P.A. 1721  WINNECKE

MONTHLY REPORT FOR FEBRUARY, 1972

No field work was carried out due to the adverse climatic conditions.

Data on past exploration was examined and a decision made to apply for a reduced area of 234 square miles as opposed to the previously held area of approximately 308 square miles.
NT.04 WINNEKE

REPORT FOR AUGUST 1971

SUMMARY

The Winnecke Authority to Prospect (No. 1721) was
reconnoitred during August with the object of reassessing
the area. The reassessment was considered necessary after
percussion drilling at the Gheko Prospect (earlier in the
year) had intersected sulphide mineralization ranging up to
7.0% zinc over five feet.

Altogether nine days were spent on a reconnaissance of the
Winnecke A to P, but a major vehicle-breakdown about midway
through the investigation resulted in a week away from the area,
and necessitated some duplicate traversing.

Most of the Authority to Prospect was reconnoitred, the
only part not visited was the central eastern portion, south-
west of Mt. Laughlen.

GEOLOGICAL MAPPING

Most of the rocks within the Authority belong to the
Precambrian Arunta Complex. The rocks consist mainly of regionally
metamorphosed sediments which for the most part are of clastic
origin, and nowcrop out as schist, gneiss and quartzite. However
in the northern part of the Authority (particularly the north-
eastern part) metacarbonate rocks are prominent in the meta
sediments.

Intrusive rocks, mainly granite and associated types are
sporadically distributed through the area. In the south-west
part of the Authority amphibolite is common - a lot of it has
undoubtedly been derived from basic lava flows.

The metamorphics have been strongly folded and faulted, and
there is little doubt that there have been several periods of
major tectonic activity. One of the most intense movements take
place in post-Proterozoic when nappes capped with Proterozoic
Heavytree Quartzite were thrust up along high angle faults to form
a prominent range trending east through the centre of the
Authority. About three miles south of the main range there are
lesser, parallel, similar structures.

MINERALIZATION

The only mining carried out within the Authority to Prospect
has been from the Winnecke Gold Field between about 1890 and
1915. None of the mines was large and the total production
amounted to only a few thousand ounces.

Cont......
The Winnecke field is situated on the northern fall of Mt. Laughlen, and the position of the workings suggest that the mineralization took place during the post-Proterozoic faulting which led to the formation of the nappes.

West of the Winnecke gold mines, along the northern side of the range, minor deposits of base metals have been found.

Geochemical sampling along the zone (carried out by Central Pacific Minerals) drew attention to an area (Gheko Prospect) in which subsequent percussion drilling intersected sulphide mineralization in which sphalerite was dominant, and range up to 7.8% zinc over 5 feet. The mineralization is in hornblende schist on or near the contact with marble. This suggests that the sulphide mineralization may be syngenetice. The zinc geochemical analyses ranged up to about 80 p.p.m. in the vicinity of the Gheko Prospect, and contrasts with analyses ranging up to 600 p.p.m. in the valley of the headwaters of the Hale River - about 12 miles east north east of the Gheko Prospect. Only minor copper mineralization has been found so far (at the Queen of Sheba Prospect) in the headwaters of the Hale River. But the relatively high geochemical analyses for zinc suggest that further work is warranted in the part of the Authority.

**SAMPLING**

Twelve stream sediment (-80 mesh) samples were collected for analysis for copper, lead and zinc. Most of the samples came from the north-east part of the Authority in the headwaters of the Hale River - the remainder came from the south-west part of the Authority. The samples B1, B11-20, B22 were submitted to AMDEL, Adelaide for AAS analyses.

Three -90 mesh stream sediment samples B21C, B23 and B24 were collected and submitted to AMDEL for a semi-quantitated spectrographic scan. Sample B21C was taken in the Hale River Valley about 1½ miles south-east of Ten Mile Dam, and samples B23 and B24 were taken from stream draining the prominent quartz intrusive about 3 miles east of Randall's Peak Bore.

**COMMENTS ON FUTURE PROGRAMME**

The recent reconnaissance has drawn attention to two parts of the Authority which appear to warrant more investigation.

1. **The N.E. portion of the Authority - east from the Hale River Valley**

The prevalence of carbonate rocks in this part of the Authority to Prospect suggests an environment suitable for syngenetic sulphide deposits. During an earlier geochemical sampling programme this area was only sparsely sampled - but of fourteen samples collected along the Hale River Valley, twelve of them returned high zinc analyses (up to 600 p.p.m.) These analyses are in marked contrast to those obtained around the GHEKO prospect (70-80 p.p.m.)
where recent drilling intersected sulphides ranging up to 7.8% zinc.

During the recent reconnaissance, four - 80 mesh samples were taken from Hale River tributaries and the maximum analysis obtained for zinc was only 55 p.p.m.

However one sample, a panned concentrate, analysed 500 p.p.m. (emission spectroscopy).

In view of these discrepancies it is considered that further sampling is necessary to establish:

1. Whether the high zinc results are real or apparent.
2. (if the high zinc analyses are substantiated) to determine if there is an anomaly indicative of a mineralized area.

2. **The South-West portion of the Authority**

The south-west part of the Authority has been extensively faulted and intruded by basic volcanics and it is possible that this activity has mineralized part of the area.

The southern part of the Authority was not included in the original geochemical sampling programme, and consequently we have no idea of the incidence or distribution of mineralization (if any) within this part of the Authority. Any investigation of the south-west part of the area will start with a reconnaissance mapping and geochemical sampling programme.
REPORT FOR JULY 1971

The Appraisals and Investigations Division of the Company is currently carrying out a follow-up study of the recent drilling programme within the P.A. Reconnaissance and field traverses by the resident geological team have delineated a 4-5 mile belt of meta-limestones, trending south-east. Earlier geochemical sampling taken from the headwaters of the Hale River, south-east of 10 Mile Dam isolated anomalous zinc results which are associated with these meta-limestones; further mapping and sampling is being carried out.

Results from additional analytical work of drill cuttings are still being evaluated. Access to the southern part of the P.A. has been made easier by a road found in the vicinity of Mt. Laughlin.
Preparatory to a field assessment of the Winnecke Authority by the Appraisals and Investigations Division of the Company scheduled for July, 1971, the data obtained from our exploration work has been further evaluated.

Previous exploration work by the Company correlated a number of previously known prospects with an east-west trending zone of shearing and vein quartz activity.

A four hole percussion drilling programme earlier in the year outlined a prospect which intersected low grade zinc mineralization in all four holes. Further analytical results have recently been received and these indicate zinc mineralisation having the following characteristics.

<table>
<thead>
<tr>
<th>Percussion Hole</th>
<th>From</th>
<th>To</th>
<th>Apparent Width</th>
<th>Est.* True Width</th>
<th>Cu</th>
<th>Zn</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH NT-04-1</td>
<td>105</td>
<td>110</td>
<td>5</td>
<td>3</td>
<td>0.4</td>
<td>1.6</td>
</tr>
<tr>
<td>PH NT-04-2</td>
<td>130</td>
<td>155</td>
<td>25</td>
<td>12</td>
<td>0.3</td>
<td>3.0</td>
</tr>
<tr>
<td>PH NT-04-3</td>
<td>70</td>
<td>85</td>
<td>15</td>
<td>8</td>
<td>0.2</td>
<td>1.8</td>
</tr>
<tr>
<td>PH NT-04-4</td>
<td>190</td>
<td>205</td>
<td>15</td>
<td>8</td>
<td>0.2</td>
<td>2.5</td>
</tr>
</tbody>
</table>

* assuming vertical lode

Further analytical work is continuing on the drill hole cuttings in an attempt to ascertain whether other elements at present.

Expenditure to the end of June 1971 is $8,497.00 out of a total of $199,998.00 spent on exploration in the Northern Territory for 1971. This does not include capital equipment and plant needed to service the various projects.
Following the recognition of Zinc in cuttings from reconnaissance drilling of the Gheko prospect it was decided to send additional samples for analysis from Holes 1-4. The results of these when received will assist in the interpretation of current information and help plan a future programme.

In addition cadmium has been reported from other areas and as this element commonly occurs in association with sphalerite it will be analysed for. Possible mineral associations in the region have suggested that cobalt, tungsten, vanadium and bismuth should be checked.

A prospector has requested we allow him to peg a small gold lease within A.P. 1721. Consideration will be given to this after an inspection has been made.

Estimated expenditure to the end of May, 1971 amounted to $7,915.00 out of a total of $160,701.95 spent on exploration in the Northern Territory for 1971. This does not include capital equipment and plant needed to service the various projects.

J. H. Mill
The Director
Mines & Water Resources Branch
N.T. Administration
DARWIN N.T. 5790

Dear Sir,

AP 1721 - Winnecke
Report for April, 1971

An application for renewal of Authority to Prospect 1721 for a further period of twelve months was dispatched to the Mines Department, Darwin on the 29th March, 1971. The Mines Department acknowledged receipt of this application on the 31st March 1971.

As stated in the previous report, a four hole percussion drilling programme was completed over the Gheko prospect on the 8th March, 1971.

The bore cuttings were rapidly logged in the field during March and were then subject to microscopic examination and detailed logging by Company geologists in Alice Springs. Cuttings from the various mineralised zones were dispatched to Geochemical and Mineralogical Laboratories Pty.Ltd. for analysis. Cross sections relating assayed sulphide intersections to magnetic and induced polarisation data are appended. The table of analytical results summarises results available to date.

An assessment of these results together with further field work is programmed in an effort to upgrade this prospect to the point where further drilling is warranted.

The results of this drilling will be further followed up by a reassessment of geological, geochemical and induced polarisation data obtained during the 1970 field season.

Estimated expenditure to the end of April, 1971 amounted to $7,915.00 out of a total of $114,418.00 spent on exploration in the Northern Territory for 1971. This does not include capital equipment and plant needed to service the various projects.

Yours faithfully,

J.F. Ivanac

C.C. Inspector of Mines
Mines Department
Alice Springs, N.T.

General Manager
<table>
<thead>
<tr>
<th>Percussion Hole</th>
<th>Cu</th>
<th>Pb</th>
<th>Zn</th>
<th>Co</th>
<th>Bi</th>
<th>Ag</th>
</tr>
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<tr>
<td>NT 04-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>105 - 110</td>
<td>4300</td>
<td>270</td>
<td>1.6%</td>
<td>140</td>
<td>10</td>
<td>8.5</td>
</tr>
<tr>
<td>110 - 115</td>
<td>660</td>
<td>64</td>
<td>100</td>
<td>26</td>
<td>15</td>
<td>8.0</td>
</tr>
<tr>
<td>NT 04-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>110 - 115</td>
<td>1000</td>
<td>450</td>
<td>6000</td>
<td>68</td>
<td>15</td>
<td>3.4</td>
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<tr>
<td>115 - 120</td>
<td>2400</td>
<td>240</td>
<td>1.33%</td>
<td>60</td>
<td>10</td>
<td>6.0</td>
</tr>
<tr>
<td>120 - 125</td>
<td>4400</td>
<td>190</td>
<td>1200</td>
<td>46</td>
<td>5</td>
<td>10.5</td>
</tr>
<tr>
<td>125 - 130</td>
<td>560</td>
<td>160</td>
<td>4400</td>
<td>48</td>
<td>10</td>
<td>3.9</td>
</tr>
<tr>
<td>130 - 135</td>
<td>880</td>
<td>1200</td>
<td>2.8%</td>
<td>140</td>
<td>5</td>
<td>6.0</td>
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<tr>
<td>135 - 140</td>
<td>2400</td>
<td>1600</td>
<td>7.8%</td>
<td>360</td>
<td>15</td>
<td>8.5</td>
</tr>
<tr>
<td>140 - 145</td>
<td>5000</td>
<td>800</td>
<td>2.6%</td>
<td>100</td>
<td>15</td>
<td>12.5</td>
</tr>
<tr>
<td>NT 04-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70 - 75</td>
<td>2100</td>
<td>370</td>
<td>3.0%</td>
<td>100</td>
<td>15</td>
<td>8.0</td>
</tr>
<tr>
<td>75 - 80</td>
<td>1800</td>
<td>210</td>
<td>1.43%</td>
<td>84</td>
<td>5</td>
<td>6.0</td>
</tr>
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<td>125 - 130</td>
<td>1200</td>
<td>160</td>
<td>800</td>
<td>28</td>
<td>10</td>
<td>3.7</td>
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<td>130 - 135</td>
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<td>700</td>
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<td>36</td>
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<td>5.5</td>
</tr>
<tr>
<td>135 - 140</td>
<td>2100</td>
<td>1.42%</td>
<td>1.7%</td>
<td>66</td>
<td>55</td>
<td>37.0</td>
</tr>
<tr>
<td>140 - 145</td>
<td>800</td>
<td>510</td>
<td>2400</td>
<td>40</td>
<td>20</td>
<td>3.7</td>
</tr>
<tr>
<td>NT 04-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>125 - 130</td>
<td>1600</td>
<td>2200</td>
<td>1.23%</td>
<td>58</td>
<td>10</td>
<td>8.5</td>
</tr>
<tr>
<td>130 - 135</td>
<td>110</td>
<td>290</td>
<td>1000</td>
<td>20</td>
<td>5</td>
<td>3.3</td>
</tr>
<tr>
<td>160 - 165</td>
<td>1500</td>
<td>700</td>
<td>5000</td>
<td>120</td>
<td>5</td>
<td>4.0</td>
</tr>
<tr>
<td>165 - 170</td>
<td>3700</td>
<td>350</td>
<td>6000</td>
<td>100</td>
<td>15</td>
<td>8.5</td>
</tr>
<tr>
<td>185 - 190</td>
<td>4000</td>
<td>370</td>
<td>2600</td>
<td>54</td>
<td>15</td>
<td>17.0</td>
</tr>
<tr>
<td>190 - 195</td>
<td>1600</td>
<td>1800</td>
<td>5.1%</td>
<td>140</td>
<td>15</td>
<td>11.0</td>
</tr>
<tr>
<td>195 - 200</td>
<td>2000</td>
<td>1800</td>
<td>1.6%</td>
<td>96</td>
<td>20</td>
<td>9.5</td>
</tr>
</tbody>
</table>
The Director
Mines & Water Resources Branch
Northern Territory Administration
DARWIN N.T. 5790

Dear Sir,

AP 1721 - Winnecke
Report for March, 1971

The percussion drilling programme by Gorey & Cole of Alice Springs, was commenced at the Gheko Prospect on the 25th February and completed on the 8th March. Four holes aggregating 865 feet were drilled and representative samples were collected at five foot intervals.

Analytical results have not yet been received but from the geological logs it would appear that mineralisation of economic significance has not been intersected.

Several zones of disseminated pyrite containing traces of chalcopyrite (estimated at \(< 1\%\) Cu) were penetrated near the contact between hornblende schist and gneiss.

Summary of drilling as follows:

**PH NT 04-1**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 100</td>
<td>Hornblende schist</td>
</tr>
<tr>
<td>100 - 115</td>
<td>Hornblende schist containing less than 5% pyrite</td>
</tr>
<tr>
<td>115 - 135</td>
<td>Hornblende schist containing trace of pyrite</td>
</tr>
<tr>
<td>135 - 237</td>
<td>Hornblende schist containing sparsely disseminated pyrite ((&lt; 1%) sulphide).</td>
</tr>
</tbody>
</table>

**PH NT 04-2**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 110</td>
<td>Quartz-felspar gneiss containing scattered horizons of hornblende rich material and traces of pyrite</td>
</tr>
<tr>
<td>110 - 120</td>
<td>Quartz-felspar gneiss containing pyrite and magnetite (up to 20% sulphide and oxide)</td>
</tr>
<tr>
<td>120 - 135</td>
<td>Hornblende schist. Pyrite less than 5%</td>
</tr>
<tr>
<td>135 - 150</td>
<td>Hornblende schist</td>
</tr>
<tr>
<td>150 - 220</td>
<td>Quartz-felspar gneiss with occasional bands of hornblende schist. Trace of pyrite ((&lt; 1%)) between 170 and 195).</td>
</tr>
</tbody>
</table>
0 - 70 Quartz-felspar - gneiss
70 - 85 Quartz-felspar-gneiss containing up to 20% combined pyrite and magnetite.
85 - 130 Quartz-felspar-gneiss
130 - 135 Quartz-felspar-hornblende-gneiss, up to 20% combined pyrite and magnetite
135 - 145 Quartz-felspar-hornblende-gneiss combined pyrite and magnetite estimated less than 10%.
145 - 170 Quartz-felspar-hornblende-gneiss

0 - 105 Hornblende schist
105 - 125 Quartz-felspar-gneiss
125 - 135 Quartz-felspar-hornblende-gneiss pyrite (up to 20%)
135 - 160 Quartz-felspar-hornblende gneiss
160 - 170 Quartz-felspar-hornblende-gneiss. Pyrite content up to 20%
170 - 185 Quartz-felspar-hornblende-gneiss. Weak epidote alteration.
185 - 220 Quartz-felspar-hornblende-gneiss. Disseminated pyrite (<5%) with pyrite concentration (10%) between 190 - 200 and 210-215.

Analytical results from the pyrite rich zones have not yet been received.

Expenditure to the end of February 1971 is $872.00 out of a total of $28,464.00 spent on exploration in the Northern Territory for 1971. This does not include capital equipment and plant needed to service the various projects.

Yours faithfully,

J.F. Ivanac
General Manager

C.C. Inspector of Mines
Mines Department
ALICE SPRINGS N.T.
The Director  
Mines & Water Resources Branch  
Northern Territory Administration  
DARWIN N.T. 5790  

Dear Sir,

AP 1721 - Winnecke (NT 04)  
Report for January, 1971

McPhar Geophysics Pty. Ltd. has amplified their interpretation on a series of induced polarisation traverses carried out in May, 1970. Conclusions are similar to those already put forward. The source of the weak I.P. anomalies are considered to be typical of quartz veins carrying minor sulphides at depth. Surface geology confirmed these opinions.

The Sliding Rock anomalies may be significant but without further detailing to define the geometry of the sources no meaningful conclusions can be made.

Based on this recent interpretation it is recommended that no further work be carried out over the Sliding Rock area unless significant mineralisation is intersected in the forthcoming drilling programme at Gheko and Rankin's Prospect.

Samples of scheelite-bearing material from Turner's Prospect have been analysed by spectrographic methods and results are as follows:-

<table>
<thead>
<tr>
<th>Element</th>
<th>1119</th>
<th>1120</th>
<th>1121</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co</td>
<td>80 ppm</td>
<td>50 ppm</td>
<td>80 ppm</td>
</tr>
<tr>
<td>Ni</td>
<td>30</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>Cr</td>
<td>30</td>
<td>250</td>
<td>100</td>
</tr>
<tr>
<td>V</td>
<td>100</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>W</td>
<td>1%</td>
<td>100</td>
<td>nd</td>
</tr>
<tr>
<td>Mo</td>
<td>300</td>
<td>nd</td>
<td>nd</td>
</tr>
<tr>
<td>Mn</td>
<td>800</td>
<td>8000</td>
<td>300</td>
</tr>
</tbody>
</table>

As stated in the report for December 1970, this occurrence, although minor has been followed up by further prospecting which has not proved encouraging.
Gorey and Cole of Alice Springs will be contracting to drill ($4.20 per foot) four percussion holes beneath hematite gossans at the Gheko Prospect. Drilling is expected to commence mid-February.

Expenditure for 1970 is approximately $11,858.

Yours faithfully,

J. F. Ivanac
General Manager

C.C. the Inspector of Mines
Mines Department
Alice Springs
The Director,
Mines & Water Resources Branch,
Northern Territory Administration,
Darwin   NT   5790

Dear Sir,

AP 1721 - Winnecke
Progress Report for December, 1970

Keith Rankin has re-examined Turner's Prospect, which lies south of Winnecke Creek Gap, with a UV lamp and found a minor occurrence of scheelite. Specimens have been sent to Geomin and Amdel for analysis.

This prospect, re-discovered by Jim Turner of The Garden station, has been worked early in the century and a small amount of malachite ore has been taken away. The pocket of malachite, chalcocite and free gold occurs on the contact of a coarse grained amphibolite and a garnetiferous quartzofeldspathic gneiss. Two small ironstone outcrops about 30 feet long and 2 or 3 feet wide occur along strike from the copper occurrence in a similar association to Rankin's copper prospect. The structure is complicated by retrograde schist-zones but the copper bearing lode appears to be a kidney shaped mass about 20 feet by 4 feet by 6 feet in dimensions with the longest dimension in the vertical direction. Costeans a short distance (15 feet) along strike did not uncover any mineralization. Five specimens were analysed for copper, lead, zinc, nickel, silver and gold. Each of the specimens assayed >1% copper, low lead, zinc and nickel, up to 30 ppm silver and up to 11.2 ppm gold. Assays carried out by Jim Turner resulted in a copper content up to 30% by weight.
No assays for tungsten were carried out at the time. The scheelite was found only on the dump near the pits and is probably of minor significance. However, it appears to be one of the unusual copper-scheelite occurrences associated with basic rock similar to those at Jinka Plain and as such should be followed up.

Since no samples from Winnecke (or Pinnacles) have been analysed for tungsten, a list of calc-silicates and amphibolites from these areas which may be suitable for investigation has been prepared and sent to Geomin.

The final report of the I.P. survey of Gheko and Sliding Rocks was received during the previous period, but the results were not examined until this period. The results were not encouraging in that no large or extensive anomalies were delineated. However, on the Gheko Grid small anomalies were associated with outcropping lodes and gossans and these are to be tested by drilling.

The reefs on the Sliding Rocks Grid did not produce any significant anomalies except perhaps in the west on Lines 1 to 4. The possibility of economic sulphide mineralization being present over the remaining reefs must be considered remote. Additional work may be warranted over the western reefs.

Yours faithfully,

J. F. Ivanac,
General Manager

cc Inspector of Mines,
Alice Springs.
10th November, 1970

The Director,
Mines & Water Resources Branch,
Northern Territory Administration,
Darwin NT 5790

Dear Sir,

AP 1721 – Winnecke
Progress Report for October, 1970

Tracks into the Gheko Copper Prospect and
the Kyanite Prospects are at present being bulldozed
and sites are being prepared to carry out a percussion
drilling programme which should commence the second
week of November.

Yours faithfully,

[Signature]

J. F. Ivanac,
General Manager

cc: Inspector of Mines,
Alice Springs.
The Director,
Mines & Water Resources Branch,
Northern Territory Administration,
Darwin NT 5790

Dear Sir,

AP 1721 - Winnecke
Progress Report for September, 1970

During the month discussions with drilling contractors took place to determine the cost of a programme to test various prospects within the Winnecke Authority to Prospect. Plans were also made to carry out ground magnetometer surveys over the Gheko Copper Prospect, and this should be completed in October.

Yours faithfully,

J. F. Ivanac,
General Manager

cc Inspector of Mines,
Alice Springs.
14th September, 1970.

The Director,
Mines & Water Resources Branch,
Northern Territory Administration,
DARWIN NT 5790

Dear Sir,

AP 1721 - Winnecke
Progress Report for August, 1970

Preliminary results have been received from AMDL on samples from two belts of kyanite schist within the A.P. Kyanite content of the southern schist belt assayed less than 10%, while the northern belt assayed between 10% and 15%, over forty feet. These grades are probably too low to be economic, as grades approaching 20% are desirable in this remote location.

Yours faithfully,

J. F. Ivanac,
General Manager.

Dear Sir,

AP 1721 - Winnecke
Progress Report for September 1969

A base-metal rich magnetite horizon has been traced for some miles across country and it is considered that if the right structural and igneous environment were to be associated with this horizon, enrichment in base metals could possibly occur.

Yours faithfully,

JOHN IVANAC
General Manager
31st July, 1969

The Director,
Mines & Water Resources Branch,
Northern Territory Administration,
Darwin NT 5790

Dear Sir,

AP 1721 - Winnecke
Progress Report for July, 1969

Evaluation of the Winnecke geochemical survey was completed during July. Analytical results of the 98 geochemical samples submitted in June became available and indicate that mineralization sampled is of low grade. A first draft of a progress report on all work carried out in the Winnecke area has been compiled.

Twenty chip samples collected from Garland's Prospect by David Ransom indicated that gold mineralization is too small and too restricted in size to be of interest to the Company.

Forty drill samples from the Gheko Prospect, discovered in June, contained uniformly low gold values. Several gossans contained greater than 1% zinc. Lead and copper values are generally less than 1%. In view of the absence of significant gold values the narrow width of the mineralization suggests that the deposit is sub-economic.

Samples collected from the garnetiferous quartzite horizon east of the Gheko Prospect indicates that the horizon is anomalous in lead and zinc, but does not contain sufficient mineralization to warrant further interest.

Yours faithfully,

[Signature]
John Ivanac,
General Manager.

cc Inspector of Mines
Magellan Petroleum.
The Director,  
Mines & Water Resources Branch,  
Northern Territory Administration,  
DARWIN N.T. 5790.

14 July 1969

Dear Sir,

AP 1721 - Winnecke  
Progress Report for June 1969

A major part of the month was taken up in the evaluation of results obtained in the Winnecke geochemical survey. A total of ninety-eight geochemical samples were submitted for analysis during the month.

David Ransom mapped and sampled Garland's Prospect (Map). Nineteen samples (04-1001 to 04-1019) were forwarded to Geomin on 4th June for analysis for copper, lead, zinc, silver and gold. Analytical results are not yet available. A brief appraisal of several anomalous stream sample results in the central part of the Winnecke area by David Ransom failed to find any obvious cause for the anomalous values.

Subsequent investigations of high geochemical values further to the west by Denis Clarke and Keith Rankin resulted in the discovery of a repetition of the Rankin Prospect type mineralization (Map). This virgin prospect the "Gheko Prospect" was gridded and mapped at a scale of 50 foot to an inch. Forty samples (04-1030 to 04-69), each from a three foot cobra drill hole were forwarded to Geomin on 18th June for analysis for copper, lead, zinc, gold and silver. Analytical results are not yet available.
Further mapping would be necessary if the complexly folded structure of the area is to be fully elucidated. Sufficient mapping has been done to show the surface distribution of mineralization which suggests the deposit is probably too small to be developed. Copper, lead and zinc mineralization occurs in pods of gossanous actinolite schist developed adjacent to a thin discontinuous bed of garnetiferous metasubzone which lies between a sequence of amphibolite and a sequence of leucocratic gneiss. Some quartz-hematite gossan is also developed in this horizon. The mineralization is interpreted as a replacement of a former thin calcareous horizon. Unless the analytical results, in particular gold and silver values, are encouraging, no further work is contemplated on this prospect.

Chip samples 04-1025 to 04-1028 (see Map), forwarded to Geomin on 10th. June were collected from a small area from which three stream samples gave an anomalous copper values. The analytical results suggest the source is a small outcrop of hornblendic calc-silicate rock (04-1082) which analysed 122 ppm copper, 1540 ppm lead and 2410 ppm zinc.

Chip sample 04-1029 (see Map) forwarded to Geomin on 10th. June consists of quartz breccia which is associated with an anomalous zinc value in a stream sediment. The sample analysed 28 ppm copper, 13 ppm lead, 14 ppm zinc, 1.1 ppm silver and 0.30 ppm gold. No further investigations are warranted.

Samples 04-1070 to 04-1080 forwarded to Geomin on June 18th and samples 04-1081 to 04-1103 forwarded on June 27th. are mainly chip and cobra drill samples collected during follow-up work on anomalous stream sediment results. Analytical results are not yet available. Most samples were taken from a garnetiferous quartzite horizon which appears to be the cause of several of the anomalous stream values. This horizon has been traced discontinuously for about six miles. It is strongly lenticular, ranging from 0 to 100 feet in thickness. Quartz-magnetite gneiss and small gossan pods (?) ex-pyrite) occur in the quartzite. The quartzite everywhere lies between a sequence of amphibolite and a sequence of acid gneisses and is most likely the same stratigraphic horizon.
which contains mineralization at the Gheko and Rankin's Prospects. Unfortunately this horizon east of the Gheko Prospect appears to have been more sandy and less calcareous; no copper, lead or zinc mineralization is readily evident. Full evaluation of this work will depend on the analytical results. A report discussing the results of the Winnecke geochemical survey in detail will be compiled when the results become available and time permits.

Yours faithfully,

[Signature]

JOHN IVANAC
General Manager

cc Inspector of Mines, Alice Springs
Magellan Petroleum (NT) Pty Ltd., Brisbane
The Director,
Mines & Water Resources Branch,
Northern Territory Administration,
Darwin NT 5790

Dear Sir,

AP 1721 - Winnecke
Progress Report for May, 1969

Geochemical sampling of the central part of the Authority continued. Sampling has been concentrated close to the contact of a marble calc-silicate gneiss sequence and a non-calcareous acid gneiss sequence. Samples 04-908 to 04-990 were despatched to Geomin on 16th May for analysis for copper, lead and zinc.

Analytical results for samples NT 04-601 to NT 04-827 were received during the month. Result sheets have been compiled showing possible anomalous results. Several small areas containing low order anomalous values have been delineated for geological investigation. Full evaluation of the geochemical results should await the receipt of the results of the remaining 163 samples.

Yours faithfully,

John Ivanac,
General Manager.

cc Inspector of Mines, Alice Springs
Magellan Petroleum (NT) Pty. Ltd., Brisbane
The Director,
Mines & Water Resources Branch,
Northern Territory Administration,
Darwin NT 5790

Dear Sir,

A.P. 1721 - Winnecke
Progress Report for April, 1969

Two assistants were engaged in geochemical sampling of the western part of the Authority. Samples NT-04-601 to 689 were despatched to Geomin on 9.4.69, samples NT-04-690 to 827 on 14.4.69, and samples NT-04-828 to 907 on 21.4.69. No analytical results are yet available.

Sampling has been carried out in the sheared structurally disturbed Arunta Complex surrounding the western extremity of the infolded Heavitree Quartzite of the Winnecke Nappe Complex. Within this area copper mineralization is known from Sliding Rock and also from Rankins Prospect just west of the area. Gold mineralization occurs in Sloane's Gully. It is the most favourable environment for mineralization within AP 1721.

An application for renewal of A.P. 1721 was lodged with the Mines Department on 21st March, 1969. Advice received on 8th May suggested that the application for renewal was still under consideration although previous advice on 14th April indicated that there would be no difficulty in the Company's rights to the area being renewed.

Yours faithfully,

John Ivanac,
General Manager.