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GEOPEKO LIMITED

KING ISLAND

MICROFILMED

REPORT No. KI/77/3

LOONGANA AREA - TASMANIA,

PROGRESS REPORT EXPLORATION LICENCE 2/76.

JOINT VENTURE, GEOPEKO LIMITED - E.Z. COMPANY OF AUSTRALASIA LTD.

by

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DEVONPORT, TASMANIA OCTOBER, 1977.

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SUMMARY

Exploration Licence 2/76, termed Loongana is jointly held by Geopeko Limited and the E.Z. Company of Australasia Limited.

This report reviews exploration activity since the initial progress report on Loongana (Rogers, 1976).

Phase 2 of the onward exploration program involved the following techniques:

(a) Challenger 1
-5650 metres of gridding.
-119 handaugered holes for soil geochemistry.
-geological mapping at 1:5000 scale.

(b) Challenger 2
-12500 metres of gridding.
-301 handaugered holes for soil geochemistry.
-geological mapping at 1:5000 scale.

(c) Challenger 3
-9900 metres of gridding.
-121 handaugered and 139 power augered holes for soil geochemistry.
-geological mapping at 1:5000 scale.

(d) Other areas
Drainage sediment sampling:
-13 drainage sediment samples collected from Black Marsh Creek.
-11 drainage sediment and 11 panned heavy mineral concentrate samples from a stream anomalous in tin.
-5 drainage sediment samples from an area anomalous in tungsten.
-geological reconnaissance mapping at 1:10,000 scale at each location.

Soil sampling:
-15 handaugered holes for soil geochemistry along Query road across an area anomalous in lead and zinc.

Phase 2 of the exploration program has indicated that:

(a) The drainage geochemical anomalies at the Challenger 1 prospect are very probably due to elevated base metal values (as shown by soil geochemistry) in tuffaceous sediment bands. There would appear to be no potential for economic Cu, Pb, Zn mineralization.

(b) At Challenger 2, two low magnitude Pb soil geochemical anomalies (peak 1200 ppm) and a low order (peak 730 ppm) Zn anomaly have been located. The source of these soil anomalies is very probably giving rise to the extensive drainage anomaly. The soil anomalies have not been tested.

(c) At Challenger 3 a 32 metre wide laminated black shale horizon anomalous in Cu, Pb and Zn has been traced over 400 metres strike length. This horizon requires further testing and has a potential to host massive Pb - Zn - (Cu) sulphide ore.

(d) The various other areas appear to have no potential for economic mineralization.
- Tungsten near the Mt. Housetop Granite.
- Tin in Native Track Tier.
- Pb, Zn near Query Road.

Recommendations for Phase 3 of the onward exploration program are given in this report.

INTRODUCTION

Exploration Licence 2/76 is jointly held by Geopeko Limited and the E.Z. Company of Australasia Limited.

Phase I of the exploration program conducted during early 1976 consisted of reconnaissance geology and stream sediment sampling. Three areas having a potential for massive sulphide deposits emerged. These were designated Challenger's 1,2, and 3. Phase 2 was designed to test these prospects and three other minor anomalous areas.

This report reviews exploration progress at Loongana since the initial progress report. (Rogers, 1976).

Field work was undertaken between late November and Christmas 1976, while based at the Upper Natone farmhouse and also during the period from late April to September 1977 from an on-site caravan camp.

The exploration program and necessary funds were approved at a joint venture partners' Operating Committee meeting on 15th November 1976, and on 18th November field work for Phase 2 commenced.

Phase 2 of the exploration program consisted of:

(a) Gridding, soil sampling and geological mapping at 1:5000 scale at Challengers 1,2 and 3.

(b) Follow up geological reconnaissance mapping at 1:10,000 scale and limited soil and drainage sediment sampling in two areas delineated during the Phase I drainage sediment sampling. An area anomalous in Lead and Zinc and one in Tin were examined.

(c) Geological reconnaissance mapping at 1:10,000 scale and limited drainage sediment sampling of an area anomalous in Tungsten.

(d) Reporting.

CONCLUSIONS

Challenger 1

1. The source of the anomalous drainage geochemical results is probably elevated base metal values within thin tuffaceous sediment horizons which are intercalated within a flow brecciated lapilli lithic vitric crystal tuff.

2. Excellent correlation exists between rock types mapped at the prospect and those exposed along a track approximately 700 metres south. The structural trend of rocks is northerly with moderate easterly dips.

3. The geochemical response in the soils over the tuffaceous sediment horizons are of moderate magnitude (peaks Cu 65 ppm, Pb 240 ppm, Zn 940 ppm) and are unlikely to indicate the presence of an economic deposit of the Rosebery type.

4. There is no evidence of intensive sericitic, chloritic or argillic alteration in the rocks.

Challenger 2

1. The geological environment consists of pyroclastic rocks of rhyolitic composition and volcaniclastic sediments, intruded? by a rhyodacitic porphyry.

2. There is no evidence of intensive sericitic, chloritic or argillic alteration in the rocks

3. The geochemical soil anomalies for Pb and Zn are not coincident but appear to be linear, enechelon, trending grid N.W. This direction is not consistent with apparent trends of the rock units.

Peak values in Pb and Zn are 1200 ppm and 730 ppm. The northern Pb anomaly is within the rhyodacitic porphyry and the southern Pb anomaly within the "flanking pyroclastics". It is considered that the source of the soil anomalies is probably also giving rise to the anomalous drainage results.

4. A poor correlation exists between soil geochemical anomalies and rock geochemical analyses from outcrops within the soil geochemical anomalies.
A sample of rhyodacitic porphyry taken from within the northern Pb soil geochemical anomaly (peak 920 ppm Pb) assayed 240 ppm Pb (and 490 ppm Zn). A sample of lithic crystal tuff of gross rhyolitic composition, taken from within the peak Zn (730 ppm) soil geochemical anomaly assayed 140 ppm Zn. (and 50 ppm Pb).

5. Manganese scavenging of zinc is unlikely to have produced the anomalous stream sediment results.

Challenger 3

1. The geological environment consists of an altered rhyolite lava, glassy acid lava, ash flow pyroclastics and black laminated shale.

2. The black shale horizon is anomalous in Cu, Pb and Zn. Peak values are 280 ppm Cu, 520 ppm Pb and 1760 ppm Zn. Visually estimated average values are 50 ppm Cu, 120 ppm Pb and 400 ppm Zn.

3. The black shale horizon has a measured thickness of 32.6 metres at one locality and has a thickness potential to host massive Pb-Zn sulphide ore.

4. Field relationships, primary foliation orientations and a bedding reading in the black shale indicate that the structural trend of the rocks is northwest with moderate dips to the northeast.

5. The exact origin and occurrence of the massive barite remains unresolved however it is suspected to probably represent remobilized material infilling faults.

6. Geological mapping and reconnaissance magnetometer traverses indicate that the basalt to the immediate south and southwest of the Two Hummocks is probably weathered and thin. Potential prospective ground therefore exists below the thin cover of basalt in this region.

7. The extent of the altered rhyolitic lava mapped in the south western grid sector remains unknown. This unit may extend a further 500 metres south to the basalt cover or be in contact with other prospective units. It is suspected to be faulted against Silurian sediments west of the Two Hummocks.
This rock type represents potential prospective ground.

8. The soil geochemical survey over the gridded area indicates the unlikely presence of a near surface mineral body. The broad spaced soil geochemistry of 200m x 50m would probably not be sufficiently close spaced to locate a suboutcropping mineral body in this area.

Tin drainage anomaly

No tin mineralization was evident during panning of steam sediment. Only low values for Sn (most were less than 20 ppm, peak 25 ppm) were reported from stream sediment and panned heavy concentrate samples. Therefore there is no potential for economic tin mineralization.

Tungsten drainage anomaly

Geological reconnaissance mapping indicates that rocks immediately adjacent to the southern Mt. Housetop granite batholith are probably contact metamorphic equivalents of the silty members of the Upper Cambrian Monia sandstone unit. Structural geological considerations of the predominant NE strike and NW dip indicate that the overlying Lower Ordovician Gordon Limestone is unlikely to be present to act as a host for significant tungsten mineralization. The peak geochemical result for W is 37 ppm by X.R.F. There is therefore no potential for economic tungsten mineralization.

Query Road - "Other Pb-Zn anomalous areas -A"

The source of the anomalous drainage sediment response for KD 0337, KD 0073, KD 0338, KD 0076 and KD 0083 of the Phase 1 survey is probably elevated base metal values (peaking at 75 ppm Cu, 260 ppm Pb, 300 ppm Zn,) within siltstone horizons.
There is no potential for economic massive Pb-Zn sulphide mineralization.

General

1. No definite correlation between lithologies at Challengers 1,2 and 3 has been achieved. The only rock type common to both Challengers 1 and 3 is probably the glassy fine grained acid lava? containing "nodules" in places.

2. To date only anomalies located using detailed stream sediment geochemistry in areas of outcropping Cambrian volcanics and pyroclastics (principally Challengers 1 and 2) and an area of geological significance (Challenger 3) have been tested.
Areas of prospective Cambrian volcanics not exposed but overlain by basalt have not been examined.
Deeper seated anomalies having no surface geochemical expression have also not been examined.

RECOMMENDATIONS

Challenger 1

1. That no further work is warranted.

Challenger 2

1. Consideration be given to conducting electrical geophysical techniques (S.P. & I.P.) over the Pb soil anomalies to test for conductors and possible sulphide. This would involve approximately 1 or 2 days work totalling approximately 2 line kilometres.

2. Depending on the results of the geophysical survey the source of the anomalies be determined by diamond drilling.

Challenger 3

1. Bedrock geochemistry (deploying power auger) be undertaken on lines 400m apart along the strike of the black shale horizon. Along strike prospecting of the black shale horizon is warranted as such horizons are recognized as possible hosts to massive Pb-Zn mineralization of the Rosebery type. This would involve approximately 18 holes, 9 holes on each of existing grid lines 5 413 800 N and 5 413 400 N. This would represent approximately 2 days drilling.

2. Depending on whether encouraging results are obtained from 1, deploy electrical geophysical techniques to trace the black shale horizon under the thin basalt cover to the south.

Further testing of the shale horizon would be carried out by auger-core drilling in order to penetrate the overlying basalt.

3. Extensions to the existing grid be made to cover the potential prospective ground south of the Two Hummocks. Lines should be at 200 metre spacings with pegs placed at 50 metre intervals. This would involve 4700 line metres of gridding.

4. Handauger soil sampling and where access permits, power augered soil geochemistry be conducted at 50 metre spacings along the grid lines. Approximately 95 samples would be collected. Samples should be analysed for the following elements:

Cu, Pb, Zn, Ag, Mn, Fe.

Results should be plotted at 1:5000 scale.

5. Geological mapping on the grid, mainly involving rock chip cuttings from the auger work. Mapping should be recorded at 1:5000 scale.

6. Geological reconnaissance of Grasstree Ridge to determine the western limit of the volcanics.

7. Geological reconnaissance be undertaken to determine the attitude (strike and dip) of the unconformably overlying Upper Cambrian conglomerate which caps the Two Hummocks. The aim of this work would be to assess the potential for the black shale horizon occuring under basalt to the NW of the quarry outcrop.

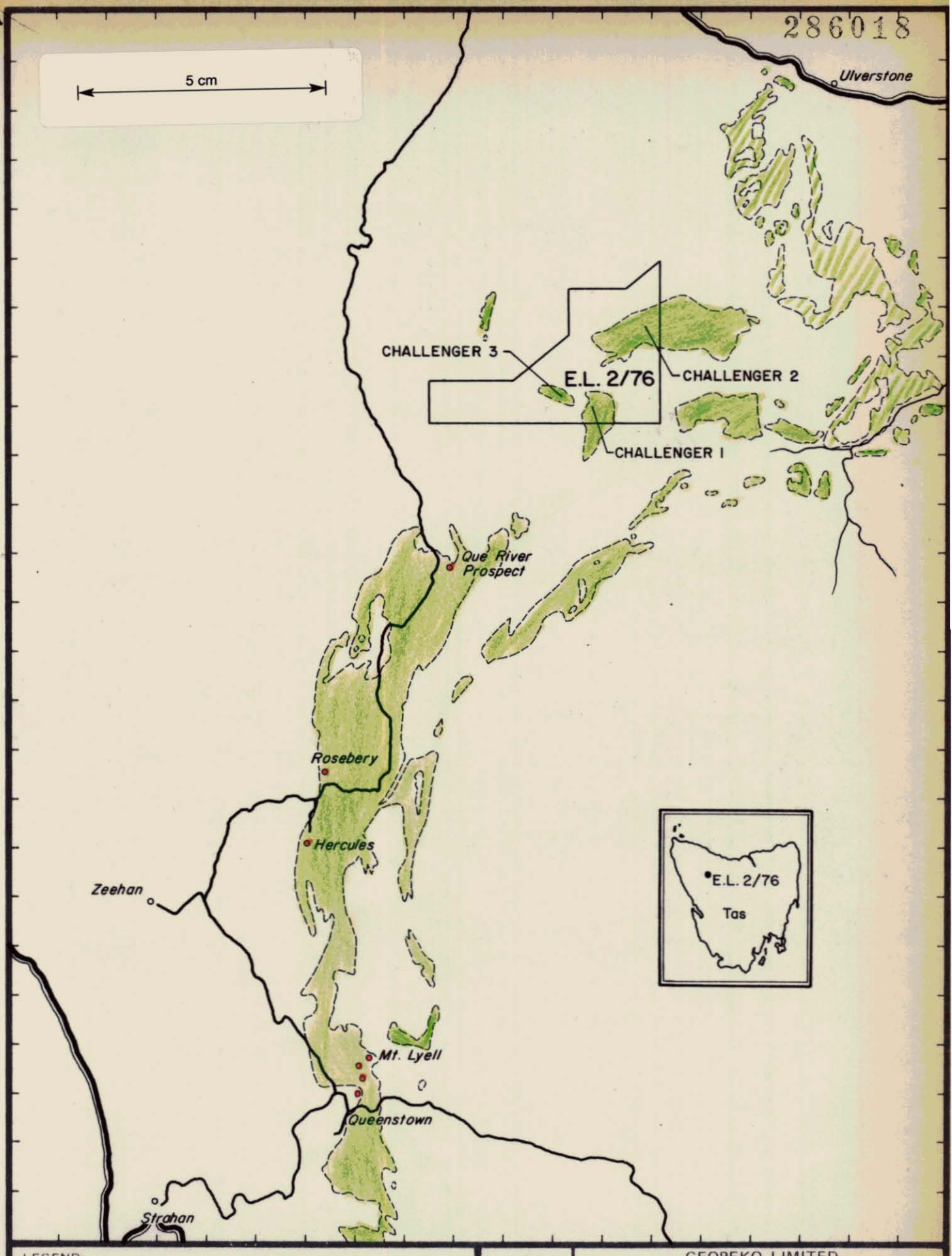
General

1. No further work is warranted on:-
   - the tin drainage anomaly
   - the tungsten drainage anomaly
   - the Query Road Pb-Zn anomalous area - A .

2. Consideration be given to conducting a low level aeromagnetic and electromagnetic survey over the E.L. This is considered justifiable as the exploration approach to date has lent heavily on the techniques of drainage geochemistry and reconnaissance geology, both of which are applicable to near surface mineralization.

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LEGEND:

- Significant Basemetal Mineralization
- Mt. Read Acid Volcanics
- Mt. Read Volcanics / Sediments

DATE: Oct.77
GEOL: G.L.B.
DWN: L.G.
CHKD: M.C.R.

GEOPEKO LIMITED
KING ISLAND

Scale: 1:500 000

Fig. No. 1

Location Map
E.L.2/76

ACTION SHEET

CHALLENGER 1

The location and drainage geochemical results for the prospect are shown in figure 2.

Vegetation

Originally a dense rain forest existed within and adjacent to the prospect. Recent logging operations and subsequent re-growth have produced two distinct vegetation patterns.

West of the track which leads north through the prospect, fallen rotting logs, dead stumps and occasional areas of horizontal scrub in creeks are becomming overgrown by small eucalypts.

Vegetation is much denser east of the road. Fallen rotting logs are being overgrown by eucalypts and sparse tea-tree re-growth which becomes much denser and is associated with sword grass and minor bauera toward the eastern end of the gridded area.

Gridding

A control station was established at 5 413 357 N, 406 000 E. This position was marked with a star picket and is beside a track approximately 700 metres north of the prospect.

The baseline was line 406 000 E and this was established from the control station north to 5 413 500 N and south to 5 412 500 N using a theodolite. Dumpy pegs were placed at 50 metre intervals along the baseline from 5 413 350 N.

Crosslines were surveyed normal to the baseline every 100 metres with pegs located at 50 metres either side of the baseline. Crosslines were range poled and pegged each 50 metres. Slope correction factors were applied where appropriate.

A total of 5650 metres of grid lines were handcut.

Map number KT 2/76 - CH1 - 4 details the grid layout and peg positions.

Geochemistry

Orientation

Line 5 412 800 N was chosen as an orientation line as it passed closest to the small stream having the anomalous stream sediment response. Refer to figure 2.

The Shell type handauger had a hollow barrel, 10 centimetres in diameter, 30 centimetres in length, which was welded to a 1.4 metre shaft and handle assembly.

The line was gridded and handaugered at 25 metre intervals down to C horizon or the limit of penetration which was governed by the length of the auger (1.7 metres) or physical penetration limits.

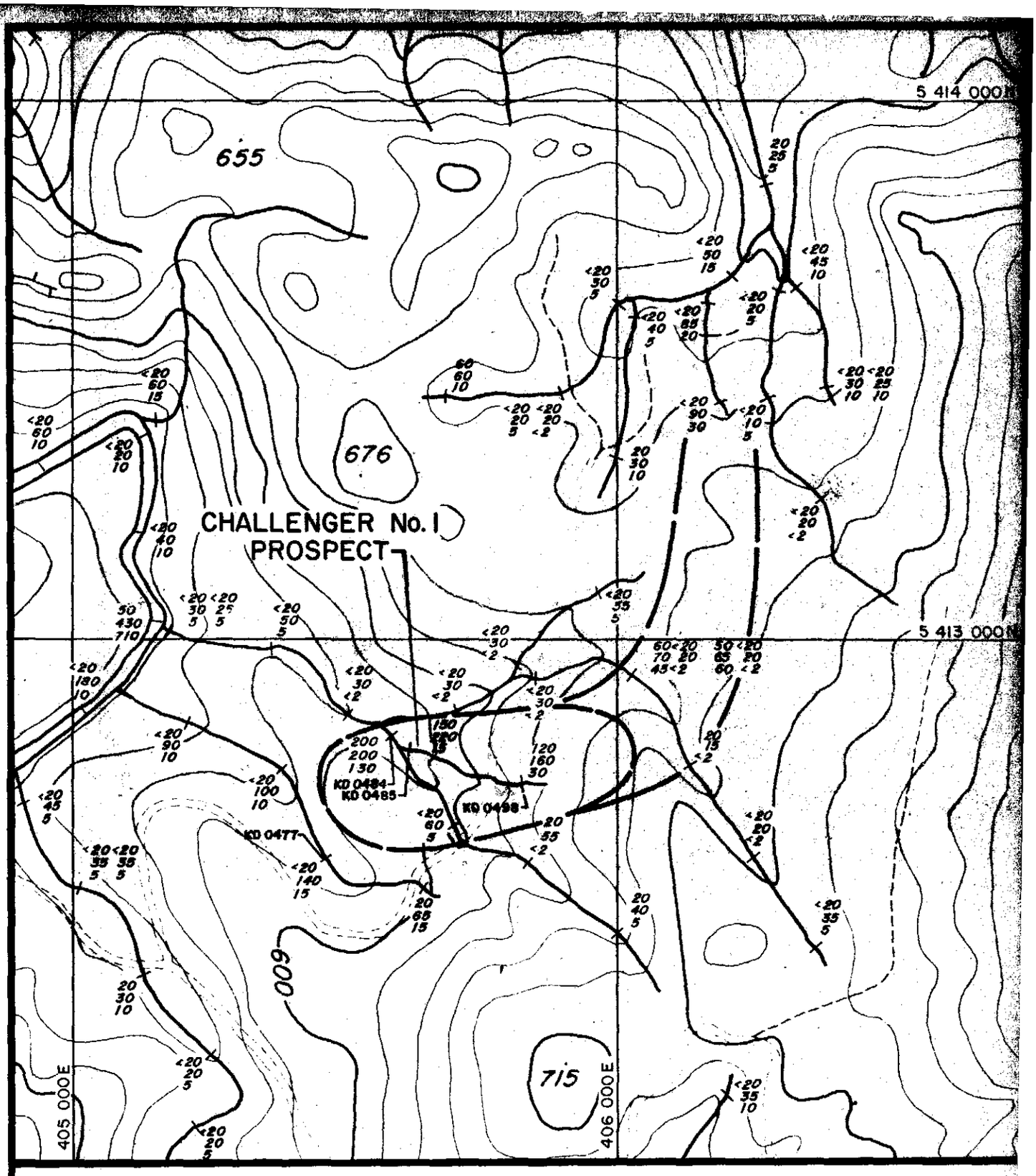
West of 406 000 E all holes were augered to C horizon while east of this location conglomerate scree inhibited penetration.

Soil sample locations are shown on map number KT 2/76 - CH1 - 7.

Hole depths are recorded on map number KT 2/76 - CH1 - 8.

A total of 40 holes were handaugered, producing 44 samples (including 4 duplicates) for 11.45 metres. The 1 in 10 duplicate sampling acts as an assaying check.

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DRAINAGE GEOCHEMICAL RESULTS :
COPPER , LEAD and ZINC

Anomalous Values - Drainage Samples

LEAD : ≥ 125 ppm (1% of total population)
50-124 ppm (7% " " ")

ZINC : ≥ 160 ppm (2% " " ")
70-159 ppm (20% " " ")

COPPER ≥ 160 ppm (1% " " ")
30-159 ppm (3% " " ")

5 cm

Fig. No. 2

Analytical results are plotted on map numbers:
KT 2/76 - CH 1 - 4, Copper
KT 2/76 - CH 1 - 5, Lead
KT 2/76 - CH 1 - 6, Zinc

Highest assays are 20 ppm Cu, 180 ppm Pb* and 410 ppm Zn in a duplicate sample. (The original sample assayed 380 ppm Zn.)

Most assays ranged from less than 2 to 5 ppm Cu, less than 20 to 70 ppm Pb and 15 to 90 ppm Zn.

From the results of the orientation line it was decided to complete soil sampling of the prospect at 50 metre spacings.

Prospect

The remaining lines were subsequently gridded and handaugered at 50 metre spacings.

A total of 79 holes were handaugered, producing 88 samples (including 9 duplicates) for a total of 35.15 metres.

Analytical results are recorded on map numbers:
KT 2/76 - CH 1 - 4, Copper
KT 2/76 - CH 1 - 5, Lead
KT 2/76 - CH 1 - 6, Zinc

Results were flat and of a similar magnitude to those seen in the orientation survey.

*

Note that an assay of 420 ppm Pb was reported for soil sample KS 0439. A typing error was suspected and the B soil sample KS 0439 was submitted for analysis. It assayed less than 20 ppm Pb. (Two soil samples are routinely collected at each location - designated A and B.)

Peak assays were 20 ppm Cu, 100 ppm Pb and 170 ppm Zn.

Most assays ranged from less than 2 to 10 ppm Cu, less than 20 to 40 ppm Pb and less than 15 to 50 ppm Zn.

No zone anomalous in Cu, Pb or Zn was outlined, however several spot highs were investigated later. Refer to discussion section.

Complete analytical results for Cu, Pb, Zn, Ag, Mn, Fe and Cd by A.A.S. for soil samples at Challenger 1 are tabulated in Appendix 4.

Geology

Refer to drawing number KT 2/76 - CH 1 - 3. In addition to the many rocks identified and plotted during grid mapping an additional 84 rocks were collected for closer macroscopic study after being sawn. The plan location of these samples is shown on map number KT 2/76 - CH 1 - 9. These rocks are stored at Geopeko.

Rock chip samples from the 119 handaugered holes were also logged to aid the correlation.

Four rock samples (KR 0987 - KR 0990) were sent to I.R. Pontifex and Associates, Adelaide for brief petrological study. Appendix 1, Mineralogical Report Number 2216 provides details of this work.

All grids and the streams within the "central zone" of the prospect not mapped during the Phase 1 program were mapped at 1:5000 scale.

Information from the 1976 field mapping was plotted onto the 1:5000 scale geological map.

Stratigraphy - from west to east.

(1) Basic intrusive - pyroxene microdiorite.

This rock outcrops in a stream at approximately 5 412 850N, 405 210E.

Thin section number KR 0786 from the Phase 1 report is representative of this body.

(2) Laminated Shale .

This was observed in a stream just east of the basic intrusive. A strike of 345° grid, dip 60° N.E. was recorded at this location.

(3) Lapilli lithic vitric crystal tuff .

This rock type consists of a red or green/pink coarse grained (lapilli) lithic vitric crystal tuff having many subrounded lithic fragments of gross rhyolitic composition, feldspar crystals and crystal fragments set in a devitrified and sericitised matrix. Flow characteristics are evident in the flow orientation of lithic clasts and shard textures in the matrix.

It is interpreted to be a flow brecciated lapilli lithic vitric crystal tuff. This unit is similar to (5) below.

(4) Massive rhyodacite porphyry.

This is a felsic lava of rhyodacite composition, having pink plagioclase phenocrysts distributed through a quartzo - feldspathetic ground mass. Bright green chlorite is also present.

Thin section number KR 0432 from the Phase 1 report is representative of this unit.

(5) Flow brecciated lapilli lithic vitric crystal tuff.

This rock type is similar to that described under (3) above - a pyroclastic flow rock. It consists of glassy fragments, lithic clasts, plagioclase and minor K - feldspar crystals randomly disposed through a devitrified glassy matrix of cryptocrystalline silica. Flow textures are evident in thin section.

Thin section examples of this unit are KR 0990, KR 0437, KR 0832 and KR 0797. The last three thin section descriptions are appended in the Phase 1 report.

(6) Devitrified weakly porphyritic glassy lava.

This unit has a pink colouration in hand specimen, is homogeneous and fairly featureless except for small weakly sericitised feldspar phenocrysts seen on sawn surfaces.

In thin section the quartzo - feldspathetic groundmass displays a relict flow fabric.

Fragmental textures are seen in outcrop (e.g. at 5 412 575 N, 406 020 E.)

Thin section examples are KR 0987, KR 0988 and KR 0989.

(7) Glassy banded porphyry? dyke.

This pink fine grained weakly porphyritic acid rock outcrops approximately 400 metres southeast of the grid and displays an easterly banding.

(8) Conglomerate consisting predominantly of quartzite pebbles set in a siliceous matrix and purple medium grained sandstone cover the extreme eastern portion of the grids. This material represents talus deposits from the Mt. Tor range and is of Upper Cambrian or Lower Ordovician age.

Structure

Bedding recordings in laminated shales indicate a northerly (NNW-NNE) strike with dips to the east of 25° and 60°.

Rock outcrops adjacent to the NW flowing stream on the eastern portion of the grid show a strong northerly foliation, dipping east at high angles (85°).

A fault is postulated to follow the trend of the creek.

From this data it is probable that the sequence youngs to the east.

Discussion of Results

During geological logging of the rock chips produced during handaugering the presence of several dark coloured, fine grained tuffaceous sediment horizons were noted within the main horizon of flow breciated lithic vitric crystal tuff.

An interpreted correlation of tuffaceous sediment from 5 412 800 N, 400 525 E (KR 0976) south to 5 412 600 N, 400 540 E has been made on the basis of surface float and auger rock chips.

Three other tuffaceous sediment horizons were logged in auger cuttings on line 5 412 800 N. They are designated KR 0975, KR 0977 and KR 0978, and have been interpreted to intersect the small stream immediately to the south. Rock geochemistry for these samples is tabulated on map number KT 2/76 - CHl - 3. All three samples are anomalous in Cu, Pb, and Zn. when compared to the geochemical response of soil samples derived from adjacent rocks.

Copper ranges from 20 to 65 ppm, Lead 70 to 240 ppm and Zinc 140 to 940 ppm.

Rock geochemical analysis of a sample of rhyodacite porphyry (KR 0995) and of a sample of devitrified weakly porphyritic lava (KR 0997) produced low values for Cu, Pb and Zn. These values are consistent with low values recorded in soils derived from these rocks.

The initial higher results for Cu, Pb and Zn recorded in the orientation soil survey were derived from tuffaceous sediments. Soil sample KS 0454 assayed 20 ppm Cu, 180 ppm Pb and soil sample KS 0462/0463 (duplicate) assayed 380/410 ppm Zn respectively. Rock geochemistry on the auger cuttings from these holes was also anomalous. KR 0975 assayed 65 ppm Cu and 240 ppm Pb while KR 0976 assayed 310 ppm Zn, respectively.

It is suspected that higher background distributions of base metals values within thin tuffaceous sediment horizons produced anomalous geochemistry in stream sediment samples KD 0484, KD 0485 and probably KD 0498 of the Phase 1 drainage survey.

Stream sediment KD 0477 (Phase 1 survey) is weakly anomalous in zinc owing to possible downstream migration of this metal from a tuffaceous sediment horizon which is interpreted to intersect the stream approximately 150 metres upstream from the drainage sample location.

Refer to fig 2.

CHALLENGER 2.

The location and drainage geochemical results for the prospect are shown in Figure 3.

Vegetation

Prior to logging operations areas around this prospect would have supported a dense rain forest.

Since the extraction of commercially viable timber and subsequent burning off, moderate to thick re-growth has occurred.

Many felled and rotting trees, numerous large dead stumps and tree ferns are becomming overgrown by new eucalypts.

Gridding

A control station was established at 5 419 000 N, 411 500 E. This position was marked with a star picket and is adjacent to the track which passes southward through the prospect.

The baseline was chosen as line 411 500 E and this was developed north to 5 420 200 N and south to 5 418 500N. It was surveyed with a theodolite with dumpy pegs every 50 metres.

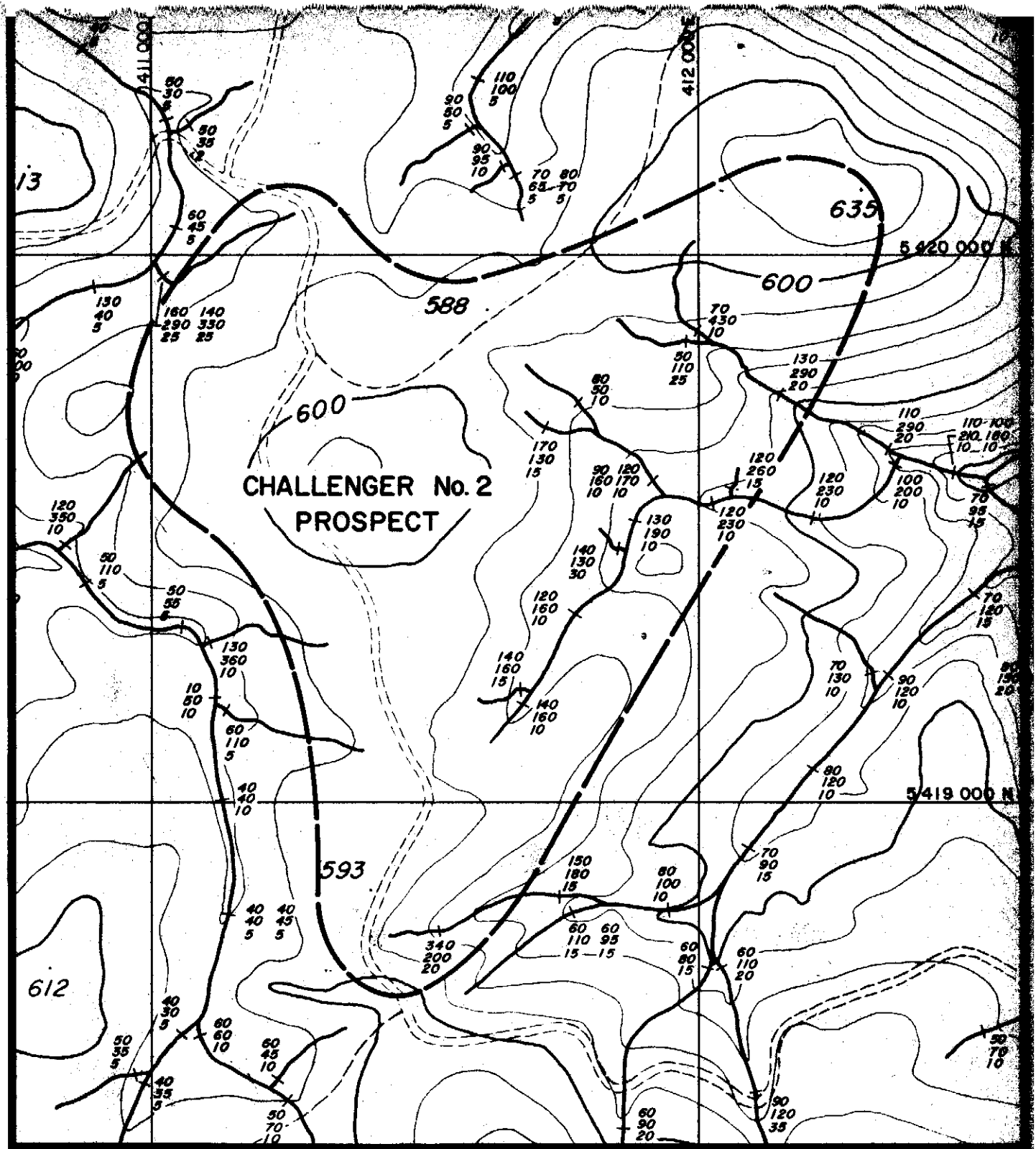
Crosslines were surveyed normal to the baseline every 100 metres with pegs located at 50 metres either side of the baseline.

Crosslines were range poled and pegged every 50 metres after appropriate slope correction factors had been applied where necessary.

A total of 12500 metres of grid lines were handcut.

Map number KT 2/76-CH2-4 details the grid layout and peg positions.

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DRAINAGE GEOCHEMICAL RESULTS :
COPPER , LEAD and ZINC

Anomalous Values – Drainage Samples

LEAD : ⩾ 160ppm (<1% of total population)
130-159ppm (1% " " ")

ZINC: ⩾ 200ppm (3% " " ")

COPPER: ⩾ 25ppm (2% " " ")

5 cm

Fig. No. 3

Geochemistry

Orientation

Three cross lines 5 419 400N, 5 419 500N and 5 419 600N were selected for gridding and orientation soil sampling, principally to investigate the possibility of manganese scavenging of base metals.

Soil handaugering was undertaken at 25 metre spacings along 5 419 500N and at 50 metre spacings on the adjacent grids using a similar shell type to that used at Challenger 1.

Most holes terminated at less than 1.7 metres (limit of hand auger) in C Horizon which consists of a medium to chocolate brown coloured clay silt containing abundant fresh rock chips.

Soil sample locations are shown on map number KT 2/76-CH2-7. Hole depths are recorded on map number KT 2/76-CH2-8.

A total of 70 holes were handaugered, producing 79 samples (including 9 duplicates) for a total of 45.85 metres.

Analytical results, the size fraction analysed and the analytical methods employed are shown on map numbers:

KT 2/76 - CH2 - 4; Copper
KT 2/76 - CH2 - 5; Lead
KT 2/76 - CH2 - 6; Zinc

On the three lines sampled most Cu values ranged from 10-30 ppm with some higher results peaking at 60 ppm. Most Pb values ranged from 150-700 ppm, peaking at 920 ppm. Most Zn values ranged from 100-400 ppm, peaking at 730 ppm.

Some discussion was held as to the presence of Mn scavenging producing the anomalous stream sediment response.

Mr. Sherrington (Geopeko Company Geochemist) inspected the results and reported that the Zn-Mn correlation coefficient was +0.358. (The highest Mn value was 1800 ppm which corresponded to 210 ppm Zn and the highest Zn value was 730 ppm which corresponded to 1600 ppm Mn.)

Mr. Sherrington concluded that the correlation coefficient was only 'mildly significant' and that geological variations could produce a similar result. (See Appendix 2)

It was decided to complete the handaugering of the prospect at 50 metre spacings although after results for Pb became available an additional 12 holes were handaugered over the peak Pb anomalies.

Prospect

To complete handaugering of the prospect at (principally) 50 metre spacings a total of 231 holes were augered, producing 251 samples (including 20 duplicates) for a total of 173.65 metres.

Results from the lower B and C Horizon soil profiles indicate low anomalous values.

Results for copper are low, most values range from 10 - 30 ppm, peaking at 100 ppm. Refer to map number KT 2/76-CH2-4.

Results for Lead have been plotted and contoured. Refer to map number KT 2/76-CH2-5. There are two main anomalous zones both apparently striking grid northwest, and they appear enechelon. Peak values are 920 ppm and 1200 ppm.Pb. In both cases the anomalous zones can be traced across three grid lines (at least 200 metres strike length) and are represented by 1 or more spot high values. Background (visual estimate) would be around 200 ppm.

Two spot high values of 720 ppm and 820 ppm are noted north of the anomalous zones, and are not considered of revelance.

Results for zinc have been plotted and contoured. Refer to map number KT 2/76-CH2-6.

Anomalous zinc distribution is scattered mostly as single values at various places on the grid. Distinctive anomalous zones do not appear to exist. Most values range from 200 to 400 ppm, peaking at 730 ppm.

No meaningful correlation appears to exist between higher Lead and Zinc values.

The reader is referred to Appendix 3 which is a memo by G.H. Sherrington to M.C. Rogers dated 2nd March, 1977. The subject being:

"Challenger 2- Loongana, Tasmania".

Complete analytical results for Cu, Pb, Zn, Ag, Mn and Fe by A.A.S. for soil samples at Challenger 2 are tabulated in Appendix 5.

Geology

Refer to geological map number KT 2/76-CH2-3.

In addition to the numerous rocks identified and plotted during grid mapping, an additional 190 rocks were sampled for closer macroscopic study after sawing. The plan position of these rock samples, which are stored at Geopeko, is shown on map number KT 2/76-CH2-9.

Rock chip samples produced from the 301 handaugered holes were also logged to aid in correlation.

Information from the Phase 1 field mapping has been transferred onto the 1:5000 scale geological map.

Stratigraphy - from west to east.

(1) Vesicular porphyritic rhyodacite.

This rock type apparently trends WNW and occupies the central - western portion of the grid. It consists of plagioclase phenocrysts and minor green chlorite after ? hornblende set in a cryptocrystalline K-feldspar rich groundmass which displays a vague flow structure. A distinctive feature of this rock is the presence of quartz filled amygdales. Irregular quartz veins are common in outcrop.

Thin section number KR 0647 from the Phase 1 report is representative of this rock type.

(2) Flanking rhyolitic pyroclastics.

A wide variety of rock types are represented within this group.

Coarse lithic (lapilli) tuffs are common in the northern portion of the grid, passing to finer grained lithic crystal tuffs and crystal tuffs to the south. This however is a broad generalization.

The lithic crystal tuff consists principally of pink rhyolite fragments and tightly packed feldspar and subordinate quartz crystals set in a chloritic clay rich groundmass.

Thin section number KR 0745 from the Phase 1 report is representative of this rock.

Associated with these flanking rhyolitic pyroclastics is an interpreted area of lithic crystal tuffs having subrounded quartz fragments. This rock has been designated as lithic quartz crystal tuff in the geological interpretation and possibly represents a facies variant - reworked tuff or volcaniclastic sediment.

(3) Laminated siltstones and tuffaceous sediments.

These rocks are intimately associated (probably interbedded) with the flanking rhyolitic pyroclastics. White siltstones minor thinly laminated shale and thinly bedded tuffaceous sediments have been interpreted to be commonly intercalated with the pyroclastics above in two regions of the grid. The interpretation is based on an abundance of outcrop, float and rock chips from handaugering.

One region lies approximately 200 metres to the north of the main porphyry mass and trends at approximately 075° grid. This interpreted strike is based on one lamination orientation taken at 5 420 000N, 411 110 E. The grid E-W orientation in this region would accentuate the apparent trend.

The second region of predominantly siltstones lies approximately 300 metres east of the main porphyry body and displays an apparent northerly trend.

(4) Plagioclase crystal vitric tuff-lava.

This rock type occurs in the far south of the prospect.

It consists of white feldspar crystals which display a common orientation surrounded by a pale green fine grained clay-chlorite ground mass. It is of gross andestic composition.

This rock has been interpreted to correlate with thin section number KR 0686 of the Phase 1 report.

(5) To the south of the prospect conglomerate outcrops. Approximately 400 metres east of the prospect is a silica dyke. These rock types have previously been reported upon during Phase 1.

Discussion of Results

The northwesterly linear trend of the Pb (and Zn) contours is consistent with the apparent trend of the rhyodacite porphyry. The northern most Pb anomaly occurs within the porphyry mass while the Pb anomaly centering on 5 419 000 N, 411 400 E lies within the flanking rhyolitic pyroclastics.

Thin section examination of a porphyry sample (KR 0647, Appendix 1 of the Phase 1 report) indicates that the rock is a lava, however an intrusive relationship would appear more compatible with its geographic relationship to the flanking rhyolitic pyroclastics.

It is probable that the anomaly centering on 5 419 000N, 411 400 E has underlying rhyolitic porphyry at ? shallow depth.

Anomalous areas for Pb are not coincident with those for Zn. Although Zn would be expected to be more mobile than Pb, the low anomalous values for both Pb and Zn tend to downgrade the prospect.

A sample of rhyodacite porphyry (KR 0998) taken from an outcrop within the northern most Pb soil geochemical anomaly assayed low in Pb and Zn - values being 240 ppm and 490 ppm respectively. (Refer to the tabulation on map number KT 2/76-CH2-3).

An outcrop sample of the lithic crystal tuff (KR 0990) taken over the highest Zn soil geochemical anomaly (720 ppm) assayed very low in Zn (140 ppm) as well as low in other elements analysed. (Refer to the tabulation on map number KT 2/76-CH2-3).

The poor correlation between the soil anomalies and rock chip analyses tends to downgrade the prospect.

CHALLENGER 3

The location of the prospect is shown of figure 4.

This area ranked prospect status as regional geological mapping during Phase 1 had verified the presence of:

1) Massite barite in trenches (Burns, 1962)

2) A dark shale, reportedly manganiferous (Burns, 1962). A sample from this horizon contained visible galena. (Sherrington, Appendix 3, Phase 1 report) and a sample assayed 0.14% Pb.

Vegetation

Two distinct vegetation patterns exist within the prospect.

The southern slopes of the Two Hummocks are covered in dense scrub while directly southeast of the two quarries a swampy button grass plain is present - The Black Marsh.

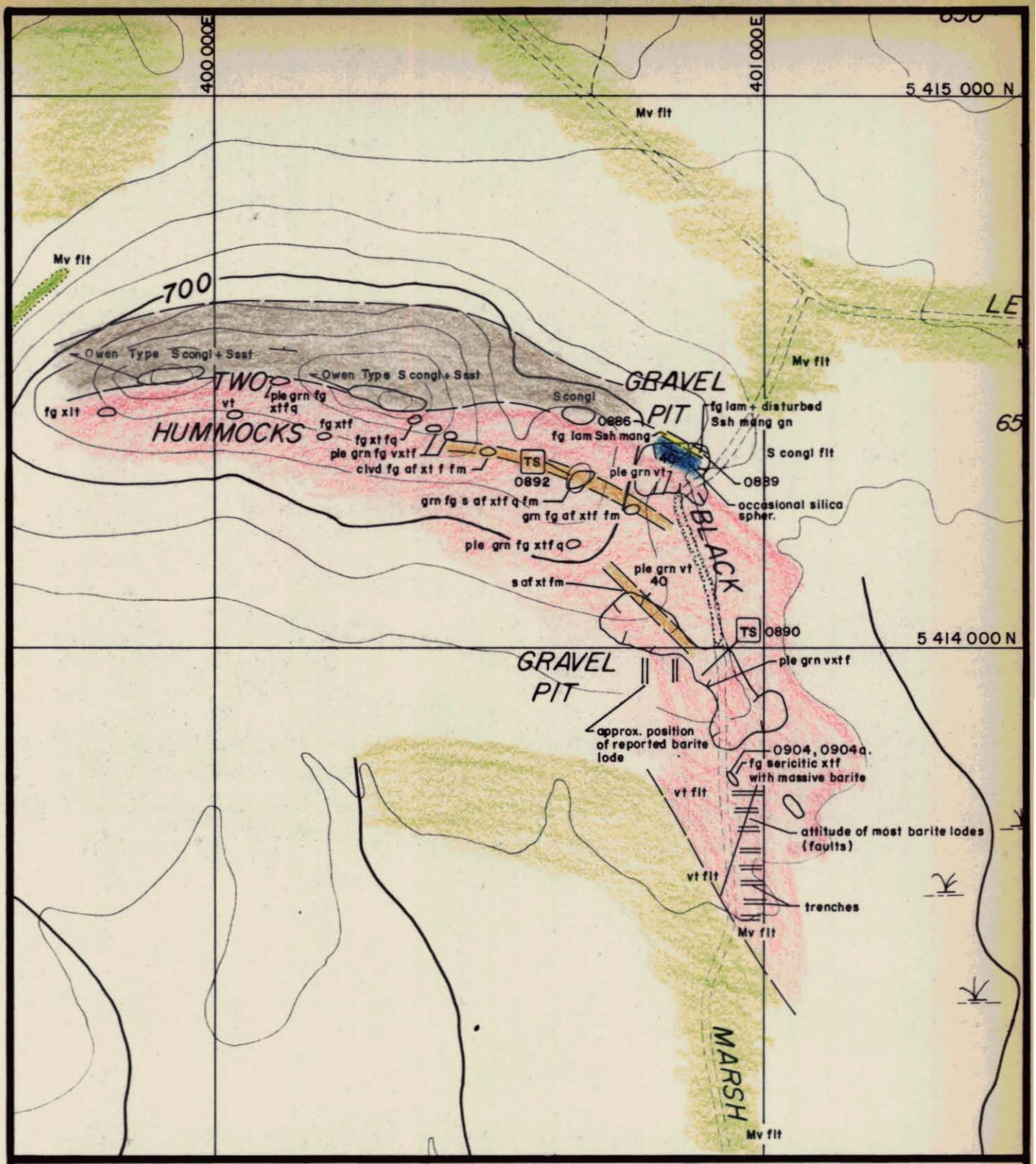
The periphery of the Black Marsh is marked by the growth of eucalypts.

Gridding

A control station marked with a star picket was established at 5 414 200N, 401 000E.

This point represents the intersection of two baselines - lines 5 414 200N and 401 000E.

038
2860039



CHALLENGER 3 PROSPECT

Scale 1:10000

GEOLOGICAL INTERPRETATION:

	Є	Glassy (fine grained) lava with large silica spheroids (pArf spher)
	Є	Vitric, crystal, minor ashflow and brecciated lava. Extensive and penetrative CO_3 alteration. (vxt), (vt), (xt).
	Є	Ashflow tuffs (where more extensive)
	Є	Shales (Ssh), laminated shale (lam Ssh), siltstone (Ssist)
	UЄ?	Sandstone (Ssst), siltstone (Ssist), conglomerate (Scongl)
	TERT.	Basalt (flows), (Mv)

5 cm

Fig. No. 4

From the control station, baseline 5 414 200 N was surveyed using a theodolite with dumpy pegs placed every 50 metres west to 399 800 E. This baseline was also established east from the control station to 401 300 E.

Every 200 metres west of the control station, crosslines were surveyed normal to the baseline with pegs at 50 metres either side of the baseline to allow for the establishment of the N - S crosslines.

Crosslines were range poled and pegged every 50 metres after appropriate slope correction factors had been applied.

From the control station, baseline 401 000 E was surveyed north with theodolite, with pegs placed at 50 metre intervals to 5 414 600 N. The baseline was also developed south to 5 413 200 N.

At 200 metre intervals south of the control station to 5 413 400 N crosslines were surveyed normal to the baseline with dumpy pegs at 50 metres either side of the baseline. The southern most point on the baseline had a crossline surveyed normal to the baseline to the east.

Some crosslines were surveyed with a theodolite and pegged every 50 metres, where visibility across the Black Marsh was good. Other crosslines were range poled.

A total of 9900 metres of grids were handcut.

Map number KT 2/76 - CH3 - 4 details the grid layout and peg positions.

Geochemistry

Preamble

The soil geochemical survey at Challenger 3 had two phases.

The first was designed to cover the area of the prospect on a 200 metre x 50 metre pattern. This program had two aims; to locate geochemically anomalous areas, and to provide rock chip samples to enable the geological environment to be ascertained.

A sample of laminated black shale from the northern most quarry contained visible galena (0.14% Pb in one sample). A bedrock power augering program was undertaken to locate this horizon which was suspected to lie under the Black Marsh and to test it's geochemical response.

Auger methods

Initially a hollow barrel shell type handauger similar to that used at Challenger's 1 and 2 was used but it was found to be unsatisfactory at augering through shallow conglomerate scree on the two western most grid lines south of the Two Hummocks.

Pebbles of grit became jammed between the auger teeth hence retarding penetration.

To overcome the penetration problem a woodworking type auger (4cm diameter auger spiral, 20cm in length) was purchased and then welded to a 1.5 metre shaft and handle assembly. This auger had two principal advantages over that initially used: penetration increased as the auger was able to deflect around small pebbles and bite into the soil; and augering speed increased as this auger cuts a smaller diameter hole.

To enable penetration to C Horizon soil profile through button grass and peat of the Black Marsh, a Jacro 200 model drilling rig mounted on a F.D. Model Muskeg Bombardier was used. Photograph No1 shows the rig in operation.

Photo No.1.

View of Jacro drilling rig mounted on a Muskeg Bombardier, at the Black Marsh, Challenger 3. Snow capped Mt. Tor is in the background.

Orientation

Three poweraugered holes were sampled at various depths to ascertain whether metal concentration varied with depth.

Holes sampled were located at:

5 414 200 N, 401 000 E
5 414 200 N, 401 300 E
5 414 200 N, 401 400 E.

Analytical results and the depth interval sampled are shown on the respective maps for:

Copper, KT 2/76 - CH3 - 4
Lead, KT 2/76 - CH3 - 5 and
Zinc, KT 2/76 - CH3 - 6.

Results were inconclusive. Some holes showed an increase in metal content with depth (e.g. Zn, 5 414 200N, 401 400 E) while other holes indicated a reverse trend (e.g. Pb, 5 414 200N, 401 300E).

It was decided on geological evidence to power auger through the black peat swamp to 2 metres in the C Horizon soil profile or to rock bottom, which ever was the shallowest.

All holes poweraugered across the Black Marsh reached C Horizon. Most were terminated at 2 metres.

Prospect

A total of 121 holes were handaugered and 87 holes poweraugered, producing 234 samples (including 21 duplicates) for a total of 233.0 metres.

Soil sample locations are shown on map number KT 2/76 -CH3 - 7.

Hole depths are recorded on map number KT 2/76 -CH3 -8.

Analytical results, the size fraction analysed and the analytical method employed are recorded on map numbers:

KT 2/76 - CH3 - 4, Copper
KT 2/76 - CH3 - 5, Lead
KT 2/76 - CH3 - 6, Zinc

Owing to the assay results for Cu, Pb and Zn being low in value and sporadic, contouring and statistical treatment of the data was considered to be impractical.

The approximate geological contact between basalt and Cambrian rocks has been plotted on the geochemical maps to facilitate the recognition of the obvious distinction between assays in basalt and those in Cambrian rocks.

Areas of basalt have a much higher Cu and Zn response than areas of Cambrian rocks.

Copper in basalt ranges from 20 to 100 ppm with most assays around 60 ppm.

Zinc in basalt ranges from 40 to 160 ppm with most assays around 100 ppm.

Lead in basalt ranges from less than 20 to 120 ppm with most assays around 60 ppm.

Copper in Cambrian rocks is low. Assays range from less than 2 ppm to 80 ppm (in black shale) with most assays around 10 ppm.

Lead ranges from less than 20 to 620 ppm with most assays around 80 ppm.

Zinc ranges from 5 to 820 ppm (in black shale) with most assays around 30 ppm.

During initial handaugering of the prospect with the Shell type handauger it was noted that penetration through shallow conglomerate scree at the western end of the prospect had been erratic. Some holes terminated at shallow depths in conglomerate scree while others penetrated to bedrock.

In a successful attempt to auger through the conglomerate scree, one day was spent re-augering along grid lines 399 800E and 400 000E and along 5 414 200N between these two eastings using the woodworking type handauger.

Soil sample numbers and hole depths are recorded in parentheses on maps KT 2/76 - CH3 - 7 and KT 2/76 - CH3 - 8, respectively.

Analytical results are plotted on the prospect geochemical maps for Cu, Pb and Zn.

Assay values are low and closely mirror the initial analyses. Copper ranged from 5 to 40 ppm. Lead values ranged from 20 to 180 ppm and Zinc values from 15 to 95 ppm.

Complete analytical results for Cu, Pb, Zn, Ag, Mn and Fe by A.A.S. for soil samples at Challenger 3 are tabulated in Appendix 6.

Black shale horizon

A series of bedrock power augered holes were drilled along baselines 5 414 200N and 401 000E.

The hole positions, soil sample numbers and hole depths are shown on map number KT 2/76 - CH3 - 14.

A total of 52 holes, producing 57 samples (including 5 duplicates) for a total of 231.5 metres was produced during this program.

Analytical results for Cu, Pb and Zn are plotted on map number KT 2/76 - CH3 - 13.

A geochemical profile for Cu, Pb, and Zn across the black shale is shown on the map above.

Complete analytical results for Cu, Pb, Zn, Ag Mn and Fe by A.A.S. for soil samples taken during this program are tabulated in Appendix 7.

The black shale horizon is weakly anomalous in Cu and strongly anomalous in Pb and Zn when compared to visually estimated background for these elements in surrounding Cambrian rocks.

Copper values range from 10 to 280 ppm compared to a visually estimated background of 50 ppm.

Visually estimated background Cu in adjacent rocks is approximately 10 ppm.

Lead values range from 90 to 520 ppm compared to a visually estimated background of 120 ppm.

Visually estimated background Pb in adjacent rocks is approximately 80 ppm.

Zinc values range from 140 - 1760 ppm compared to a visually estimated background of 400 ppm.

Visually estimated background Zn in adjacent rocks is approximately 30 ppm.

Geology

Refer to the geological map (map number KT 2/76 -CH3 -3) and the Rock Chip Map (map number KT 2/76 - CH3 -10)

The geological map is essentially a fact map that has had interpreted geological boundaries drawn from a detailed study of approximately 260 rock chip samples.

Outcrop at the prospect is principally confined to areas within and immediatley adjacent to the two quarries. About 50% of the prospect is covered by a peat bog (The Black Marsh) and approximately 20% of the prospect area is covered by a shallow depth of conglomerate scree.

In addition to the many rocks identified and plotted while grid mapping, an additional 76 rocks were sampled for detailed macroscopic study after sawing.

The plan location of these rock samples, which are stored at Geopeko is shown on map number KT 2/76 - CH3 - 9.

Five rock samples (KR 0982 - KR 0986) were sent to I.R. Pontifex and Assoicates, Adelaide, for brief petrological study. Appendix 1, Mineralogical Report Number 2216 provides details of this work.

Information from field mapping during Phase 1 has been transferred onto the geological map .

Stratigraphy - from the SW to NE

(1) Porphyritic amygdaloidal rhyolite lava.

This rock type outcrops in a bulldozed trench at approximately 5 413 820N, 400 810E. It has been observed in rock chips and as float to the NW and SE of this location. A NW trend is interpreted.

The rock is essentially an altered porphyritic acid lava of rhyolitic composition. It consists of sericitised phenocrysts of plagioclase feldspar set in a pink feldspar rich groundmass containing numerous deuterically infilled quartz vesicles.

Thin section examples are KR 0984 and KR 0987.

(2) Glassy fine grained lava.

This rock varies from a massive pale green ultrafine grained featureless rock (designated as pale green vitric tuff on map number KT 2/76 - CH3 -3) to a pale green massive type having minute white altered feldspar phenocrysts set in an altered cryptocrystalline siliceous matrix (designated as pale green vitric

crystal tuff on map number KT 2/76 - CH3 - 3), to a similar rock that contains faint pale green whisps of ? sericite dispersed throughout the groundmass. (designated as pale green/white sericitic vitric crystal tuff, feldspar, on map number KT 2/76 - CH3 - 3.)

Thin section examples are KR 0983 and also KR 0890 from the Phase 1 report.

This rock type also occurs as massive outcrops in the northern most quarry at the Two Hummocks. It has been logged in rock chips to the SE and also in the extreme NE sector of the prospect.

A NW strike and a dip to the NE is interpreted for this rock type based on a primary foliation striking 320° grid, dipping 58° NE.

> Burns (1962) reported upon the presence of numerous barytes lodes within this horizon, describing them as"vertical and on a broad scale appear as an irregular stockwork infilling joints or faults in a fault zone crossing the green tuff".

No further geological evidence was gathered during the prospect mapping as the baryte lodes are obscured by water infilling the trenches.

(3) Ashflow tuffs.

This rock type is intercalated with the fine grained glassy lava described earlier.

The rock is pale green in colour and consists of fragments of glassy rhyolite, crystals of plagioclase and minor quartz, having wavy streaks of dark green chloritic clays all dispersed in a matrix consisting of microcrystalline silica - clay - sericite.

Strike of primary foliation varies from 320° - 350° grid, dipping at 58° and 75° NE.

Thin section examples are KR 0985 and also KR 0892 from the Phase 1 report.

(4) Black laminated shale.

This thinly laminated black shale outcrops in the northern most quarry and strikes at 332° grid, dipping at 38° NE. It displays some electrical conductivity (Sherrington, Appendix 3 of the Phase 1 report).

A program of bedrock power augered holes was planned to locate this horizon which was expected to lie under the Black Marsh and also to provide some information concerning the rock types immediately to the NE. These latter rocks are obscured by conglomerate adjacent to the quarry.

Map number KT 2/76 - CH3 - 12 provides details of this work.

The shale was logged in the rock chips over a distance of 60 metres from 400 915E to 400 975E on 5 414 200N. Rock chips at 400 930E, 400 950E and 400 970E were logged as fine grained acid lava - interpreted to represent rubble lying on the shale.

The only other indication of this horizon is in a rock chip sample at 5 414 00N, 401 050E - approximately 400 metres SSE of the quarry outcrop.

(5) Crystal lithic tuff

This rock type has not been observed in outcrop. One float rock sample (KR 1637) and evidence of it occurring in rock chips (denoted white/black crystal lithic tuff on map number KT 2/76 - CH3 - 10 are the only indications of its interpreted presence.

It appears mottled white/black in hand specimen (KR 1637) and consists of crystals of quartz and feldspar and fragments of black? shale set in an argillic groundmass. Vague bedding is evident.

Immediately to the NE of this rock type, rock chips indicate the interpreted presence of a pale brown fine grained tuffaceous sediment. Refer to map number KT 2/76 - CH3 - 10.

(6) Conglomerate/Sandstone.

Unconformably overlying Cambrian lithologies, forming the summit and northern slopes of the Two Hummocks is a conglomerate consisting principally of quartzite pebbles in a siliceous matrix.

The attitude of the conglomerate is unknown.

(7) Basalt.

Remnants of Tertiary basalt flows surround the prospect to the North, South and East.

Discussion of results

The southern extent of the altered rhyolitic lava mapped in the south - western portion of the grid remains unknown. The unit may extend a further 500 metres to the interpreted basalt cover or be in contact with other prospective units.

In an unsuccessful attempt to locate the contact between Cambrian rocks and Tertiary basalt, short reconnaissance magnetometer traverses were run south to the Two Hummocks. The instrument used was a Uni Mag Portable Proton Magnetometer (Model G-836). The expected 'noisy' response over areas of basalt did not eventuate, and therefore the basalt is interpreted to be highly weathered and thin in the region south of the Two Hummocks.

The Burnie 1:250,000 Geological Sheet (SK 55-3) maps Silurian sediments faulted against the Cambrian, southwest of the Two Hummocks.

The geology of the prospect has been established as consisting of Lower - Middle Cambrian altered porphyritic acid lavas, pyroclastics and associated black shale.

The magnitude of the geochemical response in the soils is low and would indicate the unlikely presence of an orebody within the gridded area.

A sample of altered porphyritic amygdaloidal rhyolite (KR 0996) was submitted for geochemical analysis. Analytical results are tabulated on drawing number KT 2/76 - CH3 - 3. There was a low response to all elements.

The black shale horizon has provided the most geochemically anomalous results and has considerable geological interest considering the relationship between black shales, and massive sulphide ores. The horizon has been mapped as continuous over 400 metres strike length and it has a measured thickness of 32.6 metres (as determined at one locality).

Summarising the geochemical data already available on this horizon:

(a) Rock geochemical analyses on two samples taken from the quarry gave the following results:

ppm	Cu	Pb	Zn	Ag	Mn	Ba	As	Sb	Sn	Fe
*	90	0.14%	390	3	2	110	30	20	(50	0.15%
KR 0994	15	720	35	(2	20					0.17%

(b) Peak soil geochemical values along baseline 5 414 200N were:

ppm	Cu	Pb	Zn	Ag	Mn	Fe%
	280	520	1760	(2	95	2.4

(c) Soil sample KS 2513, augered at 5 414 000N, 401 050E, a position approximately 400 metres SE of the quarry outcrop, assayed:

ppm	Cu	Pb	Zn	Ag	Mn	Fe
	80	580	820	(2	20	1.45%

(d) Burns (1962) states that "Manganese occurs as a bedding replacement within the laminated siltstone. The deposit is low grade".

Rock geochemical analyses indicate very low manganese results.

* Sampled by K. Wright, analysed at Australian Laboratory Services, Brisbane.

The potential of the black shale horizon along strike has not been tested. To the south the available soil geochemistry indicates fluctuating values in Cu, Pb and Zn. To the north the horizon will probably be truncated against the unconformity, the dip of which was not measured in this phase, or will be overlain by basalt.

DRAINAGE SAMPLING

Black Marsh Creek

This stream flows southeast across the Black Marsh at Challenger 3, draining Cambrian volcanics and pyroclastics in its upper reaches and basalt further south.

Map number KT 2/76 - 4C details the positions of the 13 drainage samples (including 1 duplicate) collected during stream sediment sampling and geological reconnaissance mapping.

Analytical results are tabulated on map number KT 2/76 - 4C.

No anomalous values were reported.

Rock types exposed in the creek bed were the pale green fine grained acid lava (KR 0967) and basalt (KR 0968).

Rock sample locations are plotted on map number KT 2/76 - 4D.

Tin Drainage Anomaly

Background discussion of this area is reported on pages 52 and 53 of the Phase 1 report.

Follow up work consisted of stream sediment sampling, panning for heavy concentrates and geological reconnaissance mapping along the stream reporting anomalous Sn.

At 11 locations along this stream a drainage sediment sample and a panned heavy concentrate sample were taken.

Map number KT 2/76 - 2C shows the positions of these samples denoted KD 0579 - KD 0600.

No cassiterite was evident during field panning.

Assay results for Sn by X.R.F. are tabulated on map number KT 2/76 - 2C.

One spot high of 25 ppm Sn (KD 0595) was recorded from the main stream sampled and another identical assay from a larger stream nearby (KD 0599). All other samples assayed less than 20 ppm Sn.

Rock types mapped were a feldspar porphyry, interpreted to be a rhyolite lava and a purple/green lithic crystal tuff of gross rhyolitic composition. Refer to map number KT 2/76 - 2A.

The rock sample locations are plotted on map number KT 2/76 - 2D.

Tungsten drainage anomaly

Background information concerning this anomalous area is provided in the Phase 1 report, page 55.

Follow up work consisted of drainage sediment sampling and geological reconnaissance mapping.

Five drainage sediment samples were collected from Laurel Creek at approximately the same locations as the anomalous (panned) samples reported by Australia and New Zealand Exploration Company.

Drainage sample locations and geochemical results for W, Sn and Mo by X.R.F. are plotted on map number KT 2/76 - 1C.

W values ranged from less than 20 to 37 ppm, Sn values varied from less than 20 to 28 ppm and Mo values from less than 5 to 10 ppm.

Geological reconnaissance was undertaken in the area of 5 422 150 N, 407 000 E. (Map number KT 2/76 -1A) and in the vicinity of 5 421 500 N, 405 400 E (Map number KT 2/76 -1A).

Rock types mapped were sandstone, biotite hornfels, pyroxene quartz hornfels (Thin section number KR 0991) and granite.

All samples were examined with an ultra violet lamp and no scheelite mineralization was present.

The southern contact of the Mt. Housetop granite batholith is now interpreted to lie further south. Refer to map number KT 2/76 -1A.

Three bedding orientations were recorded during field mapping. One had a northerly strike, dipping at 48° E. The other two bedding readings had a NE strike with dips of 55° and 70° NW.

SOIL SAMPLING

Query Road - "Other Pb-Zn anomalous areas -A"

Background information is reported under "Other Pb-Zn anomalous areas -A' of the Phase 1 report.

Follow up work consisted of soil sampling and the geological logging of handaugered rock chip cuttings.

A total of 15 holes were handaugered at 50 metre spacings along Query Road from:

5 421 250 N, 412 350 E to

5 420 950 N, 412 750 E,

producing 16 samples (including 1 duplicate) for a total of 11.1 metres.

Figure 5 details the location, sample numbers, hole depths and geology of rock chip cuttings.

Analytical results for Cu, Pb, Zn, Ag, Mn, Fe and Cd by A.A.S. are tabulated in Appendix 8.

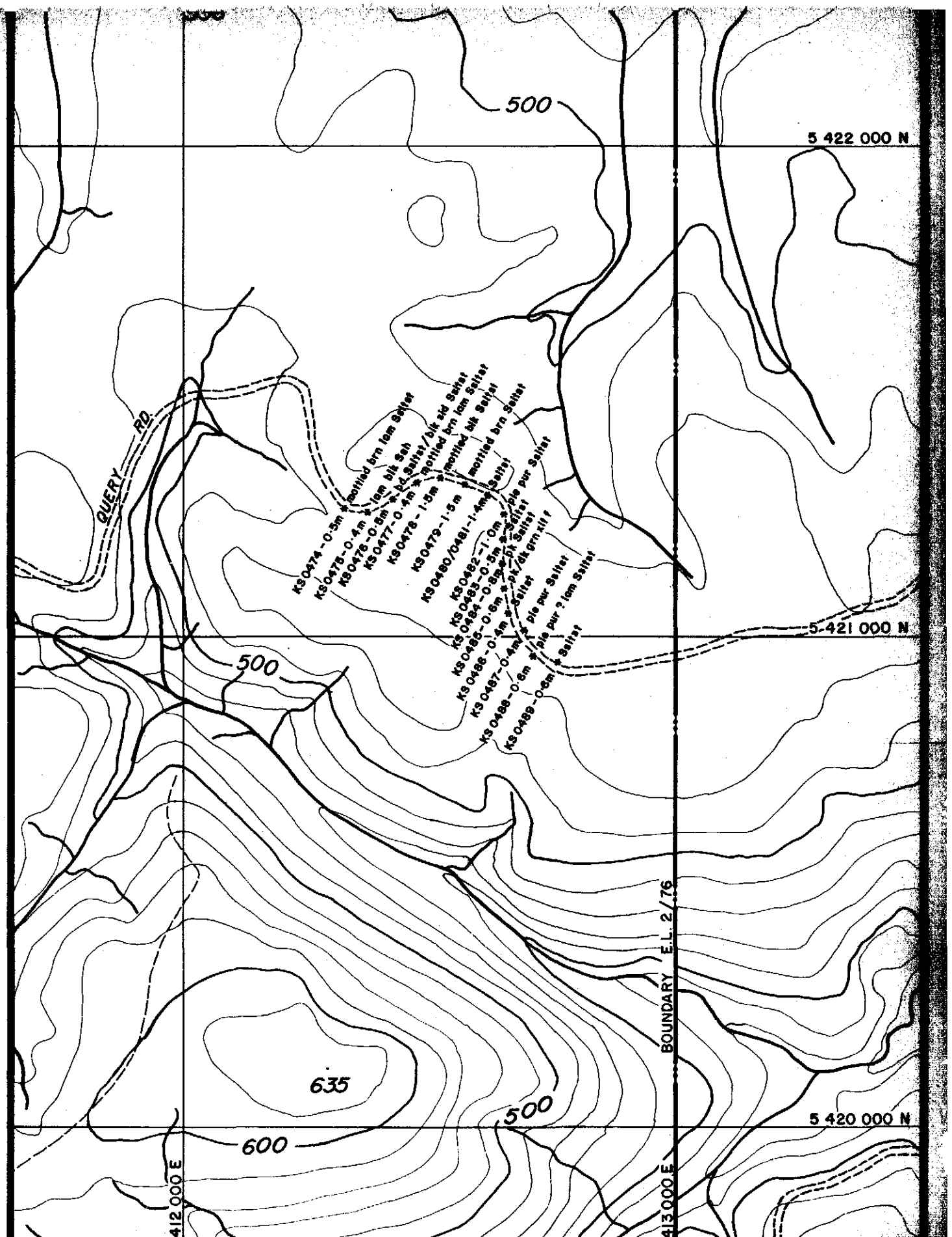
Laminated siltstone was the principal rock type logged. Geochemical results for Pb, Zn and Cu are low and consistent with those values recorded during the Phase 1 drainage sediment sampling in streams immediately to the NE and SW of Query Road. Refer to map number KT 2/76 - 1C of the Phase 1 report.

GEOPEKO LIMITED

G.L. BUCKLAND
GEOLOGIST.

Approved:

M. C. ROGERS
SUPERVISING GEOLOGIST



LEGEND:

KS 0480/0481 ..... Original soil sample / duplicate
1-4m ..... Hole depth
Saltst ..... For geological interpretation see DWG. No. KT2/76-CH2-3

5 cm

E.L. 2/76 LOONGANA, TASMANIA

QUERY ROAD AREA

SOIL SAMPLE LOCATIONS

SCALE 1:10,000

Fig. No. 5

REFERENCES

Burns, K.L. 1962: Barytes and Manganese near Guilford. Annual Report, 1962. Tasmania Department of Mines.

Rogers, M.C. 1976: Loongana Area - Tasmania. Progress Report Exploration Licence 2/76 Joint Venture, Geopeko Limited - E.Z. Company of Australia.

Unpublished Geopeko report

BOX 120, POST OFFICE, GRASSY, KING ISLAND, TASMANIA, 7256. TELEX KSCHEEL AA 58587.

GEOPEKO LIMITED - King Island

THE MINE AREA, GRASSY, KING ISLAND, TASMANIA, 7256, AUSTRALIA. PHONE LYMWOOD 220

Appendix 1

16th August, 1977.

Mr. I.R. Pontifex,
I.R. Pontifex and Associates,
26 Kensington Rd,
ROSE PARK.....5067
South Australia.

Dear Ian,

Enclosed are 10 rock sample for petrological study. Most have been submitted to confirm the field name but there are also some "problem' rocks.

All samples are from within an exploration area in Northern Tasmania. Your Mineralogical Report Number 2017, 12th August, 1976, dealt with this same area. Thin sections KR 0832, 0890 and 0892 from that report have been enclosed so that comparisons can be made with selected rocks from this group.

KR 0892 to KR 0990 are a suite from an acid volcanic environment, while KR 0991 is a contact metamorphic rock.

Area 1 (Area 3 of the 1976 Report)

KR	Description
0982	?Brecciated tuff
0983	Fine grained crystal vitric tuff or altered glassy lava. Is this a similar rock type to KR 0890 of the 1976 report?
0984	White/pink altered lithic vitric tuff.
0985	Pale green/white ash flow lithic crystal vitric tuff. Is this a similar rock type to KR 0892 of the 1976 report?
0986	Pale green/pink crystal lithic tuff, feldspars are waxy (sericite). Is this the same rock type as KR 0984 above?

Area 2 (Area 2 in 1976 Report)

KR	Description
0987	Pink vitric crystal tuff.
0988	Pink vitric crystal tuff.
0989	Pink crystal vitric tuff.
0990	Brecciated lithic crystal tuff.

Area 3

KR	Description
0991	Bedded pyroxene biotite silica hornfels. Is any carbonate present in this rock.?

It would be appreciated if you could undertake this work at your earliest convenience.

Our Order Number is KP No 1239.

Yours faithfully,
GEOPEKO LIMITED

G.L. BUCKLAND
Geologist.

Ian R. Pontifex & Associates Pty. Ltd.

TEL. 332 6744
A.H. 31 3816

26 KENSINGTON ROAD, ROSE PARK
SOUTH AUSTRALIA

P.O. BOX 91, NORWOOD
SOUTH AUSTRALIA 5067

MINERALOGICAL REPORT NO. 2216

19th September, 1977.

TO:	Mr. G.L. Buckland, GeoPeko Ltd., P.O. Box 598, Devonport. Tasmania 7310
YOUR REFERENCE:	Order No. KP 1239 Your letter dated 16/8/77
MATERIAL:	Rock samples (10)
IDENTIFICATION:	KR0982 to KR0991
WORK REQUESTED:	Petrographic descriptions and comments as requested
SAMPLES & SECTIONS:	Temporarily retained

INVESTIGATION BY D. COWAN

PONTIFEX & ASSOCIATES PTY. LTD.

KR 0982: Devitrified and moderately altered (sericitised) "rhyolitic", glassy lava or tuff-lava

Field comment: ? brecciated tuff

This rock consists of microgranular to semi fibrous, crudely spherulitic, quartz and random sericite in varying proportions. It has a more or less pervasive perlitic structure typical of devitrified felsic glass and contains frequent angular to subangular weakly flow-orientated lithic clasts, sized mainly in the 0.5 - 5mm range and comprising around 50 vol. % of the area sectioned.

These features include sparse sericitised and/or silicified feldspar phenocrysts (to 0.5mm) and accessory opaques martitised magnetite, subordinate titaniferous types now represented by ultrafine sphene). A few are pumiceous with quartz-filled vesicles sometimes elongate and lineated ("collapsed pumice"). The devitrified matrix is essentially similar but relatively devoid of phenocrysts and opaques and relatively finer grained.

There is no evidence of shards. In common with many rhyolites from the Mount Read Volcanics primary quartz crystals are absent. Since primary feldspar composition is obscure,use of the term "rhyolitic" is based on the abundant quartz resulting from devitrification of felsic (siliceous) glass. This rock consisted initially of glassy lava (and pumice) fragments cemented by similarly glassy lava (hence tuff lava). The fragmental fabric is enhanced in hand specimen by the perlitic devitrification structure and by weak Fe-staining of the clasts.

KR 0983: devitrified and altered (sericitised), rhyolitic vitric crystal tuff (ignimbrite), with quartz veinlets

Field comment: fine grained crystal vitric tuff or altered glassy lava.

The rock consists essentially of ultrafine quartz with subordinate random to incipiently orientated sericite and closely intergrown cryptocrystalline K-feldspar (revealed by staining). These phases represent devitrified and altered glass. Relict microshards (mean 10-15μ) are more or less pervasive throughout and show a fairly marked dimensional-orientation (eutaxitic fabric).

Small crystals (to 0.5mm) and crystal fragments of feldspar, and rarely quartz, are disseminated throughout the rock. Feldspar is extensively altered to kaolin, sericite and quartz with associated microgranular secondary K-feldspar (adularia in part). There are a few poorly resolved similarly altered ? lava clasts.

The rock is weakly leucoxene-stained and carries accessory leucoxenised opaques. Late microfractures, healed with quartz, are common.

.../

KR 0983 Contd.

In contrast KR 0892 is more heavily altered (sericitised) and relatively coarser grained initially. On re-inspection some of the "fiamme" in that rock are suggestive of flow-or autobrecciated ignimbritic material, and the two specimens are therefore, conceivably closely related.

KR 0890 is much finer and lacks diagnostic textures seen in KR0983, even though both rocks may have a similar gross mineralogical composition. There is insufficient information however to establish any real affinities between the two rocks.

KR 0984: devitrified weakly altered porphyritic sodi-potassic rhyolite amygdaloidal and weakly stressed

Field comment: white/pink altered lithic vitric tuff

This rock contains frequent weakly sericitised phenocrysts (to 2mm) and phenocrystal clusters of pink-pigmented albite. In addition there are thinly dispersed completely sericitised feldspar phenocrysts (< 0.5mm), which appear to have been sanidine-anorthoclase on the basis of shape, and rare recrystallised quartz phenocrysts.

The groundmass consists of essentially random extremely fine potash feldspar microlites enclosed in felsitic anhedral patches of quartz (mean 0.25mm) which result from devitrification. Irregular to cuspate patches (to 3mm), made up of aggregates of weakly growth-zoned quartz crystals with accessory kaolin and sericite represent (? deuterically) infilled vesicles.

Accessory leucoxenised opaques have partly crystallised as cloudy anatase crystals. Stress is reflected in strained extinction (quartz) and fairly frequent late subparallel quartz-healed microfractures.

This is a lava with an essentially rhyolitic composition, but again unusual in that phenocrystal quartz is negligible.

KR 0985: devitrified, altered weakly sheared "rhyolitic" lithic-vitric-crystal tuff, probable flow - or autobrecciated ignimbrite

Field comment: pale green/white ash flow lithic crystal vitric tuff.

This pyroclastic rock is very poorly sorted mainly in the ash range but it also contains disseminated lapilli (i.e. >4mm diameter). The clasts are generally angular but show a weak dimensional (flow-) orientation.

The majority are porphyritic glassy "rhyolite" with sericitised feldspar phenocrysts enclosed in microcrystalline quartzo-feldspathic material variably stained with sericite and representing devitrified and altered groundmass. Quartz phenocrysts are essentially absent.

Accompanying these are variably flow banded relatively weakly sericitised lithic fragments with, locally, relict eutaxitic fabrics. Sericitised feldspar grains with rare relatively fine quartz comprise a subordinate crystal component.

The matrix is poorly resolved consisting of microcrystalline quartz often "grading" into the pale lithic clasts. However, typical semi-random to lineated devitrified shards are seen in places and the gross fabric is analogeous to that of a flow breccia with pyroclastic clasts in a pyroclastic matrix.

This rock thus shows some affinities with the more heavily sericitised KR0892 (of the previous report), and may also be related to KR0983. However the size of the fragments and their variation in composition is greater in KR0985 (although the gross composition is similar).

KR 0986: acid lava, feldspar phenocrysts extensively sericitised ± quartz, amygdales silicified

Field comment: pale green/pink crystal lithic tuff with waxy feldspars (sericite)

This is predominantly an altered porphyritic acid lava, but it contains several fragments of similar composition which may be xenoliths, or pyroclastic lithic components. As in KR 0984, feldspar phenocrysts are common and partly clustered into glomerphenocrysts. These are extensively sericitised with some of the finer grains (? sanidine-anorthoclase) completely replaced pseudomorphously by aggregates of quartz, sericite and pale green chlorite. The groundmass is near-identical with that in 0984 with random K-feldspar microlites enclosed in felsitic anhedral quartz.

Faintly flow-orientated quartz filled vesicles are relatively common. These features are subovoid to irregular in shape and give the rock a certain, and rather misleading, "crystal-fragmental" appearance in hand specimen. The quartz is accompanied by small patches of sericite and chlorite and occasionally by small pink-pigmented (Fe-oxide inclusions) crystals of adularia. Leucoxenised accessory opaques are relatively abundant.

Incipient stress can be related to sporadic semi-continuous straight quartz veins.

The rock is essentially a porphyritic and amygdaloidal acid lava, with vesicles silicified and felspars showing advanced sericitic and minor silicic alteration. It is indeed essentially the same rock type as KR 0984.

KR 0987: devitrified, weakly porphyritic glassy lava, extensively pervasively sericitised

Field comment: pink vitric crystal tuff

This rock is both homogeneous and rather featureless. It consists of weakly sericite-stained fine felsite-like anhedral quartz with intergranular patches of random to incipiently orientated sericite after feldspar. The aggregate is incipiently banded and includes thinly dispersed partly recrystallised microspherulites of quartz and rare quartz "microphenocrysts". Small cavities throughout represent altered and subsequently leached feldspar phenocrysts. Accessory leucoxenic material is present.

The rock is interpreted as a weakly porphyritic glassy lava of acid ("rhyolitic") affinities, devitrified and pervasively sericitised.

KR 0988: devitrified, sericitised weakly porphyritic glassy lava ("rhyolitic")

Field comment: pink vitric crystal tuff.

A felsic-devitrified weakly porphyritic lava rather similar to KR0987. In contrast this rock has a relatively marked relict flow fabric and contains occasional weakly sericitised phenocrysts of oligoclase-albite (0.2 - 0.75mm), in addition to rare heavily resorbed and partly recrystallised quartz microphenocrysts.

The groundmass consists of felsitic anhedral quartz with subordinate cryptocrystalline alkali feldspar (revealed mainly by staining pink in hand specimen) and incipiently orientated sericite. A vague perlitic fabric is developed but is partly obliterated by incipient shearing. Accessory leucoxenised opaques and rare grains of magnetite are present.

KR 0989: glassy lava or fine vitric ash, completely pervasively silicified due to devitrification, subordinate and probably related chlorite-sericite alteration

Field comment: pink crystal vitric tuff

This is a homogeneous, fairly featureless rock extremely fine grained, and consisting largely of microcrystalline quartz with pervasive interstitial partly degraded/Fe-stained sericite and chlorite. Small quartz crystal fragments are sparsely disseminated throughout, and these are fragment Fe-stained patches of clay (0.05 - 0.25mm) with the appearance of completely altered feldspar crystal fragments. In addition vague very fine shard-like shapes are semi-pervasive in the fine quartz-clay aggregates.

Overall the evidence is sketchy but in favour of a fine vitric-crystal ash as the original rock type.

KR 0990: flow-brecciated ignimbrite, devitrified pervasively sericitised

Field comment: brecciated lithic crystal tuff.

This is a devitrified and extensively sericitised flow-or autobrecciated ignimbrite.

Frequent angular lithic clasts are sized in the 0.5 - 5mm range and the majority of these features are recognisable as (devitrified and sericitised) vitric and vitric crystal tuff of rhyolitic character, often with fine scale flow banding and/or eutaxitic microfabrics. There are occasional clasts of perlitic devitrified porphyritic-lava, Feldspar crystals (albite, K-feldspar in roughly equal proportions) and crystal fragments are disseminated throughout.

Fragmental material is weakly flow-orientated within a sericitised matrix with semi-pervasive, very fine, semi-random to orientated (eutaxitic) relict shard textures and sparse accessory leucoxenised opaques. Texturally the matrix is very similar to the tuff clasts which evidently developed by autobrecciation during flow. The gross fabric is similar to that of KR 0985.

KR 0991: contact metasomatised quartzo-feldspathic and weakly calc-magnesic siltstone / fine sandstone (fine layered pyroxene potassic feldspar quartz hornfels)

Field comment: bedded pyroxene biotite silica hornfels.

This rock was originally a bedded siltstone with intercalations of fine sandstone. Recognisable clastic material comprises quartz and alkali feldspar in subequant but slightly variable proportions, and the cement consists also largely of microcrystalline to cryptocrystalline quartz and K-feldspar.

Relict bedding persists on a 0.5mm - 1cm scale and is essentially planar but locally transcurrent and elsewhere incipiently graded.

The rock has been weakly hornfelsed with the resultant development of extremely fine grained pale green diopside-hedenbergite as single grains and small aggregates of poikilitic character. Pyroxene tends to be concentrated in the coarser (sandy) bands and evidently developed by metasomatic replacement of subordinate carbonate cement.

Rare small patches (to 0.15mm) of carbonate (dolomite-ankerite) persist locally. The rock also contains sparse very fine sphene and, fine grained magnetite (mean 0.02 - 0.03mm), disseminated, but in poorly defined layers.

286074

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED

WEST COAST MINES
P.O. BOX 21 ROSEBERY
TASMANIA 7470 AUSTRALIA
TELEPHONE (004) - 73 1104
TELEX AA58588
TELEGRAMS AND CABLES
'ZINCORE' ROSEBERY

REF: GD:dc

14th December, 1976

The Supervising Geologist,
Geopeko Limited,
P.O. Box 120,
GRASSY, 7256
King Island

Attention Mr. Murray Rogers:

Dear Sir,

Loongana Geochemistry

With reference to the minutes of our meeting of 15th November, point 3 records that managanese scavenging was discussed, and that Mr. Sherrington would be asked to comment.

We have received a copy of his memorandum to Mr. K. Wright, dated 17/11/76, and have also made an examination of the data ourselves. At this stage we are not completly happy that the geochemical response of the Loongana area is not being effected by managanese scavenging and would repeat the suggestions we made at our meeting viz - one of the Challenger areas be investigated to determine if bed rock response or a scavenging effect has been observed.

Along these lines the following observations and suggestions are made, as per our recent phone discussion:-

1) The correlation co-efficient for Zn - Mn over the whole area is 0.1764, a rather high value (statistically) as several hundred samples are included. It does demonstrate a positive correlation at the 10% level of confidence (90% correlation).

2) The Mn - Zn correlation co-efficient for the Challenger 2 area is 0.71. As this is based on 15 samples it has a positive correlation at the 1% level of significance (ie. 99% positive correlation).

The inference that we would draw from this correlation is that Mn could well be scavenging Zn in Challenger 2 area. Consequently the work programme for this prospect should be restricted to sufficient orientation geochemistry to determine that genuine bed rock response is being obtained and that the high base metal values are a primary feature.

.../2

3) The Mn - Zn correlation for Challenger 1 is 0.26, (for samples from the general area), and 0.10 for samples actually in Challenger 1 anomaly.

We are not confident that there are sufficient samples of this anomalous area to statistically evaluate the data. Intuitively we would suggest that the higher Zn values occur with high, but not peak, Mn values and hence scavenging can not be ruled out.

The work programme for Challenger 1 should be restricted to orientation geochemistry as per Challenger 2.

I hope to have the opportunity to discuss these proposals with you in the near future.

Yours faithfully,

for D.K. Brock
Manager, West Coast Mines

c.c.

C. Haslam

K. Wright

LOONGANA GEOCHEMISTRY

SAMPLE FROM CHALLENGER 1.

SAMPLE NO.	ZINC (ppm)	MN (ppm)
484	200	1800
497	60	1600
485	220	570
498	160	6100

Correlation Co-efficients

S zn/mn = - 17933.33

S zn/mn = - 13450.00

r = - 0.10

LOONGANA GEOCHEMISTRY

SELECTED SAMPLES OVER CHALLENGER NO 1.

SAMPLE NO.	ZINC (ppm)	MN (ppm)
478	100	430
477	140	740
476	65	2400
482	50	1000
484	200	1800
497	60	1600
485	220	570
496	55	70
498	160	6100
490	70	45

Correlation Co-efficients.

$S_{zn/mn} = -29383.22$

$S_{zn/mn'} = -26444.00$

$r = -0.26$

LOONGANA GEOCHEMISTRY

SELECTED SAMPLES OVER CHALLENGER 2 AREA

	SAMPLE NO.	ZINC (ppm)	MN (ppm)
1	50	50	180
2	51	130	480
3	48	130	850
4	49	160	430
5	47	160	500
6	45	160	600
7	46	160	1300
8	80	170	440
9	12	180	950
10	13	200	1200
11	54	230	850
12	52	230	700
13	53	260	950
14	55	290	1600
15	56	430	1400

S zn/mn = 25265.71

S zn/mn = 23581.33

Correlation Co-efficient Σ = 0.71

BASIC DISTRIBUTIONS AND SIGNIFICANCE TABLES

TABLE 10

THE CORRELATION COEFFICIENT

Values of the Correlation Coefficient for Different Levels of Significance

For a total correlation, v is 2 less than the number of pairs in the sample; for a partial correlation, the number of eliminated variates should also be subtracted. The probabilities at the head of the columns refer to the two-tail test of significance and give the chance that $|r|$ will be greater than the tabulated values. For a single-tail test the probabilities should be halved.

Example — In a test for a significant positive correlation between two variables, the observed correlation coefficient of ten pairs of observations would have to exceed the value +0.7155 to be significant at the 1% level.

	.1	.05	.02	.01	.001
ν=1	.98769	.99392	.999507	.999877	.9999988
2	.90000	.95000	.98000	.990000	.99900
3	.8054	.8783	.93433	.95873	.99116
4	.7293	.8114	.8822	.91720	.97406
5	.6694	.7545	.8329	.8745	.95074
6	.6215	.7067	.7887	.8343	.92493
7	.5822	.6664	.7498	.7977	.8982
8	.5494	.6319	.7155	.7646	.8721
9	.5214	.6021	.6851	.7348	.8471
10	.4973	.5760	.6581	.7079	.8233
11	.4762	.5529	.6339	.6835	.8010
12	.4575	.5324	.6120	.6614	.7800
13	.4409	.5139	.5923	.6411	.7603
14	.4259	.4973	.5742	.6226	.7420
15	.4124	.4821	.5577	.6055	.7246
16	.4000	.4683	.5425	.5897	.7084
17	.3887	.4555	.5285	.5751	.6932
18	.3783	.4438	.5155	.5614	.6787
19	.3687	.4329	.5034	.5487	.6652
20	.3598	.4227	.4921	.5368	.6524
25	.3233	.3809	.4451	.4869	.5974
30	.2960	.3494	.4093	.4487	.5541
35	.2746	.3246	.3810	.4182	.5189
40	.2573	.3044	.3578	.3932	.4896
45	.2428	.2875	.3384	.3721	.4648
50	.2306	.2732	.3218	.3541	.4433
60	.2108	.2500	.2948	.3248	.4078
70	.1954	.2319	.2737	.3017	.3799
80	.1829	.2172	.2565	.2830	.3568
90	.1726	.2050	.2422	.2673	.3375
100	.1638	.1946	.2301	.2540	.3211

This table is taken from Table VII of Fisher and Yates: Statistical Tables for Biological, Agricultural and Medical Research, published by Oliver & Boyd Ltd., Edinburgh, and by permission of the authors and publishers.

GEOPEKO LIMITED

(Incorporated in New South Wales)

INTER-OFFICE MEMO

Our Ref.:

Chatswood, 21st December, 1976

Your Ref.:

From: G.H. SHERRINGTON

c.c. K. WRIGHT

To: M.C. ROGERS

LOONGANA MANGANESE GEOCHEMISTRY

I refer to Mr. D.K. Brock's letter of December 14.

Since the subject of manganese scavenging was first raised I have spoken to Dr. Charles Butt of C.S.I.R.O. Division of Mineral Chemistry, Perth, who has worked on this matter in the U.K. His experience was expressed in two relevant statements:

1. He would not expect scavenging to be a major factor in these climates unless there was above 0.5 to 1% Mn in the fraction analysed.

2. The capacity for adsorption is about 10% of the weight of manganese.

While I have not done a literature search to find formal experimental evidence to underline these statements, I do say that they are in accordance with conclusions I have reached from past general reading of miscellaneous literature. Indeed in some of the Loongana areas there is so much zinc relative to manganese that one wonders what is scavenging ~~about~~ what!

Dr. Butt also said that he had not seen evidence that lead was scavenged; that the occurrence of coincident lead anomalies would be interpreted in the first instance as evidence for mineralisation.

The correlation coefficient work reported by Mr. Brock, particularly for Challenger II area, does indeed show a positive zinc-manganese correlation. But there is also a positive lead-zinc correlation which might have nothing to do with manganese scavenging. The correlation does not elucidate any cause-effect mechanism.

My position on this matter remains unchanged. I do believe that a valid anomaly has been found and that manganese scavenging, if it occurs, is having only minor influence on the distribution of values.

G.H. SHERRINGTON

GHS:ps

22 DEC 1976

KSCHEEL AA58587
GEOPEKO AA24622

MURRAY ROGERS 22/12/76

CORRELATION COEFFICIENT ZINC BY MANGANESE IS PLUS 0.358. THIS WILL BE ARGUED BY EZ AS SIGNIFIVANT. IT IS MILDLY SO BUT IT IS NOT FIRM EVIDENCE FOR SCAVENGING IN THAT THE CORRELATION CAN EUQALLY ARISE FROM INHRRENT GEOLOGICAL VARIATION.

GEOFF SHERRINGTON

KSCHEEL AA58587

GEOPEKO LIMITED

(Incorporated in New South Wales)

INTER-OFFICE MEMO

Our Ref.:

Chatswood, 2nd March, 1977

Your Ref.: Appendix 3

From: G.H. SHERRINGTON

To: M.C. ROGERS

CHALLENGER II - LOONGANA, TASMANIA

The results of soil sampling on the grid have been received. In conjunction with the geological map prepared at the time of stream sediment sampling, and with the sediment results, an interpretation was made.

Essentially, we confirm that the source of mineralisation is mainly within the feldspar quartz porphyry tongue which intrudes the west-central part of the grid. The levels of base metals found in grid sampling are consistent with those in stream sediments.

I am prepared to dismiss this prospect at this stage in favour of development of other areas. There are several similar examples in Geopeko work of the past 3 years where a mildly mineralised rock unit has been shown to cause anomalous geochemistry. While some would argue that such a rock unit is a favourable host to ore, we see no evidence of such enrichment and do not propose further geochemical work to search for such a possibility at this time.

G.H. Sherrington

GHS:ps

G.H. SHERRINGTON

APPENDIX NO. 4

ANALYTICAL RESULTS

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %	Cd ppm
KS04030	(2	(20	10	(2	10	0.24	5
1	2	(20	15	(2	10	0.26	2
2	(2	(20	10	(2	5	0.19	5
3	5	30	120	(2	20	0.24	5
4*	5	(20	120	(2	15	0.26	5
5	(2	(20	15	(2	10	0.20	2
6	(2	(20	10	(2	10	0.21	2
7	(2	(20	25	(2	10	0.18	2
8	(2	(20	10	(2	5	0.18	(2
9	(2	420	15	(2	5	0.20	2
9B	2	(20	5	(2	5	0.12	
40	(2	(20	15	(2	5	0.18	(2
1	2	(20	30	(2	10	0.21	2
2	(2	(20	20	(2	10	0.20	(2
2**	(2	(20	15	(2	10	0.21	(2
3	2	(20	15	(2	5	0.30	2
4	2	(20	15	(2	10	0.21	2
5	(2	(20	20	(2	10	0.18	2
6	(2	(20	15	(2	5	0.20	2
7	5	30	40	(2	10	1.4	2
8	5	50	40	(2	25	3.4	5
9	5	80	90	(2	90	3.1	5
50	10	100	100	(2	130	3.3	5
1*	10	80	100	(2	110	3.4	5
2	10	90	190	2	420	3.5	5
3	10	80	210	(2	300	5.1	5
4	20	180	210	2	1100	3.9	5
5	10	80	80	(2	460	3.6	5
6	15	120	110	2	380	4.8	5
6**	20	120	120	2	390	4.9	5
7	20	120	160	2	600	4.3	2
8	15	90	190	(2	280	3.9	5
9	10	70	90	(2	310	5.0	5
60	20	60	80	(2	620	3.4	2
1	15	140	190	2	210	5.1	5
2	10	70	380	(2	620	3.4	2
3*	10	80	410	(2	720	3.6	2
4	10	30	50	(2	250	3.3	2
5	5	30	60	(2	210	3.6	5
6	5	30	40	(2	110	3.5	5
7	5	40	60	(2	260	4.7	5
8	10	30	120	(2	420	4.3	5
9	10	50	90	2	980	4.2	5
70	10	30	85	(2	800	4.1	5
1	20	70	80	(2	140	4.6	5
1**	20	70	80	(2	130	4.5	5
2	20	80	80	2	250	5.5	5
KS0473*	20	80	90	2	300	6.0	5

* Denotes duplicate of previous sample.

** Denotes repeat and check.

(Denotes less than.

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
KS 2598	15	40	50	(2	1880	4.1
9	20	60	60	(2	260	5.8
600	15	60	45	(2	280	3.6
1*	20	70	45	(2	280	3.7
2	5	30	50	(2	20	2.7
3	10	50	90	(2	380	4.3
4	15	70	90	(2	540	4.0
5	20	40	40	(2	490	3.4
6	10	40	45	(2	370	3.5
7	10	40	30	(2	280	2.2
8	15	40	55	(2	170	4.8
8**	10	50	50	(2	180	4.8
9	5	30	25	(2	190	0.98
10	10	40	20	(2	40	0.90
1*	10	20	20	(2	40	0.92
2	2	(20	15	(2	20	0.84
3	5	20	15	(2	30	0.72
4	5	20	10	(2	10	0.12
5	5	(20	5	(2	(5	0.10
6	10	(20	10	(2	10	0.16
7	5	20	25	(2	10	0.20
8	(2	(20	5	(2	(5	0.11
9	10	20	10	(2	(5	0.13
20	5	(20	5	(2	10	0.12
1*	5	(20	10	(2	5	0.14
2	2	(20	10	(2	5	0.09
3	5	(20	10	(2	10	0.11
4	5	(20	10	(2	10	0.09
4**	2	(20	10	(2	10	0.09
5	10	(20	10	(2	10	0.09
6	10	20	10	(2	10	0.09
7	5	(20	15	(2	10	0.34
8	5	20	30	(2	30	1.50
9	10	30	30	(2	340	1.67
30	10	50	90	(2	190	3.8
1*	10	60	100	(2	130	3.9
2	10	40	75	(2	260	4.0
3	15	30	50	(2	280	3.6
4	10	100	60	(2	170	4.4
5	10	30	20	(2	140	1.70
6	15	90	55	(2	300	3.4
7	15	40	60	(2	220	4.3
8	5	40	40	(2	340	3.7
9	10	20	95	(2	520	1.55
40	10	40	40	(2	230	5.3
1*	20	50	45	(2	220	5.5
2	10	60	50	(2	160	5.9
3	2	(20	10	(2	5	0.24
4	2	(20	5	(2	(5	0.19
5	2	(20	10	(2	(5	0.08
6	5	(20	10	(2	5	0.90
7	5	(20	10	(2	10	0.14
8	2	(20	10	(2	5	0.13
KS 2649	2	(20	10	(2	10	0.12

* Denotes duplicate of previous sample

** Denotes repeat and check

(Denotes less than.

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
KS 2650	2	(20	15	(2	220	0.75
1*	2	(20	15	(2	240	0.64
2	10	90	100	(2	80	3.6
3	10	80	170	(2	80	3.5
4	5	(20	30	(2	60	0.90
5	2	70	75	(2	200	2.9
6	10	20	100	(2	280	4.7
7	10	40	75	(2	240	3.6
8	10	100	55	(2	200	4.3
8**	10	100	50	(2	200	4.3
9	10	70	80	(2	120	4.6
60	5	20	60	(2	830	5.7
1*	10	50	70	(2	920	5.8
2	5	30	45	(2	240	3.7
3	2	20	35	(2	220	3.7
4	10	70	90	(2	580	8.9
5	5	40	10	(2	10	0.21
6	2	50	10	(2	10	0.17
7	5	50	30	(2	10	0.57
8	(2	60	30	(2	10	1.40
9	(2	40	15	(2	20	0.13
70	(2	40	10	(2	20	0.13
70**	(2	40	10	(2	30	0.13
1*	(2	50	10	(2	30	0.18
2	(2	50	10	(2	15	0.19
3	(2	40	15	(2	30	0.99
4	(2	60	10	(2	10	0.10
5	(2	50	10	5	20	0.31
6	5	40	25	(2	20	3.00
7	(2	50	20	(2	30	1.95
8	(2	60	40	(2	30	0.67
9	(2	40	10	5	10	0.12
9**	(2	40	10	2	10	0.12
80	(2	40	15	2	10	0.82
1*	(2	30	10	(2	15	0.14
2	(2	40	10	(2	10	0.10
3	(2	40	10	(2	(5	0.29
4	(2	40	15	(2	20	0.20
KS 2685	(2	40	10	2	20	0.14

Analytical method: Cu, Pb, Zn, Ag, Mn, Fe, Cd, by A.A.S. following HCl leach and HCl/HNO_3 leach in latter stages of 0.25g sample.

* Denotes duplicate of previous sample.

** Denotes repeat and check.

(Denotes less than

APPENDIX NO. 5

ANALYTICAL RESULTS

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
KS 0351	10	360	150	(2	300	4.4
2*	10	320	120	(2	250	3.8
3	10	580	340	(2	480	4.7
4	10	600	340	(2	650	5.1
5	10	700	390	(2	650	5.6
6	10	440	180	(2	650	4.4
7	10	210	210	(2	150	3.7
8	10	160	100	(2	400	3.1
9	10	420	200	(2	350	4.4
60	20	200	210	(2	1800	6.0
1	20	240	350	(2	820	5.1
2*	20	270	350	(2	810	5.4
2**	15	260	350	(2	820	5.3
3	10	370	230	(2	690	5.7
4	20	420	260	(2	780	5.9
5	25	520	270	(2	400	5.4
6	25	170	90	(2	290	7.6
7	30	280	270	(2	630	6.5
8	35	360	410	(2	780	7.5
9	30	330	230	(2	590	8.5
70	20	160	50	(2	480	7.6
1	30	320	220	(2	420	6.7
2	30	240	210	(2	430	6.9
3	30	280	240	(2	130	7.0
4*	30	240	220	(2	510	7.1
5	30	80	160	(2	80	5.3
6	30	180	80	(2	540	5.6
7	40	160	100	(2	120	4.1
8	30	220	160	(2	370	7.6
9	35	170	140	(2	260	7.0
80	35	220	170	(2	460	7.5
1*	30	180	150	(2	460	6.6
2	40	90	150	(2	290	4.3
3	10	340	170	(2	210	5.0
4	10	420	200	(2	440	4.9
4**	10	410	210	(2	440	4.9
5	5	230	210	(2	200	5.2
6	5	190	170	(2	100	4.7
7	10	230	120	(2	80	3.8
8	5	210	170	(2	150	3.8
9	10	170	160	(2	240	6.0
90	10	140	240	(2	1200	3.8
1	10	310	290	(2	1200	4.6
2	15	920	140	(2	1100	3.9
3	10	140	180	(2	1000	2.2
4*	20	50	150	(2	510	1.4
5	20	140	380	2	730	8.9
KS 0396	25	340	340	2	850	5.6

* Denotes duplicate of previous sample.

** Denotes repeat and check.

(Denotes less than.

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
KS 0397	30	230	730	2	1600	5.6
8	30	180	270	(2	370	7.9
9	30	250	200	(2	1400	6.0
400	25	200	110	(2	1400	2.4
1	30	160	90	(2	790	4.0
2	30	240	240	2	640	6.8
3	5	70	110	(2	340	3.6
3**	5	70	110	(2	360	3.7
4*	5	60	100	(2	250	3.4
5	40	180	270	(2	60	4.3
6	60	100	290	(2	70	5.9
7	15	50	80	(2	370	4.3
8	15	70	80	(2	60	4.0
9	20	100	120	(2	60	4.4
10*	15	90	130	(2	60	4.6
1	25	190	200	2	280	5.8
2	30	100	110	(2	600	4.1
3	25	150	240	2	610	5.8
4	20	220	140	2	570	6.0
5	20	220	200	2	300	6.9
6	15	180	130	(2	880	4.9
6**	15	190	150	(2	900	5.0
7	20	240	250	2	620	6.0
8	10	150	80	(2	80	2.4
9	10	280	380	2	230	5.2
20	10	250	140	(2	1300	5.0
1	10	300	220	(2	160	5.7
2*	5	310	220	2	160	5.5
3	5	190	80	(2	60	2.2
4	10	250	170	2	1600	6.0
5	5	400	210	2	800	4.6
6	5	240	200	2	260	4.8
7	10	340	240	2	530	5.4
8	5	120	220	(2	340	4.7
KS 0429	10	180	140	2	180	4.6
KS 0490	10	120	130	(2	1100	4.6
1	20	120	150	(2	880	5.1
2	10	180	160	(2	580	4.0
3	10	150	120	(2	1400	4.3
4	10	230	210	(2	640	5.3
5	20	130	120	2	240	4.3
6	30	220	280	(2	1500	6.4
7	20	160	140	(2	1600	6.4
8	15	110	260	(2	1700	6.0
9	20	90	100	(2	440	4.9
500	10	80	80	(2	200	1.8
1	5	80	540	(2	220	5.1
2	10	110	160	(2	180	3.9
3	20	140	180	(2	350	5.8
4*	20	140	210	(2	360	5.7
5	10	130	140	(2	290	5.1
6	20	160	130	(2	1500	5.5
KS 0507	10	60	60	(2	30	3.3

* Denotes duplicate of previous sample.

** Denotes repeat and check.

(Denotes less than.

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
KS0507**	10	60	60	(2	30	3.3
8	30	110	170	(2	820	5.6
9	15	100	210	(2	190	9.6
10	30	120	510	(2	320	8.0
1	10	140	130	(2	420	8.6
2	20	100	170	(2	3900	5.4
3	20	150	310	(2	1100	6.1
4	30	110	230	(2	3200	4.3
5*	30	130	330	(2	2700	8.4
6	10	280	330	(2	380	5.9
7	10	260	170	(2	320	5.2
8	10	320	320	(2	550	5.5
9	5	260	210	(2	450	5.0
20	10	340	430	(2	840	8.4
1	10	260	340	(2	860	8.6
2	10	270	540	(2	320	8.6
3	30	380	220	2	410	8.8
4	5	120	35	(2	30	1.9
5	20	120	160	(2	1700	11.0
6*	20	120	160	(2	1300	10.0
7	10	320	50	(2	240	1.4
8	10	80	70	(2	130	4.1
9	15	170	290	(2	1700	5.5
30	10	130	100	(2	350	4.7
1	30	180	260	(2	340	6.3
2	30	260	220	2	880	5.8
3	10	50	50	(2	40	3.9
3**	10	50	50	(2	40	3.3
4	20	90	170	(2	160	5.4
5	10	80	130	(2	240	5.8
6	20	100	120	(2	220	4.2
7	50	380	240	2	580	5.7
8*	40	380	230	2	620	5.2
9	40	140	150	2	360	5.0
40	10	70	100	(2	420	3.5
1	10	50	30	(2	40	1.6
2	10	90	60	(2	1100	4.0
3	10	100	70	(2	560	4.7
4	15	160	170	2	580	4.7
5	50	150	130	2	290	4.1
6	20	100	90	(2	260	4.3
7	100	110	360	2	790	9.6
8	35	180	460	2	270	6.0
9	40	340	300	(2	1000	10.0
550	20	180	180	(2	1000	5.6
701*	20	180	180	(2	990	5.8
2	20	60	60	(2	60	2.8
3	5	80	80	(2	40	3.6
4	10	720	110	(2	250	4.6
5	20	200	110	2	480	8.6
6	25	130	110	(2	160	4.7
7	35	70	180	(2	4000	5.4
8	45	180	270	(2	340	13.0
KS0709	10	60	150	(2	240	5.0

* Denotes duplicate of previous sample.

** Denotes repeat and check.

(Denotes less than.

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
KS 0710	10	60	90	(2	190	4.3
1	35	270	270	(2	2600	9.0
2*	35	280	310	(2	2300	9.8
3	20	120	190	(2	330	6.0
4	20	160	340	2	380	6.5
5	10	110	180	(2	210	5.9
6	20	190	210	(2	450	6.2
7	20	150	190	(2	390	8.6
8	30	310	370	(2	480	6.0
8**	30	310	350	(2	450	6.2
9	10	70	30	2	50	2.9
20	10	60	110	(2	160	5.3
1	5	30	20	(2	190	1.6
2	20	140	180	(2	1100	5.3
3*	20	160	200	(2	1200	5.7
4	20	180	210	(2	640	6.3
5	20	270	210	(2	460	4.4
6	10	80	90	(2	130	5.9
7	20	60	90	(2	880	5.4
8	10	70	100	(2	400	5.8
9	20	260	150	2	650	12.0
30	10	100	190	2	1500	6.5
1	10	60	80	2	680	5.0
2	15	70	110	2	290	5.3
3	25	50	110	2	280	3.7
4	15	60	80	(2	1600	5.8
5	40	90	180	(2	1500	4.7
6	60	270	280	2	800	8.8
7	15	100	70	(2	200	5.2
8	20	80	80	(2	320	4.6
9	10	60	50	(2	60	5.4
40	15	60	70	(2	80	5.1
1	10	60	65	(2	60	5.0
2	10	80	40	(2	20	4.4
3	5	60	20	(2	20	1.6
4	20	80	65	(2	50	4.4
5	50	70	310	(2	1200	6.6
5**	45	70	300	(2	1100	6.2
6	80	80	370	(2	)10000	6.1
7	30	80	170	(2	420	3.0
8	30	80	170	(2	90	6.3
9	10	70	150	(2	80	6.4
50	30	120	180	(2	120	5.0
1	20	40	40	(2	10	0.68
2	10	30	30	(2	(5	0.32
3	90	160	210	(2	15	2.5
4	20	70	135	(2	40	3.1
5	25	60	55	(2	60	4.7
6	40	110	210	(2	45	5.3
7	25	170	75	(2	30	4.2
8	30	820	35	(2	360	1.38
9	10	80	10	(2	20	0.94
60	10	40	10	(2	10	1.08
1	70	130	260	(2	50	3.9
2	30	60	65	(2	15	5.7
KS 0763	10	50	30	(2	20	2.6

* Denotes duplicate of previous sample.

** Denotes repeat and check.

(Denotes less than.
) " greater than

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
KS 0764*	10	50	20	(2	20	2.8
4**	10	50	20	(2	20	2.7
5	15	110	140	2	90	5.8
6	25	150	160	2	260	5.0
7	25	270	190	(2	390	5.2
8	15	350	160	(2	800	4.3
9	15	260	200	2	1000	4.4
70	10	100	230	(2	700	5.2
1	30	440	330	2	1500	9.5
2	50	300	350	2	680	5.6
3	20	150	140	(2	1500	5.0
4	40	140	160	(2	480	5.5
5*	40	130	140	(2	430	5.2
6	30	130	35	(2	610	1.38
7	25	80	85	(2	120	4.8
8	70	60	50	(2	100	2.5
9	20	20	20	(2	30	3.1
80	25	50	60	(2	100	4.8
1	35	90	80	(2	50	4.7
2	40	160	140	(2	500	5.6
3	40	120	470	(2	2300	9.3
4	30	240	190	(2	830	6.2
5	15	250	220	(2	1400	6.3
6*	40	270	230	2	1400	6.3
7	30	110	140	(2	1500	5.5
7**	20	110	140	(2	1500	5.7
8	25	250	550	2	360	5.5
9	30	150	220	(2	710	6.2
90	35	210	190	(2	1300	6.5
1	25	90	80	(2	90	6.6
2	50	130	190	(2	110	5.8
3	30	60	70	(2	80	4.0
4	35	60	140	(2	1800	5.7
5	20	40	60	(2	390	2.9
6	40	110	120	(2	500	4.6
7*	40	110	130	(2	490	5.0
8	35	170	230	(2	920	6.0
9	10	60	60	(2	120	3.9
800	40	120	45	(2	700	5.2
1	10	90	85	(2	610	4.0
2	5	120	110	(2	100	2.9
3	10	60	95	(2	90	3.8
4	40	100	190	(2	60	5.3
5	30	130	70	(2	1000	4.1
6	40	180	240	(2	670	7.4
7	30	90	90	(2	550	4.3
8	20	180	110	(2	1500	3.9
9	30	100	110	(2	320	4.4
10	10	160	30	(2	560	1.7
10**	10	160	35	(2	540	1.8
1*	10	180	40	(2	550	2.1
2	10	160	130	(2	120	6.4
3	5	100	25	(2	30	2.0
4	20	120	70	(2	550	1.8
KS 0815	15	100	120	(2	980	4.5

* Denotes duplicate of previous sample.

** Denotes repeat and check.

(Denotes less than.

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
KS 0816	10	60	35	(2	20	1.1
7	25	100	150	(2	160	5.4
8	20	110	140	(2	270	5.7
9	25	310	210	(2	10000	11.4
20	30	110	150	(2	1300	5.3
1	20	100	120	(2	500	6.2
2	35	210	220	(2	800	6.1
3	20	80	80	(2	940	5.1
4	10	50	50	(2	870	3.9
5	10	40	110	(2	1300	2.6
6*	5	40	110	(2	1000	2.4
6**	10	40	120	(2	1100	2.7
7	60	100	150	(2	1300	8.1
8	20	70	280	(2	610	7.5
9	30	250	120	(2	2100	5.6
30	45	1200	120	(2	370	5.1
1	30	420	470	(2	610	9.0
2	25	380	140	(2	730	3.4
3	20	90	200	(2	340	5.2
4	60	90	190	(2	680	6.9
5	20	150	150	(2	340	4.7
6	10	500	160	(2	1700	5.5
7*	10	600	190	(2	2000	5.2
8	55	80	130	(2	2300	6.6
9	80	80	220	(2	1700	6.4
40	25	250	170	(2	460	4.6
1	10	40	100	(2	850	2.1
2	15	60	100	(2	180	4.1
3	10	100	380	(2	1200	9.6
3**	10	100	400	(2	1100	10.0
4	35	130	170	(2	2200	4.8
5	40	210	170	(2	1100	5.5
6	30	110	100	(2	1200	5.6
7	60	300	240	(2	1500	5.0
8*	65	290	250	(2	1400	5.2
9	80	80	230	(2	1800	8.1
50	15	50	160	(2	1300	5.0
1	25	80	240	(2	370	5.2
2	60	120	70	(2	100	4.4
3	10	80	70	(2	100	5.4
4	10	40	20	(2	40	2.9
5	50	90	300	(2	4700	5.9
6	80	70	410	(2	970	10.4
7	30	70	240	(2	590	6.3
8	40	70	120	(2	340	5.3
9	35	70	190	(2	2500	5.5
60*	40	70	140	(2	1300	5.0
1	45	60	160	(2	210	4.6
2	30	90	170	(2	1300	7.8
3	10	40	140	(2	930	4.9
4	30	40	170	(2	1000	4.7
5	15	40	90	(2	1000	3.5
6	5	60	80	(2	2400	8.4
7	10	50	30	(2	70	3.9
KS 086 8	20	140	40	(2	110	2.4

* Denotes duplicate of previous sample.

** Denotes repeat and check.

(Denotes less than.

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
KS0868**	20	150	50	(2	120	2.6
9	10	30	60	(2	440	4.3
70	20	40	100	(2	10	5.4
1*	25	50	110	(2	180	6.1
2	30	60	100	(2	200	6.2
3	30	50	70	(2	1100	4.5
4	30	60	150	(2	1200	5.3
5	20	50	130	(2	1800	5.4
6	50	140	80	(2	1300	6.3
KS0877	100	40	170	(2	890	7.7
KS2686	10	240	140	(2	190	5.0
7	10	430	130	(2	420	4.4
8	15	250	230	(2	1960	6.7
9	10	190	180	(2	2720	5.0
90	15	240	290	(2	880	5.3
1*	20	260	280	(2	1040	5.1
2	10	140	100	(2	840	3.8
3	15	210	220	(2	1800	5.0
4	10	80	110	(2	2200	6.7
5	10	40	140	(2	520	3.9
6	40	190	140	(2	840	6.1
7	40	490	140	(2	600	5.0
KS2698	30	420	320	(2	200	9.1

Analytical method: Cu, Pb, Zn, Ag, Mn, Fe by A.A.S. following hot conc. HCl leach and HCl/HNO_3 leach in latter stages for 1 hour of 0.25g sample.

* Denotes duplicate of previous sample.

** Denotes repeat and check.

(Denotes less than.

APPENDIX NO. 6

ANALYTICAL RESULTS

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
K S 0001	10	50	35	(2	30	1.06
2	10	60	25	(2	10	0.90
3	10	80	35	(2	30	3.00
4	10	80	50	(2	40	0.70
5	2	70	20	(2	10	0.17
6	(2	40	10	(2	10	0.19
7	2	60	15	(2	10	0.40
8	2	50	25	(2	15	0.22
9	(2	30	15	(2	20	0.14
10	(2	50	20	(2	20	0.14
1*	2	60	20	(2	15	0.15
2	(2	80	20	(2	20	0.14
3	2	100	20	(2	15	0.13
4	2	60	20	(2	15	0.09
5	2	120	15	(2	10	0.12
6	2	70	10	(2	10	0.11
7	5	280	20	(2	20	0.14
8	2	80	15	(2	10	0.09
9	5	190	20	(2	15	0.10
20	5	80	15	(2	10	0.12
1	5	90	15	(2	15	0.14
2*	5	80	10	(2	5	0.13
2**	5	90	20	(2	10	0.14
3	5	70	10	(2	10	0.12
4	2	90	15	(2	10	0.11
5	(2	70	15	(2	15	0.12
6	(2	80	20	(2	10	0.18
.7	90	110	140	2	130	13.6
KS 0028	65	120	100	2	1100	11.8
KS 2412	10	20	20	(2	120	0.80
3	10	(20	15	(2	20	0.65
4	5	(20	10	(2	20	0.16
5	20	(20	30	(2	120	2.25
6	15	60	15	(2	110	2.3
7	5	100	20	(2	20	1.50
8	10	80	15	(2	10	0.27
9	(2	100	10	(2	10	0.15
20A	10	(20	20	(2	30	3.1
20B	10	(20	20	(2	30	3.2
2	20	20	30	(2	40	1.85
3	20	60	30	(2	50	3.3
4	20	20	20	(2	20	2.15
5	20	(20	30	(2	40	2.3
6	30	(20	30	(2	160	1.95
7	20	(20	30	(2	120	2.3
KS - 242 8	30	20	45	(2	130	4.4

* Denotes duplicate of previous sample.

** Denotes repeat and check.

(Denotes less than.

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
KS2429	30	20	45	(2	45	2.6
30	30	20	30	(2	50	4.7
1*	30	20	25	(2	40	4.7
2	10	(20	20	(2	120	3.2
3	10	20	25	(2	75	1.50
4	10	50	15	(2	20	0.70
5	10	60	25	(2	50	2.7
6	20	110	50	(2	10	0.21
7	10	100	20	(2	30	4.8
8	(2	100	15	(2	15	0.18
9	5	60	20	(2	10	0.56
40	55	(20	80	(2	150	6.3
40**	60	20	80	(2	140	6.3
1*	70	20	100	(2	330	9.0
2	30	20	40	(2	65	2.6
3	50	(20	70	(2	50	3.7
4	35	20	65	(2	110	3.4
5	5	30	35	(2	20	1.60
6	10	90	45	(2	50	2.4
7	(2	220	10	(2	10	0.13
8	(2	20	10	(2	40	0.10
9	(2	60	15	(2	10	0.12
50	(2	20	10	(2	15	0.11
1	5	220	10	(2	10	0.25
2	5	620	15	(2	10	0.11
3	10	200	20	(2	20	0.16
4	20	160	20	(2	50	3.8
5	20	140	30	(2	120	3.0
6	30	110	30	(2	20	1.05
7	15	200	25	(2	40	3.2
8	10	60	10	(2	20	0.27
9	10	30	15	(2	15	2.25
60	5	60	10	(2	10	0.12
1	5	50	10	(2	10	0.12
2	10	200	10	(2	10	0.11
3	5	220	20	(2	10	0.13
4	(2	20	5	(2	10	0.10
5	5	(20	5	(2	20	0.19
6	(2	(20	10	(2	30	0.22
7	5	100	15	(2	10	0.57
8	10	20	10	(2	55	0.17
9	10	70	10	(2	30	0.27
70	50	180	35	(2	15	3.9
1*	45	140	30	(2	20	4.4
2	5	60	10	(2	20	0.20
3	5	60	20	(2	30	0.15
4	(2	20	10	(2	15	0.18
5	5	60	15	(2	15	0.28
6	5	60	10	(2	20	0.21
7	(2	100	10	(2	10	0.12
8	(2	20	10	(2	20	0.18
9	30	40	60	(2	300	4.7
80	40	30	75	(2	100	2.8
KS2481*	40	20	80	(2	90	2.8

* Denotes duplicate of previous sample

KS 2464 duplicate of KS 2450

** Denotes repeat and check.

(Denotes less than.

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
KS2482	20	100	40	(2	75	3.1
3	10	60	40	(2	50	2.3
4	5	(20	25	(2	10	0.49
5	5	(20	10	(2	20	0.37
6	10	(20	25	(2	70	0.28
7	5	(20	15	(2	25	0.66
8	5	(20	10	(2	10	0.10
9	(2	20	10	(2	25	0.20
90	5	120	10	(2	10	0.11
1*	(2	100	45	(2	10	0.12
2	(2	(20	50	(2	5	1.30
3	(2	20	10	(2	15	0.37
4	60	30	50	(2	50	4.1
5	70	30	50	(2	80	1.45
6	30	30	40	(2	80	6.2
7	10	50	15	(2	10	0.19
8	10	40	15	(2	10	0.18
9	25	50	25	(2	30	0.68
2500	(2	20	10	(2	10	0.30
1*	5	(20	10	(2	10	0.32
2	20	20	80	(2	40	1.95
3	10	100	30	(2	10	0.55
4	15	580	220	(2	20	1.25
5	20	220	310	(2	30	1.30
6	20	80	20	(2	15	1.45
7	60	120	250	(2	20	0.36
8	80	90	110	(2	40	0.47
9	30	100	60	(2	40	1.80
10	10	140	80	(2	30	0.47
1	20	200	100	(2	30	0.64
2	10	180	220	(2	300	3.4
3	80	580	820	(2	20	1.45
4	10	520	15	(2	10	0.11
5	10	50	15	(2	10	0.20
6	10	140	20	(2	10	0.20
7	10	40	15	(2	10	0.18
8	40	40	230	(2	120	2.5
9	120	20	160	(2	210	19.5
20	15	(20	20	(2	20	0.78
1*	10	20	20	(2	25	0.74
2	10	40	15	(2	30	0.68
2**	10	40	15	(2	25	0.70
3	20	60	60	(2	75	2.45
4	30	40	100	(2	280	3.2
5	30	60	90	(2	20	0.38
6	5	20	10	(2	15	0.17
7	40	580	80	(2	10	0.13
8	15	60	15	(2	(5	0.08
9	(2	20	10	(2	10	0.14
30	10	40	30	(2	30	0.39
1*	10	40	25	(2	30	0.36
2	25	60	40	(2	20	1.28
3	40	180	150	(2	110	3.6
KS2534	5	160	50	(2	15	1.15

* Denotes duplicate of previous sample.

** Denotes repeat and check.

(Denotes less than.

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
KS2535	10	360	25	(2	15	0.61
6	60	70	40	(2	60	0.45
7	10	(20	10	(2	(5	0.08
8	(2	(20	15	(2	(5	0.07
9	10	(20	20	(2	10	0.21
40	10	20	20	(2	10	0.10
1*	10	40	25	(2	10	0.10
2	10	80	20	(2	20	0.25
3	10	30	25	(2	10	0.16
4	10	20	15	(2	10	0.25
4**	10	20	15	(2	10	0.30
5	10	260	30	(2	15	0.24
6	10	60	25	(2	20	0.17
7	10	30	20	(2	10	0.30
8A	10	180	80	(2	10	0.35
8B	10	170	35	(2	10	0.22
9	10	60	20	(2	10	0.59
50	50	60	70	(2	80	6.9
1*	70	20	95	(2	110	8,9
2	90	20	140	2	50	5.1
3	40	30	90	2	120	11.4
4	70	30	120	2	75	9.9
5	40	40	70	(2	60	10.0
6	80	30	120	(2	70	3.2
7	60	30	120	(2	110	5.3
8	70	50	100	(2	100	8.5
9	75	40	100	2	60	6.8
60	70	30	110	2	180	9.0
1	70	40	110	2	180	8.8
2	10	280	80	(2	25	1.52
3	10	110	160	(2	30	1.20
4	20	240	95	(2	20	2.3
5	10	170	120	2	65	4.6
6	10	20	20	(2	5	0.42
6**	10	30	20	(2	10	0.45
7	10	80	20	(2	5	0.15
8	50	160	45	(2	10	1.30
9	10	50	60	(2	20	2.2
70	10	40	40	(2	100	3.0
1*	10	40	40	(2	100	3.5
2	10	(20	40	(2	20	1.05
3	30	20	50	(2	80	3.5
4	10	(20	75	(2	20	1.20
5	20	30	30	(2	10	0.31
6	60	20	110	2	120	6.7
7	20	40	40	(2	50	3.4
8	70	30	100	(2	160	11.7
8**	80	30	100	(2	160	11.8
9	65	40	95	(2	130	8.4
80	75	40	110	(2	85	10.1
1*	80	20	110	(2	75	9.6
2	60	50	130	2	240	9.9
3	60	60	130	2	340	9.4
KS2584	100	60	140	2	130	9.9

* Denotes duplicate of previous sample.

** Denotes repeat and check.

(Denotes less than.

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
KS2585	65	100	100	2	180	10.6
6	60	50	95	2	160	11.8
7	80	80	120	(2	90	8.3
8	50	70	110	(2	70	7.2
9	60	40	95	(2	370	6.4
90	70	40	120	(2	60	8.8
1*	80	20	120	2	60	8.8
2	60	30	100	(2	45	5.5
3	70	30	120	2	55	5.2
4	70	40	100	2	40	6.2
5	80	30	120	(2	45	3.6
6	65	30	110	(2	90	6.2
KS2597	70	60	110	(2	370	6.4
KS2758	30	40	50	(2	250	3.5
9	20	20	75	(2	110	3.5
60	30	40	60	(2	120	3.9
60**	30	40	55	(2	120	4.0
1*	35	30	80	(2	230	4.6
2	25	40	40	(2	20	3.3
3	20	40	45	(2	5	2.1
4	40	40	35	(2	640	2.7
5	30	40	40	(2	280	3.5
6	20	20	50	(2	40	1.72
7	30	30	50	(2	110	3.4
8	20	30	95	(2	200	5.1
9	15	20	45	(2	60	2.6
70	10	130	30	(2	30	2.0
1*	10	170	40	(2	20	2.0
2	10	180	30	(2	25	0.23
3	10	90	30	(2	10	0.96
4	10	100	20	(2	15	2.1
5	25	60	30	(2	35	2.6
6	20	30	35	(2	80	2.5
7	15	40	30	(2	1520	1.24
8	10	90	30	(2	45	1.40
KS2779	5	100	15	(2	15	0.24

Analytical method; Cu, Pb, Zn, Ag, Mn, Fe by A.A.S. following HCl leach and HCl/HNO_3 leach in latter stages of 0.25g sample.

* Denotes duplicate of previous sample.

** Denotes repeat and check.

(Denotes less than.

APPENDIX NO. 7

ANALYTICAL RESULTS

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
KS2701	10	50	70	(2	120	3.2
2	15	110	90	(2	120	2.0
3	10	200	75	(2	30	1.06
4	15	70	20	(2	10	0.42
5	75	30	80	(2	85	3.3
6	35	60	45	(2	70	4.8
7	30	60	60	(2	130	9.4
8	50	60	50	(2	90	5.7
9	30	80	45	(2	110	7.4
10	50	40	50	(2	35	6.2
1*	45	40	45	(2	25	4.8
2	85	30	80	(2	45	1.84
3	50	40	75	(2	80	1.25
4	65	40	60	(2	65	1.12
5	70	50	80	(2	75	6.1
5**	70	40	75	(2	70	6.2
6	60	50	65	(2	80	4.1
7	110	40	110	2	170	11.6
8	10	20	190	(2	300	4.6
9	10	80	50	(2	30	6.7
20	20	200	220	(2	180	4.5
1*	20	190	190	(2	150	3.7
2	10	90	130	(2	180	2.8
3	15	90	160	(2	160	3.9
4	10	80	160	(2	130	3.4
5	10	80	80	(2	75	2.5
6	10	90	120	(2	160	2.8
7	55	110	120	(2	220	5.4
8	15	80	110	(2	200	3.1
9	15	90	90	(2	240	2.9
30	20	120	45	(2	10	1.18
1*	10	120	35	(2	5	0.96
2	15	140	40	(2	25	0.66
3	10	110	80	(2	1320	2.0
4	30	130	200	(2	430	5.0
5	15	40	130	(2	320	5.1
6	10	120	170	(2	410	5.9
7	10	70	170	(2	60	1.27
8	20	180	1760	(2	25	1.68
9	10	90	270	(2	30	0.64
40	70	120	410	(2	95	2.4
1*	65	100	380	(2	90	2.3
2	30	150	820	(2	40	1.22
3	65	170	870	(2	25	1.28
4	80	120	480	(2	30	1.76
5	70	120	430	(2	10	2.0
6	65	520	790	(2	20	1.64
KS2747	55	470	1680	(2	20	1.80

* Denotes duplicate of previous sample.

** Denotes repeat and check.

(Denotes less than.

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %
KS2748	60	390	380	(2	30	1.60
9	80	120	140	(2	20	1.40
50	260	280	350	(2	25	1.28
1*	280	210	360	(2	20	1.22
2	10	140	60	(2	10	0.25
3	10	30	20	(2	10	0.18
4	5	20	10	(2	5	0.16
5	5	20	20	(2	5	0.16
6	10	40	40	(2	15	0.19
KS2757	5	20	15	(2	10	0.13

Analytical method: Cu, Pb, Zn, Ag, Mn, Fe by A.A.S. following hot conc. HCl leach and HCl/HNO_3 leach in latter stages for 1 hour of 0.25g sample.

* Denotes duplicate of previous sample

** Denotes repeat and check.

(Denotes less than

APPENDIX NO. 8

ANALYTICAL RESULTS

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Mn ppm	Fe %	Cd ppm
KS0474	45	100	90	2	180	4.9	2
5	25	80	80	(2	60	3.8	5
6	30	110	90	2	30	3.9	5
7	50	120	170	(2	110	5.4	5
8	20	110	50	(2	350	5.9	5
9	35	260	130	(2	700	4.3	5
80	40	190	250	(2	100	4.3	5
1*	40	150	200	(2	110	4.4	5
2	40	80	70	(2	40	4.6	5
3	25	30	30	(2	15	2.3	2
4	75	80	80	(2	610	5.5	2
5	20	60	270	(2	130	5.1	5
6	60	120	300	2	200	8.1	5
7	60	90	70	(2	150	5.7	5
8	30	80	40	(2	50	3.6	2
KS0489	30	80	90	2	120	6.2	5

Analytical method: Cu, Pb, Zn, Ag, Mn, Fe, Cd by A.A.S. following HCl leach and HCl/HNO_3 leach in latter stages of 0.25g sample.

* Denotes duplicate of previous sample.

** Denotes repeat and check.

(Denotes less than.

405 000 E | 405 500 E | 406 000 E | 406 500 E | 407 000 E

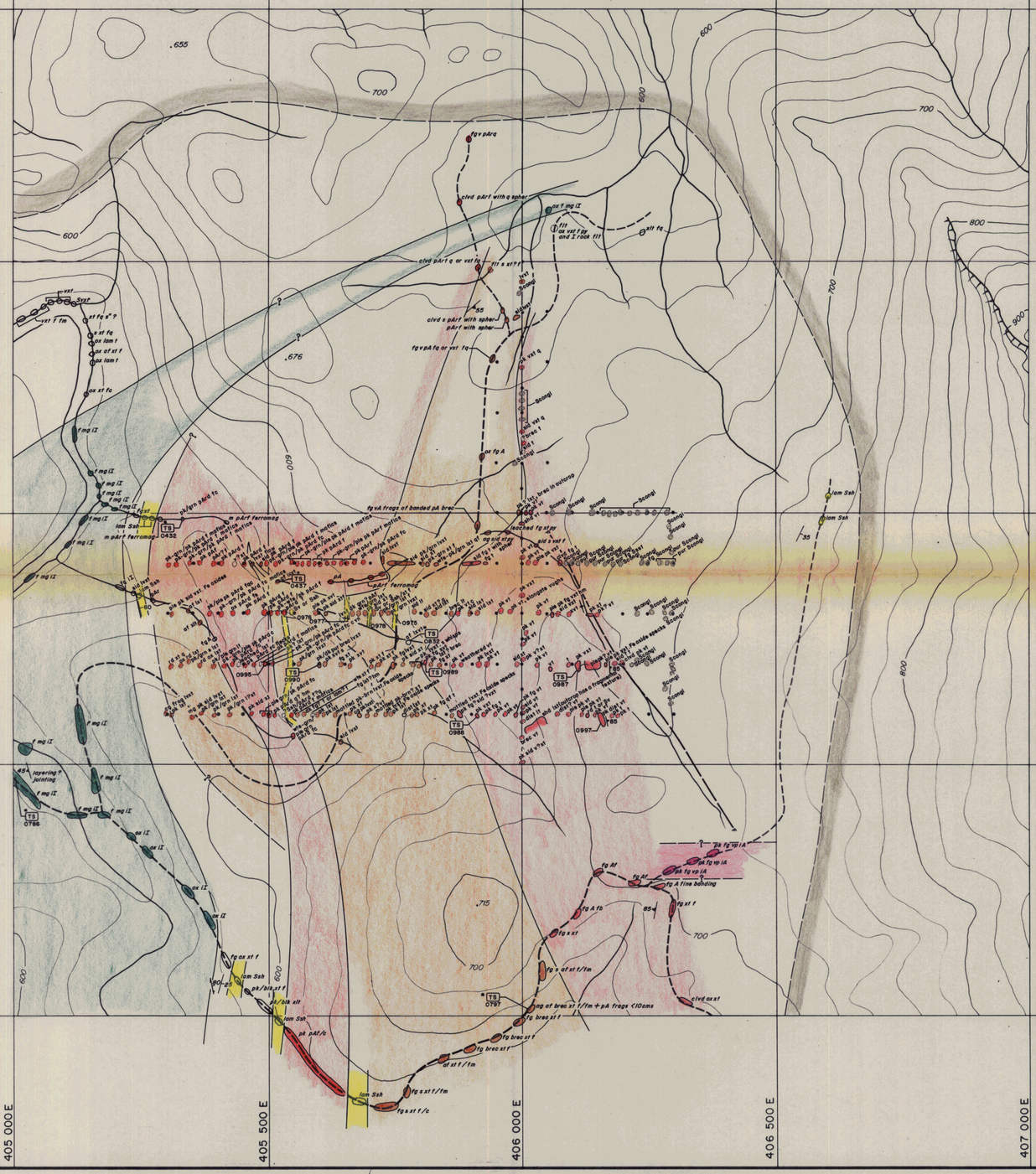
5 414 000N

5 413 500N

5 413 000N

5 412 500 N

5 412 000N



SYMBOLS:

IGNEOUS:

A	acid igneous unclassified
Ard	rhyodacite
IA	intrusive acid
Σ	intermediate unclassified
IZ	intrusive intermediate

SEDIMENTARY:

Sah	shale
Sst	sandstone
Scongl	conglomerate
Sv	tuffaceous sediments

STRUCTURAL and TEXTURAL:

t	tuff unclassified
lt	lithic tuff
xt	crystal tuff
vt	vitric tuff
ag	agglomerate >32mm
af	ash flow
p	porphyritic
brec	brecciated
shd	sheared
ox	oxidised
sid	silicified
clvd	cleaved
lam	laminated
m	massive
fm	fiamme
flt	flaot
vn	vein
fb	flow banding
dist	disturbed
spher	spheroids
frags	fragments

STRUCTURAL:

	outcrop limit
	rubble boundary
	approximate contact
	interpreted contact
	bedding
	cleavage
	primary foliation
F—F	interpreted fault

COLOURS:

pk	pink
blk	black
wte	white
grn	green
rd	red
pur	purple
brn	brown
dk	dark
ple	pale

GRAIN SIZE:

fg	fine grained (<1mm)
mg	medium grained (1-5mm)

SILICATE MINERALOGY:

q	quartz
f	feldspar
c	chlorite
s	sericite
ferromag	ferromagnesians
matics	matics

SULPHIDE MINERALOGY:

hm	hematite
py	pyrite
s"	sulphides

GEOLOGICAL LETTERING:

horizontal obtained from Rogers (1976)

MISCELLANEOUS:

TS 0797 thin section and rock number (Rogers. 1976)

TS 0988 thin section and rock number

GEOLOGICAL INTERPRETATION:

Pascal		
19-70		U€? Conglomerate, sandstone scree (Scongl, Sst)
19-21		€ Devitrified weakly porphyritic glassy lava (vt, vxt)
19-64		€ Flow brecciated lithic vitric crystal tuff lava (lxt, lst, xt)
19-01		€ Laminated shale/tuffaceous sediments (lam Sah, Sv)
19-15		€ Rhyodacite lava (pArd f)
19-22		€ Glassy banded porphyry dyke (vpIA)
19-45		€ Basic intrusive - pyroxene microdiorite (f mg IZd)

ROCK GEOCHEMISTRY: (ppm)

KR	Cu	Pb	Zn	Ag	Mn	Fe%
0975	65	240	940	2	2500	16·2
0976	10	<20	310	<2	650	2·65
0977	20	200	220	<2	390	2·60
0978	30	70	140	<2	420	4·70
0995	10	20	85	<2	730	1·80
0997	15	70	50	<2	80	1·56

ANALYTICAL TECHNIQUE:
Cu, Pb, Zn, Ag, Mn, Fe by AAS following hot conc. HCl leach and HCl / HNO_3 leach in latter stages for 1 hr. at 0·25g sample.

GN MN 11·7°

286101

5 cm

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE: 1:5000 | No. KT2/76-CHI-3

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER I

GEOLOGICAL MAP 1327

DATE: October 1977
GEOLOGIST: G.L.B.
DRAWN: L.G.
CHECKED: M.C.R.

Q36/28 77-1239

410 000 E | 410 500 E | 411 000 E | 411 500 E | 412 000 E | 412 500 E | 413 000 E

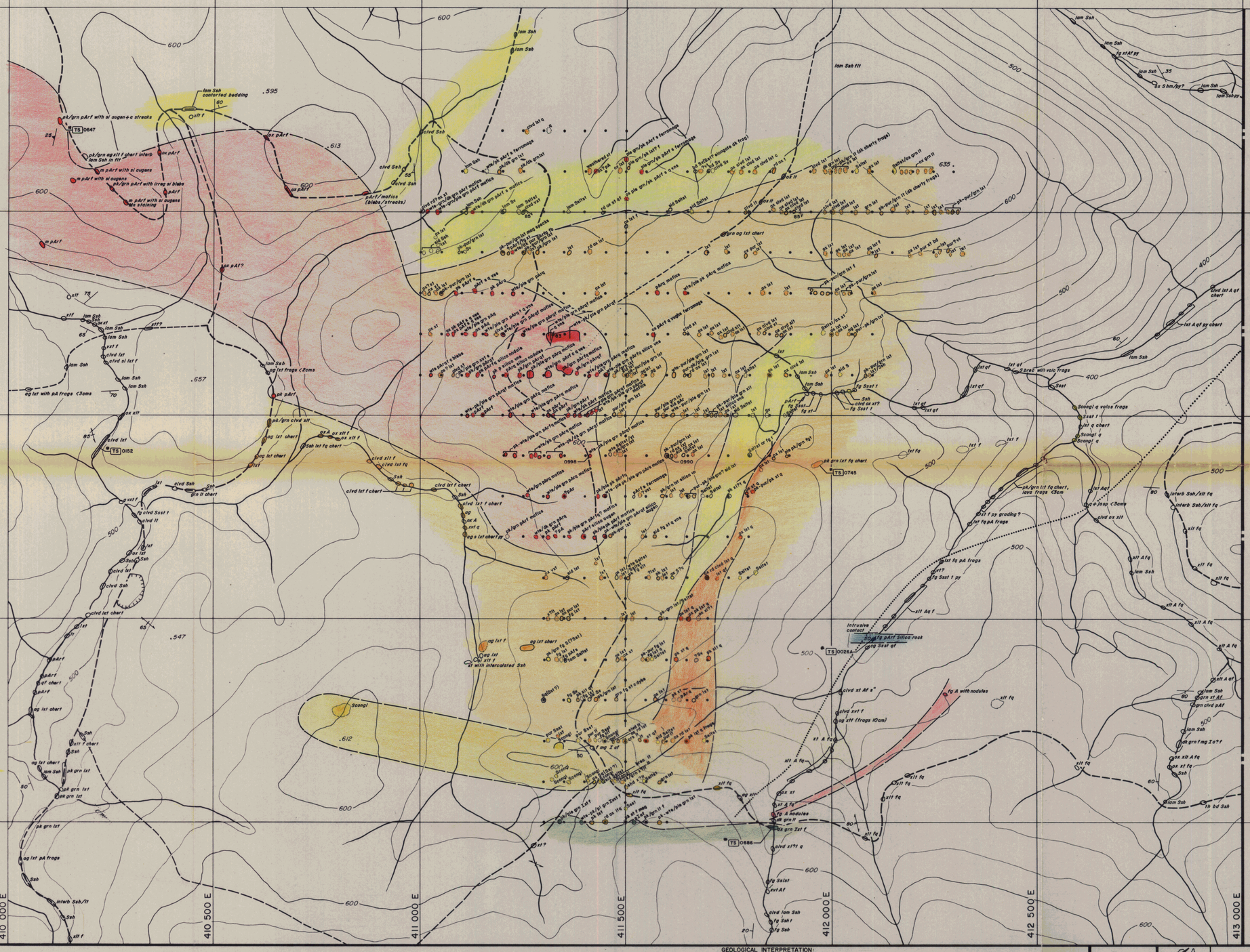
5 420 500 N

5 420 000 N

5 419 500N

5 419 000N

5 418 500N


lom Sah
lom Sah fff
lom Sah/ff
lom Sah contorted bedding
pk/grn pArf with si ovgen+c streaks
TS 0647
pk/grn og sltf f chert interb lom Sah in fff
ox pArf
m pArf with si ovgens
pk/grn pArf with irreg si blebs
m pArf with si ovgens wis staining
m pArf
ox pArf?
pArf/mafics (blebs/streaks)
clvd Sah
clvd lst q
clvd lst
clvd lst f
clvd lst fq
clvd lst f chert
clvd sltf f
clvd lst fq
clvd lst A of chert
lst A qf py chert
lst qf
lst f
lst fq
lst A qf
lst A fq
lst fq
lst fq pA frags
lst f py grading?
lst A qf
lst A fq
lst fq
lst fq
lst

5 415 000 N

5 414 000 N

5 413 000 N

400 000 E

401 000 E

402 000 E

Two Hummocks

Black Marsh

LEVEN ROAD

BLACK MARSH ROAD

Black Marsh Creek

700

600

Mv flf

Owen Type Scongl + Sssf

TS 0982

TS 0985

TS 0984

TS 0990

TS 0996

TS 0983

weathered Mv

5 cm

286103

TOPOGRAPHICAL SYMBOLS:

Bulldozed track
Bulldozed trench
Rubble heap
Quarry

SYMBOLS:

IGNEOUS:

A	acid igneous unclassified
Ar	rhyolite
Mv	basalt

SEDIMENTARY:

Ssh	shale
Sslst	siltstone
Sst	sandstone
Sq	quartzite
Scongl	conglomerate

STRUCTURAL and TEXTURAL:

t	tuff unclassified
lt	lithic tuff
xt	crystal tuff
vt	vitric tuff
fm	fiamme
af	ash flow
p	porphyritic
vns	veins
m	massive
lam	laminated
frags	fragments
a	amygdaloidal
brec	brecciated
clvd	cleaved
sid	silicified

STRUCTURAL SYMBOLS:

outcrop limit
rubble boundary
approximate contact
interpreted contact
bedding
primary foliation
jointing
float
unconformity
minor fault

COLOURS:

pk	pink
grn	green
blk	black
pur	purple
wte	white
ple	pale
dk	dark

GRAIN SIZE:

fg	fine grained (<1mm)

SILICATE MINERALOGY:

q	quartz
f	feldspar
c	chlorite
s	sericite

GEOLOGICAL LETTERING:

horizontal obtained from Rogers (1976)

MISCELLANEOUS:

* TS 0890 thin section and rock number (Rogers 1976)
TS 0983 thin section and rock number

GEOLOGICAL INTERPRETATION:

Pencil		
19-47	TERT.	Basalt (flows) (Mv)
19-70	U€?	Conglomerate (Scongl) Sandstone (Sest)
19-56	€	Fine grained ? tuffaceous sediment (fg ?t)
19-08	€	Crystal lithic tuff (xlt)
19-01	€	Laminated shale (lam Ssh)
19-57	€	Ashflow tuffs (af lvxt fm $_v$ af lxvt fm)
19-21	€	Glossy fine grained lava (vxt f)
19-15	€	Porphyritic amygdaloidal rhyolite (pArf qa)

ROCK GEOCHEMISTRY: (ppm)

KR	Cu	Pb	Zn	Ag	Mn	Fe%
0994	15	720	35	<2	20	0·17
0996	10	<20	30	<2	40	0·55

ANALYTICAL TECHNIQUE:

Cu, Pb, Zn, Ag, Mn, Fe by AAS following hot conc. HCl leach and HCl / HNO_3 leach in latter stages for 1 hr. at 0·25g sample.

GN MN 11°

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE: 1:5000

No KT2/76-CH3-3

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 3

GEOLOGICAL MAP

1329

DATE: October/1977
GEOLOGIST: G.L.B.
DRAWN: L.G.
CHECKED: M.C.R.

Q36128 77-1239

405 000 E | 405 500 E | 406 000 E | 406 500 E | 407 000 E

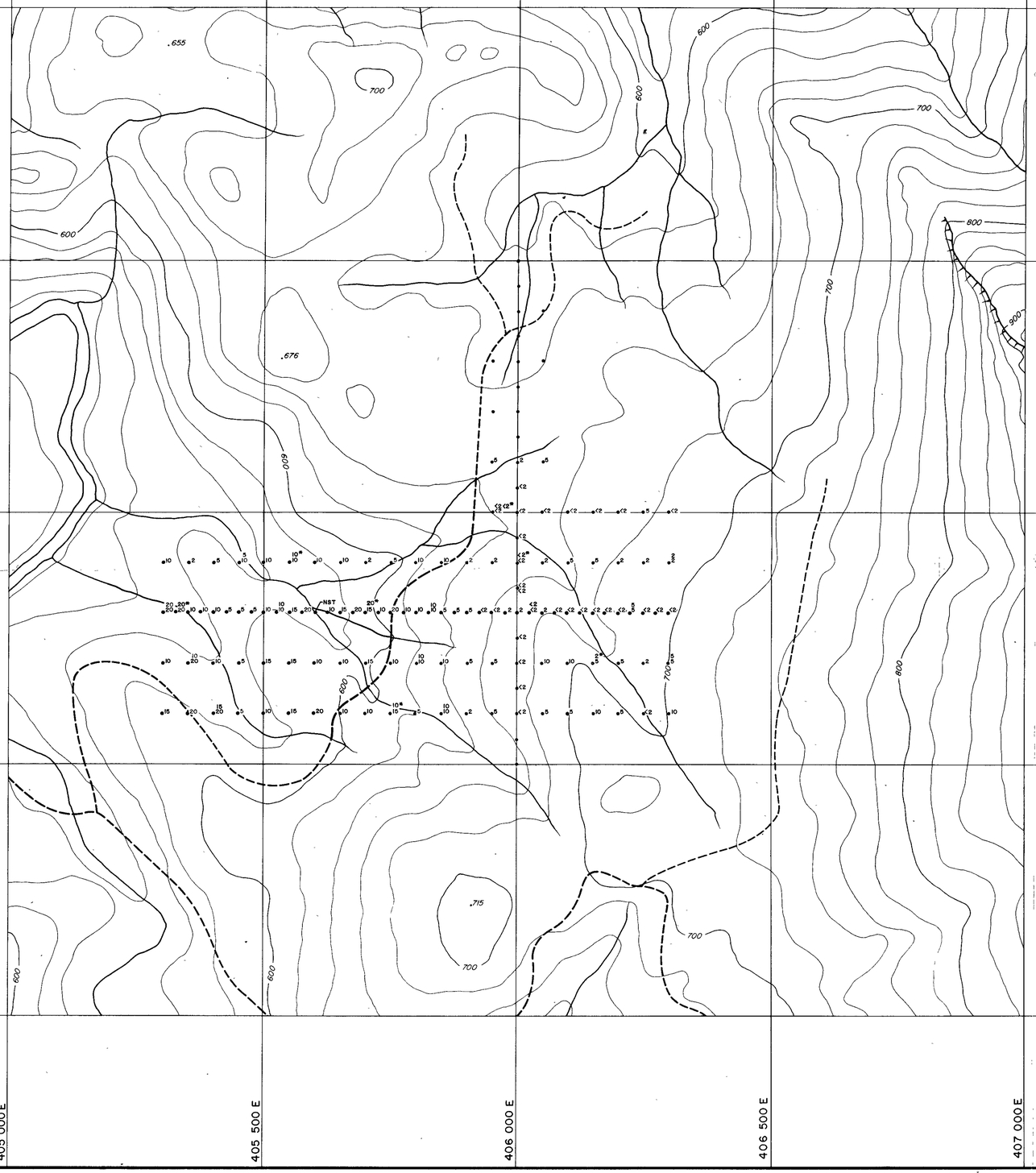
5 414 000 N

5 413 500 N

5 413 000 N

5 412 500 N

5 412 000 N



286104

5 cm

LEGEND

ANALYTICAL NOTES

Analytical Method — Cu by AAS following hot conc HCl leach and HCl/HNO_3 leach in latter stages for 1 hr of 0.25g sample

Size fraction analysed — -80 mesh

Analytical results in ppm

10. . . Original sample assay (10ppm)
•20 . . . Duplicate sample assay (20ppm)

20* . . A.C.S.L. repeat and check assay (20ppm)
•15 . . . Original sample assay (15ppm)

<2 <2* Original sample assay (<2ppm); A.C.S.L. repeat and check assay (<2 ppm)
•<2 . . . Duplicate sample assay (<2ppm)

•NST No sample taken, peg in creek bed. All samples hand augered

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1:5000

No KT2/76-CHI-4

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER I
GEOCHEMICAL RESULTS
COPPER

1330

DATE: Oct, 1977
GEOLOGIST: G.L.B
DRAWN: L.G
CHECKED: M.C.R

Q36/28 77-1239

410 000 E | 410 500 E | 411 000 E | 411 500 E | 412 000 E | 412 500 E | 413 000 E

5 420 500 N

5 420 000 N

5 419 500 N

5 419 000 N

5 418 500 N

Quarry

.595 .613 .657 .593 .547 .612

600 500 400

LEGEND:

SYMBOLS:

Geological contact, approximate

ANALYTICAL NOTES:

Analytical Method Cu by AAS following hot conc HCl leach and HCl/HNO_3 leach in latter stages for 1 hr at 0.25g sample

Size fraction analysed −80 mesh

Analytical results in ppm

10 —·—·— Original sample assay (10ppm)
•10·_·_· Duplicate sample assay (10ppm)

15* · · · A.C.S.L. repeat and check assay (15ppm)
•15 · · · Original sample assay (15ppm)

10 ..... Original sample assay (10ppm)
•5 10* Duplicate sample assay (5ppm); A.C.S.L. repeat and check assay on duplicate sample (10*ppm)

10 10*... Original sample assay (10ppm), A.C.S.L. repeat and check assay on original sample (10*ppm)
•10·_·_· Duplicate sample assay (10ppm)

286105

5 cm

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1 5000

No KT2/76-CH2-4

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 2
GEOCHEMICAL RESULTS 1331
COPPER

DATE Oct, 1977
GEOLOGIST G.L.B.
DRAWN L.G
CHECKED M.C.R

Q36/29 77-1239

5 415 000 N

5 414 000 N

5 413 000 N

400 000 E

401 000 E

402 000 E

Two Hummocks

700

800

600

LEVEN ROAD

Refer to DWG No. KT2/76 - CH3 - 13 for detail Highest Cu value 280ppm

Black Marsh

BLACK MARSH ROAD

Black Marsh Creek

286106

5 cm

LEGEND

SYMBOLS:

- Geological contact, approximate
- Hand augered sample
- Power auger sample
- Sample not received by A C S L for assay

ANALYTICAL NOTES

Analytical Method - Cu by AAS following hot conc HCl leach and HCl/HNO_3 leach in latter stages for 1 hr of 0·25g sample
Size fraction analysed - -80 mesh
Analytical results in ppm

50 - Original sample assay (50ppm)
*45 - Duplicate sample assay (45ppm)

(10) - Reaugered sample assay (10ppm)
*12 - Original sample assay (12ppm)

(30) - Reaugered sample assay (30ppm)
(35) - Reaugered duplicate sample assay (35ppm)
*20 - Original sample assay (20ppm)

(30) - Reaugered sample assay (30ppm)
30 - Original sample assay (30ppm)
*30 - Duplicate sample assay (30ppm)

80 - Denotes A C S L repeat and check assay (80ppm)
*(80) - Denotes A C S L repeat and check assay on reaugered sample (80ppm)

10 - Sample taken at 1·0m
*10 - " " " 1·5m (E O H)

60 - Sample taken at 2·0m
*80 - " " " 3·6m (E O H)

10 - Sample taken at 4·0m
15 - " " " 5·0m
*20 - " " " 6·5m (E O H)

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1:5000

No KT2/76-CH3-4

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 3
GEOCHEMICAL RESULTS 1332
COPPER

DATE · Oct, 1977
GEOLOGIST G L B
DRAWN · L G
CHECKED M C R

Q36/255 77-1239

405 000 E | 405 500 E | 406 000 E | 406 500 E | 407 000 E

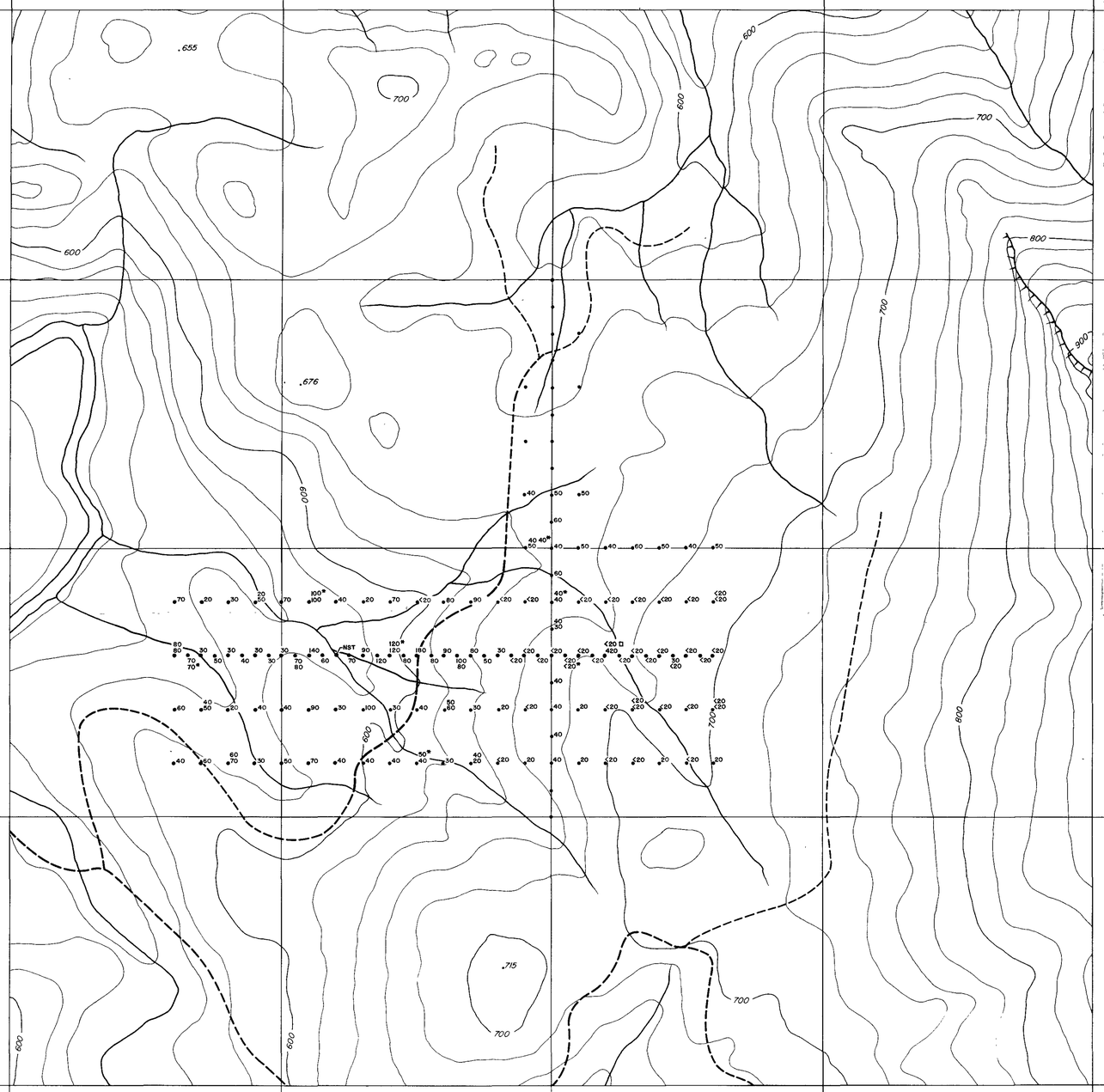
5 414 000N

5 413 500N

5 413 000N

5 412 500 N

5 412 000N


.655
700
600
600
700
800
.676
600
40 50 50
60
40 40* 40 50 40 60 50 40 50
60
70 20 30 20 70 100* 100 40 20 70 <20 80 90 <20 <20 40* 40 <20 <20 <20 <20 <20 <20 <20
80 80 30 30 50 40 30 30 30 70 80 140 60 NST 90 70 120* 120 180 80 80 80 100 80 50 <20 <20 <20 <20 <20 <20

410 000 E | 410 500 E | 411 000 E | 411 500 E | 412 000 E | 412 500 E | 413 000 E

5 420 500 N

5 420 000 N

5 419 500 N

5 419 000N

5 418 500N

Quarry

.595 .613 .657 .593 .547 .612 .635

600 500 400

LEGEND:

- 1000 - 1200 (Pb ppm)
- 800 - 1000 (Pb ppm)
- 600 - 800 (Pb ppm)
- 400 - 600 (Pb ppm)
- 200 - 400 (Pb ppm)

SYMBOLS:

- Geological contact, approximate
- Geochemical contour (Pb ppm)

ANALYTICAL NOTES:

Analytical Method: Pb by AAS following hot conc. HCl leach and HCl/HNO_3 leach in latter stages for 1 hr. at 0·25g sample.
Size fraction analysed: −80 mesh
Analytical results in ppm.

160 160*.....Original sample assay (160ppm); A.C.S.L. repeat and check assay on original assay (160* ppm)
•180.....Duplicate sample assay (180ppm)

•50.....Original sample assay (50ppm)
50 50*.....Duplicate sample assay (50ppm); A.C.S.L. repeat and check assay on duplicate sample (50* ppm)

250.....Original sample assay (250 ppm)
• 270.....Duplicate sample assay (270ppm)

150*.....A.C.S.L. repeat and check assay (150* ppm)
•140.....Original sample assay (140 ppm)

286108

5 cm

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE: 1: 5000 | No. KT2/76-CH2-5

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 2
GEOCHEMICAL RESULTS
LEAD

1334

DATE: Oct., 1977
GEOLOGIST: G.L.B.
DRAWN: L.G.
CHECKED: M.C.R.

Q36128 77-1239

5 415 000 N

400 000 E

401 000 E

402 000 E

700

600

800

LEVEN ROAD

Two Hummocks

Refer to DWG. NO. KT2/76-CH3-13 for detail. Highest Pb value 520 ppm.

Black Marsh

5 414 000 N

BLACK MARSH ROAD

Black Marsh Creek

5 413 000 N

286109

5 cm

LEGEND:

SYMBOLS:

- Geological contact, approximate
- ● Hand augered sample
- ○ Power auger sample
- □ Sample not received by A.C.S.L. for assay.

ANALYTICAL NOTES:

Analytical Method: Pb by AAS following hot conc. HCl leach and HCl/HNO_3 leach in latter stages for 1 hr. of 0·25 g sample.

Size fraction analysed: −80 mesh

Analytical results in ppm.

180.....Original sample assay (180ppm)
●140.....Duplicate sample assay (140ppm)

(90).....Reaugered sample assay (90ppm)
●60.....Original sample assay (60ppm)

(40).....Reaugered sample assay (40ppm)
(30).....Reaugered duplicate sample assay (30ppm)
●<20.....Original sample assay (<20ppm)

30▽.....Denotes A.C.S.L. repeat and check assay (30▽ppm)
●(40▽)....Denotes A.C.S.L. repeat and check assay on reaugered sample (40▽ppm)

*50.....Sample taken at 1·0m
●40..... " " " 1·5m (E.O.H.)

**120.....Sample taken at 2·0m
●90..... " " " 3·6m (E.O.H.)

***100.....Sample taken at 4·0m
580..... " " " 5·0m
●220..... " " " 6·6m (E.O.H.)

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1:5000

No KT2/76-CH3-5

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 3
GEOCHEMICAL RESULTS 1335
LEAD

DATE: Oct., 1977
GEOLOGIST: G.L.B.
DRAWN: L.G.
CHECKED: M.C.R.

QJ6/28 77-1239

405 000 E | 405 500 E | 406 000 E | 406 500 E | 407 000 E

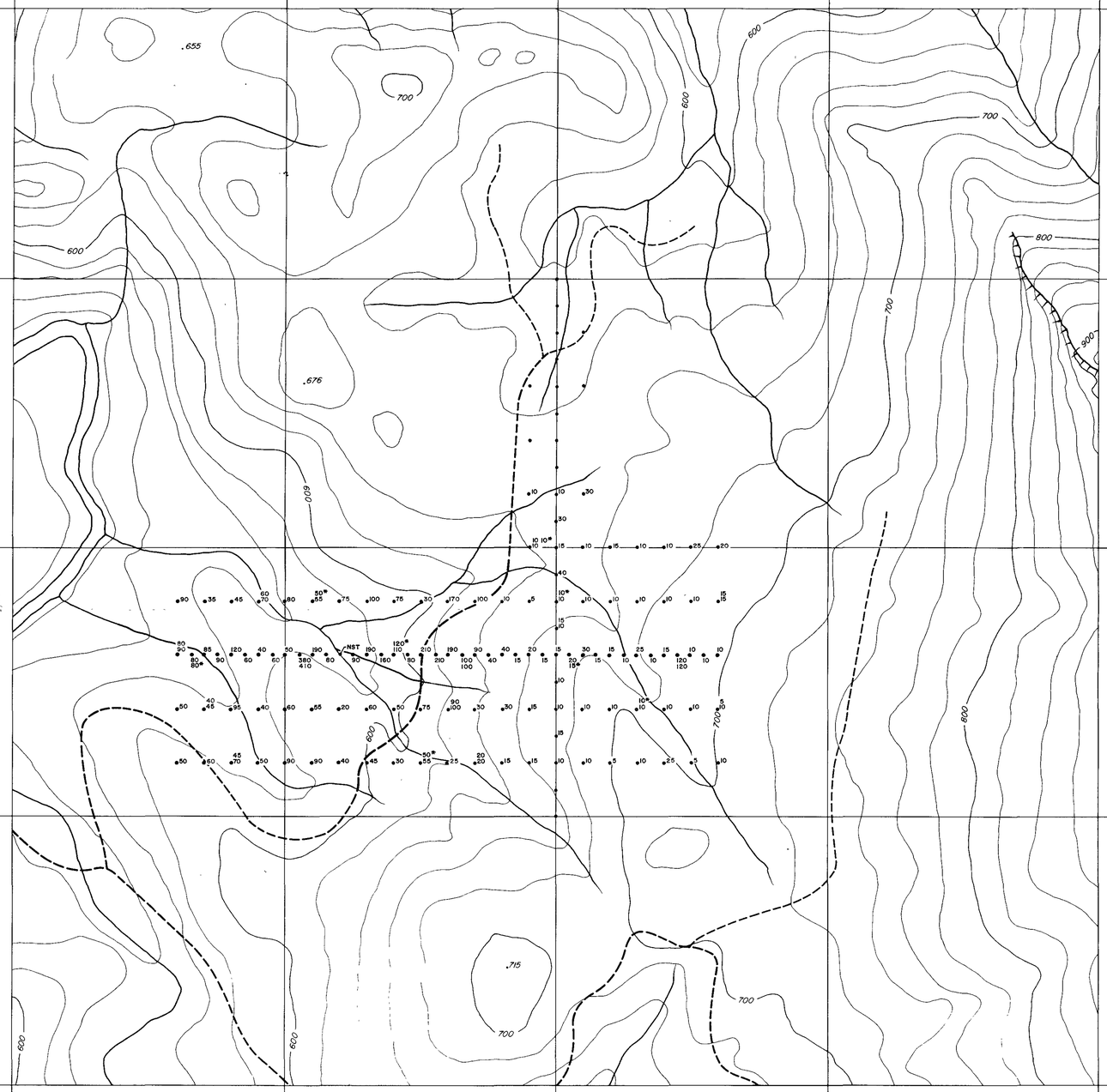
5 414 000N / 5 414 000 N

5 413 500N / 5 413 500 N

5 413 000N / 5 413 000 N

5 412 500 N / 5 412 500 N

5 412 000N / 5 412 000 N



286110

5 cm

LEGEND.

ANALYTICAL NOTES

Analytical Method: Zn by AAS following hot conc HCl leach and HCl/HNO_3 leach in latter stages for 1 hr of 0·25g sample

Size fraction analysed: −80 mesh

Analytical results in ppm

45 .....Original sample assay (45ppm)
•70. ...Duplicate sample assay (70ppm)

50*..... A C S L. repeat and check assay (50*ppm)
•55. ..Original sample assay (55ppm)

10 10* Original sample assay (10ppm); A C S L. repeat and check assay (10*ppm)
•10 Duplicate sample assay (10ppm)

•NST .....No sample taken, peg in creek bed
All samples hand augered

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1 5000

No KT2/76-CHI-6

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER I
GEOCHEMICAL RESULTS
ZINC 1336

DATE Oct, 1977
GEOLOGIST G L B
DRAWN: L G
CHECKED M C R

410 000 E | 410 500 E | 411 000 E | 411 500 E | 412 000 E | 412 500 E | 413 000 E

5 420 500 N

5 420 000 N

5 419 500N

5 419 000N

5 418 500N

Quarry

.595 .613 .657 .547 .612 .593 .635

600 500 400

LEGEND:

- 600 – 800 (Zn ppm)
- 400 – 600 (Zn ppm)
- 200 – 400 (Zn ppm)

SYMBOLS:

- Geological contact, approximate
- Geochemical contour (Zn ppm)

ANALYTICAL NOTES:

Analytical Method: Zn by AAS following hot conc. HCl leach and HCl/HNO_3 leach in latter stages for 1 hr. at 0·25g sample.

Size fraction analysed: –80 mesh

Analytical results in ppm.

160.....Original sample assay (160ppm)
●190.....Duplicate sample assay (190ppm)

210*.....A.C.S.L. repeat and check assay (210 ppm)
●200.....Original sample assay (200ppm)

●350.....Original sample assay (350 ppm)
350.....Duplicate sample assay (350ppm)
350*.....A.C.S.L. repeat and check assay on duplicate sample (350* ppm)

5 cm

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE: 1 5000

No. KT2/76-CH2-6

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 2
GEOCHEMICAL RESULTS
ZINC

1337

DATE: Oct., 1977
GEOLOGIST: G.L.B.
DRAWN: L.G.
CHECKED: M.C.R

Q36/28 77-1239

5 415 000 N

400 000 E

401 000 E

402 000 E

5 414 000 N

5 413 000 N

700

800

600

LEVEN ROAD

Two Hummocks

Refer to DWG. No KT2/76-CH3-13 for detail Highest Zn value 1760ppm

Black Marsh

BLACK MARSH ROAD

Black Marsh Creek

LEGEND:

SYMBOLS

Geological contact, approximate

Hand augered sample

Power auger sample

Sample not received by A C S L for assay

ANALYTICAL NOTES

Analytical Method Zn by AAS following hot conc HCl leach and HCl/HNO_3 leach in latter stages for 1 hr of 0.25g sample

Size fraction analysed -80 mesh

Analytical results in ppm

20 Original sample assay (20ppm)
25 Duplicate sample assay (25ppm)

(30) Reaugered sample assay (30ppm)
(40) Reaugered duplicate sample assay (40ppm)
15 Original sample assay (15ppm)

(50) Reaugered sample assay (50ppm)
10 Original sample assay (10ppm)

100^{∇} Denotes A C S L repeat and check assay (100^{∇}ppm)
(55^{∇}) Denotes A C S L repeat and check assay on reaugered sample (55^{∇}ppm)

* 15 Sample taken at 1.0m
15 " " " 1.5m (E O H)

** 250 Sample taken at 2.0m
110 " " " 3.6m (E O H)

*** 30 Sample taken at 4.0m
220 " " " 5.0m
310 " " " 6.5m (E O H)

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1:5000

No KT2/76-CH3-6

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 3
GEOCHEMICAL RESULTS
ZINC 1333

DATE Oct, 1977
GEOLOGIST G.L.B
DRAWN L.G
CHECKED M.C.R

5 cm

Q36128 77-1239

405 000 E | 405 500 E | 406 000 E | 406 500 E | 407 000 E

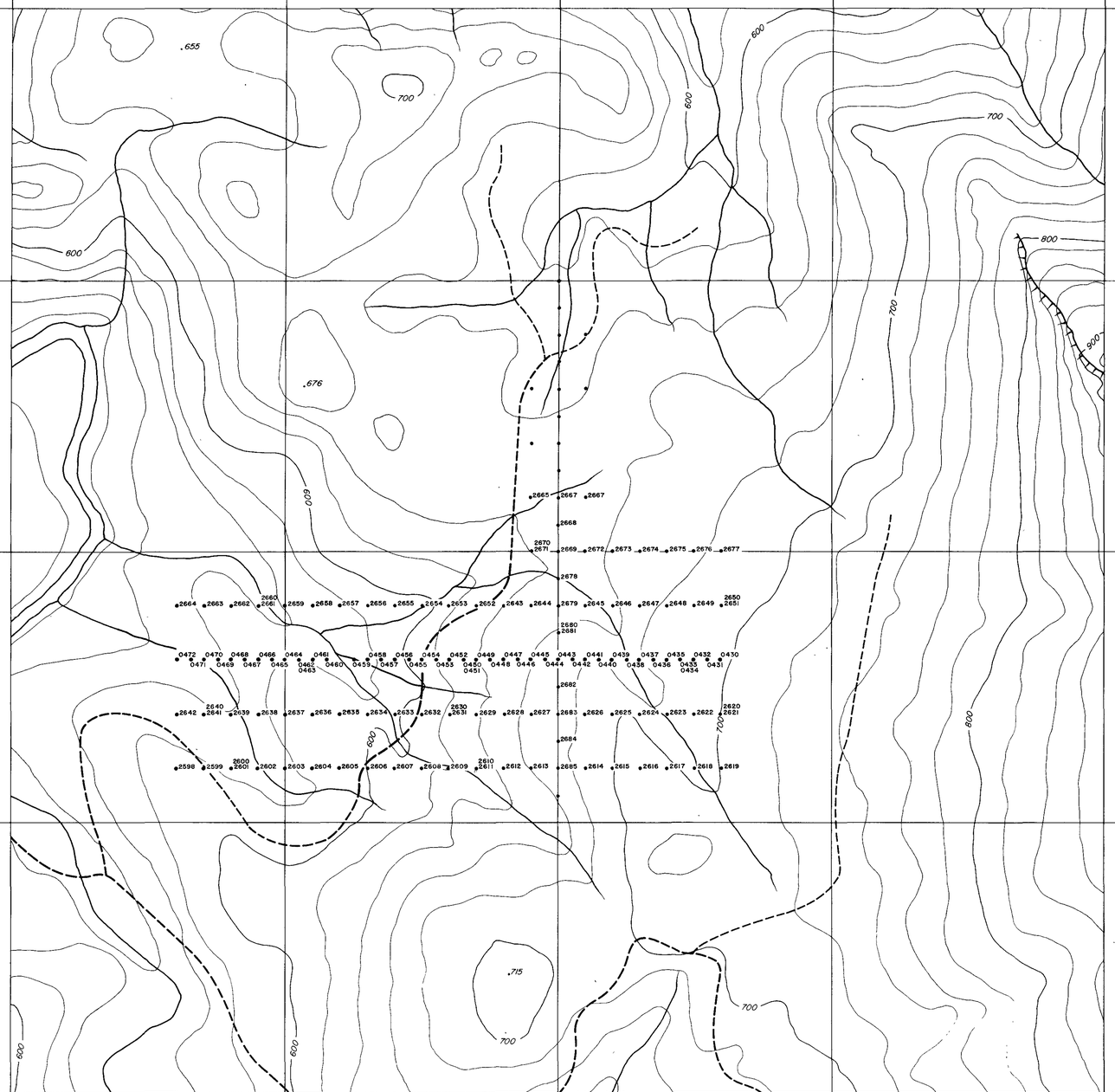
5 414 000 N

5 413 500 N

5 413 000 N

5 412 500 N

5 412 000 N



286113

5 cm

LEGEND:

● 2602 .. .. Soil sample no KS 2602

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1 5000

No KT2/76-CHI-7

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER I

SOIL SAMPLE LOCATION MAP 1339

DATE Oct, 1977
GEOLOGIST G.L.B
DRAWN- L.G
CHECKED M.C.R

Q36/28 77-1239

410 000 E | 410 500 E | 411 000 E | 411 500 E | 412 000 E | 412 500 E | 413 000 E

5 420 500 N

5 420 000 N

5 419 500 N

5 419 000 N

5 418 500 N

600 500 400

.595 .613 .657 .593 .635 .547 .612

Quarry

LEGEND:
● 0427.... Soil sample no. KS 0427

286114
5 cm

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1 : 5000

No KT2/76-CH2-7

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 2

SOIL SAMPLE LOCATION MAP 1340

DATE Oct, 1977
GEOLOGIST G.L.B.
DRAWN L.G.
CHECKED M.C.R.

Q30/28 77-1239

5 415 000 N

400 000 E

401 000 E

402 000 E

700

800

600

LEVEN ROAD

Two Hummocks

Black Marsh

BLACK MARSH ROAD

Black Marsh Creek

5 414 000 N

5 413 000 N

LEGEND:
●0004 .Soil sample no KS 0004

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1 : 5000

No KT2/76-CH3-7

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 3

SOIL SAMPLE LOCATION MAP 1341

DATE: Oct, 1977
GEOLOGIST: G.L.B
DRAWN: L.G
CHECKED: M.C.R

286115

5 cm

Q36/28 77-1239

405 000 E | 405 500 E | 406 000 E | 406 500 E | 407 000 E

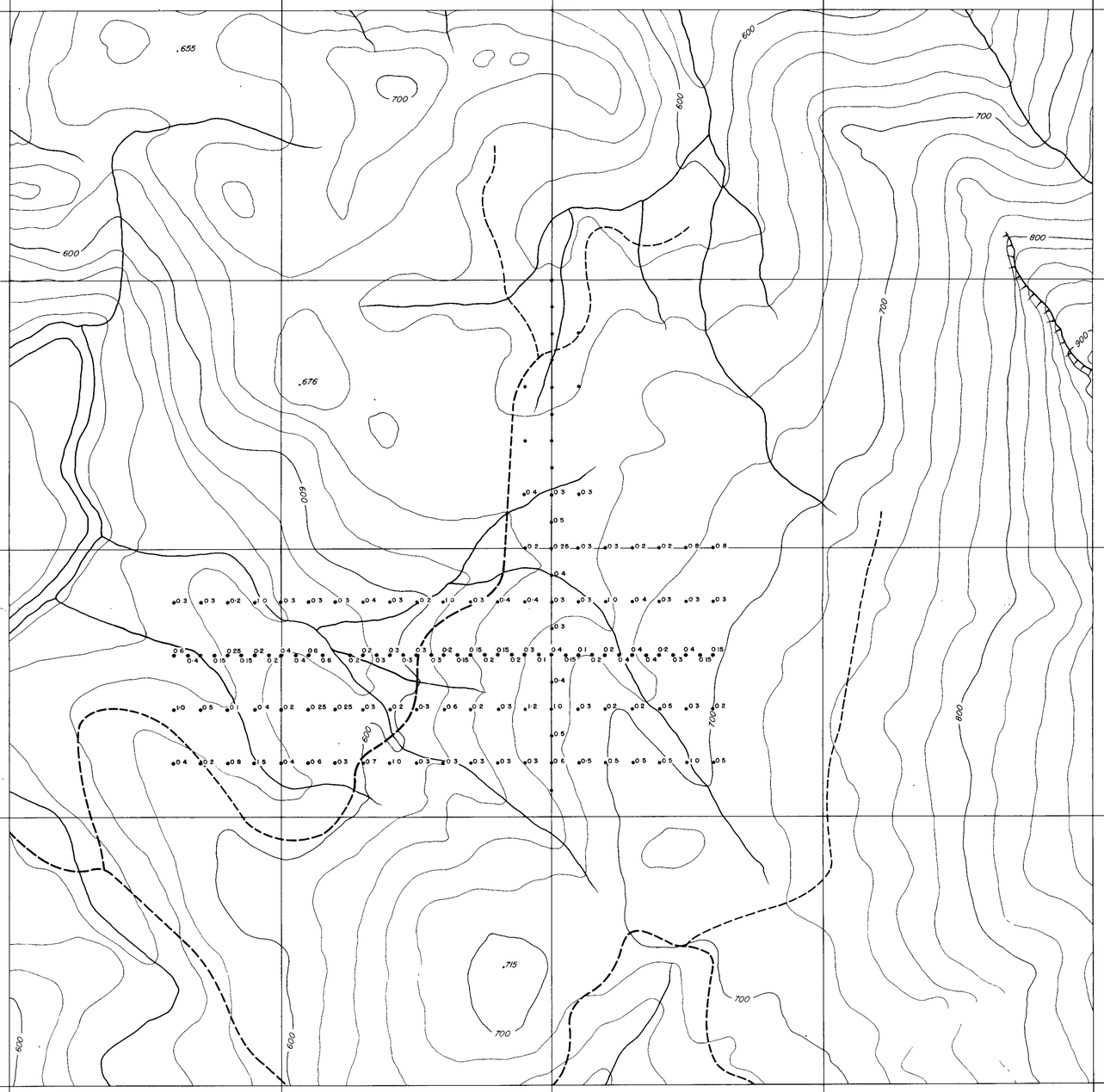
5 414 000 N

5 413 500 N

5 413 000 N

5 412 500 N

5 412 000 N



LEGEND:
0 5 Auger hole depth 0 5 metres

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1 5000

No KT2/76-CHI-8

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER I

AUGER HOLE DEPTHS 1342

DATE Oct, 1977
GEOLOGIST G L B
DRAWN L G
CHECKED M C R

286116

5 cm

Q36/28 77-1239

410 000 E | 410 500 E | 411 000 E | 411 500 E | 412 000 E | 412 500 E | 413 000 E

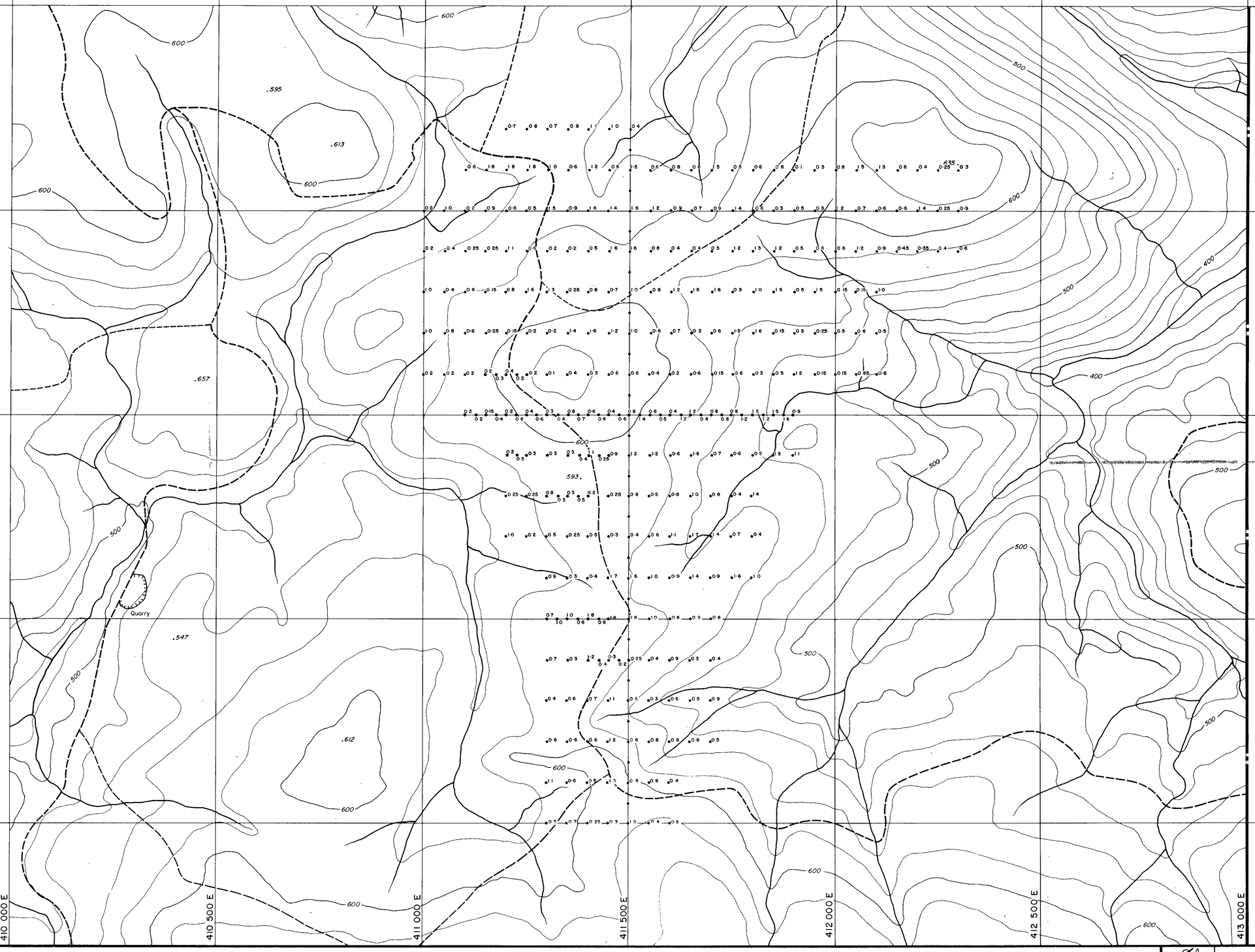
5 420 500 N

5 420 000 N

5 419 500 N

5 419 000 N

5 418 500 N



LEGEND

0·5 Auger hole depth 0·5metres

286117

5 cm

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1:5000

No KT2/76-CH2-8

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 2

AUGER HOLE DEPTHS 1343

DATE Oct, 1977
GEOLOGIST G L B
DRAWN L G
CHECKED M C R

Q36/28 77-1239

5 415 000 N

400 000 E

401 000 E

402 000 E

5 414 000 N

5 413 000 N

LEVEN ROAD

Two Hummocks

Black Marsh

BLACK MARSH ROAD

Black Marsh Creek

700

800

600

LEGEND

● 0·5 . Auger hole depth 0·5metres

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1:5000

No KT2/76-CH3-8

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 3

AUGER HOLE DEPTHS 1344

DATE: Oct, 1977
GEOLOGIST G L B
DRAWN L G
CHECKED M C R

286118

5 cm

Q36/28 77-1239

405 000 E | 405 500 E | 406 000 E | 406 500 E | 407 000 E

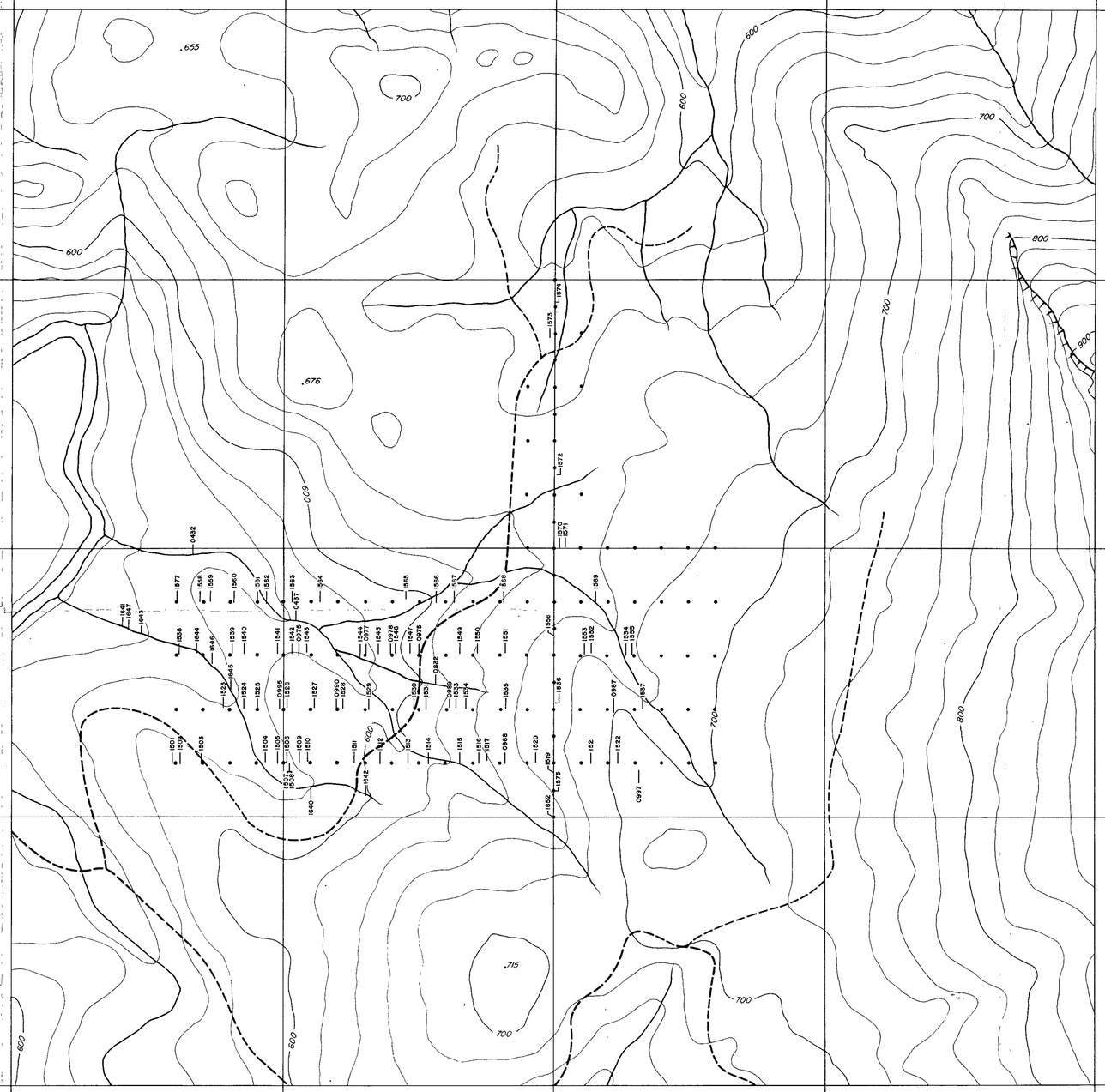
5 414 000 N

5 413 500 N

5 413 000 N

5 412 500 N

5 412 000 N



LEGEND

—1640 .. Rock sample no KR 1640

286119

5 cm

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1 5000

No KT2/76-CHI-9

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER I

ROCK SAMPLE LOCATION MAP

1345

DATE Oct, 1977
GEOLOGIST G.L.B
DRAWN L.G
CHECKED M.C.R

Q36/28 77-1239

410 000 E | 410 500 E | 411 000 E | 411 500 E | 412 000 E | 412 500 E | 413 000 E

5 420 500 N

5 420 000 N

5 419 500 N

5 419 000 N

5 418 500 N

Quarry

LEGEND

—1659 . . Rock sample no. KR 1659

286120

5 cm

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE: 1 5000

No KT2/76-CH2-9

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 2

ROCK SAMPLE LOCATION MAP 1346

DATE Oct, 1977
GEOLOGIST G.L.B.
DRAWN: L.G
CHECKED M.C.R

Q 30/28 77-1239

5 415 000 N

400 000 E

401 000 E

402 000 E

5 414 000 N

5 413 000 N

LEVEN ROAD

Two Hummocks

Black Marsh

BLACKS MARSH ROAD

Black Marsh Creek

700

800

600

LEGEND.

—1596 Rock sample no KR 1596

286121

5 cm

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE: 1 5000

No KT2/76-CH3-9

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 3

ROCK SAMPLE LOCATION MAP

1347

DATE Oct., 1977
GEOLOGIST: G L B
DRAWN: L G
CHECKED: M C R

Q26128 77-1239

5 415 000 N

400 000 E

401 000 E

402 000 E

5 414 000 N

5 413 000 N

Two Hummocks

Black Marsh

LEVEN ROAD

BLACK MARSH ROAD

Black Marsh Creek

700

800

600

LEGEND

NOTE

For geological legend see Dwg No KT2/76-CH3-3

• } No rock chips
o }

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1:5000

No KT2/76-CH3-10

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 3
GEOLOGICAL INTERPRETATION
ROCK CHIP MAP

1348

DATE Oct, 1977
GEOLOGIST G L B
DRAWN L G
CHECKED M C R

286122

5 cm

Q36128 77-1239

400 800 E | 400 850 E | 400 900 E | 400 950 E | 401 000 E

5 414 500 N

5 414 450 N

5 414 400 N

5 414 350 N

5 414 300 N

5 414 250 N

5 414 200 N

?

?

38

Gravel Pit

ROAD

MARSH

BLACK

Mv

? Mv

fg? xl / Mv

Mv / S congl

S ?sat

S wte fg ? S

S NRC

Mv

NRC

fg 1

wte fg 1

wte / dk brn xlt

fg S / qtz

fg ?

Mv

? xl

fg S / qtz

S congl

wte fg S

S congl

fg 1

NRC

fg xl q

wte / blk xlt q

?1

wte / blk xlt q

wte / blk xlt q

wte / blk xlt q

wte / blk xlt q

wte / blk xlt q

wte / blk xlt q

wte / blk xlt q

? xlt q

NRC

wte / blk ? xlt q ? py

ple grn vt

ple grn vt

ple grn vt

ple grn vt

slcl fg vt

fg ? xl qtz vns

grn vt

blk Sah

blk Sah

blk Sah

ple grn vt

blk Sah

blk Sah

lam blk Sah

ple ? fg vt

lam blk Sah

lam blk Sah

blk Sah / grn vt

ple grn vt / qtz

blk Sah

qtz / ? blk Sah

slickensided qtz.

qtz

S congl

ple grn vt

5 cm

286123

LEGEND:

Geological contact

NRC — No rock chips

● Hand augered

○ Power augered

GEOLOGICAL INTERPRETATION:

Pencil No.		
19-47	TERT.	Basalt (Mv)
19-70	U6	Conglomerate (S congl)
19-56	6	Fine grained tuff (fgt)
19-08	6	Crystal lithic tuff (xlt q)
19-01	6	Laminated shale (lam Sah)
19-21	6	Glassy fine grained lava (vt)

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE: 1:500

No. KT2/76-CH3-12

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 3
BLACK SHALE HORIZON
GEOLOGICAL INTERPRETATION
ROCK CHIP MAP

1349

DATE: Oct., 1977
GEOLOGIST: G.L.B.
DRAWN: R.F.
CHECKED: M.C.R.

Q36/28 77-1239

400 800 E | 400 850 E | 400 900 E | 400 950 E | 401 000 E

5 414 500 N

5 414 450 N

5 414 400 N

5 414 350 N

5 414 300 N

5 414 250 N

5 414 200 N

Gravel Pit

2000 ppm

1000 ppm

0

ROAD

MARSH

BLACK

Zn

Pb

Cu

LAMINATED BLACK SHALE HORIZON

SCALE
Vertical: 1cm = 100ppm

5 cm

286124

LEGEND:

60.....Cu ppm sample assay
390.....Pb ppm " "
380.....Zn ppm " "

• Hand augered sample
○ Power augered sample
( ) Denotes duplicate sample assay
▽ Denotes A.C.S.L. repeat and check assay

Analytical methods: Cu, Pb and Zn by AAS following hot conc. HCl leach and HCl/HNO_3 leach in latter stages of 0·25g sample.
Size fraction analysed: −80mesh

DATE: Oct., 1977
GEOLOGIST: G.L.B.
DRAWN: R.F.
CHECKED: M.C.R.

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE: 1:500

No. KT2/76-CH3-13

E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 3
BLACK SHALE HORIZON
GEOCHEMICAL RESULTS AND PROFILES
FOR Cu, Pb and Zn

1350

Q36|28 77-1239

400 800 E | 400 850 E | 400 900 E | 400 950 E | 401 000 E

5 414 500 N

5 414 450 N

5 414 400 N

5 414 350 N

5 414 300 N

5 414 250 N

5 414 200 N

2443 1 5

2444 0 5

2494 1 0

2717 1 0

2716 3 5

2715 3 5

2495 1 5

2714 3 5

2713 3 5

2712 2 6

2710/2711 2 0

2709 1 2

2708 1 0

2707 1 0

2706 1 2

2705 2 0

2496 1 4

2733 6 5

2704 4 5

2732 9 5

2703 9 0

2730/2731 4 5

2702 3 7

2729 3 0

2701 1·2

2728 1 5

2524 1 5

2727 2 0

2726 3·0

2725 6 5

2724 4 5

2723 2 0

2722 3 0

2720/2721 4 5

2719 1 0

2718 5 0

2518 2 0

2757 0 3 | 2756 2 0 | 2755 0 5 | 2754 1 5 | 2756 1 0 | 2753 1 3 | 2752 3 0 | 2750/2751 2 0 | 2749 2 0 | 2748 3 5 | 2747 2 0 | 2746 3 0 | 2745 5 0 | 2744 6 5 | 2525 2 0 | 2743 5 0 | 2742 9 5 | 2740/2741 6·0 | 2739 5 0 | 2738 9 0 | 2737 11 5 | 2736 15 5 | 2735 15 5 | 2734 21 0

ROAD

MARSH

BLACK

Gravel Pit

5 cm

286125

LEGEND

2757 Soil sample no KS 2757
2750/2751 Soil sample no KS 2750 / duplicate KS 2751
0 3. _ Hole depth in metres
● Hand augered sample
○ Power augered sample

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE 1 500

No. KT2/76-CH3-14

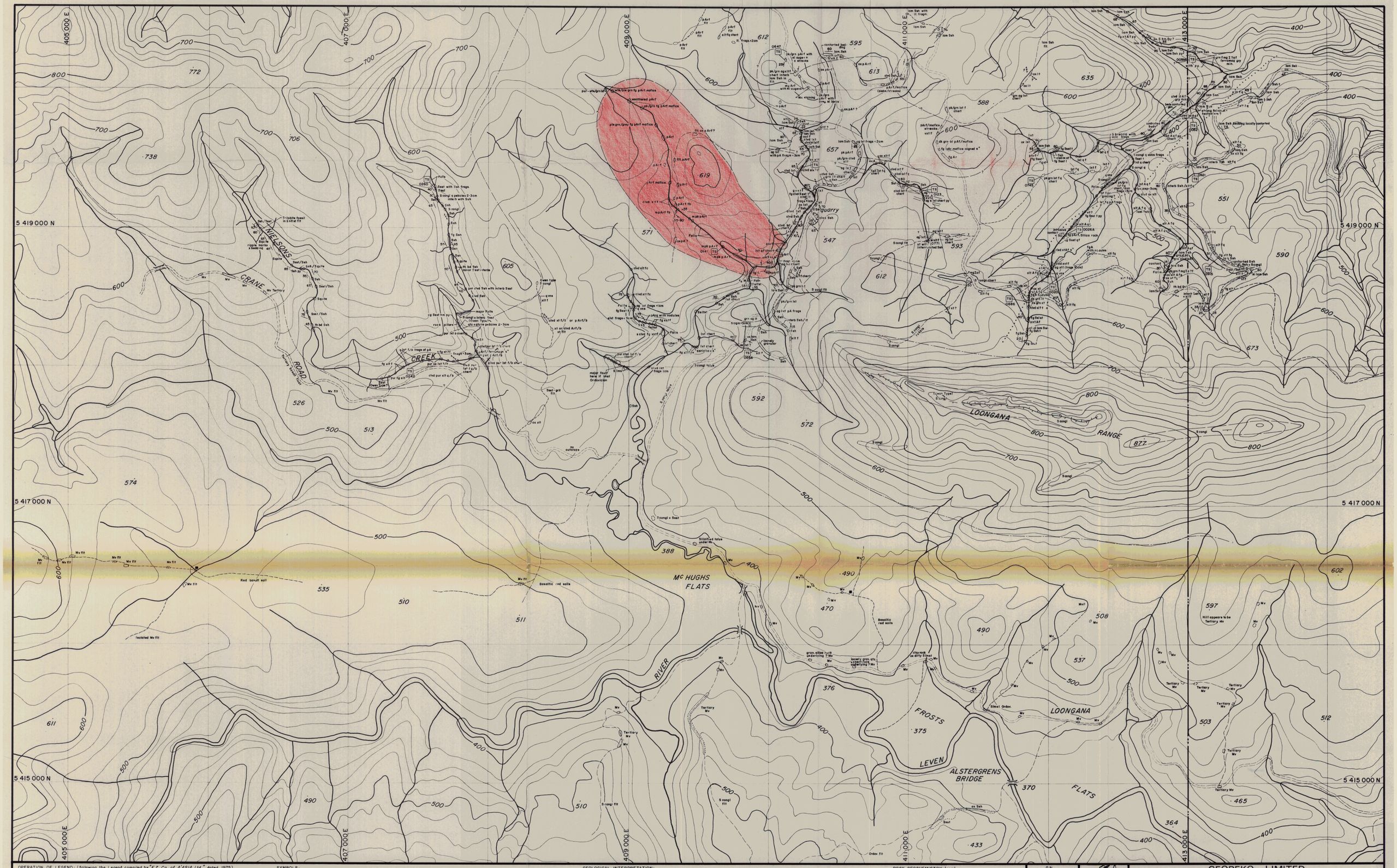
E.L. 2/76 LOONGANA, TASMANIA
CHALLENGER 3
BLACK SHALE HORIZON
SOIL SAMPLE No's / HOLE DEPTHS

1351

DATE: Oct, 1977
GEOLOGIST: G L B
DRAWN: R F
CHECKED M C R

Q36/28 77-1239

405 000 E
407 000 E
409 000 E
411 000 E
413 000 N
5 425 000 N
5 423 000 N
5 421 000 N
LOYETEA PEAK
CREEK
PUFFERS
TRACK
NATIVE
TIER
Granite outcropping
Abundant Granite Outcropping
Exfoliated Granite Tors
Basaltic red soils
(Owen Type) Scongi + Sset
Scongi + Sset
Scongi
Sset
Sset ttt py
Sset / Sset
Sset fff
Sset / biotite hornfels
abundant biotite hornfels
biotite hornfels
Sset fff
Sset / py
Sset ttt
Sset f
Salt f
Salt sst
Salt / Sset
Sset / Sset
Sset / Sset
Sset


405 000 E
407 000 E
409 000 E
411 000 E
413 000 E
5 419 000 N
5 417 000 N
5 415 000 N
NIELSONS
CRANE
CREEK
ROAD
LOONGANA
RANGE
Mc HUGHS
FLATS
RIVER
FROSTS
LEVEN
ALSTERGRENS
BRIDGE
LOONGANA
FLATS
quarry
Red basalt soil
Basaltic red soils
Isolated Mv flt
major fault here if Ineat Ordovician
no outcrops
Silicified talus under Mv
Hill appears to be Tertiary Mv
Tertiary Mv
Slmst Ordov.
Ordov flt
Mv flt
Mv
Mv Tertiary
S congl
S congl flt
Sslst
Sslst flt
Sslst/Sch
Sslst/Sch flt
Sslst/Sch flt
Sslst/Sch
Sslst/Sch
Sslst/Sch

SAMPLE NUMBER	GEOCHEMICAL RESULTS											
	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Mn ppm	Au ppb	As ppm	Sn ppm	Ba ppm		
KO 0048	30	140	130	< 2	4·8	850						
0049	10	90	180	< 2	3·0	430						
0050	10	80	50	< 2	2·2	180	< 20	< 20	10	1000		
0051	15	170	130	< 2	3·8	480						
0052	10	120	230	< 2	3·2	700						
0053	10	120	180	< 2	2·9	350	< 20	< 5	100	2000		
0054	10	120	230	< 2	2·7	850						
0055	20	130	220	< 2	3·5	1400						
0056	10	70	430	< 2	2·9	1400	< 20	< 5	300	3000		
0057	25	50	110	< 2	3·4	3700						
0058	15	70	180	< 2	3·4	900	< 20	< 5	300	3000		
0059	10	70	170	< 2	2·5	1400	< 20	< 5	500	3000		
0060	10	100	170	< 2	3·5	950						
0061	15	70	160	< 2	2·8	1300						
0062	15	110	170	< 2	3·0	900						
0063	10	100	140	< 2	2·8	770						
0064	20	110	180	< 2	3·2	1000						
0065	15	100	160	< 2	3·2	1200						
0066	10	70	180	< 2	2·8	1100						
0067	10	140	130	< 2	2·2	800	< 20	10	300	5000		
0068	10	70	150	< 2	2·2	750						
0069	10	90	180	< 2	2·6	700						
0070	5	100	120	< 2	2·4	1000						
0071	5	90	110	< 2	2·4	700	< 20	< 5	500	3000		
0072	10	90	100	< 2	2·6	680						
0073	10	130	250	< 2	6·7	3700	< 20	< 5	100	1000		
0074	10	100	70	< 2	2·7	1200						
0075	5	100	120	< 2	3·8	400						
0076	10	130	140	< 2	6·4	3100						
0077	5	60	65	< 2	9000	450						
0078	5	50	40	< 2	6800	200						
0079	10	130	150	< 2	3·4	1000						
0080	10	120	170	< 2	3·0	440						
0081	5	80	110	< 2	2·4	540						
0082	10	100	130	< 2	2·5	800						
0083	10	120	180	< 2	6·3	3400						
0084	10	50	65	< 2	1·44	450	< 20	10	500	5000		
0085	5	40	30	< 2	2000	20						
CHECK 0037	10	70	130	< 2	1·75	950						
0056												
0070	5	95	120	< 2	1·65	1000	< 20	< 5				

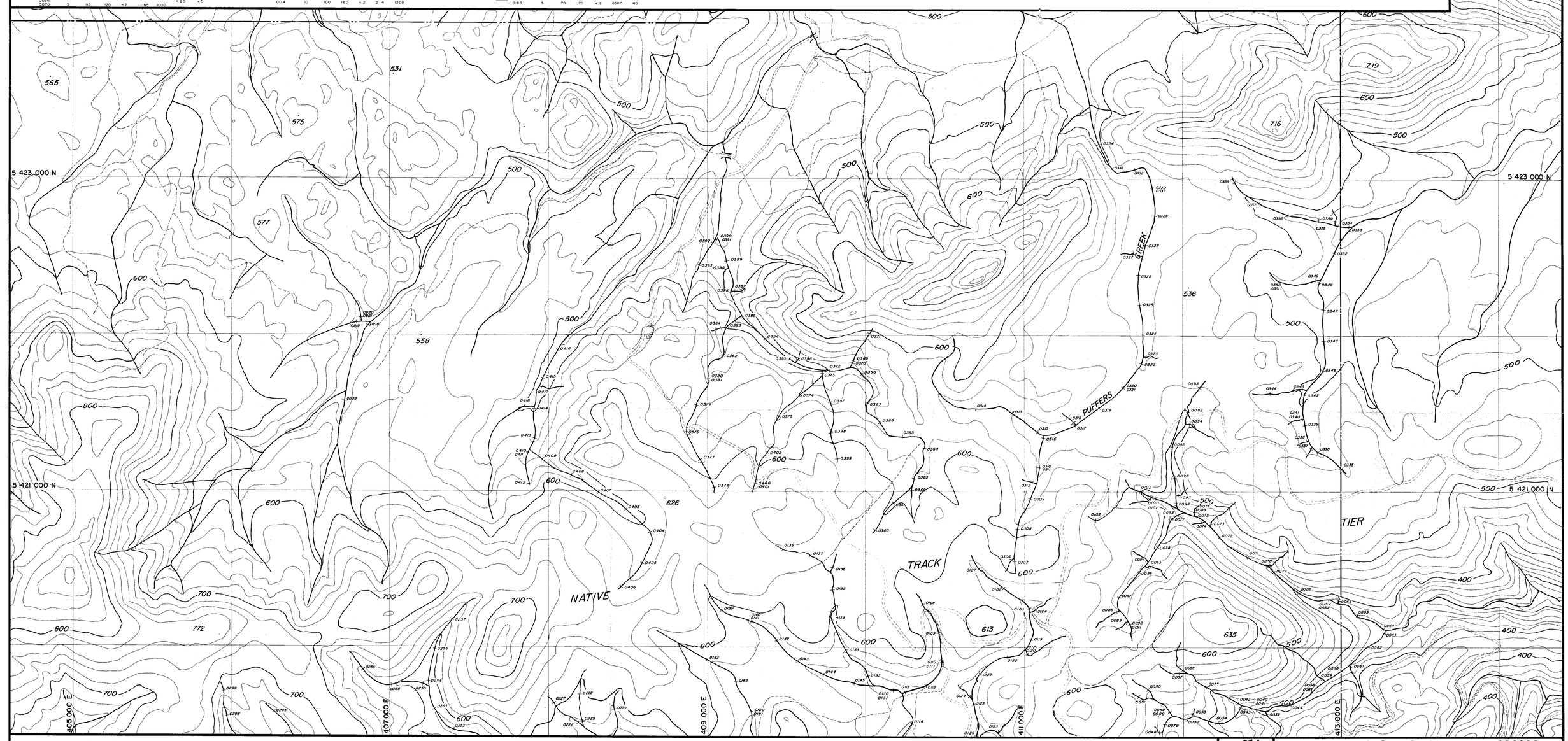
SAMPLE NUMBER	GEOCHEMICAL RESULTS											
	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Mn ppm	Au ppb	As ppm	Sn ppm	Ba ppm		
KO 0086	5	50	25	< 2	2600	170						
0087	5	110	100	< 2	2	1700						
0088	5	90	50	< 2	2·0	1000						
0089	10	90	95	< 2	1·38	800						
0090	5	70	65	< 2	5400	230						
0091	5	80	70	< 2	5500	330						
0092	10	60	50	< 2	2·5	580						
0093	< 2	80	20	< 2	900	10						
0094	5	60	40	< 2	1·22	180						
0095	10	80	90	< 2	2·2	750	< 20	< 5	500	3000		
0096	10	90	120	< 2	3·0	1400						
0097	10	80	190	< 2	4·3	720						
0098	5	110	130	< 2	5·4	1800						
0099	10	80	130	< 2	2·0	650						
0100	10	50	95	< 2	1·14	470	< 20	< 5	500	2000		
0101	10	40	100	< 2	1·3	420						
0102	10	60	190	3	2·2	850						
0103	10	50	160	3	2·2	1150						
0104	< 2	50	35	< 2	8000	110						
0105	5	50	30	< 2	6500	130						
0106	5	40	40	3	5500	190						
0107	< 2	50	35	< 2	2800	20						
0108	10	80	80	< 2	1·6	1300						
0109	10	90	95	< 2	2·1	1000						
0110	10	80	90	< 2	1·8	1100						
0111	10	100	100	< 2	2·0	1420						
0112	15	80	90	2	1·9	520	< 20	< 5	100	2000		
0113	10	80	100	< 2	1·9	800						
0114	15	100	170	< 2	2·4	1100						
0119	5	60	45	< 2	1·3	200	< 20	< 5	200	2000		
0120	25	160	390	3	2·4	4500						
0121	25	140	330	< 2	2·4	2800						
0122	5	130	40	< 2	8000	340						
0123	10	60	100	< 2	1·6	1750						
0124	25	80	80	< 2	1·8	3850						
0125	5	70	65	2	9000	160						
0126	10	80	110	< 2	1·6	550						
CHECK 0092	10	60	60	< 2	2·4	550						
0114	10	100	160	< 2	2·4	1200						

SAMPLE NUMBER	GEOCHEMICAL RESULTS											
	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Mn ppm	Au ppb	As ppm	Sn ppm	Ba ppm		
KO 0127	10	40	100	< 2	1·5	340	< 20	< 5	300	2000		
0128	10	70	110	< 2	1·2	130						
0129	10	90	180	2	2·4	1270						
0130	10	70	120	< 2	1·5	700						
0131	10	90	180	< 2	1·5	650						
0132	10	140	250	< 2	2·1	550	< 20	10	300	3000		
0133	10	90	200	< 2	1·7	720	< 20	< 5	200	3000		
0134	10	80	190	< 2	1·8	880						
0135	10	80	200	3	1·7	850						
0136	10	70	70	< 2	1·0	650						
0137	10	70	200	< 2	2·0	280						
0138	10	90	65	< 2	5000	180						
0139	5	100	110	< 2	1·4	1850						
0140	10	90	100	< 2	1·6	460						
0141	10	90	100	< 2	1·4	400						
0142	10	100	90	< 2	1·4	1040	< 20	< 5	300	2000		
0143	5	80	55	< 2	1·3	500						
0144	10	60	100	3	1·9	720						
0145	5	70	50	< 2	5000	210	< 20	< 5	100	2000		
0183	10	120	350	3	2·2	900						
0180	5	80	70	< 2	5000	220						
0181	5	80	80	< 2	1·2	520						
0182	5	100	65	< 2	8500	550	< 20	< 5	300	2000		
0183	5	80	65	2	7000	290						
0225	10	70	120	< 2	2·1	3400						
0226	5	70	35	< 2	9100	170						
0227	5	< 20	40	< 2	1·9	800						
0228	15	90	90	2	3·0	3700						
0229	10	90	95	< 2	1900	210						
0252	< 2	< 20	20	< 2	650	< 5						
0253	< 2	< 20	10	< 2	450	< 5						
0254	< 2	20	35	< 2	1600	5						
0255	< 2	< 20	25	< 2	900	10						
0256	5	30	25	< 2	7200	25						
0257	5	80	80	< 2	2·1	850						
0258	< 2	< 20	20	< 2	1400	< 5						
0259	5	< 20	20	< 2	1200	50						
CHECK 0130	10	80	120	< 2	1·5	700						
0180	5	70	70	< 2	8500	180						

SAMPLE NUMBER	GEOCHEMICAL RESULTS											
	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Mn ppm	Au ppb	As ppm	Sn ppm	Ba ppm		
KO 0295	5	20	25	< 5	8500	20						
0298	5	< 20	30	< 2	1·53	35						
0299	5	< 20	30	< 2	8900	15						
0306	10	70	150	< 2	2·0	2600						
0307	10	70	180	< 2	1·39	1100						
0308	5	< 20	75	< 2	9000	230						
0309	5	20	65	< 2	6800	80						
0310	5	< 20	50	< 2	9600	150						
0311	5	< 20	35	< 2	1·24	410	< 20	< 5	200	3000		
0312	< 2	< 20	20	< 2	2900	25						
0313	5	20	70	< 2	25	460						
0314	< 2	20	< 5	2	5300	260						
0315	< 2	20	25	< 2	2900	20	< 20	< 5	30	2000		
0316	5	20	45	< 2	6800	85						
0317	5	20	30	< 2	5300	50						
0318	5	20	25	< 2	5200	15						
0319	5	20	40	< 2	6200	140						
0320	< 2	20	50	< 2	6700	170	< 20	< 5	3	2000		
0321	< 2	20	30	< 2	5900	150						
0322	5	< 20	55	< 2	5700	110	< 20	< 5	100	2000		
0323	5	20	35	< 2	4500	20						
0324	5	20	35	< 2	6400	35						
0325	5	20	35	< 2	4900	85						
0326	5	< 20	35	< 2	5300	45						
0327	5	20	50	< 2	6800	120						
0328	< 2	20	30	< 2	6700	25	< 20	< 5	10	2000		
0329	5	20	45	< 2	1·01	140						
0330	5	20	35	< 2	5400	70	< 20	< 5	20	1000		
0331	5	< 20	30	< 2	5700	50						
0332	5	30	30	< 2	5200	30						
0333	10	20	50	< 2	9500	260						
0334	10	20	60	< 2	1·62	570	< 20	10	20	2000		
0335	20	30	130	< 2	5·2	260						
0336	10	20	130	< 2	3·1	540						
0337	70	30	170	2	6·1	800						
0338	15	30	300	< 2	4·9	850						
0339	15	< 20	110	< 2	2·5	320						
0340	10	< 20	95	< 2	1·70	290						

SAMPLE NUMBER	GEOCHEMICAL RESULTS											
	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Mn ppm	Au ppb	As ppm	Sn ppm	Ba ppm		
KO 0341	10	20	120	< 2	1·85	420						
0342	10	< 20	90	< 2	1·39	190	< 20	< 5	30	2000		
0343	10	20	70	< 2	1·17	470						
0344	10	< 20	90	< 2	1·58	470						
0345	10	< 20	120	< 2	1·95	560						
0346	10	< 20	80	< 2	2·0	790						
0347	5	< 20	70	< 2	1·85	540						
0348	5	< 20	40	< 2	7500	150	< 20	40	5	2000		
0349	5	< 20	35	< 2	7500	170						
0350	5	< 20	45	< 2	7900	170						
0351	10	20	50	< 2	1·25	370						
0352	10	20	55	< 2	1·23	240						
0353	5	< 20	40	< 2	7800	590						
0354	5	< 20	90	< 2	1·0	850	< 20	10	5	2000		
0355	10	< 20	85	< 2	1·45	800						
0356	5	20	70	< 2	1·58	1500						
0357	10	20	75	< 2	1·95	1050						
0358	30	140	100	2	1·5	600						
0359	10	60	120	< 2	2·5	4500						
0360	5	< 20	20	< 2	5900	25						
0361	5	< 20	60	< 2	1·56	900						
0362	5	< 20	50	< 2	2·3	400						
0363	10	< 20	160	< 2	2·5	2400	< 20	< 5	20	1000		
0364	5	20	35	< 2	5400	45						
0365	5	< 20	35	< 2	9000	290						
0366	10	20	45	< 2	1·48	640						
0367	10	20	70	< 2	1·30	630						
0368	5	20	55	< 2	1·34	660	< 20	< 5	20	1000		
0369	5	50	30	< 2	5700	30						
0370	5	30	30	< 2	5700	30						
0371	< 2	40	15	< 2	7500	10						
0372	60	80	140	< 2	5·4	2250	< 20	10	20	2000		
0373	15	30	250	< 2	3·7	1200						
0374	10	< 20	85	< 2	1·23	660						
0375	5	< 20	60	< 2	831	100						
0376	5	< 20	55	< 2	4200	40						
0377	< 2	< 20	50	< 2	8500	500						
0378	5	< 20	30	< 2	9000	140						
0379	5	20	40	< 2	7500	60	< 20	< 5	10	1000		

SAMPLE NUMBER	GEOCHEMICAL RESULTS											
	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Mn ppm	Au ppb	As ppm	Sn ppm	Ba ppm		
KO 0380	5	< 20	50	< 2	1·12	620						
0381	5	20	40	< 2	1·09	580						
0382	10	30	90	< 2	5·4	1200						
0383	10	40	110	< 2	4·0	3900	< 20	10	5	1000		
0384	5	60	130	< 2	3·0	1300						
0385	10	60	140	< 2	3·0	3400						
0386	20	50	160	< 2	3·6	1900	< 20	10	50	2000		
0387	< 2	< 20	40	< 2	2000	110						
0388	< 2	20	20	< 2	1·50	80						
0389	5	30	85	< 2	1·4	430						
0390	70	40	120	< 2	1·7	470						
0391	5	30	70	< 2	1·57	280						
0392	5	< 20	30	< 2	1·10	80						
0393	< 2	< 20	20	< 2	350	20						
0394	5	30	85	< 2	1·16	860						
0395	5	< 20	70	< 2	1·70	1200						
0396	10	< 20	80	< 2	6400	70	< 20	60	3	500		
0397	15	60	220	< 2	1·80	1700	< 20	< 5	5	1000		
0398	10	30	130	< 2	1·18	1700						
0399	5	40	80	< 2	1·59	740						
0400	5	20	30	< 2	2·1	390						
0401	5	< 20	30	< 2	1·37	400						
0402	5	< 20	55	< 2	1·18	340						
0403	5	20	35	< 2	1700	15						
0404	< 2	30	30	< 2	1700	10						
0405	20	30	40	< 2	3600	180						
0406	10	20	50	< 2	5400	290						
0407	5	20	55	< 2	5300	50						
0408	5	30	50	< 2	9400	100	< 20	< 5	3	2000		
0409	5	30	40	< 2	5200	40						
0410	< 2	< 20	15	< 2	7500	25						
0411	< 2	< 20	10	< 2	5400	20						
0412	< 2	< 20	15	< 2	900	90						
0413	5	20	60	< 2	1·48	480						
0414	5	< 20	20	< 2	3000	30						
0415	< 2	20	20	< 2	1·50	80						
0416	< 2	< 20	25	< 2	2100	95						
0417	5	< 20	20	< 2	9700	70	< 20	< 5	3	1000		
0418	5	< 20	60	< 2	1·03	60						



GEOCHEMICAL RESULTS: (PHASE 2)

KO NR	Sn(ppm)	W(ppm)	Mo(ppm)
0918	<20	22	10
0919	<20	37	7
0920	20	< 20	6
0921	28	22	<5
0922	<20	29	9
0920	20	29	7 (ACSL repeat and check analysis)

ANALYTICAL METHOD:
Sn, W and Mo determined by X.R.F.

NOTE:
This map has been compiled from enlargements of the Tasmanian Lands Department's aerial photo overlays.

ANALYTICAL METHOD:
Cu, Pb, Zn, Ag, Fe and Mn by A.A.S. following hot conc $HClO_4$ leach for 1 hour of 0·25g sample.
Au by Special low level CRA/AAS.
As by modified Gutzeit method.
Sn and Ba by Emission Spectrography Schemes, ES 2 and 3.
A.C.S. Laboratories Pty. Ltd.

DATE: Oct., 1977
GEOLOGIST: M.C.R. G.L.B.
DRAWN: L.G.
CHECKED: M.C.R.

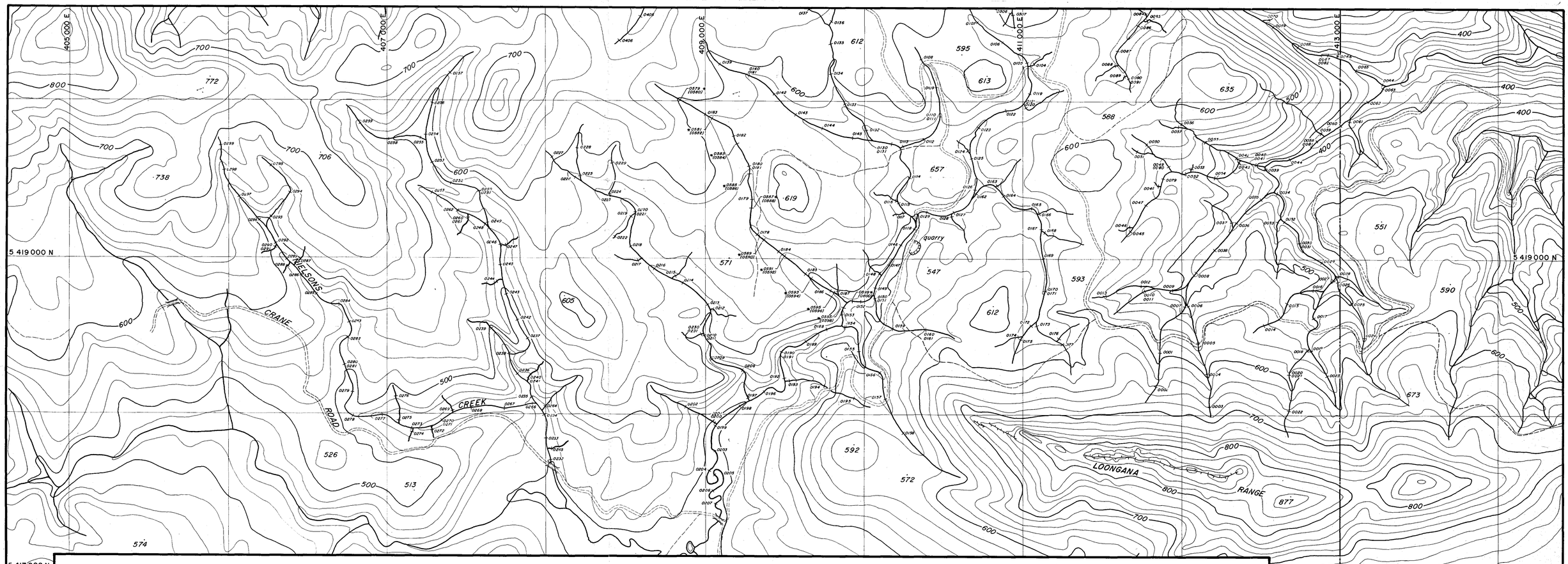
GEOPEKO LIMITED 286128
KING ISLAND GROUP
SCALE: 1: 10,000
No. KT2/76-1C

EL. 2/76
LOONGANA, TASMANIA
DRAINAGE SAMPLE LOCATION MAP WITH GEOCHEMICAL RESULTS

KT2/76-5	KT2/76-2
KT2/76-4	KT2/76-3
	KT2/76-1

1354

936/28 77-1239



GEOCHEMICAL RESULTS

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Mn ppm	Au ppb	As ppm	Sn ppm	Ba ppm
KD 0001	20	60	90	<2	1·95	900	< 20	80	500	2000
0002	10	50	60	<2	1·56	1500				
0003	15	60	60	<2	2·4	1700				
0004	15	70	95	<2	2·4	1600				
0005	35	90	120	<2	3·9	1700				
0006	20	60	110	<2	3·3	1200				
0007	15	60	80	<2	1·95	600				
0008	10	70	90	<2	2·3	650				
0009	10	90	100	<2	1·90	500				
0010	15	60	110	<2	2·5	900				
0011	15	60	95	<2	2·5	800				
0012	15	150	110	<2	2·3	950	< 20	<5	1000	2000
0013	20	340	200	<2	2·6	1200				
0014	10	50	70	<2	2·1	500				
0015	10	60	80	<2	2·3	850				
0016	25	70	95	<2	2·2	1200				
0017	25	70	100	<2	3·9	1400				
0018	15	50	85	<2	2·2	1000				
0019	15	60	95	<2	2·7	1000				
0020	10	50	80	<2	3·1	800	< 20	10	500	3000
0021	15	50	75	<2	3·3	800				
0022	5	50	50	<2	1·60	600				
0023	20	60	130	<2	3·9	2300				
0024	20	60	130	<2	2·6	1800				
0025	25	80	150	<2	2·5	2200	< 20	<5	500	3000
0026	15	60	120	<2	2·6	1300				
0027	20	70	95	<2	2·7	900	< 20	<5	500	3000
0028	20	50	100	<2	1·80	1000				
0029	20	60	100	<2	2·6	1100				
0030	30	50	90	<2	2·8	1100				
0031	15	70	100	<2	2·5	950				
0032	15	60	150	<2	3·1	900	< 20	<5	500	3000
0033	20	80	150	<2	2·9	1200				
0034	10	60	100	<2	2·1	500				
0035	15	70	120	<2	3·1	900				
0036	10	90	120	<2	2·5	700				
0037	10	70	130	<2	1·76	900	< 20	<5	300	3000
0038	10	80	120	<2	2·4	600				
0039	15	70	95	<2	2·3	600				
0040	10	110	210	<2	2·5	900	< 20	<5	50	1000
0041	10	100	140	<2	2·4	1000				
0042	20	110	290	<2	2·9	1800				
0043	10	100	200	<2	2·7	750				
0044	15	70	140	<2	2·5	750				
0045	10	140	160	<2	3·9	600				
0046	15	70	160	<2	3·9	1300				
0047	10	120	160	<2	2·7	500	< 20	30	50	2000
0048	30	140	130	<2	4·9	850				
0049	10	90	160	<2	3·2	430				
0050	10	80	90	<2	2·2	850	< 20	20	10	1000
0051	15	170	130	<2	3·8	480				
0052	10	120	250	<2	2·8	700				
0053	15	120	260	<2	2·9	950	< 20	<5	100	2000
0054	10	120	230	<2	2·7	850				
0055	20	130	290	<2	3·5	1600				
0056	10	70	140	<2	2·5	450	< 20	<5	300	3000
0057	25	50	110	<2	3·4	3700				
0058	15	70	150	<2	3·2	900	< 20	<5	300	3000
0059	10	70	170	<2	2·5	1400	< 20	<5	500	3000
0060	10	100	170	<2	2·8	950				
0061	15	70	160	<2	2·8	1300				
CHECK 0008	20	60	80	<2	1·9	1400				
0027	20	70	180	<2	1·76	950	< 20	<5		
0056	10						< 20	<5		

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Mn ppm	Au ppb	As ppm	Sn ppm	Ba ppm
KD 0062	15	80	170	<2	3·0	900				
0063	10	100	140	<2	2·9	770				
0064	20	110	180	<2	3·2	1000				
0065	15	100	180	<2	3·2	1200				
0066	10	70	180	<2	2·8	1100				
0067	10	140	190	<2	2·2	800	< 20	10	500	3000
0068	10	70	110	<2	2·0	750				
0069	10	90	180	<2	2·6	700				
0070	5	100	120	<2	1·60	1000				
0079	10	130	190	<2	3·4	1000				
0080	10	120	170	<2	3·2	640				
0081	15	80	110	<2	2·4	540				
0082	10	100	180	<2	2·5	800				
0084	10	50	65	<2	1·44	430	< 20	10	500	3000
0085	5	40	30	<2	2200	20				
0086	5	50	25	<2	2600	170				
0087	5	90	110	106	2·0	1700				
0088	5	90	50	<2	2·0	1000				
0089	10	90	75	<2	2·8	850				
0090	5	70	65	<2	5400	230				
0091	5	80	70	<2	8500	330				
0104	<2	50	35	<2	8000	110				
0105	5	50	30	<2	6500	130				
0106	5	40	40	<2	5500	100				
0107	<2	50	35	<2	2800	20				
0108	10	80	95	<2	1·6	1300				
0109	10	90	95	<2	2·1	1000				
0110	10	80	90	<2	1·8	1100				
0111	10	100	100	<2	2·0	1420				
0112	15	80	90	<2	1·9	820	< 20	<5	100	2000
0113	10	80	100	<2	1·9	800				
0114	15	100	100	<2	2·4	1100				
0115	10	80	120	2	1·7	850	< 20	<5	100	2000
0116	10	80	120	2	1·5	950				
0117	15	40	100	2	2·3	1050				
0118	10	70	110	2	1·7	640				
0119	5	60	45	<2	1·5	200	< 20	<5	200	2000
0120	25	160	290	3	2·4	4500				
0121	25	140	330	<2	2·4	2800				
0122	5	130	40	<2	8000	340				
0123	10	60	100	<2	1·6	1750				
0124	25	80	80	<2	1·8	380				
0125	5	70	65	2	9000	160				
0126	10	80	110	<2	1·6	550	< 20	<5	3000	3000
0127	10	40	100	<2	1·5	340				
0128	10	70	85	2	1·2	130				
0129	10	90	180	2	2·4	1270				
0130	10	70	120	<2	1·5	700				
0131	10	90	120	<2	1·9	620				
0132	10	140	250	<2	2·1	550	< 20	10	300	3000
0133	10	90	210	<2	1·6	720				
0134	10	80	190	<2	1·8	680	< 20	<5	200	3000
0135	10	80	170	3	1·7	450				
0136	10	70	70	<2	1·0	650				
0137	10	70	210	<2	2·2	280				
0139	5	100	70	<2	1·2	1250				
0201	20	70	240	<2	2·8	1700	< 20	<5	50	1000
CHECK 0059	5	50	20	3	2500	110				
0180	5	70	70	<2	8500	190				
0146							< 20			
0184							< 20			

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Mn ppm	Au ppb	As ppm	Sn ppm	Ba ppm
KD 0141	10	90	110	<2	1·4	400				
0142	10	100	80	<2	1·4	1040	<20	<5	500	2000
0143	5	60	55	2	1·3	500				
0144	10	60	100	<2	1·9	720				
0145	5	70	60	2	2·8	1100				
0146	10	140	190	<2	2·2	800	< 20	10	500	3000
0147	5	70	80	<2	1·4	380				
0148	10	90	100	3	1·9	1300				
0149	10	<10	90	2	1·5	480				
0150	5	50	40	2	1·4	540				
0151	5	50	35	2	1·2	550				
0152	10	70	120	<2	1·8	440				
0153	10	70	120	<2	2·2	750				
0154	10	70	80	<2	1·6	560				
0155	10	60	40	2	2·0	80				
0156	10	50	60	<2	2·2	80				
0157	5	40	45	2	2·9	80	<20	<5	100	2000
0158	10	50	20	2	1·5	30				
0159	5	40	50	2	9000	110	<20	<5	500	50
0160	5	50	30	<2	1·3	480				
0161	5	50	35	<2	1·8	1620				
0162	10	70	120	2	2·8	750	<20	<5	300	100
0163	10	120	350	3	2·2	900				
0164	5	50	110	<2	1·8	950				
0165	5	50	55	<2	1·4	560				
0166	10	130	360	<2	1·5	2500				
0167	10	50	70	<2	2·0	980	<20	<5	500	2000
0168	5	60	110	<2	1·2	370				
0169	10	40	70	<2	1·2	410				
0170	5	40	40	<2	1·3	410				
0171	5	40	40	<2	1·2	350				
0172	5	40	30	<2	7000	430				
0173	10	60	60	<2	2·1	720	<20	<5	300	2000
0174	5	50	45	<2	1·9	1300				
0175	5	40	35	<2	7400	330				
0176	10	60	55	<2	1·8	850				
0177	10	50	70	3	2·2	1070				
0178	5	60	85	<2	7500	480	<20	<5	500	3000
0179	5	70	80	<2	7000	380				
0180	5	70	80	<2	9000	220	<20	<5	200	2000
0181	5	80	80	<2	1·1	520				
0182	5	100	85	<2	8500	550	<20	<5	300	2000
0183	5	80	85	3	7000	290				
0184	5	60	80	<2	7000	460				
0185	5	80	65	2	5500	290				
0186	5	70	80	<2	6000	390	<20	<5	3000	3000
0187	5	60	90	3	3500	520				
0188	10	80	100	<2	1·6	550	<20	<5	300	2000
0189	10	80	140	<2	2·2	770	<20	<5	2000	3000
0190	10	70	90	<2	1·6	650				
0191	10	70	100	3	1·6	680				
0192	10	90	120	<2	1·9	620				
0193	10	50	90	<2	2·0	560				
0194	10	50	65	2	1·6	520	<20	20	30	1000
0195	10	80	70	2	1·8	680	<20	<5		
0196	10	80	140	<2	2·0	910	<20	<5	100	2000
0197	10	70	100	<2	9000	480	<20	20	5000	
0198	15	80	100	<2	1·5	230				
0199	10	100	130	3	1·8	900				
0200	10	100	240	3	1·8	1400				
0201	20	70	240	<2	2·8	1700	<20	<5	50	1000
CHECK 0159	5	50	20	3	2500	110				
0180	5	70	70	<2	8500	190				
0146							<20			
0184							<20			

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Mn ppm	Au ppb	As ppm	Sn ppm	Ba ppm
KD 0202	10	20	80	<2	1·4	400				
0203	10	60	200	<2	2·6	1200				
0204	10	20	100	<2	1·25	280				
0205	10	<20	85	<2	1·50	110				
0206	15	<20	170	<2	2·4	1000				
0207	10	<20	130	3	1·5	300	<20	10	50	3000
0208	10	20	110	<2	1·40	690				
0209	10	<20	110	<2	1·35	630				
0210	10	30	95	<2	1·10	2·90				
0211	10	<20	90	<2	1·25	3·90				
0212	5	30	55	<2	6700	240				
0213	5	20	85	<2	8800	250	<20	<5	50	2000
0214	10	30	110	<2	1·37	400				
0215	10	50	140	<2	6500	320				
0216	10	30	90	<2	1·32	460				
0217	10	<20	55	2	1·75	70				
0218	5	20	180	<2	1·03	900				
0219	10	40	120	<2	1·40	650				
0220	10	40	70	<2	1·11	950	<20	<5	20	2000
0221	10	40	85	<2	1·10	1000				
0222	10	20	60	<2	1·04	160				
0223	5	40	55	<2	8800	420				
0224	10	50	150	<2	9200	950				
0225	10	70	120	<2	2·1	3400				
0226	5	30	35	<2	8105	170				
0227	5	<20	40	<2	6000	35				
0228	15	90	90	2	3·0	3700				
0229	10	40	95	<2	7000	250				
0230	5	<20	75	<2	8500	180				
0231	5	<20	55	<2	9800	170				
0232	10	40	50	<2	1·65	220				
0233	10	<20	50	<2	1·60	240	<20	<5	50	2000
0234	10	20	55	<2	1·60	310				
0235	5	40	30	<2	7100	180				
0236	5	20	30	<2	5500	170				
0237	5	<20	20	<2	5000	40				
0238	15	100	210	<2	2·8	2800				
0239	15	80	120	<2	3·1	1200				
0240	25	40	230	2	2·5	2200				
0241	28	20	280	<2	4·0	2000	<20	20	3	1000
0242	10	<20	40	<2	1·07	720				
0243	<2	<20	20	<2	3200	30				
0244	5	<20	45	<2	1·0	220				
0245	5	<20	50	<2	6000	50	<20	<5	30	1000
0246	<2	<20	15	<2	1900	15				
0247	<2	<20	15	<2	3200	40				
0248	5	20	30	<2	6200	110				
0249	<2	<20	20	<2	1950	10				
0250	<2	<20	20	<2	1800	10				
0251	<2	<20	20	<2	1200	15	<20	<5	5	1000
0252	<2	<20	20	<2	1900	10				
0253	<2	<20	10	<2	900	15				
0254	<2	20	35	<2	1800	55				
0255	<2	<20	25	<2	1900	10				
0256	5	30	35	<2	3200	25				
0257	<2	<20	35	<2	4700	80				
0258	<2	<20	20	<2	1400	15				
0259	5	<20	30	<2	3200	30				
0264	5	<20	95	<2	7400	600				
0265	<2	<20	80	<2	4700	10				

SAMPLE NUMBER	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Mn ppm	Au ppb	As ppm	Sn ppm	Ba ppm
KD 0266	10	20	75	<2	2·7	760				
0267	15	30	120	<2	3·3	780				
0268	15	<20	80	<2	3·3	460	< 20	10	50	2000
0269	10	<20	50	<2	1·70	250				
0270	20	<20	80	<2	1·57	620				
0271	20	<20	75	2	3·1	490				
0272	30	<20	130	3	5·4	460				
0273	15	<20	75	<2	3·0	500				
0274	30	<20	120	<2	5·8	900				
0275	10	<20	40	<2	7600	320				
0276	15	<20	80	<2	1·43	680				
0277	10	<20	50	<2	2·2	240				
0278	20	<20	65	<2	4·0	400				
0279	5	<20	60	<2	7600	20	< 20	10	20	1000
0280	10	<20	45	<2	1·80	65				
0281	10	<20	35	<2	1·50	60				
0282	5	<20	20	<2	7600	15				
0283	5	<20	25	<2	5200	10				
0284	<2	<20	20	<2	5000	10				
0285	5	<20	30	<2	1·45	70				
0286	5	<20	20	<2	7900	10	< 20	<5	10	2000
0287	5	<20	20	<2	4900	10				
0288	10	30	80	<2	2·3	530				
0289	5	<20	10	<2	5300	5				
0290	<2	<20	40	<2	1900	5				
0291	<2	<20	20	<2	2100	10				
0292	5	<20	20	<2	6700	15				
0293	<2	20	25	<2	4600	10				
0294	<2	<20	40	<2	6500	15				
0295	5	<20	20	<2	8500	20				
0296	5	<20	20	<2	1·51	20				
0297	5	<20	25	<2	1·12	45				
0298	5	<20	30	<2	1·53	35				
0299	5	<20	20	<2	8900	15				
0305	10	70	150	<2	2·0	2600				
0307	10	20	160	<2	1·39	1100				
0400	<2	30	20	<2	3600	150				
0406	10	20	50	<2	5400	290				
RESUBMITTED SAMPLES - XRF METHOD										
0006									< 20	
0007									< 20	
0009									20	
0010									< 20	
0012									300	
0013									30	
0048									< 20	
0052									< 20	
0053									20	
0054									25	
0178									770	
0184									30	
0185									25	
0186									0·33%	
0187									20	
0189									0·23%	
0190									45	
CHECK 0012									290	
0154									<20	

LEGEND:

● 0593 ..... Odd numbered samples dried and sieved -80mesh and pulverised.
(0594) ..... Even numbered samples pulverised in entirety.

GEOCHEMICAL RESULTS: (PHASE 2)

KD NO	0579	0580	0581	0582	0583	0584	0585	0586	0587	0588	0589	0590	0591	0592	0593	0594	0595	0596	0597	0598	0599	0600
Sn(ppm)	SNR*	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	25	<20	<20	<20	<20

CHECK: 0583 0589 0592 0598
<20 <20 <20 <20

SNR* ..... Sample not received.
Sn determined by X.R.F.

NOTE:
This map has been compiled from enlargements of the Tasmanian Lands Department's aerial photo overlays.

ANALYTICAL METHOD:
Cu, Pb, Zn, Ag, Fe and Mn by AAS following hot conc. $HCl:O_2$ leach for 1 hour of 0·25g sample.
Au by Special low level CRA/AAS.
As by modified Gutzeit method.
Sn and Ba by Emission Spectrography Schemes, ES 2and 3.

A.C.S. Laboratories Pty. Ltd.

5 cm

DATE: Oct., 1977
GEOLOGIST: M.C.R. G.L.B.
DRAWN: R.F.
CHECKED: M.C.R.

GEOPEKO LIMITED
KING ISLAND GROUP
286129

SCALE: 1:10,000

No. KT2/76-2C

EL 2/76
LOONGANA, TASMANIA
DRAINAGE SAMPLE LOCATION MAP WITH GEOCHEMICAL RESULTS

1355

L. Drawings

KT2/76-1	
KT2/76-5	KT2/76-2
KT2/76-4	KT2/76-3

Q86128 77-1239

SAMPLE NUMBER	GEOCHEMICAL RESULTS									
	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe%	Mn ppm	Au ppb	As ppm	Sn ppm	Ba ppm
KD 0420	5	<20	35	<2	1 38	170				
0421	5	<20	35	<2	1 25	160				
0422	5	<20	45	<2	1 85	400	<20	<5	30	1000
0423	5	<20	20	<2	9700	160				
0424	5	<20	20	<2	9000	180	<20	<5	30	1000
0425	10	<20	35	<2	1 8	530				
0427	5	<20	20	<2	8700	150				
0428	5	<20	25	<2	6000	45				
0429	10	<20	45	<2	8800	260	<20	<5	20	1000
0430	10	<20	70	<2	1 39	1200				
0431	10	<20	65	<2	1 50	1200				
0432	10	20	85	<2	2 2	1200				
0433	<2	<20	30	<2	1 56	270	<20	<5	30	1000
0437	5	<20	20	<2	4600	10				
0438	5	<20	20	<2	1500	5				
0442	10	<20	40	<2	1 17	110				
0448	10	<20	10	<2	7400	15				
0478	10	<20	100	<2	1 21	430				
0479	10	<20	90	<2	9800	410				
0480	5	<20	30	<2	9300	110				
0481	5	<20	25	<2	1 05	100				
0482	5	<20	50	<2	1 58	1000	<20	<5	3	3000
0499	10	<20	80	<2	2 8	420				
0500	50	40	90	<2	2 6	410				
0501	10	20	85	<2	2 4	380				
0502	10	30	60	<2	1 05	160	<20	<5	20	1000
0503	10	100	65	2	1 48	210				
0504	5	80	55	<2	1 04	110				
0505	15	80	110	<2	4 6	1200				
0506	10	<20	65	<2	2 1	290				
0507	10	30	95	<2	3 0	490				
0508	10	20	90	2	3 3	630	<20	<5	50	2000
0509	15	30	120	<2	3 6	590				
0510	10	<20	180	<2	2 3	280				
0511	10	<20	75	<2	2 3	250				
0512	10	<20	75	<2	2 0	220	<20	<5	50	2000
0513	10	<20	80	<2	2 0	400				
0514	10	20	80	<2	2 5	330				
0515	15	80	95	<2	3 2	490				
0516	5	20	25	<2	6800	55				
0517	15	40	100	<2	3 9	390	<20	<5	30	2000
0518	10	<20	110	<2	3 1	270				
0519	5	<20	20	<2	9300	55	<20	<5	20	2000
0520	5	<20	35	<2	2200	10				
0521	5	<20	20	<2	3200	20				
0522	10	<20	40	<2	5100	30				
0523	5	<20	60	<2	1 10	40				
0524	5	<20	45	<2	6300	35				
0525	5	<20	15	<2	7100	60				
0526	10	20	45	2	2 8	110				
0527	5	<20	30	<2	1 07	140	<20	<5	20	2000
0528	<2	<20	15	<2	6700	40				
0529	<2	<20	20	<2	6800	55				
0551	710	50	430	<2	1 80	180				
0552	10	<20	40	<2	1 73	260				
0553	10	<20	20	<2	1 34	150				
0554	15	<20	60	<2	1 70	760				
0555	10	<20	60	<2	1 70	430				
0556	10	<20	45	<2	1 50	175				
0557	10	<20	50	<2	1 94	270				
0558	20	20	70	<2	2 4	640				
0559	110	120	100	<2	2 8	540				
0560	10	<20	55	<2	1 50	330				
0561	5	<20	50	<2	1 42	340				
0562	10	<20	50	<2	1 59	460	<20	<5	30	500
0563	10	<20	45	<2	1 39	340				
0564	10	20	45	<2	1 40	360				
0565	5	<20	10	<2	3900	15				
CHECK 0556	10	<20	50	<2	1 60	180				
0562	10	<20	50	<2	1 45	430				

GEOCHEMICAL RESULTS (PHASE 2)

KD N°	Cu(ppm)	Pb(ppm)	Zn(ppm)	Ag(ppm)	Fe%	Mn(ppm)	Ba(ppm)
0566	25	80	30	<2	0-15	10	200
0567	5	60	30	<2	0-17	10	220
0568	30	90	220	<2	0-74	10	220
0569	10	60	20	<2	0-29	10	240
0570	10	60	40	<2	4-8	80	60
0571	10	60	20	<2	0-84	10	100
0572	10	80	30	<2	0-98	10	100
0573	10	100	35	<2	3 3	35	80
0574	10	90	45	<2	1 8	45	260
0575	10	90	50	<2	2 5	40	250
0576	10	100	45	<2	2 4	35	240
0577	20	130	60	2	3 7	100	470
0578	10	90	30	2	9 6	170	380
REPEAT AND CHECK -							
0569	10	60	20	<2	0-28	10	260
0574	10	90	40	<2	1 8	45	270

NOTE.
This map has been compiled from enlargements of the Tasmanian Lands Department's aerial photo overlays

ANALYTICAL METHOD:
Cu, Pb, Zn, Ag, Fe and Mn by AAS following hot conc. $HClO_4$ leach for 1 hour at 0·25g sample
Au by Special low level CRA/AAS.
As by modified Gutzeit method.
Sn and Ba by Emission Spectrography Schemes, ES 2 and 3.

A.C.S. Laboratories Pty. Ltd.

5 cm

DATE: Oct., 1977
GEOLOGIST: M C R G L B
DRAWN: L G
CHECKED: M C R

GEOPEKO LIMITED
KING ISLAND GROUP

SCALE: 1 10,000

No. KT2/76-4C

E.L. 2/76 1356
LOONGANA, TASMANIA
DRAINAGE SAMPLE LOCATION MAP WITH GEOCHEMICAL RESULTS

KT2/76-1 | KT2/76-2 | KT2/76-3 | KT2/76-4 | KT2/76-5

Grid & Fork

Q36128 77-1239

405 000 E
407 000 E
409 000 E
411 000 E
413 000 E
5 425 000 N
5 423 000 N
5 421 000 N

LOYETEA PEAK
Rock Samples 0855 0856 0857 off sheet
PUFFERS TRACK
NATIVE CREEK
TIER

NOTE
This map has been compiled from enlargements of the Tasmanian Lands Department's aerial photo overlays

GEOPEKO LIMITED 286131
KING ISLAND GROUP

SCALE: 1" 10,000

No. KT2/76-1D

1357

E.L. 2/76
LOONGANA, TASMANIA
ROCK SAMPLE LOCATION MAP

5 cm

DATE: Oct, 1977
GEOLOGIST: M C R S L B
DRAWN L G
CHECKED M C R

KT2/76-1

KT2/76-5	KT2/76-2
KT2/76-4	KT2/76-3

©36128 77-1239

405 000 E
407 000 E
409 000 E
411 000 E
413 000 E
5 419 000 N
5 417 000 N
5 415 000 N
NELSONS CREEK ROAD
CRANE
RIVER
Mc HUGHS FLATS
LOONGANA RANGE
LOONGANA
FROSTS
LEVEN
ALSTERGRENS BRIDGE
FLATS
quarry
772
738
706
574
526
513
535
510
511
611
605
571
619
612
595
613
588
635
657
547
593
592
572
590
551
673
490
470
376
375
433
465
364
877
602
597
508
537
503
512
388
370

NOTE
This map has been compiled from enlargements of the Tasmanian Lands Department's aerial photo overlays.

GEOPEKO LIMITED
KING ISLAND GROUP
286132

SCALE: 1:10,000

No. KT2/76-2D

DATE: Oct, 1977
GEOLOGIST: M.C.R. G.L.B.
DRAWN: R.F.
CHECKED: M.C.R.

1358

E.L. 2/76
LOONGANA, TASMANIA
ROCK SAMPLE LOCATION MAP

5 cm

KT2/76-1
KT2/76-5 KT2/76-2
KT2/76-4 KT2/76-3

Q36 25 77-1239

397 000 E
399 000 E
401 000 E
403 000 E
405 000 E
5 415 000 N
5 413 000 N
5 411 000 N

ROAD
PLAIN
RIVER
RABBIT
BLYTHE
RIDGE
GRASSTREE
TWO HUMMOCKS
GRAVEL PIT
BLACK
LEVEN
ROAD
GRAVEL PIT
MARSH
BLACK MARSH
ROAD
BLACK MARSH
CREEK
HUT
ROAD
BLACK
MARSH
BURGHLEY PARK
RIVER
PARK
MIDDLESEX
WATTLE
ROAD
MEDWAY
ROAD
GRAVEL PIT
ROAD

NOTE
This map has been compiled from enlargements of the Tasmanian Lands Department's aerial photo overlays

GEOPEKO LIMITED
KING ISLAND GROUP
286133

SCALE: 1 10,000

No. KT2/76-4D

EL 2/76 1359
LOONGANA, TASMANIA
ROCK SAMPLE LOCATION MAP

5 cm

DATE: Oct, 1977
GEOLOGIST M C R G L B
DRAWN: L G
CHECKED M C R

	KT2/76-1
KT2/76-5	KT2/76-2
KT2/76-4	KT2/76-3

93/28 77-1359