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ABERFOYLE EXPLORATION PTY. LTD.
1 Greenhill Road, Wayville South Australia 5034
P.O. Box 84 Goodwood South Australia 5034
Telephone: 272 8866 Telex: AA82843

MARIONOAK RIVER
E.L. 22/74 TASMANIA
REPORT FOR THE YEAR ENDING
AUGUST, 1979

79-1380

OPEN FILE

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INTRODUCTION

This report describes exploration activities conducted during the summer programme of 1979, within E.L. 22/74, north-west of Rosebery, in the Silver Falls area. It follows the three reports by I.B. Freytag detailing the history, tenure, location, topography, access, exploration targets and results since February 1975.

The E.Z. Company, who hold the adjoining E.L. 12/72, completed a 4 wheel-drive access track to the Silver Falls region in December 1978. In February 1979 Aberfoyle Exploration commenced evaluation of the area. A programme of gridding, mapping, soil geochemistry and geophysics was completed within two months. No significant targets were delineated.

The grid established at Silver Falls consists of a 1600 metre base line (striking 010 magnetic) with 800 metre cross lines at 200 m intervals. Data from E.Z. drill core logs (Appendix C) and mapping was compiled at 1:2,500 scale.

OBJECTIVES

Exploration was designed to assess the acid volcanic stratigraphy along a strike extent of 1600 m. Gridding, detailed geological mapping at 1:2,500 scale, soil geochemistry and an I.P. survey were proposed to explore the area.

The exploration programme was designed to evaluate the Silver Falls prospect described by Mackintosh Reid (1918), where Pb-Zn mineralisation occurs in acid volcanics. The known disseminated mineralisation was considered unlikely to be economic but may have represented the partial remobilisation of a nearby hitherto undiscovered massive sulphide orebody.

STRATIGRAPHY

The Silver Falls region hosts a suite of Cambrian sediments and acid volcanics. On the western side of the grid a succession of predominantly shallow water sediments, in excess of 300 metres thick, is composed of quartzites, siltstones, shales and conglomerates. A welded, vitric, pyroclastic, acid volcanic unit of variable thickness overlies the sediments. In turn this is followed by a series of subaqeous, acid lithic tuffs and bedded to laminated grey-black siltstones, interstratified in a repetitive cycle.

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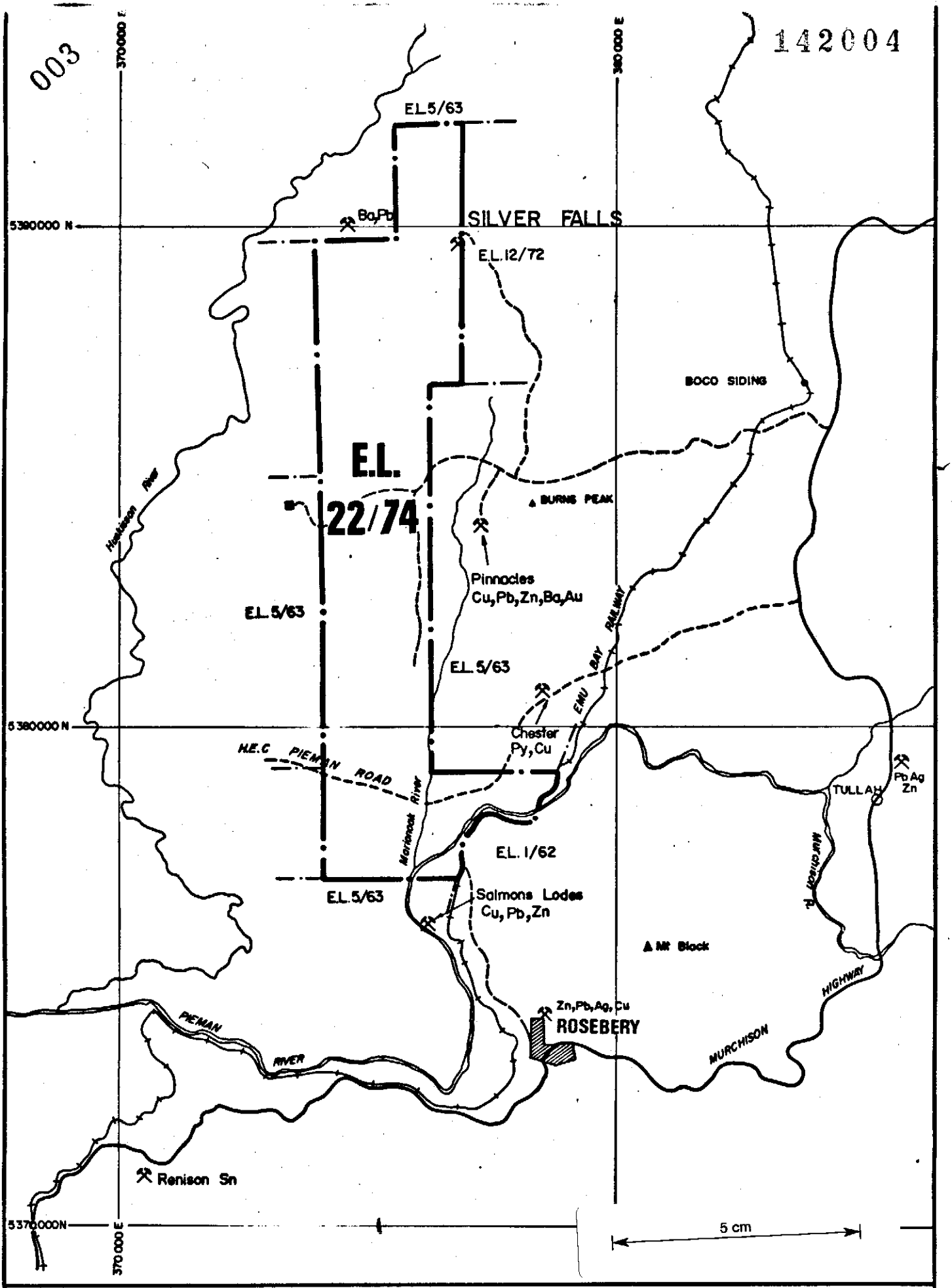

COMINCO EXPLORATION PTY LTD

Drawn: R.K.Y	NORTH WEST TASMANIA	Location code: K55/5+6
Traced:	MARIONOAK RIVER E.L.22/74	Scale: 1:100,00
Checked:	LOCATION PLAN	Date: December 1974
Revised: Date: 16/7/79		Plate No MOC 1

LITHOLOGIES

Undifferentiated Sediments

Sediments at the base of the sequence are undifferentiated, predominantly fine grained and extremely siliceous. Rock types include massive to laminated, fine grained to saccharoidal, siliceous and micaceous quartzites. Sandstones, siltstones, shales, homogeneous fine grained conglomerates and pisolitic siltstones constitute a minor portion of this lithology.

Proximal to the lower volcanic contact volcolithic sandstones occur sporadically throughout the quartzite. Rock fragments, a major clastic component, include pure and argillaceous cherts with subordinate basic and felsic intermediate lava clasts. Rare labile lithic clasts of oxidised pyrites are also observed.

Welded Acid Pyroclastics

The volcanic pile is essentially a lithic - vitric - crystal ignimbrite of dacitic to rhyolitic affinities. Partially molded fragments with contorted and uniform flow banding microtextures are suggestive of autobrecciation processes during deposition.

Although texturally uniform this unit can be mineralogically subdivided into three units defined by the extent and type of alteration. (Mineralogies are listed in order of abundance).

a) Weakly Altered Volcanic

Microcrystalline quartzo-feldspathic material + Oligoclase + Albite + Quartz ± Sericite ± Carbonate (calcite-dolomite). (Appendix A, sample 201602).

b) Incipiently Altered Volcanic

Sericite + Microfelsitic albite + Quartz + Albite + Carbonate (ankerite) ± Galena ± Sphalerite ± Chalcopyrite ± (?) Tetrahedrite ± Fe sulphide. (Appendix A, samples 203960 and 201608).

c) Pervasively Altered Volcanic

Amorphous Silica + Sericite. (Appendix A, sample 203961).

Subaqeous Lithic Tuff

The medium to coarse sandy lithic tuffs are rhyolitic in nature and are composed of angular to sub-rounded rock/crystal fragments. Although displaying a predominantly volcanic content, the non pyroclastic component and soft sediment deformation features attest to its subaqeous deposition. Pervasive and selective chloritization is characteristic of this unit. Rare pyrite clasts, up to 1 cm in diameter have been noted.

Siltstone

Bedded to well laminated and seldom micaceous siltstones and rare fine grained shales. Minor lateral facies equivalents include quartz rich sandstones and fine grained micaceous quartzites.

Porphyritic Microgranite

This rock type is considered to be a minor intrusive, possibly Devonian in age. Quartz, albite and K-feldspar phenocrysts set in a weakly sericitised matrix consisting of medium grained quartz, albite and semi-psuedomorphs after biotite.

STRUCTURE

The stratigraphy at Silver Falls dips moderate to steeply toward the east and although no younging direction has been established, the sequence is considered to be upright. The area has undergone at least one deformation rendering the sediments assymmetrically folded. The sparsity of fold structures and sporadic nature of the poorly defined axial plane schistosity concur with a mild deformation history.

The lower contact between the ignimbrite and the undifferentiated sediments is believed to be faulted. Topographic and geological evidence supports this contention:

- A near vertical rock face expresses the contact at the Silver Falls.
- It is the only contact defined by creeks.
- A weak schistosity striking N-S parallels the contact at the Silver Falls.

This feature represents the possible extension of the Owen Thrust (Campana), a regional meridional fault structure.

MINERALISATION

The incipiently altered unit of the welded ash-flow pile is host to base metal mineralisation now considered to be minor vein disseminations and aggregates of galena, sphalerite, chalcopyrite, pyrite and (?) tetrahedrite, associated with quartz - carbonate impregnations. The mineralisation appears to be shear controlled. The mineralised zones are gradational (over approximately 1.5 metres) to the barren, weakly altered ignimbrite.

Evaluation of the Silver Falls area arose from both direct and conceptual considerations. The disseminated mineralisation may have represented the partial remobilisation of a pre-existing volcanogenic orebody.

The present study identified:

a) An intrusive microgranite: (potential heat source for the generation of epigenetic hydrothermal fluid activity).

b) A possible extension of the Owen Thrust: (providing access for mineralising solutions).

Both the above suggest the Silver Falls mineralisation is related to hydrothermal activity of Devonian age.

While regarded as important, assessment of the regional significance of the inferred fault was restricted by the detailed nature of the survey.

Nevertheless the task remains academic until the relative ages of the Owen Thrust and mineralisation can even establish the possibility of a relationship.

Little can be construed from the occurrence of pyrite fragments in volcanics and sediments both above and below the ignimbrite pile. Although a volcanogenic source is suggested, its location, host and extent are purely conjectural.

SOIL GEOCHEMISTRY

Soil samples, essentially of the C horizon, were taken by hand auger at depths of up to 80 cm. The samples were collected at 10 m intervals over the entire grid area.

Analyses were obtained for Cu, Pb and Zn using A.A.S. and subsequently plotted and contoured (Plate MOC 15).

Interpretation of Log Cumulative Frequency

Plots of Log Cumulative Frequency enabled suitable contour values to be chosen. (Appendix B).

Element	Contour Values	
Cu	40	60
Pb	500	1000
Zn	200	400

The survey outlines the spatial dimensions of the known mineralisation. Galena, the most abundant disseminated sulphide, is accompanied by minor sphalerite and rare chalcopyrite and pyrite.

The survey revealed no further zones of interest within the confines of the Silver Falls grid. Indeed, even ignoring the anomalous thresholds set by the disseminated mineralisation, the analyses for those areas within the thoroughly altered ignimbrite do not exceed background.

I.P. GEOPHYSICS

Using a 50 m dipole spacing, a dipole - dipole I.P. survey, immediately followed the geochemical sampling. Nine cross lines were surveyed at 200 m intervals. The data is plotted on pseudo cross sections.

Plan presentation of both percentage frequency effect and resistivity was accomplished by averaging the data for the first three dipole separations at each receiver position. Three dipole separations were averaged to remove noise often evident in n = 1 data plus obtaining some response from "topped-off" anomalies. Plates MOC 16 and MOC 17 show contour plans of Percentage Frequency Effect and Apparent Resistivity respectively.

The I.P. data was interpreted by S. Webster, Senior Geophysicist. The survey highlights a contact phenomenon in the northern half of the grid. A frequency effect maximum of 4 percent at 5150E on line 4100E is considered weakly anomalous. The significance of this zone is doubtful due to the coincidence of a topographic high.

CONCLUSION

At Silver Falls disseminated base metal mineralisation is known to persist for at least 55 metres vertical extent (Appendix C, E.Z. Diamond Drill Hole Logs).

The search for massive sulphides identified a thoroughly altered horizon within an ignimbritic pile. However the lack of geochemical or significant geophysical response in this zone suggests there is little likelihood for the local occurrence of a massive sulphide deposit within the gridded area.

Although little incentive is offered by the present study the potential of the thoroughly altered ignimbrite cannot be denied as only a portion of the horizon has been explored.

The known disseminated mineralisation at Silver Falls is considered to be sub-economic. It appears to be related to epigenetic hydrothermal solutions located in acid volcanics adjacent to a possible extension of the Owen Thrust.

REFERENCES

Freytag, I.B.	(1976)	Exploration Licence 22/74 Marionoak River Area. Progress Report on Exploration to July, 1976.
Freytag, I.B.	(1977)	Exploration Licence 22/74 Marionoak River Area. Progress Report on Exploration for the year ending July, 1977.
Freytag, I.B.	(1978)	Exploration Licence 22/74 Marionoak River Area. Progress Report on Exploration for six months ending February, 1978.

SIGNED: _____

J.R. Taylor,
Geologist.

ENDORSED: _____

K.R. Yates
Manager - Outside Exploration.

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142011

APPENDIX A

PETROLOGY REPORT

The following CMS report (79/2/4) consists of eight detailed rock descriptions from samples taken in and around the Silver Falls grid.

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REPORT CMS 79/2/4

Petrological Descriptions

201 602 (T.S. 26686) K-stain very weakly positive.
This is an altered and weakly sheared volcanic of dacitic to sodic rhyolitic character. It is interpreted on relict textural grounds as a lithic-vitric-crystal tuff and conceivably ignimbritic.

Frequent crystals and crystal fragments of oligoclase and albite (mean 1 mm, to 3 mm) are accompanied by subordinate, variably resorbed quartz crystals and fragments. A few of these features are enclosed in poorly resolved lithic clasts (750 μ - 4 mm), but the majority are discrete within an altered microcrystalline quartzo-feldspathic matrix with sparse but characteristic relict microshard textures. The rock is weakly banded (e.g. in distribution of feldspar grains) and exhibits a faint preferred orientation suggestive of an ash flow mode of origin. Problematically, the finer detail has been obliterated.

Feldspars are weakly sericitised and carbonate-stained with some development of secondary albite. The matrix is similarly altered with variably developed sericitisation accompanied by patchy carbonate (calcite-dolomite) and frequent small patches of secondary albite (locally with inherited shardy microtextures). A faint but more or less pervasive pigmentation with ultrafine opaques (?carbonaceous) is evident and sheared veinlets of sericite, carbonate or rarely quartz occur sporadically.

203 962 (T.S. 26687) K-stain positive.
This is an altered and stressed tuff of rhyolitic affinities.

The coarse, "sheared pebbly" fabric (hand specimen) is poorly resolved in thin section, where the rock is distinctly sandy textured. It is poorly to moderately sorted in the fine to medium sand range with sporadic coarse sand- to pebble-sized megaclasts. This sandy framework is vaguely bedded, comprises 60-80 % of the rock, and consists largely of angular albite grains with slightly subordinate angular to subrounded quartz and accessory sanidine-anorthoclase (inverted, partly albitised). The megaclasts (to 2 cm +) consist of heavily altered rhyolite, porphyritic (quartz, albite, sanidine-anorthoclase phenocrysts), and with a pervasively chloritised groundmass (probably glassy originally). These are the darker, angular chloritic patches seen in hand specimen.

The sparse matrix consists of microcrystalline albite with subordinate chlorite with a rather patchy distribution and traces of quartz

and hydromuscovite. Clastic quartz and (particularly) albite may be overgrown. Locally, the matrix exhibits devitrified/albitised shardy microtextures.

Whilst the bulk of clastic debris is clearly pyroclastic, some quartz grains show rounded detrital shapes. Similarly, the shards appear to have been mildly abraded. Thus, there is some evidence of re-working, although there are no tangible non-volcanic components. Deposition was evidently subaqueous.

The rock has been stressed. The distribution of chlorite in crude lenses (hand specimen)probably reflects weakly boudinaged bedding.

Partly oxidised fine-grained pyrite occurs as single grains and clusters within the chloritised rhyolitic clasts, where it is accompanied by traces of ?bornite (or Cu-sulphide, possibly after chalcopyrite).

961
203 ~~694~~ (T.S. 26688) K-stain negative.
This quartz-sericite rock represents a thoroughly altered fragmental rhyolite.

The rock consists virtually entirely of microcrystalline quartz and subordinate random to incipiently orientated sericite. Occasional volcanic quartz crystals/crystal fragments persist and feldspar crystals are represented by sericitic semi-pseudomorphs, many of which have been leached to form cavities. These features are partly enclosed in angular lithic clasts (500 μ - 1 cm +), poorly-sorted and partly moulded on to one another. A few are identified as porphyritic lava with felsitic or locally perlitic devitrification textures. Others are finely flow-structured types, occasionally with faint relict shardy textures. A few could be interpreted as collapsed pumice. Many are featureless due to the pervasive silicification and sericitisation. The sparse matrix phase is relatively siliceous and featureless, but may locally exhibit faint shardy microtextures.

Thus the rock consists essentially of clasts of lava and vitric tuff in a partly tuffaceous matrix. It may represent a flow- or auto-brecciated ignimbrite, but full interpretation is negated by obliteration of the more critical textural details.

203 955 (T.S. 26689) K-stain virtually negative.
This is an altered, stressed and partly weathered porphyritic microgranite, representing a marginal or minor intrusive phase (e.g. a dyke).

Sparsely disseminated phenocrysts (to 3 mm) comprise stressed/ partly recrystallized quartz with embayed margins, incipiently sericite-stained albite, and completely kaolinised ?K-feldspar represented partly by cavities. These features are enclosed in a weakly sericite-stained medium-grained (mean 250 μ) granitic-textured groundmass of albite and quartz with accessory leucoxenised opaques and sparse sericitic semi-pseudomorphs of ?biotite flakes.

Occasional semi-continuous quartz veinlets are present and these predate the stress. Kaolin aggregates are locally stained with oxidised fine-grained pyrite. Elsewhere, Fe-staining represents degraded fine-grained carbonate (?siderite) representing an accessory alteration phase.

203 960 (T.S. 26690) K-stain negative.
This altered rhyolite is reasonably interpreted as a flow-brecciated ignimbrite and thus appears related to 203 691.

The rock consists essentially of stressed quartz and sericite-stained/ albitised feldspar crystals/crystal fragments (mean 350 μ to 1.5 mm) disseminated throughout variably sericite-stained microfelsitic albite and quartz with patches of ankeritic carbonate. A contorted and fragmented microscale flow-banding is evident and, on close inspection, relict shard textures are more or less ubiquitous. In detail, the fabric comprises angular to cuspate clasts ranging from a few hundred microns to in excess of 1 cm diameter, closely packed and partly moulded onto one another. This is typical of ignimbrites which are autobrecciated in the later stages of flow and can be compared with flow breccias developed in viscous acid lavas.

Thin discontinuous veinlets of carbonate, sericite and quartz are common and predate a phase of incipient shearing. Sparse, fine-grained patches (to 1 mm, typically < 250 μ) of sulphide (galena, Fe-sulphide, ?tetrahedrite) are associated with quartz-carbonate impregnations. Many veinlets are stained with ultrafine ?carbonaceous matter.

201 601 (T.S. 26691) K-stain weakly positive.
This altered and stressed tuff is rather similar to 203 962 but is finer-grained and more extensively albitised.

The weakly bedded sandy framework is poorly sorted in the silt to medium sand range with occasional coarse sand-sized (i.e. > 1 mm) megaclasts. The main constituents are angular rock fragments and feldspars (sim. 203 963), but traces only of sanidine-anorthoclase with subordinate quartz. Silt- to fine sand-sized albitised ?shards are common in places. Lithic clasts are similarly albitised and/or chloritised and are generally featureless, although some are clearly porphyritic rhyolitic types.

An accessory non-pyroclastic component comprises sparsely disseminated silt- to fine sand-sized pelitic rock fragments (shale, carbonaceous shale, silty shale), clastic white mica flakes, and rare, well-rounded zircons. The matrix consists of chlorite-stained microcrystalline albite with accessory quartz and appears to represent altered pelitic ash material. Subaqueous deposition appear likely and there is some evidence of slumping.

The sectioned area includes portion of a 1 cm diameter angular spongy aggregate of pyrite. This feature is extensively oxidised, but appears to represent a selectively altered (chloritised) megaclast similar to those in 203 962.

201 608 (T.S. 26692) K-stain weakly positive.
This is a flow- or autobrecciated ignimbrite of similar paragenesis to 203 960.

Texturally, the rock consists of randomly sized and orientated angular to cuspate eutaxitic microtextured clasts (500 μ - 5 mm) in a similarly textured, faintly flow-banded matrix. Clasts comprise around 35 % of the rock and are locally moulded onto one another. A sparse crystal component of quartz and alkali feldspar (mainly albite, traces partly corroded/albitised K-feldspar) is disseminated throughout the clasts and enclosing matrix. Partly obliterated shard microtextures are semi-pervasive.

Alteration is closely analogous to that in the previous specimen, comprising a quartz/albite/sericite assemblage with patchy ankeritic carbonate partly associated with quartz- and sericitic veinlets. The rock carries minor traces of sulphide (oxidised pyrite, traces ?tetrahedrite) and is weakly stained with ?carbonaceous matter (too fine for positive identification in thin-section.

203 951 (T.S. 26693) K-stain negative.
This rock is a weakly volcanomict lithic sandstone.

The framework (75-85 % of rock) is poorly sorted in the fine- to coarse sand range with bedding defined by a marked dimensional preferred orientation and weak grading. Rock fragments are the main clastic component (approx. 75 % of framework),particularly chert (pure and argillaceoustypes) with subordinate lava clasts (basaltic and felsic intermediate types), and pelitic varieties (shale, carbonaceous shale, silty shale, argillaceous siltstone/fine sandstone) with incipient, regionally metamorphic textures. These are accompanied by subordinate angular to subangular clastic quartz (volcanically derived in part, total 15-20 %), accessory albite and traces of mica (muscovite, chloritised biotite). There is a sparse detrital heavy mineral assemblage of opaques, leucoxenic semi-opaques and rare rutile, zircon and chromite.

The matrix consists of cherty to microgranular quartz aggregates, weakly but pervasively stained with chlorite. The rock has been stressed. Minor oxidised, fine-grained pyrite occurs within the matrix and variably altered (chloritised) labile lithic clasts.

D. Cowan, B. Sc.

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142017

APPENDIX B

LOG CUMULATIVE FREQUENCY PLOTS FOR GEOCHEMICAL DATA

Computation data and accompanying graphical representation for the Log Cumulative frequency of the geochemical analyses. Cu, Pb and Zn are plotted individually.

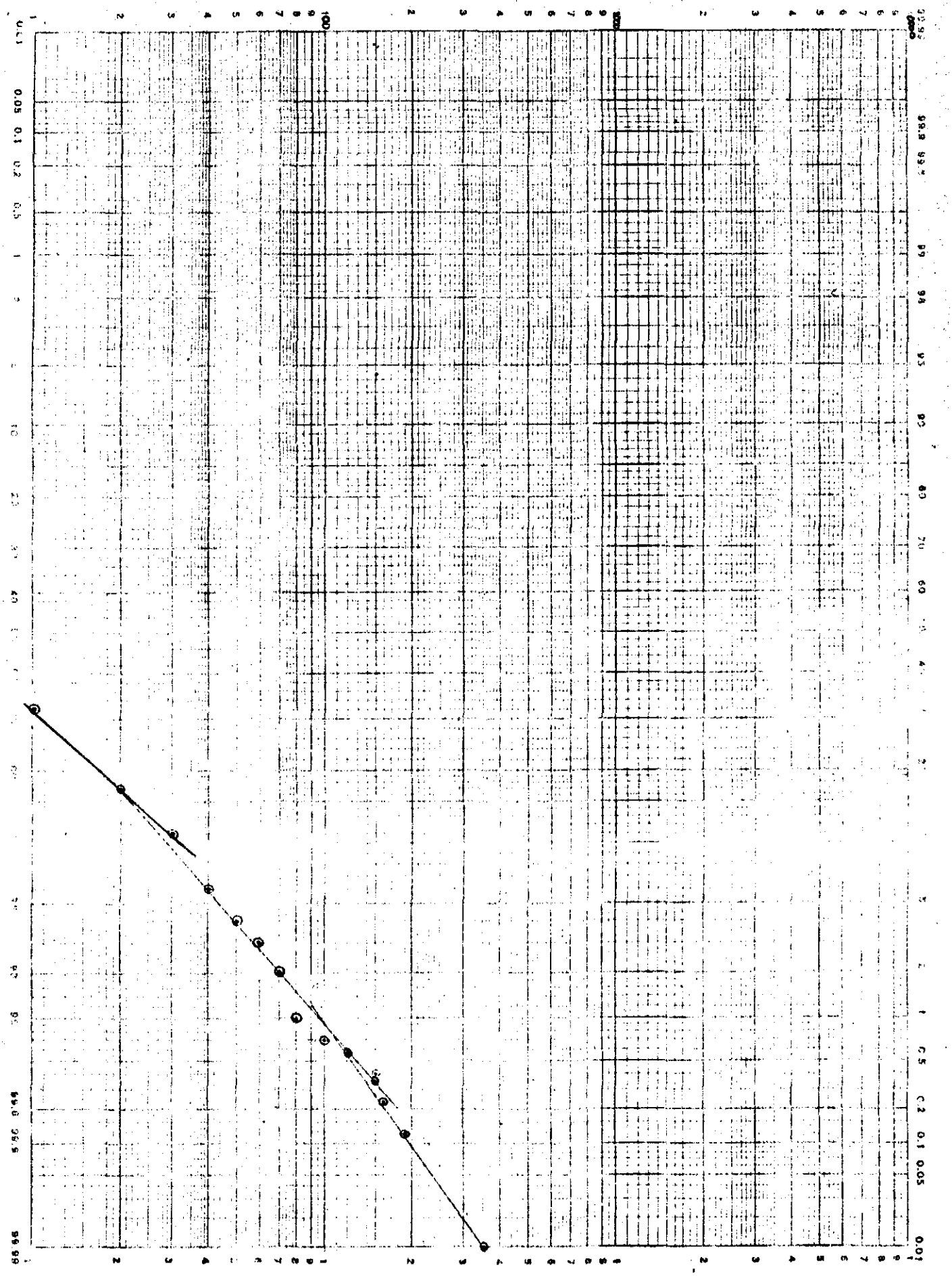
GORMACK GRAPH PAPERS ... URCH N.Z. ... No. 1223 ... Millimetre Logarithmic

142018

Cu
017

MARIONOAK GEOCHEMISTRY DATA
— FROM SILVER FALLS GRID

LOG PROBABILITY PLOT OF CUMULATIVE FREQUENCY FOR Cu



018

142019

Project Marionoak - Silver Falls Grid Date 30·4·79

Job Type Plotting log probability of Comulative Frequency for Cu.

Operator S Monday.

Class interval	Total	Cumulative Total	Cumulative %
1 - 10	602	602	68·25
11 - 20	132	734	83·22
21 - 30	55	789	89·45
31 - 40	42	831	94·22
41 - 50	22	853	96·71
51 - 60	10	863	97·84
61 - 70	6	869	98·52
71 - 80	5	874	99·09
81 - 90			
91 - 100	2	876	99·32
101 - 110			
111 - 120	1	877	99·43
121 - 130			
131 - 140			
141 - 150	2	879	99·65
151 - 160	1	880	99·77
161 - 170			
171 - 180			
181 - 190	1	881	99·88
191 - 200			
201 - 210			
211 - 220			
221 - 230			
231 - 240			
241 - 250			
251 - 260			
261 - 270			
271 - 280			

MP 9/78

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142020

Project Marioncak - Silver Falls Grid Date 30·4·79

Job Type Plotting Log Probability of Cumulative Frequency for Co.

Operator S Monday

			Total		Cumulative Total		Cumulative %
	281 - 290						
	291 - 300						
	301 - 310						
	311 - 320						
	321 - 330						
	331 - 340						
	341 - 350						
	351 - 355	1	1		882		100.

MP 9/78

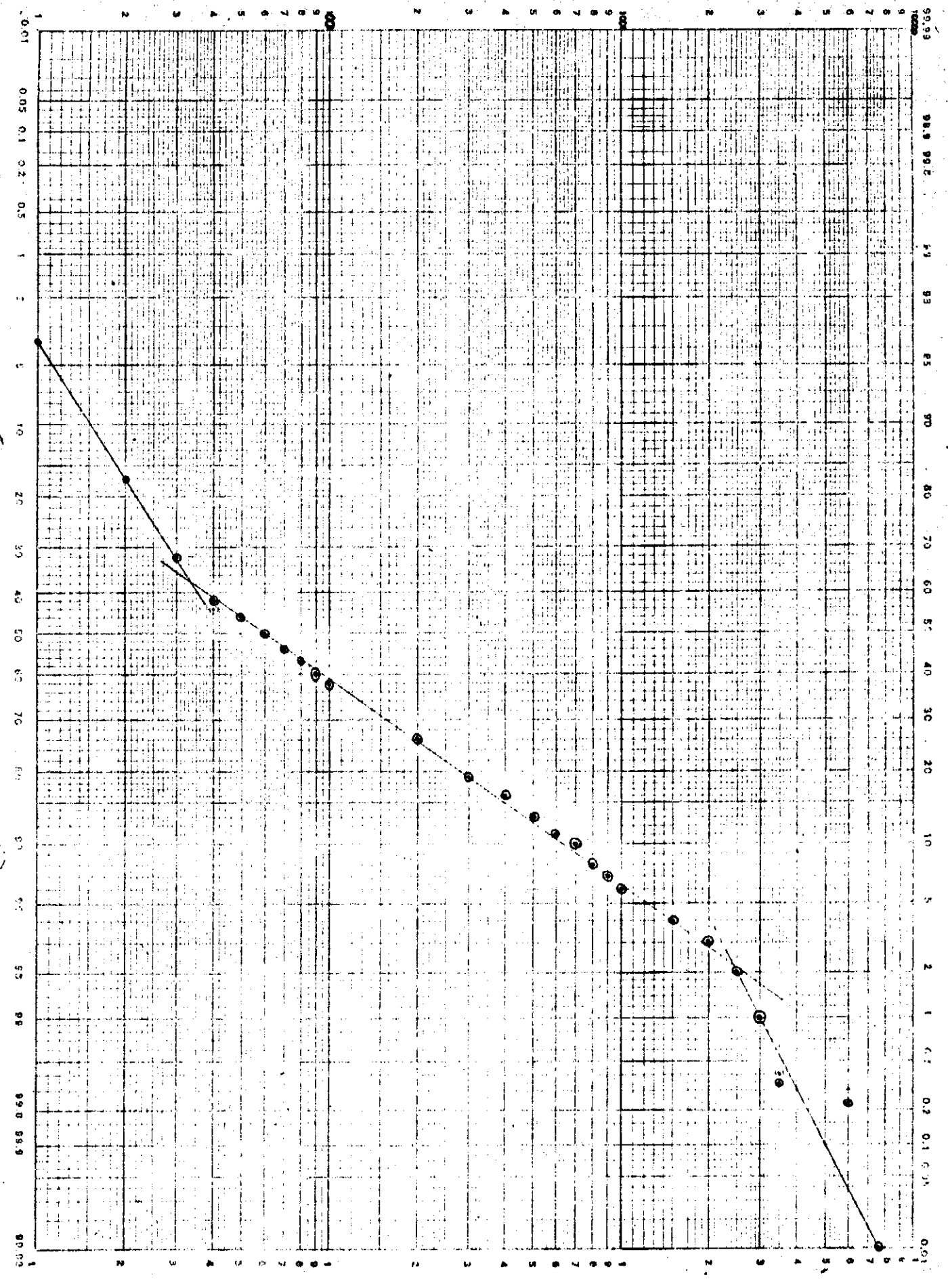
MACK GRAPH PAPERS ... No. 1223 Probability x 3 cycle log

Pb. 020

MARIONOAK GEOCHEMISTRY DATA — FROM SILVER FALLS GRID

142021

LOG PROBABILITY PLOT OF CUMULATIVE FREQUENCY FOR Pb



021

142022

Project Marionoak Silver Falls grid · Soil Sample Date 30 · 4 · 79

Job Type Plotting Log Probability of Comulative frequency for Pb.

Operator S Monday.

Class interval.	Total	Comulative Total	Comulative %
1 - 10	33	33	3 · 74
11 - 20	122	155	17 · 57
21 - 30	100	255	31 · 02
31 - 40	98	353	42 · 94
41 - 50	53	406	46 · 03
51 - 60	36	442	50 · 11
61 - 70	36	478	54 · 19
71 - 80	27	505	57 · 25
81 - 90	25	530	60 · 09
91 · 100	20	550	62 · 35
101 - 200	109	659	74 · 72
201 - 300	58	717	81 · 29
301 - 400	24	741	84 · 01
401 - 500	27	768	87 · 07
501 - 600	19	787	89 · 23
601 - 700	11	798	90 · 47
701 - 800	16	814	92 · 29
801 - 900	7	821	93 · 08
901 - 1000	5	826	93 · 65
1001 - 1500	28	854	96 · 82
1501 - 2000	8	862	97 · 73
2001 - 2500	3	865	98 · 07
2501 - 3000	9	874	99 · 09
3001 - 3500	5	879	99 · 66
3501 - 4000			
4001 - 4500			
4501 - 5000			
5001 - 5500			

MP 9/78

022

142023

Project Marionoak Silver Falls Grid. Date 30.4.79

Job Type Plotting log. Probability of comulative frequency for Pb..

Operator G Munday.

Class interval		Total		Comulative Total		Comulative %
5501-6000		1		880		99.77
6001-6500						
6501-7000						
7001-7500		2		882		100

MP 9/78

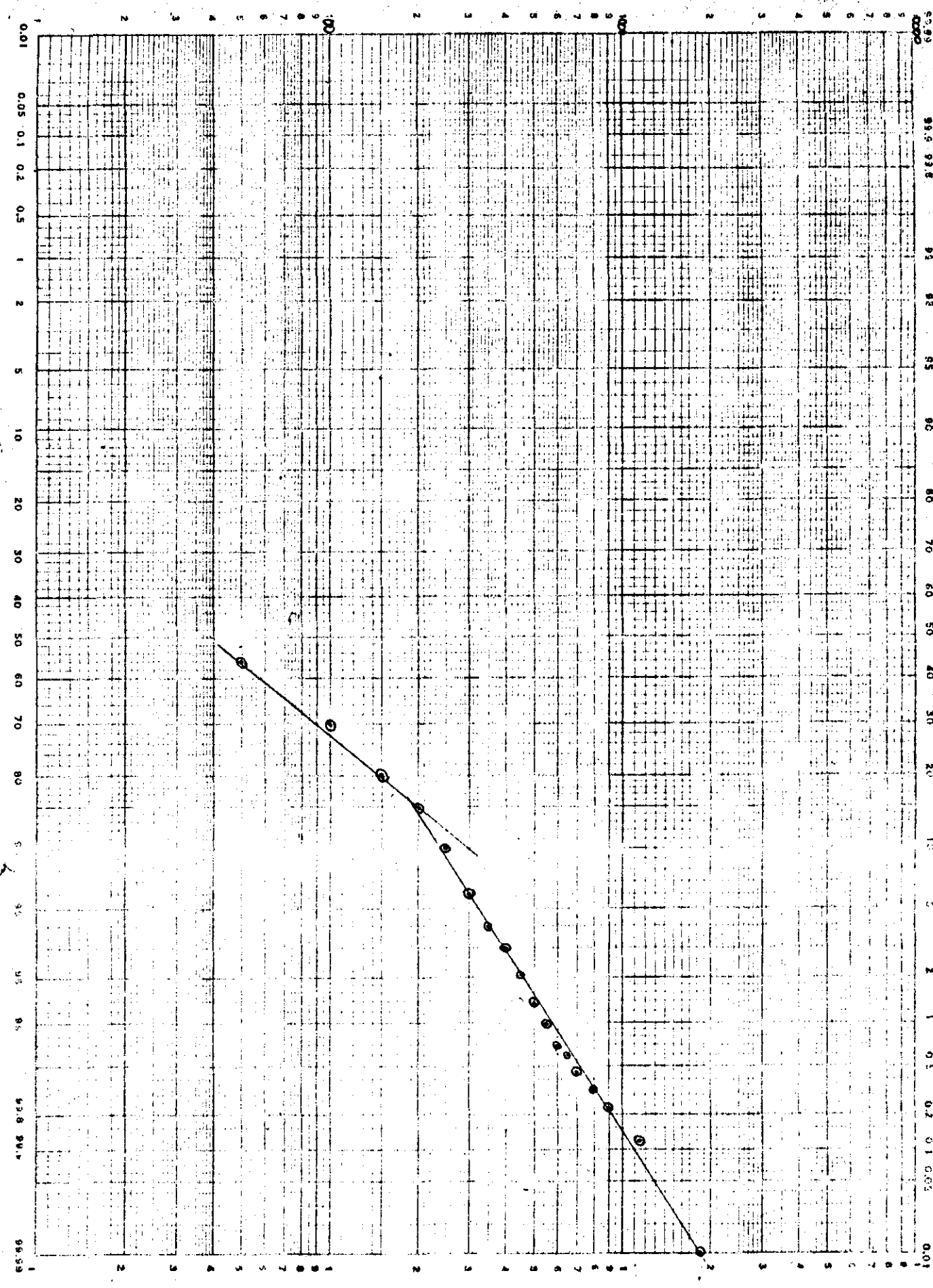
...MACK GRAPH PAPERS LTD. ...UKOH N.Z. ... No. 1223 Probability/log 3 cycle log ...

1420 24

023 Marionoak Geochemistry Data

- From Silver Falls Grid

Log Probability Plot of cumulative frequency for Zn.



024

142025

Project Marionoak. Silver Falls grid - Soil Samples. Date 30·4·79

Job Type Plotting Log Probability of cumulative frequency for Zn.

Operator J Munday

Class interval		Total		Cumulative Total		Cumulative %
1 - 50		496		496		56·23
51 - 100		128		624		70·75
101 - 150		83		707		80·16
151 - 200		51		758		85·94
201 - 250		42		800		90·70
251 - 300		30		830		94·10
301 - 350		18		848		96·14
351 - 400		9		857		97·16
401 - 450		7		864		97·959
451 - 500		6		870		98 ·64
501 - 550		4		874		99·093
551 - 600		2		876		99· 32
601 - 650		1		877		99 · 43
651 - 700		1		878		99 · 55
701 - 750						
751 - 800		1		879		99·66
801 - 850						
851 - 900		1		880		99·77
901 - 950						
951 - 1000						
1001 - 1050						
1051 - 1100						
1101 - 1150		1		881		99·88
1151 - 1200						
1201 - 1250						
1251 - 1300						
1301 - 1350						
1351 - 1400						

MP 9/78

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142026

Project Marioncak. Silver Falls Grid. Date 30.4.79

Job Type Plotting Log Probability of Comulative Frequency for Zn.

Operator J Monday

	Class interval		Total		Comulative Total		Comulative %
	1401 - 1450						
	1451 - 1500						
	1501 - 1550						
	1551 - 1600						
	1601 - 1650						
	1651 - 1700						
	1701 - 1750						
	1751 - 1800						
	1801 - 1850		1		882		100.

MP 9/78

142027

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APPENDIX C

DRILL LOGS FROM A PROGRAMME BY THE ELECTROLYTIC ZINC COMPANY OF AUSTRALIA LTD.

A record of four drill cores from the Silver Falls area. Taken from a prospect report by The Electrolytic Zinc Company of Australia Limited.

PROSPECTS

027

Electrolytic Zinc Company of Australasia Limited

WEST COAST DEPARTMENT

Hole No. PP62

RECORD OF DIAMOND DRILL CORES

See 2069

Sheet No. 1

SPECIFICATIONS

Mine: Silver Falls
Location: Surface
N Coord.: 21406 N
E Coord.: 20475 E
R.L.: 1094'
Direction: 197° Sil. F. Grid
Angle: -30°
Length: 164'
Size Hole: XRB

SURVEY DATA

Footage	Dir'tion	Angle	Footage	Dir'tion	Angle

OBJECT: To test the mineralised outcrop below the surface.

RESULT: No surveys

PLOTTED

40 Plan
X.S.
L.S.
100 Plan
X.S.
L.S.

PROGRESS				Description			ANALYTICAL DATA								DIPS	
Date	Depth	Advance	Amount of Core	From	To		From	To	Amount of Core	Pb %	Zn %	Cu %	Ag ozs	Au dwts.	Fe %	Footage	Angle
						ROCK											
5	4	4	1 4	0	55	Medium grained grey coloured grit	113'0"	115'0"	0'6"	N	N	0.02	N	N			
6	30	26	25 3				115'0"	130'0"	4'4"	N	N	0.02	N	N			
12	46	16	3 6	55	164	Light grey silicified agglomerate with occasional specks and splashes of galena	130'0"	137'6"	3'1"	N	N	0.04	N	N			
13	76	30	7 2														
14	118	42	38 6														
10	130	12	4 3														
11	159	29	9 3			From 108-164' odd specks of galena											
12	164 6	5 6	3 3			From 113-137½' strongest mineralisation											

1420028

RECORDS PROSPECTS

Electrolytic Zinc Company of Australasia Limited

WEST COAST DEPARTMENT

Hole No. PP62 028

RECORD OF DIAMOND DRILL CORES See 2067

Sheet No. 1

SPECIFICATIONS

Silver Falls — Length: 93'
Surface — Size Hole: XRB
21128 N
20379 E
1964'
Section: 900 Sil. F. Grid
Dip: -50

SURVEY DATA

Footage	Dir'tion	Angle	Footage	Dir'tion	Angle

OBJECT: To test the mineralised outcrop below the surface.

RESULT: No. Survey. Hole abandoned 93 ft. owing to difficult drilling.

PLOTTED

40 Plan
X.S.
L.S.
100 Plan
X.S.
L.S.

PROGRESS Depth	Advance	Amount of Core	Description From	To		ANALYTICAL DATA From	To	Amount of Core	Pb %	Zn %	Cu %	Ag ozs	Au dwts.	Fe %	DIPS Footage	Angle
					ROCK											
13	13	5 6	0	50	Medium grained grey grit											
43	30	4	50	60	No core just greenish grey clay											
60	17	1														
80	20	2	60	93	Silicified agglomerate light grey coloured with odd streaks and specks of galena.											
93	13	5														

14 20 29

RECORDS PROSPECTS

Electrolytic Zinc Company of Australasia Limited

WEST COAST DEPARTMENT

Hole No. PP63 029

RECORD OF DIAMOND DRILL CORES Sec 2066

Sheet No. 1

SPECIFICATIONS

Mine: Silver Falls — Length: 74'
Location: Surface — Size Hole: XRB
N. Coord.: 20835 N
E. Coord.: 2°425 E
R.L.: 1971
Direction: 90° Sil. F. Grid
Angle: -1:0

SURVEY DATA

Footage	Dir'tion	Angle	Footage	Dir'tion	Angle

OBJECT: To test below mineralised outcrop

RESULT: No surveys.

PLOTTED

40 Plan
X.S.
L.S.
100 Plan
X.S.
L.S.

PROGRESS Date	Depth	Advance	Amount of Core	Description From	To		ANALYTICAL DATA From	To	Amount of Core	Pb %	Zn %	Cu %	Ag ozs	Au dwts.	Fe %		DIPS Footage	Angle
14	20'	20	12 6	0	74	ROCK Grey silicified agglomerate- coarse irregular structure Specks and splashes of galena through whole core. Strongest zones of mineralisation 9'-13' and 30'-35' Small splash of sphalerite at 66'.												
15	50'	30	21															
17	60'	10	2 6															
30	74'	14	7															

14 2030

Electrolytic Zinc Company of Australasia Limited

WEST COAST DEPARTMENT

Hole No. PF73 030

Soo 2068

RECORD OF DIAMOND DRILL CORES

Sheet No. 1

SPECIFICATIONS

Mine: Silver Falls
Location: Surface
N. Coord.: 21002 N
E. Coord.: 20433 E
R.L.: 1920'
Direction: 90° Mil. F. Grid
Angle: 37°
Length: 145'
Size Hole: XRB

SURVEY DATA

Footage	Dir'tion	Angle	Footage	Dir'tion	Angle

OBJECT: To test for northerly extension of the mineralised outcrop south of the falls.

RESULT: No survey

PLOTTED

40 Plan
X.S.
L.S.
100 Plan
X.S.
L.S.

PROGRESS

Date	Depth	Advance	Amount of Core	
	13	18		
	21	3		
	31	10		6"
	40	9	2	
	45	5	1	6
	54	9	5	
	62	8	1	6
	66	4	1	6
	96	30	5	6
	126	30	21	
	145	19	8	

Description

From	To	
		ROCK
0	31	Grey sandstone
31	145	Dark grey silicified fine agglomerate with odd specks of galena
		No sign of mineralisation was found in the sedimentary rocks.

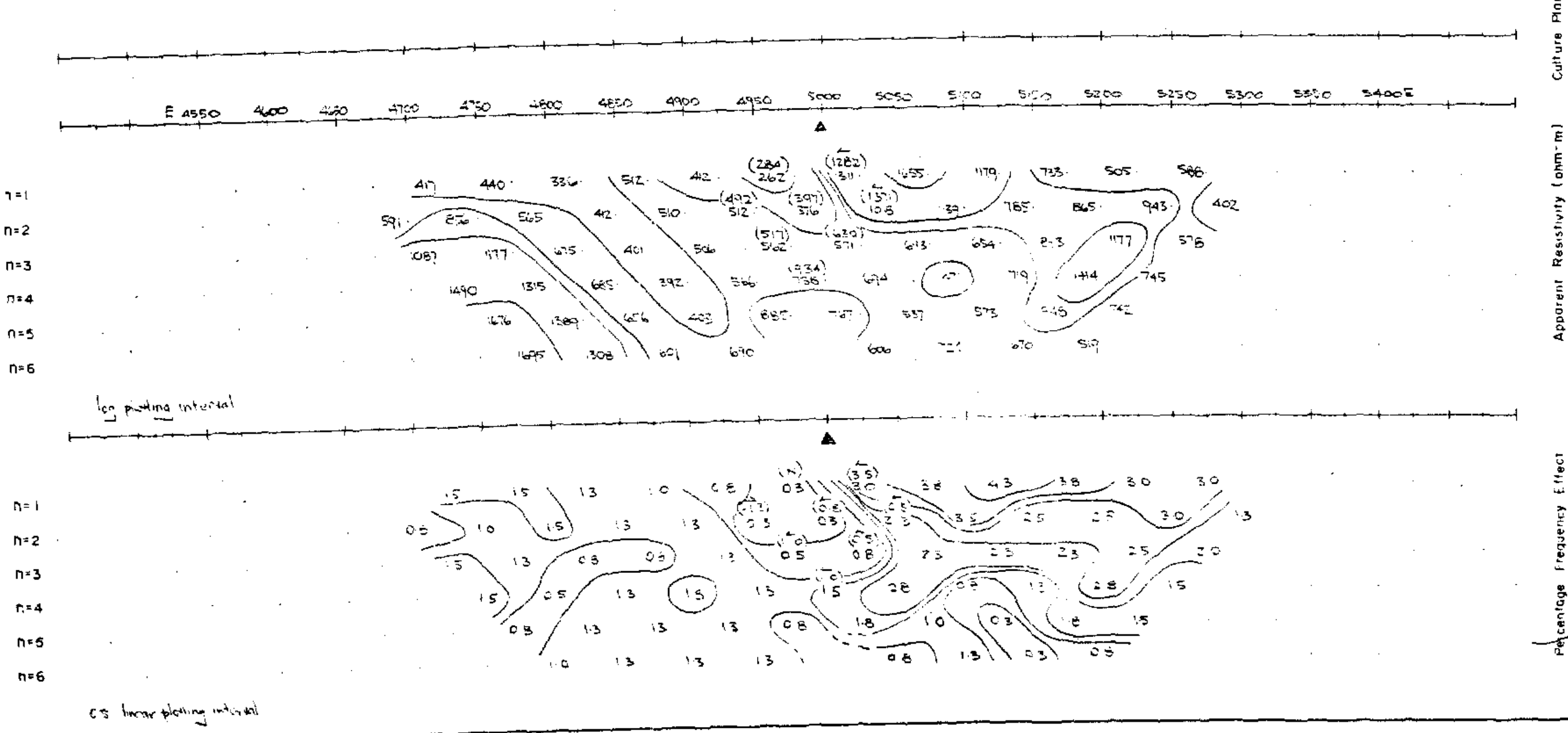
ANALYTICAL DATA

From	To	Amount of Core	Pb %	Zn %	Cu %	Ag ozs	Au dwts.	Fe %	

DIPS

Footage	Angle

14203



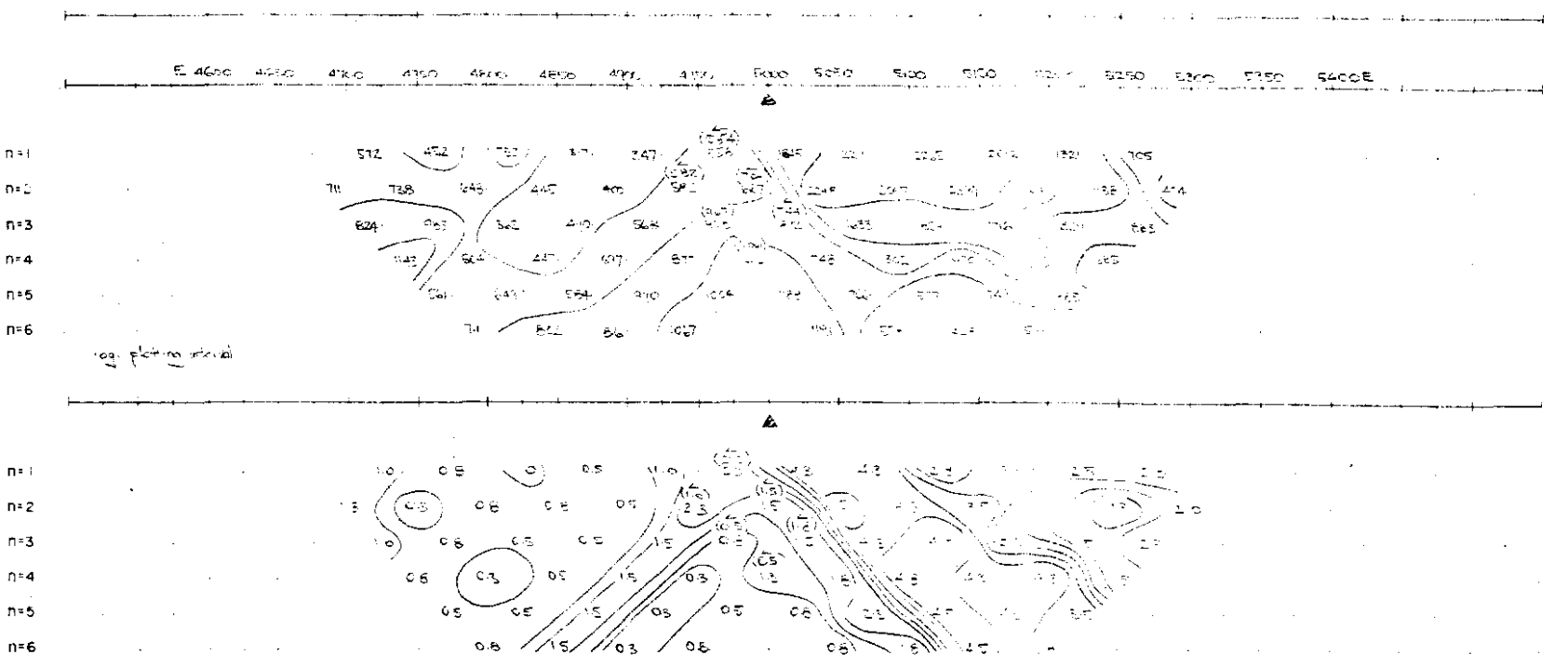
SOLO GEOPHYSICS AND CO.

INDUCED POLARIZATION & RESISTIVITY SURVEY

CLIENT Aberfoyle Pty Ltd
AREA Silver Falls - Tasmania
GRID Marionoak
LINE
ARRAY Dipole - Dipole
DIPOLE SPREAD 50 Metres
FREQUENCIES
TRANSMITTER TYPE
RECEIVER TYPE
ELECTRODE TYPE
SCALE

SURVEYOR
DATE OF SURVEY
PLOTTED BY

5 cm



Contour Plan

Apparent Resistivity (ohm-m)

Percentage Frequency Effect

SOLO GEOPHYSICS AND CO.

INDUCED POLARIZATION & RESISTIVITY SURVEY

CLIENT [illegible]

AREA [illegible]

GRID [illegible]

LINE 400N

ARRAY > Pole - Dipole

DIPOLE SPREAD 50 Metres

FREQUENCIES [illegible]

TRANSMITTER TYPE [illegible]

RECEIVER TYPE [illegible]

ELECTRODE TYPE [illegible]

SCALE 1:5000

SURVEYOR [illegible]

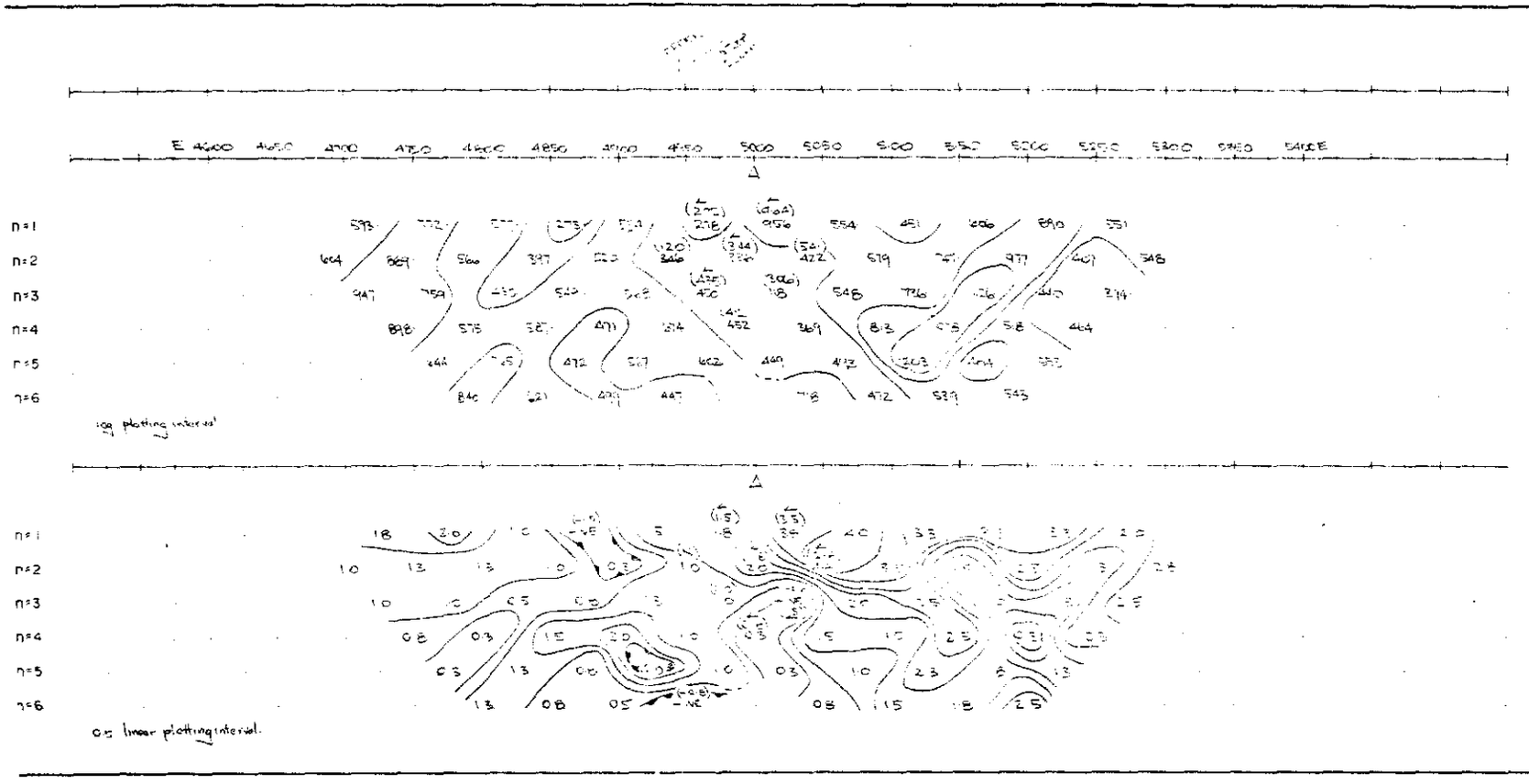
DATE OF SURVEY 17-2-79

PLOTTED BY [illegible]

line profile

5 cm

033



Culture Plan

Apparent Resistivity (ohm-m)

Percentage Frequency Effect

line profile

SOLO GEOPHYSICS AND CO.

INDUCED POLARIZATION & RESISTIVITY SURVEY

CLIENT [illegible]

AREA [illegible] FALLS - [illegible]

GRID [illegible]

LINE 4800 N

ARRAY [illegible]

DIPOLE SPREAD 50 Metres

FREQUENCIES [illegible]

TRANSMITTER TYPE [illegible]

RECEIVER TYPE [illegible]

ELECTRODE TYPE [illegible]

SCALE 1:2500

SURVEYOR [illegible]

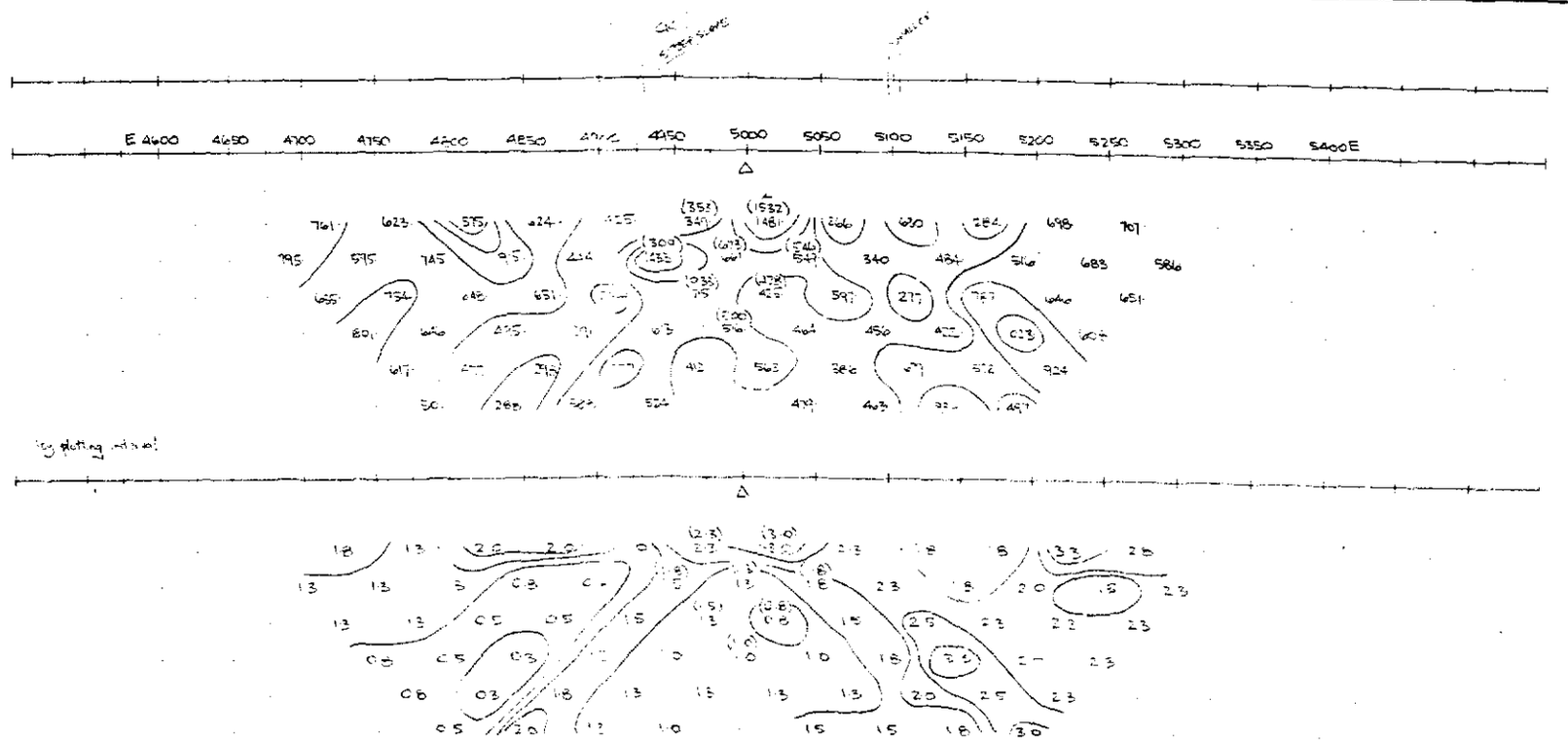
DATE OF SURVEY 4-2-79

PLOTTED BY [illegible]

5 cm

1420 34

034



Culture Plan

Apparent Resistivity (ohm-m)

Percentage Frequency Effect

SOLO GEOPHYSICS AND CO.

INDUCED POLARIZATION & RESISTIVITY SURVEY

CLIENT FREEPORT TIN LTD

AREA SILVER HILLS — TASMANIA

GRID MARIONOAK

LINE 4800N

ARRAY DIPOLE-DIPOLE

DIPOLE SPREAD 50 METRES

FREQUENCIES 2 CPS & 10 CPS

TRANSMITTER TYPE [illegible]

RECEIVER TYPE McPhar P660

ELECTRODE TYPE Pot

SCALE 1:2500

SURVEYOR [illegible]

DATE OF SURVEY [illegible]

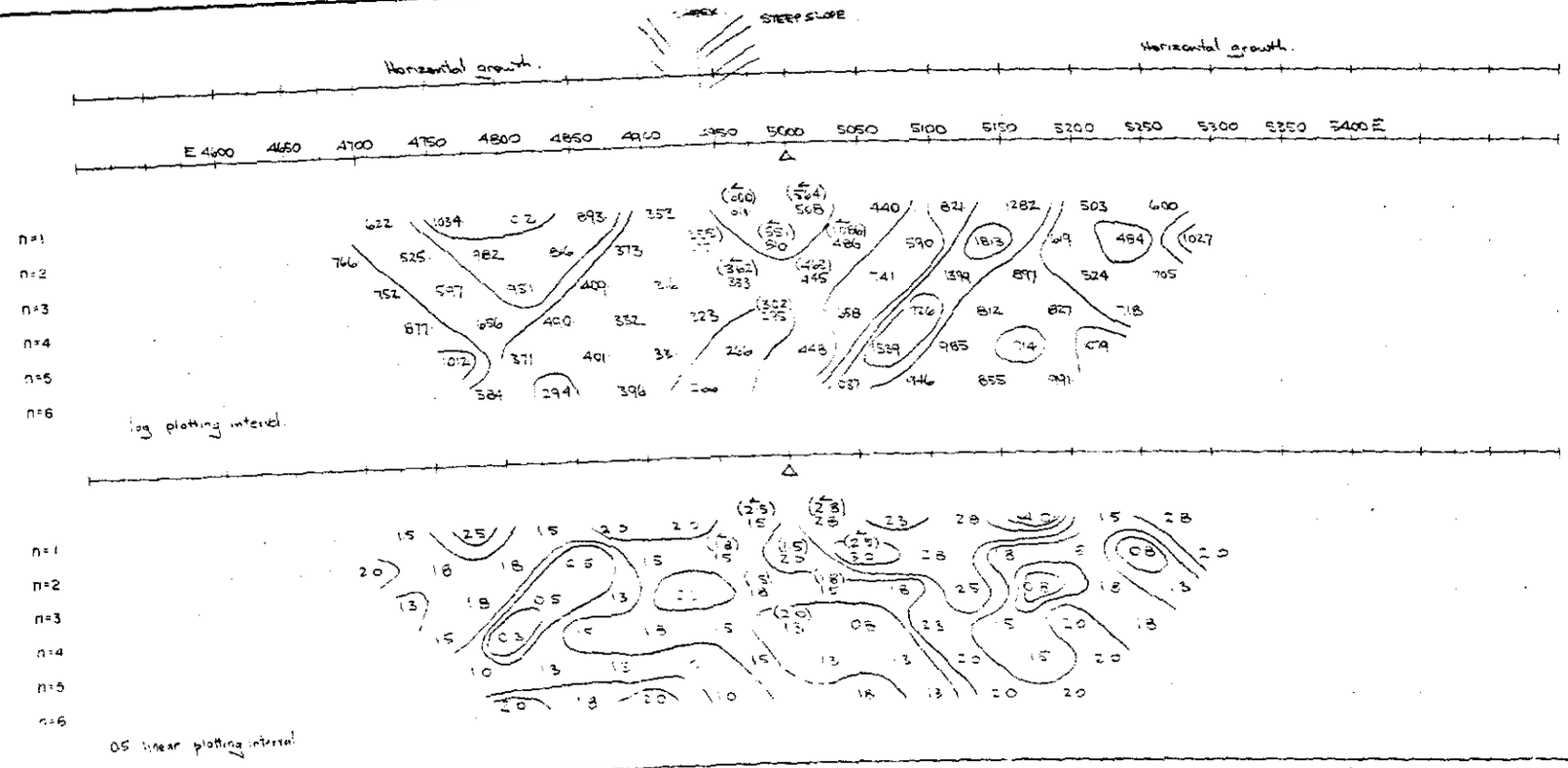
PLOTTED BY [illegible]

line profile — cross cut

5 cm

1420035

035



Culture Plan

Apparent Resistivity (ohm-m)

Percentage Frequency Effect

Line Profile

SOLO GEOPHYSICS AND CO

INDUCED POLARIZATI & RESISTIVITY SURVE

CLIENT Aberfoyle Pty Ltd

AREA Silver Falls

GRID Marion Oak

LINE 4700 N

ARRAY Dipole - Dipole

DIPOLE SPREAD 50 Metres

FREQUENCIES 2.5 & 0.3 Hz

TRANSMITTER TYPE McPhar P[illegible]

RECEIVER TYPE McPhar P[illegible]

ELECTRODE TYPE Foil

SCALE 1:2500

SURVEYOR D.K.C.C. P[illegible]

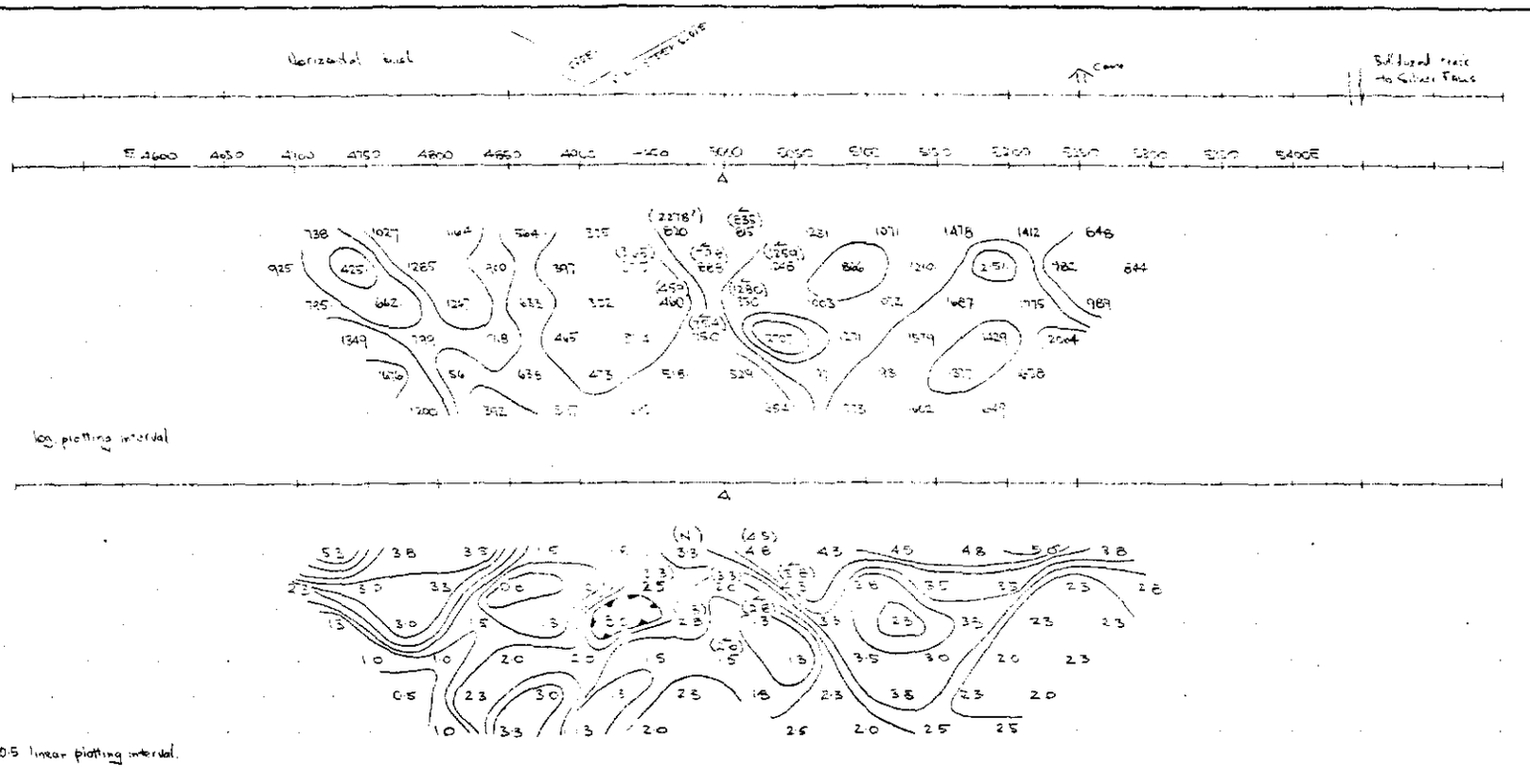
DATE OF SURVEY 7-2-79

PLOTTED BY Brian Rau

5 cm

142036

036

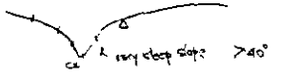


SOLO GEOPHYSICS AND CO.

INDUCED POLARIZATION & RESISTIVITY SURVEY

CLIENT Freeport Pty Ltd
AREA Silver Falls - Tasmania
GRID Marion Oak
LINE 4900N
ARRAY Dipole-Dipole
DIPOLE SPREAD 50 METRES
FREQUENCIES 0·5 & 0·2 Hz
TRANSMITTER TYPE McPhar P660
RECEIVER TYPE McPhar P660
ELECTRODE TYPE Fc -
SCALE 1:2500

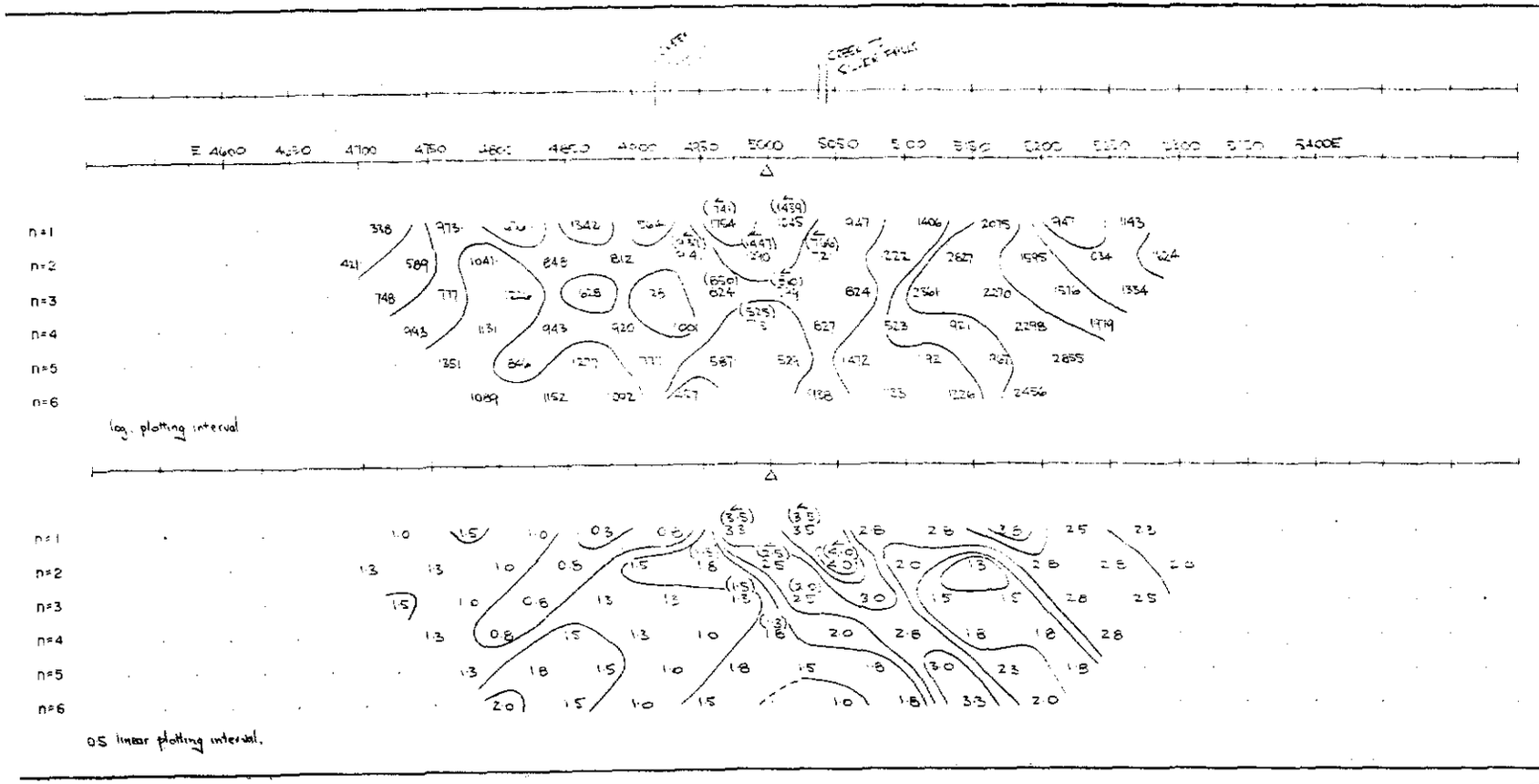
SURVEYOR BR CC PB
DATE OF SURVEY 6-2-79
PLOTTED BY Brian Kirk



5 cm

142037

037



Culture Plan

Apparent Resistivity (ohm-m)

Percentage Frequency Effect

SOLO GEOPHYSICS AND CO.

INDUCED POLARIZATION & RESISTIVITY SURVEY

CLIENT Peerfoyle Pty Ltd

AREA Silver Falls

GRID Y. Arionoak

LINE 5100 N

ARRAY Dipole – Dipole

DIPOLE SPREAD 50 METRES

FREQUENCIES 2.5 & 0.3 HZ

TRANSMITTER TYPE MP-MK II P660

RECEIVER TYPE MP-MK II P660

ELECTRODE TYPE Foil

SCALE 1:2500

SURVEYOR B.R. CC PR

DATE OF SURVEY 2-2-79

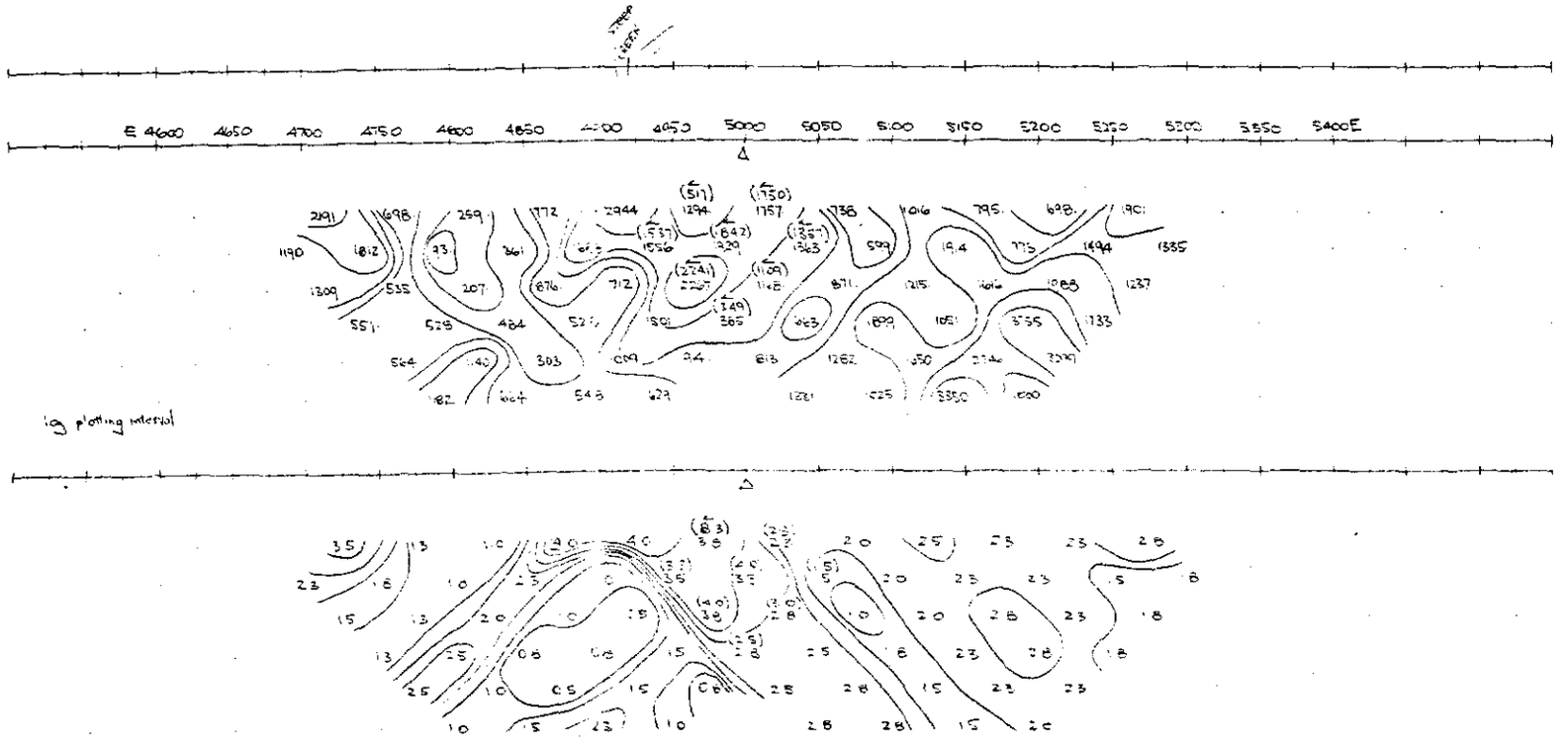
PLOTTED BY Brian Rau

Line Profile:

5 cm

1420038

038



Culture Plan

Apparent Resistivity (ohm-m)

Percentage Frequency Effect

SOLO GEOPHYSICS AND CO.

INDUCED POLARIZATION & RESISTIVITY SURVEY

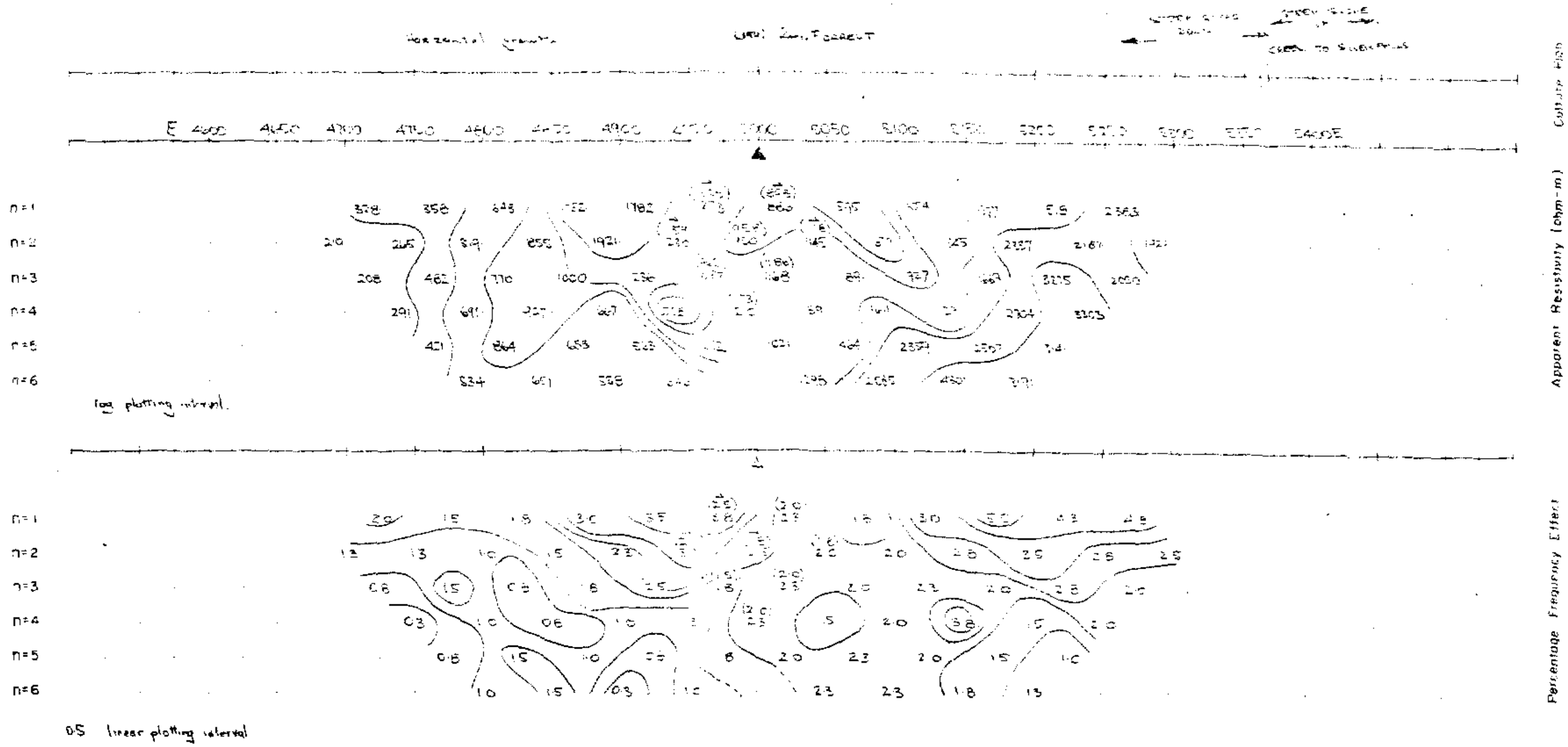
CLIENT Peterfoyle Pty Ltd
AREA Silver Falls Tasmania
GRID Marionoak
LINE 5300 N
ARRAY Dipole - Dipole
DIPOLE SPREAD 50 Metres
FREQUENCIES 2.5 4 0.2 Hz
TRANSMITTER TYPE McPhar P660
RECEIVER TYPE McPhar P660
ELECTRODE TYPE Pots
SCALE 1:2500

SURVEYOR BR C.C. P.R.
DATE OF SURVEY 5-12-79
PLOTTED BY Brian Rall

line profile

5 cm

A42039

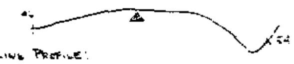


SOLO GEOPHYSICS AND CO

INDUCED POLARIZATION & RESISTIVITY SURVEY

CLIENT Aberfoyle Pty Ltd
AREA Silver Falls Tasmania
GRID Tape on chain
LINE 5500 N
ARRAY Dipole - Dipole
DIPOLE SPREAD 50 Metres
FREQUENCIES 2.5 & 0.3 Hz
TRANSMITTER TYPE
RECEIVER TYPE
ELECTRODE TYPE
SCALE 2500

SURVEYOR
DATE OF SURVEY 4-2-79
PLOTTED BY



Line Profile

5 cm

142040

MN GN

10°

Note 1 The outcrop at this locality consists of an incipiently altered quartz / albite / sericite / carbonate, quartz, feldspar, lithic, vitric crystal tuff. The brecciated habit of the rock face at Silver Falls has been interpreted as representing the influence of autobrecciation processes on the welded ash flow pile. Indeed the lithic nature of this lithology could be accounted for by incorporating a flow breccia emplacement mechanism.

A weakly defined schistosity striking roughly N-S is sporadically imprinted on this altered ignimbrite at Silver Falls. It reflects a shearing event which either continues through or commences after the epigenetic mineralisation

LEGEND

Microgranite (Intrusive) — Sparsely disseminated qtz / alb / k'spar phenocrysts in a m.g. granitic matrix. The rock is weakly sericitised and contains minor carb. and py.

Siltstone — Bedded to well laminated and seldom micaceous. Mudstone and shale are not uncommon to this unit. Minor lateral facies equivalents include qtz. rich ss. and mic. qtzite. (v.f.g. grey silty soil)

Rhyolite (?) Autobrecciated Ignimbrite — Flow brecciated welded qtz, feldspar, lithic, vitric. crystal tuff. Alteration phases include qtz, albite, sericite and carbonate. Disseminated Ga, Sph and Cpy are common.
Weakly altered: Deep orange brown coarse qtz. rich gravel.
Incipiently altered: Brown grey clay with minor detrital qtz.
Pervasively altered: White clay with abundant subrounded qtz crystals.

Lithic Tuff — Subaqueous, lithic crystal tuff of rhyolitic affinities. Texturally and compositionally variable. Weakly bedded to poorly sorted. Strongly chloritic and v weakly mineralised. (Characteristic orange - brown sandy / gritty sand

Undifferentiated Sediments — In order of abundance the sediments include :-
Micaceous qtzite
Laminated micaceous siltstones
Mudstone
Micaceous ss
Shale
Conglomerate
Pisolitic sts.
(Micaceous grey black soil with abundant sil. rock chips)

- Outcrop
- Float
- Interpreted geological contact
- Mn staining
- B^{So}_{Si} Fold hinge — 1st generation
- Si Axial plane — 1st generation
- Dip
- X 203955 Rock sample
- ⊗ 18633 Stream sample
- Pit
- Camp
- Track
- Creek
- PPI
- PDI
- ACI
- FI

E.L. Boundary 12/72 E.Z.

E.L. 22/74 — Aberfoyle

Base Line

5000E

5400E

4600E

5500N 5300N 5100N 4900N 4700N 4500N 4300N 4100N 3900N

142041

N.B. Geological contacts were established on the basis of the nature and composition of soil samples where no other evidence was available.

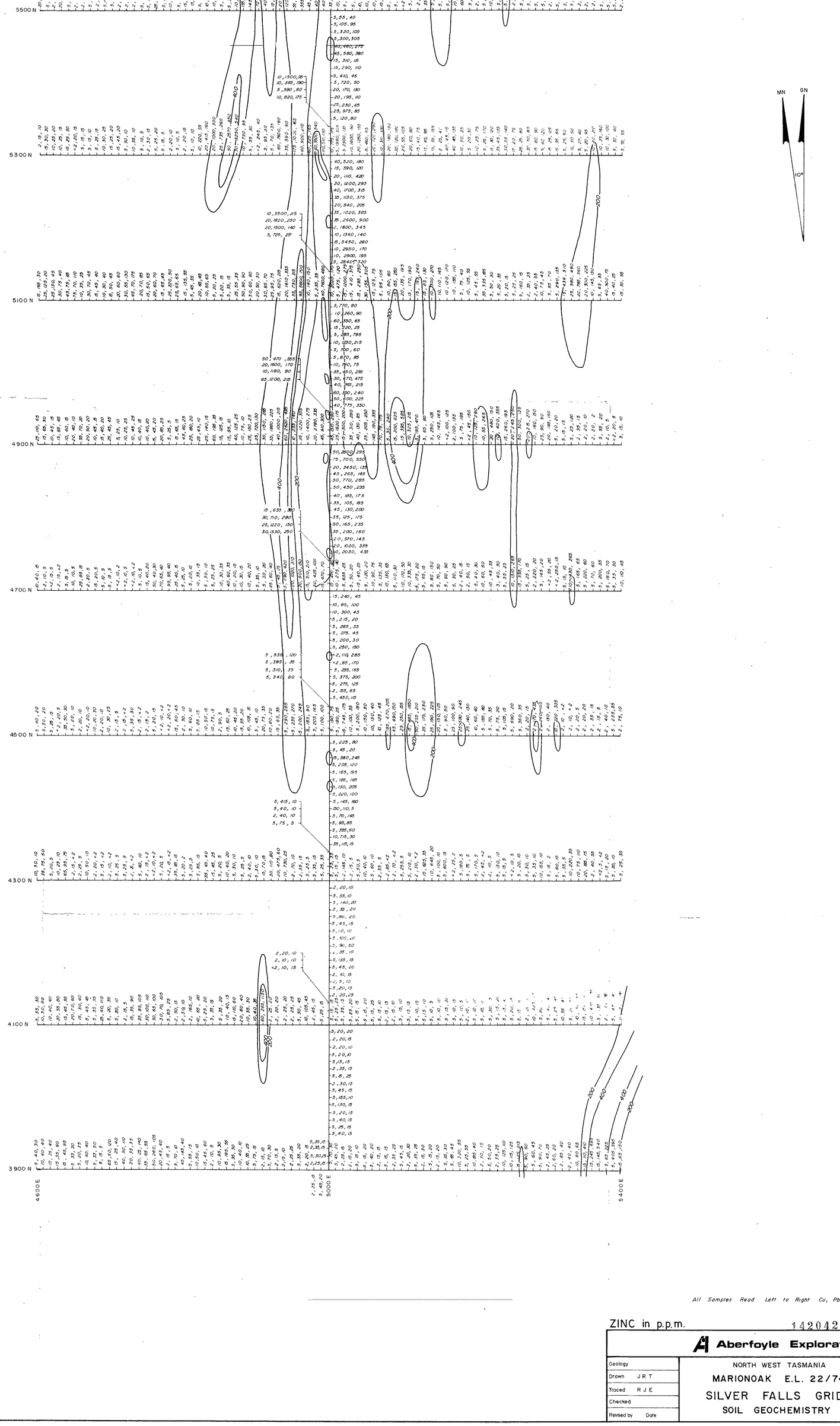
5 cm

2793

79-1380

Aberfoyle Exploration Pty Ltd

Geology: J.R.T.	NORTH WEST TASMANIA	Location code:
Drawn: J.R.T.	MARIONOAK E.L. 22/74	Date: June, 1979
Traced: R.J.E.	SILVER FALLS GRID	Scale: 1:2,500
Checked:	GEOLOGICAL MAP	Plate No Moc. 14
Revised by: Date:		



All Samples Read Left to Right Cu, Pb, Zn in p.p.m

ZINC in p.p.m.

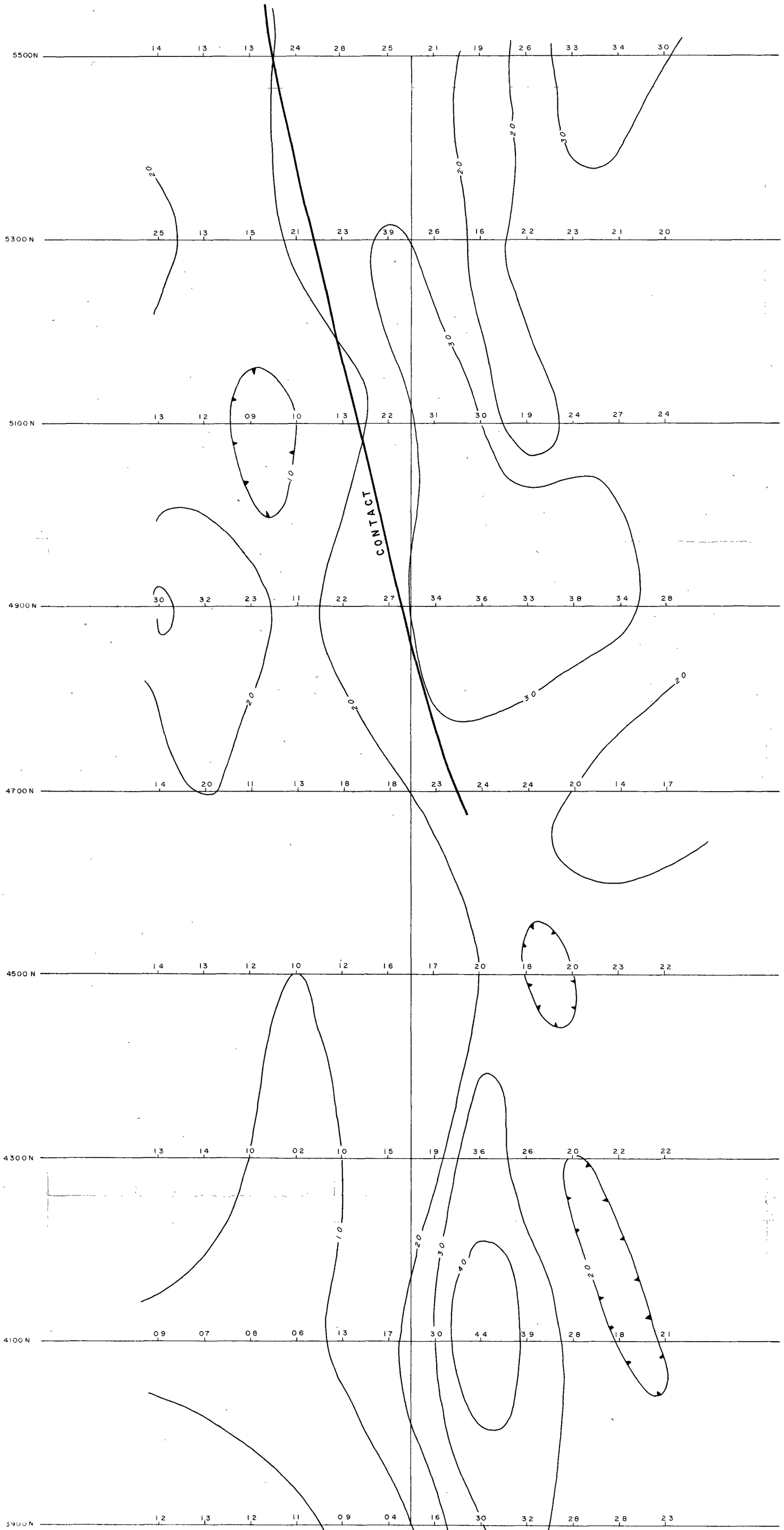
142042

79-1380

E796

Aberfoyle Exploration Pty Ltd

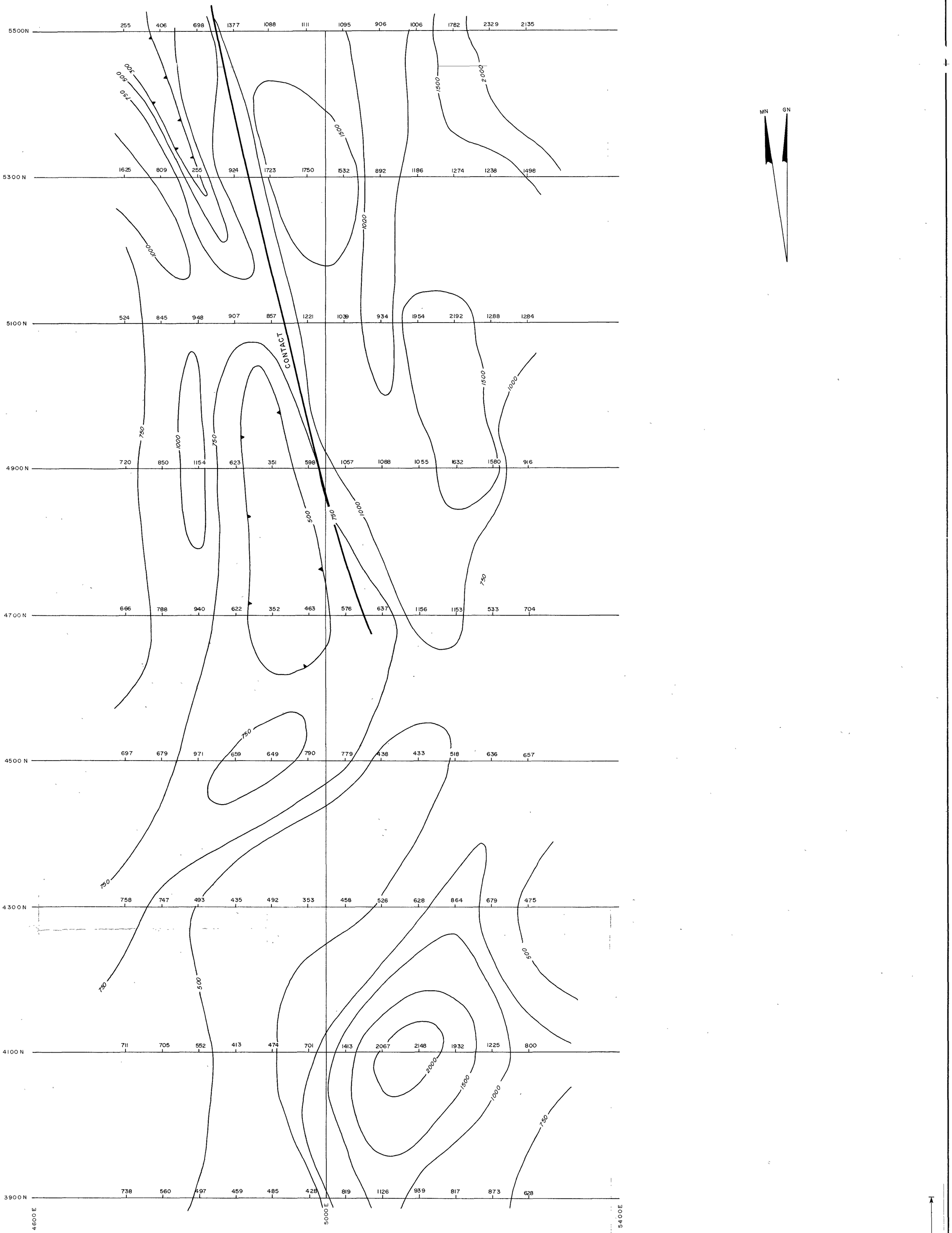
Geology	NORTH WEST TASMANIA	Location code
Drawn J R T	MARIONOAK E.L. 22/74	Date July, 1979
Traced R J E	SILVER FALLS GRID	Scale 1 2500
Checked	SOIL GEOCHEMISTRY	Plate No Moc 15
Revised by Date		



142043

2797
79-1380

Aberfoyle Exploration Pty Ltd			
Geology JT	NORTH WEST TASMANIA MARIONOAK E L 22/74 SILVER FALLS Percentage Frequency Effect	Location code	
Drawn JT		Date Feb 1979	
Traced R J E		Scale 1 2500	
Checked		Plate No MOC 16	
Revised by Date			



2798

79-1380

142044

Aberfoyle Exploration Pty Ltd

Geology	J T	NORTH WEST TASMANIA	Location code
Drawn	J T	MARIONOAK E.L. 22/74	Date Feb 1979
Traced	R J E	SILVER FALLS	Scale 1 2500
Checked		Apparent Resistivity	Plate No MOC 17
Revised by	Date		