GEOPESCO LIMITED

INSPECTION OF A.P.'s 2444, 2449, 2597 and 2598

- Harts Range Area, N.T.

by: J.W. FAULKNER

INTRODUCTION

During November 1970, Mr. A. Fergusson of Alice Springs invited Geopeko Ltd. to examine four Authorities to Prospect, which he and two other partners currently hold under title.

These tenements, which collectively embrace a total area of 944 square miles, are located in the south eastern sector of the HARTS RANGES, approximately 90 air-miles east of Alice Springs.

During late December 1970, the writer spent 5 days examining the A.P. areas.

Mr. Fergusson is anxious to arrange an option with GEOPÉKO to further explore these areas. A modest initial working option arrangement is negotiable.
SUMMARY

The A.F. areas embrace extensive areas of exposed Archaean? rocks (Arunta complex). Granitic intrusives are extensive and may be regarded as a source for potential economic mineral deposits.

A thick sequence of structurally deformed Proterozoic sediments unconformably overlies the Arunta rocks on some sections of the A.F.'s and offer excellent host rock conditions.

All rock formations have been affected by numerous strong fault (shear) zones.

Several minor occurrences of copper mineralisation are known which are associated with both Archaean? and Proterozoic rocks. The source of this mineralisation is not entirely clear, but may be related in part to granitic intrusives.
CONCLUSIONS

Certain field relationships and associated geologic phenomenon on the four A.P.'s require clarification; and until this is achieved all areas must be favourably regarded for economic mineral deposits. That is, it is not possible to make a reliable statement as to the potential of any of the individual A.P.'s at this time.

Pertinent features requiring closer study are:

(i) The significance of extensive alteration (epidotisation) of granitic rocks (e.g. south of Alberta dam). There are rumours that mineral claims recently pegged (near Grants Bluff) by Central Pacific Minerals, cover disseminated scheelite mineralisation associated with epidotised granite.

(ii) Numerous faults (or shears) known to occur on the A.P. areas require closer examination - the epidotisation known on A.P. 2697 may in fact be directly related to a zone of north west-south east shears.

(iii) The significance of known minor copper mineralization occurring in the Proterozoic carbonate beds. Three alternative genetic explanations require consideration here:
(a) the mineralization is syngentic.
(b) an association of copper mineralization with basaltic rocks, recorded is the Proterozoic sequence?
(c) Hydrothermal mineralization, resulting from a late-stage "reactivation" of granitic rocks with channeling to the favourable carbonate beds via shears, faults, etc.

RECOMMENDATIONS

The writer recommends that CPOAKO negotiate a modest working option so as to allow these further necessary studies to of the various A.P.'s to proceed. No difficulty is anticipated with arranging such an option.
In view of the current exploration activity by many individual companies, and including such reputable organisations as C.R.A. who hold numerous large areas in the general region, there is added impetus for G.E.O.P.E.O. to get in on the action.

As far as the writer is aware, there is no longer any "open" ground available in the Harts Ranges which could be considered suited to the type of research suggested.
TENURE

The four A.P.'s 2443, 2449, 2698 and 2697 are located approximately 90 air-miles east from Alice Springs (see attached plans).

Pertinent details regarding the above tenements follows:

<table>
<thead>
<tr>
<th>A.P. Number</th>
<th>Area (sq. miles)</th>
<th>Expiry date</th>
<th>Holders</th>
</tr>
</thead>
<tbody>
<tr>
<td>2444</td>
<td>10</td>
<td>10/5/71</td>
<td>R. Ferguson - Alice Springs</td>
</tr>
<tr>
<td>2449</td>
<td>40</td>
<td>27/2/71</td>
<td>&quot; &quot; &quot; &quot;</td>
</tr>
<tr>
<td>2697</td>
<td>615</td>
<td>19/2/71</td>
<td>R. Ferguson, L. Underdown, and A. Kruger - Alice Springs</td>
</tr>
<tr>
<td>2698</td>
<td>279</td>
<td>19/2/71</td>
<td>R. Ferguson, L. Underdown, and A. Kruger - Alice Springs</td>
</tr>
</tbody>
</table>

Total: 944 sq. miles

More detailed information regarding boundaries of the A.P.'s can be seen on attached Figs. I & II.
ACCESS SITUATION

A graded dirt road provides land access to Nummery Station, some 120 miles from Alice Springs. The Alice Springs end (30-40 miles) is currently being upgraded and sealed for tourists' access, but generally the road is reliable only during dry weather.

Several station tracks service the A.P. areas (see Fig. II) and give adequate 4-wheel drive access for any preliminary exploratory work.

A small airstrip is available at the Old Nummery Homestead site, but would require some upgrading to comply with D.C.A. specifications.

There are several water bores, wells etc. on the A.P. areas which would provide local supplies for a small field party.
PREVIOUS ACTIVITIES

Prior to Geopeko's introduction to the four A.P. areas, the holding syndicate had negotiations with two other companies, both of whom have since relinquished their interests.

Western Nuclear performed some geochemical and geophysical work in the vicinity of Coultharcs Gap (A.P. 2449) (details not available), but apparently only limited reconnaissance work elsewhere.

Signal Pacific Company (Dillingham) have carried out some reconnaissance stream sampling and rapid prospecting in conjunction with low-level (70 feet?) reconnaissance airborne magnetics over the areas of A.P.'s 2449 and 2697. Geological supervision on the ground was mineral. Their total expenditure was approximately $7,000.

The operating geologist (Mr. F. Greene) for Signal Pacific advises that no statistical processing of geochemical results has been performed, and that their interest was abandoned because no mineralization of significant dimensions were found.

It is apparent that both companies have approached the areas with the "quick-lead for obvious targets" philosophy, and apparently no significant geological mapping was performed.

A.P.'s 2449, 2444 and 2697 are included in areas (Alice Springs, Illegua Creek) previously mapped (scale 1:250,000) by the B.M.R. (see references). The geological information is of course fairly generalised, and some discrepancies are apparent. A.P. 2698 is located in the northern sector of the Hale River sheet (1:250,000).

High level aeromagnetic surveys were completed over all areas by Aero Services Ltd. during 1962, under contract to B.M.R. as part of national coverage programme.
NOTES ON GENERAL GEOLOGY

The three A.P.'s 2444, 2449 and 2697 fall on the Alice Springs and Illewa Creek S.M. geological sheets (1:250,000). As far as is known, this mapping represents the most comprehensive mapping performed on these areas (see references).

A.P. 2698 falls on northern sector of Hattie River sheet (see references).

The salient geological features are:

(i) Archaean? (Arunta complex) basement with extensive granitic intrusives, minor pegmatitic and quartz veining, and,

(ii) Proterozoic sediments.

The proportion of units represented on respective A.P.'s is roughly as follows:

<table>
<thead>
<tr>
<th>A.P.</th>
<th>Proportion</th>
<th>% outcrop</th>
</tr>
</thead>
<tbody>
<tr>
<td>2444</td>
<td>100% Proterozoic sediments</td>
<td>70/80%</td>
</tr>
<tr>
<td>2449</td>
<td>(40% Proterozoic)</td>
<td>80/90%</td>
</tr>
<tr>
<td>2697</td>
<td>(60% Archaean and granite)</td>
<td>60%</td>
</tr>
<tr>
<td>2698</td>
<td>65% Proterozoic and 35% Archaean</td>
<td>50%</td>
</tr>
</tbody>
</table>

The high-grade metamorphics which from the bulk of the Harts Range are much less extensive on the areas under discussion. This is apparently influenced primarily by the large volume of granite intrusives, particularly on the areas of A.P.'s 2449 and 2697.

Only very rough estimates can be made regarding proportions of rock types at this time, but the following tentative figures may be taken as a guide:

<table>
<thead>
<tr>
<th>A.P.</th>
<th>Metamorphics (Aruntas)</th>
<th>Granitic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2449</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>2697</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>2698</td>
<td>60%</td>
<td>40%</td>
</tr>
</tbody>
</table>

The metamorphics, which exhibit the characteristic complex folding and intense cleavage of the "Aruntas", are composed of both meta-sediments and meta-igneous facies. Small lenses of basic (amphibolite) rock occur. Noticeable is the absence of garnetiferous facies - suggesting a distinct lithological change from rocks of the Harts Range proper.
The extensive granitic intrusives are for the most part massive, jointed with only mild metamorphic foliation. These rocks apparently represent compositional ranges of Granodiorite-Granite, and it is not clear whether only one or several distinct intrusive phases are present. A granite-Proterozoic sediment (Heavitree quartzite) contact examined near Coulthards Gap (A.P. 2449) has an erosional relationship, and suggests early proterozoic intrusion. However, evidence possibly suggesting later activity is as follows:

(a) Occurrence of Gold Mineralisation in Proterozoic quartzite at White Range (60 miles N.W. from Alice Springs).

(b) The presence of minor quartz-tourmaline veining in Proterozoic? quartzite about 4 miles south of Alberta dam (A.P. 2697).

(c) The presence of known minor copper mineralisation in Proterozoic (Gillian Member) Dolomite beds.

(d) The occurrence of basaltic rocks within the Proterozoic sequence.

The Proterozoic rocks appear to be represented by basal (Heavitree) quartzite which rapidly grades (interlenses) upwards into a thick sequence of essentially dolomitic beds. The E.M.R. have reported several basalt occurrences within the dolomitic members, but as yet these rocks have not been observed by the writer.

The E.M.R. mappings indicate that the Proterozoic rocks have been strongly folded in recumbent fashion forming large "nappe" structures with associated shearing.

Extensive faulting (shearing) has affected all rocks, and in the Alberta dam area (A.P. 2697) there is a suggestion of associated extensive chemical alteration (hydrothermal?), particularly epidotisation, with the faulting. This relationship has yet to be confirmed.

Some thin phosphorite beds have been recorded within the Proterozoic sequence (reference VI).
SOME DETAILS OF Cu-rich OR POSSIBLE MINERALISATION

A.P. 2444 (Refer Figs. I, II and appendix)

Weak copper mineralisation occurs within Proterozoic
dolomite (Gillen Member) near the eastern boundary of the A.P.,
and 2½ miles south-easterly from Limbla Homestead.

The copper occurs essentially in the form of chrysocolla
Sample F 9166) as sparse small veinlets (up to 1" thick) and
"paintings" apparently in joints or fractures. The mineralisation
seems to have some stratigraphic control and occurs in the nasal
section of a flat (±30°) easterly pitching synclinal fold or flexure.

The zone of mineralisation is not well defined, but as tested
by several shallow pits, a strike length of 150-200 feet and thickness
of 10 feet is indicated. There is no significant ore grade material
available and no reason to suppose that the mineralisation will live
or improve with depth.

The best rock is a siliceous, fine-grained, grey-brown
dolomite which shows no apparent alteration effects related to the
copper mineralisation.

The source of this copper mineralisation is at present
obscure.

A.P.'s 2449 and 2697

There is known evidence of definite copper mineralisation
at three separate localities on these areas.

(a) One Mile North Westerly from Coulthard's Gap (A.P. 2449)
A small "raft" of altered mineralised basic rock (dolerite??)
occurs within massive granite. Outcrop conditions are not ideal,
but definite maximum limitations can be stated regarding dimensions
of the mineralised rock.

The copper mineralisation is in the form of strong malachite
staining, which apparently has permeated irregularly along strong
joints and fractures in the host. The best rock is extensively
chloritised, but there is no evidence of mineral veining. It seems
probable that the malachite is derived from a weakly disseminated
sulphide protore? although this source may not be present beneath
the exposed carbonate copper.

Two samples, F 9153 and F 9154, were collected from this
locality, and represent rather selected mineralised rock.
A massive irregular quartz vein occurs close by the mineralised exposure, and this may have channeled the primary copper mineralisation.

The maximum aerial dimension of the altered basic rock would be 250-300 feet. From evidence of pronounced lineations (cleavage?) present in the rock, it appears that the body has a thickness of 20-30 feet and dips at 30-40° to the north-east into granite.

It is most doubtful that the amount of significant mineralisation (+ 1% Cu, say) exceeds 10/20 tons.

A limited amount of detailed geochemical and geophysical groundwork has been previously performed on this area by Western Nuclear. However, results of this work are not available.

Perhaps a significant feature of this area is the general abundance of thin tourmaline-rich quartz veining.

At a position 2 miles north-west from Coulthards Gap, a zone of ferruginised ? dolomite approx. 50 feet wide, extends in a north-west direction for a distance of 1 mile approximately. This material is largely limonitic, but small local concentrations of manganese oxides occur. Relict bedding is generally prevalent throughout.

This body of iron enrichment appears to have some stratigraphic control, in that it occurs adjacent to a quartzite (Heavitree) dolomite contact. However, disposition of rock types indicates the presence of a fault, which would more directly control the iron concentration.

The writer believes that the origin of iron (and manganese) can be attributed to leaching from the dolomite, and then concentrated at the faulted quartzite/dolomite contact. Nowhere does the ironstone have boxwork or features resembling typical sulphide gossans.

Seven random chip samples (F 9146-9152) were collected from the above area (see appendix). Although some values would normally be regarded as anomalous, the writer considers that in this instance the traditional strong chemical affinity by manganese oxide is the influencing effect.

Concentration of iron has also been noted at two other locations, viz:

(i) 3 miles north-east from Casey Bore (east side A.P. 2444).
(ii) 1 mile east of Little Well (A.P. 2698).
In both examples, siliceous, jaspery ironstones are localised in quartzite-dolomite contacts - refer samples F 9167, F 9168, F 9169, F 9170 and F 9171.

These occurrences again do not appear to represent mineralisation.

(b) South Side of Coulthards Gap (A.P. 2697)

Strong malachite staining is again present in highly altered dolomite (?) on the south bank of the Male River, immediately south of Coulthards Gap.

This occurrence is again enclosed by granite (or granodiorite ?) and the basic rock, with its included mineralisation, is restricted to dimensions of 20-30 feet across.

Sample F 9155 is a selected sample taken from the mineralised rock.

A thin (10-20 feet) capping of Proterozoic dolomite is prevalent, overlying granitic rock some 30-50 feet south of the small copper showing; but this is apparently not mineralised.

A sample (F 9157) of granitic rock collected a short distance north-west from the malachite occurrence has anomalous (250 ppm) copper values, which may be of indirect economic significance? The analysis requires confirmation by more comprehensive sampling.

(c) 4 miles South of Alberta Dam (A.P. 2697)

Granitic rock is very extensive in this area (as is the north of Coulthards Gap). Proterozoic rocks occur as prominent remnant escarpments and appear to be predominately quartzite facies (Heavitree).

The granitic rocks are massive, unfoliated, for most part and presumably are early Proterozoic, but there is no clear evidence of intrusion into the overlying Proterozoic sediments.

The granitic rocks have been strongly epidotized here (4 miles south of Alberta Dam), and the epidotisation apparently extends as a broad, very irregular, zone, trending in a north-westerly ? direction for an indicated distance of at least 6 miles.

The limitations of this zone of epidotisation are not known, but apparently locally at least it attains a width in excess of 1 mile. Present knowledge suggests that the epidotisation is related to a broad zone of shearing indicated on B.H.A. maps. (Illegible sheet).
The implications and significance of this alteration are at present obscure, but require clarification because:

(a) Small amount of strongly disseminated chalcopyrite have been reported (F. Greene, Signal Pacific) in altered granitic rock about 4 miles south of Alberta Dam (exact location not known).

(b) There are rumours that scheelite mineralisation has been located on epidotised granite 2 miles westerly of Grant Bluff (south flank of Dilse Range).

(c) The epidotisation observed south of Alberta Dam appears to be due to solution (chemical) alteration, rather than to regional metamorphic influences.

(d) Anomalous copper values (samples F 9164, 9165) are known to occur in a fault? some adjacent to the epidotised granite.

The only direct evidence of mineralisation is a silicified fault? some located approximately 3/4 miles south of Alberta Dam. Here massive quartzose bodies 100-200 feet wide can be traced in a N.W./S.E. direction for about 3 miles and carry occasional "peds" of siliceous boxwork texture with associated iron oxide. Copper values of 1000 and 1500 ppm respectively are recorded.

The silicified fault? zone is enclosed by epidotised granite, which locally carries heavy disseminations of hematite and some tourmaline.

Four samples of epidotised granitic rock (F 9159, 9160, 9162 and 19163) did not yield significant geochemistry.

Some magnetic features revealed by high level magnetics over this region require closer study.

A.P. 2608

Mr. H. Ferguson advises that some copper was mined from near Little Well many years ago & however, the writer was unable to find any evidence of copper mineralisation during the recent visit.

The U.D.R. report extensive weak copper mineralisation within Proterozoic rocks about 14 miles north-west from Little Well. (see Ref. (vi))
On the northern area of A.P. 2698, small lens of meta-dolerite?, enclosed in acid gneiss and apparently forming part of the Aruntas, are heavily impregnated with pyritic sulphides. The pyrite is now represented as limonitic cubes, some of which exceed 1 inch. Two bodies of the altered basic rock were examined. These had dimensions of approximately 500 feet by 80 feet and 200 feet by 50 feet respectively.

One sample (F 9174) of hand picked limonite cubes carries anomalous cobalt values, but its significance is at present obscure - the pyritic sulphide may be genetically related to small pegmatitic bodies which occur nearby.

At approximately a mile easterly from the above meta-dolerite, three small lenses (pipes??) (30-40 feet across) of a serpentinized ultramafic (pyroxenite?) rock (sample F 9172) occur within the Arunta? complex. These bodies probably have no direct economic value, but additional groundwork is indicated for possible nickel mineralisation.

There are some magnetic features (high level survey) on the northern sector of A.P. 2698 which require explaining.
REFERENCES

PUBLISHED GEOLOGICAL MAPPING ETC.

(i) The Geology and Mica Fields of the Harts Range, Central Australia.


(iii) The Western Portion of the Arltunga Area.

(iv) Alice Springs Sheet
(v) Illegma Creek Sheet 1:250,000 Geological Series, B.M.R
(vi) Hale River Sheet
(vii) Huckitta, N.T. Sheet (-Re. GRANTS LLUFF)

HIGH LEVEL TOTAL MAGNETIC INTENSITY PLANS (B.M.R.)

Hale River Sheet 1:250,000 Scale.
Illegma Creek
### APPENDIX

**HARTS RANGE ROCK SAMPLES**

(Emission Spectroscopy - A.M. D.L.)

<table>
<thead>
<tr>
<th>Sample</th>
<th>Cu</th>
<th>Mo</th>
<th>Ni</th>
<th>W</th>
<th>Pt</th>
<th>Co</th>
<th>Zn</th>
<th>Pb</th>
<th>Sh</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>F 9146</td>
<td>50</td>
<td>30</td>
<td>200</td>
<td>50</td>
<td>1</td>
<td>300</td>
<td>500</td>
<td>100</td>
<td>1</td>
<td>West end. Iron- manganese enrichment associated with dolomitic rocks.</td>
</tr>
<tr>
<td>F 9147</td>
<td>70</td>
<td>50</td>
<td>100</td>
<td>50</td>
<td>&lt;1</td>
<td>700</td>
<td>150</td>
<td>200</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>F 9148</td>
<td>1,500</td>
<td>3</td>
<td>100</td>
<td>50</td>
<td>&lt;1</td>
<td>300</td>
<td>300</td>
<td>50</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>F 9149</td>
<td>50</td>
<td>10</td>
<td>100</td>
<td>500</td>
<td>&lt;1</td>
<td>300</td>
<td>300</td>
<td>150</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>F 9150</td>
<td>30</td>
<td>3</td>
<td>150</td>
<td>50</td>
<td>&lt;1</td>
<td>300</td>
<td>400</td>
<td>50</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>F 9151</td>
<td>3,000</td>
<td>&lt;3</td>
<td>30</td>
<td>50</td>
<td>&lt;1</td>
<td>100</td>
<td>70</td>
<td>50</td>
<td>1</td>
<td>East end.</td>
</tr>
<tr>
<td>F 9152</td>
<td>20</td>
<td>&lt;3</td>
<td>10</td>
<td>50</td>
<td>&lt;1</td>
<td>10</td>
<td>20</td>
<td>100</td>
<td>1</td>
<td>The 'cave' 1 mile N.W. of Coulthards Gap.</td>
</tr>
<tr>
<td>F 9153</td>
<td>5,000</td>
<td>&lt;3</td>
<td>30</td>
<td>50</td>
<td>&lt;1</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>1</td>
<td>Nalchite stained in altered amphibolite?</td>
</tr>
<tr>
<td>F 9154</td>
<td>10,000</td>
<td>5</td>
<td>30</td>
<td>50</td>
<td>1</td>
<td>50</td>
<td>20</td>
<td>3</td>
<td>3</td>
<td>Heavy malachite staining on altered amphibolite? South side, Coulthards Gap.</td>
</tr>
<tr>
<td>F 9155</td>
<td>&gt;10,000</td>
<td>5</td>
<td>30</td>
<td>50</td>
<td>30</td>
<td>100</td>
<td>30</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>F 9156</td>
<td>30</td>
<td>&lt;3</td>
<td>5</td>
<td>50</td>
<td>&lt;1</td>
<td>10</td>
<td>20</td>
<td>10</td>
<td>5</td>
<td>Dolomite.</td>
</tr>
<tr>
<td>F 9157</td>
<td>250</td>
<td>&lt;3</td>
<td>30</td>
<td>50</td>
<td>&lt;1</td>
<td>10</td>
<td>20</td>
<td>5</td>
<td>1</td>
<td>Granodiorite?</td>
</tr>
<tr>
<td>F 9158</td>
<td>20</td>
<td>&lt;3</td>
<td>30</td>
<td>50</td>
<td>&lt;1</td>
<td>10</td>
<td>20</td>
<td>80</td>
<td>3</td>
<td>Granodiorite? dyke.</td>
</tr>
<tr>
<td>F 9159</td>
<td>60</td>
<td>&lt;3</td>
<td>10</td>
<td>50</td>
<td>50</td>
<td>10</td>
<td>30</td>
<td>80</td>
<td>70</td>
<td>Quartz-epidote veining.</td>
</tr>
<tr>
<td>F 9160</td>
<td>30</td>
<td>&lt;3</td>
<td>&lt;5</td>
<td>50</td>
<td>&lt;1</td>
<td>5</td>
<td>20</td>
<td>30</td>
<td>2</td>
<td>Epidotised granite.</td>
</tr>
<tr>
<td>F 9161</td>
<td>30</td>
<td>&lt;3</td>
<td>30</td>
<td>50</td>
<td>&lt;1</td>
<td>10</td>
<td>20</td>
<td>10</td>
<td>2</td>
<td>Quartz-tourmaline in Heavitree quartzite.</td>
</tr>
<tr>
<td>F 9162</td>
<td>100</td>
<td>&lt;3</td>
<td>20</td>
<td>50</td>
<td>3</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>1</td>
<td>Epidotised granite rock.</td>
</tr>
<tr>
<td>F 9163</td>
<td>20</td>
<td>&lt;3</td>
<td>20</td>
<td>50</td>
<td>&lt;1</td>
<td>10</td>
<td>20</td>
<td>5</td>
<td>1</td>
<td>Epidotised granite rock with disseminated hematite.</td>
</tr>
<tr>
<td>F 9164</td>
<td>1,000</td>
<td>&lt;3</td>
<td>10</td>
<td>50</td>
<td>50</td>
<td>10</td>
<td>20</td>
<td>5</td>
<td>1</td>
<td>Silic gossan in fault zone in granite.</td>
</tr>
<tr>
<td>F 9165</td>
<td>1,500</td>
<td>&lt;3</td>
<td>5</td>
<td>50</td>
<td>20</td>
<td>50</td>
<td>20</td>
<td>3</td>
<td>1</td>
<td>Chrysocolla in dolomite.</td>
</tr>
<tr>
<td>F 9166</td>
<td>10,000</td>
<td>&lt;3</td>
<td>50</td>
<td>50</td>
<td>20</td>
<td>10</td>
<td>20</td>
<td>2</td>
<td>1</td>
<td>Silic limonite boulder doubtful gossan.</td>
</tr>
<tr>
<td>F 9167</td>
<td>100</td>
<td>&lt;3</td>
<td>30</td>
<td>50</td>
<td>&lt;1</td>
<td>50</td>
<td>100</td>
<td>100</td>
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**Remarks**

- Oxidised pyrite cubes (devils dice).
- Silic, limonitic ironstone 1 mile N.W. of Coulthards Gap.
- Granite.
- Gabbro. Granodiorite?? dyke rock.
- Porphyritic biotite granite.
- Ferruginised limestone breccia.