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GEOPEKO LIMITED

KING ISLAND

REPORT No. KI/74/10

MICROFILMED
FICHE No 012929A-29C

PROGRESS REPORT ON THE MINERAL POTENTIAL OF EXPLORATION LICENCE 15/66

ML 17m/19

by

S. GRIEVE BROWN

AMG REFERENCE POINTS ADDED

93-3457

ISG REFER REPORT 70-0676

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Map of Southern King Island showing Radiometric contours, scale 1:25000

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INTRODUCTION

Exploration Licence 15/66 covers an area of 110sq.km. in the south east of King Island and incorporates the area previously held under E.L. 13/73. The north western portion of the licence area (141sq.km.) was relinquished in April 1974.

The Exploration Licence was originally granted to King Island Scheelite (1947) Limited in November 1966 in respect of an area of 2340 acres. Since that time various additions increased its size to cover a maximum of 238sq.km. in 1969. The present 110sq.km. includes the area previously held under E.L. 13/73 which was incorporated into E.L. 15/66 in April 1974.

Prior to the compilation of the 1:12000 scale base maps in February 1970 exploration within the licence area was mainly confined to the Grassy and Bold Head granites and their associated contact aureoles. With the production of the 1:12000 base maps surface mapping was extended throughout the Licence area. (J.J. Gresham Geological Progress Report on E.L. 15/66).

The purpose of this report is to compile and record all exploration work carried out within the licence area, excluding the Grassy and Bold Head mine series contacts, and to provide an assessment of its economic potential.

During the period 1963 to date the following exploration programme has been conducted.

- Base map compilation from aerial photographs. Scale 1:12000.
- Regional photo controlled geological mapping at approximate scale of 1:12000.
- Airborne radiometric and magnetic survey.
- Test survey using airborne infra-red scanning over part of the E.L.
- Ground I.P. survey over the Ireland Farm Prospect (Joint Venture).
- Hand Auger geochemical sampling, Ireland Farm Prospect (Joint Venture).
- Two inclined diamond drill holes, Ireland Farm Prospect (Joint Venture).
- Ground magnetic traverses over the following prospects Magnetic anomalies 6 and 11.
- Ground magnetic surveys over the following prospects Investigators 9, 10, 15, 16 and 17.

- Reconnaisance bedrock geochemical soil sampling over the following prospects:-

  Magnetic Anomaly 6 (9 holes, 57.75m).
  Magnetic Anomaly 11 (5 holes, 39.95m).
  Investigator 9 (10 holes, 35.97m).
  Investigator 10 (10 holes, 43.59m).
  Investigator 15 (10 holes, 94.64m).

- Detailed auger drilling to bedrock on the following prospects.

  Investigator 4 (94 holes 856.80m).
  Investigator 16 (46 holes 333.90m).
  Investigator 17 (94 holes 834.08m).

- Surface sampling of ironstone outcrops at Investigator 15.

- Percussion drilling of one hole at Magnetic Anomaly No.11 totalling 91.44m of drilling.

- Mapping and geochemical sampling of the East Coast strip including the Barrier Creek Workings.

SUMMARY

As a result of airborne geophysics and regional geological mapping carried out over the licence area four regions of interest were outlined. These are as follows:-

Bold Head granite contacts:- Investigators 4, 16 and 17 (W, Mo).

North-south magnetic linear:- Magnetic anomaly No.6. Investigators 9 and 10.

Circular magnetic 'high':- Magnetic anomaly No.11 (possible granite).

Area of ironstone capping:- Investigator 15, Irelands farm joint venture. (ironstone and basic dykes).

The Bold Head granite contacts, with the exception of the Investigator 1 - Bold Head Mine area, contain no mine series rocks. Extensive auger drilling in this area deliniated only two small tungsten/molybdenum anomalies both of which are associated with cross faulting of the main Grassy River fault. The lack of suitable host rocks in this area makes it unlikely that any significant mineralization will occur.

The north-south magnetic linear was tested in four locations by auger drilling with no anomalous geochemical values being recorded. Since the only rock types encountered were quartzites and siltstones, it is felt that this anomaly is due to variations of the magnetite content in the sediments.

The circular magnetic 'high' is interpreted from the aeromagnetic contours to be due to a deeply buried body, possibly a granite stock. Auger and percussion drilling over this anomaly showed only quartzites and siltstones with minor black shales and no anomalous values were recorded. The potential is regarded as being low as the limey mine series rocks do not occur in the vicinity.

The area of ironstone capping, although recording relatively high values of iron (53.46% Fe), magnesium (5.08%) and manganese (0.72%), occurs as a limonite - goethite pisolitic laterite veneer overlying siltstones. The basic dykes in this area have been geochemically sampled and diamond drilled (Ireland's farm) and show no economic potential.

CONCLUSIONS

1. Geologically the environment of the portion of the licence area covered by this report appears unfavourable for mineral deposits. Only pelitic and quartzitic sediments are evident in the field and these would not be expected to be good host rocks for mineralization.

2. The basic intrusive bodies occurring in the north of the licence area do not have any noticeable economic mineralization associated with them.

3. While the ironstone occurrance at Investigator 15 contains erratic high values of iron, magnesium and manganese, the percentage of these elements is too low to justify further expenditure at the present time and in the foreseeable future.

4. The linear magnetic anomaly which is covered by prospects Investigators 9 and 10 and magnetic anomaly 6 is considered to be due to variations in the magnetite contact with the sediments.

5. The hornfelsed pelitic sediments encountered in the Investigator 4, 16 and 17 areas are considered to be hornfelsed equivalents of the quartzites underlying the mine series and as such have no potential for economic mineralization.

6. The Au, Zn, Pb, etc. mineralization occuring in narrow quartz veins in the Barrier Creek workings is restricted in distribution and is considered not to have any significant economic potential.

7. The source of Magnetic Anomaly No.11 is possible a deeply buried granite body. No evidence exists for any associated mineralization.

8. It is therefore considered unlikely that any economically significant mineralization occurs within the area under consideration.

RECOMMENDATIONS

1. The north western portion of E.L.15/66 (141sq.km.) should be relinquished.

2. Exploration within the area retained should be directed towards the complete definition of the potential of the Grassy and Bold Head granite contacts.

ACTION SHEET

1. E.L. 15/66 was reduced by 141sq.km on the 24th April, 1974.

2. E.L. 13/73 was incorporated in E.L. 15/66 on the 24th April, 1974 bringing the total area to 110sq.km.

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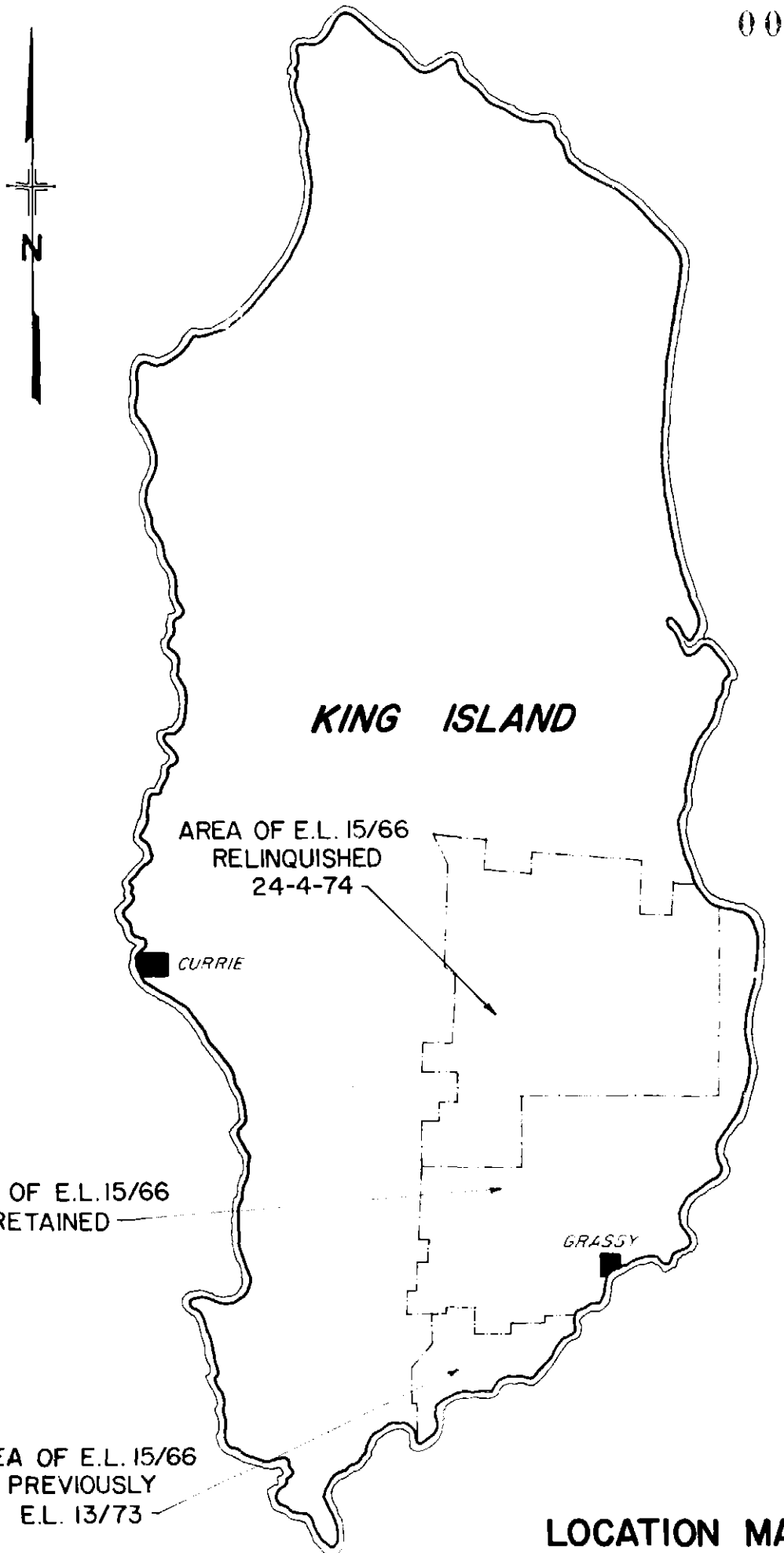

LOCATION MAP
E.L. 15/66

ISG REFER REPORT 70-0676

AMG REFERENCE POINTS ADDED

GEOPHYSICS

The Exploration Licence was covered by the airborne magnetic and radiometric survey carried out over most of King Island in February 1973 by Canadian Aero Services on behalf of Geopeko Limited.

No meaningful results were obtained from the radiometric survey.

Two magnetic anomalies (anomalies 6 and 11) were located within the area under consideration and ground magnetic traverses were carried out to locate the anomalies.

Magnetic anomaly No.6 is a relatively narrow linear anomaly which was indicated by ground magnetometer traverses to be due to a narrow steeply dipping body. Later auger drilling suggests that this body is a sedimentary horizon relatively rich in magnetite.

Magnetic Anomaly No.11 is a broad circular magnetic high whose source is interpreted to occur at depth (in the order of 1500m) Auger and percussion drilling encountered only siltstones and quartzites with occasional units of pyritic shale.

An I.P. survey conducted on the Ireland's Farm prospect (Joint Venture) in 1968 by Costigan Mining Australia defined 3 anomalies. Dips of 40 - 60^{o} and a strike of 300^{o} magnetic were inferred for the sources of these anomalies. Later diamond drilling showed the anomalies to be due to sedimentary pyritic black shales.

A single test line incorporating multiband, infa-red thermal scan and false colour I.R. techniques was flown north-south from Grassy to Mt. Counsel under various conditions. This work showed up the Grassy River fault with associated cross faults and the ironstone at Investigator 15.

GEOLOGY

Geological mapping was carried out over the entire licence area on an approximate scale of 1:12000 using photo controlled regional base maps obtained from 1967 aerial photographs using the slotted template method of photo laydown.

More detailed mapping was carried out on a scale of 1:5000 using contoured plans produced by planimetry from 1967 aerial photographs.

The geology of E.L. 15/66 consists mainly of the Precambrian Eastern Sediments, a series of quartzites and siltstones, with a narrow strip of Cambrian sediments and volcanics outcropping along the east coast. Two granitic bodies of lower Carboniferous age are intruded into the sediments in the Grassy and Bold Head area.

With the exception of the outcrops along the east coast and some of the deeper creeks very little structural information is available, the majority of the area being cultivated land with moderate amounts of float and occasional outcrops.

The Eastern Sediments

This sequence consists of very low grade regionally metamorphosed quartzites and shales with minor basic sills apparent in the Pegarah area.

Where these units occur in outcrop they are generally seen to have a north-south strike and there is evidence for a series of major fold axis lying in approximately the same direction.

These sediments which are generally blue-grey in colour show normal sedimentary features such as graded bedding in hand specimen. This unit grades west into a series of grey-green sediments which show a slightly higher metamorphic grade.

The rocks have been described by J.J. Gresham in a geological progress report on E.L. 15/66 in 1970.

The East Cost Volcanic, Sediment Sequence

This series of rocks are very well exposed along the south-east coast of King Island and as well defined sequence of shales - dolomites and tillites overlain by basic volcanics has been mapped.

The volcanics, which consist of lava flows showing various textures, massive, blocky, ropy and pillow have been described by a number of writers, and have been correlated with Tasmanian volcanics (Scott 1950).

Some stratification is apparent within the volcanics with the breccia and massive tuffs being earlier than the blocky, ropy and pillow lara. Showers of tuff were apparently ejected through out the period of vulcanicity.

Fine grained sediments are also apparent within the volcanic pile and there is evidence that the volcanics were occasionally injected into the sediments.

The underlying sediments consist of a basal siltstone shale sequence overlain by a thick tilloidal unit of approximately 30m.

The tilloid consists of angular and subrounded fragments of bedded limestones, cherts and sediments in a matrix of carbonate and ironstained clay with some fine grained quartz.

The origin of the unit is still a matter of some conjecture, see Jago (1974).

Overlying the tilloid there is a thick (approximately 50m) unit of laminated dolomite ($CaCo_3$ - 41%, $MgCo_3$ - 31%).

Between the dolomite and the overlying volcanics there is a thin sequence of micaceous siltstones and shales.

The Mine Series

The mine series sequence of contact metamorphosed sediments and overlying volcanics lie in the extrememm south-east within the area retained and will be the subject of separate reports.

They have been documented by many workers, the most up-to-date one being that by Danielson M.J. (in print), and are not described here.

The Granites

Both the Bold Head and Grassy Granites, which have intrusive relationships to the surrounding sediments, have been shown by age dating (McDougal and Leggo) to be of Lower Carbonfeous age.

In addition to similar stock like characters both granites have well developed contact metamorphic aureoles and are thought to be the source of the tungsten mineralization occuring in the mine series.

On the basis of thin section and chemical analysis the granites have been termed the Bold Head adamellite and the Grassy granodiorite, although in hand speciment they are texturally very similar.

Only the Bold Head adamellite contact with the siltstones and quartzites of the Eastern sediments occurs within the area under consideration and both the adamellite/mine series contact and the Grassy granite will be dealt with in separate reports.

Within the siltstones and quartzites a metamorphic aureole is distinquishable around the eastern and northern sides of the Bold Head adamellite where the granitic stock underlies these sediments at a shallow depth. Aeromagnetic and gravity results have shown that in these areas the adamellite - sediment contact dips away from the stock at very shallow angles.

On the western side of this stock the adamellite terminates abrubtly along the line of the Grassy River fault which separates it from unmetamorphored Eastern sediments.

Other Rock Types

Two other rock types, ironstone and gabbroic bodies, occur within the licence area especially in the Pegarah area in the north.

The gabbroic bodies, occur as relatively thin sills within the sedimentary sequence and consists of a dark green coarsely crystalline rock with large crystals of pyroxene apparent in hand specimen.

The ironstones, limonite - geothite, pisolitic laterite types, are developed over the gabboroic bodies and adjacent sedimentary rocks. These ironstones appear to be generally a thin veneer although in some areas they reach to considerable thickness.

The ironstones are thought to be laterites developed in the Tertiary.

Massive milky quartz is relatively abundant as float throughout the licence area and is probably derived from fracture and joint infillings within the sediments. The relative abundance of this material is due to its far greater resistance to erosion than its host rocks the siltstones, shales and quartzites of the Eastern sediments.

ECONOMIC GEOLOGY

There is no known economic mineralization within that portion of the licence area under consideration.

Narrow mineralized quartz veins containing Cu, Au, Pb, Zn and As occur in the Barrier Creek area. The area was examined in 1935 by Blake (Report on Barrier Creek Quartz Sulphide lodes, King Island) at which time the workings were accessable. Visible galena, chalcopyrite and minor sphalerite occur in sparce discontinuous quartz veins transecting the siltstones and shales (as seen in old workings) and it is considered that the mineralization is probably derived from syngenatic sulphides occurring within the sedimentary sequence. Good values for Pb, Zn, Ag, Au and As are recorded in the mineralized quartz veins but the lack of any suitable host rocks and limited extent of the veining make it unlikely that this occurrence possesses any economic significance.

The lateritic ironstone at Investigator 15 is derived from the weathering of relatively narrow basic bodies and surrounding sediments. Bedrock geochemical sampling and diamond drilling of the basic rocks and the surrounding sediments was carried out with no significant values being recorded for any of the elements assayed. (Fe, Mg, Cr, Ni, Zn, Pb, Cu, Mn.) The only high values occuring in this area being associated with lateritic ironstone itself which contained high values for iron, magnesian and manganese (up to 53.4% Fe, 5.09% Mg, 0.7% Mn). The ironstone, although having a relatively large though patchy lateral extent appears to be of limited thickness. This together with the relatively low (as compared with W.A. deposits) iron content makes it of very limited economic significance.

No anomalous geochemical trends were recorded from auger drilling of the linear magnetic anomaly No.6, Investigator 9 and 10 trend, and it is considered that this anomly is due to variations in the magnetite content of the sedimentary horizons and hence has no economic significance.

No anomalous geochemical results were recorded from either the auger drilling or the percussion drilling at Magnetic Anomaly 11. This anomaly is now interpreted as possibly a very deeply buried granite, and in the absence of suitable host rocks the area is considered to have no economic significance.

The Bold Head Granite contact area, with the exception of Investigator 1 showed only two areas of anomalous tungsten results. Both these anomalies were located where cross faulting of the Grassy River fault has been interpreted and are localized in these fault zones. It is considered that these have a low economic potential due to their nature and limited extent.

Although a considerable number of geochemical samples were examined from the East Coast sediments and volcanics, no anomalous values were recorded and in no area was any contact alteration effects apparent. It is considered that although some of the rock could be classed as good host rocks for scheelite mineralization, they lie too far away from the source of that mineralization (granite), and have not been subjected to mineralizing fluids.

PROSPECTS

Investigator 15

This area of lateritic ironstone lies in the northern portion of the licence area at Pegarah Road, and is characturised by the large number of ironstone boulders occurring at the surface.

The ironstone appears to be a relatively thin horizon developed due to Tertiary weathering of shallow dipping dolerite sills which intrude the sediments in this area and the sediments themselves.

Although the ironstone contains quite high values of iron (up to 53.4%) and Magnesium (up to 5.08%) the distribution of these higher values is very erratic and this together with the discontinuous nature of the lateritic horizon severely reduce its economic potential.

Sampling work has been restricted to 15 bulk chip samples from the ironstone outcrops and a line of 10 auger drill holes across the area along Pegarah road. Some earlier work was carried out under the Irelands farm joint venture and is reported by Costigan Mining Australia in 1968.

Irelands Farm Prospect. (Joint Venture).

This prospect which was outlined during a regional soil sampling and Induced Polarization survey in the Pegarah area consisted of strong I.P. anomalies associated with geochemical highs occurring along a gabbro/sediment contact.

A report covering this prospect was made to Costigan Mining Australia Pty Ltd, the joint venturers with King Island Scheelite 1947 Ltd, by E.R. Leckie dated 10th September, 1968.

After hand auger geochemical sampling and a more detailed I.P. survey in which two separate anomalous areas were delimiated, two diamond drill holes were drilled. These holes intersected quartzites, mudstones and shales showing evidence of very low grade regional metamorphism. Short intersections of feldspar porphyry were intersected in both holes. Analysis of the split core showed that low anomalous values (up to 700ppm Cu, 400ppm Zn and 80ppm Mo) were present in the bands of pyritic carbonaceous shale.

It was concluded that the source of the I.P. anomalies were sedimentary pyrite while the soil geochemical anomalies were due to high trace metal variations in the rocks, and not to any form of economic mineral concentration.

Work carried out by Geopeko Ltd on an adjoining area (Investigator 15) would tend to substantiate these results.

Magnetic Anomaly No.6

This fairly intense linear magnetic high which was located during the airborne geophysical survey, lies in the extreme west of E.L. 15/66 within the siltstones and shale sequence.

Two ground magnetic traverses No.6 and 6A were carried out in an east-west direction across this anomaly and gemco drilling to bedrock was carried out to determine its source. All samples were assayed for Cu, Pb, Zn, Ni, Co, Cr. No anomalous values were recorded. In all cases good bedrock chips of slightly weathered siltstones and quartzitic siltstones were obtained and the magnetic anomaly is now thought to reflect variations in magnetite content in various horizons of siltstone - quartzite unit.

Magnetic Anomaly No.11

This broad low intensity circular magnetic anomaly which occurs just south of Naracoopa was initially located during the airborne geophysical survey.

One line of gemco auger holes were drilled across the anomaly in an approximate north-south direction along the Naracoopa road. All samples were analysed for Cu, Pb, Zn, Ni, Mo, and W, but no anomalous results were recorded. Good rock chips predominantly of a grey quartzite were recorded from most holes. Vein quartz was present both as float and as chips in two holes.

A percussion drill hole P.D.H. 52 was drilled about 11 metres east of the inferred centre of the large, 1500m x 2000m, magnetic anomaly No.11 and intersected a sequence of quartzites and siltstones.

Investigators 9 and 10

These two prospects cover areas of anomalous magnetic character originally outlined by an earlier aeromagnetic survey flown over the south eastern portion of the island. From the more recent aeromagnetic survey of the island flown in 1973 by Canadian Aero Services these magnetic anomalies are interpreted as portions of the linear anomaly (magnetic anomaly No.6) which have been displaced by faulting.

Both these areas were gridded, read for magnetics and geologically mapped. The only rock types recorded during the mapping were typical siltstones and quartzites of the eastern siltstone sequence and no surface expression of the source of the anomaly occurred.

Auger drilling to bedrock was carried out (Investigator 9 - 35/97m in 10 holes, Investigator 10 - 43.59m in 10 holes) across the magnetic anomalies and all samples analysed for Cu, Pb, Zn, Ni. No anomalous values were recorded.

Good bedrock chips of siltstones and quartzites were obtained from all holes and it was concluded that the magnetic anomaly was a function of variations in the magnetite content within the sedimentary sequence.

Investigator 4

This prospect is located close to the northern contact of the Bold Head granite and covers a portion of Block F2 (Clark's) which was purchased by the company on the 10th April, 1970 for $25,000.

Geologically the area consists of quartzites and spotted shales with an area of tremolite hornfels occurring in the south.

The area was gridded (I.S.G.), mapped and read for magnetics prior to gemco auger drilling.

A detailed report on this prospect by J.J. Gresham was circulated in May 1972.

The following conclusions were recorded:-

1) No mine series or volcanic rocks, similar to those at No.3 Orebody exist in the area.

2) No anomalous geochemical results indicative of mineralization have been recorded in the area.

3) The high tungsten values recorded in some samples were due to contamination during storage.

4) The tremolite hornfels in the area are considered to have orginally been a siliceous carbonate rich horizon, which has undergone some degree of remobilization and been strongly metamorphosed. The structural and stratigraphic relationship of this rock type to the spotted sediments, quartzites and sandstones is unknown.

5) No potential exists in the area for economic mineralization and it is considered that no further work is necessary in the area.

No further work has been conducted on this prospect, results of exploration in adjacent areas (Investigator 16 and 17) have tended to substantiate the above conclusion.

Investigator 16 and 17

These prospects cover the contacts of the Bold Head granite excepting the southern area. The southern area is designated Investigator 1 and is the subject of a separate report.

In both Investigators 16 and 17 the Bold Head granite is in contact with siltstones and quartzites of the eastern sediments, those on the western side (Investigator 17) being brought into contact with the granite by movement on the Grassy River fault. For this reason only those sediments on the northern and eastern sides of the granite body show signs of contact metamorphism (Investigator 16).

Examination of the Grassy River fault zone in the region of the Bold Head Granite (Investigator 17) has shown that this is a relatively wide zone of brecciated and recemented (silica) material. Auger drilling and photo-interpretation has shown that the Grassy River fault is offset in a series of small steps by lesser east-west trending faults which have been shown to cut the Bold Head granite in three places.

The only areas of anomalous tungsten recorded in Investigator 17 are located where the southern two of these faults intersect the main Grassy River fault, the geochemical anomalies showing a distinct east-west trend. The anomalies are restricted in size up to 50m x 100m and have maximums of only 350ppm WO_3 and 150ppm WO_3.

It is considered that the lack of suitable host rocks associated with these anomalies as well and the restricted surface expression of the fault zone, would preclude the existance of economically significant deposits.

On the eastern and northern contacts of the Bold Head granite (Investigator 16), the siltstones and quartzites have been affected by contact metamorphism which is evidenced by the development of spotting in the siltstones.

GEOPEKO LIMITED

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GEOLOGIST.

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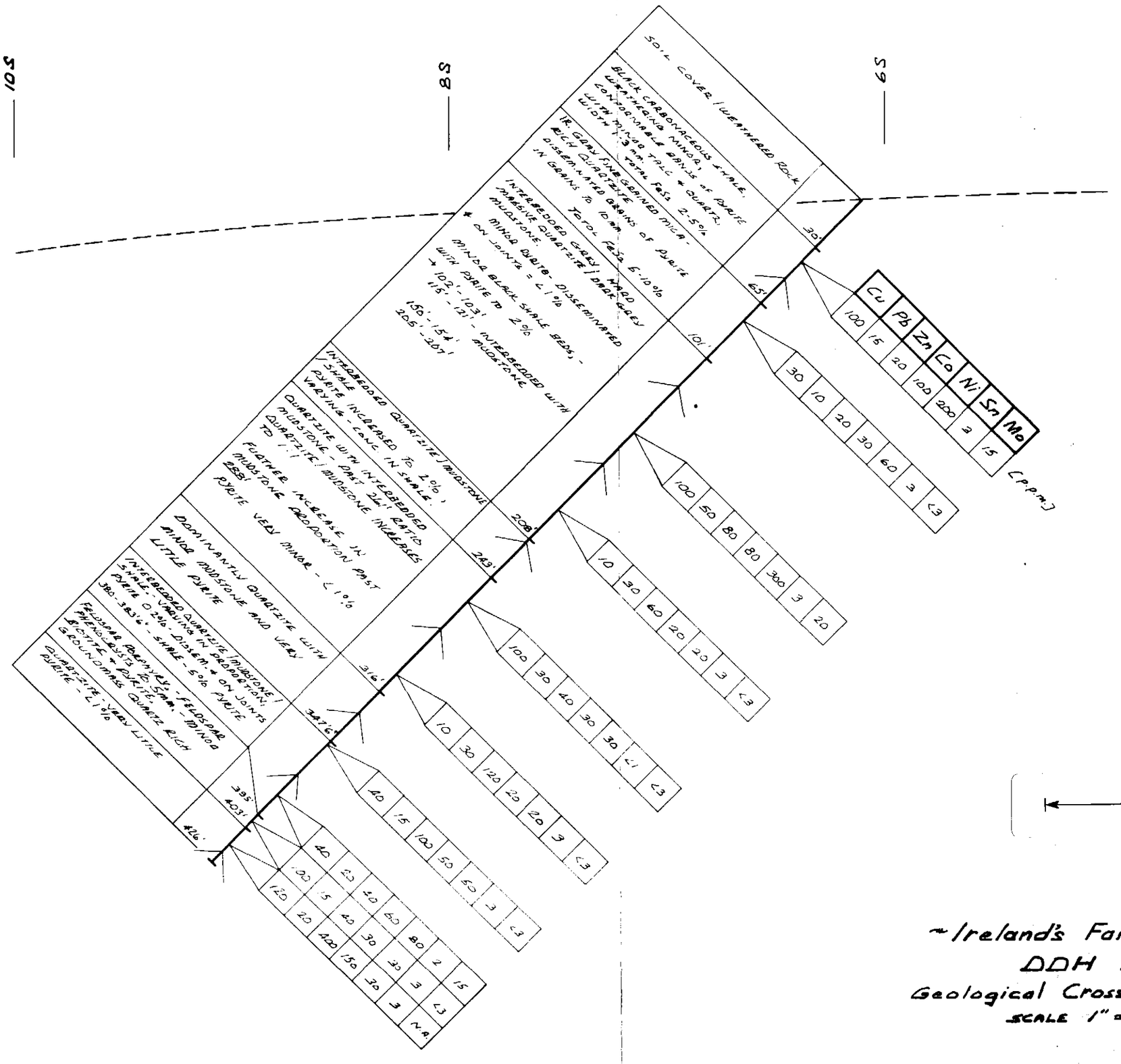


93-3457

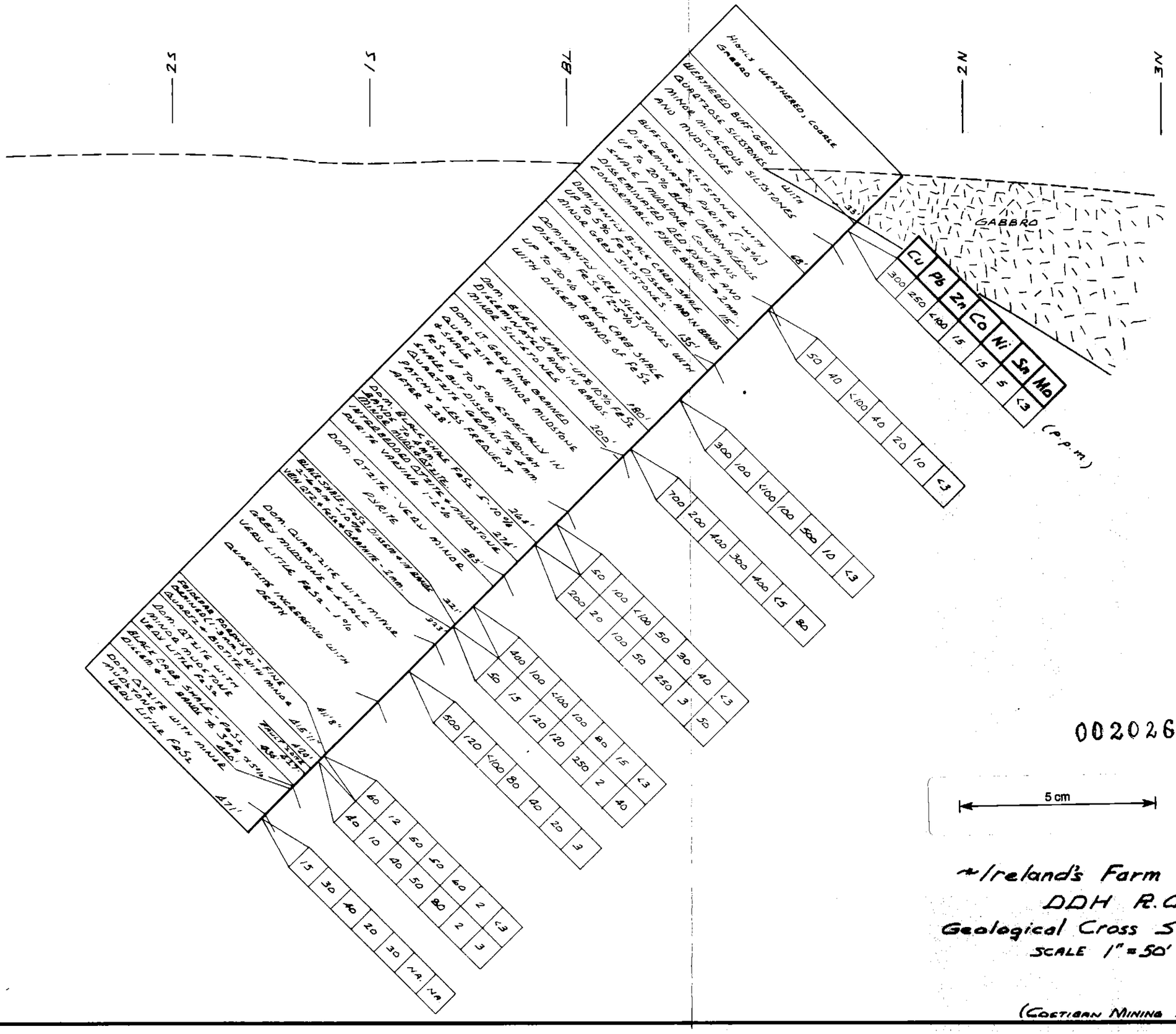
~Ireland's Farm Project~

DDH R.02

Geological Cross Section

SCALE 1" = 50'

(COSTIGAN MINING AUSTRALIA PTY. LTD.)



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5 cm

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Ireland's Farm Project

DDH R.01

Geological Cross Section

SCALE 1" = 50'

(COCTIBAN MINING AUSTRALIA PTY. LTD.)

M.A. No. 16

INV. 11

INV. 12

INV. 15

M.A. No. 5

M.A. No. 6

M.A. No. 11

E.L. 15/66

E.L. 15/66
(AREA RETAINED)

IRELAND'S Form Prospect

DDH R01

DDH R02

Point Cowper

Sea Elephant Bay

Abattoir's water bores

Racecourse water bores

Hospital water bore

Currie

Porky

Creek

Western Alluvials

Eastern Alluvials

Elephant

Yates

Fraser

Barrier Ck. Workings Pb,Zn

Longview

39 x65

39 x55

39 x45

1

2

3

4

C

D

E

002027

55 N 3a

MAGNETIC CONTOUR PLAN
SHOWING LOCATION OF AUGER DRILL HOLES

- Percussion Drill Hole
- Gemco Hole
- Roads
- E.L. Boundary
- Boundaries of areas covered by larger scale maps

93-3457

FLIGHT ALTITUDE	92 METRES
FLIGHT INTERVAL	TRAVERSE 200 METRES, TIE LINE 4KILOMETRES
CONTOUR INTERVAL	TOTAL MAGNETIC INTENSITY 5 GAMMAS
CONTOUR INTERVAL	TOTAL COUNT 25 CPS
PROJECTION	INTERGRATED CO-ORD. SYSTEM
SURVEYED AND COMPILED	MARCH - MAY 1973
A.S.P. PROJECT NO.	7302

SHEET INDEX

3
2
1

AIRBORNE GEOPHYSICAL SURVEY
KING ISLAND
TASMANIA
GEOPEKO LIMITED
TOTAL MAGNETIC INTENSITY
REGIONAL FIELD REMOVED
SCALE 1 25,000

KILOMETRES

FLOWN AND COMPILED BY AERO SURVEYS (AUST.PTY.) LTD.

5 cm

39 30S

40 00S

40 30S

143 30E

143 30E

144 00E

144 30E

144 30E

560000N

FLIGHT ALTITUDE			92 METRES
FLIGHT INTERVAL	TRAVERSE 200 METRES		TIE LINE 4 KILOMETRES
CONTOUR INTERVAL	TOTAL MAGNETIC INTENSITY		5 GAMMAS
CONTOUR INTERVAL	TOTAL COUNT		25 CPS
PROJECTION			INTERGRATED CO-ORD SYSTEM
SURVEYED AND COMPILED			MARCH - MAY 1973
A.S.C. PROJECT NO			7302

SHEET INDEX

AIRBORNE GEOPHYSICAL SURVEY

KING ISLAND

TASMANIA

GEOPEKO LIMITED

TOTAL COUNT

002028

5 cm

93-3457

SCALE 1 : 25,000

0 5 1 2 3

KILOMETRES

FLOWN AND COMPILED BY: AERO SERVICE (AUST) PTY. LTD.

CAMMERAY, N.S.W.

E

F

G

E.L. 15/66
(AREA RETAINED)

Estrick River

Fitzmaurice Bay

Cataraque Point

Big Lake

Seal Bay

Surprise Point

Surprise Bay

002029

5 cm

93-3457 1

MAGNETIC CONTOUR PLAN
SHOWING LOCATION OF AUGER DRILL HOLES

- Percussion Drill Holes
- Gemco Hole
- Roads
- E.L. Boundary
- Boundaries of areas covered by larger scale maps

FLIGHT ALTITUDE 92 METRES
FLIGHT INTERVAL TRAVERSE 200 METRES TIE LINE 4 KILOMETRES
CONTOUR INTERVAL TOTAL MAGNETIC INTENSITY 5 GAMMAS
CONTOUR INTERVAL TOTAL COUNT 25 CPS
PROJECTION INTERGRATED CO-ORD SYSTEM
SURVEYED AND COMPILED MARCH - MAY 1973
ASC PROJECT NO 7302

SHEET INDEX
3
2
1

AIRBORNE GEOPHYSICAL SURVEY
KING ISLAND
TASMANIA
GEOPEKO LIMITED

TOTAL MAGNETIC INTENSITY

REGIONAL FIELD REMOVED
SCALE 1 : 25,000

KILOMETRES

FLOWN AND COMPILED BY AERO SERVICE (AUST) PTY. LTD
CAMBERRA, N.S.W.

PERCUSSION DRILL LOG PDH 52

Proposed location: centre of magnetic anomaly 11.

Actual location : about 100m east of centre of magnetic anomaly 11.

Note:- hole position not surveyed as this hole was drilled south of Naracoopa.

0 - 110' SILTSTONES AND QUARTZITES

Mainly grey siltstones and quartzitic siltstones with minor pyrite present in the chips.

110 - 120' SILTSTONES AND QUARTZITES

As above but here quite large amounts of vein quartz is also present.

120 - 130' VERY DARK BLACK SILTSTONE

Very dark grey black in colour very soft siltstones rich in pyrite and with a high content of vein quartz.

130 - 300' QUARTZITIC SILTSTONES

Grey geen in colour still with a high content of quartz present in the samples.

E.O.H. 300'.

GEOPEKO LIMITED

KING ISLAND

HOLE NUMBER:- W.B.3. DATE:- 2-3-74.

LANDOWNER:- M. BAKER

BLOCK:- CONTRACTORS RESERVE

LOCATION:- PEGARAH ESTATE.

DRILL LOG

0 - 15' SOIL

Initially a grey clay rich soil which becomes orange-brown in colour and more of a sandy loam to 15'.

15 - 35' SILTSTONES

Well weathered grey siltstones occurring as soft crumbly chips in a clay rich matrix.

35 - 55' CLAY

Dark black clay with well weathered rock chips orange brown in colour on the surface but extremely soft white and clay rich when broken. The colour tends to grey towards 55'.

55 - 70' SILTSTONES

Good chips of fresh unweathered grey soft siltstones.

70 - 80' QUARTZITIC SILTSTONES

These chips are dark black in colour and, although fine grained as in the above unit, are very much harder due to the higher quartz content, which is apparent in them.

80 - 90' QUARTZITE

Very hard chips of grey medium grained quartzite. Minor pyrite is apparent on the joints.

90 - 120' SILTSTONES

Good chips of a dense black fine grained siltstone.

E.O.H. 120'

GEOPEKO LIMITED

002033

Geological Legend

EAST COAST SANDSTONES - SHALES

REEKARA QUARTZ MUSCOVITE SCHISTS

WEST COAST METASEDIMENTS
(quartzites and quartz mica schists)

DEVONIAN GRANITE

WEST COAST GRANITE COMPLEX

BASALT

BASIC DYKES

Mt. COUNSEL METAMORPHIC AUREOLE

39 40S

39 50S

39 55S

39 56S

143 30E

143 35E

350000E

580000N

144 00E

144 05E

FLIGHT ALTITUDE	92 METRES		
FLIGHT INTERVAL	TRAVERSE 200 METRES	TIE LINE 4 KILOMETRES	
CONTOUR INTERVAL	TOTAL MAGNETIC INTENSITY	5 GAMMAS	
CONTOUR INTERVAL	TOTAL COUNT	25 CPS	
PROJECTION	INTERGRATED CO-ORD. SYSTEM		
SURVEYED AND COMPILED	MARCH – MAY 1973		
A.S.C. PROJECT NO.	7302		

SHEET INDEX

AIRBORNE GEOPHYSICAL SURVEY

KING ISLAND

TASMANIA

GEOPEKO LIMITED

TOTAL COUNT

002034

5 cm

SCALE 1 : 25,000

0 .5 1 2 3

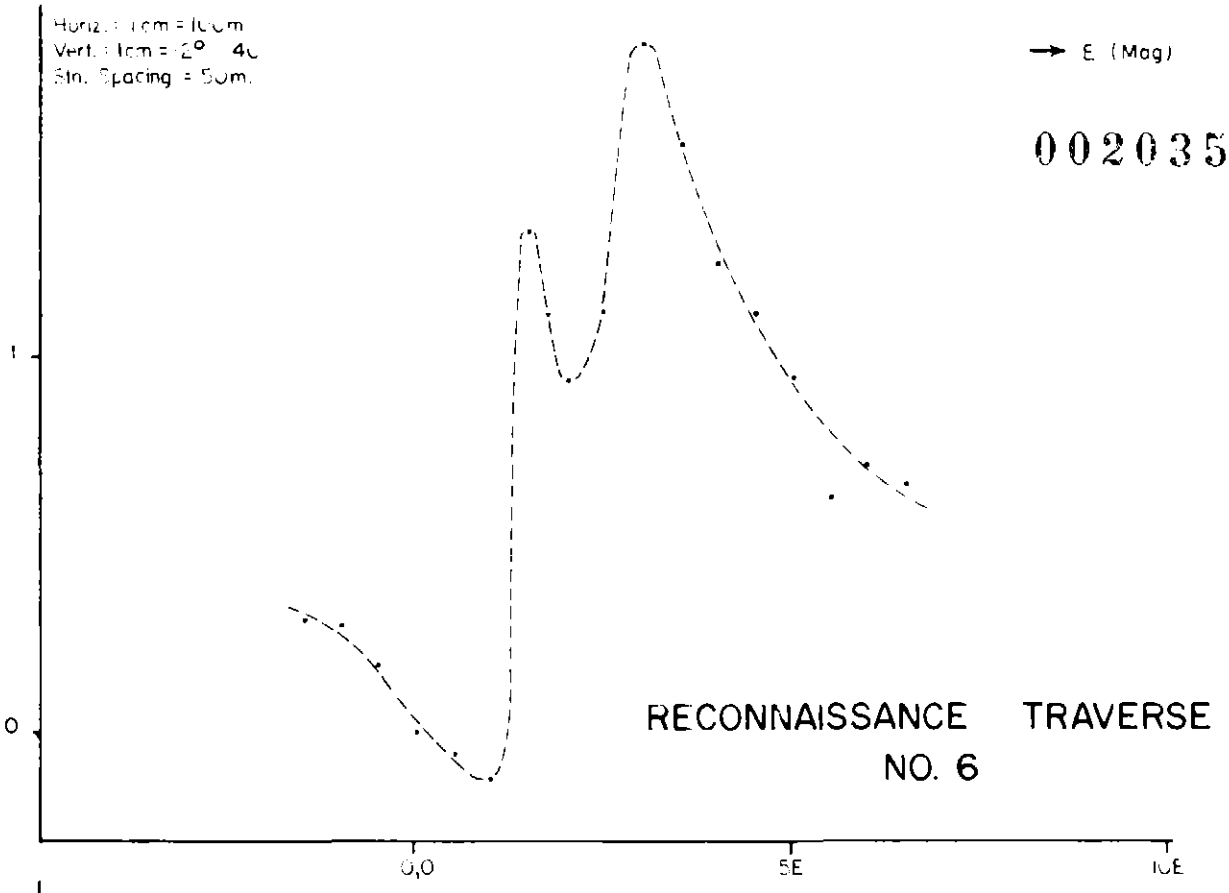
KILOMETRES

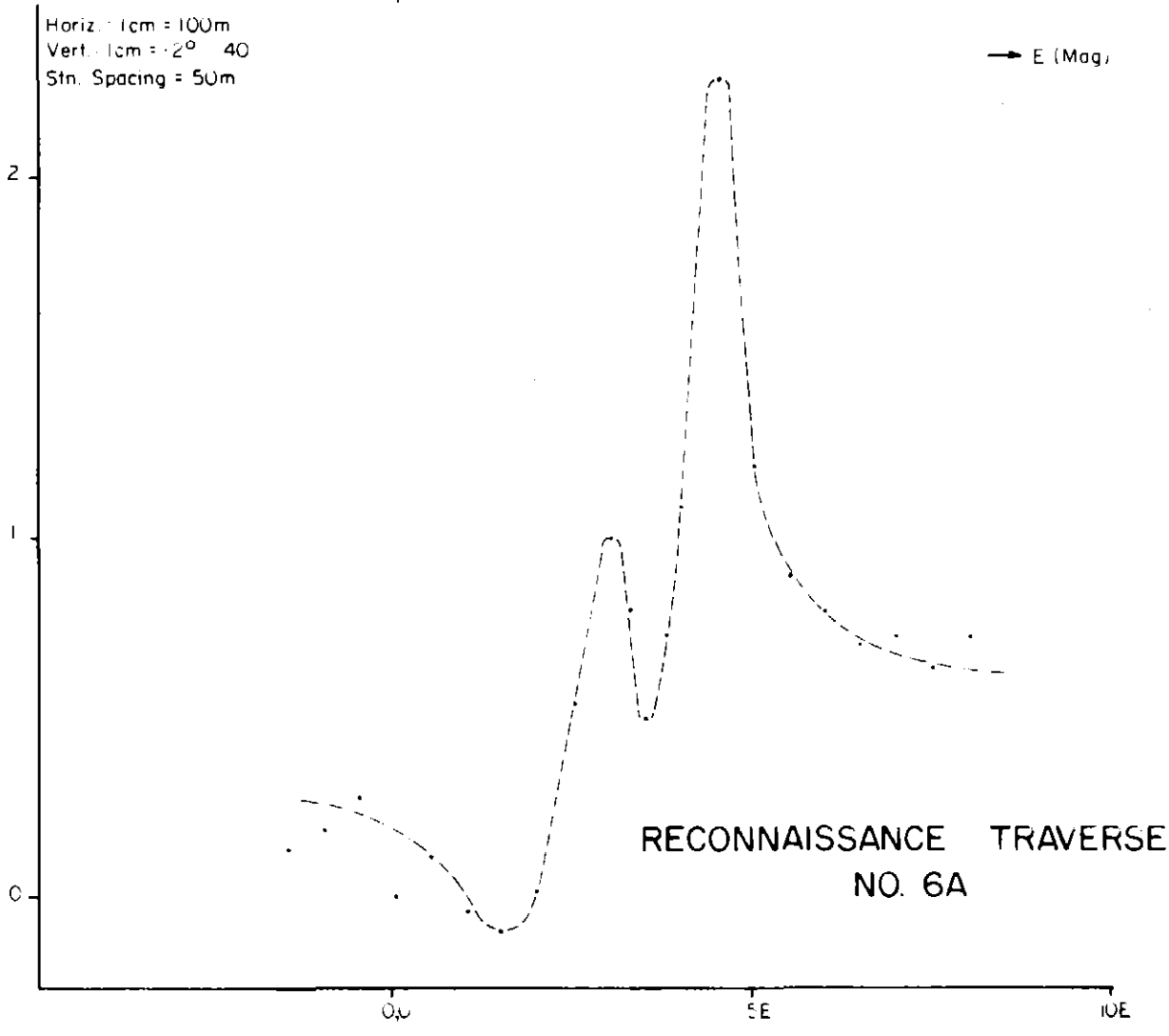
FLOWN AND COMPILED BY AERO SERVICE (AUST) PTY. LTD.

CAMMERAY, N.S.W.

93-3457

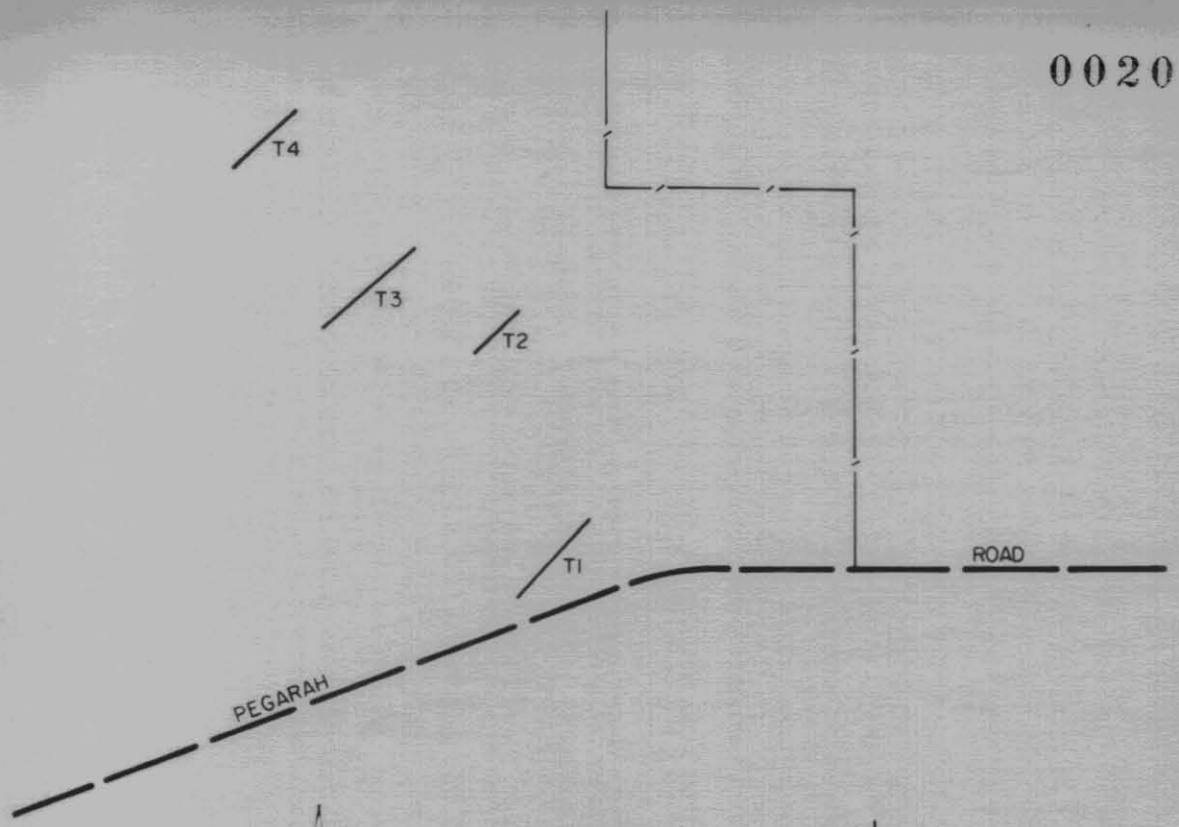
002035

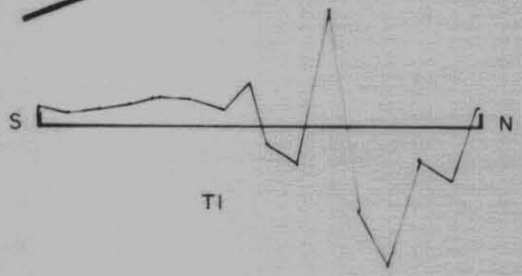


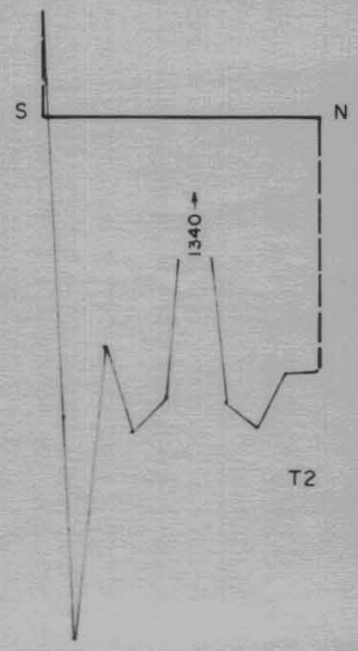


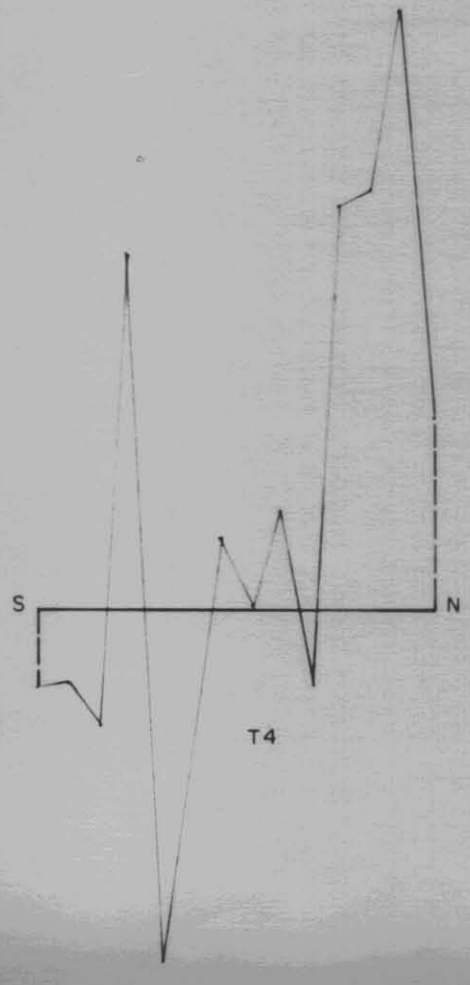
MAGNETIC ANOMALY 6/6A

002036

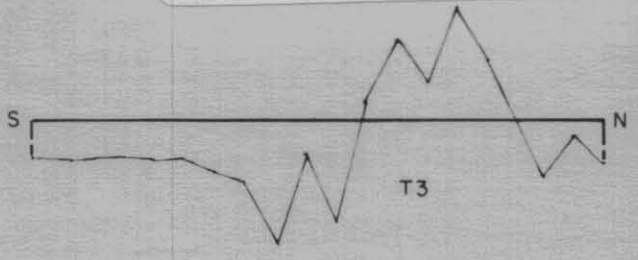








5 cm



INVESTIGATOR 15

MAGNETIC RECONAISSANCE SURVEY

(VERTICAL CPT)

SCALE: 100 /cm

L.A.R. & ASSOCIATES '73

220 000 E

221 000 E

INVESTIGATOR 4

YARRA CREEK

ROAD

569 000 N

569 000 N

INVESTIGATOR 17

568 000 N

568 000 N

INVESTIGATOR 16

220 000 E

221 000 E

002037

5 cm

93-3457

LEGEND:

Rivers and Dams

Roads

Fences

Auger Holes

5 Tungsten Results (ppm)

NOTE: Surveyed on ISG grid.

DATE: SEP '74

GEOLOGIST: SGB

DRAWN: KD

CHECKED: MCR

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1:5000

No. KGII6/17-3

INVESTIGATORS 16 and 17 TUNGSTEN GEOCHEMISTRY

INVESTIGATOR 4

INVESTIGATOR 17

INVESTIGATOR 16

220 000 E

221 000 E

569 500 N

568 500 N

567 500 N

YARRA CREEK

ROAD

01635 01634 01633 01632 01631 01630 01627 01628 01629 01626 01625 01624 01623 02304 1619 1620 1621 1622 2303 2305 2306 2307 2308 03019 01299 01296 01298 01297 01292 01293 01294 01295 03020 01291 01290 01289 01618 03021 01614 01615 01616 01617 03022 01552 01553 01554 01555 03023 01559 01558 01557 01556 02327 02328 02329 02310 02309 02311 02312 02313 02314 02324 02323 02322 01560 01561 01562 01563 01566 01565 01564 01567 01568 01569 1572 1571 1570 03024 03025 03026 03027 02301 02302 02315 02316 02317 02318 02319 02320 02321 02325 02326 03028 03029 1373 1375 1374 1378 1376 1377 01379 01380 01381

01604 01605 01606 01607 01608 3401 1275 1276 1277 1278 1279 1280 1281 1282 1283 03400 01612 01610 01609 01611 01613 01264 01262 01251 01253 01255 01256 01258 01260 01265 01266 01267 01268 01269 01270 01271 01272 01273 01274

5 cm

GSK No.s	Cu	Pb	Zn	Ni	Bi	Mo	W
	GEOCHEMICAL RESULTS						
	INVESTIGATOR 17						
1289	15		45	55	<20	2	120
1290	30		70	55	<20	2	150
1291	15		50	40	<20	2	60
1292	20		70	20	<20	<2	15
1293	80		100	50	<20	10	25
1294	65		50	25	<20	<2	25
1295	40		50	40	<20	2	20
1296	35		90	45	<20	<2	15
1297	15		60	40	<20	<2	10
1298	50		40	40	<20	<2	10
1299	50		55	20	<20	<2	10
1552	30			50	<20	<2	15
1553	80			45	<20	<2	2
1554	20			40	<20	<2	2
1555	10			50	<20	<2	5
1556	15			30	<20	<2	15
1557	15			25	<20	<2	10
1558	65			55	<20	<2	2
1559	45			40	<20	<2	2
1560	25			25	<20	<2	2
1561	50			30	<20	<2	2
1562	20			25	<20	<2	5
1563	10			15	<20	<2	5
1564	10			25	<20	<2	5
1565	120			80	<20	<2	<2
1566	25			20	<20	<2	<2
1567	20			10	<20	<2	<2
1568	45			25	<20	<2	2
1569	15			55	<20	<2	<2
1570	10			40	<20	<2	2
1571	40			40	<20	<2	10
1572	20			35	<20		2
1614	30		65	25	<20	<2	15
1615	30		40	35	<20	<2	30
1616	15		35	35	<20	<2	15
1617	20		20	50	<20	<2	10
1618	25		55	35	<20	<2	15
1619	10		40	45	<20	<2	5
1620	35		60	70	<20	<2	5
1621	15		50	30	<20	<2	2
1622	15		50	25	<20	<2	10
1623	10		20	20	<20	<2	5
1624	20		20	15	<20	<2	10
1625	25		100	20	<20	<2	2
1626	20		55	35	<20	<2	15
1627	20		65	20	<20	<2	5
1628	30		35	20	<20	<2	5
1629	20		15	20	<20	2	2
1630	10		5	35	<20	2	2
1631	10		25	10	<20	2	<2
1632	20		40	15	<20	<2	2
1633	15		25	15	<20	2	2
1634	20		60	20	<20	<2	10
1635	25		20	10	<20	2	5
2301	40			<5	<20	5	260
2302	25			10	<20	5	350
2303	70			350	<20	2	40
2304	15			5	<20	<2	30
2305	30			5	<20	<2	20
2306	30			10	<20	<2	30
2307	140			10	<20	5	5
2308	130			20	<20	<2	5
2309	90			20	<20	5	20
2310	150			10	<20	2	90
2311	110			15	<20	<2	10
2312	130			110	<20	<2	5
2313	280			50	<20	150	<2
2314	35			10	<20	<2	10
2315	20			20	<20	5	20
2316	230	20	40	20		2	40
2317	140	20	30	10		2	20
2318	250	35	55	25		<2	30
2319	510	20	40	15		<2	40
2320	110	25	30	20		15	60
2321	190	25	45	20		<2	15
2322	55	35	30	15		<2	<2
2323	65	35	40	15		<2	<2
2324	110	35	100	30		<2	<2
2325	60	60	55	15		2	<2
2326	35	55	35	20		<2	<2
2327	110	40	60	20		<2	30
2328	130	45	90	25		<2	10
2329	60	45	50	20		<2	20
3019	45	20	80	20	<20	2	<2
3020	30	30	10	<5	<20	10	2
3021	30	<20	30	<5	<20	2	<2
3022	20	<20	30	<5	<20	2	<2
3023	20	20	40	<5	<20	2	<2
3024	25	<20	85	60	<20	<2	<2
3025	35	20	100	20	<20	5	<2
3026	10	<20	60	15	<20	2	5
3027	10	<20	20	5	<20	2	10
3028	40	<20	50	10	<20	2	2
3029	25	<20	80	20	<20	2	2
	INVESTIGATOR 16						
1251	290	40	40	50	<20	15	60
1253	230	35	55	35	<20	15	20
1255	80	35	60	45	<20	<2	10
1256	40	30	60	25	<20	<2	10
1258	45	40	95	20	<20	<2	<2
1260	55	40	65	15	<20	<2	2
1262	80	50	30	15	<20	<2	5
1264	35	80	45	25	<20	<2	20
1265	15	40	15	20	<20	<2	5
1266	15	25	20	10	<20	<2	2
1267	25	30	25	15	<20	<2	<2
1268	20	35	30	15	<20	<2	2
1269	10	20	10	35	<20	<2	2
1270	25	25	55	10	<20	<2	5
1271	45	40	40	15	<20	<2	5
1272	20	25	20	15	<20	<2	5
1273	25	30	45	15	<20	<2	10
1274	20	35	30	15	<20	<2	10
1275	90	50	20	10	780	150	70
1276	15	80	15	10	<20	<2	15
1277	15	45	15	10	<20	<2	10
1278	75	45	25	10	<20	<2	10
1279	15	40	25	20	<20	<2	<2
1280	95	30	60	50	<20	<2	2
1281	75	35	45	15	<20	<2	10
1282	30	30	60	20	<20	<2	<2
1283	25	25	45	20	<20	<2	20
1373	25	40	120	20	<20	2	10
1374	10	25	15	30	<20	2	30
1375	15	30	35	110	<20	<2	15
1376	15	35	50	80	<20	<2	40
1377	15	40	45	110	<20	<2	40
1378	15	35	35	25	<20	2	20
1379	20	30	85	20	<20	<2	10
1380	50	35	70	30	<20	<2	20
1381	30	30	70	45	<20	<2	20
1604	200	35	10	40	<20	30	20
1605	50	60	10	20	<20	40	5
1606	25	65	30	35	<20	2	20
1607	30	40	20	210	<20	<2	<2
1608	25	35	30	30	<20	2	5
1609	70	60	15	45	<20	<2	<2
1610	40	30	15	20	<20	2	<2
1611	35	40	15	40	<2	<2	<2
1612	40	60	15	40	20	<2	<2
1613	35	35	10	25	20	<2	<2
3400	50	<20	40	20	20	<2	<2
3401	80	<20	40	25	20	<2	20

LEGEND:

- Rivers and Dams
- Roads
- Fences
- O Auger Holes
- 01234 GSK Numbers

NOTE: Surveyed on ISG grid.

DATE: SEP. '74
GEOLOGIST: SGB
DRAWN: KD
CHECKED: MCR

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE: 1:5000

No. KG116/17-2

INVESTIGATORS 16 and 17 TOTAL GEOCHEMISTRY

93-3457

002038

220 000 E

221 000 E

INVESTIGATOR 4

YARRA CREEK ROAD

569 000 N

INVESTIGATOR 17

5 cm

568 000 N

INVESTIGATOR 16

220 000 E

221 000 E

93-3457

LEGEND:

- Rivers and Dams
- Fault
- Roads
- Geological Boundary
- Fences
- Auger Holes
- abc Geological Data
- qt Quartzite
- s Siltstones
- sd Sandstones
- g Granite
- ap Aplite
- fsp Feldspar Porphyry
- n Quartz
- Δ Breccia
- pyh Pyrrhotite

NOTE: Survey on ISG grid.

DATE: SEP '74
GEOLOGIST: SGB
DRAWN: KD
CHECKED: MCR

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE: 1:5000

No. KG116/17-1

INVESTIGATORS 16 and 17 GEOLOGY

002039

NOTE: Magnetic Survey by R. G. A. Tuson, Feb. – March 1970,
using Askania Gfz. No. 671015 with scale value of 228·8 gammas per degree
and Askania Gfz. No. 681645 with scale value of 224·8 gammas per degree
and by V.K. Hjorring, Aug. – Oct. 1970, & R.G.A.Tuson & D.M.Rayburn, March 1971,
using Askania Gfz No. 58215I with scale value of 213·5 gammas per degree
and by L. Farrar, Feb. 1972
using Askania Gfz No. 671015 with scale value of 228·8 gammas per degree.

Magnetic Datum – King Island 1970 Base Station.

Co-ordinates are in terms of I.S.G.

002040 93-3457

GEOPEKO LTD.

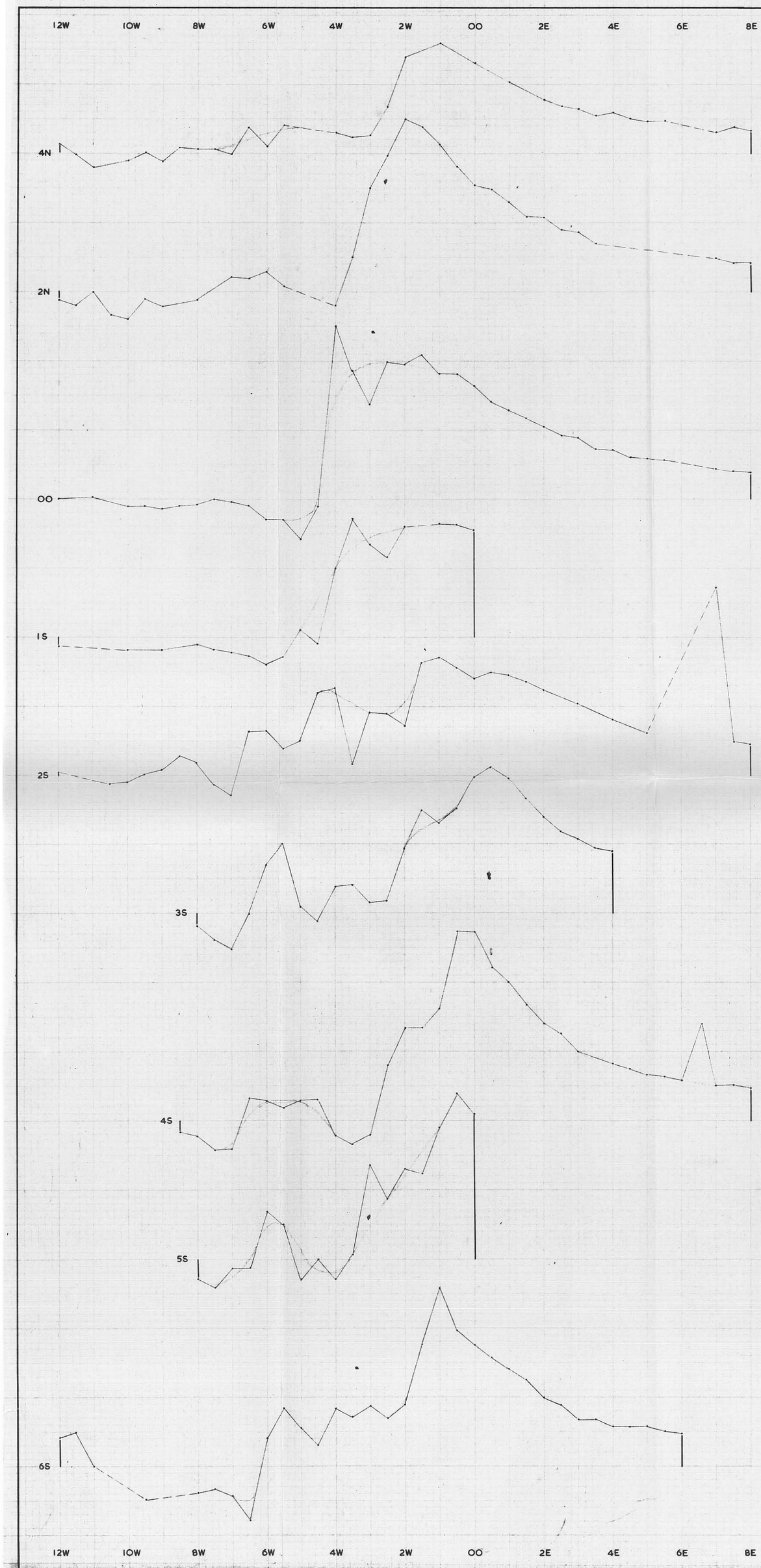
Geophysical Survey – King Island. Tas.

INVESTIGATOR I (16, 17) BOLD HEAD.

Plan showing Geomagnetic Vertical Component Contours.

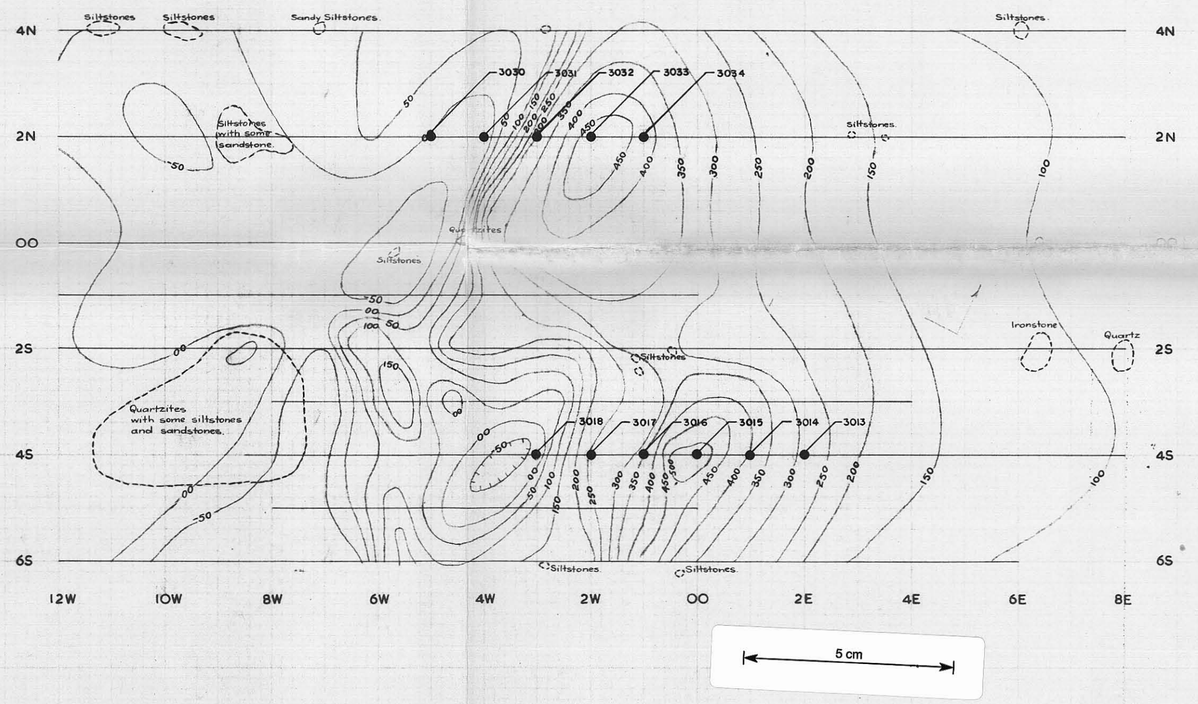
Contour Interval :- 50 & 100 gammas.

Scale :- 25 metres to one cm 1 : 2500



GEOCHEMICAL RESULTS

SAMPLE NO.	Cu	Pb	Zn	Ni	Bi	Mo	W
3013	40	<20	60	20	<20	10	10
3014	10	<20	25	50	<20	10	10
3015	30	20	20	15	<20	10	<2
3016	15	<20	25	5	<20	10	<2
3017	15	<20	25	5	<20	10	<2
3018	40	<20	60	20	<20	10	<2
3030	30	<20	45	25	<20	10	2
3031	20	<20	70	40	<20	10	<2
3032	120	<20	65	20	<20	10	<2
3033	15	<20	85	20	<20	10	<2
3034	30	<20	60	30	<20	10	<2



5 cm

93-3457

002041

Geological information as shown on Plan by J. J. Gresham dated 23/3/70.

Locality is 1 mile NE. of Lymwood.

245700 E
5567250 N

Magnetic Survey: by R.G. Tuson March 1970 using
Askania Gfz Magnetometer No. 671015, Scale Value 228·8 Gammas per Degree.
& " " " No. 681695, Scale Value 229·8 Gammas per Degree.

Magnetic Datum: King Island 1970 Base Station.

3035 . Auger drill hole and sample number.

GEOPEKO LTD.

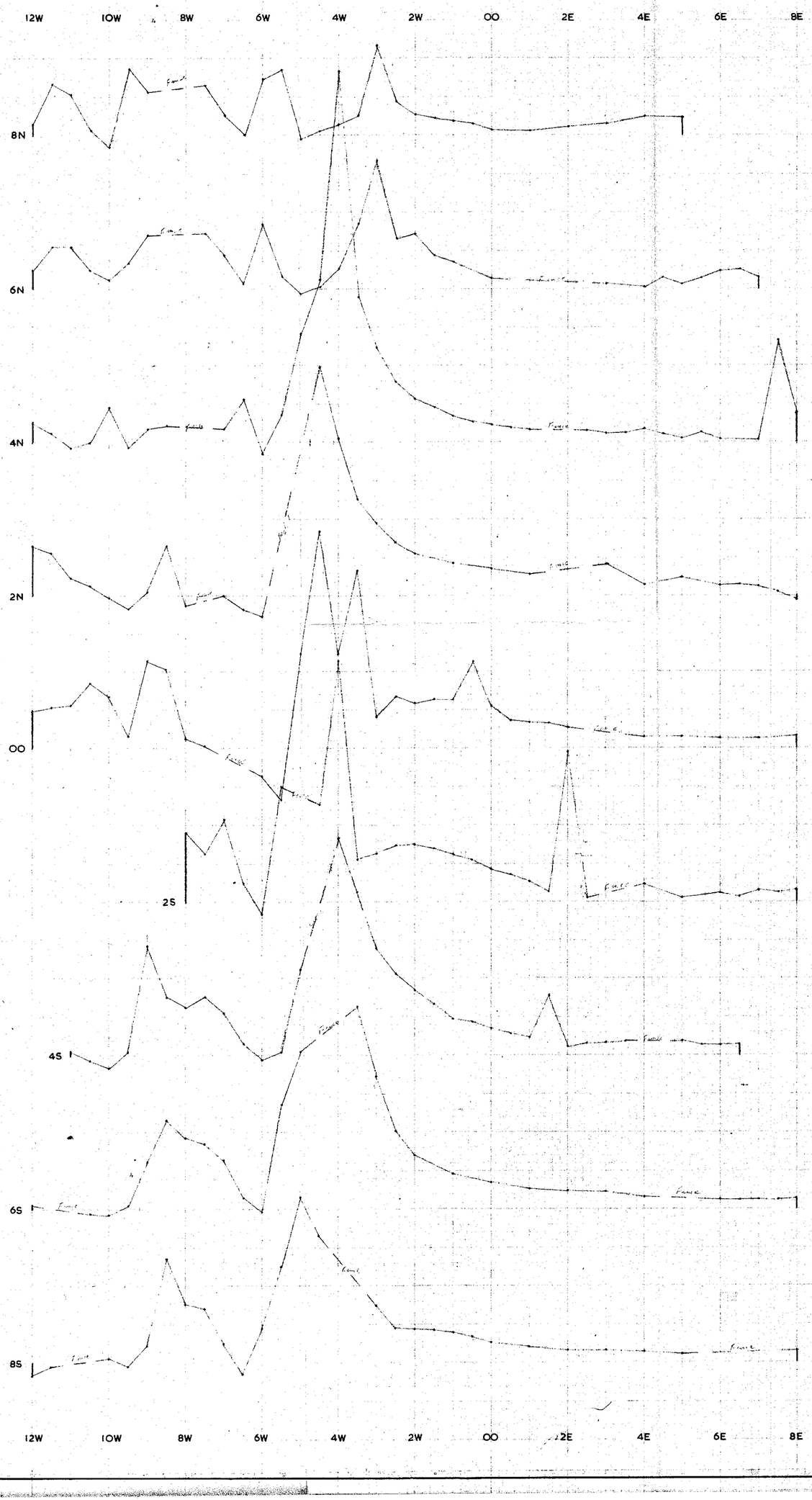
Geophysical Survey – King Island. Tas.

INVESTIGATOR 9.

Plan showing Geomagnetic Vertical Component Profiles and Contours.

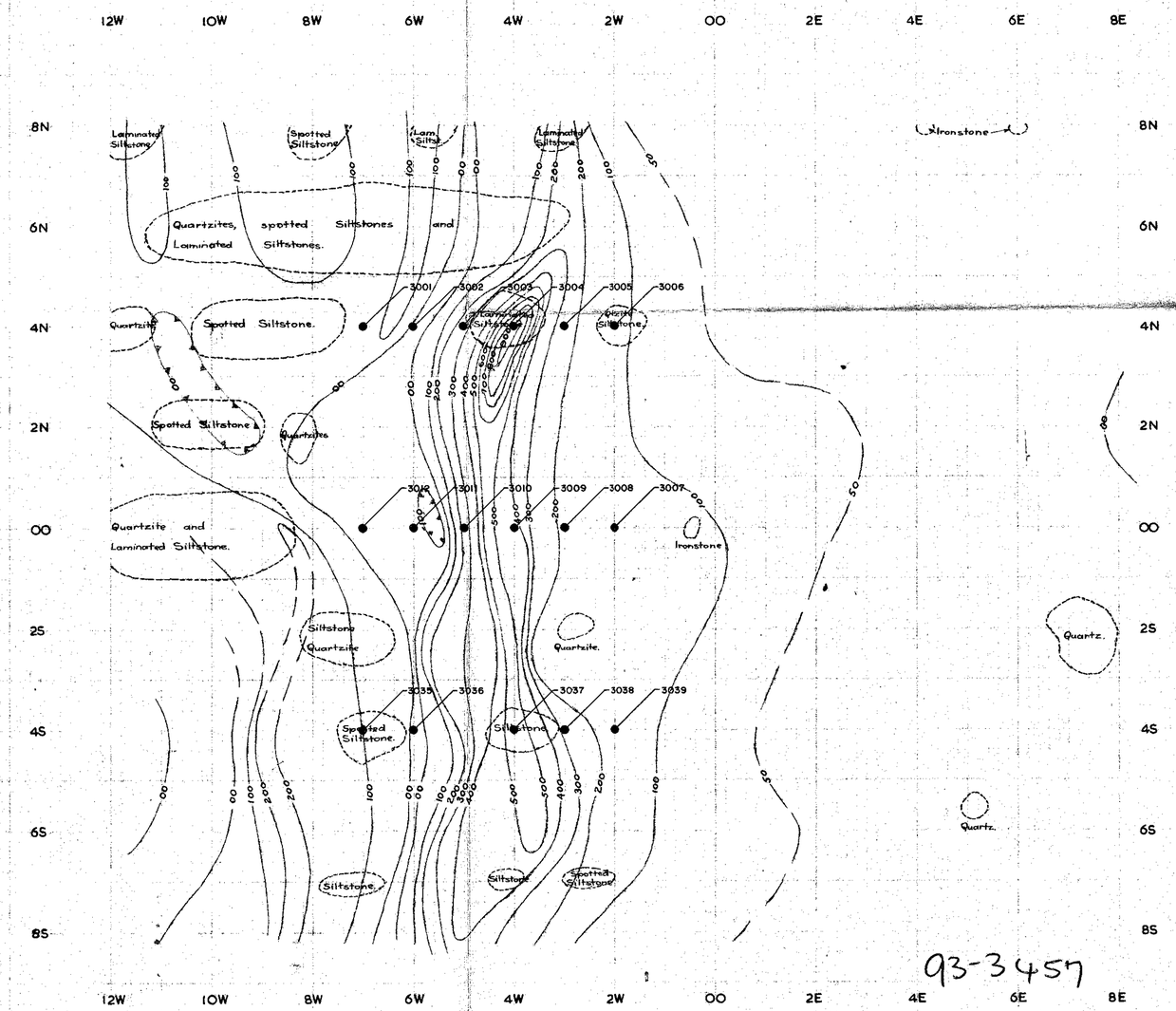
Contour Interval :– 50 gammas.

Scale :– Hor :– 200 feet to an inch.
Vert :– 200 gammas to an inch.



GEOCHEMICAL RESULTS

SAMPLE NO.	Cu	Pb	Zn	Ni	Fe	Bi	Mo	W
3001	10	20	35	20	—	<20	5	2
3002	20	60	40	20	—	<20	5	<2
3003	10	20	90	25	—	<20	2	<2
3004	10	35	15	15	—	20	5	2
3005	40	25	80	30	—	<20	2	2
3006	50	20	80	20	—	<20	5	5
3007	60	20	90	40	—	<20	5	2
3008	45	20	95	50	—	<20	5	5
3009	10	<20	110	35	—	<20	5	2
3010	20	<20	90	30	—	<20	5	<2
3011	15	<20	75	30	—	<20	5	<2
3012	20	<20	70	20	—	<20	5	<2
3035	5	<20	45	20	620	<20	2	5
3036	10	<20	75	25	750	<20	2	5
3037	15	<20	60	10	770	<20	2	5
3038	15	<20	75	20	1000	<20	10	5
3039	30	<20	90	20	1000	<20	5	5



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Geological information as shown on Plan by J.J. Gresham dated 24/3/70.

Locality is 1 mile SW. of Lymwood.

293400E
5569400N

002042

Magnetic Survey: by R.G. Tuson March 1970 using Askania Gfz Magnetometer No.671015, Scale Value 228·8 Gammas per Degree.

3035 Auger drill hole and sample number

Magnetic Datum: King Island 1970 Base Station.

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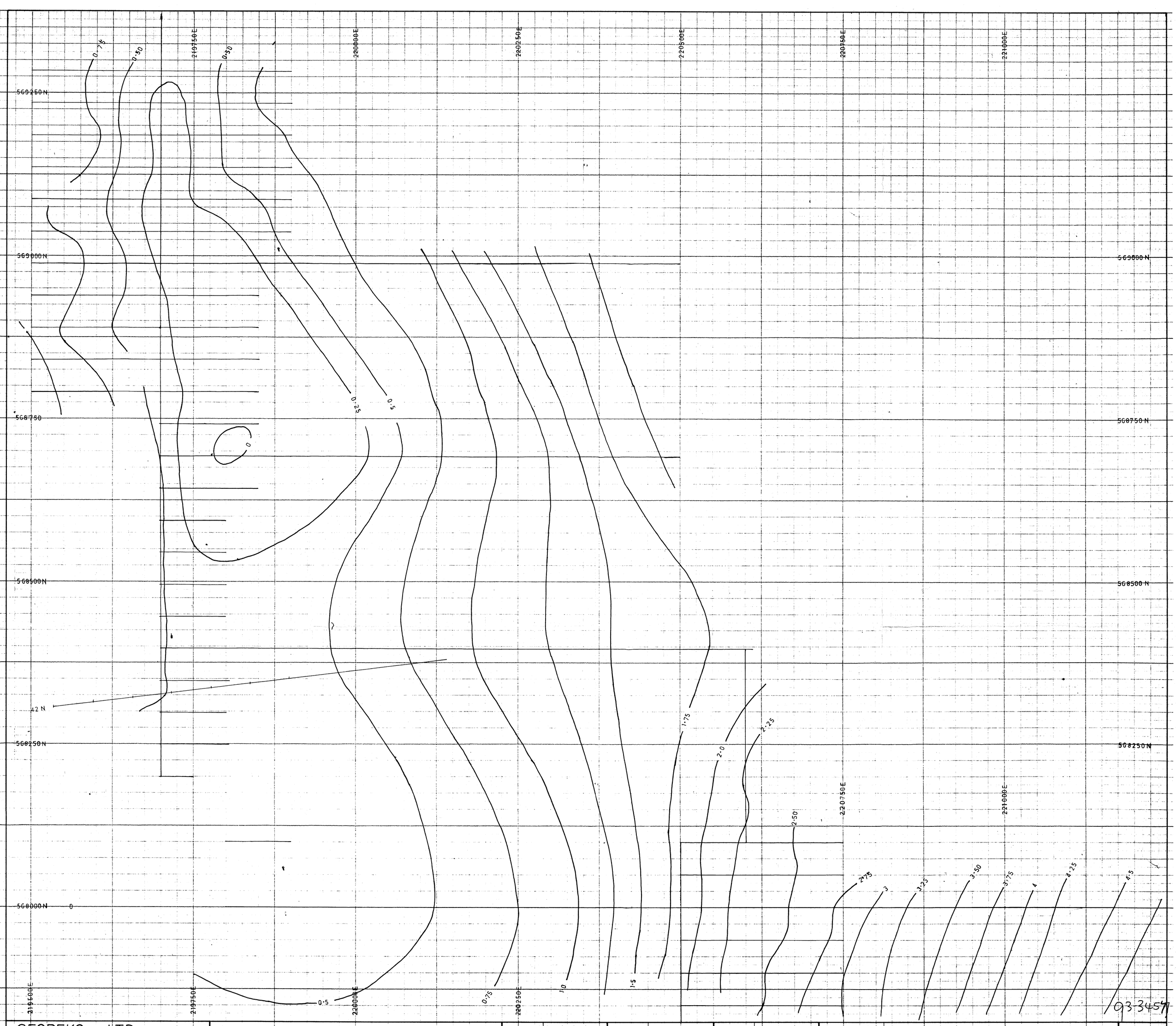
INVESTIGATOR 10.

Plan showing Geomagnetic Vertical Component Profiles and Contours.

Contour Interval :– 100 gammas.

Scale :– Hor :– 200 feet to an inch.
Vert :– 200 gammas to an inch.



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Geophysical Surveys.
Plan No. 2

Instrument	Worden Gravimeter No 38	Datum	See Note plan 1	Hor. Scale	1:2500	AREA	King Island Tasmania
Observer	V.H. Hjorring R.G.A. Tuson L.J.D. Farrar	Base Peg	1N/GE	Vert. Scale		PROSPECT	BOLD HEAD (INVESTIGATOR 1,16,17)
Scale Fact.	0·1048	Date	Sept – Oct 1970 Jan – Feb 1972	Cont. Int.	0·25 Mgals	PLAN SHOWS	Gravity Contours

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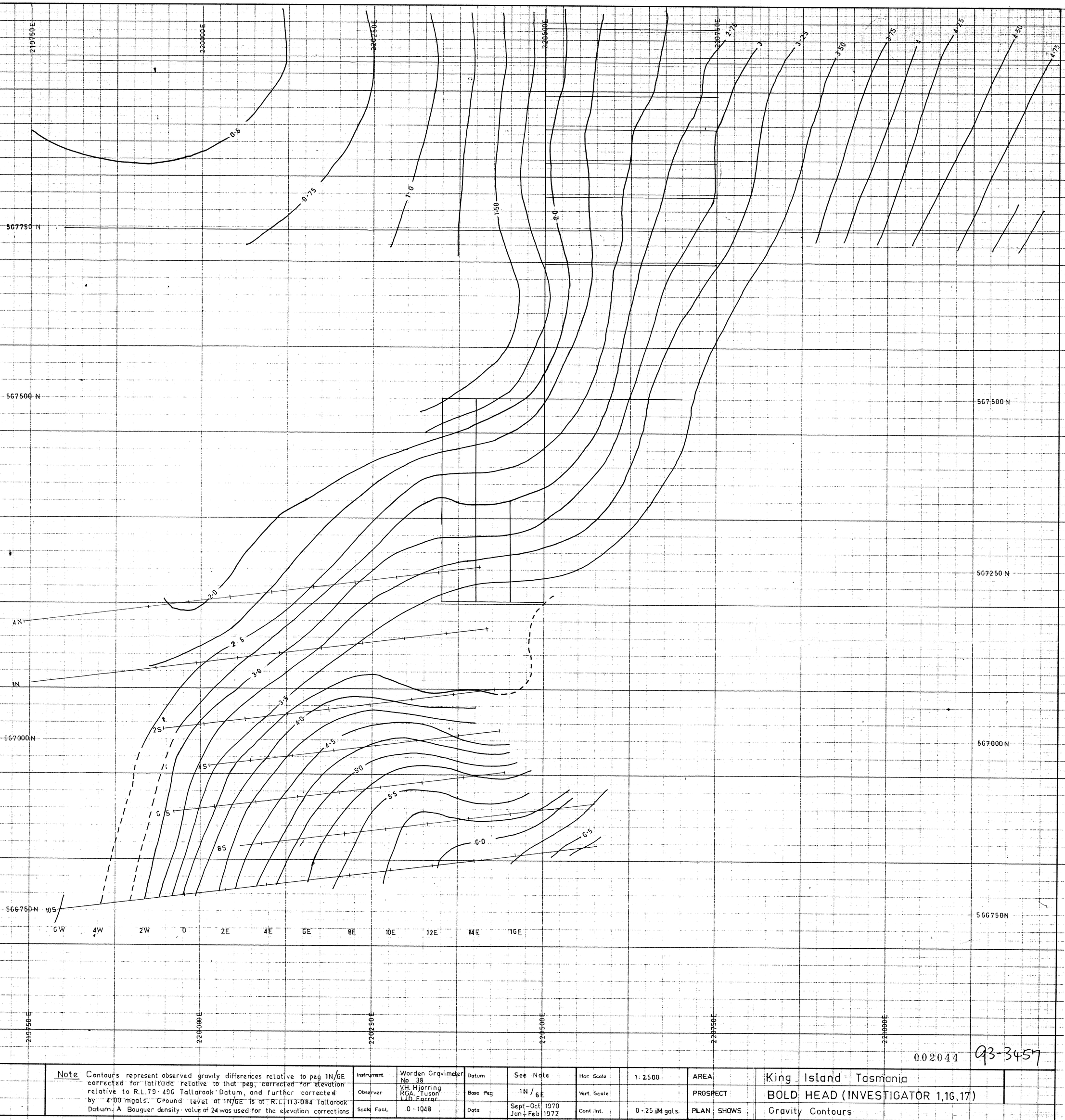

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GEOPEKO LTD Geophysical Surveys. Plan No. 1	Note Contours represent observed gravity differences relative to peg 1N/6E corrected for latitude relative to that peg, corrected for elevation relative to R.L.79·496 Tallarook Datum, and further corrected by 4·00 mgals. Ground level at 1N/6E is at R.L. 113·084 Tallarook Datum. A Bouguer density value of 24 was used for the elevation corrections	Instrument	Worden Gravimeter No 38	Datum	See Note	Hor. Scale	1:2500	AREA	King Island Tasmania
		Observer	V.H. Hjorring RGA. Tuson L.J.D. Farrar	Base Peg	1N / 6E	Vert. Scale		PROSPECT	BOLD HEAD (INVESTIGATOR 1,16,17)
		Scale Fact.	0·1048	Date	Sept–Oct 1970 Jan–Feb 1972	Cont. Int.	0·25 mGals.	PLAN SHOWS	Gravity Contours