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**GEOLOGICAL EXPLORATION REPORT**  
**SUMMER-FALL 2000**  
**BRUNNE-TURCOTTE OPTION**  
Porter Township

for

URSA MAJOR MINERALS INC.

M. J. Perkins  
and  
G. T. Shore Geological Consulting

*28 March, 2001*



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## 1.0 INTRODUCTION

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The Brunne-Turcotte Option is located in Porter Township approximately 65 kilometres (km.) north-west of Sudbury, Ontario. During the summer and fall of the year 2000 a program of geological mapping, prospecting, geochemical surveying, and stripping was completed by Ursa Major Minerals Inc.

The property is underlain by Huronian Supergroup metasediments intruded mafic rocks. A gabbro sill of variable texture and mineralogy that is approximately 200 metres thick at its widest point occurs in the centre of the property and is the focus of the current program. At the east end of the property, the gabbro sill has been folded into 'Z' asymmetry. A ultramafic layer approximately 15 metres wide, is traceable along the northern margin of the sill and interpreted to represent an altered basal meta-pyroxenite unit indicating that the sill has a top to the south.

The gabbroic sill is in contact with poorly sorted, polymictic conglomerates in the north and well-bedded quartzites and polymictic conglomerates to the south. Folded and altered Espanola Fm. Limestone containing minor gold mineralization occurs locally, presumably related to skarn mineralization events. Gold mineralization is generally associated with pyrite, pyrrhotite, epidote and garnet alteration within the meta-limestone.

Previous work on the property concentrated on gold exploration until 1999 when D. Brunne and M. Turcotte recognised the platinum-group element (PGM) potential on the property. After a limited stripping and channel sampling program, focused on the gabbroic sill, produced results as high as 9.7 g/t Palladium (Pd) and 1.3 g/t Platinum (Pt) over 0.5 metres (Sample BS99-141), the property was optioned to Ursa Major Minerals Inc. (Ursa) in late 1999.

Reconnaissance geological mapping, prospecting, lithological and soil geochemical surveying, and mechanical stripping and sampling were completed by Ursa during the summer and fall of 2000. Geological mapping confirmed the previous geology discovered by other operators

PGM mineralization at the Brunne PGM Showing and in the gabbroic sill to the north-west appears associated with zones of disseminated and blebby pyrrhotite and chalcopyrite mineralization. Values as high as 13.65 g/t palladium, 1.86 g/t platinum (GS-165) were returned from samples taken at the Brunne PGM Showing. Systematic sampling drill core from the Cameco Corporation drill hole BS94-01 revealed a notable PGM zonation within the gabbroic sill. Results indicate increasing PGM and nickel mineralization towards the northern margin (bottom) of the gabbroic sill. Correlation between this drill hole and surface geology indicate that the gabbroic sill is 120-145 metres thick, including a 40m thick meta-pyroxenite layer at the base, and dipping 45° south in the area of L0+00 to L2+00E.

Trenching was completed to extend PGM mineralization to the north-west where prospecting indicated numerous zone of disseminated sulphide mineralization in the gabbroic sill. Trenching and sampling led to the discovery of the 90 metre zone of anomalous PGM mineralization approximately 15 metres south (or stratigraphically above) the meta-pyroxenite horizon in the gabbroic sill, which returned values up 1.5 g/t Pt+Pd+Au. This unit provides an exploration target horizon that extends across the property. The presence in the trench of meta-pyroxenite located north of a quartzite unit previously believed to be the northern contact of the gabbro sill implies that the basal contact of the sill may be located farther north than previously believed and obscured by overburden.

Prospecting along the northern contact between the gabbro and quartzites to the west of the current trenching program is recommended combined with geophysical, geochemical and structural mapping exploration focused at defining the target horizon and possible structural or lithological traps that may occur along the gabbroic sill. The relationship between sulphide and PGM mineralization and form or generation of sulphides that best indicate the presence of PGM mineralization should be examined. Relationships between PGM mineralization and faulting must also be determined to see if, and how, local structures have disrupted potential PGM bearing layer.

The area around a zone known as the Hanover Showing is seen as prospective as the structural geology of the area is complex with significant faulting and shearing that appear associated with mineralizing fluids and contain anomalous Au and PGM values. Gabbroic rocks containing anomalous PGM values are associated with minimal sulphides (<10%), mainly chalcopyrite. These factors are consistent with high grade mineralization at the Brunne PGM Showing and the presence of a late intrusive breccia zone may indicate that this area is at the same structural level as that of the Brunne PGM Showing. A program of stripping and trenching across the main mineralized zones in this area is proposed.

## **2.0 LOCATION AND ACCESS**

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The Brunne-Turcotte Option is located in the south-west corner to central portion of Porter Township approximately 65 km north-west of the town of Espanola, east of Sudbury (Figure 1). The property is accessible from Highway 17, north at Nairn Centre using gravel secondary leading to the abandoned Agnew Lake Mine (uranium), a distance of approximately 9 km, then by way of an Ontario Hydro right-of-way road. An ATV is required to drive approximately 10 kms from the abandoned minesite to the property on the hydro right-of-way.

The property can also be reached by water and foot via Agnew Lake. The paved Agnew Lake Road leads from the Trans-Canada Hwy 17 at Webbwood, Ontario north to the Agnew Lake Lodge, a distance of approximately 9 kms. From the Agnew Lake Lodge, a 6 km boat trip is required to access a trail that begins near the mouth of Sutherland Creek. The 1.75 km trail intersects a hydro tower right-of-way which can be used to access the complete length of the property. A trail on the right-of-way can be followed east to Sutherland Creek and O'Brien Lake (locally known as Mud Lake). A boat is required to cross the 15 m wide creek and the trail continues onto the Brunne-Turcotte Option (Figure 3). From this point the best access is by ATV.

## **3.0 PROPERTY CLAIM MANAGEMENT**

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The Brunne-Turcotte Option consists 12 contiguous unpatented mining claims (68 units) in Porter and Baldwin Townships (G-2865) (Figure 2), Sudbury Mining District, NTS 42-I/5. The approximate co-ordinates for the centre of the property are Longitude 81°46' west and Latitude 46°24' north. The claim information is summarised in Table 1.

**Table 1: Brunne-Turcotte Option Claims**

<b>Claim No.</b>	<b>Recording Date</b>	<b>Units</b>	<b>Township</b>
S1118381	1991-Oct-17	12	Porter (G-2865)
S1118382	1991-Oct-02	12	Porter (G-2865)
S1165387	1992-Mar-23	6	Porter (G-2865)
S1237517	2000-Jan-10	4	Porter (G-2865)
S1237518	2000-Jan-10	16	Porter (G-2865)
S1237519	2000-Jan-10	12	Porter (G-2865)
S1217916	2000-Jan-17	8	Porter (G-2865)
S1217917	2000-Jan-17	4	Porter (G-2865)
S1217991	2000-Jan-17	4	Porter (G-2865)
S1237545	2000-Mar-30	4	Porter (G-2865)
S1247351	2000-May-09	4	Porter (G-2865)
11		84	

Three claims, S1118381, S1118382, and S1165387 are currently 50% owned by D. Brunne (Whitefish Falls, Ontario), and 50% owned M. Turcotte (Webbwood, Ontario). These claims are currently held by option and operated by Ursa Major Minerals Inc.. The remaining claims are 100% owned and operated by Ursa Major Minerals Inc., Suite 405, 100 Adelaide Street West, Toronto, Ontario, M5H 1S3.

#### **4.0 WORK PERFORMED BY OTHER COMPANIES**

In 1968 Hanover Exploration Ltd attempted three diamond drill holes south of O'Brien Lake on the east side of Sutherland Creek targeting a EM-16 and magnetic anomaly. Two of the holes (68-2, 68-3) failed due to thick overburden. The third hole, 68-1 targeted what is now known as the Hanover Showing was drilled to a length of 347.8 feet, collared in diorite with occasional 1-3% chalcopyrite and pyrrhotite with numerous quartz veins to 327 feet where it entered metasediments. No assay results were available in the assessment files for this hole. Selco and INCO regionally explored for PGM's associated with the gabbroic intrusive in the late 1980's. In 1991 D. Brunne and M. Turcotte staked three claims in central Porter Township and exposed a mineralized pyrite, pyrrhotite gossan 'skarn' showing (subsequently named the Main Skarn) that returned gold values as high as 9.0 g/t.

Cameco Corporation optioned the property in 1993, completed 46 kms. of grid cutting, ground magnetic and EM (VLF) surveying and performed geological exploration for 'gold-in-skarn' type mineralization in limestone units adjacent to the gabbroic sill on the property. The exploration program consisted of 1:5000 grid mapping, sampling, local humus sampling and minor stripping. In 1994 the program culminated in three drill holes (BS94-01 to 03 at 278m, 311m, and 258m length respectively) totalling 847 metres to test targets and models. Results were not as strong as hoped and Cameco Corporation released the property.

Subsequently D. Brunne and M. Turcotte performed further trenching and stripping at several PGM prospective locations on the property. The Brunne PGM Showing (previously called the 'East Skarn') was stripped and sampled and an area of anomalous sulphide and PGM mineralization was

located at the southern contact between the gabbroic sill and conglomerates. In 1999 channel and grab samples of the gabbroic sill returned numerous significant values summarised in **Appendix I (Figure 6)**.

Two smaller trenches were stripped to the west of the Brunne PGM Showing but no significant mineralization was discovered. The Main Skarn was stripped and an area of layered gabbroic rocks with significant sulphide mineralization was located. Three smaller trenches were dug to the west of the Main Skarn but no significant mineralization was indicated.

## **5.0 REGIONAL GEOLOGY**

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Porter Township is predominantly underlain by sedimentary rocks of the Huronian Supergroup consisting of quartzites, conglomerates, greywackes and argillites with minor intercalated limestone. Large masses of gabbroic rock occur throughout the township and are generally concordant to major structures and lithologies. They have thus been interpreted as sill-like bodies intruded into the Huronian sedimentary sequence. Some workers have designated these gabbroic intrusives to be part of the Nipissing Intrusive sequence, a tholeiitic intrusive suite, dated at approximately 2219 Ma (Bennett et al., 1991). Archean felsic intrusive rocks of variable granitic composition occur in the north-eastern portion of the township and may be unconformably overlain by the Huronian rocks (Ginn, 1961).

The main structural feature of the property area is the large Porter syncline, a synclinal structure composed mainly of Huronian sedimentary rocks, closing to the east. A series of strong, subparallel faults trend east-west or north-east through the syncline, causing significant tectonic disturbance to the rocks in the syncline. Significant fault structures in the area include: Hunter Lake Fault, O'Brien Fault, South Cygnet Fault, North Sealine Fault, Sutherland Bay Fault and the South Sealine Fault.

Exploration in the area has indicated that nickel, copper, PGE's, uranium and gold mineralization occurs throughout the area. The Shakespeare Deposit, located in the north-east corner of Shakespeare Township approximately 5 km south-west of the property, contains near surface resource of 2,081,000 tonnes of 0.36% Ni, 0.42% Cu, 0.224 g/t Au, 0.40 g/t Pt, and 0.44 g/t Pd and is located in similar mafic and gabbroic rocks.

## **6.0 PROPERTY GEOLOGY**

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The Brunne-Turcotte Option is underlain mainly by a sill-like gabbroic body with variable texture and mineralogy (**Figure 3**). That part of the sill which outcrops along the hydroline is the focus of exploration in this program. This body runs through the property and is approximately 200 m wide at its widest point. Towards the east end of the property, the sill has been folded into 'Z' asymmetry. A fine to medium-grained highly altered rock composed of fibrous amphibole and chlorite forms a mappable unit approximately 30 m wide, traceable along the northern margin of the gabbro sill. This unit is interpreted to represent an altered meta-pyroxenite layer, that crystallized at the base of the sill. A geochemical traverse across the gabbro indicated that this part of the sill is differentiated with increasing SiO<sub>2</sub>, and decreasing MgO (GS-173-179) supporting the idea that the top of the sill is to the south.

The gabbroic body is bounded on the north by poorly sorted, polymictic conglomerates and on the south by a mixture of well-bedded quartzites and polymictic conglomerates. Minor outcrops of highly folded Espanola Fm. limestone occur along the southern margin of the gabbro and are generally



metamorphosed by the gabbro. Skarn mineralization - pyrite, pyrrhotite, epidote and garnet occur within the metalimestone. Minor gold mineralization occurs locally. In the vicinity of the Brunne PGM Showing, the limestone is 'Z' folded, with fold axis plunging to the southwest.

## 7.0 EXPLORATION PROGRAM SUMMER 2000

Field work was carried out during the summer 2000 in two intervals, June 5 - 21, and July 31 - August 25. Exploration surveys of reconnaissance and detailed trench mapping, prospecting, PGM and geochemical sampling, and soil geochemical sampling were completed over portions of the property. G.T. Shore Geological Consultants was retained to run the program assisted by Mr. T. Mikel and Mr. H. Tracanelli. Over 150 rock grab and representative samples and 49 soil samples were obtained and analysed to investigate PGM mineralization on the property and to define and extend the PGM anomaly on the Brunne PGM showing. Geochemical analysis procedures used are outlined in **Appendix II**.

While attempts were made to tie mapping and sampling into the 1993 Cameco Corporation exploration grid much of the reconnaissance work was tied into the NTS/UTM co-ordinate system using a hand held Global Positioning System (GPS) with generally +/-10m accuracy. Where possible Cameco Corporation work was surveyed into this location throughout the program.

Seven traverses at 1:5000 scale were completed over the gabbroic sill using the Cameco Corporation geological map as a base. Traverse lines were spaced approximately 200 m apart and were positioned in order to collect sample information between major stripped areas - the Brunne PGM Showing and Main Skarn. A series of seven samples were collected on Traverse 7 in order to provide a geochemical cross-section across the gabbroic sill. Samples collected on the traverses were plotted on the 1:5000 Cameco Corporation geological base map (**Map 2**).

Detailed geological mapping at 1:200 scale was completed at the Brunne PGM #1 and #3 Trenches west of the Brunne PGM Trench. Detailed geological mapping at 1:100 scale and soil geochemical sampling was completed over a small occurrence located in the south west corner of the Cameco Corporation grid called the Hanover Occurrence. Geological reviews of Trench #2 Brunne PGM, the northern portion of the Main Skarn and Main Skarn trenches 2 & 3 were also completed. **Table 2** summarises the trench locations mapped in UTM co-ordinates

**Table 2: Detailed Trench Mapping Sites Locations in UTM Co-ordinates**

<b>Trench</b>	<b>Easting (NAD 27)</b>	<b>Northing (NAD 27)</b>
Brunne PGM (ES)	442204	5139007
Main Skarn (MS)	440849	5138426
MS Trench #3	440562	5138329
MS Trench #4	440617	5138262
Hanover Showing	439462	5136977

Cameco Corporation diamond drill hole core for BS94-01 and 03 was relogged and BS94-01 sampled to assess Ni, Cu and PGM distribution in the gabbroic sill.

## 7.1 BRUNNE PGM TRENCHES

The Brunne PGM showing is located approximately 3.5 km east of Sutherland Creek along the hydro right-of-way (**Figure 3**). The showing was initially stripped in 1993 to explore for gold mineralization in the limestone skarn at the south margin of the gabbro. Later sampling by D. Brunne and M. Turcotte indicated anomalous PGM values in the gabbroic sill nearby and further trenching to the north of the limestone outcrop was completed. A detailed channel sampling program over the stripped area returned significantly anomalous PGM values (up to 11g/t over 0.5m combined Pt + Pd + Au) associated with up to 10% chalcopyrite-pyrrhotite mineralization (**Appendix I**). Trenches #2 and #3 were stripped to determine the western strike extent of PGM mineralization (**Figure 5**).

### 7.11 Brunne PGM Showing

Detailed mapping of the Brunne PGM Showing (**Figure 6**) determined that there were four major rock types at the trench:

1) **POLYMICTIC CONGLOMERATE:**

A rusty brown, matrix supported conglomerate occurs along the southern margin of the outcrop and contains rounded clasts of quartzite, limestone and volcanic (?) rocks ranging in size from pebbles to boulders over 1m in size (**Plate 1**). On average however, the conglomerate is primarily composed of pebble sized clasts.

2) **QUARTZITE:**

Fine grained, white to pale grey, very hard with a white porcelain weathered surface, laminated to thinly bedded with locally thicker, coarser grained beds. In proximity to faulting the quartzite in places is brecciated and takes on a light green colour.

3) **AMPHIBOLE QUARTZ GABBRO:**

The main unit at the outcrop is a variably textured gabbro, medium to coarse-grained with amphibole after pyroxene and up to 10% quartz (**Plate 4**). Pegmatitic patches occur locally. No layering was observed. Sulphide (chalcopyrite and pyrrhotite) mineralization occur sporadically and in patches, apparently with little structural control. Chalcopyrite is the main sulphide phase and occurs up to 10% locally. Where sulphides comprise greater than 1% of the gabbro, the weathered surface is typically rusty. Pyrrhotite is less common and generally makes up less than 2% of the sulphides at any location. Pinkish weathering at one location may represent cobalt bloom.

4) **LATE INTRUSIVE BRECCIA ZONE CONTAINING ALL EARLIER ROCK TYPES:**

Adjacent to the gabbro but north of the conglomerate is a late intrusive (?) breccia zone containing xenoliths of all the rock types in the area: quartzite, conglomerate, and gabbro (**Plate 1**). The matrix to the breccia is fine-grained and green and when strained develops a strong foliation. Xenoliths vary in size from millimetre-scale to large boulders

over 1m in size. Several composite xenoliths were observed: a metre-sized xenolith of quartzite intruded by gabbro (**Plate 2**). Large xenoliths show a long-axis orientation parallel to the gabbro contact (060°). At the eastern edge of the outcrop, the breccia zone surrounds a large (5m x 15m) xenolith (?) of coarse-grained, biotite-bearing (up to 10%) gabbro which does not match the mineralogy or texture of the main gabbro at the outcrop (**Plate 3**). It is possible that the breccia zone truncates the gabbro obliquely.

Minor rock types found include late quartz veins cross-cutting the gabbro and white, coarse-grained leucocratic felsic dykes that are intruded along shear/ductile fault zones.

Small (10cm), sinuous quartz veins in tension gashes (?) occur in the central parts of the outcrop trending approximately E-W. Rusty gossan occurs locally in some veins and one grab sample from one such quartz vein (GS-102) returned 172ppb Pd. It is not known whether this indicates primary PGM mineralization in the quartz vein or contamination by nearby mineralized gabbro during sampling.

Sulphide mineralization occurs in blebs and pods and does not appear to be structurally controlled although the largest spatial occurrence (2m x 3m) of mineralization is at the southern margin of the gabbro in contact with the breccia zone and a small ductile shear offsets a portion of the zone (1m offset) (**Plate 5**). Pods and blebs of mineralization get smaller and further apart towards the north of the outcrop and generally occur on a 350° trend. Chalcopyrite (Cpy) is associated with higher PGM values. The mode and distribution of mineralization is interpreted to represent a disrupted sulphide-rich layer within the gabbroic sill. Disruption occurred while the gabbroic magma was still largely fluid.

The detailed sampling program completed by G.T. Shore Geological Consulting confirmed the anomalous PGM values determined by D. Brunne and M. Turcotte and located a few new pods (less than 30cm in size) of mineralization with PGM concentrations consistent with earlier analyses.

## **7.12 Brunne PGM Trench #2**

This trench is located approximately 20m to the west of the showing. Results of mapping of this trench is shown on Figure 7.

Three rock types were observed at this outcrop:

1) **MASSIVE MEDIUM-GRAINED GABBRO**

The outcrop is composed mainly of massive medium-grained gabbro similar to the unmineralized gabbro in the Brunne PGM Showing.

2) **LATE HETEROGENEOUS BRECCIA ZONE**

The composition of the late intrusive breccia zone is similar to that in trench#1 and contains gabbroic xenoliths.

3) **FINE-GRAINED MAFIC DYKE.**

A fine-grained greenish mafic dyke 75 cm wide, cross-cuts the gabbro, trending approximately 131°/65°.

The orientation of the intrusive breccia zone in the Brunne PGM Trench #2 is NW as opposed to

the NE trend found in Trench 1. Since the orientation of the breccia zone in trench #3 (further west) is also NE, it is possible that the breccia zone has been folded in a 'Z' asymmetry, forming a parasitic fold of the larger-scale 'Z' folding of the gabbroic sill. If this is the case, folding of the gabbroic sill occurred post- emplacement of the breccia zone, i.e. quite late in the history of the area, since the breccia zone contains gabbroic xenoliths.

Mineralization was rare and spotty at trench #2. Small specks of chalcopyrite and pyrrhotite were noted locally, but generally formed less than 1% of the rock. One poorly mineralized sample, GS-116 was assayed and found to contain 36 ppb Au, 10 ppb Pt, 12 ppb Pd.

### **7.13 Brunne PGM Trench #3**

This trench occurs approximately 15m to the west of Brunne PGM Trench 2 and forms a large 'L'-shaped stripped outcrop trending NE (**Plate 6**). Six main rock types were found to occur at trench #3 (**Figure 8**):

1) **LATE HETEROGENEOUS BRECCIA ZONE**

The outcrop is dominated by a late intrusive breccia zone containing metre scale rounded xenoliths of quartzite, conglomerate and coarse-grained biotite-bearing gabbro. The matrix of the breccia zone forms small (decimetre-scale wide), shoots and zones that surround and intrude the xenoliths. The zone trends approximately NE. Locally the matrix of the breccia zone becomes highly foliated and schistose.

2) **MASSIVE MEDIUM-GRAINED GABBRO**

To the north and west of the breccia zone, the outcrop is dominated by massive, medium-grained gabbro cross-cut by small (10cm wide) quartz-filled shear zones trending NE. At the northend of the outcrop, a zone of finer-grained more mafic material was observed and may represent a horizontal layer, approximately 15 cm thick. No other evidence of layering was observed.

3) **TREMOLITE CHLORITE (META-PYROXENITE) SCHIST**

At the far west end of the outcrop, a 5 m wide zone of tremolite-chlorite schist (Meta-pyroxenite) appears to cross-cut the gabbro trending NNE (**Plate 7**). The zone narrows to the north, eventually becoming a small ductile shear zone in the massive, medium-grained gabbro. Towards the south of the outcrop, the less foliated margins contain elongated (zone parallel) xenoliths of white quartzite (felsic volcanic rock?) (**Plate 8**) and smaller, more mafic looking xenoliths. The central portions are extremely foliated and no xenoliths could be identified. Because there is a strong similarity between this rock and the highly foliated breccia zone observed at the east end of the outcrop, the tremolite chlorite schist (Meta-pyroxenite) here is interpreted to represent a highly deformed offshoot of the breccia zone common to all three trenches in this area.

4) **COARSE-GRAINED BIOTITE-BEARING GABBRO**

5) **POLYMICTIC CONGLOMERATE, and**

6) **QUARTZITE**

No significant mineralization was identified in the Brunne PGM Trench #3. Previous channel

sampling by D. Brunne and M. Turcotte at the north end of the outcrop failed to locate any anomalous PGM values despite the presence of up to 3% chalcopyrite and pyrrhotite mineralization. It should be noted that the sulphides found here were in close proximity to non-continuous decimetre-scale layering. Sampling during the current program also failed to locate areas of PGM mineralization.

Coarse-grained to pegmatitic biotite-bearing gabbro containing minor sulphides, the tremolite chlorite schist (meta-pyroxenite), and quartz veins filling ductile shears in the central portions of the trench did not contain PGM mineralization. It seems clear that the mega-breccia that dominates Brunne PGM Trench #3 has significantly disrupted the original geometry of the gabbroic sill in this area.

## 7.2 MAIN SKARN TRENCHES

The Main Skarn is located approximately 1600 m east of Sutherland Creek along the hydro right-of-way (Figure 4). The large stripped outcrop can be seen easily from the right-of-way and an ATV trail leads up the north side of the hill. Early exploration by Cameco Corporation focused on the skarn mineralization - pyrite, epidote, garnet, pyrrhotite within the limestone at the south margin of the outcrop and within sulphide mineralized "endoskarn" conduits within the gabbro itself. Three additional trenches, Main Skarn Trenches 2, 3, and 4, were exposed to the west of the main outcrop over a distance of 400m.

### 7.21 Main Skarn Showing

The Main Skarn - Showing (Figure 9) provides continuous exposure from south to north of the folded and metamorphosed Espanola Fm., a quartz monzonite dyke and medium to coarse-grained gabbro with well-developed layering locally and anomalous sulphide mineralization.

#### 1) LAYERED GABBRO

At the northern margin of the outcrop, the gabbro displays well-developed mineralogical layering (Figure 10) with rusty weathering due to significant sulphide mineralization locally (Plates 9-15). The layering trends NE and dips to the east at approximately 45°. From north to south, the gabbro changes from massive medium-grained biotite bearing gabbro lacking sulphides, to a coarse-grained gabbro with feldspar clots and 2-3% pyrrhotite to fine-grained feldspar porphyritic gabbro with >1% pyrrhotite to a leucocratic quartz gabbro with minor sulphides to coarse-grained to pegmatitic patchy biotite bearing gabbro with up to 10% sulphides. Geochemical sampling across these layers indicates that magnesium # (Mg to Fe ratio) decreases towards the south, again supporting the contention that the paleotop direction of the gabbroic sill is to the south in the vicinity of the Brunne-Turcotte Option (Table 3).

**Table 3. Magnesium/Iron Contents of Layered Gabbro, Main Skarn**

Sample #	Pt+Pd+Au (ppb)	Mg # =Mg/(Mg+Fe)x100	Cr ppm	Description	Location	Mg %	Fe%
GS-135	28	18.41492	48	mg-cg qz gab <<1%po	furthest nw	0.79	3.5
GS-134	24	14.22319	51	mg-cg qz gab rusty 1%po	next se	0.65	3.92
GS-133	37	11.49144	66	fspar pxtic gab 3%po	below layering	0.47	3.62
GS-126	67	12.08267	54	mg cg qz gab 3% po peg	above layering	0.76	5.53
GS-127	28	12.0603	72	mg cg qz gab bt altrd 1-2%po <<1%cpy	above layering	0.72	5.25
GS-128	41	12.11073	66	mg qz gab less bt alm 1-5%po <1% cpy	above layering	0.7	5.08

## 2) GABBRO

The coarse-grained and pegmatitic gabbro grades southward into more massive medium-grained gabbro with minor sulphide mineralization. A one metre wide zone of rusty gabbro trends NNW across the outcrop and contains minor chalcopyrite, pyrrhotite and rare arsenopyrite (**Plate 16**). This was interpreted by Cameco Corporation to represent an endoskarn conduit, but the present study suggests that this structure simply represents a ductile shear zone which has allowed the movement of mineralizing fluids through the gabbro.

## 3) QUARTZ MONZONITE(?)

This 15m wide unit occurs between the gabbro and the limestone and appears to be an intrusive dyke with texture and mineralogy similar to the host gabbro suggesting a possible genetic relationship (granophyre?). The dyke trends NE and is grey, massive, fine to medium-grained containing abundant quartz and feldspar and minor amphibole (**Plate 17**). Towards the east edge of the outcrop, the dyke has intruded a xenolith of rusty limestone (2m x 5m) which is highly metamorphosed and deformed. The dyke contains no sulphide mineralization but is in contact with the very rusty and sulphide mineralized limestone skarn at its south margin (**Plate 18**). The dyke was traced through several stripped trenches to the west where it was observed to narrow (2-5m) (**Figures 10 & 11**).

Although sulphide mineralization is significant in the vicinity of the layered gabbro (up to 10% locally), no significant PGM mineralization was identified. The bulk of the sulphide mineralization was pyrrhotite and exploration on the Brunne-Turcotte Option suggests that chalcopyrite is more often associated with anomalous PGM values. Spatially, sulphide mineralization was concentrated in variably textured pegmatitic gabbro occurring just above the best layered section.

A late, pinkish, rusty, felsic aplitic dyke intrudes the gabbro and contained minor chalcopyrite and pyrrhotite (1%) (**Plate 19**). An assay sample (GS-137) of the dyke returned anomalous gold values - 186 ppb.

## 7.22 Main Skarn Trench #2

This trench is located approximately 100m to the west of the main outcrop and is 30m long and 5m wide exposing the contact between the gabbro, quartz monzonite and limestone (**Figure 11**). The gabbro in this trench is coarse-grained and contains up to 10% biotite. No sulphide mineralization was

identified. The quartz monzonite dyke appears to cross cut the gabbro while the limestone is well-layered and metamorphosed to the south of the monzonite. Silty sandy layers within the limestone may represent channel-fill scours (**Plate 20**). The limestone locally contains euhedral greenish 0.5cm garnet porphyroblasts.

### 7.23 Main Skarn Trench #3

Approximately 125 metres west of Main Skarn Trench #2 this trench is approximately 35 metres long and 5 metres wide providing exposure of the quartz monzonite cross-cutting coarse-grained biotite-bearing gabbro (**Figure 12**). No limestone is present in this trench. A zone of rusty surface weathering occurs within the biotite-bearing gabbro and was found to contain <1% chalcopyrite and pyrrhotite however no significant PGM mineralization was identified in samples taken.

## 7.3 HANOVER SHOWING

The Hanover Showing occurs in the southwest corner of the property approximately 800 m due south of where the hydro right-of-way intersects Sutherland Creek (**Figure 4**). The showing can be accessed from two directions; both involve using a bush trail constructed by New Millennium Resources during their 1999 exploration program on an adjacent property.

The property access trail from Agnew Lake intersects Millenniums bush trail approximately 1.5 km north-east of Agnew Lake. Following the skidder trail to the east approximately 500 metres leads to Sutherland Creek where a bearing of 070° through the bush for 400 metres ends at the showing. From the hydro right-of-way approximately 1.25 km. east of Sutherland Creek, the same skidder trail heads to the southwest. Following this trail will eventually intersect Sutherland Creek, and the 070° bearing can be taken again.

In the late 1960's Hanover Explorations Ltd. performed geological and geophysical surveying, and diamond drilling work focused on copper exploration throughout various properties in the Porter Township area. The casing for one of Hanover's drill holes, # 68-1 was located during the present program 10m North of BL0 at 50W (UTM 439437 5137002).

In 1993 - 1994 Cameco Corporation mapped the area at 1:5000 scale and noted the presence of gabbroic rocks in the area. Several grab samples from the area returned anomalous gold, copper and nickel values. Results from a soil geochemical survey completed by Cameco Corporation on L21W indicated anomalous values of Cu, Ni, Au, As, Cd, and Co associated with narrow (<30cm generally), quartz-filled, north-west-trending shear zones in sediments in the area. The soil samples were not analyzed for PGMs. The results appear to show a correlation between anomalous copper, nickel and to a lesser extent, cobalt values on the downslope side of gabbroic outcrops.

In June of 2000 as part of the present program D. Brunne prospected the area and noted gossans in highly foliated sulphide-bearing gabbroic rocks. One sample (DB00-104) containing 3% sulphides, mainly chalcopyrite and pyrrhotite, returned over 500 ppb combined Au, Pd, Pt. Other samples in the same outcrop although lower in PGM concentrations, were still anomalous ( $\approx$  100 ppb).

Since outcrop exposure in the vicinity of the Hanover Showing is poor and sampling had returned limited information on mineralized zones, a B-horizon soil geochemistry survey for PGM's was

completed. The soil geochemical survey was followed up by geological mapping of the survey grid.

### 7.31 B-Horizon Geochemical Survey

G. Shore, H. Tracaneli and T. Mikel flagged a grid over the showing using the location of sample DB00-104 as the origin point and a baseline direction of 060° azimuth. Lines were spaced 50 metres apart with stations flagged at 25 metre intervals. An area approximately 200 metres (E-W) x 175 metres (N-S) was delineated for geochemical survey (**Figure 4**). Samples were collected at 25 m intervals along the east-west baseline and at 12.5 m intervals from sample location DB00-104. A total of 49 samples were collected and analyzed for Pt, Pd, Au, and multi-element package of Be, Na, Mg, Al, P, K, Ca, Sc, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Sr, Y, Zr, Mo, Ag, Cd, Sn, Sb, Ba, La, W, Pb, and Bi. (**Appendix IV, Figures 13 & 14**). Geochemical analysis procedures used are outlined in **Appendix II**.

In general, the entire area of the survey was found to be anomalous in soil PGM values containing approximately 40 ppb Pt+Pd for most samples. The area in close proximity to the anomalous PGM values from grab samples (DB00-104) showed PGM concentrations in excess of 100 ppb Pt+Pd. The highest Pd+Pt values, 116 ppb and 120 ppb correspond to the gabbroic sill location.

### 7.32 Hanover Showing Geology

The Hanover Showing is underlain by highly faulted and sheared metasediments - quartzites and conglomerates intruded by thin bands of gabbroic rocks likely related to the sills in the area (**Figure 15**). A major fault trending at 060° occurs in a 10 metre wide lineament located approximately 200 metres north of the showing and consists of highly foliated and altered sedimentary and gabbroic (?) rocks. This fault may be partially responsible for the geological complexity of the area. A relatively large swamp/creek filled lineament occurs 75 metres to the south of the showing and trends approximately 240°. Due to thick overburden cover, it is not clear whether this lineament represents a geological contact or fault structure. Other smaller lineaments trending at 260° occur throughout the area and dissect the lithologies.

The gabbro is composed of 5-10% quartz, amphibole (after pyroxene?) now altered to chlorite and biotite locally. Pegmatitic pods of gabbro occur locally but do not form mappable units. In high strain zones such as faults or shear zones, the gabbro develops a strong foliation, contains abundant biotite and may become indistinguishable from highly foliated and altered sedimentary rocks. In close proximity to the gabbro is a late intrusive (?) breccia zone that contains mainly rounded xenoliths of conglomerate and quartzite, including gabbro. This breccia zone is interpreted to be similar to the breccia zone observed at the Brunne PGM Showing.

There are two types of significant mineralization in the Hanover Showing area. The first is in small (<30cm) quartz-filled shears (@260°-280°) that occur in the quartzites and conglomerates and contain pyrite, chalcopyrite and minor arsenopyrite. Cameco Corporation located several anomalous Au values in these shear zones (>300ppb Au). The current geochemical sampling program located an anomalous Au value in soil (713 ppb Au) to the north of the Hanover Showing in an area close to the inferred gabbro-sedimentary contact. This anomaly may also be related to sediment-hosted, quartz-filled shear zones. A zone of rusty quartzite was located on Line 0+50W, 0+25m N where rusty quartz veins contained pyrrhotite, chalcopyrite and arsenopyrite (?).



The second association is within the thin bands of gabbroic rock. Locally, the gabbro contains up to 5% sulphides, mainly chalcopyrite with minor pyrrhotite, possibly intergrown. Within high strain zones, like that containing anomalous PGM values, the rock is black to dark grey, rusty on surface, highly foliated and contains up to 5% sulphides, mainly chalcopyrite with minor pyrrhotite. Several specks of malachite were also observed. Sampling by D. Brunne at the DB00-104 outcrop was over a distance of 75.0 cm. and four samples were taken (DB00-102 to 105). Of the four samples, only DB00-104 contained anomalous PGM concentrations although the entire outcrop appears to have similar mineralogy and texture. Resampling of the same outcrop during the mapping program failed to find PGM mineralization comparable to DB00-104. Sample GS-187 taken at the same outcrop returned 224 ppb. Pt+Pd+Au.

#### 7.4 RE-LOGS OF DIAMOND DRILL HOLES BS94-01 AND BS94-03

G. Shore relogged Cameco Corporation drill holes BS94-01 and BS94-03, which were drilled to investigate the 'gold in skarn' type mineralization at the Main Skarn Showing (**Figure 4**), to determine lithological variation within the sill, Cu, Ni, and PGM distribution and see if any previously overlooked sulphide bearing layers could be found in the gabbroic units intersected in the drill holes. The core is currently stored at M. Turcottes' property, 662 Agnew Lake Rd., Webbwood Ontario. Several zones of Quartz-Gabbro with 1-5% disseminated and lenticular pyrrhotite and chalcopyrite were found to have not been sampled previously.

Correlation of BS94-01 and BS94-03 with surface geology indicates that between L0+00 and L2+00E the gabbroic sill dips south at approximately 45°. In this area the sill has a true thickness of 120-145 metres including a 40 metre thick meta-pyroxenite. These drill holes are interpreted to have ended in a lense of metasedimentary rocks which separate the sill from a lower meta-pyroxenite layer located below the sediments. The meta-sediment lense terminates in the vicinity of L10+00E, and at that location the lower meta-pyroxenite appears to join the main sill.

Sampling of 1.0m samples of hole BS94-01 on a 4-5 metre interval throughout the gabbroic sill was completed by M. Perkins with sampling concentrated on the areas with increased sulphide contents. Samples were split using a manual core splitter, bagged and tagged on site, packed in potato sacks and shipped to Xral Laboratories by bus. Geochemical analysis procedures used are outlined in **Appendix II**. Ursa Major Minerals Inc. and Cameco Corporation drill logs, sampling results, and sample certificates are attached in **Appendix V**.

Results of the current assaying are shown in a simple down hole plot on **Figure 16** indicate that in general PGE values increase towards the bottom of the hole. BS94-01 was drilled at 310°/-45° and crossed the gabbroic sill from 77.5m to 244.5m, ending in conglomerates and quartzite. The results indicate elevated Pt and Pd values in the 15-25 ppb range in two zones increasing towards the bottom of the hole. This correlates with G. Shores field work that indicates the top of the sill faces south. The two anomalous PGM intervals are located at 95 to 108m (~ width 13.0m) and 137 to 241.3m (~ width 104.3m) down hole. The highest Pt and Pd values returned in the current program were 28 and 53 ppb respectively, and while uneconomic do show that the potential for significant PGM mineralization does exist along the basal portion, or near the northern contact, of the gabbroic sill.

Nickel results tends to indicate an enrichment (100 - 457 ppm range) towards the stratigraphic bottom of the gabbroic sill while copper tends to show a weak enrichment (100 - 345 ppm range)

towards the top of the unit.

## **8.0 EXPLORATION PROGRAM FALL 2000**

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From 11 October to 18 November, 2000, H. Tracanelli, assisted by E. Robinson and K. Myllymaki, completed prospecting traverses across the Brunne-Turcotte Option property on Lines 0, 2E, 4E, 6E, 8E, 10E, 12E, 14E and 16E. From October 30 to November 6, 2000 the excavation of several trenches were completed in the area around the Brunne PGM Showing using a Komatsu excavator. Due to the lateness of the field season the trenches were not washed or detail mapped. Grab sampling was completed in zones of increased sulphide mineralization. Samples were forwarded to Xral Laboratories for Pt, Pd, Au, Cu, and Ni analysis.

The purpose of the program was to prospect and test for a PGM enriched layer above the meta-pyroxenite horizon near the northern contact, or basal portion of the gabbro sill. The work completed in the summer by G. Shore, along with field investigations by H. Tracanelli indicated that significant zones of sulphide mineralization continued to the north west of the Brunne PGM Showing. Results of stripping confirm anomalous PGE values continue along the northern contact of the gabbroic sill to the south-west of the Brunne PGM Showing

### **8.1 PROSPECTING**

H. Tracanelli assisted by E. Robinson completed reconnaissance traverses along lines 0, 2E, 4E, 6E, 8E, 10E, 12E, 14E and 16E to locate the northern contact of the gabbroic sill. The results of these traverses are summarised on **Map 4**. The 1994 Cameco Geology map was used as a base to confirm the gabbroic contacts and units. While some minor discrepancies were noted regarding outcrop locations much of the Cameco Corp. surface work was confirmed. Special attention was paid to sulphide mineralization associated with the gabbroic sill, and the meta-pyroxenite layer near the lower, or northern sill contact. Sampling confirmed that a PGM anomalous layer occurred above the meta-pyroxenite.

### **8.2 TRENCHING**

Eight days were spent excavating and stripping several trenches to the north-east of the Brunne PGM Showing (**Map 4**). Excavations were completed by Carlyle Construction Limited (PO Box 5283, Espanola, Ontario P5E 1S3) using a Komatsu backhoe. Geological mapping and sampling was completed while the excavations took place and focused on the type and content of sulphide mineralization in the gabbroic sill. 81 grab samples were taken of sulphide mineralized altered gabbro in an attempt to define a zone of continuous PGM mineralization.

During mapping two types of sulphide mineralization were found in association with the gabbro

1. Primary disseminated Sulphides as disseminations and lenses, and
2. Secondary Sulphides associated with fracturing and quartz-carbonate veining.

Sampling results (**Maps 5A, 5B**) confirm that PGM mineralization is mainly associated with the first type, or primary sulphide mineralization. The Brunne PGM Zone was extended for a further 15m to

north-west (samples 368153 to 368160) and grab sampling returned values as high as 5.49 g/t Pt+Pd+Au (368154).

A zone of anomalous PGM mineralization was uncovered for a 90 metre length from L11+60E, 3+70N to L12+50E, 3+60N by trenching. Results as high as 1.22 g/t Pd or 1.48 g/t Pt+Pd+Au (sample 368189) were returned from grab samples in this area. The width of this 'horizon' is unknown but current sampling would tend to indicate it is less than 5.0 metres, located approximately 15 meters south (above) of the meta-pyroxenite horizon. The gabbro (gabbro to quartz-diorite) in these areas is irregularly mineralized by 2-5% disseminated fine grained pyrrhotite (Po) and chalcopyrite (Cpy) mineralization.

Structurally the trenched area is complex. Several fault systems at 200 to 215°, 290 to 320°, and 239° (regional faulting direction?) directions cut the currently uncovered zone. The direction and distance of strike-slip movements of these faults is currently unknown but appears to mimic regional structures such as the Cygnet, Sealine, Hunter Lake and O'Brien Lake Faults which can be traced east into the Sudbury Structure.

Based on other PGM showings and anomalies in the area, amounts and style of Po and Cpy mineralization has significant influence on PGM mineralization. The true nature of this relationship at this particular showing is unknown at this time as several areas with similar sulphide mineralization on the property failed to return PGM values of interest. Sulphides generally occur as fine-grained sub-euhedral crystals either disseminated or concentrated in less than 1.0 cm. lenses or blebs. Predominantly pyrrhotite content is greater than chalcopyrite and when sulphide contents increase to greater than 5% a 'net' texturing becomes apparent. Margins of these sulphide mineralized areas are generally diffuse, irregular and gradational. Further investigation should disclose if PGM mineralization is associated with a particular generation or type of sulphide mineralization.

Directly west of the current trenching program the gabbroic sill appears to contain a band/xenolith of quartzite. Meta-pyroxenite rocks have been found located north of this unit but remain largely covered by overburden. Previously the northern contact of the gabbro has been assumed to be along this quartzite contact, however potentially this gabbro contact is farther to the north.

While values obtained from sampling the current trenching are lower than hoped based on the Brunne PGM Showing the work completed has confirmed the continuing presence of significant PGM mineralization over large areas of the gabbroic sill. Anomalous PGM mineralization remains open along strike in both directions. Further work is required to determine the extents of, effects of faulting on, and relationship of sulphide mineralization to PGM mineralization.

## **9.0 CONCLUSIONS AND RECCOMENDATIONS**

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PGM mineralization at the Brunne PGM Showing and in the gabbroic sill to the north-west appears associated with irregular zones of disseminated and blebby pyrrhotite and chalcopyrite mineralization. Values as high as 13.65 g/t palladium (GS-165) were returned from samples taken at the Brunne PGM Showing. The diffuse sulphide mineralization and possibly disrupted layering, within the gabbroic rocks make exploration difficult. Some time must be spent to determine the relationship between sulphide and PGM mineralization to determine the form or generation of sulphides best indicate

the presence of PGM mineralization. The relationship of PGM mineralization and faulting must also be determined to see if, and how, local structures have disrupted potential PGM bearing layers. Detailed geological mapping and sampling should be completed across the trenches so far completed and further trenching be completed between the Brunne PGM Showing and the new zone of PGM mineralization. In addition a soil geochemical survey and detailed geological mapping should be completed along the gabbroic sill to delineate the meta-pyroxenite horizon, structural or lithological traps, and any associated PGMs.

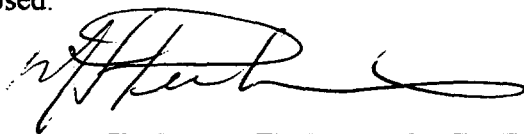
Systematic sampling of the drill core from the Cameco Corporation drill hole BS94-01 has revealed a notable PGM zonation within the gabbroic sill. Results indicate increasing PGM and nickel mineralization towards the northern margin of the gabbroic sill. Correlation of BS94-01 and BS94-03 with surface geology indicates that between L0+00 and L2+00E the gabbroic sill dips south at approximately 45°. In this area the sill has a true thickness of 120-145 metres including a 40 metre thick meta-pyroxenite. These drill holes are interpreted to have ended in a lense of metasedimentary rocks which separate the sill from a lower meta-pyroxenite layer located below the sediments. The meta-sediment lense terminates in the vicinity of L10+00E, and at that location the lower meta-pyroxenite appears to join the main sill.

The discovery of the 90 metre zone of anomalous PGM mineralization approximately 15 metres south (or lithologically above) the meta-pyroxenite horizon in the gabbroic sill, which returned values up to 1.48 g/t Pt+Pd+Au, provides an exploration target horizon that extends across the property. Combined with geophysical, geochemical and structural mapping exploration effort should be focused at structural flexure or lithological traps that may occur along the gabbroic sill.

Prospecting along the contact between the gabbro and the breccia zone to the west of the current trenching program should be completed to determine the location of the northern contact of the sediments and gabbro. Previously believed to south of a large quartzite unit which appears in outcrop, the presence of meta-pyroxenite located north of this unit implies the northern contact of the gabbro sill may be located farther north and obscured by overburden. A more extensive soil geochemistry survey across this contact is recommended.

The area around the Hanover Showing is seen as prospective as the structural geology of the area is complex with significant faulting and shearing at an orientation (260-280°) that is distinct from the main structural trends in the area (060°). Several of these shear zones are associated with mineralizing fluids and contain anomalous Au and PGM values. Much of the outcrop area is obscured by overburden especially in the vicinity of the main showing (DB00-104). Although the shear zones within the gabbro appear to continue to the east and west, their surface expression is not visible because of overburden cover. Gabbroic rocks containing anomalous PGM values are associated with minimal sulphides (<10%), mainly chalcopyrite. These factors are consistent with good mineralization at the Brunne PGM Showing and the presence of a late intrusive breccia zone may indicate that this area is at the same structural level as that of the Brunne PGM Showing. The coincidence of high strain zones and sulphide mineralization suggests that primary mineralization may have been remobilized and concentrated by later structural events and the numerous shear zones in the area enhance the potential of the area. Results of soil sampling indicate elevated PGM values. A program of stripping and trenching across the main mineralized zones in this area is proposed.

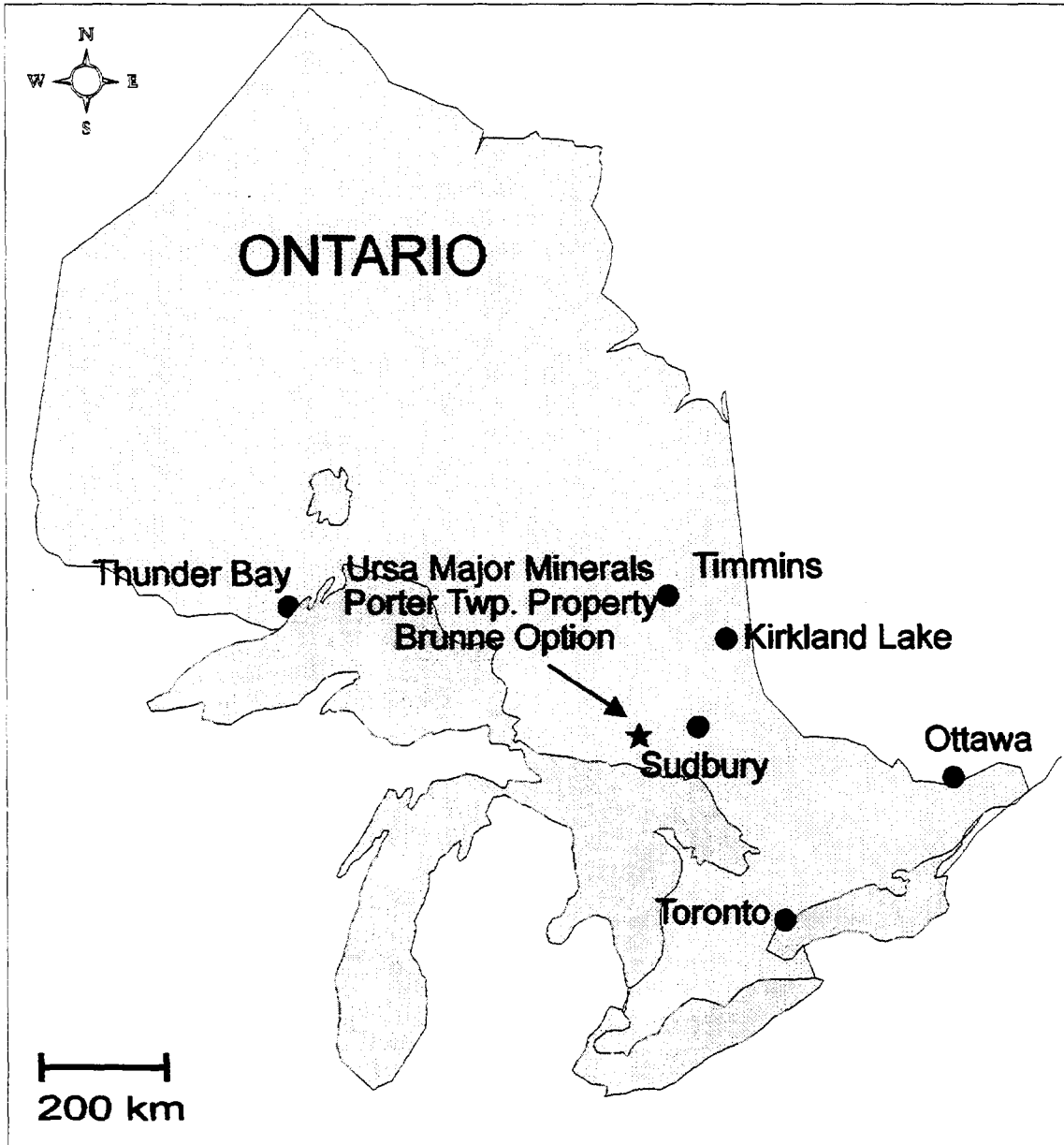
Michael Perkins 28 March 2001



01 Apr 01

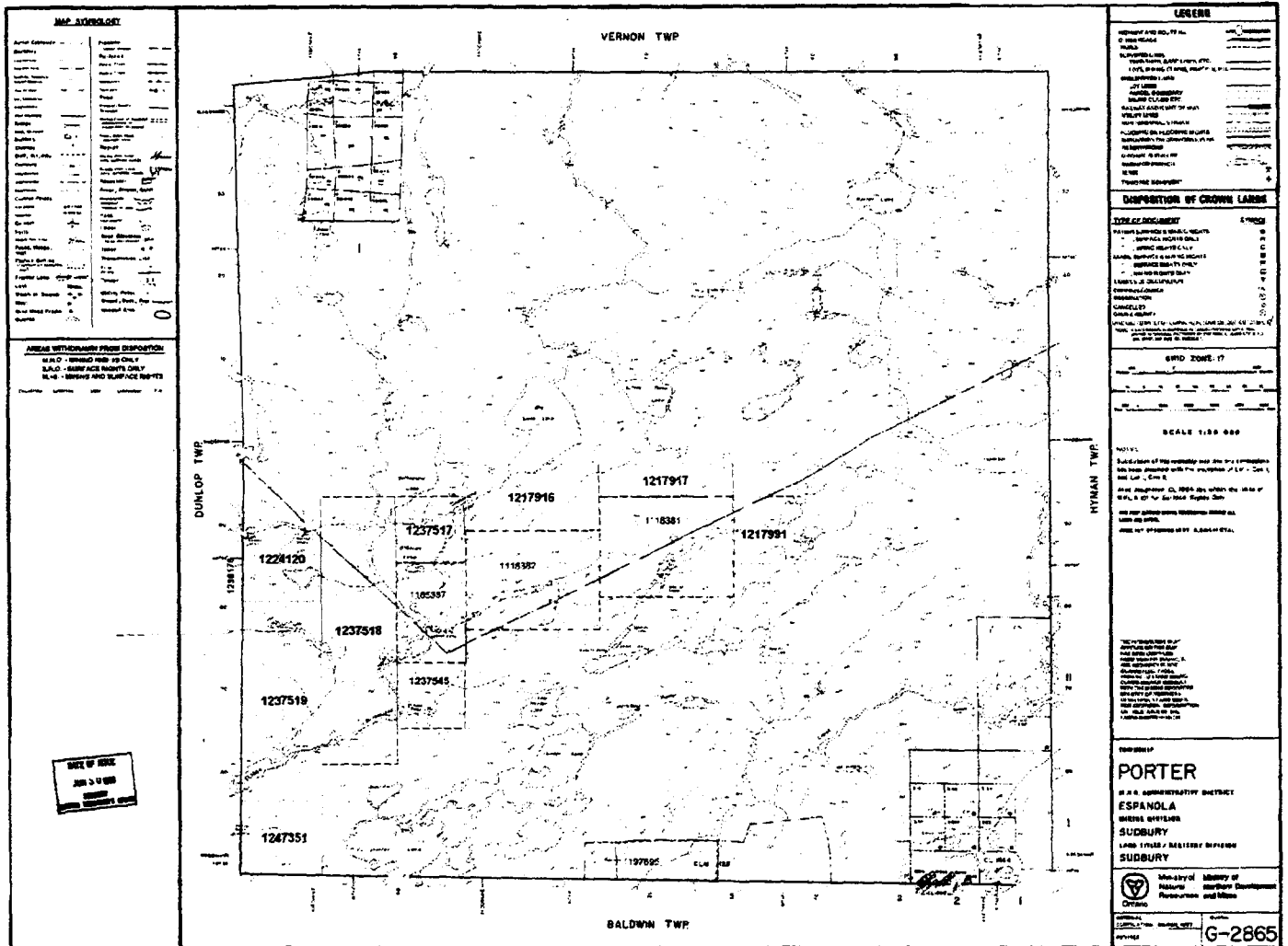
**10.0 FIGURES**

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**FIGURE 1**

*Ursa Major Minerals Inc. - Brunne-Turcotte Option - Porter Township*



**FIGURE 2**

*Ursa Major Minerals Inc. - Brunne-Turcotte Option - Porter Township*

# SUDBURY AREA PROJECTS

PGE values up to  
8.55 g/t Pd, 1.17 g/t Pt, 0.34 g/t Au, 0.15% Cu, 0.14%  
Ni over 1.0 m

O'Brien Showing  
Up to 15.6 g/t Pt+Pd from grab  
samples.

Bye Zone  
9.1% Cu, 8.8 g/t Pt+Pd, 7.5 g/t Au  
from grab samples.

Ursa's  
Shakespeare  
Option

Shakespeare Property  
2,081,000 tons @ 0.36%Ni, 0.42%Cu,  
0.224 g/t Au, 0.40 g/t Pt, 0.44 g/t Pd  
(Dept of Energy and Mines, 1989)

Ursa's  
Porter Twp  
Option

**Legend**

- Mixed sediment and quartzite
- Mafic and ultramafic rocks
- Intermediate to mafic volcanic
- Granitic Rocks

**Scale**  
0 1 2km.

**Legend**

- Grenville Province
- Southern Province
- East Bull Lake Intrusive Suite
- Huronian Volcanics
- Superior Province

Superior Province Southern Province  
Grenville Province

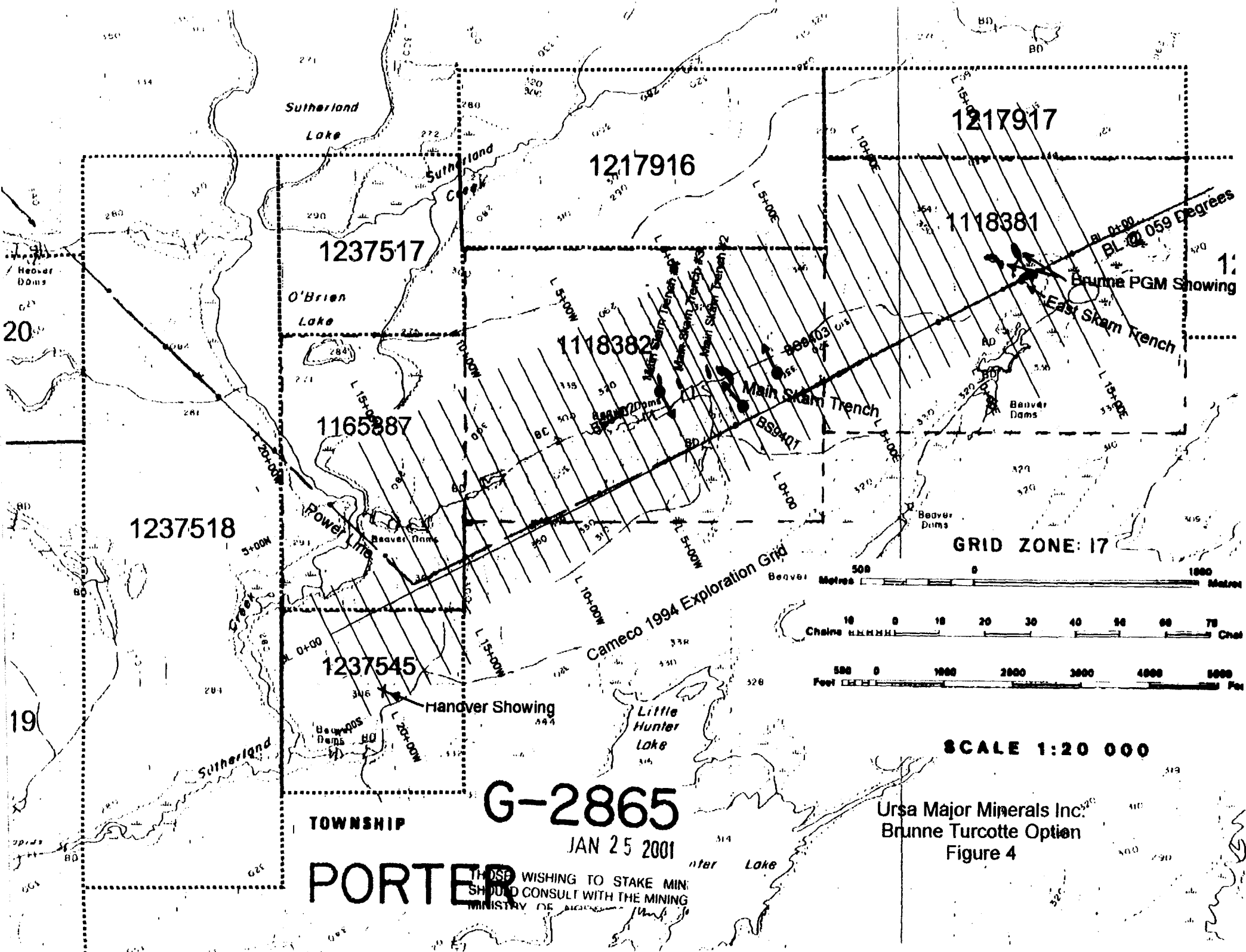
East Bull Lake Intrusion  
Agnew Lake Intrusion  
Sudbury Intrusive Complex  
River Valley Intrusion  
Granulite Front Thrust Zone  
Lake Nipissing

Property Location

50 kms

FIGURE 3





1217917

1217916

1237517

1118381

Brunne PGM Showing

East Steam Trench

1118382

Main Steam Trench

1165887

1237518

GRID ZONE: 17

Cameco 1994 Exploration Grid

Beaver Dams 500 0 1000 Metres

10 0 10 20 30 40 50 60 70 Chains

500 0 1000 2000 3000 4000 5000 Feet

SCALE 1:20 000

Ursa Major Minerals Inc.  
Brunne Turcotte Option  
Figure 4

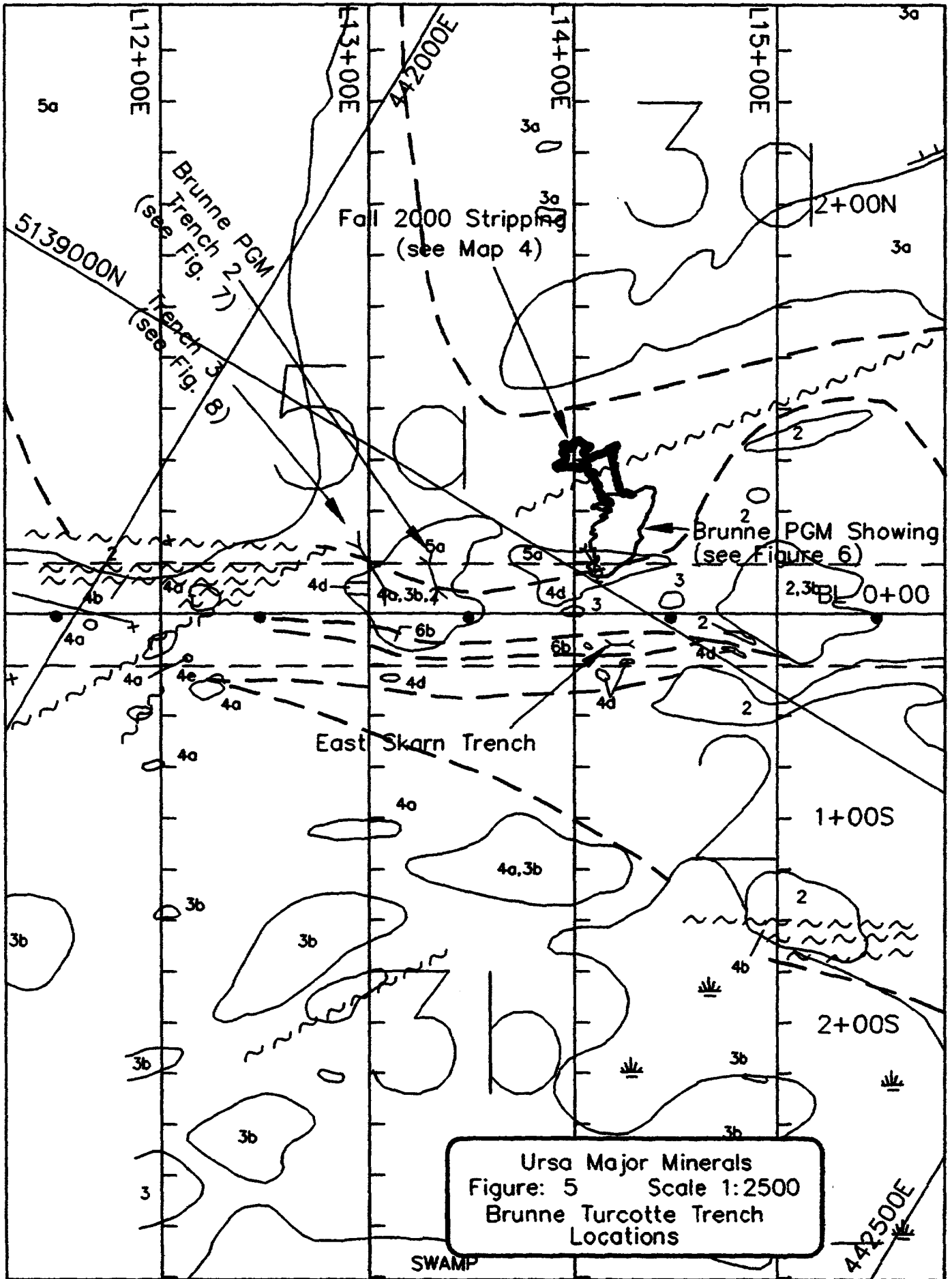
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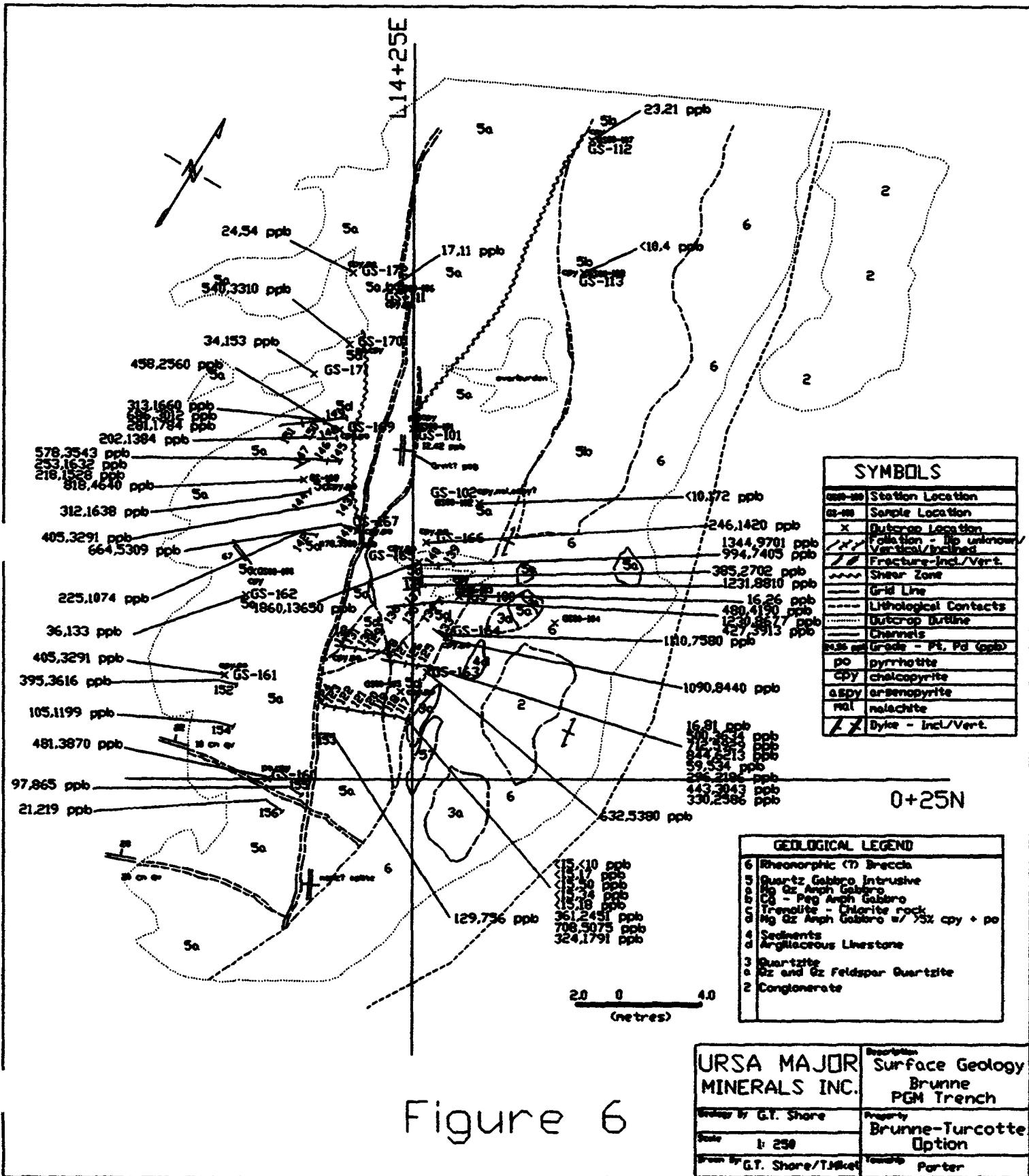
JAN 25 2001

PORTER

THOSE WISHING TO STAKE MIN.  
SHOULD CONSULT WITH THE MINING  
MINISTRY OF



Ursa Major Minerals  
 Figure: 5 Scale 1:2500  
 Brunne Turcotte Trench  
 Locations

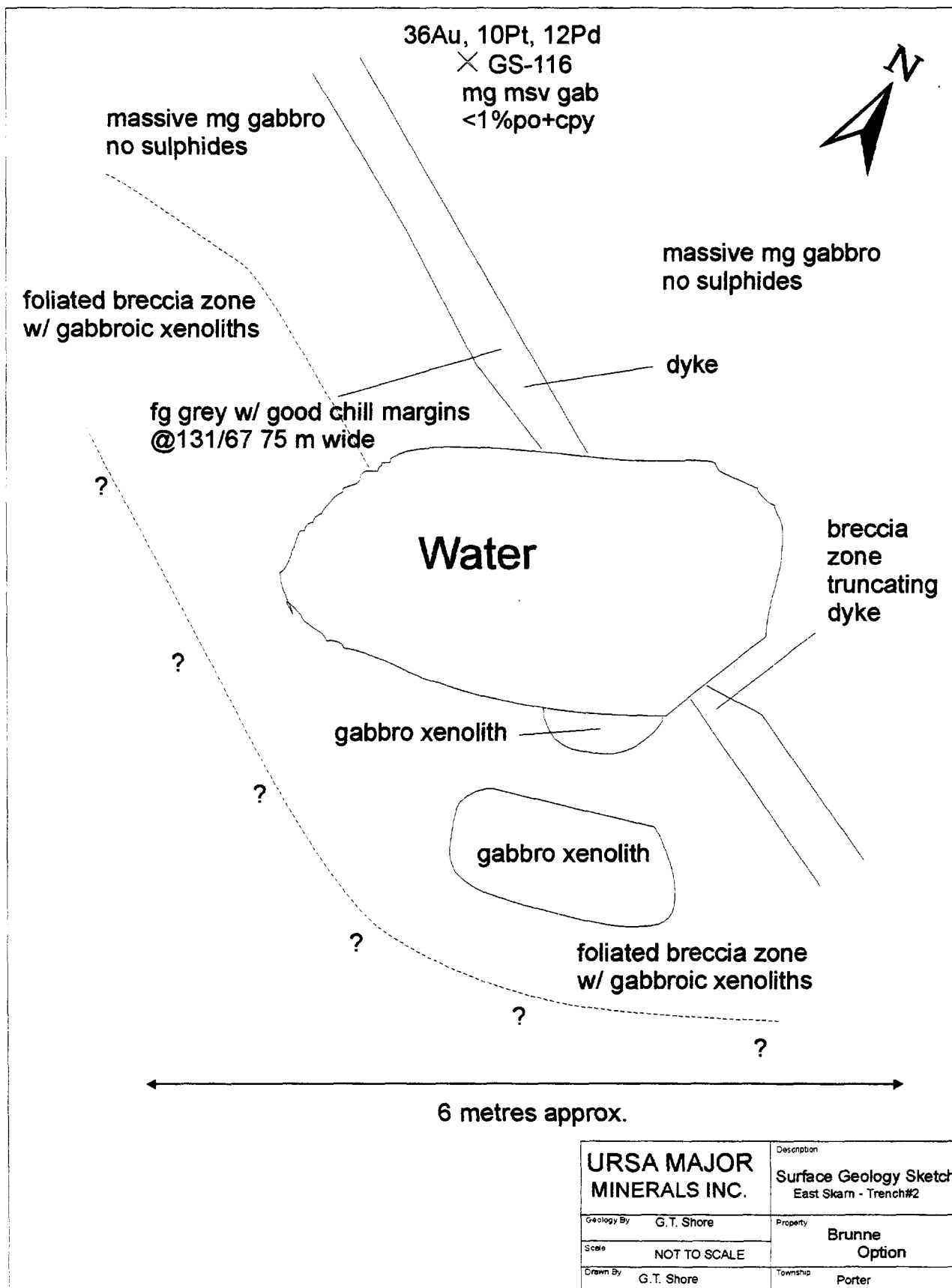


SYMBOLS	
GS-#	Station Location
GS-#	Sample Location
X	Dyke Location
—	Foliation - Dip unknown
—	Vertical/Inclined
—	Fracture-Incl/Vert.
—	Shear Zone
—	Grid Line
—	Lithological Contacts
—	Dykecrop Outline
—	Channels
—	Grade - Pt, Pd (ppb)
py	pyrrhotite
cpy	chalcopyrite
aspy	arsenopyrite
mal	malachite
X	Dyke - Incl/Vert.

GEOLOGICAL LEGEND	
6	Rhyolitic (?) Breccia
5	Quartz Gabero Intrusive
5a	Qz - Amph Gabero
5b	Peg Amph Gabero
5c	Tremolite - Chlorite rock
5d	mg Qz Amph Gabero w/ 75% cpy + po
4	Sediments
d	Argillaceous Limestone
3	Quartzite
a	Qz and Qz Feldspar Quartzite
2	Conglomerate

URSA MAJOR MINERALS INC.		Surface Geology Brunne PGM Trench	
Drawn by G.T. Shore		Property Brunne-Turcotte Option	
Scale 1: 250		Compiled by Porter	
Drawn by G.T. Shore/T.H. Kuc			

Figure 6



**FIGURE 7**

*Ursa Major Minerals Inc. - Brunne-Turcotte Option - Porter Township*

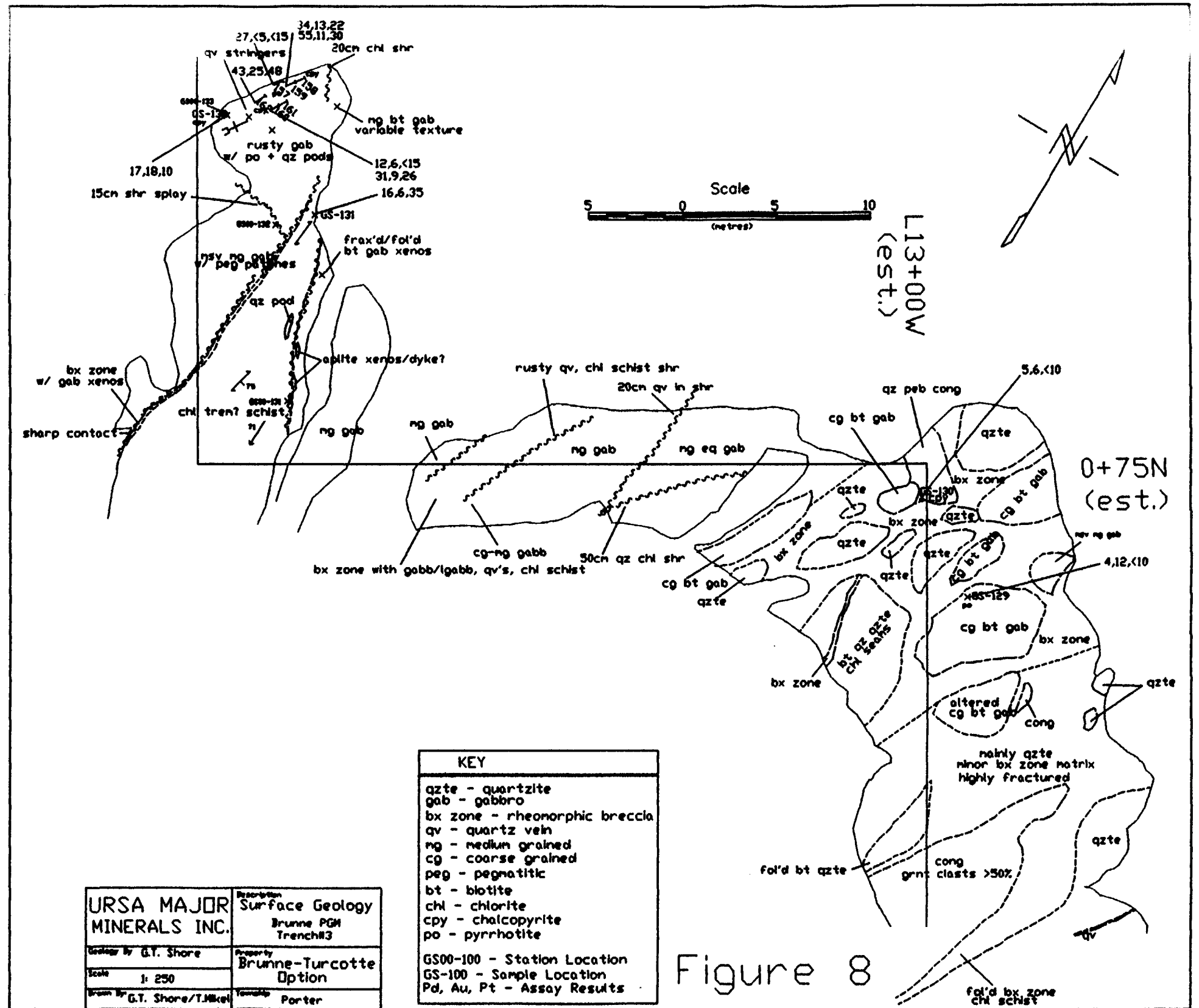
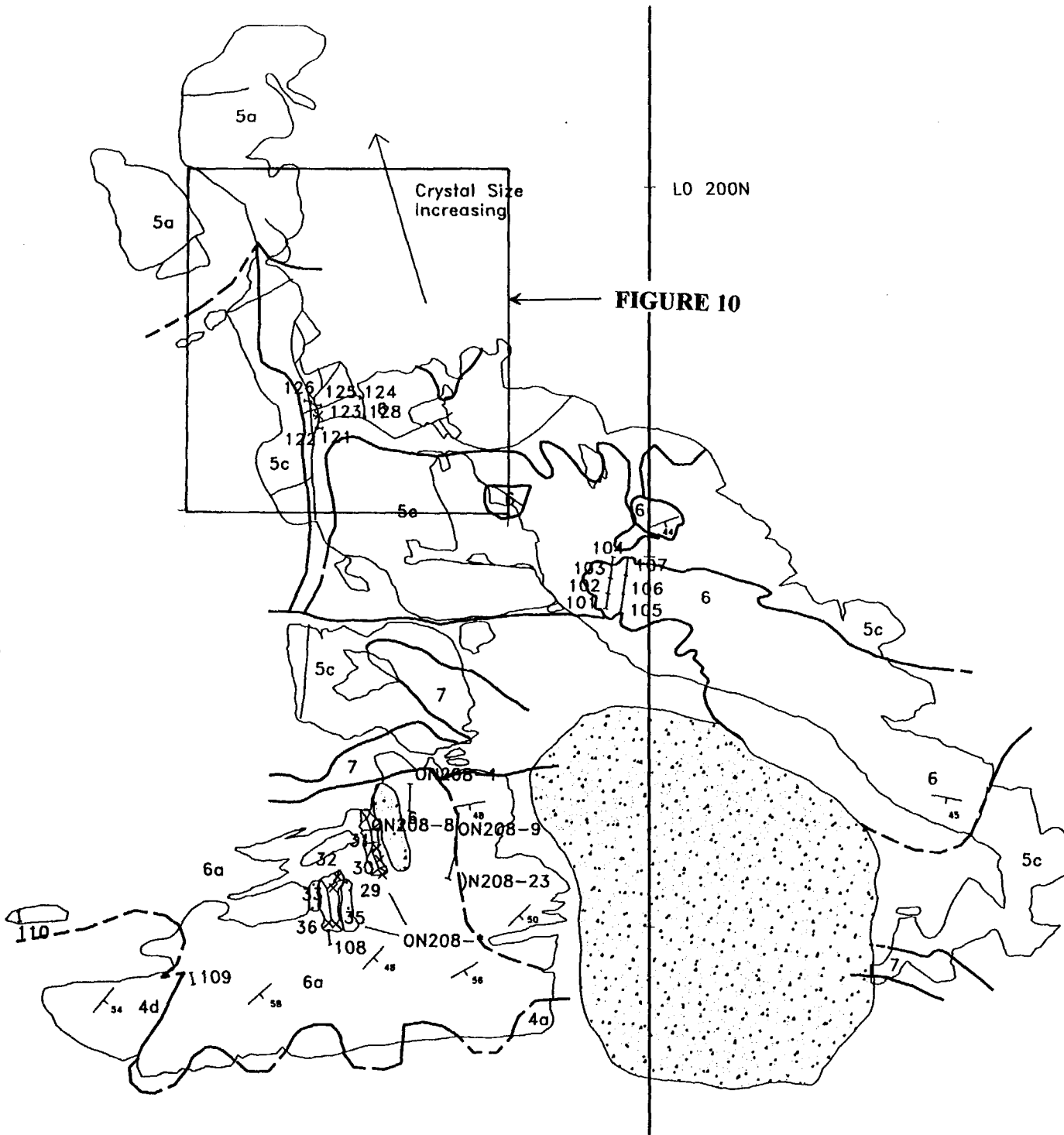


FIGURE 9



**LEGEND**

- 7 Monzonite
- 6 Garnet - Pyroxene Skarn
  - a) po+Apy+py
- 5 a) Medium to Coarse amphibole gabbro
  - c) altered quartz diorite
- 4 a) greywacke, argillite, siltstone
  - d) argillaceous limestone

**SYMBOLS**

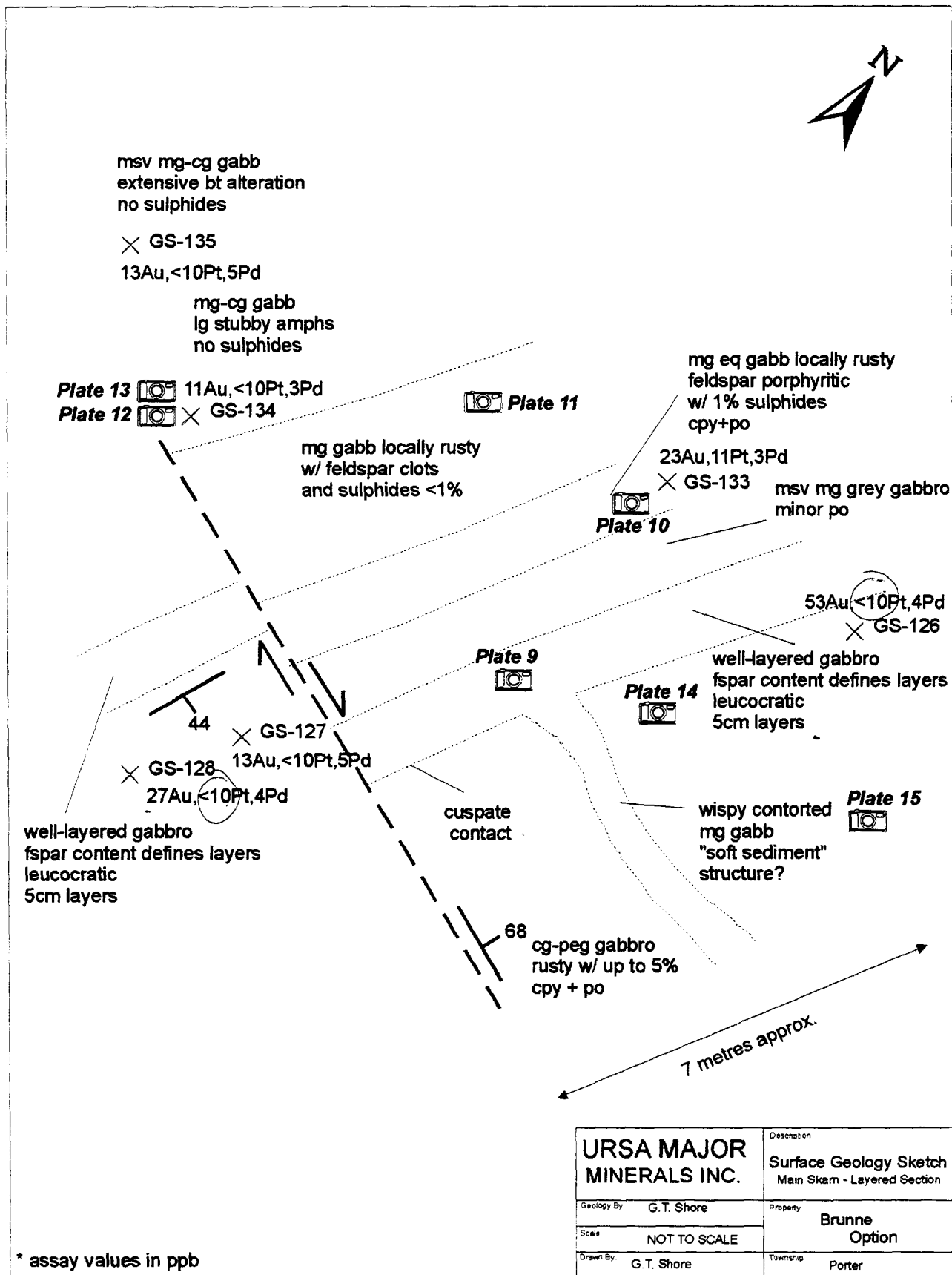
- Outcrop
- ... Rubble
- ⊗ Trench
- ⊗ Sample
- + Grid Line
- - - Contact
- Fractures
- Bedding



0 5 10 15m  
Scale 1:400

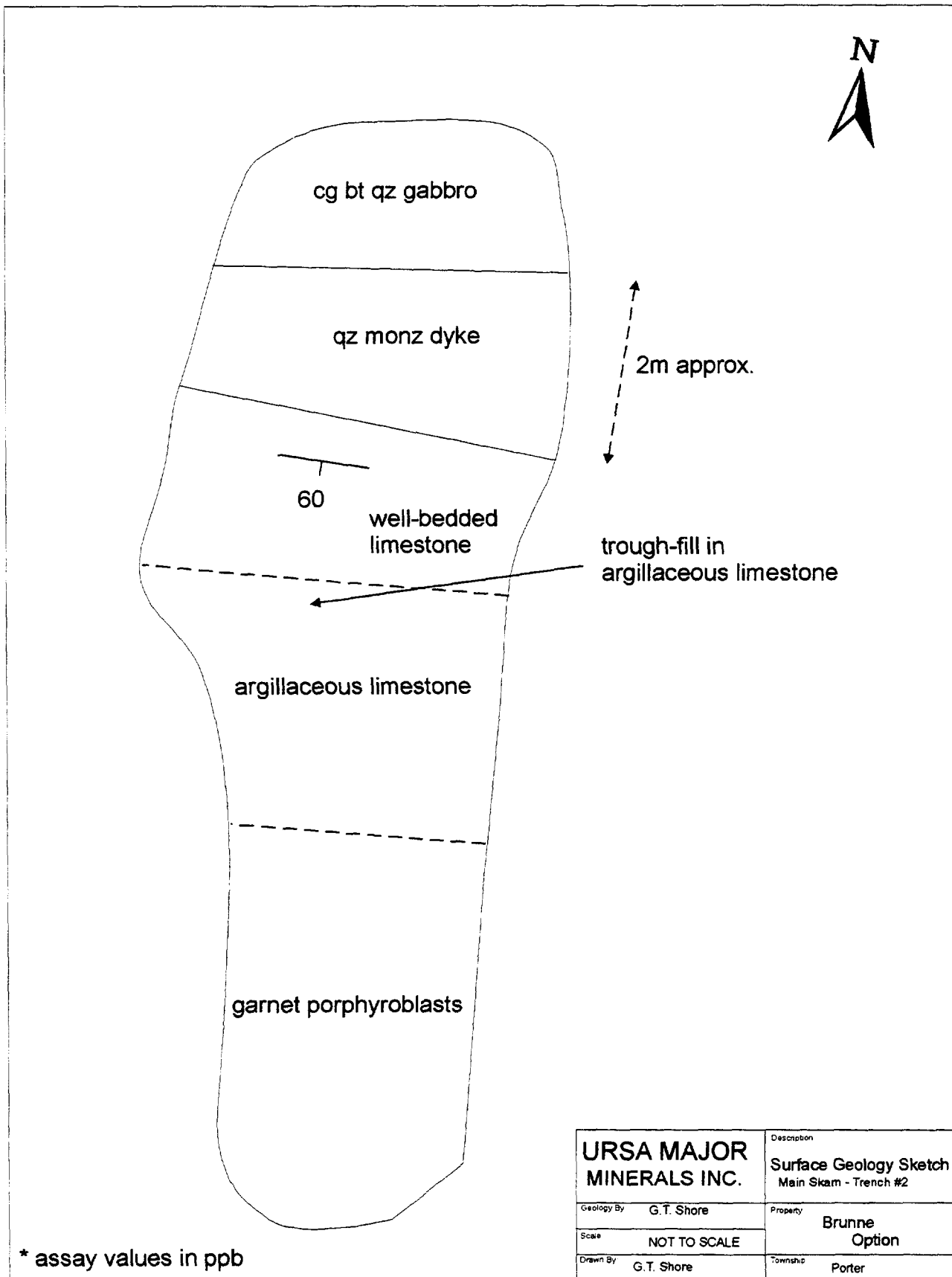
	<p><b>BIG SWAN PROJECT</b></p>
<p><b>BIG SWAN SHOWING Main Skarn</b></p>	

Compiled By: P.C. & M.K.	95/01/12	Dwg No.: ECG94025
Drafted By: P. CHUBB		
Scale: 1:400		
N.T.S.:		
Disposition(s):		



**FIGURE 10**

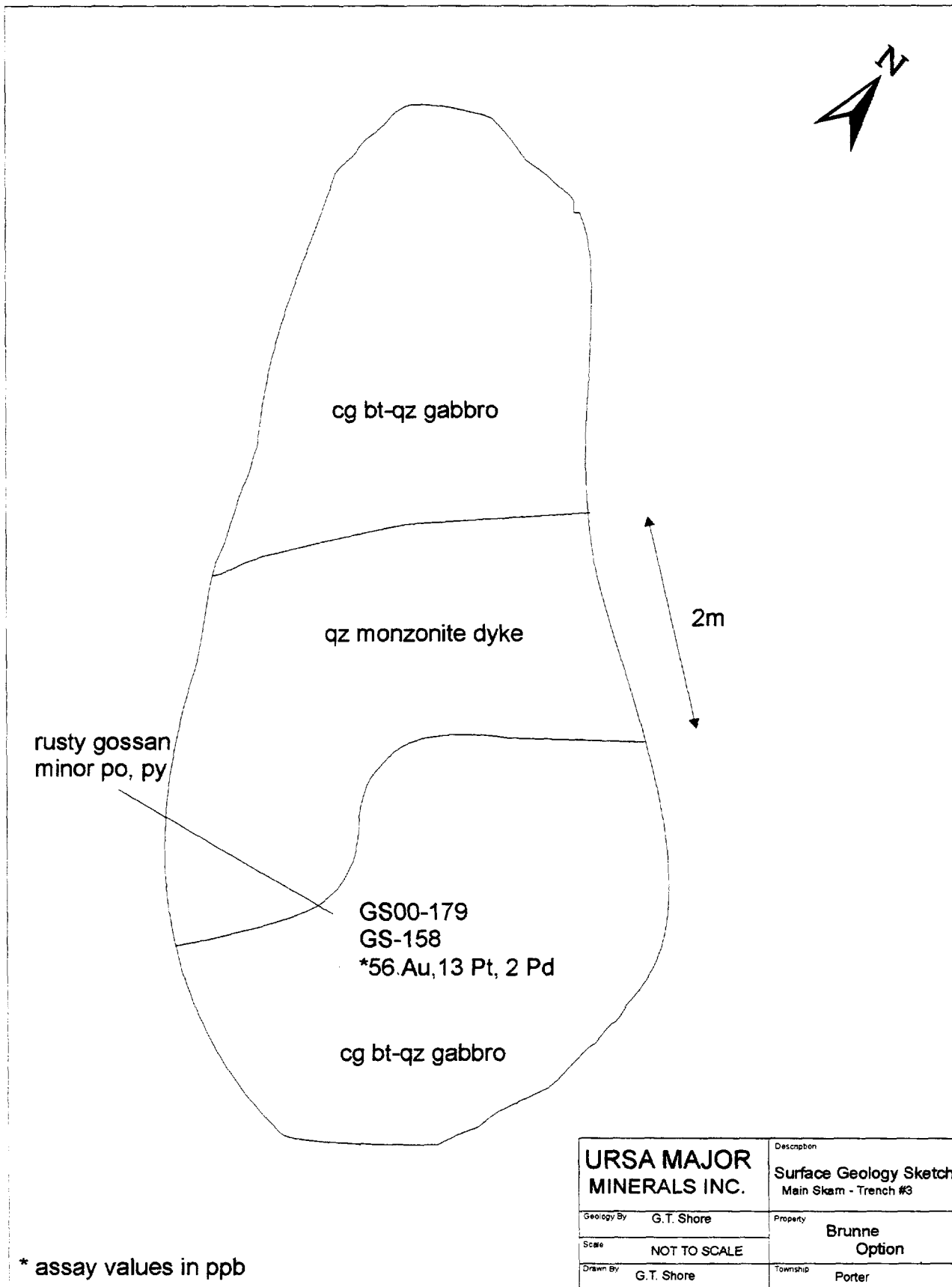
*Ursa Major Minerals Inc. - Brunne-Turcotte Option - Porter Township*



**FIGURE 11**

*Ursa Major Minerals Inc. - Brunne-Turcotte Option - Porter Township*



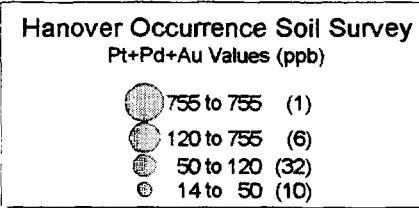
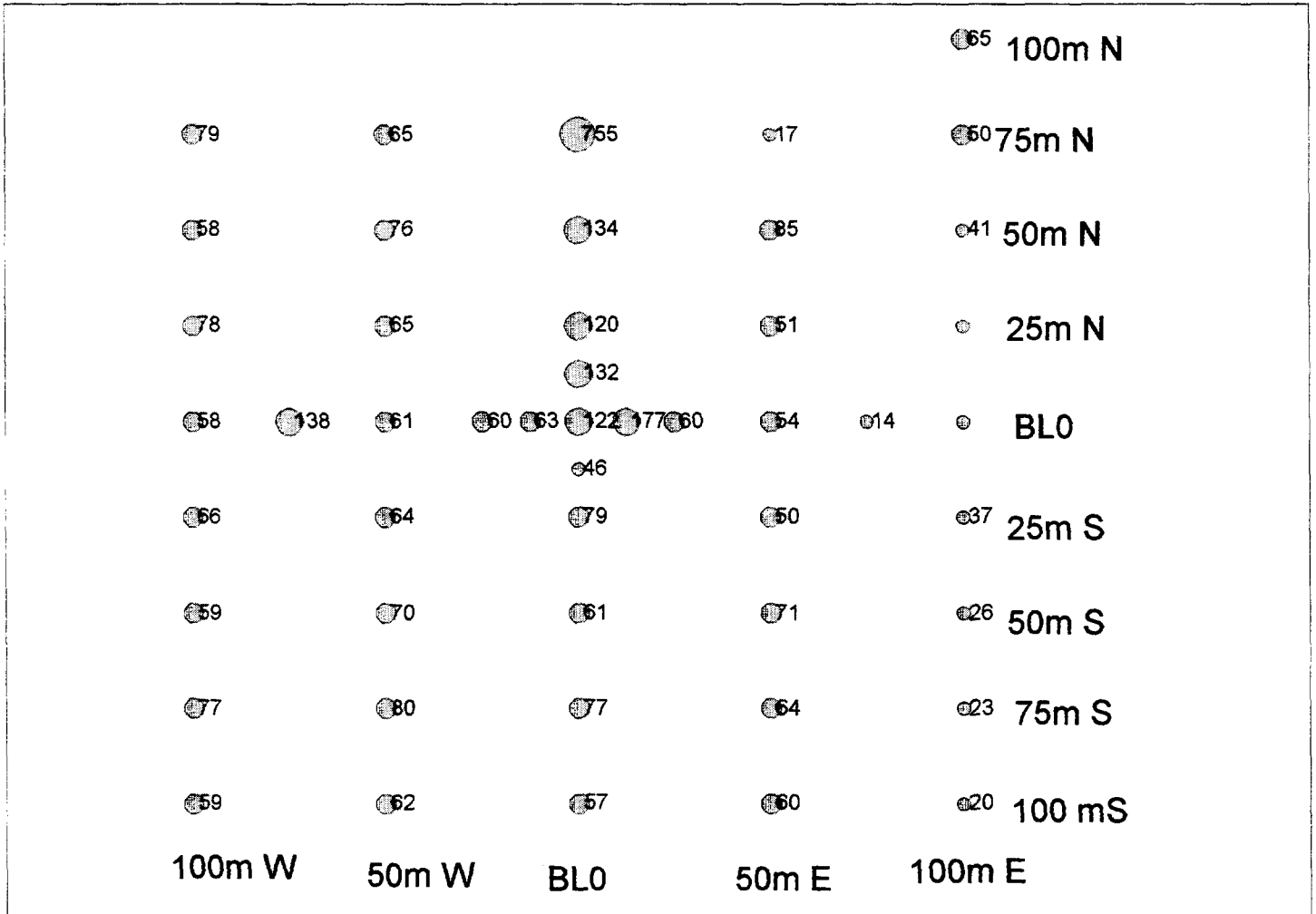


\* assay values in ppb

**FIGURE 12**

*Ursa Major Minerals Inc. - Brunne-Turcotte Option - Porter Township*

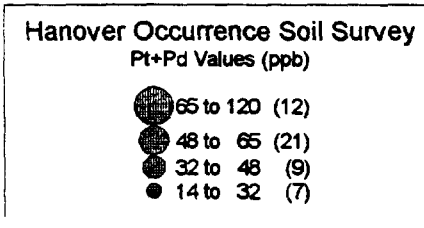
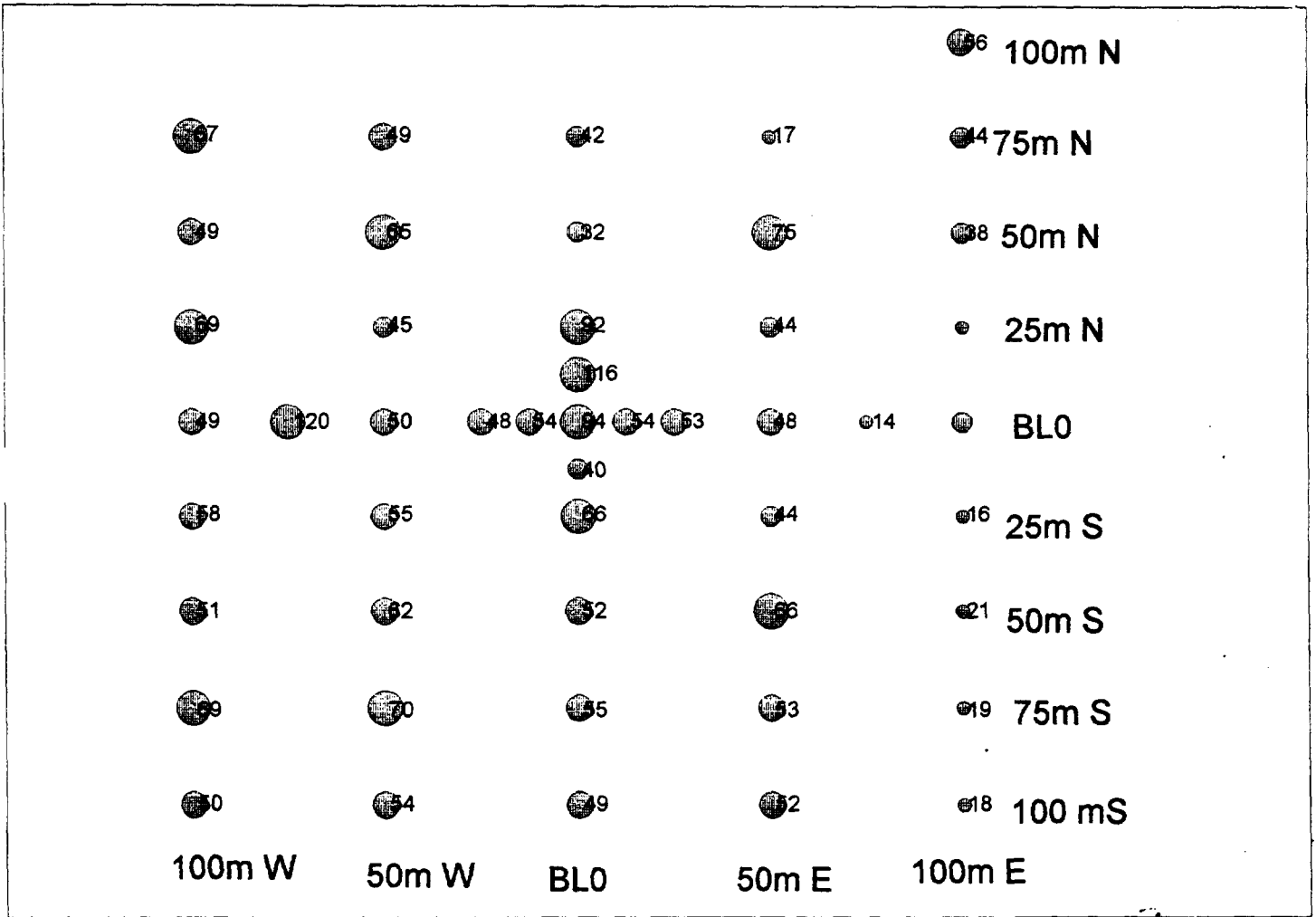
# Hanover Occurrence - B Horizon Soil Geochemical Survey



**FIGURE 13**

*Ursa Major Minerals Inc. - Brunne-Turcotte Option - Porter Township*

# Hanover Occurrence - B Horizon Soil Geochemical Survey



**FIGURE 14**

*Ursa Major Minerals Inc. - Brunne-Turcotte Option - Porter Township*

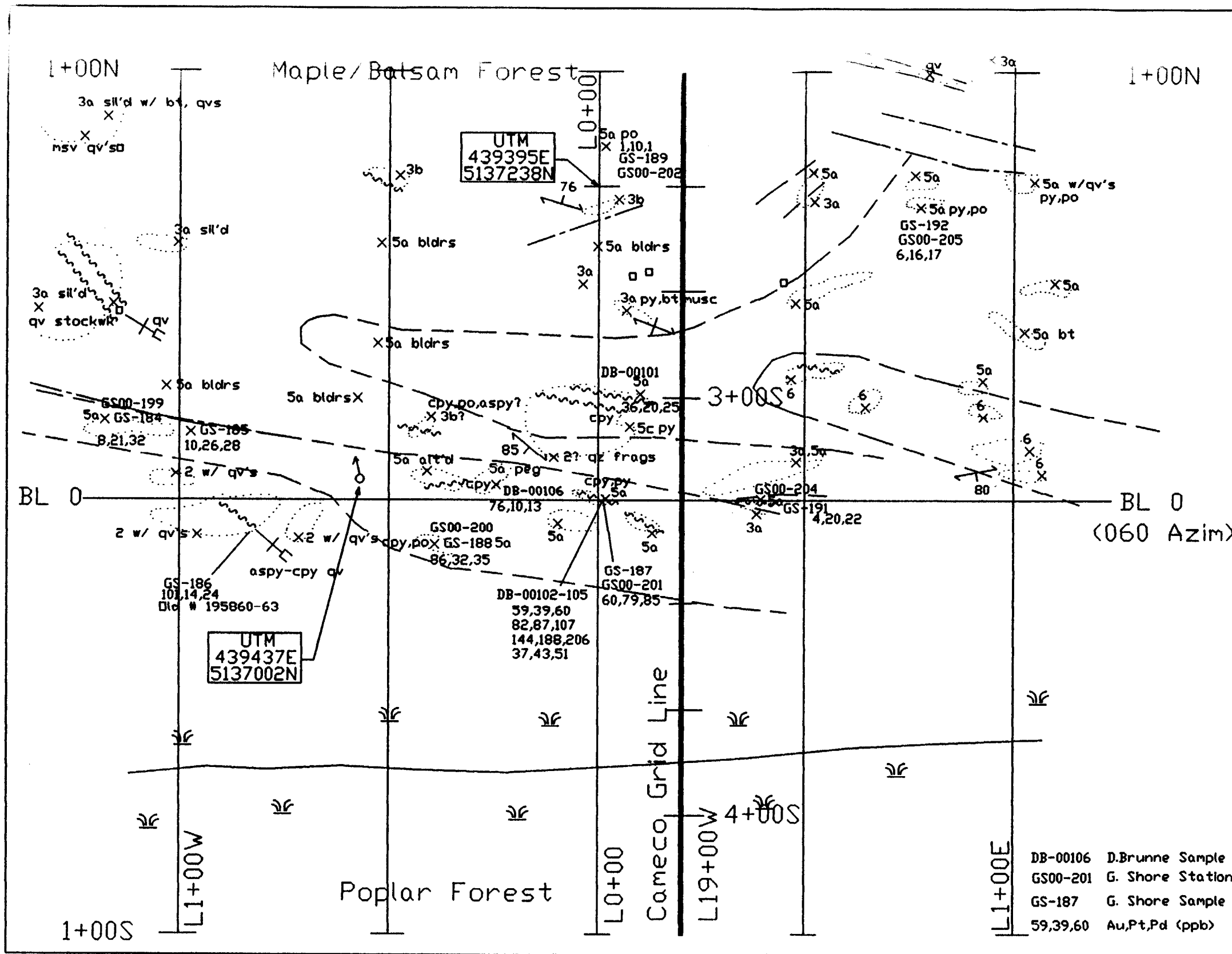
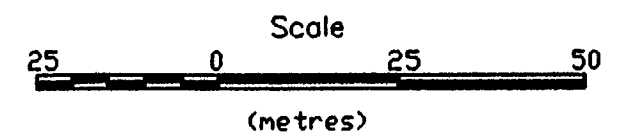


Figure: 15

GEOLOGICAL LEGEND	
6	Rheomorphic (?) Breccia
5	Quartz Gabbro Intrusive
a	Mg Qz Amph Gabbro
b	Cg - Peg Amph Gabbro
c	Tremolite - Chlorite rock
d	Mg Qz Amph Gabbro w/ >5% cpy + po
4	Sediments
d	Argillaceous Limestone
3	Quartzite
a	Qz and Qz Feldspar Quartzite
2	Conglomerate



URSA MAJOR MINERALS INC.	Description
	Surface Geology Hanover Showing
Geology by G.T. Shore	Property Brunne Option
Scale 1: 100	Township Porter
Drawn by G.T. Shore	

DB-00106	D. Brunne Sample
GS00-201	G. Shore Station
GS-187	G. Shore Sample
59,39,60	Au,Pt,Pd (ppb)

**PORTER PGM PROJECT**  
 Brunne/Turcotte Option  
 Drill Hole 94-01 Resampling

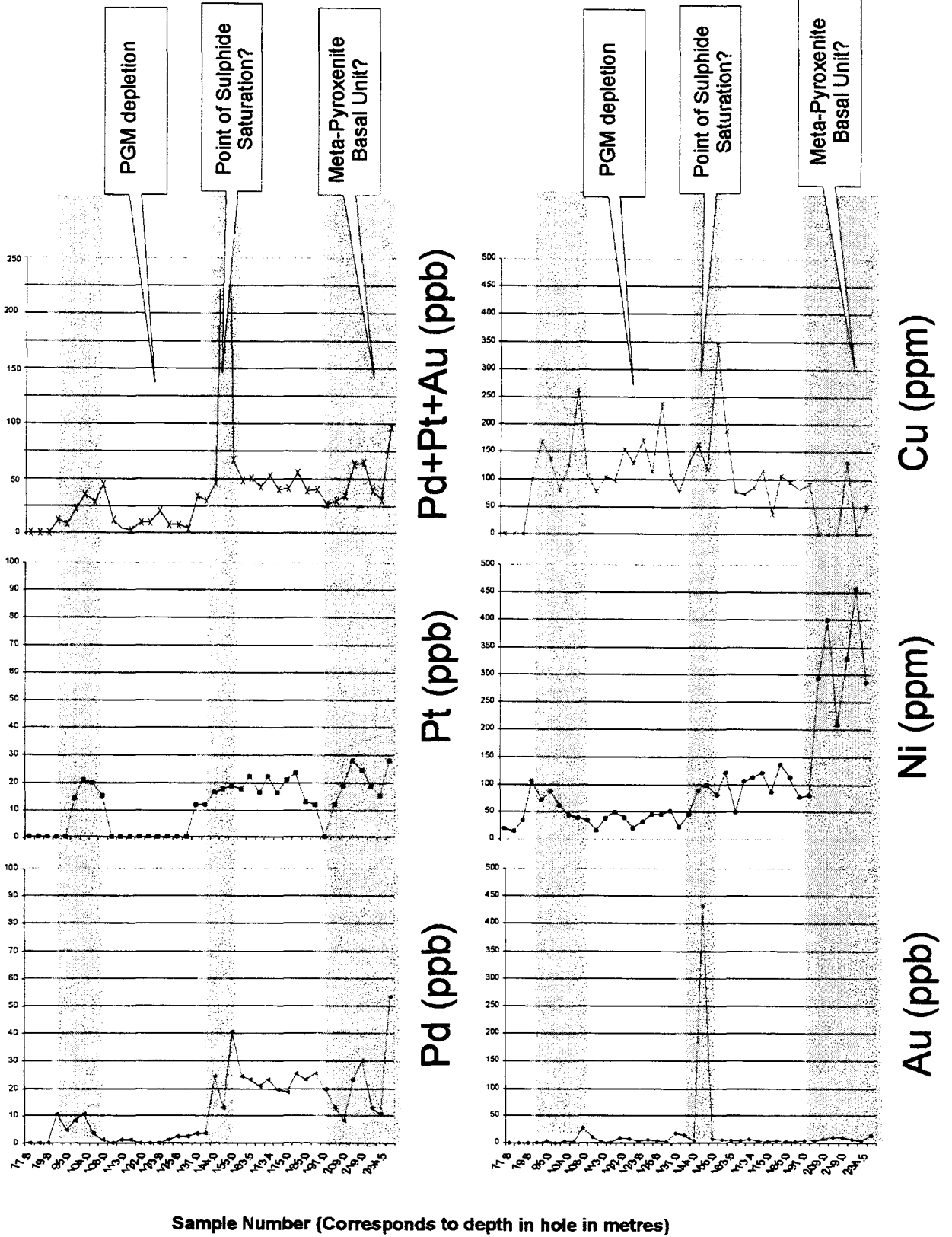


Figure: 16.

## 11.0 PLATES

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**Plate 1:** Brunne PGM Showing. Contact between brown quartz pebble conglomerate (top of photo) and greenish grey breccia zone containing quartzite xenoliths. Yellow magnet marks contact between two units. Pencil points to gabbroic xenolith in breccia zone.

**Plate 2:** Brunne PGM Showing. Metre-scale composite xenolith of white quartzite intruded by medium-grained amphibole bearing gabbro. Notebook sits on gabbro. Note the flow of the breccia zone around the margins of the xenolith.

**Plate 3:** Brunne PGM Showing. Coarse-grained amphibole-biotite gabbro (5mx15m) xenolith (?) occurring within the breccia zone.

**Plate 4:** Brunne PGM Showing. Medium-grained greenish quartz amphibole gabbro. Unmineralized at this location.

**Plate 5:** Looking south towards the mineralized PGM zone at the Brunne PGM Showing. Note the sharp breccia zone contact to the left of the photo (marked by orange paint). The mineralized zone is distinguished by the rusty brown weathering rock in the centre of the photo. The hammer parallels a well-developed ductile shear/fault zone that appears to disrupt the mineralized zone and is filled by quartz vein material locally. Note the sharp change to the right of the photo as the mineralized zone is truncated by medium-grained, massive, unmineralized gabbro.

**Plate 6:** Looking east across the Brunne PGM Trench #3. T. Mikel for scale.

**Plate 7:** Looking north on Brunne PGM Trench #3. Highly foliated zone of tremolite-chlorite schist occurs in foreground and trends to the figure at the far end of the outcrop. The NNE-trending zone appears to truncate the gabbro - lower right corner of photo. T. Mikel for scale.

**Plate 8:** Brunne PGM Trench #3. White, highly deformed quartzite? felsic volcanic rock xenoliths at the margin of the highly foliated tremolite-chlorite schist (Meta-pyroxenite) rock located at the Brunne PGM Trench #3. Deformation decreases to the right of the photo.

**Plate 9:** Looking NE over well-developed layering at the Main Skarn Showing. Layering trends N-S and dips to the east approximately 45°. Note the leucocratic layer and abundance of rusty sulphides "above" layered sequence. Tops believed to be towards top of photo.

**Plate 10:** Main Skarn Showing layered sequence. Plagioclase porphyritic gabbroic layer with chalcopyrite and pyrrhotite <2%.

**Plate 11:** Main Skarn Showing layered sequence. Medium-grained massive gabbro with minor biotite and rusty sulphide rich patches. Chalcopyrite and pyrrhotite <1%.

**Plate 12:** Main Skarn Showing. Massive medium-grained biotite (10-15%) gabbro without sulphide mineralization.

**Plate 13:** Main Skarn Showing. Massive medium-grained biotite gabbro cut by rusty fractures and

joints trending at 064°.

**Plate 14:** Main Skarn Showing. Located just "above" layered sequence. Medium-grained to coarse-grained "spotty" textured gabbro with rusty pyrrhotite (5%). Minor patches of leucocratic pegmatitic gabbro.

**Plate 15:** Main Skarn Showing. Coarse-grained to pegmatitic patchy gabbro with up to 5% sulphides and coarse-grained amphiboles. Note the association of rusty sulphides and pegmatitic patches.

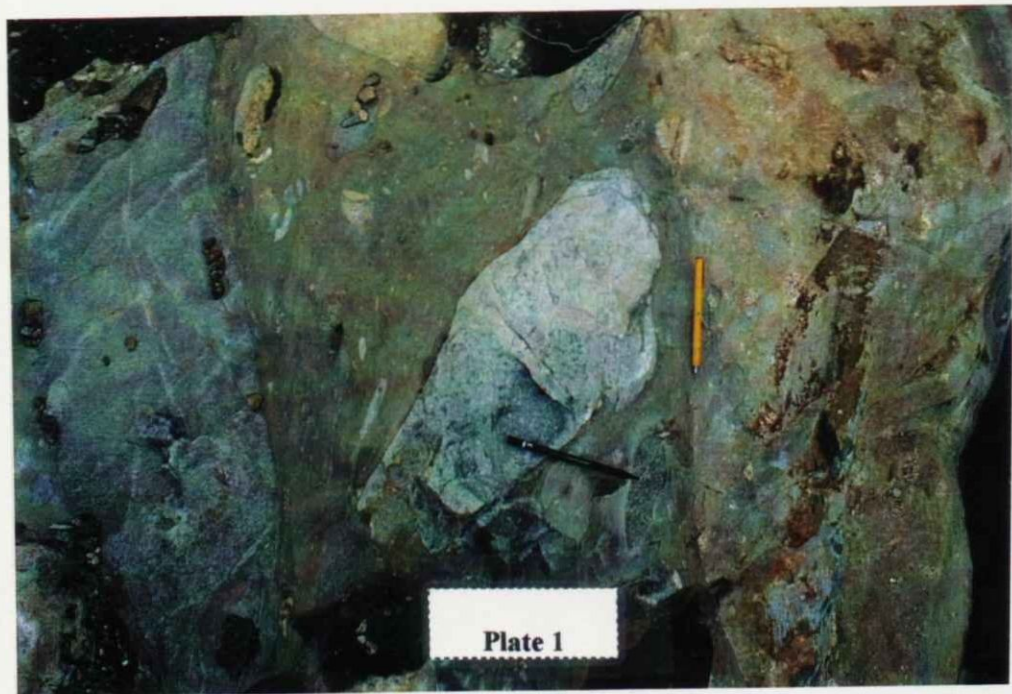
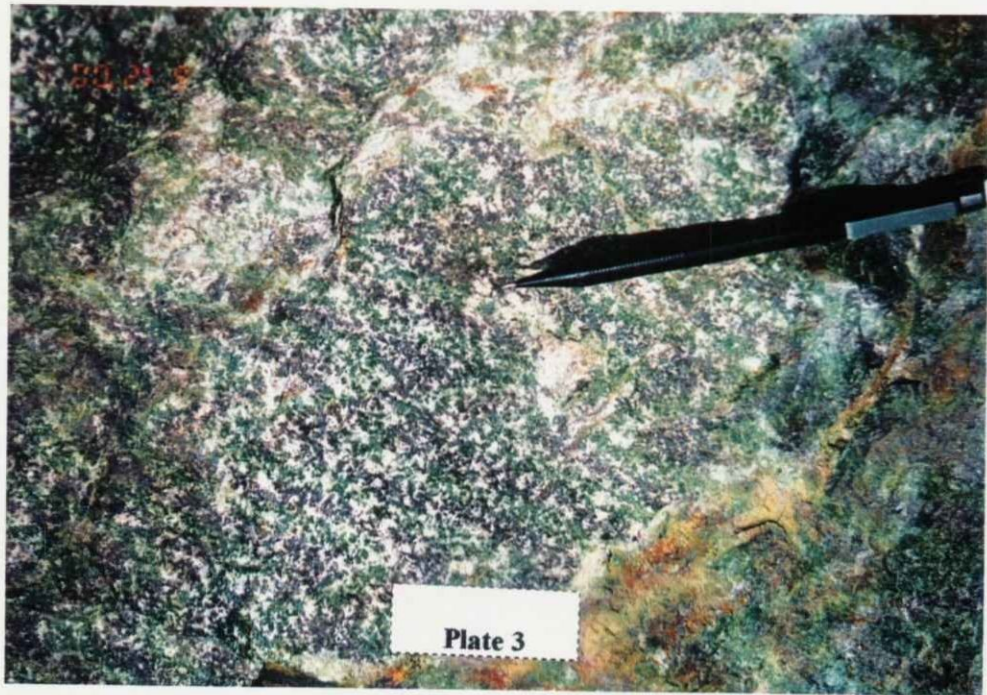
**Plate 16:** Looking north at the Main Skarn Showing. A one metre wide rusty zone dips to the SW and contains minor sulphides including rare arsenopyrite. Cameco Corporation termed this structure "endoskarn". T. Mikel for scale.

**Plate 17:** Main Skarn Showing. Typical massive medium-grained texture of the quartz monzonite (?) dyke (granophyre) that cross-cuts the gabbro at the outcrop. Note minor mafic inclusions to top of photo.

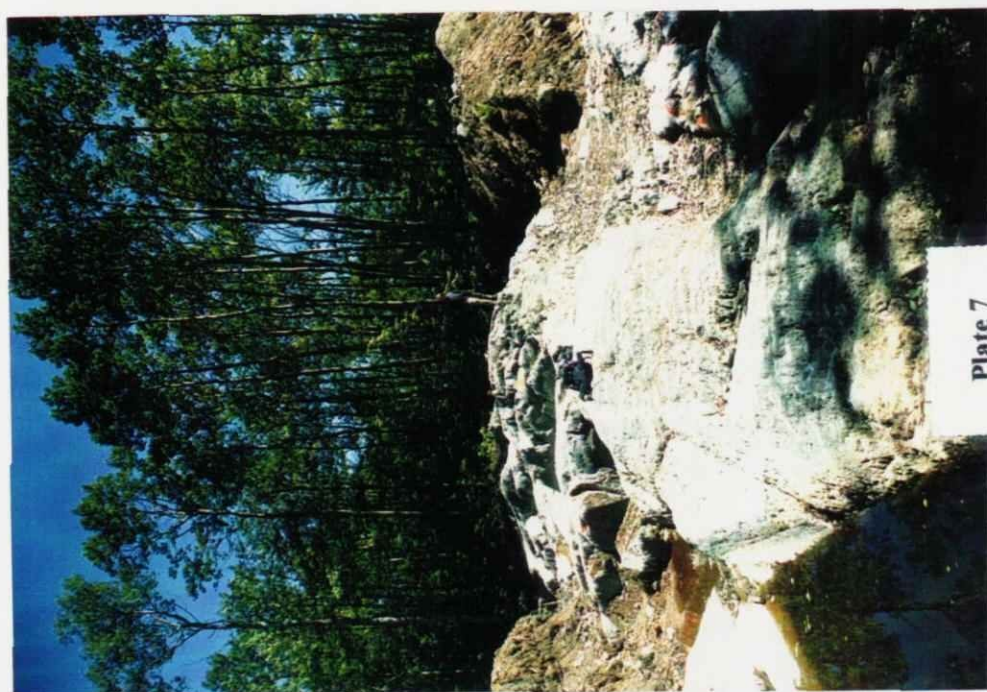
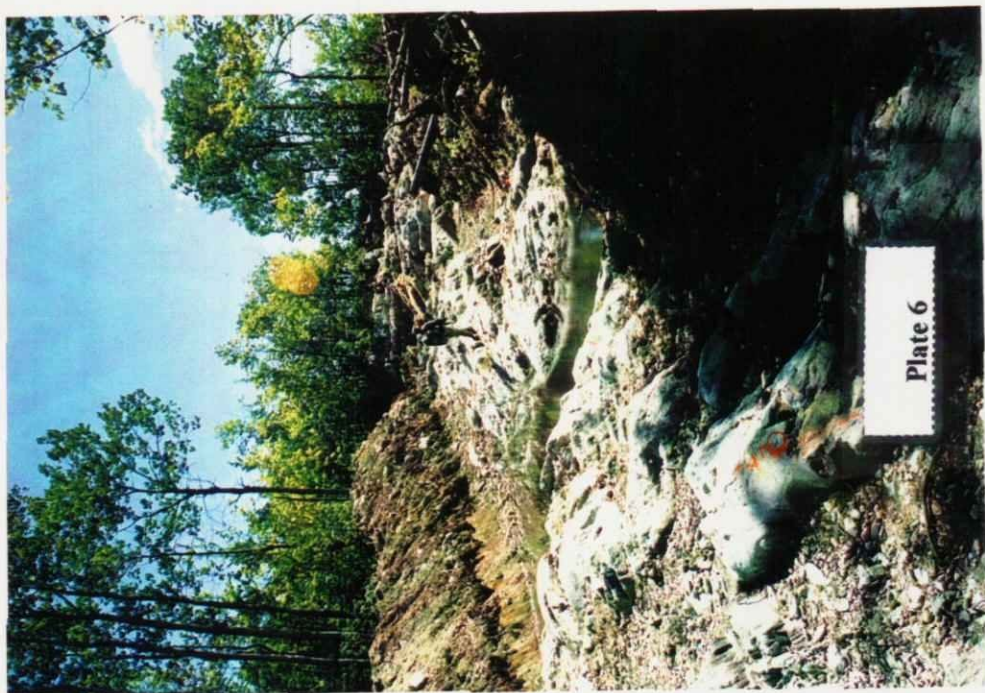
**Plate 18:** Looking north at the Main Skarn Showing. Rusty limestone skarn in foreground. Lighter massive quartz monzonite (?) dyke in middle. Backpack marks northern contact between dyke and massive gabbro. T. Mikel for scale.

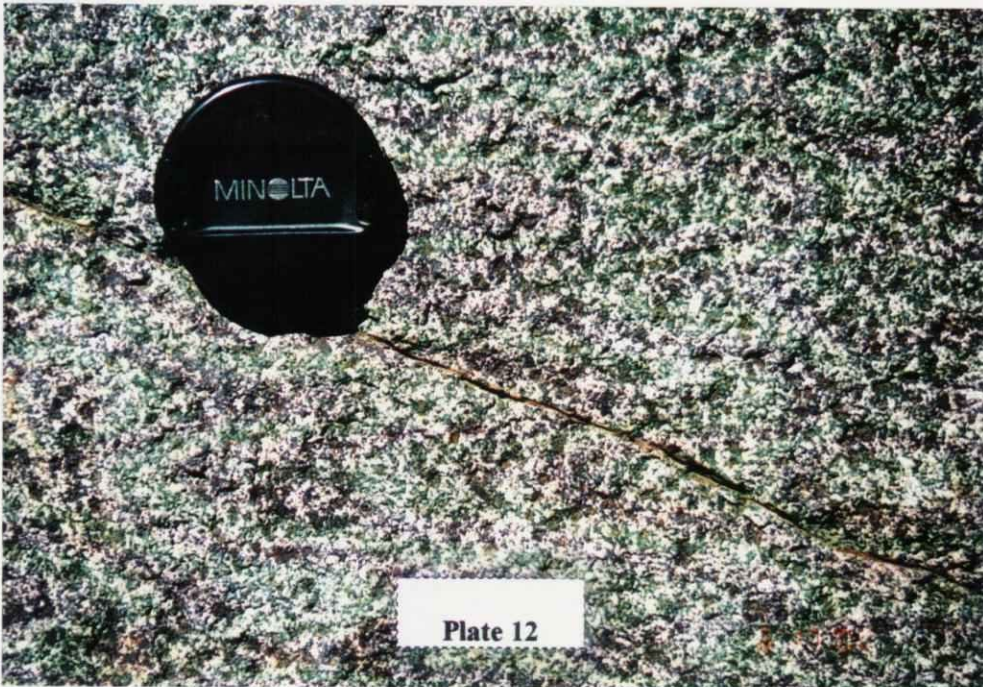
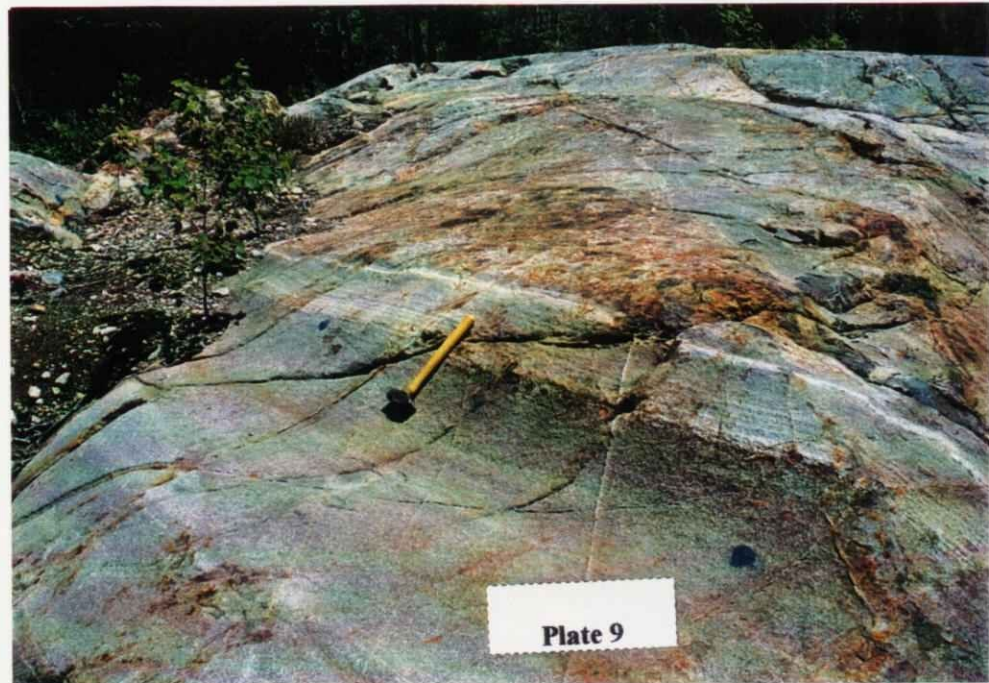
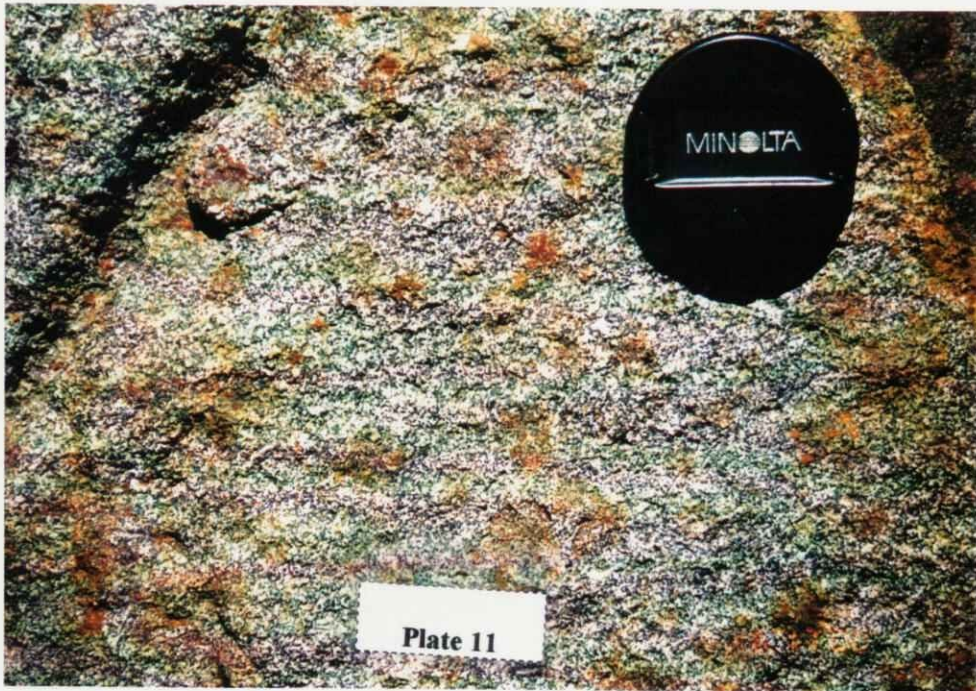
**Plate 19:** Looking north-west at the Main Skarn Showing. Rusty pink brown, late felsic aplitic dyke intruding gabbro. Dyke contained minor cpy and po and anomalous gold value 186 ppb from sample GS-137.

**Plate 20:** Looking south at Main Skarn Trench #2 across well-layered and foliated Espanola Formation limestone. Note the more competent, sandy-silty layer that may represent a channel-fill scour suggesting paleotops to the south. Hammer for scale.









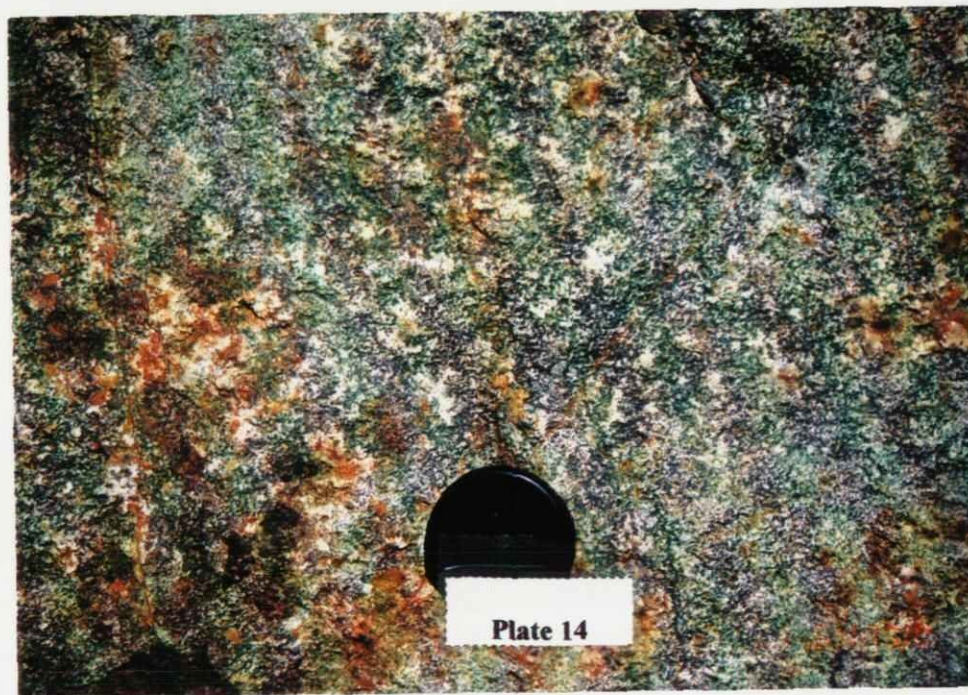
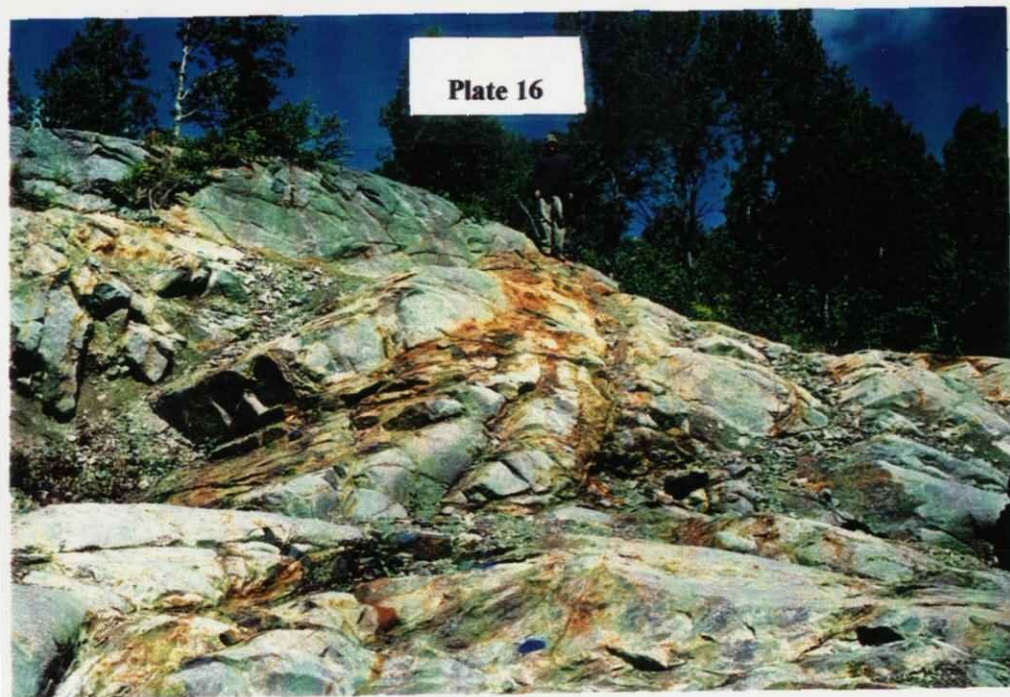




Plate 19

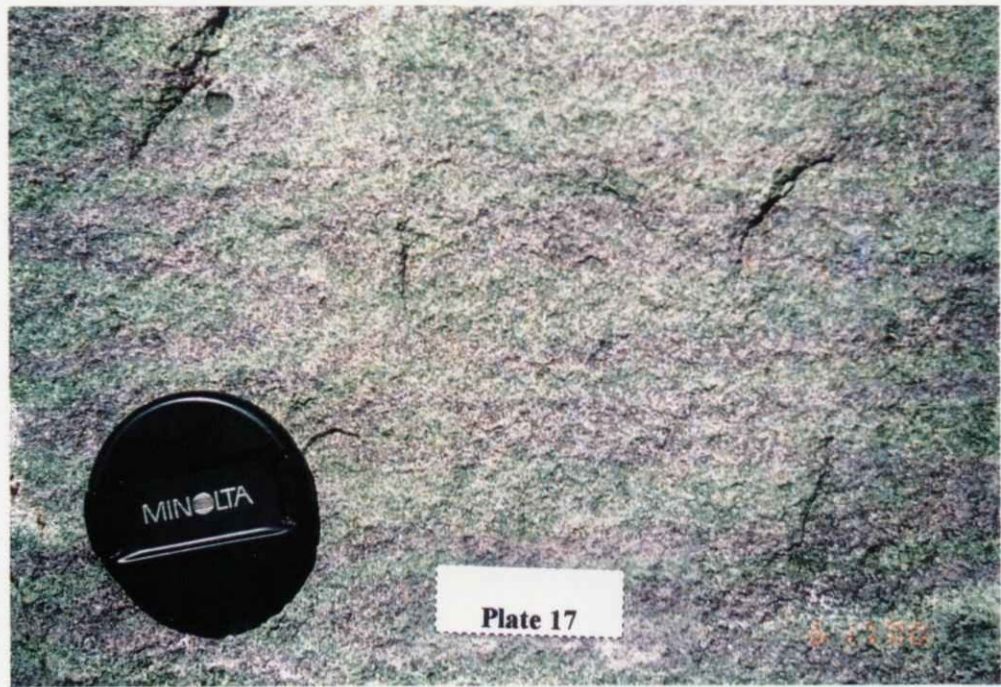


Plate 17



Plate 20

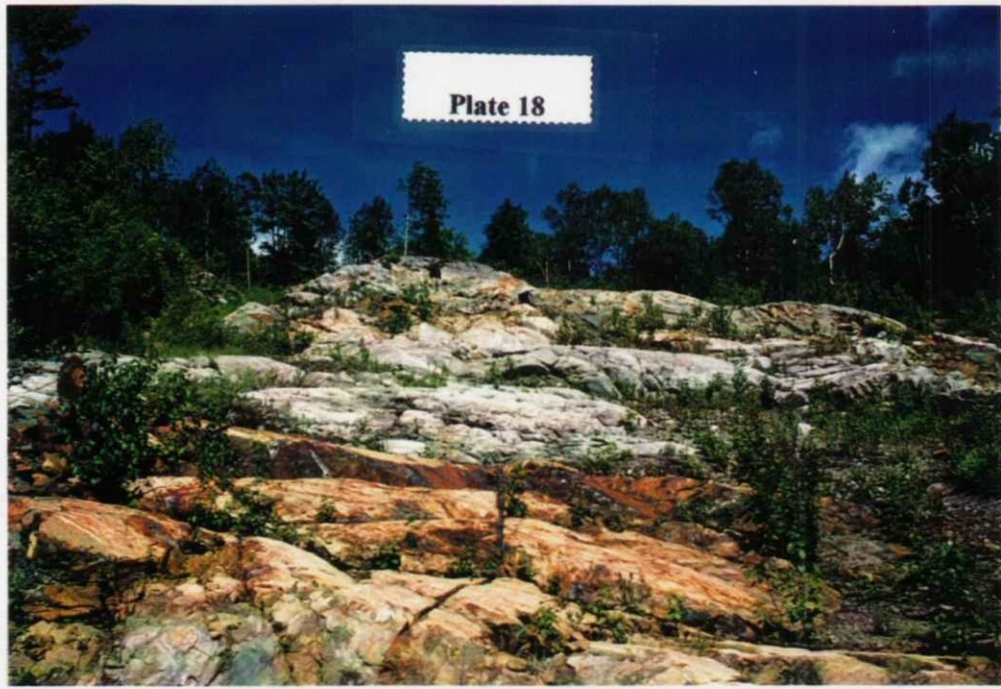


Plate 18

## 12.0 BIBLIOGRAPHY

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*Ginn, R.M.*, 1961: **Geology of Porter Township**, Ontario Department of Mines, Geological Report No. 5, incl. Map 2011.

*Mathews, R.*, 1993: Report on the Geophysical Program, Big Swan Project, Porter Township, Cameco Corporation, Sudbury Mining Division, Assessment Report.

*Koziol, M., and Chubb, P.*, 1995: Report on 1993-94 Field Exploration Activities, Big Swan Project, Porter Township, Cameco Corporation, Sudbury Mining Division, Assessment Report.

**13.0 STATEMENT OF QUALIFICATIONS**

---

## **Michael James Perkins**

I, Michael James Perkins, graduated from Sir Sandford Fleming College in the Minerals Exploration Technologist program in 1983, and have worked as a exploration technologist and geologist since that time. I have also completed 3 years towards a degree in Geology at the University of Toronto.

I have no interest or shares in Patricia Mining Corp.

I currently reside at 981 North Bay Drive, PO Box 42, Coboconk, Ontario, K0M 1K0, tele: 705-454-3587, fax: 705-454-2797.

I am a member of the Prospectors and Developers Association, and the Ontario Prospectors Association.

A handwritten signature in black ink, appearing to read 'M. Perkins', with a long horizontal flourish extending to the right.

Michael Perkins  
07 February 2001

## Statement of Qualifications

### Harold J. Tracanelli

I Harold Joseph Tracanelli; currently reside at 192 North Shore Road, in the Town of Onaping, within the Greater City of Sudbury, Ontario.

I have been actively engaged in prospecting, geological and various mineral exploration related functions of one sort or another since 1980.

I graduated from Cambrian College of Applied Arts and Technology, in Sudbury, Ontario, with a Geological Engineering Technicians Diploma in 1985.

I am an active member of the Sudbury Prospectors and Developers Association.

I hereby certify that I have personal knowledge, was present, participated and or supervised work which was carried out on the Ursa Major Minerals Inc., / Brunne - Turcotte Porter Township Option, as per described within the report.

I have preformed to the best of my abilities, all duties which were required, in accordance to industry standards.

I do not hold any position of office, nor have I been issued, expect, or am I entitled to receive any issuance of publicly traded securities or other forms of equities in Ursa Major Minerals Inc., in return for services rendered for the project.

Signed

  
Harold J. Tracanelli

FEB 08<sup>th</sup>/2001  
Date

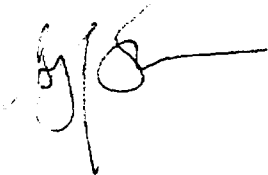
Onaping, Ontario  
Dated at



## CERTIFICATE OF QUALIFICATION

I, **Geoffrey Thomas Shore**, of 314 Dorchester St. Newmarket, Ontario, do hereby certify that:

1. I am a Consulting Geologist retained by Ursa Major Minerals Inc.
2. I have received the following degrees in Geological Science: B.Sc. 1991 University of Toronto, Toronto, Ontario; and M.Sc. 1995 University of Western Ontario, London, Ontario.
3. I have been practising my profession for over 14 years.
4. I am not a director, officer or employee of Ursa Major Minerals Inc. or of an affiliate thereof, or a partner, employer or employee of such director, officer or employee, or associate of any director or officer of Ursa Major Minerals Inc. or of an affiliate thereof. The author and no partner or employer or associate of the author beneficially owns, directly or indirectly, any securities of Ursa Major Minerals Inc., or any subsidiary thereof.
5. This report and its conclusions and recommendations are based on the examination and collection of data during two field work periods: June 5-21, 2000 and July 29 - Sept. 30, 2000.



Geoffrey Thomas Shore, B.Sc. M.Sc.

Newmarket, Ontario. February 6, 2001

## 14.0 SUMMARY OF COSTS

---

Description		Cost	Totals
<b>Labour</b>			
G. Shore (and assistants)	39 man days	\$7,982	
M. Perkins (and assistants)	12 man days	\$2,000	
H. Tracanelli (and assistants)	46 man days	\$9,063	
Report Production/Drafting	20 man days	\$5,000	
Supervision	5 man days	\$3,500	
			<b>\$27,545</b>
<b>Transportation</b>			
Vehicles (2,694 km's)	\$0.30/km	\$808	
ATV Rental		\$738	
Truck Rental	Echo Rental Sudbury	\$2,680	
			<b>\$4,226</b>
Food/Accommodation			<b>\$4,437</b>
Hardware			<b>\$219</b>
Office			<b>\$250</b>
Assaying Costs	~\$26/sample		<b>\$7,948</b>
298 Samples	(incl. shipping)		
Excavator (46 hrs.)	\$85/hr		<b>\$3,915</b>
			<b>\$48,540</b>

**APPENDIX I**  
**1999 SAMPLING RESULTS**  
**BRUNNE-TURCOTTE OPTION**

---

## Big Swan PGE Sample Descriptions 1999

Sample	Description	Pd.	Au.	Pt
BS 99 101	grab med. gr. leuco-gab. 1% diss. [cpy+po] east skarn PGE zone	6160	279	664
BS 99 102	grab med. gr. leuco-gab. 3% diss. [cpy+po] east skarn PGE zone.	4627	159	548
BS 99 103	grab cr. gr. peg. gab. <0.5% diss. cpy, biotite alter. east skarn PGE zone.	934	60	57
BS 99 104	grab med. gr. leuco-gab. 1% diss. [cpy+po] east skarn PGE zone.	5315	256	712
BS 99 105	grab med. gr. peg.-gab. < 0.5% cpy. mod. biotite, sericite alter. east skarn PGE zone.	106	57	30
BS 99 106	float- hvy. carb.-gab. <0.5% py.- one line mag. [ L13E , 1+50N].	< 10	< 5	< 15
BS 99 107	grab- med. gr. peg. gab. <0.5% [cpy+po] wall rock to 12" quartz vein.	< 10	91	<15
BS 99 108	grab-mass trem-ser. unit [5b] <0.5% cpy.	28	7	17
BS 99 109	grab- mass trem. ser unit [5b] <0.5% cpy in fracture ajt. to 1/2" qtz. vein.	< 10	<5	<15
BS 99 110	grab- endoskarn, 20% biotite, cr. gr. peg. gab., 3% diss. po+cpy, main skarn.	<10	<5	<15
BS 99 111	grab- endoskarn, 50% biotite, with 1/2 qtz. vein, 3% diss. po+cpy, main skarn.	<10	20	<15
BS 99 112	grab- endoskarn, cr gr. peg. hornblende gab. 2% diss. py+po, main skarn.	<10	58	<15
BS 99 113	grab- exoskarn, epidote, garnet, pyroxene skarn, 15% diss. cpy+po. main skarn.	<10	14	<15
BS 99 114	grab- med. gr. slightly foilated gab./ diorite 2% diss. cpy+po, PGE zone east skarn .	8334	453	965
BS 99 115	grab- cr. gr. peg. gab., ser . biotite alter. tr. cpy, east skarn area. L15E 0+25N.	20	6	<15
BS 99 116	grab- exoskarn, 10% diss. py. east skarn.	<10	<5	<15

### New Trench # 1 East Skarn PGE Zone

BS 99 117	Channel 50 cm.	Diorite	1% po+cpy	1791	63	324	
BS 99 118	"	"	"	1% po+cpy	5075	207	708
BS 99 119	"	"	"	0.5% cpy+po	2451	184	361

## Big Swam Sample Descriptions [ cont ].

					Pd.	Au.	Pt.	
BS 99 120	Channel 50 cm.	Diorite		tr. po.	18	9	<15	
BS 99 121	"	"	"	0.5% cpy+po.	34	12	<15	
BS 99 122	"	"	"	tr. cpy.	50	19	<15	
BS 99 123	"	"	"	0.5% cpy+po.	17	6	<15	
BS 99 124	"	"	"	tr. cpy.	<10	<5	<15	
BS 99 125	"	"	"	8% cpy+po.	2586	160	330	
BS 99 126	"	"	"	5% cpy+po.	3043	241	443	
BS 99 127	"	"	"	5% cpy+po.	2186	176	296	
BS 99 128	"	"	"	0.5% cpy.	534	48	59	
BS 99 129	"	"	"	8% cpy+po.	6213	351	844	
BS 99 130	"	"	"	8% cpy+po.	5929	365	712	
BS 99 131	"	"	"	0.5% cpy+po.	3634	250	500	
BS 99 132	"	"	"	0.5% cpy.	81	19	16	
BS 99 133	"	"	"	5% cpy+po.	8440	661	1090	
BS 99 134	"	"	"	1% po+cpy.	3913	329	427	
BS 99 135	"	"	"	6% cpy+po.	8677	547	1230	
BS 99 136	"	"	"	8% cpy+po.	4190	213	480	
BS 99 137	"	"	"	8% cpy+po.	8810	345	1231	
BS 99 138	"	"	"	2% cpy+po.	2702	101	385	
BS 99 139	"	"	"	3% cpy+po.	7405	339	994	
BS 99 140	"	"	"	5% cpy+po.	9701	337	1344	.34 oz / Tcr 10-731 gr / Tcr
BS 99 141	"	"	"	5% cpy+po.	5309	366	664	

Big Swan Sample descriptions [ cont ].				Pd.	Au.	Pt.	
BS 99 142	Channel	50 cm.	Diorite	1% cpy+po.	1074	46	225
BS 99 143	"	"	" "	3% cpy+po.	3291	338	405
BS 99 144	"	"	" "	5% cpy+po.	1638	151	312
BS 99 145	"	"	" "	1% cpy+po.	1528	113	218
BS 99 146	"	"	" "	3% cpy+po.	1632	108	253
BS 99 147	"	"	" "	4% cpy+po.	3543	135	578
BS 99 148	"	"	" "	0.5% po+cpy.	1384	46	202
BS 99 149	"	"	" "	1% po+cpy.	1784	53	281
BS 99 150	"	"	" "	2% po+cpy.	3012	205	686
BS 99 151	"	"	" "	2% cpy+po.	1660	175	313
BS 99 152	"	"	" "	2% cpy+po.	3616	94	395
BS 99 153	"	"	" "	1% cpy+po.	756	28	129
BS 99 154	"	"	" "	1% cpy+po.	1199	36	105
BS 99 155	"	"	" "	0.5% po+cpy.	865	66	97
BS 99 156	"	"	" "	0.5% cpy+po.	219	28	21

## Trench # 3

BS 99 157	"	"	" "	0.5% po+tr. cpy.	27	<5	<15
BS 99 158	"	"	" "	0.5% po.+tr. cpy.	55	11	30
BS 99 159	"	"	" "	5% cpy+po.	34	13	22
BS 99 160	"	"	" "	1% po+tr. cpy.	12	6	<15
BS 99 161	"	"	" "	3% cpy+po.	31	9	26

<b>Big Swan Sample descriptions [cont.]</b>					<b>Pd.</b>	<b>Au.</b>	<b>Pt.</b>	
BS 99 162	"	"	"	"	3% po+cpy.	43	25	48
BS 99 163	Grab cr. gr. peg. gab / diorite 2% diss. cpy+po. # 3 trench.				15	<u>304</u>	16	

**Appendix II**  
**Sample Descriptions and Assay Certificates**  
**Geological Mapping Summer 2000**

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XRAL Laboratories has provided quality analytical services to the mining, exploration and research sectors for over 40 years and has been a leader in the introduction of new technologies.

XRAL Laboratories is a member of the SGS Société Générale de Surveillance Group, the world's largest inspection and testing organization. Based in Geneva, Switzerland, SGS operates in 140 countries with a network of 392 subsidiaries, over 300 laboratories, more than 1,290 offices and over 39,000 employees.

In North America, the central laboratory is located in Toronto (Don Mills) and specialized laboratories are also located in Hermosillo, Mexico as well as in Rouyn-Noranda, Quebec.



## North American SGS Geochemical Services

### **XRAL Laboratories**

1885 Leslie Street  
Toronto, Ontario M3B 3J4  
Tel: (416) 445-5755

**In the U.S.: 1-800-387-0255**

Fax: (416) 445-4152  
Internet: XRAL@sgsgroup.com

### **Les Laboratoires XRAL**

129, av. Marcel Baril  
Rouyn-Noranda, Québec J9X 7B9  
Tel: (819) 764-9108 Fax: (819) 764-4673

### **XRAL Laboratories**

c/o Parson's Airways  
Northwest Arm Schist Lake  
Flin Flon, Manitoba R9A 1N6  
Tel/Fax: (204) 687-6229

### **General Testing Laboratories (GTL)**

#50 - 655 West Kent Avenue North  
Vancouver, British Columbia V6P 6T7  
Tel: (604) 324-1166 Fax: (604) 324-1177

### **SGS Canada Inc.**

55 Ross Street  
Saint John, N.B. E2L 1W9  
Tel: (506) 633-1872 Fax: (506) 633-0886

### **XRAL Laboratories**

5 Mill Road  
Grand Falls - Windsor  
Newfoundland A2H 1B8  
Tel/Fax: (709) 489-3434

### **XRAL Activation Services Inc.**

In the U.S.: 1-800-387-0255

### **SGS XRAL Laboratories**

Km 2.5 Carretera Internacional  
Salida a Nogales, Hermosillo  
Sonora, Mexico  
Tel: 52-62-100350 Fax: 52-62-100816  
Internet: sgsherm@imparcial.com.mx

- Sample forwarding can be arranged through other SGS locations in Canada, U.S.A., South America, Europe and Africa. See page 15.



Expertise everyday, everywhere

01/00

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# Sample Preparation

## Drill Core and Rocks

Standard procedure is to dry, crush to -2mm, riffle to a maximum split of 250g and mill in chrome steel equipment to 75µ (200#). See code PG205.

Clients are billed for the use of silica sand cleaners between samples to minimize the risk of contamination from mineralized samples. When cleaners are not required, specify that PPCL be eliminated.

Large ring mills are used to prepare 1-2kg pulps (PP10, PP20), primarily to improve sample representivity for gold projects.

The reduction of samples by crushing and grinding cannot be accomplished without a degree of adulteration with wear material from the grinding surfaces of the equipment. XRAL uses a variety of equipment with different potential contaminants:

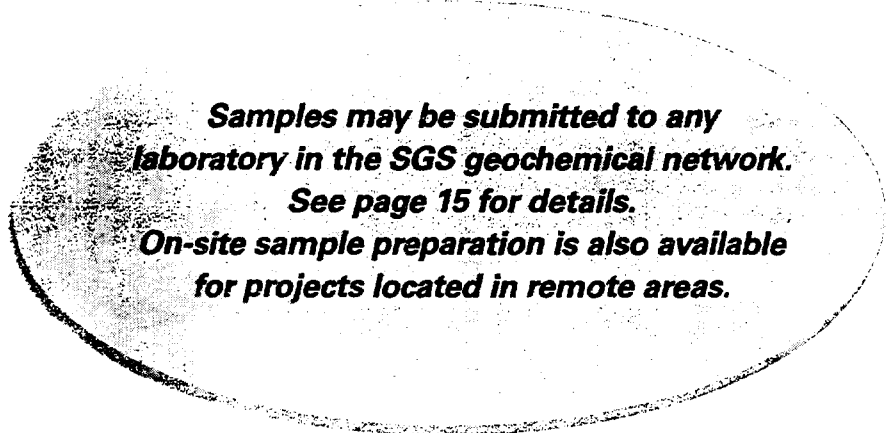
Chrome steel	• Fe (up to 0.15%)
	• Cr (up to 150 ppm)
	• Traces Mn, Si, C, V
Tungsten carbide	• W, Co, C
Agate	• SiO <sub>2</sub> (up to 0.3%)

The amount of adulterant is a function of grinding time and hardness of the sample. Please specify instructions suitable for your project.

## Other Preparation Services



See page 10 for sample shipping and storage.



Method Code	Procedure	Price
PC02	Crush (<5 kg to -2mm), split	\$ 2.90
PP02	Pulverize (200g) to 75µ (200#), hardened steel	\$ 2.65
PP10	Pulverize (1000g) to 75µ (200#), hardened steel	\$ 4.30
PXH	Hourly preparation rate	\$42.00
PP01AE	Pulverize (<100g) to 100µ (150#), Agate mortar and pestle	\$ 8.35
PP01A	Pulverize (100g) to 75µ (200#), Agate	\$ 5.50
PP01W	Pulverize (100g) to 75µ (200#), Tungsten Carbide	\$ 6.10
PPCL	Silica sand cleaner	\$ 1.55
PSA	Particle Size Analysis	On Request
PX15	Specific Gravity	\$ 7.50

Custom preparation on request

Method Code	Procedure	Price
PX01	Weighing and reporting weight	\$ 2.20
PD01	Drying bulk samples (<5kg, 105°C)	\$ 1.25
PDOW	Surcharge for drying overweight samples	per kg \$ 0.25 per lb \$ 0.10
PDEW	Surcharge for drying excessively wet samples	\$ 1.35
PS180	Sieving (<2kg) of soils or stream sediments to 180µ (80#)	\$ 1.55
PS106	Sieving (<2kg) of soils or stream sediments to 106µ (150#)	\$ 2.00
PX06	Core Cutting per hour plus consumables	\$42.00
PX07	Compositing (per sample included)	\$ 1.55
PSWH	Wet sieving per hour	\$42.00
PX11	Drying and blending humus	\$ 2.60
PX12	Drying and macerating vegetation	\$ 4.10
PX25	Extra drying charge for samples received in non-porous bags	\$ 1.00
PX20	Heavy media separations	On Request
PX13	Preparation of lake sediments and other special procedures	On Request

# Precious Metal Analysis

## Gold, Platinum and Palladium by Lead Fire Assay/Instrumental Finish

- Gravimetric finish is recommended when results exceed 2,000 ppb.
- **Platinum and Palladium** can be added. Detection limits are 10 ppb for platinum and 1 ppb for palladium. A surcharge of \$1.40 per element is applied.

Method Code	Elements	Sample Weight	Detection Limits	Finish	Price per sample
FA15*	Gold	15g	5 ppb	AA/ICP	\$ 9.45
<del>FA30*</del>	<del>Gold</del>	<del>30g</del>	<del>5 ppb</del>	<del>AA/ICP</del>	<del>\$ 10.00</del>
FA301*	Gold	30g	1 ppb	DCP/NA	\$ 10.50
<del>FA50*</del>	<del>Gold</del>	<del>50g</del>	<del>5 ppb</del>	<del>AA</del>	<del>\$ 11.00</del>
FA501*	Gold	50g	1 ppb	AA/ICP	\$ 11.55
FA30G	Gold	30g	0.001 oz/ton	Gravimetric	\$ 12.10
FA31G	Silver	30g	0.1 oz/ton	Gravimetric	\$ 12.10
FA32G	Gold,Silver	30g	0.001, 0.1 oz/ton	Gravimetric	\$ 16.30
FA50G	Gold	50g	0.001 oz/ton	Gravimetric	\$ 16.30
AA73	Silver	2g	0.3 g/ton - 300 g/ton	AA	\$ 4.75

## Gold by Cyanidation and Aqua Regia

- These techniques are NOT total gold assays. The reported value is cyanide extractable gold.

Method Code	Sample Weight	Digestion/ Finish	Detection Limits	Price per sample
AA22	3-5kg	BLEG-24 Hr Leach	Au (0.05 ppb)	\$ 35.00

## Geochemical Analysis of Precious Metals/Rhenium by NiS Fire Assay

- Method Code: FAPGMS
- Price per sample: \$125.00

*Handwritten notes:*  
 Au. \$ 12 / sample.  
 FA method  
 others by NiS  
 so all others  
 are \$125

A 25g sample is analyzed (price for 50g option on request). Loss of osmium, through volatility of osmium tetroxide, is controlled. The method is not suitable for samples with high zinc content. The residue after nickel sulfide fusion is analyzed by ICP/MS. Gold, Platinum and Palladium are also run by lead fire assay. The gold value from the lead collection is considered to be the most accurate and is the gold value reported.

Elements	Detection Limits
Gold Au	1 ppb
Palladium Pd	1 ppb
Rhenium Re	1 ppb
Platinum Pt	1 ppb
Ruthenium Ru	1 ppb
Iridium Ir	0.1 ppb
Osmium Os	3 ppb

*Handwritten note:* Walter Grandin

## Geochemical Gold and Pathfinders by NAA

- Method Code: NAAU3
- Sample Weight: 0.5 to 30g
- Price per sample:  
 One element: \$12.40  
 Each additional element: \$1.25  
 All elements: \$14.90

Elements	Detection Limits
Arsenic As	2 ppm
Tungsten W	2 ppm

## Screened Metallics

- Method Code: FASMET
- Price per sample: \$27.50
- Lower reporting limit: 0.001 oz/ton

Includes sieving of 250g split at 150 mesh, assay of the entire +150 mesh fraction, a 30g assay of the -150 mesh fraction and calculations.

- A surcharge of \$1.90/250g applies for sieving the entire sample. When the +150 mesh fraction exceeds 30g, additional fire assay charges may apply.

# Whole Rock Analysis

XRAL has over 35 years of unparalleled experience in the determination of the major rock components using x-ray fluorescence spectrometry on a **fused disc** prepared from a 2g sample.

The calibration program, based on the analysis of over 40 international standard reference materials, accommodates a wide range of sample materials including chromite and barite rich materials, providing accurate and high quality data.

These methods are not suitable for sulphide rich minerals.

- **Method Code XRF103** is recommended for igneous petrology studies.
- **Volume discounts** for large exploration programmes can be arranged by contractual agreement.

## Classical Whole Rock Package

Method Code	Item	Samples per batch	
		1-50	51 plus
XRF100	Majors - SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , CaO, MgO, Na <sub>2</sub> O, K <sub>2</sub> O, Fe <sub>2</sub> O <sub>3</sub> , MnO, Cr <sub>2</sub> O <sub>3</sub> , P <sub>2</sub> O <sub>5</sub> , TiO <sub>2</sub> , loss on ignition (lower reporting limit: 0.01%)	\$ 34.65	\$ 28.10
XRF102	With add-on traces - Ba, Nb, Rb, Sr, Y, Zr (detection limit: 5 ppm; Ba - 40 ppm)	\$ 39.90	\$ 33.35
XRF103	With add-on traces - Ba, Nb, Rb, Sr, Y, Zr (detection limit: 2 ppm; Ba - 20 ppm) - using pressed pellet	\$ 44.65	\$ 38.10

## Additional Determinations Associated with Whole Rock Analysis

Method Code	Elements	Method	Detection Limits	Price
CHM111	FeO	Titration	0.1 %	\$ 12.60
CHM113	Cl <sup>-</sup>	Specific Ion	50 ppm	\$ 9.20
CHM114	CO <sub>2</sub>	Coulometry	0.01 %	\$ 12.90
CHM115	H <sub>2</sub> O <sup>+</sup>	Penfield	0.1 %	\$ 10.25
CHM116	H <sub>2</sub> O <sup>-</sup>	Gravimetric	0.1 %	\$ 7.90
CHM117	C (organic)	Coulometry	0.05 %	\$ 16.00
CHM118	C (total)	Leco	0.01 %	\$ 11.80
CHM119	C (total) and S	Leco		\$ 17.60

## X-Ray Fluorescence Spectrometry

• **Method Code:** XRF7

• **Price per sample:**

One element: **\$8.40**

Each additional element: **\$2.25**

A minimum of 5g of sample is required for this analysis. Please note that this technique is not suitable for highly mineralized samples. See page 7.

This method determines total metal concentrations using the **pressed pellet** technique eliminating potential dissolution problems.

Elements	Detection Limits	Elements	Detection Limits
Aluminum	3 ppm - 4000 ppm	Barium	2 ppm - 4000 ppm
Calcium	3 ppm - 4000 ppm	Bismuth	3 ppm - 4000 ppm
Chromium	20 ppm - 4000 ppm	Cadmium	2 ppm - 4000 ppm
Cobalt	3 ppm - 4000 ppm	Chlorine	5 ppm - 4000 ppm
Copper	5 ppm - 4000 ppm	Chromium	2 ppm - 4000 ppm
Iron	2 ppm - 4000 ppm	Gold	5 ppm - 4000 ppm
Lead	2 ppm - 4000 ppm	Mercury	5 ppm - 4000 ppm
Manganese	3 ppm - 4000 ppm	Vanadium	2 ppm - 4000 ppm
Nickel	2 ppm - 4000 ppm	Yttrium	2 ppm - 4000 ppm
Zinc	2 ppm - 4000 ppm	Zirconium	3 ppm - 4000 ppm
		Zinc	2 ppm - 4000 ppm

## Mineralogical Analysis

X-Ray Diffraction analysis is offered on the Philips PW1710 diffractometer.

Method Code		Price
XRD1	Scan without interpretation	\$ 35.00
XRD3	Scan with full interpretation, but excluding clay speciation	\$ 88.00

• The above charges do not include clay separations.

Sample #	Location		Description
GS 100	East Skarn	refer to map	Amph Gabbro Mgr - green amph 45% - some chl alt'n in matrix anhedral Qtz < 5% - Vsmall <1% cpy specks - non magnetic MSV - no fol, fract's widely spaced, common locally "X" cut Qtz V along face
GS 101	East Skarn	refer to map	Biotite Granite? Mgr to Fgr (aphti) 15% bt, Qtz 35% Feldspar 50% (Plagio?) w/ 1% Po + minor Cpy ( locally Lg globs Py/ 1Cm+ locally sheared
GS 102	East Skarn	refer to map	Gabbro QtzV w/ cpy Pent? Aspy? + malchite Rusty Qtz V
GS 111	East Skarn	refer to map	Sulphides <1% in Gabbro
GS 112	East Skarn	refer to map	Good sulphides (Cpy Finely diss'd in Lg Gabbro Xenolith)
GS 113	East Skarn	refer to map	Gabbro Xenolith - Cpy - 5% + Qtz 1 or 2 specks of Cpy
GS 114	East Skarn	refer to map	Gabbro unit no sulphides, Accicular Aps (Actinolites) + Fspar - Fgr
GS 115	East Skarn	refer to map	in rusty skarn - Po + epi + Pyr + garnet locally MSV Po
GS 116	East Skarn	refer to map	Protolith limestone? w/ Cl% Po + Cpy - Cpy possibly rimming Po? Mgr MSV gabbro host
GS 126	Main Skarn	refer to map	Mgr/Cgr alt'd gabbro/ rusty surface 15-20% Qtz Fspar 15% alt'd Amphs now Bt 3% Po diss'd gabbro locally patchy w/ Pym leucritic << 1cm
GS 127	Main Skarn	refer to map	From just above layered horizon alt'd gabbro - amph - to bt - lg (0.5cm) Qtz pods associated w/ Po and some Pla fspar 1-2% Po w/ minor Cpy Qtz up to 15% rusty surface
GS 128	Main Skarn	refer to map	Qtz gabbro - Mgr - less bt alt'n - 10-15% Qtz no Pla Fspar 1-5% Po w/ <1% Cpy rimming Po Float angular rusty surface
GS 129	East skarn Tr#3	refer to map	Lg 10m X 3m xenolith of Cgr bt Qtz alt'd gabbro minor <<1% Po (2 specks) highly bt alt'd - no amph seen - low Plag - Qtz 15-20%
GS 130	East skarn Tr#3	refer to map	in lg block of conglomerate - mainly matrix >80% all pebbles - mainly clear Qtz clasts stretched 3 or 4 Cgr bt GRNT pebbles locally <<1% Cpy 1 or 2 specks sugary bt Qtz matrix
GS 131	East skarn Tr#3	refer to map	"Tremolite" unit - highly foliated unit approx 2m wide but pinches and swells and piches toward N very soft green rock no texture visible margins appear to have highly fol'd bx zone w/ GRNT? Clasts stretched 4:1
GS 132	East skarn Tr#3	refer to map	small shear of chl schist going thin gabb
GS 133	Main Skarn	refer to map	mainly Po up to 3% (some 0.5cm blebs)
GS 134	Main Skarn	refer to map	mainly Po up to 1%
GS 135	Main Skarn	refer to map	Lg clasts of bt <<1% sulphides Po
GS 136	Main Skarn	refer to map	altd gabbro, Shr @ 120/70
GS 137	Main Skarn	refer to map	aplitic dyke, 40% qtz, 40% feld, 20% bio, 1%po, tr py/cpy
GS 138	Main Skarn	refer to map	aplitic dyke 70-80% sucrosic qtz, 1%po, tr py/cpy
GS 139	Main Skarn	refer to map	gossanous altd gabbro
GS 140	Main Skarn	refer to map	qtz monzonite dyke
GS 141	Main Skarn	refer to map	green skarn material/ minor amph (horn) altn
GS 141A	Traverse	refer to map	fgr gabbro with <1% Po
GS 142	Traverse	refer to map	mgr gabbro 10% Qtz w minor Cpy
GS 143	Traverse	refer to map	mgr qtz gabbro 40% Qtz w 1% Po
GS 144	Traverse	refer to map	mgr qtz gabbro 10% Qtz w , 1% Po
GS 155	Traverse	refer to map	float? Mgr Qtz bldr (10%) gabbro MSV

Sample #	Location		Description
			w/Cpy on fract + minor Py? Cpy? Within rock <<1%
GS 156	Traverse	refer to map	mgr mass Qtz gabbro <1% Po
GS 157	Traverse	refer to map	m-fgr mass melanocratic gabbro, 20% Plag, Po on fract
GS 158	Traverse	refer to map	cgr gabbro, 1% sulphides mainly Po w/ minor Py diss'd
GS 159	Main skarn	Trench #3	mgr mass gabbro, 10% Qtz, tr cpy/po
GS 160	Brunne Trench		M/Cgr MSV gabbro - w/ up 5% sulph Po > Cpy Fgr blebs are diss'd throughout rock
GS 161	Brunne Trench		rusty patches of Mgr gabbro rusty on surface in patches Qtz up to 5%
GS 162	Brunne Trench		rusty patches 2m N of GS 161 only surface weathered pieces - sulph Mgr MSV gabbro
GS 163	Brunne Trench		up to 2% Cpy in net textured possible foli'n parallel to breccia contact Mg - MSV gabbro w/ rusty surface X cut by mm scale QtzV
GS 164	Brunne Trench		zone approx 30 cm wide w/ pinch - swell margins or rusty zone - very sharp contacts w/ mgr Cgr green rusty patches gabbro whata lower grade material
GS 165	Brunne Trench		Cpy + Po up to 2% - rusty on surface occurs in Mgr gabbro
GS 166	Brunne Trench		1m N of 165 occurs on a rusty 20cm wide of Mgr MSV gabbro up to 1 % mainly Cpy minor Po cherty grey sulph rock look to it in place
GS 167	Brunne Trench		right beside BS 99 141 rusty patch 1m long X 50cm wide W/ cherty blk sulph, 2% cpy tr po,
GS 168	Brunne Trench		right beside BS 99 147 rusty mgr MSV gabbro w/ 1% Cpy + minor Po
GS 169	Brunne Trench		Mgr gabbro w/ <1% Cpy + Po rusty patches on surface
GS 170	Brunne Trench		Mgr MSV gabbro w/ rusty patches on surface 1% diss'd sulph Po > Cpy
GS 171	Brunne Trench		Mgr MSV gabbro w/ minor rusty patches surface and sugary Qtz 2cm wide MSV Cpy asso'd w/ Qtz V w/ minor Po locally <1% diss'd Cpy in rock rep sample w/ native Cu? up to 10% Qtz
GS 172	Brunne Trench		Cgr MSV gabbro - rusty w/ 1% Cpy+Po - fresh looking rock up to 10% Qtz
GS 173	Traverse		mgr gabbro, southern margin
GS 174	Traverse		Qtz gabbro with trem
GS 175	Traverse		gabbro
GS 176	Traverse		gabbro
GS 177	Traverse		gabbro
GS 178	Traverse		gabbro
GS 179	Traverse		meta pyroxenite
GS 180	Traverse		F/Mgr some bt w/ several specks Po <<1%
GS 181	Traverse		meta blk gabbro Mgr w/10% bt + 5% Qtz <<1% Cpy or is it bt
GS 182	Traverse		mgr gabbro, 35-40% feld

Sample #	Location	Description
GS 183	Traverse	blk M/Fgr w/ <1% diss'd sulph Cpy throughout
GS 184	Traverse	gabbro, tr po/cpy
GS 185	Traverse	mg gabbro
GS 186	Traverse	quartzite w mass aspy, old cameco sample
GS 187	Traverse	from main shr'd gabbro w/ up to 3% Py+Po alt'n minor mafic
GS 188	Traverse	resample mesocratic gabbro, sulphides maybe concentrated in more Cgr felsic Plag rich zones
GS 189	Hanover Occ	Mgr fresh looking gabbro 5% Qtz chl alt'n mafic minerals diss'd Po 1% throughout rock
GS 190	Hanover Occ	altd, gossaneous gabbro w 20% qtz
GS 191	Hanover Occ	partly sheared gabbro, minor bio
GS 192	Hanover Occ	gabbro, minor qv's with cpy
GS 193	Hanover Occ	mineralized 3c <10% Qtz +/- 10% V.S mainly Cpy w/ minor Po very rusty



**XRAL Laboratories**  
A Division of SGS Canada Inc.

JUL 17 2000

1885 Leslie Street  
Don Mills, Ontario  
Canada M3B 3J4  
Telephone (416) 445-5755  
Fax (416) 445-4152

10

**CERTIFICATE OF ANALYSIS**

**Work Order: 059937**

To: **URSA Major International**  
Attn: **R. Sutcliff**  
100 Adelaide Street West  
Suite 405  
TORONTO  
ONTARIO M5H 1S3

Date : 11/07/00

Copy 1 to : Richard Sutcliffe

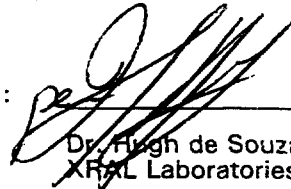
Copy 2 to :

P.O. No. :  
Project No. :  
No. of Samples : 62 Rock  
Date Submitted : 21/06/00  
Report Comprises : Cover Sheet plus  
Pages 1 to 9

**Distribution of unused material:**

Pulps: RETURN SAME AS ABOVE  
Rejects: RETURN TO: 45 DOUGLAS RD. ANCASTER, ONT. L9C

Certified By :



Dr. Hugh de Souza, General Manager  
XRAL Laboratories

**ISO 9002 REGISTERED**

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample  
n.a. = Not applicable -- = No result  
\*INF = Composition of this sample makes detection impossible by this method  
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion





**XRAL Laboratories**  
A Division of SGS Canada Inc.

Work Order: 059937

Date: 11/07/00

FINAL

Page 1 of 9

Element. Method. Det. Lim. Units.	Au FA301 1 ppb	Pt FA301 10 ppb	Pd FA301 1 ppb	Be ICP70 0.5 ppm	Na ICP70 0.01 %	Mg ICP70 0.01 %	Al ICP70 0.01 %	P ICP70 0.01 %	K ICP70 0.01 %	Ca ICP70 0.01 %	Sc ICP70 0.5 ppm	Ti ICP70 0.01 %	V ICP70 2 ppm	Cr ICP70 1 ppm	Mn ICP70 2 ppm	Fe ICP70 0.01 %
GS-100	15	16	26	<0.5	0.05	0.92	1.26	0.04	0.35	0.39	1.6	0.08	42	54	166	2.13
GS-101	63	12	42	<0.5	0.04	0.60	0.90	0.09	0.37	0.22	4.2	0.08	31	78	125	3.22
GS-102	28	<10	172	<0.5	0.01	0.04	0.09	<0.01	<0.01	0.02	<0.5	<0.01	7	155	144	2.27
GS-103	30	25	8	<0.5	0.05	0.55	0.88	0.04	0.18	0.68	2.6	0.10	51	56	223	2.04
GS-104	24	44	55	<0.5	0.09	0.86	1.60	0.03	0.66	0.59	3.0	0.10	79	55	248	2.79
GS-105	15	14	6	<0.5	0.06	1.03	1.73	0.03	0.73	0.49	2.7	0.09	71	73	276	3.06
GS-106	13	11	12	<0.5	0.06	1.17	1.75	0.04	0.36	0.46	2.5	0.06	62	69	318	3.24
GS-107	6	14	3	<0.5	0.01	0.08	0.27	<0.01	0.12	<0.01	<0.5	<0.01	6	106	21	0.83
GS-108	15	25	23	<0.5	0.06	0.78	1.06	0.03	0.08	0.67	2.8	0.08	37	36	200	1.74
GS-109	76	<10	3	<0.5	<0.01	<0.01	0.02	<0.01	0.02	<0.01	<0.5	<0.01	10	134	14	1.50
GS-110	380	157	64	<0.5	0.03	0.54	0.73	0.02	0.08	1.13	2.1	0.07	49	26	180	1.59
GS-111	36	17	11	<0.5	0.04	0.92	1.15	0.04	0.16	0.33	2.2	0.07	52	54	188	2.35
GS-112	14	23	21	<0.5	0.03	1.40	2.14	0.04	0.80	0.31	2.0	0.12	76	42	372	4.85
GS-113	8	<10	4	<0.5	0.05	0.80	1.26	0.05	0.34	1.26	3.1	0.14	79	46	279	2.76
GS-114	8	<10	15	<0.5	0.03	0.51	0.59	0.02	0.26	0.55	2.0	0.10	30	155	97	1.21
GS-115	19	<10	11	0.6	<0.01	0.14	0.40	0.02	0.02	0.31	<0.5	0.08	25	58	121	12.9
GS-116	9	11	23	<0.5	0.08	1.06	1.51	0.02	0.09	0.63	0.8	0.04	28	52	247	2.05
GS-117	13	20	10	<0.5	0.04	1.12	1.44	0.04	0.15	0.57	2.3	0.11	55	52	297	3.04
GS-118	6	19	11	<0.5	0.03	1.34	1.86	0.04	0.43	0.67	2.5	0.12	59	45	413	3.57
GS-119	6	20	14	<0.5	0.04	1.27	1.78	0.04	0.36	0.72	2.4	0.08	73	34	386	3.68
GS-120	72	29	25	<0.5	0.05	0.83	1.37	0.04	0.18	0.69	2.6	0.09	55	30	275	2.55
GS-121	188	352	420	<0.5	0.03	1.48	1.85	0.02	0.07	0.22	1.1	0.03	37	59	376	5.24
GS-122	14	<10	9	<0.5	0.03	1.21	1.50	0.05	0.08	0.32	1.8	0.05	35	109	294	2.75
GS-123	251	255	266	<0.5	0.02	0.57	0.82	0.03	0.02	0.32	2.0	0.07	35	45	172	3.61
GS-124	11	10	13	<0.5	0.02	0.66	0.81	0.03	0.03	0.67	1.2	0.05	24	40	204	1.50
GS-125	14	21	32	<0.5	0.04	0.85	1.31	0.03	0.23	0.46	1.4	0.06	36	40	254	2.56
GS-126	53	<10	4	<0.5	0.05	0.76	1.60	0.07	0.98	0.48	4.1	0.17	99	54	267	5.53
GS-127	13	<10	5	<0.5	0.05	0.72	1.29	0.08	0.45	0.82	4.5	0.16	104	72	272	5.25
GS-128	27	<10	4	<0.5	0.06	0.70	1.44	0.06	0.88	0.50	4.2	0.15	86	66	240	5.08
GS-129	12	<10	4	<0.5	0.05	1.03	2.06	0.07	1.14	1.53	4.4	0.16	146	44	332	4.76



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Element.	✓ Au	✓ Pt	✓ Pd	Be	Na	Mg	Al	P	K	Ca	Sc	Ti	V	Cr	Mn	Fe
Method.	FA301	FA301	FA301	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70
Det. Lim.	1	10	1	0.5	0.01	0.01	0.01	0.01	0.01	0.01	0.5	0.01	2	1	2	0.01
Units.	ppb	ppb	ppb	ppm	%	%	%	%	%	%	ppm	%	ppm	ppm	ppm	%
GS-130	6	<10	5	<0.5	0.02	0.57	0.97	0.02	0.52	0.04	2.4	0.06	25	113	136	2.38
GS-131	6	35	16	<0.5	<0.01	2.37	2.00	0.02	0.03	0.14	1.0	0.05	50	472	309	2.64
GS-132	18	10	17	<0.5	0.06	1.23	1.60	0.02	0.28	0.40	1.3	0.07	35	58	221	2.24
GS-133	23	11	3	<0.5	0.05	0.47	1.17	0.09	0.72	0.56	3.5	0.14	34	66	218	3.62
GS-134	11	<10	3	<0.5	0.06	0.65	1.45	0.06	0.77	0.56	3.8	0.19	84	51	247	3.92
GS-135	13	<10	5	<0.5	0.08	0.79	1.55	0.05	0.76	0.62	3.5	0.13	78	48	266	3.50
GS-136	23	19	13	<0.5	0.08	1.14	1.95	0.04	1.24	0.42	2.9	0.13	84	58	239	3.95
GS-137	186	<10	5	<0.5	0.03	1.07	1.67	0.08	0.96	0.22	3.9	0.13	62	70	199	4.47
GS-138	45	<10	6	<0.5	0.05	0.71	1.18	0.07	0.67	0.15	6.7	0.11	64	76	118	4.11
GS-139	24	<10	10	<0.5	0.04	0.92	1.59	0.07	1.22	0.41	5.3	0.14	65	93	231	4.19
GS-140	17	<10	5	<0.5	0.03	0.97	1.51	0.04	1.13	0.16	3.7	0.10	41	100	189	2.38
GS-141	558	18	10	<0.5	0.03	0.26	0.34	0.03	0.07	0.84	<0.5	0.03	13	32	120	5.54
GS-142	9	30	36	<0.5	0.06	1.10	1.72	0.04	0.59	0.53	2.1	0.10	52	51	317	3.00
GS-143	12	12	4	<0.5	0.05	0.66	0.97	0.06	0.13	0.58	2.5	0.15	70	49	201	2.77
GS-144	55	229	362	<0.5	0.10	0.73	1.39	0.02	0.29	0.55	1.4	0.06	31	38	170	1.84
GS-145	6	32	43	<0.5	0.09	0.71	1.30	0.03	0.33	0.50	1.6	0.07	36	47	199	1.88
GS-146	12	28	38	<0.5	0.07	0.96	1.64	0.03	0.35	0.42	1.3	0.06	39	38	249	2.53
GS-147	193	410	467	<0.5	0.06	1.16	1.93	0.02	0.47	0.32	1.3	0.07	44	41	297	5.09
GS-148	16	34	37	<0.5	0.08	1.00	1.74	0.04	0.57	0.45	1.4	0.07	44	47	252	2.84
GS-149	238	611	500	<0.5	0.04	0.86	1.44	0.05	0.21	0.35	1.7	0.06	49	53	228	5.42
GS-150	484	573	499	0.5	<0.01	2.06	3.08	0.03	0.09	0.04	3.4	0.07	121	126	450	11.3
GS-151	119	433	174	<0.5	0.02	1.72	2.23	0.03	0.25	0.12	1.8	0.05	75	108	386	5.03
GS-152	16	48	42	0.5	0.04	1.39	2.27	0.04	1.33	0.35	3.3	0.14	114	102	372	5.37
GS-153	5	12	3	<0.5	0.04	1.14	1.78	0.09	0.63	0.72	2.9	0.17	96	37	315	3.84
GS-154	9	40	11	<0.5	0.03	1.77	1.87	0.04	0.21	0.25	2.6	0.06	80	35	281	3.08
GS-155	8	23	23	<0.5	0.22	0.86	2.13	0.03	0.34	1.03	1.9	0.06	36	32	156	1.81
GS-156	8	20	21	<0.5	0.10	1.17	1.73	0.03	0.18	0.81	2.3	0.08	43	40	194	2.45
GS-157	15	21	12	<0.5	0.02	2.03	1.78	0.02	0.32	0.18	1.2	0.06	50	319	174	3.06
GS-158	56	13	2	<0.5	0.06	0.35	0.79	0.11	0.23	0.68	4.6	0.09	17	65	164	2.89
GS-159	10	15	6	<0.5	0.08	0.80	1.50	0.04	0.58	0.61	2.7	0.09	54	36	225	2.64



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Element.	Au	Pt	Pd	Be	Na	Mg	Al	P	K	Ca	Sc	Ti	V	Cr	Mn	Fe
Method.	FA301	FA301	FA301	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70
Det. Lim.	1	10	1	0.5	0.01	0.01	0.01	0.01	0.01	0.01	0.5	0.01	2	1	2	0.01
Units.	ppb	ppb	ppb	ppm	%	%	%	%	%	%	ppm	%	ppm	ppm	ppm	%
GS-153a	3	<10	2	<0.5	0.04	1.25	1.88	0.10	0.57	0.70	2.7	0.16	91	51	398	4.04
*Dup GS-100	14	11	24	<0.5	0.04	0.91	1.24	0.04	0.35	0.37	1.5	0.08	42	51	162	2.10
*Dup GS-112	11	22	20	<0.5	0.03	1.43	2.19	0.05	0.83	0.32	2.1	0.13	78	41	380	4.94
*Dup GS-124	7	11	9	<0.5	0.02	0.68	0.85	0.03	0.03	0.69	1.2	0.05	25	42	210	1.54
*Dup GS-136	17	16	16	<0.5	0.08	1.14	1.94	0.04	1.23	0.42	2.8	0.14	83	58	238	3.94
*Dup GS-148	17	36	34	0.5	0.07	0.97	1.68	0.04	0.56	0.41	1.7	0.06	42	47	243	2.77
*Dup GS-141a	3	11	3	<0.5	0.03	1.21	1.82	0.10	0.56	0.68	2.7	0.15	89	52	387	3.95



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Element. Method. Det.Lim. Units.	Co ICP70 1 ppm	Ni ICP70 1 ppm	Cu ICP70 0.5 ppm	Zn ICP70 0.5 ppm	As ICP70 3 ppm	Sr ICP70 0.5 ppm	Y ICP70 0.5 ppm	Zr ICP70 0.5 ppm	Mo ICP70 1 ppm	Ag ICP70 0.2 ppm	Cd ICP70 1 ppm	Sn ICP70 10 ppm	Sb ICP70 5 ppm	Ba ICP70 1 ppm	La ICP70 0.5 ppm	W ICP70 10 ppm
GS-100	18	49	67.0	20.2	<3	5.8	2.5	3.7	<1	0.2	<1	<10	<5	75	5.2	<10
GS-101	33	54	1370	20.6	<3	9.0	7.9	5.6	<1	0.7	<1	<10	<5	64	21.7	<10
GS-102	17	104	974	25.0	43	0.8	<0.5	2.1	<1	0.5	<1	<10	<5	5	<0.5	<10
GS-103	24	29	387	27.9	<3	7.6	4.6	4.2	<1	<0.2	<1	<10	<5	41	10.3	<10
GS-104	22	51	337	38.0	3	10.7	3.0	3.6	<1	<0.2	<1	<10	<5	159	5.9	<10
GS-105	18	32	119	40.2	<3	7.3	2.8	3.2	<1	0.2	<1	<10	<5	189	6.5	<10
GS-106	26	50	282	42.0	<3	6.6	2.5	2.1	<1	<0.2	<1	<10	<5	88	7.5	<10
GS-107	2	3	18.8	2.9	<3	1.3	<0.5	1.7	<1	0.2	<1	<10	<5	19	0.7	<10
GS-108	16	38	110	21.3	<3	10.0	3.3	3.4	<1	0.3	<1	<10	<5	17	5.5	<10
GS-109	446	7	4260	22.6	870	<0.5	0.5	1.9	10	3.1	<1	<10	<5	12	<0.5	<10
GS-110	28	93	660	20.7	24	7.7	2.5	3.6	<1	0.6	<1	<10	<5	23	3.4	<10
GS-111	24	46	632	26.3	4	6.2	3.4	3.7	<1	0.2	<1	<10	<5	29	7.1	<10
GS-112	38	40	248	41.3	<3	6.0	2.6	3.4	<1	0.3	<1	<10	<5	157	7.2	<10
GS-113	27	26	202	25.7	4	9.1	4.2	4.3	<1	0.2	<1	<10	<5	66	6.5	<10
GS-114	6	51	26.5	18.9	7	7.7	1.5	2.7	<1	<0.2	<1	<10	<5	30	5.2	<10
GS-115	315	76	319	7.8	<3	5.7	2.3	26.3	<1	1.0	4	<10	<5	1	10.6	<10
GS-116	20	50	83.4	22.5	<3	13.0	1.8	2.5	<1	0.3	<1	<10	<5	18	3.7	<10
GS-117	23	47	129	45.6	<3	8.7	3.9	4.0	<1	<0.2	<1	<10	<5	67	5.5	<10
GS-118	25	46	128	52.0	<3	10.2	3.5	4.5	<1	0.2	<1	<10	<5	93	4.3	<10
GS-119	26	46	93.8	45.3	<3	8.3	4.0	2.9	<1	0.4	<1	<10	<5	61	7.8	<10
GS-120	20	34	107	35.5	<3	8.3	3.5	3.9	1	<0.2	<1	<10	<5	35	5.7	<10
GS-121	157	2800	3780	74.3	69	4.3	1.5	0.7	<1	2.7	<1	<10	<5	15	4.3	<10
GS-122	20	138	1170	47.3	<3	7.4	11.5	5.4	<1	0.8	<1	<10	<5	15	34.6	<10
GS-123	52	533	7660	62.9	124	5.6	2.0	3.2	<1	4.4	<1	<10	<5	5	3.1	<10
GS-124	16	40	385	33.7	3	7.6	2.2	2.7	<1	0.3	<1	<10	<5	8	4.8	<10
GS-125	23	53	199	32.8	<3	5.9	2.3	2.9	<1	0.3	<1	<10	<5	39	5.1	<10
GS-126	32	22	383	35.3	43	5.1	5.9	5.4	<1	0.3	<1	<10	<5	289	11.6	<10
GS-127	17	20	466	35.6	10	7.2	8.7	9.7	<1	0.3	<1	<10	<5	108	22.5	<10
GS-128	16	16	527	28.8	22	6.4	6.5	6.0	<1	0.3	<1	<10	<5	223	13.4	<10
GS-129	33	20	229	33.0	<3	12.2	6.0	5.1	<1	0.2	<1	<10	<5	237	9.3	<10



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Element. Method. Det.Lim. Units.	Co ICP70 1 ppm	Ni ICP70 1 ppm	Cu ICP70 0.5 ppm	Zn ICP70 0.5 ppm	As ICP70 3 ppm	Sr ICP70 0.5 ppm	Y ICP70 0.5 ppm	Zr ICP70 0.5 ppm	Mo ICP70 1 ppm	Ag ICP70 0.2 ppm	Cd ICP70 1 ppm	Sn ICP70 10 ppm	Sb ICP70 5 ppm	Ba ICP70 1 ppm	La ICP70 0.5 ppm	W ICP70 10 ppm
GS-130	9	17	69.4	61.7	<3	<0.5	4.0	4.5	<1	0.2	<1	<10	<5	88	6.4	<10
GS-131	20	108	9.7	32.5	<3	1.3	1.4	2.1	<1	0.3	<1	<10	<5	9	1.7	<10
GS-132	23	83	187	22.7	4	13.9	1.5	1.6	<1	0.3	<1	<10	<5	41	3.5	<10
GS-133	21	10	211	24.5	22	7.2	7.8	7.3	1	<0.2	<1	<10	<5	215	18.4	<10
GS-134	19	15	142	27.6	14	6.3	5.7	5.0	<1	<0.2	<1	<10	<5	238	12.1	<10
GS-135	33	30	133	31.6	41	7.7	5.6	5.0	<1	<0.2	<1	<10	<5	199	10.8	<10
GS-136	19	62	327	34.9	11	10.1	3.7	5.7	<1	<0.2	<1	<10	<5	249	4.9	<10
GS-137	16	12	314	29.6	<3	10.0	8.0	7.5	<1	0.3	<1	<10	<5	184	19.1	106
GS-138	22	22	465	20.6	<3	15.3	6.4	4.7	<1	0.2	<1	<10	<5	138	15.0	<10
GS-139	18	21	247	30.4	53	6.7	9.3	7.1	<1	0.4	<1	<10	<5	242	25.8	<10
GS-140	10	23	7.9	25.0	7	4.1	9.2	11.5	<1	0.3	<1	<10	<5	243	21.5	<10
GS-141	44	13	635	9.3	213	6.1	3.1	5.9	<1	0.3	<1	<10	<5	15	8.4	<10
GS-142	23	46	143	41.6	<3	10.4	3.2	2.0	<1	<0.2	<1	<10	<5	120	6.7	<10
GS-143	27	40	456	21.3	<3	7.1	5.0	4.7	<1	0.3	<1	<10	<5	27	7.1	<10
GS-144	25	96	227	21.9	15	16.6	2.0	2.2	1	0.5	<1	<10	<5	50	4.7	<10
GS-145	15	29	90.1	21.6	<3	13.3	2.0	2.3	<1	<0.2	<1	<10	<5	64	4.4	<10
GS-146	18	43	85.5	29.2	<3	10.9	1.9	2.8	<1	<0.2	<1	<10	<5	67	4.1	<10
GS-147	120	1550	3850	64.1	67	10.6	1.5	2.2	2	2.7	<1	<10	<5	91	3.7	<10
GS-148	26	82	462	35.3	<3	12.5	3.1	2.4	<1	0.5	<1	<10	<5	129	7.0	<10
GS-149	162	1740	4940	54.5	157	7.8	2.2	1.2	6	3.5	<1	<10	<5	48	5.9	<10
GS-150	34	411	3170	55.5	169	4.7	0.6	4.7	23	>10.0	11	<10	<5	18	2.7	<10
GS-151	45	494	894	41.8	<3	2.9	1.3	2.0	1	1.0	<1	<10	<5	54	3.9	<10
GS-152	69	510	1250	66.5	4	3.1	4.0	4.9	6	0.8	<1	<10	<5	272	15.5	<10
GS-153	25	38	148	45.4	<3	6.6	5.4	2.4	<1	0.4	<1	<10	<5	196	8.3	<10
GS-154	34	38	179	55.9	12	3.8	4.7	3.1	<1	0.2	<1	<10	<5	57	9.8	<10
GS-155	24	44	70.1	30.9	31	34.3	2.5	2.9	<1	<0.2	<1	<10	<5	76	4.9	<10
GS-156	31	53	33.7	25.0	42	15.1	2.7	2.9	<1	0.2	<1	<10	<5	36	7.0	<10
GS-157	33	176	208	29.3	31	5.2	0.8	2.8	<1	<0.2	<1	<10	<5	87	2.9	<10
GS-158	21	7	255	55.9	18	8.7	16.9	7.7	<1	<0.2	<1	<10	<5	58	29.0	<10
GS-159	20	30	211	33.1	7	10.8	3.9	3.5	<1	0.2	<1	<10	<5	135	8.0	<10



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Element.	Co	Ni	Cu	Zn	As	Sr	Y	Zr	Mo	Ag	Cd	Sn	Sb	Ba	La	W
Method.	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70
Det. Lim.	1	1	0.5	0.5	3	0.5	0.5	0.5	1	0.2	1	10	5	1	0.5	10
Units.	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<del>GS-153a</del>	26	37	134	41.5	<3	5.9	5.9	3.7	<1	<0.2	<1	<10	<5	113	9.1	<10
GS-153a	43	350	687	49.1	<3	4.5	2.8	4.1	<1	0.8	<1	<10	<5	125	7.1	<10
*Dup GS-100	16	49	68.6	21.2	<3	5.5	2.5	3.3	<1	<0.2	<1	<10	<5	75	5.1	<10
*Dup GS-112	39	42	249	42.8	<3	6.2	2.7	3.5	<1	0.2	<1	<10	<5	163	7.6	<10
*Dup GS-124	17	40	387	34.7	<3	8.0	2.2	2.5	<1	0.3	<1	<10	<5	10	5.2	<10
*Dup GS-136	20	62	325	34.7	14	10.0	3.6	5.8	<1	0.3	<1	<10	<5	249	4.9	<10
*Dup GS-148	25	81	462	35.1	<3	12.2	3.4	2.8	2	0.6	<1	<10	<5	127	7.5	<10
*Dup GS-141a	25	36	132	42.3	<3	5.8	5.9	3.6	<1	<0.2	<1	<10	<5	112	8.8	<10



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Element.	Pb	Bi
Method.	ICP70	ICP70
Det.Lim.	2	5
Units.	ppm	ppm
GS-100	<2	<5
GS-101	6	*INF
GS-102	5	<5
GS-103	5	<5
GS-104	<2	<5
GS-105	3	<5
GS-106	<2	<5
GS-107	3	<5
GS-108	<2	<5
GS-109	209	*INF
GS-110	5	<5
GS-111	2	<5
GS-112	<2	<5
GS-113	<2	<5
GS-114	5	<5
GS-115	15	<5
GS-116	2	<5
GS-117	3	<5
GS-118	2	<5
GS-119	<2	<5
GS-120	3	<5
GS-121	4	*INF
GS-122	5	*INF
GS-123	9	*INF
GS-124	<2	<5
GS-125	4	<5
GS-126	3	<5
GS-127	<2	<5
GS-128	3	<5
GS-129	<2	<5



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Element.	Pb	Bi
Method.	ICP70	ICP70
Det. Lim.	2	5
Units.	ppm	ppm
GS-130	52	<5
GS-131	<2	<5
GS-132	<2	<5
GS-133	<2	<5
GS-134	<2	<5
GS-135	<2	<5
GS-136	<2	<5
GS-137	3	<5
GS-138	6	<5
GS-139	5	<5
GS-140	<2	<5
GS-141	5	<5
GS-142	4	<5
GS-143	4	<5
GS-144	<2	<5
GS-145	<2	<5
GS-146	2	<5
GS-147	<2	*INF
GS-148	<2	<5
GS-149	3	*INF
GS-150	10	*INF
GS-151	<2	<5
GS-152	<2	*INF
GS-153	3	<5
GS-154	6	<5
GS-155	5	<5
GS-156	4	<5
GS-157	<2	<5
GS-158	65	<5
GS-159	4	<5





**XRAL Laboratories**  
A Division of SGS Canada Inc.

Work Order: 059937

Date: 11/07/00

FINAL

Page 9 of 9

Element.	Pb	Bi
Method.	ICP70	ICP70
Det. Lim.	2	5
Units.	ppm	ppm
<del>GS-112</del>	<2	<5
GS-153a	4	<5
*Dup GS-100	<2	<5
*Dup GS-112	<2	<5
*Dup GS-124	<2	<5
*Dup GS-136	<2	<5
*Dup GS-148	<2	<5
*Dup GS-141a	2	<5

JUL 19 2000



**XRAL Laboratories**  
A Division of SGS Canada Inc.

1885 Leslie Street  
Don Mills, Ontario  
Canada M3B 3J4  
Telephone (416) 445-5755  
Fax (416) 445-4152

### CERTIFICATE OF ANALYSIS

**Work Order: 059938**

To: **URSA Major International**  
**Attn: Geoff Shore**  
100 Adelaide Street West  
Suite 405  
TORONTO  
ONTARIO M5H 1S3

Date : 11/07/00

Copy 1 to : Richard Sutcliffe

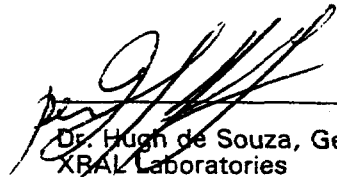
Copy 2 to :

P.O. No. :  
Project No. :  
No. of Samples : 27 Rock  
Date Submitted : 21/06/00  
Report Comprises : Cover Sheet plus  
Pages 1 to 3

**Distribution of unused material:**

Pulps: RETURN SAME AS ABOVE  
Rejects: RETURN TO: 45 DOUGLAS RD. ANCASTER, ONT. L9C

Certified By :

  
\_\_\_\_\_  
Dr. Hugh de Souza, General Manager  
XRAL Laboratories

### ISO 9002 REGISTERED

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample  
n.a. = Not applicable -- = No result  
\*INF = Composition of this sample makes detection impossible by this method  
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



**XRAL Laboratories**  
A Division of SGS Canada Inc.

Work Order: 059938

Date: 11/07/00

FINAL

Page 1 of 3

Element. Method. Det.Lim. Units.	Au FA301 1 ppb	Pt FA301 10 ppb	Pd FA301 1 ppb	Be ICP70 0.5 ppm	Na ICP70 0.01 %	Mg ICP70 0.01 %	Al ICP70 0.01 %	P ICP70 0.01 %	K ICP70 0.01 %	Ca ICP70 0.01 %	Sc ICP70 0.5 ppm	Ti ICP70 0.01 %	V ICP70 2 ppm	Cr ICP70 1 ppm	Mn ICP70 2 ppm	Fe ICP70 0.01 %
DB-00-100	141	<10	7	<0.5	<0.01	0.11	0.11	<0.01	0.02	<0.01	0.7	<0.01	13	193	36	6.73
DB-00-101	36	20	25	<0.5	0.04	1.52	1.78	0.05	0.43	0.33	2.5	0.07	79	125	259	4.23
DB-00-102	59	39	60	<0.5	0.04	2.15	2.76	0.04	1.22	0.65	3.2	0.12	113	123	434	5.65
DB-00-103	82	87	107	<0.5	0.04	2.05	2.62	0.04	1.27	0.30	2.8	0.11	108	125	373	5.63
DB-00-104	144	188	206	<0.5	0.03	1.87	2.51	0.04	0.99	0.25	2.8	0.12	106	107	361	5.88
DB-00-105	37	43	51	<0.5	0.04	1.78	2.28	0.04	0.70	0.37	2.6	0.09	89	98	482	4.72
DB-00-106	76	<10	13	<0.5	0.03	1.01	1.09	0.03	0.11	0.36	3.4	0.11	103	58	167	4.07
DB-00-107	47	<10	3	<0.5	0.08	0.82	1.44	0.08	0.16	0.98	4.8	0.09	88	64	310	4.40
DB-00-108	13	13	14	<0.5	0.08	0.71	1.05	0.03	0.13	0.54	2.0	0.04	41	54	148	1.90
DB-00-109	9	<10	10	<0.5	0.10	0.72	1.13	0.03	0.22	0.59	2.1	0.05	44	48	149	1.87
DB-00-110	5	<10	9	<0.5	0.08	1.00	1.44	0.04	0.36	0.57	2.3	0.06	49	48	208	2.32
DB-00-111	15	12	23	<0.5	0.05	1.25	1.60	0.03	0.73	0.34	1.6	0.08	54	59	207	2.79
DB-00-112	20	30	34	<0.5	0.04	1.52	1.82	0.02	0.82	0.31	1.6	0.08	57	55	249	3.47
DB-00-113	53	<10	4	<0.5	0.06	0.40	1.00	0.15	0.40	1.24	2.1	0.10	9	88	262	2.70
DB-00-114	27	<10	7	<0.5	0.07	0.41	1.02	0.09	0.43	0.86	2.6	0.11	20	99	256	2.87
DB-00-115	20	<10	7	<0.5	0.02	2.16	3.33	0.04	0.23	4.22	18.0	0.04	194	68	1160	8.17
DB-00-116	36	10	12	0.5	0.02	2.08	3.49	0.06	0.98	2.06	25.1	0.15	246	49	1010	8.30
DB-00-117	37	<10	7	<0.5	0.04	1.14	1.69	0.16	0.65	0.63	3.5	0.07	61	93	297	3.17
DB-00-118	14	<10	6	<0.5	0.04	0.73	0.82	0.08	0.25	0.37	3.3	0.12	64	132	127	2.46
DB-00-119	9	32	25	<0.5	0.04	1.36	1.79	0.04	0.64	0.36	2.2	0.11	68	60	351	3.94
DB-00-120	43	<10	6	<0.5	0.04	0.71	0.81	0.09	0.34	0.45	4.2	0.14	61	180	135	3.16
DB-00-121	12	<10	9	<0.5	0.05	1.71	2.40	0.04	1.32	0.85	2.6	0.14	78	47	436	4.07
DB-00-122	14	<10	6	<0.5	0.07	0.64	1.33	0.07	0.59	0.90	4.3	0.14	56	92	269	3.37
DB-00-123	37	<10	7	<0.5	0.04	1.39	3.13	0.06	2.32	0.33	4.5	0.25	92	96	458	7.35
DB-00-124	10	<10	7	<0.5	0.07	1.09	1.66	0.05	0.21	0.77	4.5	0.10	71	53	328	3.68
DB-00-125	18	<10	7	<0.5	0.05	1.25	1.93	0.04	0.49	0.93	3.0	0.09	67	71	425	4.27
DB-00-126	22	42	62	<0.5	0.08	1.08	1.48	0.02	0.07	0.46	1.8	0.06	38	63	228	2.90
*Dup DB-00-100	160	10	5	<0.5	<0.01	0.11	0.11	<0.01	0.02	<0.01	<0.5	<0.01	13	189	36	6.60
*Dup DB-00-112	25	25	36	<0.5	0.04	1.53	1.83	0.02	0.80	0.33	1.7	0.09	57	52	253	3.50
*Dup DB-00-124	11	<10	6	<0.5	0.07	1.06	1.61	0.04	0.20	0.77	4.3	0.10	70	52	320	3.56



**XRAL Laboratories**  
A Division of SGS Canada Inc.

Work Order: 059938

Date: 11/07/00

FINAL

Page 2 of 3

Element. Method. Det.Lim. Units.	Co ICP70 1 ppm	Ni ICP70 1 ppm	Cu ICP70 0.5 ppm	Zn ICP70 0.5 ppm	As ICP70 3 ppm	Sr ICP70 0.5 ppm	Y ICP70 0.5 ppm	Zr ICP70 0.5 ppm	Mo ICP70 1 ppm	Ag ICP70 0.2 ppm	Cd ICP70 1 ppm	Sn ICP70 10 ppm	Sb ICP70 5 ppm	Ba ICP70 1 ppm	La ICP70 0.5 ppm	W ICP70 10 ppm
DB-00-100	214	18	>10000	152	320	0.7	0.6	4.0	1	>10.0	2	<10	<5	11	1.2	<10
DB-00-101	54	125	1170	33.8	<3	5.8	3.9	7.1	2	0.9	<1	<10	<5	59	7.1	<10
DB-00-102	46	159	692	46.8	<3	14.2	3.1	5.2	<1	0.7	<1	<10	<5	132	5.6	<10
DB-00-103	51	315	2120	46.6	<3	8.3	3.1	6.4	<1	1.2	<1	<10	<5	124	5.8	<10
DB-00-104	34	213	2400	39.0	<3	11.6	2.0	4.7	<1	1.0	<1	<10	<5	132	5.0	<10
DB-00-105	43	162	978	40.1	<3	10.5	3.0	5.3	<1	0.6	<1	<10	<5	88	5.1	<10
DB-00-106	39	62	1320	17.7	<3	6.9	2.8	7.1	<1	0.7	<1	<10	<5	24	3.5	<10
DB-00-107	45	20	421	33.1	<3	8.3	8.9	6.4	<1	<0.2	<1	<10	<5	32	11.7	<10
DB-00-108	22	60	372	21.2	<3	12.6	3.1	4.5	1	0.5	<1	<10	<5	23	5.3	<10
DB-00-109	26	62	268	18.5	<3	13.6	2.9	4.0	<1	<0.2	<1	<10	<5	36	5.1	<10
DB-00-110	21	54	113	23.8	<3	12.2	3.2	4.5	<1	<0.2	<1	<10	<5	60	5.4	<10
DB-00-111	33	98	386	27.6	<3	6.4	2.2	3.6	<1	0.3	<1	<10	<5	111	5.2	<10
DB-00-112	41	186	599	36.5	<3	4.5	1.5	2.8	<1	<0.2	<1	<10	<5	127	3.4	<10
DB-00-113	32	11	241	18.6	<3	21.7	15.9	7.9	<1	<0.2	<1	<10	<5	105	36.1	<10
DB-00-114	45	22	700	37.3	25	15.8	11.2	7.6	<1	<0.2	10	<10	<5	94	24.5	<10
DB-00-115	48	57	647	95.6	<3	37.9	4.6	5.2	<1	0.2	<1	<10	<5	46	*INF	<10
DB-00-116	41	47	208	246	<3	16.9	9.0	7.2	<1	0.3	1	<10	<5	180	*INF	<10
DB-00-117	25	21	95.3	49.3	10	10.5	10.1	4.8	<1	<0.2	<1	<10	<5	143	19.1	<10
DB-00-118	47	107	385	15.7	<3	6.6	8.6	8.4	2	<0.2	<1	<10	<5	53	22.0	<10
DB-00-119	36	64	196	36.2	<3	9.0	3.8	5.1	1	<0.2	<1	<10	<5	52	8.5	<10
DB-00-120	73	126	586	15.6	<3	6.6	11.0	8.5	<1	<0.2	<1	<10	<5	61	32.0	<10
DB-00-121	32	54	115	48.6	23	10.3	3.7	5.3	<1	<0.2	<1	<10	<5	202	5.3	<10
DB-00-122	23	19	143	26.3	78	7.6	6.7	6.1	1	<0.2	<1	<10	<5	170	9.8	<10
DB-00-123	30	32	94.5	68.8	<3	6.5	7.2	6.2	<1	<0.2	<1	<10	<5	793	10.2	<10
DB-00-124	34	40	213	47.6	18	8.5	5.3	5.0	<1	<0.2	<1	<10	<5	44	9.2	<10
DB-00-125	33	49	307	52.9	14	9.1	4.2	4.4	<1	<0.2	<1	<10	<5	120	10.3	<10
DB-00-126	71	459	678	39.4	30	13.9	1.6	2.6	<1	<0.2	<1	<10	<5	10	2.8	<10
*Dup DB-00-100	217	17	>10000	148	318	0.6	0.7	2.7	<1	>10.0	3	<10	<5	10	1.6	<10
*Dup DB-00-112	41	183	598	37.3	<3	4.7	1.4	2.4	<1	0.2	<1	<10	<5	125	3.4	<10
*Dup DB-00-124	33	37	216	45.5	23	8.3	5.1	6.0	<1	0.4	<1	<10	<5	42	8.8	<10



**XRAL Laboratories**  
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Work Order: 059938

Date: 11/07/00

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Element.	Pb	Bi
Method.	ICP70	ICP70
Det.Lim.	2	5
Units.	ppm	ppm
DB-00-100	16	*INF
DB-00-101	<2	*INF
DB-00-102	4	<5
DB-00-103	<2	*INF
DB-00-104	<2	*INF
DB-00-105	<2	<5
DB-00-106	5	*INF
DB-00-107	<2	<5
DB-00-108	6	<5
DB-00-109	<2	<5
DB-00-110	<2	<5
DB-00-111	<2	<5
DB-00-112	<2	<5
DB-00-113	6	<5
DB-00-114	<2	<5
DB-00-115	6	<5
DB-00-116	12	<5
DB-00-117	5	9
DB-00-118	3	<5
DB-00-119	<2	<5
DB-00-120	6	<5
DB-00-121	<2	<5
DB-00-122	6	<5
DB-00-123	<2	6
DB-00-124	3	<5
DB-00-125	5	<5
DB-00-126	5	<5
*Dup DB-00-100	17	*INF
*Dup DB-00-112	<2	<5
*Dup DB-00-124	2	<5

SEP 01 2000



**XRAL Laboratories**  
A Division of SGS Canada Inc.

1885 Leslie Street  
Don Mills, Ontario  
Canada M3B 3J4  
Telephone (416) 445-5755  
Fax (416) 445-4152

### CERTIFICATE OF ANALYSIS

**Work Order: 060605**

To: **URSA Major International**  
Attn: **Geoff Shore**  
100 Adelaide Street West  
Suite 405  
TORONTO  
ONTARIO M5H 1S3

Date : 28/08/00

Copy 1 to :

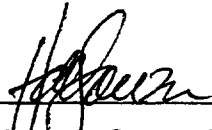
Copy 2 to :

P.O. No. :  
Project No. :  
No. of Samples : 22 Rock  
Date Submitted : 10/08/00  
Report Comprises : Cover Sheet plus  
Pages 1 to 3

**Distribution of unused material:**

**Pulps:** Discarded After 90 Days Unless Instructed!!!  
**Rejects:** Discarded After 90 Days Unless Instructed!!!

Certified By :

  
\_\_\_\_\_  
Dr. Hugh de Souza, General Manager  
XRAL Laboratories

### ISO 9002 REGISTERED

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample  
n.a. = Not applicable -- = No result  
\*INF = Composition of this sample makes detection impossible by this method  
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



**XRAL Laboratories**  
A Division of SGS Canada Inc.

Work Order: 060605

Date: 28/08/00

FINAL

Page 1 of 3

Element. Method. Det. Lim. Units.	Au FA301 1 ppb	Pt FA301 10 ppb	Pd FA301 1 ppb	Be ICP70 0.5 ppm	Na ICP70 0.01 %	Mg ICP70 0.01 %	Al ICP70 0.01 %	P ICP70 0.01 %	K ICP70 0.01 %	Ca ICP70 0.01 %	Sc ICP70 0.5 ppm	Ti ICP70 0.01 %	V ICP70 2 ppm	Cr ICP70 1 ppm	Mn ICP70 2 ppm	Fe ICP70 0.01 %
GS-160	215	481	3870	<0.5	0.07	1.09	1.58	0.02	0.21	0.34	0.8	0.05	34	84	223	4.09
GS-161	139	432	3750	<0.5	0.06	1.44	1.93	0.06	0.17	0.31	0.9	0.06	37	101	293	3.67
GS-162	11	36	133	<0.5	0.03	3.48	3.95	0.04	0.08	0.67	5.6	0.07	131	145	833	5.86
GS-163	264	632	5380	<0.5	0.05	1.17	1.53	0.04	0.23	0.38	1.7	0.07	42	93	244	3.30
GS-164	464	1110	7580	<0.5	0.03	1.73	2.06	0.03	0.03	0.20	1.2	0.05	54	82	357	5.48
GS-165	692	1860	13650	<0.5	0.03	2.09	2.36	0.03	0.02	0.18	2.3	0.04	70	96	419	6.35
GS-166	58	246	1420	<0.5	0.09	0.97	1.56	0.04	0.37	0.44	2.0	0.07	53	72	198	2.80
GS-167	221	478	3500	<0.5	0.10	1.13	1.78	0.03	0.50	0.48	1.5	0.07	45	81	237	3.14
GS-168	290	818	4640	<0.5	0.07 <sup>1</sup>	1.39	2.13	0.03	0.46	0.33	1.3	0.08 <sup>1</sup>	52	63	283	4.13
GS-169	80	458	2560	<0.5	0.05	1.59	2.16	0.04	0.48	0.31	1.2	0.07	47	64	325	3.76
GS-170	124	540	3310	<0.5	0.04	1.37	1.70	0.03	0.33	0.22	1.8	0.08	57	61	262	3.73
GS-171	34	34	153	<0.5	0.04	0.46	0.64	0.03	0.05	0.51	1.5	0.07	22	80	112	1.25
GS-172	17	24	54	<0.5	0.12	0.94	1.62	0.04	0.49	0.61	1.7	0.07	63	54	176	1.98
GS-180	6	22	37	<0.5	0.04	1.28	1.24	0.02	0.11	0.30	1.5	0.06	34	243	219	1.77
GS-181	22	19	28	<0.5	0.08	1.25	1.99	0.04	0.88	0.59	3.4	0.12	66	65	353	3.64
GS-182	16	28	25	<0.5	0.09	0.97	1.59	0.04	0.52	0.80	3.6	0.10	61	73	325	2.87
GS-183	15	20	24	<0.5	0.07	1.12	1.77	0.05	0.70	0.87	3.9	0.12	70	64	337	3.31
GS-184	8	21	32	<0.5	0.05	1.44	1.66	0.03	0.11	0.99	1.9	0.08	48	119	344	2.54
GS-185	10	26	28	<0.5	0.04	1.51	1.88	0.04	0.20	0.42	2.7	0.08	71	60	395	3.22
GS-186	101	14	24	<0.5	0.02	0.11	0.17	<0.01	0.02	0.03	<0.5	<0.01	5	188	25	1.36
GS-187	60	79	85	<0.5	0.04	1.84	2.46	0.04	0.86	0.35	2.8	0.10	95	103	392	4.80
GS-188	86	32	35	<0.5	0.04	1.57	1.86	0.04	0.11	0.35	2.0	0.07	58	115	317	3.50
*Dup GS-160	181	439	3710	<0.5	0.07	1.10	1.60	0.02	0.22	0.34	0.9	0.05	34	84	224	4.06
*Dup GS-172	20	16	60	<0.5	0.12	0.95	1.64	0.04	0.50	0.63	1.7	0.07	64	55	179	2.00



**XRAL Laboratories**  
A Division of SGS Canada Inc.

Work Order: 060605

Date: 28/08/00

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Page 2 of 3

Element. Method. Det.Lim. Units.	Co ICP70 1 ppm	Ni ICP70 1 ppm	Cu ICP70 0.5 ppm	Zn ICP70 0.5 ppm	As ICP70 3 ppm	Sr ICP70 0.5 ppm	Y ICP70 0.5 ppm	Zr ICP70 0.5 ppm	Mo ICP70 1 ppm	Ag ICP70 0.2 ppm	Cd ICP70 1 ppm	Sn ICP70 10 ppm	Sb ICP70 5 ppm	Ba ICP70 1 ppm	La ICP70 0.5 ppm	W ICP70 10 ppm
GS-160	185	1880	4090	72.1	227	11.6	1.2	0.9	<1	1.6	<1	<10	<5	42	2.8	<10
GS-161	70	472	1120	37.2	<3	8.5	1.6	2.9	<1	0.7	<1	<10	<5	30	3.4	<10
GS-162	43	119	27.9	68.0	<3	7.7	4.2	4.9	<1	0.3	<1	<10	<5	15	5.3	<10
GS-163	92	571	3520	60.5	118	8.7	1.8	2.6	<1	1.8	<1	<10	<5	42	4.5	<10
GS-164	190	973	2710	54.0	185	4.4	1.4	2.6	<1	1.3	<1	<10	<5	5	2.4	<10
GS-165	863	1930	1600	55.7	1440	4.3	2.0	2.5	<1	1.2	<1	<10	<5	3	4.2	<10
GS-166	51	502	1110	41.4	10	10.7	2.8	4.7	<1	0.7	<1	<10	<5	66	5.5	<10
GS-167	69	723	3280	60.3	148	13.6	2.0	3.0	<1	1.6	<1	<10	<5	86	4.7	<10
GS-168	82	912	3650	61.6	74	11.2	1.8	3.8	<1	1.7	<1	<10	<5	78	4.0	<10
GS-169	61	480	800	46.0	10	7.2	1.8	2.5	<1	0.3	<1	<10	<5	76	4.5	<10
GS-170	86	566	1490	50.8	12	4.4	2.6	3.8	<1	0.6	<1	<10	<5	63	4.3	<10
GS-171	20	66	1860	38.7	6	10.2	2.1	2.4	<1	0.8	<1	<10	<5	7	4.3	<10
GS-172	21	62	270	25.0	<3	17.3	3.2	5.1	<1	<0.2	<1	<10	<5	85	7.0	<10
GS-180	20	86	53.7	20.7	<3	5.8	1.9	2.8	<1	<0.2	<1	<10	<5	16	5.1	<10
GS-181	38	34	45.7	57.9	27	7.6	4.6	4.5	<1	0.3	<1	<10	<5	192	9.2	<10
GS-182	32	32	173	52.2	23	10.1	4.6	4.5	<1	0.3	<1	<10	<5	130	8.9	<10
GS-183	31	30	101	55.2	20	9.6	5.0	5.0	<1	<0.2	<1	<10	<5	188	11.7	<10
GS-184	26	51	98.5	38.1	4	13.5	3.0	3.5	<1	<0.2	<1	<10	<5	24	3.6	<10
GS-185	28	42	136	49.7	<3	8.1	3.0	4.1	<1	0.4	<1	<10	<5	41	3.5	<10
GS-186	5400	273	2700	8.8	12450	1.4	1.3	<0.5	<1	1.0	<1	<10	10	4	22.4	46
GS-187	54	312	1630	49.4	22	9.4	3.1	5.4	<1	0.8	1	<10	<5	89	6.5	<10
GS-188	113	118	2260	55.3	94	7.8	3.1	3.6	<1	1.4	<1	<10	<5	13	4.2	<10
*Dup GS-160	184	1860	4080	71.1	231	11.9	1.3	1.0	<1	1.9	<1	<10	<5	42	2.5	<10
*Dup GS-172	20	63	269	25.2	<3	17.9	3.3	5.1	<1	<0.2	<1	<10	<5	84	6.8	<10





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Element.	Pb	Bi
Method.	ICP70	ICP70
Det.Lim.	2	5
Units.	ppm	ppm
GS-160	6	INF
GS-161	5	INF
GS-162	4	<5
GS-163	3	INF
GS-164	6	INF
GS-165	6	INF
GS-166	<2	INF
GS-167	6	INF
GS-168	7	INF
GS-169	5	<5
GS-170	8	INF
GS-171	3	INF
GS-172	<2	<5
GS-180	5	<5
GS-181	8	<5
GS-182	7	<5
GS-183	6	<5
GS-184	6	<5
GS-185	2	150
GS-186	6	INF
GS-187	6	INF
GS-188	5	INF
*Dup GS-160	6	INF
*Dup GS-172	2	<5



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
 5175 Timberlea Blvd., Mississauga  
 Ontario, Canada L4W 2S3  
 PHONE: 905-624-2808 FAX: 905-624-6163

To: URSA MAJOR LTD.

STE. 405 - 100 ADELAIDE ST. W.  
 TORONTO, ON  
 M5H 1S3

Page Number : 1-A  
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 Account : RRY

Project : PORTER  
 Comments : ATTN: RICHARD SUTCLIFF CC: MICHAEL PERKINS

**CERTIFICATE OF ANALYSIS      A9936336**

SAMPLE	PREP CODE	Au ppb AFS	Pt ppb AFS	Pd ppb AFS							
BS-99-118	205 226	248	835	7880							
BS-99-126	205 226	346	445	4010							
BS-99-135	205 226	768	1310	>10000							
BS-99-138	205 226	164	710	7260							
SKARN-533	205 226	32	< 5	32							

12/20/99 4:19PM CHEMEX LABS VAX-FAX  
 CO: M. Perkins PAGE 002

CERTIFICATION

SEP 18 2000



**XRAL Laboratories**  
A Division of SGS Canada Inc.

1885 Leslie Street  
Don Mills, Ontario  
Canada M3B 3J4  
Telephone (416) 445-5755  
Fax (416) 445-4152

### CERTIFICATE OF ANALYSIS

Work Order: 060810

To: **URSA Major International**  
Attn: **Geoff Shore**  
100 Adelaide Street West  
Suite 405  
TORONTO  
ONTARIO M5H 1S3

Date : 12/09/00

Copy 1 to :

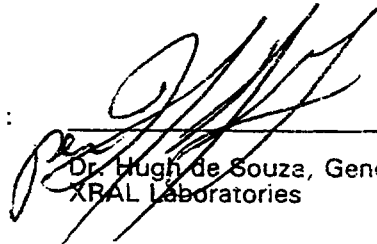
Copy 2 to :

P.O. No. :  
Project No. :  
No. of Samples : 43 Rock  
Date Submitted : 23/08/00  
Report Comprises : Cover Sheet plus  
Pages 1 to 6

**Distribution of unused material:**

Pulps: Discarded After 90 Days Unless Instructed!!!  
Rejects: Discarded After 90 Days Unless Instructed!!!

Certified By :

  
\_\_\_\_\_  
Dr. Hugh de Souza, General Manager  
XRAL Laboratories

**ISO 9002 REGISTERED**

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample  
n.a. = Not applicable -- = No result  
\*INF = Composition of this sample makes detection impossible by this method  
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



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Element. Method. Det.Lim. Units.	Au FA301 1 ppb	Pt FA301 10 ppb	Pd FA301 1 ppb	Be ICP70 0.5 ppm	Na ICP70 0.01 %	Mg ICP70 0.01 %	Al ICP70 0.01 %	P ICP70 0.01 %	K ICP70 0.01 %	Ca ICP70 0.01 %	Sc ICP70 0.5 ppm	Ti ICP70 0.01 %	V ICP70 2 ppm	Cr ICP70 1 ppm	Mn ICP70 2 ppm	Fe ICP70 0.01 %
GS-189	4	21	12	0.9	0.05	1.39	1.75	0.04	0.81	0.81	5.9	0.09	80	113	445	3.44
GS-190	41	12	2	0.7	0.09	1.46	1.85	0.07	1.06	0.52	6.0	0.14	174	83	256	5.17
GS-191	4	20	22	<0.5	0.09	1.61	1.90	0.04	0.45	0.46	2.7	0.06	78	95	271	3.62
GS-192	6	16	17	<0.5	0.05	1.26	1.60	0.03	0.80	0.45	1.9	0.11	59	100	306	2.87
GS-193	411	623	623	<0.5	0.07	1.46	1.93	0.04	0.25	0.26	1.4	0.06	64	122	359	6.30
GS-194	205	385	421	<0.5	0.04	1.51	1.67	0.02	0.06	0.15	1.2	0.03	55	147	306	4.74
GS-195	11	27	33	<0.5	0.10	0.71	1.24	0.04	0.31	0.57	2.4	0.06	46	78	219	2.10
GS-196	194	361	504	<0.5	0.04	0.88	1.29	<0.01	0.17	0.14	1.4	0.06	42	50	192	4.48
GS-197	28	76	78	<0.5	0.07	2.00	2.10	0.04	0.05	0.24	2.2	0.03	69	215	334	3.28
GS-198	337	647	715	<0.5	0.06	1.03	1.59	0.03	0.33	0.28	1.3	0.04	45	54	273	5.89
GS-199	27	68	76	<0.5	0.07	0.99	1.54	0.03	0.30	0.33	1.0	0.04	36	60	256	2.58
GS-200	14	71	112	<0.5	0.09	0.78	1.32	0.02	0.44	0.44	1.4	0.05	34	59	220	2.02
GS-201	271	528	664	<0.5	0.04	0.99	1.42	0.01	0.27	0.19	0.9	0.04	39	45	284	5.11
GS-202	351	722	762	<0.5	0.03	1.35	1.87	0.03	0.20	0.13	1.3	0.08	75	100	335	7.11
GS-203	5	15	5	<0.5	0.07	0.86	1.39	0.09	0.41	0.63	2.9	0.10	87	48	265	2.72
GS-204	335	627	723	<0.5	0.07	0.92	1.57	0.04	0.30	0.31	2.1	0.07	58	67	288	4.97
GS-205	350	394	525	<0.5	0.07	0.66	1.14	0.03	0.31	0.34	1.2	0.05	38	37	192	4.17
GS-206	7	15	22	<0.5	0.08	1.15	1.61	0.03	0.25	0.61	1.8	0.05	45	71	351	2.90
GS-207	284	547	727	<0.5	0.04	1.16	1.70	0.03	0.39	0.21	1.2	0.05	53	59	322	6.21
GS-208	38	85	83	<0.5	0.08	0.96	1.40	0.07	0.19	0.45	2.0	0.10	70	91	325	3.56
GS-209	6	18	47	<0.5	0.05	1.11	1.54	0.02	0.18	0.43	1.2	0.04	39	57	358	2.83
GS-210	35	100	99	<0.5	0.07	1.05	1.48	0.03	0.15	0.36	1.2	0.03	33	59	301	2.63
GS-211	226	399	504	<0.5	0.05	1.13	1.57	0.03	0.30	0.17	0.8	0.06	40	46	315	5.12
GS-212	3	<10	2	<0.5	0.23	0.23	0.46	0.07	0.01	1.26	3.7	0.05	14	105	262	0.75
GS-213	3	<10	5	<0.5	0.03	1.59	1.98	0.03	0.47	0.12	3.0	0.04	58	184	205	2.97
GS-214	1	12	6	<0.5	0.03	1.53	1.84	0.03	0.21	0.30	5.4	0.02	60	174	289	2.85
GS-215	9	33	30	<0.5	0.09	1.12	1.76	0.04	0.67	1.14	2.2	0.08	65	73	405	3.20
GS-217	98	207	236	<0.5	0.05	1.56	2.04	0.03	0.40	0.28	1.6	0.06	74	141	376	4.37
GS-218	85	193	216	<0.5	0.07	0.63	1.19	0.03	0.33	0.36	1.4	0.05	36	28	172	2.67
GS-219	162	257	327	<0.5	0.03	1.81	2.54	0.03	0.53	0.11	2.1	0.11	108	239	477	6.42



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Element. Method. Det. Lim. Units.	Au FA301 1 ppb	Pt FA301 10 ppb	Pd FA301 1 ppb	Be ICP70 0.5 ppm	Na ICP70 0.01 %	Mg ICP70 0.01 %	Al ICP70 0.01 %	P ICP70 0.01 %	K ICP70 0.01 %	Ca ICP70 0.01 %	Sc ICP70 0.5 ppm	Ti ICP70 0.01 %	V ICP70 2 ppm	Cr ICP70 1 ppm	Mn ICP70 2 ppm	Fe ICP70 0.01 %
GS-220	281	562	659	<0.5	0.07	0.93	1.60	0.04	0.42	0.26	1.0	0.06	52	60	241	5.28
GS-221	16	44	45	<0.5	0.08	1.09	1.64	0.04	0.21	0.44	1.8	0.05	55	77	298	2.83
GS-222	183	383	506	<0.5	0.07	1.01	1.52	0.03	0.08	0.41	1.2	0.04	42	45	259	4.10
GS-223	144	192	194	<0.5	0.07	0.95	1.58	0.03	0.49	0.41	2.9	0.06	72	108	298	5.47
GS-224	154	310	410	0.7	0.06	0.86	1.35	0.03	0.32	0.35	1.1	0.04	47	43	228	6.40
GS-225	194	400	473	<0.5	0.05	1.62	2.03	0.03	0.32	0.19	1.4	0.05	80	154	375	5.84
GS-226	109	204	272	<0.5	0.07	1.78	2.12	0.03	0.25	0.14	1.5	0.04	79	194	363	4.62
GS-227	38	88	96	<0.5	0.15	0.71	1.48	0.03	0.32	0.60	1.7	0.05	38	54	191	2.14
GS-229	5	99	66	<0.5	0.07	0.75	1.03	0.02	0.07	0.42	1.2	0.05	27	44	185	1.40
GS-230	49	49	55	<0.5	0.09	2.05	2.86	0.04	1.50	0.15	8.0	0.14	140	199	417	4.72
GS-231	2	<10	5	<0.5	0.03	0.75	1.34	0.04	0.19	0.07	0.8	0.02	18	52	130	2.46
GS-232	3	22	45	<0.5	0.07	0.93	1.21	0.02	0.08	0.45	1.2	0.04	25	84	194	1.62
GS-233	2	13	<1	<0.5	0.02	1.57	2.47	0.09	1.11	0.38	1.8	0.14	146	53	497	5.27
*Dup GS-189	3	15	9	<0.5	0.05	1.35	1.70	0.04	0.76	0.79	5.6	0.09	78	111	435	3.38
*Dup GS-201	270	524	627	<0.5	0.04	1.01	1.44	0.01	0.27	0.20	0.9	0.04	40	47	288	5.17
*Dup GS-213	3	11	7	<0.5	0.04	1.71	2.14	0.03	0.50	0.13	3.1	0.05	63	195	220	3.16
*Dup GS-226	105	196	253	<0.5	0.06	1.85	2.20	0.03	0.25	0.15	1.7	0.05	83	199	378	4.72



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Element. Method. Det. Lim. Units.	Co ICP70 1 ppm	Ni ICP70 1 ppm	Cu ICP70 0.5 ppm	Zn ICP70 0.5 ppm	As ICP70 3 ppm	Sr ICP70 0.5 ppm	Y ICP70 0.5 ppm	Zr ICP70 0.5 ppm	Mo ICP70 1 ppm	Ag ICP70 0.2 ppm	Cd ICP70 1 ppm	Sn ICP70 10 ppm	Sb ICP70 5 ppm	Ba ICP70 1 ppm	La ICP70 0.5 ppm	W ICP70 10 ppm
GS-189	28	55	79.7	48.6	12	12.9	3.6	4.4	2	0.5	<1	<10	<5	83	4.5	<10
GS-190	32	25	459	30.9	<3	6.9	9.5	10.9	1	0.3	<1	<10	<5	118	15.2	<10
GS-191	33	57	164	31.4	<3	9.0	3.1	5.1	<1	0.2	<1	<10	<5	58	5.8	<10
GS-192	27	66	107	39.2	<3	6.9	3.0	4.6	<1	0.3	<1	<10	<5	90	4.7	<10
GS-193	164	2500	5310	76.3	234	6.9	1.7	2.8	1	3.3	<1	<10	<5	39	5.4	<10
GS-194	146	2140	4290	67.3	37	4.2	1.1	2.0	4	3.3	<1	<10	<5	13	5.7	<10
GS-195	17	100	149	27.2	<3	10.9	3.2	3.0	1	0.3	<1	<10	<5	66	6.2	<10
GS-196	195	2090	4090	51.1	208	3.5	0.9	1.7	5	1.8	<1	<10	<5	32	4.2	<10
GS-197	32	185	233	37.8	4	2.6	2.3	2.5	1	0.4	<1	<10	<5	15	8.2	<10
GS-198	279	4540	5760	82.0	131	7.0	1.9	<0.5	3	3.8	<1	<10	<5	70	6.4	<10
GS-199	28	218	489	32.0	<3	9.4	1.9	2.9	<1	0.6	<1	<10	<5	65	5.2	<10
GS-200	18	79	453	31.9	<3	11.7	1.8	3.2	<1	0.6	<1	<10	<5	103	4.6	<10
GS-201	190	3390	5010	76.4	17	4.6	1.1	0.6	<1	3.4	<1	<10	<5	46	3.3	<10
GS-202	19	252	4180	36.3	114	7.4	0.6	4.6	9	7.1	<1	<10	<5	36	3.5	<10
GS-203	17	47	422	41.2	<3	8.1	6.5	5.1	<1	0.8	<1	<10	<5	107	9.5	<10
GS-204	16	254	3440	36.6	23	12.7	1.7	4.5	<1	4.2	<1	<10	<5	74	6.1	<10
GS-205	94	2010	4440	64.2	<3	8.7	1.7	2.8	<1	2.7	<1	<10	<5	56	4.6	<10
GS-206	23	146	172	40.2	<3	9.3	2.9	4.3	<1	0.3	<1	<10	<5	46	5.9	<10
GS-207	223	3330	5600	87.7	72	3.9	1.6	1.7	<1	3.9	<1	<10	<5	82	5.8	<10
GS-208	42	389	1940	72.3	<3	7.2	3.3	5.6	2	1.0	<1	<10	<5	46	11.3	<10
GS-209	26	62	215	40.3	<3	5.7	1.5	4.0	<1	0.5	<1	<10	<5	33	3.9	<10
GS-210	33	278	531	37.6	<3	8.1	2.0	3.0	<1	0.8	<1	<10	<5	31	4.7	<10
GS-211	109	1400	3380	56.5	74	4.6	1.0	4.0	<1	2.6	<1	<10	<5	58	4.4	<10
GS-212	6	34	271	14.4	<3	6.8	10.8	8.2	1	0.5	<1	<10	<5	5	14.1	<10
GS-213	34	114	38.7	23.5	20	3.3	4.2	3.6	5	<0.2	<1	<10	<5	45	7.3	<10
GS-214	29	107	60.3	37.3	<3	5.8	6.7	4.6	3	<0.2	<1	<10	<5	27	12.7	<10
GS-215	25	44	108	47.7	3	11.6	3.7	5.2	1	0.4	<1	<10	<5	155	7.4	<10
GS-217	51	534	1830	46.6	23	6.1	1.4	2.5	3	1.7	<1	<10	<5	79	4.9	<10
GS-218	60	876	1580	35.5	<3	11.2	1.9	2.1	<1	2.1	<1	<10	<5	73	4.5	<10
GS-219	23	273	1350	45.2	19	8.7	0.8	5.1	6	2.0	<1	<10	<5	122	10.2	<10



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Element.	Co	Ni	Cu	Zn	As	Sr	Y	Zr	Mo	Ag	Cd	Sn	Sb	Ba	La	W
Method.	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70
Det.Lim.	1	1	0.5	0.5	3	0.5	0.5	0.5	1	0.2	1	10	5	1	0.5	10
Units.	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GS-220	41	504	4650	38.3	99	13.4	1.4	3.5	9	4.1	<1	<10	<5	93	5.0	<10
GS-221	25	149	184	29.2	<3	8.4	2.7	3.5	1	0.3	<1	<10	<5	48	6.0	<10
GS-222	115	2380	3630	82.0	<3	8.8	1.9	1.3	<1	2.6	<1	<10	<5	17	4.4	<10
GS-223	179	1940	1580	58.7	121	5.2	2.7	3.3	9	0.9	<1	<10	<5	113	9.5	<10
GS-224	307	5540	6380	95.8	177	6.9	2.3	<0.5	7	3.9	<1	<10	<5	69	6.1	<10
GS-225	181	2550	2850	64.4	103	3.4	1.3	1.8	7	2.2	<1	<10	<5	58	4.9	<10
GS-226	53	649	2270	49.9	41	3.0	1.2	3.0	3	1.8	<1	<10	<5	45	6.0	<10
GS-227	30	405	732	23.1	<3	19.8	2.1	3.7	1	1.1	<1	<10	<5	69	4.6	<10
GS-229	13	49	79.5	17.1	<3	11.4	1.7	2.6	<1	0.3	<1	<10	<5	15	2.8	<10
GS-230	22	200	429	58.9	21	4.6	3.5	8.2	1	0.9	<1	<10	<5	166	4.5	<10
GS-231	14	37	45.5	19.1	3	1.2	9.2	4.6	2	0.2	<1	<10	<5	28	27.5	<10
GS-232	15	51	67.7	31.4	<3	11.8	1.7	2.2	<1	0.3	<1	<10	<5	19	3.6	<10
GS-233	29	32	75.6	68.5	<3	6.9	3.7	5.0	<1	0.3	<1	<10	<5	129	8.1	<10
*Dup GS-189	27	54	76.1	47.4	15	12.2	3.2	4.5	<1	0.3	<1	<10	<5	80	4.6	<10
*Dup GS-201	198	3440	5020	77.6	18	4.6	1.1	0.5	<1	3.6	<1	<10	<5	47	3.2	<10
*Dup GS-213	32	119	41.3	25.2	16	3.6	4.3	3.4	3	<0.2	<1	<10	<5	49	7.3	<10
*Dup GS-226	52	651	2270	49.3	43	3.4	1.4	3.2	3	2.1	<1	<10	<5	46	5.9	<10



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Element.	Pb	Bi
Method.	ICP70	ICP70
Det. Lim.	2	5
Units.	ppm	ppm
GS-189	6	<5
GS-190	12	<5
GS-191	4	<5
GS-192	<2	<5
GS-193	2	*INF
GS-194	10	*INF
GS-195	3	<5
GS-196	5	*INF
GS-197	<2	<5
GS-198	9	*INF
GS-199	8	<5
GS-200	<2	<5
GS-201	9	*INF
GS-202	8	*INF
GS-203	<2	<5
GS-204	5	*INF
GS-205	6	*INF
GS-206	<2	<5
GS-207	7	*INF
GS-208	2	*INF
GS-209	2	<5
GS-210	4	<5
GS-211	6	*INF
GS-212	4	<5
GS-213	2	<5
GS-214	7	<5
GS-215	3	<5
GS-217	4	*INF
GS-218	7	*INF
GS-219	3	*INF



SEP 18 2000



**XRAL Laboratories**  
A Division of SGS Canada Inc.

1885 Leslie Street  
Don Mills, Ontario  
Canada M3B 3J4  
Telephone (416) 445-5755  
Fax (416) 445-4152

### CERTIFICATE OF ANALYSIS

**Work Order: 060809**

To: **URSA Major International**  
Attn: **Geoff Shore**  
100 Adelaide Street West  
Suite 405  
TORONTO  
ONTARIO M5H 1S3

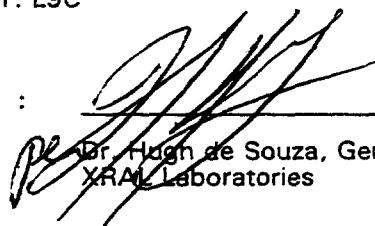
Date : 12/09/00

Copy 1 to :  
Copy 2 to :  
P.O. No. :  
Project No. :  
No. of Samples : 7 Rock  
Date Submitted : 23/08/00  
Report Comprises : Cover Sheet plus  
Pages 1 to 2

**Distribution of unused material:**

Pulps: RETURN SAME AS ABOVE  
Rejects: RETURN TO: 45 DOUGLAS RD. ANCASTER, ONT. L9C

Certified By :

  
Dr. Hugh de Souza, General Manager  
XRAL Laboratories

**ISO 9002 REGISTERED**

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample  
n.a. = Not applicable -- = No result  
\*!NF = Composition of this sample makes detection impossible by this method  
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



**XRAL Laboratories**  
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Work Order: 060809

Date: 12/09/00

FINAL

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Element.	Au	Pt	Pd	SiO2	Al2O3	CaO	MgO	Na2O	K2O	Fe2O3	MnO	TiO2	P2O5	Cr2O3	LOI	Sum
Method.	FA301	FA301	FA301	XRF102	XRF102	XRF102	XRF102	XRF102	XRF102	XRF102	XRF102	XRF102	XRF102	XRF102	XRF102	XRF102
Det. Lim.	1	10	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.001	0.01	0.01	0.01A	0.01
Units.	ppb	ppb	ppb	%	%	%	%	%	%	%	%	%	%	%	%	%
173	4	21	12	53.7	13.2	8.20	4.01	2.60	1.48	14.3	0.18	1.343	0.14	0.01	0.95	100.2
174	6	18	7	54.3	14.3	8.21	4.62	2.36	0.98	13.1	0.18	1.065	0.13	0.02	0.95	100.2
175	8	64	25	53.5	14.8	8.85	5.69	2.28	0.98	12.2	0.17	0.885	0.09	0.02	0.85	100.4
176	4	26	17	53.3	14.8	9.24	5.80	2.37	0.87	12.3	0.18	0.950	0.10	0.02	0.35	100.3
177	3	14	63	51.7	16.4	9.77	6.40	2.34	0.98	10.9	0.16	0.754	0.09	0.02	0.80	100.4
178	2	< 10	12	51.9	15.4	10.4	8.20	1.94	0.80	9.57	0.15	0.610	0.06	0.07	0.25	100.1
179	3	20	12	51.8	8.80	7.29	15.7	1.14	0.37	11.5	0.19	0.547	0.05	0.21	2.75	100.4
*Dup 173	5	13	8	53.6	13.1	8.18	4.02	2.61	1.48	14.2	0.18	1.340	0.14	0.01	1.00	100.0



**XRAL Laboratories**  
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**Work Order:** 060809

**Date:** 12/09/00

**FINAL**

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Element.	Rb	Sr	Y	Nb	Ba	Zr
Method.	XRF102	XRF102	XRF102	XRF102	XRF102	XRF102
Det.Lim.	2	2	2	2	20	2
Units.	ppm	ppm	ppm	ppm	ppm	ppm
173	68	162	29	8	274	113
174	36	178	25	8	197	90
175	37	185	21	7	214	80
176	32	180	20	5	208	83
177	39	203	16	4	222	67
178	28	181	14	3	159	56
179	18	62	11	3	96	63
*Dup 173	68	162	28	8	273	112

**Appendix III**  
**B Horizon Soil Geochemistry - Hanover Showing**  
**Sample Description, Results and Certificates**

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Line #	Station #	Topography	Soil Descr.	Outcrop	Comments	Au ppb	Pt ppb	Pd ppb
100E	100N	flat	grey silty B	qzte 5m to north		9	28	28
100E	75N	at bottom of slope	rusty brown sand	gabb 2m to south	qv's in gabbro	6	24	20
100E	50N	top of hill	rusty brown sand	none		3	20	18
100E	25N	flat	silty grey sand	bldrs of gabbro		3	10	10
100E	0	at bottom of slope	silty grey B	none	uphill to qzte	2	20	14
100E	25S	flat - swampy	silty grey sand	none		21	-10	6
100E	50S	flat - low	silty clay		alders and spruce	5	13	8
100E	75S	at bottom of slope	silty grey B	none	large poplars	4	-10	9
100E	100S	flat	silty grey B	none	large poplars	2	-10	8
75E	0	at bottom of slope	silty grey B	none	uphill to gabbro	-1	-10	4
50E	75N	at bottom of slope	fg silty B	none	seeds or congl?	1	12	5
50E	50N	flat	silty sandy	none	crossed gabb/sed contact to S	10	39	36
50E	25N	at bottom of slope	silty grey B	none	downslope from gabbro o/c	7	21	23
50E	0	flat	fg grey silty sand	none		6	25	23
50E	25S	flat	fg grey brown	none	alders	6	18	26
50E	50S	flat	fg grey sandy	none	large poplars	5	39	27
50E	75S	flat	clay silty grey	none	small poplars	11	28	25
50E	100S	moving downslope	clay silty grey	none	spruce	8	26	26
25E	0	flat	grey silty B	bldrs of gabbro		7	32	21
12.5E	0	flat - slightly downhill to SE	tan yellow sandy	gabbro 3 m to S		123	29	25
0	75N	flat	grey silty B	none	crossed gabb/sed contact to S	713	20	22
0	50N	flat	brown silt/clay	none		102	14	18
0	25N	downslope from o/c	fg grey silt	rusty gabb with breccia	5m from DB00-101	28	44	48
0	12.5N	on top of hill	mainly humus - poor B	gabb?		16	78	38
0	0	at bottom of outcrop	grey silty B horizon	sheared rusty gabb	at showing DB00-104	28	52	42
0	12.5S	moving downslope	sandy light brown	none	downslope from DB00-104	6	17	23

Line #	Station #	Topography	Soil Descr.	Outcrop	Comments	Au ppb	Pt ppb	Pd ppb
0	25S	flat	sandy grey	none	poplars and maple	13	28	38
0	50S	flat - low	sandy grey	none	alders	9	21	31
0	75S	flat - low	sandy grey w/ qz pebbles	none	alders	22	26	29
0	100S	hummocky beside dry stream	sandy silt w/ clay	none		8	26	23
12.5W	0	at bottom of slope	silty grey B	gabbro 5 m to N		9	26	28
25W	0	at bottom of slope	silty grey B	gabbro 2m to N		12	21	27
50W	75N	at bottom of slope	sandy brown silt	qzte 1m to north		16	28	21
50W	50N	hummocky	fg rusty brown sand /silt	gabbro sed bldrs		11	34	31
50W	25N	flat	rusty brown sand	gabbro 1m to S		20	21	24
50W	0	at bottom of slope	grey sand and silt	none	drill steel nearby	11	18	32
50W	25S	at bottom of slope	silty grey brown	gabbro 5m to S and 5m N		9	26	29
50W	50S	low swampy	silty grey	none		8	26	36
50W	75S	low swampy	silty brown clay	none		10	36	34
50W	100S	moving uphill	light grey silty	none		8	26	28
75W	0	at bottom of slope	dk black sandy w/ humus	qzte with qv's and shears		18	58	62
100W	75N	at bottom of slope	brown sandy silt	qzte 5m to W		12	34	33
100W	50N	at bottom of slope	silty grey B	qzte 10m to W		9	25	24
100W	25N	flat	silty grey B	gabbro 12 m to S	gabbro bldrs	9	30	39
100W	0	between two outcrops	silty grey B	qzte w/ aspy veins 5m to N	qzte 2m to north	9	22	27
100W	25S	moving downhill	silty grey B	qzte 5 m to S	qzte contains rusty qv's	8	21	37

<b>Line #</b>	<b>Station #</b>	<b>Topography</b>	<b>Soil Descr.</b>	<b>Outcrop</b>	<b>Comments</b>	<b>Au ppb</b>	<b>Pt ppb</b>	<b>Pd ppb</b>
100W	50S	moving downhill	rusty grey silt	none	poplars	8	25	26
100W	75S	low swampy	light grey brown clay	none		8	34	35
100W	100S	moving uphill	light grey silty clay	none	large poplars	9	21	29

Line #	Station #	Au ppb	Pt ppb	Pd ppb	Be ppm	Na %	Mg %	Al %	P %	K %	Ca %	Sc ppm	Ti %	V ppm	Cr ppm	Mn ppm	Fe %	Co ppm	Ni ppm	Cu ppm	Zn ppm	As ppm	Zr ppm
100E	100N	9	28	28	0.7	0.02	0.36	0.85	0.02	0.04	0.17	1	0.05	24	21	258	1.16	6	17	12.5	40	-3	1.8
100E	75N	6	24	20	-0.5	0.02	0.48	1.4	0.05	0.03	0.1	1.2	0.1	66	23	163	3.14	9	18	46.3	66.8	-3	2.4
100E	50N	3	20	18	-0.5	0.02	0.2	1.25	0.06	0.03	0.07	0.8	0.04	29	21	144	1.56	5	13	14.3	40.2	-3	0.6
100E	25N	3	10	10	-0.5	0.02	0.5	1.17	0.01	0.05	0.14	2.2	0.06	31	34	381	1.49	10	18	11	33.9	-3	2.9
100E	0	2	20	14	-0.5	0.02	0.28	0.75	0.03	0.03	0.11	0.9	0.04	34	27	132	1.21	5	13	14.8	32.2	-3	1.4
100E	25S	21	-10	6	0.5	0.02	0.45	1	0.02	0.08	0.17	1.7	0.06	29	29	169	1.33	5	17	10.3	42	-3	3.4
100E	50S	5	13	8	-0.5	0.02	0.31	0.84	0.02	0.04	0.11	1.4	0.05	23	22	125	1.02	5	13	6.1	27.3	-3	2.2
100E	75S	4	-10	9	-0.5	0.02	0.09	0.32	0.01	0.04	0.11	-0.5	0.04	14	8	82	0.51	1	5	2.9	16.2	-3	1.1
100E	100S	2	-10	8	-0.5	0.02	0.03	0.21	0.01	0.03	0.04	-0.5	0.02	9	4	307	0.3	1	3	3.5	10.8	-3	-0.5
75E	0	-1	-10	4	-0.5	0.02	0.66	1.35	0.03	0.1	0.16	2	0.08	38	37	276	1.91	7	21	11.5	48.9	-3	5.3
50E	75N	1	12	5	-0.5	0.02	0.36	0.75	0.03	0.03	0.06	0.5	0.06	37	98	207	1.41	5	19	8.9	30.1	-3	0.9
50E	50N	10	39	36	-0.5	0.02	0.31	1.94	0.08	0.03	0.1	1.6	0.05	31	37	136	1.67	9	20	50	46.8	-3	3.4
50E	25N	7	21	23	-0.5	0.01	0.09	0.49	0.02	0.04	0.08	-0.5	0.04	24	14	103	0.79	2	7	13.5	22	4	1.7
50E	0	6	25	23	-0.5	0.02	0.64	1.63	0.03	0.08	0.17	2.5	0.07	39	42	323	2.17	11	26	21.1	63.2	-3	3.3
50E	25S	6	18	26	-0.5	0.02	0.76	1.85	0.04	0.13	0.23	3.5	0.07	39	52	389	2.11	12	31	17.8	75.4	-3	3.9
50E	50S	5	39	27	-0.5	0.02	0.58	1.23	0.03	0.09	0.18	1.7	0.06	34	34	453	1.74	9	20	9.6	62.8	-3	3.4
50E	75S	11	28	25	-0.5	0.02	0.49	1.14	0.03	0.07	0.2	2.2	0.06	29	32	205	1.53	6	19	12.1	39.2	-3	3.5
50E	100S	8	26	26	-0.5	0.02	0.32	0.83	0.02	0.05	0.14	1.3	0.05	23	21	236	1.09	4	12	6.1	45.5	-3	1.1
25E	0	7	32	21	-0.5	0.02	0.09	0.36	0.02	0.03	0.07	0.5	0.05	20	9	92	0.55	2	4	4.5	12.8	-3	1.6
12.5E	0	123	29	25	-0.5	0.02	0.5	1.92	0.03	0.06	0.12	2.3	0.07	35	37	308	1.78	20	42	64.8	67.4	-3	2.8
0	75N	713	20	22	-0.5	0.02	0.06	0.31	0.01	0.02	0.05	-0.5	0.04	14	9	61	0.41	-1	4	3.8	11.6	-3	0.9
0	50N	102	14	18	-0.5	0.02	0.28	1.62	0.05	0.04	0.07	1.2	0.06	41	33	114	2.18	5	14	14.8	38.7	-3	3
0	25N	28	44	48	-0.5	0.02	0.67	0.98	0.04	0.03	0.04	1.8	0.01	39	33	121	1.39	6	27	123	20.8	-3	0.6
0	12.5N	16	78	38	-0.5	0.02	0.18	0.84	0.06	0.03	0.04	0.7	0.02	20	11	208	0.92	5	11	39.6	45.6	-3	-0.5
0	0	28	52	42	-0.5	0.02	0.24	0.5	0.03	0.03	0.06	0.6	0.1	45	13	143	1.2	4	15	27.9	19.1	-3	-0.5



Line #	Station #	Au ppb	Pt ppb	Pd ppb	Be ppm	Na %	Mg %	Al %	P %	K %	Ca %	Sc ppm	Ti %	V ppm	Cr ppm	Mn ppm	Fe %	Co ppm	Ni ppm	Cu ppm	Zn ppm	As ppm	Zr ppm
0	12.5S	6	17	23	-0.5	0.02	0.39	1.28	0.04	0.05	0.09	1.5	0.05	30	25	122	1.42	7	19	26.2	23.2	-3	4
0	25S	13	28	38	-0.5	0.02	0.77	1.87	0.03	0.1	0.18	2.7	0.08	43	47	370	2.34	12	31	36.2	67.4	-3	4.1
0	50S	9	21	31	-0.5	0.02	0.68	1.61	0.03	0.09	0.2	2.9	0.07	35	43	256	1.9	10	25	18.9	55.5	-3	3.1
0	75S	22	26	29	-0.5	0.02	0.24	0.79	0.02	0.04	0.08	1.2	0.05	19	19	66	0.86	3	10	7.5	21.2	-3	2.4
0	100S	8	26	23	-0.5	0.03	0.78	1.97	0.04	0.11	0.28	4	0.07	44	52	435	2.3	13	34	21.7	84.3	-3	3.9
12.5W	0	9	26	28	-0.5	0.02	0.06	0.34	0.01	0.03	0.04	-0.5	0.04	20	7	28	0.5	-1	4	4.8	9.7	-3	0.8
25W	0	12	21	27	-0.5	0.02	0.16	0.44	0.02	0.02	0.05	0.7	0.05	29	13	46	0.87	3	6	11.1	15.6	-3	1.5
50W	75N	16	28	21	-0.5	0.02	1	1.83	0.02	0.03	0.08	5.5	0.12	88	22	120	2.48	9	19	10.5	83.8	-3	2.7
50W	50N	11	34	31	-0.5	0.02	0.74	2.24	0.03	0.07	0.11	2.8	0.07	50	42	143	2.34	14	35	51.6	55.4	-3	5
50W	25N	20	21	24	-0.5	0.02	0.29	2.19	0.1	0.03	0.07	1.7	0.07	45	27	134	2.7	7	14	14.6	44.3	-3	3.9
50W	0	11	18	32	-0.5	0.02	0.3	1	0.03	0.03	0.09	1.2	0.05	23	21	70	0.84	6	14	15.8	26.9	-3	1.3
50W	25S	9	26	29	-0.5	0.02	0.48	1.57	0.04	0.05	0.15	2.3	0.04	30	41	174	1.51	11	27	43.6	80.6	-3	1.7
50W	50S	8	26	36	-0.5	0.02	0.53	1.32	0.03	0.08	0.15	2	0.06	35	36	175	1.74	7	21	21.2	50	-3	3.3
50W	75S	10	36	34	-0.5	0.02	0.64	1.45	0.02	0.07	0.2	2.2	0.07	39	40	212	1.89	9	24	13.9	60.5	-3	3.3
50W	100S	8	26	28	-0.5	0.02	0.54	0.95	0.05	0.07	0.28	2.4	0.07	33	31	310	1.53	9	18	12.4	30.2	-3	7
75W	0	18	58	62	-0.5	0.02	0.11	0.43	0.06	0.03	0.05	-0.5	-0.01	13	9	80	0.66	4	50	92.7	58	7	-0.5
100W	75N	12	34	33	-0.5	0.02	0.34	1.17	0.03	0.04	0.11	1.4	0.05	20	25	99	1	23	22	312	63.7	-3	1.2
100W	50N	9	25	24	-0.5	0.02	0.03	0.22	-0.01	0.02	0.02	-0.5	0.02	9	5	15	0.21	-1	1	2.9	6.2	-3	0.7
100W	25N	9	30	39	-0.5	0.02	0.25	1.38	0.02	0.02	0.05	1.6	0.07	36	29	66	1.46	4	11	19.1	23.3	-3	3.1
100W	0	9	22	27	-0.5	0.02	0.03	0.26	0.02	0.02	0.04	-0.5	0.02	11	7	30	0.36	-1	2	4.2	9.8	-3	-0.5
100W	25S	8	21	37	-0.5	0.02	0.02	0.18	0.01	0.02	0.03	-0.5	0.02	10	4	22	0.3	1	2	5.1	10.1	-3	-0.5
100W	50S	8	25	26	-0.5	0.02	0.65	1.61	0.05	0.09	0.17	1.9	0.07	38	41	482	2.15	9	25	9.7	94.3	-3	3.3
100W	75S	8	34	35	-0.5	0.02	0.54	1.24	0.03	0.06	0.22	2.5	0.06	30	34	328	1.63	19	22	15.4	56.1	-3	3.3
100W	100S	9	21	29	-0.5	0.02	0.71	1.41	0.04	0.11	0.19	2.4	0.08	42	41	314	2.01	9	25	14.6	42.3	-3	6.3
Assay Method	FA301				ICP70																		
Detection Limit	1	10	1	0.5	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.5	0.01	2	1	2	0.01	1	1	0.5	0.5	3	0.5

Line #	Station #	Sr ppm	Y ppm	Zr ppm	Mo ppm	Ag ppm	Cd ppm	Sn ppm	Sb ppm	Ba ppm	La ppm	W ppm	Pd ppm	Bi ppm
100E	100N	7.5	1.9	1.8	-1	0.3	-1	-10	-5	46	6.8	-10	13	-5
100E	75N	5	1.1	2.4	1	0.3	-1	-10	-5	24	4	-10	13	-5
100E	50N	4.6	1.4	0.6	-1	-0.2	-1	-10	-5	41	5.6	-10	11	-5
100E	25N	10.1	2.7	2.9	-1	0.2	-1	-10	-5	48	9.9	-10	12	-5
100E	0	6.2	1.2	1.4	1	0.2	-1	-10	-5	35	6.3	-10	22	-5
100E	25S	12.4	2.5	3.4	-1	0.3	-1	-10	-5	49	11.1	-10	14	-5
100E	50S	7.2	2.3	2.2	-1	0.2	6	-10	-5	35	8.5	-10	11	-5
100E	75S	9	1.1	1.1	-1	0.3	-1	-10	-5	23	7.4	-10	11	-5
100E	100S	4.4	1	-0.5	-1	0.2	-1	-10	-5	33	6.7	-10	12	-5
75E	0	11.2	2.7	5.3	-1	0.2	-1	-10	-5	42	10.5	-10	12	-5
50E	75N	3.8	1	0.9	-1	-0.2	-1	-10	-5	28	4.2	-10	15	-5
50E	50N	5.4	2.3	3.4	-1	0.3	-1	-10	-5	29	7.4	-10	12	-5
50E	25N	4.4	1	1.7	-1	0.5	-1	-10	-5	38	5.8	-10	13	-5
50E	0	12.2	4.6	3.3	-1	0.3	-1	-10	-5	71	13.5	-10	13	-5
50E	25S	15.8	4.2	3.9	-1	0.4	-1	-10	-5	89	15.8	-10	17	-5
50E	50S	12.9	2.4	3.4	-1	0.3	-1	-10	-5	56	9.8	-10	13	-5
50E	75S	11.6	3.4	3.5	-1	0.3	-1	-10	-5	50	12.2	-10	6	-5
50E	100S	9.6	1.9	1.1	-1	-0.2	-1	-10	-5	46	8.3	-10	12	-5
25E	0	5.3	1.4	1.6	-1	0.4	-1	-10	-5	32	7.2	-10	14	-5
12.5E	0	7.3	3.6	2.8	2	0.4	-1	-10	-5	84	11.5	-10	12	-5
0	75N	4.2	1	0.9	-1	0.3	-1	-10	-5	25	5.8	-10	15	-5
0	50N	4.3	1.7	3	-1	0.4	-1	-10	-5	26	6.4	-10	15	-5
0	25N	2.8	1.3	0.6	-1	0.5	-1	-10	-5	21	3.5	-10	14	-5
0	12.5N	3.8	1.7	-0.5	-1	0.5	-1	-10	-5	33	6	-10	10	-5

Line #	Station #	Sr ppm	Y ppm	Zr ppm	Mo ppm	Ag ppm	Cd ppm	Sn ppm	Sb ppm	Ba ppm	La ppm	W ppm	Pd ppm	Bi ppm
0	0	4.5	0.9	-0.5	-1	0.3	-1	-10	-5	33	3.1	-10	22	-5
0	12.5S	4.7	2.4	4	-1	0.2	-1	-10	-5	26	8.1	-10	12	-5
0	25S	12.6	4.2	4.1	-1	-0.2	-1	-10	-5	86	14.2	-10	13	-5
0	50S	13.1	3.4	3.1	-1	-0.2	-1	-10	-5	79	13.2	-10	13	-5
0	75S	6.2	2.2	2.4	-1	0.4	-1	-10	-5	28	9	-10	15	-5
0	100S	16	6.5	3.9	-1	0.3	-1	-10	-5	120	23	-10	15	-5
12.5W	0	4.3	1.2	0.8	-1	0.3	-1	-10	-5	26	7.7	-10	14	-5
25W	0	3.8	1.2	1.5	1	0.3	-1	-10	-5	28	5.9	-10	15	-5
50W	75N	4.5	1.6	2.7	-1	0.4	-1	-10	-5	24	4.1	-10	14	-5
50W	50N	4.8	3.6	5	-1	0.3	5	-10	-5	63	11.3	-10	22	-5
50W	25N	4.1	2.2	3.9	-1	0.2	-1	-10	-5	26	5.3	-10	14	-5
50W	0	5.2	2.7	1.3	-1	0.3	-1	-10	-5	33	11.2	-10	13	-5
50W	25S	9	3.6	1.7	2	0.5	-1	-10	-5	76	11.7	-10	12	-5
50W	50S	8.9	3.1	3.3	-1	0.3	-1	-10	-5	60	12.2	-10	14	-5
50W	75S	12.1	3.1	3.3	-1	0.4	-1	-10	-5	65	11.3	-10	15	-5
50W	100S	13.3	4.8	7	-1	0.4	-1	-10	-5	45	16.6	-10	12	-5
75W	0	3.7	2.9	-0.5	1	0.4	-1	-10	-5	58	21.8	-10	39	-5
100W	75N	6	3.1	1.2	1	0.3	-1	-10	-5	30	11.7	-10	22	-5
100W	50N	2.4	1	0.7	-1	0.4	-1	-10	-5	15	6.4	-10	10	-5
100W	25N	4.2	2.2	3.1	-1	0.2	-1	-10	-5	25	8.2	-10	13	-5
100W	0	4.4	0.9	-0.5	-1	0.3	-1	-10	-5	15	5.8	-10	10	-5
100W	25S	3.6	0.9	-0.5	-1	0.3	-1	-10	-5	19	6.8	-10	12	-5
100W	50S	12.1	2.5	3.3	-1	0.5	-1	-10	-5	65	10.5	-10	13	-5
100W	75S	11.7	4.6	3.3	-1	0.2	-1	-10	-5	73	15.7	-10	12	-5
100W	100S	11.2	3.3	6.3	-1	0.4	-1	-10	-5	51	12.1	-10	15	-5
Assay Method	ICP70													
Detection Limits	0.5	0.5	0.5	1	0.2	1	10	5	1	0.5	10	2	5	

SEP 01 2000



**XRAL Laboratories**  
A Division of SGS Canada Inc.

1885 Leslie Street  
Don Mills, Ontario  
Canada M3B 3J4  
Telephone (416) 445-5755  
Fax (416) 445-4152

### CERTIFICATE OF ANALYSIS

**Work Order: 060604**

To: **URSA Major International**  
Attn: **Geoff Shore**  
100 Adelaide Street West  
Suite 405  
TORONTO  
ONTARIO M5H 1S3

Date : 28/08/00

Copy 1 to :

Copy 2 to :

P.O. No. :  
Project No. : PORTER TOWNSHIP  
No. of Samples : 49 Soil  
Date Submitted : 10/08/00  
Report Comprises : Cover Sheet plus  
Pages 1 to 6

**Distribution of unused material:**

**Pulps:** Discarded After 90 Days Unless Instructed!!!  
**Rejects:** Discarded After 90 Days Unless Instructed!!!

Certified By :

Dr. Hugh de Souza, General Manager  
XRAL Laboratories

**ISO 9002 REGISTERED**

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample  
n.a. = Not applicable -- = No result  
\*INF = Composition of this sample makes detection impossible by this method  
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



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Date: 28/08/00

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Element.	Au	Pt	Pd	Be	Na	Mg	Al	P	K	Ca	Sc	Ti	V	Cr	Mn	Fe
Method.	FA301	FA301	FA301	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70
Det.Lim.	1	10	1	0.5	0.01	0.01	0.01	0.01	0.01	0.01	0.5	0.01	2	1	2	0.01
Units.	ppb	ppb	ppb	ppm	%	%	%	%	%	%	ppm	%	ppm	ppm	ppm	%
100E 100N	9	28	28	0.7	0.02	0.36	0.85	0.02	0.04	0.17	1.0	0.05	24	21	258	1.16
100E 75N	6	24	20	<0.5	0.02	0.48	1.40	0.05	0.03	0.10	1.2	0.10	66	23	163	3.14
100E 50N	3	20	18	<0.5	0.02	0.20	1.25	0.06	0.03	0.07	0.8	0.04	29	21	144	1.56
100E 25N	3	10	10	<0.5	0.02	0.50	1.17	0.01	0.05	0.14	2.2	0.06	31	34	381	1.49
100E BLO	2	20	14	<0.5	0.02	0.28	0.75	0.03	0.03	0.11	0.9	0.04	34	27	132	1.21
100E 25S	21	<10	6	0.5	0.02	0.45	1.00	0.02	0.08	0.17	1.7	0.06	29	29	169	1.33
100E 50S	5	13	8	<0.5	0.02	0.31	0.84	0.02	0.04	0.11	1.4	0.05	23	22	125	1.02
100E 75S	4	<10	9	<0.5	0.02	0.09	0.32	0.01	0.04	0.11	<0.5	0.04	14	8	82	0.51
100E 100S	2	<10	8	<0.5	0.02	0.03	0.21	0.01	0.03	0.04	<0.5	0.02	9	4	307	0.30
75E BLO	<1	<10	4	<0.5	0.02	0.66	1.35	0.03	0.10	0.16	2.0	0.08	38	37	276	1.91
50E 75N	1	12	5	<0.5	0.02	0.36	0.75	0.03	0.03	0.06	0.5	0.06	37	98	207	1.41
50E 50N	10	39	36	<0.5	0.02	0.31	1.94	0.08	0.03	0.10	1.6	0.05	31	37	136	1.67
50E 25N	7	21	23	<0.5	0.01	0.09	0.49	0.02	0.04	0.08	<0.5	0.04	24	14	103	0.79
50E BLO	6	25	23	<0.5	0.02	0.64	1.63	0.03	0.08	0.17	2.5	0.07	39	42	323	2.17
50E 25S	6	18	26	<0.5	0.02	0.76	1.85	0.04	0.13	0.23	3.5	0.07	39	52	389	2.11
50E 50S	5	39	27	<0.5	0.02	0.58	1.23	0.03	0.09	0.18	1.7	0.06	34	34	453	1.74
50E 75S	11	28	25	<0.5	0.02	0.49	1.14	0.03	0.07	0.20	2.2	0.06	29	32	205	1.53
50E 100S	8	26	26	<0.5	0.02	0.32	0.83	0.02	0.05	0.14	1.3	0.05	23	21	236	1.09
25E BLO	7	32	21	<0.5	0.02	0.09	0.36	0.02	0.03	0.07	0.5	0.05	20	9	92	0.55
12.5E BLO	123	29	25	<0.5	0.02	0.50	1.92	0.03	0.06	0.12	2.3	0.07	35	37	308	1.78
0 75N	713	20	22	<0.5	0.02	0.06	0.31	0.01	0.02	0.05	<0.5	0.04	14	9	61	0.41
0 50N	102	14	18	<0.5	0.02	0.28	1.62	0.05	0.04	0.07	1.2	0.06	41	33	114	2.18
0 25N	28	44	48	<0.5	0.02	0.67	0.98	0.04	0.03	0.04	1.8	0.01	39	33	121	1.39
0 12.5N	16	78	38	<0.5	0.02	0.18	0.84	0.06	0.03	0.04	0.7	0.02	20	11	208	0.92
0 BLO	28	52	42	<0.5	0.02	0.24	0.50	0.03	0.03	0.06	0.6	0.10	45	13	143	1.20
0 12.5S	6	17	23	<0.5	0.02	0.39	1.28	0.04	0.05	0.09	1.5	0.05	30	25	122	1.42
0 25S	13	28	38	<0.5	0.02	0.77	1.87	0.03	0.10	0.18	2.7	0.08	43	47	370	2.34
0 50S	9	21	31	<0.5	0.02	0.68	1.61	0.03	0.09	0.20	2.9	0.07	35	43	256	1.90
0 75S	22	26	29	<0.5	0.02	0.24	0.79	0.02	0.04	0.08	1.2	0.05	19	19	66	0.86
0 100S	8	26	23	<0.5	0.03	0.78	1.97	0.04	0.11	0.28	4.0	0.07	44	52	435	2.30



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Element.	Au	Pt	Pd	Be	Na	Mg	Al	P	K	Ca	Sc	Ti	V	Cr	Mn	Fe
Method.	FA301	FA301	FA301	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70
Det.Lim.	1	10	1	0.5	0.01	0.01	0.01	0.01	0.01	0.01	0.5	0.01	2	1	2	0.01
Units.	ppb	ppb	ppb	ppm	%	%	%	%	%	%	ppm	%	ppm	ppm	ppm	%
12.5W BLO	9	26	28	<0.5	0.02	0.06	0.34	0.01	0.03	0.04	<0.5	0.04	20	7	28	0.50
25W BLO	12	21	27	<0.5	0.02	0.16	0.44	0.02	0.02	0.05	0.7	0.05	29	13	46	0.87
50W 75N	16	28	21	<0.5	0.02	1.00	1.83	0.02	0.03	0.08	5.5	0.12	88	22	120	2.48
50W 50N	11	34	31	<0.5	0.02	0.74	2.24	0.03	0.07	0.11	2.8	0.07	50	42	143	2.34
50W 25N	20	21	24	<0.5	0.02	0.29	2.19	0.10	0.03	0.07	1.7	0.07	45	27	134	2.70
50W BLO	11	18	32	<0.5	0.02	0.30	1.00	0.03	0.03	0.09	1.2	0.05	23	21	70	0.84
50W 25S	9	26	29	<0.5	0.02	0.48	1.57	0.04	0.05	0.15	2.3	0.04	30	41	174	1.51
50W 50S	8	26	36	<0.5	0.02	0.53	1.32	0.03	0.08	0.15	2.0	0.06	35	36	175	1.74
50W 75S	10	36	34	<0.5	0.02	0.64	1.45	0.02	0.07	0.20	2.2	0.07	39	40	212	1.89
50W 100S	8	26	28	<0.5	0.02	0.54	0.95	0.05	0.07	0.28	2.4	0.07	33	31	310	1.53
75W BLO	18	58	62	<0.5	0.02	0.11	0.43	0.06	0.03	0.05	<0.5	<0.01	13	9	80	0.66
100W 75N	12	34	33	<0.5	0.02	0.34	1.17	0.03	0.04	0.11	1.4	0.05	20	25	99	1.00
100W 50N	9	25	24	<0.5	0.02	0.03	0.22	<0.01	0.02	0.02	<0.5	0.02	9	5	15	0.21
100W 25N	9	30	39	<0.5	0.02	0.25	1.38	0.02	0.02	0.05	1.6	0.07	36	29	66	1.46
100W BLO	9	22	27	<0.5	0.02	0.03	0.26	0.02	0.02	0.04	<0.5	0.02	11	7	30	0.36
100W 25S	8	21	37	<0.5	0.02	0.02	0.18	0.01	0.02	0.03	<0.5	0.02	10	4	22	0.30
100W 50S	8	25	26	<0.5	0.02	0.65	1.61	0.05	0.09	0.17	1.9	0.07	38	41	482	2.15
100W 75S	8	34	35	<0.5	0.02	0.54	1.24	0.03	0.06	0.22	2.5	0.06	39	34	328	1.63
100W 100S	9	21	29	<0.5	0.02	0.71	1.41	0.04	0.11	0.19	2.4	0.08	42	41	314	2.01
*Dup 100E 100N	8	32	31	0.8	0.02	0.35	0.82	0.02	0.04	0.16	1.1	0.05	26	22	292	1.12
*Dup 50E 25N	9	32	28	<0.5	0.01	0.10	0.51	0.03	0.04	0.08	<0.5	0.04	26	16	111	0.89
*Dup 0 BLO	I.S.	I.S.	I.S.	<0.5	0.02	0.26	0.53	0.03	0.04	0.06	0.7	0.10	47	13	147	1.24
*Dup 50W 25S	11	29	29	<0.5	0.02	0.49	1.59	0.04	0.06	0.15	2.2	0.04	30	41	174	1.52
*Dup 100W 100S	I.S.	I.S.	I.S.	<0.5	0.03	0.70	1.40	0.04	0.11	0.20	2.4	0.08	41	41	311	1.98



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Element. Method. Det.Lim. Units.	Co ICP70 1 ppm	Ni ICP70 1 ppm	Cu ICP70 0.5 ppm	Zn ICP70 0.5 ppm	As ICP70 3 ppm	Sr ICP70 0.5 ppm	Y ICP70 0.5 ppm	Zr ICP70 0.5 ppm	Mo ICP70 1 ppm	Ag ICP70 0.2 ppm	Cd ICP70 1 ppm	Sn ICP70 10 ppm	Sb ICP70 5 ppm	Ba ICP70 1 ppm	La ICP70 0.5 ppm	W ICP70 10 ppm
100E 100N	6	17	12.5	40.0	<3	7.5	1.9	1.8	<1	0.3	<1	<10	<5	46	6.8	<10
100E 75N	9	18	46.3	66.8	<3	5.0	1.1	2.4	1	0.3	<1	<10	<5	24	4.0	<10
100E 50N	5	13	14.3	40.2	<3	4.6	1.4	0.6	<1	<0.2	<1	<10	<5	41	5.6	<10
100E 25N	10	18	11.0	33.9	<3	10.1	2.7	2.9	<1	0.2	<1	<10	<5	48	9.9	<10
100E BLO	5	13	14.8	32.2	<3	6.2	1.2	1.4	1	0.2	<1	<10	<5	35	6.3	<10
100E 25S	5	17	10.3	42.0	<3	12.4	2.5	3.4	<1	0.3	<1	<10	<5	49	11.1	<10
100E 50S	5	13	6.1	27.3	<3	7.2	2.3	2.2	<1	0.2	6	<10	<5	35	8.5	<10
100E 75S	1	5	2.9	16.2	<3	9.0	1.1	1.1	<1	0.3	<1	<10	<5	23	7.4	<10
100E 100S	1	3	3.5	10.8	<3	4.4	1.0	<0.5	<1	0.2	<1	<10	<5	33	6.7	<10
75E BLO	7	21	11.5	48.9	<3	11.2	2.7	5.3	<1	0.2	<1	<10	<5	42	10.5	<10
50E 75N	5	19	8.9	30.1	<3	3.8	1.0	0.9	<1	<0.2	<1	<10	<5	28	4.2	<10
50E 50N	9	20	50.0	46.8	<3	5.4	2.3	3.4	<1	0.3	<1	<10	<5	29	7.4	<10
50E 25N	2	7	13.5	22.0	4	4.4	1.0	1.7	<1	0.5	<1	<10	<5	38	5.8	<10
50E BLO	11	26	21.1	63.2	<3	12.2	4.6	3.3	<1	0.3	<1	<10	<5	71	13.5	<10
50E 25S	12	31	17.8	75.4	<3	15.8	4.2	3.9	<1	0.4	<1	<10	<5	89	15.8	<10
50E 50S	9	20	9.6	62.8	<3	12.9	2.4	3.4	<1	0.3	<1	<10	<5	56	9.8	<10
50E 75S	6	19	12.1	39.2	<3	11.6	3.4	3.5	<1	0.3	<1	<10	<5	50	12.2	<10
50E 100S	4	12	6.1	45.5	<3	9.6	1.9	1.1	<1	<0.2	<1	<10	<5	46	8.3	<10
25E BLO	2	4	4.5	12.8	<3	5.3	1.4	1.6	<1	0.4	<1	<10	<5	32	7.2	<10
12.5E BLO	20	42	64.8	67.4	<3	7.3	3.6	2.8	2	0.4	<1	<10	<5	84	11.5	<10
0 75N	<1	4	3.8	11.6	<3	4.2	1.0	0.9	<1	0.3	<1	<10	<5	25	5.8	<10
0 50N	5	14	14.8	38.7	<3	4.3	1.7	3.0	<1	0.4	<1	<10	<5	26	6.4	<10
0 25N	6	27	123	20.8	<3	2.8	1.3	0.6	<1	0.5	<1	<10	<5	21	3.5	<10
0 12.5N	5	11	39.6	45.6	<3	3.8	1.7	<0.5	<1	0.5	<1	<10	<5	33	6.0	<10
0 BLO	4	15	27.9	19.1	<3	4.5	0.9	<0.5	<1	0.3	<1	<10	<5	33	3.1	<10
0 12.5S	7	19	26.2	23.2	<3	4.7	2.4	4.0	<1	0.2	<1	<10	<5	26	8.1	<10
0 25S	12	31	36.2	67.4	<3	12.6	4.2	4.1	<1	<0.2	<1	<10	<5	86	14.2	<10
0 50S	10	25	18.9	55.5	<3	13.1	3.4	3.1	<1	<0.2	<1	<10	<5	79	13.2	<10
0 75S	3	10	7.5	21.2	<3	6.2	2.2	2.4	<1	0.4	<1	<10	<5	28	9.0	<10
0 100S	13	34	21.7	84.3	<3	16.0	6.5	3.9	<1	0.3	<1	<10	<5	120	23.0	<10



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Date: 28/08/00

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Element. Method. Det.Lim. Units.	Co ICP70 1 ppm	Ni ICP70 1 ppm	Cu ICP70 0.5 ppm	Zn ICP70 0.5 ppm	As ICP70 3 ppm	Sr ICP70 0.5 ppm	Y ICP70 0.5 ppm	Zr ICP70 0.5 ppm	Mo ICP70 1 ppm	Ag ICP70 0.2 ppm	Cd ICP70 1 ppm	Sn ICP70 10 ppm	Sb ICP70 5 ppm	Ba ICP70 1 ppm	La ICP70 0.5 ppm	W ICP70 10 ppm
12.5W BLO	<1	4	4.8	9.7	<3	4.3	1.2	0.8	<1	0.3	<1	<10	<5	26	7.7	<10
25W BLO	3	6	11.1	15.6	<3	3.8	1.2	1.5	1	0.3	<1	<10	<5	28	5.9	<10
50W 75N	9	19	10.5	83.8	<3	4.5	1.6	2.7	<1	0.4	<1	<10	<5	24	4.1	<10
50W 50N	14	35	51.6	55.4	<3	4.8	3.6	5.0	<1	0.3	5	<10	<5	63	11.3	<10
50W 25N	7	14	14.6	44.3	<3	4.1	2.2	3.9	<1	0.2	<1	<10	<5	26	5.3	<10
50W BLO	6	14	15.8	26.9	<3	5.2	2.7	1.3	<1	0.3	<1	<10	<5	33	11.2	<10
50W 25S	11	27	43.6	80.6	<3	9.0	3.6	1.7	2	0.5	<1	<10	<5	76	11.7	<10
50W 50S	7	21	21.2	50.0	<3	8.9	3.1	3.3	<1	0.3	<1	<10	<5	60	12.2	<10
50W 75S	9	24	13.9	60.5	<3	12.1	3.1	3.3	<1	0.4	<1	<10	<5	65	11.3	<10
50W 100S	9	18	12.4	30.2	<3	13.3	4.8	7.0	<1	0.4	<1	<10	<5	45	16.6	<10
75W BLO	4	50	92.7	58.0	7	3.7	2.9	<0.5	1	0.4	<1	<10	<5	58	21.8	<10
100W 75N	23	22	312	63.7	<3	6.0	3.1	1.2	1	0.3	<1	<10	<5	30	11.7	<10
100W 50N	<1	1	2.9	6.2	<3	2.4	1.0	0.7	<1	0.4	<1	<10	<5	15	6.4	<10
100W 25N	4	11	19.1	23.3	<3	4.2	2.2	3.1	<1	0.2	<1	<10	<5	25	8.2	<10
100W BLO	<1	2	4.2	9.8	<3	4.4	0.9	<0.5	<1	0.3	<1	<10	<5	15	5.8	<10
100W 25S	1	2	5.1	10.1	<3	3.6	0.9	<0.5	<1	0.3	<1	<10	<5	19	6.8	<10
100W 50S	9	25	9.7	94.3	<3	12.1	2.5	3.3	<1	0.5	<1	<10	<5	65	10.5	<10
100W 75S	19	22	15.4	56.1	<3	11.7	4.6	3.3	<1	0.2	<1	<10	<5	73	15.7	<10
100W 100S	9	25	14.6	42.3	<3	11.2	3.3	6.3	<1	0.4	<1	<10	<5	51	12.1	<10
*Dup 100E 100N	6	17	14.2	43.0	<3	8.4	2.0	1.6	<1	0.4	<1	<10	<5	42	7.6	<10
*Dup 50E 25N	2	7	12.0	24.1	3	4.5	1.1	1.9	<1	0.4	<1	<10	<5	43	6.2	<10
*Dup 0 BLO	5	16	28.1	19.4	<3	5.0	1.0	<0.5	<1	0.3	<1	<10	<5	34	3.3	<10
*Dup 50W 25S	11	27	43.0	81.0	<3	9.0	3.5	1.4	2	0.4	<1	<10	<5	75	11.4	<10
*Dup 100W 100S	10	24	14.4	41.7	<3	11.7	3.3	6.0	<1	0.5	<1	<10	<5	52	11.9	<10





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Element.	Pb	Bi
Method.	ICP70	ICP70
Det.Lim.	2	5
Units.	ppm	ppm
100E 100N	13	<5
100E 75N	13	<5
100E 50N	11	<5
100E 25N	12	<5
100E BLO	22	<5
100E 25S	14	<5
100E 50S	11	<5
100E 75S	11	<5
100E 100S	12	<5
75E BLO	12	<5
50E 75N	15	<5
50E 50N	12	<5
50E 25N	13	<5
50E BLO	13	<5
50E 25S	17	<5
50E 50S	13	<5
50E 75S	6	<5
50E 100S	12	<5
25E BLO	14	<5
12.5E BLO	12	<5
0 75N	15	<5
0 50N	15	<5
0 25N	14	<5
0 12.5N	10	<5
0 BLO	22	<5
0 12.5S	12	<5
0 25S	13	<5
0 50S	13	<5
0 75S	15	<5
0 100S	15	<5



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Element.	Pb	Bi
Method.	ICP70	ICP70
Det.Lim.	2	5
Units.	ppm	ppm
12 5W BLO	14	<5
25W BLO	15	<5
50W 75N	14	<5
50W 50N	22	<5
50W 25N	14	<5
50W BLO	13	<5
50W 25S	12	<5
50W 50S	14	<5
50W 75S	15	<5
50W 100S	12	<5
75W BLO	39	<5
100W 75N	22	<5
100W 50N	10	<5
100W 25N	13	<5
100W BLO	10	<5
100W 25S	12	<5
100W 50S	13	<5
100W 75S	12	<5
100W 100S	15	<5
*Dup 100E 100N	13	<5
*Dup 50E 25N	14	<5
*Dup 0 BLO	21	<5
*Dup 50W 25S	12	<5
*Dup 100W 100S	13	<5

**Appendix IV**  
**Drill Logs and Sampling Results and Certificates**  
**BS94-01 and BS94-03**

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**Hole BS9401**

Relog of Hole By G. Shore, August 25, 2000

<b>From (m)</b>	<b>To (m)</b>	<b>Lithological Description</b>
<b>0</b>	<b>24.0</b>	<b>Overburden</b>
<b>24.0</b>	<b>29.5</b>	<b>Greywacke:</b> grey fg highly fissile greywacke - contains rounded rock fragments
	@28.5	talc/chl shears
<b>29.5</b>	<b>51.0</b>	<b>Quartzite:</b> grey to pink to white quartzite - starts out grey and becomes lighter towards bottom of hole, sericite along fract planes, locally becomes pinkish with hematite alteration
	@41m	fg orange pk silica bands in qtze with abundant fracturing parallel to core axis - zone 1m wide
	@45m	zone of fracturing with chl on frac planes
	@47m	zone of heavy fracturing - core is extremely blocky
<b>51.0</b>	<b>63.0</b>	<b>Siltstone (Espanola Fm?):</b> grey fg, no grains seen, well foliated with minor qz stringers <1mm, near top get interbeds of orangy to dark red grey qzte, contains qz carb stringers throughout that are subparallel to foliation
	@53.5m	contains red (hem?) bands with pyrite (3-4%) along foliation planes
	@62m	locally sheared
<b>63.0</b>	<b>64.0</b>	<b>Garnet - Epidote Skarn:</b> greenish epidote and pk garnet (1mm) and pyrite >> cpy with total sulphides approx. 2% with increasing sulphides towards bottom of hole - almost massive sulphides
<b>64.0</b>	<b>68.0</b>	<b>Siltstone (Espanola Fm?):</b> fg very fissile siltstone - talc - chl schist - very broken up core, does not react with acid - well foliated, cpy occurs along fracture and at top get lg 5mm cubes of pyrite 5-10%
<b>68.0</b>	<b>71.5</b>	<b>Calcareous Siltstone (Marble?):</b> grey to white, massive, reacts strongly with acid, minor pyrite cubes near top but decrease in abundance towards bottom of section - uncontorted bedding is visible on the mm scale
<b>71.5</b>	<b>74</b>	<b>Epidote Skarn:</b> mg eq sugary green epidote rich rock - minor <1% py and po
<b>74</b>	<b>77.5</b>	<b>Calcareous Siltstone (Marble?):</b> white rextallized marble? - well bedded - euhedral py cubes (<1%) up to 2mm pk garnets up to 5mm locally developed along certain bedding planes
<b>77.5</b>	<b>99.2</b>	<b>Quartz Gabbro:</b> contact with marble appears relatively sharp but some core may be missing, mg eq sugary texture 10%+ qz, <5% bt, 45% amph, 40% plag
	@ 80m	qz 15%+ bt 20%+ (mg black flakes)
	<b>84.8-89m</b>	<b>missing box 16</b>
	@ 89 m	possible layering? - 5cm bands of plag rich gabbro with 6-8cm bands of bt rich gabbro - up to 50% bt
	@93m	becomes cg, bt 10%, qz<10% - interstitial plag and qz - fresher amphiboles and less plag than above - minor cpy?
	@96.9m	lg 2cm laths of amph (after cpx?)

From	To	Lithological Description (cont.)	Hole: BS9401
	@98m	qz vein 15cm wide - white qz devoid of mineralization	
<b>99.2</b>	<b>117</b>	<b>Altered Qz Gabbro - variable texture and mineralogy</b>	
	@99.2m	cg gabbro 10% qz with very fg specks of cpy? <<1% plag becoming milky and some feldspar is pkish (hem alteration)	
	@100m	first appearance of powdery white (skeletal?) highly altered crystals (leucoxene?) 5-10% - easily visible - after olivine? opx? 10-15% qz, smoky grey feldspars	
	@101m	plag content (up to 40%) and xtal size increasing up to 6mm locally pegmatitic - qz 20% leucox 10% - no sulphides - bt 5% but increasing	
	@104m	bt increasing to 10%	
	@108.7m	more leucocratic cg phase with up to 1% po occurring as disseminated specks - leucox shows 1mm dk rims around crystals - disequilibrium texture? - look skeletal locally	
	@110.5m	mg bt rich rock with amph alteration to bt up to 25-30% bt, 20% qz - leucox 15-20% but fg and white contains subrounded enclave of dark fg bt rich rock 2-4cm	
	@112.5m	1cm chl shear band	
<b>117.0</b>	<b>127.0</b>	<b>Pegmatitic Qz Gabbro:</b> cg to pegmatitic gabbro - bt after amphibole - amph 30%, bt 20%, plag 30%, qz 25%, leucox 15% fg	
	@118m	get 2mm bt shr bands 5/6 over 20cm - texture varies slightly from medium grained to coarse grained	
	@120m	fg bt shears at 70degrees TCA	
	@125m	<1% disseminated cpy?	
<b>127.0</b>	<b>138.3</b>	<b>Mg (low) qz gabbro:</b> feldspars, bt and leucox decreasing, feld 20%, leucox <5%, amph 30%, bt 20%, qz 10%+	
	@130m	10cm qv with coxcomb fibrous light brown tremolite? growing perpendicular to vein margin on downhole side of vein	
<b>138.3</b>	<b>139.5</b>	<b>Monzonite Dyke?:</b> qz and bt rich rock, hematitized and pk in middle of section occurs at 70 degrees TCA - minor cpy in qv stringer veins, last 10cm are chl qz fspr fault gouge - highly fractured - zone at 70 TCA	
<b>139.5</b>	<b>177</b>	<b>Mg qz gabbro:</b> massive qz 20% ,fspar 25%, amph 40,no leucox bt<10%	
	@146m	less qz 10%, bt 10%, amph 45%, plag 35%, no leucox	
	@150.2m	plag amph rich zones (2) 5cm wide - layers? 90 degrees TCA, 1cm qv's w/cpy <1%, xcut at 70degrees TCA	
	@157m	1cm wide silicified veins - 70-80 degrees TCA	
	@163m	qz 10%, bt <5% no leucox, <1% cpy as specks to 167m	
	<b>169.1-173.3</b>	<b>missing box 36</b>	

From	To	Lithological Description (cont.)	Hole: BS9401
177.0	194.0	Mg to fg qtz Gabbro: <1% disseminated specks of cpy throughout rock - fspar decreasing becoming more fine-grained than above	
194	208	Transition to Chlorite Tremolite (Meta-pyroxenite) rock: fg and amphibole increasing - amphiboles becoming fibrous - low qz <10%, grading into chlorite tremolite rock below	
208	244.8	Chlorite Tremolite (Meta-pyroxenite) Rock: fine-grained amph rich rock - light green fresh surface - some chl alteration, fibrous amphiboles are distinctive - low qz <5% at bottom of section get conglomerate slivers between chl-trem rock, intrusive fingers? into conglomerate?	
	@218m	3 qv's w/ py - cpy? with large blades (5mm) of a light green amphibole, 3-4cm wide zone with minor <5% leucoxene	
	@243m	intruded by 5mm qv's - pods and lenses of qz	
244.8	258.0	Conglomerate: fg grey matrix with 2mm grains near top but larger pebbles of granitic rock become more abundant, Cameco log notes gabbro fragments - didn't see any - although this could suggest the presence of breccia zone at bottom of sill	
258.0	278.0	Quartzite: gradational from conglomerate - white massive with weak bedding locally	
278.0	278.0	EOH	

## Sampling Log BS9401

Sample #	From	To	Length	Description
9401-77.8	77.8	78.8	1.0	Quartz Gabbro- contact with Huronian @ 77.8
9401-78.8	78.8	79.8	1.0	Quartz Gabbro- <1% Py, vfgr, non-magnetic
9401-79.8	79.8	89.0	1.0	Quartz Gabbro- trace vfgr Py
9401-89.0	89.0	90.0	1.0	Quartz Gabbro-fgr, minor feld/epidote altn, 1% Po/Cpy lenses <1cm,
9401-95.0	95.0	96.0	1.0	Quartz Gabbro-cgr, massive, minor epi altn on fractures
9401-100	100.0	101.0	1.0	Alt'd Quartz Gabbro- as per above, increased chl/olivine altn
9401-104	104.0	105.5	1.5	Alt'd Quartz Gabbro- 2-4mm amph, chl, olivine cx in plagioclase
9401-107	107.0	108.0	1.0	Alt'd Quartz Gabbro- 1% Po, tr Cpy
9401-108	108.0	109.0	1.0	Alt'd Quartz Gabbro- as per 107
9401-109	109.0	110.0	1.0	Alt'd Quartz Gabbro- as per 107
94011130	113.0	114.0	1.0	Alt'd Quartz Gabbro- mgr, homogenous and equigranular, tr Po
9401-118	118.0	119.0	1.0	Pegmatitic Quartz Gabbro- homogenous and equigranular, 2-3mm bio cx along fractures
9401-122	122.0	122.8	0.8	Pegmatitic Quartz Gabbro- 1% diss Po, slightly magnetic,
9401-122.8	122.8	123.8	1.0	Pegmatitic Quartz Gabbro- 1% diss Po, slightly magnetic,

Sample #	From	To	Length	Description
9401-123.8	123.8	124.8	1.0	Pegmatitic Quartz Gabbro- 1% diss Po, slightly magnetic,
9401-124.8	124.8	125.6	0.8	Pegmatitic Quartz Gabbro- 1% diss Cpy/Po, slightly magnetic,
9401-125.6	125.6	126.6	1.0	Pegmatitic Quartz Gabbro- 1% diss Po, slightly magnetic
9401-131	131.0	132.0	1.0	Mg (low) Quartz Gabbro- mgr, no sulphides,
9401-137	137.0	138.0	1.0	Mg (low) Quartz Gabbro- as per 125.6
9401-138	138.0	139.3	1.3	Monzonite/Diabase Dyke- vfgr, no sulphides
9401-144	144.0	145.0	1.0	Medium Grained Quartz Gabbro- no sulphides, equigranular
9401-150	150.0	151.0	1.0	Medium Grained Quartz Gabbro-<1%Po/Cpy assoc with fracturing, homogeneous and equigranular
9401-155	155.0	156.0	1.0	Medium Grained Quartz Gabbro- as per 150
9401-160	160.0	161.0	1.0	Medium Grained Quartz Gabbro- as per 150, minor bio filled shear
9401-163.5	163.5	164,5	1.0	Medium Grained Quartz Gabbro- as per 150, several <2mm fractures/veins
9401-166	166.0	167.0	1.0	Medium Grained Quartz Gabbro-, as per 150, minor 1cm qtz-carb vein
9401-173.4	173.4	174.0	0.6	Medium Grained Quartz Gabbro- diss and fracture controlled Po/Cpy
9401-174	174.0	175.0	1.0	Medium Grained Quartz Gabbro
9401-175	175.0	176.0	1.0	Medium Grained Quartz Gabbro- 1% <0.2mm Po cx
9401-180.2	180.2	181.2	1.0	Medium-Fine Grained Quartz Gabbro-Po assoc with 2mm qtz-carb vein
9401-185	185.0	186.0	1.0	Medium-Fine Grained Quartz Gabbro- no sulphides
9401-191	191.0	192.0	1.0	Medium-Fine Grained Quartz Gabbro- 0.5% Cpy/Po, vfgr
9401-197	197.0	198.0	1.0	Medium-Fine Grained Quartz Gabbro- no sulphides
9401-203	203.0	204.0	1.0	Chlorite-Tremolite (Pyroxenite?)-transitional zone, increased chl/trem, reduced grain size, non-magnetic
9401-209	209.0	210.0	1.0	Chlorite-Tremolite (Pyroxenite?)- as per 203
9401-215	215.0	216.0	1.0	Chlorite-Tremolite (Pyroxenite?)-massive, homogeneous, equigranular, unfol, no sulphides
9401-219	219.0	220.0	1.0	Chlorite-Tremolite (Pyroxenite?)- as per 209, 2cm qtz vein with 1cm chl cx, 5% Po
9401-227	227.0	228.5	1.5	Chlorite-Tremolite (Pyroxenite?)- as per 209

9401-234.5	234.5	236.0	1.5	Chlorite-Tremolite (Pyroxenite?)- as per 209, Py/Po lenses?
9401-241.3	241.3	242.4	1.1	Chlorite-Tremolite (Pyroxenite?)- as per 209, contact with conglomerate ~ 1.0m downhole

**40 Samples**





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Element.	Au	Pt	Pd	Cu	Ni	Co	As
Method.	FA301	FA301	FA301	ICAY50	ICAY50	ICAY50	AAH70
Det.Lim.	1	10	1	10	10	10	0.6
Units.	ppb	ppb	ppb	ppm	ppm	ppm	ppm
9401-77.8	<1	<10	<1	<10	20	10	3.7
9401-78.8	<1	<10	<1	<10	15	25	7.4
9401-79.8	<1	<10	<1	<10	35	13	6.9
9401-89.0	1	<10	10	100	107	33	11.2
9401-95.0	3	<10	5	169	72	41	26.0
9401-100.0	<1	14	8	137	88	39	29.9
9401-104.0	4	21	10	80	63	58	32.4
9401-107.0	4	20	4	126	44	49	37.0
9401-108.0	28	15	1	261	39	48	24.7
9401-109.0	12	<10	<1	105	35	33	29.9
9401-118.0	1	<10	1	104	38	41	29.2
9401-122.0	9	<10	<1	97	50	57	41.0
9401-122.8	8	<10	<1	155	39	73	107
9401-123.8	4	<10	<1	130	21	56	41.6
9401-124.8	6	<10	1	171	32	40	193
9401-125.6	5	<10	2	115	45	60	50.4
9401-131.0	2	<10	2	238	45	53	29.7
9401-137.0	19	11	3	108	52	75	74.2
9401-138.0	15	11	3	78	23	14	7.0
9401-144.0	5	16	24	131	46	41	31.9
9401-150.0	433	17	13	163	89	108	151
9401-155.0	8	18	40	118	99	58	41.2
9401-160.0	6	17	24	345	81	65	60.7
9401-163.5	5	22	23	187	121	61	49.5
9401-166.0	5	16	21	76	50	41	33.5
9401-173.4	7	22	23	73	106	38	21.1
9401-174.0	3	16	20	84	114	41	34.2
9401-175.0	2	21	18	116	121	43	30.3
9401-180.2	5	23	26	36	87	34	40.0
9401-185.0	2	13	23	107	137	42	49.6
9401-191.0	2	12	25	95	113	55	51.0
9401-197.0	5	<10	20	81	77	34	47.7
9401-203.0	5	11	13	91	81	34	41.9
9401-209.0	8	18	8	<10	294	58	48.8
9401-215.0	11	28	23	<10	400	70	52.3
9401-219.0	10	24	30	<10	210	68	37.7
9401-227.0	7	18	13	132	330	70	33.1
9401-234.5	5	15	10	<10	457	200	50.0
9401-241.3	15	28	53	51	286	77	53.4
94011130	2	<10	1	78	16	55	28.7
*Dup 9401-77.8	<1	<10	<1	<10	21	10	3.2
*Dup 9401-122.8	6	14	<1	153	35	73	117
*Dup 9401-166.0	5	19	21	79	45	43	34.3
*Dup 9401-227.0	7	17	12	127	334	73	35.3



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Element.	Au	Pt	Pd	Cu	Ni	Co	As
Method.	FA301	FA301	FA301	ICAY50	ICAY50	ICAY50	AAH70
Det.Lim.	1	10	1	10	10	10	0.6
Units.	ppb	ppb	ppb	ppm	ppm	ppm	ppm
9401-77.8	<1	<10	<1	<10	20	10	3.7
9401-78.8	<1	<10	<1	<10	15	25	7.4
9401-79.8	<1	<10	<1	<10	35	13	6.9
9401-89.0	1	<10	10	100	107	33	11.2
9401-95.0	3	<10	5	169	72	41	26.0
9401-100.0	<1	14	8	137	88	39	29.9
9401-104.0	4	21	10	80	63	58	32.4
9401-107.0	4	20	4	126	44	49	37.0
9401-108.0	28	15	1	261	39	48	24.7
9401-109.0	12	<10	<1	105	35	33	29.9
9401-118.0	1	<10	1	104	38	41	29.2
9401-122.0	9	<10	<1	97	50	57	41.0
9401-122.8	8	<10	<1	155	39	73	107
9401-123.8	4	<10	<1	130	21	56	41.6
9401-124.8	6	<10	1	171	32	40	193
9401-125.6	5	<10	2	115	45	60	50.4
9401-131.0	2	<10	2	238	45	53	29.7
9401-137.0	19	11	3	108	52	75	74.2
9401-138.0	15	11	3	78	23	14	7.0
9401-144.0	5	16	24	131	46	41	31.9
9401-150.0	433	17	13	163	89	108	151
9401-155.0	8	18	40	118	99	58	41.2
9401-160.0	6	17	24	345	81	65	60.7
9401-163.5	5	22	23	187	121	61	49.5
9401-166.0	5	16	21	76	50	41	33.5
9401-173.4	7	22	23	73	106	38	21.1
9401-174.0	3	16	20	84	114	41	34.2
9401-175.0	2	21	18	116	121	43	30.3
9401-180.2	5	23	26	36	87	34	40.0
9401-185.0	2	13	23	107	137	42	49.6
9401-191.0	2	12	25	95	113	55	51.0
9401-197.0	5	<10	20	81	77	34	47.7
9401-203.0	5	11	13	91	81	34	41.9
9401-209.0	8	18	8	<10	294	58	48.8
9401-215.0	11	28	23	<10	400	70	52.3
9401-219.0	10	24	30	<10	210	68	37.7
9401-227.0	7	18	13	132	330	70	33.1
9401-234.5	5	15	10	<10	457	200	50.0
9401-241.3	15	28	53	51	286	77	53.4
94011130	2	<10	1	78	16	55	28.7
*Dup 9401-77.8	<1	<10	<1	<10	21	10	3.2
*Dup 9401-122.8	6	14	<1	153	35	73	117
*Dup 9401-166.0	5	19	21	79	45	43	34.8
*Dup 9401-227.0	7	17	12	127	334	73	35.3

**Hole BS9403**

Relog of Hole By G. Shore, June 15, 2000

<b>From (m)</b>	<b>To (m)</b>	<b>Lithological Description</b>	<b>Hole: BS9403</b>
0	79.9	<b>Not Logged</b>	
79.9	83	<b>Chlorite Biotite Schist:</b> well foliated/bedded rock composed of chlorite and biotite - possible siltstone protolith? - pyrite cubes along fractures and shear surfaces increasing qz content towards bottom of section	
83	87	<b>Sheared/Faulted Quartzite:</b> sheared, foliated qzte, sericite at contact with above unit - possibly faulted - some minor talc in shear zones - more competent qzte shows faulting and brecciation with small laminated blocks broken up and juxtaposed at different angles	
88	95	<b>Not Logged</b>	
95	99	<b>Talc - Chlorite Schist:</b> highly schistose rock - previously sampled - no visible sulphides	
99	106	<b>Mg Qz Gabbro:</b> light coloured, eq with >10% qz - cpy stringers and blebs occur locally, chl alteration of amphs very distinctive green colour	
	@99m	2cm + blebs of cpy	
	@103m	becoming coarser grained - good laths of fspar and amh - good gabbroic texture with minor hematite alteration of fspars - pk	
106	107	<b>Shear Zone:</b> bt - chl altered gabbro - highly foliated	
107	149.3	<b>Not Logged</b>	
149.3	158	<b>Mg Qz Gabbro:</b> locally eq - more melanocratic - 40-50% amphibole, >10%qz, locally <1% disseminated cpy	
158	166	<b>Mg Gabbro:</b> less quartz approx 5% - same gabbroic texture - gradational from above unit	
166	214	<b>Not Logged</b>	
214	222	<b>Mg Gabbro:</b> msv qz 5-10% - becomes more bt and chl altered towards bottom of hole, approaching chl-trem rock texture and mineralogy but not exact correlation, contains 1% sulphides as disseminated specks up to contact, contact with conglomerate not sharp - possible assimilation	
	@222m	3cm qv with cpy and py very close to contact	
222	231.5	<b>Sandstone/Greywacke:</b> cg, light coloured, salt and peppered textured rock - composed mainly of bt, qz and fspar - no clasts <<1% sulphides, small shears contain minor po <1% - matrix becomes darker towards bottom of hole with increasing amount of clasts	
231.5	254	<b>Conglomerate:</b> fg-mg dark black matrix of rock fragments and qz clasts mainly pebble sized <64mm - granitic in composition - smaller fragments of qz and pk fspar are likely derived from granitic clasts, 1% cpy and po on fractures surfaces, no breccia zone at contact with gabbro	
254	258	<b>Quartzite</b>	
258	258	<b>EOH</b>	

CAMECO CORPORATION

DIAMOND DRILL LOG

PROPERTY: BIGSWAN  
 HOLE No.: BS9401  
 Collar Eastings: 0.00  
 Collar Northings: 56.00  
 Collar Elevation: 0.00  
 Grid: BIGSWAN

Collar Inclination: -45.00  
 Grid Bearing: 350.00  
 Final Depth: 278.00 metres

Logged by: M. KOZIOL  
 Date: OCTOBER 23, 1994  
 Down-hole Survey:

FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	ASSAYS TO	WIDTH Au (ppb)
0	24.5	OVERBURDEN				
24.5	30.6	ALTERED GREYWACKE	1	25.50	27.00	1.50
		Greenish grey color, fine to medium grained, massive, chloritized and talcose. Chlorite and talc form slip surfaces at 50° to 70° to core axis. Trace amounts of very fine pyrrhotite occur randomly distributed.	2	27.00	28.10	1.10
		27.0-28.1 breccia/brittle fault zone - this section consists of brecciated and ground quartzite and greywacke. The centre 20cm is a talc chlorite schist. Core angles of schistosity are at 60° to 70° to core axis.	3	28.10	29.60	1.50
		28.1-28.2 - talc schist.				
30.6	52.8	QUARTZITE	4	48.50	50.00	1.50
		Light grey color, fine grained, glassy, fractured and broken. Hematite coating on some fractures. Bedded with beds ranging in width from 1mm to more than 1m. Bedding is at 70° to core axis. Locally sections are sericitized, e.g., at 36.0m the rock is strongly	5	50.00	52.80	2.80

HOLE No: BS9401

**CAMECO CORPORATION**

**DIAMOND DRILL LOG**

**PROPERTY: BIGSWAN**  
**HOLE No.: BS9401**

FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	ASSAYS TO	WIDTH Au (ppb)
		sericitized and foliated at 45° to core axis. The quartzite contains a few 1mm to 5mm wide, clear white quartz veins. These occur parallel and subparallel to bedding.				
		48.0-52.8 - quartzite is brecciated and porous with hematite along fracture surfaces. Minor amount of marcasite and chalcopyrite occur as subhedral crystals and nuggets within the open pores.				
		NOTE: entire section from 24.5 to 52.8 is representative of a fault zone.				
52.8	63.0	BEDDED SUBGREYWACKE AND SILTSTONE (ESPANOLA FM.)	6	52.80	54.00	1.20 229
		The rock is fine grained, finely bedded, grey in color and still broken and blocky. Locally, the core is albitized. Bedding at 59m is at 80° to core axis and individual beds vary from <1cm to 0.5m in thickness. Moving towards the bottom of the interval, the siltstone is more sericitic and biotitic.	7	62.00	63.00	1.00 1
		52.5-54.0 - this section is chloritized, carbonatized (calcite and Fe carbonate), biotitic, and mineralized with 5% pyrite and chalcopyrite (py:cp = 4:1). Chalcopyrite occurs as stringers along certain beds and pyrite is locally associated with chlorite and calcite rich beds.				

HOLE No: BS9401

# CAMECO CORPORATION

## DIAMOND DRILL LOG

PROPERTY: BIGSWAN  
HOLE No.: BS9401

Page 3

FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	ASSAYS TO	WIDTH	Au (ppb)
63.0	64.0	GARNET-EPIDOTE-MAGNETITE SKARN	8	63.00	64.00	1.00	8
<p>the core is apple green in color with patches of pinkish grey and black. Fine grained epidote makes up 50% of the rock, garnet 30%, and magnetite, occurring as massive fine grained blotches, makes up almost 20%. The rock is heavy and contains no obvious sulphides, except for minor amounts of a later generation pyrite. The skarn has a faint remnant bedding at 50° to 60° to core axis, and the contacts are conformable at 60° to core axis.</p>							
64.0	67.6	CHLORITE-BIOTITE-TALC SCHIST	9	64.00	65.00	1.00	22
<p>The rock is fine grained, foliated, with variable compositional layers reflecting original bedding/composition?. Foliation is at 60° to core axis. Color of unit is light grey green alternating with dark grey to black, biotite dominant beds. Locally the rock is calcareous and only trace amounts of pyrite are present.</p>							
			10	65.00	66.00	1.00	8
			11	66.00	67.60	1.60	1
67.6	73.5	CALCAREOUS SILTSTONE	12	67.60	69.00	1.40	389
<p>The rock is light greenish grey, fine grained, bedded, contains 30% to 50% fine sugary calcite and is weakly chloritized. The upper 0.6m of the interval is interbedded with the foliated siltstone? from above and contains 1% pyrrhotite and pyrite as</p>							
			13	69.00	70.50	1.50	1
			14	70.50	72.00	1.50	1
			15	72.00	73.50	1.50	6

HOLE No: BS9401

**CAMECO CORPORATION**

**DIAMOND DRILL LOG**

**PROPERTY: BIGSWAN**  
**HOLE No.: BS9401**

FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	ASSAYS		
				FROM	TO	WIDTH Au (ppb)
		discontinuous bands at 45° to core axis. Pyrite also occurs as coarse cubes up to 0.8cm. Total sulphide content of the upper 0.6m is 3%. The entire calcareous siltstone unit contains minor amounts of pyrrhotite.				
73.5	73.9	EPIDOTE SKARN	16	73.50	73.90	0.40 7
		light green color, fine grained, mostly massive but contains few 0.6cm to 1cm beds of very fine siltstone. Trace amounts of later formed pyrite occur near the contacts. Contacts with the underlying and overlying beds are conformable at 70° to core axis.				
73.9	77.8	GARNET SKARN	17	73.90	75.40	1.50 1
		White color, fine grained, sugary (recrystallized) texture. Rock was a finely bedded limestone. Red and brownish garnets occur locally along certain beds and form 10% of the interval. Garnets range in size from very fine to 0.5cm. Light green tremolite forms 1% of the rock. Minor amounts of pyrite occur finely disseminated and along later fractures.	18	75.40	76.90	1.50 1
			19	76.90	77.80	0.90 6
77.8	97.7		DIORITE	20	77.80	79.30
		Dark grey to black color, fine grained, massive. The upper 1.5m is hairline fractured and fractures are filled with black biotite. The diorite contains minor	21	86.00	87.50	1.50 5

HOLE No: BS9401

# CAMECO CORPORATION

## DIAMOND DRILL LOG

PROPERTY: BIGSWAN  
HOLE No.: BS9401

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FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	ASSAYS TO	WIDTH Au (ppb)
		amounts of very fine pyrrhotite disseminated throughout. Quartz forms 10% of the rock.				
		85.0-89.9 - the diorite is coarser grained, up to 2mm grains, and contains 20% quartz and 10% to 20% biotite.				
		93.5-97.7 - the diorite becomes coarser grained and more chloritic.				
97.7	210.0	COARSE GRAINED DIORITE (ALTERED)	22	97.90	98.40	0.50
		The rock is greenish grey, coarse grained (2-4mm crystals), subhedral to euhedral and contains 25% smoky and clear quartz as silica pockets and anhedral masses. The mafic minerals are chloritized and the feldspars are saussuritized and hematite stained. Small patches of leucoxene are present throughout and form from 1% to 3%. Black biotite forms 5% of the rock and occurs as hairline veinlets and associated with the chloritized mafic minerals. Pyrrhotite occurs in trace amounts but from 107.0m to 110.0m it forms 1% of the rock. Chalcopyrite is also present in trace amounts.	23	101.00	102.50	1.50
			24	102.50	104.00	1.50
			25	104.00	105.50	1.50
			26	105.50	107.00	1.50
			27	107.00	108.50	1.50
			28	108.50	110.00	1.50
		98.0-98.3 - white and clear quartz vein occurs at 30° to core axis. The vein contains 15% light green chlorite, 55% muscovite, and along fractures, minor amounts of pyrrhotite and trace amounts of				

HOLE No: BS9401



# CAMECO CORPORATION

## DIAMOND DRILL LOG

PROPERTY: BIGSWAN  
HOLE No.: BS9401

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FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	ASSAYS TO	WIDTH Au (ppb)
		chalcopyrite. A 10cm wide biotite dominant alteration zone is formed at both the upper and lower contacts.				
		112.8 - a chloritized slip surface, 5cm wide, lies at 40° to core axis.				
		122.5 and 122.8 - chloritic slip surfaces at 20° to core axis.				
		127.2 - chloritic slip surfaces at 20° to core axis.				
		128. and 129.7 - 3cm and 8cm wide, clear quartz veins lie at 70° to core axis. The lower (downhole) contacts of the veins are strongly sericitized.				
		122-126 - section contains 1% pyrrhotite.				
		138.3-139.4 Diabase Dyke - fine to medium grained, grey color, massive. Diorite on either side is fractured and fractures are filled with chlorite.				
		139.4 - A 5cm wide gouge zone lies at 50° to core axis. A muddy graphite-chlorite mixture acts as matrix to brecciated quartz-feldspar rock.				
		* 150.0-167.0 - Narrow (<1cm) veinlets occur at mostly shallow (5° to 40°) angles to core axis. A few of the veins occur at 90° to core axis. The veins are mineralized with minor amounts of pyrrhotite and				

HOLE No: BS9401

# CAMECO CORPORATION

## DIAMOND DRILL LOG

PROPERTY: BIGSWAN  
HOLE No.: BS9401

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FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	ASSAYS TO	WIDTH Au (ppb)	
		<p>chalcopyrite. The veins are distributed at approximately 1 vein every 1.5m to 3m of core length. A few shallow (15° to 25°) angle fractures cut the core. These are chloritized and range in width from 0.5cm to 1cm. At 154.0m these are up to 2cm wide and the core is more fractured.</p> <p>170.0-176.0 - The diorite contains minor amounts of disseminated and fracture controlled pyrrhotite and chalcopyrite.</p> <p>Moving downhole, the diorite becomes progressively finer grained. Increased chloritization and tremolite mineralization starts at approximately 195.0m and increases towards the bottom.</p>					
210.0	243.6	<p><b>CHLORITE-TREMOLITE ROCK</b></p> <p>Green to green-grey in color, massive. The composition of the rock is mainly tremolite (actinolite ?) and chlorite with minor amounts of fine biotite randomly distributed. The section from 212m to 215m has several, strongly chloritized fractures that occur at 20° to core axis.</p> <p>218.5 - A 5cm quartz vein contains minor pyrrhotite and chalcopyrite. The vein is at 60° to core axis.</p> <p>219.5 - A 2cm wide quartz vein contains 35 pyrrhotite</p>	29	224.00	225.50	1.50	8
			30	225.50	227.00	1.50	5
			31	227.00	228.50	1.50	85
			32	228.50	230.00	1.50	1
			33	230.00	231.50	1.50	7
			34	231.50	233.00	1.50	1
			40	240.30	241.30	1.00	17
			41	241.30	242.40	1.10	20
			42	242.40	243.60	1.20	20

HOLE No: BS9401

# CAMECO CORPORATION

## DIAMOND DRILL LOG

PROPERTY: BIGSWAN  
HOLE No.: BS9401

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FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	ASSAYS TO	WIDTH Au (ppb)
		and chalcopyrite and lies at 90° to core axis.				
		224.0-227.0 - The number of chloritized fractures occurring at 20° to core axis increases to 10/m.				
		227.5-227.6 - Chloritized quartz vein with trace amounts of pyrite and chalcopyrite. The vein makes up 80% of this section. Chlorite and minor biotite make up the rest. The vein occurs at 20° to core axis. The quartz is smoky-white in color.				
		228.7-242.4 - This section contains several 1cm to 2cm white quartz veins at 60° to 90° to core axis. The veins contain minor amounts of pyrrhotite and chalcopyrite.				
		242.4-243.6 - This section is strongly sheared 90 - 78° to core axis, with fault gouge at 243.4. Alteration assemblages include talc, tremolite, quartz, biotite and carbonate assemblages. Sulphides include 1-2% blebby and disseminated pyrrhotite and chalcopyrite. Lower contact is sharp.				
243.6	259.2	PARA-CONGLOMERATE	43	253.60	254.80	1.20 5
		Medium to dark grey, fine grained with large fragments of granite and smaller fragments of gabbro. Fragments are less than 10cm wide with the majority less than 5cm. Fragments are subrounded to rounded with < 15% rock				

HOLE No: BS9401

**CAMECO CORPORATION**

DIAMOND DRILL LOG

PROPERTY: BIGSWAN  
HOLE No.: BS9401

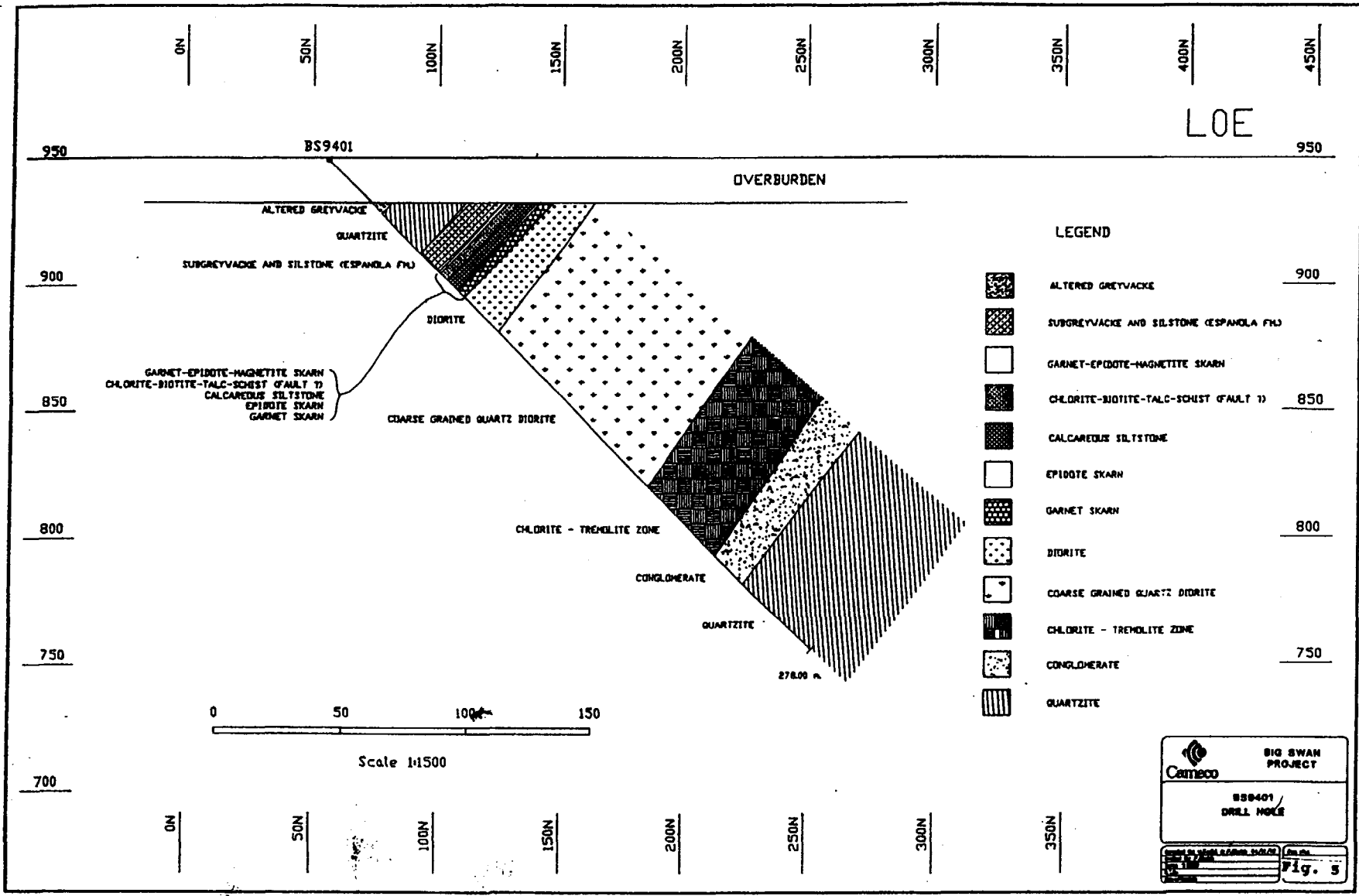
FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	ASSAYS TO	WIDTH Au (ppb)
		volume. Matrix is fine grained and qtz-rich with a weak but pervasive foliation 20° to core axis. Minor quartz veining is present at 30° to core axis. Sulphides are developed mainly along fractures and consist of <3% blebby and disseminated pyrite and minor pyrrhotite.				
259.2	278.0	QUARTZITE	44	264.70	265.50	0.80
		Buff white, massive and fine grained with weak layering developed. Unit is competent and very hard with bedding oriented at 76° to core axis. Pure white quartz veins crosscut unit (<5% rock volume). Minor specularite otherwise no sulphides present.	45	277.10	278.00	0.90

DOWN-HOLE SURVEY DATA

DEPTH	INCLINATION	BEARING
150.00	-44.00	
200.00	-44.00	
250.00	-44.00	
278.00	-42.00	

HOLE No: BS9401

looking W



# CAMECO CORPORATION

## DIAMOND DRILL LOG

PROPERTY: BIG SWAN  
 HOLE No.: BS9403  
 Collar Eastings: 200.00 E  
 Collar Northings: 125.00 N  
 Collar Elevation: 0.00  
 Grid: BIGSWAN

Collar Inclination: -45.00  
 Grid Bearing: 360.00  
 Final Depth: 258.00 metres  
 Test for eastern extension of skarn

Logged by: M. KOZIOL  
 Date: NOVEMBER 3, 1994  
 Down-hole Survey: ACID TEST  
 Test lower contact of diorite sill

FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	ASSAYS			
				FROM	TO	WIDTH Au (ppb)	
0.0	3.0	OVERBURDEN					
3.0	36.0	QUARTZITE AND SANDSTONE  Light grey, alternating with darker grey and orange colors. Bedded, fine grained. The interval consists of beds of quartzite (fine quartz sandstone), ranging in width from 1mm to 0.6m. These alternate with beds of siltstone. Bedding is at 60° to core axis, and, locally decreases to 50°. Graded bedding is visible in some of the siltstone beds. Few specks of pyrite are scattered along some of the beds.					
36.0	72.0	GREYWACKE  The rock is grey, fine grained, bedded with beds ranging in width from 1cm to 10cm. The core is broken and blocky from 38.3m to 45.0m. The lower half of the interval becomes progressively more chloritized and locally fractured. Light green chlorite fills the fractures. Towards the bottom, the rock becomes more talcose.					
72.0	84.5	CHLORITE-BIOTITE-TREMOLITE SCHIST	1	71.00	72.50	1.50	6

HOLE No: BS9403

**CAMECO CORPORATION**

DIAMOND DRILL LOG

PROPERTY: BIG SWAN  
HOLE No.: BS9403

FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	ASSAYS			
				FROM	TO	WIDTH Au (ppb)	
		Green and black green bands alternate with brown biotite rich bands, representing original composition of individual beds. Foliation (schistosity) angles at 74.0m are at 60° to core axis. Green tremolite rich beds occur from 73.0m to 76.0m. The tremolite in these is scattered at random and cross cuts the foliation. Fine pyrite, forming 1%, is scattered throughout, and in some sections, is localized to fine fractures and foliation surfaces. A second generation pyrite forms cubes up to 1cm. This type of pyrite is only a minor component and is limited to fractures rich in biotite. Pyrrhotite is present (<1%) along fractures which have been filled with quartz veins. Foliation angles at 83.5m are at 45° to core axis.	2	72.50	74.00	1.50	7
			3	74.00	75.50	1.50	5
			4	75.50	77.00	1.50	7
			5	77.00	78.50	1.50	7
			6	78.50	80.00	1.50	5
			7	80.00	81.50	1.50	8
			8	81.50	83.00	1.50	5
			9	83.00	84.50	1.50	5
84.5	93.5		FAULTED QUARTZITE  Light colored, glassy, brecciated with chlorite and sericite forming along breccia surfaces. The quartzite gets progressively more chloritic and talcose especially in the lower 1m.  87.0-87.5 - talc-chlorite gouge zone	10	84.50	86.00	1.50
93.5	99.8	TALC CHLORITE ALTERATION ZONE	11	93.50	95.00	1.50	5
			12	95.00	96.50	1.50	5

HOLE No: BS9403

**CAMECO CORPORATION**

DIAMOND DRILL LOG

PROPERTY: BIG SWAN  
HOLE No.: BS9403

FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	ASSAYS			
				FROM	TO	WIDTH Au (ppb)	
		This section is grey-green in color and made up mostly of talc and chlorite. Remnant bedding (?) or blocks (?) of quartzite are totally engulfed in chlorite and talc. Moving down the interval, the altered rock was massive textured, possibly diorite. Coarse tremolite occurs in clusters within the last 3.0m of the interval. The tremolite forms 30% of the rock and shows no preferred orientation.	13	96.50	98.00	1.50	5
			14	98.00	99.80	1.80	64
		99.5-99.7 - Two 1cm wide, shallow (<20°) fractures are filled with massive pyrrhotite and chalcopyrite.					
99.8	158.0	QUARTZ DIORITE	15	110.00	111.00	1.00	6
		Medium grained, massive, mafic minerals are chloritized in a similar manner as holes BS9401 and 9402. Minor amounts of magnetite and chalcopyrite occur along fractures.	16	111.00	113.00	2.00	5
		106.5-107.1 - The diorite is totally altered to chlorite-biotite and displays a foliation at 60° to core axis.					
		128.5 - A 5cm wide quartz vein contains 5% pyrrhotite and 5% chalcopyrite as massive clusters. Vein lies at 90° to core axis.					
		131.0-158.0 - Coarse Grained Quartz Diorite - chloritized, biotite rich (up to 10%). Fine tremolite					

HOLE No: BS9403



**CAMECO CORPORATION**

DIAMOND DRILL LOG

PROPERTY: BIG SWAN  
HOLE No.: BS9403

FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	ASSAYS TO	WIDTH Au (ppb)
		forms 5% and quartz makes up 30 to 35% of the rock. Biotite occurs as alteration of mafic minerals and along fractures. Minor pyrrhotite is present along fractures.				
158.0	222.9	<b>GABBRO</b>  The composition of the diorite gradually changes to gabbro. The rock is still chloritic but only weakly biotitic. Small laths of plagioclase and tremolite are abundant and quartz is only a minor constituent. Minor amounts of chalcopyrite are scattered along fractures. The contact with the underlying conglomerate is sharp at 50' to core axis.  219.0-222.9 - moving towards the contact the gabbro becomes more chloritic. The last one metre of the interval also contains 10% biotite.  220.8-221.1 - Shear, tight, compact, barren, lies at 50' to core axis.				
222.9	254.0	<b>CONGLOMERATE</b>  Dark grey color, polymictic, with large proportion of granitic clasts, matrix supported, bedded. The clasts range in size from 3mm to 5cm and make up 10 to 20% of the rock. They are rounded and mostly granite with some				

HOLE No: BS9403

**CAMECO CORPORATION**

DIAMOND DRILL LOG

PROPERTY: BIG SWAN  
HOLE No.: BS9403

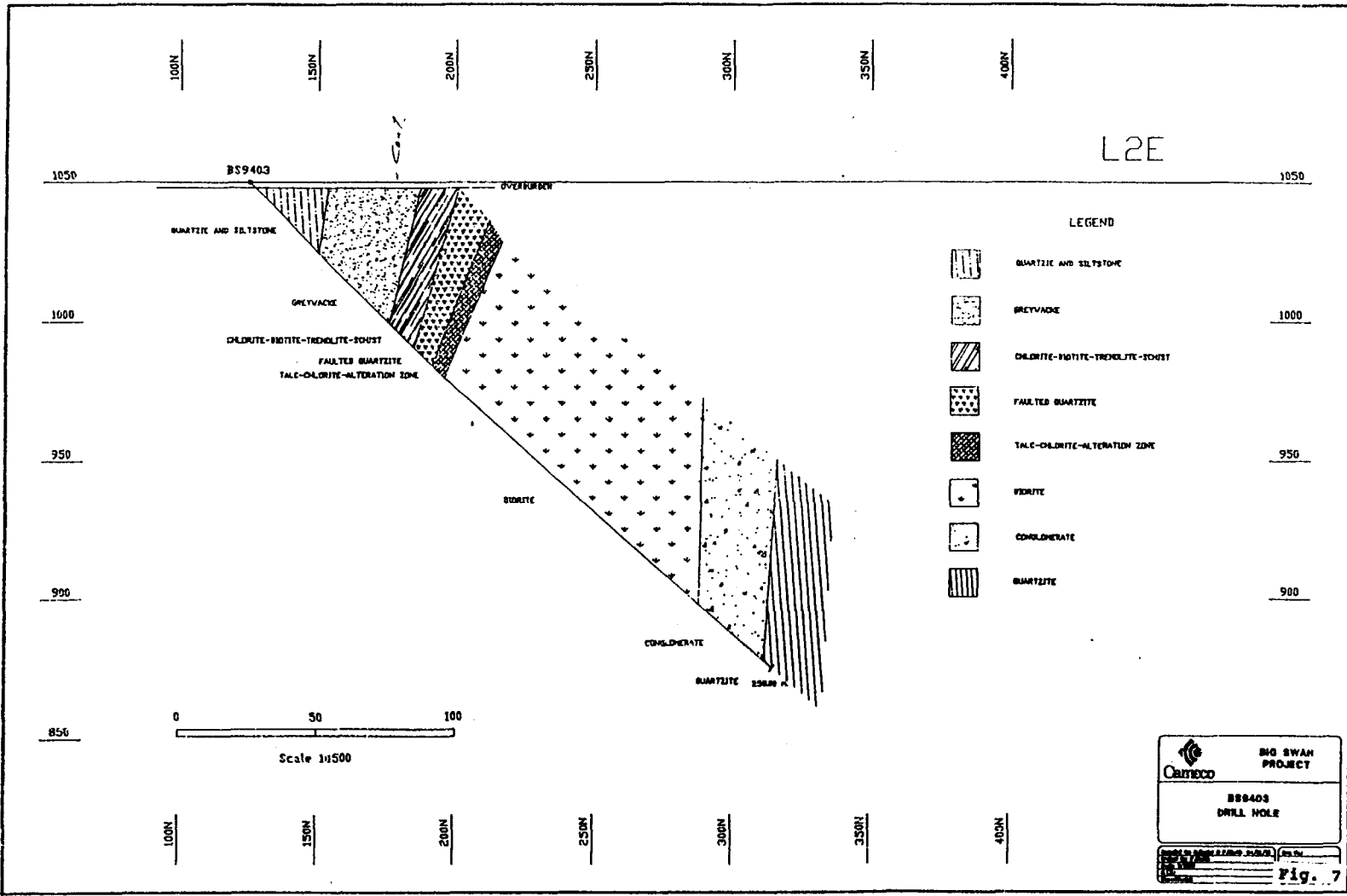
FROM	TO	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	ASSAYS TO	WIDTH Au (ppb)
		quartz pebbles and gabbro. The matrix is a medium grained quartz sandstone. Locally the conglomerate is hairline fractured and the fractures are filled with pyrite and pyrrhotite. Some of the beds are weakly sericitized.				
		246.5 - A one centimetre wide breccia\fault zone occurs at 20° to core axis. The breccia zone is filled with calcite and chlorite.				
254.0	258.0	QUARTZITE Light grey, fine grained, massive. END OF HOLE				

DOWN-HOLE SURVEY DATA

DEPTH	INCLINATION	BEARING
50.00	-45.00	
100.00	-43.00	
200.00	-41.00	
258.00	-40.00	

HOLE No: BS9403

1000y v6.



NOV - 7 2000



**XRAL Laboratories**  
A Division of SGS Canada Inc.

1885 Leslie Street  
Don Mills, Ontario  
Canada M3B 3J4  
Telephone (416) 445-5755  
Fax (416) 445-4152

### CERTIFICATE OF ANALYSIS

**Work Order: 061565**

To: **URSA Major International**  
**Attn: R. Sutcliff**  
100 Adelaide Street West  
Suite 405  
TORONTO  
ONTARIO M5H 1S3

Date : 02/11/00

Copy 1 to : Harold Tracanelli

Copy 2 to :

P.O. No. : *Poster*  
Project No. :  
No. of Samples : 6 Rock  
Date Submitted : 18/10/00  
Report Comprises : Cover Sheet plus  
Pages 1 to 3

**Distribution of unused material:**

Pulps: Return.  
Rejects: Return.

Certified By :

Dr. Hugh de Souza, General Manager  
XRAL Laboratories

### ISO 9002 REGISTERED

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample  
n.a. = Not applicable -- = No result  
\*INF = Composition of this sample makes detection impossible by this method  
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



**XRAL Laboratories**  
A Division of SGS Canada Inc.

Work Order: 061565

Date: 02/11/00

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Element.	Au	Pt	Pd	Be	Na	Mg	Al	P	K	Ca	Sc	Ti	V	Cr	Mn	Fe
Method.	FA301	FA301	FA301	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70
Det.Lim.	1	10	1	0.5	0.01	0.01	0.01	0.01	0.01	0.01	0.5	0.01	2	1	2	0.01
Units.	ppb	ppb	ppb	ppm	%	%	%	%	%	%	ppm	%	ppm	ppm	ppm	%
368003	10	24	20	<0.5	0.08	0.60	0.90	0.02	0.11	0.51	1.6	0.05	26	107	141	1.10
368005	17	17	27	<0.5	0.05	1.12	1.17	0.03	0.04	0.42	1.9	0.04	37	93	212	1.94
368006	16	18	26	<0.5	0.22	0.63	1.79	0.02	0.25	1.00	1.8	0.05	30	41	157	1.44
368007	14	12	16	<0.5	0.12	1.30	1.75	0.03	0.44	0.48	1.6	0.07	49	185	213	2.16
368018	26	<10	16	<0.5	0.02	0.30	0.33	<0.01	<0.01	0.04	1.3	0.02	18	108	50	2.28
368021	4	<10	10	<0.5	0.03	0.05	0.10	<0.01	0.01	0.11	<0.5	<0.01	7	162	45	0.61
*Dup 368003	12	16	20	<0.5	0.08	0.62	0.94	0.02	0.11	0.54	1.7	0.06	28	111	145	1.13



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Element.	Co	Ni	Cu	Zn	As	Sr	Y	Zr	Mo	Ag	Cd	Sn	Sb	Ba	La	W
Method.	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70
Det.Lim.	1	1	0.5	0.5	3	0.5	0.5	0.5	1	0.2	1	10	5	1	0.5	10
Units.	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
368003	11	33	51.3	11.5	5	14.4	1.9	1.4	<1	<0.2	<1	<10	<5	17	2.7	<10
368005	15	41	327	23.2	<3	11.9	2.1	1.8	<1	<0.2	<1	<10	<5	10	4.9	<10
368006	16	31	93.1	19.3	11	36.5	2.4	3.0	<1	<0.2	<1	<10	<5	67	4.9	<10
368007	19	73	89.3	27.8	<3	18.3	2.5	2.3	<1	<0.2	<1	<10	<5	67	4.3	<10
368018	3	16	7290	29.0	16	3.3	<0.5	1.6	<1	0.7	<1	<10	<5	57	0.7	<10
368021	15	47	258	4.2	<3	2.9	<0.5	0.9	<1	<0.2	<1	<10	<5	3	0.7	<10
*Dup 368003	10	33	51.7	11.9	6	15.1	2.1	1.4	<1	<0.2	<1	<10	<5	17	2.7	<10



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Element.	Pb	Bi	Li
Method.	ICP70	ICP70	ICP70
Det.Lim.	2	5	1
Units.	ppm	ppm	ppm
368003	2	<5	5
368005	<2	<5	11
368006	<2	<5	9
368007	2	<5	11
368018	<2	INF	2
368021	2	<5	<1
*Dup 368003	<2	<5	5

**Appendix V**  
**Sample Certificates - Mapping Fall 2000**



Sample #	Location	Description
368001	442130 5139048	Mgr/Cgr Gabbro Abundant Qtz – light grey – mauve in colour Possible silica alt'n local 1-2% Irregular shaped blebs of Mgr Po and lesser Cpy possible trace Pyrite Sub euhedral >cubic
368002	442080 5139021	Fine to medium grained gabbro Irregular spotty blebs of Po ½-1% local irregular blebs of Po trace Cpy
368003	441916 5139136	Medium grained grey green gabbro > possible siliceous alt'd
368004	441929 5139159	Medium – coarse grained gabbro/diorite local 10mm rusty blebs of fine grained Pyrr and Cpy
368005	441914 5139118	Medium to coarse Grained gabbro/Diorite with Qtz veining and associated mineralization
368006	441905 5139089	Diorite – possible quartz diorite
368007	441916 5139190	Medium grained tremolitic gabbro Spotty, rusty patches on fractured surfaces
368008	441874 5139222	Gabbro – diorite – tremolite gabbro medium grained tremolitic gabbro-diorite? Localized up to 1cm blebs of Cpy/Po
368009	0441876 5139215	Medium to fine grained gabbro – diorite tremolitic gabbro > 2-3% Po – possible Pentlandite, Cpy > limonite weathering
368010	0441876 5139216	Medium to fine grained gabbro – diorite tremolitic gabbro > 2-3% Po – possible Pentlandite, Cpy > limonite weathering
368011	0441876 5139217	Medium to fine grained gabbro – diorite tremolitic gabbro > 2-3% Po – possible Pentlandite, Cpy > limonite weathering
368012	044187 5139231	Medium grained diorite Qtz diorite with 1-2% coarsly diss'd blebs of Po and lesser Cpy
368013	0441843 5139205	Medium to Coarse gabbro-diorite > ½-1% irregular blebs of medium grained Po, minor Cpy
368014	441791 5139172	Fine grained Qtz diorite – diorite > 2-3% Po minor Cpy, rusty fractures siliceous alt'd
368015	0441799 51339168	Fine to medium grained Qtz diorite > 2-3% fine grained Po minor Cpy
368016	4417851 5139179	Medium to coarse grained Qtz diorite > trace – ½% local fine grained blebs of Po with Cpy blebs to 8mm +/-
368017	0441785 5139182	Medium to fine grained Qtz diorite local 2-3mm blebs of Cpy-Po of associated with Qtz
368018	0442140 5138195	White – Pink sucrosic Qtz vein developed on diorites
368019	0442158 5138979	Dark medium grained gabbro with ½ - 1% finely diss'd Po
368021	441983 5138947	M-cgr gabbro, qtz blebs/vns, fgr py-po
368022	L12+09E 3+75N	Medium to coarse grained diorite Qtz diorite Locally 3-5% of fine diss'd and highly irregular jagged blebs of Po with lesser <1/2-1% Cpy
368023	L12+03E 3+75N	½-1% finely diss'd and small blebs of fine grained Po < Cpy in a medium – – coarse grained diorite/Qtz diorite
368024	L11+91E 3+75N	Medium to fine grained diorite/Qtz diorite Trace – ½ finely diss'd top small blebs of Cpy
368025	L11+87E 3+75N	Medium to coarse grained diorite – qtz gabbro 2-3% small < 5mm blebs and fine grained diss'd Po and Cpy
368026	L11+82E 3+75N	Medium to coarse grained diorite – qtz gabbro Locally 2-4% of finely diss'd 5mm-8mm irreg blebs of f-mgr Po<Cpy
368027	refer to map	Mgr to Cgr diorite - qtz diorite 1/2 -1%
368028	refer to map	Mgr to Cgr diorite - qtz diorite 1/2 -1% Locally 5% of Diss'd 10 10mm irreg blebs of Fgr Po - lesser 1/2 -1% Cpy
368029	refer to map	Mgr diorite/Qtz diorite (Cameco Sample12930) 1/2-2% diss'd to 8mm-10mm irreg blebs of F/Mgr Po
368030	0443389 5150164	Mgr/Cgr blebs Qtz diorite w/ some visible blue Qtz eyes >trace fine diss'd Po
368031	0443389 5150164	Angular blebs Cgr/VCgr diorite/Qtz diorite
368032	0443389 5150164	Small blebs of Mgr/Cgr Qtz diorite
368033	0443389 5150164	Small Cgr/VCgr gabbro diorite

Sample #	Location	Description
368034	0443475 5150222	Subrounded blebs of Cgr/VCgr gabbro
368035	0443417 5150179	Boulder of very strongly alt'd deformed fgr/Mgr gabbro
368038	0442951 5149921	Deformed<silicified brecciated Fgr gabbro Trace 1/2% of finely diss'd Cpy
368039	0442957 5149928	Mgr gabbro diorite some large epidote blebs of 5-10mm Trace 1/2% finely Diss'd Po
368040	0442962 5149924	Mgr/Fgr somewhat alt'd and mildly deformed gabbro - diorite - mild shearing
368041	442978 5149927	Strongly alt'd and deformed Fgr/Mgr gabbro trace 1/2 Pyr, trace cpy possible trace Po visible octahedral magnetite
368042	0443225 5149838	Gabbro
368043	441087 5148563	F/Mgr dirty - alt'd Qtzites
368044	440921 5148809	possible outcrop Cgr gabbro/diorite 1-2% of irreg blebs and diss'd Fgr pyrite trace 1/2% Cpy
368045	441135 5144038	Fgr/Mgr moderatley to strongly foliated sheared agrillite metasediment
368046	441135 5144038	irreg boudinaged Qtz V'n Mat'l occurring w/in the metasedimants host rocks
368047	441135 5144038	Fgr/Mgr light Grey light white subvitreous Qtz Vein
368048	441135 5144038	Similar to # 368047
368049	441342 5138871	Mgr gabbro trace Finely Diss'd Po, Pyrite, Trace Cpy (6E/3+50N)
368050	L8E 3+81N	Boulder, gabbro, 1-2% fgr, diss py, tr fgr cpy
368151	442621 5139238	f-mgr gabbro, meta-pyroxenite
368152	442602 5139232	meta-pyroxenite,
368153	442190 5139020	Brunne showing, Qtz diorite, 1-2%fgr py/po
368154	442190 5139020	Brunne showing, Mgr Qtz diorite 4-5% fishnet pattern -blebs diss'd Fgr Cpy <Po
368155	442190 5139020	Brunne showing, Mgr Qtz diorite/diorite with localized 1/2-1% up to 10mm blebs of F/Mgr Cpy < Po
368156	442190 5139020	Brunne showing, Mgr Qtz diorite w/ 2-3% Cpy < Po
368157	442190 5139020	Brunne showing, M/Cgr Qtz diorite/diorite local 1/2-1% Fgr Cpy < Po
368158	Brunne North Trench	Refer to Map#5B gabbro
368159	Brunne North Trench	Refer to Map#5B gabbro
368160	Brunne North Trench	Refer to Map#5B gabbro
368161	Brunne North Trench	Refer to Map#5B gabbro
368162	Brunne North Trench	Refer to Map#5B gabbro
368163	Brunne North Trench	Refer to Map#5B gabbro
368164	Brunne North Trench	Refer to Map#5B gabbro
368165	Brunne North Trench	Refer to Map#5B gabbro
368166	Brunne North Trench	Refer to Map#5B gabbro
368172	443279 5149929	bldr of M/Cgr gabbro diorite
368174	New trench	refer to Map 5B F/Mgr light grey - light green subvitreous - strong surface rusting
368175	New trench	refer to Map 5B F/Mgr diorite
368176	New trench	refer to Map 5B gabbro
368177	New trench	refer to Map 5B gabbro
368178	New trench	refer to Map 5B cummlate gabbro
368179	New trench	refer to Map 5B Trem gab alt'n
368180	New trench	refer to Map 5B cummlate gabbro
368181	New trench	refer to Map 5B cummlate gabbro, strong sulphides
368182	New trench	refer to Map 5B cummlate gabbro
368183	New trench	refer to Map 5B cummlate gabbro, mild - moderate sulphide mineralization
368184	New trench	refer to Map 5B tremolite gabbro
368185	New trench	refer to Map 5B cummlate gabbro
368186	New trench	refer to Map 5B cummlate gabbro
368187	New trench	refer to Map 5B cummlate gabbro, 'siliceous
368188	New trench	refer to Map 5B cummlate gabbro with sulphides
368189	New trench	refer to Map 5B gabbro
368190	New trench	refer to Map 5B gabbro with sulphides

Sample #	Location		Description
368191	441770	5139169	silica digested gabbro diorite
368192	441878	5139231	Fgr altd gabbro w/ 2-3% local Fgr Cpy
368193	441882	5139215	mgr qtz diorite 2-3% fgr diss lensy net textured Po cpy
368194	441875	5139212	M/Fgr diorite 1/2- 1% local Fgr diss'd blebs of Po - Cpy
368195	441876	5139216	M/Fgr diorite/Qtz diorite 20mm blebs of Po < Cpy
368196	441867	513217	Mgr diorite /Qtz diorite locally 2-3% of Fgr net texture diss'd Cpy - Po
368197	441867	513217	Mgr diorite w/ blebs of Po <tr Cpy ass'd w/ 2-3% Fgr diss'd blebs and net textured Po - -Cpy
368198	441867	513217	Mgr/Cgr up to 20mm blebs of Po w/ Cpy 3-5% of Fgr net texture Po with Cpy
368199	441867	513217	Mgr diorite/Qtz diorite Fgr diss'd local 3-5% net texture
368200	441861	5139215	Mgr diorite /Qtz diorite small 5mm blebs of Fgr Po<Cpy
368201	441861	5139215	M/Cgr diorite/Qtz diorite
368202	441861	5139215	Mgr Diorite/Qtz diorite w/ local 1-2% of Fgr net Textured Cpy Po
368203	441883	5139216	Mgr diorite/Qtz diorite tracew diss'd Cpy Po Cpy Pyrr
368204	441882	5139210	Mgr diorite/Qtz diorite trace Fgr diss'd Po Cpy 5mm local blebs
368205	Brune#1 trench	refer to Map 5A	Mgr diorite/gabbro w/ trace Fgr Po
368206	Brune#1 trench	refer to Map 5A	Mgr slightly Alt'd diorite/Gabbro trace Fgr diss'd Po scattered Fgr Cpy/Po
368207	Brune#1 trench	refer to Map 5A	Mgr gabbro diorite w/ Trace 1/2% of Fgr diss'd Po
368208	Brune#1 trench	refer to Map 5A	Mgr gabbro diorite w/ trace 1/2% local 3/4-1% +/- VF/Fgr Po
368209	Brune#1 trench	refer to Map 5A	Mgr gabbro diorite w/ trace of Fgr Po
368210	Brune#1 trench	refer to Map 5A	Mgr diorite/Qtz diorite w/ Fgr Diss'd Po
368211	Brune#1 trench	refer to Map 5A	Mgr diorite/Qtz diorite w/ tr Fgr diss'd Po Cpy
368212	Brune#1 trench	refer to Map 5A	M/Cgr diorite w/ local 1% Fgr net textured Cpy W/ Po
368213	Brune#1 trench	refer to Map 5A	M/Cgr gabbro w/ trace Fgr diss'd Po - Cpy numerous thin 1-2mm
368214	Brune#1 trench	refer to Map 5A	M/Cgr gabbro w/ irreg local Fgr Cpy<Po
368215	Brune#1 trench	refer to Map 5A	Mgr gabbro diorites w/ tr 1/2% Fgr diss'd Cpy<Po
	441983	5138947	12E / 1+00N
	0442073	5139010	GPS Location Point = L 13+00E / 0+75N

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A Division of SGS Canada Inc.

1885 Leslie Street  
Don Mills, Ontario  
Canada M3B 3J4  
Telephone (416) 445-5755  
Fax (416) 445-4152

### CERTIFICATE OF ANALYSIS

**Work Order: 061564**

To: **URSA Major International**  
**Attn: R. Sutcliff**  
100 Adelaide Street West  
Suite 405  
TORONTO  
ONTARIO M5H 1S3

Date : 02/11/00

Copy 1 to : Harold Tracanelli


Copy 2 to :

P.O. No. :  
Project No. : *Poster*  
No. of Samples : 23 Rock  
Date Submitted : 18/10/00  
Report Comprises : Cover Sheet plus  
Pages 1 to 3

**Distribution of unused material:**

Pulps: Return.  
Rejects: Return.

Certified By :

  
\_\_\_\_\_  
Dr. Hugh de Souza, General Manager  
XRAL Laboratories

### ISO 9002 REGISTERED

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample  
n.a. = Not applicable -- = No result  
\*INF = Composition of this sample makes detection impossible by this method  
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



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Element. Method. Det.Lim. Units.	Au FA301 1 ppb	Pt FA301 10 ppb	Pd FA301 1 ppb	Be ICP70 0.5 ppm	Na ICP70 0.01 %	Mg ICP70 0.01 %	Al ICP70 0.01 %	P ICP70 0.01 %	K ICP70 0.01 %	Ca ICP70 0.01 %	Sc ICP70 0.5 ppm	Ti ICP70 0.01 %	V ICP70 2 ppm	Cr ICP70 1 ppm	Mn ICP70 2 ppm	Fe ICP70 0.01 %
368001	11	24	24	<0.5	0.13	0.81	1.50	0.02	0.17	0.63	1.6	0.04	34	78	165	1.73
368002	40	35	43	<0.5	0.06	1.10	1.42	0.02	0.17	0.37	1.2	0.05	33	64	210	2.34
368004	11	<10	23	<0.5	0.12	0.51	1.25	0.02	0.09	0.73	0.8	0.04	20	81	108	1.00
368008	37	35	148	<0.5	0.06	1.00	1.35	0.02	0.07	0.45	0.6	0.04	22	102	183	2.09
368009	23	76	56	<0.5	0.04	1.11	1.47	0.03	0.63	0.36	1.4	0.09	46	82	219	3.08
368010	21	20	36	<0.5	0.09	0.92	1.51	0.03	0.35	0.64	1.3	0.07	37	86	191	2.14
368011	35	81	313	<0.5	0.07	0.94	1.34	0.03	0.16	0.50	1.2	0.06	38	152	172	3.48
368012	39	84	383	<0.5	0.04	0.71	0.87	0.03	0.09	0.40	1.2	0.04	26	129	130	2.88
368013	15	17	63	<0.5	0.22	0.90	2.29	0.02	0.28	1.04	1.2	0.05	34	79	163	2.06
368014	8	23	47	<0.5	0.12	0.74	1.45	0.01	0.36	0.58	1.3	0.06	33	88	145	2.07
368015	10	16	48	<0.5	0.15	0.68	1.46	0.01	0.28	0.73	1.8	0.06	34	58	158	2.55
368016	7	<10	8	<0.5	0.13	0.51	1.15	0.02	0.17	0.85	2.4	0.07	36	51	156	1.53
368017	5	<10	8	<0.5	0.08	0.91	1.36	0.04	0.35	0.72	2.3	0.09	46	56	214	2.23
368019	8	11	38	<0.5	0.06	0.88	1.01	0.04	0.39	0.49	3.5	0.06	51	51	149	2.97
368020	25	26	31	<0.5	0.14	0.68	1.58	0.02	0.32	0.81	1.3	0.05	30	77	132	1.73
368022	31	186	269	<0.5	0.06	0.62	1.01	0.03	0.18	0.47	1.1	0.04	27	93	111	3.08
368023	80	62	238	<0.5	0.14	0.55	1.40	0.02	0.14	0.80	1.2	0.04	26	75	107	1.58
368024	7	25	26	<0.5	0.08	0.78	1.34	0.02	0.12	0.68	1.2	0.05	28	80	139	1.52
368025	56	34	130	<0.5	0.14	1.09	1.70	0.02	0.14	0.77	3.0	0.04	42	114	141	3.18
368026	35	74	29	<0.5	0.13	0.78	1.55	0.02	0.21	0.75	1.5	0.05	34	79	132	2.05
368027	23	53	55	<0.5	0.08	0.67	1.06	0.03	0.17	0.60	1.7	0.05	32	91	137	2.25
368028	28	60	81	<0.5	0.09	0.64	1.12	0.03	0.18	0.59	1.2	0.05	29	90	126	2.08
368029	56	78	68	<0.5	0.10	0.61	1.18	0.03	0.19	0.65	1.2	0.05	29	87	121	2.53
*Dup 368001	10	16	19	<0.5	0.13	0.77	1.46	0.02	0.16	0.64	1.6	0.04	33	75	161	1.66
*Dup 368017	6	<10	8	<0.5	0.08	0.89	1.33	0.03	0.34	0.72	2.2	0.09	45	56	211	2.19



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Element. Method. Det. Lim. Units.	Co ICP70 1 ppm	Ni ICP70 1 ppm	Cu ICP70 0.5 ppm	Zn ICP70 0.5 ppm	As ICP70 3 ppm	Sr ICP70 0.5 ppm	Y ICP70 0.5 ppm	Zr ICP70 0.5 ppm	Mo ICP70 1 ppm	Ag ICP70 0.2 ppm	Cd ICP70 1 ppm	Sn ICP70 10 ppm	Sb ICP70 5 ppm	Ba ICP70 1 ppm	La ICP70 0.5 ppm	W ICP70 10 ppm
368001	17	89	179	21.9	<3	23.2	2.1	2.9	<1	0.6	<1	<10	<5	31	4.3	<10
368002	31	163	587	25.3	6	14.5	1.3	1.7	<1	0.7	<1	<10	<5	26	3.3	<10
368004	23	59	119	14.5	25	25.9	1.5	1.9	<1	0.3	<1	<10	<5	17	3.6	<10
368008	29	333	598	27.5	<3	11.6	1.4	2.9	<1	0.6	<1	<10	<5	13	3.4	<10
368009	57	363	494	29.7	19	5.9	1.8	2.7	<1	0.6	<1	<10	<5	108	5.6	<10
368010	27	119	331	24.0	10	16.9	2.2	2.4	<1	0.5	<1	<10	<5	64	5.6	<10
368011	74	578	825	26.4	<3	14.4	1.8	2.3	<1	0.8	<1	<10	<5	33	5.1	<10
368012	109	876	981	23.9	44	8.8	1.9	2.4	<1	0.8	<1	<10	<5	14	5.3	<10
368013	24	154	248	19.8	33	37.8	1.6	2.3	<1	0.3	<1	<10	<5	59	4.0	<10
368014	30	135	218	18.0	<3	20.2	0.9	1.2	<1	0.4	<1	<10	<5	81	2.8	<10
368015	44	223	396	17.3	<3	23.2	1.2	1.8	<1	<0.2	<1	<10	<5	67	3.5	<10
368016	14	52	182	14.1	<3	17.3	2.4	3.2	<1	0.2	<1	<10	<5	47	5.0	<10
368017	17	38	100	31.3	<3	13.5	2.9	4.1	<1	0.5	<1	<10	<5	87	6.7	<10
368019	36	78	374	14.7	<3	4.6	3.4	4.2	<1	0.6	<1	<10	<5	65	10.0	<10
368020	26	213	491	22.1	16	27.8	1.8	2.6	<1	0.6	<1	<10	<5	74	4.4	<10
368022	136	922	979	21.9	92	13.4	1.8	2.1	<1	0.6	<1	<10	<5	41	4.6	<10
368023	83	299	934	22.7	137	25.6	1.8	2.4	<1	0.6	<1	<10	<5	30	4.0	<10
368024	17	83	196	16.9	<3	18.6	1.9	2.1	<1	0.7	<1	<10	<5	22	3.9	<10
368025	101	635	1900	673	<3	26.3	2.2	2.5	<1	1.9	6	<10	<5	32	3.7	<10
368026	45	452	834	29.6	14	24.4	2.2	3.2	<1	1.1	<1	<10	<5	47	4.2	<10
368027	54	442	617	24.3	18	15.5	2.2	2.7	<1	0.3	<1	<10	<5	32	3.8	<10
368028	53	524	593	19.5	25	17.9	2.0	2.6	<1	0.4	<1	<10	<5	37	3.4	<10
368029	64	617	566	20.6	11	20.0	2.1	2.9	<1	0.6	<1	<10	<5	39	3.8	<10
*Dup 368001	16	83	162	21.3	<3	23.1	2.0	3.6	<1	0.5	<1	<10	<5	29	4.3	<10
*Dup 368017	16	37	96.1	31.0	<3	13.4	2.7	3.2	<1	0.3	<1	<10	<5	84	6.1	<10



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Element.	Pb	Bi	Li
Method.	ICP70	ICP70	ICP70
Det.Lim.	2	5	1
Units.	ppm	ppm	ppm
368001	3	<5	8
368002	3	<5	7
368004	3	<5	5
368008	3	<5	8
368009	<2	<5	9
368010	<2	<5	8
368011	<2	<5	9
368012	5	<5	7
368013	3	<5	7
368014	<2	<5	7
368015	2	<5	7
368016	<2	<5	5
368017	4	<5	10
368019	2	<5	6
368020	<2	<5	7
368022	3	<5	7
368023	<2	<5	7
368024	<2	<5	10
368025	1390	*INF	19
368026	12	<5	10
368027	11	<5	8
368028	2	<5	8
368029	4	<5	7
*Dup 368001	3	<5	7
*Dup 368017	3	<5	10

DEC 28 2000



**XRAL Laboratories**  
A Division of SGS Canada Inc.

1885 Leslie Street  
Don Mills, Ontario  
Canada M3B 3J4  
Telephone (416) 445-5755  
Fax (416) 445-4152

### CERTIFICATE OF ANALYSIS

**Work Order: 061883**

To: **URSA Major International**  
**Attn: R. Sutcliff**  
100 Adelaide Street West  
Suite 405  
TORONTO  
ONTARIO M5H 1S3

Date : 14/12/00

Copy 1 to :

Copy 2 to :

P.O. No. :  
Project No. : PORTERTWP PROJECT  
No. of Samples : 62 Rock  
Date Submitted : 16/11/00  
Report Comprises : Cover Sheet plus  
Pages 1 to 9

**Distribution of unused material:**

Pulps: Return.  
Rejects: Return.

Certified By :

Dr. Hugh de Souza, General Manager  
XRAL Laboratories

**ISO 9002 REGISTERED**

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample  
n.a. = Not applicable -- = No result  
\*INF = Composition of this sample makes detection impossible by this method  
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion





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Element. Method. Det.Lim. Units.	Au FA301 1 ppb	Pt FA301 10 ppb	Pd FA301 1 ppb	Be ICP70 0.5 ppm	Na ICP70 0.01 %	Mg ICP70 0.01 %	Al ICP70 0.01 %	P ICP70 0.01 %	K ICP70 0.01 %	Ca ICP70 0.01 %	Sc ICP70 0.5 ppm	Ti ICP70 0.01 %	V ICP70 2 ppm	Cr ICP70 1 ppm	Mn ICP70 2 ppm	Fe ICP70 0.01 %
368030	1	<10	1	<0.5	0.09	0.97	1.85	0.04	1.11	0.51	1.7	0.16	97	43	309	3.74
368031	<1	<10	<1	<0.5	0.06	0.53	1.28	0.07	0.74	0.47	2.2	0.13	126	19	254	3.69
368032	1	<10	<1	<0.5	0.13	0.58	1.32	0.03	0.29	0.65	1.5	0.09	50	33	177	1.98
368033	3	<10	<1	<0.5	0.05	0.49	0.76	0.03	0.08	0.27	1.1	0.07	34	22	188	1.98
368034	1	<10	<1	<0.5	0.09	0.65	1.24	0.05	0.08	1.06	2.9	0.10	80	36	317	3.30
368035	43	<10	1	<0.5	0.03	2.69	2.22	0.02	0.28	7.37	10.3	0.05	122	38	1520	6.25
368036	5	<10	7	0.6	0.06	1.52	2.55	0.03	1.89	0.88	17.3	0.23	194	102	972	4.75
368037	2	<10	15	0.8	0.03	1.97	3.36	0.04	2.85	1.37	9.6	0.32	179	108	1390	6.28
368038	2	<10	7	<0.5	0.10	0.68	1.04	0.03	0.84	1.61	11.7	0.15	107	127	650	2.12
368039	5	19	25	0.9	0.04	3.09	4.28	0.04	3.14	2.24	6.5	0.32	226	78	2080	7.02
368040	4	22	28	1.6	0.07	2.82	3.59	0.04	2.34	1.89	4.3	0.29	181	99	1710	6.38
368041	5	16	19	0.5	0.05	1.70	1.94	0.06	0.68	0.68	6.8	0.14	114	39	662	4.01
368042	4	<10	7	0.6	0.12	1.79	1.85	0.05	0.02	0.74	13.5	0.02	128	97	779	4.24
368043	10	<10	7	<0.5	0.03	0.94	1.10	0.04	0.02	0.70	1.3	0.06	42	129	345	2.36
368044	5	<10	5	<0.5	0.06	1.00	1.23	0.03	0.13	0.61	1.8	0.07	48	31	257	2.27
368045	5	<10	6	0.6	0.02	1.48	2.15	0.09	1.19	0.89	3.1	0.15	61	89	472	6.15
368046	45	<10	6	<0.5	<0.01	1.46	2.09	<0.01	0.09	0.27	1.3	0.01	38	159	314	4.90
368047	617	47	27	<0.5	<0.01	0.08	0.07	<0.01	0.02	0.19	<0.5	<0.01	11	93	102	11.4
368048	41	30	17	0.9	<0.01	0.03	0.03	<0.01	<0.01	0.03	<0.5	<0.01	20	177	64	>15.0
368049	10	17	9	<0.5	0.07	0.84	1.36	0.05	0.09	0.49	2.4	0.07	48	36	218	2.95
368050	6	<10	6	<0.5	0.08	1.02	1.43	0.10	0.44	0.66	4.0	0.15	140	50	333	4.97
368151	419	1020	7340	<0.5	0.04	1.30	1.64	0.03	0.34	0.25	0.7	0.05	34	53	238	3.77
368152	174	520	4670	<0.5	0.09	1.22	1.71	0.03	0.46	0.33	1.5	0.07	51	51	239	4.40
368153	153	386	1760	<0.5	0.07	1.04	1.44	0.03	0.15	0.45	0.9	0.05	36	53	212	3.03
368154	276	652	4560	<0.5	0.08	1.09	1.55	0.03	0.35	0.37	1.0	0.06	40	65	225	3.49
368155	52	74	525	<0.5	0.07	1.31	1.83	0.04	0.60	0.36	0.8	0.07	45	40	251	2.80
368156	198	440	2340	<0.5	0.08	1.21	1.78	0.03	0.47	0.40	1.0	0.07	41	53	240	3.21
368157	47	86	401	<0.5	0.08	1.08	1.66	0.03	0.53	0.43	1.0	0.07	43	45	222	2.47
368158	24	164	1010	<0.5	0.06	1.48	1.74	0.03	0.05	0.75	1.8	0.06	54	44	351	3.22
368159	20	29	47	<0.5	0.07	0.97	1.44	0.03	0.49	0.44	1.3	0.07	42	38	216	2.35



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Element. Method. Det.Lim. Units.	Co ICP70 1 ppm	Ni ICP70 1 ppm	Cu ICP70 0.5 ppm	Zn ICP70 0.5 ppm	As ICP70 3 ppm	Sr ICP70 0.5 ppm	Y ICP70 0.5 ppm	Zr ICP70 0.5 ppm	Mo ICP70 1 ppm	Ag ICP70 0.2 ppm	Cd ICP70 1 ppm	Sn ICP70 10 ppm	Sb ICP70 5 ppm	Ba ICP70 1 ppm	La ICP70 0.5 ppm	W ICP70 10 ppm
368030	27	38	143	48.3	<3	11.0	4.7	8.4	<1	<0.2	<1	<10	<5	275	7.0	<10
368031	25	9	102	50.1	<3	7.7	6.8	6.5	<1	<0.2	<1	<10	<5	215	8.1	<10
368032	16	54	262	24.5	<3	17.7	3.5	6.1	<1	<0.2	<1	<10	<5	67	4.1	<10
368033	24	52	176	17.3	<3	5.1	2.4	2.8	<1	<0.2	<1	<10	<5	20	3.5	<10
368034	22	14	176	31.2	<3	16.0	5.6	5.8	<1	0.3	<1	<10	<5	21	7.0	<10
368035	38	63	682	65.4	<3	69.6	4.4	3.3	<1	0.8	1	<10	<5	74	4.1	<10
368036	34	40	339	153	<3	7.3	5.1	6.0	<1	0.4	<1	<10	<5	435	8.0	<10
368037	43	60	144	302	<3	8.4	7.7	7.6	<1	<0.2	<1	<10	<5	551	12.1	<10
368038	29	17	745	103	<3	10.8	4.4	6.6	<1	0.2	<1	<10	<5	224	8.4	<10
368039	42	78	101	307	<3	6.9	3.8	6.1	<1	<0.2	1	<10	<5	530	5.3	<10
368040	39	77	85.8	242	<3	9.4	4.6	6.2	<1	<0.2	1	<10	<5	663	6.3	<10
368041	14	26	33.5	84.5	<3	10.1	3.7	4.6	<1	<0.2	<1	<10	<5	285	5.1	<10
368042	23	38	12.6	62.8	<3	11.0	6.9	21.8	<1	<0.2	<1	<10	<5	36	16.5	<10
368043	21	17	70.0	32.8	13	19.0	3.2	3.2	<1	<0.2	<1	<10	<5	18	4.8	<10
368044	18	35	142	25.8	<3	14.1	2.0	2.0	<1	<0.2	<1	<10	<5	20	2.3	<10
368045	36	50	233	73.1	<3	23.8	7.5	24.2	2	5.1	<1	<10	<5	93	10.6	<10
368046	16	11	177	63.8	<3	6.1	0.5	2.5	<1	>10.0	1	<10	<5	10	1.3	<10
368047	157	111	>10000	183	<3	4.7	<0.5	5.1	<1	>10.0	7	<10	<5	3	*INF	<10
368048	333	238	1700	1780	<3	0.7	<0.5	7.2	<1	>10.0	20	<10	<5	<1	*INF	<10
368049	23	32	275	26.8	<3	9.2	4.0	4.9	<1	0.4	<1	<10	<5	17	7.3	<10
368050	30	25	163	52.4	<3	20.4	10.9	5.8	<1	0.6	<1	<10	<5	97	10.0	<10
368151	67	1370	6460	76.8	657	8.0	1.3	1.7	<1	2.8	<1	<10	<5	49	3.9	<10
368152	137	1110	4750	80.7	95	10.7	2.1	3.3	<1	2.1	<1	<10	<5	72	4.7	<10
368153	51	467	1360	44.0	3	11.7	2.0	3.0	<1	0.5	<1	<10	<5	21	4.7	<10
368154	82	876	4190	69.7	75	10.7	2.0	3.3	<1	1.8	<1	<10	<5	54	4.9	<10
368155	24	105	574	31.3	10	10.6	1.8	2.4	<1	0.2	<1	<10	<5	90	4.7	<10
368156	45	530	3010	53.9	107	12.8	1.8	3.5	<1	1.4	<1	<10	<5	77	4.6	<10
368157	24	139	855	29.1	37	13.0	2.2	4.2	<1	0.5	<1	<10	<5	86	5.5	<10
368158	30	71	190	32.0	9	7.7	4.2	3.1	<1	0.4	<1	<10	<5	10	7.7	<10
368159	24	39	194	24.4	6	10.3	2.4	2.8	<1	0.3	<1	<10	<5	86	5.5	<10



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Element. Method. Det. Lim. Units.	Pb ICP70 2 ppm	Bi ICP70 5 ppm	Li ICP70 1 ppm	Cu ICAY50 0.01 %	Pb ICAY50 0.01 %	Ag AA73 0.3 g/mt
368030	4	<5	11	n.a.	n.a.	n.a.
368031	5	<5	7	n.a.	n.a.	n.a.
368032	2	<5	7	n.a.	n.a.	n.a.
368033	5	<5	6	n.a.	n.a.	n.a.
368034	2	<5	6	n.a.	n.a.	n.a.
368035	11	<5	14	n.a.	n.a.	n.a.
368036	12	<5	22	n.a.	n.a.	n.a.
368037	7	<5	31	n.a.	n.a.	n.a.
368038	44	<5	5	n.a.	n.a.	n.a.
368039	<2	<5	40	n.a.	n.a.	n.a.
368040	2	<5	25	n.a.	n.a.	n.a.
368041	12	<5	11	n.a.	n.a.	n.a.
368042	3	<5	8	n.a.	n.a.	n.a.
368043	2	<5	17	n.a.	n.a.	n.a.
368044	<2	<5	11	n.a.	n.a.	n.a.
368045	620	8	17	n.a.	n.a.	n.a.
368046	5960	191	15	n.a.	n.a.	49.8
368047	4220	*INF	1	1.78	n.a.	65.1
368048	>10000	*INF	<1	n.a.	1.20	119
368049	31	<5	12	n.a.	n.a.	n.a.
368050	57	<5	13	n.a.	n.a.	n.a.
368151	3	*INF	9	n.a.	n.a.	n.a.
368152	10	*INF	8	n.a.	n.a.	n.a.
368153	6	*INF	11	n.a.	n.a.	n.a.
368154	5	*INF	8	n.a.	n.a.	n.a.
368155	<2	<5	11	n.a.	n.a.	n.a.
368156	<2	*INF	10	n.a.	n.a.	n.a.
368157	2	<5	9	n.a.	n.a.	n.a.
368158	3	<5	10	n.a.	n.a.	n.a.
368159	2	<5	10	n.a.	n.a.	n.a.



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Element. Method. Det.Lim. Units.	Au FA301 1 ppb	Pt FA301 10 ppb	Pd FA301 1 ppb	Be ICP70 0.5 ppm	Na ICP70 0.01 %	Mg ICP70 0.01 %	Al ICP70 0.01 %	P ICP70 0.01 %	K ICP70 0.01 %	Ca ICP70 0.01 %	Sc ICP70 0.5 ppm	Ti ICP70 0.01 %	V ICP70 2 ppm	Cr ICP70 1 ppm	Mn ICP70 2 ppm	Fe ICP70 0.01 %
368160	15	35	138	<0.5	0.09	1.01	1.51	0.03	0.51	0.48	1.8	0.08	44	32	245	2.54
368161	33	14	30	<0.5	0.04	0.84	1.10	0.04	0.17	0.58	1.7	0.06	35	41	230	2.10
368162	27	16	21	<0.5	0.06	2.44	2.91	0.04	0.13	3.53	9.0	0.07	129	66	736	5.17
368163	6	20	10	0.5	0.06	1.78	1.86	0.06	0.26	0.50	5.8	0.12	96	39	393	4.10
368164	7	11	8	<0.5	0.12	0.83	0.95	0.05	0.09	0.61	4.1	0.10	60	97	207	2.13
368165	27	78	86	<0.5	0.09	0.67	1.18	0.03	0.45	0.43	1.5	0.07	36	59	146	2.13
368166	98	68	304	<0.5	0.12	0.89	1.41	0.02	0.10	0.59	1.1	0.03	30	88	156	2.75
368167	92	122	213	<0.5	0.04	1.62	1.77	0.02	0.10	0.09	3.3	0.05	131	322	197	5.72
368168	18	34	47	<0.5	0.07	1.30	1.66	0.02	0.11	0.37	2.1	0.05	49	95	251	3.08
368169	12	29	28	<0.5	0.12	0.41	0.88	0.02	0.02	0.75	0.9	0.01	17	40	92	1.31
368170	4	12	9	<0.5	0.27	0.35	1.82	<0.01	0.04	1.15	0.9	0.02	13	50	64	0.46
368171	25	<10	6	<0.5	0.04	0.56	0.62	0.07	0.03	0.25	<0.5	0.05	27	78	187	2.05
368172	9	<10	2	<0.5	0.09	0.88	1.72	0.05	0.88	0.53	2.2	0.16	91	36	343	4.01
368173	4	<10	1	<0.5	0.13	0.68	1.47	0.02	0.33	0.61	0.7	0.06	40	28	139	1.72
368174	9	<10	3	<0.5	0.08	0.71	0.78	0.05	0.13	0.42	4.0	0.08	66	97	149	1.80
368175	2	12	8	<0.5	0.02	2.04	1.70	0.02	0.23	0.40	3.2	0.06	60	338	302	2.42
368176	12	<10	7	<0.5	0.09	0.43	0.59	0.09	0.05	0.32	2.2	0.09	34	102	100	1.82
368177	3	13	12	<0.5	0.02	2.11	1.76	0.02	0.05	0.19	2.2	0.08	66	260	314	2.92
368178	10	<10	6	<0.5	0.08	0.49	0.60	0.07	0.06	0.39	2.4	0.07	44	82	106	1.86
368179	4	11	8	<0.5	0.06	0.84	1.08	0.02	0.52	0.30	1.3	0.07	38	143	127	1.44
368180	13	11	6	<0.5	0.07	0.58	0.80	0.04	0.13	0.52	2.6	0.07	67	60	143	2.39
368181	13	<10	8	<0.5	0.06	0.16	0.34	0.06	0.05	0.03	1.9	0.08	28	36	31	4.20
368182	8	10	4	<0.5	0.07	0.61	0.81	0.05	0.07	0.43	3.5	0.09	92	60	141	2.90
368183	7	15	8	<0.5	0.05	0.63	0.80	0.03	0.22	0.39	1.1	0.04	31	70	137	1.32
368184	4	20	15	<0.5	0.09	1.02	1.35	0.02	0.54	0.48	1.5	0.07	46	189	144	1.66
368185	29	<10	6	<0.5	0.05	0.39	0.53	0.06	0.05	0.32	1.4	0.04	27	50	84	1.93
368186	13	20	21	<0.5	0.08	0.66	0.80	0.04	0.09	0.48	2.3	0.07	46	54	138	1.79
368187	13	12	14	<0.5	0.05	0.20	0.31	0.07	0.03	0.27	1.2	0.07	21	60	53	1.38
368188	78	100	874	<0.5	0.14	0.81	1.44	0.02	0.12	0.63	1.5	0.03	33	63	123	2.18
368189	107	148	1220	<0.5	0.08	0.50	0.86	0.03	0.09	0.42	0.9	0.02	22	46	74	1.74



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Element. Method. Det. Lim. Units.	Co ICP70 1 ppm	Ni ICP70 1 ppm	Cu ICP70 0.5 ppm	Zn ICP70 0.5 ppm	As ICP70 3 ppm	Sr ICP70 0.5 ppm	Y ICP70 0.5 ppm	Zr ICP70 0.5 ppm	Mo ICP70 1 ppm	Ag ICP70 0.2 ppm	Cd ICP70 1 ppm	Sn ICP70 10 ppm	Sb ICP70 5 ppm	Ba ICP70 1 ppm	La ICP70 0.5 ppm	W ICP70 10 ppm
368160	25	53	229	26.7	4	10.2	2.5	3.5	<1	<0.2	<1	<10	<5	93	7.0	<10
368161	33	37	715	40.6	24	8.9	2.2	2.9	<1	0.3	<1	<10	<5	28	6.2	<10
368162	44	79	540	53.3	6	33.9	4.5	3.4	<1	0.4	<1	<10	<5	17	7.8	<10
368163	24	38	86.2	21.3	<3	8.1	5.3	5.6	<1	<0.2	<1	<10	<5	49	7.7	<10
368164	23	28	185	13.0	5	8.4	6.5	6.5	2	<0.2	<1	<10	<5	13	17.0	<10
368165	30	194	615	19.6	13	12.0	2.0	2.6	<1	<0.2	<1	<10	<5	89	4.6	<10
368166	66	632	1780	33.7	<3	19.4	1.6	1.9	<1	0.7	<1	<10	<5	16	3.9	<10
368167	126	725	>10000	59.6	310	4.7	3.2	2.3	24	3.0	<1	<10	<5	22	11.3	<10
368168	25	145	638	24.0	<3	7.3	1.0	2.1	2	0.5	<1	<10	<5	28	5.2	<10
368169	42	352	319	10.8	77	24.4	0.9	0.9	<1	<0.2	<1	<10	<5	3	3.8	<10
368170	12	23	67.9	4.2	6	50.1	0.8	0.8	<1	0.2	<1	<10	<5	9	2.6	<10
368171	16	51	58.1	6.2	<3	5.8	5.2	14.7	9	<0.2	<1	<10	<5	10	16.8	<10
368172	42	107	577	52.3	<3	13.2	4.8	10.1	<1	0.5	<1	<10	<5	236	6.7	<10
368173	14	34	112	18.5	<3	20.5	1.7	2.4	<1	<0.2	<1	<10	<5	59	3.0	<10
368174	21	25	166	56.2	<3	9.6	6.4	4.7	<1	<0.2	<1	<10	<5	32	12.0	<10
368175	18	85	24.0	31.6	<3	6.2	1.4	1.7	<1	<0.2	<1	<10	<5	44	3.1	<10
368176	31	38	734	17.1	<3	7.4	7.5	5.3	2	0.2	<1	<10	<5	7	14.1	<10
368177	20	99	11.6	78.0	<3	1.5	1.3	2.6	<1	<0.2	<1	<10	<5	9	5.4	<10
368178	36	50	552	23.7	<3	8.5	6.9	5.7	<1	0.2	<1	<10	<5	8	14.9	<10
368179	12	55	32.1	16.4	<3	8.3	1.0	1.4	<1	<0.2	<1	<10	<5	69	2.7	<10
368180	37	40	471	15.4	<3	8.5	4.8	4.3	<1	<0.2	<1	<10	<5	14	9.0	<10
368181	19	17	300	5.9	5	5.0	1.7	6.4	<1	0.4	<1	<10	<5	14	5.6	<10
368182	58	48	630	17.4	<3	8.1	6.2	5.3	<1	0.3	<1	<10	<5	7	12.4	<10
368183	20	51	143	12.6	<3	8.7	2.5	1.0	<1	<0.2	<1	<10	<5	26	4.9	<10
368184	14	58	28.7	18.3	<3	13.5	1.4	1.6	<1	<0.2	<1	<10	<5	68	3.7	<10
368185	45	52	915	16.5	<3	6.4	5.8	4.7	<1	<0.2	<1	<10	<5	8	10.9	<10
368186	28	36	355	15.7	<3	9.1	4.6	4.6	2	<0.2	<1	<10	<5	12	9.2	<10
368187	36	34	520	8.0	<3	5.2	4.9	4.7	1	0.4	<1	<10	<5	5	12.0	<10
368188	77	846	1870	33.2	218	22.0	2.1	1.9	<1	0.7	<1	<10	<5	20	4.8	<10
368189	63	925	2480	34.2	228	13.2	2.0	1.5	<1	1.0	<1	<10	<5	15	5.3	<10



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Element. Method. Det.Lim. Units.	Pb ICP70 2 ppm	Bi ICP70 5 ppm	Li ICP70 1 ppm	Cu ICAY50 0.01 %	Pb ICAY50 0.01 %	Ag AA73 0.3 g/mt
368160	3	<5	9	n.a.	n.a.	n.a.
368161	3	<5	7	n.a.	n.a.	n.a.
368162	5	<5	14	n.a.	n.a.	n.a.
368163	3	<5	21	n.a.	n.a.	n.a.
368164	4	<5	11	n.a.	n.a.	n.a.
368165	<2	<5	7	n.a.	n.a.	n.a.
368166	4	*INF	9	n.a.	n.a.	n.a.
368167	8	*INF	15	1.47	n.a.	n.a.
368168	2	<5	10	n.a.	n.a.	n.a.
368169	2	<5	4	n.a.	n.a.	n.a.
368170	4	<5	3	n.a.	n.a.	n.a.
368171	6	<5	6	n.a.	n.a.	n.a.
368172	3	<5	9	n.a.	n.a.	n.a.
368173	2	<5	8	n.a.	n.a.	n.a.
368174	21	<5	5	n.a.	n.a.	n.a.
368175	<2	<5	11	n.a.	n.a.	n.a.
368176	10	<5	3	n.a.	n.a.	n.a.
368177	2	<5	17	n.a.	n.a.	n.a.
368178	8	<5	4	n.a.	n.a.	n.a.
368179	<2	<5	7	n.a.	n.a.	n.a.
368180	3	<5	5	n.a.	n.a.	n.a.
368181	14	<5	1	n.a.	n.a.	n.a.
368182	<2	<5	6	n.a.	n.a.	n.a.
368183	3	<5	7	n.a.	n.a.	n.a.
368184	<2	<5	8	n.a.	n.a.	n.a.
368185	6	<5	5	n.a.	n.a.	n.a.
368186	<2	<5	8	n.a.	n.a.	n.a.
368187	5	<5	2	n.a.	n.a.	n.a.
368188	8	*INF	8	n.a.	n.a.	n.a.
368189	2	*INF	6	n.a.	n.a.	n.a.



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Element.	Au	Pt	Pd	Be	Na	Mg	Al	P	K	Ca	Sc	Ti	V	Cr	Mn	Fe
Method.	FA301	FA301	FA301	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70
Det. Lim.	1	10	1	0.5	0.01	0.01	0.01	0.01	0.01	0.01	0.5	0.01	2	1	2	0.01
Units.	ppb	ppb	ppb	ppm	%	%	%	%	%	%	ppm	%	ppm	ppm	ppm	%
368190	13	<10	13	<0.5	0.09	0.48	0.76	0.08	0.19	0.48	2.1	0.08	47	85	132	2.27
368191	10	14	13	<0.5	0.05	0.57	0.69	0.03	0.08	0.47	1.8	0.03	30	35	131	1.30
*Dup 368030	4	<10	7	<0.5	0.08	0.96	1.84	0.04	1.08	0.49	1.7	0.14	95	42	303	3.70
*Dup 368042	3	<10	7	0.6	0.11	1.74	1.80	0.05	0.02	0.72	13.2	0.02	124	93	753	4.10
*Dup 368154	261	686	4860	<0.5	0.08	1.09	1.56	0.03	0.35	0.36	1.1	0.06	40	64	225	3.50
*Dup 368166	88	68	257	<0.5	0.12	0.85	1.38	0.02	0.10	0.57	1.0	0.03	30	84	149	2.67
*Dup 368178	10	12	11	<0.5	0.07	0.47	0.57	0.07	0.06	0.37	2.4	0.06	42	79	100	1.80
*Dup 368190	9	<10	11	<0.5	0.09	0.48	0.76	0.08	0.19	0.48	2.2	0.08	47	83	133	2.29



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Element.	Co	Ni	Cu	Zn	As	Sr	Y	Zr	Mo	Ag	Cd	Sn	Sb	Ba	La	W
Method.	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70	ICP70
Det.Lim.	1	1	0.5	0.5	3	0.5	0.5	0.5	1	0.2	1	10	5	1	0.5	10
Units.	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
368190	31	21	362	12.8	<3	6.3	10.7	7.4	<1	<0.2	<1	<10	<5	29	13.9	<10
368191	12	25	58.9	12.4	<3	6.2	2.5	2.7	4	<0.2	<1	<10	<5	15	5.8	<10
*Dup 368030	25	38	144	48.5	<3	10.6	4.7	8.9	<1	0.4	<1	<10	<5	274	7.2	<10
*Dup 368042	22	36	12.0	60.6	<3	10.7	6.7	20.6	<1	<0.2	<1	<10	<5	35	15.9	<10
*Dup 368154	74	883	4270	69.8	70	10.8	2.0	3.2	<1	2.0	<1	<10	<5	55	4.9	<10
*Dup 368166	63	615	1750	33.2	<3	19.1	1.5	1.5	<1	0.8	<1	<10	<5	15	3.8	<10
*Dup 368178	35	49	536	22.9	<3	8.1	6.6	5.9	<1	<0.2	<1	<10	<5	8	14.7	<10
*Dup 368190	30	22	365	12.9	<3	6.3	10.9	8.3	<1	<0.2	<1	<10	<5	29	15.1	<10





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Element.	Pb	Bi	Li	Cu	Pb	Ag
Method.	ICP70	ICP70	ICP70	ICAY50	ICAY50	AA73
Det.Lim.	2	5	1	0.01	0.01	0.3
Units.	ppm	ppm	ppm	%	%	g/mt
368190	4	<5	5	n.a.	n.a.	n.a.
368191	2	<5	7	n.a.	n.a.	n.a.
*Dup 368030	<2	<5	11	n.a.	n.a.	n.a.
*Dup 368042	2	<5	8	n.a.	n.a.	n.a.
*Dup 368154	5	*INF	8	n.a.	n.a.	n.a.
*Dup 368166	4	*INF	9	n.a.	n.a.	n.a.
*Dup 368178	7	<5	4	n.a.	n.a.	n.a.
*Dup 368190	3	<5	5	n.a.	n.a.	n.a.



**XRAL Laboratories**  
A Division of SGS Canada Inc.

1885 Leslie Street  
Don Mills, Ontario  
Canada M3B 3J4  
Telephone (416) 445-5755  
Fax (416) 445-4152

## Upper Concentration Limits Have Been Exceeded

Some of the results in this report are outside the applicable analytical range. Please refer to the table below or the current Schedule of Fees and Services for our recommended upper concentration limits. Results greater than the upper concentration limit are reported for the convenience of our clients, but are of poor precision and/or subject to interferences.

Please contact us for additional technical information or for an accurate determination by an appropriate technique.

Method Code	Instrument	Elements	Upper Limit	Comments
ICP 70	ICP/AA	Ag	10 ppm	See note below
ICP 70 ICP 80 ICP 90	ICP	32 elements  24 elements	5,000 ppm	As, Sb, Bi, W, La may be affected for samples with >1,0% Cu, Zn or >25% Fe
XRF 7	XRF	25 elements	4,000 ppm	Matrix dependent. Not suitable for concentrates or highly mineralized samples.
CHM 20	Cold vapour	Hg	100 ppm	
AAH 3	AA Hydride	Sb, As, Bi	200 ppm	
Es 4	DCP Fusion	Be, B, Ge, V	2,000 ppm	
GFAA 10	GFAA	Ce, Se, Te	200 ppm	
CHM 13 CHM 10	Specific Ion	Cl F	5,000 ppm 1%	
ICPMS 10	ICPMS	In	4,000 ppm	

**Note:** Method code is ICP 70 utilizes a nitric aqua regia digestion. Silver may precipitate from solution as a chloride and may be underestimated. A fire assay determination for silver is recommend.

DEC 28 2000



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A Division of SGS Canada Inc.

1885 Leslie Street  
Don Mills, Ontario  
Canada M3B 3J4  
Telephone (416) 445-5755  
Fax (416) 445-4152

### CERTIFICATE OF ANALYSIS

**Work Order: 062141**

To: **URSA Major International**  
Attn: **R. Sutcliff**  
100 Adelaide Street West  
Suite 405  
TORONTO  
ONTARIO M5H 1S3

Date : 14/12/00

Copy 1 to :

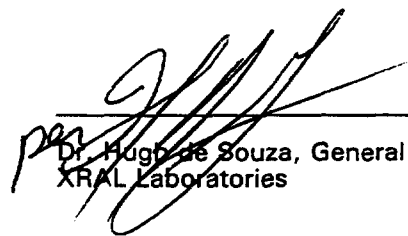
Copy 2 to :

P.O. No. :  
Project No. :  
No. of Samples : 24 Rock  
Date Submitted : 04/12/00  
Report Comprises : Cover Sheet plus  
Pages 1 to 3

**Distribution of unused material:**

Pulps: Return.  
Rejects: Return.

Certified By :

  
\_\_\_\_\_  
Dr. Hugh de Souza, General Manager  
XRAL Laboratories

**ISO 9002 REGISTERED**

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample  
n.a. = Not applicable -- = No result  
\*INF = Composition of this sample makes detection impossible by this method  
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



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Element. Method. Det.Lim. Units.	Au FA301 1 ppb	Pt FA301 10 ppb	Pd FA301 1 ppb	Be ICP70 0.5 ppm	Na ICP70 0.01 %	Mg ICP70 0.01 %	Al ICP70 0.01 %	P ICP70 0.01 %	K ICP70 0.01 %	Ca ICP70 0.01 %	Sc ICP70 0.5 ppm	Ti ICP70 0.01 %	V ICP70 2 ppm	Cr ICP70 1 ppm	Mn ICP70 2 ppm	Fe ICP70 0.01 %
368192	18	12	9	<0.5	0.10	0.83	1.28	0.02	0.23	0.58	1.9	0.06	35	83	165	1.56
368193	38	69	72	<0.5	0.13	1.63	1.91	0.02	0.42	0.64	6.6	0.06	72	187	187	2.72
368194	16	11	22	<0.5	0.16	0.83	1.75	0.03	0.40	0.82	1.9	0.08	39	81	168	1.68
368195	24	37	45	<0.5	0.07	1.00	1.46	0.02	0.48	0.40	1.5	0.08	39	94	221	2.42
368196	65	59	309	<0.5	0.07	1.17	1.46	0.02	0.24	0.46	1.9	0.06	39	143	213	2.99
368197	111	153	840	<0.5	0.08	0.95	1.29	0.02	0.19	0.46	1.5	0.05	33	141	184	4.30
368198	172	168	165	<0.5	0.10	0.92	1.47	0.02	0.34	0.57	1.5	0.06	33	115	180	4.27
368199	27	15	116	<0.5	0.08	1.10	1.44	0.02	0.29	0.52	1.9	0.07	38	157	214	2.41
368200	20	<10	19	<0.5	0.12	0.82	1.54	0.03	0.27	0.73	1.4	0.06	33	115	183	1.59
368201	4	<10	6	<0.5	0.05	1.02	1.15	0.03	0.38	0.35	2.1	0.06	43	235	216	2.02
368202	8	23	70	<0.5	0.08	0.83	1.01	0.02	0.16	0.55	2.0	0.05	32	120	155	1.70
368203	6	<10	7	<0.5	0.09	0.73	1.18	0.02	0.13	0.63	1.5	0.05	29	120	179	1.35
368204	10	15	73	<0.5	0.11	0.74	1.12	0.03	0.08	0.66	2.0	0.04	28	97	137	1.21
368205	13	18	29	<0.5	0.08	1.05	1.54	0.03	0.21	0.82	2.6	0.07	53	62	295	2.59
368206	3	<10	10	<0.5	0.10	0.97	1.45	0.03	0.28	0.61	2.7	0.08	48	36	245	2.29
368207	6	22	6	<0.5	0.06	1.37	1.92	0.04	0.47	1.06	2.1	0.09	65	59	401	3.81
368208	3	<10	12	<0.5	0.11	1.20	1.91	0.04	0.46	0.90	2.7	0.09	61	51	329	3.25
368209	8	11	10	<0.5	0.06	0.95	1.36	0.03	0.27	0.57	2.1	0.07	41	51	255	2.38
368210	6	16	38	<0.5	0.06	1.35	1.81	0.03	0.46	0.45	2.4	0.09	64	41	360	3.31
368211	4	12	15	<0.5	0.07	1.24	1.87	0.04	0.65	0.50	2.0	0.09	47	69	385	3.48
368212	9	<10	7	<0.5	0.06	0.93	1.18	0.04	0.43	0.39	2.0	0.07	53	36	185	1.99
368213	3	14	4	<0.5	0.10	0.90	1.49	0.04	0.56	0.64	3.0	0.10	49	67	262	2.63
368214	43	15	8	<0.5	0.04	0.52	0.68	0.04	0.08	0.48	2.5	0.10	34	59	150	1.79
368215	26	16	24	<0.5	0.06	0.68	0.84	0.03	0.12	0.60	2.4	0.05	35	52	210	1.71
*Dup 368192	12	<10	6	<0.5	0.10	0.82	1.24	0.02	0.23	0.56	2.2	0.06	34	80	160	1.48
*Dup 368204	6	13	73	<0.5	0.10	0.72	1.08	0.03	0.08	0.63	1.9	0.04	27	95	133	1.17



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Element. Method. Det.Lim. Units.	Co ICP70 1 ppm	Ni ICP70 1 ppm	Cu ICP70 0.5 ppm	Zn ICP70 0.5 ppm	As ICP70 3 ppm	Sr ICP70 0.5 ppm	Y ICP70 0.5 ppm	Zr ICP70 0.5 ppm	Mo ICP70 1 ppm	Ag ICP70 0.2 ppm	Cd ICP70 1 ppm	Sn ICP70 10 ppm	Sb ICP70 5 ppm	Ba ICP70 1 ppm	La ICP70 0.5 ppm	W ICP70 10 ppm
368192	19	53	143	22.2	9	18.2	2.4	2.7	<1	<0.2	<1	<10	<5	41	4.1	<10
368193	60	333	571	569	28	25.4	2.9	1.2	<1	0.6	3	<10	<5	92	4.0	<10
368194	15	51	354	27.9	<3	30.5	2.3	1.5	<1	<0.2	<1	<10	<5	90	5.0	<10
368195	18	86	331	26.1	17	13.2	1.7	1.5	<1	0.4	<1	<10	<5	86	4.6	<10
368196	57	857	1720	46.2	40	13.0	2.3	0.7	<1	0.9	<1	<10	<5	40	3.1	<10
368197	173	2480	3190	65.7	140	13.9	1.8	<0.5	<1	1.3	<1	<10	<5	31	3.1	<10
368198	177	2390	4460	71.6	236	19.3	2.0	<0.5	<1	2.0	<1	<10	<5	56	3.8	<10
368199	31	405	682	31.1	24	14.0	2.2	1.0	<1	0.3	<1	<10	<5	47	3.1	<10
368200	16	68	109	18.8	<3	23.5	2.5	2.5	<1	0.2	<1	<10	<5	52	5.0	<10
368201	17	77	81.4	24.1	<3	5.8	2.0	2.3	<1	<0.2	<1	<10	<5	70	4.9	<10
368202	34	235	244	16.5	10	14.5	2.1	1.5	<1	<0.2	<1	<10	<5	27	4.3	<10
368203	17	82	121	18.1	<3	17.0	2.0	1.5	<1	<0.2	<1	<10	<5	26	4.5	<10
368204	18	59	118	34.0	10	19.8	2.5	2.4	<1	<0.2	<1	<10	<5	16	4.9	<10
368205	23	51	153	27.0	<3	14.3	3.6	3.2	<1	<0.2	<1	<10	<5	38	5.6	<10
368206	19	43	154	25.9	<3	15.7	3.1	4.0	<1	0.3	<1	<10	<5	54	5.9	<10
368207	30	53	268	36.8	<3	11.3	3.7	3.4	<1	<0.2	<1	<10	<5	85	6.6	<10
368208	27	51	155	30.3	<3	17.7	3.8	4.5	<1	0.2	<1	<10	<5	88	6.5	<10
368209	23	42	153	24.4	5	11.5	2.7	2.7	<1	<0.2	<1	<10	<5	53	5.1	<10
368210	26	55	128	33.5	4	8.9	2.9	3.3	<1	0.3	<1	<10	<5	89	5.6	<10
368211	27	52	148	35.1	<3	10.5	3.1	3.5	<1	<0.2	<1	<10	<5	136	6.6	<10
368212	19	48	255	40.7	4	9.1	4.3	3.1	<1	<0.2	<1	<10	<5	75	8.2	<10
368213	20	35	148	26.8	<3	13.1	4.5	6.4	<1	<0.2	<1	<10	<5	127	6.7	<10
368214	39	114	828	19.7	5	7.7	2.7	2.7	<1	0.2	<1	<10	<5	15	4.5	<10
368215	18	38	711	26.2	9	8.7	2.6	3.0	<1	0.3	<1	<10	<5	22	6.7	<10
*Dup 368192	20	52	141	22.3	10	17.9	2.5	3.2	<1	<0.2	<1	<10	<5	40	4.3	<10
*Dup 368204	18	59	116	32.6	11	19.0	2.4	2.3	<1	<0.2	<1	<10	<5	16	4.9	<10



**XRAL Laboratories**  
A Division of SGS Canada Inc.

Work Order: 062141

Date: 14/12/00

FINAL

Page 3 of 3

Element.	Pb	Bi	Li
Method.	ICP70	ICP70	ICP70
Det.Lim.	2	5	1
Units.	ppm	ppm	ppm
368192	3	<5	9
368193	157	<5	24
368194	4	<5	9
368195	<2	<5	10
368196	4	*INF	14
368197	5	*INF	11
368198	4	*INF	11
368199	3	<5	12
368200	2	<5	8
368201	<2	<5	10
368202	3	<5	10
368203	<2	<5	11
368204	7	<5	11
368205	<2	<5	10
368206	3	<5	10
368207	<2	<5	12
368208	<2	<5	12
368209	<2	<5	9
368210	2	<5	14
368211	<2	<5	13
368212	9	<5	10
368213	<2	<5	10
368214	4	<5	5
368215	3	<5	7
*Dup 368192	3	<5	9
*Dup 368204	8	<5	11



Date: 2001-JUN-28

GEOSCIENCE ASSESSMENT OFFICE  
933 RAMSEY LAKE ROAD, 6th FLOOR  
SUDBURY, ONTARIO  
P3E 6B5

MITCHELL BERNARD TURCOTT  
P.O. BOX 338  
WEBBWOOD, ONTARIO  
P0P 2G0 CANADA

Tel: (888) 415-9845  
Fax: (877) 670-1555

**Submission Number:** 2.21043  
**Transaction Number(s):** W0170.00075

Dear Sir or Madam

**Subject: Approval of Assessment Work**

We have approved your Assessment Work Submission with the above noted Transaction Number(s). The attached Work Report Summary indicates the results of the approval.

At the discretion of the Ministry, the assessment work performed on the mining lands noted in this work report may be subject to inspection and/or investigation at any time.

If you have any question regarding this correspondence, please contact STEVEN BENETEAU by email at [steve.beneteau@ndm.gov.on.ca](mailto:steve.beneteau@ndm.gov.on.ca) or by phone at (705) 670-5855.

Yours Sincerely,



Ron Gashinski  
Supervisor, Geoscience Assessment Office

**Cc: Resident Geologist**

Dan Albert Brunne  
(Claim Holder)

Mitchell Bernard Turcott  
(Claim Holder)

Ursa Major Minerals Incorporated  
(Claim Holder)

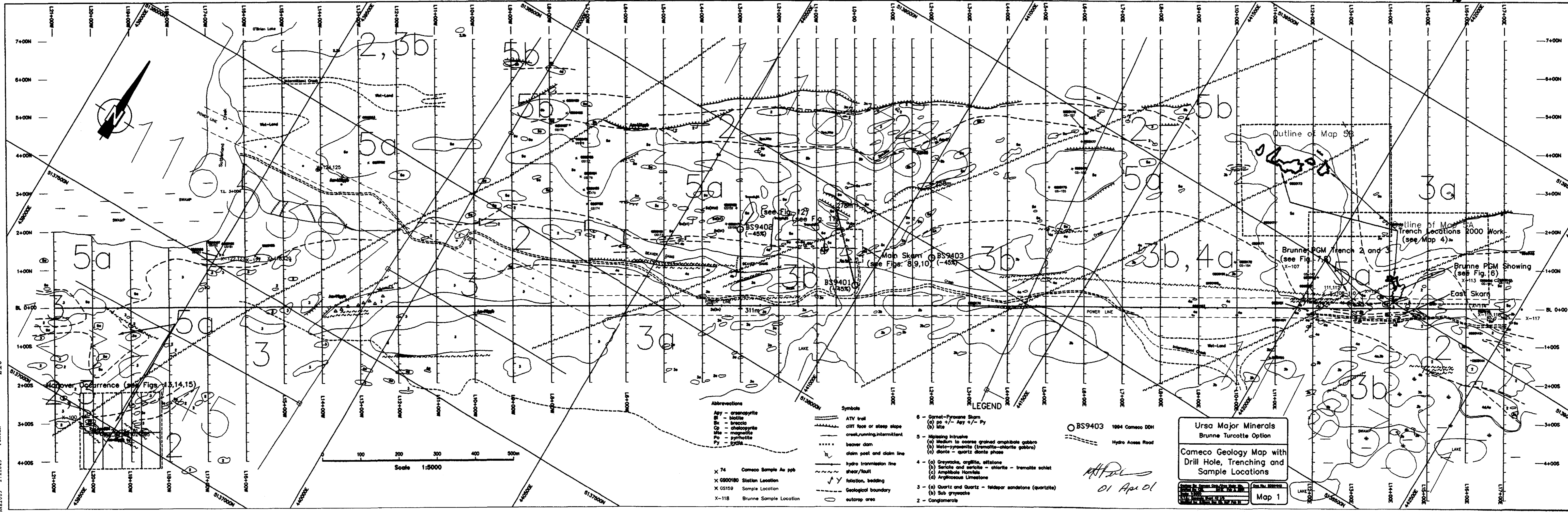
**Assessment File Library**

Michael James Perkins  
(Agent)

Mitchell Bernard Turcott  
(Assessment Office)







Abbreviations  
 Apy - arsenopyrite  
 Bt - biotite  
 Br - breccia  
 Cp - chloropyrite  
 Mts - magnetite  
 Py - pyrrhotite  
 Py - pyrite

Symbols  
 - - - - - ATV trail  
 - - - - - cliff face or steep slope  
 - - - - - creek, running, intermittent  
 - - - - - beaver dam  
 - - - - - claim post and claim line  
 - - - - - hydro transmission line  
 - - - - - shear/fault  
 - - - - - foliation, bedding  
 - - - - - Geological boundary  
 - - - - - outcrop area

X 74 Cameco Sample Au ppt  
 X GS00180 Station Location  
 X GS159 Sample Location  
 X-118 Brunne Sample Location

6 - Garnet-Pyroxene Skarn  
 (a) po +/- Apy +/- Py  
 (b) Mts

5 - Mafic Intrusive  
 (a) Medium to coarse grained amphibole gabbro  
 (b) Meta-pyroxenite (tremolite-chlorite gabbro)  
 (c) diorite - quartz diorite phase

4 - (a) Greywacke, argillite, siltstone  
 (b) Sericite and vermicite - chlorite - tremolite schist  
 (c) Amphibole Hornfels  
 (d) Argillaceous Limestone

3 - (a) Quartz and Quartz - feldspar sandstone (quartzite)  
 (b) Sub greywacke

2 - Conglomerate

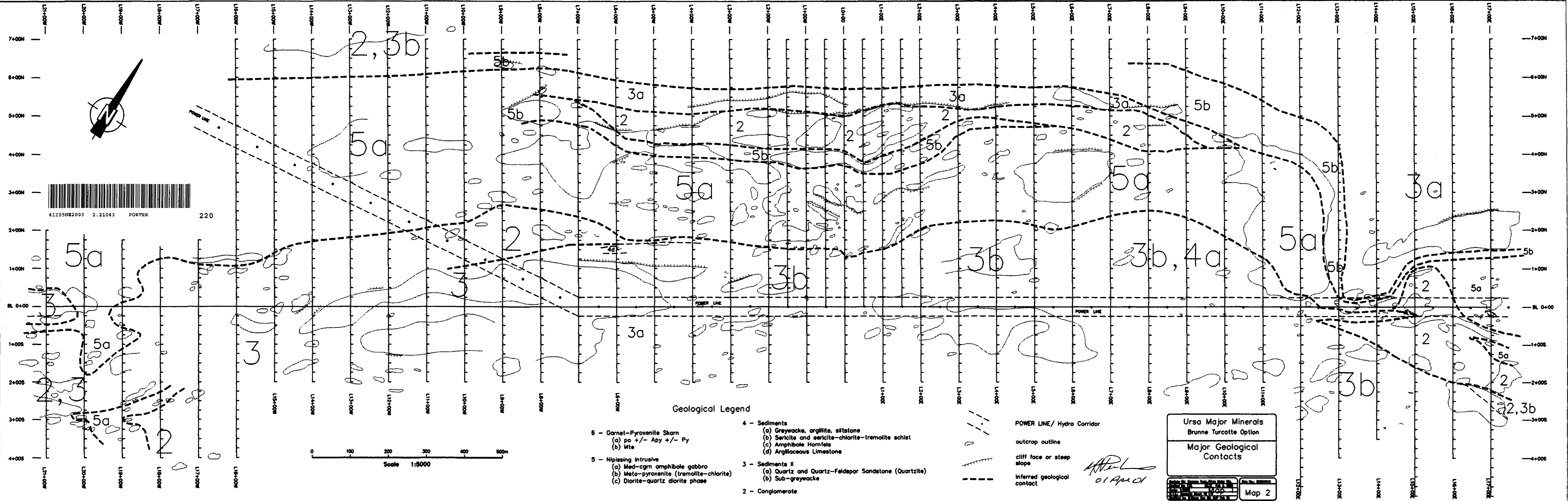
BS9403 1994 Cameco DDH  
 Hydro Access Road

*M.H. Porter*  
 01 April

Ursa Major Minerals  
 Brunne Turcotte Option  
 Cameco Geology Map with  
 Drill Hole, Trenching and  
 Sample Locations

Map 1

210  
 PORTER  
 2.21043  
 4 11 05 2003



41105NE2003 2.21043 PORTER 220

- Geological Legend**
- 6 - Garnet-Pyroxenite Skarn
    - (a) po +/- Apy +/- Py
    - (b) Mte
  - 5 - Nipissing Intrusive
    - (a) Med-cgrn amphibole gabbro
    - (b) Meta-pyroxenite (tremolite-chlorite)
    - (c) Diorite-quartz diorite phase
  - 4 - Sediments
    - (a) Greywacke, argillite, siltstone
    - (b) Sericite and sericite-chlorite-tremolite schist
    - (c) Amphibole Hornfels
    - (d) Argillaceous Limestone
  - 3 - Sediments II
    - (a) Quartz and Quartz-Feldspar Sandstone (Quartzite)
    - (b) Sub-greywacke
  - 2 - Conglomerate

POWER LINE/ Hydro Corridor  
 outcrop outline  
 cliff face or steep slope  
 inferred geological contact

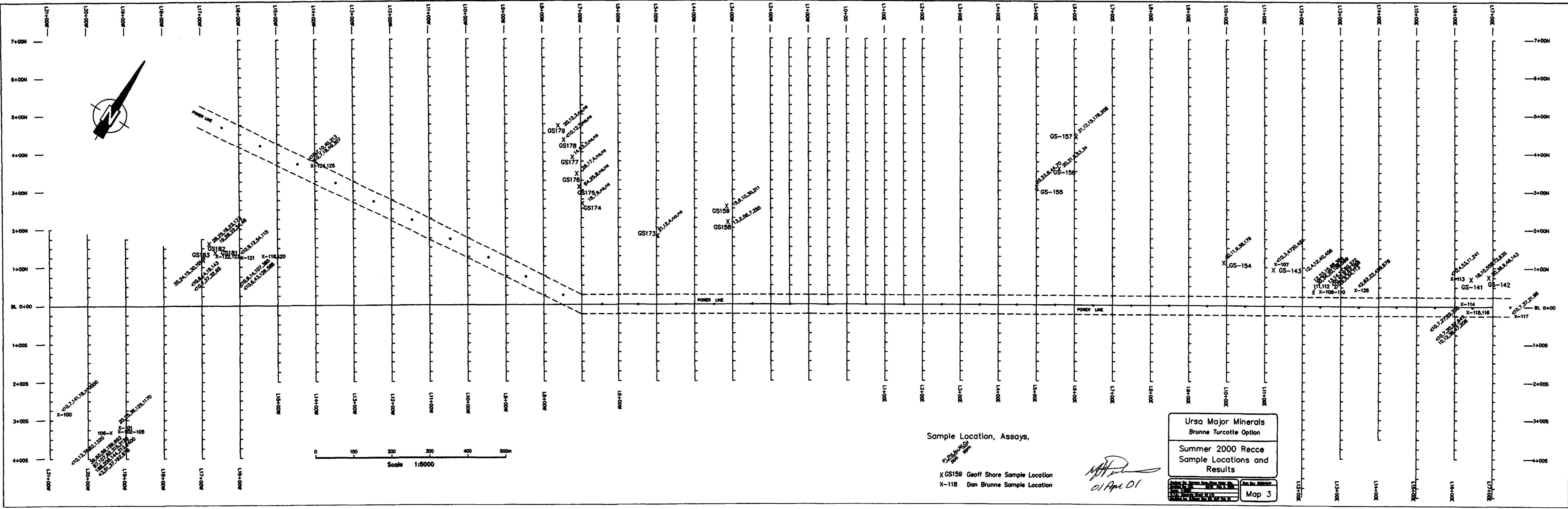
Ursa Major Minerals  
 Brunne Turcotte Option  
 Major Geological Contacts  
 Map 2

*Handwritten signature*  
 01 April

Scale 1:5000



41105NE2003 2.21043 PORTER 230



Sample Location, Assays,

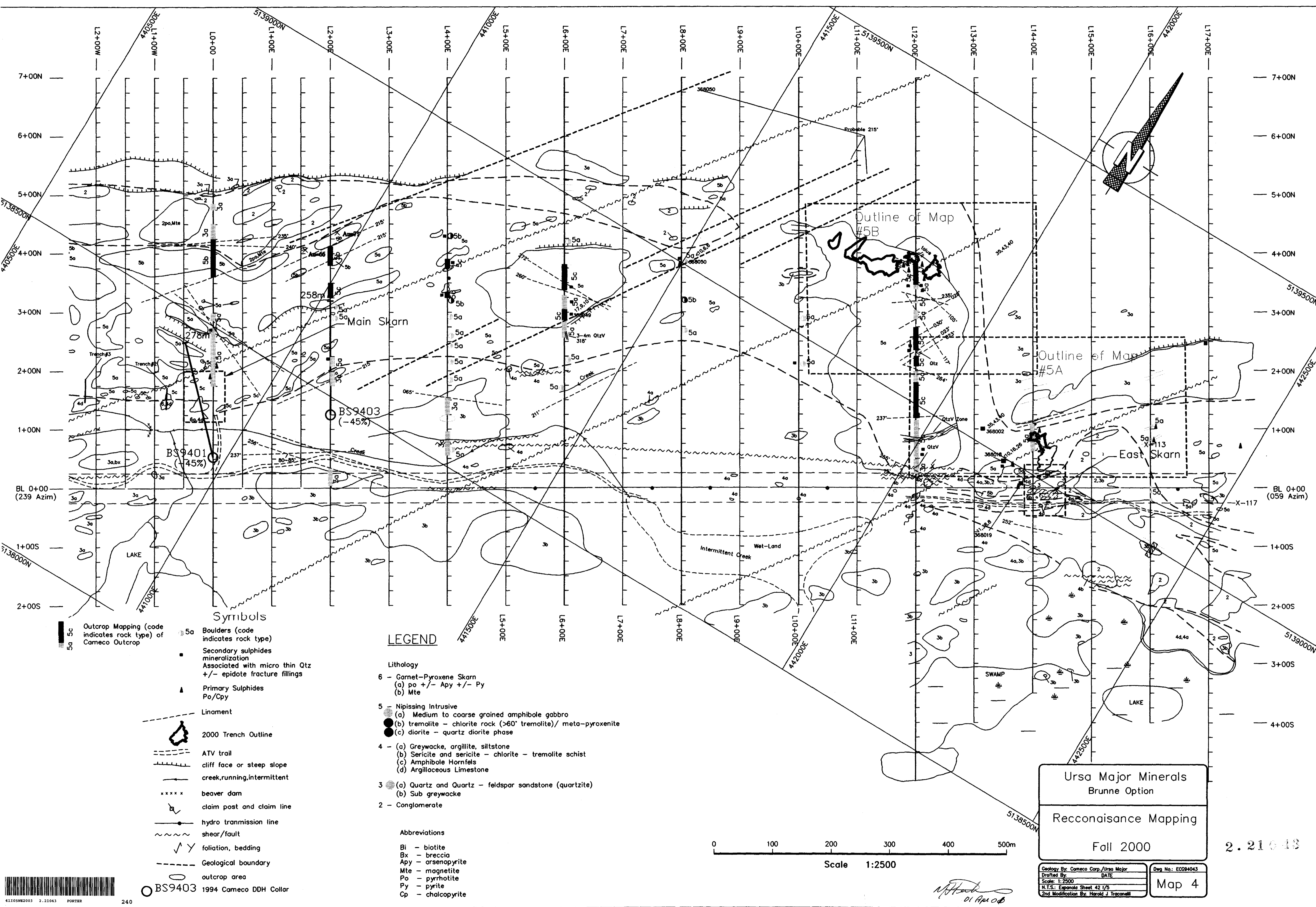
X GS159 Geoff Shore Sample Location  
 X-118 Dan Brunne Sample Location

01 Apr 01

Ursa Major Minerals  
Brunne Turcotte Option

Summer 2000 Recce  
Sample Locations and  
Results

Map 3



- Symbols**
- 5a 5c Outcrop Mapping (code indicates rock type) of Cameco Outcrop
  - 5a Boulders (code indicates rock type)
  - Secondary sulphides mineralization Associated with micro thin Qtz +/- epidote fracture fillings
  - Primary Sulphides Po/Cpy
  - Liniment
  - 2000 Trench Outline
  - ATV trail
  - cliff face or steep slope
  - creek, running, intermittent
  - beaver dam
  - claim post and claim line
  - hydro transmission line
  - shear/fault
  - foliation, bedding
  - Geological boundary
  - outcrop area

- LEGEND**
- Lithology**
- 6 - Garnet-Pyroxene Skarn
    - (a) po +/- Apy +/- Py
    - (b) Mte
  - 5 - Nipissing Intrusive
    - (a) Medium to coarse grained amphibole gabbro
    - (b) tremolite - chlorite rock (>60% tremolite)/ meta-pyroxenite
    - (c) diorite - quartz diorite phase
  - 4 - (a) Greywacke, argillite, siltstone
    - (b) Sericite and sericite - chlorite - tremolite schist
    - (c) Amphibole Hornfels
    - (d) Argillaceous Limestone
  - 3 - (a) Quartz and Quartz - feldspar sandstone (quartzite)
  - (b) Sub greywacke
  - 2 - Conglomerate
- Abbreviations**
- Bi - biotite
  - Bx - breccia
  - Apy - arsenopyrite
  - Mte - magnetite
  - Po - pyrrhotite
  - Py - pyrite
  - Cp - chalcopyrite

BS9403 1994 Cameco DDH Collar

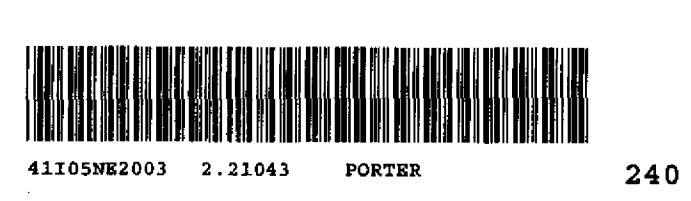
Ursa Major Minerals  
Brunne Option  
Reconnaissance Mapping  
Fall 2000

2.21048

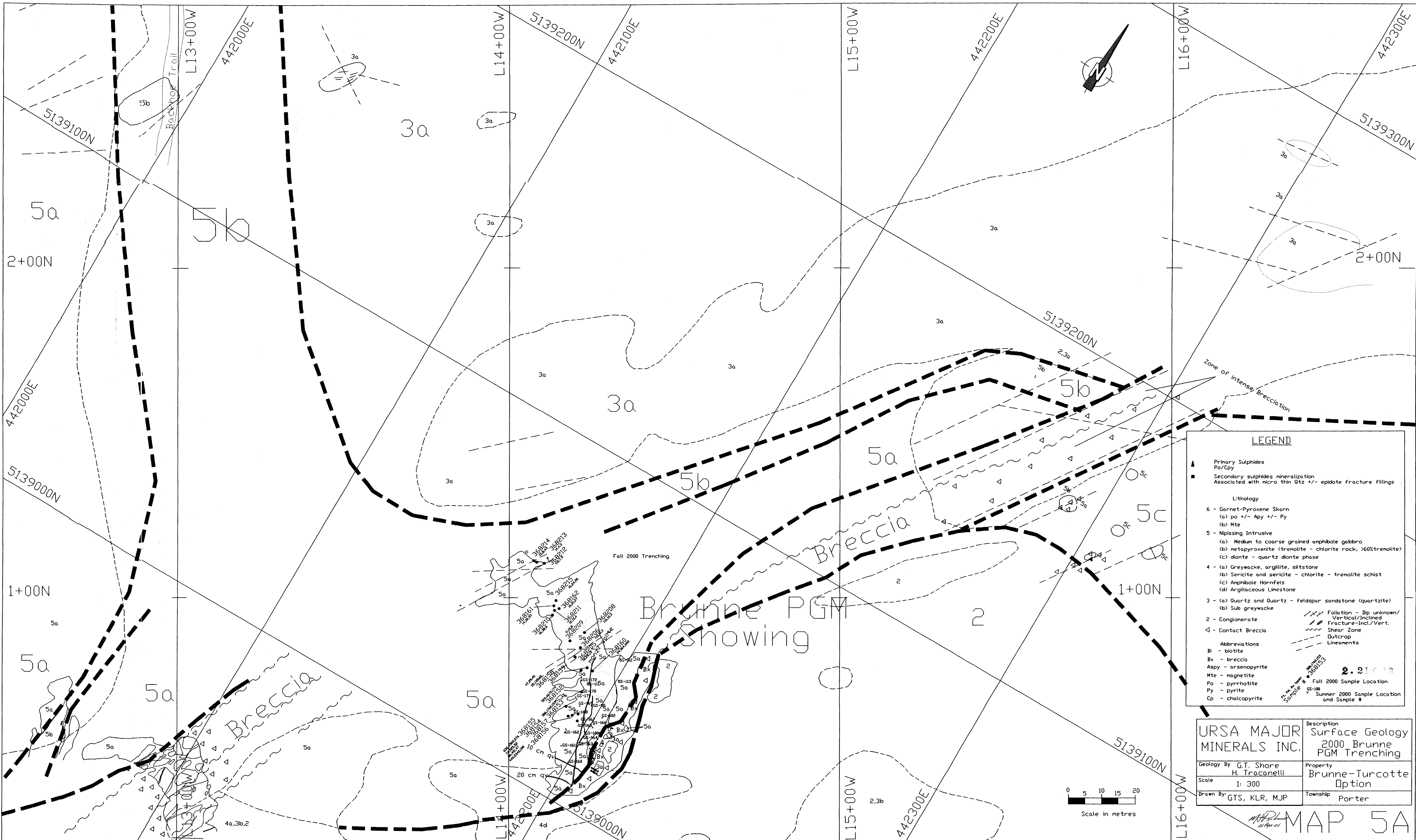
Scale 1:2500

Geology By: Cameco Corp./Ursa Major  
Drafted By: DATE  
Scale: 1:2500  
N.T.S.: Espandio Sheet 42 1/5  
2nd Modification By: Harold J. Trocenielli

Map 4



*M. J. ...*  
01 Apr 03

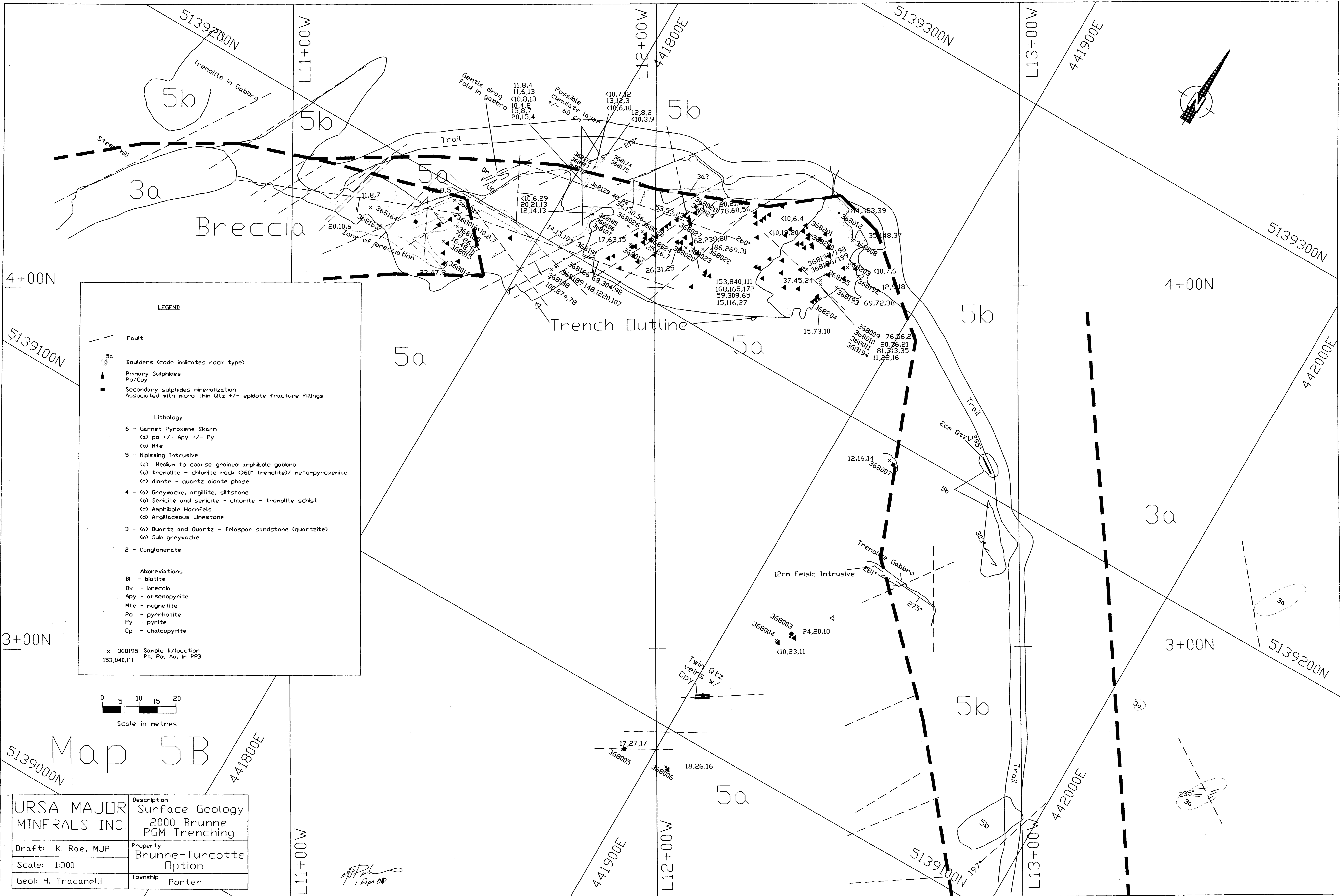


**LEGEND**

- ▲ Primary Sulphides  
Po/Cpy
  - Secondary sulphides mineralization  
Associated with micro thin Qtz +/- epidote fracture fillings
- Lithology**
- 6 - Garnet-Pyroxene Skarn  
(a) po +/- Apy +/- Py  
(b) Mte
  - 5 - Nipissing Intrusive  
(a) Medium to coarse grained amphibole gabbro  
(b) netopyroxenite (trenolite - chlorite rock, >60% trenolite)  
(c) diorite - quartz diorite phase
  - 4 - (a) Greywacke, argillite, siltstone  
(b) Sericite and sericite - chlorite - trenolite schist  
(c) Amphibole Hornfels  
(d) Argillaceous Limestone
  - 3 - (a) Quartz and Quartz - feldspar sandstone (quartzite)  
(b) Sub greywacke
  - 2 - Conglomerate
  - △ Contact Breccia
- Abbreviations**
- Bi - biotite
  - Bx - breccia
  - Aspy - arsenopyrite
  - Mte - magnetite
  - Po - pyrrhotite
  - Py - pyrite
  - Cp - chalcopyrite
- Structural Features**
- Foliation - Dip unknown/  
Vertical/Inclined
  - Fracture-Incl/Vert.
  - Shear Zone
  - Outcrop
  - Lineaments
2. 210 13  
Fall 2000 Sample Location  
GS-100 Summer 2000 Sample Location  
and Sample #

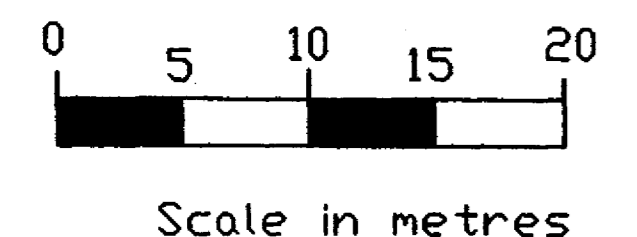
URSA MAJOR MINERALS INC.		Description Surface Geology 2000 Brunne PGM Trenching	
Geology By G.T. Shore H. Tracaneli		Property Brunne-Turcotte Option	
Scale 1: 300		Township Porter	
Drawn By GTS, KLR, MJP			

MAP 5A



**LEGEND**

- - - Fault
  - 5a Boulders (code indicates rock type)
  - ▲ Primary Sulphides  
Po/Cpy
  - Secondary sulphides mineralization  
Associated with micro thin Qtz +/- epidote fracture fillings
- Lithology**
- 6 - Garnet-Pyroxene Skarn  
(a) po +/- Apy +/- Py  
(b) Mte
  - 5 - Nipissing Intrusive  
(a) Medium to coarse grained amphibole gabbro  
(b) tremolite - chlorite rock (>60° tremolite)/ meta-pyroxenite  
(c) diorite - quartz diorite phase
  - 4 - (a) Greywacke, argillite, siltstone  
(b) Sericite and sericite - chlorite - tremolite schist  
(c) Amphibole Hornfels  
(d) Argillaceous Limestone
  - 3 - (a) Quartz and Quartz - feldspar sandstone (quartzite)  
(b) Sub greywacke
  - 2 - Conglomerate
- Abbreviations**
- Bl - biotite
  - Bx - breccia
  - Apy - arsenopyrite
  - Mte - magnetite
  - Po - pyrrhotite
  - Py - pyrite
  - Cp - chalcopyrite
- x 368195 Sample #/location  
Pt, Pd, Au, in PPB  
153,840.111



Map 5B

URSA MAJOR MINERALS INC.	Description Surface Geology 2000 Brunne PGM Trenching
Draft: K. Rae, MJP	Property Brunne-Turcotte Option
Scale: 1:300	Township Porter
Geol: H. Tracaneli	

*MJP*  
1 Apr 00

