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EL 2197

LAKE HARRIS

ANNUAL REPORTS TO LICENCE EXPIRY FOR THE PERIOD 13/9/96 TO 12/9/2000

Submitted by
John Cochrane, RGC Exploration Pty Ltd and Goldstream Mining NL
2000

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EXPLORATION PROGRESS REPORT

LAKE HARRIS PROJECT

EL2197

GEOLOGY, GEOPHYSICS AND GEOCHEMISTRY

Vol 1 of 1

REFERENCE NUMBER: 03039801

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27 January, 1998

PROSPECTS: Pachymoo

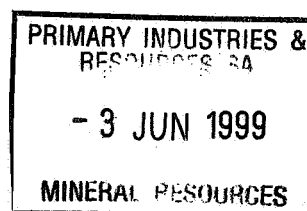
M.A.P SHEETS: 1:250,000:Gairdner 1:100,000:

GEOGRAPHIC COORDS	Min East:	516000	max East:	559000
	Min North:	6525000	max North:	6562000

COMMODITY(s):Au, Cu

KEY WORDS:Gawler Craton, South Australia, calcrete, gold, Olympic Dam-type mineralisation.
Distribution:

- o **RGC Exploration Information Centre Reference:**
- o **John Cochrane**
- o **Cu-Au WA**



SUMMARY OF ACTIVITIES

EL 2197 was granted to prospector John Cochrane in September 1996. RGC is in a joint venture with John Cochrane to explore EL 2197. The tenement is 1275 km² in area and covers Archaean to Early Proterozoic rocks within the Gawler Craton, South Australia. The oldest rocks include Gawler range volcanics which are intruded by mid-Proterozoic Hiltaba granite. The tenement was obtained to search for Olympic Dam-style mineralisation.

To date, a large proportion of the tenement remains untested due to extensive cover by tertiary sand dunes, silcrete and alluvial gravels.

Field work started in August 1997 with a gravity survey completed by Haines Surveys. The gravity survey was carried out on 1 km centres over the whole tenement excluding areas of salt lakes. Five hundred and forty calcrete samples were collected by auger on one kilometre centres. This was then followed up with 374 infill calcrete samples.

Results from the gravity survey were encouraging. A circular 1.4 mgal high approximately 3 km in diameter was outlined. This area is covered by silcrete and colluvium.

Calcrete samples over 5 ppb Au are considered anomalous. Follow up of the single point anomalies in the northern part of the tenement were disappointing however eight samples returned Au values greater than 5 ppb along the southern edge of the gravity high. The main features of this area include:

- 3 km by 3 km circular 1.4 mgal gravity high.
- coincident magnetic lineament cutting through the gravity high.
- coincident magnetic low zone inside the gravity high.
- low order Au anomalies concentrated at the southern edge of the gravity high that have a strong Cu and U correlation.

This target has many of the features associated with Olympic Dam-style mineralisation. Au anomalies associated with the gravity high warrant follow up with RAB drilling. A drill programme of approximately 30 RAB holes is proposed to test the target.

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 03039801.doc - copy of report
 Figures.exe - copy of figures used in report

1. INTRODUCTION

The purpose of this report is to document work done on EL 2197 between July and December 1997.

In recent years, the Gawler Craton has gained a lot of attention due to exploration successes of deposits such as Challenger, Tunkillia and Nuckulla Hill. These deposits appear to be mainly gold but potential also exists for Cu-Au deposits of Olympic Dam-type. RGC Exploration was offered EL 2197 by prospector John Cochrane in March 1997.

The Hiltaba granite which crops out within and around the margins of the tenement is host to mineralisation at Tunkillia, Nuckulla Hill and related to the Roxby Downs granite, host to Olympic Dam deposit. EL 2197 has remained relatively under explored because of the extensive tertiary cover. It was decided to enter the joint venture because of the high potential for Cu-Au deposits within EL 2197.

1.1. LOCATION AND ACCESS

The Lake Harris tenement EL 2197 is located about 20-60 km south of Kingoonya in the central Gawler Craton of South Australia. It falls in the southwestern corner of the Gairdner (SH53-15) 1:250 000 sheet.

The Kokatha area is semi-arid pastoral land, generally well drained with outcrop or shallow alluvial cover present. Dune fields cover the southern portion of the tenement. The licence area falls mostly within the Kokatha station pastoral lease, with the north eastern part of the tenement over the Coondambo pastoral lease.

Road access is good to most of the tenement, being serviced by the Kingoonya-Wirrulla road and numerous station tracks to bores and along fence lines. Access is restricted in the dune country by thick scrub and loose sand.

1.2. TENURE

Tenement EL2197 was granted to John Cochrane in September 1996 for twelve months. Total area of the tenement is 1275 km². RGC Exploration has entered a farm in deal which requires the expenditure of \$150 000 to complete stage one. Another \$500 000 must be spent to earn 60% of the project. Current expenditure is \$110 000.

2. REGIONAL GEOLOGY

The Lake Harris project lies within the Late Archaean to mid-Proterozoic Gawler Craton which underlies the greater part of South Australia (Figure 1). The oldest rocks in the craton are part of the Mulgathing Complex, a thick pile of sedimentary and basic volcanic rocks, ranging in age from Late Archaean to Early Proterozoic. These rocks were metamorphosed to granulite facies during the Sleafordian Orogeny (Late Archaean - Early Proterozoic). The rocks were intruded by the Glenloth

Regional Geology and Tenement Location

1 : 5 million

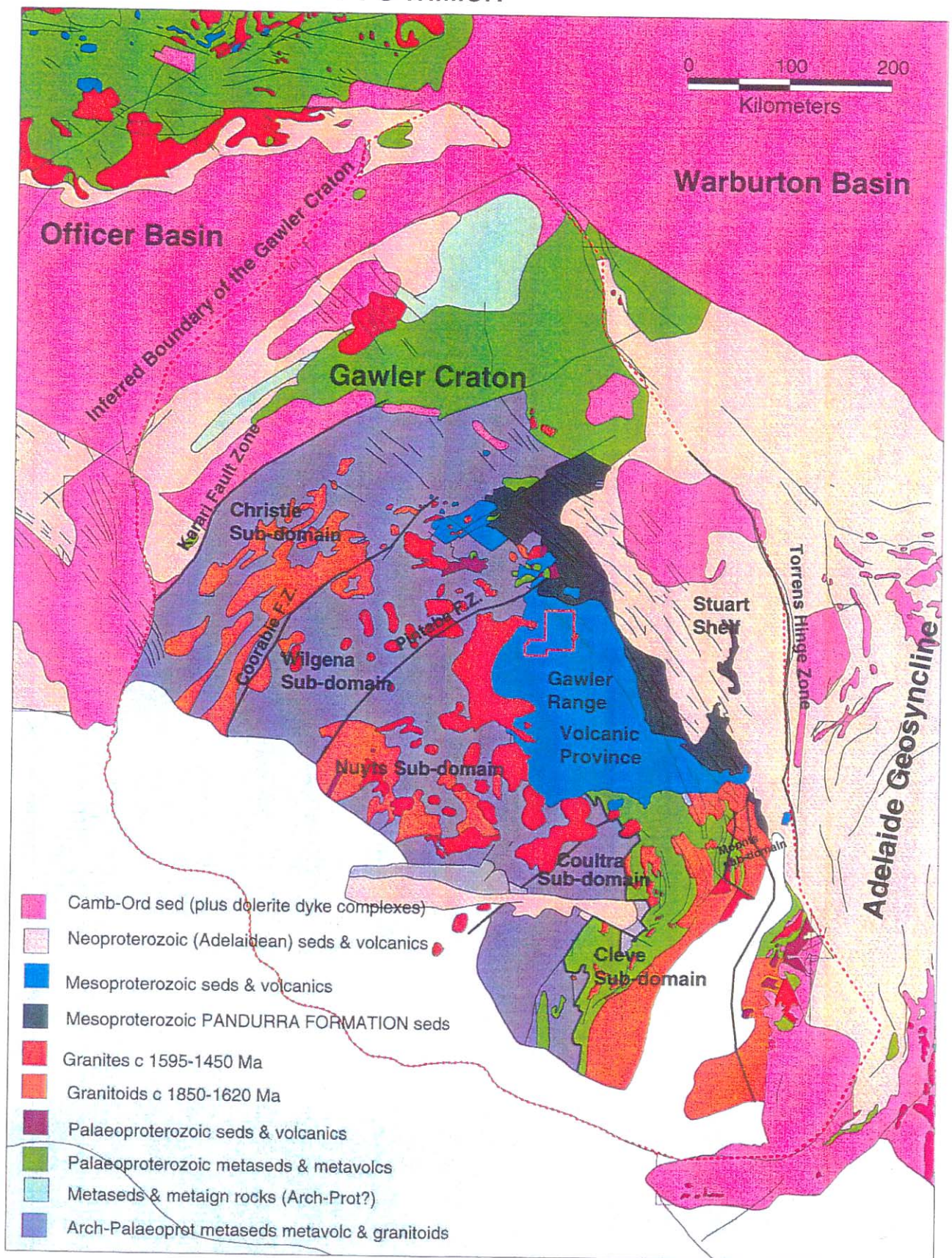


Figure 1

granite in the final stages of the orogeny at about 2300 Ma. Near Kokatha the sequence includes basaltic or spillitic pillow lavas intercalated with calcareous marine sediments which were altered to basic hornfels and calc-silicate hornfels.

The Gairdner sheet area was exposed to a prolonged period of erosion before the Kimban orogeny between 1800 M.a. and 1550 M.a. During the Middle Proterozoic the Gawler Range volcano-plutonic event (1590 M.a.) produced predominantly a calc-alkaline assemblage of dacite, rhyodacite and rhyolite, with subsidiary potassic andesite and tholeiitic basalt erupted subaerially over Late Archaean to Early Proterozoic rocks.

At 1480 M.a. the Gawler Volcanics and older rocks were intruded by a series of high level, discordant batholiths and stocks of the Hiltaba granite suite and by related dykes of rhyolite and rhyodacite. There is no obvious tectonic control to the distribution of the Gawler Range volcanics and associated Hiltaba suite granites other than that they form a nebulous ellipsoidal zone in the east-central region of the craton.

The Gawler Craton has undergone no substantial deformation except brittle minor faulting since 1450 M.a. It is divided into a number of tectonic sub-domains based on structural, metamorphic and stratigraphic character. The project area is within the Gawler Ranges Volcanic Province a relatively undeformed sub-domain, but more irregular in its distribution. It overlies the Cleve and Coultas sub-domains. The province contains Gawler Range volcanics, the Hiltaba supersuite, the Corunna conglomerate and the Labyrinth Formation.

3. LOCAL GEOLOGY

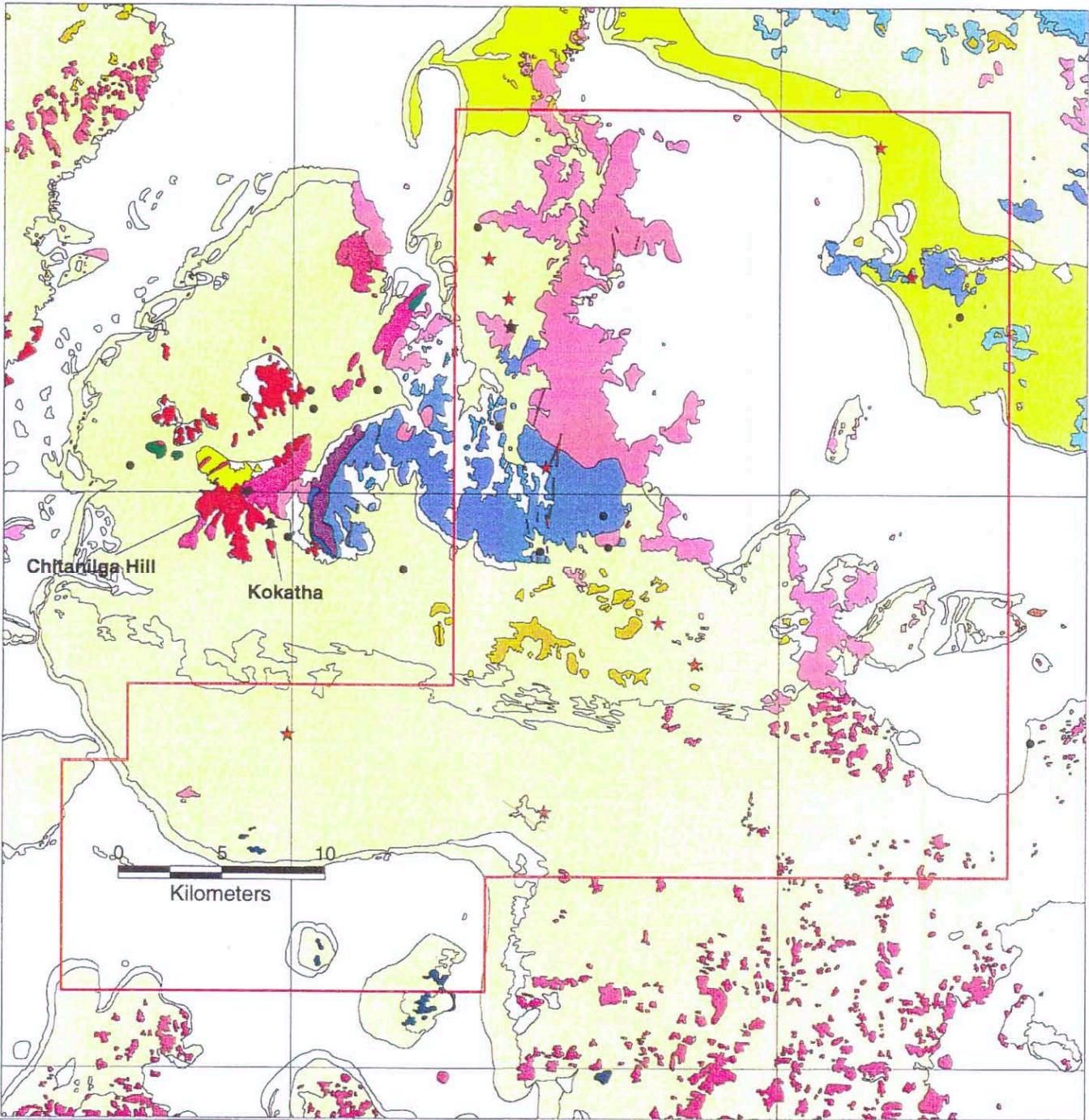
Rocks outcropping within the project area belong mostly to the Gawler Range Volcano-Plutonic Province (Figure 2). These rocks include the Chandabooka dacite which forms an irregular saucer-shaped structure some 15 km wide (west-east) and 10 km long, between Kokatha homestead and Lake Gardiner. On the east side of the structure the Chandabooka dacite overlies a gently undulating sequence of rhyolitic ignimbrites and flows (Lake Gairdner Rhyolite).

There is minimal outcrop of the Hiltaba granites within the tenement. The largest occurrence of Hiltaba granite is 7 km west of the tenement near to Kokatha station. The Hiltaba granites consist of leucocratic unfoliated pink to reddish brown medium to coarse-grained potash granite grading to adamellite. The Hiltaba granite is highly fractionated and enriched in Th, U, Rb and REE. Intrusive contacts between dacite west of Kokatha show no metamorphism only slight induration and incipient recrystallisation.

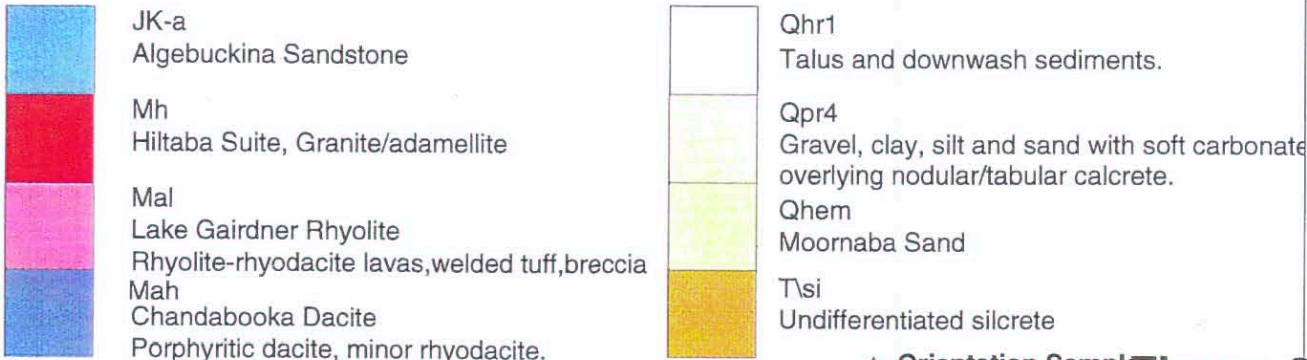
The Mesozoic Algebukina sandstone crops out within the north eastern part of the tenement and unconformably overlies volcanic rocks. It is a poorly sorted, pale grey quartzose sandstone and pebbly grit with some conglomerate beds. Logs of water bores sunk to the north of Lake Gairdner indicate a maximum thickness of 15 m.

Forty percent of the tenement is covered by salt lakes. There is also extensive cover by Quaternary alluvial sands and gravels in the southern portion of the tenement.

Geology and Orientation Sample Locations



Geology 1:100 000 Interpretation



★ Orientation Sample **Figure 2**

4. PREVIOUS EXPLORATION

A review of all exploration covering the Lake Harris EL was undertaken. Companies in the past have focussed on outcropping areas such as the Chandabooka caldera just to the west of EL 2197.

Mines Exploration Pty Ltd (1980) was granted EL 548 to search for epithermal Au mineralisation associated with caldera structures. Lesser priority was given to exploration for base metals associated with Archaean marine basalts. After ground reconnaissance and geophysical interpretation was completed, no evidence of alteration or mineralisation was discovered in or around the Chandabooka Caldera.

The Utah Development company held title over Chitanilga Hill and Clucas Hill with Els 824 and 759 respectively in 1981. They complete 35 km of traverses, collecting 681 rock samples and 28 stream sediment samples. They located some minor Au anomalism they believed to be attributed to narrow quartz veins produced during intrusion of the Hiltaba granites into overlying volcanics.

BHP Gold Pty Ltd held title over the Kokatha area under EL 1505 and 1504 from 1988 to 1990. Stream sediment sampling using bulk cyanide leaching techniques discovered some low order gold anomalies that were non repeatable in follow up sampling. After three stream sediment programmes including 80, five kilogram, -2mm samples, BHP decided to relinquish the ground.

CRAE Ltd. was granted EL 1641 in 1990 for one year. The EL covers most of the outcrop from Chitanilga Hill east to Lake Gairdner. A stream sediment programme totalling 226 samples produced three Au anomalies. Follow up of the anomalous areas found no further signs of mineralisation. After a review of the geophysics the ground was relinquished in September 1990.

5. EXPLORATION STRATEGY

There are no reported occurrences of mineralisation within the tenement, however potential exists for a number mineralisation styles. There are three main types of targets which include:

1. Proterozoic iron oxide breccia mineralisation (Ernest Henry - Olympic Dam-style Cu-Au)
2. Structurally controlled gold mineralisation hosted in mid-Proterozoic granites (Yarlbrinda Shear Zone, Tunkillia and Nuckulla Hill)
3. Structurally controlled gold mineralisation hosted by Archaean rocks (Challenger-style).

With the above mineralisation styles in mind an exploration strategy has been outlined below.

- A review of the MESA high resolution aeromagnetic data to establish a regional geological framework and define structures.
- Define magnetic highs that are possibly related to magnetite and hence oxidised hydrothermal systems or magnetic lows possibly due to haematite alteration.
- A gravity survey was conducted primarily to search for highs that may indicate mineralised breccia systems (Olympic Dam-style), and alteration systems.
- Calcrete sampling was used locate anomalies and follow up with infill sampling to define drill targets.
- RAB/aircore drilling will be used for initial testing of anomalies to base of weathering (~50m).

6. GEOPHYSICS

6.1. AEROMAGNETICS

The aeromagnetic survey was flown in March-May 1993 by World Geoscience Corporation using a fixed wing aircraft, flying at a terrain clearance of 80 m, on 400 m north-south orientated flight lines (Figure 3).

A qualitative interpretation of the magnetic data over Lake Harris project has been completed by Southern Geoscience Consultants prior to RGC Explorations involvement in the project. The report suggests the area is underlain by Mulgathing Complex basement and Hiltaba suite rocks. There are a number of large lineaments on the aeromagnetic image. The most interesting pair strike approximately east west across the tenement in covered areas. These lineaments are aeromagnetic lows and interestingly the lineament widens within the gravity anomaly. This large magnetic low may be a result of haematite surrounded by magnetic alteration system. Hiltaba granites to the east of Kokatha, border the magnetic lineament and are elongate in distribution suggesting that this structure was active during emplacement of the granites.

6.2. GRAVITY

Gravity data was collected by Haines surveys on one kilometre centres covering 65% of the tenement. The data has been corrected in house for regional and bouguer effects.

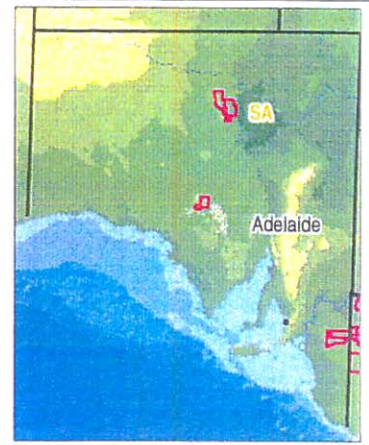
The dominant feature of the gravity survey is a circular 1.4 mgal anomaly which is approximately 4 km in diameter and lies in the centre of the tenement (Figure 4).

Whether the gravity high is related to an intrusion at depth is unclear. There are a few factors that support this possibility:

- The first is the circular shape of the discrete anomaly.
- The fact the anomaly is coincident with two large east-west striking magnetic lineaments is encouraging. Hiltaba granite crops out to the east and west of these lineaments which may have been active during granite emplacement.
- The correlation of U with Au which only occurs in this area.
- The presence of thin quartz veins in saprolite nearby has been noted elsewhere in volcanics close to the intrusive contact between Hiltaba granite and volcanics.

7. CALCRETE AND SOIL SAMPLING

Three surveys have been completed during the months of September through to November 1997. A small orientation survey of 15 samples was followed by a regional calcrete survey of 540 samples and a infill programme totalling 374 samples. The orientation survey was primarily designed to determine the nature of regolith, calcrete types and distribution.



Lake Harris Aeromagnetic Survey First Vertical Derivative

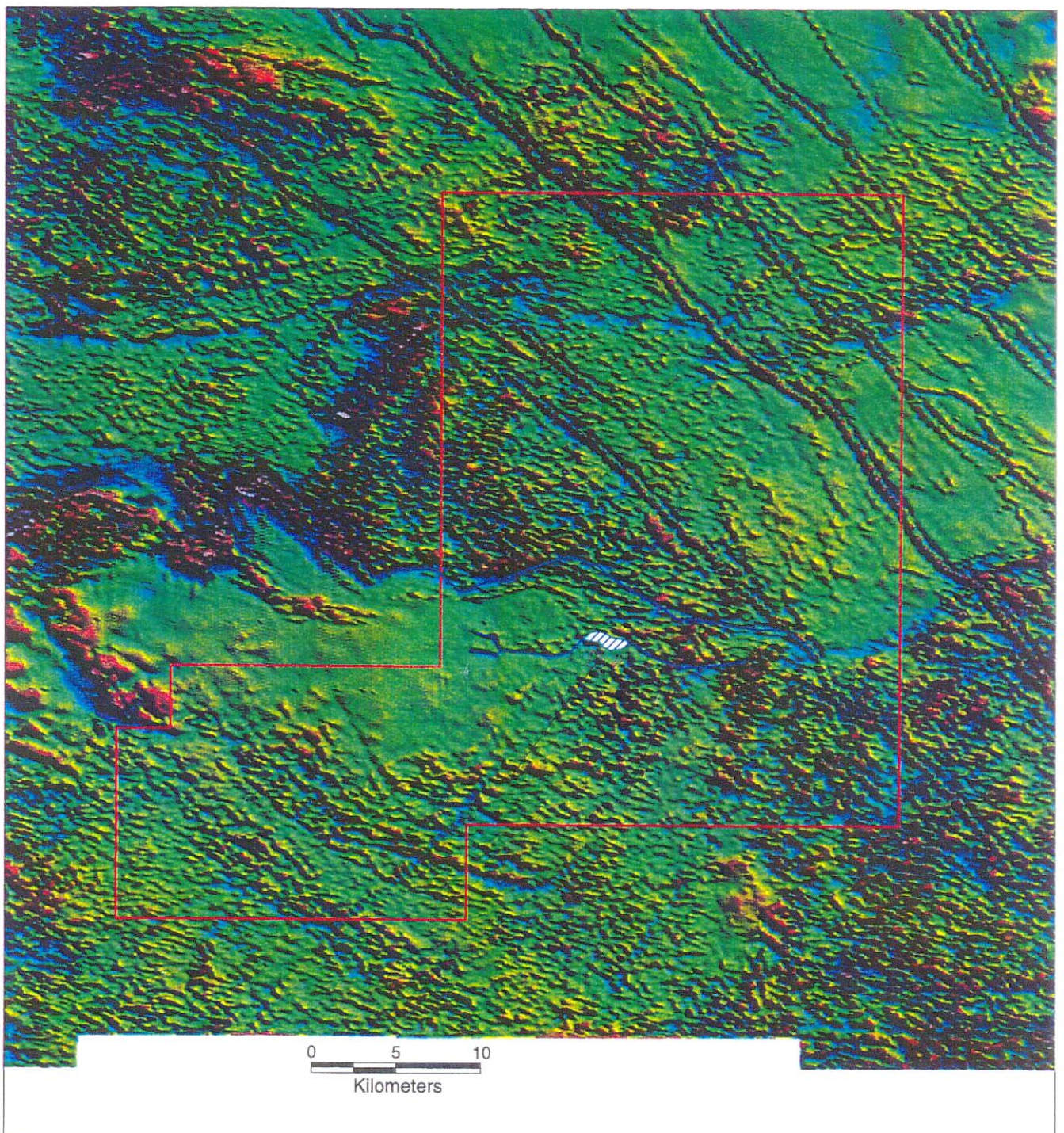


Figure 3

Lake Harris Gravity Survey

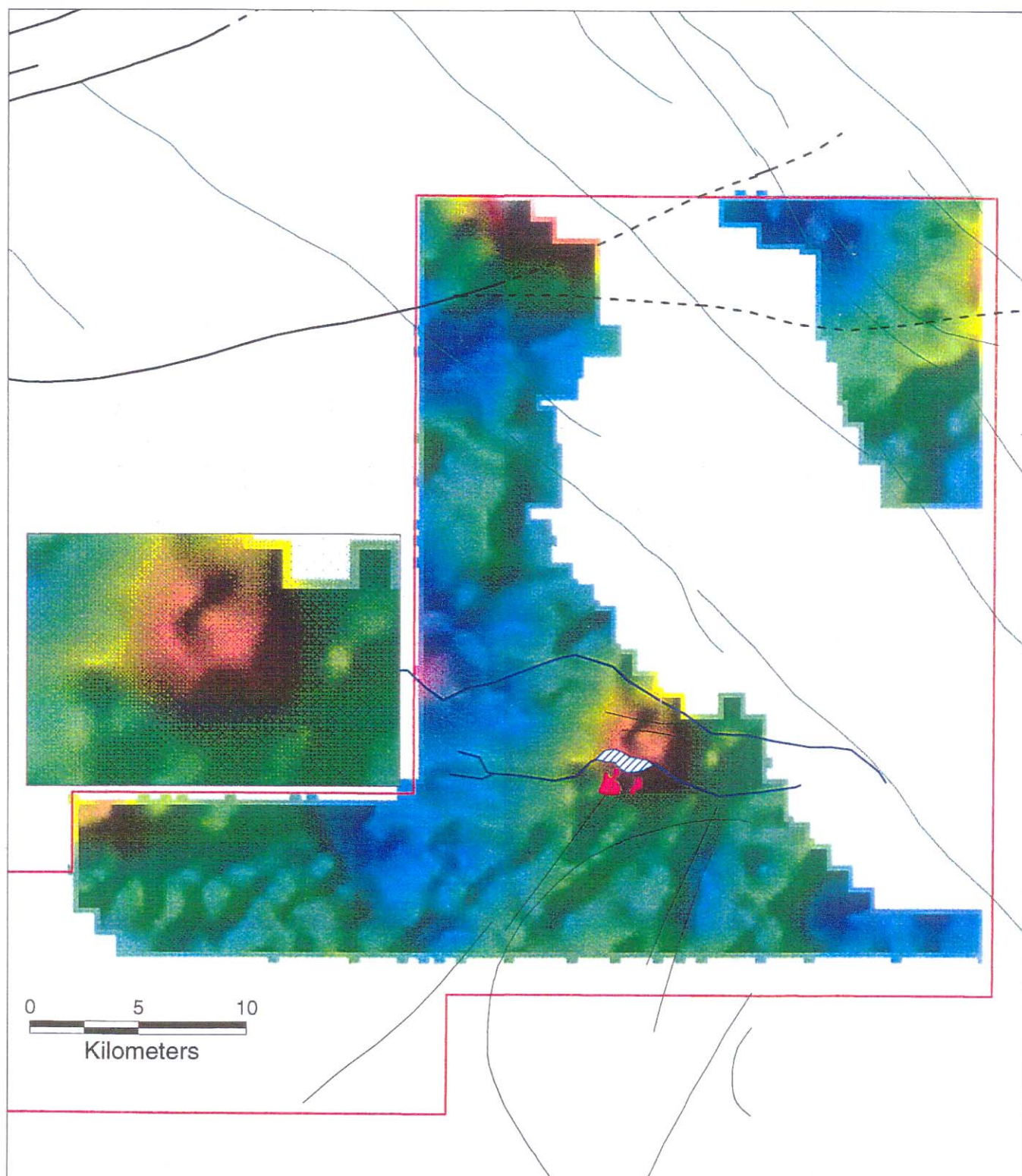


Figure 4

7.1. REGOLITH AND LANDFORM

The Lake Harris tenement contains at least six main landforms including sand dunes, outcropping volcanics, colluvium, alluvium, silcrete and salt lakes. The salt lakes cover approximately 40% of the tenement leaving the other 60% available for sampling. There are no drill holes within the area to help gain an understanding of the regolith.

I have divided the tenement into a number of domains based on landsat and field data. These domains include areas of outcropping volcanics and their colluvium, silcrete and silcrete colluvium, alluvial wash and sand dunes. Sand dunes can be further subdivided into vegetation domains thick, moderate and scarce vegetation. Vegetation density can be recognised on the landsat 741 image. Areas with poor quality or no calcrete generally correspond to the lighter areas on the image. These areas have a no overstorey of trees, generally grass and shrubs.

Outcropping silcrete forms mesas above the alluvial plains. The alluvial areas are made up of a mixture of weathered volcanics and silcrete. Calcrete type and distribution differs dramatically with each domain thus complicating the interpretation and comparison of geochemical results.

7.2. CALCRETE CLASSIFICATION

The Calcrete was classified on physical characteristics into seven types:

1. Nodular calcrete: 10mm to 100mm diameter often rounded to elongated calcrete with concentric rings.
2. Massive calcrete: often thick (20cm) layer of calcrete. Occasionally with laminar bands formed around rock fragments.
3. Sand calcrete: Sand cemented together with a carbonate cement.
4. Clay calcrete: Clay mixed with carbonate cement.
5. Angular calcrete: Generally flinty chips of white calcrete.
6. Casilcrete: Silcrete with carbonate in fractures or carbonate cement with silcrete matrix.
7. Powdery calcrete: Flour like calcrete

7.3. CALCRETE DISTRIBUTION

Depth to calcrete varied from 0.1 m to 6 m, the latter being in the sand dunes and the former common in all the other landforms. Calcrete is found over most of the tenement except in areas of outcrop and within parts of the sand dunes. The best indication for the presence of calcrete at depth is blue bush. A positive empirical relationship between the height of blue bush and the thickness of calcrete exists.

7.3.1. Sand Dunes

Calcrete type varies within the dunes between nodular and sandy calcrete. Generally older more established dunes contained calcrete. The older dunes have a well developed overstorey of trees such as Mulga Scrub and Northern Cyprus Pine (*Callitris glaucophylla*) and sheoak. The troughs often have some clay material mixed in with the sand. Younger dunes characterised with wattle trees and grass often have no calcrete. Nodular calcrete was mostly present at the interface of the sand dunes and the alluvial terrains.

7.3.2. Outcropping volcanics

Calcrete is developed in thin soil cover over the volcanics and generally it forms best in areas of high ground water flow such as creeks. Massive calcrete is common in the thinly developed soils above volcanic rocks.

7.3.3. Outcropping silcrete

Massive calcrete and/or casilcrete is common in thinly developed soils above silcrete outcrop. The massive calcrete develops approximately 5 to 10 cm below the surface.

7.3.4. Colluvium

Casilcrete is common in colluvium sourced from silcrete and angular calcrete from colluvium below volcanics.

7.3.5. Alluvium

The casilcrete is common in alluvium developed from the erosion of silcrete and angular to massive calcrete is common in alluvial material developed from the erosion of volcanics. Clay calcrete develops in wet boggy areas around the volcanics.

7.4. REGIONAL CALCRETE SURVEY

The first pass regional calcrete survey was carried out on a one kilometre square grid (Figure 5). There are a number of reasons for choosing a widely spaced sampling pattern. These include:

- Tunkillia and Challenger deposits were both found on 1.6 km square grid. It has been shown that gold anomalies above these deposits are broad. The discovery sample at Challenger was 180 ppb but neighbouring values ranged from 3 to 7 ppb.
- The cost factor also contributed to the choice of sample spacing as halving the spacing quadruples the amount of samples to collect.
- The recently completed gravity survey over Lake Harris tenement was completed on one kilometre centres. This provided accurately located sample sites for the calcrete survey.

Half the calcrete sampling was carried out by McLeod Drilling and Exploration. They worked mainly in the sand dunes and RGC Exploration completed the rest of the survey.

7.4.1. Sample Weight and Screening

Approximately 1-2 kg of calcrete was collected and sieved to +2 mm. The sieving discards mostly sand and upgrades the calcrete in the sample. In some areas where the calcrete is actually within the fine fraction a bulk sample was collected. Grain size was logged as fine (<4 mm), medium (4 mm-1 cm) and coarse (>1 cm). Ten percent hydrochloric acid was used to give an indication of the amount of calcrete in the sample.

7.4.2. Sample and data collection

Most samples were collected using a Toyota mounted auger rig or occasionally by shovel. Care was taken with auger to prevent drilling through thin calcrete to quickly, otherwise it may be missed. The shovel was used in areas of near surface thinly developed calcrete.

Information relating to the sample was collected on HP Palm top computer and down loaded each night. A database screen was set up in the palm top to collect all the relevant data (Appendix 1). The database function is powerful because it allows the user to customise sample information



Sample Locations

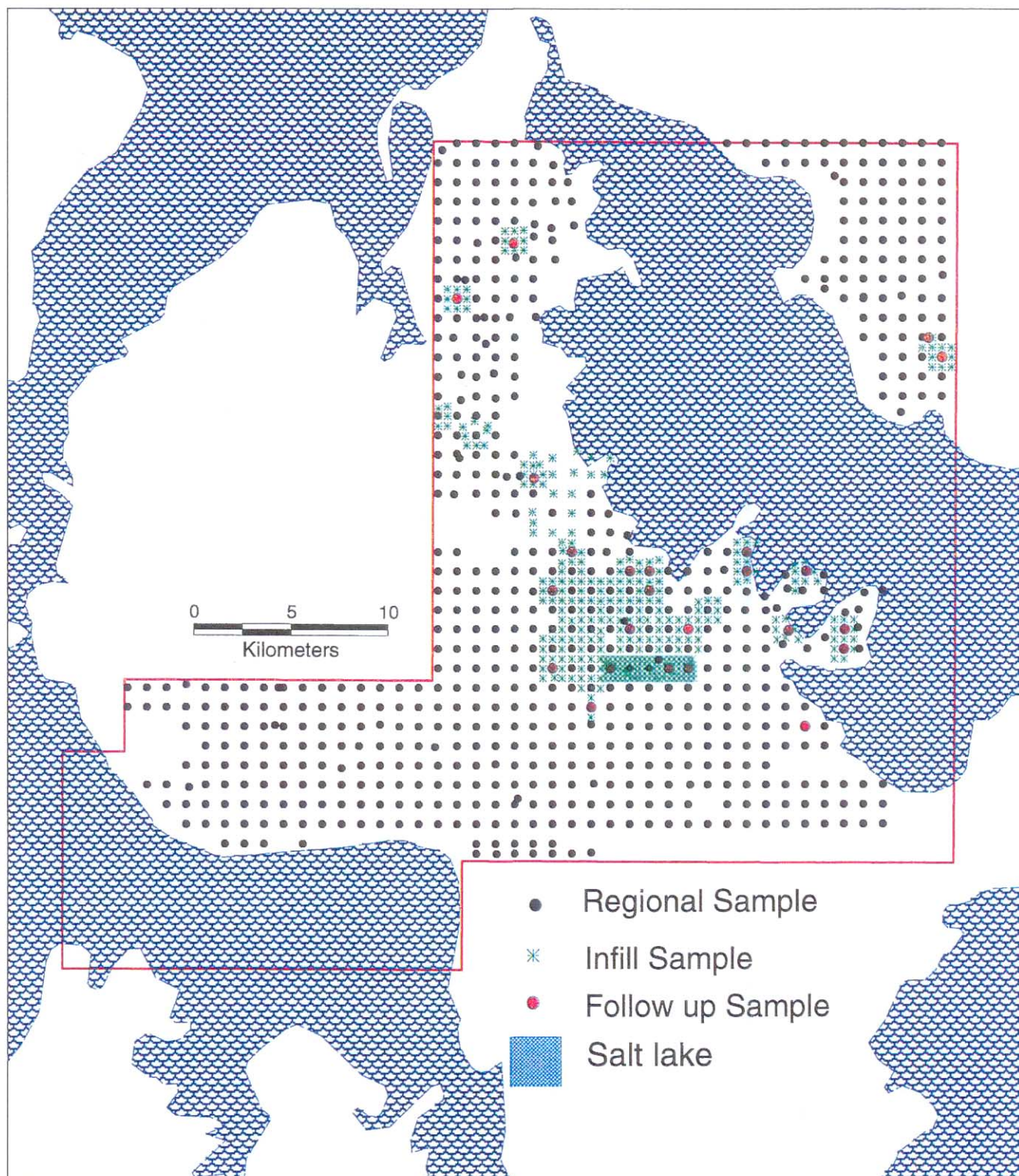


Figure 5

collection screen to the individual programme without the use of cumbersome codes. Consistency of information was improved by using a standardised form on the palm top.

7.4.3. Analytical Techniques

Samples were sent to AMDEL in Adelaide for processing. All samples are dried and totally pulverised until at least 80% was less than 75 microns. For the Acid digest a portion of the sample is dissolved in a heated aqua regia, which is swirled to promote dissolution. A test tube of containing 10ml of solution is read by optical emission spectrometry. Approximately 1ml of this liquor is extracted and diluted and read by ICP mass spectrometry for W, U, Se and Te. Samples from the infill programme were read by ICP mass spectrometry for Bi(0.1), Cd(0.1), Co(0.2) and Sb(0.1) as well to obtain a lower detection limit.

TABLE 1. ANALYTICAL PROCEDURE

AMDEL System No: A970906

<u>Element</u>	<u>Digest/Extraction</u>	<u>Analysis</u>
Au(0.05), Ag(0.05)	Cyanide leach	ICP mass Spectrometry (BLEG1C)ppb
Ag(0.5),As(1),Bi(5),Cd(1), Co(1),Cr(2),Cu(1), Fe(0.01%), Mn(5), Mo(1), Ni(1), Pb(3), P(5), Sb(5), V(1), Zn(1), Ca(0.01%), Mg(0.01%)	Acid digest	ICP -(IC2EC)ppm Optical emission Spectrometry
W(0.1), U(0.02), Se(0.5), Te(0.2)	Acid digest	ICP mass Spectrometer(1C2M) ppm

7.4.4. Analytical Results and Interpretation

Five samples out of the 540 contained Au greater than 5 ppb with a peak value of 7.2 ppb. Although the results are low it is not unusual to get some low order anomalies on a broadly spaced grid.

It is demonstrated within the literature that gold and calcium are enriched within calcrete. As calcium content rises so does Au. An X-Y graph (Figure 6) of Au ppb vs Ca pct shows a reasonable straight line correlation. The anomalous gold values plot above the main trend and lie within their own group. This group of 26 samples was selected for the infill programme. Not all the samples have high gold but were separate from the main population trend. A high Ca low gold population also exists away from the main trend.

Calcrete could not always be found within the sand dunes. Gold and calcium values were much lower in samples from the sand dunes.

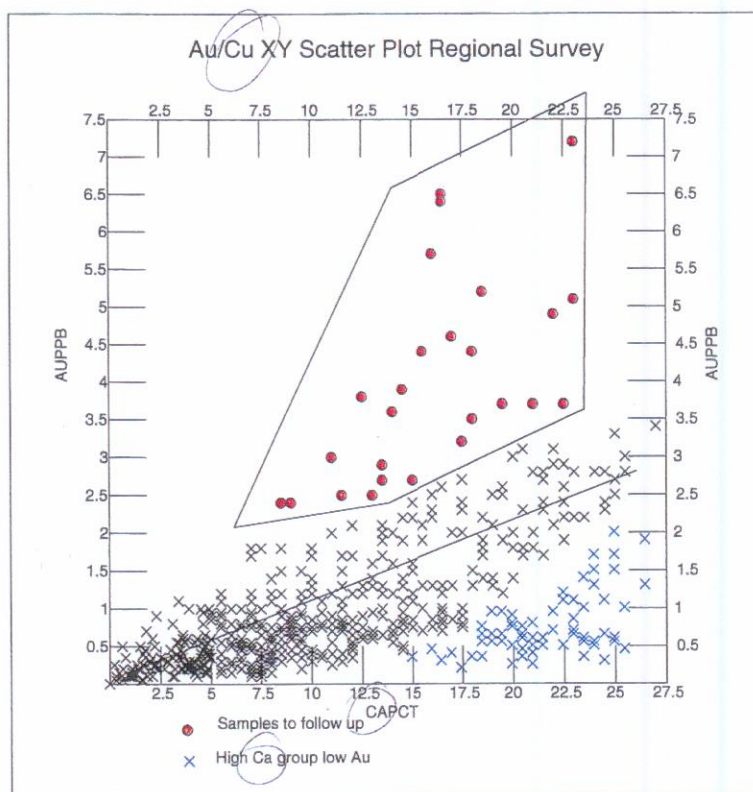


Figure 6

7.5. INFILL PROGRAMME

The two most interesting regional gold anomalies are those associated with a 1.4 mgal high gravity anomaly. There is a coincident east west magnetic lineament that cuts through the gravity high. This magnetic lineament corresponds with outcropping granite to the east and west and thus may indicate a continuation of Hiltaba granite beneath the gravity high.

To test this area a 250 m spaced grid was planned. For all other isolated gold anomalies the grid was infilled to 500 m including resampling of the original anomalous sample site.

7.5.1. Sampling Method

The sampling method was the same as the regional programme. In this programme infill holes were marked with a pink paddle marker with the sample number written on the paddle. A piece of flagging tape was tied to a tree near to the sample site. All sites were located with a Omnistar differential GPS to 5 m accuracy. Data was collected on a HP palm top as before.

Analytical method remained the same for all elements as the regional samples except for Bi, Cd, Co and Sb which were measured using a mass spectrometer to a lower detection limit.

Our sampling rate was dramatically increased with the use of a extra cut down rod which meant we could drill up to 2m without a rod change. This effectively reduced our rod changing by 80% saving us 5minutes on each hole.

7.5.2. Analytical results

Out of the 374 samples taken seven have Au greater than 5 ppb. Six of these samples lay inside the 250 m grid area (Figure 7). The peak value was 6.6 ppb Au.

Sampling around isolated anomalies north of the 250 m grid did not return any anomalous Au. Samples around many of the isolated gold anomalies are situated near interpreted dolerite dykes which may explain the higher background gold values.

7.5.3. Duplicate Samples

Thirty five duplicate samples were collected at random. The duplicates repeated well for all the elements (Figure 8). However there are some discrepancies within the higher grade gold samples. A series of graphs plotted with Au, Cu, Ca, and Mg against duplicate numbers follow. Series one was sorted on increasing Au grade. The graphs indicate the widening gap between Au values as the Au grade increases. As this discrepancy is not reflected in the Ca values it may indicate an analytical problem for Au.

7.5.4. Resampling

Twenty three sites were resampled in the infill programme (Figure 9). The blue line indicates regional samples and the pink line indicates infill results. Resampling results highlight a problem of repeatability between batches. The infill results for Au and Mg are almost all lower, however the shape of the blue and pink lines are similar within each element. Cu repeats well and Ca is erratic, however the infill results also tend to be lower.

7.6. DISCUSSION OF RESULTS

Relationships between the different elements were interpreted using GAS software and with the use of correlation tables in Microsoft Excel. A correlation table exists for each regolith/landform domain. These tables are calculated for all samples and for infill results alone (Appendix 2).

The infill programme confirmed the anomalism coincident with the gravity high. A cluster of gold values higher than 5 ppb occur at the western end of the 250 m grid (Figure 7). This area is dominated by silcrete outcrop and colluvium. Silcrete areas have a higher background level of Au at 2.4 ppb compared to a regional value of 1.3 ppb. The higher gold anomalies can not be a factor of upgrade in the calcrete because Ca values are relatively low and show no positive correlation with Au. Samples from this area have a significant Au-Cu-Ni-Mg-U and weak Zn correlation (Appendix 2). There is no correlation of Au and U in any other area of the tenement however the U correlation may be explained by the upgrading effect within the silcrete. The U levels are not high in the silcrete areas but the same processes that may be concentrating the gold could be concentrating the U.

The summary map of Au anomalies (Figure 10) shows that gold is concentrated around the southern edge of the gravity high and just south of the magnetic low. This may reflect the real position of gold mineralisation below. The reason why no anomalous gold is found over the central and northern part of the gravity high may be explained by the presence of an alluvial fan. In this area Landsat image of bands 7, 4 and 1 show a large alluvial fan spreading over the northern part of the gravity anomaly. This may mask any anomalous gold beneath the transported fan and explain why Au is only found along the southern edge of the gravity high.



Calcrete Sampling Au ppb Results

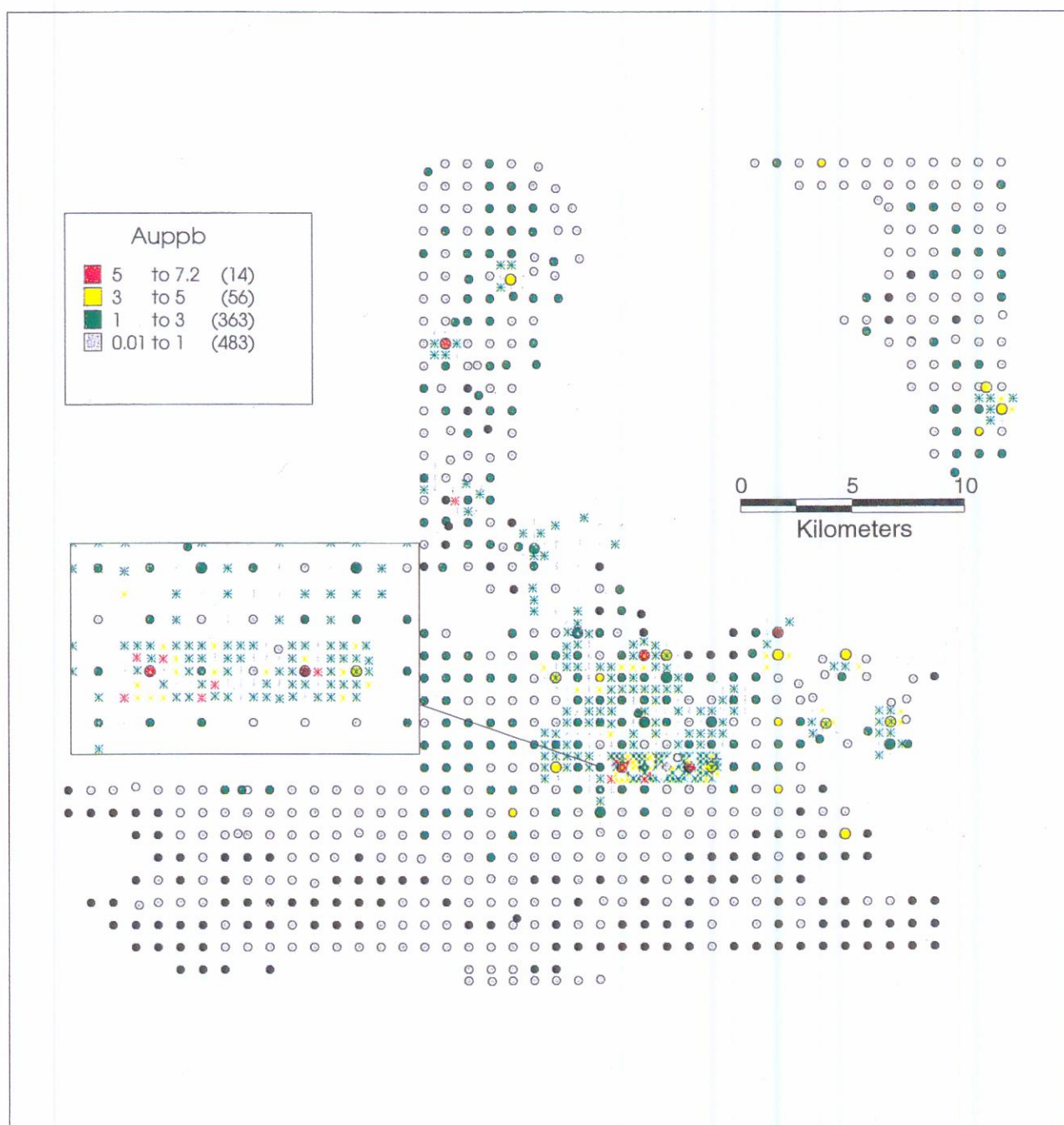
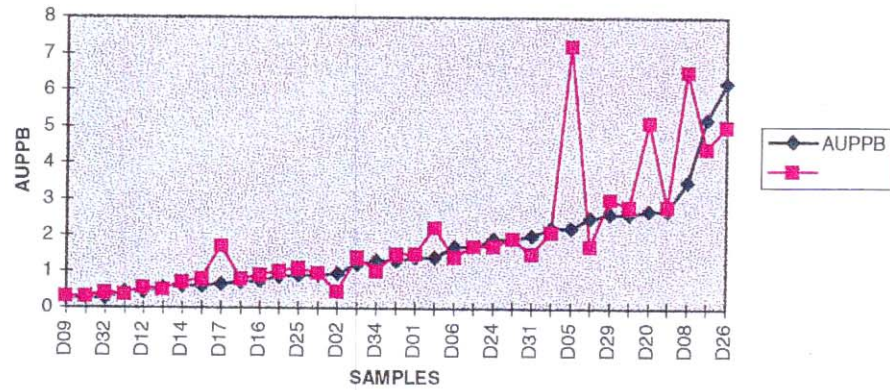


Figure 7

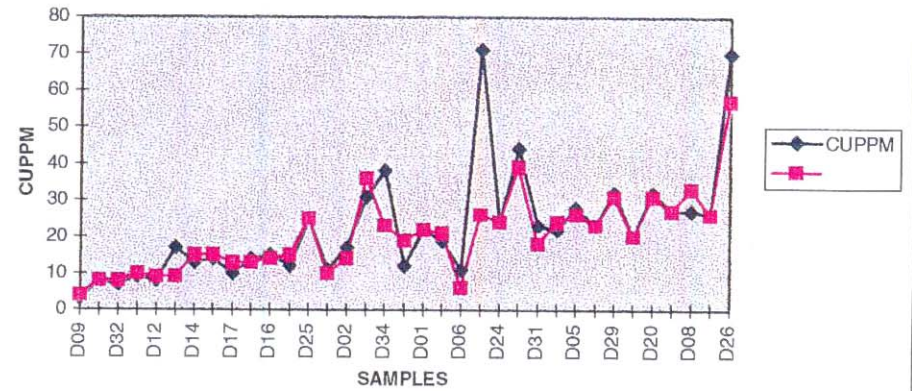
DUPLICATE RESULTS

Data sorted by Auppb

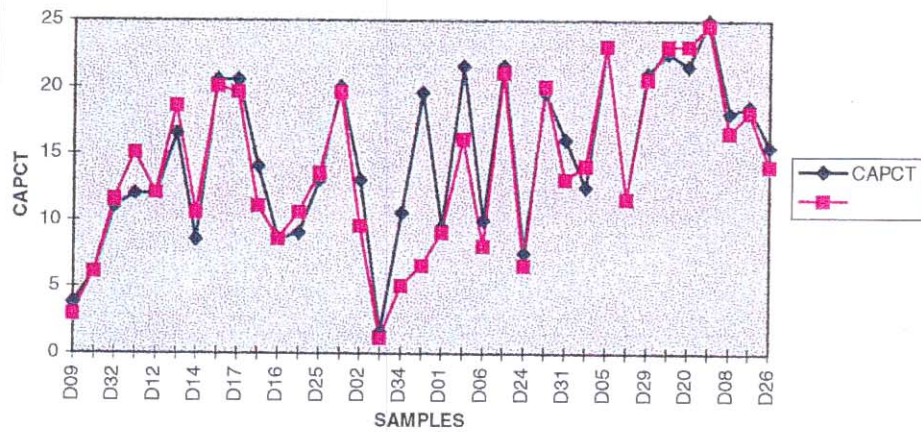
AUPPB DUPLICATES



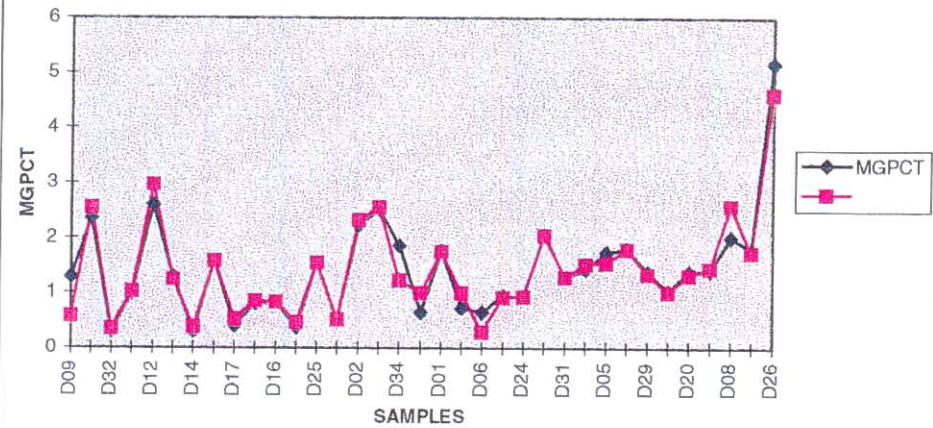
CUPPM Duplicates



CAPCT Duplicates



MGPCT Duplicates

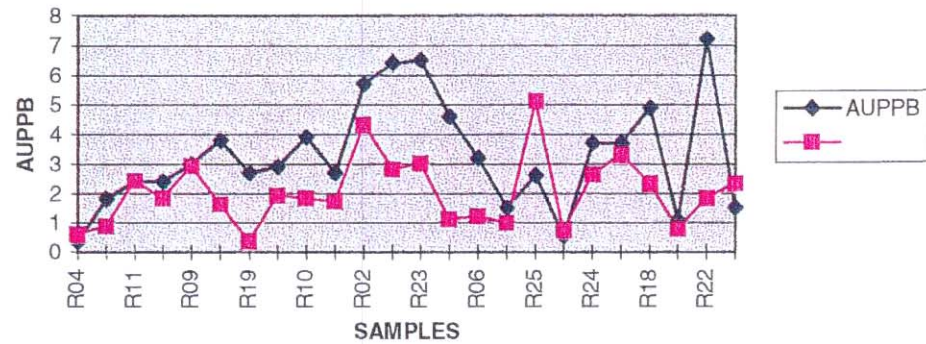


RESAMPLING RESULTS

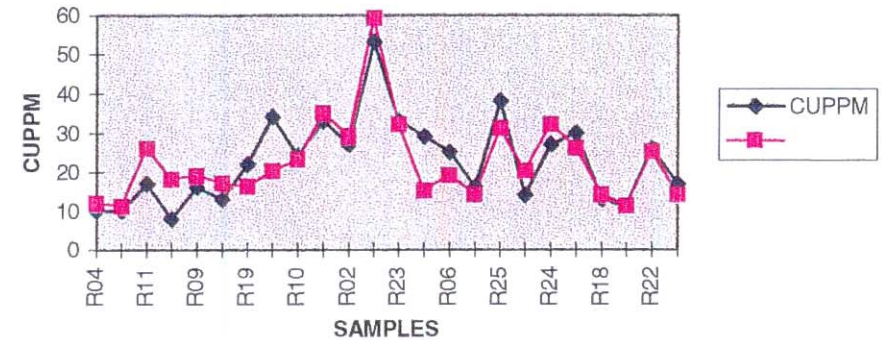
Samples sorted by Capct grasde.

Series 1 Regional sample, Series 2 follow up samples

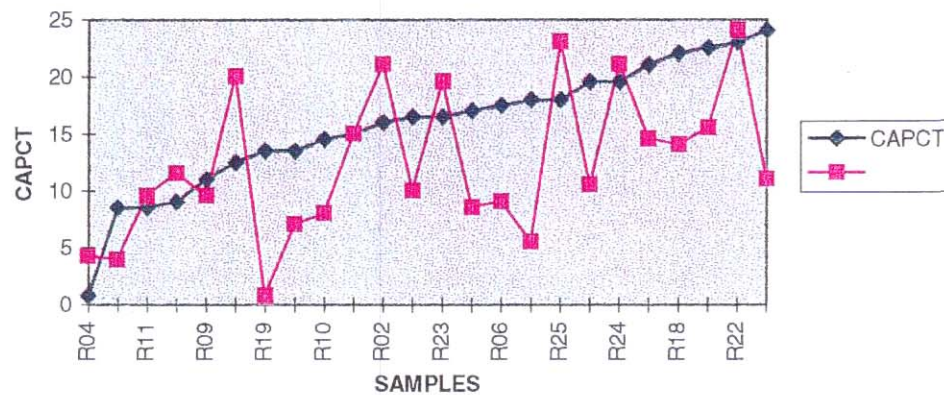
AUPPB RESAMPLE



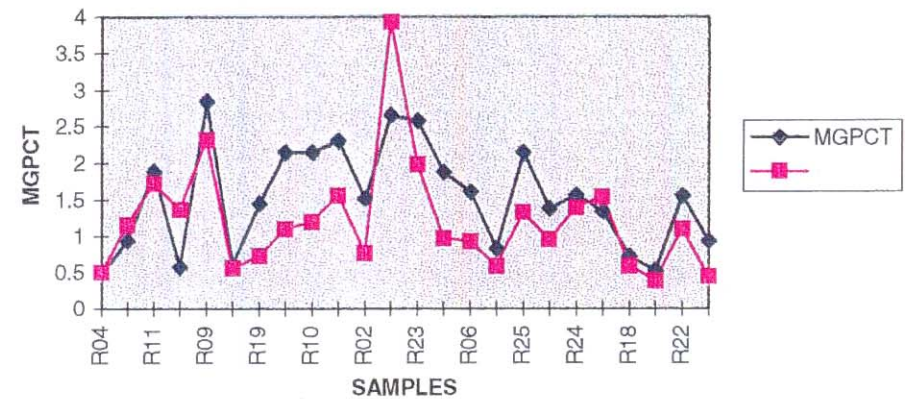
CUPPM RESAMPLE



CAPCT RESAMPLE



MGPCT RESAMPLE



The effect of different regolith/landform types on gold content in calcrete is unclear. No obvious scavenging effects are evident by metals such as Mn and Fe. The greatest impact on gold content is related to the Ca content of the calcrete. Sandy calcrete has a low Ca value which may explain lower Au values associated with sand dunes. Plot of calcrete type vs Au and Ca shows massive and angular calcrete have higher background levels in these elements than the rest. Nearly all the anomalous gold values are within the angular and massive calcrete. This is not totally explained by the high background Ca as several of the samples have only moderate Ca levels. Nodular calcrete has high background Ca but little Au. Sand calcrete and clay calcrete have low levels of Ca and Au

Correlation tables indicate a good regional correlation between Au and Ca, Mg, Cu. The Au-Cu correlation is particularly good. The anomalous Au group plot as a discrete population on graphs of relative frequency for Au and Cu and their logs.

Vanadium is highest within the volcanics and correlates well with Fe. Mn is highest within the volcanics and has a high correlation with Zn.

8. ROCK SAMPLING

Three rock chip samples were taken. Samples were analysed using the same method as describe for calcrete samples. Full details of location and results for these samples are in the data base (Appendix 3)

Two samples (Nos 275667 and 275668) came from within the 250 m grid area. A depression about 200 m² was discovered in an otherwise featureless area. There are two main rock types outcropping within this depression. Both were extremely weathered. The first rock type is green and pink saprolite with relict quartz and feldspar crystals. The texture was granitic however the lack of ubiquitous quartz suggest to me that the rock was once a volcanic. The other rock type is a fine grained grey saprolite that was soft and weathered possibly due to chlorite alteration. This rock had a well developed schistosity striking north south with a subvertical dip. Thin (1cm) quartz veins were parallel to the schistosity. Samples were taken of both these rocks for analysis, however no anomalous Au was found. Quartz veins have been mapped in volcanics near to intrusive contact with Hiltaba granites. Quartz veins observed here may indicate a granite intrusion close by.

Sample No. 275658 was from an outcrop of lake Gairdner rhyolite near Monte's Well. The rhyolite is altered by sericite and some Fe staining. Au value returned was 5 ppb. Calcrete samples nearby were not anomalous in Au.

9. CONCLUSIONS AND RECOMENDATIONS

9.1. TARGET AND CONCEPTS

Multi-disciplinary exploration work in the Lake Harris project has proven extremely successful and has generated a high priority grass roots follow-up target. By itself calcrete sampling has created no obvious areas to follow up however, a cluster of Au anomalism at the southern edge of the gravity high is interesting for a number of factors, these include:

- The gravity high may be an intrusive breccia complex.



Summary Map of Anomalies at Lake Harris



Figure 10

- The distinct magnetic low within the gravity high may represent magnetite destruction by haematite (OD) and,
- The strong correlation of Au with Cu and U indicates again an Olympic Dam-style of mineralisation.

9.2. DRILLING BUDGET AND LOGISTICS

A small programme of drilling is suggested to test for mineralisation. This area of anomalism is now referred to Pachymoo prospect which means 'why' in Russian.

The budget left for drilling is limited at about \$40 000 this could only support a relatively small drilling programme of RAB or aircore holes drilled to approximately 30 to 50 m in depth. A water bore within 3 km of the prospect intersects the water table at 30m. There is also some outcropping saprolite at the southern end of the gravity high. Three lines of nine holes each are proposed. These lines will traverse the Au anomaly as well as the magnetic low and gravity high. Figure 11 shows a plan of drill holes for the target area. Twenty seven holes approximately 30 - 50 m would give a total of 1000 m of drilling.

10. REFERENCES

BLISSETT A.H, PARKER A.J, SCHEFFLER J, 1989, Gawler Range Excursion October 6-9th 1989. MESA.

DREXEL, J.F, PREISS, W.V, PARKER, A.J, 1993, The Geology of South Australia, Vol 1, Precambrian. MESA.

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NEWTON, A.W, 1996, Mineral Exploration and Development in South Australia. MESA.



Proposed Drilling at Lake Harris

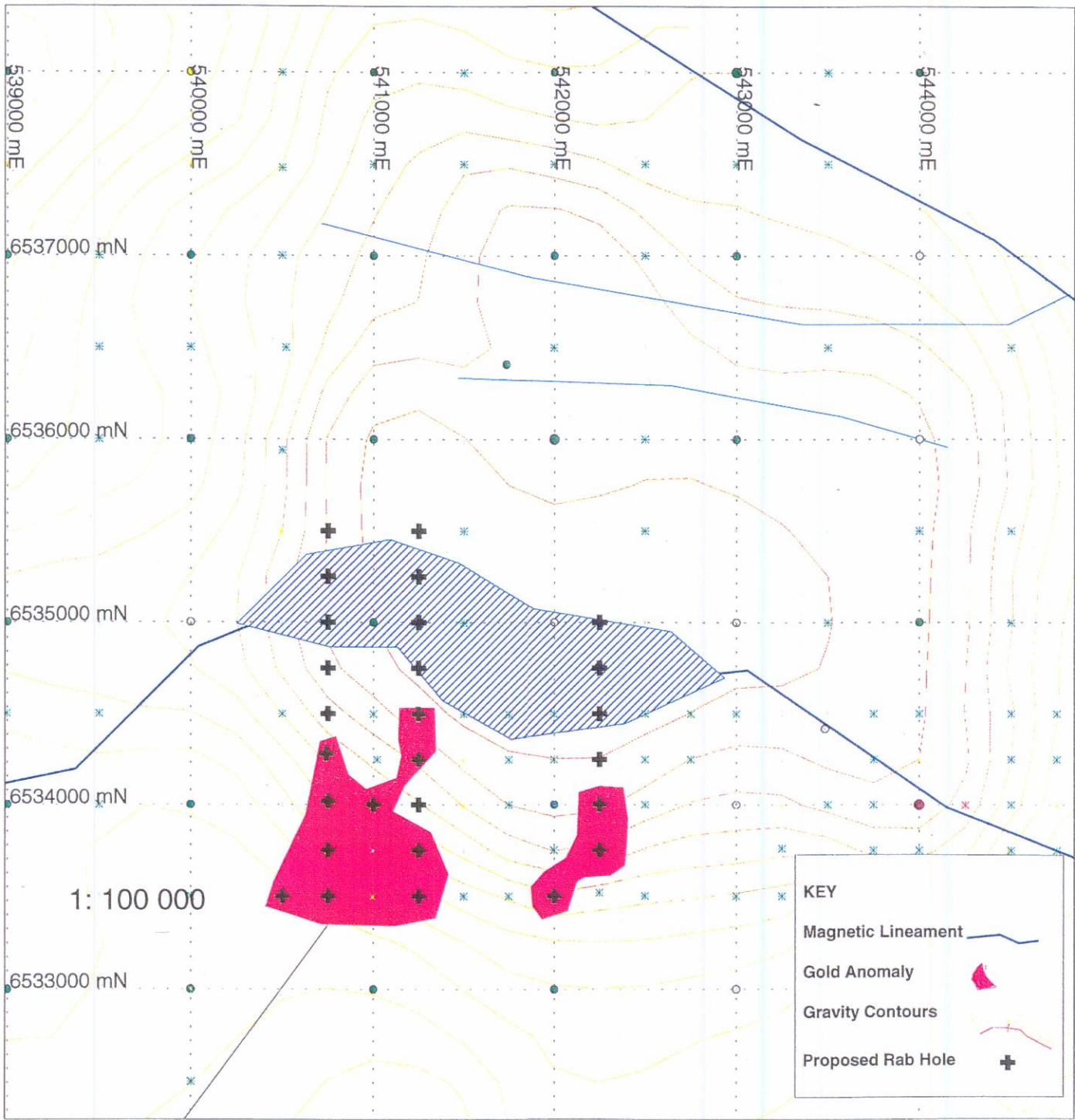


Figure 11

APPENDIX



HEWLETT
PACKARD

Database: CALCRE~2

Data Item

08/12/97 2:22 pm

DATE 9/11/1997 SAMPLE No 1070431

NORTH 6541000 EAST 538000

FROM .1 TO .2

HCL RX

☐ Vstr

☐ Str ☐ Mod

☒ None ☐ Weak

☐ Blue Bush ☐ Sheoak

Note NO CALCRETE.

Site Type

☐ Auger

☒ Shovel

GR SIZE

☒ med ☐ <4mm

☐ csr

CALCRETE TYPE

☐ Nodular ☐ Angular

☐ Clay+Cal ☐ Powdery

☐ Sand Cal ☐ Massive

☐ Casilcrete ☒ Soil

TERRAIN

☐ All Flat ☐ Dunes

☒ Colluvium ☐ Residual

☐ Saprolite

Help

Add

Note

Find

Clip

Prev

Next

Cancel

Done

F1

F2

F3

F4

F5

F6

F7

F8

F9

F10

Menu=<Alt>

Correlation Coefficient Table for Lake Harris Calcrete data Infill all data																						
	AUPPB	AGPPB	ASPPM	BIPPM	CDPPM	COPPM	CRPPM	CUPPM	FEPPM	MNPPM	MOPPM	NIPPM	PBPPM	PPPM	SBPPM	VPPM	ZNPPM	CAPCT	MGPCT	WPPM	UPPM	
AUPPB	1.00																					
AGPPB	-0.10	1.00																				
ASPPM	-0.07	0.15	1.00																			
BIPPM	-0.37	0.10	0.20	1.00																		
CDPPM	0.09	0.20	-0.17	-0.16	1.00																	
COPPM	0.21	-0.04	-0.14	-0.03	0.19	1.00																
CRPPM	-0.42	0.08	0.26	0.30	-0.28	-0.15	1.00															
CUPPM	0.65	-0.06	-0.04	-0.27	0.11	0.38	-0.36	1.00														
FEPPM	-0.20	0.03	0.42	0.52	-0.08	0.07	0.12	-0.06	1.00													
MNPPM	-0.20	0.10	-0.05	0.28	0.08	0.40	0.10	-0.06	0.22	1.00												
MOPPM	0.03	0.01	0.07	-0.01	-0.09	0.24	0.23	0.13	0.10	0.07	1.00											
NIPPM	0.17	-0.02	-0.05	0.02	-0.03	0.34	-0.05	0.53	0.12	0.15	0.22	1.00										
PBPPM	-0.17	0.10	0.29	0.39	0.01	0.02	0.06	-0.09	0.53	0.19	0.02	0.00	1.00									
PPPM	0.26	-0.02	-0.05	-0.01	0.15	0.32	-0.36	0.44	0.10	0.14	0.14	0.21	0.13	1.00								
SBPPM	-0.17	0.04	0.52	0.41	-0.08	-0.21	0.12	-0.20	0.62	0.00	-0.06	-0.07	0.38	-0.07	1.00							
VPPM	-0.24	0.11	0.56	0.47	-0.05	0.01	0.19	-0.11	0.87	0.18	0.10	0.09	0.48	0.02	0.62	1.00						
ZNPPM	-0.04	0.04	-0.09	0.13	-0.01	0.22	-0.08	0.22	0.16	0.21	0.14	0.73	0.12	0.18	0.00	0.08	1.00					
CAPCT	0.44	-0.18	-0.28	-0.55	0.43	0.12	-0.60	0.36	-0.28	-0.32	-0.02	0.03	-0.14	0.27	-0.24	-0.26	-0.03	1.00				
MGPCT	0.59	-0.04	0.02	-0.16	0.05	0.27	-0.26	0.79	-0.10	-0.05	0.12	0.36	-0.09	0.36	-0.24	-0.07	0.03	0.18	1.00			
WPPM	-0.18	0.06	0.14	0.18	-0.16	-0.24	0.31	-0.24	-0.01	-0.01	-0.20	-0.15	0.11	-0.23	0.23	0.00	-0.06	-0.27	-0.19	1.00		
UPPM	-0.09	0.07	0.28	0.25	-0.14	-0.03	0.10	-0.08	0.32	0.06	0.27	0.06	0.25	0.13	0.25	0.45	0.06	-0.12	0.07	0.02	1.00	

374 samples

Correlation Coefficeint Table for Infill Samples, Silcrete Areas

	AUPPB	AGPPB	ASPPM	BIPPM	CDPPM	COPPM	CRPPM	CUPPM	FEPPM	MNPPM	MOPPM	NIPPM	PBPPM	PPPM	SBPPM	VPPM	ZNPPM	CAPCT	MGPCT	WPPM	UPPM
AUPPB	1.00																				
AGPPB	0.12	1.00																			
ASPPM	-0.06	0.09	1.00																		
BIPPM	-0.15	-0.15	0.33	1.00																	
CDPPM	-0.17	-0.08	-0.37	-0.26	1.00																
COPPM	0.02	0.11	-0.43	-0.23	0.74	1.00															
CRPPM	-0.22	0.08	0.70	0.14	-0.57	-0.69	1.00														
CUPPM	0.67	0.23	-0.11	0.08	-0.21	0.15	-0.45	1.00													
FEPPM	-0.24	-0.02	0.45	0.76	-0.54	-0.53	0.50	-0.10	1.00												
MNPPM	-0.37	-0.10	-0.22	0.46	0.11	-0.08	-0.18	-0.10	0.53	1.00											
MOPPM	0.19	-0.08	0.47	0.08	-0.44	-0.47	0.64	-0.04	0.13	-0.26	1.00										
NIPPM	0.57	0.41	-0.13	-0.06	-0.34	-0.04	-0.26	0.91	-0.09	-0.07	0.08	1.00									
PBPPM	-0.01	-0.46	0.11	-0.10	-0.10	-0.50	0.31	-0.41	0.02	-0.02	0.23	-0.40	1.00								
PPPM	0.48	0.06	-0.21	-0.11	0.17	0.38	-0.65	0.61	-0.42	-0.11	-0.25	0.38	-0.04	1.00							
SBPPM	-0.09	0.10	0.43	0.60	-0.18	-0.30	0.31	0.03	0.69	0.29	0.05	0.00	0.06	-0.26	1.00						
VPPM	-0.37	0.21	0.59	0.68	-0.45	-0.49	0.53	-0.18	0.90	0.50	0.12	-0.12	-0.06	-0.35	0.63	1.00					
ZNPPM	0.44	0.04	-0.61	-0.13	0.26	0.43	-0.82	0.55	-0.28	0.29	-0.40	0.39	-0.18	0.72	-0.24	-0.34	1.00				
CAPCT	0.21	-0.26	-0.74	-0.41	0.71	0.72	-0.86	0.14	-0.69	0.03	-0.47	-0.04	-0.10	0.50	-0.54	-0.75	0.71	1.00			
MGPCT	0.62	0.19	-0.03	0.04	-0.29	0.01	-0.34	0.95	-0.16	-0.17	0.14	0.92	-0.33	0.56	0.00	-0.19	0.43	0.04	1.00		
WPPM	0.04	0.49	0.24	-0.27	-0.22	-0.32	0.46	-0.17	-0.21	-0.40	0.49	0.02	0.21	-0.04	-0.04	0.01	-0.28	-0.36	-0.02	1.00	
UPPM	0.61	0.03	-0.01	0.12	-0.48	-0.08	-0.06	0.56	0.02	-0.31	0.10	0.47	-0.01	0.39	-0.02	-0.18	0.15	-0.08	0.54	-0.04	1.00

55 samples

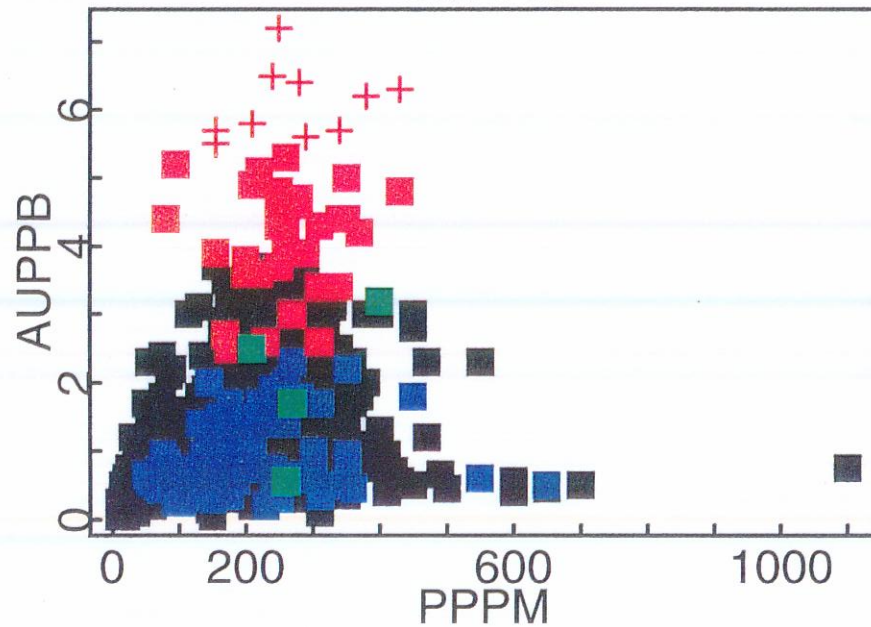
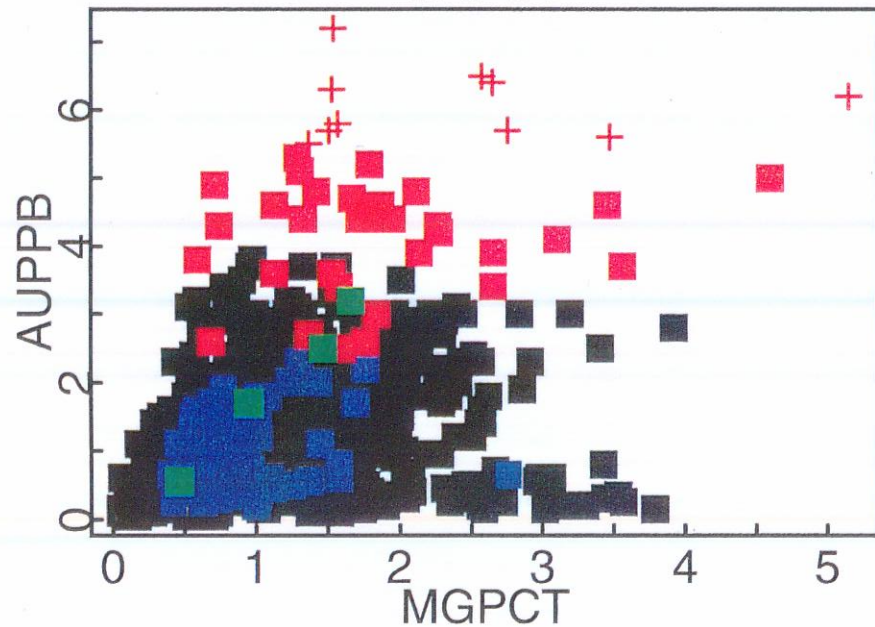
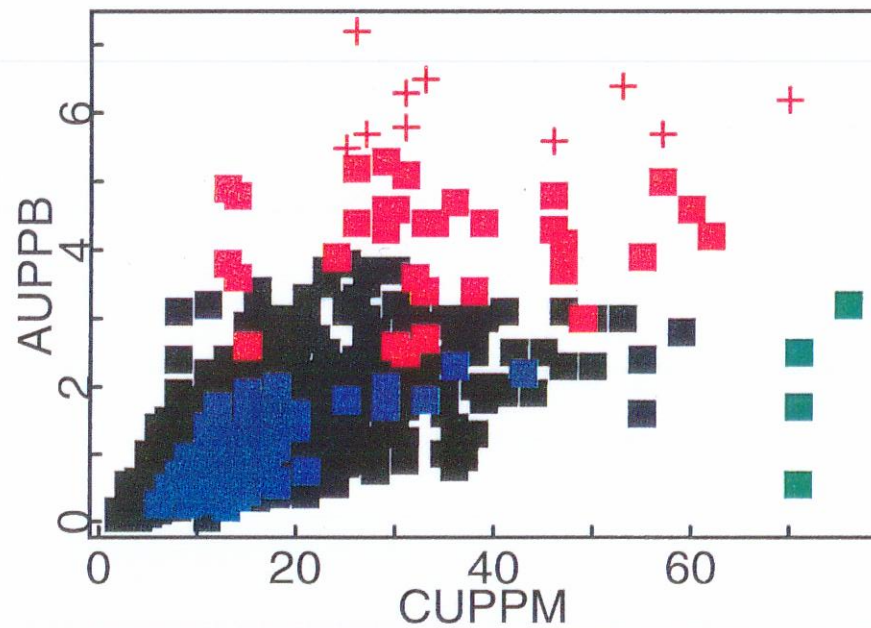
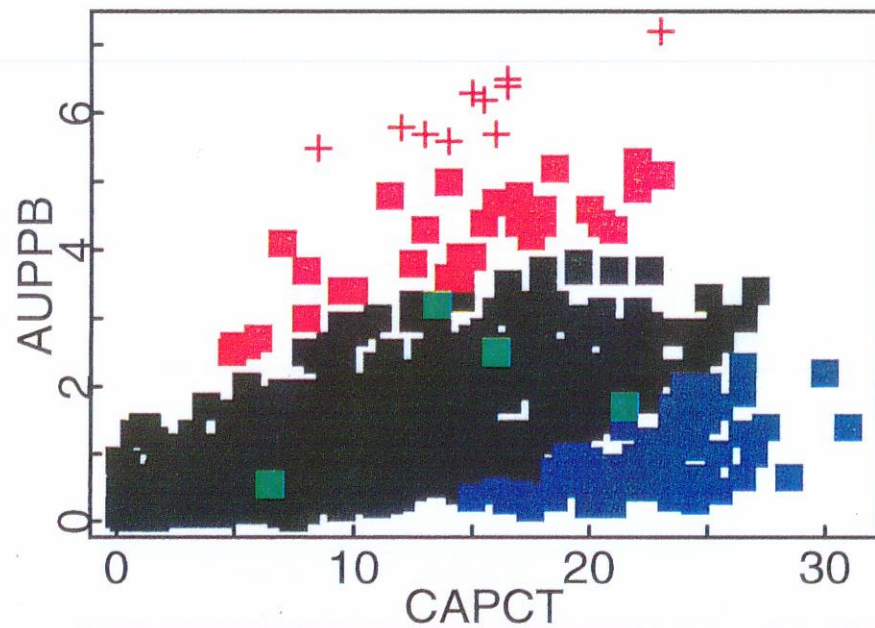
Correlation Coefficient Table for Infill Samples, Mal (Lake Gairdner rhyolite)

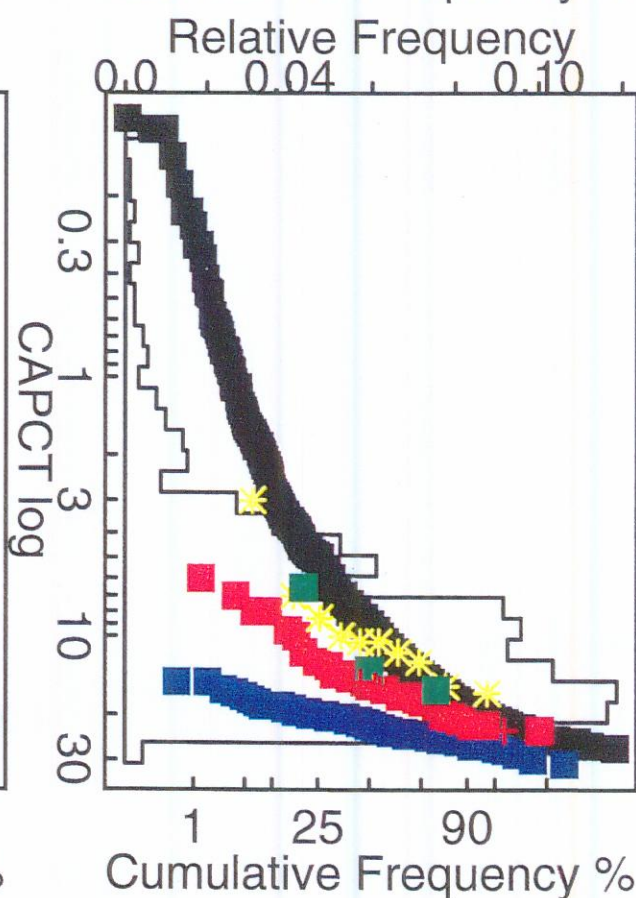
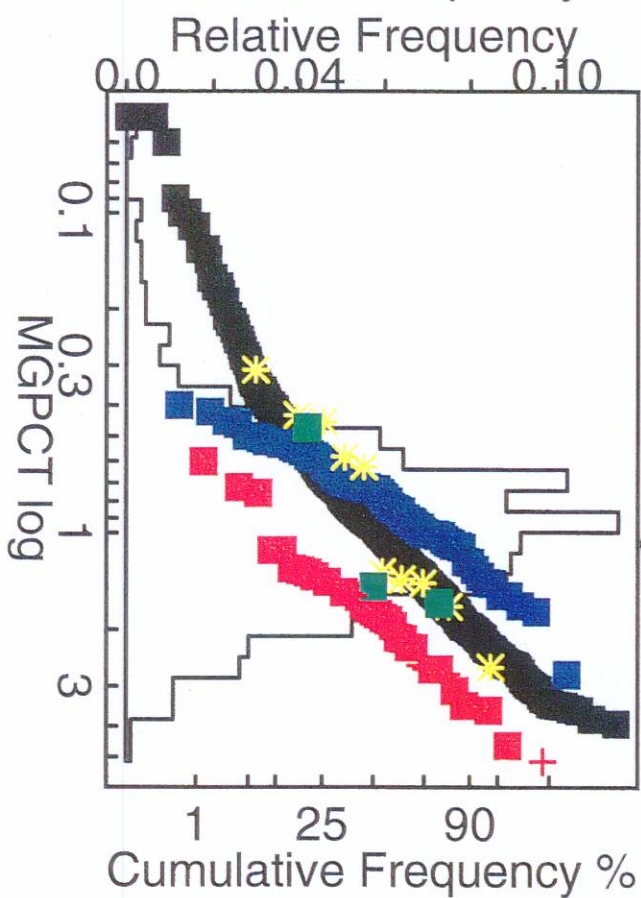
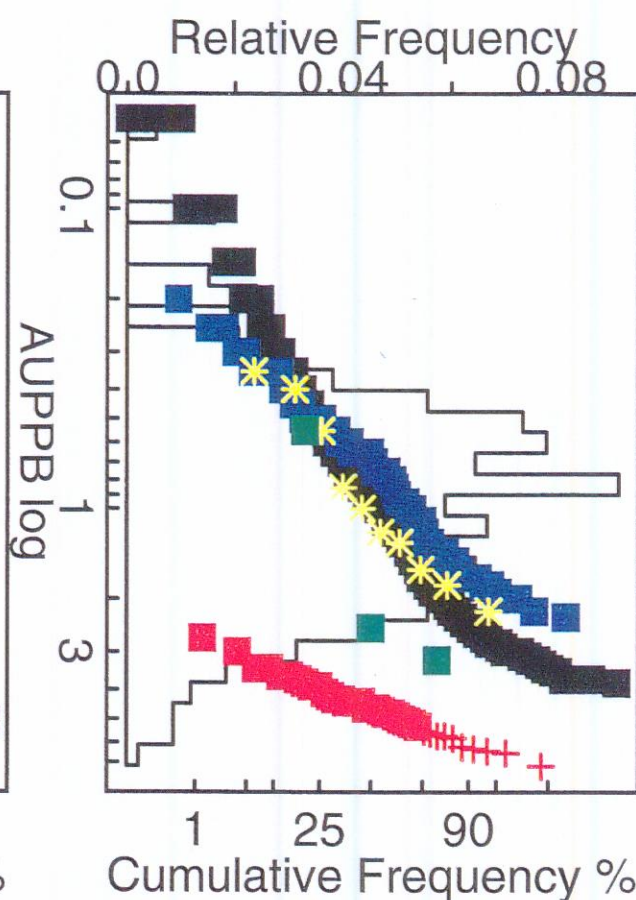
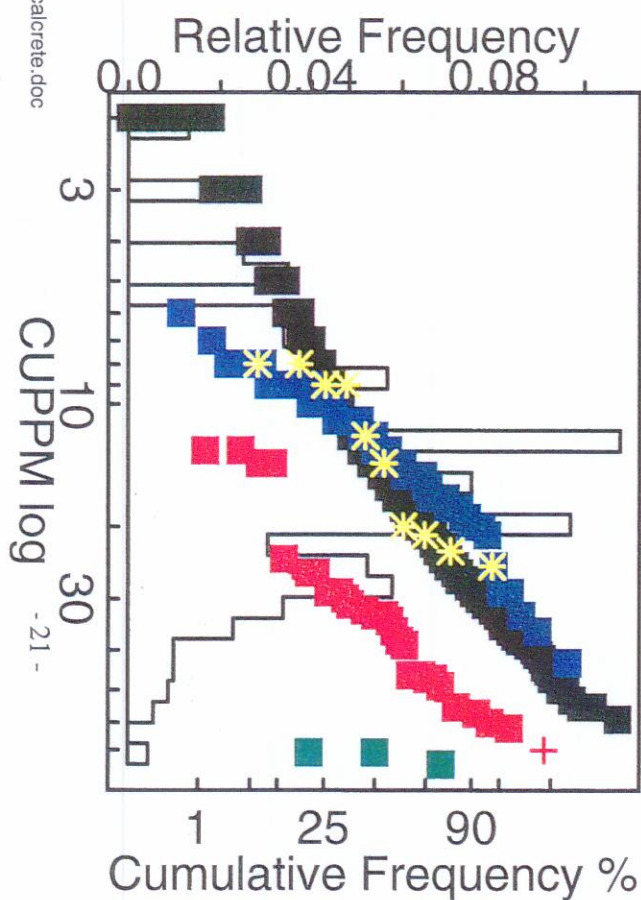
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AUPPB	1.00																			
AGPPB	-0.09	1.00																		
ASPPM	-0.11	0.17	1.00																	
BIPPM	-0.42	0.05	0.37	1.00																
CDPPM	0.25	0.35	0.03	-0.10	1.00															
COPPM	0.26	0.06	-0.08	-0.10	0.42	1.00														
CRPPM	-0.57	0.17	0.30	0.50	-0.19	0.00	1.00													
CUPPM	0.60	-0.01	0.08	-0.26	0.31	0.58	-0.29	1.00												
FEPPM	-0.19	-0.01	0.83	0.52	-0.04	0.10	0.42	0.03	1.00											
MNPPM	0.00	0.11	0.00	0.17	0.48	0.53	0.29	0.28	0.14	1.00										
MOPPM	-0.13	0.16	0.17	0.13	-0.06	0.33	0.35	0.08	0.27	0.17	1.00									
NIPPM	0.21	0.09	0.33	0.15	0.25	0.71	0.30	0.64	0.50	0.63	0.43	1.00								
PBPPM	-0.35	0.13	0.74	0.63	-0.06	0.05	0.46	-0.11	0.81	0.10	0.28	0.28	1.00							
PPPM	0.15	-0.01	0.24	0.18	0.15	0.32	-0.07	0.41	0.16	0.00	0.22	0.31	0.25	1.00						
SBPPM	-0.26	-0.05	0.79	0.58	-0.09	-0.07	0.40	-0.08	0.88	-0.04	0.09	0.27	0.77	0.14	1.00					
VPPM	-0.15	0.10	0.02	0.44	0.08	0.09	0.36	0.08	0.93	0.16	0.18	0.45	0.81	0.17	0.86	1.00				
ZNPPM	-0.31	0.16	0.12	0.42	-0.13	0.46	0.47	0.15	0.37	0.41	0.58	0.58	0.42	0.27	0.22	0.24	1.00			
CAPCT	0.58	-0.18	-0.16	-0.54	0.27	0.20	-0.68	0.38	-0.27	-0.27	0.01	-0.03	-0.35	0.21	-0.26	-0.19	-0.39	1.00		
MGPCT	0.63	0.07	0.10	-0.22	0.41	0.39	-0.39	0.72	-0.04	0.29	-0.08	0.53	-0.17	0.31	-0.13	0.05	-0.04	0.43	1.00	
WPPM	-0.28	-0.02	0.08	0.33	-0.20	-0.06	0.24	-0.18	0.06	-0.12	-0.01	-0.07	0.19	0.08	0.27	0.05	0.14	-0.31	-0.18	1.00
UPPM	-0.26	0.21	0.77	0.40	-0.13	0.00	0.32	-0.04	0.71	0.06	0.33	0.29	0.73	0.21	0.62	0.77	0.38	-0.22	0.04	0.15

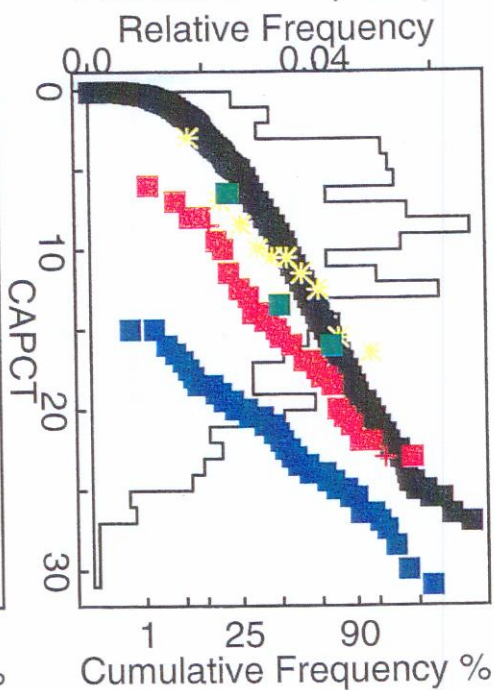
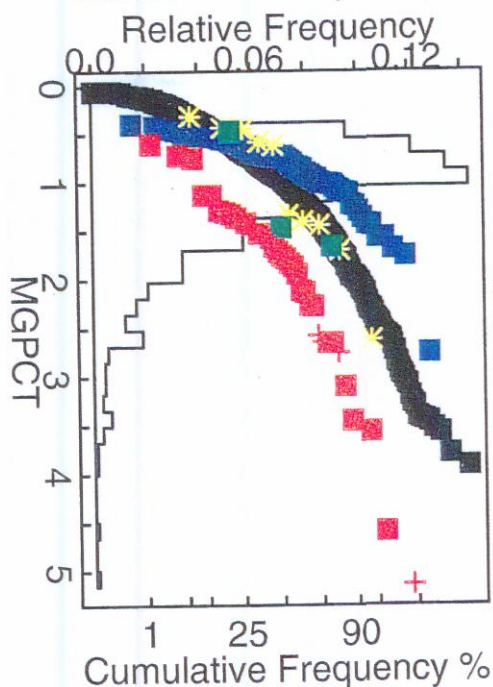
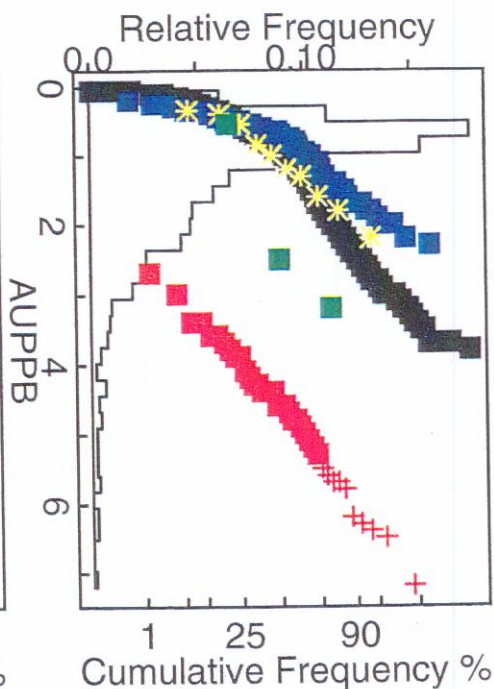
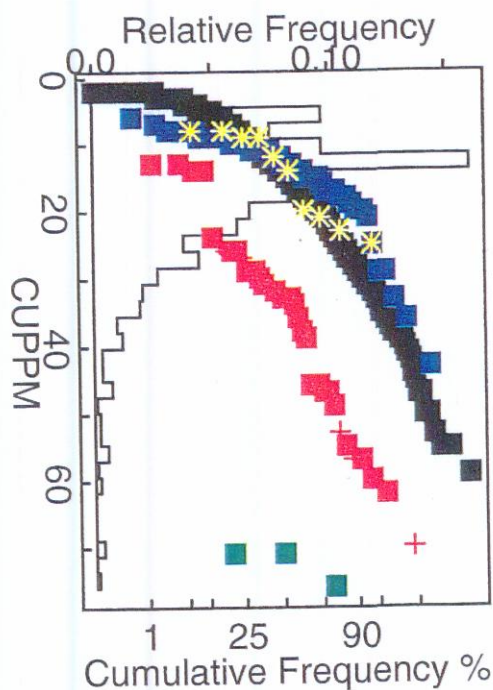
58 Samples

Correlation Coefficient Table for Infill Samples, Alluvial

	AUPPB	AGPPB	ASPPM	BIPPM	CDPPM	COPPM	CRPPM	CUPPM	FEPPM	MNPPM	MOPPM	NIPPM	PBPPM	PPPM	SBPPM	VPPM	ZNPPM	CAPCT	MGPCT	WPPM	UPPM
AUPPB	1.00																				
AGPPB	0.11	1.00																			
ASPPM	0.08	0.10	1.00																		
BIPPM	-0.34	0.10	0.04	1.00																	
CDPPM	0.13	0.08	-0.24	-0.19	1.00																
COPPM	-0.07	0.00	0.14	0.03	-0.05	1.00															
CRPPM	-0.38	0.18	0.23	0.41	-0.31	-0.10	1.00														
CUPPM	0.65	0.04	0.10	-0.36	0.07	0.32	-0.47	1.00													
FEPPM	-0.32	0.00	0.01	0.43	-0.15	0.60	0.10	-0.04	1.00												
MNPPM	-0.25	-0.04	0.06	0.05	-0.10	0.34	0.09	-0.14	0.21	1.00											
MOPPM	-0.07	0.15	0.32	-0.25	-0.04	0.36	0.08	0.09	0.21	0.04	1.00										
NIPPM	0.31	0.04	0.11	-0.07	-0.09	0.71	-0.25	0.72	0.49	0.16	0.26	1.00									
PBPPM	-0.12	0.00	-0.01	0.15	-0.01	0.16	0.08	-0.05	0.10	0.11	-0.04	0.07	1.00								
PPPM	0.47	0.03	0.19	-0.27	0.18	0.39	-0.49	0.75	-0.02	0.04	0.15	0.58	-0.02	1.00							
SBPPM	0.03	0.05	0.29	0.08	0.01	-0.15	0.05	-0.06	0.07	0.03	0.12	-0.05	-0.01	0.08	1.00						
VPPM	-0.28	-0.09	0.44	0.32	-0.19	0.13	0.21	-0.28	0.54	0.14	0.08	0.02	0.02	-0.14	0.31	1.00					
ZNPPM	-0.09	0.05	-0.14	0.05	0.06	0.68	-0.25	0.31	0.66	0.14	0.33	0.62	0.09	0.34	-0.13	0.10	1.00				
CAPCT	0.37	-0.20	-0.28	-0.58	0.55	-0.15	-0.64	0.34	-0.34	-0.24	0.01	-0.03	-0.15	0.35	0.02	-0.25	-0.04	1.00			
MGPCT	0.62	0.02	0.22	-0.19	-0.01	0.29	-0.38	0.86	0.00	-0.08	-0.11	0.71	0.05	0.65	-0.01	-0.15	0.22	0.14	1.00		
WPPM	-0.12	0.04	-0.06	0.25	-0.13	-0.28	0.36	-0.17	-0.23	0.08	-0.22	-0.16	0.10	-0.29	0.00	-0.11	-0.28	-0.31	0.01	1.00	
UPPM	-0.05	-0.04	0.29	0.07	-0.14	-0.14	0.06	-0.15	-0.20	-0.05	0.15	-0.15	0.05	0.04	0.27	0.16	-0.11	-0.07	-0.05	0.11	1.00



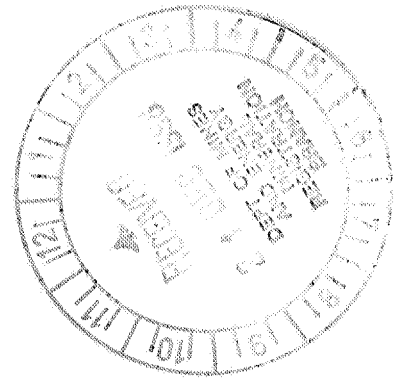




Correlation Coefficient Table for Infill Samples, Mah(Chandabooka dacite)

	AUPPB	AGPPB	ASPPM	BIPPM	CDPPM	COPPM	CRPPM	CUPPM	FEPPM	MNPPM	MOPPM	NIPPM	PBPPM	PPPM	SBPPM	VPPM	ZNPPM	CAPCT	MGPCT	WPPM	UPPM
AUPPB	1.00																				
AGPPB	-0.23	1.00																			
ASPPM	-0.07	0.17	1.00																		
BIPPM	-0.48	0.12	-0.14	1.00																	
CDPPM	-0.07	-0.06	-0.49	0.40	1.00																
COPPM	0.03	0.30	-0.28	0.34	0.07	1.00															
CRPPM	-0.43	0.37	0.06	0.37	0.01	0.55	1.00														
CUPPM	0.57	-0.03	-0.06	0.14	0.14	0.40	0.02	1.00													
FEPPM	-0.37	0.04	0.41	0.48	-0.01	-0.13	0.23	-0.05	1.00												
MNPPM	-0.26	0.59	-0.06	0.54	-0.01	0.69	0.51	0.21	0.11	1.00											
MOPPM	0.06	0.06	0.30	-0.21	-0.14	-0.01	0.36	0.19	0.10	-0.17	1.00										
NIPPM	-0.16	0.43	-0.15	0.37	0.06	0.76	0.68	0.45	0.12	0.57	0.18	1.00									
PBPPM	-0.18	-0.04	0.26	0.53	0.13	0.02	0.14	0.20	0.34	0.43	-0.11	-0.08	1.00								
PPPM	0.10	0.21	0.48	-0.05	0.10	0.18	0.36	0.31	0.31	0.17	0.28	0.30	0.21	1.00							
SBPPM	-0.44	-0.01	0.07	0.52	0.12	-0.17	0.17	-0.16	0.59	0.05	-0.22	0.07	0.09	-0.10	1.00						
VPPM	-0.40	0.10	0.32	0.45	-0.12	0.04	0.34	-0.01	0.88	0.13	0.24	0.34	0.13	0.18	0.58	1.00					
ZNPPM	-0.28	0.43	0.03	0.46	0.15	0.57	0.63	0.10	0.12	0.75	-0.01	0.44	0.43	0.27	0.03	0.01	1.00				
CAPCT	0.53	-0.34	-0.04	-0.34	0.20	-0.34	-0.54	0.33	-0.02	-0.56	0.30	-0.37	-0.18	0.05	-0.14	-0.08	-0.44	1.00			
MGPCT	0.56	-0.07	0.02	-0.41	-0.06	-0.01	-0.32	0.58	-0.06	-0.27	0.17	0.22	-0.32	0.32	-0.25	0.01	-0.41	0.43	1.00		
WPPM	0.02	0.13	-0.06	0.10	-0.03	-0.06	0.10	-0.18	-0.01	0.17	-0.04	-0.09	0.17	-0.14	-0.03	-0.08	0.25	-0.12	-0.32	1.00	
UPPM	-0.18	-0.27	0.19	0.17	-0.17	-0.29	0.00	-0.25	0.68	-0.21	0.04	-0.18	0.10	-0.07	0.36	0.67	-0.24	0.05	-0.11	0.26	1.00

29 samples



E.L. 2197 "Lake Harris"
Annual Report to 10th October 1998

Goldstream Mining
Adelaide 1998

For:
Vigilant Oil Pty Ltd

PIRSA

R99/00006



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Figure 1 : Tenement Location Plan

1. Summary

Exploration for gold and base metals on Exploration Licence 2197 "Lake Harris" has comprised, completion of a 1km x 1km gravity survey, regional (1km x 1km) and infill (500m x 250m) auger-rig calcrete sampling and integration of this data with previously obtained magnetic data.

2. Introduction

This report was compiled by Goldstream Mining N.L. (Goldstream) from data and information provided by Vigilant Oil Pty Ltd (Vigilant, John Cochrane) and RGC Exploration. Exploration Licence 2197 "Lake Harris" is centered approximately 50 km south of Kingoonya and is situated on the Kokatha and Coondambo pastoral leases (Fig 1). Terrain consists of sand ridges, low-lying bluebush and saltbush plains, and hills of outcropping Gawler Range Volcanics. Access is via the Kingoonya-Wirrulla road and numerous station tracks.

3. Tenure

Exploration Licence 2197 "Lake Harris" was originally granted to John Cochrane in September 1996 for twelve months, and covered an area of 1275km². The Exploration Licence has recently been assigned to Vigilant Oil Pty Ltd and renewed without a reduction in area and Goldstream is currently negotiating a joint venture agreement. The tenement was subject to a joint venture agreement between John Cochrane and RGC Exploration until the withdrawal of RGC Exploration earlier this year.

4. Geology

The tenement area is dominated by Cainozoic sand, calcrete, silcrete, soil and lacustrine sediments. Substantial areas in the north of the E.L. have outcropping Gawler Range Volcanics, mainly dacite to rhyolite in composition. Magnetic data suggests that Hiltaba Granite will underlie much of the remaining area. Several prominent northwest trending linear features are interpreted to be dolerite dykes (Gairdner dyke swarm).

5. Previous Exploration

Numerous companies have explored within the region of E.L. 2197 and a summary of their work is provided in Warland (1998).

~~6. Current Exploration~~ Previous.

6.1 Calcrete Geochemistry

Nine-hundred and fourteen auger-rig calcrete samples were collected. A low order Au and U anomaly was recorded east of Kokatha homestead. Results and sample location information is documented in Warland (1998).

6.2 Gravity Survey

A 1km x 1 km gravity survey was completed over 65% of the tenement, only salt lake areas were excluded. A 1.4 mgal anomaly, approximately 4km x 4km, was located adjacent to the anomalous calcrete area (see above). Results and images are documented in Warland (1998).

6.3 Aeromagnetic Interpretation

A review of previous aeromagnetic work highlighted a coincident magnetic low coincident with the gravity anomaly and pair of east-west trending shears bracketing the gravity and calcrete anomalies (Warland, 1998).

6.4 Rockchip Geochemistry

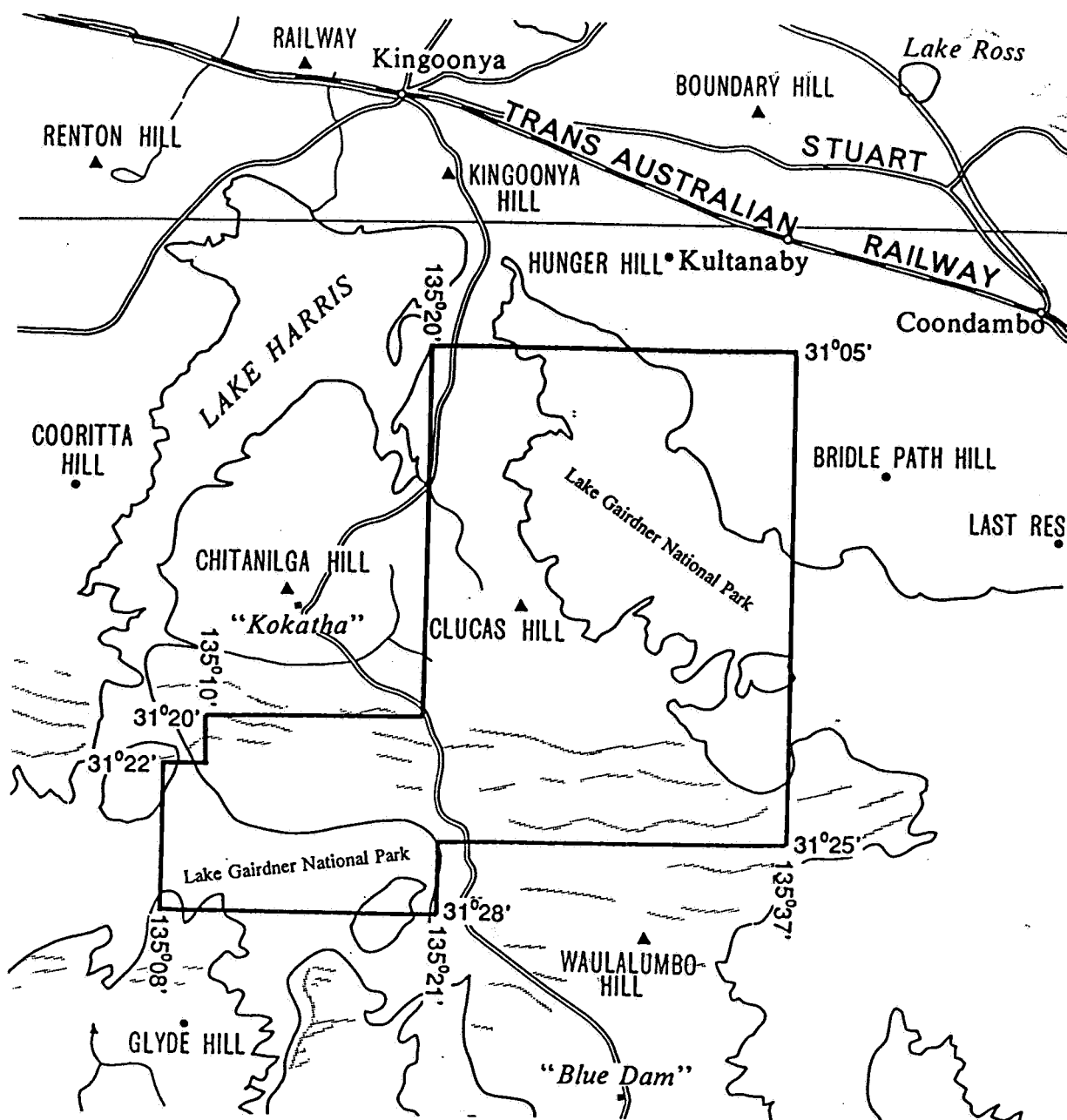
Three rockchip samples were collected on the tenement, with two being from within the area of the defined calcrete/geophysical anomaly. None of the rocks had anomalous metal values (Warland, 1998).

7. Conclusions

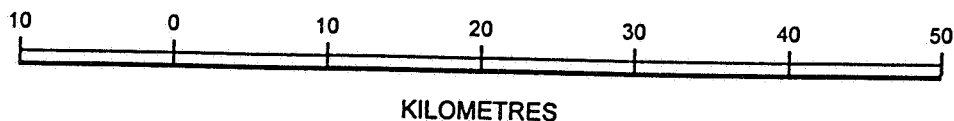
A coincident magnetic/gravity and calcrete anomaly has been identified on E.L. 2197 and has been advanced to a point where RAB/Aircore drilling is now necessary. Favourable results from drilling and further geophysical modelling would justify RC drilling of the prospect.

8. References

WARLAND, I. (1998), Exploration Progress Report, Lake Harris Project EL 2197 Geology, Geophysics and Geochemistry, RGC Exploration, unpublished report, reference number 03039801.



SCALE 1 : 500 000



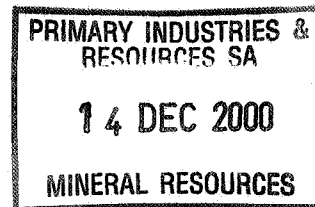
DM : 102/96

AREA : 1275 square kilometres (approx.)

1:250 000 PLANS : GAIRDNER

LOCALITY : LAKE HARRIS AREA - Approximately 40 km southeast of Kingoonya

EL No : 2197



EL 2197

ANNUAL TECHNICAL REPORT

Period Ending 13 September 1999



EXPLORATION LICENCE 2197 – LAKE HARRIS

SOUTH AUSTRALIA

RAB DRILLING PROGRAMME – APRIL 1999.

D.R. EDGECOMBE

MAY, 1999

This report was prepared by Kelpie Exploration Pty Ltd for Goldstream Mining NL. The report was compiled by David Edgecombe, an employee of Kelpie Exploration Pty Ltd. The opinions and interpretations expressed represent the best judgement of Kelpie Exploration Pty Ltd but neither Kelpie Exploration Pty Ltd nor its employees accept any responsibility or make any warranties or representations, expressed or implied, as to the validity of these opinions and interpretations insofar as they are relied upon to reach decisions of an economic or potentially economic nature.

EXPLORATION LICENCE 2197 - LAKE HARRIS

RAB DRILLING PROGRAMME - APRIL 1999.

SUMMARY

A co-incident gravity, magnetic and geochemical anomaly at Lake Harris was tested by drilling two lines of reconnaissance RAB holes. This work suggests that the anomalous feature is the result of fracture controlled alteration of the host volcanics. The gravity anomaly probably reflects the presence of a palaeotopographic high, however confirmation by a geophysicist that this is consistent with drillhole data is recommended. Assay data were not available at the time this report was compiled, however as only trace amounts of sulphide were present base metal values are expected to be low and any further work is therefore likely to be contingent on the presence of significant gold assays.

INTRODUCTION

Exploration Licence 2197 "Lake Harris" is subject to a joint venture between Goldstream Mining NL and the tenement holder Vigilant Oil NL. Prior to Goldstream's involvement the EL was explored by RGC Ltd who conducted calcrete geochemical and gravity surveys. This work located a discrete 1.8 milligal gravity anomaly, broadly co-incident with a sigmoidal magnetic low sited on a local flexure within a regionally extensive east-west shear zone. On the southern flank of the gravity feature calcrete sampling located low order gold and uranium anomalies. RGC recognised the significance of the co-incident features but withdrew from its joint venture (with Vigilant) without drilling the target (Warhurst, 1998).

Goldstream involvement in EL 2197 was focused specifically on testing of the Lake Harris anomaly. Drilling of the target was completed in April 1999.

WORK COMPLETED

Data compiled by RGC (Warhurst, 1998) were reviewed and it was concluded that RAB drill testing of the Lake Harris gravity-magnetic-geochemical anomaly was justified. In April 1999 a programme of 27 RAB holes on two lines was completed (Fig.1). In total 747 metres were drilled, principally RAB hammer. Each one metre interval was temporarily stored in bags and measurements of radioactivity and magnetic susceptibility were recorded. Samples (total 147) were composited to nominal five metre intervals, though this was increased to ten metres where thick Mesozoic cover was present. Small reference samples from each metre have been retained along with a larger bottom of hole sample.

REGIONAL GEOLOGY

The Lake Harris tenement is located within the Gawler Ranges Volcanic Province. Outcrop of Proterozoic rocks within the tenement area is dominated by Gawler Range Volcanics and Hiltaba suite granites. In this region both early (oxidised) and late (more reduced) phases of the Gawler Range Volcanics are present. The former are considered more favourable for generation of copper/gold mineralisation and typically contain some intermediate to mafic volcanics as well as the more extensive rhyolitic to dacitic rocks (see Budd et al., 1998).

The Proterozoic rocks are unconformably overlain by Mesozoic sandstone/mudstone sequences, generally ascribed to the Algebuckina Sandstone. These sediments are in turn overlain by Cainozoic sediments, dominantly residual and transported soils, alluvium/sheetwash and lacustrine clastic and evaporitic sediments. Weathering products include silcrete (commonly well developed over Mesozoic sediments) and calcrete, which can provide a sensitive geochemical exploration medium.

PROSPECT GEOLOGY

Over the Lake Harris gravity target intensely silica/sericite altered rocks, probably originally felsic tuffs, are present in outcrop on the eastern drill traverse (Fig.1). To the north on this line lag/subcrop of dark red rhyolitic volcanics, believed to be ashflow tuff, is relatively common. No other Proterozoic rocks were found in outcrop during the 1999 drilling programme.

Drilling encountered Proterozoic volcanics in every hole. Textures in almost all cases were suggestive of subaerial tuffaceous origins, both airfall and ashflow. Most were porphyritic crystal tuffs, however aphyric and ignimbritic variants were also present. Clasts of flow banded rhyolite, interpreted to be lavas, were noted in some holes. However, as no massive units were intersected it is assumed that the lava fragments were sourced from lower in the volcanic pile during eruption of the tuffs. Compositionally most tuffs appear to be rhyolite, probably ranging to rhyodacite and dacite. In logging no attempt was made to distinguish between these classes - all have been termed rhyolites.

At the southern end of the western line (holes 9 and 10) volcanics of apparently more mafic/intermediate composition were intersected. Whilst petrographic confirmation is required, if the field identification is correct, then the presence of these rocks is significant as indicating that the target is within the lower, more prospective part of the Gawler Range Volcanics. Granite was present in narrow zones in some holes, inferred to be thin dykes of Hiltaba suite affinity.

On the western drill traverse a mesa rising to about 15 metres above plains level is present on the southern margin of the gravity anomaly. The mesa is capped by silcrete developed on Algebuckina Sandstone (see Fig.1), which outcrops locally on the slopes, and in this region typically comprises white clayey fine to coarse and granule quartz

sandstone, however substantial thicknesses of white to pale green mudstone are also present locally. Drilled depths to Proterozoic bedrock increase rapidly approaching this mesa. As a consequence, two holes originally planned to be drilled from sites found to be located on the mesa were deleted from the programme, as thickness of the Algebuckina Sandstone was considered likely to be excessive (+50 metres). Drilled thickness of Mesozoic sediment within the prospect area is very variable, suggesting quite rugged palaeotopography. It is believed a topographic high on the basement volcanics may contribute substantially to the gravity anomaly.

Regolith typically comprised aeolian sand/silt over variably indurated clay/quartz (interpreted to be transported soil), with calcrete and/or silcrete sometimes present at or near the contact between the two. Sheetwash/alluvial sand and gravel is present locally within the clay/quartz unit.

ALTERATION AND MINERALISATION

A substantial area of alteration is present on the southern flank of the Lake Harris gravity anomaly. The alteration is very apparent as a colour change from typical red/purple to pale green/yellow, dark green/grey in unoxidised material. Though petrographic confirmation would be beneficial, the alteration appears to be dominantly sericite/silica, comparable to alteration associated with gold/base metal mineralisation elsewhere in the Gawler Range Volcanics. Epidote is present in unweathered material and fine quartz veinlets are usually associated with the alteration. The altered rocks outcrop on the eastern drill traverse (Fig.1), forming a low topographic high. These outcrops have been sampled (rock-chip), however results were apparently not considered anomalous.

In drillholes, substantial intersections of altered volcanics have been obtained (see drillhole logs and Fig.2). Whilst the volume of altered material is very large, only trace amounts of sulphide were observed. If the analogy with other areas of similar alteration in the Gawler Craton Proterozoic is valid, then the lack of sulphide does not auger well, as in all cases known to the writer gold increases with increasing sulphide.

It appears that the alteration zone, though not yet well defined, is highly likely to be the cause of the magnetic low apparent on the airborne magnetic data. This style of alteration would be expected to be magnetite destructive. Regionally the unaltered hosting rhyolites typically contain accessory magnetite and haematite, reflected in their usual dark red/purple colours. The location of the magnetic anomaly on a flexure in a regional east-west shear zone (interpreted from magnetic data) is therefore likely to be more than simple co-incidence. It is interpreted as reflecting fluid flow focused through a dilatant zone on the regional shear.

The alteration may also have played a significant role in generation of the gravity anomaly. As noted previously there appears to be a substantial palaeotopography developed on the Proterozoic-Mesozoic unconformity and the alteration zone forms a topographic high, albeit relatively subdued, on the current land surface. This is taken to

reflect greater resistance to weathering as a result of the high silica content of the altered rocks. When depths to (relatively) fresh rock are considered it is apparent that the gravity closure co-incides with an area of thin cover (see Fig.3), though this may be an over simplification as thin cover is also present at the southern limit of the drilled area. It would be appropriate to supply the drillhole data, along with accurate topographic control (presumably available from the gravity survey database) to a geophysicist to confirm that this is sufficient to cause the gravity anomaly. Specific gravity measurements on selected RAB cuttings would also benefit such a study.

In hole 2 some evidence of fine brecciation was observed, possibly in association with weak haematite or chlorite alteration though positive identification would require petrographic examination. If the tentative identification is correct then it represents a potentially more significant alteration style, it does not appear to be areally extensive but may extend further to the east (based on possible haematite alteration in hole 15). Should anomalous assays result from these holes and haematite/chlorite alteration is confirmed then further drilling in this area should be given high priority. (Note that distinction between accessory haematite and alteration related haematite is critical to any decision on further work).

RADIOACTIVITY

Samples from each drilled metre were tested with a hand held broad band gamma ray scintillometer. Responses of up to five times background were recorded, though absolute values were apparently not high. As there were some doubts as to the sensitivity of the instrument some further checking of radioactive response on bottom hole samples is recommended.

CALCRETE GEOCHEMICAL ANOMALIES

Two low order calcrete gold/uranium geochemical anomalies were located by RGC on the southern margin of the gravity anomaly. The larger geochemical feature broadly correlates with the Algebuckina Sandstone mesa on the southern end of the western drill traverse. The drilled intersection (of Algebuckina) within the geochemical anomaly was dominated by white to grey/green mudstone which conceivably may contain slightly elevated uranium. Sandstones in the Algebuckina elsewhere in the region contain sufficient detrital gold to generate calcrete anomalies, and are considered the most likely source of the elevated calcrete results here.

On the eastern drill traverse the calcrete gold/uranium anomaly occurs over part of the outcrop area of silica/sericite altered rhyolites. It is therefore an area not well suited to calcrete sampling, as no substantial weathered/saprolitic zone is present. It is considered likely that the calcrete gold and uranium values will be very similar to those in the volcanics and that they are therefore neither anomalous (at values of around 3ppb Au) nor directly comparable to calcrete results from the remainder of the tenement.

CONCLUSIONS AND RECOMMENDATIONS

It is highly likely that both the gravity and magnetic anomalies are attributable to the basement high of silica/sericite/epidote altered Gawler Range Volcanics, though geophysical modelling to confirm this is feasible would be prudent. Extensive sericite/silica alteration is present, however the lack of associated sulphides in more than trace amounts is considered a negative aspect. Unless significantly anomalous assay values are obtained it is doubtful that further work could be justified.

Tentatively identified haematite/chlorite alteration represents a potentially more significant alteration style but will require petrographic confirmation and assay support before any follow up is planned.

REFERENCES

Budd, A., Wyborn, L. and Bastrakova, I., 1998. Exploration significance of the Hiltaba Suite, South Australia. AGSO Research Newsletter, 29, 1-4.

Warhurst, -, 1998. Exploration Licence 2197 - Lake Harris. Unpublished report to RGC Ltd.

D.R. Edgecombe
Adelaide
26 April 1999

Goldstream Mining

Drill Logging Codes: Summary

Igneous (non-extrusive)

Gdl- dolerite
Ggd- granodiorite
Ggu- granitic rock (undifferentiated)
Gmu- mafic rock (undifferentiated)
Gpg- pegmatite
Gum- ultramafic general
Gfu - felsic rock (undifferentiated)
Gry - rhyolite

Volcanics

Vrd- rhyodacitic volcanic
Yry- rhyolite volcanic
Vbs - basalt
Vum - ultramafic volcanic
Vvm- mafic volcanic
Try - rhyolitic tuff
Vvf - felsic volcanic
Vvu - volcanic undifferentiated

Mineral Names

apy- arsenopyrite
bi- biotite
cl- chlorite
fx- feldspar
gn- garnet
he- haematite
li- limonite
nt- nontronite
py-pyrite
qz- quartz
se/sr/ser- sericite
ep- epidote
fe - iron
go - goethite
gy - gypsum
si - silica
fl - fluorite
gr/gf - graphite
ck - chalcedony
ca - calcite
az - azurite
mu - muscovite
mt - magnetite
di - diopside

Other

Ind- indurated
ox- oxidised
pal- pallid
sap- saprolitic
shd- sheared
sl- slightly
st- strongly
tr- trace
bnd- bedded/banded
Rku - rock general
Ruu - undifferentiated rock
pyc- pyroclastic
por - porphyritic/phenocrysts
mod - moderately
hpn - hardpan
wk - weak
Vqz - quartz vein
cy - clay general
Rvq - quartz vein
gzc - coarse grained

Metamorphic

Mgn- gneiss
Msc- schist
Mam - amphibolite
Mms - schist
Mmu - metamorphic
undifferentiated

Regolith & Overburden

Occ- calcrete
Ocy- clay
Ofc- ferricrete
Ogv- gravel
Osn- sand (unconsolidated)
Ost- silcrete
Ois - ironstone
Ohp - hardpan
Osu - soil general
Oou - overburden general
Oln - lignite

Sediments- Clastic

Ssn- sandstone
Ssl- siltstone
Sqt - quartzite
Scy - claystone
Smd - mudstone
Sar - arenite

Sediments - Chemical

Sjs - jaspilite/jasper
Sil - iron formation silica facies
Sis - iron formation sulphide facie
Sif - ifon formation, general

Alteration

acl- chlorite alteration
ahe/he alt- haematite alteration
ep alt- epidote alteration
aser/asr - sericite alteration
asi - silica alteration

Weathering

Whl- highly weathered
Wmd- moderately weathered
Wsl- slightly weathered
Frs- fresh

Colour

A- grey
B- brown
G- green
I- pink
L- olive
N- black
O- orange
P- purple
R- red
U- blue
W- white
Y- yellow

Strength/Shade

1- very pale
2- pale
3- light
4- medium light
5- moderate
6- dusky
7- very dusky
8- dark
9- very dark

HOLE NO. : 99 LH 001

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location : E 541000 N 6535000

Elevation:

T.D. : 27m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 18/4/1999

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S.	Radiom
0	1	Oas Osl				Oas	0	20
1	2	Oas Osl				Oas	0	30
2	3	Oas Osl Olg		14799		Oas	0	25
3	4	Try R/B	Whl			Try	0	35
4	5	Try R/B	Whl	x		Try	0	50
5	6	Try Dark R/B	Whl			Try	0	50
6	7	Try weak ? asr R	Wmd			Try	0	50
7	8	Try weak ? asr R	Wmd	14800		Try	0	50
8	9	Try weak ? asr R	Wmd			Try	0	50
9	10	Try weak ? asr R/P	Wmd	x		Try	0	50
10	11	Try weak ? asr R	Wsl			Try	0	50
11	12	Try weak ? asr	Wsl			Try	0	60
12	13	Try - occasional flakes ? he P/R	Wsl	14801		Try	0	60
13	14	Try - rare fine veinlets ? he vqz R	Wsl			Try	0	60
14	15	Try R	Wsl	x		Try	0	55
15	16	Try P/R	Wsl			Try	0	65
16	17	Try	Wsl			Try	0	55
17	18	Try	Wsl	14802		Try	0	60
18	19	Try ? asr P 7	Wsl			Try	0	50
19	20	Try	Wsl	x		Try	0	50
20	21	Try	Wsl			Try	0	60
21	22	Try	Wsl			Try	0	55
22	23	Try	Wsl	14803		Try	0	55
23	24	Try	Wsl			Try	0	50
24	25	Try	Wsl	x		Try	0	40
25	26	Try	Wsl	14804		Try	0	50
26	27	Try	Wsl	x		Try	0	40
		E.O.H. @ 27 metres						

Tenement name/no: **Lake Harris**

Type: **Hammer RAB**

Elevation: T.D. : 18m

Date: 18/4/1999

[illegible]

HOLE NO. : 99 LH 003

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location : E 541000 N 6535500

Elevation:

T.D. : 39m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 18/4/1999

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
0	1	Osl / Osn / Oas R/B				Oas	70	20
1	2	Oas / Olg / Osl R/B				Oas	80	25
2	3	Oas / Olg / Osl R/B		14809		Oas	20	25
3	4	Osl / Olg Pale B				Osl	0	25
4	5	Osl / Olg Pale B		x		Osl	0	25
5	6	Osl / Olg Pale B				Osl	0	30
6	7	Osl / Olg Pale B				Osl	0	25
7	8	qz Olg Osl ? Some Algebuckina Pale B		14810		Oqc	0	25
8	9	Oqc Osl Pale B				Oqc	0	25
9	10	Oqc sap Wh - Pale B	Whl	x		Oqc	0	25
10	11	Oqc sap pal Wh - Pale B	Whl			Oqc	0	30
11	12	Ocy pal Cream	Whl			Oqc	0	35
12	13	Oqc sap pal Cream	Whl	14811		Oqc	0	40
13	14	Ocy sap pal Cream	Whl			Oqc	0	35
14	15	Ocy sap pal + Try wtd Cream + R/B	Whl	x		Oqc	0	35
15	16	li Try Y/B	Whl			Try	180	40
16	17	li Try Y/B	Whl			Try	0	50
17	18	Try xlt High mag susc R/B	Wmd	14812		Try	240	50
18	19	Try xlt R/B	Wmd			Try	100	50
19	20	Try xlt R/B	Wmd	x		Try	150	45
20	21	Try xlt R/B	Wmd			Try	130	55
21	22	Try xlt R/B	Wmd			Try	90	50
22	23	Try xlt R/B	Wmd	14813		Try	40	55
23	24	Try xlt R/B	Wmd			Try	100	65
24	25	Try xlt R/B	Wmd	x		Try	140	65
25	26	Try xlt R/B	Wmd			Try	55	50
26	27	Try xlt R/B	Wmd			Try	0	60
27	28	Try Dark R	Wsl	14814		Try	120	50
28	29	Try Dark R	Wmd			Try	0	50
29	30	Try Dark R	Wmd	x		Try	0	50

HOLE NO. : 99 LH 003

[illegible]

GOLDSTREAM MINING N.L.

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HOLE NO. : 99 LH 004

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location: E 541000 N 6535750

Elevation:

T.D. : 21m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 18/4/1999

[illegible]

HOLE NO. : 99 LH 005

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location : E 5 N 6536000

Elevation:

T.D. : 24m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 18/4/1999

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
0	1	Oas - Osl) R/B				Osn	0	30
1	2	Oas - Osl) R/B				Osn	0	35
2	3	Osl - Olg) R/B		14821		Osn	0	30
3	4	Olg - Osl) Osn / Olg R/B				Osn	0	30
4	5	Olg - Osl) R/B		x		Osn	0	35
5	6	Osl - Olg) R/B				Osn	0	30
6	7	Osl - Osn) R/B				Osn	0	30
7	8	Osn Ost R/B + A		14822		Osn	0	40
8	9	? Ost or Try wtd ? G/A				Try	0	45
9	10	? Try wtd ? asr ? G/A		x		Try	0	50
10	11	Try asr G/A				Try	0	40
11	12	Try asr G/A		14823		Try	0	50
12	13	Try asr G/A				Try	0	65
13	14	Try asr G/A + P				Try	0	60
14	15	Try asr G/A + P		x		Try	0	65
15	16	Try asr P (G)				Try	0	60
16	17	Try asr P (G)				Try	0	60
17	18	he Try asr P (G)		14824		Try	0	65
18	19	he Try asr P (G)				Try	0	65
19	20	he Try asr P (G)		x		Try	0	65
20	21	he Try asr Water Table P (G)				Try	0	65
21	22	he Try asr P (G)		14825		Try	0	60
22	23	he Try asr P (G)				Try	0	65
23	24	he Try asr P		x		Try	0	60
		E.O.H. @ 24 metres						
		Very wet						

HOLE NO. : 99 LH 006

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Locatio E 541000 N 6534750

Elevation:

T.D. : 33m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 19/4/1999

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
0	1	Oas Oqc R/B 6				Oas	0	25
1	2	Oas Oqc R/B 4				Oas	0	25
2	3	Oas Oqc Occ R/B 4		14826		Oas	0	25
3	4	Oas Olg (Ost) R/B 4				Oas	0	30
4	5	Oqc Ost R/B 5 - W/A 5		x		Oqc	0	40
5	6	Oqc sap pal W/A 5	Whl			Oqc	0	40
6	7	Oqc sap pal Cream - I 3	Whl			Oqc	0	45
7	8	Try / Trd fine vqz B/I 5	Wmd	14827		Try	0	50
8	9	Try xtl R/B 7	Wmd			Try	0	50
9	10	Try xtl qz vlt R/B 7	Wmd	x		Try	0	45
10	11	Try xtl qz vlt R/B 7	Wmd			Try	0	50
11	12	li Try xtl Y/B-R/B	Wmd			Try	0	70
12	13	Try xtl Y/B 7	Wmd	14828		Try	0	65
13	14	Try xtl Y/B 7	Wmd			Try	0	65
14	15	Try xtl Y/B 7	Wmd	x		Try	0	65
15	16	Try xtl Y/B 7	Wmd			Try	0	65
16	17	Try xtl (qz vlt) Y/B 7	Wmd			Try	0	65
17	18	Try xtl Y/B 7	Wmd	14829		Try	0	65
18	19	Try xtl ?asi Y/B 7	Wmd			Try	0	65
19	20	Try xtl ?asi Y/B 7	Wmd	x		Try	0	60
20	21	li Try xtl asi B/Y 7	Wmd			Try	0	65
21	22	li Try xtl asi B/Y 7	Wmd			Try	0	65
22	23	li Try xtl asi B/Y 7	Wmd	14830		Try	0	65
23	24	li Try xtl asi B/Y 7	Wmd			Try	0	65
24	25	li Try xtl asi B/Y 7	Wmd	x		Try	0	65
25	26	li Try xtl asi B/Y 7	Wmd			Try	0	65
26	27	li Try xtl asi B/Y 7	Wmd			Try	0	65
27	28	li Try xtl asi B/Y 7	Wmd	14831		Try	0	60
28	29	li Try xtl asi B/Y 7	Wmd			Try	0	60
29	30	li Try xtl asi B/(R) 7	Wmd	x		Try	0	55

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HOLE NO. : 99 LH 006

[illegible]

HOLE NO. : 99 LH 007

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location : E 541000 N 6534500

Elevation:

T.D. : 39m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 19/4/1999

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
0	1	Oas R/B 4				Oas	0	20
1	2	Oas R/B 4				Oas	0	25
2	3	Oas Oqc Ost Olg R/B 4		14833		Oas	0	30
3	4	Oqc Ost R/B 4				Oqc	0	25
4	5	Oqc pal Cream 4		x		Oqc	0	30
5	6	Oqc pal Cream 4				Oqc	0	40
6	7	Oqc pal Cream 4				Oqc	0	50
7	8	Oqc pal Cream 4		14834		Oqc	0	55
8	9	Oqc pal Cream 4				Oqc	0	55
9	10	Oqc pal sap Cream 4		x		Oqc sap	0	55
10	11	Oqc pal sap Cream 4				Oqc sap	0	55
11	12	Oqc pal sap Cream/I 4				Oqc sap	0	55
12	13	Oqc sap Cream/I 4		14835		Oqc sap	0	50
13	14	? Try I/B 4	Whl			Try	0	55
14	15	? Try I/B 4	Whl	x		Try	0	60
15	16	? Try I/B 4	Whl			Try	0	60
16	17	Try I/B 5	Whl			Try	0	60
17	18	Try xlt (qz vlt) I/B 5	Whl	14836		Try	0	65
18	19	Try xlt I/B 5	Whl			Try	0	70
19	20	Try xlt I/B 5	Whl	x		Try	0	65
20	21	Try xlt qz vlt B/G 4	Wmd			Try	0	60
21	22	Try xlt ?asr B/G 4	Wmd			Try	0	65
22	23	Try xlt B/G 4	Wmd	14837		Try	0	65
23	24	Try xlt B/G 4	Wmd			Try	0	65
24	25	Try xlt B/G 4	Wmd	x		Try	0	60
25	26	Try xlt ?asr B/G 4	Wmd			Try	0	65
26	27	Try xlt B/G 4	Wmd			Try	0	65
27	28	Try xlt B/G/4	Wmd	14838		Try	0	65
28	29	Try xlt B/Y 4	Wmd			Try	0	60
29	30	Try xlt ?asr B/Y 4	Wmd	x		Try	0	50

HOLE NO. : 99 LH 007

[illegible]

HOLE NO. : 99 LH 008

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location : E 541000 N 6534250

Elevation:

T.D. : 63m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 19/4/1999

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
0	1	Oas Ost (lag) R/B				Oas	30	20
1	2	Oas Ost (lag) B 2				Oas	15	25
2	3	Ost Oas Ssn W 5		14841		Ost	20	30
3	4	qz Ssn (Algebuckina) W 7				Ssn	0	35
4	5	qz Ssn (Algebuckina) W 7				Ssn	0	50
5	6	qz Ssn (Algebuckina) W 7				Ssn	0	50
6	7	qz Ssn (Algebuckina) W 7				Ssn	0	50
7	8	qz Ssn (Algebuckina) W 7				Ssn	0	50
8	9	qz Ssn (Algebuckina) W 7				Ssn	0	55
9	10	qz Ssn (Algebuckina) W 7		x		Ssn	0	50
10	11	qz Ssn (Algebuckina) (Y) W7				Ssn	0	55
11	12	qz Ssn (Algebuckina) (Y) W7				Ssn	0	50
12	13	qz Ssn (Algebuckina) W 7				Ssn	0	50
13	14	qz Ssn (Algebuckina) W 7				Ssn	0	50
14	15	qz Ssn (Algebuckina) W 7		14842		Ssn	0	55
15	16	qz Ssn (Algebuckina) W 7				Ssn	0	50
16	17	qz Ssn (Algebuckina) W 7				Ssn	0	55
17	18	qz Ssn (Algebuckina) W 7				Ssn	0	55
18	19	qz Ssn (Algebuckina) W 7				Ssn	0	55
19	20	qz Ssn (Algebuckina) W 7		x		Ssn	0	55
20	21	qz Ssn (Algebuckina) W 7				Ssn	0	55
21	22	qz Ssn (Algebuckina) W 7				Ssn	0	55
22	23	qz Ssn (Algebuckina) W 7				Ssn	0	60
23	24	qz Ssn (Algebuckina) W 7				Ssn	0	50
24	25	qz Ssn (pink clay) W/I 4				Ssn	0	55
25	26	qz Ssn and silty clay W/I 4		14843		Ssn	0	65
26	27	(li) qz Ssn and pink clay W/I 4				Ssn	0	65
27	28	(li) qz Ssn and pink clay W/I 4				Ssn	0	65
28	29	(li) qz Ssn and pink clay W/I 4				Ssn	0	60
29	30	(li) qz Ssn and pink clay W/I 4		x			0	65

HOLE NO. : 99 LH 008

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
30	31	qz Ssn I 6				Ssn	0	60
31	32	qz Ssn I 6				Ssn	0	60
32	33	(li) qz Ssn W/I 5		14844		Ssn	0	55
33	34	(li) qz Ssn W/I 5				Ssn	0	60
34	35	li Oqc (? Ssn) R 3		x		Oqc	0	50
35	36	li Oqc (? Ssn) R 3				Oqc	0	55
36	37	li Oqc (? Ssn) R 6				Oqc	0	75
37	38	qz Ssn A/G 5		14845		Oqc	0	90
38	39	he qz Ssn or Try whl ? R 6				Oqc	0	80
39	40	he qz Ssn or Try whl ? R 6	Whl	x		Try	0	75
40	41	he Try R 6	Whl			Try	0	80
41	42	he Try R 6	Whl			Try	0	85
42	43	he Try R6&G5	Whl	14846		Try	0	80
43	44	he Try R/B 7	Whl			Try	0	90
44	45	he ? Try R/B 7	Whl	x		Try	0	80
45	46	he ? Try R/B 7	Whl			Try	0	85
46	47	he Try R/B 7 (G 4)	Whl			Try	0	70
47	48	he Try R/B 7 (G 4)	Whl	14847		Try	0	70
48	49	he Try ? asi R/B 6	Whl			Try	0	65
49	50	he Try ? asi R/B 6	Whl	x		Try	0	65
50	51	he Try ? asi R/B 6	Whl			Try	0	70
51	52	he Try ? asi R/B 6				Try	0	65
52	53	he Try ? asi R/B 6		14848		Try	0	65
53	54	he Try ? asi R/B 6				Try	0	65
54	55	Try asi asr aep R/B-G6	Wsl	x		Try	0	65
55	56	Try asi asr aep R/B-G6	Wsl			Try	0	60
56	57	Try asi asr aep R/B-G6	Wsl			Try	0	55
57	58	Try asi asr aep R/B-G6	Wsl	14849		Try	0	55
58	59	Try asi asr aep R/B-G6	Wsl			Try	0	50
59	60	Try asi asr aep R/B-G6	Wsl	x		Try	0	55
60	61	Try asi asr aep R/B-G6	Wsl			Try	0	55
61	62	Try asi asr aep R/B-G6	Wsl	14850		Try	0	60
62	63	Try asi asr aep R/B-G6	Wsl	x		Try	0	50
		E.O.H. @ 63 metres						

HOLE NO.: 99 LH 009

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location: E 541000 N 6533000

Elevation:

T.D.: 42m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 19/4/1999

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
0	1	Oas Ost R/B 5				Ost	20	20
1	2	Ost R/B 5				Ost	40	25
2	3	Ost - Ofc Y/B-R 7		14851		Ost	40	30
3	4	Ost - Ofc Y/B-R 7				Ost	0	30
4	5	Ost - Oqc R/B 5		x		Ost	0	30
5	6	Vry apy R/B 4				Vry	0	35
6	7	Vry apy Y/B 4				Vry	0	35
7	8	Vry apy Y/B 4		14852		Vry	0	35
8	9	Vry apy Cream - B4				Vry	0	40
9	10	Vry apy Cream - B4		x		Vry	0	35
10	11	Vry apy W 5				Vry	0	35
11	12	Vry apy R/B 3				Vry	0	35
12	13	Vry apy R/B 3		14853		Vry	0	40
13	14	Vry apy R/B 3				Vry	0	40
14	15	Vry apy B/I 3		x		Vry	0	40
15	16	Vry apy R/B 4				Vry	0	45
16	17	Vry apy Y/B 5				Vry	0	45
17	18	Vry apy Y/B 5		14854		Vry	0	45
18	19	li Vry apy Y/B 5				Vry	0	45
19	20	? Van RYB 5		x		? Van	0	45
20	21	? Van YB 5				? Van	0	45
21	22	? Van YB 5				? Van	25	45
22	23	? Van xlt qz vlt YB 5		14855		? Van	40	50
23	24	? Van xlt qz vlt YB 5				? Van	80	50
24	25	? Van YB 5		x		? Van	80	45
25	26	? Van B 4				? Van	20	45
26	27	? Van B 4				? Van	0	50
27	28	? Van B 4		14856		? Van	0	45
28	29	glassy ? Van xlt B 4				? Van	0	45
29	30	? Van xlt B 4		x		? Van	0	40

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HOLE NO. : 99 LH 009

[illegible]

HOLE NO. : 99 LH 010

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location : E 541000 N 6533250

Elevation:

T.D. : 42m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 19/4/1999

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
0	1	Ost Oas R/B 5				Ost	0	20
1	2	Ost (Occ)				Ost	0	25
2	3	Oqc ind R/B 6		14860		Oqc	0	25
3	4	Oqc ind R/B 6				Oqc	0	30
4	5	Oqc ind R/B 6		x		Oqc	0	30
5	6	? Vry apy or Oqc/Ost G/A 3				Oqc	0	30
6	7	? Vry apy or Oqc/Ost G/A 3				Oqc	0	30
7	8	? Vry apy or Oqc/Ost G/A 3		14861		Oqc	0	35
8	9	Oqc sap pal G/A 3				Oqc	0	35
9	10	Oqc sap pal		x		Oqc	0	40
10	11	(li) Oqc Y/B 4				Oqc	0	40
11	12	Oqc sap I/Crm 4				Oqc	0	40
12	13	Oqc sap pal W 4		14862		Oqc	0	45
13	14	Oqc sap pal I/Crm 4				Oqc	0	40
14	15	Oqc sap I/Crm 5		x		Oqc	0	45
15	16	Oqc sap I/Crm 5				Oqc	0	50
16	17	Oqc sap I/Crm 5				Oqc	0	45
17	18	Oqc sap I/Crm 5		14863		Oqc	0	45
18	19	Oqc sap I/Y 4				Oqc	0	45
19	20	Oqc sap Y/R 6		x		Oqc	0	50
20	21	(li) Oqc sap Y/B 4				Oqc	0	45
21	22	? Van or ?Try alt B 3	Whl			?Van	0	50
22	23	? Van or ?Try alt B 3	Whl	14864		?Van	0	55
23	24	? Van or ?Try alt B 3	Whl			?Van	0	55
24	25	? Van asr or Try alt G - R	Whl	x		?Van	0	60
25	26	? Van asr or Try alt G - R	Whl			?Van	0	55
26	27	? Van asr or Try alt G - R	Whl			?Van	0	50
27	28	? Van asr or Try alt G - R	Whl	14865		?Van	0	55
28	29	? Van asr or Try alt G - R	Wmd			?Van	0	55
29	30	Van - Try R/B- (G)	Wmd	x		?Van	0	55

HOLE NO. : 99 LH 010

[illegible]

HOLE NO. : 99 LH 011

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location : E 541000 N 6533500

Elevation:

T.D. : 42m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 19/4/1999

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
0	1	Oas Ost(lag)-contaminated RB 5		N S x		Oas	0	20
1	2	Oas Occ Ost RB 5				Oas	0	25
2	3	Oqc ind Oas) R/B 5		14869		Oas	0	20
3	4	Oas) Prob. with Ost lag R/B 5				Oas	0	25
4	5	Oas (Oqc) R/B 5		x		Oas	0	30
5	6	Oas / Oqc / (Ost) R/B 5				Oas	0	30
6	7	Oqc pal - Ocy I/W 4				Ocy	0	35
7	8	Ocy pal (? Mesozoic) I/W 4		14870		Ocy	0	50
8	9	Ocy pal (? Mesozoic) I/W 4				Ocy	0	50
9	10	Ocy pal (? Mesozoic) I/W 4		x		Ocy	0	40
10	11	Ocy pal (? Mesozoic) I/W 4				Ocy	0	50
11	12	Ocy pal (? Mesozoic) I/W 4				Ocy	0	50
12	13	Ocy pal (? Mesozoic) I/W 4		14871		Ocy	0	50
13	14	Ocy pal (? Mesozoic) I/W 4				Ocy	0	40
14	15	Ocy pal (? Mesozoic) Cr/W		x		Ocy	0	45
15	16	Ocy pal (? Mesozoic) Cr/W				Ocy	0	50
16	17	Ocy pal (? Mesozoic) Cr/W				Ocy	0	50
17	18	Ocy pal (? Mesozoic) Cr/W		14872		Ocy	0	50
18	19	Ocy pal (? Mesozoic) Cr/W				Ocy	0	50
19	20	Ocy pal (? Mesozoic) Cr/W		x		Ocy	0	50
20	21	Ocy pal (? Mesozoic) Cr/W				Ocy	0	40
21	22	Ocy pal (? Mesozoic) W/(I)				Ocy	0	45
22	23	Ocy pal (? Mesozoic) W/(I)		14873		Ocy	0	50
23	24	Ocy pal (? Mesozoic) W/(I)				Ocy	0	55
24	25	Ocy pal (? Mesozoic) W/(I)		x		Ocy	0	50
25	26	Ocy pal (? Mesozoic) W/(I)				Ocy	0	60
26	27	Ocy pal (? Mesozoic) W/(I)				Ocy	0	60
27	28	Ocy pal (? Mesozoic) W/(I)		14874		Ocy	0	55
28	29	Ocy pal (? Mesozoic) W/(I)				Ocy	0	55
29	30	Ocy pal (? Mesozoic) W/(I)		x		Ocy	0	50

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HOLE NO. : 99 LH 011

[illegible]

Date: 20/4/1999

[illegible]

Tenement name/no: **Lake Harris** Prospect: **Lake Harris** Type: **Hammer RAB**

Location : E 542000 N 6535750 Elevation: T.D. : 9m

Azimuth/Inclination: - / 90° Logged by: D.E. Date: 20/4/1999

[illegible]

HOLE NO. : 99 LH 014

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location : E 542000 N 6535500

Elevation:

T.D. : 21m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 20/4/1999

[illegible]

HOLE NO. : 99 LH 015

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location : E 542000 N 6535250

Elevation:

T.D. : 27m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 20/4/1999

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
0	1	Oas (Ogv)				Oas	0	25
1	2	Oas Oqc Occ				Oqc	0	25
2	3	Oqc Ost		14887		Oqc	0	30
3	4	Ost + ? Try whl				Ost	0	30
4	5	? Try asi asr	Whl	x		Try	0	35
5	6	? Try asr or ? Van A 3	Whl			Try	0	35
6	7	? Try asr or ? Van A 3	Whl			Try	0	40
7	8	? Try asr or ? Van A 3	Whl	14888		Try	0	35
8	9	? Try asr or ? Van A 3	Whl			Try	0	40
9	10	(li) ? Try Y/B - A	Whl	x		Try	0	40
10	11	Try apy ? asr A/B 3	Whl			Try	0	45
11	12	Try apy ? asr qz vlt G/A 3	Wmd			Try	0	45
12	13	Try apy ? asr G/A 3	Wmd	14889		Try	0	45
13	14	Try apy ? asr G/A 3	Wmd			Try	0	45
14	15	Try apy ? asr A 3	Wsl	x		Try	0	50
15	16	Try apy ? asr A 3	Wsl			Try	0	50
16	17	he Try xtl qz vlt R/B 7	Wsl			Try	0	55
17	18	he Try xtl qz vlt R/B 7	Wsl	14890		Try	0	55
18	19	he Try xtl qz vlt R/B 7	Wsl			Try	0	55
19	20	he Try xtl qz vlt wld R/B 7	Wsl	x		Try	0	55
20	21	he Try xtl igb ? bxx R/B 7	Wsl			Try	0	50
21	22	he Try xtl igb R/B 7	Wsl			Try	0	45
22	23	he Try xtl igb R/B 7	Wsl	14891		Try	0	50
23	24	he Try xtl igb R/B 7	Wsl			Try	0	50
24	25	he Try xtl igb R/B 7	Wsl	x		Try	0	45
25	26	he Try xtl igb R/B 7	Wsl	14892		Try	0	50
26	27	he Try xtl igb R/B 7	Wsl	x		Try	0	50
		E.O.H. @ 27 metres						

Tenement name/no: Lake Harris	Prospect: Lake Harris	Type: Hammer RAB
Location : E 542000 N 6535000		Elevation: T.D. : 18m
Azimuth/Inclination: - / 90°	Logged by: D.E.	Date: 20/4/1999

[illegible]

HOLE NO.: 99 LH 017

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location: E 542000 N 6534750

Elevation:

T.D.: 30m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 20/4/1999

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
0	1	Oas Oqc				Oas	0	25
1	2	Try - glassy apy G 5	Whl			Try	0	30
2	3	Try asr A/G 3	Whl	14897		Try	0	30
3	4	Try asr A/G 3	Whl			Try	0	45
4	5	Try xlt asr asi A/G 3	Whl	x		Try	0	50
5	6	Try xlt asr asi A/G 3	Whl			Try	0	50
6	7	Try xlt asr asi G/I 3	Whl			Try	0	50
7	8	Try xlt asr asi G/I 3	Whl	14898		Try	0	45
8	9	Try xlt asr asi G 3	Wmd			Try	0	45
9	10	Try xlt asr asi G 3	Wmd	x		Try	0	45
10	11	Try xlt asr asi G 3	Wmd			Try	0	50
11	12	Try xlt asr asi I 3	Wmd			Try	0	50
12	13	Try xlt asr asi qz vlt G/I 3	Wmd	14899		Try	0	50
13	14	Try xlt asr asi qz vlt G/I 3	Wmd			Try	0	50
14	15	Try xlt asr asi G/I 3	Wmd	x		Try	0	50
15	16	Try xlt asr asi G/I 3	Wmd			Try	0	50
16	17	Try xlt asr asi qz vlt G/I 3	Wmd			Try	0	45
17	18	Try xlt asr asi box G/I 3	Wmd	14900		Try	0	50
18	19	Try xlt asr asi A/G 6	Wmd			Try	0	50
19	20	Try xlt asr asi A/G 6	Wmd	x		Try	0	50
20	21	Try xlt asr asi A/G 6	Wmd			Try	0	45
21	22	Try xlt asr asi A/G 6	Wmd	14901		Try	0	50
22	23	Try xlt asr asi A/G 6	Wmd			Try	0	55
23	24	Try xlt asr asi A/G 6	Wmd			Try	0	55
24	25	Try xlt asr asi A/G 6	Wmd	x		Try	0	60
25	26	Try xlt asr asi R - G 6	Wmd			Try	0	55
26	27	Try xlt asr asi R - G 6	Wmd			Try	0	55
27	28	Try xlt asr asi R 7	Wmd	14902		Try	0	50
28	29	Try xlt asr asi R/G 6	Wmd			Try	0	55
29	30	Try xlt asr asi R/G 6	Wmd	x		Try	0	50

E.O.H. @ 30 metres

HOLE NO. : 99 LH 018

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location : E 542000 N 6534500

Elevation:

T.D. : 36m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 20/4/1999

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
0	1	Oas Oqc W6				Oas	0	20
1	2	qz Ssn (Algebuckina) W6	Whl			Ssn	0	25
2	3	qz Ssn W6	Whl	14903		Ssn	0	30
3	4	qz Ssn W6	Whl			Ssn	0	30
4	5	qz Ssn W6	Whl			Ssn	0	35
5	6	qz Ssn rare Try asr (? contam). W6	Whl			Ssn	0	30
6	7	qz ssn W6	Whl			Ssn	0	30
7	8	qz Ssn W6	Whl			Ssn	0	30
8	9	qz Ssn W6	Whl	x		Ssn	0	30
9	10	Try asr + Ssn G + W	Whl			SSn/Try	0	35
10	11	Try asr asi Prob. xlt G/B 5	Wmd			Try	0	50
11	12	Try asr asi G5	Wmd			Try	0	55
12	13	Try asr asi G5	Wmd			Try	0	55
13	14	Try asr asi qz vlt G5	Wmd	14904		Try	0	55
14	15	Try asr asi G5	Wmd	x		Try	0	50
15	16	Try asr asi qz vlt G5	Wsl			Try	0	55
16	17	Try asr asi qz vlt G - I	Wsl			Try	0	50
17	18	Try asr asi G - I	Wsl	14905		Try	0	55
18	19	Try asr asi G - I	Wsl			Try	0	65
19	20	li Try asr asi Y/B	Wsl	x		Try	0	65
20	21	Try asr asi G	Wsl			Try	0	65
21	22	Try asr asi G	Wsl			Try	0	65
22	23	Try asr asi G		14906		Try	0	60
23	24	Try asr asi G - I				Try	0	60
24	25	Try asr asi G - I		x		Try	0	65
25	26	Try asr asi G - I				Try	0	65
26	27	Try asr asi G				Try	0	65
27	28	Try asr asi G		14907		Try	0	65
28	29	li Try asr asi G/Y				Try	0	65
29	30	Try asr asi G/A		x		Try	0	65

GOLDSTREAM MINING N.L.

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HOLE NO. : 99 LH 018

[illegible]

HOLE NO. : 99 LH 019

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location : E 542000 N 6534250

Elevation:

T.D. : 39m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 20/4/1999

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
0	1	Oas				Oas	0	30
1	2	Oas				Oas	0	30
2	3	qz Ssn - Algebuckina	W	14909		Ssn	0	30
3	4	qz Ssn	W			Ssn	0	50
4	5	qz Ssn	W			Ssn	0	50
5	6	qz Ssn	W			Ssn	0	45
6	7	qz Ssn	W			Ssn	0	45
7	8	qz Ssn	W			Ssn	0	50
8	9	qz Ssn	W			Ssn	0	50
9	10	qz Ssn	W	x		Ssn	0	45
10	11	qz Ssn	W			Ssn	0	50
11	12	qz Ssn	W			Ssn	0	50
12	13	qz Ssn	W			Ssn	0	50
13	14	qz Ssn	W			Ssn	0	50
14	15	qz Ssn	W	14910		Ssn	0	55
15	16	qz Ssn	W			Ssn	0	55
16	17	qz Ssn	W			Ssn	0	55
17	18	qz Ssn	W			Ssn	0	55
18	19	qz Ssn	W			Ssn	0	60
19	20	qz Ssn	W	x		Ssn	0	55
20	21	qz Ssn	W			Ssn	0	45
21	22	qz Ssn + rare Try				Ssn	0	50
22	23	qz Ssn + rare Try				Ssn	0	55
23	24	qz Ssn + rare Try		14911		Ssn	0	55
24	25	qz Ssn + Try	R/B	Whl	x	Ssn	0	55
25	26	qz Ssn + Try		Whl		Try	0	45
26	27	qz Ssn + Try		Whl		Try	0	45
27	28	Try asr asi	R/B - G	Whl	14912	Try	0	80
28	29	Try asr asi	R/B - G	Whl		Try	0	85
29	30	Try asr asi	R/B - G	Wmd	x	Try	0	85

GOLDSTREAM MINING N.L.

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HOLE NO. : 99 LH 019

[illegible]

Tenement name/no: Lake Harris

Type: **Hammer RAB**

Elevation: T.D. : 6m

Date: 21/4/1999

[illegible]

HOLE NO. : 99 LH 021

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location : E 542000 N 6533500

Elevation:

T.D. : 33m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 21/4/1999

Outcrop sericite/silica altered rhyolite

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
0	1	Try asi asr G4	Wmd			Try	0	30
1	2	Try asi asr G4	Wmd			Try	0	40
2	3	Try asi asr G4	Wmd	14916		Try	0	50
3	4	Try asi asr G4	Wmd			Try	0	50
4	5	Try asi asr G4	Wmd	x		Try	0	50
5	6	Try asi asr G4	Wmd			Try	0	50
6	7	Try asi asr G4	Wmd			Try	0	55
7	8	Try asi asr G4	Wmd	14917		Try	0	55
8	9	Try asi asr G4	Wmd			Try	0	60
9	10	Try asi asr G5	Wsl	x		Try	0	55
10	11	Try asi asr G5	Wsl			Try	0	50
11	12	Try asi asr G5	Wsl			Try	0	55
12	13	Try asi asr G5	Wsl	14918		Try	0	55
13	14	Try asi asr G5	Wsl			Try	0	50
14	15	Try asi asr G5	Wsl	x		Try	0	50
15	16	Try asi asr G5	Wsl			Try	0	50
16	17	Try asi asr G5	Wsl			Try	0	55
17	18	Try asi asr G5	Wsl	14919		Try	0	50
18	19	cy Try asi asr G5				Try	0	55
19	20	cy Try asi asr G5		x		Try	0	55
20	21	cy Try asr pal Crm/G4	Wmd			Try	0	60
21	22	cy Try asr pal Crm/G4	Wmd			Try	0	55
22	23	cy Try asr pal Crm/G4	Wmd			Try	0	85
23	24	cy Try asr pal Crm/G4	Wmd	14920		Try	0	60
24	25	cy Try asr pal Crm/G4	Wmd	x		Try	0	55
25	26	cy Try asr pal Crm/I	Wmd			Try	0	60
26	27	cy Try asr pal	Wmd			Try	0	65
27	28	Try asr Gn	Wsl	14921		Try	0	60
28	29	Try asr I/(G)	Wsl			Try	0	60
29	30	Try xlt - weak asr R/B	Wmd	x		Try	0	65

HOLE NO. : 99 LH 021

[illegible]

Tenement name/no: **Lake Harris** Prospect: **Lake Harris** Type: **Hammer RAB**

Location : E 542000 N 6533000 Elevation: T.D. : 12m

Azimuth/Inclination: - / 90° Logged by: D.E. Date: 21/4/1999

[illegible]

Page...1...of...1...

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: **Hammer RAB**

Location : E 542000 N 6532500

Elevation:

T.D. : 9m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 21/4/1999

[illegible]

HOLE NO. : 99 LH 024

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location : E 542000 N 6536500

Elevation:

T.D. : 27m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 21/4/1999

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
0	1	Oas Occ Olg				Oas	0	20
1	2	Oas Occ Oqc				Occ	0	20
2	3	Oqc Osn		14928		Oqc	0	30
3	4	Osn Oqc				Osn	0	30
4	5	Osn		x		Osn	0	30
5	6	Oqc				Oqc	0	35
6	7	Oqc				Oqc	0	30
7	8	Oqc Osn		14929		Oqc	0	30
8	9	Try xlt asi asr	G	Wmd		Try	0	35
9	10	Try asi asr	G5	Wmd	x	Try	0	40
10	11	Try asi asr	G5	Wmd		Try	0	45
11	12	Try asi asr	G5	Wmd		Try	0	50
12	13	Try asi asr	G5	Wmd	14930	Try	0	55
13	14	Try asi asr qz vlt	G5	Wmd		Try	0	55
14	15	Try asi asr	G/(B)	Wmd	x	Try	0	55
15	16	Try asi asr Minor vqz	G/(B)	Wmd		Try	0	50
16	17	Try xlt (asr)	I/G	Wmd	14931	Try	0	55
17	18	Try xlt / Try apr	I/G	Wmd		Try	0	60
18	19	Try apr	G	Wsl		Try	0	55
19	20	Try apr	G	Wsl	x	Try	0	50
20	21	Try apr / Try xlt	G	Wsl		Try	0	55
21	22	Try xlt Minor vqz	G	Wsl		Try	0	60
22	23	Try xlt (asr)	B/(G)	Wsl	14932	Try	0	55
23	24	Try xlt (asr)	B/(G)	Wsl		Try	0	60
24	25	Try xlt (asr)	B/(R)	Wsl	x	Try	0	60
25	26	Try xlt (asr)	B	Wsl	14933	Try	0	55
26	27	Try xlt (asr)		Wsl	x	Try	0	60
		E.O.H @ 27 metres						

GOLDSTREAM MINING N.L.

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HOLE NO. : 99 LH 025

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location : E 542000 N 6537000

Elevation:

T.D. : 18m

Azimuth/Inclination: - / 90°

Logged by: **D.E.**

Date: 21/4/1999

[illegible]

HOLE NO. : 99 LH 026

Tenement name/no: Lake Harris

Prospect: Lake Harris

Type: Hammer RAB

Location : E 542000 N 6537500

Elevation:

T.D. : 33m

Azimuth/Inclination: - / 90°

Logged by: D.E.

Date: 21/4/1999

From	To	Geology	Weathering	Sample	Au	Lithology	Mag S	Radiom
0	1	Oas Occ				Occ	0	20
1	2	Occ Oas Oqc				Oqc	0	25
2	3	Oqc		14937		Oqc	0	25
3	4	Oqc				Oqc	0	25
4	5	Oqc				Oqc	0	20
5	6	Oqc				Oqc	0	25
6	7	Oqc				Oqc	0	25
7	8	Oqc Osn				Oqc	0	25
8	9	Oqc Osn				Oqc	0	25
9	10	Osn Oqc		x		Osn	0	30
10	11	Osn				Osn	0	30
11	12	Oqc (pal)				Oqc	0	30
12	13	Oqc (pal)		14938		Oqc	0	30
13	14	Oqc pal Ois				Oqc	0	30
14	15	Ost				Ost	0	30
15	16	Ost				Ost	0	30
16	17	Ost + Ssn				Ost	0	30
17	18	he qz Ssn				Ssn	0	30
18	19	Ssn + Smd (Mesozoic)				Ssn	0	30
19	20	Ssn + Smd (Mesozoic)		x		Ssn	0	30
20	21	Ssn + Smd (Mesozoic)				Ssn	0	30
21	22	qz Ssn Damp - poor recovery				Ssn		
22	23	No sample recovered		14939		?		
23	24	No sample recovered. Water inject. Poor sample.				?		
24	25	Water inject. Poor sample.		x		Ssn		
25	26	Ssn/Smd				Ssn	0	30
26	27	Smd/Ssn				Ssn	0	30
27	28	? Ggu I/W	Whl	14940		?Ggu	0	30
28	29	? Ggu I	Whl			?Ggu	0	30
29	30	? Ggu I	Whl	x		?Ggu	0	30

GOLDSTREAM MINING N.L.

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HOLE NO. : 99 LH 026

[illegible]

Tenement name/no: Lake Harris **Prospect:** Lake Harris **Type:** Hammer RAB

Location : E 542000 N 6538000 Elevation: T.D. : 24m

Azimuth/Inclination: - / 90° Logged by: D.E. Date: 21/4/1999

[illegible]

RECEIVED

13 MAY 1999

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Genalysis Laboratory Services Pty. Ltd.

ANALYSTS AND CONSULTING CHEMISTS
ACN: 008 787 237

ATTENTION P GREENHILL
GOLDSTREAM MINING NL
PO BOX 346
PROSPECT SA 5082
AUSTRALIA

RAB DRILLING
LAKE HARRIS

Analytical Report

COMMENTS

ATTENTION: P GREENHILL ...
RAB....

JOB INFORMATION

JOB CODE :562.0/991716
No. SAMPLES :147
ELEMENTS :9
CLIENT O/N :00872
DATE RECEIVED :21/04/99
DATE COMPLETED :10/05/99

LEGEND

'X' = LESS THAN DETECTION LIMIT
'N/R' = SAMPLE NOT RECEIVED
'*' = RESULT CHECKED
'()' = RESULT STILL TO COME
'I/S' = INSUFFICIENT SAMPLE FOR ANALYSIS
'E6' = RESULT x 1,000,000

MAIN OFFICE AND LABORATORY

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Tel:(08)9021 2881 Fax:(08)9021 3476

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genalysis laboratory services pty. ltd.

SAMPLE DETAILS

DISCLAIMER

Genalysis Laboratory Services Pty Ltd disclaims any liability, legal or otherwise, for any inferences implied from this report relating to either the origin of, or the sampling technique employed in the collection of, the submitted samples.

SAMPLE STATE(S) & SAMPLE PREPARATION(S)

Rotary Air Blast Sample(s)
Dry, Single Stage Mix & Grind (chrome-steel bowl)

SAMPLE STORAGE DETAILS

GENERAL CONDITIONS :

SAMPLE STORAGE OF SOLIDS

Bulk Residues and Pulps will be stored for 60 DAYS without charge. After this time all Bulk Residues and Pulps will be stored at a rate of \$1.20/cubic metre/day until your written advice regarding collection or disposal is received. Expenses related to the return or disposal of samples will be charged to you at cost.

SAMPLE STORAGE OF SOLUTIONS

Samples received as liquids, waters or solutions will be held for 60 DAYS free of charge then disposed of, unless written advice for return or collection is received.



ANALYSIS

ELEMENTS	Au	Au-Rp1	Au-Rp2	Cu	Zn	As	Ag	Pb	U
UNITS	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION	1	1	1	1	5	0.5	0.005	1	0.01
METHOD	B/ETA	RO/ETA	B/ETA	B/MS	B/MS	B/MS	B/MS	B/MS	B/MS

SAMPLE NUMBERS

1 14799	1		9	30	3.0	0.025	8	0.52
2 14800	1		5	60	5.0	0.045	11	1.25
3 14801	x		4	55	2.5	0.020	9	1.55
4 14802	x		4	55	1.5	0.055	15	1.50
5 14803	x		4	55	1.0	0.050	16	1.35
6 14804	x		4	50	1.5	0.075	16	1.20
7 14805	x		11	30	3.0	0.025	12	0.49
8 14806	1		4	80	1.5	0.015	8	0.66
9 14807	x		3	80	1.0	0.020	5	0.54
10 14808	x		18	85	1.0	0.035	8	0.62
11 14809	1		11	25	2.0	0.010	8	0.34
12 14810	x		5	10	3.5	0.010	8	0.42
13 14811	x		4	15	4.0	0.015	9	1.06
14 14812	x		4	80	1.0	0.020	15	1.70
15 14813	x		5	55	1.0	0.005	25	2.75
16 14814	x		7	75	3.0	0.035	11	2.65
17 14815	x		3	65	1.5	0.060	9	1.75
18 14816	x		9	45	1.5	0.085	16	1.02
19 14817	2		23	* 30	5.5	0.050	9	1.65
20 14818	x		17	15	5.5	x	9	0.90
21 14819	x		8	60	3.0	0.010	54	1.80
22 14820	x		7	90	1.5	0.080	185	* 1.90
23 14821	1		11	25	3.0	0.025	10	0.52
24 14822	1		5	15	5.0	x	9	0.72
25 14823	1		3	25	2.0	0.010	11	1.25
26 14824	x		3	30	1.0	0.025	11	1.16
27 14825	x		2	20	1.0	0.015	11	1.10
28 14826	2		15	40	4.0	0.020	9	0.92
29 14827	1		5	35	4.0	0.025	12	1.12
30 14828	1		9	80	6.5	0.070	8	1.95
31 14829	x		4	70	3.5	0.070	7	1.80
32 14830	x		3	65	3.5	0.075	5	1.18
33 14831	x		2	70	3.5	0.145	5	0.84
34 14832	x		2	55	2.0	0.085	6	0.58
35 14833	5		12	25	4.0	0.010	8	0.90
36 14834	2		3	5	1.5	0.005	7	0.66
37 14835	1		7	20	6.0	0.020	52	1.60
38 14836	2		7	40	12.5	0.155	45	1.45
39 14837	1		5	40	7.0	0.085	9	1.16
40 14838	5		4	35	7.5	0.075	8	1.18



ANALYSIS

ELEMENTS	Au	Au-Rp1	Au-Rp2	Cu	Zn	As	Ag	Pb	U
UNITS	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION	1	1	1	1	5	0.5	0.005	1	0.01
METHOD	B/ETA	RO/ETA	B/ETA	B/MS	B/MS	B/MS	B/MS	B/MS	B/MS

SAMPLE NUMBERS

41 14839	6		6	4	35	10.5	0.140	12	1.25
42 14840	18		17	3	25	5.0	0.105	7	1.18
43 14841	1			7	10	4.5	0.010	8	0.82
44 14842	1			3	5	3.5	x	7	1.02
45 14843	x			3	10	5.0	x	9	2.45
46 14844	1			4	10	6.5	x	3	3.10
47 14845	1			3	10	4.0	x	12	6.80*
48 14846	x			3	10	3.5	x	23	5.30*
49 14847	x			3	10	6.5	x	14	2.95
50 14848	4			3	10	5.5	0.015	11	2.35
51 14849	4			3	10	7.0	0.005	16	1.30
52 14850	13		13	3	10	11.0	0.025	11	1.16
53 14851	3			13	15	7.0	0.015	9	1.06
54 14852	x			3	10	14.5	0.010	15	0.72
55 14853	x			2	15	4.5	x	14	0.68
56 14854	1			2	55	6.5	x	7	1.65
57 14855	x			2	100	3.0	x	8	1.85
58 14856	1			2	125	2.0	x	12	1.70
59 14857	1			2	95	1.0	x	8	0.84
60 14858	x			2	120	2.0	0.015	9	1.02
61 14859	5		5	1	100	1.5	0.060	6	0.96
62 14860	3		2	14	35	6.0	0.020	10	1.75
63 14861	1			2	5	2.0	x	13	0.48
64 14862	1			3	5	4.0	x	10	0.43
65 14863	x			2	5	2.0	x	11	0.60
66 14864	2			4	30	3.5	0.030	25	2.05
67 14865	x			2	40	1.5	0.015	13	0.92
68 14866	2			2	50	2.0	0.020	11	0.82
69 14867	2			3	50	2.0	0.025	11	0.64
70 14868	2			3	50	2.5	0.040	11	0.68
71 14869	3			14	30	9.0	0.005	8	1.50
72 14870	1			5	10	5.0	x	82	* 0.62
73 14871	x			3	5	1.5	x	24	0.47
74 14872	1			4	5	3.0	x	21	0.82
75 14873	x			4	5	4.5	x	20	1.40
76 14874	13	12		17	55	8.0	0.460	29	2.05
77 14875	6	5		5	135	8.5	0.190	31	1.60
78 14876	3			3	80	5.0	0.070	12	0.68
79 14877	3			4	45	4.5	0.055	12	0.68
80 14878	2			10	15	4.5	0.045	7	0.78



ANALYSIS

ELEMENTS	Au	Au-Rp1	Au-Rp2	Cu	Zn	As	Ag	Pb	U
UNITS	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION	1	1	1	1	5	0.5	0.005	1	0.01
METHOD	B/ETA	RO/ETA	B/ETA	B/MS	B/MS	B/MS	B/MS	B/MS	B/MS

SAMPLE NUMBERS

81 14879	1			5	50	3.0	0.105	180	* 1.35
82 14880	X			11	55	2.0	0.070	60	* 1.60
83 14881	X			8	35	2.5	0.020	9	0.78
84 14882	1			10	50	3.0	0.035	8	1.10
85 14883	1			8	20	2.5	0.010	7	0.38
<hr/>									
86 14884	X			3	15	1.0	X	7	0.52
87 14885	X			3	55	1.5	0.020	4	1.45
88 14886	1			3	70	1.0	0.035	3	1.60
89 14887	1			11	35	3.5	0.010	8	0.50
90 14888	1			5	110	9.0	X	12	0.98
<hr/>									
91 14889	X			6	70	6.0	X	9	1.14
92 14890	X			4	85	2.5	0.015	10	1.80
93 14891	1			3	85	2.0	X	8	1.30
94 14892	X			4	95	2.0	0.005	12	1.65
95 14893	1			9	35	3.5	X	5	0.66
<hr/>									
96 14894	X			4	95	5.5	0.005	10	1.45
97 14895	X			3	120	1.5	0.045	10	1.40
98 14896	X			5	140	* 2.0	0.110	6	1.35
99 14897	1			7	15	4.5	0.020	7	0.54
100 14898	X			2	10	4.5	X	6	0.82
<hr/>									
101 14899	X			2	15	4.5	X	8	1.00
102 14900	X			2	15	5.0	X	11	1.35
103 14901	1			2	10	6.5	X	16	1.95
104 14902	X			2	10	8.0	X	14	1.45
105 14903	1			5	5	4.0	X	5	0.56
<hr/>									
106 14904	X			3	5	11.0	X	14	1.06
107 14905	1			3	10	8.0	0.060	15	0.96
108 14906	X			3	10	11.5	0.040	20	1.30
109 14907	X			3	20	10.0	0.110	13	2.45
110 14908	1			2	20	8.0	0.040	10	1.75
<hr/>									
111 14909	1			10	10	4.0	0.065	20	0.78
112 14910	X			4	5	5.0	0.090	13	1.00
113 14911	2			3	30	6.0	0.080	8	2.60
114 14912	7		7	3	25	14.5	0.045	21	3.40
115 14913	2			4	25	14.0	0.035	20	2.20
<hr/>									
116 14914	X			3	5	17.0	0.060	9	1.02
117 14915	1			4	5	2.5	X	32	0.60
118 14916	1			5	10	5.0	0.005	9	0.62
119 14917	X			2	10	0.5	X	10	1.35
120 14918	X			3	5	0.5	X	10	1.16



ANALYSIS

ELEMENTS	Au	Au-Rp1	Au-Rp2	Cu	Zn	As	Ag	Pb	U
UNITS	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppm	ppm
DETECTION	1	1	1	1	5	0.5	0.005	1	0.01
METHOD	B/ETA	RO/ETA	B/ETA	B/MS	B/MS	B/MS	B/MS	B/MS	B/MS

SAMPLE NUMBERS

121 14919	X	2	5	X	X	6	1.04
122 14920	X	2	X	X	X	8	0.48
123 14921	X	5	15	2.0	X	18	2.25
124 14922	1	5	75	3.0	0.085	39	1.30
125 14923	1	9	25	4.5	0.020	8	0.72
126 14924	1	3	10	4.0	X	6	1.04
127 14925	X	5	10	4.5	0.035	13	1.06
128 14926	1	11	15	2.5	0.005	8	0.45
129 14927	X	4	15	5.0	X	7	1.16
130 14928	2	10	20	5.0	0.065	8	0.86
131 14929	X	5	10	6.0	0.015	11	0.62
132 14930	1	3	X	1.0	0.025	32	0.47
133 14931	X	4	5	1.5	0.065	37	0.38
134 14932	X	5	X	1.0	0.020	20	0.45
135 14933	X	6	10	1.5	0.015	19	0.76
136 14934	X	10	25	3.0	0.010	8	0.62
137 14935	X	4	10	4.5	X	6	0.48
138 14936	X	3	10	6.5	X	6	0.90
139 14937	1	12	20	5.0	X	9	1.04
140 14938	X	3	X	2.5	X	4	0.66
141 14939	X	2	X	1.0	X	3	0.66
142 14940	X	3	X	1.0	X	9	0.80
143 14941	X	2	20	1.5	X	8	1.45
144 14942	1	13	30	4.5	X	9	1.25
145 14943	X	5	10	10.0	X	12	2.85
146 14944	X	2	30	5.5	0.025	9	2.35
147 14945	X	2	40	3.5	0.015	5	1.50
Ch.0001(14799	) 1	9	30	3.0	0.015	8	0.50
Ch.0026(14824	) X	2	25	1.0	0.005	10	1.20
Ch.0051(14849	) 4	3	10	8.0	X	17	1.30
Ch.0076(14874	) 9	16	50	7.5	0.370	26	2.00
Ch.0101(14899	) X	2	15	5.0	0.050	9	1.04
Ch.0126(14924	) X	3	5	4.0	0.015	6	1.00
STD: PL-7	12						
STD: PL-7		16	20	9.0	0.360	16	0.52



METHOD CODE DESCRIPTIONS

B/ETA

Aqua-Regia digest.

Analysed by Graphite Furnace Atomic Absorption Spectrometry.

RO/ETA

Pre-Roast followed by an Aqua-Regia digest.

Analysed by Graphite Furnace Atomic Absorption Spectrometry.

B/MS

Aqua-Regia digest.

Analysed by Inductively Coupled Plasma Mass Spectrometry.



VIGILANT OIL PTY LTD

ACN 008 889 174

21 TROY STREET
PO BOX 366
APPLECROSS 6953 WESTERN AUSTRALIA

email: j.cochrane@eepo.com.au
TELEPHONE: 61 8 9316 1156
FACSIMILE: 61 8 9316 1402

FAX TRANSMISSION

TO : GEORGE KWITKO
PRIMARY INDUSTRIES & RESOURCES SA 08 8463 3101

FROM : JOHN COCHRANE 08 9316 1402

SUBJECT : RENEWAL MINERAL EXPLORATION LICENCE NO 2197

DATE : 11 AUGUST 1999 REF: JC634

Vigilant Oil Pty Ltd hereby applies to renew EL2197 in order to enable exploration to continue.

I confirm that during the current six month reporting period a drilling programme was undertaken by our co-joint venturer Goldstream Mining N.L. The results of the programme were quite disappointing and Goldstream has therefore advised it is withdrawing from the joint venture.

Once you have the report on the drilling programme, which should be with you in 1-2 weeks, we can discuss appropriate renewal terms including relinquishment of part of the tenement area.

Yours faithfully,



J. COCHRANE

PIRSA

C99/02308



VIGILANT OIL PTY LTD

ACN 008 889 174

MAIL: P.O. BOX 939 COURIER: LEVEL 3, 9 BOWMAN ST
SOUTH PERTH, WESTERN AUSTRALIA
6951

TELEPHONE: 61 8 9474 6344
FACSIMILE: 61 8 9474 6355
EMAIL: johndcochrane@hotmail.com

FACSIMILE COVER PAGE

To: GEORGE KWITKO

Fax #: 088463 3101

Company: SADME

From: John Cochrane

Fax #: +618 9474 6355

Tel #: +618 9474 6344

Subject:

Sent: 1/12/00 at 9:31:32 AM

Pages: 1 (including cover)

MESSAGE:

PRIMARY INDUSTRIES
EQUIPMENT

01 DEC 2000

Dear Sir,
Renewal of EL 2197

I have discussed this matter further with my consultant geologist and ~~it is difficult to~~ make a case for paying the rent and other costs associated with renewing this EL for another year.

While the industry and the region were so strongly in favour in the first year of the EL that had the Department/Minister allowed the dealing I could have sold the tenement to a party prepared to pay me \$1.5m plus 1% royalty for it and then spend a lot on exploration, we have now seen the risks involved in denying that transaction materialise. Indeed my letter to Neville Alley of 26 March 1997 seems prophetic.

Today, there are multiple Native Title Claims, the gold price is much lower, the region is out of favour through disappointing results, the regions leading companies are unwanted in the market and despite all my efforts nobody wants the tenement.

My experience with EL 2197 has been dissappointing to say the least.

However in this industry optimism is a prerequisite and it is likely that I shall be applying for further tenements in SA at some time.

Meantime, thankyou for your past assistance. The Goldstream report will be sent to you to copy and return as discussed. If anything further is needed to properly finalise things please let me know.

Regards
JOHN COCHRANE

