	1.0	35			
22	17987		2.15%	5	285	1.0	20			
23	17988		1.45%	5	215	4.5	25			
[illegible]	17989		9600	5	170	5.0	10			
25	17990		6600	X	195	X	X			

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

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A division of Nuttall Holdings (Pty) Ltd.

ANALYTICAL DATA 663611

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 979	9.3.82	KP 3003	4 OF 8

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ptd	Pb			
1	17991		6700	5	210	X	X			
2	17992		2.05%	5	355	X	20			
3	17993		2.95%	10	325	X	X			
4	17994		1.00%	25	195	X	5			
5	17995		1.45%	5	335	0.5	30			
6	17996		2.35%	10	625	X	25			
7	17997		9900	5	345	1.0	30			
8	17998		2.15%	10	585	X	10			
9	17999		3.00%	10	355	0.5	25			
10	18000		4.40%	10	1600	X	490			
11	18001		4.45%	5	1600	X	505			
12	18002		3.70%	10	1200	1.0	40			
13	18003		4.65%	15	1300	0.5	50			
14	18004		3.70%	5	920	0.5	370			
15	18005		1.25%	5	215	X	245			
16	18006		2.35%	40	625	X	205			
17	18007		4.65%	10	2150	X	1700			
18	18008		1.65%	35	285	0.5	240			
19	18009		3.55%	20	350	0.5	145			
20	18010		1.50%	20	335	1.0	880			
21	18011		1.40%	20	315	2.0	1950			
22	18012		1.25%	10	150	X	80			
23	18013		2.05%	10	265	X	435			
24	18014		1.70%	15	115	2.0	155			
25	18015		9950	5	470	X	645			

Results in ppm unless otherwise specified
X = element concentration not detected at or above the limit
* = element concentration is above detection limit
- = element not determined

J.H. THOMAS
OFFICER

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

ANALYTICAL DATA

663612

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 979	9.3.82	KP 3003	5 OF 8

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Mo	Pb			
1	18016		1.45%	25	175	X	90			
2	18017		9150	10	235	X	170			
3	18018		1.75%	10	165	0.5	105			
4	18019		9050	10	55	0.5	15			
5	18020		8550	5	185	X	15			
6	18021		7850	5	190	X	X			
7	18022		7000	10	115	X	15			
8	18023		1.70%	10	290	X	15			
9	18024		1.85%	45	375	X	115			
10	18025		8850	330	375	0.5	2.12%			
11	18026		1.85%	25	580	0.5	205			
12	18027		1.45%	5	290	X	15			
13	18028		1.45%	55	620	0.5	95			
14	18029		9200	40	395	X	120			
15	18030		7350	10	220	X	40			
16	18031		7250	5	235	X	70			
17	18032		9550	15	245	X	35			
18	18033		1.45%	10	565	0.5	110			
19	18034		2.35%	10	405	X	10			
20	18035		1.90%	10	285	X	40			
21	18036		2.15%	15	535	X	2500			
22	18037		1.65%	10	400	X	15			
23	18038		7150	10	155	X	10			
24	18039		2.05%	5	1050	X	115			
25	18040		1.50%	5	420	X	25			

Results in parts per million unless specified
X = element present, but concentration too low to measure
0.5 = element concentration is below detection limit
- = element not determined

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

ANALYTICAL DATA

663613

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 979	9.3.82	KP 3003	6 OF 8

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	18041		9550	5	375	X	40			
2	18042		9150	5	215	X	60			
3	18043		1.50%	5	195	X	5			
4	18044		2.00%	10	480	X	10			
5	18045		8450	10	210	X	20			
6	18046		1.80%	20	355	X	120			
7	18047		2.85%	25	475	0.5	510			
8	18048		3.95%	25	425	X	170			
9	18049		5.60%	10	840	X	105			
10	18050		1.25%	15	230	X	15			
[illegible]	18051		1.25%	10	220	0.5	35			
[illegible]	18052		1.95%	10	450	X	395			
13	18053		7250	10	80	0.5	45			
14	18054		1.90%	35	140	X	10			
15	18055		2.95%	10	755	X	25			
16	18056		3.45%	10	790	1.0	180			
17	18057		3.85%	10	980	X	140			
18	18058		8950	15	145	0.5	50			
19	18059		7150	55	495	0.5	60			
20	18060		9950	55	535	X	35			
21	18061		1.25%	55	555	0.5	25			
22	18062		2.90%	15	265	1.0	20			
23	18063		1.35%	5	90	1.0	20			
[illegible]	18064		1.50	5	175	X	20			
25	18065		2.30%	5	120	0.5	X			

Results in [illegible] specified
[illegible] = element present, but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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

ANALYTICAL DATA

663614

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 979	9.3.82	KP 3003	7 OF 8

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	18066		2.25%	10	185	1.0	95			
2	18067		3.05%	20	325	X	90			
3	18068		2.65%	15	255	X	65			
4	18069		2.90%	10	685	X	220			
5	18070		1.20%	10	65	X	70			
6	18071		1.20%	15	60	0.5	95			
7	18072		2.35%	20	155	0.5	15			
8	18073		2.05%	20	75	1.0	40			
9	18074		4.95%	30	210	0.5	25			
10	18075		4.15%	15	295	X	65			
[illegible]	18076		4.05%	35	645	X	165			
[illegible]	18077		3.95%	75	745	X	315			
13	18078		3.75%	15	1150	X	690			
14	18079		7.25%	40	745	X	220			
15	18080		3.75%	15	1450	0.5	320			
16	18081		3.90%	15	1350	0.5	310			
17	18082		4.15%	15	700	1.0	900			
18										
19										
20										
21										
22										
23										
[illegible]										
25										

Results in [illegible] otherwise specified.
X = element present, but concentration too low to measure
— = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

ANALABS

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

663615

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 979	9.3.82	KP 3003	8 OF 8

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	STD FS4		7.75%	310	745	0.5	90			
2	RPT TS 17956		5500	10	205	0.5	40			
3	RPT TS 17975		9100	15	475	X	X			
4	STD FS4		8.20%	310	760	X	100			
5	RPT TS 18015		9850	5	490	X	635			
6	STD FS4		7.75%	315	765	0.5	110			
7	TS 18036		2.20%	15	525	X	2550			
8	TS 18055		3.10%	10	730	X	15			
9	STD FS4		7.45%	315	790	X	95			
10	TS 18076		4.25%	35	620	X	160			
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		50	5	5	0.5	5			
	DIGESTION		101	101	101	101	101			
25	METHOD		101	101	101	101	101			

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

AUTHORISED OFFICER

ANALABS

663616

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1032

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
kp 3018	K 599

DATE RECEIVED	RESULTS REQUIRED
15.3.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	22.3.82	3	24

STATE OF SAMPLES: REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
RO	KR 9142-50		1		2				Cu Pb Zn Ag Fe	101	101
	KR 8651-65			3	4				Mn	101	101
									As	101	114
									Ba		120
									Au		309
									Sn W		403

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 20
Rocks (9142-50)

VOYAGER 30
Rocks
(8651-65)

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
	CU	nitric acid	A3	other mixed acids	Mx	spectrophotometry	SPEC
	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
	Pul	HF mixture	A6	ignition	IG	titration	TTN
	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
	Fl	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
	Sk					fluorescence	FLUOR
	Mis					inductively coupled plasma	ICP

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

663617

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1032	26.3.82	KP 3018	1 OF

TUBE No.	SAMPLE No.		Mn	Fe	Cu	Zn	As	Ag	Sn	Ba
1	KR 9142		1100	2.05%	10	50	3	X	4	5
2	KR 9143		1300	7.10%	5	660	4	0.5	6	35
3	KR 9144		315	8.90%	25	250	6	X	5	230
4	KR 9145		85	6750	10	35	4	X	6	125
5	KR 9146		120	5200	5	10	2	0.5	8	5
6	KR 9147		1400	2.55%	5	295	2	0.5	10	85
7	KR 9148		1250	2.30%	10	120	2	X	10	90
8	KR 9149		1050	2.95%	5	175	2	X	8	165
9	KR 9150		60	8600	5	25	2	X	7	50
10	KR 8651		55	5050	5	15	1	X	4	230
11	KR 8652		75	1.60%	5	40	1	X	X	205
12	KR 8653		55	4400	10	15	1	X	5	190
13	KR 8654		45	3100	10	20	1	X	4	115
14	KR 8655		65	4250	5	10	1	0.5	3	135
15	KR 8656		415	1.90%	10	30	1	X	X	230
16	KR 8657		45	3650	20	15	2	0.5	X	75
17	KR 8658		50	3950	45	25	3	0.5	X	90
18	KR 8659		435	6800	1850	7.75%*	10	108*	X	10
19	KR 8660		50	5850	15	760	410	0.5	X	135
20	KR 8661		85	8600	1150	3.89%*	31	85*	6	20
21	KR 8662		610	4.15%	10	105	25	X	5	200
22	KR 8663		615	4.25%	5	140	26	X	5	255
23	KR 8664		105	1.45%	5	70	5	X	5	225
24	KR 8665		95	1.25%	X	65	4	X	5	220
25										

Results in ppm unless otherwise stated
% = element present at or above 0.1% concentration
X = element concentration below detection limit
- = element not determined

AUTHORISED OFFICER

ANALABS

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

ANALYTICAL DATA

663618

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1032	26.3.82	KP 3018	2OF

TUBE No.	SAMPLE No.		Mn	Fe	Cu	Zn	Ag	Au	Sn	Be
1	STD FS4		690	7.65%	305	790	27	0.5		415
2	RPT KR 9142		1050	2.05%	5	55	6	X		5
3	RPT KR 8661		85	8550	1200	3.89%*	33	85*		15
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		5	50	5	5	1	0.5	3	5
	DIGESTION		101	101	101	101	101	101		
25	METHOD		101	101	101	101	114	101	403	120

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

AUTHORISED SIGNATURE

ANALABS

603613

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1032	26.3.82	KP 3018	3OF

No.	SAMPLE No.		W%	Au	Pb					
1	KR 9142		X	X	15					
2	KR 9143		X	X	40					
3	KR 9144		X	X	125					
4	KR 9145		X	X	125					
5	KR 9146		15	X	5					
6	KR 9147		X	X	60					
7	KR 9148		X	X	30					
8	KR 9149		X	X	5					
9	KR 9150		X	X	20					
10	KR 8651		X	X	15					
11	KR 8652		X	X	5					
12	KR 8653		X	X	30					
13	KR 8654		X	X	25					
14	KR 8655		X	X	20					
15	KR 8656		X	X	10					
16	KR 8657		X	4.01	95					
17	KR 8658		X	1.25	195					
18	KR 8659		X +	0.839	2.82%*					
19	KR 8660		X	0.008	1550					
20	KR 8661		130+	2.26	2.64%*					
21	KR 8662		X	0.009	30					
22	KR 8663		X	0.007	35					
23	KR 8664		X	X	20					
24	KR 8665		X	X	35					
25										

ANALABS

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

663620

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1032	26.3.82	KP 3018	4OF

TUBE No.	SAMPLE No.		W	Au	Pb					
1	STD FS4				95					
2	RPT KR 9142				10					
3	RPT KR 8661				2.64%*					
4										
5										
6										
7										
8										
9										
10										
11										
12	NOTE: * Analysed by Method 104									
13	NOTE: + Major Zn Interference Approximate Values									
14										
15										
16										
17										
18										
19										
20										
21										
22										
	DETECTION		10	0.005	5					
24	DIGESTION				101					
25	METHOD		403	309	101					

203

Elliot

ANALABS

663621

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
Telex AA92560

ANALYTICAL REPORT No. 83.1 00 1036

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3030	K 687

DATE RECEIVED	RESULTS REQUIRED
2.4.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	6.4.82	3	11

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
PU	Various							1	Au		309

RESULTS TO: As Above

RESULTS TO:

REMARKS

Check analyses
Au Voyager 20

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

AUTHORISED OFFICER

204

ANALABS

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

663622

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	82.1 08 1095	6.4.82	KP 3030	1 OF 1

TUBE No.	SAMPLE No.	Hg								
1	TS 17920	0.019								
2	TS 17980	0.023								
3	TS 17989	0.007								
4	TS 18002	X								
5	TS 18025	0.007								
6	TS 18039	X								
7	TS 18030	0.009								
8	TS 18126	X								
9	TS 18172	0.012								
10	TS 18228	0.005								
11	TS 18248	0.008								
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	0.003								
24	DIGESTION									
25	METHOD	289								

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

AUTHORISED OFFICER B Dow

205 Eliot VOYAGER 20

ANALABS

A division of MacDonald Hamilton & Co Pty. Ltd
52 Murray Road, Welshpool, W.A. 6106
tel. [illegible] 7999

663623
Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1104

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2899	686

DATE RECEIVED	RESULTS REQUIRED
5.4.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	13.4.82	3	31

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
WR	TS 18229-50, TS 18126								Cu Pb Zn Ag	101	101

RESULTS TO: As Above

RESULTS TO:

REMARKS

Check analyses

Ag Voyager 20

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

AUTHORISED OFFICER

206

ANALABS

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

663624

ANALYTICAL DATA

PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	93.1-08 1104	13.4.82	KP 2899	1 OF 3

	SAMPLE No.		Cu	Zn	Ag	Pb				
	TS 18220		40	345	1.0	125				
	TS 18221		40	365	0.5	125				
3	TS 18222		15	300	0.5	50				
4	TS 18223		15	680	0.5	250				
5	TS 18224		20	220	1.0	90				
6	TS 18225		20	535	0.5	290				
7	TS 18226		10	10	1.0	10				
8	TS 18227		15	165	0.5	35				
9	TS 18228		10	70	5.5	140				
10	TS 18229		15	60	0.5	140				
11	TS 18230		20	105	3.5	30				
12	TS 18231		20	100	5.0	30				
13	TS 18232		5	50	3.0	15				
14	TS 18233		10	60	1.5	10				
15	TS 18234		15	135	3.5	15				
16	TS 18235		15	45	2.0	30				
17	TS 18236		10	180	2.5	35				
18	TS 18237		15	450	1.5	180				
19	TS 18238		15	70	2.5	20				
20	TS 18240		10	140	3.5	30				
21	TS 18241		15	155	1.5	35				
22	TS 18242		10	65	1.0	30				
23	TS 18243		10	50	3.5	20				
24	TS 18244		10	50	1.5	20				
25	TS 18245		10	90	1.0	55				

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

AUTHORISED OFFICER B Dorr

207

ANALABS

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

663625

ANALYTICAL DATA

PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1104	13.4.82	KP 2899	OF 2 3

	SAMPLE No.		Cu	Zn	Ag	Pb				
	TS 18246		10	55	1.0	30				
	TS 18247		10	70	0.5	60				
3	TS 18248		10	2400	1.0	320				
4	TS 18249		10	75	0.5	30				
5	TS 18250		10	25	0.5	70				
6	TS 18126		15	50	20.5	40				
7										
8										
9										
10										
11										
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14										
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16										
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20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER B Dow

663626

VOYAGER 22

ANALABS

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663627

ANALYTICAL REPORT No. 83.1 08 1070

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
	K 682

DATE RECEIVED	RESULTS REQUIRED
23.3.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	29.3.82	3	19

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 6701-19	1			2				Cu Pb Zn Ag Fe Au	101	101 309

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 22 SOILS

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

A THOMSEN-OFFETT

ANALABS

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

663628

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1070	29.3.82	KP 3026	1 OF 2

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Au	Pb	wt(g)	
1	TD 6701		3100	10	15	0.5	X	10	3.37	
2	TD 6702		6000	X	40	0.5	X	30	9.10	
3	TD 6703		2100	X	10	0.5	0.001	5	363.06	
4	TD 6704		4750	10	20	0.5	X	25	2.42	
5	TD 6705		3050	X	10	X	0.001	5	363.13	
6	TD 6706		9300	40	100	0.5	0.027	90	7.44	
7	TD 6707		1950	X	10	X	0.001	X	228.73	
8	TD 6708		8000	25	30	0.5	X	10	19.61	
9	TD 6709		2850	5	10	0.5	0.002	10	340.87	
10	TD 6710		3650	X	5	0.5	X	10	7.90	
11	TD 6711		7100	X	5	0.5	X	10	290.84	
12	TD 6712		1.70%	15	20	0.5	X	25	34.72	
13	TD 6713		1.85%	X	10	0.5	0.002	30	337.29	
14	TD 6714		5800	X	10	0.5	0.003	20	40.59	
15	TD 6715		5000	X	10	X	0.001	10	197.56	
16	TD 6716		2750	X	5	0.5	X	5	75.73	
17	TD 6717		2750	X	5	1.0	0.002	10	296.46	
18	TD 6718		3400	5	5	0.5	0.490	X	59.98	
19	TD 6719		3500	X	X	0.5	0.002	5	300.34	
20										
21										
22										
23										
24										
25										

VOLCANIC SOILS

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

AUTHORISED OFFICER

ANALABS

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

663629

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1070	29.3.82	KP 3026	2 OF

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Au	Pb	wt(g)	
1	STD FS4		8.60%	345	890	1.0		115		
2	RPT TD 6701		2700	10	15	0.5		5		
3										
4										
5										
6										
7										
8										
9										
10										
[illegible]										
12										
13										
14										
15								VOYAGER 22		SOILS
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		50	5	5	0.5		5		
[illegible]	DIGESTION		101	101	101	101		101		
25	METHOD		101	101	101	101	309	101		

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

AUTHORISED OFFICER B. Dove

PW/FB/V22 SOILS

ANALABS

663630

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

Phone (09) 458 7999 | 52 Murray Road, Welshpool, W.A. 6106 | Telex AA92560

ANALYTICAL REPORT No. 83.1 08 732

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
	K 555

DATE RECEIVED	RESULTS REQUIRED
7.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	14.12.81	3	70

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 14035-104	1			3	2			Cu Pb Zn Ag	A1	AAS
									Mg K	A6	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 22
SOILS

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

AUTHORISED OFFICER [signature]

ANALABS

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

663631

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 00 732	23.12.81	KP 2826	1 OF 4

TUBE No.	SAMPLE No.	Mg	K	Cu	Zn	Ag	Pb			
1	14035	1.35%	1.8%	10	60	0.2	X			
2	14036	1.5%	1.95%	65	95	0.2	15			
3	14037	1600	2.55%	5	20	X	20			
4	14038	3500	4.5%	5	10	X	15			
5	14039	2000	3.15%	X	10	X	X			
6	14040	1800	3.2%	X	10	0.1	5			
7	14041	1800	2.8%	5	10	X	X			
8	14042	2700	5.0%	X	15	X	5			
9	14043	1850	2.4%	5	70	X	10			
10	14044	1700	1.85%	5	25	0.2	X			
11	14045	2400	2.65%	X	35	0.5	X			
12	14046	2500	2.9%	X	70	X	5			
13	14047	2000	2.35%	5	20	0.6	X			
14	14048	1600	3.15%	5	40	X	X			
15	14049	2100	2.6%	5	170	0.3	15			
16	14050	1900	2.45%	5	30	X	5			
17	14051	2050	2.65%	5	20	X	X			
18	14052	2800	3.7%	5	95	X	X			
19	14053	170	2400	5	20	0.6	X			
20	14054	825	4900	10	20	0.2	X			
21	14055	3400	5.1%	5	35	0.2	10			
22	14056	650	4500	5	15	0.2	X			
23	14057	2500	2.85%	5	50	0.1	5			
24	14058	2450	4.0%	5	40	0.2	X			
25	14059	3450	5.1%	5	35	0.2	X			

Results in parts per million unless otherwise indicated
X = element present, but concentration too low to measure
N = element concentration is below detection limit
- = element not determined

AUTHORISED OFFICER

ANALABS

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

663632

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 732	23.12.81	KP 2826	2 OF 4

TUBE No.	SAMPLE No.	Mg	K	Cu	Zn	Ag	Pb			
1	14060	2350	4.75%	5	50	0.2	X			
2	14061	2650	4.85%	5	45	0.2	X			
3	14062	1800	4.15%	5	45	0.2	X			
4	14063	2200	4.45%	X	40	0.3	X			
5	14064	1300	3.75%	X	35	0.2	X			
6	14065	1400	4.2%	5	45	0.2	5			
7	14066	1400	5.0%	5	35	0.2	15			
8	14067	1250	2.05%	10	40	0.3	5			
9	14068	2050	3.6%	5	40	0.3	X			
10	14069	825	8500	X	20	X	5			
[illegible]	14070	4000	3.4%	X	35	0.2	10			
[illegible]	14071	4500	3.85%	X	35	0.2	5			
13	14072	4600	3.9%	X	15	0.3	5			
14	14073	1050	1.05%	X	15	X	5			
15	14074	2700	3.15%	X	15	X	X			
16	14075	3150	2.2%	10	20	0.2	X			
17	14076	2050	2.7%	10	30	0.1	X			
18	14077	1700	3.6%	5	25	0.1	X			
19	14078	1950	3.8%	X	30	0.7	X			
20	14079	2350	3.0%	5	25	0.1	X			
21	14080	2100	3.35%	15	45	0.2	15			
22	14081	2250	3.3%	10	40	0.1	10			
23	14082	2000	2.95%	5	35	X	10			
[illegible]	14083	2800	4.0%	5	40	0.1	5			
25	14084	3400	3.35%	5	35	0.1	X			

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

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663633

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 732	23.12.81	KP 2826	3 OF 4

TUBE No.	SAMPLE No.	Mg	K	Cu	Zn	Ag	Pb			
1	14085	2450	3.15%	5	25	X	5			
2	14086	2700	4.25%	5	30	0.1	X			
3	14087	2450	4.45%	X	30	0.2	10			
4	14088	7350	2.7%	10	245	0.1	110			
5	14089	4450	2.0%	5	75	X	10			
6	14090	8450	2.15%	5	105	0.1	X			
7	14091	8400	2.35%	5	110	X	5			
8	14092	9050	2.2%	X	340	X	X			
9	14093	4000	2.95%	10	30	0.1	10			
10	14094	2950	2.7%	10	60	0.1	X			
[illegible]	14095	2650	2.75%	5	35	0.2	X			
[illegible]	14096	2350	3.9%	X	25	0.1	X			
13	14097	1700	3.55%	X	30	X	5			
14	14098	2150	3.45%	5	25	0.4	X			
15	14099	1400	3.85%	10	25	0.9	X			
16	14100	1100	4.35%	5	15	0.4	15			
17	14101	1250	4.5%	5	15	0.3	15			
18	14102	5700	3.8%	5	960	0.8	65			
19	14103	4150	4.4%	X	40	X	15			
20	14104	3400	3.1%	X	145	X	15			
21										
22										
23										
[illegible]										
25										

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

AUTHORISED OFFICER B. D[illegible]

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663634

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 732	23.12.81	KP 2826	4 OF 4

TUBE No.	SAMPLE No.	Na	K	Cu	Zn	Ag	Pb			
1	STD FS4	–	–	300	735	0.6	110			
2	RPT 14035	–	–	10	60	0.3	5			
3	RPT 14054	–	–	10	20	0.3	X			
4	STD FS4	–	–	300	740	0.6	105			
5	RPT 14075	–	–	10	25	0.1	X			
6	RPT 14094	–	–	10	60	0.1	5			
7										
8										
9										
10										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	50	5	5	0.1	5			
	DIGESTION	A6	A6	A1	A1	A1	A1			
25	METHOD	A6/1	A6/1	A1/1	A1/1	A1/2	A1/1			

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

AUTHORISED OFFICER

K556 PW/EB/V22

ANALABS

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663635

ANALYTICAL REPORT No. 83.1 08 762

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2834	PW/EB/V22/2

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	24.12.81	3	71

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 14105-75	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 22 (SOILS).

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

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ANALABS

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

663636

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 762	5.1.82	KP 2834	1 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14105	2250	30	430	X	80				
2	14106	1900	10	30	X	10				
3	14107	2800	10	25	0.5	5				
4	14108	1850	5	190	X	30				
5	14109	1200	10	10	X	5				
6	14110	1350	15	15	0.5	10				
7	14111	1550	15	15	X	5				
8	14112	2100	15	430	X	75				
9	14113	1.80%	20	235	X	105				
10	14114	1.95%	10	120	X	20				
11	14115	3.65%	5	260	X	15				
12	14116	3.60%	10	500	X	15				
13	14117	1.70%	20	370	X	15				
14	14118	8600	20	580	X	150				
15	14119	6100	X	100	X	60				
16	14120	1.65%	10	330	X	100				
17	14121	1.85%	10	415	X	100				
18	14122	1.60%	20	1900	X	170				
19	14123	8600	5	155	X	35				
20	14124	9600	5	200	X	65				
21	14125	6300	5	30	X	20				
22	14126	3750	X	40	X	10				
23	14127	2000	10	25	X	15				
24	14128	3.70%	30	95	X	5				
25	14129	1.10%	15	30	X	5				

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

AUTHORISED OFFICER

ANALABS

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

66363

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 762	5.1.82	KP 2834	2 OF 4

LINE No.	SAMPLE NO.	Fe	Cu	Zn	Ag	Pb				
1	14130	5150	X	25	X	X				
2	14131	5300	5	20	X	5				
3	14132	4800	15	25	X	10				
4	14133	2.05%	20	30	X	25				
5	14134	5600	15	25	X	5				
6	14135	1.05%	15	45	X	20				
7	14136	9000	X	30	X	15				
8	14137	8000	X	30	X	5				
9	14138	1.05%	X	30	X	10				
10	14139	9750	10	25	X	15				
11	14140	4.05%	5	355	X	45				
12	14141	4.30%	5	370	X	40				
13	14142	6650	10	50	X	10				
14	14143	6950	10	35	X	15				
15	14144	4850	5	20	X	5				
16	14145	8100	X	35	X	5				
17	14146	3350	X	20	0.5	5				
18	14147	3000	X	25	X	X				
19	14148	2850	5	20	0.5	X				
20	14149	1950	X	15	X	10				
21	14150	1.30%	5	205	X	50				
22	14151	1.25%	X	280	X	55				
23	14152	1.85%	15	80	1.0	10				
24	14153	1.75%	15	70	X	5				
25	14154	8000	X	35	X	X				

Results to apply only to the sample(s) tested.
- = element absent and appropriate for low temperature
X = element concentration is below detection limit
— = element not determined

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

663638

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 762	5.1.82	KP 2834	3 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14155	1.85%	5	50	X	10				
2	14156	3700	10	30	X	10				
3	14157	3200	15	910	X	30				
4	14158	2450	X	55	X	X				
5	14159	2750	X	15	X	X				
6	14160	3550	X	20	X	5				
7	14161	3250	X	15	X	X				
8	14162	3650	X	20	X	X				
9	14163	4000	X	15	X	X				
10	14164	4650	X	85	X	80				
11	14165	4500	5	65	X	85				
12	14166	3850	X	45	X	45				
13	14167	1.80%	5	60	X	10				
14	14168	2.25%	10	95	0.5	10				
15	14169	5750	5	800	X	325				
16	14170	3850	5	125	4.5	95				
17	14171	4000	5	145	0.5	105				
18	14172	7000	5	80	X	10				
19	14173	4150	5	45	X	X				
20	14174	4850	5	30	X	X				
21	14175	3900	5	25	X	5				
22										
23										
25										

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

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ANALABS

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

ANALYTICAL DATA

663639

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 762	5.1.82	KP 2834	4 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	STD FS4	8.10%	295	720	0.5	95				
2	RPT 14105	2300	30	470	X	90				
3	RPT 14124	9400	10	200	X	60				
4	STD FS4	8.30%	310	740	X	105				
5	RPT 14145	6950	X	30	X	X				
6	RPT 14164	4400	X	80	X	80				
7										
8										
9										
10										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
	DIGESTION	A1	A1	A1	A1	A1				
25	METHOD	A1/1	A1/1	A1/1	A1/1	A1/1				

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

AUTHORISED OFFICER

Voyager 22

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA72560

663640

ANALYTICAL REPORT No. 83.1 08 1071

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.:
PROJECT: K 683
DATE RECEIVED: 23.3.82
RESULTS REQUIRED:

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	31.3.82	3	24

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	ANALYSIS
SO	TS 18367-87	1			2	2			Cu Pb Zn Ag Fe	101	1
RO	KR 8613-16		1	3	4						

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 22
ROCKS | SOILS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
chip	CH	nitric acid	A3	other mixed acids	MA	spectrophotometry	SPEC
rock	RO	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
grab	GR	HF under pressure	A7	pressed powder (XRF)	PP	other chemical means	CHEM
auger	A	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLMO
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

223

ANALABS

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

663641

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1.08.1071	31.3.82	KP 3027	1 OF

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	TS 18367		5800	225	190	10.0	5			
2	TS 18368		8200	55	70	1.0	X			
3	TS 18369		6000	55	60	0.5	10			
4	TS 18370		5050	40	45	0.5	10			
5	TS 18371		4900	40	45	0.5	20			
6	TS 18372		4300	25	50	2.0	10			
7	TS 18373		4300	15	30	3.5	30			
8	TS 18374		5000	25	30	1.0	25			
9	TS 18375		9.90%	240	120	3.0	385			
10	TS 18376		2.15%	75	55	2.0	40			
11	TS 18377		2.45%	85	25	6.0	90			
12	TS 18378		8000	25	35	1.5	135			
13	TS 18379		9600	50	35	0.5	70			
14	TS 18380		8000	30	25	0.5	70			
15	TS 18381		7500	30	30	0.5	60	VOYAGER 22		
16	TS 18382		7150	25	25	1.0	55	Rocks / Soils		
17	TS 18383		3300	15	25	0.5	25			
18	TS 18384		5600	10	25	0.5	20			
19	TS 18385		2650	5	15	0.5	10			
20	TS 18386		1750	15	35	1.0	30			
21	TS 18387		2050	10	35	0.5	20			
22	KR 8613		18.0%	30	390	X	890			
23	KR 8614		8.50%	10	180	1.0	60			
24	KR 8615		43.0%	5	2500	X	1550			
25	KR 8616		4.20%	340	65	5.0	60			

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

AUTHORISED OFFICER

224

ANALABS

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

663642

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1071	31.3.82	KP 3027	2 OF

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Hg	Rb			
1	STD FS4		8.70%	355	800	0.5	125			
2	RPT TS 18367		5600	210	180	10.0	10			
3	RPT TS 18386		1900	15	25	1.0	25			
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15								VOYAGER 22		
16								ROCKS/SOILS		
17										
18										
19										
20										
21										
22										
23	DETECTION		50	5	5	0.5	5			
24	DIGESTION		101	101	101	101	101			
25	METHOD		101	101	101	101	101			

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

AUTHORISED OFFICER B Dan

225

ANALABS

663643

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
Telex AA92560

ANALYTICAL REPORT No. 83.1 08 940

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2896	K 591

DATE RECEIVED	RESULTS REQUIRED
12.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	22.2.82	3	12

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
RO	KR 8601-12		1	3	2 4				Cu Pb Zn Ag Fe Au	101	101 309

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 22
ROCKS

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

AUTHORISED OFFICER B Dorr

ANALABS

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

663644

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 940	22.2.82	KP 2896	1 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Au	Pb			
1	8601	1.80%	5	35	X	0.010	X			
2	8602	6.30%	45	95	X	0.015	10			
3	8603	5.60%	25	85	X	0.005	15			
4	8604	5.25%	35	70	X	0.009	X			
5	8605	18.0%	20	565	X	0.008	5			
6	8606	14.0%	125	150	X	0.008	5			
7	8607	10.0%	195	190	X	0.007	30			
8	8608	2.55%	10	55	0.5	0.007	X			
9	8609	6.80%	30	55	X	0.008	15			
10	8610	16.5%	25	445	X	0.014	20			
[illegible]	8611	4.95%	15	1200	0.5	X	625			
12	8612	46.5%	10	960	X	X	1850			
13										
14										
15								VOYAGER 22		
16									ROCKS	
17										
18										
19										
20										
21										
22										
23										
[illegible]										
25										

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

AUTHORISED OFFICER

ANALABS

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

668645

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 940	22.2.82	KP 2896	2 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Au	Pb			
1	STD FS4	8.25%	320	810	1.5		95			
2	RPT 8601	1.80%	5	40	X		X			
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15								VOYAGER	22	
16									Rocks	
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	0.005	5			
	DIGESTION	101	101	101	101		101			
25	METHOD	101	101	101	101	309	101			

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

AUTHORISED OFFICER [signature]

228

663646

VOYAGER 24

V24

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663647

ANALYTICAL REPORT No. 83.1 08 776

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
	RL V24/1

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	24.12.81	3	136

STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SC	KR 8701-8836	1	2	4	3 5				Cu Pb Zn Ag As Au Sb	A1 A11	AAS RG50 AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 24
CORE
~~ROCK~~ SAMPLES
DDH V24-1

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

AUTHORISED OFFICER

V24

ANALABS

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

663648

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 776	4.1.82	KP 2840	1 OF 2

TUBE No.	SAMPLE No.	Cu	Zn	Pb	Ag	Sb	Bi	Pb		
1	8701	25	55	76	0.1	X	0.033	5		
2	8702	10	55	19	0.2	X	0.050	X		
3	8703	10	50	23	0.1	X	0.008	15		
4	8704	10	75	24	0.1	X	X	20		
5	8705	10	60	15	0.1	X	X	10		
6	8706	10	75	18	0.1	X	X	10		
7	8707	10	60	19	X	X	X	10		
8	8708	10	85	18	0.1	X	X	5		
9	8709	10	100	19	0.1	X	0.008	5		
10	8710	10	160	16	0.1	X	X	140		
11	8711	10	200	10	0.1	X	X	95		
12	8712	10	195	7	0.1	X	X	85		
13	8713	10	115	8	0.1	X	0.033	70		
14	8714	10	185	7	0.1	X	X	1100		
15	8715	5	185	9	0.1	X	X	50		
16	8716	5	145	10	0.1	X	X	55		
17	8717	20	385	3	0.1	X	0.025	75		
18	8718	10	1700	4	0.1	X	0.008	205		
19	8719	5	335	2	0.2	X	X	240		
20	8720	15	2350	3	0.2	X	0.025	530		
21	8721	5	125	11	0.1	X	X	15		
22	8722	10	75	8	0.1	X	0.008	10		
23	8723	10	55	7	0.1	X	X	X		
24	8724	5	55	7	0.1	X	X	X		
25	8725	5	85	10	0.1	X	X	X		

Results in ppm unless otherwise specified
X = element present but below detection limit
— = element not determined

AUTHORISED OFFICER

V24

ANALABS

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

663649

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 776	4.1.82	KP 2840	2 OF

TUBE No.	SAMPLE No.	Cu	Zn	As	Ag	Sb	Au	Pb		
1	8726	10	55	9	X	X	X	X		
2	8727	5	45	11	X	X	X	X		
3	8728	5	40	9	0.1	X	X	X		
4	8729	10	40	9	0.1	X	X	5		
5	8730	5	25	6	X	X	X	X		
6	8731	10	70	5	X	X	X	35		
7	8732	20	80	5	0.1	X	X	340		
8	8733	210	285	3	0.1	X	X	195		
9	8734	950	4150	2	0.2	X	X	650		
10	8735	20	100	2	0.1	X	X	5		
	8736	45	70	1	0.1	X	X	70		
	8737	205	95	1	X	X	X	70		
13	8738	15	80	1	X	X	X	10		
14	8739	45	95	7	0.1	X	X	140		
15	8740	5	55	5	0.2	X	X	X		
16	8741	40	95	9	X	X	X	15		
17	8742	10	45	10	X	X	X	5		
18	8743	5	55	9	X	X	X	20		
19	8744	5	60	10	X	X	X	15		
20	8745	15	45	10	X	X	X	20		
21	8746	10	25	9	X	X	X	25		
22	8747	5	305	9	X	X	X	80		
23	8748	5	125	8	X	X	X	25		
	8749	10	165	8	X	X	X	20		
25	8750	5	110	8	X	X	X	150		

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

AUTHORISED OFFICER

V24

ANALABS

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

663650

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 776	4.1.82	KP 2840	3 OF 7

TUBE No.	SAMPLE No.	Cu	Zn	As	Ag	Sb	Au	Pb		
1	8751	5	100	7	X	X	X	55		
2	8752	5	130	7	X	X	X	85		
3	8753	10	215	7	X	X	X	90		
4	8754	5	145	5	X	X	X	45		
5	8755	5	105	6	X	X	X	15		
6	8756	5	85	6	X	X	X	5		
7	8757	5	85	6	X	X	X	X		
8	8758	5	65	6	X	X	0.100	10		
9	8759	5	65	5	X	X	X	5		
10	8760	5	55	5	X	X	X	5		
[illegible]	8761	5	55	4	X	X	X	X		
12	8762	35	920	7	X	X	X	650		
13	8763	15	135	11	X	X	X	80		
14	8764	25	450	20	X	1	X	210		
15	8765	40	1200	18	X	X	X	455		
16	8766	30	645	28	X	1	0.033	300		
17	8767	30	900	20	X	1	X	260		
18	8768	40	485	23	X	2	X	115		
19	8769	115	920	37	0.3	5	0.008	940		
20	8770	30	100	9	X	1	X	40		
21	8771	20	405	29	X	3	X	170		
22	8772	10	55	14	X	2	0.008	10		
23	8773	5	50	6	X	X	X	X		
[illegible]	8774	5	50	22	X	2	0.008	X		
25	8775	10	45	37	X	3	X	25		

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

AUTHORISED OFFICER B. [illegible]

V74

ANALABS

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

663651

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 776	4.1.82	KP 2840	4 OF 7

Item No.	Sample No.	Cu	Zn	As	Ag	Sb	Au	Pb		
1	8776	5	35	10	X	X	X	X		
2	8777	15	45	140	X	4	0.008	20		
3	8778	10	120	36	X	3	X	85		
4	8779	10	85	27	X	2	X	5		
5	8780	5	85	22	X	2	X	5		
6	8781	5	265	7	1.2	1	X	1300		
7	8782	10	310	17	0.2	2	X	170		
8	8783	10	125	34	0.1	5	X	100		
9	8784	10	395	56	X	6	X	85		
10	8785	5	75	13	X	1	0.042	35		
[illegible]	8786	10	90	21	X	2	0.033	70		
[illegible]	8787	10	195	39	X	4	0.033	110		
13	8788	10	75	41	0.3	6	0.017	435		
14	8789	15	85	19	X	2	0.025	160		
15	8790	5	105	18	X	1	X	70		
16	8791	10	105	22	X	2	0.008	40		
17	8792	10	85	24	X	2	X	55		
18	8793	5	90	20	X	3	X	50		
19	8794	10	95	29	X	3	0.008	110		
20	8795	10	380	18	0.1	2	0.017	140		
21	8796	10	370	20	X	3	0.008	175		
22	8797	X	170	6	X	X	X	40		
23	8798	10	165	18	X	3	X	140		
[illegible]	8799	10	35	68	X	4	0.008	55		
25	8800	15	560	3	0.4	X	X	740		

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

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

663652

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 776	4.1.82	KP 2840	5 OF 7

TUBE No.	SAMPLE No.	Cu	Zn	As	Ag	Sb	Au	Pb		
1	8801	10	115	2	X	X	X	215		
2	8802	X	85	6	X	X	X	30		
3	8803	5	80	8	X	2	X	30		
4	8804	X	130	9	X	2	X	20		
5	8805	10	115	7	X	2	0.067	20		
6	8806	10	560	4	X	1	X	115		
7	8807	20	55	34	X	4	0.017	60		
8	8808	15	320	2	X	X	X	80		
9	8809	20	100	3	X	X	X	25		
10	8810	115	425	3	X	X	X	535		
[illegible]	8811	15	235	21	X	2	X	380		
[illegible]	8812	15	115	21	X	2	X	65		
13	8813	10	485	10	X	2	X	70		
14	8814	15	600	6	X	1	X	220		
15	8815	5	170	5	X	1	X	70		
16	8816	5	110	15	X	2	X	30		
17	8817	10	225	10	X	2	X	50		
18	8818	10	245	2	X	X	X	45		
19	8819	5	65	1	X	X	X	30		
20	8820	10	645	4	X	1	X	565		
21	8821	10	260	6	0.1	X	X	140		
22	8822	50	2150	3	0.1	1	X	290		
23	8823	10	195	3	0.6	2	X	1950		
[illegible]	8824	15	450	3	X	X	X	45		
25	8825	110	830	3	0.1	X	X	485		

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

AUTHORISED OFFICER B. Dar

ANALABS

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

663653

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 776	4.1.82	KP 2840	6 OF 7

TUBE No.	SAMPLE No.	Cu	Zn	Mo	Ag	Sb	Au	Pb		
1	8826	90	585	3	0.2	1	X	650		
2	8827	15	1050	2	0.2	2	X	690		
3	8828	10	420	2	0.1	2	X	135		
4	8829	25	1050	1	0.4	2	0.017	1250		
5	8830	20	1050	1	0.2	1	X	1700		
6	8831	15	1200	3	0.1	2	X	210		
7	8832	10	405	3	X	2	X	145		
8	8833	5	340	4	0.1	2	X	75		
9	8834	10	210	6	X	2	X	105		
10	8835	10	255	5	X	X	X	60		
11	8836	10	295	4	X	1	0.008	20		
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER

ANALABS

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

663654

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 776	4.1.82	KP 2840	7 OF 7

TUBE No.	SAMPLE No.	Cu	Zn	As	Ag	Sb	Au	Pb		
1	STD FS4	315	760	26	0.8	–	–	100		
2	RPT 7841	40	95	8	X	–	–	20		
3	RPT 7860	5	55	6	X	–	–	X		
4	STD FS4	305	705	21	0.7	–	–	80		
5	RPT 8701	20	55	70	0.1	–	–	5		
6	RPT 8720	15	2350	3	0.3	–	–	540		
7	STD FS4	305	720	21	0.6	–	–	95		
8	RPT 8781	5	255	6	1.2	–	–	1300		
9	RPT 8800	15	560	3	0.5	–	–	725		
10	STD FS4	300	730	24	0.5	–	–	100		
[illegible]	RPT 8821	10	265	7	0.1	–	–	135		
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	1	0.1	1	0.008	5		
[illegible]	DIGESTION	A1	A1	A1	A1	A11		A1		
25	METHOD	A1/1	A1/1	A1/3	A1/2	A11/1	RG50	A1/1		

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

AUTHORISED OFFICER

ANALABS

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92568

ANALYTICAL REPORT No. 83.1 08 922

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2897	K 587

DATE RECEIVED	RESULTS REQUIRED
12.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	18.2.82	3	21

REFER BELOW	SAMPLE NUMBERS	STATE OF SAMPLES: DRY	PRE-TREATMENT: CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	MORE	ANALYSIS: REFER TO ANALYTICAL SECTION	PREPARATION	METHOD
R0	KR 9121-41		1		2				Cu Pb Zn Ag Fe	101	101
				3	4				As	101	101
									Au		309

RESULTS TO: As Above

RESULTS TO:

REMARKS

STATE OF SAMPLES

whole core	WC
split core	SC
[illegible]	CU
	Ro
	SO
	PU
	WA
[illegible]	TI
stream sediment	SS
heavy mineral	HM

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Mx
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TTN
other chemicals means	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

ANALABS

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

663656

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 922	18.2.82		1 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	As	Ag	Au	Pb		
1	9121	4350	30	455	7	X	0.052	120		
2	9122	3600	35	325	7	X	0.053	360	V24	
3	9123	3650	25	125	3	X	0.150	100	COSTEAN	
4	9124	3850	25	90	3	1.0	0.110	220		
5	9125	3500	20	55	1	X	0.018	55		
6	9126	5000	15	30	1	X	X	70		
7	9127	9000	1450	315	13	X	0.053	1550		
8	9128	5300	15	25	1	0.5	0.042	65		
9	9129	4400	30	365	3	X	0.072	415		
10	9130	3700	15	275	3	X	X	110		
[illegible]	9131	4250	10	215	2	X	0.013	30		
12	9132	3250	5	425	2	X	X	25		
13	9133	7650	5	10	1	0.5	X	X	QV	
14	9134	6550	10	15	1	X	0.031	X	QV	
15	9135	2500	5	20	2	1.5	X	15	Agg peb gpl	
16	9136	7850	25	435	23	X	X	90	black shale vol RR	
[illegible]	9137	3850	5	35	8	X	X	10		
18	9138	1.25%	5	355	47	X	X	75	black shale contact	
19	9139	2900	10	55	5	X	X	10	V24	
20	9140	2250	10	35	11	0.5	X	10		
21	9141	1950	5	45	2	X	0.033	X		
22										
23										
[illegible]										
25										

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

AUTHORISED OFFICER

ANALABS

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

663657

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 922	18.2.82		2 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	As	Ag	Au	Pb		
1	STD FS4	7.65%	295	780	25	0.5		95		
2	RPT 9121	4350	30	465	9	0.5		120		
3	RPT 9140	2150	10	35	12	0.5		10	V24 COSTEAN	
4										
5										
6										
7										
8										
9										
10										
11										
12										
13									Q4	
14									Q1	
15									Agg peb	
16									[illegible] shale V24 RRC	
17										
18									black shale costean	
19									V24	
20										
21										
22										
23	DETECTION	50	5	5	1	0.5	0.005	5		
24	DIGESTION	101	101	101	101	101		101		
25	METHOD	101	101	101	114	101	309	101		

Results in ppm unless otherwise specified
[illegible] = element present but concentration too low to measure
[illegible] = element concentration is below detection limit
[illegible] = element not determined

AUTHORISED OFFICER

Voyager. 04

ANALABS

663658

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999
Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1065

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3023	K 678

DATE RECEIVED	RESULTS REQUIRED
22.3.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	31.3.82	3	19

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
PU	Various	1				2			Cu Pb Zn Ag Fe	101	10
									As	101	11
									Au		309

RESULTS TO: As Above

RESULTS TO:

REMARKS

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

AUTHORISED OFFICER

ANALABS

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

663659

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1065	1.4.82	KP 3023	1 OF 2

TUBE No.	SAMPLE No.		Fe	Cu	Zn	As	Ag	Au	Pb	
1	TS 14975		4100	10	105	9	X	0.107	275	
2	TS 14978		1200	10	15	X	X	0.032	20	
3	TS 14981		2200	5	15	X	0.5	X	10	
4	TS 14984		2000	5	10	3	0.5	0.020	15	
5	TS 14987		2100	10	15	X	0.5	0.009	10	
6	TS 14990		2000	10	10	X	0.5	0.061	10	
7	TS 14993		3400	20	15	1	0.5	0.019	10	
8	TS 14996		2150	5	10	1	0.5	0.014	10	
9	TS 14999		2550	10	10	X	X	0.010	20	
10	TS 15535		4000	10	210	5	0.5	0.010	40	
[illegible]	TS 15538		2900	20	360	7	0.5	0.007	210	
12	TS 15541		2600	10	10	X	0.5	X	55	
13	TS 15544		3000	10	15	6	0.5	0.015	10	
14	TS 15547		2150	20	50	6	0.5	X	20	
15	TS 15550		3750	10	455	5	0.5	0.021	60	
16	TS 16699		6850	10	170	11	0.5	X	95	
17	TS 16883		2.10%	470	400	76	1.0	0.031	75	
18	TS 16886		4.00%	20	130	13	0.5	0.007	20	
19	TS 16889		7.00%	35	150	32	0.5	0.005	30	
20										
21										
22										
23										
[illegible]										
25										

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

AUTHORISED OFFICER

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ANALABS

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

663660

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1065	1.4.82	KP 3023	2 OF 2

TUBE No.	SAMPLE No.		Fe	Cu	Zn	As	Ag	Au	Pb	
1	STD FS4		8.05%	340	840	28	1.0		135	
2	RPT TS 14975		4300	5	105	10	0.5		290	
3										
4										
5										
6										
7										
8										
9										
10										
[illegible]										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		50	5	5	1	0.5	0.005	5	
[illegible]	DIGESTION		101	101	101	101	101		101	
25	METHOD		101	101	101	114	101	309	101	

Results in ppm unless otherwise specified
[illegible] = element present, but concentration too low to measure
[illegible] = element concentration is below detection limit
[illegible] = element not determined

AUTHORISED OFFICER

243

Mercury Detection Systems

mercury analysers, dosimeters & accessories

Tel. (02) 44 2787

P.O. Box 253
Pymble N.S.W. 2073

663661

MERCURY GEOCHEMISTRY

For: Geopeko Ltd.

Date: 2nd April, 1982

Sample No.	Hg (ppb)	Sample No.	Hg (ppb)
TS 14973	6	15546	11
14974	41,43	15548	14
14976	24	15549	10
14977	28,25	16697	12
14979	18	16698	13
14980	20	16700	25,21
14982	6	16882	30,34
14983	17	16884	12
14985	15	16885	25,24
14986	17	16887	14
14988	20	16888	22
14989	16	16890	5
14991	22	16891	5
14992	15	16892	12
14994	56,59	16893	20
14995	15	16894	19
14997	10	16895	11
14998	19	16896	20
15000	17	16897	18
15534	31,36	16898	10
15536	8	16900	6
15537	12		
15539	26,31	18451	8
15540	14	18452	8
15542	5	18453	9
15543	16		
15545	6		

M.L. LOWDER

M. L. Lowder

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663662

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

V30/24 Par con V24 30/1

ANALYTICAL REPORT No. 83.1 08 921

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
	K 590

DATE RECEIVED	RESULTS REQUIRED
12.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	18.2.82	3	28

STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
80	TD 6373-92				1				Cu Pb Zn As Ag	101	101
									Fe	101	101
	TS 16496-500				2	1			Ba		120
	TS 16694-696								Sn		119
									W		124
									Au		309

RESULTS TO: As Above

RESULTS TO:

REMARKS

V24 - V30
drainage
samples

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

AUTHORISED OFFICER B Dean

245

663663

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 921	22.2.82	KP 2898	1 OF 6

TUBE No.	SAMPLE No.		Fe	Cu	Zn	As	Bi	Sn	Ba	W
1	TD 6373		1.30%	5	130	1	1.0	885	10	4.0
2	TD 6374		4350	45	795	1	X	110	10	3.5
3	TD 6375		4250	5	25	1	11.0	45	9	4.0
4	TD 6376		4550	10	10	X	X	24	5	4.0
5	TD 6377		4700	15	25	1	X	34	5	4.0
6	TD 6378		4600	15	10	1	X	2	50	4.5
7	TD 6379		4450	10	10	X	21.0	7	44	3.5
8	TD 6380		4750	10	15	1	X	2	44	3.5
9	TD 6381		3300	15	15	X	3.0	1	35	2.0
10	TD 6382		4100	10	5	1	X	3	23	4.0
11	TD 6383		2650	15	10	X	4.0	2	18	1.0
12	TD 6384		6450	15	25	8	X	1	59	1.5
13	TD 6385		3650	10	20	1	0.5	1	33	1.5
14	TD 6386		1.75%	40	475	59	3.0	3	135	1.5
15	TD 6387		5100	40	15	2	X	3	38	3.0
16	TD 6388		4000	15	15	X	X	2	57	2.0
17	TD 6389		4150	15	25	X	X	2	73	2.5
18	TD 6390		5850	25	40	2	1.0	330	34	3.0
19	TD 6391		4850	15	15	X	X	100	25	6.0
20	TD 6392		3950	10	15	1	X	125	24	12.5
21	-16+80#	TS 16496	4.60%	15	135	160	X	1	235	1.5
22	-16+80#	TS 16497	5550	10	35	15	X	6	44	1.5
23	-16+80#	TS 16498	6350	30	45	23	2.5	2	74	2.0
24	-16+80#	TS 16499	6500	10	10	2	X	1	40	1.5
	-20+80#	TS 16500	4050	20	295	5	X	1	39	2.0

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

AUTHORISED OFFICER

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663664

ANALABS

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 921	22.2.82	KP 2898	2 OF

TUBE No.	SAMPLE No.	Fe	Cu	Zn	As	Ag	Sn	Ba	W
1	-20+80# TS 16694	6000	10	10	1	X	2	30	2.0
2	-20+80# TS 16695	8100	15	15	1	X	X	29	1.0
3	-20+80# TS 16696	2850	5	175	2	2.0	2	63	1.0
4	-80# TS 16496	3.15%	10	125	120	X	1	180	1.5
5	-80# TS 16497	1.15%	30	85	59	X	1	95	1.5
6	-80# TS 16498	8400	75	80	44	3.5	4	93	1.0
7	-80# TS 16499	1.05%	20	25	3	X	3	75	1.5
8	-80# TS 16500	6550	30	45	3	X	2	61	1.0
9	-80# TS 16694	3500	35	715	11	X	2	56	1.0
10	-80# TS 16695	5600	15	35	1	X	2	43	1.0
11	-80# TS 16696	3600	10	455	3	X	1	74	1.0
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

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

AUTHORISED OFFICER

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663665

ANALABS

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

Telex AA92560

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	
	83.1 08 921	22.2.82	KP 2898	4

TUBE No.	SAMPLE No.	Au	Pb	wt(g)
1	TD 6373	101	5	10.10
2	TD 6374	33.7	15	6.13
3	TD 6375	5.05	15	18.57
4	TD 6376	0.318	5	7.55
5	TD 6377	0.087	5	14.90
6	TD 6378	7.54	10	9.67
7	TD 6379	396	X	8.93
8	TD 6380	12.1	10	10.42
9	TD 6381	242	X	15.85
10	TD 6382	0.418	X	15.56
11	TD 6383	I/S	10	I/S
12	TD 6384	1.70	30	7.24
13	TD 6385	5.77	35	13.07
14	TD 6386	I/S	50	I/S
15	TD 6387	0.249	5	2.81
16	TD 6388	0.086	X	4.65
17	TD 6389	0.133	X	3.00
18	TD 6390	11.3	10	4.40
19	TD 6391	10.6	X	5.49
20	TD 6392	0.224	X	8.48
21	-16+80# TS 16496	0.810	360	18.39
22	-16+80# TS 16497	0.070	115	107.50
23	-16+80# TS 16498	0.612	430	38.59
	-16+80# TS 16499	0.153	15	36.48
25	-20+80# TS 16500	0.065	255	36.74

V30 pan cons

V24 pan cons

V9 pan cons

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

AUTHORISED OFFICER

248

663666

ANALABS

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

124 + con V24 301

Telex AA92560

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	
	83.1 08 921	22.2.82	KP 2898	5

TUBE No.	SAMPLE No.		Au	Pb	wt(g)					
1	-20+80# TS	16694	0.011	5	78.59					
2	-20+80# TS	16695	X	X	11.93					
3	-20+80# TS	16696	0.167	15	43.19					
4	-80# TS	16496	0.214	250	4.68					
5	-80# TS	16497	I/S	830	I/S					
6	-80# TS	16498	I/S	965	I/S					
7	-80# TS	16499	I/S	35	I/S					
8	-80# TS	16500	I/S	50	I/S					
9	-80# TS	16694	0.143	605	10.51					
10	-80# TS	16695	I/S	5	I/S					
11	-80# TS	16696	X	25	8.70					
12										
13										
14										
15										
16										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER B Dow

663667

VOYAGER 29

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — 663668 Telex AA92560

ANALYTICAL REPORT No. 83.1 08 696

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2810	K 554

DATE RECEIVED	RESULTS REQUIRED
23.11.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	27.11.81	3	34

STATE OF SAMPLES		PRE-TREATMENT								ANALYSIS		
REFER TO BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 14001-34	1				2			Cu Pb Zn Ag	A1	MHS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 29
(SOILS)

STATE OF SAMPLES

whole core	WC
split core	SC
cutting	CU
rock	Ro
soil	SO
pulp	PU
water	WA
tissue	TI
stream sediment	SS
heavy mineral	HM

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Ma
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TIT
other chemicals means	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

ANALABS

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

663669

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 696	30.11.81	KP 2810	1 OF 3

TUBE No.	SAMPLE No.	Cu	Zn	Ag	Pb					
1	14001	15	2050	0.8	1850					
2	14002	5	160	0.3	90					
3	14003	5	90	0.5	40					
4	14004	10	40	0.2	90					
5	14005	10	105	0.8	100					
6	14006	5	90	0.5	35					
[illegible]	14007	5	165	0.2	35					
8	14008	X	25	0.4	5					
9	14009	X	10	0.2	15					
10	14010	5	15	0.2	X					
[illegible]	14011	X	10	0.1	X					
12	14012	X	10	0.1	X					
13	14013	100	70	2.7	X					
14	14014	30	1150	1.0	715					
15	14015	X	85	2.8	300					
[illegible]	14016	X	50	0.9	40					
17	14017	10	40	0.1	115					
18	14018	15	25	1.6	15					
19	14019	X	260	0.2	195					
20	14020	X	190	0.1	125					
21	14021	X	75	0.2	60					
22	14022	X	135	0.3	120					
23	14023	X	170	0.2	130					
[illegible]	14024	X	90	0.1	150					
25	14025	X	20	0.8	35					

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

AUTHORISED OFFICER

ANALABS

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

663670

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 696	30.11.81	KP 2810	2 OF 3

TUBE No.	SAMPLE No.	Cu %	Zn %	Fe %	Pb %					
1	14026	X	25	0.6	250					
2	14027	X	40	X	160					
3	14028	X	15	0.2	15					
4	14029	X	5	0.3	50					
5	14030	30	110	0.3	40					
6	14031	35	95	0.2	45					
7	14032	10	70	0.2	50					
8	14033	X	23	0.2	20					
9	14034	X	35	0.1	20					
10										
11										
12										
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14										
15										
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22										
23										
24										
25										

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

AUTHORISED OFFICER

ANALABS

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

663671

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 696	30.11.81	KP 2810	3 OF 3

TUBE No.	SAMPLE No.	Cu	Zn	Ag	Pb					
1	FS4	305	765	1.0	115					
2	14001	15	2000	0.7	1750					
3	14020	X	185	0.1	135					
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	0.1	5					
24	DIGESTION	A1	A1	A1	A1					
25	METHOD	A1/1	A1/1	A1/2	A1/1					

Results in ppm unless otherwise specified

T = element present but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

AUTHORISED SIGNATURE

Soil Voyager 29

ANALABS

663672

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

Phone (09) 458 7999 | 52 Murray Road, Welshpool, W.A. 6106 | Telex AA92560

ANALYTICAL REPORT No. 83.1 08 878

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
	K 578

DATE RECEIVED	RESULTS REQUIRED
2.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
		3	159

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	TS 15375-533	1				2			Cu Pb Zn Ag Fe	101	101

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 29
SOILS.

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

Authorised Signatory

ANALABS

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

663673

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 878	12.2.82	KP 2878	1 OF 3

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15375	1800	X	30	0.5	5				
2	15376	1450	5	10	0.5	5				
3	15377	850	5	25	0.5	25				
4	15378	850	10	10	0.5	25				
5	15379	8000	25	205	0.5	220				
6	15380	9700	X	90	0.5	5				
7	15381	9700	X	90	X	5				
8	15382	3850	5	25	X	20				
9	15383	3950	X	15	0.5	30				
10	15384	2850	X	10	0.5	15				
11	15385	3000	X	5	1.0	5				
12	15386	9600	5	45	X	10				
13	15387	2.10%	5	45	0.5	5				
14	15388	3.05%	30	1250	0.5	455				
15	15389	3.85%	15	140	X	10				
16	15390	3.65%	15	145	0.5	35				
17	15391	3.65%	10	145	X	35				
18	15392	2.65%	10	105	X	20				
19	15393	3.05%	X	185	0.5	10				
20	15394	700	X	60	0.5	15				
21	15395	1250	X	15	0.5	20				
22	15396	1800	X	100	X	40				
23	15397	2150	5	10	X	X				
24	15398	2350	X	15	0.5	X				
25	15399	3250	5	5	1.5	X				

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

AUTHORISED SIGNATURE

ANALABS

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

663674

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 00 878	12.2.82	KP 2878	2 OF 8

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15400	1250	X	10	1.0	5				
2	15401	1150	5	10	X	5				
3	15402	1450	X	85	0.5	60				
4	15403	2050	5	15	1.0	5				
5	15404	2050	5	15	0.5	X				
6	15405	1650	X	10	X	X				
7	15406	2700	X	115	0.5	20				
8	15407	1800	5	135	0.5	15				
9	15408	2100	5	80	0.5	X				
10	15409	1550	5	55	0.5	60				
11	15410	1050	5	15	X	15				
12	15411	1150	5	15	1.0	20				
13	15412	1750	X	245	X	45				
14	15413	1200	5	30	0.5	15				
15	15414	1650	5	165	0.5	85				
16	15415	2700	5	75	X	30				
17	15416	2500	X	100	X	35				
18	15417	3100	25	245	X	210				
19	15418	1.40%	25	165	X	35				
20	15419	6250	10	80	X	15				
21	15420	2.35%	25	135	0.5	10				
22	15421	1.55%	20	135	X	15				
23	15422	6950	5	35	X	5				
24	15423	7150	X	70	X	35				
25	15424	5200	5	310	X	60				

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

AUTHORISED OFFICER

ANALABS

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

663675

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 878	12.2.82	KP 2878	3 OF

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15425	4850	5	90	0.5	60				
2	15426	4950	10	280	0.5	175				
3	15427	1.65%	50	380	0.5	120				
4	15428	2.00%	55	85	0.5	40				
5	15429	9800	10	55	X	40				
6	15430	2.25%	10	105	X	40				
7	15431	5.70%	10	100	X	35				
8	15432	2.25%	185	550	0.5	140				
9	15433	2.00%	15	95	X	35				
10	15434	7400	5	35	X	10				
11	15435	2800	15	25	X	70				
12	15436	5250	15	65	X	30				
13	15437	3100	10	70	X	25				
14	15438	2.20%	15	100	X	10				
15	15439	2.15%	20	75	X	20				
16	15440	2.35%	15	75	X	5				
17	15441	2.25%	20	75	X	5				
18	15442	1.40%	15	65	X	15				
19	15443	1.85%	15	185	X	15				
20	15444	2750	5	10	X	X				
21	15445	8950	40	35	0.5	10				
22	15446	2.45%	60	100	X	15				
23	15447	2.05%	55	55	X	5				
24	15448	2.95%	55	85	X	20				
25	15449	2950	20	85	X	65				

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

AUTHORISED OFFICER

ANALABS

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

663676

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 878	12.2.82	KP 2878	4 OF 8

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15450	6450	10	135	X	30				
2	15451	6600	15	125	X	25				
3	15452	9150	5	75	0.5	5				
4	15453	1.80%	5	65	0.5	10				
5	15454	1.35%	20	135	X	55				
6	15455	3.95%	40	235	1.0	30				
7	15456	6950	10	25	0.5	55				
8	15457	1.15%	5	40	X	25				
9	15458	1.75%	15	60	X	40				
10	15459	3850	10	20	0.5	15				
11	15460	4450	5	10	X	15				
12	15461	4550	5	10	0.5	10				
13	15462	3050	5	150	0.5	30				
14	15463	3250	X	65	0.5	25				
15	15464	3750	X	90	X	20				
16	15465	6550	5	35	X	15				
17	15466	3050	5	10	X	X				
18	15467	4650	5	15	0.5	X				
19	15468	8050	3350	5.45%*	13.0*	1.25%*				
20	15469	3800	120	1700	1.0	595				
21	15470	3150	10	180	X	130				
22	15471	3150	10	155	X	140				
23	15472	2650	X	25	0.5	5				
24	15473	2450	5	45	X	20				
25	15474	1250	15	55	X	175				

Results in ppm unless otherwise specified

* = element present, but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

AUTHORISED OFFICER

ANALABS

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

663677

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 00 878	12.2.82	KP 2878	5 OF 8

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Mo	Pb				
1	15475	2250	5	165	X	55				
2	15476	2050	5	15	X	X				
3	15477	1900	X	10	X	X				
4	15478	3100	5	10	X	10				
5	15479	3600	25	20	X	45				
6	15480	2400	15	175	X	250				
7	15481	2150	10	245	X	160				
8	15482	3600	5	20	X	5				
9	15483	3550	5	205	X	180				
10	15484	2150	5	15	X	X				
11	15485	3.95%	5	235	X	15				
12	15486	4.70%	10	445	0.5	10				
13	15487	3.15%	10	395	X	15				
14	15488	3600	5	20	0.5	X				
15	15489	2.90%	20	145	X	65				
16	15490	2.00%	5	145	X	60				
17	15491	2.10%	5	150	X	75				
18	15492	4.65%	10	345	X	55				
19	15493	4.15%	10	160	X	5				
20	15494	5.85%	5	425	X	60				
21	15495	2950	10	50	X	255				
22	15496	3250	5	45	X	110				
23	15497	5150	25	255	0.5	75				
24	15498	3250	65	70	X	145				
25	15499	2650	10	15	X	10				

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

AUTHORISED OFFICER

ANALABS

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

663678

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 878	12.2.82	KP 2878	6 OF 8

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Mo	Pb				
1	15500	2950	15	35	X	145				
2	15501	3250	110	2150	0.5	1450				
3	15502	2150	10	25	X	X				
4	15503	2350	15	20	X	110				
5	15504	1850	85	1000	X	1400				
6	15505	3250	5	15	0.5	10				
7	15506	2850	60	15	X	195				
8	15507	3800	10	555	0.5	200				
9	15508	2950	10	15	0.5	X				
10	15509	3550	5	15	X	X				
11	15510	1.75%	250	880	6.5	540				
12	15511	1.85%	265	840	11.0	815				
13	15512	6.30%	335	680	0.5	95				
14	15513	6600	30	155	0.5	100				
15	15514	3050	5	25	X	15				
16	15515	3100	10	15	0.5	20				
17	15516	3100	10	125	X	90				
18	15517	4350	10	125	X	100				
19	15518	4250	10	25	X	10				
20	15519	9400	290	1300	X	1700				
21	15520	1.00%	10	105	X	45				
22	15521	9850	X	100	0.5	35				
23	15522	1.75%	10	320	1.0	50				
24	15523	2.70%	5	70	X	5				
25	15524	1.40%	5	85	X	75				

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

AUTHORISED OFFICER

ANALABS

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

663679

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 878	12.2.82	KP 2878	7 OF 8

TUBE No.	SAMPLE No.	Fe%	Cu	Zn	Pb%	Pb				
1	15525	1.90%	5	125	X	25				
2	15526	1.80%	5	95	X	25				
3	15527	1.75%	5	105	0.5	5				
4	15528	6450	10	515	0.5	340				
5	15529	2.35%	105	65	X	20				
6	15530	3.10%	65	85	X	15				
7	15531	4.70%	65	90	X	15				
8	15532	9750	25	20	X	X				
9	15533	1.95%	X	25	X	10				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER

ANALABS

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

663680

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 870	12.2.82	KP 2878	8 OF 8

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	STD FS4	7.20%	285	710	1.5	90				
2	RPT 15375	1850	X	25	0.5	X				
3	RPT 15394	600	X	50	0.5	10				
4	STD FS4	7.25%	300	740	X	90				
5	RPT 15415	2550	10	75	X	30				
6	RPT 15434	7100	10	30	X	5				
7	STD FS4	7.45%	305	720	0.5	95				
8	RPT 15455	4.10%	30	225	1.0	35				
9	RPT 15474	1250	20	55	X	160				
10	STD FS4	7.30%	300	710	0.5	100				
11	RPT 15495	2800	15	50	X	245				
12	RPT 15514	2850	5	20	X	20				
13										
14										
15										
16	NOTE: * A6 Check to follow									
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
24	DIGESTION	101	101	101	101	101				
25	METHOD	101	101	101	101	101				

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

AUTHORISED OFFICER

ANALABS

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

663681

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 977

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3009	K 594

DATE RECEIVED	RESULTS REQUIRED
25.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	4.3.82	3	36

STATE OF SAMPLES: REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
RO	KR 9385-9415		1	3	2 4				Cu Pb Zn Ag Fe Ba	101	101 120
RO	TS 14968-14972	1				2					

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 29
COSTEANS
AND SOILS

STATE OF SAMPLES

whole core	WC
split core	SC
cuttings	CU
	RO
	SO
	PU
water	WA
tissue	TI
stream sediment	SS
heavy mineral	HM

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Mx
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TTN
other chemicals means	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

AUTHORISED SIGNATURE

ANALABS

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

663682

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 977	4.3.82	KP 3009	1 OF 3

TUBE No.	SAMPLE No.		Fe%	Cu	Zn	Mg	Bi	Pb		
1	KR 9385		6600	15	95	X	480	150		
2	KR 9386		8850	15	155	X	680	135		
3	KR 9387		1.60%	965	1.15%	2.0	510	1700		
4	KR 9388		1.40%	15	635	0.5	610	180		
5	KR 9389		1.15%	5	370	X	345	60		
6	KR 9390		9750	10	515	X	370	50		
7	KR 9391		7850	20	815	0.5	260	840		
8	KR 9392		6650	25	420	1.0	275	770		
9	KR 9393		8400	45	600	1.0	270	1400		
10	KR 9394		1.55%	225	2600	6.5	325	4950		
11	KR 9395		7450	20	750	X	280	955		
12	KR 9396		5000	15	1150	1.5	275	520		
13	KR 9397		7500	55	1400	2.5	355	965		
14	KR 9398		5850	15	1400	1.0	305	810		
15	KR 9399		5750	10	75	0.5	255	300		
16	KR 9400		6400	115	615	0.5	330	1900		
17	KR 9401		2.25%	35	230	X	300	175		
18	KR 9402		2.15%	35	225	X	305	170		
19	KR 9403		1.85%	10	215	X	345	50		
20	KR 9404		2.15%	15	185	0.5	295	50		
21	KR 9405		2.30%	15	200	X	405	45		
22	KR 9406		3.15%	35	305	X	330	60		
23	KR 9407		2.05%	10	300	X	320	130		
24	KR 9408		1.85%	15	330	X	265	250		
25	KR 9409		2.60%	45	885	X	385	400		

VOYAGER 29
COSTEANS
AND SOILS

Results in parts per million unless specified
X = element present but concentration too low to analyse
< = element concentration is below detection limit
- = element not determined

AUTHORISED OFFICER

ANALABS

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

663683

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 977	4.3.82	KP 3009	2 OF 3

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Ba	Pb		
1	KR 9410	2.60%	20	400	X	300	240		
2	KR 9411	2.05%	10	410	X	265	125		
3	KR 9412	1.50%	35	300	X	260	85		
4	KR 9413	6050	10	215	X	370	60		
5	KR 9414	5550	5	165	X	435	70		
6	KR 9415	46.5%	10	15	X	75	10		
7	-10+80# TS 14968	3650	5	15	X	105	5		
8	-10+80# TS 14969	3050	X	5	0.5	135	5		
9	-10+80# TS 14970	9400	705	5550	2.0	485	1200		
10	-10+80# TS 14971	1.45%	1950	2.05%	3.5	455	2150		
11	-10+80# TS 14972	3850	7950	9.20%	10.0	465	2800		
12	-80# TS 14968	5950	15	80	0.5	195	55		
13	-80# TS 14969	5150	10	20	0.5	325	15		
14	-80# TS 14970	1.35%	1400	1.00%	3.0	905	3050		
15	-80# TS 14971	2.00%	1450	2.40%	3.0	995	2900		
16	-80# TS 14972	5450	6700	6.25%	8.0	700	2450		
17									
18									
19									
20									
21									
22									
23									
24									
25									

VOYAGER 29
COSTEANS
AND SOILS

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

AUTHORISED OFFICER

[redacted]

ANALABS

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

663684

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 977	4.3.82	KP 3009	3 OF 3

TUBE No.	SAMPLE No.	ONE	Fe	Cu	Zn	Ag	Ba	Pb		
1	STD FS4		7.85%	310	750	0.5	420	90		
2	RPT KR 9385		6550	15	95	X	470	160		
3	RPT KR 9404		2.10%	10	175	X	280	45		
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15								VOYAGER 21		
16								CUTTINGS		
17								AND SOILS		
18										
19										
20										
21										
22										
23	DETECTION		50	5	5	0.5	5	5		
24	DIGESTION		101	101	101	101	120	101		
25	METHOD		101	101	101	101	120	101		

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

AUTHORISED OFFICER _____ DATE _____

ANALABS

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

663685

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 878	15.2.82	KP 2878	1 OF 1

TUBE No.	SAMPLE No.	Zn	Ag	Pb						
1	TS 15468	5.29%	13	1.28%						
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14	NOTE:	AG Check								
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	25	2	25						
	DIGESTION	104	104	104						
25	METHOD	104	104	104						

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

AUTHORISED OFFICER

268

ANALABS

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

663686

Phone (09) 458 7999 | 52 Murray Road, Welshpool, W.A. 6106 | Telex AA92560

ANALYTICAL REPORT No. 82.1 08 770

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
kp 2848	PW/EB/V19,2 K864
DATE RECEIVED	**RESULTS REQUIRED**
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	4.1.82	3	65

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 15186-250	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 29

65 Ghorgon Soils.

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

AUTHORISED OFFICER B Dorr

269

ANALABS

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

663687

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 770	5.1.82	KP 2848	1 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15186	2.95%	5	85	X	30				
2	15187	2.35%	X	115	X	7				
3	15188	3750	X	15	X	10				
4	15189	5000	X	15	X	X				
5	15190	4950	30	575	0.5	15				
6	15191	5600	45	710	X	20				
7	15192	4250	5	85	X	20				
8	15193	3150	10	10	0.5	10				
9	15194	4400	X	10	X	5				
10	15195	7800	100	45	X	35				
11	15196	1.75%	55	75	X	10				
12	15197	1.85%	15	75	X	10				
13	15198	1.75%	10	75	X	10				
14	15199	1.45%	20	645	0.5	135				
15	15200	2.15%	20	65	X	10				
16	15201	1.95%	20	65	0.5	5				
17	15202	5550	10	80	X	10				
18	15203	5600	10	315	0.5	75				
19	15204	3850	55	320	0.5	65				
20	15205	1.60%	5	165	X	20				
21	15206	7750	10	15	X	15				
22	15207	5400	245	115	X	210				
23	15208	2.25%	20	150	X	80				
24	15209	2.55%	10	145	X	30				
25	15210	3400	10	100	0.5	25				

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

AUTHORISED OFFICER

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ANALABS

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

663688

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 03 770	5.1.82	KP 2848	2 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15211	3600	10	95	X	25				
2	15212	2750	10	80	0.5	130				
3	15213	5650	10	50	X	195				
4	15214	2500	5	10	1.5	125				
5	15215	2650	55	35	X	300				
6	15216	5000	5	15	0.5	35				
7	15217	3650	5	15	X	10				
8	15218	4950	X	340	X	10				
9	15219	3050	X	15	X	5				
10	15220	5900	60	675	1.0	1250				
11	15221	6400	65	570	1.0	1150				
12	15222	2150	X	10	0.5	25				
13	15223	2900	5	10	X	30				
14	15224	3500	10	15	0.5	85				
15	15225	2750	X	175	X	90				
16	15226	4050	X	30	X	20				
17	15227	3450	X	95	X	70				
18	15228	4450	X	155	X	15				
19	15229	4350	X	20	X	X				
20	15230	4000	10	30	X	20				
21	15231	4050	10	30	X	20				
22	15232	4350	X	20	X	X				
23	15233	5600	X	25	X	X				
24	15234	2000	X	15	X	X				
25	15235	5500	X	20	X	X				

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

AUTHORISED OFFICER

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ANALABS

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

663689

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 770	5.1.82	KP 2848	3 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15236	2100	X	15	X	X				
2	15237	3950	X	20	X	X				
3	15238	3600	X	40	X	X				
4	15239	5.35%	5	335	X	70				
5	15240	2.00%	X	320	X	255				
6	15241	2.30%	X	285	X	230				
7	15242	2.90%	145	1100	X	530				
8	15243	2.95%	1000	3550	0.5	1650				
9	15244	2450	X	20	X	X				
10	15245	9500	5	440	X	115				
11	15246	2.35%	X	330	0.5	120				
12	15247	4.55%	5	280	X	50				
13	15248	5.25%	25	155	X	45				
14	15249	4.05%	X	395	X	15				
15	15250	5.30%	10	1350	X	1750				
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER B Dove

272 — 329

ANALABS

663690

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 977

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3009	K 594

DATE RECEIVED	RESULTS REQUIRED
25.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	4.3.82	3	36

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
RO	KR 9385-9415		1		2				Cu Pb Zn Ag Fe	101	101
				3	4				Ba		120
SO	TS 14968-14972	1				2					

RESULTS TO: As Above

RESULTS TO:

REMARKS

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

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ANALABS

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

663691

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 977	4.3.82	KP 3009	1 OF 3

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Ba	Pb		
1	KR 9385		6600	15	95	X	480	150		
2	KR 9386		8850	15	155	X	680	135		
3	KR 9387		1.60%	965	1.15%	2.0	510	1700		
4	KR 9388		1.40%	15	635	0.5	610	180		
5	KR 9389		1.15%	5	370	X	345	60		
6	KR 9390		9750	10	515	X	370	50		
7	KR 9391		7850	20	815	0.5	260	840		
8	KR 9392		6650	25	420	1.0	275	770		
9	KR 9393		8400	45	600	1.0	270	1400		
10	KR 9394		1.55%	225	2600	6.5	325	4950		
11	KR 9395		7450	20	750	X	280	955		
12	KR 9396		5000	15	1150	1.5	275	520		
13	KR 9397		7500	55	1400	2.5	355	965		
14	KR 9398		5850	15	1400	1.0	305	810		
15	KR 9399		5750	10	75	0.5	255	300		
16	KR 9400		6400	115	615	0.5	330	1900		
17	KR 9401		2.25%	35	230	X	300	175		
18	KR 9402		2.15%	35	225	X	305	170		
19	KR 9403		1.85%	10	215	X	345	50		
20	KR 9404		2.15%	15	185	0.5	295	50		
21	KR 9405		2.30%	15	200	X	405	45		
22	KR 9406		3.15%	35	305	X	330	60		
23	KR 9407		2.05%	10	300	X	320	130		
24	KR 9408		1.85%	15	230	X	265	250		
25	KR 9409		2.60%	45	885	X	385	400		

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

AUTHORISED OFFICER B Dorn

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ANALABS

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

663692

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 00 977	4.3.82	KP 3009	2 OF 3

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Ba	Pb		
1	KR 9410		2.60%	20	400	X	300	240		
2	KR 9411		2.05%	10	410	X	265	125		
3	KR 9412		1.50%	35	300	X	260	85		
4	KR 9413		6050	10	215	X	370	60		
5	KR 9414		5550	5	165	X	435	70		
6	KR 9415		46.5%	10	15	X	75	10		
7	-10+80# TS	14968	3650	5	15	X	105	5		
8	-10+80# TS	14969	3050	X	5	0.5	135	5		
9	-10+80# TS	14970	9400	705	5550	2.0	485	1200		
10	-10+80# TS	14971	1.45%	1950	2.05%	3.5	455	2150		
11	-10+80# TS	14972	3850	7950	9.20%	10.0	455	2800		
12	-80# TS	14968	5950	15	80	0.5	195	55		
13	-80# TS	14969	5150	10	20	0.5	325	15		
14	-80# TS	14970	1.35%	1400	1.00%	3.0	985	3050		
15	-80# TS	14971	2.00%	1450	2.40%	3.0	995	2900		
16	-80# TS	14972	5450	6700	6.25%	8.0	700	2450		
17										
18										
19										
20										
21										
22										
23										

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

AUTHORISED OFFICER

Mercury Detection Systems

mercury analysers, dosimeters & accessories

Tel. (02) 44 2787

P.O. Box 253
Pymble N.S.W. 2073

275

663693

MERCURY GEOCHEMISTRY

For: Geopeko Ltd.

Date: 2nd April, 1982

Sample No.	Hg (ppb)
TS 14973	6
14974	41,43 107
14976	24
14977	28,25 32
14979	18
14980	20 X
14982	6
14983	17 20
14985	15
14986	17 9
14988	20
14989	16 61
14991	22
14992	15 19
14994	56,59
14995	15 14
14997	10
14998	19 10
15000	17
15534	31,36 10
15536	8
15537	12 7
15539	26,31
15540	14 X
15542	5
15543	16 15
15545	6

Sample No.	Hg (ppb)
15546	11 X
15548	14
15549	10 21
16697	12
16698	13 X
16700	25,21
16882	30,34 31
16884	12
16885	25,24 7
16887	14
16888	22 5
16890	b 5 — 10500N
16891	b 5
16892	b 12 — 10021
16893	b 20
16894	b 19 — 10050
16895	b 11
16896	b 20
16897	b 18
16898	b 10
16900	b 6
18451	b 8
18452	b 8
18453	b 9

101216

101506

M.L. LOWDER

M.L. Lowder

276

663694

VOYAGER 29W

ANALABS

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

663695

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 764

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2839	JP/EB/V29/1

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	4.1.82	3	96

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS			
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 14176-201 TS 14203-272	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 29 W

SOILS

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

AUTHORISED OFFICER

ANALABS

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

663696

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 764	5.1.82	KP 2839	1 OF 5

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14176	2150	25	40	0.5	X				
2	14177	2300	30	65	3.5	20				
3	14178	3300	10	45	X	10				
4	14179	1.10%	25	155	X	30				
5	14180	6200	15	50	X	20				
6	14181	5950	15	50	X	30				
7	14182	5900	10	40	X	10				
8	14183	6350	15	45	0.5	15				
9	14184	6400	15	45	X	10				
10	14185	1.10%	25	1300	X	50				
11	14186	1.80%	20	105	X	20				
12	14187	2.40%	10	80	X	15				
13	14188	3650	10	50	X	20				
14	14189	4700	10	50	X	30				
15	14190	4200	10	35	X	20				
16	14191	3800	10	70	X	30				
17	14192	3000	10	70	X	60				
18	14193	5600	10	55	X	40				
19	14194	2.95%	35	50	X	40				
20	14195	1.15%	15	30	X	45				
21	14196	2.40%	15	35	X	25				
22	14197	2.15%	15	45	X	15				
23	14198	2.10%	15	30	X	20				
24	14199	1.70%	15	50	X	30				
25	14200	1.00%	15	55	X	10				

Results in ppm (g/tonne) unless otherwise specified
X = element present, but concentration too low to measure
— = element concentration is below detection limit
* = element not determined

AUTHORISED OFFICER

ANALABS

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

663697

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 764	5.1.82	KP 2839	2 OF 5

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14201	7700	10	60	X	25				
2	14202	N/S	N/S	N/S	N/S	N/S				
3	14203	2400	X	20	X	X				
4	14204	4250	5	40	X	10				
5	14205	4450	5	30	X	10				
6	14206	3350	5	115	0.5	40				
7	14207	4800	10	165	1.0	35				
8	14208	2200	X	25	0.5	10				
9	14209	3200	X	25	X	5				
10	14210	5000	X	30	X	15				
11	14211	5500	X	25	X	7				
12	14212	5000	5	40	X	15				
13	14213	4050	X	25	1.0	5				
14	14214	3700	10	75	X	5				
15	14215	2550	5	30	0.5	10				
16	14216	2450	5	45	0.5	10				
17	14217	5950	15	70	2.5	5				
18	14218	4600	5	60	X	5				
19	14219	4750	5	30	0.5	X				
20	14220	4350	5	45	0.5	10				
21	14221	4900	X	45	0.5	15				
22	14222	5100	5	30	X	35				
23	14223	4100	5	30	0.5	X				
24	14224	6000	5	30	X	10				
25	14225	1250	5	25	X	X				

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

AUTHORISED OFFICER

ANALABS

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

663698

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 764	5.1.82	KP 2839	3 OF 5

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Hg	Pb				
1	14226	1.10%	5	45	0.5	60				
2	14227	6000	5	30	X	5				
3	14228	4.55%	10	80	X	25				
4	14229	2450	10	20	X	5				
5	14230	3650	10	25	X	10				
6	14231	4150	5	20	X	X				
7	14232	4200	10	15	1.0	X				
8	14233	2400	5	15	0.5	5				
9	14234	2850	10	20	0.5	X				
10	14235	1650	10	115	0.5	40				
11	14236	1150	10	25	1.0	X				
12	14237	1200	5	15	X	5				
13	14238	7.20%	15	100	X	15				
14	14239	2700	5	15	5.0	X				
15	14240	1150	5	15	3.0	X				
16	14241	1550	X	10	2.5	X				
17	14242	2000	X	15	1.0	5				
18	14243	900	5	10	1.5	10				
19	14244	1300	X	10	0.5	5				
20	14245	1.10%	X	20	1.5	20				
21	14246	5300	X	45	1.5	15				
22	14247	7150	X	40	0.5	5				
23	14248	5250	5	40	3.0	20				
24	14249	3600	X	30	0.5	20				
25	14250	4100	X	15	X	5				

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

AUTHORISED OFFICER

ANALABS

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

663699

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 764	5.1.82	KP 2839	4 OF 5

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14251	4050	X	30	1.0	5				
2	14252	1.10%	X	40	1.0	10				
3	14253	7100	5	40	4.0	25				
4	14254	3.70%	5	75	X	20				
5	14255	2.90%	10	45	0.5	30				
6	14256	1.55%	5	30	X	10				
7	14257	5250	5	30	X	15				
8	14258	1.45%	10	55	X	20				
9	14259	1.60%	10	60	1.5	30				
10	14260	2.30%	20	95	0.5	35				
[illegible]	14261	2.25%	20	95	X	40				
12	14262	7400	10	100	X	30				
13	14263	6250	20	600	0.5	120				
14	14264	5500	X	45	X	20				
15	14265	1.05%	X	35	0.5	20				
16	14266	1.65%	5	35	X	5				
17	14267	2300	5	65	X	25				
18	14268	3.05%	15	80	X	20				
19	14269	5.55%	10	120	X	30				
20	14270	6750	10	305	1.5	140				
21	14271	6300	10	270	X	130				
22	14272	6650	5	100	0.5	45				
23										
25										

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

AUTHORISED OFFICER

ANALABS

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

663700

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 764	5.1.82	KP 2839	5 OF 5

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	STD FS4	8.40%	305	710	1.5	90				
2	RPT 14176	1950	25	40	X	5				
3	RPT 14195	1.15%	10	25	X	40				
4	STD FS4	6.65%	205	525	1.0	70				
5	RPT 14216	2250	10	40	X	5				
6	RPT 14235	1500	10	95	0.5	45				
7	STD FS4	9.0%	300	760	0.5	100				
8	RPT 14256	1.45%	5	30	0.5	10				
9										
10										
11										
12										
13										
14										
15										
16										
17										
18	NOTE: N/S Means Sample Not Submitted									
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
24	DIGESTION	A1	A1	A1	A1	A1				
25	METHOD	A1/1	A1/1	A1/1	A1/1	A1/1				

Results in grams unless otherwise specified

* = element present, but concentration too low to measure

X = element not present or below detection limit

— = element not determined

AUTHORISED OFFICER

ANALABS

663701

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 767

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
kp 2845	JP/EB/V29W/

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	4.1.82	3	69

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	T8 14273-341	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 29W
(SOILS)

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

AUTHORISED OFFICER: [signature]

ANALABS

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

663702

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 767	5.1.82	KP 2845	1 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14273	6.65%	10	70	X	5				
2	14274	6.60%	25	70	X	10				
3	14275	2150	X	X	0.5	10				
4	14276	1550	X	10	1.0	X				
5	14277	1250	X	5	1.5	5				
6	14278	1650	X	5	1.5	X				
7	14279	6400	30	15	X	20				
8	14280	1.15%	10	25	X	20				
9	14281	1.25%	15	25	X	25				
10	14282	2.25%	15	220	X	15				
[illegible]	14283	7550	X	25	X	10				
12	14284	2.95%	X	35	X	25				
13	14285	1.20%	X	20	0.5	15				
14	14286	4750	X	10	X	10				
15	14287	7.00%	X	80	X	20				
16	14288	1.45%	5	35	X	10				
17	14289	2.45%	15	65	X	25				
18	14290	1.45%	10	25	X	15				
19	14291	1.60%	10	30	X	15				
20	14292	9800	5	55	X	15				
21	14293	3000	X	15	1.0	5				
22	14294	1.00%	X	50	1.0	15				
23	14295	5800	5	10	0.5	10				
[illegible]	14296	5700	X	45	0.5	10				
25	14297	6600	5	105	X	25				

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

AUTHORISED OFFICER

ANALABS

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

663703

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 767	5.1.82	KP 2845	2 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14298	5900	5	30	X	15				
2	14299	6000	X	15	X	10				
3	14300	3850	X	20	X	10				
4	14301	4550	5	70	X	15				
5	14302	8400	X	35	X	15				
6	14303	1.30%	X	30	X	5				
7	14304	2.15%	10	120	0.5	65				
8	14305	1.05%	X	30	X	30				
9	14306	4850	X	55	X	X				
10	14307	2150	X	10	X	X				
11	14308	2000	X	10	0.5	X				
12	14309	4950	10	195	6.5	285				
13	14310	3400	X	10	0.5	5				
14	14311	3600	X	10	X	10				
15	14312	5750	X	35	X	X				
16	14313	4050	X	60	X	5				
17	14314	4650	10	245	0.5	80				
18	14315	1.70%	20	90	X	30				
19	14316	6.00%	35	90	X	10				
20	14317	2.35%	5	80	X	40				
21	14318	7200	10	25	0.5	15				
22	14319	4000	5	15	0.5	X				
23	14320	7900	X	15	0.5	5				
24	14321	1.05%	X	20	X	10				
25	14322	2150	5	10	1.5	X				

Results in parts per million unless otherwise specified
1 = element present but concentration too low to measure
X = element not detected or concentration is below detection limit
— = element not determined

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

663704

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 767	5.1.82	KP 2845	3 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14323	7600	X	25	1.0	5				
2	14324	4900	X	20	0.5	5				
3	14325	1.40%	X	40	X	10				
4	14326	1.75%	X	50	X	100				
5	14327	6900	5	45	1.0	105				
6	14328	3.85%	5	190	0.5	15				
7	14329	7000	5	35	0.5	10				
8	14330	4750	X	35	0.5	20				
9	14331	5100	X	35	0.5	30				
10	14332	5700	5	20	X	15				
11	14333	6250	X	25	0.5	10				
12	14334	2000	X	15	1.0	5				
13	14335	5900	X	15	0.5	5				
14	14336	2900	X	20	2.0	5				
15	14337	6650	X	40	0.5	10				
16	14338	5850	X	35	0.5	5				
17	14339	6300	X	25	0.5	5				
18	14340	4550	X	25	0.5	5				
19	14341	4150	X	25	X	15				
20										
21										
22										
23										
24										
25										

Results in ppm unless otherwise specified

1 = element present, but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

AUTHORISED OFFICER

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

663705

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 767	5.1.82	KP 2845	4 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Hg	Pb				
1	STD FS4	7.85%	310	760	1.0	95				
2	RPT 14273	6.70%	15	75	X	5				
3	RPT 14292	1.00%	10	50	0.5	15				
4	STD FS4	8.20%	300	730	X	100				
5	RPT 14313	4150	X	65	0.5	X				
6	RPT 14332	5100	5	20	X	10				
7										
8										
9										
10										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
	DIGESTION	A1	A1	A1	A1	A1				
25	METHOD	A1/1	A1/1	A1/1	A1/1	A1/1				

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

AUTHORISED OFFICER

ANALABS

663706

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 769

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2847	JP/EB/V19W/

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES
	4.1.82	3

TOTAL No. OF SAMPLES: 81

STATE OF SAMPLES		PRE TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSES SECTION	PREPARATION	METHOD
SO	TS 14342-422	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 29 WEST.

SOILS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cuttings	CU	nitric acid	A3	other mixed acids	Mo	spectrophotometry	SPEC
rock	RO	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemical methods	CHEM
leach	L	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fire assay	FIRE
heavy mineral	HM					inductively coupled plasma	ICP

A.O.

ANALABS

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

663707

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 769	5.1.82	KP 2847	1 OF 5

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Mn	Pb				
1	14342	4.75%	40	30	X	20				
2	14343	6.00%	35	20	X	25				
3	14344	3.00%	20	15	X	25				
4	14345	3.65%	35	40	X	70				
5	14346	6300	15	30	X	40				
6	14347	5.00%	40	110	X	30				
7	14348	3300	5	10	X	25				
8	14349	5000	X	10	X	20				
9	14350	6050	X	10	X	15				
10	14351	6000	10	15	X	10				
11	14352	6200	5	15	0.5	15				
12	14353	7700	5	20	X	10				
13	14354	7700	5	15	X	10				
14	14355	1.05%	X	15	X	25				
15	14356	1.15%	5	25	X	20				
16	14357	3900	15	20	X	15				
17	14358	1200	X	10	X	5				
18	14359	3550	5	10	X	5				
19	14360	2350	X	10	1.0	5				
20	14361	1850	5	5	0.5	5				
21	14362	1000	X	10	0.5	X				
22	14363	1000	X	5	X	5				
23	14364	1200	X	5	0.5	15				
24	14365	950	X	X	X	20				
25	14366	4950	15	20	X	5				

Soils

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

AUTHORISED OFFICER

ANALABS

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

663708

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 769	5.1.82	KP 2847	2 OF 5

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Pb	Ag	Pb				
1	14367	950	5	5	0.5		5				
2	14368	1150	5	20	X		5				
3	14369	500	X	15	X		10				
4	14370	700	X	20	1.0		10				
5	14371	800	X	5	0.5		10				
6	14372	750	5	5	0.5		5				
7	14373	1150	X	X	X		10				
8	14374	2.65%	25	235	0.5		120				
9	14375	1.05%	5	130	X		145				
10	14376	1.55%	10	115	X		110				
11	14377	2150	10	10	0.5		10				
12	14378	1.05%	X	235	0.5		45				
13	14379	4400	5	40	1.0		20				
14	14380	1.15%	5	80	0.5		45				
15	14381	1.00%	5	65	1.0		35				
16	14382	1.00%	5	30	X		20				
17	14383	2.55%	20	335	X		170		Sals		
18	14384	2.35%	20	815	X		90				
19	14385	3.00%	20	550	X		150				
20	14386	1.85%	10	100	X		35				
21	14387	9000	5	25	0.5		20				
22	14388	1.45%	5	30	X		10				
23	14389	6150	10	15	X		10				
24	14390	6650	X	30	X		15				
25	14391	7150	10	25	0.5		15				

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

AUTHORISED OFFICER

ANALABS

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

663709

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 769	5.1.82	KP 2847	3 OF 5

ITEM No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14392	3100	X	15	X	5				
2	14393	2500	X	5	X	5				
3	14394	2750	X	10	X	10				
4	14395	3050	5	15	X	5				
5	14396	1250	X	10	X	15				
6	14397	2150	5	45	X	25				
7	14398	3000	5	45	X	70				
8	14399	3350	X	15	X	15				
9	14400	5200	X	30	X	20				
10	14401	5500	X	30	X	20				
11	14402	3250	X	25	X	15				
12	14403	1.25%	X	70	X	35				
13	14404	1750	X	10	X	5				
14	14405	4000	5	85	0.5	75				
15	14406	6200	X	35	X	20				
16	14407	1200	X	5	X	X				
17	14408	3.70%	10	215	X	40		Sales		
18	14409	1.35%	5	65	X	15				
19	14410	2.65%	X	45	X	20				
20	14411	2.95%	X	45	X	20				
21	14412	1150	X	10	X	10				
22	14413	5600	X	15	X	15				
23	14414	1.35%	X	430	X	15				
24	14415	1.25%	5	65	X	385				
25	14416	5750	X	15	0.5	15				

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

AUTHORISED OFFICER

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

663710

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 769	5.1.82	KP 2847	4 OF 5

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Mn	Pb				
1	14417	1.95%	10	90	X	80				
2	14418	4650	X	25	X	10				
3	14419	3250	X	10	X	5				
4	14420	1.30%	X	10	X	10				
5	14421	1.05%	X	10	X	10				
6	14422	1.95%	X	35	X	30				
7										
8										
9										
10										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

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ANALABS

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

663711

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 769	5.1.82	KP 2847	5 OF 5

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Mo	Pb				
1	STD FS4	7.40%	290	720	0.5	95				
2	RPT 14342	4.90%	40	30	X	20				
3	RPT 14361	1700	5	X	1.0	X				
4	STD FS4	8.40%	315	755	X	95				
5	RPT 14382	1.10%	5	30	X	20				
6	RPT 14401	5600	X	25	X	20				
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
	DIGESTION	A1	A1	A1	A1	A1				
25	METHOD	A1/1	A1/1	A1/1	A1/1	A1/1				

Results to part per million unless specified

T = element present, but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

AUTHORISED OFFICER

Soil samples ...so... VES/129W

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999
Telex AA92560

663712

ANALYTICAL REPORT No. 83.1 08 766

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2844	PW/EB/V29W/

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	4.1.82	3	64

STATE OF SAMPLES (KEY BELOW)	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 14751-814	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 29W
SOILS

STATE OF SAMPLES

whole core	WC
split core	SC
cutting	CU
Rock	RO
soil	SO
pulp	PU
alluvial	ALA
tailings	TI
stream sediment	SS
heavy mineral	HM

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	MA
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TTN
other chemicals means	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

ANALABS

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

663713

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 766	6.1.82	KP 2844	1 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Mo	Pb				
1	14751	2000	X	125	0.5	80				
2	14752	1650	X	10	X	X				
3	14753	1.95%	X	45	X	X				
4	14754	4.05%	5	90	0.5	15				
5	14755	7300	X	15	2.5	X				
6	14756	1.70%	X	130	0.5	30				
7	14757	3650	X	5	X	X				
8	14758	1.75%	X	35	X	X				
9	14759	1.35%	X	35	0.5	10				
10	14760	3250	X	15	3.0	X				
11	14761	3150	X	15	4.5	5				
12	14762	2350	X	X	X	X				
13	14763	2800	X	10	1.5	X				
14	14764	3500	15	20	X	X				
15	14765	1.75%	5	30	X	10				
16	14766	2700	5	25	X	55				
17	14767	2.05%	15	710	0.5	95				
18	14768	2.15%	15	235	X	100				
19	14769	2.35%	95	250	X	45				
20	14770	2.15%	15	55	X	20				
21	14771	2.15%	15	55	X	25				
22	14772	3.05%	35	55	X	35				
23	14773	2.55%	25	55	X	25				
24	14774	1.30%	10	40	X	10				
25	14775	1.05%	15	30	X	25				

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

AUTHORISED OFFICER

ANALABS

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

663714

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 766	6.1.82	KP 2844	2 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14776	1250	X	X	X	X				
2	14777	700	X	10	X	X				
3	14778	2.45%	15	50	X	30				
4	14779	2350	5	25	X	5				
5	14780	3.15%	40	55	X	25				
6	14781	3.55%	40	60	X	15				
7	14782	3.40%	10	50	0.5	10				
8	14783	2850	5	80	0.5	30				
9	14784	1550	X	X	X	X				
10	14785	2.45%	10	85	0.5	X				
11	14786	1.75%	X	95	0.5	5				
12	14787	1.75%	X	110	0.5	X				
13	14788	1.15%	5	35	3.5	X				
14	14789	1.85%	5	105	0.5	5				
15	14790	1.70%	X	35	6.5	X				
16	14791	1.55%	10	35	7.5	X				
17	14792	8700	X	45	0.5	X				
18	14793	3550	5	10	1.5	X				
19	14794	2550	5	5	6.0	X				
20	14795	1.00%	5	25	X	X				
21	14796	1.55%	45	50	1.5	50				
22	14797	1.05%	5	45	4.0	20				
23	14798	6250	10	25	0.5	50				
24	14799	1750	X	15	X	X				
25	14800	3.10%	25	55	0.5	35				

* Results are quoted to the number of figures specified

I = element present but concentration is below measured

X = element detected but concentration is below detection limit

\- = element not detected/not tested

AUTHORISED OFFICER

ANALABS

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

663715

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 766	6.1.82	KP 2844	3 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14801	2.75%	25	50	X	30				
2	14802	5300	X	15	X	10				
3	14803	7900	5	10	0.5	X				
4	14804	5100	5	10	0.5	X				
5	14805	1600	X	10	X	X				
6	14806	1.50%	5	25	1.0	10				
7	14807	2.65%	20	3300	X	285				
8	14808	3.35%	25	135	X	35				
9	14809	7600	20	35	X	40				
10	14810	2050	X	15	X	X				
11	14811	2100	X	10	X	X				
12	14812	4.15%	30	85	X	X				
13	14813	3.05%	40	85	X	X				
14	14814	2.60%	40	50	X	5				
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER

ANALABS

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

663716

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 766	6.1.82	KP 2844	4 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	STD FS4	7.95%	300	735	0.5	95				
2	RPT 14751	1900	X	105	0.5	80				
3	RPT 14770	2.00%	15	55	X	20				
4	STD FS4	7.95%	315	740	0.5	105				
5	RPT 14791	1.65%	10	35	8.5	X				
6	RPT 14810	2050	X	15	X	X				
7										
8										
9										
10										
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16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
24	DIGESTION	A1	A1	A1	A1	A1				
25	METHOD	A1/1	A1/1	A1/1	A1/1	A1/1				

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

AUTHORISED OFFICER

K562 JP/EB/V29W Trace samples

ANALABS

663717

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999 Telex AA92560

ANALYTICAL REPORT No. 83.1 08 768

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2846	JP/EB/V29W/

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	4.1.82	3	25

STATE OF SAMPLES		PRE-TREATMENT								ANALYSIS		
SEE BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 14815-39	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 29W

MATE INFILL SAMPLES

STATE OF SAMPLES

whole core	WC
split core	SC
cutting	CU
Re	
SO	
PU	
WA	
TI	
SS	
HM	

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Ma
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TTN
other chemical means	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

2.0

ANALABS

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

663718

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 768	5.1.82	2846	1 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14815	1.20%	X	55	X	X				
2	14816	2.10%	5	110	X	35				
3	14817	1.40%	X	150	X	20				
4	14818	6250	X	25	0.5	X				
5	14819	8200	X	30	0.5	X				
6	14820	9500	5	55	X	10				
7	14821	6600	5	45	X	10				
8	14822	8000	10	60	1.5	5				
9	14823	4.75%	10	335	X	120				
10	14824	6250	X	25	X	10				
11	14825	6.55%	25	90	X	X				
12	14826	6550	5	210	X	20				
13	14827	8350	5	55	X	15				
14	14828	7800	5	55	X	5				
15	14829	4900	X	15	X	X				
16	14830	1.95%	5	65	1.0	15				
17	14831	2.00%	5	75	1.5	15				
18	14832	5800	10	75	X	20				
19	14833	4.35%	65	90	X	25				
20	14834	1.45%	10	25	X	10				
21	14835	5700	5	15	X	20				
22	14836	1.60%	25	190	X	30				
23	14837	2.40%	10	95	X	30				
24	14838	2.70%	10	50	2.5	55				
25	14839	5600	15	20	X	5				

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

AUTHORISED OFFICER

ANALABS

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

663719

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 768	5.1.82	2846	2 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	STD FS4	7.40%	295	720	0.5	95				
2	RPT 14815	1.10%	X	40	1.0	5				
3	RPT 14834	1.35%	10	25	X	5				
4										
5										
6										
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12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
	DIGESTION	A1	A1	A1	A1	A1				
25	METHOD	A1/1	A1/1	A1/1	A1/1	A1/1				

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

AUTHORISED OFFICER

ANALABS

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

Phone (09) 458 7999 | 52 Murray Road, Welshpool, W.A. 6106 | Telex AA92560

663720

ANALYTICAL REPORT No. 83.1 08 774

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2852	PW/EB/V29W/

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	4.1.82	3	26

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 14486-90 TS 14492-500 TS 16002-10 TS 16012-14	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 29W
SOILS

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

AUTHORISED OFFICER B. [illegible]

ANALABS

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

663721

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 774	6.1.82	KP 2852	1 OF 3

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	14486	7550	5	25	X	10				
2	14487	4950	X	15	X	5				
3	14488	2650	20	20	1.5	10				
4	14489	2500	X	5	2.0	X				
5	14490	2850	X	10	X	5				
6	14491	N/S	N/S	N/S	N/S	N/S				
7	14492	1800	X	10	0.5	X				
8	14493	2350	X	10	1.0	X				
9	14494	1200	X	5	1.5	15				
10	14495	2000	X	5	1.5	X				
11	14496	3400	X	10	1.5	25				
12	14497	1950	X	5	5.0	X				
13	14498	2250	X	185	X	5				
14	14499	4400	X	195	X	585				
15	14500	2650	X	45	1.0	55				
16	16001	N/S	N/S	N/S	N/S	N/S				
17	16002	3550	X	30	X	10				
18	16003	1550	X	10	X	15				
19	16004	2350	X	15	X	5				
20	16005	1850	X	15	X	X				
21	16006	1600	X	5	X	X				
22	16007	2050	X	10	X	X				
23	16008	1850	X	10	X	X				
24	16009	2850	X	10	X	X				
25	16010	1.80%	X	70	X	X				

Results in ppm unless otherwise specified

X = element present but concentration too low to measure

< = element concentration is below detection limit

- = element not determined

AUTHORISED OFFICER

ANALABS

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

663722

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 774	6.1.82	KP 2852	2 OF 3

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Pb	Ag	Pb			
1	16011	N/S	N/S	N/S	N/S	N/S	N/S			
2	16012	1.45%	X	40	X	5				
3	16013	4700	X	10	X	X				
4	16014	4000	X	15	0.5	5				
5										
6										
7										
8										
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22										
23										
24										
25										

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

AUTHORISED OFFICER

306.

ANALABS

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

663723

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 774	6.1.82	KP 2852	3 OF 3

Rec. No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	STD FS4	8.60%	320	750	0.5	95				
2	RPT 14486	7300	5	25	X	15				
3	RPT 16005	1950	5	15	0.5	X				
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18	NOTE: N/S means Sample Not Submitted									
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
24	DIGESTION	A1	A1	A1	A1	A1				
25	METHOD	A1/1	A1/1	A1/1	A1/1	A1/1				

Results in ppm unless otherwise indicated
T = element present, but concentration too low to measure
X = element content under or below detection limit
— = element not determined

AUTHORISED OFFICER

306 ___ 61 Jacro PW/EB/V9 + V29 W

ANALABS

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

Phone (09) 458 7999 | 52 Murray Road, Welshpool, W.A. 6106 | Telex AA92560

663724

ANALYTICAL REPORT No. 83.1 08 773

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2851	PW/EB/V9/1 K567

DATE RECEIVED	RESULTS REQUIRED
21.12.81	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	5.1.82	3	174

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 15251-374 TS 15551-600	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO

As Above

RESULTS TO

REMARKS

~~174~~

Voyager 29 W

174 C-horizon soils.

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

307

ANALABS

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

663725

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 773	5.1.82	KP 2851	1 OF 8

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15251	2.85%	5	275	0.5	150				
2	15252	3.65%	X	195	X	120				
3	15253	10.0%	25	930	1.0	485				
4	15254	1.65%	5	135	X	135				
5	15255	1.60%	X	70	X	30				
6	15256	2.80%	325	4850	X	3000				
7	15257	4.80%	10	600	X	725				
8	15258	4.55%	10	1850	X	295				
9	15259	1.25%	X	45	X	155				
10	15260	3.85%	X	1600	X	470				
	15261	4.15%	X	1750	X	535				
12	15262	2.45%	X	150	X	30				
13	15263	6050	X	320	X	30				
14	15264	2.40%	X	1300	X	285				
15	15265	7300	X	1950	X	1000				
16	15266	2.20%	X	590	X	10				
17	15267	1.35%	15	940	X	40				
18	15268	4450	X	410	X	35				
19	15269	3950	X	650	X	70				
20	15270	4950	X	645	X	180				
21	15271	5600	5	685	X	200				
22	15272	3950	10	320	X	50				
23	15273	5450	15	340	0.5	1000				
	15274	4200	10	30	X	120				
25	15275	2.35%	5	265	X	130				

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

AUTHORISED OFFICER B Dow

308

ANALABS

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

663726

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 773	5.1.82	KP 2851	2 OF 8

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15276	9000	X	20	X	15				
2	15277	3000	5	15	X	X				
3	15278	8000	X	190	X	30				
4	15279	2250	X	10	X	X				
5	15280	2550	X	10	X	X				
6	15281	2700	X	10	X	X				
7	15282	2850	X	10	X	X				
8	15283	6.30%	10	165	X	X				
9	15284	5950	15	30	X	X				
10	15285	2300	5	25	X	X				
11	15286	2400	X	15	X	X				
12	15287	1.45%	15	2650	0.5	520				
13	15288	4050	320	1100	X	140				
14	15289	7000	5	880	X	200				
15	15290	4.50%	15	1750	X	475				
16	15291	4.70%	10	1700	X	390				
17	15292	5750	10	80	X	55				
18	15293	2.30%	5	760	X	120				
19	15294	2.10%	10	1400	0.5	195				
20	15295	1.35%	10	50	X	20				
21	15296	9850	55	65	0.5	40				
22	15297	6400	10	35	X	10				
23	15298	9300	365	40	X	245				
24	15299	6000	15	1200	X	1450				
25	15300	3350	10	80	1.0	30				

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

AUTHORISED OFFICER B. Dorn

309

ANALABS

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

663727

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 773	5.1.82	KP 2851	3 OF 8

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15301	3650	15	80	0.5	30				
2	15302	3.60%	5	670	X	185				
3	15303	3.50%	X	500	X	400				
4	15304	4.70%	5	145	X	15				
5	15305	4.40%	X	950	X	170				
6	15306	1.70%	10	2450	X	160				
7	15307	2150	X	20	X	X				
8	15308	3600	575	115	X	25				
9	15309	1.20%	5	20	X	X				
10	15310	2.00%	20	1450	X	245				
11	15311	2.10%	15	1250	0.5	160				
12	15312	800	10	10	X	X				
13	15313	2250	5	10	X	X				
14	15314	3100	10	20	X	X				
15	15315	3050	X	15	1.0	X				
16	15316	5450	5	50	X	30				
17	15317	4200	X	5	X	X				
18	15318	4.25%	5	60	X	X				
19	15319	2.45%	X	30	X	X				
20	15320	1.20%	5	25	X	X				
21	15321	9900	5	20	X	X				
22	15322	3050	X	5	0.5	X				
23	15323	2350	X	5	X	5				
24	15324	2750	X	5	X	X				
25	15325	5950	X	25	X	X				

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

AUTHORISED OFFICER

310

ANALABS

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

663728

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 773	5.1.82	KP 2851	4 OF 8

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15326	5700	15	135	X	200				
2	15327	4.60%	X	125	0.5	10				
3	15328	2.45%	35	60	X	20				
4	15329	6.15%	10	105	X	X				
5	15330	3.20%	5	140	0.5	5				
6	15331	3.30%	5	135	X	5				
7	15332	2.65%	10	100	X	5				
8	15333	2.40%	5	95	X	X				
9	15334	2.95%	10	210	X	X				
10	15335	3300	5	35	X	X				
11	15336	3.20%	15	130	X	15				
12	15337	2.10%	10	55	0.5	X				
13	15338	2650	10	15	X	X				
14	15339	3050	5	15	X	X				
15	15340	2.00%	10	255	0.5	100				
16	15341	2.15%	5	295	0.5	115				
17	15342	2.65%	25	205	0.5	90				
18	15343	1.95%	X	90	X	X				
19	15344	4.25%	15	250	0.5	X				
20	15345	1.60%	5	70	X	5				
21	15346	3100	5	10	X	X				
22	15347	4450	X	5	X	X				
23	15348	2850	5	5	0.5	5				
24	15349	4850	5	10	X	X				
25	15350	8750	10	20	X	10				

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

AUTHORISED OFFICER

311

ANALABS

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

663729

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 773	5.1.82	KP 2851	5 OF 8

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15351	8700	5	25	0.5	5				
2	15352	1.00%	5	40	X	5				
3	15353	3.70%	10	70	0.5	5				
4	15354	1350	X	X	1.5	15				
5	15355	1650	X	X	1.0	X				
6	15356	2700	X	15	X	X				
7	15357	4350	X	95	X	X				
8	15358	1650	X	15	0.5	5				
9	15359	2350	X	25	X	10				
10	15360	1.35%	X	35	0.5	10				
11	15361	1.50%	X	40	0.5	X				
12	15362	2.00%	10	385	0.5	100				
13	15363	8.20%	15	235	X	20				
14	15364	5.25%	50	155	1.0	25				
15	15365	3.30%	15	185	X	60				
16	15366	2.00%	10	650	1.0	310				
17	15367	4.35%	25	345	X	175				
18	15368	1.60%	5	305	X	90				
19	15369	9200	5	175	X	35				
20	15370	2.10%	X	230	X	40				
21	15371	1.95%	5	220	X	45				
22	15372	1.45%	5	115	X	30				
23	15373	1750	X	65	X	10				
24	15374	4600	55	820	X	265				
25	15551	4.75%	60	2550	X	2150				

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

AUTHORISED OFFICER

312

ANALABS

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

663730

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 773	5.1.82	KP 2851	6 OF 8

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15552	2100	10	135	X	125				
2	15553	3250	X	45	X	25				
3	15554	3100	X	35	X	15				
4	15555	2200	5	205	X	40				
5	15556	2950	35	1150	1.5	3700				
6	15557	3500	X	15	X	25				
7	15558	1450	X	10	X	15				
8	15559	2100	X	5	X	5				
9	15560	1450	X	60	X	15				
10	15561	1550	X	45	X	20				
11	15562	1350	X	105	X	165				
12	15563	2000	X	125	X	10				
13	15564	3000	85	2900	2.0	1200				
14	15565	2150	X	50	X	35				
15	15566	2350	X	70	X	25				
16	15567	2850	X	165	X	25				
17	15568	5400	X	540	X	105				
18	15569	4600	105	75	X	25				
19	15570	2350	X	220	X	495				
20	15571	2100	5	120	X	350				
21	15572	3850	10	50	X	X				
22	15573	2650	X	15	X	10				
23	15574	8400	5	425	0.5	445				
24	15575	2600	X	35	X	10				
25	15576	3000	X	125	X	110				

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

AUTHORISED OFFICER B Dan

313

ANALABS

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

663731

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 00 773	5.1.82	KP 2851	7 OF 8

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	15577	3300	10	10	X	20				
2	15578	4900	5	235	X	10				
3	15579	1.55%	10	70	X	15				
4	15580	3900	X	105	X	60				
5	15581	3700	X	75	X	25				
6	15582	1.85%	5	80	X	20				
7	15583	1.80%	5	155	X	25				
8	15584	4750	10	150	X	25				
9	15585	4650	X	35	X	15				
10	15586	2150	X	65	X	5				
11	15587	4200	25	115	X	10				
12	15588	2250	5	20	X	X				
13	15589	1.35%	25	95	X	X				
14	15590	4700	5	35	1.0	X				
15	15591	4300	5	30	1.0	X				
16	15592	3050	X	20	1.0	5				
17	15593	2.80%	X	115	0.5	15				
18	15594	10.0%	10	450	0.5	425				
19	15595	1.25%	5	65	X	40				
20	15596	2.15%	90	1950	X	550				
21	15597	5550	25	95	X	15				
22	15598	1.90%	20	265	0.5	15				
23	15599	6200	5	550	X	35				
24	15600	3.25%	10	345	2.5	210				
25										

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

AUTHORISED OFFICER

314 V29 West V29W

ANALABS

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

663732 SOILS

Phone (09) 458 7999 | 52 Murray Road, Welshpool, W.A. 6106 | Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1066

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

Geopeko Ltd
PO B. : 598
Devonport
Tasmania 7316

ORDER No.	PROJECT
	K 679

DATE RECEIVED	RESULTS REQUIRED
22.3.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	30.3.82	2	15

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TD 6394-6400	1			2				Cu Pb Zn Fe Mn	101	101
	TD 6667-6675								Ag	101	101
									As	101	114
									Sn W		403
									Au		309

RESULTS TO: As Above

RESULTS TO:

REMARKS

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

AUTHORISED OFFICER B. Da[illegible]

315

V29W

Soils

ANALABS

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

663733

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83/1 [illegible] 1066	[illegible]	KP 3022	OF

TUBE No.	SAMPLE No.		Bi	Fe	Cu	Zn	As	Hg	Sb	U
1	TD 6394		80	2400	10	5	2	0.5	X	X
2	TD 6395		70	4600	15	10	1	X	6	25
3	TD 6396		20	3650	5	X	2	X	X	10
4	TD 6397		20	2600	5	X	X	X	X	X
5	TD 6398		25	4800	35	20	1	X	4	10
6	TD 6399		110	2.50%	10	10	4	0.5	X	X
7	TD 6400		2350	53.0%	10	100	21	0.5	X	X
8	TD 6667		15	3250	5	5	3	X	3	X
9	TD 6668		30	8500	5	X	1	0.5	X	X
10	TD 6669		20	3000	5	5	3	0.5	3	X
11	TD 6670		135	3.60%	5	10	2	X	X	X
12	TD 6671		15	3400	5	10	X	X	4	X
13	TD 6672		30	5700	5	10	1	0.5	X	10
14	TD 6673		10	2900	10	5	X	0.5	8	X
15	TD 6674		10	2650	30	1000	X	X	X	X
16	TD 6675		20	4650	40	20	X	0.5	X	X
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER B Dan

316

V29W

Soils

ANALABS

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

663734

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1.08 1066	8.4.82	KP 3022	2 OF

TUBE No.	SAMPLE No.		Mn	Fe	Cu	Zn	As	Ag	Sn	W
1	STD FS4		750	8.60%	350	890	30	1.0		
2	RPT ID 6394		70	2450	10	10	X	0.5		
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION		5	50	5	5	1	0.5	3	10
24	DIGESTION		101	101	101	101	101	101		
25	METHOD		101	101	101	101	114	101	402	401

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

AUTHORISED OFFICER

317

V29W

SOILS

ANALABS

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

663735

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1066	8.4.82	KP 3022	3OF 4

TUBE No.	SAMPLE No.		Au	Pb	wt(g)					
1	TD 6394		28.0	15	26.76					
2	TD 6395		6.89	10	14.22					
3	TD 6396		2.59	15	37.43					
4	TD 6397		0.003	10	35.98					
5	TD 6398		3.72	10	16.65					
6	TD 6399		2.35	15	13.36					
7	TD 6400		0.546	45	48.34					
8	TD 6667		10.0	20	35.37					
9	TD 6668		8.69	10	21.76					
10	TD 6669		0.014	10	27.50					
[illegible]	TD 6670		0.087	20	19.96					
12	TD 6671		X	5	15.47					
13	TD 6672		1.11	15	24.07					
14	TD 6673		X	15	8.82					
15	TD 6674		2.30	10	19.58					
16	TD 6675		X	10	34.27					
17										
18										
19										
20										
21										
22										
23										
[illegible]										
25										

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

AUTHORISED OFFICER B. Doe

318

V21W

ANALABS

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

663736

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1066	8.4.82	KP 3022	4 OF

TUBE No.	SAMPLE No.		Au	Pb	wt(g)					
1	STD FS4			130						
2	RPT TD 6394			20						
3										
4										
5										
6										
7										
8										
9										
10										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION			5						
	DIGESTION			101						
25	METHOD		309	101						

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

AUTHORISED SIGNATORY

319

ANALABS

663737

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1193

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3059	K 536

DATE RECEIVED	RESULTS REQUIRED
12.5.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	17.5.82	3	41

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHO
RO	KR 9858-900 KR 9051-58 (Not Continuous)		1	3	2 4				Cu Pb Zn Ag Fe	101	10

RESULTS TO: As Above

RESULTS TO:

REMARKS

V294
+ V31

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

Author

AUTHORISED

320

ANALABS

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

663738

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1193	18.5.82	KP 3059	1 OF 3

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	KR 9858		1.85%	15	40	X	15			
2	KR 9859		7800	5	20	X	25			
3	KR 9860		8800	65	2750	2.0	1350			
4	KR 9862		1.60%	10	55	X	5			
5	KR 9865		3.95%	10	325	X	X			
6	KR 9871		1.40%	20	210	X	25			
7	KR 9874		3.70%	15	320	X	20			
8	KR 9875		1.00%	10	35	X	125			
9	KR 9876		3150	5	40	X	10			
10	KR 9877		4600	5	65	X	40			
11	KR 9878		1.55%	15	105	X	10			
12	KR 9879		6750	5	110	X	15			
13	KR 9880		1.40%	5	55	X	15			
14	KR 9881		4.00%	10	370	X	5			
15	KR 9882		4000	5	20	X	10	V794		
16	KR 9883		4.50%	15	205	X	15			
17	KR 9884		7500	5	20	X	X	+ V31		
18	KR 9885		1.25%	10	120	X	10			
19	KR 9886		1950	X	20	X	10			
20	KR 9887		4900	10	15	X	X			
21	KR 9888		1.05%	5	150	X	75			
22	KR 9889		4900	10	20	X	X			
23	KR 9890		2.05%	10	60	X	10			
24	KR 9891		1.40%	15	35	X	10			
25	KR 9892		2.05%	15	55	X	15			

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

AUTHORISED OFFICER

321

ANALABS

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

663739

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1193	18.5.82	KP 3059	2 OF 3

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	KR 9893		1.00%	85	480	2.0	840			
2	KR 9894		1.00%	15	50	X	20			
3	KR 9895		1.00%	10	70	X	15			
4	KR 9896		2.30%	20	75	X	10			
5	KR 9897		2.10%	10	80	X	15			
6	KR 9898		4300	5	15	X	10			
7	KR 9899		9900	10	25	X	5			
8	KR 9900		1.45%	10	90	X	45			
9	KR 9051		2.05%	20	160	X	55			
10	KR 9052		2.45%	25	65	X	X			
11	KR 9053		4.65%	60	50	X	10			
12	KR 9054		8600	10	1.02%*	35.0*	3.75%*			
13	KR 9055		9700	10	40	X	65			
14	KR 9056		2.65%	5	65	X	30			
15	KR 9057		1.05%	25	20	X	65	V79 W		
16	KR 9058		1.00%	5	120	X	85	+ V31		
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER B Dan

663740

VOYAGER 30

ANALABS

663741

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1064

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

Geopeko Ltd
PO Box 698,
Devonport
Tasmania 7310

ORDER No.	PROJECT
	K 677

DATE RECEIVED	RESULTS REQUIRED
22.3.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	26.3.82	3	7

STATE OF SAMPLES REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
RO	KR 8666-72		1	3	2 4				Cu Pb Zn Fe Ag As Au	101 101	101 114 309

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 30
Rocks

STATE OF SAMPLES

whole core	WC
split core	SC
cutting	CU
rock	RO
soil	SO
pulp	PU
water	WA
tissue	TI
stream sediment	SS
heavy mineral	HM

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Ma
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorbtion	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TTN
other chemicals meaning	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

AUTHORISED OFFICER

ANALABS

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

663742

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1064	29.3.82	KP 3025	1 OF 2

TUBE No.	SAMPLE No.		Fe	Cu	Zn	As	Ag	Au	Pb	
1	KR 8666		4450	15	10	24	X	0.041	15	
2	KR 8667		4100	5	10	13	1.0	0.045	30	
3	KR 8668		4450	5	15	13	1.5	0.044	15	
4	KR 8669		8250	10	10	7	0.5	0.060	20	
5	KR 8670		5200	5	10	7	0.5	0.495	15	
6	KR 8671		7950	10	5	5	2.0	0.012	25	
7	KR 8672		7650	15	10	24	1.5	0.107	25	
8										
9										
10										
11										
12										
13										
14										
15								VOYAGER 30		
16								ROCKS		
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER

ANALABS

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

663743

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1064	29.3.82	KP 3025	2 OF 2

TUBE No.	SAMPLE No.		Fe	Cu	Zn	As	Ag	Au	Pb	
1	STD FS4		7.65%	320	765	27	1.0		115	
2	RPT KR 8666		4500	15	10	27	X		15	
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15								VOYAGER 30		
16								ROCKS		
17										
18										
19										
20										
21										
22										
23	DETECTION		50	5	5	1	0.5	0.005	5	
	DIGESTION		101	101	101	101	101		101	
25	METHOD		101	101	101	114	101	309	101	

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

AUTHORISED OFFICER

Voyager 30

ANALABS

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663744

ANALYTICAL REPORT No. 83.1 08 1063

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
	K 676

DATE RECEIVED	RESULTS REQUIRED
22.3.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	31.3.82	3	57

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	TS 18310-66	1				2			Cu Pb Zn Ag Fe	101	101
									As	101	114
									Au		309

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 30
SOILS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
[illegible]	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
[illegible]	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
[illegible]	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
[illegible]	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
[illegible]	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
[illegible]	PU	HF mixture	A6	ignition	IG	titration	TTN
[illegible]	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
[illegible]	Ti	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
[illegible]	SS					fluorescence	FLUOR
[illegible]	[illegible]					inductively coupled plasma	ICP

ANALABS

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

663745

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1063	1.4.82		1 OF 4

Page No.	Sample No.		Fe	Cu	Zn	As	Hg	Au	Pb	
1	TS 18310		5500	10	25	4	0.5	0.006	50	
2	TS 18311		2500	5	20	2	0.5	X	100	
3	TS 18312		2.10%	5	190	2	X	X	85	
4	TS 18313		6150	5	90	2	0.5	X	35	
5	TS 18314		2800	10	50	8	X	X	30	
6	TS 18315		8600	5	20	5	X	X	15	
7	TS 18316		2.35%	10	40	2	X	0.005	20	
8	TS 18317		3.00%	15	75	2	0.5	X	56	
9	TS 18318		3.05%	15	80	4	0.5	X	35	
10	TS 18319		5.10%	15	120	8	X	X	120	
11	TS 18320		2.50%	20	110	19	0.5	X	195	
12	TS 18321		2.60%	10	65	17	0.5	X	35	
13	TS 18322		9000	10	80	7	X	X	35	
14	TS 18323		5700	X	15	4	0.5	X	15	
15	TS 18324		5.20%	25	70	7	X	VOYAGE 30		
16	TS 18325		1.10%	20	25	14	X	0.00 SOILS		
17	TS 18326		7600	X	15	2	0.5	X	15	
18	TS 18327		1.90%	20	60	46	0.5	X	85	
19	TS 18328		3.70%	10	50	15	X	0.009	80	
20	TS 18329		8400	5	50	9	0.5	X	20	
21	TS 18330		4.05%	20	60	33	X	X	35	
22	TS 18331		4.15%	20	60	36	X	X	35	
23	TS 18332		3.60%	20	115	22	X	X	35	
24	TS 18333		4.60%	25	105	19	0.5	X	20	
25	TS 18334		5900	5	150	9	0.5	X	40	

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

AUTHORISED OFFICER

B28

ANALABS

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

663746

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1063	1.4.82		2 OF 4

TUBE No.	SAMPLE No.		Fe	Cu	Zn	As	Ag	Au	Pb	
1	TS 18335		4150	X	20	2	X	X	15	
2	TS 18336		1.20%	X	35	1	X	X	15	
3	TS 18337		5000	30	40	2	0.5	X	10	
4	TS 18338		6900	10	35	2	0.5	0.024	10	
5	TS 18339		5500	5	20	1	0.5	X	15	
6	TS 18340		3900	5	10	2	X	X	15	
7	TS 18341		3950	X	10	1	0.5	X	15	
8	TS 18342		4950	X	20	1	0.5	X	15	
9	TS 18343		1.35%	X	65	2	0.5	X	15	
10	TS 18344		1.95%	X	50	2	X	X	55	
11	TS 18345		3200	X	5	2	X	0.006	10	
12	TS 18346		2.65%	5	50	9	0.5	0.006	15	
13	TS 18347		2.60%	5	90	2	0.5	0.008	20	
14	TS 18348		3.00%	X	85	1	X	X	15	
15	TS 18349		2.65%	X	65	1	X	VOYAGER 30		
16	TS 18350		1.35%	5	30	2	X	X SALES		
17	TS 18351		1.60%	X	35	2	X	X	15	
18	TS 18352		4400	5	20	2	0.5	X	10	
19	TS 18353		7900	15	45	1	X	X	25	
20	TS 18354		1.20%	20	80	6	0.5	X	25	
21	TS 18355		9300	25	75	15	0.5	X	35	
22	TS 18356		3750	20	175	4	0.5	X	35	
23	TS 18357		1750	30	25	2	0.5	X	20	
24	TS 18358		8900	40	200	28	0.5	X	45	
25	TS 18359		1.35%	20	195	4	0.5	X	25	

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

AUTHORISED OFFICER

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

663747

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1063	1.4.82		3 OF 4

TUBE No.	SAMPLE No.		Fe	Cu	Zn	As	Ag	Au	Pb	
1	TS 18360		9700	25	30	2	0.5	X	25	
2	TS 18361		1.30%	25	35	2	0.5	X	50	
3	TS 18362		8800	20	35	25	1.5	X	25	
4	TS 18363		6500	45	570	5	1.0	X	355	
5	TS 18364		1.35%	10	45	2	0.5	X	15	
6	TS 18365		7000	10	20	2	0.5	X	35	
7	TS 18366		6250	20	30	8	0.5	X	160	
8										
9										
10										
11										
12										
13										
14										
15								VOYAGER 30		
16								SOILS		
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

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663748

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1063	1.4.82		4 OF 4

TUBE No.	SAMPLE No.	Fe %	Cu	Zn	As	Ag	Au	Pb	
1	STD FS4	8.05%	310	820	24	1.0		105	
2	RPT TS 18310	5600	5	20	4	1.0		45	
3	RPT TS 18329	8000	5	50	8	X		30	
4	STD FS4	8.30%	335	840	27	1.0		130	
5	RPT TS 18350	1.30%	5	25	X	X		15	
6									
7									
8									
9									
10									
11									
12									
13									
14									
15							VOYAGER 3		
16							SOILS		
17									
18									
19									
20									
21									
22									
23	DETECTION	50	5	5	1	0.5	0.005	5	
24	DIGESTION	101	101	101	101	101		101	
25	METHOD	101	101	101	114	101	309	101	

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

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1331 — Eliot

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663749

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 | 52 Murray Road, Welshpool, W.A. 6106 | Telex AA92560

ANALYTICAL REPORT No. 83.1 08 921

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
	K 590

DATE RECEIVED	RESULTS REQUIRED
12.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	18.2.82	3	28

STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TD 6373-92				1				Cu Pb Zn As Ag	101	101
									Fe	101	101
	TS 16496-500				2	1			Ba		120
	TS 16694-696								Sn		118
									W		124
									Au		309

RESULTS TO: As Above

RESULTS TO:

REMARKS

Voyager 30 ? Drainage or V16 ? Panned Concentrates and -80# Samples.

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

R.O.

332

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663750

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 921	22.2.82	KP 2898	1 OF 6

TUBE No.	SAMPLE No.		Fe	Cu	Zn	As	Ag	Sn	Ba	W
1	TD 6373		1.30%	5	130	1	1.0	885	10	4.0
2	TD 6374		4350	45	795	1	X	110	10	3.5
3	TD 6375		4250	5	25	1	11.0	45	9	4.0
4	TD 6376		4550	10	10	X	X	24	5	4.0
5	TD 6377		4700	15	25	1	X	34	5	4.0
6	TD 6378		4600	15	10	1	X	2	50	4.5
7	TD 6379		4450	10	10	X	21.0	7	44	3.5
8	TD 6380		4750	10	15	1	X	2	44	3.5
9	TD 6381		3300	15	15	X	3.0	1	35	2.0
10	TD 6382		4100	10	5	1	X	3	23	4.0
11	TD 6383		2650	15	10	X	4.0	2	18	1.0
12	TD 6384		6450	15	25	8	X	1	59	1.5
13	TD 6385		3650	10	20	1	0.5	1	33	1.5
14	TD 6386		1.75%	40	475	59	3.0	3	135	1.5
15	TD 6387		5100	40	15	2	X	3	38	3.0
16	TD 6388		4000	15	15	X	X	2	57	2.0
17	TD 6389		4150	15	25	X	X	2	73	2.5
18	TD 6390		5850	25	40	2	1.0	330	34	3.0
19	TD 6391		4850	15	15	X	X	100	25	6.0
20	TD 6392		3950	10	15	1	X	125	24	12.5
21	-16+80# TS 16496		4.60%	15	135	160	X	1	235	1.5
22	-16+80# TS 16497		5550	10	35	15	X	6	44	1.5
23	-16+80# TS 16498		6350	30	45	23	2.5	2	74	2.0
24	-16+80# TS 16499		6500	10	10	2	X	1	40	1.5
25	-20+80# TS 16500		4050	20	295	5	X	1	39	2.0

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

AUTHORISED OFFICER B Dow

333

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663751

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 921	22.2.82	KP 2898	2 OF

TUBE No.	SAMPLE No.	Fe	Cu	Zn	As	Ag	Sn	Ba	W
1	-20+80# TS 16694	6000	10	10	1	X	2	30	2.0
2	-20+80# TS 16695	8100	15	15	1	X	X	29	1.0
3	-20+80# TS 16696	2850	5	175	2	2.0	2	63	1.0
4	-80# TS 16496	3.15%	10	125	120	X	1	180	1.5
5	-80# TS 16497	1.15%	30	85	59	X	1	95	1.5
6	-80# TS 16498	8400	75	80	44	3.5	4	93	1.0
7	-80# TS 16499	1.05%	20	25	3	X	3	75	1.5
8	-80# TS 16500	6550	30	45	3	X	2	61	1.0
9	-80# TS 16694	3500	35	715	11	X	2	56	1.0
10	-80# TS 16695	5600	15	35	1	X	2	43	1.0
11	-80# TS 16696	3600	10	455	3	X	1	74	1.0
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

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

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663752

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 921	22.2.82	KP 2898	4 OF 6

TUBE No.	SAMPLE No.	Au	Pb	wt(g)
1	TD 6373	101	5	10.10
2	TD 6374	33.7	15	6.13
3	TD 6375	5.05	15	18.57
4	TD 6376	0.318	5	7.55
5	TD 6377	0.087	5	14.90
6	TD 6378	7.54	10	9.67
7	TD 6379	396	X	8.93
8	TD 6380	12.1	10	10.42
9	TD 6381	242	X	15.85
10	TD 6382	0.418	X	15.56
11	TD 6383	I/S	10	I/S
12	TD 6384	1.70	30	7.24
13	TD 6385	5.77	35	13.07
14	TD 6386	I/S	50	I/S
15	TD 6387	0.249	5	2.81
16	TD 6388	0.086	X	4.65
17	TD 6389	0.133	X	3.00
18	TD 6390	11.3	10	4.40
19	TD 6391	10.6	X	5.49
20	TD 6392	0.224	X	8.48
21	-16+80# TS 16496	0.810	360	18.39
22	-16+80# TS 16497	0.070	115	107.50
23	-16+80# TS 16498	0.612	430	38.59
24	-16+80# TS 16499	0.153	15	36.48
25	-20+80# TS 16500	0.065	255	36.74

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

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 921	22.2.82	KP 2898	5 OF 6

E No.	SAMPLE No.		Au	Pb	wt(g)					
1	-20+80#	TS 16694	0.011	5	78.59					
2	-20+80#	TS 16695	X	X	11.93					
3	-20+80#	TS 16696	0.167	15	43.19					
4	-80#	TS 16496	0.214	250	4.68					
5	-80#	TS 16497	I/S	830	I/S					
6	-80#	TS 16498	I/S	965	I/S					
7	-80#	TS 16499	I/S	35	I/S					
	-80#	TS 16500	I/S	50	I/S					
	-80#	TS 16694	0.143	605	10.51					
	-80#	TS 16695	I/S	5	I/S					
	-80#	TS 16696	X	25	8.70					

AAS
XRF
SPEC
COL
CHR
TTN
CHEM
MISC
FLUOR
ICP

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

AUTH

663754

VOYAGER 31

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 456 7999
Telex AA92560

663755

ANALYTICAL REPORT No. 83.1 08 1120

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3032	

DATE RECEIVED	RESULTS REQUIRED
8.4.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	22.4.82	3	72

REFER BELOW	STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS		
	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
PU	KR 9589-9622 KR 9551-9588							1	Sn W		402 401

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 31
ROCK CHIPS.

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

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663756

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1120	22.4.82	KP 3032	1 OF

TUBE No.	SAMPLE No.	Sn	W								
1	KR 9589	X	6								
2	KR 9590	X	X								
3	KR 9591	X	X								
4	KR 9592	X	X								
5	KR 9593	5	X								
6	KR 9594	X	X								
7	KR 9595	X	X								
8	KR 9596	X	X								
9	KR 9597	X	X								
10	KR 9598	4	X								
11	KR 9599	X	X								
12	KR 9600	X	X								
13	KR 9601	X	X								
14	KR 9602	X	X								
15	KR 9603	X	X					VOYAGER 31			
16	KR 9604	7	X					ROCK CHIPS.			
17	KR 9605	X	X								
18	KR 9606	X	X								
19	KR 9607	X	X								
20	KR 9608	5	X								
21	KR 9609	X	X								
22	KR 9610	X	X								
23	KR 9611	X	X								
24	KR 9612	X	X								
25	KR 9613	X	X								

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

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663757

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1120	22.4.82	KP 3032	2 OF

TUBE No.	SAMPLE No.	Sn	W							
1	KR 9614	X	X							
2	KR 9615	X	X							
3	KR 9616	X	X							
4	KR 9617	X	X							
5	KR 9618	X	X							
6	KR 9619	X	X							
7	KR 9620	X	X							
8	KR 9622	X	X							
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	4	4							
24	DIGESTION									
25	METHOD	402	401							

VOYAGER 31
ROCK CHIPS.

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

AUTHORISED OFFICER

ANALABS

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663758

ANALYTICAL REPORT No. 83.1 08 852

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2867	K 652

DATE RECEIVED	RESULTS REQUIRED
25.1.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	28/1/82	3	1

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
RO	KR 8511		1		2				Cu Pb Zn Ag	A6	AAS
				3	4				Bi As Mo Ba	A1	AAS
									Sn	A11	AAS
									Au		RG50
									W	A6	SPEC

RESULTS TO: As Above

RESULTS TO: VOYAGER 22 SOILS

REMARKS

VOYAGER 31
ROCK CHIPS

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

VOYAGER 22 ROCKS

ANALABS

663253

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 852	16.2.82	KP 2867	1 OF 4

No.	SAMPLE No.	Cu	Zn	Pb	Mo	Ag	Sb	Ba	W	Au
1	8511	50	200	10.0%	X	9	20	150	2.0	1.34
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15								VOYAGER 31		
16								ROCK CHIPS		
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

663760

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 852	16.2.82	KP 2867	2 OF 4

TUBE No.	SAMPLE No.	Cu	Zn	As	Mo	Ag	Sn	Ba	W	Au
1	STD FS4			29	0.5		265	370		
2	RPT 8511			10.0%	0.5		20	150		
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15								VOYAGER	31	
16										
17								Rock	CHIPS	
18										
19										
20										
21										
22										
23	DETECTION	25	25	1	0.5	2	1	10	0.5	0.005
	DIGESTION	104	104	101	102	104				
25	METHOD	104	104	114	121	104	118	120	124	309

Results in parts per million unless otherwise specified
* = element present but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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663761

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 852	16.2.82	KP 2867	3 OF 4

TUBE No.	SAMPLE No.	Pb	Bi							
1	8511	7700	X							
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15								VOYAGER 31		
16								ROCK CHIPS		
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

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663762

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 852	16.2.82	KP 2867	4 OF 4

TUBE No.	SAMPLE No.	Pb	Bi							
1	STD FS4		92							
2	RPT 8511									
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	25	2							
24	DIGESTION	104	102							
25	METHOD	104	102							

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

AUTHORISED SIGNATURE

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663763

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999
Telex AA92560

ANALYTICAL REPORT No.

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

ORDER No.	PROJECT

DATE RECEIVED	RESULTS REQUIRED

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

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

RESULTS TO

RESULTS TO

REMARKS

VOYAGER 31
ROCK CHIPS.

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

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

663764

ANALYTICAL DATA

...LE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 912	18.2.82	KP 2886	1 OF 3

	SAMPLE No.	Fe	Cu	Zn	As	Ag	Pb			
1	9589	4.15%	15	85	16	0.5	30			
2	9590	3.80%	X	80	13	X	15			
3	9591	3.25%	5	45	15	X	30			
4	9592	4.70%	5	60	9	X	30			
5	9593	3.85%	15	55	7	0.5	20			
6	9594	3.65%	10	65	4	X	20			
7	9595	3.40%	10	45	9	0.5	30			
8	9596	3.70%	10	100	7	X	20			
9	9597	2.05%	15	40	8	1.0	85			
10	9598	2.65%	5	40	7	X	15			
11	9599	1.05%	50	2900	25	1.5	750			
12	9600	3.05%	5	50	21	X	X			
13	9601	2.00%	10	40	31	0.5	25			
14	9602	2.00%	25	60	100	0.5	85			
15	9603	2.00%	20	380	110	1.5	710	VOMACED	31	
16	9604	1.90%	10	1.60%	900	17.0	8400	PORK CHOPS		
17	9605	2.70%	5	5650	1050	2.0	1100			
18	9606	2.55%	15	980	80	1.5	370			
19	9607	3.35%	10	70	45	0.5	80			
20	9608	3.00%	5	320	21	X	10			
21	9609	2.20%	10	45	40	1.0	60			
22	9610	2.45%	30	50	21	X	X			
23	9611	1.00%	15	20	18	0.5	25			
24	9612	3.15%	5	70	24	0.5	15			
25	9613	3.85%	5	145	26	0.5	15			

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

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ANALYTICAL DATA

E PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 912	18.2.82	KP 2886	2 OF 3

	SAMPLE No.	Fe	Cu	Zn	As	Ag	Pb			
	9614	3.85%	5	70	17	0.5	5			
2	9615	2.95%	10	100	26	X	35			
3	9616	1.65%	10	50	22	X	55			
4	9617	4.10%	5	270	130	X	255			
5	9618	1.40%	5	80	22	0.5	290			
6	9619	6.15%	45	10	1100	1.0	40			
7	9620	1.20%	10	20	450	0.5	20			
8	9622	1.25%	10	25	35	X	20			
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

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663766

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
458 7999
Telex AA92560

ANALYTICAL REPORT No. 83.1 08 1120

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3032	

DATE RECEIVED	RESULTS REQUIRED
8.4.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	22.4.82	3	72

STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
PU	KR 9589-9622							1	Sn		402
	KR 9551-9588								W		401

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 31
ROCKS

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

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

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ANALYTICAL DATA

LE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1120	22.4.82	KP 3032	1 OF

	SAMPLE No.	Sn	W							
1	KR 9589	X	6							
2	KR 9590	X	X							
3	KR 9591	X	X							
4	KR 9592	X	X							
5	KR 9593	5	X							
6	KR 9594	X	X							
7	KR 9595	X	X							
8	KR 9596	X	X							
9	KR 9597	X	X							
10	KR 9598	4	X							
11	KR 9599	X	X							
12	KR 9600	X	X							
13	KR 9601	X	X							
14	KR 9602	X	X							
15	KR 9603	X	X							
16	KR 9604	7	X							
17	KR 9605	X	X							
18	KR 9606	X	X							
19	KR 9607	X	X							
20	KR 9608	5	X							
21	KR 9609	X	X							
22	KR 9610	X	X							
23	KR 9611	X	X							
24	KR 9612	X	X							
25	KR 9613	X	X							

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

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

663768

ANALYTICAL DATA

FILE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1120	22.4.82	KP 3032	2 OF

	SAMPLE No.	Sn	W								
1	KR 9614	X	X								
2	KR 9615	X	X								
3	KR 9616	X	X								
4	KR 9617	X	X								
5	KR 9618	X	X								
6	KR 9619	X	X								
7	KR 9620	X	X								
8	KR 9622	X	X								
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23	DETECTION	4	4								
	DIGESTION										
25	METHOD	402	401								

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

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663769

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 834

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2860	K 570

DATE RECEIVED	RESULTS REQUIRED
19.1.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	27.1.82	3	429

STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 16015-251 TS 16501-565 TS 16568-693 TS 14202	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 31 ?

429 Soils

+V33

+29 +29W

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

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A division of MacDonald Hamilton & Co. Pty. Ltd

663770

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
IS	83.1 08 834	27.1.82	KP 2860	1 OF 20

E No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16015	6800	65	30	0.5	465				
2	16016	7600	X	30	X	50				
3	16017	6400	10	25	X	320				
4	16018	6550	5	25	X	25				
5	16019	7800	30	20	0.5	X				
6	16020	7150	10	20	X	X				
7	16021	7400	25	20	0.5	10				
8	16022	6550	X	105	1.0	30				
9	16023	5300	X	20	X	10				
10	16024	4150	X	15	X	X				
11	16025	4800	X	25	0.5	35				
12	16026	7900	X	25	0.5	X				
13	16027	1.30%	X	65	1.5	20				
14	16028	2.10%	X	195	X	15				
15	16029	1.55%	X	50	0.5	5				
16	16030	8300	X	60	1.0	X				
17	16031	5350	X	45	0.5	X				
18	16032	5700	X	35	0.5	320				
19	16033	7850	X	35	0.5	20				
20	16034	6000	X	40	X	10				
21	16035	6850	X	25	X	10				
22	16036	2900	X	15	2.5	15				
23	16037	2950	X	70	0.5	5				
24	16038	3650	X	15	1.0	40				
25	16039	6250	X	20	0.5	5				

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

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663771

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	2 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16040	5350	X	20	X	160				
2	16041	5500	X	30	0.5	180				
3	16042	7900	X	45	1.0	50				
4	16043	6400	X	35	0.5	15				
5	16044	8700	X	80	X	25				
6	16045	5.60%	X	175	0.5	60				
7	16046	7.60%	X	70	X	90				
8	16047	2.00%	X	75	X	60				
9	16048	2.65%	X	125	1.0	200				
10	16049	4800	X	115	X	55				
11	16050	9650	X	45	X	20				
12	16051	8900	40	45	X	20				
13	16052	4.10%	X	70	X	195				
14	16053	3.30%	X	30	X	30				
15	16054	5650	X	20	X	5				
16	16055	3.70%	95	20	X	X				
17	16056	3050	X	10	X	X				
18	16057	2.60%	10	40	0.5	25				
19	16058	5250	X	20	0.5	X				
20	16059	1.75%	25	130	X	30				
21	16060	1.60%	5	40	0.5	X				
22	16061	1.80%	25	840	0.5	90				
23	16062	3700	X	55	1.5	10				
24	16063	9950	X	25	X	X				
25	16064	1400	X	10	0.5	X				

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
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663772

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 00 834	27.1.82	KP 2860	3 OF 26

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16065	2950	X	20	X	X				
2	16066	8000	X	30	X	10				
3	16067	4350	X	35	0.5	X				
4	16068	4850	X	15	1.0	X				
5	16069	6400	X	20	0.5	X				
6	16070	5750	X	15	X	X				
7	16071	6100	X	15	X	20				
	16072	5400	X	10	0.5	25				
9	16073	4450	X	15	X	95				
10	16074	4050	X	10	X	90				
11	16075	6700	X	15	0.5	50				
12	16076	5350	X	20	0.5	10				
13	16077	4200	5	20	0.5	X				
14	16078	5300	5	25	X	X				
15	16079	4450	X	15	0.5	X				
16	16080	4650	5	25	X	X				
	16081	4600	5	20	X	5				
18	16082	3000	X	15	1.0	20				
19	16083	2500	X	10	0.5	10				
20	16084	2750	X	15	1.0	45				
21	16085	2000	X	15	X	5				
22	16086	3400	5	15	0.5	10				
23	16087	2500	X	10	1.0	40				
24	16088	2850	5	10	0.5	75				
25	16089	4200	5	20	X	10				

Results in ppm unless otherwise specified
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663773

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	4 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16090	4500	X	20	1.5	35				
2	16091	6550	60	305	3.5	235				
3	16092	7000	10	50	1.5	5				
4	16093	5300	5	20	1.0	X				
5	16094	4500	X	20	1.0	X				
6	16095	3050	10	10	X	5				
7	16096	3000	45	10	1.0	X				
8	16097	4450	10	15	0.5	X				
9	16098	5300	5	15	0.5	X				
10	16099	3050	10	10	X	5				
11	16100	1900	10	20	2.0	55				
12	16101	2000	10	20	2.0	80				
13	16102	4200	10	15	1.5	20				
14	16103	3350	5	10	X	X				
15	16104	3.25%	15	25	X	45				
16	16105	2.25%	20	15	X	X				
17	16106	3150	X	5	X	X				
18	16107	6800	X	10	X	X				
19	16108	2750	X	20	1.0	10				
20	16109	4800	X	15	2.0	X				
21	16110	4450	X	15	2.0	15				
22	16111	4550	5	15	1.0	15				
23	16112	4450	5	20	X	10				
24	16113	6200	10	55	1.0	20				
25	16114	7500	10	30	1.0	5				

Results in ppm unless otherwise specified
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ANALABS

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

663774

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	5 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb
1	16115	6650	X	20	0.5	X
2	16116	7550	X	20	0.5	X
3	16117	3900	X	15	X	X
4	16118	6100	X	15	0.5	X
5	16119	7400	5	20	0.5	X
6	16120	9900	15	80	1.0	25
7	16121	1.00%	20	90	0.5	25
8	16122	5600	10	15	0.5	X
9	16123	8500	10	25	0.5	10
10	16124	3.20%	15	110	0.5	25
11	16125	5400	X	40	0.5	75
12	16126	6450	X	35	1.5	X
13	16127	1000	X	10	X	X
14	16128	1750	X	10	0.5	X
15	16129	3550	X	20	0.5	X
16	16130	3050	X	160	X	40
17	16131	3100	X	165	X	40
18	16132	5300	X	45	0.5	X
19	16133	2000	X	15	X	10
20	16134	4400	X	10	X	20
21	16135	2150	X	10	0.5	5
22	16136	3400	X	5	0.5	10
23	16137	6500	5	20	X	10
24	16138	5150	10	50	1.0	20
25	16139	4150	5	10	1.0	X

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

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

663775

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	6 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	flg	Pb				
1	16140	2450	5	135	X	125				
2	16141	6050	10	340	X	385				
3	16142	9100	15	70	X	75				
4	16143	5700	10	175	X	120				
5	16144	3700	90	50	X	390				
6	16145	7300	140	4650	1.5	5600				
7	16146	1.50%	15	1500	X	665				
8	16147	9700	20	165	X	70				
9	16148	8850	15	100	X	30				
10	16149	1.00%	5	205	X	80				
11	16150	5300	5	435	1.0	65				
12	16151	7200	X	55	1.0	400				
13	16152	5050	X	50	4.5	75				
14	16153	6400	10	30	1.5	90				
15	16154	3150	10	20	0.5	10				
16	16155	2.00%	5	45	1.5	30				
17	16156	3500	X	15	1.0	5				
18	16157	6250	X	20	0.5	X				
19	16158	4000	X	20	0.5	X				
20	16159	1.50%	10	25	X	145				
	16160	7.00%	120	35	X	60				
	16161	6.75%	110	40	X	70				
	16162	7200	50	20	X	90				
	16163	1750	15	15	X	1000				
	16164	1.35%	30	25	0.5	2500				

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

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ANALABS

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

663776

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	7 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16165	1.80%	30	20	X	130				
2	16166	1.75%	65	20	X	1250				
3	16167	6250	45	30	2.0	570				
4	16168	1.40%	10	125	X	80				
5	16169	6300	5	150	X	15				
6	16170	7800	X	25	1.5	X				
7	16171	7300	X	35	1.5	X				
	16172	7900	X	25	1.0	X				
9	16173	7550	X	15	1.0	X				
10	16174	6700	X	25	0.5	10				
	16175	7550	5	35	X	X				
12	16176	9950	10	25	0.5	5				
13	16177	9300	X	25	0.5	X				
14	16178	5750	10	40	X	5				
15	16179	1.20%	5	30	0.5	X				
16	16180	6400	5	30	0.5	X				
	16181	6650	X	30	0.5	X				
18	16182	7300	10	45	X	25				
19	16183	1.55%	25	335	X	85				
20	16184	4.60%	15	780	X	70				
21	16185	1.40%	10	95	0.5	20				
22	16186	2.30%	10	55	X	15				
23	16187	2.00%	10	65	X	15				
	16188	1.70%	10	70	0.5	35				
25	16189	9650	5	80	X	40				

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

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ANALABS

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

663777

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	8 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16190	1.80%	20	90	X	30				
2	16191	1.30%	45	80	X	35				
3	16192	9200	5	45	X	15				
4	16193	9150	10	30	X	20				
5	16194	5950	5	25	X	10				
6	16195	5000	5	20	0.5	10				
7	16196	2550	10	10	0.5	5				
	16197	1.60%	10	30	X	10				
9	16198	2.65%	5	105	X	15				
10	16199	2.15%	10	45	0.5	20				
	16200	2.70%	20	65	X	10				
12	16201	8700	30	400	X	20				
13	16202	3800	10	90	0.5	30				
14	16203	3200	10	30	2.5	X				
15	16204	1.30%	20	220	0.5	45				
16	16205	4900	25	230	X	55				
	16206	4550	5	40	8.5	85				
18	16207	4000	10	35	0.5	15				
19	16208	1.50%	20	565	X	60				
20	16209	2.10%	20	460	1.5	20				
21	16210	1.40%	10	155	8.5	20				
22	16211	9300	5	415	1.0	15				
23	16212	2.80%	15	285	X	85				
	16213	6000	20	155	0.5	115				
25	16214	5750	35	520	53.0	90				

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

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

663778

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	9 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb
1	16215	1.45%	15	710	34.5	5
2	16216	3900	X	100	0.5	X
3	16217	4350	10	95	0.5	X
4	16218	4300	X	140	X	5
5	16219	5200	X	20	0.5	5
6	16220	4200	5	105	X	X
7	16221	6700	5	1350	X	X
8	16222	5600	10	185	0.5	20
9	16223	4900	5	35	0.5	75
10	16224	5900	5	75	5.5	65
11	16225	4700	15	630	0.5	20
12	16226	4750	X	65	1.5	10
13	16227	4600	10	20	10.5	10
14	16228	6000	X	25	1.0	30
15	16229	6500	10	470	1.0	30
16	16230	6450	5	70	0.5	30
17	16231	7150	10	140	1.0	30
18	16232	7200	30	155	3.5	15
19	16233	4850	5	25	2.5	15
20	16234	4700	X	20	1.0	10
21	16235	4300	5	40	0.5	X
22	16236	4850	10	95	1.0	X
23	16237	4000	5	15	0.5	10
24	16238	1.55%	5	40	0.5	15
25	16239	2.80%	10	180	X	15

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

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663779

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	10 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16240	3.80%	15	230	X	5				
2	16241	3.75%	15	200	X	25				
3	16242	3.05%	100	215	X	30				
4	16243	3000	10	25	X	X				
5	16244	2550	5	20	X	45				
6	16245	4100	5	20	X	55				
7	16246	5300	10	35	X	85				
8	16247	6200	10	35	1.0	15				
9	16248	4850	5	40	X	60				
10	16249	6700	10	40	X	15				
11	16250	6200	10	35	1.5	20				
12	16251	2.45%	15	65	X	30				
13	16501	2.30%	5	180	X	X				
14	16502	3700	X	25	X	15				
15	16503	3750	X	30	X	10				
16	16504	1.70%	5	185	0.5	10				
17	16505	8800	X	90	X	50				
18	16506	3600	X	10	X	5				
19	16507	1.40%	X	100	X	5				
20	16508	4650	X	50	X	20				
21	16509	9800	5	130	0.5	25				
22	16510	7850	120	60	0.5	75				
23	16511	7650	155	55	0.5	80				
24	16512	3.30%	10	195	X	35				
25	16513	3.15%	10	315	0.5	250				

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

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663780

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	11 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16514	3.30%	15	300	X	10				
2	16515	3700	160	1250	1.0	1200				
3	16516	8000	10	310	X	80				
4	16517	7700	15	415	0.5	565				
5	16518	2400	5	10	0.5	X				
6	16519	3750	5	25	X	X				
7	16520	9600	10	100	X	5				
	16521	9800	X	110	0.5	10				
9	16522	2.80%	20	195	X	20				
10	16523	3000	10	20	X	20				
	16524	3.00%	5	205	X	90				
12	16525	6.00%	20	260	X	35				
13	16526	5.20%	30	275	0.5	160				
14	16527	1.50%	X	90	X	5				
15	16528	1.65%	10	65	X	60				
16	16529	3.15%	15	115	X	20				
	16530	3.40%	20	165	X	75				
18	16531	3.30%	15	135	X	55				
19	16532	5.95%	15	380	X	235				
20	16533	3.65%	25	165	0.5	145				
21	16534	3.05%	5	70	X	5				
22	16535	7500	X	20	X	X				
23	16536	2950	5	20	X	15				
	16537	2650	X	10	X	X				
25	16538	3.45%	30	170	X	10				

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

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663781

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	12 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb
1	16539	5.65%	5	330	X	5
2	16540	1.20%	5	175	X	20
3	16541	9650	5	160	X	20
4	16542	1800	15	170	X	130
5	16543	3.25%	15	385	X	50
6	16544	2.70%	145	270	X	180
7	16545	2100	10	15	X	X
[illegible]	16546	3750	55	25	0.5	X
9	16547	2300	40	25	X	5
10	16548	4000	10	20	X	5
11	16549	3300	10	30	X	5
[illegible]	16550	7600	10	610	X	15
13	16551	8500	10	620	X	10
14	16552	4000	X	215	X	15
15	16553	4.90%	X	305	0.5	30
16	16554	8250	10	580	1.0	195
[illegible]	16555	2100	5	40	0.5	20
18	16556	2000	5	20	X	5
19	16557	1950	5	25	X	X
20	16558	3050	20	45	0.5	X
21	16559	2750	5	30	0.5	X
22	16560	6000	X	40	0.5	X
23	16561	5900	5	35	0.5	X
[illegible]	16562	1.25%	5	105	X	X
25	16563	8650	20	195	X	95

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

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663782

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	13 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb
1	16564	4.10%	X	530	X	X
2	16565	2.30%	5	85	0.5	X
3	16568	8400	10	40	0.5	X
4	16569	5150	10	50	X	X
5	16570	5100	5	25	X	X
6	16571	5300	5	30	X	X
7	16572	8000	5	35	X	X
8	16573	9950	5	40	X	X
9	16574	1.65%	30	50	X	X
10	16575	7600	15	55	X	5
11	16576	8050	20	30	0.5	X
12	16577	9900	X	35	X	X
13	16578	1200	X	25	X	30
14	16579	2250	X	40	X	X
15	16580	2650	5	30	X	X
16	16581	3150	X	20	X	X
17	16582	3050	X	15	0.5	X
18	16583	2950	X	15	X	X
19	16584	1650	X	10	0.5	X
20	16585	1350	5	15	0.5	40
21	16586	3100	5	10	X	5
22	16587	4600	10	25	0.5	10
23	16588	3.30%	10	145	X	115
24	16589	3250	20	15	X	5
25	16590	7000	X	40	X	X

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

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663783

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	14 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb
1	16591	6900	5	40	0.5	5
2	16592	1.00%	X	115	X	15
3	16593	2650	5	65	X	80
4	16594	2800	5	55	0.5	60
5	16595	2100	X	80	0.5	40
6	16596	2300	X	95	X	225
7	16597	3500	X	135	0.5	190
8	16598	4600	10	285	1.0	55
9	16599	3600	10	180	0.5	120
10	16600	2.10%	15	1550	X	35
11	16601	2.10%	20	1600	1.0	40
12	16602	2.15%	5	140	0.5	10
13	16603	8700	5	30	0.5	X
14	16604	1.95%	10	50	0.5	5
15	16605	3300	X	30	0.5	15
16	16606	4250	X	55	X	25
17	16607	2350	X	40	X	10
18	16608	2300	X	15	X	5
19	16609	2.65%	5	255	X	40
20	16610	1.80%	10	160	X	30
21	16611	1.85%	10	155	X	30
22	16612	3.60%	5	220	X	10
23	16613	4.45%	X	215	X	5
24	16614	8.40%	115	4000	X	1050
25	16615	4800	15	1200	X	1150

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

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663784

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	15 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb
1	16616	3800	15	60	X	25
2	16617	5.60%	15	270	X	95
3	16618	3.80%	15	120	X	10
4	16619	6.60%	10	810	X	65
5	16620	3.75%	X	275	X	60
6	16621	3.80%	X	290	X	65
7	16622	2.20%	X	75	X	20
8	16623	2.15%	15	85	X	15
9	16624	2150	X	10	X	X
10	16625	3600	X	20	0.5	X
11	16626	1900	10	15	X	X
12	16627	1.90%	X	95	X	5
13	16628	2.40%	5	150	X	30
14	16629	2.30%	5	155	X	X
15	16630	7200	10	55	X	10
16	16631	7050	10	50	X	5
17	16632	4700	20	190	X	160
18	16633	2000	15	25	X	X
19	16634	2400	5	15	X	X
20	16635	2.35%	15	205	X	45
21	16636	4.10%	30	590	0.5	135
22	16637	7500	135	3800	1.0	1500
23	16638	3850	10	75	X	15
24	16639	8450	10	160	1.5	100
25	16640	3150	5	20	0.5	X

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
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663785

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	16 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb
1	16641	2650	X	15	X	X
2	16642	7300	10	255	0.5	410
3	16643	5800	10	210	0.5	300
4	16644	3150	5	80	X	115
5	16645	2350	5	60	0.5	30
6	16646	3800	120	550	X	850
7	16647	9600	25	480	0.5	560
8	16648	1.75%	110	925	0.5	950
9	16649	9900	10	165	0.5	40
10	16650	1.45%	10	150	0.5	25
11	16651	1.40%	5	140	0.5	30
12	16652	1.80%	110	240	0.5	30
13	16653	2.25%	10	610	0.5	125
14	16654	1.50%	20	355	X	30
15	16655	9850	15	285	X	35
16	16656	3750	15	215	0.5	105
17	16657	1.45%	10	160	X	30
18	16658	1.00%	15	140	X	45
19	16659	8400	15	230	X	300
20	16660	1.85%	10	235	0.5	30
21	16661	1.90%	20	120	0.5	35
22	16662	2.00%	30	335	0.5	15
23	16663	1.80%	10	340	X	25
24	16664	2.25%	X	630	1.0	235
25	16665	1.55%	X	440	0.5	30

V 29 (W)

V-19

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

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

663786

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	17 OF

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16666	3.80%	15	440	X	185				
2	16667	2.70%	50	430	0.5	200				
3	16668	3.15%	10	1600	X	320				
4	16669	3.00%	15	750	0.5	370				
5	16670	1.95%	10	600	X	150				
6	16671	1.75%	X	995	X	150				
7	16672	2.80%	55	1350	X	280				
8	16673	3.05%	85	2450	1.0	330				
9	16674	1.95%	20	810	0.5	390				
10	16675	7.55%	X	1300	X	125				
11	16676	2.70%	25	3850	0.5	1100				
12	16677	1.75%	5	1200	0.5	295				
13	16678	7850	30	555	1.0	305				
14	16679	9500	X	1600	0.5	910				
15	16680	9000	75	4600	3.5	3650				
16	16681	8400	65	4650	3.5	3800				
17	16682	9950	50	135	1.5	60				
18	16683	8150	10	130	X	X				
19	16684	9200	10	185	0.5	355				
20	16685	6500	X	385	X	30				
21	16686	1.25%	10	255	0.5	70				
22	16687	6600	5	295	X	170				
23	16688	9850	10	715	0.5	300				
24	16689	5150	5	100	X	45				
25	16690	5450	5	80	X	20				

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

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

663787

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	18 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16691	6200	5	60	X	15				
2	16692	5150	15	125	X	285				
3	16693	4450	5	55	X	20				
4	14202	1800	5	15	X	X				
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
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24										
25										

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

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663788

VOYAGER 33

Elliot

ANALABS

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

663789

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 82.1 08 1208

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 3063	K 537

DATE RECEIVED	RESULTS REQUIRED
17.5.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	28.5.82	3	40

STATE OF SAMPLES	PRE-TREATMENT									ANALYSIS			
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE		REFER TO ANALYSIS SECTION	PREPARATION	METHOD
PU	Various							1	As Ba		101	114 120

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 33
(SOILS)

STATE OF SAMPLES

whole core	WC
split core	SC
cutting	CU
rock	Ro
soil	SO
pulp	PU
water	WA
fluid	Fl
stream sediment	SS
heavy mineral	HM

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Ma
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TIT
other chemicals means	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

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663790

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1208	28.5.82	KP 3063	1 OF 3

TUBE No.	SAMPLE No.		As	Ba	Au					
1	16159		73	1150	0.009					
2	16160		310	485	0.034					
3	16161		240	435	0.014					
4	16162		30	965	0.032					
5	16163		29	395	0.047					
6	16164		400	490	0.008					
7	16165		40	595	X					
8	16166		120	675	X					
9	16167		150	615	0.084					
10	16168		58	155	X					
[illegible]	16288		9	835	X					
12	16289		6	615	X					
13	16290		3	705	X					
14	16291		3	740	X					
15	16292		1	475	X					
16	16293		330	1100	X					
17	16294		25	760	X					
18	16295		8	430	X					
19	16296		1	735	X					
20	16297		2	320	X					
21	16323		1	975	X					
22	16324		8	405	X					
23	16325		4	165	X					
[illegible]	16326		3	485	X					
25	16327		75	340	X					

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

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

663791

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1208	28.5.82	KP 3063	2 OF 3

TUBE No.	SAMPLE No.		Re	Ba	Au					
1	16328		15	565	X					
2	16329		56	900	X					
3	16330		17	970	X					
4	16331		15	1025	X					
5	16332		5	1200	X					
6	16342		6	65	X					
7	16343		5	700	X					
8	16344		23	705	X					
9	16345		3	925	X					
10	16346		320	295	X					
11	16347		57	895	X					
12	16348		2	585	X					
13	16349		1	465	X					
14	16350		X	570	X					
15	16351		X	595	X					
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER

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663792

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 1208	28.5.82	KP 3063	3 OF 3

TUBE No.	SAMPLE No.	Ag	Be	Au					
1	STD FS4	25	115						
2	RPT TS 16159	70	1100						
3	RPT TS 16297	1	305						
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	1	5	0.008					
24	DIGESTION	101							
25	METHOD	114	120	303					

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

AUTHORISED OFFICER

Voyager SS

V33
Solu

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Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560

663793

ANALYTICAL REPORT No. 83.1 08 917

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2891	K 654

DATE RECEIVED	RESULTS REQUIRED
10.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	18.2.82	3	58

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 16252-309	1				2			Cu Pb Zn Ag Fe	101	101

RESULTS TO: As Above

RESULTS TO:

REMARKS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
[illegible]	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
[illegible]	Ro	aqua regia	A4	alkaline attack	AA	calorimetry	COL
[illegible]	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
[illegible]	PU	HF mixture	A6	ignition	IG	titration	TTN
[illegible]	WA	[illegible]	A7	[illegible] powder (XRF)	PP	other chemicals means	CHEM
[illegible]	TI	[illegible]	A8	glass fusion (XRF)	GF	miscellaneous	[illegible]
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICPC

AUTHORISED OFFICER: B. D[illegible]

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V 33
Soils

663794

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 917	18.2.82	KP 2891	1 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Mg	Pb				
1	16252	2.00%	25	60	1.0	15				
2	16253	2.45%	20	75	X	5				
3	16254	2500	X	15	0.5	10				
4	16255	1.30%	5	35	X	10				
5	16256	2.30%	5	85	X	15				
6	16257	6650	X	20	X	10				
7	16258	3500	X	15	X	X				
8	16259	3450	X	15	0.5	X				
9	16260	5050	X	20	X	X				
10	16261	4700	X	20	X	10				
	16262	8500	X	50	X	X				
	16263	1.65%	5	840	1.5	435				
13	16264	3.10%	130	530	X	935				
14	16265	5300	20	10	X	60				
15	16266	1.20%	X	60	0.5	65				
16	16267	5100	X	60	X	20				
	16268	4050	70	345	X	225				
18	16269	1.19%	20	490	0.5	470				
19	16270	5800	X	275	X	100				
20	16271	6100	5	285	X	140				
21	16272	1.30%	5	4350	0.5	285				
22	16273	5400	X	225	0.5	25				
23	16274	7350	X	40	X	X				
	16275	7600	5	45	0.5	20				
25	16276	5500	10	30	0.5	20				

Results in parts million unless otherwise specified.
= interference on line corrected for. Possible low results.
% = # = element concentration is below detection limit.
X = element not determined.

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V33
Soils

663795

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 917	18.2.82	KP 2891	2 OF 4

LAB. No.	SAMPLE No.	Fe	Cu	Zn	Mo	Pb				
1	16277	8000	5	735	X	5				
2	16278	5900	10	60	0.5	30				
3	16279	4500	10	80	0.5	10				
4	16280	8500	20	770	1.0	55				
5	16281	8600	20	665	0.5	50				
6	16282	1.35%	15	360	0.5	75				
7	16283	6300	20	790	X	180				
8	16284	1.05%	10	50	X	X				
9	16285	1.30%	10	70	X	90				
10	16286	3.00%	10	50	0.5	35				
11	16287	1.65%	15	40	X	35				
12	16288	7650	5	40	X	445				
13	16289	2350	50	35	X	135				
14	16290	1450	10	10	X	190				
15	16291	1450	X	10	0.5	195				
16	16292	1200	X	10	X	5				
17	16293	1.30%	100	1.65%	66.0	1.65%				
18	16294	5050	10	390	4.5	285				
19	16295	5.65%	10	160	0.5	35				
20	16296	5800	10	60	X	15				
21	16297	2350	X	55	X	45				
22	16298	2850	X	115	0.5	55				
23	16299	4550	10	105	0.5	85				
24	16300	3250	X	40	2.5	10				
25	16301	3000	X	20	3.5	10				

X = Insufficient sample for analysis specified
- = Element present, but concentration too low to measure
< = Element concentration is below detection limit
N = Element not determined

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V 33
Soils

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

ANALYTICAL DATA

663796

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 917	18.2.82	KP 2891	3 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16302	4400	X	105	1.5	50				
2	16303	2200	X	40	X	15				
3	16304	1400	X	20	2.0	X				
4	16305	4900	X	50	X	25				
5	16306	6100	X	30	X	X				
6	16307	6800	X	40	X	10				
7	16308	6000	X	25	X	X				
8	16309	5550	X	25	X	X				
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Results in parts per Gas of whose specified
T = element present, but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALYTICAL DATA

663797

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 917	18.2.82	KP 2891	4 OF 4

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	STD FS4	9.90%	295	750	0.5	100				
2	RPT 16252	2.30%	30	65	0.5	15				
3	RPT 16271	6600	10	285	X	150				
4	STD FS4	8.80%	265	760	1.0	100				
5	RPT 16292	1050	X	10	X	X				
6										
7										
8										
9										
10										
11										
12										
13	NOTE: Sample No TS 16293 To Be Confirmed									
14	By Method 104									
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
	DIGESTION	101	101	101	101	101				
25	METHOD	101	101	101	101	101				

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

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380

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663798

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 917	18.2.82	KP 2891	1 OF 1

TUBE No.	SAMPLE No.	Zn	Ag	Pb						
1	16293	1.64%	62	1.51%						
2										
3										
4										
5										
6										
7										
8										
9										
10										
12										
13										
14	NOTE: Sample Confirmation									
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	25	2	25						
	DIGESTION	104	104	104						
25	METHOD	104	104	104						

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

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663799

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 08 843

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2869	K 574

DATE RECEIVED	RESULTS REQUIRED
22.1.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	28.1.82	3	187

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER (SEE REMARKS)	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SC	TS 16310-495 TS 14905	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 33
SOILS

STATE OF SAMPLES

whole core	WC
split core	SC
cuttings	CU
	RO
	SO
	PU
	WA
	FI
	SE
	MA

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Ma
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
[illegible] pressure	A7	pressed powder (XRF)	PP
[illegible]	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TTN
other chemicals means	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

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663800

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
Ts	83.1 08 843	28.1.82	KP 2869	1 OF 5

YOUR No.	SAMPLE No.	Fe	Cu	Zn	Mg	Pb				
1	16310	4100	X	35	1.0	35				
2	16311	4550	X	30	1.0	25				
3	16312	6450	35	305	1.5	1950				
4	16313	3350	5	25	6.0	565				
5	16314	3650	X	40	1.5	980				
6	16315	6900	X	85	1.5	130				
7	16316	5550	X	25	0.5	5				
8	16317	4600	X	30	1.0	15				
9	16318	5250	X	45	1.0	240				
10	16319	6200	X	30	2.0	X				
11	16320	5150	X	230	0.5	35				
12	16321	4800	X	215	1.0	35				
13	16322	1.35%	X	35	1.0	X				
14	16323	6100	X	30	X	10				
15	16324	5200	5	245	1.0	90				
16	16325	3.10%	X	60	0.5	20				
17	16326	4800	X	15	X	X				
18	16327	4650	10	490	1.0	200				
19	16328	2.30%	45	70	X	30				
20	16329	1.55%	65	465	0.5	50				
21	16330	1.35%	15	60	1.0	20				
22	16331	1.60%	15	55	X	20				
23	16332	4650	5	20	X	10				
24	16333	2.00%	5	35	0.5	5				
25	16334	3.70%	5	35	1.0	20				

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

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663801

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 843	28.1.82	KP 2869	2 OF 3

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Mn	Pb				
1	16335	3.00%	10	80	0.5	25				
2	16336	2.40%	5	45	0.5	10				
3	16337	9750	X	30	0.5	5				
4	16338	4.75%	10	65	0.5	25				
5	16339	3900	5	15	X	10				
6	16340	3100	X	15	0.5	X				
7	16341	3150	X	15	X	5				
8	16342	2.10%	10	120	0.5	30				
9	16343	4150	X	20	1.0	X				
10	16344	1.60%	50	250	1.0	55				
11	16345	7100	10	35	1.0	35				
12	16346	5050	15	1800	X	285				
13	16347	6000	X	300	1.0	80				
14	16348	5950	X	45	1.0	15				
15	16349	5500	5	50	1.0	10				
16	16350	4150	X	20	1.0	10				
17	16351	4850	X	20	1.0	5				
18	16352	3600	X	20	0.5	X				
19	16353	4100	X	15	0.5	5				
20	16354	3950	X	15	0.5	10				
21	16355	4850	X	30	X	10				
22	16356	9050	X	40	0.5	15				
23	16357	6050	5	25	0.5	35				
24	16358	5800	X	35	X	10				
25	16359	5300	X	20	X	10				

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

AUTHORISED OFFICER

384

ANALABS

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

663802

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 843	28.1.82	KP 2869	3 OF 9

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16360	3550	X	35	0.5	15				
2	16361	2700	X	20	0.5	15				
3	16362	4050	5	25	0.5	35				
4	16363	3750	X	25	1.0	25				
5	16364	4900	X	40	1.0	50				
6	16365	7950	X	115	0.5	160				
7	16366	7800	X	90	1.0	30				
8	16367	4150	X	215	1.0	35				
9	16368	4000	X	40	1.5	50				
10	16369	6800	X	35	2.5	35				
[illegible]	16370	1.35%	5	95	1.5	45				
[illegible]	16371	1.55%	X	105	1.5	45				
13	16372	8500	X	50	1.0	35				
14	16373	9450	5	50	X	55				
15	16374	1.30%	10	45	1.0	50				
16	16375	5400	X	20	1.0	15				
[illegible]	16376	6000	X	45	1.0	60				
18	16377	2.15%	X	50	1.0	180				
19	16378	1.35%	X	40	X	20				
20	16379	1.00%	X	35	0.5	10				
21	16380	5450	X	20	X	X				
22	16381	5200	X	20	X	15				
23	16382	3450	X	15	1.0	15				
[illegible]	16383	5350	X	20	0.5	10				
25	16384	1.90%	10	195	0.5	50				

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

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

66380

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 843	28.1.82	KP 2869	4 OF 9

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16385	2.30%	10	280	0.5	25				
2	16386	2.00%	25	65	0.5	15				
3	16387	2.60%	30	95	X	30				
4	16388	1.75%	20	65	0.5	10				
5	16389	6000	10	20	X	5				
6	16390	2.70%	55	55	X	15				
7	16391	2.60%	50	60	X	20				
8	16392	2.00%	115	60	1.5	95				
9	16393	2.40%	5	60	X	5				
10	16394	2.05%	X	50	X	X				
11	16395	1.50%	X	35	0.5	10				
12	16396	1.60%	15	40	0.5	15				
13	16397	2.35%	10	55	0.5	10				
14	16398	1.30%	30	35	0.5	10				
15	16399	7900	15	30	X	5				
16	16400	1.95%	20	75	0.5	15				
17	16401	2.10%	20	85	1.0	10				
18	16402	1.60%	10	60	0.5	25				
19	16403	2.85%	30	75	0.5	10				
20	16404	8800	5	170	0.5	50				
21	16405	2.45%	X	55	1.0	25				
22	16406	5600	X	20	0.5	10				
23	16407	5300	X	20	0.5	10				
24	16408	5050	X	45	1.5	10				
25	16409	7800	X	80	1.5	20				

All results in ppm unless otherwise specified.
X = element present, but concentration too low to measure.
N = element concentration is below detection limit.
- = sample not determined.

AUTHORISED OFFICER

386

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

663804

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 843	28.1.82	KP 2869	5 OF 9

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16410	5250	X	70	1.0	20				
2	16411	5300	X	65	1.0	25				
3	16412	5000	X	80	0.5	5				
4	16413	4850	X	40	1.5	5				
5	16414	4000	X	20	1.5	30				
6	16415	4000	15	70	0.5	120				
7	16416	6350	5	25	1.0	80				
8	16417	4250	X	20	X	125				
9	16418	6100	X	20	1.0	5				
10	16419	5450	X	20	1.0	60				
[illegible]	16420	7700	X	30	1.0	40				
12	16421	8250	X	30	1.0	40				
13	16422	4700	X	20	0.5	X				
14	16423	6200	X	25	0.5	10				
15	16424	5300	X	35	0.5	10				
16	16425	3000	X	15	2.0	X				
[illegible]	16426	6300	X	25	1.0	25				
18	16427	5500	X	20	0.5	10				
19	16428	5600	X	20	1.0	95				
20	16429	5200	X	25	1.5	5				
21	16430	4800	X	15	0.5	45				
22	16431	5250	X	10	0.5	70				
23	16432	4850	X	15	1.5	10				
[illegible]	16433	4350	5	40	1.0	45				
[illegible]	16434	5400	X	15	0.5	X				

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

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

663805

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 843	28.1.82	KP 2869	6 OF 9

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16435	9850	15	50	1.0	40				
2	16436	1.70%	45	65	X	30				
3	16437	2.25%	35	70	1.0	80				
4	16438	2.20%	15	90	0.5	30				
5	16439	1.75%	X	215	1.5	5				
6	16440	3600	X	5	0.5	5				
7	16441	4300	X	10	0.5	10				
8	16442	7650	X	10	1.0	10				
9	16443	3.40%	10	45	0.5	50				
10	16444	1150	10	5	0.5	5				
11	16445	3200	10	5	1.0	15				
12	16446	9200	X	30	1.0	5				
13	16447	8500	X	25	1.5	15				
14	16448	1.40%	X	100	X	15				
15	16449	9400	5	320	1.0	10				
16	16450	9350	X	35	X	X				
17	16451	1.00%	X	35	0.5	X				
18	16452	8400	X	25	1.0	5				
19	16453	7600	X	20	1.0	5				
20	16454	4.20%	X	85	X	10				
21	16455	2.50%	X	55	0.5	5				
22	16456	6900	X	20	0.5	15				
23	16457	5500	X	30	1.5	10				
24	16458	6200	X	15	1.5	X				
25	16459	4650	X	10	1.0	X				

results in ppm unless otherwise specified

* = element present, but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

AUTHORISED OFFICER

ANALABS

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

663806

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 843	28.1.82	KP 2869	2 OF 3

TUBE No.	SAMPLE No.	Fe %	Cu	Zn	Ag	Pb				
1	16460	4800	X	15	1.0	X				
2	16461	5350	X	15	1.5	X				
3	16462	4300	X	15	1.5	85				
4	16463	5750	60	20	1.0	35				
5	16464	1850	X	10	X	X				
6	16465	1300	X	X	0.5	10				
7	16466	9450	20	80	0.5	25				
8	16467	1.65%	10	25	1.5	10				
9	16468	4150	X	5	0.5	10				
10	16469	3.75%	5	50	0.5	10				
11	16470	3.10%	5	45	0.5	40				
12	16471	3.30%	X	55	X	35				
13	16472	3600	10	50	X	20				
14	16473	3.00%	5	50	X	35				
15	16474	7450	X	20	X	10				
16	16475	5550	X	130	0.5	80				
17	16476	7300	X	25	X	5				
18	16477	3500	X	25	X	50				
19	16478	2800	X	10	0.5	X				
20	16479	5250	X	10	X	10				
21	16480	5700	X	10	X	5				
22	16481	6400	X	15	X	10				
23	16482	1.45%	20	80	X	55				
24	16483	1.55%	5	45	0.5	15				
25	16484	4000	10	45	1.0	10				

N = no sample received or sample not specified
I = an element present but too low for accurate determination too low to measure
X = element concentration is below detection limit
— = element not determined

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389

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

663807

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 843	28.1.82	KP 2869	8 OF 9

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16485	9700	75	40	X	10				
2	16486	1.25%	5	25	X	30				
3	16487	1.55%	10	115	0.5	25				
4	16488	2.55%	25	80	1.0	15				
5	16489	2.80%	50	70	X	10				
6	16490	3.25%	45	110	0.5	10				
7	16491	3.35%	45	105	X	10				
8	16492	1.25%	40	30	X	X				
9	16493	1.65%	X	35	X	X				
10	16494	1.85%	50	75	X	15				
11	16495	2.70%	35	85	X	20				
12	14905	2.40%	5	70	1.0	15				
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

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663808

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 843	28.1.82	KP 2869	9 OF 9

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	STD FS4	8.40%	290	730	0.5	105				
2	RPT 16310	3900	X	40	2.5	30				
3	RPT 16329	1.65%	70	465	1.0	50				
4	STD FS4	8.10%	280	720	0.5	110				
5	RPT 16350	4000	X	20	1.0	X				
6	RPT 16369	6600	X	35	2.5	40				
7	STD FS4	8.20%	295	725	0.5	105				
8	RPT 16390	2.70%	55	60	0.5	10				
9	RPT 16409	7400	X	75	1.5	15				
10	STD FS4	8.50%	305	740	1.0	105				
[illegible]	RPT 16430	4600	X	15	0.5	50				
12	RPT 16449	8850	5	300	1.0	15				
13	STD FS4	8.40%	310	760	0.5	105				
14	RPT 16470	3.10%	10	50	0.5	35				
15	RPT 16489	2.90%	45	65	X	10				
16										
[illegible]										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
[illegible]	DIGESTION	A1	A1	A1	A1	A1				
25	METHOD	A1/1	A1/1	A1/1	A1/1	A1/1				

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

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999
Telex AA92560

663809

ANALYTICAL REPORT No. [illegible] 879

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
	K 579

DATE RECEIVED	RESULTS REQUIRED
2.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	12.2.82	3	98

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	LP 9551-98		1	3	2 4				Cu Pb Zn Ag Fe As Au	101 101	101 114 304

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 32

ROCK CHIPS.

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

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392

ANALABS

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

663810

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 879	12.2.82	KP 2879	1 OF 3

TUBE No.	SAMPLE No.	Fe	Cu	Zn	As	Ag	Au	Pb		
1	9551	1.95%	5	130	28	X	X	35		
2	9552	2.00%	15	80	53	X	X	20		
3	9553	1.65%	10	40	1200	X	0.042	30		
4	9554	2.15%	35	35	460	X	0.020	50		
5	9555	2.65%	15	205	120	X	X	185		
6	9556	2.15%	20	4200	630	4.5	X	1550		
7	9557	1.95%	105	5400	1700	11.0	0.030	6300		
8	9558	1.50%	15	2250	73	1.5	X	985		
9	9559	2.40%	20	180	57	0.5	X	115		
10	9560	2.20%	5	315	74	X	X	210		
11	9561	1.95%	15	2300	220	1.0	X	895		
12	9562	1.55%	40	2.85%	300	18.0	X	1.60%		
13	9563	1.45%	15	1.60%	65	35.0	X	9500		
14	9564	1.30%	25	70	34	X	X	55		
15	9565	7800	10	260	100	0.5	X	290		
16	9566	2.05%	15	1700	450	3.0	X	390		
17	9567	2.30%	10	570	59	2.0	X	165		
18	9568	2.50%	95	2750	53	37.0	X	1600		
19	9569	2.20%	65	3650	42	17.5	X	3050		
20	9570	2.90%	10	375	29	0.5	X	210		
21	9571	2.10%	10	35	X	X	X	5		
22	9572	2.85%	10	55	51	X	X	15		
23	9573	1.90%	30	2700	1400	9.0	0.033	2100		
24	9574	1.30%	10	440	190	3.0	X	560		
25	9575	3.15%	45	760	9000	12.0	0.051	780		

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

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393

ANALABS

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

663811

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 879	12.2.82	KP 2879	OF

TUBE No.	SAMPLE No.	Fe	Cu	Zn	As	Ag	Au	Pb		
1	9576	1.65%	130	510	51	1.0	X	275		
2	9577	2.00%	240	45	23	0.5	X	25		
3	9578	1.25%	10	70	42	X	X	35		
4	9579	9600	10	350	90	0.5	X	215		
5	9580	7400	10	25	1	0.5	X	20		
6	9581	1.35%	5	30	8	X	X	20		
7	9582	7800	10	20	3	X	0.024	10		
8	9583	1.35%	10	60	300	X	X	35		
9	9584	8000	10	20	13	X	X	X		
10	9585	1.20%	10	30	2	X	X	10		
11	9586	7800	10	25	31	X	X	15		
12	9587	5500	10	40	28	0.5	X	125		
13	9588	1.40%	30	280	90	2.0	X	690		
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER B Dan

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999
Telex AA92560

663812

ANALYTICAL REPORT No. 83.1 08 834

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2860	K 570

DATE RECEIVED	RESULTS REQUIRED
19.1.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	27.1.82	3	429

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SOIL	TS 16615-251 TS 16501-565 TS 16568-693 TS 14202	1				2			Cu Pb Zn Fe Ag	A1	AAS

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 33
SOILS
(428 SAMPLES)

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

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395

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

663813

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	1 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16015	6800	65	30	0.5	465				
2	16016	7600	X	30	X	60				
3	16017	6400	10	25	X	320				
4	16018	6550	5	25	X	25				
5	16019	7800	30	20	0.5	X				
6	16020	7150	10	20	X	X				
7	16021	7400	25	20	0.5	10				
8	16022	6550	X	105	1.0	30				
9	16023	5300	X	20	X	10				
10	16024	4150	X	15	X	X				
11	16025	4800	X	25	0.5	35				
12	16026	7900	X	25	0.5	X				
13	16027	1.30%	X	65	1.5	20				
14	16028	2.10%	X	195	X	15				
15	16029	1.55%	X	50	0.5	5				
16	16030	8300	X	60	1.0	X				
17	16031	5350	X	45	0.5	X				
18	16032	5700	X	35	0.5	320				
19	16033	7850	X	35	0.5	20	(428 SAMPLES)			
20	16034	6000	X	40	X	10				
21	16035	6850	X	25	X	10				
22	16036	2900	X	15	2.5	15				
23	16037	2950	X	70	0.5	5				
24	16038	3650	X	15	1.0	40				
25	16039	6250	X	20	0.5	5				

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

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396

ANALABS

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

663814

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	2 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16040	5350	X	20	X	160				
2	16041	5500	X	30	0.5	180				
3	16042	7900	X	45	1.0	50				
4	16043	6400	X	35	0.5	15				
5	16044	8700	X	80	X	25				
6	16045	5.60%	X	175	0.5	60				
7	16046	7.60%	X	70	X	90				
8	16047	2.00%	X	75	X	60				
9	16048	2.65%	X	125	1.0	200				
10	16049	4800	X	115	X	55				
11	16050	9550	X	45	X	20				
12	16051	8900	40	45	X	20				
13	16052	4.10%	X	70	X	195				
14	16053	3.30%	X	30	X	30				
15	16054	5650	X	20	X	5				
16	16055	3.70%	95	20	X	X				
17	16056	3050	X	10	X	X				
18	16057	2.60%	10	40	0.5	25				
19	16058	5250	X	20	0.5	X	(428 SAMPLES)			
20	16059	1.75%	25	130	X	30				
21	16060	1.60%	5	40	0.5	X				
22	16061	1.80%	25	840	0.5	90				
23	16062	3700	X	55	1.5	10				
24	16063	9950	X	25	X	X				
25	16064	1400	X	10	0.5	X				

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

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

663815

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	3 OF 26

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16065	2950	X	20	X	X				
2	16066	8000	X	30	X	10				
3	16067	4350	X	35	0.5	X				
4	16068	4850	X	15	1.0	X				
5	16069	6400	X	20	0.5	X				
6	16070	5750	X	15	X	X				
7	16071	6100	X	15	X	20				
[redacted]	16072	5400	X	10	0.5	25				
9	16073	4450	X	15	X	95				
10	16074	4050	X	10	X	90				
11	16075	6700	X	15	0.5	50				
12	16076	5350	X	20	0.5	10				
13	16077	4200	5	20	0.5	X				
14	16078	5300	5	25	X	X				
15	16079	4450	X	15	0.5	X				
16	16080	4550	5	25	X	X				
[redacted]	16081	4600	5	20	X	5				
18	16082	3000	X	15	1.0	20				
19	16083	2500	X	10	0.5	10				
20	16084	2750	X	15	1.0	45				
21	16085	2000	X	15	X	5				
22	16086	3400	5	15	0.5	10				
23	16087	2500	X	10	1.0	40				
[redacted]	16088	2850	5	10	0.5	75				
25	16089	4200	5	20	X	10				

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

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398

ANALABS

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

663816

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	4 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16090	4500	X	20	1.5	35				
2	16091	6550	60	305	3.5	235				
3	16092	7000	10	50	1.5	5				
4	16093	5300	5	20	1.0	X				
5	16094	4500	X	20	1.0	X				
6	16095	3050	10	10	X	5				
7	16096	3000	45	10	1.0	X				
8	16097	4450	10	15	0.5	X				
9	16098	5300	5	15	0.5	X				
10	16099	3050	10	10	X	5				
11	16100	1900	10	20	2.0	55				
12	16101	2000	10	20	2.0	80				
13	16102	4200	10	15	1.5	20				
14	16103	3350	5	10	X	X				
15	16104	3.25%	15	25	X	45				
16	16105	2.25%	20	15	X	X				
17	16106	3150	X	5	X	X				
18	16107	6800	X	10	X	X				
19	16108	2750	X	20	1.0	10				
20	16109	4800	X	15	2.0	X				
21	16110	4450	X	15	2.0	15				
22	16111	4550	5	15	1.0	15				
23	16112	4450	5	20	X	10				
24	16113	6200	10	55	1.0	20				
25	16114	7500	10	30	1.0	5				

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

AUTHORISED OFFICER B Dan

399

663817

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	5 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16115	6650	X	20	0.5	X				
2	16116	7550	X	20	0.5	X				
3	16117	3900	X	15	X	X				
4	16118	6100	X	15	0.5	X				
5	16119	7400	5	20	0.5	X				
6	16120	9900	15	80	1.0	25				
7	16121	1.00%	20	90	0.5	25				
8	16122	5600	10	15	0.5	X				
9	16123	8500	10	25	0.5	10				
10	16124	3.20%	15	110	0.5	25				
11	16125	5400	X	40	0.5	75				
12	16126	6450	X	35	1.5	X				
13	16127	1000	X	10	X	X				
14	16128	1750	X	10	0.5	X				
15	16129	3550	X	20	0.5	X				
16	16130	3050	X	160	X	40				
17	16131	3100	X	165	X	40				
18	16132	5300	X	45	0.5	X				
19	16133	2000	X	15	X	10				
20	16134	4400	X	10	X	20				
21	16135	2150	X	10	0.5	5				
22	16136	3400	X	5	0.5	10				
23	16137	6500	5	20	X	10				
24	16138	5150	10	50	1.0	20				
25	16139	4150	5	10	1.0	X				

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

AUTHORISED OFFICER

400

ANALABS

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

663818

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	6 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16140	2450	5	135	X	125				
2	16141	6050	10	340	X	385				
3	16142	9100	15	70	X	75				
4	16143	5700	10	175	X	120				
5	16144	3700	90	50	X	390				
6	16145	7300	140	4650	1.5	5600				
7	16146	1.50%	15	1500	X	685				
8	16147	9700	20	165	X	70				
9	16148	8850	15	100	X	30				
10	16149	1.00%	5	205	X	80				
11	16150	5300	5	435	1.0	65				
12	16151	7200	X	55	1.0	400				
13	16152	5050	X	50	4.5	75				
14	16153	6400	10	30	1.5	90				
15	16154	3150	10	20	0.5	10				
16	16155	2.00%	5	45	1.5	30				
17	16156	3500	X	15	1.0	5				
18	16157	6250	X	20	0.5	X				
19	16158	4000	X	20	0.5	X				
20	16159	1.50%	10	25	X	145				
21	16160	7.00%	120	35	X	60				
22	16161	6.75%	110	40	X	70				
23	16162	7200	50	20	X	90				
24	16163	1750	15	15	X	1000				
25	16164	1.35%	30	25	0.5	2500				

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

AUTHORISED OFFICER B. Dan

401

ANALABS

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

663819

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	7 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16165	1.80%	30	20	X	130				
2	16166	1.75%	65	20	X	1250				
3	16167	6250	45	30	2.0	570				
4	16168	1.40%	10	125	X	80				
5	16169	6300	5	150	X	15				
6	16170	7800	X	25	1.5	X				
7	16171	7300	X	35	1.5	X				
8	16172	7900	X	25	1.0	X				
9	16173	7550	X	15	1.0	X				
10	16174	6700	X	25	0.5	10				
11	16175	7550	5	35	X	X				
12	16176	9950	10	25	0.5	5				
13	16177	9300	X	25	0.5	X				
14	16178	5750	10	40	X	5				
15	16179	1.20%	5	30	0.5	X				
16	16180	6400	5	30	0.5	X				
17	16181	6650	X	30	0.5	X				
18	16182	7300	10	45	X	25				
19	16183	1.55%	25	335	X	85				
20	16184	4.60%	15	780	X	70				
21	16185	1.40%	10	95	0.5	20				
22	16186	2.30%	10	55	X	15				
23	16187	2.00%	10	65	X	15				
24	16188	1.70%	10	70	0.5	35				
25	16189	9650	5	80	X	40				

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

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

663820

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	8 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16190	1.80%	20	90	X	30				
2	16191	1.30%	45	80	X	35				
3	16192	9200	5	45	X	15				
4	16193	9150	10	30	X	20				
5	16194	5950	5	25	X	10				
6	16195	5000	5	20	0.5	10				
7	16196	2550	10	10	0.5	5				
8	16197	1.60%	10	30	X	10				
9	16198	2.65%	5	105	X	15				
10	16199	2.15%	10	45	0.5	20				
11	16200	2.70%	20	65	X	10				
12	16201	8700	30	400	X	20				
13	16202	3800	10	90	0.5	30				
14	16203	3200	10	30	2.5	X				
15	16204	1.30%	20	220	0.5	45				
16	16205	4900	25	230	X	55				
17	16206	4550	5	40	8.5	85				
18	16207	4000	10	35	0.5	15				
19	16208	1.50%	20	565	X	60				
20	16209	2.10%	20	460	1.5	20				
21	16210	1.40%	10	155	8.5	20				
22	16211	9300	5	415	1.0	15				
23	16212	2.80%	15	285	X	85				
24	16213	6000	20	155	0.5	115				
25	16214	5750	35	520	53.0	90				

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

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663821

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	9 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16215	1.45%	15	710	34.5	5				
2	16216	3900	X	100	0.5	X				
3	16217	4350	10	95	0.5	X				
4	16218	4300	X	140	X	5				
5	16219	5200	X	20	0.5	5				
6	16220	4200	5	105	X	X				
7	16221	6700	5	1350	X	X				
8	16222	5600	10	185	0.5	20				
9	16223	4900	5	35	0.5	75				
10	16224	5900	5	75	5.5	65				
11	16225	4700	15	630	0.5	20				
12	16226	4750	X	65	1.5	10				
13	16227	4600	10	20	10.5	10				
14	16228	6000	X	25	1.0	30				
15	16229	6500	10	470	1.0	30				
16	16230	6450	5	70	0.5	30				
17	16231	7150	10	140	1.0	30				
18	16232	7200	30	155	3.5	15				
19	16233	4850	5	25	2.5	15				
20	16234	4700	X	20	1.0	10				
21	16235	4300	5	40	0.5	X				
22	16236	4850	10	95	1.0	X				
23	16237	4000	5	15	0.5	10				
24	16238	1.55%	5	40	0.5	15				
25	15239	2.80%	10	180	X	15				

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

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663822

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	10 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16240	3.80%	15	230	X	5				
2	16241	3.75%	15	200	X	25				
3	16242	3.05%	100	215	X	30				
4	16243	3000	10	25	X	X				
5	16244	2550	5	20	X	45				
6	16245	4100	5	20	X	55				
7	16246	5300	10	35	X	85				
8	16247	6200	10	35	1.0	15				
9	16248	4850	5	40	X	60				
10	16249	6700	10	40	X	15				
11	16250	6200	10	35	1.5	20				
12	16251	2.45%	15	65	X	30				
13	16501	2.30%	5	180	X	X				
14	16502	3700	X	25	X	15				
15	16503	3750	X	30	X	10				
16	16504	1.70%	5	185	0.5	10				
17	16505	8800	X	90	X	50				
18	16506	3600	X	10	X	5				
19	16507	1.40%	X	100	X	5				
20	16508	4650	X	50	X	20				
21	16509	9800	5	130	0.5	25				
22	16510	7850	120	60	0.5	75				
23	16511	7650	155	55	0.5	80				
24	16512	3.30%	10	195	X	35				
25	16513	3.15%	10	315	0.5	250				

Results in ppm unless otherwise specified
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663823

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	11 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16514	3.30%	15	300	X	10				
2	16515	3700	160	1250	1.0	1200				
3	16516	8000	10	310	X	80				
4	16517	7700	15	415	0.5	565				
5	16518	2400	5	10	0.5	X				
6	16519	3750	5	25	X	X				
7	16520	9600	10	100	X	5				
8	16521	9800	X	110	0.5	10				
9	16522	2.80%	20	195	X	20				
10	16523	3000	10	20	X	20				
11	16524	3.00%	5	205	X	90				
12	16525	6.00%	20	260	X	35				
13	16526	5.20%	30	275	0.5	160				
14	16527	1.50%	X	90	X	5				
15	16528	1.65%	10	65	X	60				
16	16529	3.15%	15	115	X	20				
17	16530	3.40%	20	165	X	75				
18	16531	3.30%	15	135	X	55				
19	16532	5.95%	15	380	X	235				
20	16533	3.65%	25	165	0.5	145				
21	16534	3.05%	5	70	X	5				
22	16535	7500	X	20	X	X				
23	16536	2950	5	20	X	15				
24	16537	2650	X	10	X	X				
25	16538	3.45%	30	170	X	10				

Results in ppm unless otherwise specified
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663824

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	12 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16539	5.65%	5	330	X	5				
2	16540	1.20%	5	175	X	20				
3	16541	9650	5	160	X	20				
4	16542	1800	15	170	X	130				
5	16543	3.25%	15	385	X	50				
6	16544	2.70%	145	270	X	180				
7	16545	2100	10	15	X	X				
8	16546	3750	55	25	0.5	X				
9	16547	2300	40	25	X	5				
10	16548	4000	10	20	X	5				
11	16549	3300	10	30	X	5				
12	16550	7600	10	610	X	15				
13	16551	8500	10	620	X	10				
14	16552	4000	X	215	X	15				
15	16553	4.90%	X	305	0.5	30				
16	16554	8250	10	580	1.0	195				
17	16555	2100	5	40	0.5	20				
18	16556	2000	5	20	X	5				
19	16557	1950	5	25	X	X				
20	16558	3050	20	45	0.5	X				
21	16559	2750	5	30	0.5	X				
22	16560	6000	X	40	0.5	X				
23	16561	5900	5	35	0.5	X				
24	16562	1.25%	5	105	X	X				
25	16563	8650	20	195	X	95				

Results in ppm unless otherwise specified
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663825

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
[illegible]	82J 08 884	27.1.82	KP 286b	13 OF 25

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Hg	Pb				
1	1[illegible]61	4.10%	X	530	X	X				
2	1[illegible]63	4.30%	5	50	0.5	X				
3	1[illegible]68	8400	10	40	0.5	X				
4	1[illegible]69	5150	10	50	X	X				
5	1[illegible]70	5100	5	25	X	X				
6	1[illegible]71	5300	5	30	X	X				
7	1[illegible]72	3000	5	35	X	X				
8	1[illegible]73	4950	5	40	X	X				
9	1[illegible]74	1.05%	30	50	X	X				
10	1[illegible]75	7500	15	50	X	5				
11	1[illegible]76	8450	20	30	0.5	X				
12	1[illegible]77	2400	X	25	X	X				
13	1[illegible]78	1.30%	X	45	X	30				
14	1[illegible]79	4250	X	40	X	X				
15	1[illegible]80	2250	5	30	X	X				
16	1[illegible]81	3150	X	20	X	X				
17	1[illegible]82	3050	X	15	0.5	X				
18	1[illegible]83	2250	X	15	X	X				
19	1[illegible]84	1650	X	10	0.5	X				
20	1[illegible]85	1550	5	15	0.5	40				
21	1[illegible]86	3100	5	10	X	5				
22	1[illegible]87	4650	10	25	0.5	10				
23	1[illegible]88	[illegible]	10	140	X	115				
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5				
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	X				

Results in ppm unless otherwise specified
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663826

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	14 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16591	6900	5	40	0.5	5				
2	16592	1.00%	X	115	X	15				
3	16593	2650	5	65	X	80				
4	16594	2800	5	55	0.5	60				
5	16595	2100	X	80	0.5	40				
6	16596	2300	X	95	X	225				
7	16597	3500	X	135	0.5	190				
8	16598	4600	10	285	1.0	55				
9	16599	3600	10	180	0.5	120				
10	16600	2.10%	15	1550	X	35				
11	16601	2.10%	20	1600	1.0	40				
12	16602	2.15%	5	140	0.5	10				
13	16603	8700	5	30	0.5	X				
14	16604	1.95%	10	50	0.5	5				
15	16605	3300	X	30	0.5	15				
16	16606	4250	X	55	X	25				
17	16607	2350	X	40	X	10				
18	16608	2300	X	15	X	5				
19	16609	2.65%	5	255	X	40				
20	16610	1.80%	10	160	X	30				
21	16611	1.85%	10	155	X	30				
22	16612	3.60%	5	220	X	10				
23	16613	4.45%	X	215	X	5				
24	16614	8.40%	115	4000	X	1050				
25	16615	4800	15	1200	X	1150				

Results in ppm unless otherwise specified
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663827

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	15 OF 20

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16616	3800	15	60	X	25				
2	16617	5.60%	15	270	X	95				
3	16618	3.80%	15	120	X	10				
4	16619	6.60%	10	810	X	65				
5	16620	3.75%	X	275	X	60				
6	16621	3.80%	X	290	X	65				
7	16622	2.20%	X	75	X	20				
8	16623	2.15%	15	85	X	15				
9	16624	2150	X	10	X	X				
10	16625	3600	X	20	0.5	X				
11	16626	1900	10	15	X	X				
12	16627	1.90%	X	95	X	5				
13	16628	2.40%	5	150	X	30				
14	16629	2.30%	5	155	X	X				
15	16630	7200	10	55	X	10				
16	16631	7050	10	50	X	5				
17	16632	4700	20	190	X	160				
18	16633	2000	15	25	X	X				
19	16634	2400	5	15	X	X				
20	16635	2.35%	15	205	X	45				
21	16636	4.10%	30	590	0.5	135				
22	16637	7500	135	3800	1.0	1500				
23	16638	3850	10	75	X	15				
24	16639	8450	10	160	1.5	100				
25	16640	3150	5	20	0.5	X				

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663828

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	16 OF 21

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16641	2650	X	15	X	X				
2	16642	7300	10	255	0.5	410				
3	16643	5800	10	210	0.5	300				
4	16644	3150	5	80	X	115				
5	16645	2350	5	60	0.5	30				
6	16645	3800	120	550	X	850				
7	16647	9600	25	480	0.5	560				
8	16648	1.75%	110	925	0.5	950				
9	16649	9900	10	165	0.5	40				
10	16650	1.45%	10	150	0.5	25				
11	16651	1.40%	5	140	0.5	30				
12	16652	1.80%	110	240	0.5	30				
13	16653	2.25%	10	610	0.5	125				
14	16654	1.50%	20	355	X	30				
15	16655	9850	15	285	X	35				
16	16656	3750	15	215	0.5	105				
17	16657	1.45%	10	160	X	30				
18	16658	1.00%	15	140	X	45				
19	16659	8400	15	230	X	300				
20	16660	1.85%	10	235	0.5	30				
21	16661	1.90%	20	120	0.5	35				
22	16662	2.00%	30	335	0.5	15				
23	16663	1.80%	10	340	X	25				
24	16664	2.25%	X	630	1.0	235				
25	16665	1.55%	X	440	0.5	30				

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
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663829

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	17 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16666	3.80%	15	440	X	185				
2	16667	2.70%	50	430	0.5	200				
3	16668	3.15%	10	1600	X	320				
4	16669	3.00%	15	750	0.5	370				
5	16670	1.95%	10	600	X	150				
6	16671	1.75%	X	995	X	150				
7	16672	2.80%	55	1350	X	280				
8	16673	3.05%	85	2450	1.0	330				
9	16674	1.95%	20	810	0.5	390				
10	16675	7.55%	X	1300	X	125				
11	16676	2.70%	25	3850	0.5	1100				
12	16677	1.75%	5	1200	0.5	295				
13	16678	7850	30	555	1.0	305				
14	16679	9500	X	1600	0.5	910				
15	16680	9000	75	4600	3.5	3650				
16	16681	8400	65	4650	3.5	3800				
17	16682	9950	50	135	1.5	60				
18	16683	8150	10	130	X	X				
19	16684	9200	10	185	0.5	355				
20	16685	6500	X	385	X	30				
21	16686	1.25%	10	255	0.5	70				
22	16687	6600	5	295	X	170				
23	16688	9850	10	715	0.5	300				
24	16689	5150	5	100	X	45				
25	16690	5450	5	80	X	20				

Results in ppm unless otherwise specified
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663830

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 834	27.1.82	KP 2860	18 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	16691	6200	5	60	X	15				
2	16692	5150	15	125	X	285				
3	16693	4450	5	55	X	20				
4	14202	1800	5	15	X	X				
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

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

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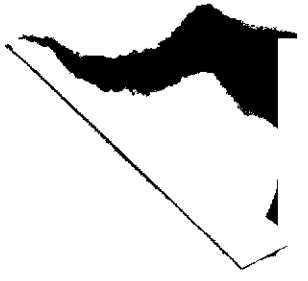
663831

VOYAGER 34



ANALABS

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663832

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

ANALYTICAL REPORT No. 83.1 88 984

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2888	K 584

DATE RECEIVED	RESULTS REQUIRED
26.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	9.3.82	3	23

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS17554-60 TS 17562-70 TS 17572-78	1				2			Cu Pb Zn Ag Fe	101	101

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 34
SOILS

STATE OF SAMPLES		
whole core	WC	
split core	SC	
cutting	CU	
rock	ROC	
soil	SO	
pulp	PU	
water	WA	
tissue	TI	
stream sediment	SS	
heavy mineral	HM	

ANALYSIS — PREPARATION			
perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Mo
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixture	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD	
atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TTN
other chemicals means	CHEM
miscellaneous	MISC
fluorescence	FLUOR
inductively coupled plasma	ICP

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

663833

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 984	9.3.82	KP 2888	1 OF 2

TUBE No.	SAMPLE No.		Fe	Cu	Zn	Ag	Pb			
1	17554		1200	5	10	0.5	20			
2	17555		2300	5	20	X	10			
3	17556		1950	X	10	X	10			
4	17557		3000	5	45	X	35			
5	17558		6200	X	15	X	5			
6	17559		1850	5	15	X	X			
7	17560		1750	5	10	X	X			
8	17562		1850	5	10	X	X			
9	17563		1750	5	10	X	X			
10	17564		3050	X	15	X	5			
[illegible]	17565		2800	X	20	X	5			
12	17566		5150	35	30	X	X			
13	17567		1100	5	20	X	X			
14	17568		1750	10	20	X	X			
15	17569		1600	10	15	X	X			
16	17570		4850	10	40	X	5	VOYAGER 34		
17	17572		2150	15	20	X	15	SOILS		
18	17573		2900	10	20	X	X			
19	17574		2350	10	20	X	X			
20	17575		5350	5	35	X	X			
21	17576		2400	5	20	X	X			
22	17577		1500	10	20	X	X			
23	17578		1800	10	20	X	X			
25										

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

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[redacted]

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663834

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 984	9.3.82	KP 2888	2 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb			
1	STD FS4	8.30%	310	760	X	95			
2	RPT TS 17554	1300	X	20	0.5	30			
3	RPT TS 17573	3100	5	25	X	X			
4									
5									
6									
7									
8									
9									
10									
[redacted]									
12									
13									
14									
15									
16							VOYAGER 34		
17							SOILS		
18									
19									
20									
21									
22									
23	DETECTION	50	5	5	0.5	5			
[redacted]	DIGESTION	101	101	101	101	101			
25	METHOD	101	101	101	101	101			

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

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417

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A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999
Telex AA92560

663835

ANALYTICAL REPORT No. 83.1 08 923

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
	K 588

DATE RECEIVED	RESULTS REQUIRED
12.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	23.2.82	3	249

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 17579-17827	1				2			Cu Pb Zn Ag Fe	101	101

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 34
SOILS

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

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663836

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 923	24.2.82	KP 2895	1 OF 11

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	17579	2250	10	15	0.5	5				
2	17580	2100	10	20	0.5	X				
3	17581	2050	10	20	1.0	X				
4	17582	2550	10	15	1.5	X				
5	17583	1200	10	20	1.5	X				
6	17584	1050	5	15	0.5	X				
7	17585	2150	5	20	1.0	X				
8	17586	1850	5	20	1.5	X				
9	17587	5600	5	405	1.0	690				
10	17588	6600	X	325	1.5	830				
11	17589	950	10	65	1.0	15				
12	17590	2600	5	25	5.0	X				
13	17591	2550	X	35	7.5	10				
14	17592	2250	15	40	9.0	10				
15	17593	3750	85	165	1.5	220				
16	17594	1900	20	25	1.0	25				
17	17595	3700	15	25	1.5	X				
18	17596	3450	5	15	1.5	X				
19	17597	1850	10	25	1.0	5				
20	17598	1900	5	65	1.0	10				
21	17599	2000	10	20	1.0	20				
22	17600	2250	10	20	1.0	X				
23	17601	2350	10	25	0.5	X				
24	17602	3400	10	20	1.5	X				
25	17603	5350	20	190	2.0	155				

VOYAGER B4
SOILS

Results in ppm unless otherwise specified
X = element present but concentration not within limits of measure
- = element concentration is below detection limit
* = element not determined

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663837

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 923	24.2.82	KP 2895	2 OF 11

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	17604	8750	15	1450	2.0	550				
2	17605	2.15%	15	3550	8.0	4150				
3	17606	1.65%	15	475	1.0	130				
4	17607	1.30%	20	145	0.5	10				
5	17608	4.25%	10	330	1.0	X				
6	17609	2650	35	660	1.0	110				
7	17610	3050	20	45	1.0	70				
8	17611	3050	25	45	X	70				
9	17612	5050	35	30	0.5	15				
10	17613	3200	30	65	X	160				
11	17614	7950	25	70	0.5	20				
12	17615	6850	15	95	X	X				
13	17616	1.15%	15	55	0.5	X				
14	17617	5500	30	65	0.5	5				
15	17618	1.25%	20	115	1.0	35	VOYAGER 34			
16	17619	2.45%	X	235	0.5	90	SOILS			
17	17620	5250	X	20	X	50				
18	17621	4850	X	20	0.5	50				
19	17622	4700	10	590	0.5	735				
20	17623	1800	5	25	X	85				
21	17624	1850	X	15	0.5	5				
22	17625	2850	5	30	0.5	X				
23	17626	3450	X	30	0.5	X				
24	17627	3150	X	35	0.5	10				
25	17628	2300	10	110	0.5	90				

Results in ppm unless otherwise specified
X = element present but not determined to required detection limit
- = element not present in sample to detection limit
N/A = not applicable

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663838

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 923	24.2.82	KP 2895	3 OF 11

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	17629	2350	5	50	0.5	30				
2	17630	1600	5	35	0.5	20				
3	17631	1400	X	30	0.5	15				
4	17632	2150	X	30	0.5	30				
5	17633	1200	5	20	0.5	X				
6	17634	1750	X	50	1.0	30				
7	17635	1350	5	20	0.5	X				
8	17636	1700	X	25	X	20				
9	17637	1850	X	15	0.5	X				
10	17638	1650	5	15	X	X				
[illegible]	17639	2500	X	30	X	10				
12	17640	800	X	15	0.5	10				
13	17641	750	5.	15	0.5	X				
14	17642	2550	5	20	X	X				
15	17643	1950	X	20	0.5	X	VOYAGER 34			
16	17644	2200	5	15	X	X	SOILS			
17	17645	1650	10	20	X	5				
18	17646	5650	5	15	X	45				
19	17647	7400	10	135	X	90				
20	17648	2000	X	20	X	10				
21	17649	1.30%	5	30	X	25				
22	17650	1500	5	10	X	X				
23	17651	1500	5	15	0.5	X				
[illegible]	17652	3250	X	80	X	5				
25	17653	3200	X	30	0.5	20				

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

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663839

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 923	24.2.82	KP 2895	4 OF 11

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	17654	3300	5	35	0.5	70				
2	17655	2050	X	20	0.5	X				
3	17656	4250	5	35	1.0	X				
4	17657	2200	5	25	1.0	X				
5	17658	1200	5	20	0.5	5				
6	17659	1950	5	25	2.0	5				
7	17660	1900	5	25	1.0	X				
8	17661	2100	X	30	1.0	5				
9	17662	4150	5	20	1.5	20				
10	17663	4200	5	15	1.0	X				
[illegible]	17664	1100	5	30	X	15				
12	17665	1450	10	45	0.5	55				
13	17666	950	10	20	0.5	40				
14	17667	2550	X	215	0.5	110				
15	17668	1750	5	20	X	X	VOYAGER 34			
16	17669	5350	5	25	0.5	15		SOILS		
17	17670	3750	5	30	0.5	15				
18	17671	3150	5	25	0.5	10				
19	17672	3250	10	30	0.5	X				
20	17673	3300	5	15	1.0	15				
21	17674	3000	10	40	0.5	20				
22	17675	6100	10	35	0.5	15				
23	17676	3.10%	5	755	0.5	35				
[illegible]	17677	6350	10	20	0.5	10				
25	17678	2150	5	15	1.5	20				

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

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663840

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 923	24.2.82	KP 2895	5 OF 11

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	17679	1.15%	5	95	1.0	135				
2	17680	6300	5	35	0.5	30				
3	17681	6400	X	35	0.5	40				
4	17682	3550	20	1800	0.5	1700				
5	17683	1.75%	10	380	0.5	95				
6	17684	2.05%	10	820	1.5	3050				
7	17685	1.40%	5	215	0.5	25				
8	17686	1.85%	X	615	1.5	795				
9	17687	4000	15	220	0.5	520				
10	17688	4750	5	710	1.0	2000				
[illegible]	17689	6900	5	25	0.5	20				
[illegible]	17690	3350	30	100	0.5	590				
13	17691	3650	55	155	1.0	725				
14	17692	3350	55	55	1.0	350				
15	17693	5000	5	1900	3.0	3950				
16	17694	2550	X	65	0.5	85				
17	17695	4100	10	360	1.0	180				
18	17696	1.95%	10	1500	0.5	1800				
19	17697	2950	5	170	1.0	70				
20	17698	3400	10	140	1.0	285				
21	17699	2750	X	25	X	5				
22	17700	2850	5	25	X	5				
23	17701	2950	X	20	X	5				
[illegible]	17702	4500	5	65	X	5				
25	17703	3750	10	30	X	X				

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

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663841

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 923	24.2.82	KP 2895	6 OF 11

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Mg	Pb				
1	17704	3650	5	25	X	X				
2	17705	6500	10	95	0.5	75				
3	17706	2450	5	50	X	X				
4	17707	2550	10	20	X	5				
5	17708	2950	X	20	X	X				
6	17709	1350	10	20	5.5	20				
7	17710	3450	10	35	1.0	X				
8	17711	3450	5	35	X	X				
9	17712	2300	5	80	0.5	X				
10	17713	1900	5	45	1.0	X				
11	17714	2400	X	10	X	X				
12	17715	2000	X	15	1.0	X				
13	17716	1900	X	15	1.0	X				
14	17717	2050	5	15	1.0	X				
15	17718	2200	X	20	0.5	X				
16	17719	1500	X	15	1.5	X				
17	17720	2250	10	20	0.5	X				
18	17721	2200	10	20	1.0	X				
19	17722	1200	5	15	X	X				
20	17723	1150	5	15	X	X				
21	17724	1600	5	15	X	5				
22	17725	2.50%	25	55	X	X				
23	17726	1.30%	25	70	X	5				
24	17727	2100	10	20	X	15				
25	17728	1600	5	15	X	5				

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

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663842

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 923	24.2.82	KP 2895	7 OF 11

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	17729	1400	X	15	X	X				
2	17730	2800	X	35	X	X				
3	17731	2600	X	30	X	X				
4	17732	1600	X	15	X	5				
5	17733	900	5	15	X	5				
6	17734	400	X	10	X	5				
7	17735	1750	5	15	X	X				
8	17736	650	5	10	X	10				
9	17737	1300	5	20	X	X				
10	17738	2750	5	30	X	5				
11	17739	2150	5	30	0.5	X				
12	17740	3650	X	30	1.0	X				
13	17741	3500	X	30	1.0	X				
14	17742	4800	5	65	0.5	X				
15	17743	2100	5	30	1.0	X				
16	17744	4700	X	305	0.5	250				
17	17745	3100	5	115	0.5	40				
18	17746	1000	X	15	0.5	X				
19	17747	3150	5	110	0.5	X				
20	17748	2550	10	70	X	X				
21	17749	4750	15	55	0.5	X				
22	17750	1.20%	10	215	0.5	20				
23	17751	1.25%	10	250	0.5	10				
24	17752	4150	5	40	0.5	X				
25	17753	1750	X	5	0.5	X				

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

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

663843

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 923	24.2.82	KP 2895	8 OF 11

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	17754	3150	5	250	0.5	5				
2	17755	3450	5	195	1.0	25				
3	17756	5800	5	60	0.5	X				
4	17757	4400	X	100	0.5	X				
5	17758	1.10%	X	155	0.5	X				
6	17759	1.30%	5	155	0.5	X				
7	17760	1.40%	5	205	0.5	X				
8	17761	1.40%	10	215	X	X				
9	17762	1.65%	5	235	0.5	5				
10	17763	1.90%	10	115	1.5	40				
[illegible]	17764	1.10%	5	65	X	X				
12	17765	3750	10	45	X	X				
13	17766	8000	10	30	0.5	X				
14	17767	5850	5	25	0.5	X				
15	17768	3950	5	15	X	X				
16	17769	2950	10	15	X	X				
17	17770	7350	5	20	X	X				
18	17771	7400	10	20	0.5	X				
19	17772	1.80%	10	80	1.0	30				
20	17773	3850	5	15	0.5	X				
21	17774	9300	60	300	0.5	325				
22	17775	1.35%	10	285	0.5	20				
23	17776	2.25%	10	765	1.0	15				
[illegible]	17777	3450	10	35	0.5	10				
25	17778	2450	10	30	1.0	X				

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

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

663844

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 923	24.2.82	KP 2895	9 OF 11

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	17779	1.15%	5	160	0.5	25				
2	17780	1500	10	200	2.0	285				
3	17781	1400	10	130	1.5	210				
4	17782	3950	5	145	0.5	790				
5	17783	1650	X	25	X	X				
6	17784	2550	X	35	X	X				
7	17785	650	X	10	X	X				
8	17786	1650	X	10	X	X				
9	17787	2800	5	50	X	5				
10	17788	1300	X	10	X	X				
[illegible]	17789	2150	5	30	X	X				
[illegible]	17790	1800	X	10	X	X				
13	17791	1700	5	10	X	X				
14	17792	1200	5	10	X	X				
15	17793	2250	X	15	X	X				
16	17794	1150	10	5	X	X				
17	17795	1100	10	10	X	X				
18	17796	1350	5	10	0.5	X				
19	17797	950	X	10	0.5	X				
20	17798	1850	5	25	0.5	X				
21	17799	2250	10	10	X	X				
22	17800	2.45%	20	35	0.5	X				
23	17801	2.35%	25	45	0.5	X				
[illegible]	17802	2400	20	35	0.5	100				
25	17803	3150	20	185	0.5	145				

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

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

663845

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 923	24.2.82	KP 2895	10 OF 11

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	17804	2000	40	35	1.0	15				
2	17805	1450	15	30	X	X				
3	17806	1550	20	155	X	90				
4	17807	2400	20	55	X	5				
5	17808	1550	15	25	X	X				
6	17809	1650	5	50	1.0	215				
7	17810	1880	25	80	1.0	75				
8	17811	2150	20	80	1.0	70				
9	17812	7850	20	35	0.5	X				
10	17813	6700	15	45	0.5	90				
[illegible]	17814	2650	15	60	0.5	45				
12	17815	2200	20	30	0.5	X				
13	17816	1450	25	35	0.5	X				
14	17817	2650	15	30	X	X				
15	17818	1400	15	30	X	X				
16	17819	2050	5	15	1.0	10				
17	17820	7300	10	35	1.0	X				
18	17821	5450	15	25	1.0	X				
19	17823	2550	15	20	0.5	X				
20	17824	3700	20	25	0.5	X				
21	17825	6350	10	25	1.0	X				
22	17826	1.80%	20	105	1.0	50				
23	17827	1.15%	5	40	1.0	X				
24										

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

AUTHORISED OFFICER

ANALABS

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

663846

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 923	24.2.82	KP 2895	11 OF 11

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Mg	Pb				
1	STD FS4	7.90%	310	780	1.0	110				
2	RPT 17579	2100	10	10	0.5	5				
3	RPT 17598	1700	10	65	0.5	20				
4	STD FS4	8.05%	315	790	1.0	115				
5	RPT 17619	2.50%	5	235	0.5	85				
6	RPT 17638	1550	5	15	0.5	X				
7	STD FS4	7.85%	315	760	1.0	110				
8	RPT 17659	2000	5	20	2.0	X				
9	RPT 17678	2200	5	15	1.5	25				
10	STD FS4	7.95%	315	780	1.0	95				
[illegible]	RPT 17699	2800	5	25	X	5				
[illegible]2	RPT 17718	2250	X	20	0.5	X				
13	STD FS4	7.85%	310	770	0.5	95				
14	RPT 17739	2050	10	30	0.5	X				
15	RPT 17758	1.15%	5	165	0.5	5				
16	STD FS4	7.85%	310	770	0.5	95				
17	RPT 17779	1.15%	5	160	0.5	25				
18	RPT 17798	1850	10	25	0.5	X				
19	STD FS4	8.20%	300	765	2.5	100				
20	RPT 17819	2000	10	20	1.0	5				
21										
22										
23	DETECTION	50	5	5	0.5	5				
[illegible]	DIGESTION	101	101	101	101	101				
25	METHOD	101	101	101	101	101				

Results in parts per million unless specified.
- = element present but concentration too low to measure
X = element concentration is below detection limit
* = element not determined

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Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

VOYAGER 34 Soils

ANALYTICAL REPORT No. 83.1 08 956

663847

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
	K 592

DATE RECEIVED	RESULTS REQUIRED
19.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	25.2.82	3	88

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS			
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	"	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
SO	TS 17828-915	1				2			Cu Pb Zn Ag Fe			101

RESULTS TO: As Above

RESULTS TO:

REMARKS

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

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VOYAGER SH Soils

ANALYTICAL DATA

663848

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 956	25.2.82		1 OF 5

RUSH No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	17828	950	10	20	X	X				
2	17829	3000	5	15	X	X				
3	17830	2500	10	15	X	X				
4	17831	2450	10	15	X	X				
5	17832	4500	10	20	X	X				
6	17833	2450	5	15	X	X				
7	17834	2900	5	20	0.5	X				
8	17835	2250	10	25	X	X				
9	17836	3100	65	1000	1.0	860				
10	17837	3750	20	65	X	X				
11	17838	4000	10	30	0.5	X				
12	17839	2700	5	25	X	20				
13	17840	3700	15	65	0.5	150				
14	17841	3750	15	60	X	150				
15	17842	6650	15	35	0.5	20				
16	17843	5700	10	25	X	25				
17	17844	2750	10	30	0.5	25				
18	17845	2450	5	30	0.5	10				
19	17846	1700	20	55	0.5	10				
20	17847	1.45%	10	65	X	25				
21	17848	6800	5	175	X	25				
22	17849	6550	10	20	0.5	10				
23	17850	5.95%	15	175	X	5				
24	17851	6.90%	10	195	X	15				
25	17852	1.10%	15	65	X	50				

Results in parts per million unless otherwise specified
T = element present but concentration too low for measure
X = element concentration is below detection limit
-- = element not determined

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VOYAGER SE4 Soils

663849

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 956	25.2.82		2 OF 5

TUBE No.	SAMPLE No.	Fe %	Cu	Zn	Ag	Pb				
1	17853	7000	10	25	X	25				
2	17854	9950	10	50	X	20				
3	17855	4.95%	10	95	X	30				
4	17856	3500	5	25	X	20				
5	17857	3450	X	40	X	10				
6	17858	3850	X	25	0.5	15				
7	17859	2500	5	45	X	25				
8	17860	3000	25	35	X	65				
9	17861	3350	20	55	X	95				
10	17862	2050	15	55	X	40				
	17863	4050	5	30	X	10				
	17864	3850	10	40	X	5				
13	17865	2350	5	15	X	X				
14	17866	3050	10	35	X	5				
15	17867	3300	15	30	X	10				
16	17868	1000	15	15	0.5	20				
	17869	2150	5	15	X	5				
18	17870	1350	5	15	0.5	15				
19	17871	1350	X	10	0.5	X				
20	17872	1600	X	15	0.5	10				
21	17873	2850	5	15	1.0	25				
22	17874	1350	X	15	0.5	X				
23	17875	2000	X	10	X	5				
	17876	2200	X	10	0.5	15				
25	17877	2700	X	15	X	X				

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

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

VOYAGER 34
SOILS

ANALYTICAL DATA

663850

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 956	25.2.82		3 OF 5

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	17878	1550	X	5	X	X				
2	17879	1600	X	10	X	5				
3	17880	4150	X	110	X	35				
4	17881	2700	X	90	X	35				
5	17882	1200	X	10	X	X				
6	17883	1250	X	5	X	10				
7	17884	4250	X	25	X	30				
8	17885	2600	X	15	X	50				
9	17886	1400	X	20	X	10				
10	17887	1350	5	10	X	5				
11	17888	1650	X	15	0.5	X				
12	17889	1400	X	10	X	15				
13	17890	1450	X	10	X	X				
14	17891	1300	X	15	X	5				
15	17892	1600	X	10	X	15				
16	17893	2850	X	25	X	10				
17	17894	3450	X	15	X	X				
18	17895	2250	X	15	X	10				
19	17896	2050	X	25	0.5	X				
20	17897	2150	X	25	0.5	5				
21	17898	1650	X	20	X	X				
22	17899	1550	X	25	X	20				
23	17900	1450	X	15	0.5	5				
24	17901	1800	X	10	X	10				
25	17902	1900	5	15	X	10				

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

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433

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ANALYTICAL DATA

663851

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 956	25.2.82		4 OF 5

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	17903	2100	X	225	0.5	30				
2	17904	2000	X	35	0.5	10				
3	17905	1600	X	20	X	10				
4	17906	4400	X	35	X	30				
5	17907	1200	X	10	2.0	10				
6	17908	2500	X	15	1.5	X				
7	17909	2850	5	10	1.0	X				
8	17910	2200	X	15	0.5	X				
9	17911	2200	X	5	1.0	X				
10	17912	2800	X	15	1.5	X				
11	17913	3900	X	15	1.5	X				
12	17914	2750	X	10	0.5	5				
13	17915	3000	10	95	0.5	10				
14										
15										
16										
17										
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21										
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24										
25										

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

AUTHORISED OFFICER B Dan

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ANALYTICAL DATA

663852

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
TS	83.1 08 956	25.2.82		5 OF 5

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	STD FS4	7.95%	310	755	0.5	100				
2	RPT 17828	1050	10	15	X	X				
3	RPT 17847	1.45%	10	60	X	20				
4	STD FS4	8.35%	305	780	0.5	105				
5	RPT 17868	950	15	15	0.5	15				
6	RPT 17887	1350	X	10	0.5	X				
7	STD FS4	8.30%	305	755	1.0	90				
8	RPT 17908	2350	X	15	1.5	X				
9										
10										
11										
12										
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14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
24	DIGESTION	101	101	101	101	101				
25	METHOD	101	101	101	101	101				

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

AUTHORISED OFFICER

Costean Chamber Tu

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Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560

663853

ANALYTICAL REPORT No. 83.1 08 880

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 2877	K 580

DATE RECEIVED	RESULTS REQUIRED
2.2.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	11.2.82	3	18

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	KR 9366-84		1	3	2 4				Cu Pb Zn Ag Fe	101	101

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19
COSTEAN 13400N.

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

AUTHORISED OFFICER B. [illegible]

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663854

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 880	11.2.82	KP 2877	1 OF 2

TUBE No.	SAMPLE No.	Fe	Cu	Zn	Ag	Pb				
1	9367	5400	10	130	X	15				
2	9368	5450	10	120	0.5	10				
3	9369	6800	15	85	X	20				
4	9370	6750	10	135	0.5	20				
5	9371	6400	15	85	X	30				
6	9372	5900	15	100	X	25				
7	9373	6850	15	110	X	30				
8	9374	5800	15	290	X	45				
9	9375	6500	10	230	X	10				
10	9376	5300	10	165	X	20				
11	9377	4300	10	175	X	10				
12	9378	4100	10	225	0.5	15				
13	9379	4700	15	370	0.5	30				
14	9380	4000	10	80	0.5	35				
15	9381	4150	10	450	X	140				
16	9382	3200	10	585	0.5	135				
17	9383	3200	10	365	1.0	95				
18	9384	3150	10	70	X	60				
19										
20										
21										
22										
23										
24										
25										

Results in ppm unless otherwise specified

T = element present but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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663855

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
KR	83.1 08 880	11.2.82	KP 2877	2 OF 2

TUBE No.	SAMPLE No.	Fe %	Cu	Zn	Ag	Pb				
1	STD FS4	7.50%	300	730	0.5	100				
2	RPT 9367	5250	15	130	X	15				
3										
4										
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17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	0.5	5				
24	DIGESTION	101	101	101	101	101				
25	METHOD	101	101	101	101	101				

Results in parts per million otherwise specified
T = # element present but concentration beyond capability
X = # element concentration is below detection limit
- = # element not determined

AUTHORISED OFFICER

ANALABS

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

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

663856

ANALYTICAL REPORT No. 83.1 08 842

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

Geopeko Ltd
PO Box 598
Devonport
Tasmania 7310

ORDER No.	PROJECT
KP 268	K 573

DATE RECEIVED	RESULTS REQUIRED
22.1.82	

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
	28.1.82	3	16

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS			
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE		REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	KR 9351-66		1		2				Cu Pb Zn Fe Ag		A1	AAS
				3	4				As Ba		A1	AAS
									Au			RG5

RESULTS TO: As Above

RESULTS TO:

REMARKS

VOYAGER 19
CHANNEL SAMPLES
COSTEAN 1306ON

STATE OF SAMPLES

whole core	WC
	SC
	CU
	Ro
	SOil
	PU
	Mill
	Ro
	SS
	Hea

ANALYSIS — PREPARATION

perchloric acid	A1	cold acid	CA
hydrochloric acid	A2	specific sulphide	SS
nitric acid	A3	other mixed acids	Mo
aqua regia	A4	alkaline attack	AA
nitric-perchloric	A5	volatilization	VO
HF mixtures	A6	ignition	IG
HF under pressure	A7	pressed powder (XRF)	PP
fusion	A8	glass fusion (XRF)	GF

ANALYSIS — METHOD

atomic absorption	AAS
x-ray fluorescence	XRF
spectrophotometry	SPEC
colorimetry	COL
chromatography	CHR
titration	TITR
other chemical means	CHEM
miscellaneous	
fluorimetry	
inductively coupled plasma	ICP

ALL SAMPLES DISPOSED OF

ANALABS

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

663857

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	83.1 08 842	3.2.82	KP 2868	1 OF

TUBE No.	SAMPLE No.		Fe	Cu	Zn	As	Ag	Ba	Au	Pb
1	KR 9351		5600	90	160	8	9.0	540	0.075	1950
2	KR 9352		7150	75	630	10	4.5	730	0.038	2450
3	KR 9353		6150	20	120	3	1.5	710	X	950
4	KR 9354		4600	30	1550	9	22	710	0.050	1.08%
5	KR 9355		6750	80	1.07%	17	58	700	0.100	1.66%
6	KR 9356		3000	1750	20.3%	200	770	4450	0.900	15.5%
7	KR 9357		4300	2800	25.4%	160	990	830	1.15	17.3%
8	KR 9358		2750	1500	20.0%	130	279	660	0.484	9.01%
9	KR 9359		9950	195	3.36%	46	92	860	0.212	2.25%
10	KR 9360		6500	45	1700	10	8.0	740	0.025	3550
11	KR 9361		1.25%	195	2100	16	16.0	660	0.028	3250
12	KR 9362		4700	10	175	3	3.0	400	0.012	555
13	KR 9363		4600	10	355	2	3.5	420	0.025	715
14	KR 9364		6100	30	1150	4	2.0	270	0.012	860
15	KR 9365		4400	15	310	6	2.0	650	0.012	340
16	KR 9366		5900	30	210	4	1.5	870	0.012	255
17										
18										
19										
20										
21										
22										
23										
24										
25										

VOYAGER 19
CHANNEL SAMPLES
COSTEAN 13060N

Results in [illegible] otherwise specified
T = element [illegible] but concentration too low to measure
X = element concentration is below designed limit
— = element not determined

AUTHORISED OFFICER

440

ANALABS

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

663858

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
				OF

TUBE No.	SAMPLE No.									
1										
2										
3										
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20										
21										
22										
23										
24										
25										

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

AUTHORISED OFFICER _____