

MAPPING AND SAMPLING

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STAR CLAIMS

OMINECA MINING DIVISION

N.T.S. 94-C-5E and 94-C-12E

Lat.: 56° 29'N Long.: 125° 40'W

by

U. MOWAT, P. Geo.

May 1, 2002

**GEOLOGICAL SURVEY BRANCH**  
ASSESSMENT REPORT

26,844

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**MAPS**

Sample Sites and Thin Section Sites 1:25000	in pocket
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**APPENDIX**

Analytical Data
Thin Section Description and Photographs

## 1.0 INTRODUCTION

In July, 2001 three days were spent mapping and sampling on selected portions of the Star 1, 2 and 4 claims. Sampling in 2000 outlined an area of highly anomalous Cu, Pt and Pd values on Capricorn Ridge including one sample (158432) which returned values of 1405 ppm Cu, 166 ppb Au, 581 ppb Pt and 1552 ppb Pd. In 2001 more detailed sampling was carried out in the vicinity of sample 158432 as well as broader spaced sampling along Capricorn Ridge. Samples were also collected from the talus below Capricorn Ridge. During sampling of the talus a zone of mineralization was discovered. A second zone of mineralization was also located approximately 1 km northwest of the first zone.

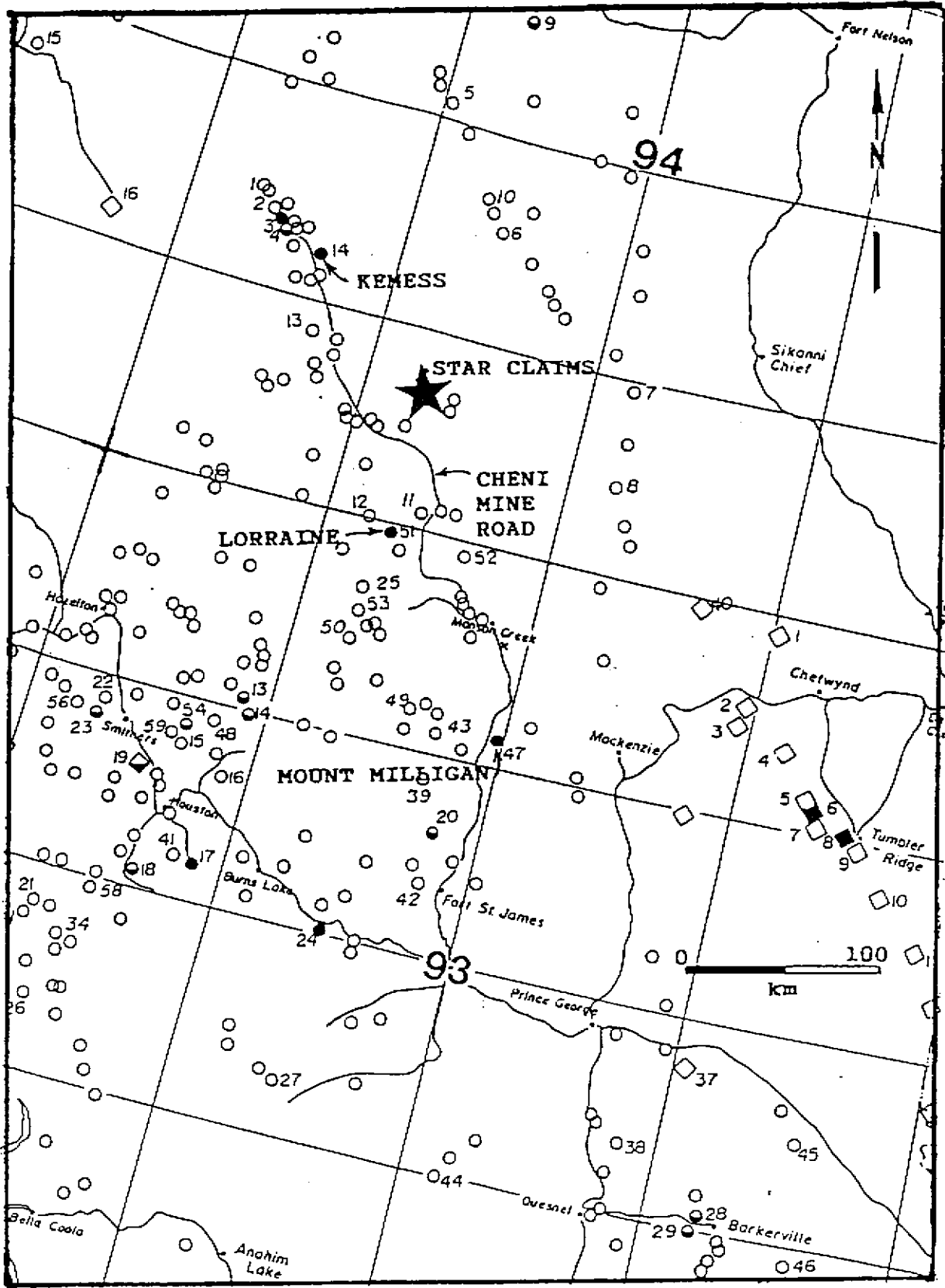
A total of 76 rock samples and 1 soil samples were collected. All samples were analysed for 30 elements by ICP and Au, Pt, Pd by FA/ICP.

In addition, 5 samples collected previously were submitted for petrographic examination.

## 2.0 LOCATION AND ACCESS

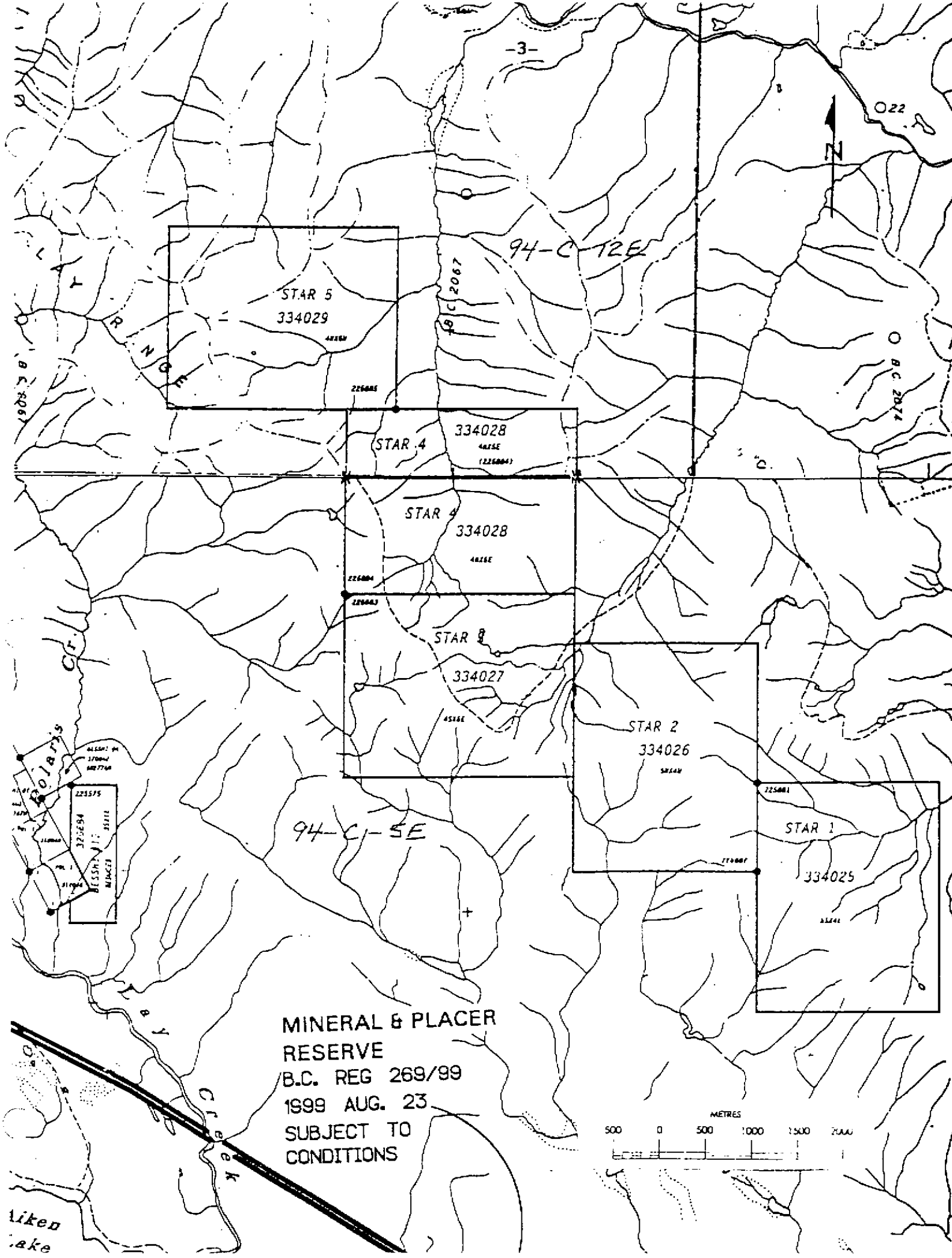
The Star claims, which are located on map sheets 94-C-5E and 94-C-12E, are 13 km northeast of Aiken Lake and 100 km almost due north of Germansen Landing. The property is located at co-ordinates  $56^{\circ} 29'N$  and  $125^{\circ} 40'W$ .

Access to the property is by helicopter from Fort St. James approximately 300 km due south. The Cheni Mine Road (Omineca Forestry Road) and the Kemess power line pass within 8 km of the property boundary. Logging roads reach the outer periphery of the property.

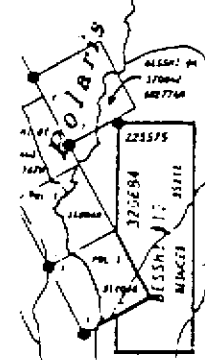
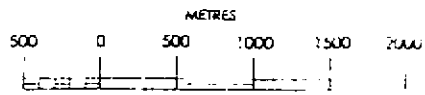


LOCATION MAP : STAR CLAIMS

FIGURE 1



MINERAL & PLACER  
 RESERVE  
 B.C. REG 269/99  
 1999 AUG. 23  
 SUBJECT TO  
 CONDITIONS



like  
lake

### 3.0 CLAIM DATA

The Star property consists of five 20 unit claims totalling 100 units. The property is located in the Omineca Mining Division.

Claim Name	Record Number	No. of Units
Star 1	334025	20
Star 2	334026	20
Star 3	334027	20
Star 4	334028	20
Star 5	334029	20

### 4.0 HISTORY

The area of the Polaris Complex has been examined by R. G. McConnell in 1894, V. Dolmage in 1927, D. Lay in 1939 and J. E. Armstrong in 1945. The first mapping of the Polaris Complex was done by E. F. Roots in 1946, 1947 and 1948.

No geological activity is recorded until 1968 when T. N. Irvine made petrologic studies of the Polaris Complex. The area remained idle until 1974 when T. N. Irvine and F. H. Foster mapped the Polaris Complex in some detail.

In 1986, a small portion of the Polaris Complex was staked by Equinox Resources who conducted an extensive silt and rock sampling program in a search for Pt and Pd. In 1987, Lacana Mining Corporation and Esso Minerals also staked portions of the Polaris Complex. In 1988 and 1989, the Polaris Complex was mapped and petrologically studies by the BCDM as part of a Pt-chromite study.

The Star 1 - 5 claims were staked in February, 1995 to cover the pyroxenitic outer phase of the Polaris Complex and also to cover known mineralization.

### 5.0 REGIONAL GEOLOGY

The Polaris Complex is located in the Omineca Crystalline Belt which is bounded on the west by Triassic Takla volcanics and sediments. The eastern side of the Omineca Crystalline Belt is separated from the Upper Proterozoic Ingenika Group and the Wolverine Metamorphic Complex, both

of which consist of sediments and metasediments including gneisses and schists, by the Swannell Fault.

The area immediately west of the Polaris Complex is underlain by the Lay Range Assemblage which has also been called the Slide Mountain Group and the Harper Ranch Group by various authors. The lithologies consist of mafic tuffs, argillites, metavolcanics, metasediments and limestones and are of Middle Pennsylvanian to Permian in age. The area to the east of the Polaris Complex is underlain by shale, argillite and limestone of either Upper Devonian to Lower Permian Big Creek Group, Cooper Ridge Group of the Slide Mountain Group.

The Polaris Complex, a crudely zoned ultramafic massif, is approximately 15 km long and 3 to 4 km wide. The core of the Complex is olivine-rich lithologies of dunite, peridotite and wehrlite. The ultramafic becomes progressively more pyroxene-rich towards the outer periphery and the lithologies range from olivine clinopyroxenite to pyroxenite to hornblende-magnetite pyroxenite and finally to hornblendite and metamorphosed and metasomatized volcanics and sediments. The Polaris Complex exhibits a thermal halo up to 2500 meters in width. In certain areas, the metasomatism has been so intense that hornblende crystals up to 1 meter in length have been observed.

The Polaris Complex and the surrounding area have been intruded by Late Triassic to Cretaceous syenites and diorites which are probably related to the Hogem Intrusive Complex. Potassium-argon dating of biotite forming a potassic halo around one intrusive in the Polaris Complex yielded ages of 167 +/- 9 Ma and 156 +/- 15 Ma. More recent dating using U/Pb on zircons from a quartz-hornblende-plagioclase pegmatite pod yielded dates of 186 +/- 2 Ma

Mineral deposits in the vicinity of the Polaris Complex include several high grade but small gold-bearing quartz veins associated with intrusive dykes in argillites, amphibolite containing coarsely crystalline pyrrhotite, pyrite, chalcopyrite and arsenopyrite as seams and as massive sulphide bodies up to 8 meters wide and 150 meters long and also shale hosted zinc-lead sedex-type mineralization.



## 6.0 PROPERTY GEOLOGY

### 6.1 General

The Star claims are underlain by a variety of lithologies including dunite, peridotite, olivine clinopyroxenite and pyroxenite. The ultramafic, where mapped, appears to be a zoned and layered body with a central core of dunite which grades to peridotite, olivine clinopyroxenite and then pyroxenite as the periphery of the ultramafic is approached. Generally the ultramafic units are flat-lying except for the western and eastern ends of Capricorn Ridge. Here the layers trend 320° and are steeply to vertically dipping.

The ultramafic has been intruded by late stage diorite stocks, diorite dykes, feldspar pegmatite dykes and minor gabbro and granite dykes. The contacts of the diorite are marked by a metamorphic and metasomatised assemblage of porphyritic hornblendite, porphyritic hornblendite-porphyritic pyroxenite and porphyritic pyroxenite. The contacts of the diorite stock and occasionally some of the feldspar pegmatite dykes are marked by the development of listwanite.

Minor amounts of sediments have been seen on the Star 2 and 3 claims. The largest outcropping consists of flat-lying inter-bedded siltstone and chert which is in fault contact with dunite. A small lense of marble, a vent? of limestone with a fossil? that resembles heliophyllum and boulders of chert have also been seen.

### 6.2 Dunite

Yellow weathering dunite occurs on the northeasterly portion of the Star 1 and 2 claims. The dunite is very fine grained to fine grained, dense and is fresh in appearance. Occasionally the dunite contains very coarse grained (2.5 cm) flakes of phlogopite, biotite and muscovite which can form up to 25% of the dunite.

### 6.3 Peridotite

The peridotite is usually blackish in colour, very fine grained to fine grained, dense and fresh in appearance. Peridotites are found adjacent to the dunite core. Occasionally pyroxene crystals up to 2.5 cm are observed. The peridotite also occasionally contains phlogopite, biotite and muscovite flakes up to 2.5 cm which can form up to 25% of the rock.

### 6.4 Olivine Clinopyroxenite

Present mapping indicates that the olivine clinopyroxenite forms a somewhat discontinuous zone adjacent to the peridotite. Generally, this unit is very fine grained to fine grained but in the vicinity of the diorite stock on the Star 2 claim pyroxene crystals up to 1 cm in length and porphyroblasts of olivine up to 7 mm have been seen.

### 6.5 Pyroxenite

There are two types of pyroxenite. The primary form of pyroxenite is part of the ultramafic suite of rocks and is found adjacent to the olivine clinopyroxenite. The pyroxenite is fine grained to medium grained but in the vicinity of a diorite stock south of Capricorn Ridge the pyroxenite is coarse grained with pyroxene crystals averaging 1 cm in length suggesting that there was some growth of the crystals.

A second type of pyroxenite is formed from metamorphism and metasomatism related to granitic activity. On Capricorn Ridge and elsewhere, pyroxenitic haloes were seen forming around dykes which intrude dunite. The haloes are gradational, and vary from fine grained felted pyroxenite to unaltered dunite. A larger diorite stock on the Star 3 claim has also produced a pyroxenite halo with pyroxene phenocrysts up to 5 cm in length. The pyroxenite grades to amphibolite as the diorite is approached and grades to unaltered peridotite farther away from the diorite contact.

#### 6.6 Amphibolite

The amphibolite is black and from fine grained felted material to porphyritic with hornblende crystals up to 15 cm in length. Occasionally, the hornblendite contains minor amounts of white feldspar as an interstitial component. The amphibolite is a metamorphic and metasomatic halo associated with granitic activity.

#### 6.7 Diorite

Diorite is found as stocks and dykes. The stocks form a northwesterly trending belt across the Star claims. The diorite is relatively fresh with minor local areas of K-spar veining, carbonate veining or pervasive epidote alteration. The diorite is medium grained with 30% hornblende except near the contact where it is dark grey, fine grained with both augite and hornblende and dark breccia fragments of presumably ultramafic. The contacts of the diorite stocks are marked by intense listwanite alteration.

#### 6.8 Feldspar Pegmatite

White feldspar pegmatites form dykes ranging in width from 0.3 to 10 meters. The dykes which are composed almost entirely of orthoclase, plagioclase with minor sanidine and rarely hornblende crystals up to 15 cm in length, form a parallel swarm of dykes which can be traced for 6 km. The dykes appear to be controlled by lithological/chemical changes within the ultramafic. Occasionally, the dykes have metasomatic halos of fine grained pyroxenite or listwanite development.

#### 6.9 Granite

A small granite dyke and granite talus was found on the Star 5 claim. The granite dyke is pink in colour whereas the granite talus was intensely pervasively replaced by epidote.

#### 6.10 Gabbro

One dyke of gabbro was located south of Capricorn Ridge. The east-west trending dyke is black with minor white interstitial feldspar. The dyke has form a well developed metamorphic, metasomatic halo of porphyritic pyroxenite and porphyritic amphibolite.

## 7.0 MINERALIZATION

### 7.1 General

Mineralization of economic significance consists of magmatic Pt-Pd-bearing chalcopyrite, pyrite with minor pyrrhotite, bornite and primary covellite. To date the best values have been found within the olivine clinopyroxenite and the magmatic pyroxenite particularly in close proximity to granitic dykes and stocks.

Two zones of significant mineralization were discovered in 2001. Both zones are in the olivine clinopyroxenite.

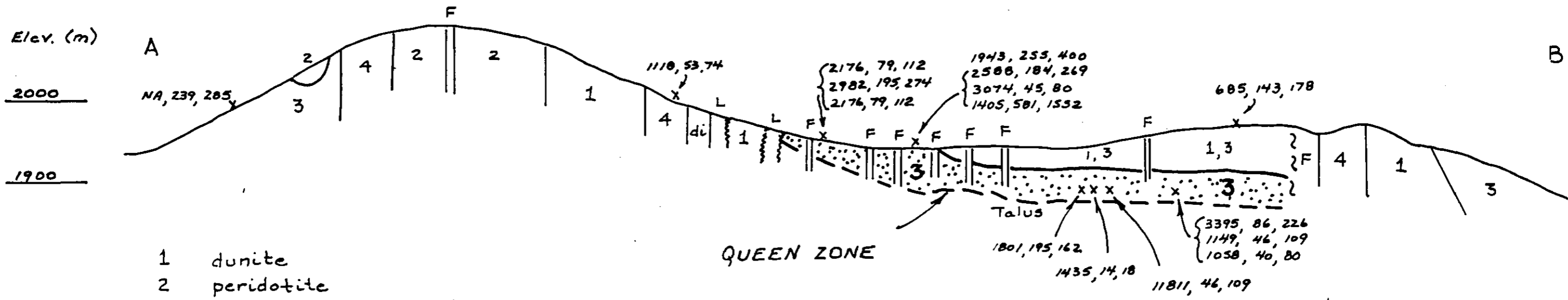
### 7.2 Olivine Clinopyroxenite

Mineralization in this unit consists of 3 to 5% very fine grained to fine grained, magmatic, disseminated chalcopyrite and pyrite with minor bornite, pyrrhotite and primary covellite. The sulphides show some remobilization near granitic dykes and stocks forming thin sulphide filled fractures. There is no associated gangue with the sulphides. The sulphides are not accompanied by any discernible alteration.

Two zones of significant mineralization were discovered during the 2001 sampling. The Queen Zone is exposed on the north-facing cliff face of Capricorn Ridge and appears as a slightly rusty weathering layer. The zone is relatively flat-lying with a gentle southerly dip and can be traced for at least 500 meters (see Figure 3). The Queen Zone is at least 20 meters thick and is possibly thicker but is covered by talus. Mineralization in the Queen Zone consists of very fine grained to fine grained, disseminated, magmatic chalcopyrite, pyrite with lesser amounts of pyrrhotite. Sulphide content ranges from 3 to 10%. No visible alteration is present. The best results include

11811 ppm Cu	174 ppb Au	46 ppb Pt	109 ppb Pd
1405 ppm Cu	166 ppb Au	581 ppb Pt	1552 ppb Pd

There is no nickel or cobalt associated with the sulphides in this zone.

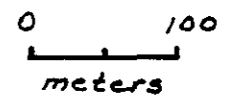


- 1 dunite
- 2 peridotite
- 3 olivine clinopyroxenite
- 4 pyroxenite
- F feldspar pegmatite
- di diorite
- L listwanite
- x rock sample  
Cu ppm, Pt ppb, Pd ppb

QUEEN ZONE

FIGURE 3

QUEEN ZONE LOOKING SOUTH



26844 a

The second zone called the GL Zone is located approximately 1 km north of the Queen Zone (see Figure 4). The GL Zone is extremely rusty weathering and like the Queen Zone is relatively flat-lying with a gentle southerly dip. Both zones are capped by a layer of dunite. The GL Zone, also like the Queen Zone appears to be 500 meters wide and at least 20 meters thick. The true thickness is obscured by talus and overburden cover. Mineralization consists of very fine grained to fine grained, magmatic, disseminated chalcopyrite, pyrite, pyrrhotite with minor bornite and primary covellite. The GL Zone appears to have more pyrrhotite than the Queen Zone. Sulphide content ranges from 3 to 15% and is not accompanied by any discernible alteration. The best results from the GL Zone are:

7677 ppm Cu	2474 ppm Ni	833 ppm Co	55 ppb Au	59 ppb Pt	91 ppb Pd
2729 ppm Cu	1647 ppm Ni	77 ppm Co	60 ppb Au	268 ppb Pt	453 ppb Pd

The nickel and cobalt values reflect a somewhat different mineralogy than that of the Queen Zone.

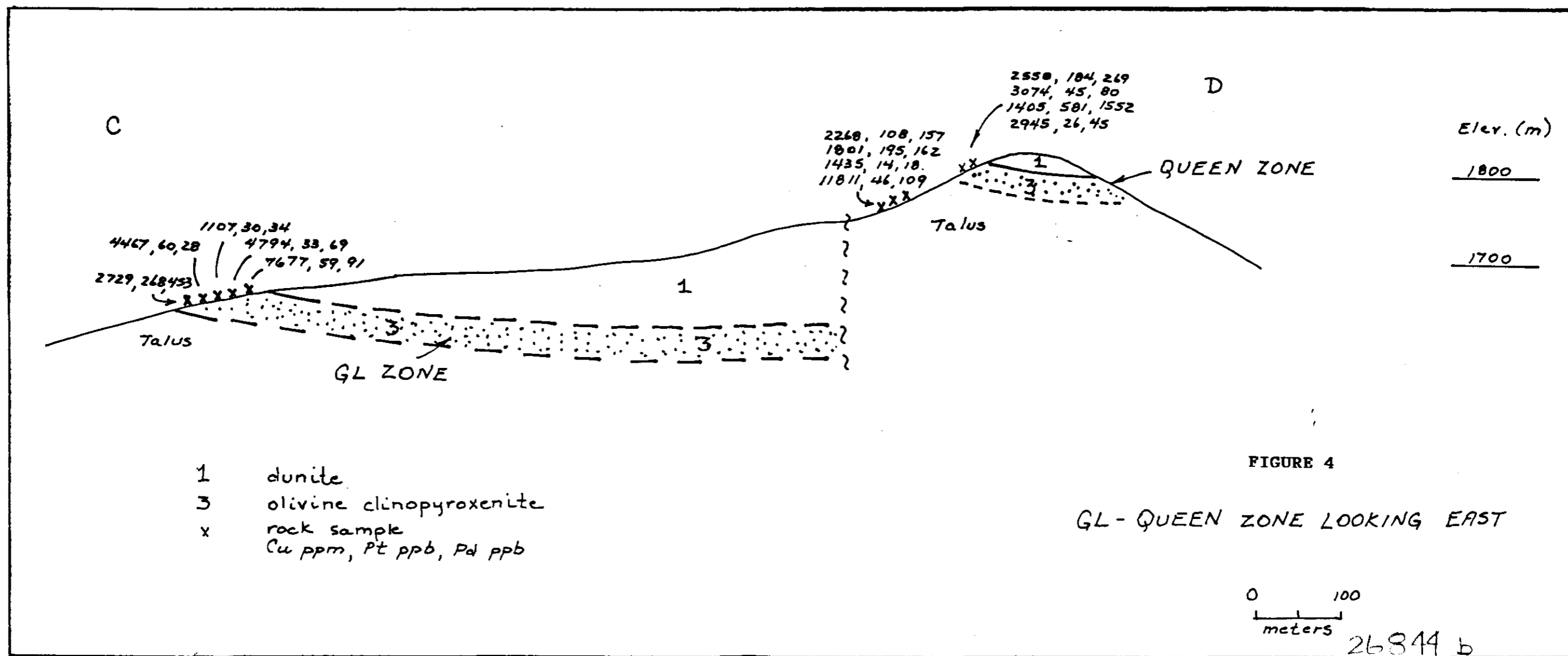
The geological similarities between the two zones such as both being flat-lying with gentle southerly dips, both being covered by a dunite cap, both having the same very fine grained to fine grained disseminated magmatic sulphides, both have the same lithology of olivine clinopyroxenite, strongly suggests that they are part of one major mineralized lithologic unit. The GL Zone is located on a down-dropped fault block and is lower in elevation than the Queen Zone. This theory is strongly corroborated by the existence of a fault-controlled listwanite along the base of Capricorn Ridge.

Where sampled, the olivine clinopyroxenite has returned significant values. On the Star 1 claim, the olivine clinopyroxenite which overlies a diorite stock returned 250 meters of anomalous Cu, Pt and Pd. A sample collected in 1998 returned a value of 3020 ppm Cu, 277 ppb Pt and 254 ppb Pd.

Olivine clinopyroxenite near a granite dyke on the Star 5 claim returned a value of 1389 ppm Cu, 101 ppb Pt and 143 ppb Pd.

### 7.3 Pyroxenite

Primary pyroxenite is locally well mineralized with pyrite, chalcopyrite and occasionally minor pyrrhotite. The sulphides are of magmatic origin and range in content from 0 to 40%. The sulphides



are generally coarse grained and form as disseminations and clots. Previous thin section examination has shown that there is a second stage of sulphide mineralization which forms sulphide haloes around pyroxene crystals. The second stage of mineralization may be either some remobilization of magmatic sulphides or be due to nearby granitic dykes or stocks. Although well mineralized this unit does not appear to be particularly prospective for Pt or Pd. The best value to date is 2697 ppm Cu, 94 ppb Pt and 84 ppb Pd. The sulphides in this unit are geochemically distinct from the sulphides in the olivine clinopyroxenite. Sulphides in the pyroxenite carry very elevated Co and Ag values.

Pyroxenite of metamorphic, metasomatic origin is generally unmineralized but where sulphides do occur, they are coarse grained and consist dominantly of pyrite with minor chalcopyrite. Nickel, cobalt, silver and gold are absent from this unit. Generally Pt and Pd are less than 20 ppb combined. The best values to date are:

975 ppm Cu	35 ppb Pt	50 ppb Pd
328 ppm Cu	15 ppb Pt	31 ppb Pd
138 ppm Cu	46 ppb Pt	50 ppb Pd
460 ppm Cu	34 ppb Pt	39 ppb Pd

#### 7.4 Amphibolite

Although locally well mineralized with pyrite and minor chalcopyrite, this unit contains relatively low Pt and Pd values. The sulphides are coarse grained and disseminated throughout the rock when present. The sulphides also show remobilization occurring as wormy streaks. Total sulphide content may reach up to 40% of the rock. The best value from this unit is 2692 ppm Cu, 28 ppb Pt and 52 ppb Pd.

#### 7.5 Diorite

The diorites are locally well mineralized with coarse grained pyrite, minor chalcopyrite and some bornite. Sulphides occur as disseminations and on fracture surfaces. The sulphides also occur as massive fracture fillings with no gangue and rarely in quartz veinlets. On the Star 2 claim shear zones within the diorite are well mineralized with pyrite and minor chalcopyrite. The best value from the diorite is 1840 ppm Cu, 10 ppb Pt and 14 ppb Pd.



## 7.6 Other

The dunites and peridotites are host to very fine grained nickel sulphides, minor chromite and in several areas chalcopyrite. Generally Pt and Pd values are only in the trace amounts in both rock types. Sporadically, the chromites contain some Pt values the best being 785 ppb Pt, 0 ppb Pd. A sample of chalcopyrite-bearing dunite returned a value of 2143 ppm Cu, 30 ppb Pt and 13 ppb Pd.

The listwanites are host to minor very fine grained pyrite and occasionally arsenopyrite. Gold values in the listwanites range from nil to 110 ppb. A soil sample collected previously near a listwanite returned a value of 8631 ppb Au. The listwanites also occasionally have weak Pt and Pd values the best being 72 ppb Pt.

## 8.0 ALTERATION

The most impressive and probably the most extensive alteration on the Star claims is the porphyritic hornblendite and the porphyritic pyroxenite metamorphic and metasomatic halo surrounding the diorite stocks. Hornblende crystals commonly reach 15 cm in length but are generally 10 cm long. Memoir 274 reports that hornblende crystals 1 meter long were found. Pyroxene crystals average 5 cm in length.

The most obvious alteration is the red-orange weathering carbonate listwanite zones which are located at the contact of the diorite stocks and dykes, occasionally at the contacts of the feldspar pegmatite dykes and along fault zones. The largest listwanite zone found to date is 500 meters long and 50 meters wide and is dominantly composed of carbonate with minor quartz and mariposite.

Coarse grained phlogopite, biotite and muscovite occur in dunites, peridotite and pyroxenites in close proximity to diorite intrusives. The mica which composes up to 25% of the rock is commonly 1 cm in diameter but reaches up to 2.5 cm on occasion.

Other than the presence of mica, most ultramafic lithologies appear to be fresh save for small areas of weak serpentization.

Alteration of the diorite and granite intrusives ranges from fresh to intensely pervasively epidotized. A thin section examination of one altered diorite places the alteration as typical greenschist assemblage. Minor potassic alteration and rare carbonate and quartz veins are occasionally present.

Alteration in the olivine clinopyroxenite of the GL Zone consists of weak replacement of the olivine by serpentine and hematite and that the clinopyroxene is replaced by 1% hornblende (personal communication, G. Nixon).

#### 9.0 **WORK PROGRAM**

In July, 2001 three days were spent mapping and sampling on selected portions of the Star 1, 2 and 4 claims. Seventy-six rock samples and 1 soil sampled were collected. All samples were analysed for 30 elements by ICP and Au, Pt, Pd by FA/ICP.

In addition, 5 samples collected previously were submitted for petrographic examination.

10.0 SAMPLE DESCRIPTIONS

Sample Number	Sample Description	Cu ppm	Pt ppb	Pd ppb
158455	Black fresh looking dunite with 10% coarse grained phlogopite; 0.5% vfg disseminated silvery metallic; no visible sulphides	12	-	4
158456	Slightly rusty weathering dunite; black fresh looking; cut by fine 1 to 2 mm wide magnetite veinlets; 0.5% vfg white silvery metallic; no visible sulphides	14	2	4
158457	Sub-porphyrific granular olivine pyroxenite; black crumbly; trace visible chalcopyrite; minor malachite and hematite	3074	45	80
158458	As 158457	1101	18	21
158459	Composite; sub-porphyrific granular rusty weathering crumbly olivine pyroxenite; trace vfg disseminated chalcopyrite, pyrite, malachite	2588	184	269
158460	Slightly rusty weathering black fg wehrlite; trace vvfgr disseminated chalcopyrite, pyrite; malachite on fractures in the interior of the rock	1095	31	32
158461	Slightly rusty weathering fg black wehrlite; trace vvfgr disseminated chalcopyrite, pyrite; minor malachite in interior of the rock	1943	255	400
158462	Rusty weathering black fg wehrlite fresh looking; trace vvfgr disseminated chalcopyrite	153	12	22
158463	Rusty weathering black fg peridotite fresh looking; trace vvfgr disseminated pyrite, chalcopyrite	1298	68	127
158464	Dark greenish black, very crumbly olivine pyroxenite; sheared; trace vvfgr disseminated pyrite; leached	29	27	13
158465	Black fresh looking fg wehrlite; trace vvfgr disseminated pyrite	39	10	15
158466	Rusty weathering black fresh looking peridotite; trace vvfgr disseminated pyrite	27	12	17
158467	Dark greenish black cg olivine pyroxenite; crumbly; rust-lined voids between porphyritic olivine crystals; leached; no visible sulphides	5	10	14

Sample Number	Sample Description	Cu ppm	Pt ppb	Pd ppb
158468	Black fresh looking mg olivine pyroxenite; no visible sulphides	18	7	5
158469	Black slightly serpentinized cg wehrlite; 0.5% vvfq disseminated silvery metallic; no visible sulphides	28	25	24
158470	Dark blackish green slightly sheared, slightly serpentinized cg wehrlite; trace vvfq disseminated chalcopyrite and white silvery metallic; minor rust on surface	3	9	8
158471	Slightly rusty black fresh looking dunite; trace vvfq disseminated silvery metallic	5	-	-
158472	Soil; full of bleached pyroxene crystals	17	3	4
158473	Slightly rusty weathering wehrlite with serpentinized pyroxene crystals up to 1 cm long; minor mica up to 5 mm in diameter; trace vvfq disseminated silvery metallic	4	-	-
158474	Black, fg, fresh looking, magnetite-rich wehrlite; 0.5% vvfq disseminated silvery metallic; pyroxene crystals up to 1 cm long; minor vfg white mica; occasional speck of vvfq pyrite; cut by vf black stringers of magnetite	8	10	7
158475	Slightly rusty; black to dark brownish peridotite; 0.5% vvfq disseminated pyrite	8	16	11
158476	Orange weathering, black fresh looking wehrlite with pyroxene phenos up to 1 cm (rare) and mica phenos up to 1 cm (rare); 10% mica; occasional speck of vvfq pyrite; platy fractures	4	51	6
158477	Brown, granular cg olivine pyroxenite; pyroxene crystals av. 2 mm; occasional rare speck of vvfq chalcopyrite	685	143	178
158478	Slightly rusty weathering cg olivine pyroxenite with pyroxene crystals averaging 4 mm; no visible sulphides	11	28	23
158479	Rusty weathering medium greenish grey cg olivine pyroxenite; pyroxene crystals av. 2 mm and are pale green from talc alteration; no visible sulphides	4	6	2

Sample Number	Sample Description	Cu ppm	Pt ppb	Pd ppb
158480	Black crystalline, dense wehrlite with 2 mm pyroxene crystals; trace vvf <sub>g</sub> disseminated chalcopyrite, pyrite	328	15	31
158481	Deep red brown weathering; dark greenish grey peridotite; trace disseminated sulphides	11	4	4
158482	Dense dark grey vfg wehrlite; 0.5% vvf <sub>g</sub> silvery metallic and trace vvf <sub>g</sub> pyrite	27	4	3
158483	Rusty weathering peridotite with 1% vvf <sub>g</sub> silvery metallic and occasional speck of pyrite	8	7	4
158484	Extremely rusty, finely crystalline amphibolite; black; 100% hornblende; trace vvf <sub>g</sub> disseminated chalcopyrite	208	4	3
158485	As above but with some white interstitial feldspar	329	17	16
158486	Orange weathering, black fresh looking micaceous dunite with 20% mica; fracture surfaces of white 50% kaolinized feldspar and 50% pale brown mica books; 0.5% vvf <sub>g</sub> disseminated silvery metallic and rare speck of pyrite in the dunite	4	12	2
158487	Orange weathering, black fresh looking peridotite with pyroxene crystals up to 1 cm; 5% mica occasionally up to 5 mm in diameter; 0.5% vvf <sub>g</sub> disseminated silvery metallic	4	21	-
158488	Orange weathering, dark blackish grey dense, fresh looking dunite; 5% fg white mica; trace vvf <sub>g</sub> disseminated silvery metallic; no visible sulphides	4	9	-
158489	Cg dark grey olivine pyroxenite; olivine and pyroxene crystals average 4 mm; granular; rare speck of pyrite; sample from outcrop where dunite becomes more pyroxene-rich and has clots of pyroxene and also 5 cm wide veinlets of pyroxene	4	3	-
158490	Rusty weathering porphyritic olivine pyroxenite with pyroxene crystals up to 3 cm but average 1 cm; trace vvf <sub>g</sub> disseminated pyrite; outcrop sheared	3	2	-

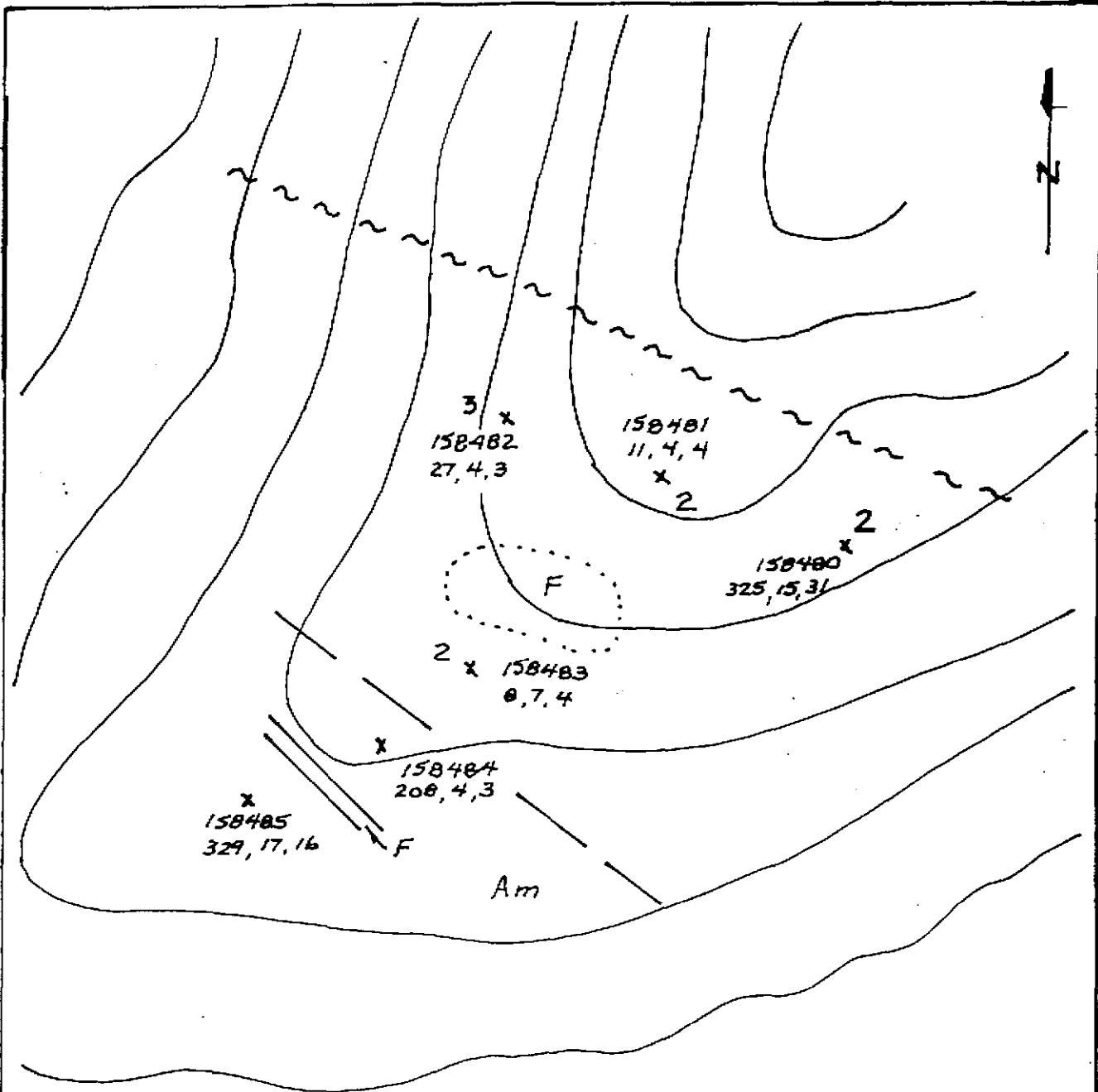


FIGURE 5

158480 Sample Number

- 2 peridotite
- 3 wehrlite
- F feldspar pegmatite
- Am amphibolite
- x rock sample

SAMPLE SITES STAR 4 CLAIM

Cu ppm, Pt ppb, Pd ppb



Sample Number	Sample Description	Cu ppm	Pt ppb	Pd ppb
158491	Dark blackish green porphyritic olivine pyroxenite with pyroxene crystals up to 5 cm but averaging 2 cm; slightly serpentinized; no visible sulphides	2	5	-
158492	Very rusty weathering, pale greyish white feldspar pegmatite with minor black patches of remnant hornblende?; occasional speck of chalcopyrite; black areas have vvfgr disseminated pyrite	71	3	2
158493	Slightly rusty weathering very dark grey crystalline olivine pyroxenite; pyroxene crystals average 4 mm; 0.5% vvfgr disseminated sulphides, mainly chalcopyrite, pyrite and bornite	1058	40	80
158494	Slightly rusty weathering very crystalline dark grey, mg olivine pyroxenite; pyroxene crystals average 3 mm; fresh looking; 1% vvfgr disseminated pyrrhotite, pyrite, chalcopyrite	1149	46	109
158495	Very rusty weathering, very crystalline dark grey, mg olivine pyroxenite; pyroxene crystals average 3 mm; 5% fg disseminated chalcopyrite, pyrite, bornite	3395	86	226
158496	Very rusty weathering, very crystalline, dark grey, mg olivine pyroxenite; pyroxene crystals average 3 mm; 5% fg disseminated chalcopyrite, pyrite, bornite	2362	47	70
158497	Black fresh looking magnetite-rich peridotite; minor pale green pyroxene crystals; altered to talc; no visible sulphides	26	-	-
158498	Black, fresh looking magnetite-rich peridotite; no visible sulphides	18	6	7
158499	Slightly rusty weathering, black wehrlite; rare speck of pyrite	68	62	106
158500	Black, fresh looking, dense wehrlite; trace vvfgr disseminated pyrite	274	27	39
158501	Orange weathering, black dense, fresh dunite with rare speck of pyrite; surface of rock full of rounded depressions averaging 5 cm in diameter	10	9	3

Sample Number	Sample Description	Cu ppm	Pt ppb	Pd ppb
158502	Slightly rusty weathering, black dense fresh looking peridotite; 10% pale brown mica up to 1 cm in diameter; trace vvfgr silvery metallic and trace pyrite	10	-	-
158503	Slightly rusty weathering greenish black cg olivine pyroxenite; pyroxene crystals up to 1 cm; trace vvfgr disseminated chalcopyrite; surface pitted with roundish limonite-filled voids	36	15	15
158504	Extremely rusty weathering (deep red brown) granular, crumbly cg olivine pyroxenite; average grain size 3 mm; 10% vfg disseminated chalcopyrite, pyrite, pentlandite?	3116	95	96
158505	Extremely rusty weathering fg olivine pyroxenite; 10% vfg disseminated chalcopyrite, pyrite, covellite	2830	81	106
158506	Heavily oxidized (deep dark red brown fg somewhat crumbly olivine pyroxenite; 10% vfg disseminated chalcopyrite, pyrite, bornite?)	2662	78	81
158507	Float; extremely oxidized (black to to dark red brown coating) fg olivine pyroxenite; 10% vfg disseminated chalcopyrite, pyrite	2582	48	62
158508	Dark greenish black cg crumbly leached olivine pyroxenite; both olivine and pyroxene crystals average 4-5 mm; trace vvfgr disseminated pyrite, chalcopyrite	27	66	64
158509	Very rusty weathering dark greenish black cg olivine pyroxenite; both olivine and pyroxene crystals 5 mm; trace vvfgr disseminated chalcopyrite, pyrite	898	126	155
158511	Very rusty weathering vfg black amphibolite with some white interstitial feldspar; hornblende crystals black, fresh averaging 1 to 2 cm; trace vfg disseminated silvery metallic; rare speck of pyrite	266	9	9
158512	Very rusty weathering vfg black olivine pyroxenite; crumbly, granular. pyroxene crystals average 4 mm; trace vvfgr disseminated pyrite	138	66	50



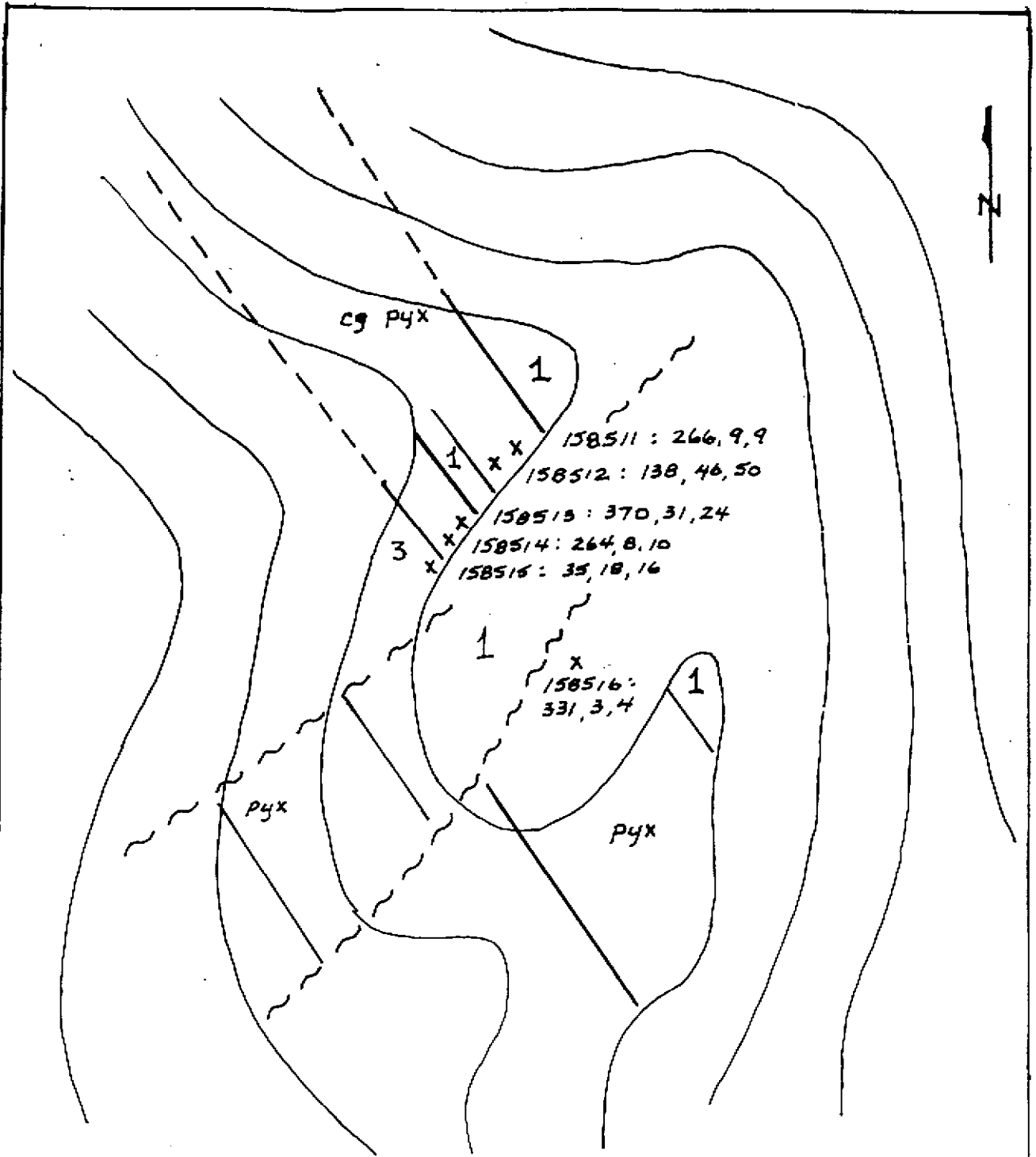


FIGURE 6

158512      Sample Number

- x      rock sample
- 1      dunite
- 3      olivine pyroxenite
- pyx    pyroxenite

**SAMPLE SITES**

**STAR 1 CLAIM**

Cu ppm, Pt ppb, Pd ppb



Sample Number	Sample Description	Cu ppm	Pt ppb	Pd ppb
158513	Very rusty weathering cg black pyroxenite with interstitial clots of white feldspar; pyroxene crystals 5 mm; trace vvfq chalcopyrite	370	31	24
158514	Very rusty weathering cg crystalline black pyroxenite with minor interstitial white feldspar; pyroxene crystals average 5 mm but are occasionally up to 1 cm; trace vvfq disseminated chalcopyrite	264	8	10
158515	Two rock types: 1) Moderately rusty weathering vcg olivine pyroxenite; on weathered surface olivine crystals raised producing a rough pimply texture; fresh surface black; pyroxene crystals 5 mm; trace vvfq disseminated chalcopyrite 2) No rust; black equigranular cg olivine pyroxenite with 4 mm pyroxene crystals; trace vvfq disseminated chalcopyrite	35	18	16
158516	Very rusty weathering black vcg fresh pyroxenite with substantial (30%) white interstitial feldspar; pyroxene crystals average 4 mm; 3% vvfq disseminated white pyrite	327	3	4
158517	Slightly rusty mg black fresh-looking olivine pyroxenite; fractures heavily irredescently varnished; pyroxene 2-3 mm; 3% vvfq disseminated chalcopyrite, pyrite	1801	195	162
158518	Very rusty weathering mg fresh-looking black olivine pyroxenite; pyroxene crystals 2 mm; 3% vvfq disseminated chalcopyrite, pyrite	1435	14	18
158519	Slightly rusty weathering cg black equigranular crumbly olivine pyroxenite; pyroxene crystals 5 mm; olivine 3 mm; 5% vfg disseminated chalcopyrite; localized patches of 10% fg chalcopyrite in orangey coloured areas; minor malachite	11811	46	109
158520	Rusty weathering cg black olivine pyroxenite; pyroxene crystals 4 mm; 5% fg disseminated chalcopyrite, pyrite; trace bornite	2268	108	157

Sample Number	Sample Description	Cu ppm	Pt ppb	Pd ppb
158521	Rusty weathering mg black somewhat crumbly equigranular olivine pyroxenite; pyroxene crystals 3 mm; 0.5% vvfgr disseminated chalcopyrite; minor malachite	2729	268	453
158522	Very rusty weathering irredescent varnish on fractures mg black equigranular olivine pyroxenite; pyroxene crystals 2 mm; 0.5% vvfgr disseminated chalcopyrite, pyrite	1914	31	21
158523	Intensely oxidized with heavy limonite coating; interior orange brown; mg olivine pyroxenite; somewhat crumbly; equigranular; pyroxene crystals 2 mm; 0.5% vvfgr disseminated chalcopyrite	4467	60	28
158524	Intensely oxidized deep red brown mg crumbly olivine pyroxenite; no fresh surface; pyroxene crystals 4 mm; 0.5% vvfgr disseminated chalcopyrite	1107	30	34
158525	Heavily oxidized deep red brown mg olivine pyroxenite; somewhat crumbly; equigranular; interior brownish; pyroxene crystals 3 mm; 2% vvfgr disseminated chalcopyrite; minor pyrite	4794	33	69
158526	Rusty weathering mg brownish, somewhat crumbly equigranular olivine pyroxenite; pyroxene crystals 3 mm; 1% vvfgr disseminated chalcopyrite	7677	59	91
R-1	Very dark red brown weathering black peridotite; slightly serpentized; cut by 2 irregular 1 cm wide carbonate-mica stringers with clots of pyrrhotite; pyrrhotite also in olivine pyroxenite but generally becomes finer grained away from veinlets; 1 angular pyrrhotite fragment 1.5 cm x 1.5 cm in olivine pyroxenite; minor mica on fractures	7	4	-
R-2	Very rusty dark red brown weathering olivine pyroxenite; serpentized with cg pyroxene phenocrysts replaced by talc; 2% fg disseminated chalcopyrite, pyrite	3680	149	242

Sample Number	Sample Description	Cu ppm	Pt ppb	Pd ppb
R-3	Black dense magnetite-rich dunite with pale grey pyroxene phenocrysts 1 cm long; no visible sulphides	21	4	2
R-4	Very rusty weathering pale grey carbonate listwanite; carbonate very crystalline and semi-transparent occasionally; cut by vague white seams of carbonate and red limonite coated fractures; 0.5% disseminated pyrite, chalcopyrite	241	-	-
R-5	Very rusty weathering medium greenish grey carbonate listwanite; dense; one 2 mm clot of chalcopyrite; greenish colour from mariposite	7	59	4
R-6	Very rusty weathering mg olivine pyroxenite; fairly crystalline; olivine and pyroxene average 2 mm; 3-5% fg disseminated chalcopyrite; cut surface shows orange patches (fragments?) of mg orange olivine pyroxenite surrounded by black dense vfg material; chalcopyrite interstitial to olivine and pyroxene crystals; trace covellite	3293	70	73

A binocular examination of polished pieces from the GL Zone show the specimen to be a pyroxenite with minor olivine. The main sulphide is chalcopyrite interstitial to pyroxene crystals occurring as rounded droplets. Other sulphides include minor amounts of a dull greyish metallic (cobaltite?) with intergrown chalcopyrite and a trace amount of pyrite and pentlandite?.

A second polished piece from the same specimen showed 3-5% sulphides including intergrown chalcopyrite and pentlandite, minor fracture-controlled chalcopyrite and covellite with a chalcopyrite rim.

Binocular examination of a cut surface of sample 158504 showed the rock to be olivine pyroxenite with 10% sulphides including a sooty brownish metallic (pentlandite?) which occurs as crystalline droplets and is disseminated throughout the specimen. This metallic forms 9% of the sulphides chalcopyrite forming 1%. Sulphides occur interstitially between the pyroxene and olivine.

Binocular examination of sample 158495 shows that chalcopyrite is the only sulphide present.

11.0 **RESULTS**

Sampling in 2000 outlined an area of anomalous Cu, Pt and Pd. Follow-up sampling in 2001 resulted in the discovery of the Queen Zone. Mineralized olivine clinopyroxenite is exposed for 500 meters in width and 20 meters in depth before being covered by talus.

A second zone was also discovered in 2001. The GL Zone is located 1 km north of the Queen Zone and also appears to be 500 meters wide and 20 meters thick before being covered by overburden and talus.

Examination of samples from both zones show the sulphides to be of magmatic origin with minor remobilization near feldspar pegmatites. The sulphides are vfg to fg, disseminated and consist mainly of chalcopyrite with lesser amounts of pyrrhotite, pyrite, bornite and primary covellite. Sulphides with economic significance are confined to olivine clinopyroxenite and magmatic pyroxenite.

Analyses shows that Pt and Pd values are related to elevated Cu values in the olivine clinopyroxenite and pyroxenite. However there is no clear correlation with higher Cu values and higher Pt, Pd values as samples 158432 (collected in 2000) and 158519 indicate:

158432: 1405 ppm Cu, 166 ppb Au, 581 ppb Pt, 1552 ppb Pd  
158519: 11811 ppm Cu, 174 ppb Au, 46 ppb Pt, 109 ppb Pd

Other than elevated gold values, Pt and Pd values are not correlated to any other elements except for copper.

Sampling also indicates that the Cu, Pt, Pd mineralization is not associated with any visible alteration. Mineralization also shows minor amounts of remobilization near granitic intrusives and include sulphide-filled fracture and sulphide rims on pyroxene crystals.

Sampling also revealed the presence of nickel and cobalt in the GL Zone. The olivine clinopyroxenite and pyroxenite units of the GL and Queen Zones are generally devoid of nickel and cobalt. However, samples 158525 and 158526 returned the following values:

158525: 1127 ppm Ni, 393 ppm Co  
158526: 2474 ppm Ni, 833 ppm Co

suggesting the presence of pentlandite and cobaltite.

## 12.0 CONCLUSIONS

Relatively consistent significant values of Cu, Pt and Pd within the olivine clinopyroxenite and pyroxenite suggest the possibility for a bulk tonnage copper deposit with significant Pt and Pd values.

13.0 REFERENCES

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Assessment Report 26198, Mapping and Sampling on the Star Claims, by U. Mowat, P. Geo., March 2000.

Assessment Report 26524, Mapping and Sampling on the Star Claims, by U. Mowat, P. Geo., April 2001.



14.0 STATEMENT OF COSTS

Analyses	
77 samples analysed for 30 elements by ICP and Au, Pt, Pd by FA/ICP at \$17.25/sample	\$1328.25
76 rock preps at \$4.75/sample	361.00
1 soil pres at \$1.40/sample	1.40
GST	<u>118.35</u>
	\$1809.00
Helicopter	
10.9 hours at \$650.00/hour	\$7085.00
951.4 liters at \$0.90/liter	856.26
291.2 liters at \$1.10/liter	320.32
GST	<u>578.31</u>
	\$8839.89
Petrography	
5 polished thin section at \$25.00/section	125.00
5 off cuts at \$0.75/cut	3.75
5 Kspar stainings at \$2.00/stain	10.00
Report	650.00
Photos	40.00
Shipping	<u>15.00</u>
	\$ 902.81
Wages	
1 man at \$400.00/day for 19 days	\$7600.00
1 man at \$275.00/day for 3 days	825.00
1 man at \$200.00/day for 1 day	<u>200.00</u>
	\$8625.00
Accommodation	
1 room for 8 days at \$64.40/day	\$ 515.20
Freight	\$ 125.55
Food	\$ 287.46
Airfare	\$ 281.06
Bus/Taxi	\$ 127.27
Supplies	\$ 46.43

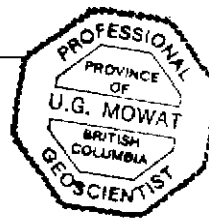
Reproduction	\$ 47.10
Telephone	\$ 10.94
Postage	\$ 1.00
TOTAL	\$21618.71

15.0 STATEMENT OF QUALIFICATIONS

- 1.0 I am a graduate of the University of British Columbia having graduated in 1969 with a Bachelor of Science in Geology.
- 2.0 I have practiced my profession since 1969 in mineral exploration, oil and gas exploration and coal exploration.
- 3.0 I am a registered member of the Association of Professional Engineers and Geoscientists of British Columbia.
- 4.0 I have a direct interest in the Star Claims.

Ursula G. Mowat

Ursula G. Mowat, P. Geo.



Dated this 6th day of may, 2002  
at Vancouver, B. C.



GEOCHEMICAL ANALYSIS CERTIFICATE

Mowat, Ursula PROJECT STAR File # A102275 Page 1

1405 - 1933 Robson St., Vancouver BC V6G 1E7 Submitted by: Ursula Mowat

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au**	Pt**	Pd**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm	ppb	ppb	ppb	
B 158455	2	12	7	54	<.3	1917	107	1414	7.34	5	<8	<2	<2	17	.4	<3	<3	27	.41	.006	<1	490	19.02	50	.04	18	.35	.05	.14	<2	26	<2	4
B 158456	2	14	<3	24	<.3	1891	106	1418	7.11	5	<8	<2	<2	5	.3	<3	<3	<1	.14	.006	<1	237	21.49	16	.01	15	.10	.01	.04	<2	<2	2	4
B 158457	1	3074	4	13	2.2	195	26	298	2.35	2	<8	<2	<2	4	<.2	3	<3	20	.38	.004	<1	109	2.90	5	.03	6	.23	.01	.01	<2	15	45	80
B 158458	2	1101	<3	9	.4	105	19	223	1.68	2	<8	<2	<2	3	<.2	3	<3	17	.39	.003	<1	87	2.02	2	.02	6	.15	.01	<.01	2	25	18	21
B 158459	2	2588	<3	14	1.4	192	26	284	2.25	2	<8	<2	<2	3	<.2	<3	<3	18	.33	.003	<1	69	2.61	3	.02	6	.14	.01	<.01	2	36	184	269
B 158460	1	1095	<3	32	.3	577	73	895	5.51	2	<8	<2	<2	3	<.2	<3	<3	51	.26	.005	<1	720	7.53	5	.05	13	.22	.01	<.01	<2	29	31	32
B 158461	<1	1943	6	34	.8	825	86	1009	6.59	3	<8	<2	<2	3	<.2	3	5	55	.23	.005	<1	868	8.79	4	.05	10	.21	.01	<.01	<2	51	255	400
B 158462	1	153	4	37	<.3	713	115	1294	9.05	2	<8	<2	<2	3	.3	3	5	152	.17	.005	<1	1029	10.66	5	1.0	7	.15	.01	<.01	<2	2	12	22
B 158463	1	1298	<3	53	.6	1068	134	1827	11.08	3	<8	<2	<2	2	.3	<3	4	75	.12	.006	<1	970	15.69	6	.05	8	.08	.01	<.01	2	12	68	127
B 158464	2	29	<3	10	<.3	148	24	251	1.90	<2	<8	<2	<2	3	<.2	<3	<3	19	.32	.004	<1	288	2.29	5	.03	9	.20	.01	<.01	<2	<2	27	13
B 158465	1	39	<3	29	<.3	486	64	749	4.56	3	<8	<2	<2	4	<.2	<3	<3	30	.23	.005	<1	590	7.18	6	.03	22	.19	.01	<.01	3	2	10	15
B 158466	1	27	<3	46	<.3	1292	152	1875	9.92	2	<8	<2	<2	2	.3	<3	<3	13	.10	.007	<1	590	17.78	6	.02	25	.07	.01	.01	2	2	12	17
B 158467	1	5	3	19	<.3	258	43	452	2.72	<2	<8	<2	<2	3	<.2	<3	3	5	.23	.005	<1	211	4.97	5	.02	12	.17	.01	<.01	2	2	10	14
B 158468	3	18	<3	15	<.3	280	30	297	1.87	2	<8	<2	<2	4	<.2	<3	<3	4	.26	.005	<1	251	3.86	5	.01	8	.13	.01	.01	2	2	7	5
B 158469	1	28	6	20	<.3	406	43	417	2.62	<2	<8	<2	<2	4	<.2	<3	<3	12	.33	.006	<1	422	5.40	5	.02	13	.21	.01	.01	<2	<2	25	24
B 158470	1	3	4	19	<.3	266	42	488	2.80	<2	<8	<2	<2	3	<.2	<3	<3	2	.18	.005	<1	284	5.51	3	.01	7	.16	.01	<.01	<2	<2	9	8
RE B 158470	1	4	<3	19	.3	271	43	497	2.85	2	<8	<2	<2	3	<.2	<3	<3	2	.18	.005	<1	284	5.61	3	.01	11	.17	.01	<.01	<2	2	9	5
B 158471	2	5	<3	38	<.3	1009	135	1811	8.67	3	<8	<2	<2	4	.4	<3	3	<1	.08	.006	<1	141	21.41	5	<.01	5	.03	.01	.01	2	<2	<2	<2
B 158473	1	4	3	27	<.3	482	69	773	4.55	<2	<8	<2	<2	11	<.2	3	<3	<1	.20	.004	<1	341	10.50	6	.01	23	.11	.01	.01	<2	<2	<2	<2
B 158474	1	8	3	34	<.3	852	96	1073	6.29	3	<8	<2	<2	6	.5	<3	3	4	.23	.005	<1	324	13.32	7	.01	36	.10	.01	.01	<2	<2	10	7
B 158475	<1	8	<3	49	<.3	959	102	1379	7.64	<2	<8	<2	<2	2	.2	3	4	15	.12	.005	<1	441	12.41	3	.02	7	.05	.01	<.01	<2	<2	16	11
B 158476	1	4	9	45	<.3	1274	117	1360	6.99	<2	<8	<2	<2	19	.3	<3	3	16	.33	.008	<1	433	20.25	35	.03	23	.27	.03	.12	<2	2	51	6
B 158477	1	685	3	13	.5	162	48	321	2.88	<2	<8	<2	<2	2	<.2	3	<3	58	.29	.003	<1	176	2.11	4	.04	6	.15	.01	<.01	2	19	143	178
B 158478	1	11	3	29	<.3	247	52	704	3.78	2	<8	<2	<2	3	<.2	<3	<3	26	.25	.004	<1	171	5.38	6	.04	9	.24	.01	<.01	<2	<2	28	23
B 158479	1	4	<3	19	<.3	177	38	433	2.59	<2	<8	<2	<2	4	<.2	3	<3	11	.24	.004	<1	131	3.84	6	.03	9	.25	.01	.01	<2	<2	6	2
B 158480	1	328	<3	22	<.3	401	45	719	4.55	<2	<8	<2	<2	54	.2	<3	<3	152	1.37	.005	<1	505	5.51	41	.15	4	1.00	.23	.19	2	5	15	31
B 158481	1	11	<3	80	<.3	1796	124	2083	9.96	6	<8	<2	<2	5	.6	<3	<3	30	.13	.009	<1	589	18.74	6	.03	7	.13	.02	.01	3	3	4	4
B 158482	2	27	4	46	<.3	620	73	1069	6.16	<2	<8	<2	<2	4	.3	3	<3	70	.19	.006	<1	783	8.83	17	.06	5	.16	.02	.03	2	2	4	3
B 158483	<1	8	5	49	<.3	1372	110	1445	8.11	<2	<8	<2	<2	2	.2	<3	5	16	.12	.008	<1	573	14.95	5	.02	7	.09	.01	.01	<2	2	7	4
B 158484	1	208	6	29	<.3	27	26	525	7.00	<2	<8	<2	<2	267	.5	<3	<3	339	2.62	.261	2	52	1.73	67	.21	5	2.12	.31	.22	<2	<2	4	3
B 158485	<1	329	4	18	<.3	24	27	440	7.35	<2	<8	<2	<2	97	.6	<3	<3	435	2.89	.028	<1	12	1.55	93	.26	9	2.52	.33	.30	<2	2	17	16
B 158486	1	4	4	43	<.3	1941	105	1181	6.35	2	<8	<2	<2	13	<.2	<3	4	17	.34	.006	<1	541	19.97	104	.04	28	.36	.05	.25	2	3	12	2
B 158487	1	4	7	46	<.3	1432	131	1656	8.13	<2	<8	<2	<2	3	.5	<3	<3	<1	.12	.005	<1	166	21.35	12	.01	40	.07	.01	.03	2	<2	21	<2
B 158488	1	4	5	23	<.3	2029	130	1663	7.88	3	<8	<2	<2	3	.3	<3	3	<1	.10	.005	<1	170	22.46	13	.01	17	.07	.01	.04	<2	2	9	<2
STANDARD C3/FA-10R	27	68	38	168	6.3	37	11	809	3.21	57	24	2	21	30	23.6	16	22	79	.60	.098	18	170	.60	151	.08	25	1.82	.04	.16	18	508	487	495
STANDARD G-2	1	5	5	44	<.3	9	4	568	1.98	<2	<8	<2	4	75	<.2	<3	<3	40	.69	.107	8	80	.60	228	.12	7	.92	.08	.48	3	-	-	-

9 Ridge

Star 4

9 Bowl

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.  
 UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.  
 ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB  
 - SAMPLE TYPE: ROCK R150 60C AU\*\* PT\*\* PD\*\* GROUP 3B BY FIRE ASSAY & ANALYSIS BY ICP-ES. (30 gm)  
 Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUL 19 2001 DATE REPORT MAILED: July 31/01 SIGNED BY: C. Toy, D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only. Data FA



SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au**	Pt**	Pd**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm	ppb	ppb	ppb
B 158489	1	4	<3	19	<.3	165	24	236	1.64	<2	<8	<2	<2	2	<.2	3	<3	2	.17	.003	<1	124	3.16	6	.01	10	.11	.01	<.01	2	16	3	<2
B 158490	<1	3	<3	38	<.3	343	70	843	5.54	<2	<8	<2	<2	5	<.2	<3	<3	11	.16	.004	<1	217	7.73	10	.02	26	.21	.01	.01	<2	5	2	<2
B 158491	1	2	<3	32	<.3	298	63	759	5.14	<2	<8	<2	<2	5	<.2	<3	<3	37	.13	.004	<1	424	6.81	5	.03	17	.17	.01	.01	<2	2	5	<2
B 158492	1	71	3	2	<.3	10	1	20	1.00	<2	<8	<2	8	29	<.2	<3	3	2	.10	.001	2	8	.11	18	.05	4	.53	.37	.02	<2	<2	3	2
B 158493	1	1058	<3	24	.4	372	59	682	4.85	<2	<8	<2	<2	3	.2	<3	<3	48	.14	.002	<1	347	5.91	2	.04	7	.09	.01	<.01	2	23	40	80
B 158494	1	1149	<3	16	.4	143	55	412	4.01	<2	<8	<2	<2	4	<.2	<3	<3	80	.23	.003	<1	331	3.17	4	.06	5	.14	.01	.01	2	15	46	109
B 158495	2	3395	4	15	1.2	301	79	410	4.79	2	<8	<2	<2	2	<.2	4	3	96	.22	.002	<1	348	3.19	6	.05	4	.10	.01	<.01	2	35	86	226
B 158496	<1	2362	6	14	.5	368	76	368	3.83	<2	<8	<2	<2	2	.3	3	3	41	.19	.002	<1	227	3.03	3	.03	4	.09	.01	<.01	2	16	47	70
B 158497	2	26	3	31	<.3	878	113	1293	7.87	4	<8	<2	<2	6	.3	<3	4	<1	.22	.006	<1	260	19.24	13	.01	73	.09	.01	.04	<2	6	<2	<2
B 158498	2	18	3	38	.4	994	114	1203	7.45	3	<8	<2	<2	8	<.2	<3	<3	2	.13	.008	<1	329	15.15	12	.01	5	.04	.01	.01	<2	20	6	7
B 158499	2	68	<3	24	.3	520	65	658	4.53	2	<8	<2	<2	5	<.2	<3	<3	17	.19	.006	<1	368	7.36	5	.02	15	.20	.01	.01	<2	3	62	106
B 158500	1	274	<3	35	.5	791	88	1086	7.16	<2	<8	<2	<2	3	.3	<3	<3	44	.16	.005	<1	700	10.24	3	.03	10	.10	.01	.01	<2	6	27	39
RE B 158500	<1	268	<3	37	.5	787	88	1076	7.04	2	<8	<2	<2	3	.2	<3	<3	42	.16	.006	<1	670	10.23	3	.03	13	.09	.01	.01	<2	18	20	36
B 158501	1	10	<3	40	<.3	1810	102	1185	7.23	5	<8	<2	<2	7	.3	<3	<3	1	.17	.006	<1	247	19.51	35	.01	21	.11	.02	.08	<2	14	9	3
B 158502	<1	10	<3	43	<.3	641	88	1046	6.58	<2	<8	<2	<2	2	.2	<3	<3	<1	.13	.004	<1	102	12.98	3	.01	12	.04	.01	<.01	2	2	<2	<2
B 158503	<1	36	5	29	<.3	300	59	686	4.67	<2	<8	<2	<2	7	<.2	<3	<3	28	.24	.005	<1	211	5.87	13	.03	16	.27	.03	.02	<2	2	15	15
B 158504	1	3116	<3	15	.4	722	350	267	6.69	<2	<8	<2	<2	1	<.2	3	3	2	.15	.003	<1	53	3.23	3	.01	6	.05	<.01	<.01	2	27	95	96
B 158505	2	2830	<3	7	.5	394	202	170	5.54	2	<8	<2	<2	1	<.2	4	3	3	.22	.002	<1	37	1.89	2	.01	7	.05	.01	<.01	3	4	81	106
B 158506	1	2662	<3	20	.9	600	372	340	8.08	<2	<8	<2	<2	1	.2	<3	3	1	.11	.004	<1	74	3.68	2	.01	8	.02	<.01	<.01	<2	5	78	81
B 158507	1	2582	<3	19	.5	427	296	348	7.65	2	<8	<2	<2	1	<.2	3	3	10	.14	.005	<1	97	3.90	5	.01	13	.06	<.01	<.01	2	14	48	62
B 158508	2	27	<3	12	<.3	120	24	260	1.69	<2	<8	<2	<2	2	<.2	3	3	<1	.25	.004	<1	81	2.91	3	.01	6	.07	.01	<.01	3	17	66	64
B 158509	2	898	3	11	.4	169	61	309	3.70	<2	<8	<2	<2	1	<.2	4	3	4	.18	.003	<1	80	3.03	6	.01	5	.07	<.01	<.01	2	20	126	155
STANDARD C3/FA-10R	26	66	34	166	5.7	36	11	772	3.47	55	22	3	21	31	23.0	13	24	79	.59	.089	18	171	.64	160	.09	20	1.82	.04	.17	17	494	481	473
STANDARD G-2	2	5	<3	41	<.3	8	4	493	1.99	<2	<8	<2	4	67	<.2	<3	<3	37	.63	.092	7	68	.60	210	.12	5	.79	.06	.44	2	-	-	-

9  
Bow/

GL  
Zone

Sample type: R0CK R150 60C. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.



GEOCHEMICAL ANALYSIS CERTIFICATE



Mowat, Ursula PROJECT STAR File # A102276

1405 - 1933 Robson St., Vancouver BC V6G 1E7 Submitted by: Ursula Mowat

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au**	Pt**	Pd**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm	ppb	ppb	ppb
B 158472	1	17	3	25	<.3	214	34	394	2.78	<2	<8	<2	3	16	<.2	<3	<3	42	.41	.016	1	496	3.87	28	.09	5	1.50	.05	.12	<2	23	3	4

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.  
 UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.  
 - SAMPLE TYPE: SOIL SS80 60C AU\*\* PT\*\* PD\*\* GROUP 3B BY FIRE ASSAY & ANALYSIS BY ICP-ES. (30 gm)

DATE RECEIVED: JUL 19 2001 DATE REPORT MAILED: *July 31/01* SIGNED BY: *C. Leong* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



GEOCHEMICAL ANALYSIS CERTIFICATE

Mowat, Ursula PROJECT STAR File # A102354  
1405 - 1933 Robson St., Vancouver BC V6G 1E7 Submitted by: Ursula Mowat

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Tl	B	Al	Na	K	W	Au**	Pt**	Pd**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppb	ppb	ppb	
R-1 Ridge	<1	7	9	51	<.3	500	75	1125	4.73	4	8	<2	<2	15	<.2	7	<3	13	.77	.005	<1	505	9.37	16	.01	15	.14	.03	.01	2	45	4	<2
R-2 GL	2	3680	9	25	1.3	1531	75	643	4.60	3	<8	<2	<2	8	<.2	5	3	5	.26	.004	<1	242	7.52	57	.02	40	.14	.01	<.01	<2	102	149	242
R-3 Ridge	2	21	<3	44	<.3	1056	142	1649	9.42	6	13	2	<2	10	.2	5	<3	<1	.12	.006	<1	299	22.37	14	.01	52	.11	.01	.06	<2	5	4	2
R-4 Q Bowl	1	241	14	19	<.3	15	5	233	1.28	8	<8	<2	7	65	.2	31	3	13	1.17	.004	4	18	.52	21	<.01	<3	.11	.10	.01	<2	5	<2	<2
R-5	1	7	<3	8	<.3	260	34	592	2.63	<2	<8	<2	<2	50	<.2	<3	<3	14	6.10	.003	<1	562	6.91	17	.01	5	.16	.02	.05	<2	<2	59	4
R-6 GL	1	3293	6	18	<.3	610	366	256	8.34	3	<8	<2	<2	2	.2	5	8	10	.21	.005	<1	112	2.49	4	.01	3	.08	.01	<.01	<2	6	70	73
B 158511	1	266	<3	28	<.3	28	25	436	8.03	8	11	<2	<2	121	.3	7	5	474	2.97	.049	1	2	2.03	182	.31	<3	2.75	.45	.22	<2	2	9	9
B 158512	2	138	3	28	<.3	164	41	569	7.29	5	9	<2	<2	39	.2	5	4	370	1.16	.012	<1	69	4.10	25	.22	<3	1.03	.19	.10	<2	2	46	50
B 158513	1	370	<3	20	<.3	41	26	375	9.36	7	12	<2	<2	70	.3	6	<3	617	1.94	.042	<1	55	1.61	65	.23	<3	1.73	.24	.13	<2	7	31	24
B 158514 Star I	1	264	<3	18	<.3	15	17	374	9.43	5	<8	<2	<2	71	.4	6	3	597	2.36	.084	<1	43	2.17	40	.28	<3	1.82	.38	.18	<2	2	8	10
B 158515	1	35	<3	35	<.3	598	71	911	7.03	3	<8	<2	<2	22	<.2	5	<3	145	.69	.004	<1	344	8.27	18	.12	5	.53	.13	.07	<2	<2	18	16
B 158516	2	327	<3	35	<.3	17	49	434	9.87	6	13	<2	<2	299	.3	5	7	588	2.90	.030	<1	18	1.30	65	.25	<3	2.86	.52	.16	<2	4	3	4
RE B 158516	3	331	<3	37	<.3	15	49	437	9.96	7	14	<2	<2	299	.5	6	<3	594	2.94	.031	<1	19	1.31	65	.25	<3	2.89	.53	.16	<2	12	<2	3
B 158517	1	1801	3	18	.4	311	96	392	5.19	5	<8	3	<2	4	<.2	6	3	154	.29	.004	<1	1079	2.84	7	.09	9	.21	.01	.01	<2	7	195	162
B 158518	1	1435	3	13	<.3	162	187	329	5.98	2	<8	<2	<2	4	<.2	5	6	111	.27	.003	<1	422	2.44	2	.06	4	.17	.01	<.01	<2	3	14	18
B 158519 Bowl	1	11811	<3	18	3.5	193	39	379	3.34	2	<8	<2	<2	4	<.2	5	<3	22	.30	.004	<1	56	3.23	6	.03	8	.23	.02	.01	<2	174	46	109
B 158520	2	2268	4	23	.5	341	66	598	4.43	3	<8	<2	<2	3	.2	4	<3	51	.23	.003	<1	235	4.53	4	.04	<3	.10	.01	<.01	<2	17	108	157
B 158521	2	2729	<3	26	1.2	1647	77	679	4.84	<2	<8	<2	<2	1	<.2	5	<3	25	.19	.005	<1	496	7.34	7	.03	7	.15	.01	<.01	2	60	268	453
B 158522 Upper	1	1914	5	26	<.3	425	239	531	7.80	3	<8	<2	<2	3	<.2	4	5	8	.21	.005	<1	64	5.68	9	.01	19	.09	.01	<.01	<2	2	31	21
B 158523 GL	2	4467	<3	26	<.3	677	199	387	6.84	4	<8	<2	<2	6	<.2	6	5	12	.30	.007	<1	117	2.45	11	.02	6	.17	.03	.01	2	<2	60	28
B 158524	<1	1107	<3	12	<.3	135	70	363	6.09	2	8	<2	<2	1	<.2	6	<3	18	.20	.003	<1	202	3.45	3	.02	3	.08	.01	.01	<2	<2	30	34
B 158525	1	4794	3	7	<.3	1127	393	139	6.82	3	<8	<2	<2	1	<.2	6	6	6	.31	.003	<1	105	1.28	2	.01	<3	.05	.01	<.01	3	4	33	69
B 158526	1	7677	4	16	.3	2474	833	142	7.38	2	<8	<2	<2	2	.4	5	<3	13	.44	.001	<1	164	1.03	1	.01	4	.10	.01	<.01	<2	5	59	91
STANDARD C3/FA-10R	25	69	36	181	5.9	39	12	830	3.44	59	20	<2	21	29	25.5	15	25	83	.57	.089	18	180	.63	152	.09	20	1.91	.04	.16	14	486	476	477
STANDARD G-2	3	4	5	46	<.3	9	4	559	2.01	<2	<8	<2	5	71	<.2	<3	<3	39	.65	.092	8	81	.61	221	.13	3	.90	.07	.45	3	-	-	-

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.  
UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.  
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB  
- SAMPLE TYPE: ROCK R150 60C AU\*\* PT\*\* & PD\*\* GROUP 3B BY FIRE ASSAY & ANALYSIS BY ICP-ES. (30 gm)  
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUL 24 2001

DATE REPORT MAILED: Aug 2/01

SIGNED BY: C. Leong D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

**Petrographic Report**

**prepared for**

**East West Resource Corporation  
(Samples STAR A, G, D, 5, 6)**

**by**

**K.E. Northcote & Associates Ltd.**

**June 12, 2001**



## **[1] STAR A Clinopyroxenite (/hornblende clinopyroxenite)**

### **Summary Description**

Ultramafic rock consisting mainly of clinopyroxene, with interstitial patches and larger irregular poikilitic grains of dark green amphibole. Magnetite and ilmenite are fairly evenly scattered, pyrite is unevenly disseminated with some associated chalcopyrite.

### **Microscopic Description**

#### **Transmitted Light**

Clinopyroxene (augite); 82-87%, subhedral (0.1 to ~ 2 mm). Section consists largely of partly interlocking. Biaxial(+) with 2V 25-40° and maximum extinction angle of approximately 45°. Colourless or very pale green in thin section. Properties consistent with augite. Fresh, unaltered.

Amphibole (hornblende); 7-10%, anhedral (0.1 to several mm). Irregular patches of dark green, green-brown pleochroic amphibole, typically interstitial to, or partly enclosing the pyroxene.

Chlorite; 1-3%, anhedral (<0.01 to 0.1 mm). Some minor alteration of the amphibole.

#### **Reflected Light**

Magnetite; 4-6%, anhedral (0.01 to 0.5 mm). Relatively evenly scattered interstitial magnetite. Generally with lesser ilmenite.

Ilmenite; 1-2%, anhedral (0.01 to 0.5 mm). Associated with magnetite.

Pyrite; 2-3%, anhedral (0.01 to 0.5 mm). Scattered interstitial. Unlike magnetite, not evenly scattered.

Chalcopyrite; <0.5%, anhedral (<0.01 to 0.5 mm). With pyrite.

## **[2] STAR G Hornblendite**

### **Summary Description**

Ultramafic rock consisting almost entirely of dark green-brown amphibole with a few scattered remnants of clinopyroxene. Epidote is sparsely scattered and interstitial patches containing epidote, feldspar and sericite are presumed to represent minor original plagioclase. Magnetite and ilmenite are fairly evenly scattered, pyrite/marcasite are unevenly disseminated and commonly enclose some chalcopyrite. Traces of bornite are present.

### **Microscopic Description**

#### **Transmitted Light**

Amphibole (hornblende); 85-90%, anhedral to subhedral (0.1 to cm scale). Sample dominated by dark green amphibole with interlocking texture. Green to greenish brown pleochroism. Biaxial (-), inclined extinction (max.  $\sim 35^\circ$ ), first order birefringence generally masked by mineral colour. Properties consistent with hornblende.

Clinopyroxene (augite); 1-3%, anhedral (0.01 to  $\sim 1$  mm). Sparsely scattered remnants, apparently partly replaced by hornblende. Suggests amphibole

Epidote; 1-2%, anhedral ( $< 0.01$  to 0.3 mm). Sparsely scattered. Some microcrystalline material in what was probably originally feldspar.

Plagioclase/sodic feldspar;  $< 5\%$ , anhedral (0.01 to  $\sim 1$  mm). Found with epidote and sericite, presumably after a more calcic plagioclase.

Apatite;  $\leq 1\%$ , subhedral to euhedral (0.1 to  $\sim 1$  mm). Sparsely scattered.

Sericite; 1-2%, microcrystalline. Fine sericite in patches of altered feldspar.

#### **Reflected Light**

Magnetite; 1-2%, subhedral ( $< 0.01$  to 0.3 mm). Fairly evenly scattered, typically with less-abundant ilmenite.

Ilmenite;  $\leq 1\%$ , anhedral to subhedral (0.01 to 0.3 mm). In most cases found with magnetite.

Sphene; traces+, anhedral ( $< 0.01$  to 0.1 mm). Sparse, locally found in irregular aggregates with ilmenite.

Pyrite; 1-3%, anhedral to subhedral ( $< 0.01$  to  $\sim 2$  mm). Unevenly disseminated, in some cases found in small interstitial and intergranular spaces. Commonly with marcasite and minor chalcopyrite

Marcasite;  $\leq 1\%$ , anhedral to subhedral ( $<0.01$  to  $0.5$  mm). With pyrite.

Chalcopyrite;  $<0.5\%$ , anhedral ( $<0.01$  to  $0.2$  mm). Irregular grains, commonly enclosed by marcasite or pyrite.

Bornite; traces+, anhedral ( $0.01$  to  $0.2$  mm). Found with chalcopyrite.

Covellite+chalcocite; traces, anhedral ( $\leq 0.01$  mm). Alteration of bornite at grain edges.

### [3] STAR D Altered diabase

#### Summary Description

Altered medium-grained mafic magmatic rock probably originally dominated by plagioclase and pyroxene. Present assemblage is consistent with greenschist grade metamorphism (amphibole, epidote, clinozoisite, chlorite, sodic feldspar), however the medium-grained magmatic texture is roughly preserved and the fabric is isotropic. There is some sericite alteration of the feldspar and quartz is introduced and associated with some pyrite and chalcopyrite.

#### Microscopic Description

##### Transmitted Light

Albite/ Altered Plagioclase; ~30%, originally >50% (<0.01 to ~2 mm). Strongly altered to very fine epidote group mineral, with sodic feldspar and minor sericite. Very little of the original plagioclase remains. Now sodic secondary feldspar containing the other alteration products.

Amphibole (actinolite); 35-40% anhedral to subhedral (0.05 to several mm). Patches of green to yellowish green pleochroic clinoamphibole. Typically ragged grains, locally fibrous. In some cases surrounding remnants of pyroxene.

Epidote/Epidote Group; 10-15%, (<0.01 to 0.5 mm). Mainly as fine alteration products found with sodic feldspar and minor sericite. Presumably after original, more calcic plagioclase.

Sericite/clays; 5-10%, anhedral (microcrystalline). Sericite±clay alteration products of plagioclase are present, along with fine epidote-group mineral(s).

Quartz; 7-10%, anhedral (0.01 to 0.5 mm). Patchy, unevenly scattered in irregular aggregates, apparently introduced along pyrite-epidote-quartz veins.

Apatite; ≤1%, subhedral to euhedral (0.05 to ~1 mm). Sparsely scattered, commonly elongate prismatic.

Clinopyroxene; traces+, anhedral (0.01 to ~1 mm). Remnants altering to amphibole.

##### Veins:

As noted, there are narrow, in some cases diffuse, veinlets containing quartz, epidote and pyrite.

##### Reflected Light

Pyrite; 2-4%, anhedral to subhedral (<0.01 to ~1 mm). In veins, as noted, and unevenly

disseminated

Magnetite; 2-3%, anhedral (<0.01 to 0.3 mm). Fairly evenly scattered in small aggregates. Typically with minor intergrown ilmenite, commonly with thin rims of sphene.

Chalcopyrite; <0.5%, anhedral (<0.01 to 0.4 mm). Typically found as small grains in pyrite.

Ilmenite; <0.5%, anhedral (<0.01 to 0.1 mm). Sparsely scattered small aggregates in sphene. Minor in magnetite.

Sphene;  $\leq$ 0.5%, anhedral (<0.01 to 0.1 mm). As noted, surrounds ilmenite and in some cases magnetite+ilmenite.

Pyrrhotite; trace, anhedral (<0.01 to 0.5 mm). A few small blebs in pyrite.

Bornite (?); trace, anhedral (<0.01 to 0.05 mm). In chalcopyrite.

#### **[4] STAR 5 Hornblendite**

##### **Summary Description**

Rock consists almost entirely of dark brown-green hornblende. Small interstitial patches contain epidote, sodic feldspar and sericite - an assemblage probably replacing original calcic plagioclase. Magnetite and ilmenite are evenly scattered. Pyrite and chalcopyrite are very finely and weakly disseminated.

##### **Microscopic Description**

##### **Transmitted Light**

Amphibole (hornblende); 87-92%, subhedral (0.1 to ~5 mm). Interlocking/partly interlocking texture. Dark brownish green to yellowish green pleochroic amphibole. Strong colour and maximum extinction angle of approx.  $35^\circ$  is consistent with hornblende (too high for actinolite).

Epidote; 5-7%, anhedral to subhedral (<0.01 to ~1 mm). Mainly interstitial to the amphibole

Sodic Feldspar; <5%, anhedral (0.01 to ~1 mm). Interstitial to the amphibole, generally found with epidote.

Sericite; 1-2%, anhedral (0.01 to 0.5 mm). Locally interstitial to the amphibole, presumably after feldspar.

Chlorite; traces+, anhedral (0.01 to 0.3 mm). Small radiating clusters of bladed chlorite noted locally interstitial to the amphibole. (Amphibole is fresh, unaltered)

##### **Reflected Light**

Magnetite; 2-4%, anhedral to subhedral (0.01 to ~2 mm). Fairly evenly scattered, commonly in interstitial spaces, but also as small grains enclosed by the hornblende. Typically with some ilmenite.

Hematite; 1-2%, anhedral (<0.01 to 0.2 mm). Filling fractures and intergranular spaces. In some cases appears to replace magnetite.

Ilmenite;  $\leq 1\%$ , anhedral to subhedral (<0.01 to 0.5 mm). Lamellae, other intergrowths with magnetite. Sparse without magnetite.

Pyrrhotite; trace, anhedral (<0.01 to 0.05 mm). Very finely and sparsely scattered as minute inclusions in amphibole.

Chalcopyrite; trace, anhedral (<0.01 to 0.05 mm). With pyrrhotite.

## **[5] STAR 6 Clinopyroxenite (in contact with hornblendite)**

### **Summary Description**

Rock consists largely of clinopyroxene, in contact with dark brown-green amphibole at one end of the section. The main part of the section contains augite with a few large poikilitic hornblende grains and scattered interstitial magnetite and pyrite. The pyrite is less evenly distributed than the magnetite.

### **Microscopic Description**

#### **Transmitted Light**

##### Main part of section:

Clinopyroxene (augite); 85-90%, subhedral (0.1 to ~2 mm). Interlocking, granular, pale, nearly colourless in thin section. Maximum extinction angle is 45°. Optic sign is biaxial (+) with moderate-low 2V. Properties consistent with augite.

Amphibole (hornblende); 5-7%, anhedral (0.1 to several mm). Interstitial, or as large poikilitic grains enclosing pyroxene. Amphibole is dark green - yellowish green pleochroic. Biaxial(-) with moderately high 2V. Maximum extinction angle is approximately 20°. Optical properties consistent with either actinolite or hornblende, but occurrence more typical of hornblende.

Chlorite; traces+, anhedral (<0.01 to 0.1 mm). Minor, alteration of the amphibole.

Contact with hornblendite at edge of section: (sharp with narrow hematite-filled fracture at contact plane)

Amphibole (hornblende); >90%, subhedral (0.1 to 1 mm). Interlocking dark green to yellowish green pleochroic amphibole with minor interstitial feldspar.

Feldspar; 2-4%, anhedral (0.01 to 0.5 mm). Interstitial to the hornblende.

Biotite; 2-3%, anhedral (<0.01 to 0.5 mm). A few patches, some appears to be alteration of amphibole along narrow veins or fractures.

Chlorite; traces+, anhedral (0.01 to 0.2 mm). Minor alteration of biotite and/or amphibole.

#### **Reflected Light**

Note: magnetite is not found in the hornblendite portion of the section. Pyrite is present in both parts.

Magnetite; 2-3%, anhedral (<0.01 to ~1 mm). Fairly evenly distributed, with largest

grains with the hornblende in interstitial positions among the clinopyroxene. Finer magnetite enclosed by the pyroxene. Some lesser associated ilmenite.

Pyrite; 2-3%, anhedral to subhedral (<0.01 to 0.5 mm). Finely and unevenly disseminated, with a concentration in a narrow band. Some alteration to hematite.

Ilmenite;  $\leq 1\%$ , anhedral to subhedral (<0.01 to 0.1 mm). Mainly as lamellae in magnetite.

Hematite; <1%, anhedral/amorphous (<0.01 to 0.1 mm). Alteration of pyrite and filling fractures and some intergranular spaces. Hematite alteration of pyrite appears stronger in the hornblende-rich portion of the section.

Chalcopyrite; traces+, anhedral (<0.01 to 0.1 mm). Minor, associated with the pyrite.



**Photomicrographs:**

**[1] STAR A**

**R01-XI-21 and 22.** Plane polarized light and crossed nicols. Pictured: clinopyroxene. Long axis field of view is 2 mm.

**R01-XI-20.** Reflected light. Pictured: same field as 21 and 22 - Magnetite, pyrite and chalcopyrite. Long axis field of view is 2 mm.

**[2] STAR G**

**R01-XI-23.** Reflected light. Pictured: magnetite, ilmenite, pyrite and chalcopyrite. Long axis field of view is 2 mm.

**[3] STAR D**

**R01-XI-24.** Plane polarized light. Pictured: texture. Long axis field of view is 2 mm.

**R01-XI-25.** Reflected Light. Pictured: pyrite with chalcopyrite. Long axis field of view is 1 mm.

**[4] STAR 5**

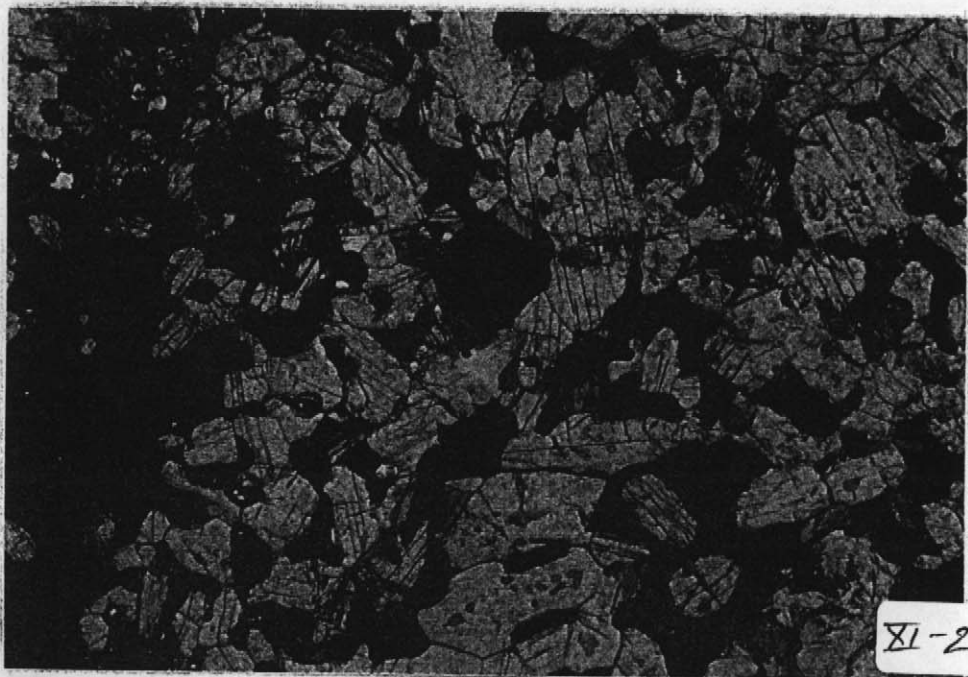
**R01-XII-0 and 1.** Plane polarized light and crossed nicols. Pictured: hornblende. Long axis field of view is 2 mm.

**[5] STAR 6**

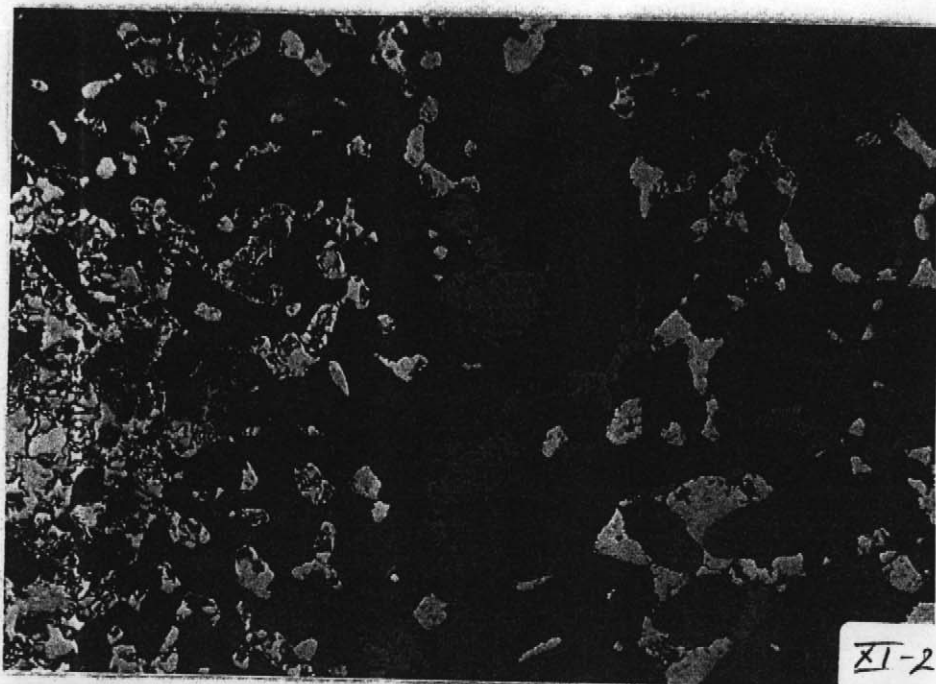
**R01-XII-3 and 4.** Plane polarized light and crossed nicols. Pictured: clinopyroxene and irregular hornblende (green). Long axis field of view is 2 mm.

**R01-XII-2.** Reflected light. Pictured: interstitial magnetite, pyrite and chalcopyrite. Long axis field of view is 2 mm.

**R01-XII-13.** Plane polarized light. Pictured: hornblende with small patches of biotite. Long axis field of view is 2 mm.



XI-21



XI-20

XI-20



XI-22



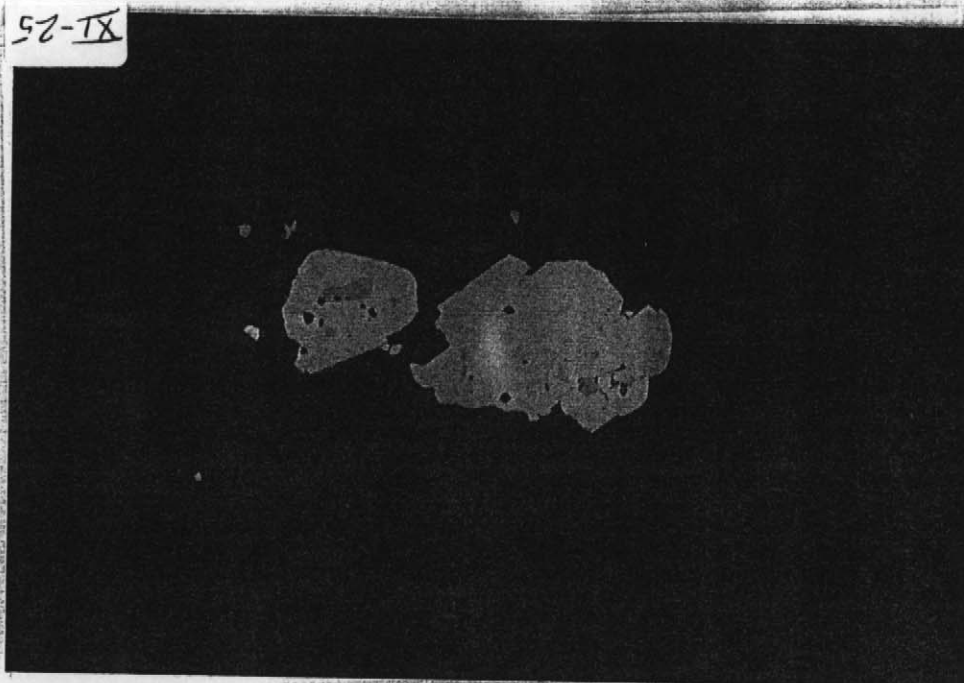
XI-23

XI-23

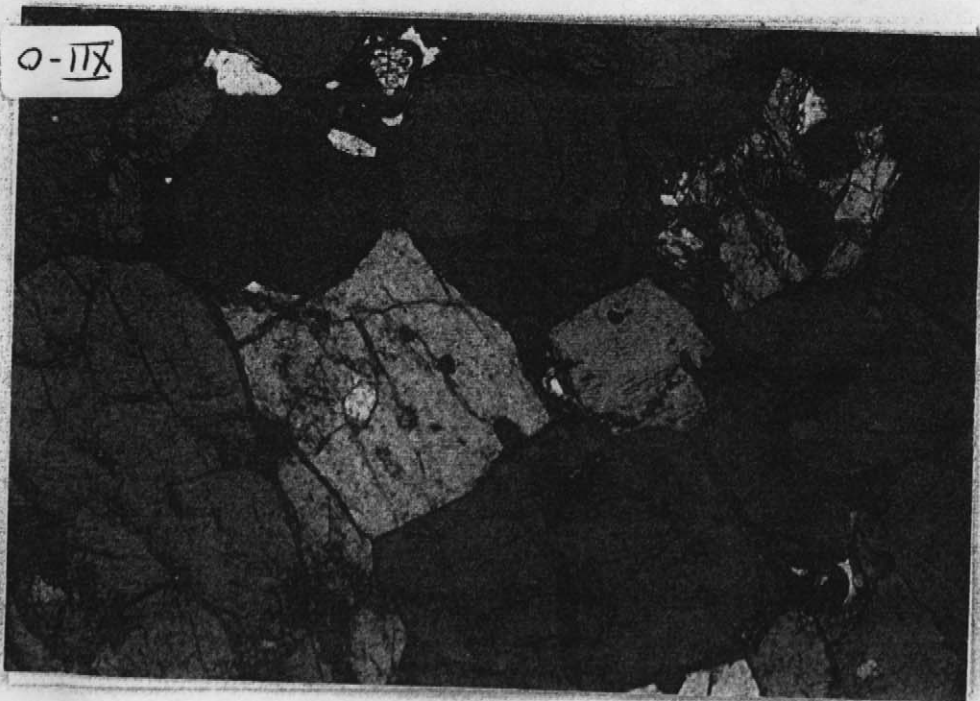
1-118



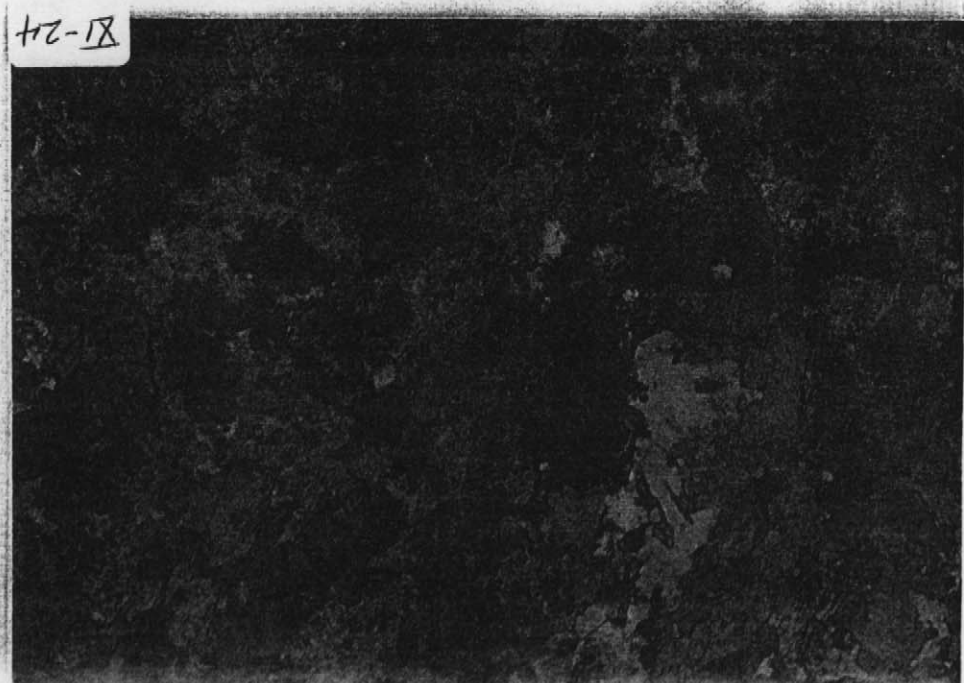
XI-25

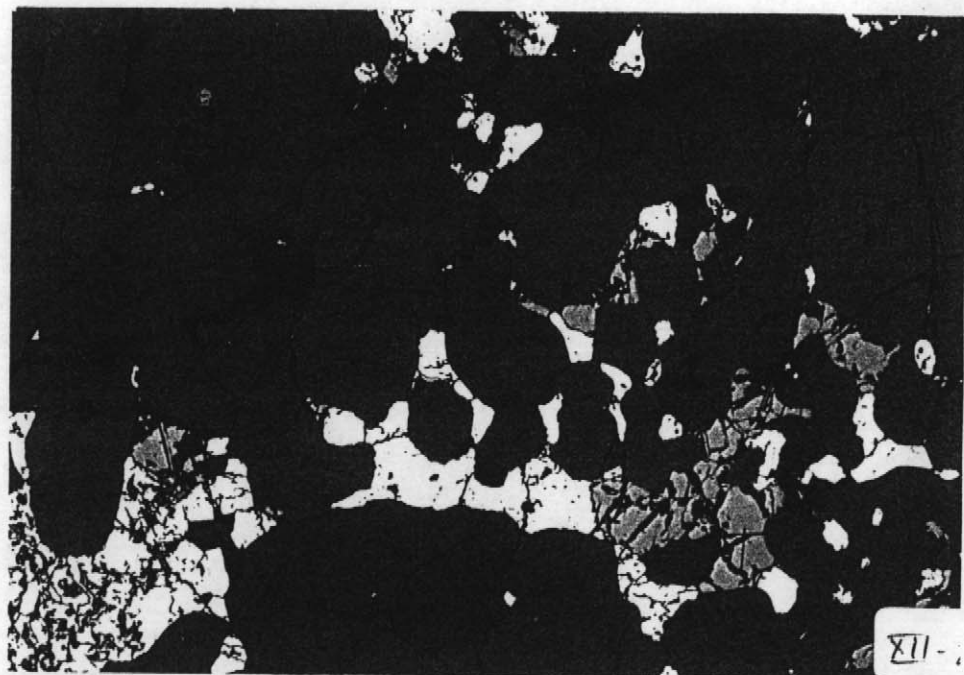
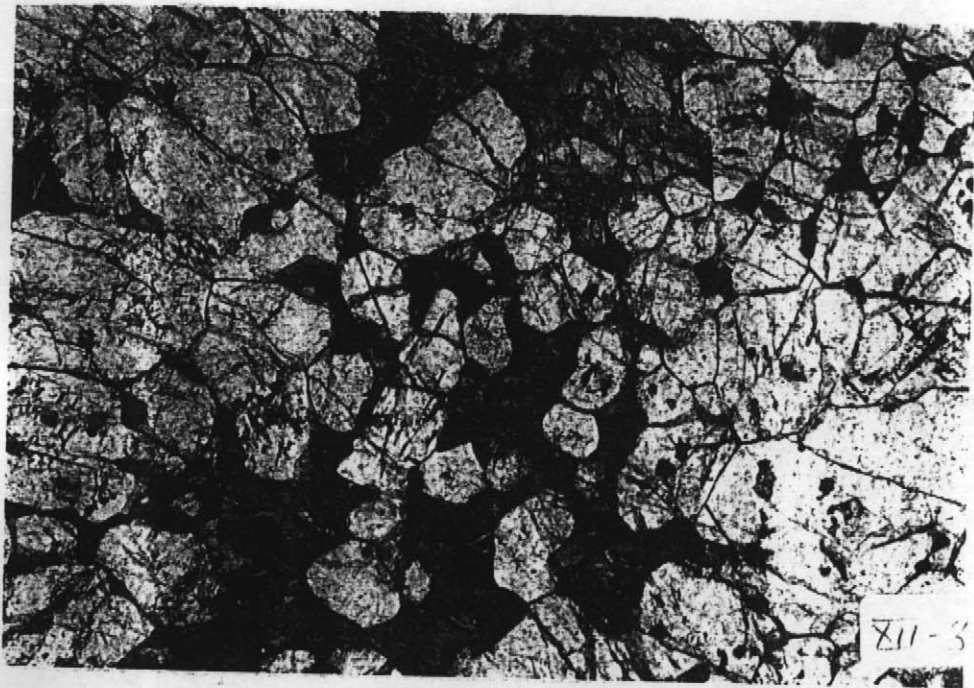


XII-0



XI-24





XII 4

XII-2

XII 13





THIN SECTION - STAR 5  
R01-XI-0, 1

158480 - 158485  
Figure 5, page 19

GL ZONE  
158502 - 509  
158521 - 526  
R-2, 6

SECTION C - D  
158455 - 501  
158517 - 520  
R-1, 3, 5  
Figure 4  
Page 12

THIN SECTION - STAR 6  
R01-XI-2, 3, 4, 13

SECTION A - B  
Figure 3  
Page 10

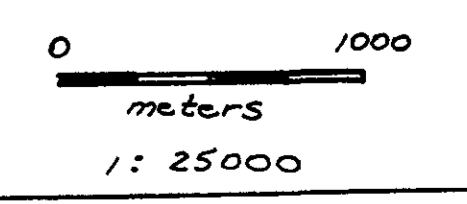
Capricorn Ridge

THIN SECTION - STAR A  
R01-XI-20, 21, 22  
THIN SECTION - STAR G  
R01-XI-23  
THIN SECTION - STAR D  
R01-XI-24, 25

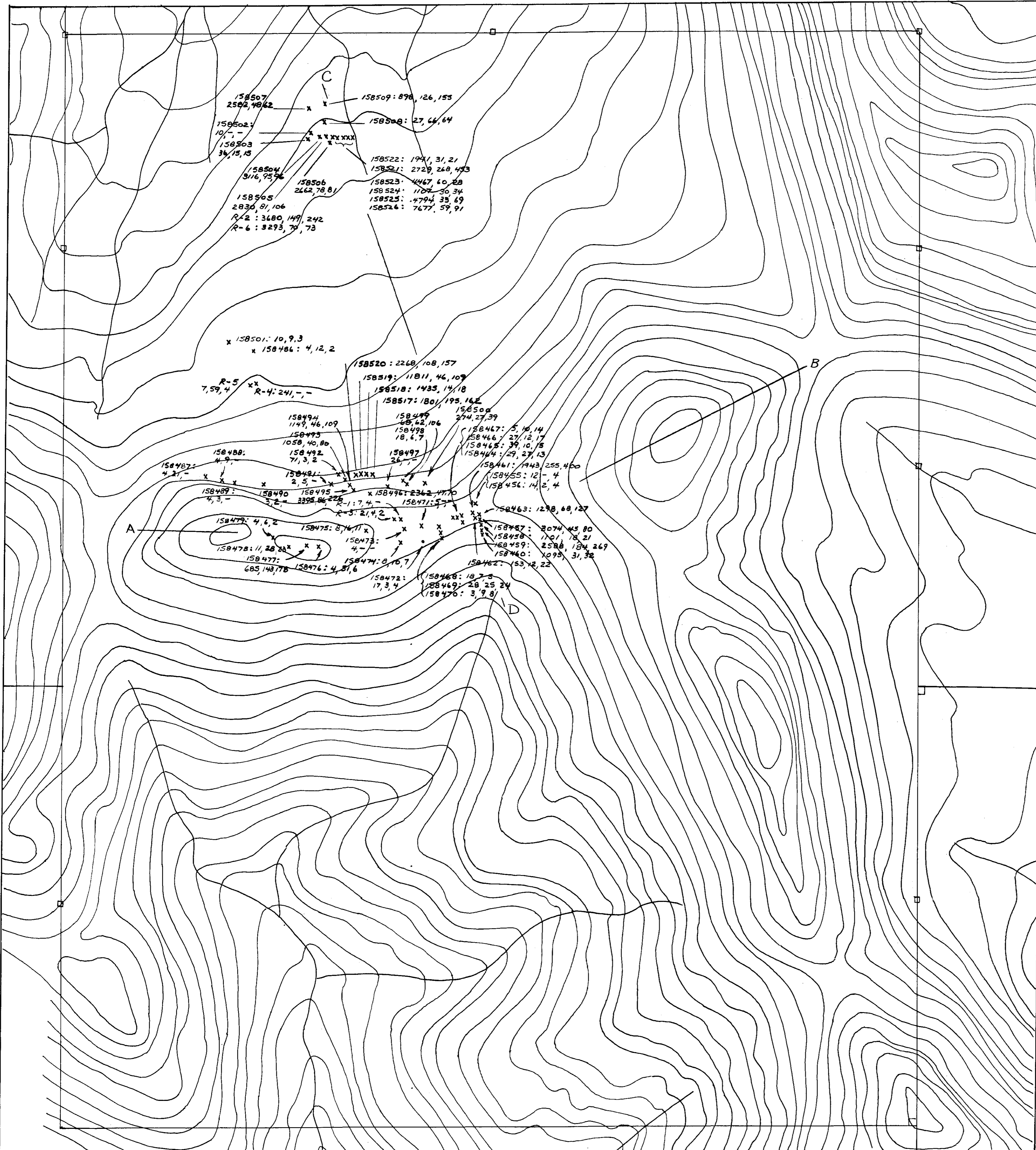
158511 - 158516  
Figure 6, page 22

### STAR CLAIMS

SAMPLE SITES AND THIN SECTION SITES



26,844



x rock sample  
 • soil sample

158519: 11811, 46, 109  
 sample number, Cu ppm, Pt ppb, Pd ppb

STAR 2 CLAIM  
 SAMPLE SITES



