REPORT ON THE 2002 DIAMOND DRILL PROGRAM ON THE BRENDA PROPERTY IN THE TOODOGGONE-KEMESS GOLD CAMP BRITISH COLUMBIA

NTS: 094E/2W, 7W

Latitude: 57º 16' N Longitude: 126º 52' W

OMINECA MINING DIVISION

for

Northgate Exploration Limited
PO Box 3519
Smithers, British Columbia
V0J 2N0

Owner/Operator:
Northgate Exploration Limited
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SUMMARY:

The 178 unit Brenda property is located 25 km northwest of Northgate's Kemess Mine and 450 km northwest of Prince George, British Columbia on NTS map sheets 094E/2W and 7W. The property is owned and was operated by Northgate Exploration Limited, subject to an option agreement with Canasil Resources Incorporated.

Geologically, the property is underlain by Upper Triassic Takla Group volcano-sedimentary stratigraphy, unconformably overlain by Lower to Middle Jurassic Hazelton Group volcanic and volcaniclastic stratigraphy of the Toodoggone Formation and intruded by felsic plutons, dykes and sills of Jurassic age, thought to be co-magmatic with the Toodoggone volcanic rocks.

Several gold-silver bearing epithermal showings and the Pillar and White Pass gold-copper prospects were previously delineated on the property. Prior work on the White Pass Zone yielded significant results including 0.48 g/t Au and 0.14% Cu over 109m from drilling, apparently hosted by Toodoggone volcanic stratigraphy and associated with steeply dipping north to northwesterly trending faults.

The four hole, 1650m 2002 diamond drill program targeted untested geophysical and geochemical anomalies below the mineralized Toodoggone volcanic rocks.

The drill program was successful in intersecting mineralized zones anomalous in copper and gold in all holes, associated with potassic and magnetite-silica altered Takla volcanic rocks, adjacent monzonite sills, and hydrothermal breccia zones in a setting analogous to that at the Kemess North Deposit.

Alteration and mineralization appear to increase easterly from BR-02-1. Distal alteration and more zinc rich mineralization were intersected in BR-02-2, 1.2 km to the east-northeast of BR-02-1.

In conclusion, widespread gold-copper mineralization and associated favourable alteration occurs on the Brenda property within a geological setting analogous to that at the Kemess North Deposit. Although the tenor of mineralization intersected in the 2002 drill program is not economic, the extent of the mineralization is widespread, suggestive of a large mineralizing system. The excellent access, available expertise and existing infrastructure at the minesite add to the potential of the property.

A 1500m diamond drill program is proposed for 2003 to follow-up the anomalous results from the current and previous programs in the White Pass Zone in an attempt to vector in towards economic mineralization. Additional porphyry gold-copper targets remain untested on the property.

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1.0 INTRODUCTION

This report documents the results of a four hole, 1650m diamond drill program completed between August 31 and October 15, 2002 on the Brenda property, 25 km northwest of the Kemess Mine in British Columbia. The program was designed to explore for extensions of significant gold-copper mineralization in Toodoggone volcanic rocks at the White Pass occurrence on the property into the underlying Takla Group volcanic rocks, which host mineralization at the Kemess North Deposit. The holes targeted untested geophysical and geochemical anomalies from previous programs, at lower elevations.

2.0 LOCATION AND ACCESS (Figure 1)

The Brenda property, on NTS map sheets 094E/2W and 7W, is located 25 km northwest of Northgate's Kemess Mine and 450 km northwest of Prince George, British Columbia, in the Omineca Mining Division. It is situated south of Jock Creek, north of the Finlay River at latitude 57°16' N and longitude 126°12' W.

Road access exists from the Kemess Mine to the Sturdee Airstrip, 21 km west of the property, via the Omineca Resource Access Road. Access from the airstrip is via the 12 km long Shasta Mine Road, followed by a 9 km four wheel drive road to the property centre.

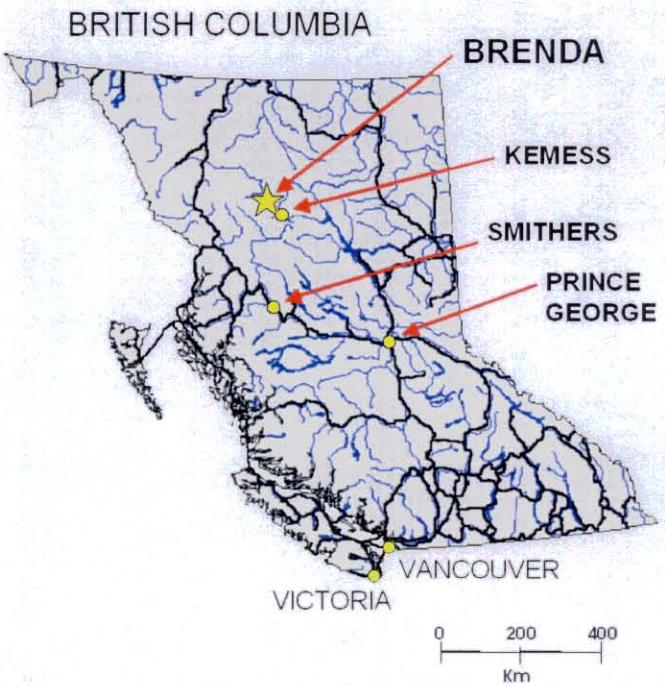


FIGURE 1 LOCATION MAP

3.0 LEGAL DESCRIPTION (Figure 2)

The 4400 ha Brenda property consists of thirteen modified grid and nine two post claims, totalling 178 contiguous units. The property is owned and was operated by Northgate Exploration Limited, subject to an option agreement with Canasil Resources Incorporated. All claims are valid to May 1, 2004. A statement of claims with expiry dates follows:

Claim Name	Record No.	Units	Expiry Date
Brenda #1, #4 - 8	238271-76	6	May 1, 2004
Jan 1 - 2	238770-71	22	May 1, 2004
Max No.1, Max 2 - 3	238772-74	3	May 1, 2004
Jan 6 - 8	239100-102	34	May 1, 2004
Pock	239522	16	May 1, 2004
Hans	239523	6	May 1, 2004
Tom 4	239993	6	May 1, 2004
Jan #9	240972	16	May 1, 2004
Tom 3, 5	306720 - 21	29	May 1, 2004
Kath 1, 3	319655, 57	40	May 1, 2004

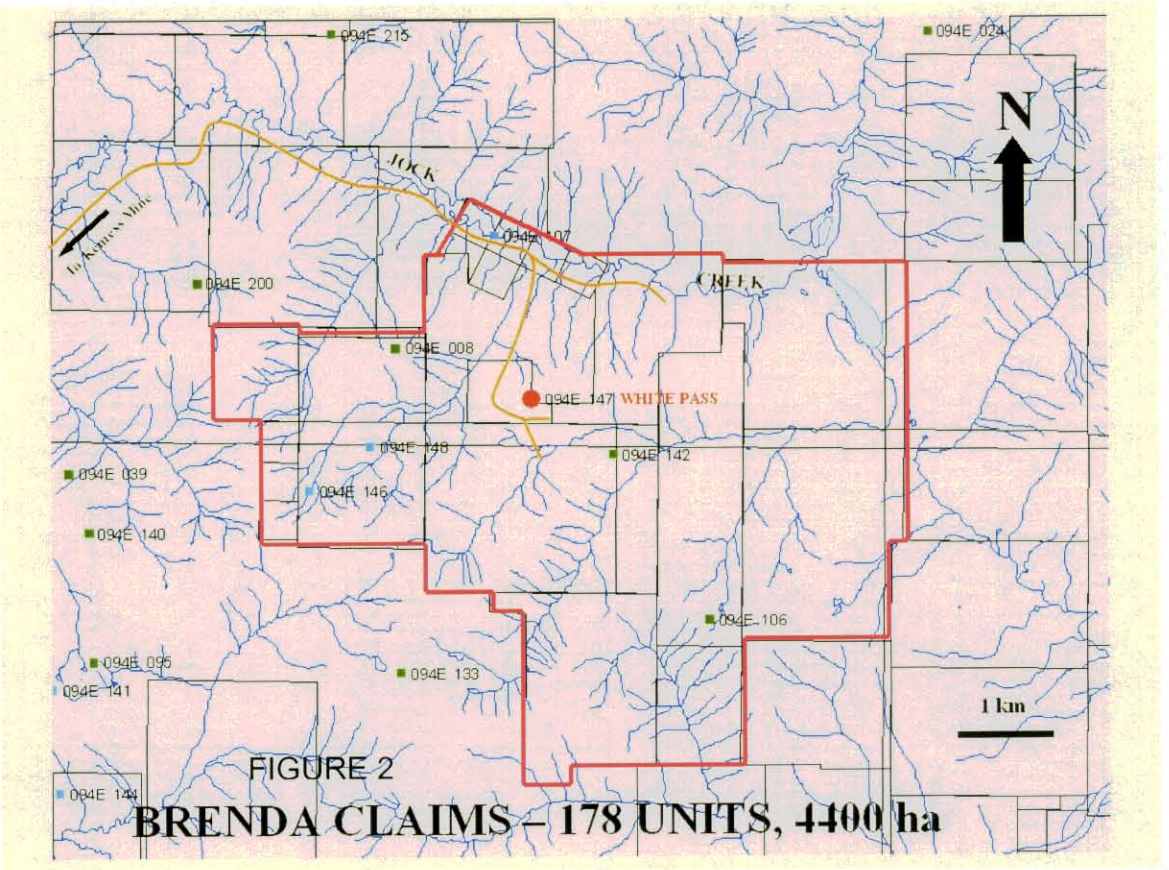


FIGURE 2
BRENDA CLAIMS – 178 UNITS, 4400 ha

4.0 PHYSIOGRAPHY

The Brenda property lies within the Samuel Black Range of the Omineca Mountains, within the watershed of the Finlay River. The region is characterized by individual and isolated small ranges separated by broad deep valleys. On the property, the topography is relatively moderate with elevations ranging from 1200m along Jock Creek to 2004m on the Tom 3 claim. The lower elevations are forested by spruce, pine, balsam, scrub willow and alders, with alpine vegetation generally above 1650m.

5.0 HISTORY

1950 discovery of gold-bearing epithermal quartz veins along Jock and Red Creeks
1980-5 prospecting and hand trenching on veins by Canmine Development Co. Ltd.
1988 Cypress Gold Canada Inc. diamond drilled 1219m in 12 holes on the epithermal veins
1989-91 soil geochemistry and trenching by Canasil Res. Inc. with discovery of White Pass gold-copper porphyry Zone
1992 Canasil drilled 271m in 4 holes on the White Pass Zone
1993 diamond drilling of 958m in 6 holes, IP/resistivity, magnetic and expansion of soil surveys by Romulus Res. Ltd on White Pass grid.
1994-7 soil geochemistry, hand trenching, 1919m of diamond drilling in 16 holes on White Pass and East Creek Zones by Canasil

6.0 GEOLOGY

6.1 Regional (Figure 3)

The regional geology of the Brenda property is represented on the Toodoggone River (94E) Map Sheet, Diakow et. al., 1985.

The property lies within the Toodoggone-Kemess Gold Camp, which is situated within a Mesozoic volcanic arc assemblage along the eastern margin of the Intermontane Belt, a northwesterly trending belt of Paleozoic to Tertiary sedimentary, volcanic and intrusive rocks. The region is dominated by northwest and northeast trending block faults. The intrusive rocks include Jurassic alkaline and calc-alkaline batholiths, stocks, dykes and sills, some of which are associated with significant porphyry style gold-copper deposits, such as at the Kemess Mine and the Kemess North Deposit.

Mineralization at both the Kemess and the Kemess North Deposit is hosted by Jurassic intrusions and adjacent Triassic Takla Group volcano-sedimentary rocks.

Numerous epithermal gold-silver deposits and prospects and some of the gold-copper porphyry prospects within the camp are hosted by volcanic rocks of the Jurassic Toodoggone Formation, which overlie the Takla Group. The Brenda property occurs at the transition from predominantly gold-copper deposits to the south and epithermal gold-silver deposits to the northwest.

6.2 Property (Figure 4)

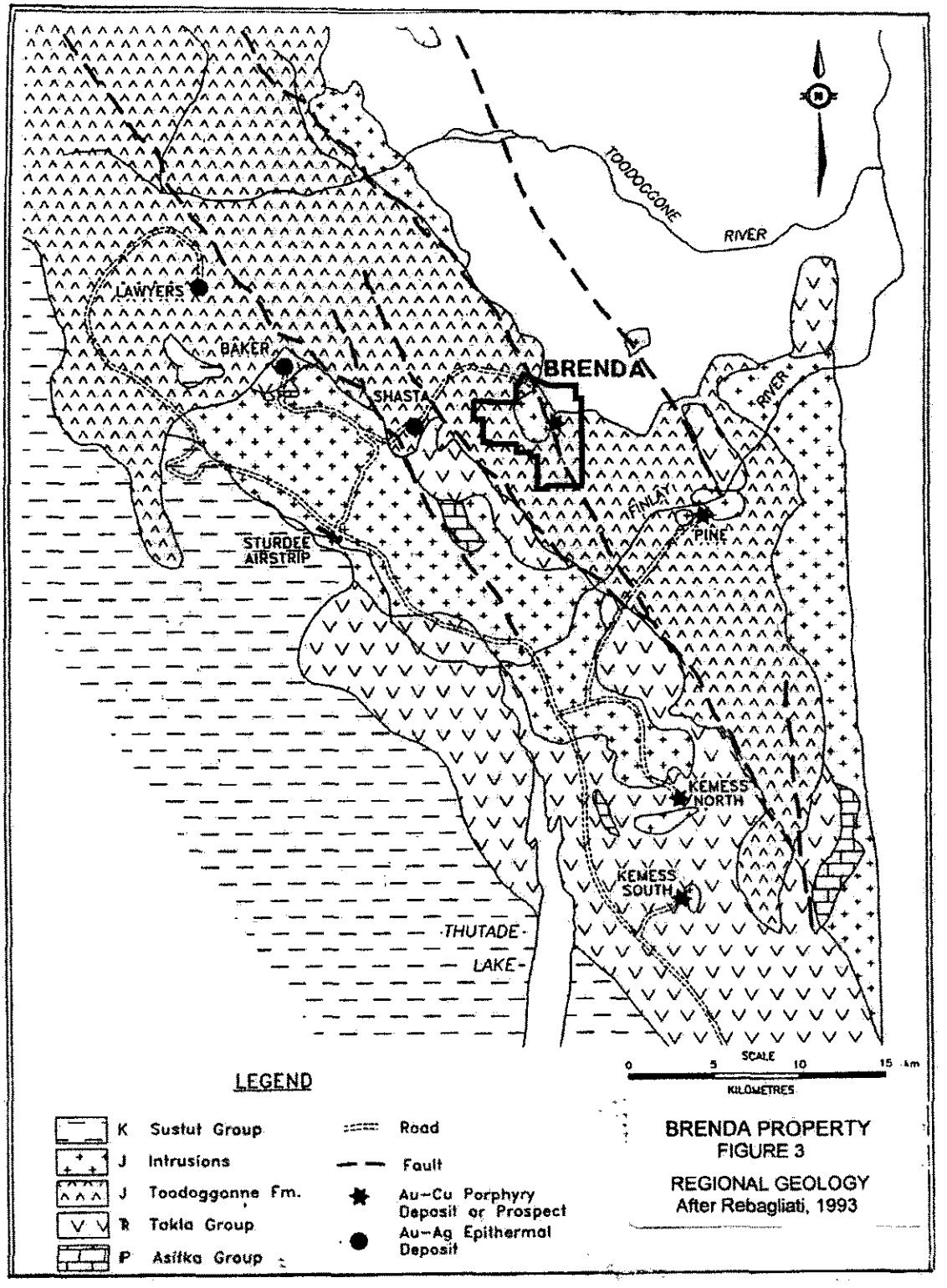
The Brenda property is underlain by Upper Triassic Takla Group volcanic rocks, unconformably overlain by Lower to Middle Jurassic Toodoggone volcanic stratigraphy of the Hazelton Group and intruded by felsic plutons, dykes and sills, thought to be co-magmatic with the Toodoggone rocks.

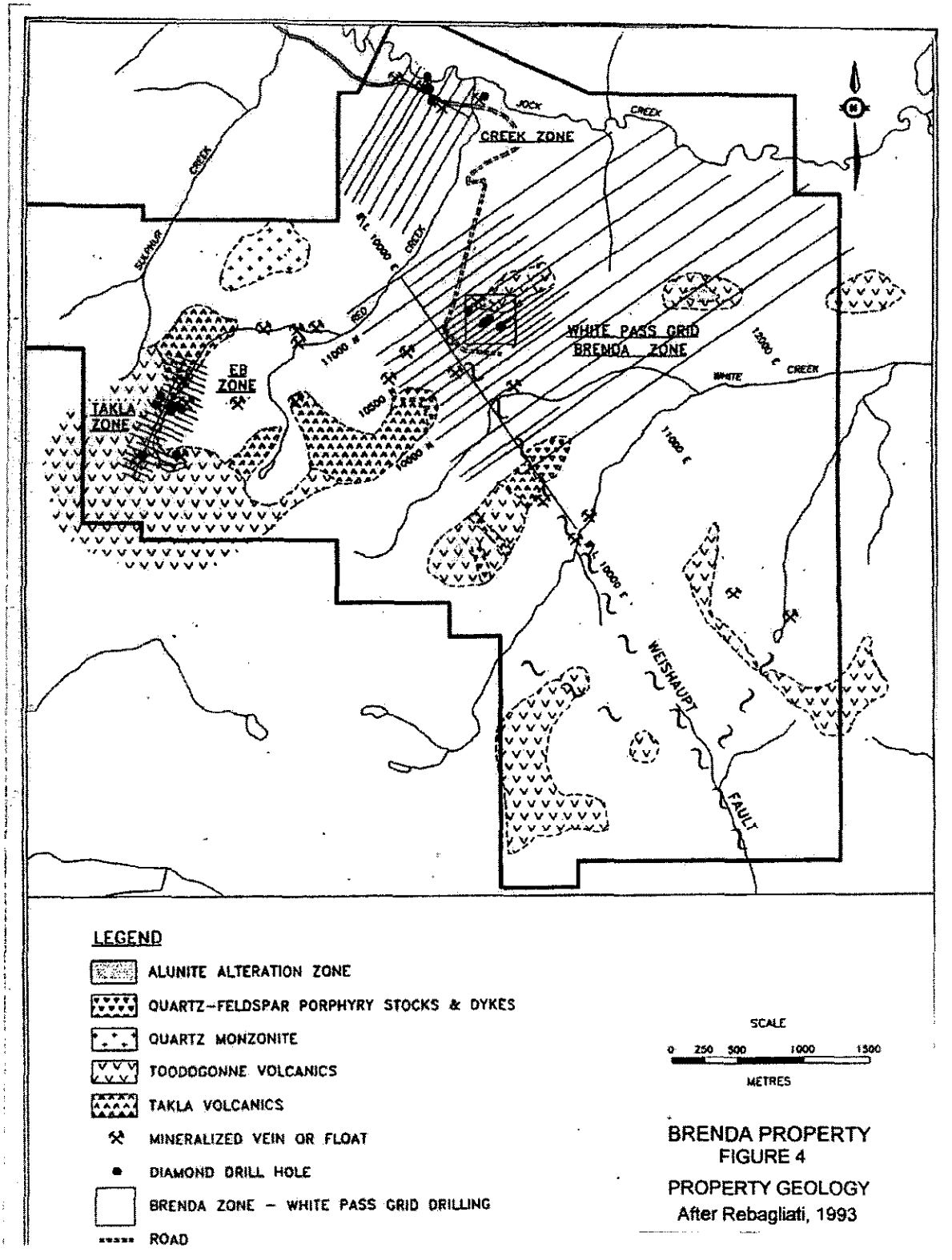
Takla Group stratigraphy has been mapped southwest of the White Pass Zone and includes mafic to intermediate augite and/or feldspar phyric flows with minor interbedded sedimentary rocks. Current drilling and a review of previous core indicates that the Takla Group stratigraphy extends into the White Pass area.

The overlying Toodoggone Formation is dominated by andesite quartz feldspar porphyry flows and dacitic lapilli tuffs. It is exposed at the higher elevations on the property, including in the White Pass area. The volcanic rocks of the Toodoggone Formation can be distinguished from those of the Takla by the presence of, often rare, quartz phenocrysts in the former.

A 1.5 km long, subcircular monzonite intrusion of the Early Jurassic Black Lake Suite is exposed 1.5 km west of the White Pass Zone. Dykes and sills of probable related monzonite and quartz feldspar porphyry intrude both the Takla and Toodoggone stratigraphy. The monzonite is commonly feldspar porphyritic and reddish brown in colour.

Late calcite amygdaloidal mafic dykes of basaltic composition, felsite and latite dykes intrude all of the above units.


TOODOGGONE
RIVER
LAWYERS
BAKER
SHASTA
BRENDA
FINLAY
RIVER
PINE
STURDEE
AIRSTRIP
KEMESS
NORTH
KEMESS
SOUTH
THUTADE
LAKE
SCALE
0 5 10 15 km
KILOMETRES
LEGEND
K Sustut Group
J Intrusions
J Toodoggonne Fm.
Tv Takla Group
P Asitka Group
Road
Fault
Au-Cu Porphyry Deposit or Prospect
Au-Ag Epithermal Deposit
BRENDA PROPERTY
FIGURE 3
REGIONAL GEOLOGY
After Rebagliati, 1993



BRENDA PROPERTY
FIGURE 4
PROPERTY GEOLOGY
After Rebagliati, 1993

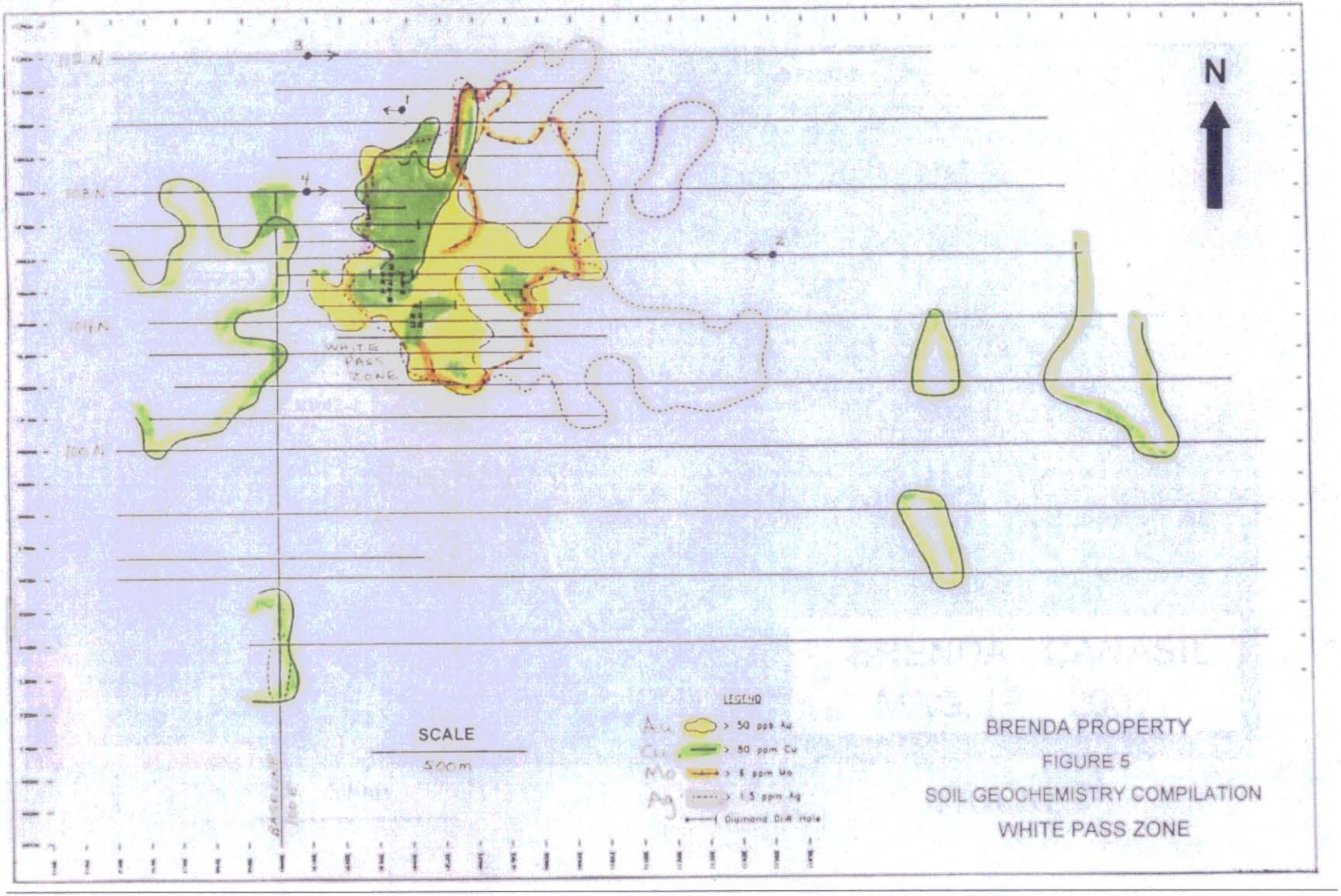
6.3 Mineralization (Figures 4-9)

The Brenda property covers six Minfile occurrences that include several gold-silver bearing epithermal showings, the Creek Zone (Minfile 094E 107), EB (Minfile 094E 148), Takla (Minfile 094E 146) and Jok (Minfile 094E 106) and two porphyry copper occurrences, the Pillar (Minfile 094E 008) and the White Pass gold - copper prospect (Minfile 094E 147). (Refer to Figure 2).

The current work focussed on the porphyry gold-copper potential of the property. At the Pillar showing bornite occurs within a fine grained feldspar porphyry. Sparse chalcopyrite with malachite mineralization associated with northwest trending fractures was exposed in trenches within a strong copper soil anomaly (to 1050 ppm) and a magnetic high anomaly. The showing appears to be related to a 1.5 km syenite to monzonite stock of the Early Jurassic Black Lake Suite.

Previous work on the White Pass prospect included trenching and approximately 2900m of diamond drilling in 20 holes. The drilling was restricted to a 350m x 100m area within a 900m x 400m anomalous zone with coincident soil geochemical and geophysical anomalies. The soil geochemistry is compiled in Figure 5. The relative total field magnetic signature and IP chargeability high anomalies are summarized in Figure 6 and the relative resistivity is summarized in Figure 7, with highs denoted by warm colours such as red and lows by cool colours such as blue and green. The above data was utilized in directing the 2002 drill program, as discussed under the drilling section of this report.

An examination of drill core from prior programs on the White Pass Zone (Figure 8) confirmed the presence of mineralization in the Toodoggone volcanic rocks and indicated the presence of Takla Group stratigraphy. Figure 9 shows a generalized cross section through the White Pass Zone on L105+50N. Mineralization appears to be associated with steeply dipping northerly trending faults within Toodoggone volcanic rocks, which are exposed at the higher elevations on the property. Significant results were obtained from the previous drilling, including 0.14% Cu, 0.48 g/t Au over 109m from DDH 93-3, 0.13% Cu, 1.1 g/t Au over 48m in DDH 93-1 and 0.14% Cu, 0.84 g/t Au over 63m from DDH 96-7.


N
WHITE PASS ZONE
SCALE
500m
LEGEND
> 50 ppb Au
> 80 ppm Cu
> 5 ppm Mo
> 1.5 ppm Ag
Diamond Drill Hole
BRENDA PROPERTY
FIGURE 5
SOIL GEOCHEMISTRY COMPILATION
WHITE PASS ZONE

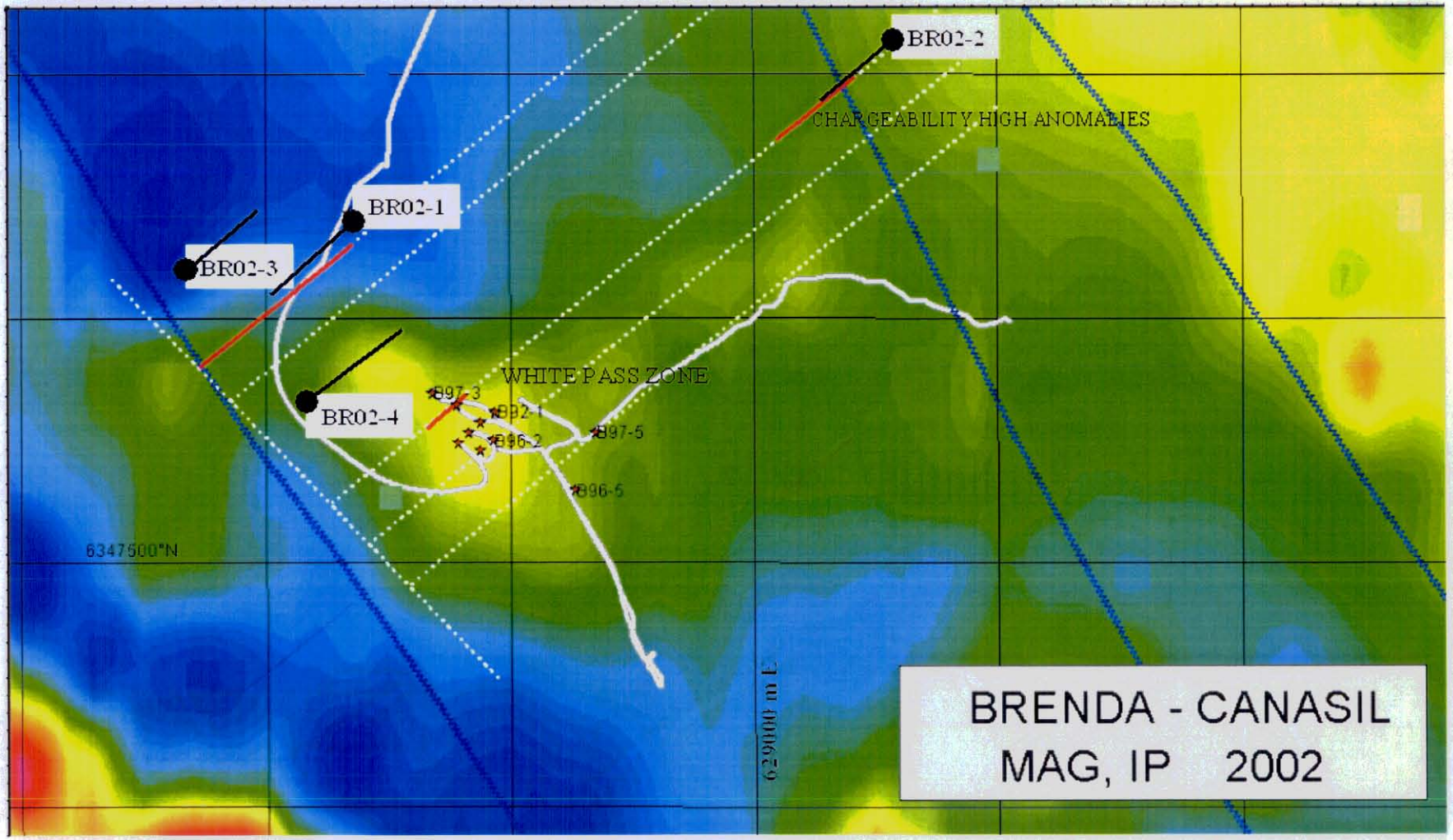

BR02-2
CHARGEABILITY HIGH ANOMALIES
BR02-1
BR02-3
BR02-4
WHITE PASS ZONE
B97-3
B97-1
B96-2
B97-5
B96-6
6347500°N
629000 mE
BRENDA - CANASIL
MAG, IP 2002
500m

FIGURE 6

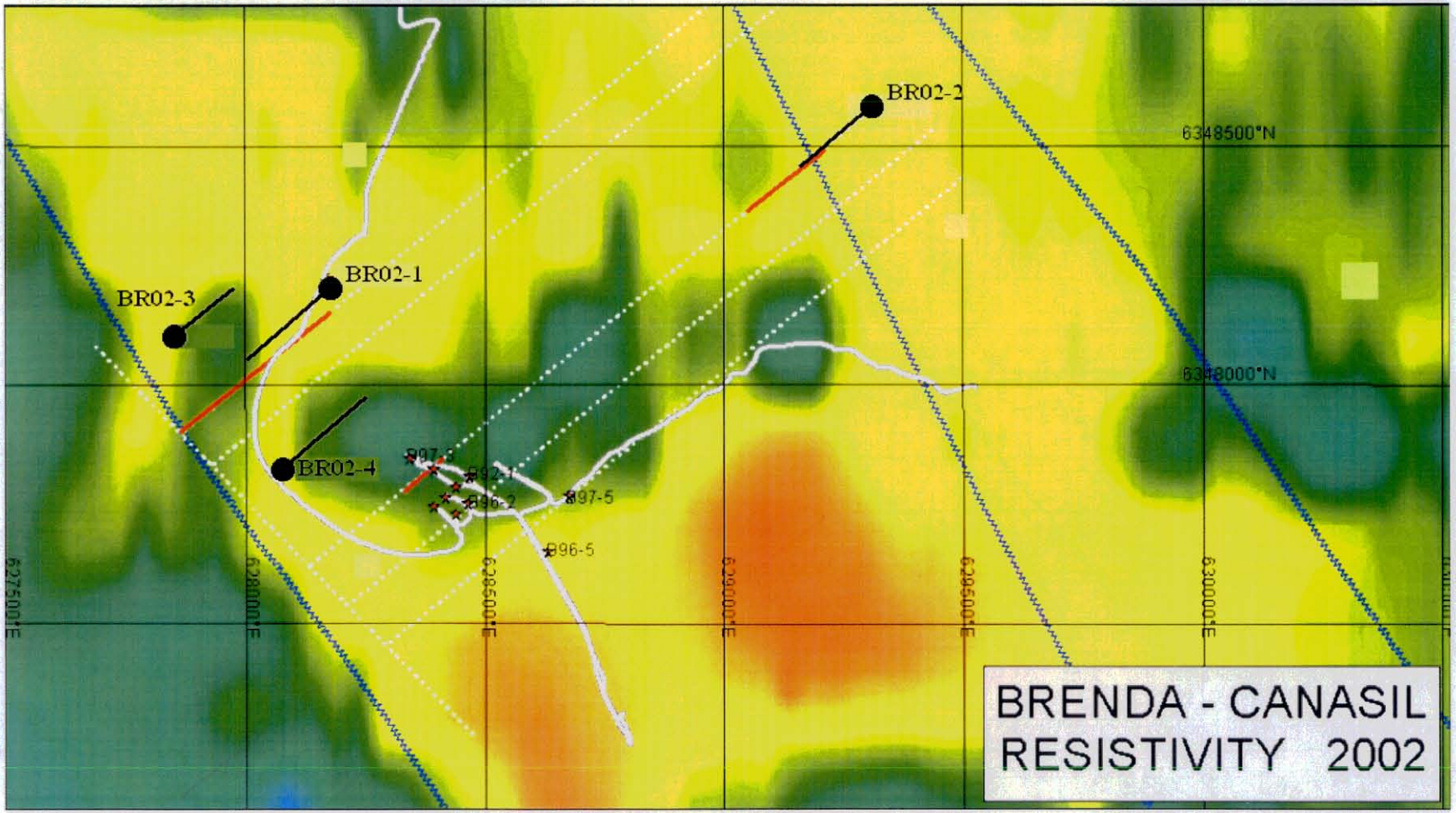

BR02-2
BR02-1
BR02-3
BR02-4
6348500°N
6348000°N
627500E
628000E
628500E
629000E
629500E
630000E
B97-3
B97-1
B96-2
B97-5
B96-5
BRENDA - CANASIL
RESISTIVITY 2002
500m

FIGURE 7

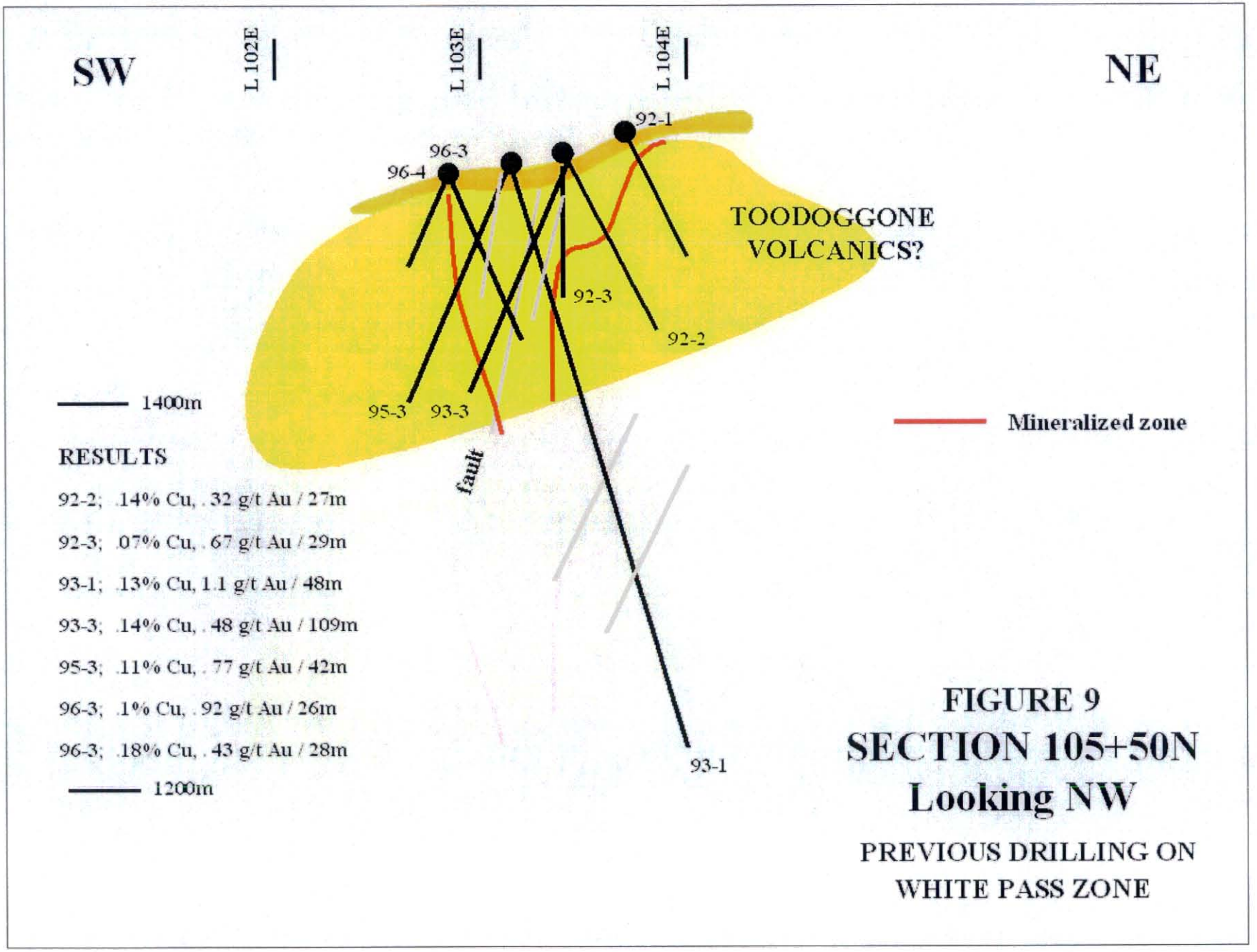


FIGURE 9

SECTION 105+50N

Looking NW

PREVIOUS DRILLING ON
WHITE PASS ZONE

PHOTO 1: Brenda overview – drill hole locations (view looking southeast)

7.0 DIAMOND DRILLING (Figures 8-16, Table 1, Photo 1)

7.1 Procedure

A total of 1650m of diamond drilling in four holes was completed on the Brenda Project during the 2002 drill program. Drilling was carried out between September 8 and October 15, 2002 by Britton Bros. Diamond Drilling Ltd. of Smithers, British Columbia. A helicopter supported JKS 2500 core drill with NQ wireline tools was mobilized to the property on August 31, 2002. HQ wireline tools were employed at the start of each hole due to poor recovery near surface.

A total of 866 samples of core were sawn in half, prepared at the Kemess minesite, where 35 quality control samples were inserted, sent to ALS Chemex Labs, Vancouver, British Columbia and analyzed for Al, Sb, As, B, Ba, Be, Bi, Cd, Ca, Cr, Co, Cu, Fe, Ge, La, Pb, Mg, Mn, Hg, Mo, Na, Ni, P, Ag, Sc, Sr, S, Ti, Tl, Sn, W, U, V and Zn using a 34 element ICP package which involves a nitric-aqua regia digestion. Gold was analyzed by fire assay with an atomic absorption finish. Select anomalous samples were assayed for zinc and lead. Lab procedures and results are outlined in Appendix IV.

Drill hole specifications are summarized in Table 1 and drill hole locations are shown on Figure 8. Drill logs are included in Appendix V. Summary sections with significant results are shown in Figures 10-12. Sample locations are plotted on the detailed cross sections (Figures 13-16 in Appendix VI). The core is stored at the lower camp at the Kemess Mine site and most of the old core is stored near the old Canasil camp on the property at GPS co-ordinates 628389E 6349428 N, Nad 83, Zone 9.

Table 1: Drill hole specifications

	GPS Nad 83, Zone 9						
Hole No.	Easting	Northing	Elev. (m)	Azimuth	Dip	Depth (m)	Samples
BR-02-1	628169	6348216	1415	235°	-70°	436.8	111501-755
BR-02-2	629285	6348586	1370	235°	-70°	420.6	111756-60,111776-112000
BR-02-3	627839	6348103	1348	55°	-60°	346.9	111761-775, 400001-176
BR-02-4	628074	6347826	1472	55°	-65°	445.0	400177-400401

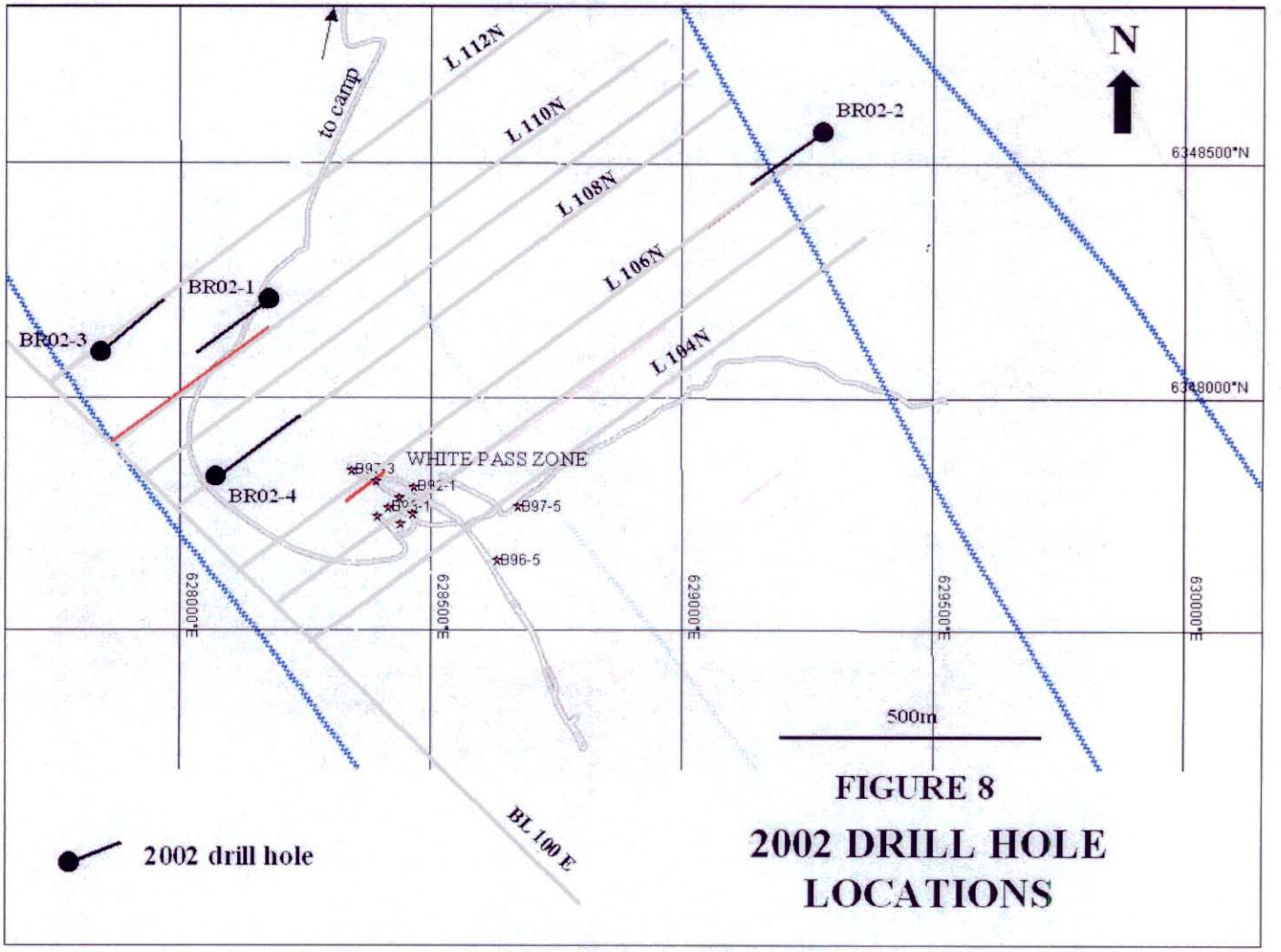


FIGURE 8

2002 DRILL HOLE LOCATIONS

7.2 Results

A brief description of each of the drill holes follows, including a summary of results, calculated as weighted averages:

DDH BR-02-1 (Figure 10)

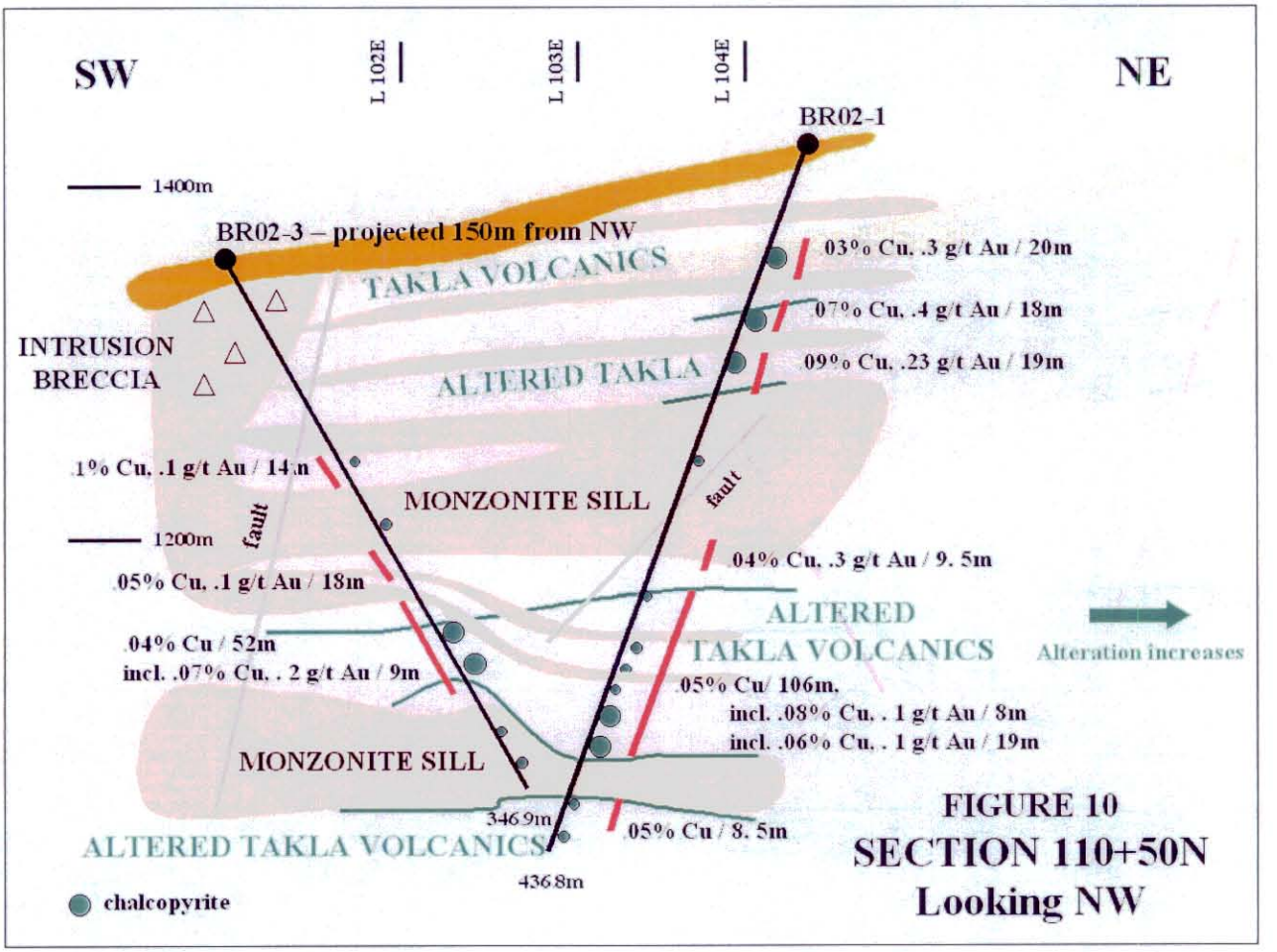
BR-02-1 targeted a chargeability high IP anomaly on L110N, at the transition of a magnetic high with a magnetic low, 400m northwest of the White Pass Zone.

The hole primarily intersected augite phyric basalt flows and possible fragmentals of the Takla Group, cut by monzonite sills, which comprise about 35% of the hole. The Takla volcanic rocks are potassically and magnetite-silica altered with a mottled texture from 100 to 150m and from 280m to the end of the hole at 436.8m. The mottled texture within the altered Takla rocks may be due to a primary fragmental texture. A thick monzonite sill was encountered from 150m to 260m. A major fault cuts the lower part of the sill from 242 to 260m. Amygdaloidal basalt dykes intrude the above units.

Chalcopyrite mineralization primarily occurs in the altered Takla volcanic rocks, characterized by their mottled texture. The only occurrence of chalcopyrite in the monzonite occurs within a tuffisite dyke, above a fault zone that cuts the main, central monzonite sill. The tuffisite and fault may represent feeder zones for mineralization with the best mineralization developing within the Takla volcanic rocks, spatially associated with the monzonite sills.

Significant Intersections:

Hole No.	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)
BR-02-1:	51.5	71.2	19.7	.03	.34
	102.8	121.0	18.2	.07	.38
	130.1	152.1	19.2	.09	.23
	241.6	251.1	18.1	.03	.27
	278.5	384.2	105.7	.05	-
Incl.	278.5	289.6	11.1	.08	.10
Incl.	302.0	321.2	19.2	.06	.11



DDH BR-02-2 (Figure 11)

DDH BR-02-2 also targeted a chargeability high IP anomaly at the edge of a magnetic high, 1.2 km to the east-northeast of BR-02-1 on L106N.

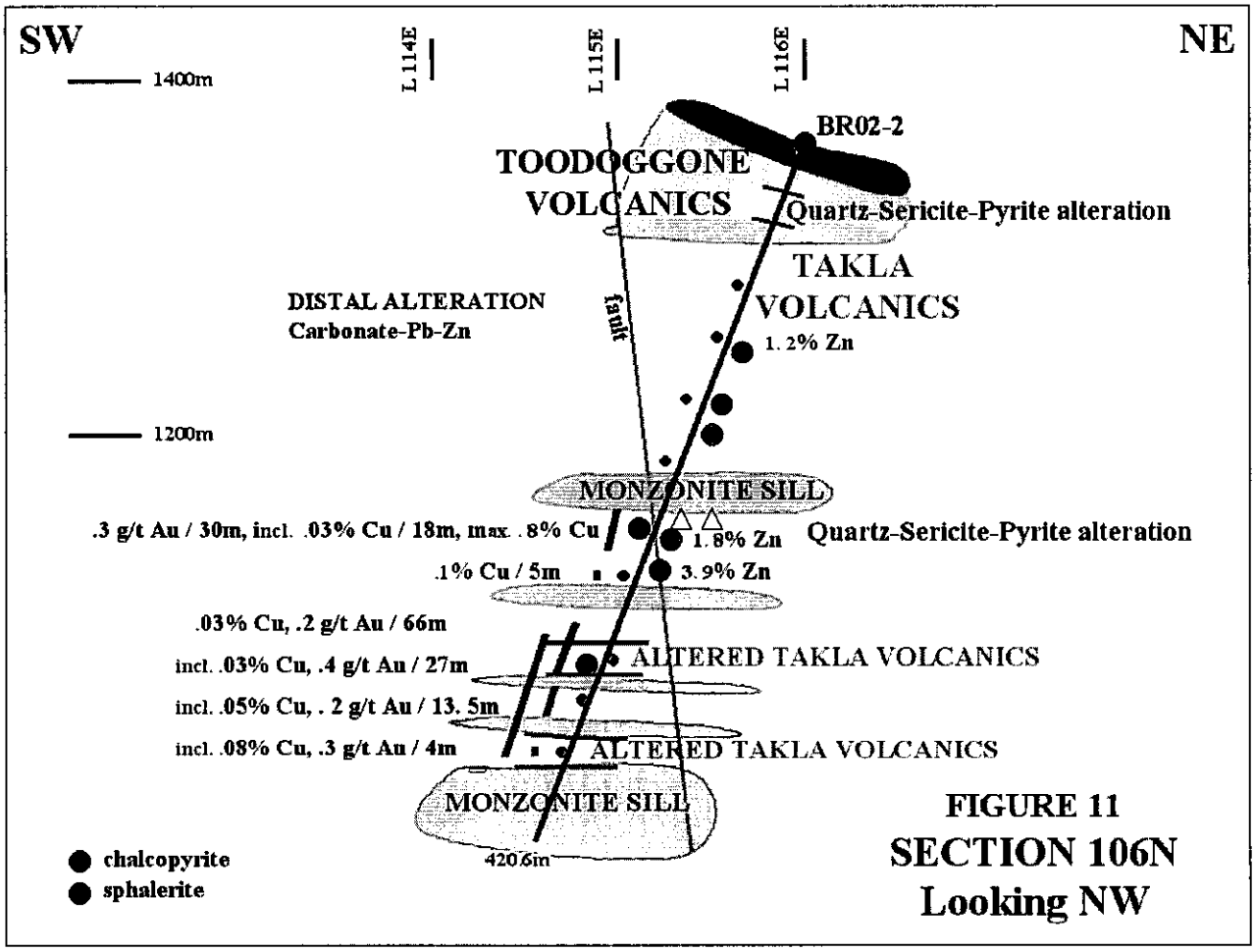
The hole primarily intersected andesite feldspar ± hornblende and augite phyric flows, possibly of the Takla Group, cut by monzonite sills, which comprise about 25% of the hole. A short interval at the top of the hole, to 44m, may represent more felsic stratigraphy of the Toodoggone Formation, but the original composition of the lithology has been obscured by quartz-sericite-pyrite alteration that predominates from 20m to the top of a sill at 44m. Felsite, latite and amygdaloidal basalt dykes intrude the above units.

Carbonate-sericite-pyrite alteration, more typical in the more distal environments of a porphyry system, predominates above 200m. Quartz-sericite-pyrite alteration is associated with a hydrothermal breccia zone, controlled by a near vertical, north to northwesterly trending fault between 221 and 245m, hosted by probable Takla volcanic rocks. Below this zone, the volcanic lithology is more readily identifiable as Takla Group.

Mineralization consists of sphalerite with lesser chalcopyrite between 60 and 347m. Chalcopyrite mineralization is more evident within the hydrothermal breccia zone and is associated with magnetic-silica altered zones within the Takla volcanic rocks, discontinuously exposed lower in the hole between 302 and 368m. Mineralization is generally not present within the monzonite sills.

Significant Intersections:

Hole No.	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)
BR-02-2:	224.6	242.3	17.7	.03	.28
	264.1	274.1	7.3	.07	-
	302.1	368.0	65.9	.03	.19
Incl.	298.1	324.9	26.8	.03	.38
Incl.	334.9	348.3	13.4	.05	.17
Incl.	364.1	368.0	3.9	.08	.28



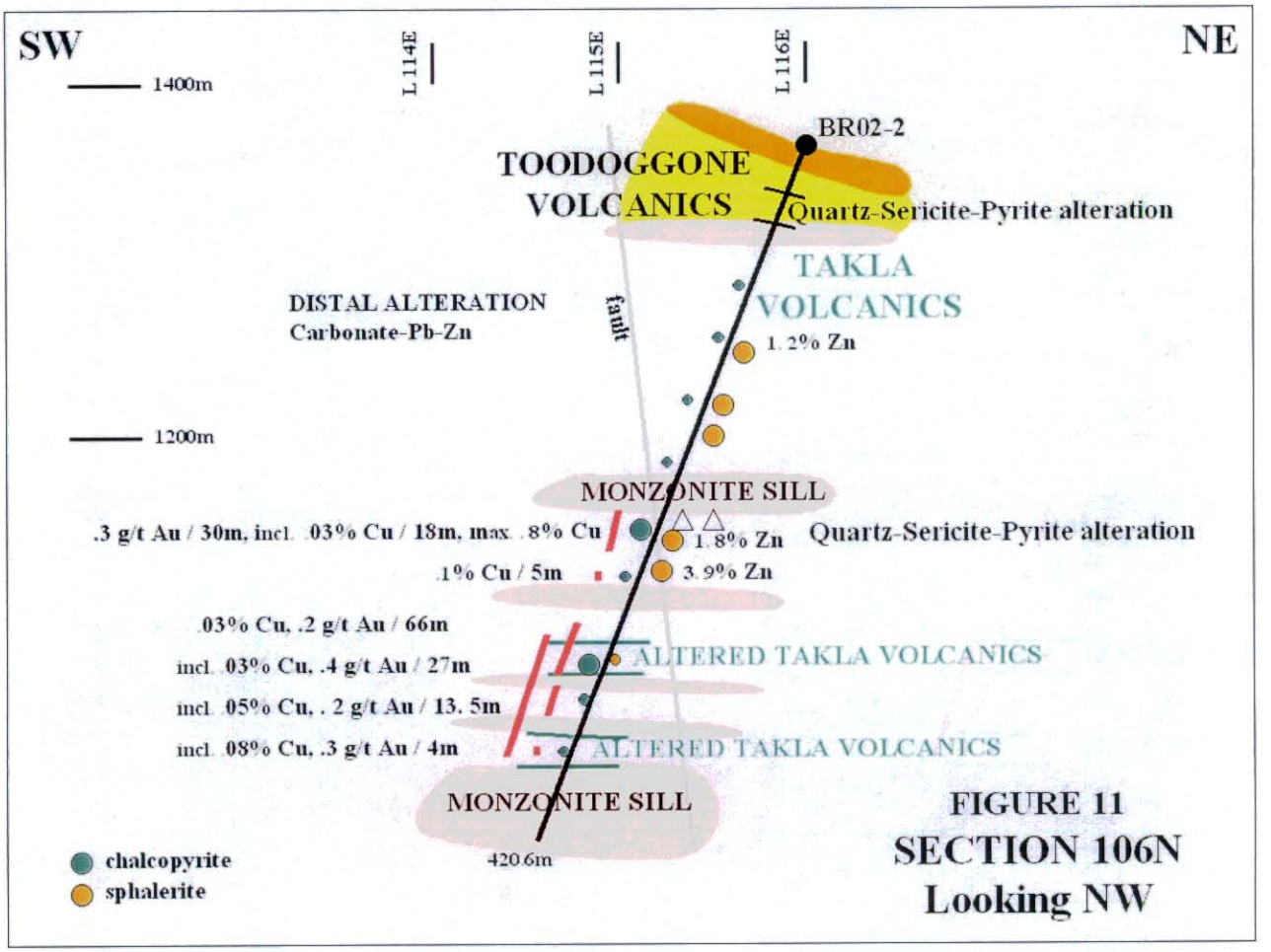
DDH BR 02-3 (Figure 10)

BR-02-3 was drilled to test the northwest extent of mineralization encountered in BR-02-1 and tests a resistivity low feature within a magnetic low.

The hole intersected augite phyric basalt flows and possible minor fragmentals of the Takla Group, cut by monzonite sills, which comprise about 50% of the hole, a greater proportion than in BR-02-1. Amygdaloidal basalt dykes intrude the above units. A major fault was encountered at 135m.

The Takla volcanic rocks are potassically and magnetite-silica altered with a mottled texture from 255 to 285m. The mottled texture within the altered Takla rocks may be due to a primary fragmental texture, as in BR-02-1. The extent of alteration in the Takla volcanic rocks is significantly less in BR-02-3 compared to BR-02-1.

An intrusion breccia, possibly related to the margins of a pluton, related to the sills, was intersected in the top of the hole to 80m. The central monzonite sill, encountered in BR-02-1 thins out in BR-02-3, with the main intersection from 150 to 200m. A lower sill was intersected from 300m to the end of the hole at 346.9m, which corresponds to a lower sill intersected in BR-02-1.



DDH BR 02-3 (Figure 10)

BR-02-3 was drilled to test the northwest extent of mineralization encountered in BR-02-1 and tests a resistivity low feature within a magnetic low.

The hole intersected augite phyric basalt flows and possible minor fragmentals of the Takla Group, cut by monzonite sills, which comprise about 50% of the hole, a greater proportion than in BR-02-1. Amygdaloidal basalt dykes intrude the above units. A major fault was encountered at 135m.

The Takla volcanic rocks are potassically and magnetite-silica altered with a mottled texture from 255 to 285m. The mottled texture within the altered Takla rocks may be due to a primary fragmental texture, as in BR-02-1. The extent of alteration in the Takla volcanic rocks is significantly less in BR-02-3 compared to BR-02-1.

An intrusion breccia, possibly related to the margins of a pluton, related to the sills, was intersected in the top of the hole to 80m. The central monzonite sill, encountered in BR-02-1 thins out in BR-02-3, with the main intersection from 150 to 200m. A lower sill was intersected from 300m to the end of the hole at 346.9m, which corresponds to a lower sill intersected in BR-02-1.

Chalcopyrite mineralization primarily occurs in the Takla volcanic rocks, proximal to the central and lower monzonite sills. Minor chalcopyrite was noted within both of the sills. The best mineralization occurs within the Takla volcanic rocks, spatially associated with the monzonite sills.

Significant Intersections:

Hole No.	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)
BR-02-3:	136.9	150.4	13.5	.10	.11
	200.7	219.1	18.4	.05	.11
	229.3	280.9	51.6	.04	-
Incl.	229.6	238.4	9.1	.07	.17

DDH BR 02-4 (Figure 12)

BR 02-4 was drilled to test the depth potential of mineralization delineated in previous programs at the White Pass Zone with significant results up to 0.103 g/t Cu and 0.48 g/t Au over 109m. A magnetic high and resistivity low feature that underlies this area and continues through the White Pass Zone is probably related to a cover of Toodoggone volcanic rocks.

The dominant lithology in BR 02-4 consists of monzonite, comprising 60% of the hole, a significant increase from that encountered in BR-02-1 and -3. The relatively flat lying body of monzonite appears to have intruded along the Toodoggone/Takla contact.

The top of the hole intersected a sequence of intermediate feldspar and augite phyric crystal, polylithic tuffs with minor andesite and basalt flows, flow breccias and interflow sediment down to 103m. Quartz eyes were identified in the basalts, indicating the stratigraphy is part of the Toodoggone Formation, which is further supported by the geophysical signature. A steep, north-northwesterly trending fault, which correlates with the fault encountered in BR-02-3, was encountered near the base of the Toodoggone stratigraphy.

A monzonite sill was intersected from 103 to 196m. The lower portion from 172 to 196m is highly altered to an assemblage of quartz-sericite-pyrite with remnant feldspar phenocrysts. A sequence of feldspar porphyritic andesite flows was encountered from 196 to 211m, which appears to belong to the Takla Group. The monzonite was again intersected from 211m to the bottom of the hole at 445m with local xenoliths of the Takla volcanic rocks. Felsite and amygdaloidal basalt dykes intrude the monzonite.

Chalcopyrite mineralization was only present within the lower monzonite body and was noted at 226, 284, 311 and 320m, generally associated with remnants of altered Takla volcanic rocks. Significant chalcopyrite mineralization was intersected in the bottom of the hole from 349 to 371m at 399m and from 413 to 440m. Mineralization is primarily associated with magnetite-silica alteration that is discontinuously developed between 347 and 440m. Minor sphalerite was noted at 436m.

The strongest chalcopyrite mineralization occurs within a fault controlled hydrothermal breccia zone with late anhydrite-pyrite flooding, overprinting the earlier magnetite-silica alteration between 352 and 369m. This fault appears to correlate with a fault encountered in BR-02-1 near the base of the main monzonite sill, indicating a north-northwesterly trend and moderate southwest dip.

Significant Intersections:

Hole No.	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)
BR-02-4:	348.8	371.0	22.2	.12	.22
Incl.	352.0	360.2	8.2	.28	.48
	412.6	440.3	27.7	.04	-
Incl.	431.0	434.7	3.7	.10	-

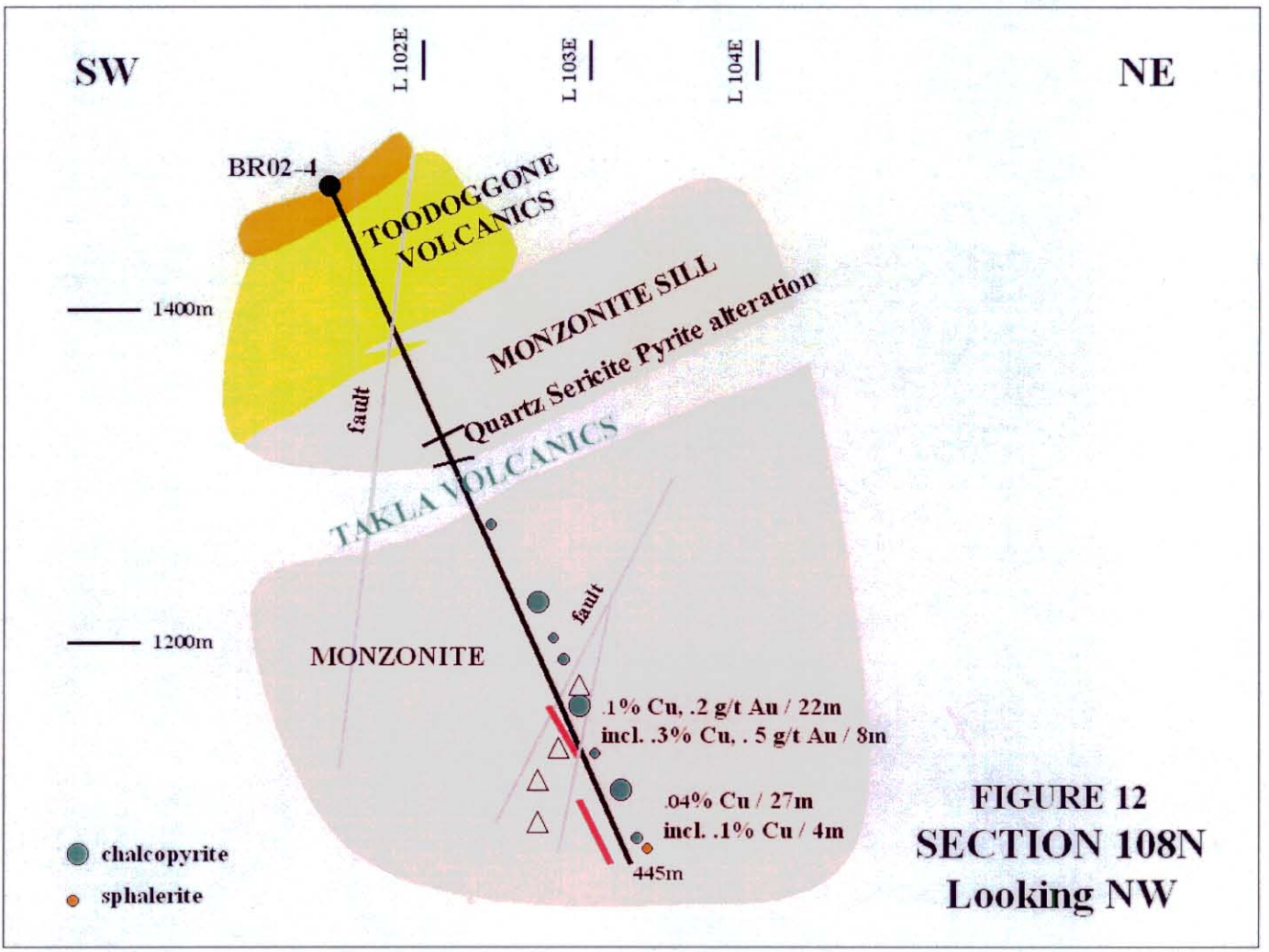


FIGURE 12
SECTION 108N
Looking NW

8.0 CONCLUSIONS AND RECOMMENDATIONS

The 2002 diamond drill program on the Brenda property was successful in intersecting mineralized zones anomalous in copper and gold associated with potassic and magnetite-silica altered Takla volcanic rocks, adjacent monzonite sills, and hydrothermal breccia zones. A strong north-northwesterly structural control is evident.

The program outlined an analogous geological setting and comparable alteration to that of the Kemess North Deposit where mineralization is hosted by magnetite-silica altered Takla volcanic rocks and monzonitic sills beneath Toodoggone volcanic rocks.

Alteration and mineralization appear to increase easterly from BR-02-1. Distal alteration and more zinc rich mineralization were intersected in BR-02-2, 1.2 km to the east-northeast of BR-02-1. The proportion of monzonite appears to increase to the southeast as seen in BR-02-4.

In conclusion, widespread gold-copper mineralization and associated favourable alteration occur on the Brenda property within a geological setting analogous to that at the Kemess North Deposit. Although the tenor of mineralization intersected in the 2002 drill program is not economic, the extent of the mineralization is widespread, suggestive of a large mineralizing system. The excellent access, available expertise and existing infrastructure at the minesite add to the potential of the property.

A 1500m diamond drill program is proposed for 2003 to follow-up the anomalous results from the current and previous programs in an attempt to vector in towards economic mineralization. Additional porphyry gold-copper targets, such as the Pillar showing, remain untested on the property.

APPENDIX I: Selected References

British Columbia Minfile, (2002): 094E; Ministry of Energy and Mines.

Diakow, L.J., Panteleyev, A. and Schroeter, T.G. 1985: Geology of the Toodoggone River area (94E); EMPR Preliminary Map 61.

Rebagliati, C.M. 1993: Summary report, Phase IV Program, Brenda Property, Brenda Gold-Copper Porphyry, Toodoggone-Kemess Gold Camp, Omineca Mining Division, British Columbia; Report for Romulus Resources Limited.

Schroeter, T.G. 1986: Toodoggone River (94E); EMPR Geological Fieldwork 1980, Paper 1981-1, p. 124-132.

Weishaupt, P.J., 1998a: Summary report, Brenda Property, Brenda Gold-Copper Porphyry, Toodoggone-Kemess Gold Camp, Omineca Mining Division, British Columbia; Report for Canasil Resources Incorporated.

Weishaupt, P.J., 1998b: Drilling report, Brenda Property, Brenda Gold-Copper Porphyry Toodoggone-Kemess Gold Camp, British Columbia; Report for Canasil Resources Incorporated.

Weishaupt, P.J., 1996: Drilling report, Brenda Property, Brenda Gold-Copper Porphyry, Toodoggone-Kemess Gold Camp, British Columbia; Report for Canasil Resources Incorporated.

Weishaupt, P.J., 1992: Geological and geochemical report, Brenda Group of Mineral Claims, Toodoggone Gold Camp, Omineca Mining District, British Columbia; Report for Canasil Resources Incorporated.

APPENDIX II - Statement of Expenditures

Canasil - Brenda joint venture (4090)

Geological:	JP Exploration Services Inc., Kamloops, BC	**$ 15,000.00**
Drill Contractor:	Britton Bros. Diamond Drilling, Smithers, BC	**107,885.00**
Helicopter:	Canadian Helicopters, Smithers, BC	**45,872.00**
Geochemistry:	ALS Chemex Labs, Vancouver, BC	**13,448.00**
Camp cost allocation:		**1,890.00**
Operating Supplies:		**5,066.00**
Miscellaneous		**2,200.00**
Legal fees		**4,379.00**
GRAND TOTAL:		**$195,740.00**

APPENDIX III

STATEMENT OF QUALIFICATION

I, Jean Marie Pautler, do hereby certify that:

I am a geologist with more than twenty years of experience.

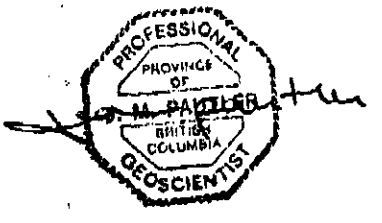
I am a graduate of Laurentian University, Sudbury, Ontario with an Honours B.Sc. degree in geology (May, 1980).

I am a Professional Geoscientist, registered in the province of British Columbia.

I supervised and implemented the 2002 diamond drill program on the Brenda Project between September 10 and October 15, 2002.

I have no direct or indirect interest in the Brenda property, which is the subject of this report.

Jean Pautler, P. Geo.
JP Exploration Services Inc.



APPENDIX IV
Geochemical Procedure and Results

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CERTIFICATE VA03008622

Project : Brenda

P.O. No: 266490

This report is for 52 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 3-Oct-2002.

The following have access to data associated with this certificate:

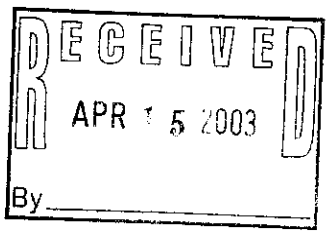
MIKE HIBBITTS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES
Cu-AA49	Assay Cu - HBr Digestion	AAS
Zn-AA46	Ore grade Zn - aqua regia/AA	AAS



To: **KEMESS MINES LTD.**
ATTN: MIKE HIBBITTS
PO BOX 3519
SMITHERS BC V0J 2N0

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

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Date : 31-Mar-2003
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA03008622

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
111802		0.26	0.009	0.7	1.36	2	<10	40	<0.5	<2	2.12	6.6	9	29	21	4.13
111803		0.26	0.008	0.5	1.25	2	<10	50	<0.5	<2	2.43	14.6	7	17	12	3.49
111804		0.26	0.011	0.6	0.96	<2	<10	30	<0.5	<2	3.02	17.6	8	26	13	3.74
111805		0.24	0.010	1.0	1.27	5	<10	40	<0.5	<2	2.70	9.3	7	10	13	3.60
111806		0.24	0.008	0.7	1.52	4	<10	40	<0.5	<2	2.58	12.9	6	23	27	3.40
111807		0.26	0.016	0.8	1.64	9	<10	30	<0.5	<2	2.93	17.8	9	10	26	3.99
111808		0.26	0.010	0.7	1.15	5	<10	30	<0.5	6	3.31	6.0	8	23	10	3.46
111809		0.24	0.012	0.5	1.21	8	<10	30	0.6	8	3.72	7.5	6	11	33	3.04
111810		0.26	0.006	0.2	1.24	5	<10	50	0.5	7	2.39	5.1	6	31	17	2.90
111811		0.26	<0.005	<0.2	0.28	<2	<10	180	<0.5	7	1.40	2.2	1	52	6	0.61
111812		0.26	0.069	2.5	1.39	6	<10	40	0.6	12	2.22	16.2	9	24	170	3.94
111813		0.24	0.499	11.6	0.44	66	<10	20	0.5	9	2.78	9.3	9	19	17	5.43
111814		0.24	0.174	4.2	0.83	29	<10	30	0.7	13	1.69	25.7	9	26	40	3.27
111815		0.24	0.047	0.2	1.15	25	<10	30	0.7	7	1.78	2.0	9	17	7	3.80
111816		0.24	<0.005	<0.2	0.43	<2	<10	80	<0.5	<2	0.39	2.3	2	87	21	0.76
111817		0.26	0.006	0.6	0.76	<2	<10	180	<0.5	4	0.71	6.0	4	42	35	1.50
111818		0.26	0.005	0.4	0.90	<2	<10	70	<0.5	4	0.87	12.4	9	77	19	1.97
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111821		0.24	0.037	0.6	1.50	26	<10	40	0.5	4	1.93	16.8	3	16	9	3.19
111822		0.26	0.143	2.2	0.38	22	<10	30	<0.5	7	5.67	1.6	8	37	7	3.33
111823		0.24	0.094	1.3	0.88	23	<10	30	0.5	8	3.34	6.4	6	15	10	3.25
111824		0.24	0.164	2.3	1.06	29	<10	30	<0.5	5	3.61	5.8	6	39	9	3.66
111825		0.26	0.076	1.2	0.30	13	<10	30	<0.5	6	4.94	<0.5	6	22	11	2.24
111826		0.26	0.071	1.4	1.44	11	<10	40	0.5	7	1.71	7.3	10	36	12	4.07
111827		0.26	0.018	0.3	3.05	2	<10	620	0.6	5	2.39	<0.5	14	15	40	4.14
111828		0.26	0.092	0.5	1.68	20	<10	50	<0.5	10	2.37	8.2	9	33	47	3.70
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111831		0.26	0.048	0.4	1.58	19	<10	40	<0.5	11	2.25	7.4	8	38	10	3.88
111832		0.26	0.010	4.0	1.12	18	<10	30	<0.5	12	2.97	84.5	11	23	809	3.29
111833		0.26	0.048	1.5	1.27	25	<10	30	0.5	16	2.55	24.4	8	34	130	3.61
111834		0.26	0.059	0.4	1.83	16	<10	40	<0.5	<2	2.11	7.6	3	18	25	3.39
111835		0.26	0.058	0.4	1.57	18	<10	40	<0.5	8	2.43	3.6	2	35	20	3.53
111836		0.26	0.073	0.8	1.58	22	<10	40	0.6	9	2.68	9.7	7	17	24	3.81
111837		0.26	0.155	2.5	1.32	27	<10	30	0.5	11	3.43	14.2	8	33	42	4.06
111838		0.26	0.199	3.6	0.92	33	<10	30	0.6	9	3.44	10.1	16	19	26	4.43
111839		0.24	0.119	1.2	1.20	40	<10	30	0.6	3	3.19	12.4	11	34	109	4.70
111840		0.26	0.309	3.3	0.81	42	<10	30	0.5	<2	3.75	13.8	11	20	49	5.08
111841		0.28	0.311	2.6	1.06	37	<10	40	0.5	8	4.15	16.8	10	31	61	4.71

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Project : Brenda

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Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
111842		0.24	0.192	1.2	1.38	32	<10	40	0.6	14	3.32	13.3	6	15	34	3.26
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111845		0.24	0.102	0.2	1.99	4	<10	80	<0.5	<2	1.98	5.6	7	31	39	3.97
111846		0.26	0.065	0.3	1.86	3	<10	50	<0.5	<2	2.07	10.6	8	21	57	3.73
111847		0.24	0.164	0.8	1.47	12	<10	50	<0.5	<2	3.05	9.7	13	32	39	4.27
111848		0.26	0.106	<0.2	1.88	3	<10	80	<0.5	<2	2.32	1.4	6	14	50	3.82
111849		0.24	0.150	0.8	1.28	8	<10	50	0.5	<2	4.00	7.8	7	28	14	3.42
111850		0.24	0.088	1.2	1.52	19	<10	50	<0.5	<2	2.48	23.0	5	11	36	4.09
111851		0.26	0.087	0.5	1.83	47	<10	50	0.5	<2	2.03	9.1	5	23	20	3.87
111852		0.26	0.036	0.9	2.04	14	<10	60	<0.5	<2	1.66	13.3	6	14	135	3.88
111853		0.26	0.182	4.0	1.09	33	<10	40	<0.5	<2	3.95	1.6	7	43	6	4.03

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Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1
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111803		10	<1	0.18	<10	1.04	1320	2	0.05	1	1070	179	4.45	2	3	143
111804		10	<1	0.19	<10	0.67	1125	1	0.05	1	1080	317	5.70	2	2	199
111805		20	<1	0.18	<10	0.92	3370	2	0.04	1	1170	334	4.89	<2	2	154
111806		20	<1	0.20	<10	1.09	3510	2	0.04	1	1260	298	4.05	<2	2	147
111807		20	1	0.21	<10	1.19	2500	1	0.06	1	960	252	4.88	<2	2	228
111808		<10	<1	0.28	<10	0.82	1610	3	0.03	2	990	283	5.61	2	2	215
111809		<10	<1	0.28	10	0.92	2220	1	0.03	2	1020	417	5.25	2	2	222
111810		<10	1	0.28	10	0.93	2050	2	0.02	3	940	329	3.97	<2	2	176
111811		<10	<1	0.19	10	0.05	718	3	0.01	1	110	148	0.88	<2	<1	82
111812		<10	<1	0.30	10	0.80	5930	8	0.02	2	1020	1025	4.40	5	2	54
111813		<10	<1	0.31	<10	0.04	1160	13	0.01	2	890	329	6.50	<2	2	34
111814		<10	<1	0.32	10	0.36	1095	23	0.02	3	1030	404	3.76	<2	2	54
111815		<10	<1	0.27	10	0.77	1470	3	0.02	2	980	89	4.40	3	2	69
111816		<10	<1	0.18	10	0.13	915	3	0.06	3	120	19	0.34	<2	1	19
111817		<10	<1	0.19	10	0.34	1930	2	0.04	2	290	209	0.56	<2	2	27
111818		<10	<1	0.23	10	0.37	1770	3	0.02	3	440	219	1.64	<2	2	78
111819		<10	<1	0.21	10	0.08	638	3	0.02	1	170	144	0.77	<2	<1	46
111820		<10	<1	0.28	10	1.05	1500	4	0.01	2	900	302	6.11	<2	2	316
111821		<10	2	0.27	<10	1.38	1745	2	0.03	2	930	296	3.83	<2	2	135
111822		<10	1	0.23	<10	0.07	98	3	0.02	3	810	51	8.42	<2	1	441
111823		<10	<1	0.25	<10	0.62	1210	7	0.02	1	840	219	5.84	<2	2	230
111824		<10	1	0.25	<10	0.86	1080	6	0.03	3	900	138	6.31	<2	2	292
111825		<10	<1	0.20	<10	0.02	39	4	0.02	2	870	13	6.61	<2	1	448
111826		<10	<1	0.34	<10	1.25	1275	4	0.03	3	970	163	4.98	<2	2	114
111827		10	1	0.18	<10	1.61	804	1	0.17	6	520	14	0.03	10	13	212
111828		<10	1	0.26	<10	1.27	2590	3	0.04	3	990	203	3.53	2	3	132
111829		<10	<1	0.31	<10	0.23	404	8	0.03	3	820	37	6.89	2	2	245
111830		<10	<1	0.28	<10	0.68	604	5	0.03	3	960	37	6.64	<2	2	327
111831		<10	2	0.23	<10	1.51	2540	9	0.04	3	1000	159	4.59	2	3	137
111832		<10	<1	0.25	<10	0.90	3400	5	0.03	3	940	1300	5.80	<2	2	174
111833		<10	4	0.26	<10	0.97	5920	14	0.04	3	1030	1655	5.27	<2	2	152
111834		10	1	0.21	<10	1.77	3920	9	0.06	2	1040	259	3.46	<2	3	122
111835		10	1	0.25	<10	1.40	3960	4	0.05	3	990	100	4.17	5	3	159
111836		10	1	0.28	<10	1.41	6100	5	0.04	2	1020	309	5.34	<2	3	167
111837		<10	1	0.32	10	1.03	2890	6	0.03	3	1110	330	6.14	<2	2	212
111838		<10	1	0.32	10	0.53	1685	6	0.03	2	970	231	6.97	<2	2	247
111839		<10	<1	0.31	10	0.80	3330	2	0.03	3	940	316	7.14	2	2	239
111840		<10	1	0.30	<10	0.39	1900	4	0.02	2	910	114	8.23	<2	2	260
111841		<10	1	0.30	<10	0.68	1545	11	0.03	3	1050	100	8.05	2	2	342

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Project : Brenda

CERTIFICATE OF ANALYSIS VA03008622

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOR	10	1	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1	1
111842		<10	<1	0.30	<10	1.06	3070	13	0.04	2	1190	244	5.24	3	2	230
111843		<10	<1	0.27	<10	1.13	3330	5	0.04	3	1000	210	4.73	<2	3	145
111844		30	<1	0.31	10	1.19	1960	7	0.06	2	980	121	4.03	<2	3	119
111845		30	<1	0.23	10	1.55	1885	5	0.06	2	990	64	2.03	3	5	117
111846		40	<1	0.23	10	1.42	2280	5	0.07	2	970	54	2.87	<2	3	116
111847		20	<1	0.33	10	0.98	1325	7	0.08	2	980	255	5.71	<2	3	193
111848		30	<1	0.22	10	1.45	1550	3	0.06	1	1050	53	1.24	3	4	121
111849		20	<1	0.34	10	0.90	1260	14	0.04	1	1000	170	5.35	2	2	212
111850		30	<1	0.34	10	1.23	1795	5	0.04	1	1120	316	5.19	<2	2	128
111851		40	<1	0.27	10	1.48	2450	16	0.04	1	1300	215	3.40	2	2	112
111852		60	<1	0.21	10	1.64	4200	11	0.05	<1	1280	214	2.73	2	3	83
111853		10	1	0.31	10	0.76	647	6	0.03	2	950	36	6.97	2	1	342

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Date : 31-Mar-2003
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA03008622

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Tl % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Cu-AA49 Cu % 0.001	Zn-AA46 Zn % 0.01
111802		0.10	<10	<10	51	<10	353	0.002	
111803		0.08	<10	<10	41	<10	425	0.001	
111804		0.06	<10	<10	28	<10	467	0.001	
111805		0.09	<10	<10	30	<10	774	0.001	
111806		0.11	<10	<10	33	<10	646	0.003	
111807		0.04	<10	<10	37	<10	723	0.003	
111808		0.05	<10	<10	30	<10	511	0.001	
111809		0.03	<10	<10	26	<10	763	0.003	
111810		0.01	<10	<10	23	<10	494	0.002	
111811		<0.01	<10	<10	2	<10	277	0.001	
111812		0.04	<10	<10	23	<10	1540	0.017	
111813		<0.01	<10	<10	7	<10	681	0.002	
111814		<0.01	<10	<10	14	<10	1910	0.004	
111815		<0.01	<10	<10	17	<10	263	0.001	
111816		0.01	<10	<10	5	<10	289	0.002	
111817		0.01	<10	<10	17	<10	844	0.004	
111818		0.01	<10	<10	19	<10	1250	0.002	
111819		<0.01	<10	<10	4	<10	712	0.001	
111820		<0.01	<10	<10	27	<10	1035	0.002	
111821		0.04	<10	<10	37	<10	1175	0.001	
111822		0.01	<10	<10	9	<10	98	0.001	
111823		0.04	<10	<10	20	<10	555	0.001	
111824		0.03	<10	<10	28	<10	524	0.001	
111825		<0.01	<10	<10	4	<10	13	0.001	
111826		0.02	<10	<10	34	<10	588	0.001	
111827		0.10	<10	<10	140	<10	90	0.004	
111828		0.06	<10	<10	45	<10	944	0.005	
111829		<0.01	<10	<10	13	<10	199	<0.001	
111830		<0.01	<10	<10	20	<10	137	<0.001	
111831		0.01	<10	<10	45	<10	883	0.001	
111832		0.03	<10	<10	29	<10	>10000	0.080	1.15
111833		0.10	<10	<10	34	<10	3140	0.014	
111834		0.04	<10	<10	61	<10	976	0.003	
111835		0.03	<10	<10	50	<10	461	0.002	
111836		0.08	<10	<10	39	<10	1225	0.002	
111837		<0.01	<10	<10	28	<10	1545	0.004	
111838		<0.01	<10	<10	19	<10	1090	0.003	
111839		0.01	<10	<10	22	<10	1365	0.011	
111840		0.02	<10	<10	13	<10	1575	0.006	
111841		0.01	<10	<10	18	<10	2300	0.007	

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Project : Brenda

CERTIFICATE OF ANALYSIS VA03008622

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Cu-AA49 Cu % 0.001	Zn-AA46 Zn % 0.01
111842		0.06	<10	<10	33	<10	1510	0.004	
111843		0.10	<10	<10	38	<10	1435	0.004	
111844		0.09	<10	<10	46	<10	1050	0.005	
111845		0.16	<10	<10	73	<10	694	0.004	
111846		0.14	<10	<10	57	<10	1410	0.008	
111847		0.10	<10	<10	38	<10	1075	0.004	
111848		0.16	<10	<10	67	<10	297	0.006	
111849		0.07	<10	<10	30	<10	924	0.002	
111850		0.03	<10	<10	33	<10	2510	0.004	
111851		0.09	<10	<10	41	<10	1080	0.003	
111852		0.12	<10	<10	41	<10	1725	0.014	
111853		<0.01	<10	<10	22	<10	152	0.001	

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CERTIFICATE VA02006317

Project : Brenda

P.O. No: 266490

This report is for 110 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 29-Nov-2002.

The following have access to data associated with this certificate:

MIKE HIBBITTS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
PUL-31	Pulverize split to 85% <75 um
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 element aqua regia ICP-AES	ICP-AES
Zn-AA46	Ore grade Zn - aqua regia/AA	AAS

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This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

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Project : Brenda

CERTIFICATE OF ANALYSIS VA02006317

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppb 5	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
111638		0.26	<5		0.3	1.07	16	<10	200	<0.5	4	1.79	0.5	10	23	19
111639		0.26	<5		0.3	1.13	5	<10	60	<0.5	<2	1.99	<0.5	10	19	23
111640		0.26	<5		0.3	0.93	6	<10	350	<0.5	3	2.24	2.0	9	17	133
111641		0.26	<5		0.2	1.13	<2	<10	100	<0.5	5	1.97	0.5	11	13	20
111642		0.26	<5		0.3	1.23	<2	<10	60	<0.5	<2	1.53	<0.5	11	16	25
111643		0.26	<5		0.5	1.22	<2	<10	170	<0.5	<2	1.05	3.2	10	14	138
111644		0.26	<5		0.4	1.19	2	<10	130	<0.5	<2	1.23	2.0	11	18	51
111645		0.26	<5		0.4	1.12	4	<10	130	<0.5	4	1.48	2.6	10	15	52
111646		0.26	<5		<0.2	3.07	8	<10	20	1.0	<2	4.83	2.4	30	1	60
111647		0.26	<5		0.4	1.22	4	<10	140	<0.5	7	1.09	0.6	10	15	91
111648		0.26	48		1.4	1.63	6	<10	50	<0.5	9	1.54	3.5	16	5	223
111649		0.26	72		1.3	1.22	12	<10	50	<0.5	6	1.89	0.8	18	5	446
111650		0.26	42		1.0	0.67	4	<10	40	<0.5	4	2.34	0.9	12	13	412
111737		0.24	131		2.2	0.56	3	<10	30	<0.5	3	2.33	1.0	10	14	476
111738		0.24	57		1.9	0.62	4	<10	30	<0.5	13	2.38	0.7	9	17	453
111739		0.26	108		3.1	0.59	9	<10	20	<0.5	5	2.68	0.8	14	16	785
111740		0.26	173		2.5	0.80	16	<10	40	<0.5	<2	3.10	17.4	12	17	238
111741		0.26	121		2.1	0.99	12	<10	40	<0.5	8	2.05	7.7	14	20	345
111742		0.26	21		1.1	1.33	5	<10	80	<0.5	<2	1.39	1.1	12	23	239
111743		0.26	26		0.9	1.28	2	<10	80	<0.5	<2	1.62	1.7	10	24	233
111744		0.26	25		1.1	1.22	2	<10	70	<0.5	<2	1.40	5.5	9	24	200
111745		0.26	102		2.6	1.12	6	<10	30	<0.5	<2	2.57	3.5	12	23	395
111746		0.26	25		0.7	1.14	<2	<10	70	<0.5	5	1.61	0.8	11	25	214
111747		0.26	28		0.7	1.22	<2	<10	60	<0.5	2	1.39	0.8	11	24	278
111748		0.28	16		0.8	1.15	3	<10	70	<0.5	<2	1.32	0.7	10	21	156
111749		0.26	17		0.3	2.60	7	<10	550	<0.5	<2	2.35	0.8	17	11	41
111750		0.26	51		1.3	1.10	6	<10	50	<0.5	4	1.78	1.4	13	19	359
111751		0.26	17		0.9	1.14	2	<10	60	<0.5	2	1.29	1.1	9	22	166
111752		0.24	18		1.3	1.21	<2	<10	70	<0.5	<2	1.35	3.3	14	26	244
111753		0.26	32		1.2	1.36	2	<10	50	<0.5	<2	2.17	2.1	16	18	452
111754		0.26	18		0.8	1.61	2	<10	40	<0.5	5	1.11	0.6	13	22	361
111755		0.24	<5		<0.2	0.33	<2	<10	30	<0.5	<2	0.76	<0.5	2	43	19
111880		0.26	<5		0.9	1.30	2	<10	70	<0.5	<2	0.77	22.7	9	29	98
111881		0.26	<5		0.9	1.32	3	<10	70	<0.5	<2	0.74	10.6	7	28	84
111882		0.24	<5		1.1	1.29	<2	<10	40	<0.5	11	0.83	16.0	9	28	179
111883		0.26	<5		0.4	1.45	<2	<10	60	<0.5	<2	0.93	4.6	9	21	60
111884		0.24	<5		0.5	1.28	<2	<10	80	<0.5	<2	0.92	7.8	10	24	70
111885		0.24	<5		2.1	1.55	4	10	90	<0.5	<2	1.01	42.6	9	22	290
111886		0.24	<5		1.1	1.27	<2	<10	60	<0.5	<2	0.88	20.5	11	24	108
111887		0.24	<5		0.4	1.36	<2	<10	80	<0.5	4	1.09	5.2	10	26	31

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Page # : 3 - A
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CERTIFICATE OF ANALYSIS VA02006317

Sample Description	Method	WEI-21	Au-AA23	Cu-AA49	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Au	Cu	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu
	Units	kg	ppb	%	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOR	0.02	5	0.001	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1
111888		0.26	324		1.2	0.31	21	<10	20	<0.5	11	4.67	0.9	10	18	27
111889		0.24	194		0.7	0.34	27	<10	20	<0.5	<2	4.63	1.0	13	17	37
111890		0.24	124		8.8	0.56	12	<10	30	<0.5	16	7.79	87.2	12	19	8220
111891		0.28	136		0.9	1.64	10	<10	40	<0.5	11	4.15	5.4	5	9	34
111892		0.26	215		2.0	1.82	2	<10	30	<0.5	11	2.47	8.2	23	11	97
111893		0.24	976		6.1	0.43	16	<10	30	<0.5	12	4.57	1.3	12	15	39
111894		0.24	80		0.4	0.39	18	<10	30	<0.5	<2	4.29	0.6	6	24	13
111895		0.24	187		0.3	0.40	9	<10	30	<0.5	<2	3.81	<0.5	6	21	7
111896		0.26	221		1.8	0.77	9	<10	40	0.5	5	2.87	8.5	10	15	19
111897		0.26	343		1.3	0.94	2	<10	40	0.5	2	2.51	5.9	10	11	34
111898		0.24	237		1.5	0.83	6	<10	30	0.5	<2	2.78	5.2	12	14	19
111899		0.26	177		1.5	1.12	5	<10	40	0.6	7	1.90	6.0	10	13	19
111900		0.26	92		11.5	0.81	2	<10	40	<0.5	18	0.97	154.0	12	15	1060
111901		0.26	405		3.9	0.95	5	<10	40	0.5	8	1.35	4.6	10	12	8
111902		0.24	510		7.0	0.32	9	<10	20	<0.5	12	5.73	1.6	16	39	47
111903		0.26	451		4.2	1.02	8	<10	30	0.6	8	2.04	7.6	10	11	16
111904		0.22	377		3.7	1.13	<2	<10	30	0.5	<2	2.66	8.3	10	15	32
111905		0.06	970		<0.2	0.21	<2	<10	10	<0.5	<2	0.34	<0.5	1	2	2
111906		0.24	275		5.4	1.04	12	<10	30	0.5	<2	2.16	6.9	11	11	29
111907		0.26	87		0.7	0.88	10	<10	50	<0.5	3	1.54	7.6	11	13	53
111908		0.26	95		1.4	0.94	3	<10	40	<0.5	5	1.78	7.3	10	13	59
111909		0.24	429		6.8	0.62	24	<10	30	<0.5	11	3.02	86.7	11	15	499
111910		0.26	202		2.7	0.50	22	<10	20	<0.5	18	2.38	38.3	11	17	83
111911		0.24	217		6.6	0.56	35	<10	20	<0.5	25	2.57	36.3	12	22	50
111912		0.26	287		1.7	0.67	8	<10	30	0.5	5	2.21	11.8	11	16	73
111913		0.26	162		3.2	0.70	9	<10	30	<0.5	12	2.57	41.7	11	17	77
111914		0.26	102		1.1	0.70	6	<10	10	<0.5	5	2.08	20.2	9	14	58
111915		0.24	198	0.017	2.0	0.67	10	<10	10	0.5	3	1.69	16.2	8	15	175
111916		0.26	201		2.7	0.77	11	<10	20	<0.5	10	1.48	29.4	11	14	179
111917		0.26	52		9.5	0.39	8	<10	20	<0.5	28	0.96	356	6	24	1845
111918		0.24	11		5.2	1.01	5	<10	40	<0.5	14	2.39	89.3	5	17	561
111919		0.24	<5		0.9	1.27	6	<10	160	<0.5	8	2.31	39.3	5	21	265
111920		0.24	14		7.9	1.11	9	<10	40	<0.5	18	0.94	167.5	6	17	748
111921		0.26	<5		0.5	1.23	5	<10	240	<0.5	5	1.25	12.1	6	21	66
111922		0.26	<5		0.2	1.34	7	<10	510	<0.5	4	1.88	5.8	6	21	37
111923		0.24	<5		0.7	1.97	11	<10	290	0.5	6	2.33	21.2	8	18	90
111924		0.24	<5		0.6	1.36	4	<10	330	<0.5	6	2.17	22.1	6	19	148
111925		0.26	<5		0.3	1.33	3	<10	220	<0.5	3	1.63	3.6	7	22	44
111926		0.24	230		1.9	0.77	7	<10	30	0.5	4	1.72	13.7	9	14	48
111927		0.24	279		1.0	0.91	6	<10	30	<0.5	4	1.83	9.5	7	20	140

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CERTIFICATE OF ANALYSIS VA02006317

Sample Description	Method	WEI-21	Au-AA23	Cu-AA49	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Au	Cu	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu
	Units	kg	ppb	%	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOR	0.02	5	0.001	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1
111928		0.24	102		0.6	1.04	9	<10	30	<0.5	2	1.04	9.3	6	19	56
111929		0.26	144		0.7	1.23	8	<10	30	0.5	<2	1.14	14.6	7	19	66
111930		0.24	73		0.4	1.08	10	<10	20	<0.5	9	0.89	15.9	9	14	29
111931		0.06	978		<0.2	0.22	2	<10	<10	<0.5	<2	0.35	<0.5	<1	2	2
111958		0.26	222		2.4	1.25	6	<10	20	<0.5	6	2.71	14.9	10	23	398
111959		0.26	355		1.5	1.20	9	<10	20	<0.5	<2	3.25	17.4	11	12	484
111960		0.26	174		1.1	1.38	10	<10	30	<0.5	5	2.38	14.2	9	17	321
111961		0.24	137		1.6	1.38	8	<10	20	<0.5	10	2.20	27.1	9	15	386
111962		0.26	138		1.1	1.24	6	<10	30	<0.5	10	2.41	10.7	9	20	620
111963		0.26	126		1.1	1.41	2	<10	20	<0.5	9	2.94	5.8	12	14	569
111964		0.26	106		1.0	1.50	6	<10	20	<0.5	2	1.98	4.6	15	22	639
111965		0.24	<5		0.6	1.52	5	<10	100	<0.5	6	1.09	14.8	6	27	173
111966		0.26	<5		0.3	1.39	2	<10	80	<0.5	3	0.84	1.7	7	40	31
111967		0.24	<5		<0.2	1.49	3	<10	350	0.5	<2	1.70	<0.5	6	22	25
111968		0.26	<5		<0.2	1.50	3	<10	130	<0.5	4	1.11	<0.5	7	44	17
111969		0.26	<5		<0.2	1.57	2	<10	190	<0.5	<2	1.06	<0.5	7	28	12
111970		0.26	<5		<0.2	1.40	<2	<10	90	<0.5	3	0.90	<0.5	6	35	3
111971		0.26	<5		<0.2	1.46	4	<10	170	<0.5	6	0.95	<0.5	6	25	6
111972		0.24	<5		<0.2	1.20	<2	<10	490	<0.5	3	1.46	<0.5	7	45	2
111973		0.26	<5		<0.2	1.22	2	<10	70	<0.5	<2	0.98	<0.5	6	27	1
111974		0.26	479		5.3	1.20	9	<10	20	<0.5	7	1.10	8.4	14	23	823
111975		0.26	90		0.5	1.63	4	<10	140	<0.5	<2	1.59	3.3	11	12	828
111976		0.26	14		0.6	1.83	3	<10	100	0.5	5	1.62	<0.5	12	20	243
111977		0.26	<5		0.3	1.74	4	<10	1800	0.5	3	2.50	<0.5	9	12	37
111978		0.24	<5		0.4	1.68	<2	<10	170	0.6	4	1.66	1.6	12	22	124
111979		0.24	<5		0.2	0.69	<2	<10	80	<0.5	3	1.06	<0.5	3	33	8
111980		0.26	<5		<0.2	0.82	<2	<10	270	<0.5	<2	1.55	2.4	4	35	9
111981		0.24	<5		<0.2	0.60	3	<10	80	<0.5	<2	0.83	1.3	3	32	5
111982		0.26	<5		<0.2	0.53	2	<10	140	<0.5	<2	0.99	<0.5	2	58	3
111983		0.26	<5		0.4	1.67	5	<10	160	0.6	<2	1.63	1.1	12	14	117

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Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc
	Units	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm
	LOR	0.01	10	1	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1
111638		2.90	10	<1	0.10	10	0.99	974	2	0.06	3	630	<2	0.14	<2	6
111639		2.59	<10	1	0.20	10	0.99	870	2	0.05	3	610	<2	0.02	4	4
111640		2.28	<10	1	0.25	10	0.72	1215	2	0.03	3	560	33	0.30	<2	2
111641		2.65	10	<1	0.17	10	0.98	1055	2	0.05	3	620	<2	0.05	2	5
111642		2.69	10	1	0.14	10	1.01	1055	3	0.06	4	630	26	0.03	<2	6
111643		2.86	10	<1	0.16	10	0.98	1695	2	0.05	3	630	112	0.40	<2	4
111644		2.82	10	<1	0.14	10	1.00	1440	3	0.05	3	610	93	0.14	<2	6
111645		2.68	10	2	0.11	10	0.94	1350	2	0.06	3	610	79	0.24	<2	6
111646		7.20	20	<1	0.32	<10	2.65	2420	1	0.04	10	1640	<2	0.26	<2	16
111647		2.94	10	<1	0.15	10	0.78	1705	4	0.04	3	640	<2	0.36	<2	5
111648		4.94	10	<1	0.21	<10	1.00	1840	9	0.07	2	1280	194	2.95	3	5
111649		4.30	10	<1	0.22	<10	0.84	1455	8	0.06	2	1370	<2	3.09	<2	5
111650		3.08	<10	1	0.24	<10	0.33	975	12	0.05	3	950	7	3.45	<2	2
111737		3.11	<10	2	0.27	<10	0.22	727	10	0.04	3	930	6	3.81	<2	2
111738		3.40	<10	1	0.27	<10	0.27	772	15	0.04	3	910	20	4.50	<2	2
111739		3.84	<10	<1	0.28	<10	0.23	605	15	0.03	2	940	7	5.87	3	1
111740		3.86	<10	<1	0.26	<10	0.53	1250	10	0.02	3	950	238	6.58	2	1
111741		3.42	<10	<1	0.29	<10	0.75	1200	23	0.03	4	940	108	4.55	<2	1
111742		3.23	10	1	0.19	<10	1.14	1815	17	0.05	5	1080	12	2.23	<2	2
111743		2.92	10	<1	0.15	<10	1.05	1950	5	0.06	4	1060	12	2.01	2	2
111744		3.20	10	<1	0.15	<10	1.04	1655	10	0.05	5	1000	14	2.03	<2	2
111745		3.79	<10	1	0.21	<10	0.83	1525	13	0.03	5	1050	87	4.67	3	2
111746		2.83	10	<1	0.18	<10	0.89	1385	9	0.05	4	930	6	2.15	<2	2
111747		3.12	<10	<1	0.17	<10	1.01	1505	9	0.05	5	1030	14	2.12	<2	2
111748		3.03	10	1	0.16	<10	0.98	1460	7	0.05	4	1020	14	2.10	<2	2
111749		4.18	10	<1	0.17	10	1.61	888	2	0.20	6	520	<2	0.01	2	12
111750		3.23	<10	1	0.27	<10	0.88	1225	25	0.03	4	1010	33	3.74	<2	1
111751		2.69	<10	<1	0.17	<10	0.91	1590	7	0.05	4	940	46	1.97	<2	2
111752		3.22	10	<1	0.19	<10	0.94	1740	9	0.05	5	1040	167	2.54	<2	2
111753		3.53	10	1	0.24	<10	1.12	1435	34	0.04	4	1110	12	3.67	<2	2
111754		3.93	10	<1	0.17	<10	1.18	1765	25	0.06	5	1150	17	1.20	<2	3
111755		0.63	<10	<1	0.11	10	0.14	316	4	0.05	2	100	<2	0.57	<2	1
111880		1.78	<10	<1	0.17	10	0.89	3900	2	0.04	3	670	359	0.48	<2	3
111881		1.76	<10	<1	0.18	10	0.89	4090	3	0.03	3	660	174	0.38	<2	3
111882		2.05	<10	<1	0.16	10	0.90	3570	4	0.04	3	720	176	0.60	<2	3
111883		2.18	<10	<1	0.12	10	1.08	3520	4	0.05	3	740	127	0.29	<2	4
111884		2.09	<10	<1	0.15	10	0.95	3780	4	0.04	3	660	113	0.82	<2	3
111885		2.23	<10	<1	0.19	10	1.02	5070	3	0.04	4	700	1935	1.08	<2	4
111886		2.13	<10	<1	0.13	10	0.96	2190	2	0.05	2	680	575	0.55	2	3
111887		2.22	<10	<1	0.09	10	1.04	2320	4	0.06	3	710	314	0.80	<2	4

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Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc
	Units	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm
	LOR	0.01	10	1	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1
111888		4.47	<10	1	0.20	<10	0.02	52	13	0.03	2	900	11	9.84	4	1
111889		4.09	<10	<1	0.23	<10	0.02	58	11	0.03	2	820	16	9.12	<2	1
111890		4.47	<10	3	0.23	<10	0.32	713	4	0.02	2	660	26	>10.0	3	1
111891		2.12	<10	<1	0.27	<10	1.63	2880	5	0.03	2	1050	122	5.39	<2	1
111892		5.43	<10	<1	0.29	<10	1.70	2940	15	0.03	3	1030	258	7.56	<2	1
111893		4.68	<10	<1	0.28	<10	0.03	57	10	0.03	2	1020	98	9.55	2	1
111894		3.64	<10	1	0.25	<10	0.02	52	16	0.02	2	1090	21	8.17	5	1
111895		2.42	<10	1	0.26	<10	0.01	31	26	0.03	2	1010	12	6.33	<2	1
111896		3.36	<10	1	0.29	10	0.49	960	10	0.03	2	1030	244	6.55	<2	1
111897		2.66	<10	1	0.33	10	0.62	1755	7	0.03	2	1060	141	4.99	2	1
111898		3.06	<10	<1	0.35	10	0.44	1640	11	0.03	2	1090	111	5.54	<2	1
111899		2.88	<10	<1	0.35	10	0.87	2120	9	0.04	2	1150	141	4.32	<2	2
111900		4.36	<10	1	0.37	10	0.43	1910	20	0.02	2	1080	3470	6.33	<2	1
111901		3.52	<10	<1	0.40	10	0.58	1210	12	0.04	2	1110	40	4.96	<2	2
111902		6.80	<10	<1	0.23	<10	0.02	108	18	0.02	3	700	24	>10.0	<2	<1
111903		4.00	<10	1	0.42	10	0.57	1450	13	0.03	2	1100	45	5.90	<2	1
111904		3.65	<10	1	0.39	<10	0.69	1500	11	0.03	2	970	215	5.81	<2	1
111905		0.27	<10	<1	0.02	<10	0.06	34	<1	0.17	2	700	3	<0.01	<2	1
111906		3.71	<10	1	0.34	<10	0.71	1730	5	0.03	2	1120	210	5.43	<2	2
111907		3.05	<10	<1	0.28	<10	0.53	1435	2	0.04	2	1070	262	4.00	<2	2
111908		3.28	<10	<1	0.32	10	0.60	1710	9	0.04	3	1180	254	4.62	<2	2
111909		4.57	<10	<1	0.32	10	0.28	904	80	0.03	2	1050	3320	8.39	2	1
111910		5.23	<10	2	0.35	10	0.11	394	256	0.02	2	1020	214	8.40	2	1
111911		8.27	<10	1	0.41	10	0.06	184	61	0.02	2	920	393	>10.0	5	1
111912		4.45	<10	<1	0.37	10	0.28	767	76	0.03	2	1100	129	7.06	2	1
111913		3.83	<10	2	0.36	10	0.31	1085	22	0.03	2	1150	261	6.60	<2	1
111914		4.07	<10	<1	0.26	10	0.34	1395	42	0.03	1	1140	240	5.45	2	2
111915		4.27	<10	<1	0.29	<10	0.32	882	31	0.02	1	990	175	5.56	<2	1
111916		4.83	<10	<1	0.28	<10	0.39	1505	42	0.02	1	1060	215	5.85	4	1
111917		4.24	<10	<1	0.24	10	0.08	579	6	0.01	1	810	224	6.62	<2	1
111918		3.09	<10	<1	0.27	10	0.57	3850	3	0.01	1	750	2930	3.67	2	2
111919		2.28	<10	1	0.25	10	0.78	4820	1	0.02	1	790	1170	1.07	<2	3
111920		3.71	<10	<1	0.25	<10	0.68	3920	<1	0.01	1	860	1375	4.06	<2	1
111921		1.80	<10	1	0.14	<10	0.79	3620	<1	0.03	1	790	757	0.62	<2	2
111922		1.96	<10	<1	0.20	10	0.85	3300	1	0.04	1	790	16	0.42	2	2
111923		2.86	10	<1	0.25	<10	1.27	5660	1	0.02	2	1130	19	0.39	2	4
111924		2.18	<10	<1	0.21	10	0.86	3780	1	0.04	2	810	21	0.53	<2	2
111925		2.11	<10	<1	0.13	<10	0.92	2930	1	0.04	2	820	21	0.57	<2	2
111926		4.33	<10	<1	0.27	<10	0.46	772	9	0.02	1	1040	60	5.58	<2	1
111927		3.32	<10	<1	0.23	10	0.67	1245	21	0.02	1	910	33	4.27	2	1

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	Analyte	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc
	Units	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm
	LOR	0.01	10	1	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1
111928		4.35	<10	<1	0.29	<10	0.72	883	3	0.03	2	1020	121	4.71	<2	2
111929		4.42	<10	<1	0.29	<10	0.97	1320	2	0.03	2	1050	32	4.66	2	2
111930		6.10	<10	<1	0.34	10	0.67	1280	7	0.02	1	1010	22	6.46	3	2
111931		0.26	<10	<1	0.02	<10	0.05	31	<1	0.14	1	700	3	0.01	<2	1
111958		5.02	<10	<1	0.27	<10	0.74	2110	10	0.02	2	940	298	5.44	2	1
111959		4.79	<10	<1	0.25	<10	0.69	1935	6	0.02	1	900	76	5.11	<2	2
111960		4.07	<10	1	0.24	<10	0.88	2260	4	0.03	2	1010	149	3.79	4	2
111961		5.40	10	<1	0.22	<10	0.95	2610	8	0.03	1	910	37	5.18	2	2
111962		4.35	<10	2	0.22	<10	0.76	2110	10	0.02	2	770	49	3.39	2	2
111963		4.73	<10	<1	0.24	<10	0.83	2190	15	0.03	1	840	18	4.58	<2	2
111964		5.18	<10	<1	0.25	<10	0.90	2160	18	0.02	2	930	13	4.53	<2	2
111965		2.19	<10	<1	0.17	<10	0.86	2480	3	0.04	2	740	5	0.27	2	2
111966		2.18	<10	1	0.13	<10	0.85	1755	3	0.04	3	710	5	0.19	<2	2
111967		2.30	<10	<1	0.21	<10	0.81	1820	2	0.04	2	700	4	0.04	<2	2
111968		2.63	<10	<1	0.19	<10	0.85	1880	4	0.04	3	710	3	0.11	<2	2
111969		2.55	<10	<1	0.22	<10	0.82	1860	4	0.03	2	680	3	0.19	2	2
111970		2.25	<10	<1	0.13	<10	0.85	1625	3	0.04	3	700	4	0.03	<2	3
111971		2.07	<10	<1	0.23	<10	0.77	1745	4	0.02	2	700	5	0.03	<2	2
111972		2.09	<10	1	0.12	<10	0.78	1310	3	0.05	3	670	5	0.38	5	2
111973		2.07	<10	<1	0.13	<10	0.79	1210	2	0.05	2	620	2	0.09	2	2
111974		5.60	<10	<1	0.32	<10	0.57	1375	15	0.02	2	850	115	4.32	<2	2
111975		5.02	10	<1	0.25	10	0.96	2030	9	0.05	1	930	12	1.02	<2	4
111976		4.10	10	<1	0.20	10	1.29	2330	14	0.04	5	1000	9	0.30	3	6
111977		3.12	10	<1	0.20	10	1.13	2430	1	0.04	4	900	9	0.10	4	5
111978		3.52	<10	<1	0.29	<10	0.91	2040	5	0.03	3	740	7	0.85	4	4
111979		1.29	<10	<1	0.18	10	0.29	864	2	0.05	1	250	<2	0.01	<2	2
111980		1.71	<10	<1	0.17	10	0.40	1050	3	0.05	2	390	3	0.03	<2	2
111981		1.17	<10	<1	0.16	10	0.29	779	2	0.06	1	240	6	0.02	<2	1
111982		1.06	<10	1	0.14	10	0.25	746	3	0.05	2	220	3	0.03	<2	1
111983		3.45	<10	<1	0.30	<10	0.88	1975	5	0.03	2	710	7	0.84	<2	3

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SMITHERS BC V0J 2N0

Date : 6-Dec-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02006317

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	Zn-AA46
	Analyte	Sr	Ti	Tl	U	V	W	Zn	Zn
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	LOR	1	0.01	10	10	1	10	2	0.01
111638		114	0.03	<10	10	84	10	89	
111639		69	0.03	<10	10	67	10	91	
111640		74	0.01	<10	10	46	10	260	
111641		52	0.04	<10	10	70	10	105	
111642		70	0.09	<10	10	77	10	112	
111643		58	0.03	<10	<10	62	10	408	
111644		63	0.09	<10	<10	78	10	240	
111645		111	0.04	<10	10	76	10	267	
111646		81	0.27	<10	10	239	20	213	
111647		54	0.10	<10	10	65	10	157	
111648		85	0.14	<10	<10	69	10	572	
111649		138	0.11	<10	10	73	10	144	
111650		121	0.06	<10	10	34	10	133	
111737		147	0.03	<10	10	25	10	95	
111738		154	0.03	<10	10	15	10	119	
111739		199	0.03	<10	10	9	10	92	
111740		223	0.02	<10	10	9	10	1820	
111741		138	0.06	<10	10	22	10	807	
111742		98	0.12	<10	<10	41	10	203	
111743		118	0.12	<10	<10	44	10	287	
111744		90	0.11	<10	<10	48	10	679	
111745		194	0.07	<10	10	28	10	443	
111746		103	0.10	<10	10	38	10	148	
111747		101	0.12	<10	<10	43	10	148	
111748		66	0.10	<10	10	39	10	139	
111749		202	0.10	<10	10	142	10	111	
111750		101	0.05	<10	<10	26	10	211	
111751		78	0.09	<10	<10	33	10	201	
111752		85	0.13	<10	<10	34	10	498	
111753		106	0.07	<10	10	32	10	256	
111754		81	0.16	<10	<10	56	10	162	
111755		55	0.01	<10	10	7	<10	34	
111880		48	0.13	<10	<10	33	<10	2860	
111881		51	0.12	<10	<10	32	10	1415	
111882		51	0.13	<10	<10	40	10	1915	
111883		57	0.15	<10	<10	51	10	593	
111884		57	0.12	<10	<10	38	10	1010	
111885		76	0.15	<10	<10	41	<10	5320	
111886		53	0.11	<10	10	45	10	2330	
111887		76	0.14	<10	<10	48	10	684	

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Date : 6-Dec-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02006317

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Zn-AA46 Zn % 0.01
111888		302	<0.01	<10	10	4	10	51	
111889		329	<0.01	<10	10	5	10	108	
111890		629	0.01	<10	10	6	10	>10000	1.03
111891		313	<0.01	<10	<10	24	10	964	
111892		167	<0.01	<10	10	26	10	1410	
111893		315	<0.01	<10	10	6	10	150	
111894		329	<0.01	<10	10	4	10	70	
111895		263	<0.01	<10	10	4	10	42	
111896		191	<0.01	<10	10	9	10	1820	
111897		162	<0.01	<10	<10	15	10	1045	
111898		186	<0.01	<10	10	14	10	707	
111899		112	<0.01	<10	<10	20	10	858	
111900		39	0.01	<10	<10	10	<10	>10000	1.83
111901		77	<0.01	<10	10	16	10	561	
111902		499	<0.01	<10	10	3	20	93	
111903		144	0.01	<10	10	14	10	965	
111904		161	0.04	<10	10	17	10	1200	
111905		1	<0.01	<10	<10	1	<10	13	
111906		148	0.04	<10	10	20	10	946	
111907		95	0.06	<10	10	21	10	1060	
111908		92	0.03	<10	10	20	10	1020	
111909		175	0.01	<10	10	11	10	>10000	1.03
111910		117	<0.01	<10	10	10	10	4690	
111911		150	<0.01	<10	10	10	10	4060	
111912		147	0.02	<10	10	13	10	1580	
111913		162	0.01	<10	10	12	<10	5230	
111914		101	<0.01	<10	<10	12	<10	2460	
111915		108	0.01	<10	<10	9	<10	2650	
111916		97	<0.01	<10	<10	10	<10	4010	
111917		49	<0.01	<10	<10	5	<10	>10000	3.89
111918		98	0.01	<10	<10	16	<10	>10000	1.03
111919		108	0.01	<10	<10	27	<10	4790	
111920		43	0.06	<10	<10	18	<10	>10000	1.90
111921		80	0.05	<10	<10	24	<10	1640	
111922		128	0.02	<10	<10	28	<10	820	
111923		106	0.04	<10	<10	44	<10	2710	
111924		101	0.02	<10	<10	32	<10	2740	
111925		100	0.04	<10	<10	33	<10	602	
111926		112	<0.01	<10	<10	10	<10	1635	
111927		101	<0.01	<10	<10	14	<10	1060	

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Date : 6-Dec-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02006317

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Zn-AA46 Zn % 0.01
111928		58	0.02	<10	<10	17	<10	987	
111929		57	0.01	<10	<10	19	<10	1775	
111930		42	<0.01	<10	<10	15	<10	1985	
111931		5	<0.01	<10	<10	1	<10	6	
111958		185	0.04	<10	<10	28	<10	2000	
111959		218	0.03	<10	<10	28	<10	2310	
111960		175	0.08	<10	<10	32	<10	1875	
111961		137	0.09	<10	<10	37	<10	3400	
111962		180	0.04	<10	<10	35	<10	1415	
111963		207	0.05	<10	<10	31	<10	835	
111964		130	0.07	<10	<10	31	<10	695	
111965		77	0.09	<10	<10	35	<10	1870	
111966		59	0.08	<10	<10	33	<10	330	
111967		91	0.06	<10	<10	34	<10	119	
111968		68	0.07	<10	<10	35	<10	117	
111969		85	0.07	<10	<10	31	<10	108	
111970		61	0.08	<10	<10	38	<10	97	
111971		81	0.06	<10	<10	27	<10	99	
111972		95	0.07	<10	<10	34	<10	87	
111973		50	0.06	<10	<10	37	<10	82	
111974		28	<0.01	<10	<10	25	<10	965	
111975		48	0.01	<10	<10	60	<10	499	
111976		54	0.03	<10	<10	74	<10	195	
111977		178	0.02	<10	<10	63	<10	162	
111978		69	0.07	<10	<10	40	<10	335	
111979		27	0.01	<10	<10	19	<10	67	
111980		54	0.01	<10	<10	30	<10	316	
111981		27	0.01	<10	<10	16	<10	200	
111982		36	0.01	<10	<10	14	<10	63	
111983		69	0.07	<10	<10	39	<10	282	

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Date : 6-Dec-2002
Account: PIL

Previously 4239

CERTIFICATE VA02006315

Project : Brenda

P.O. No: 266490

This report is for 26 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 29-Nov-2002.

The following have access to data associated with this certificate:

MIKE HIBBITTS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
PUL-31	Pulverize split to 85% <75 um
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 element aqua regia ICP-AES	ICP-AES

RECEIVED
APR 15 2003
By_____

To: **KEMESS MINES LTD.**
ATTN: MIKE HIBBITTS
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This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

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Date : 6-Dec-2002
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Project : Brenda

CERTIFICATE OF ANALYSIS VA02006315

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppb 5	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
111776		0.26	15	0.008	1.0	1.08	12	<10	140	<0.5	<2	0.14	1.9	3	28	67
111777		0.26	5	0.005	0.2	0.53	5	<10	40	<0.5	<2	0.04	0.7	2	15	49
111778		0.26	11	0.005	0.6	1.38	6	<10	30	<0.5	<2	0.14	5.0	13	15	45
111779		0.24	9	0.009	0.5	1.58	9	<10	40	<0.5	<2	0.14	0.9	9	12	89
111780		0.26	9	0.003	0.9	1.60	6	<10	30	<0.5	<2	0.14	17.5	11	23	27
111781		0.24	10	0.001	0.7	1.34	3	<10	30	<0.5	<2	0.12	3.9	10	11	15
111782		0.26	15	0.003	0.8	0.92	10	<10	40	<0.5	<2	0.12	4.1	8	24	25
111783		0.24	9	0.010	1.4	1.08	7	<10	30	<0.5	<2	0.27	37.1	11	16	102
111784		0.26	<5	0.003	0.6	1.53	7	<10	40	<0.5	<2	0.43	12.1	6	20	26
111785		0.24	6	0.001	0.3	1.60	4	<10	30	<0.5	<2	0.46	6.5	6	15	11
111786		0.26	<5	0.010	0.4	1.33	5	<10	120	<0.5	<2	1.25	4.7	8	47	99
111787		0.26	<5	0.003	<0.2	1.24	5	<10	220	<0.5	<2	1.30	0.7	7	29	28
111788		0.26	<5	0.005	0.3	1.20	5	<10	210	<0.5	<2	1.20	2.6	7	50	46
111789		0.24	<5	0.002	0.4	1.13	6	<10	150	<0.5	<2	1.25	2.3	6	34	24
111790		0.24	<5	0.005	0.3	1.19	6	<10	50	<0.5	<2	0.98	1.2	6	52	52
111791		0.24	5	0.007	0.4	1.29	5	<10	80	<0.5	<2	1.07	3.9	6	34	70
111792		0.26	<5	0.015	0.7	1.28	5	<10	130	<0.5	<2	1.36	7.1	5	47	146
111793		0.26	<5	0.008	0.5	1.32	6	<10	130	<0.5	<2	1.25	3.5	6	31	81
111794		0.24	16	0.004	0.3	1.52	18	<10	30	0.6	<2	2.36	0.6	7	33	40
111795		0.26	13	0.002	0.4	1.15	18	<10	20	<0.5	<2	4.43	14.5	8	17	21
111796		0.24	6	0.002	<0.2	1.53	5	<10	50	<0.5	<2	2.06	1.5	7	30	13
111797		0.24	12	0.001	0.4	1.09	10	<10	30	0.5	5	2.17	10.6	7	24	14
111798		0.24	9	0.001	0.4	1.11	2	<10	30	0.5	8	2.43	3.7	8	40	12
111799		0.26	8	0.001	0.4	1.09	7	<10	30	0.5	10	1.99	7.2	7	25	6
111800		0.24	7	0.002	0.5	1.05	3	<10	20	<0.5	6	2.12	8.6	7	43	10
111801		0.26	8	0.001	0.6	1.01	4	<10	30	0.5	12	2.37	10.3	7	25	10

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Date : 6-Dec-2002
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Project : Brenda

CERTIFICATE OF ANALYSIS VA02006315

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
111776		2.99	<10	<1	0.30	<10	0.50	941	5	0.05	3	690	577	1.10	<2	3
111777		3.38	<10	<1	0.33	10	0.07	116	4	0.17	1	1110	327	2.30	<2	3
111778		6.68	<10	<1	0.37	<10	0.70	1025	8	0.02	3	1120	617	6.41	2	3
111779		4.45	<10	2	0.29	<10	0.95	2070	19	0.03	2	1000	492	3.88	<2	3
111780		4.56	<10	<1	0.22	<10	1.06	2310	6	0.04	2	440	893	4.38	2	4
111781		3.98	<10	3	0.28	<10	0.70	978	7	0.03	2	540	256	4.11	<2	3
111782		3.97	<10	<1	0.27	<10	0.35	527	8	0.03	2	510	967	4.18	2	3
111783		4.55	<10	1	0.28	<10	0.68	991	5	0.04	2	720	2440	4.86	2	3
111784		4.46	<10	<1	0.19	<10	1.44	2370	2	0.06	2	1010	216	3.81	<2	5
111785		4.08	<10	2	0.16	<10	1.56	2990	1	0.05	2	880	67	3.39	<2	4
111786		2.46	<10	1	0.16	10	0.97	3280	1	0.04	3	980	649	0.90	2	3
111787		2.16	<10	1	0.11	<10	0.91	2000	1	0.04	2	990	59	0.34	2	3
111788		2.09	<10	1	0.13	<10	0.85	1805	1	0.05	3	830	414	0.37	2	3
111789		2.08	<10	<1	0.14	<10	0.84	2900	1	0.03	2	770	269	0.96	<2	2
111790		2.09	<10	3	0.13	<10	0.83	2700	1	0.04	3	790	152	0.50	2	2
111791		2.15	<10	2	0.12	<10	0.87	3500	1	0.04	2	880	428	0.99	2	3
111792		2.06	<10	1	0.15	<10	0.87	4030	2	0.03	3	960	785	1.27	<2	2
111793		2.33	<10	1	0.11	<10	0.93	3070	1	0.04	2	920	462	1.09	<2	3
111794		4.12	<10	<1	0.30	10	1.28	1880	2	0.02	2	1090	108	4.97	<2	2
111795		4.20	<10	1	0.22	10	0.91	2750	4	0.02	2	950	569	6.84	10	1
111796		3.26	20	<1	0.22	10	1.32	2610	4	0.05	1	850	111	3.01	<2	2
111797		3.70	<10	1	0.27	<10	0.80	1470	7	0.05	2	1050	240	5.13	2	2
111798		3.68	<10	2	0.23	<10	0.92	1780	7	0.06	2	1060	142	5.21	<2	3
111799		3.73	<10	2	0.21	<10	0.95	2270	4	0.05	2	1080	122	4.88	<2	3
111800		4.08	<10	<1	0.19	<10	0.87	1820	2	0.05	2	1030	94	5.23	<2	3
111801		4.17	<10	<1	0.18	<10	0.87	1790	2	0.05	2	1080	113	5.68	<2	3

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Date : 6-Dec-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02006315

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Tl % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
111776		63	0.04	<10	<10	37	<10	127
111777		132	0.04	<10	<10	18	<10	20
111778		281	0.03	<10	<10	34	<10	124
111779		269	0.09	<10	<10	39	<10	113
111780		83	0.10	<10	<10	44	<10	818
111781		147	0.11	<10	<10	34	<10	350
111782		114	0.04	<10	<10	24	<10	101
111783		69	0.09	<10	<10	37	<10	1655
111784		29	0.15	<10	<10	63	<10	415
111785		23	0.11	<10	<10	62	<10	179
111786		56	0.07	<10	<10	43	<10	682
111787		75	0.10	<10	<10	44	<10	154
111788		72	0.09	<10	<10	43	<10	391
111789		64	0.07	<10	<10	33	<10	352
111790		48	0.10	<10	<10	42	<10	250
111791		54	0.11	<10	<10	41	<10	574
111792		66	0.10	<10	<10	35	<10	947
111793		72	0.11	<10	<10	40	<10	518
111794		111	<0.01	<10	<10	21	<10	143
111795		194	<0.01	<10	<10	18	<10	1860
111796		106	0.05	<10	<10	36	<10	252
111797		144	0.07	<10	<10	25	<10	397
111798		152	0.08	<10	<10	31	<10	181
111799		106	0.10	<10	<10	29	<10	332
111800		148	0.11	<10	<10	37	<10	261
111801		159	0.11	<10	<10	36	<10	298

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CERTIFICATE VA02006293

Project : Brenda

P.O. No: 266490

This report is for 40 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 24-Nov-2002.

The following have access to data associated with this certificate:

MIKE HIBBITTS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
PUL-31	Pulverize split to 85% <75 um
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS

To: **KEMESS MINES LTD.**
ATTN: MIKE HIBBITTS
PO BOX 3519
SMITHERS BC V0J 2N0

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Page # : 2 - A
Total # of pages : 2 (A)
Date : 28-Nov-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02006293

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppb 5	Cu-AA49 Cu % 0.001
111628		0.24	65	0.038
111629		0.26	59	0.048
111630		0.24	101	0.058
111631		0.26	58	0.027
111632		0.28	59	0.034
111633		0.24	66	0.019
111634		0.26	46	0.026
111635		0.26	151	0.067
111636		0.24	<5	0.004
111637		0.26	<5	0.004
111707		0.26	<5	0.003
111708		0.24	138	0.099
111709		0.28	5	0.014
111710		0.24	278	0.055
111711		0.24	81	0.072
111712		0.26	147	0.117
111713		0.26	93	0.077
111714		0.24	105	0.073
111715		0.26	<5	0.014
111716		0.24	<5	0.012
111717		0.26	<5	0.034
111718		0.26	133	0.059
111719		0.24	<5	0.067
111720		0.24	21	0.008
111721		0.24	385	0.088
111722		0.24	<5	0.003
111723		0.24	183	0.057
111724		0.28	139	0.065
111725		0.24	41	0.042
111726		0.26	25	0.031
111727		0.26	62	0.072
111728		0.28	138	0.097
111729		0.24	77	0.068
111730		0.24	174	0.073
111731		0.26	142	0.042
111732		0.06	1070	0.001
111733		0.24	75	0.035
111734		0.26	142	0.083
111735		0.28	<5	0.015
111736		0.26	<5	0.011

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CERTIFICATE VA02006291

Project : Brenda

P.O. No: 266490

This report is for 102 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 24-Nov-2002.

The following have access to data associated with this certificate:

MIKE HIBBITTS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
PUL-31	Pulverize split to 85% <75 um
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS

To: **KEMESS MINES LTD.**
ATTN: MIKE HIBBITTS
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Signature:

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Project : Brenda

Date : 28-Nov-2002
Account: PIL

CERTIFICATE OF ANALYSIS VA02006291

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppb 5	Cu-AA49 Cu % 0.001
111552		0.24	123	0.042
111553		0.26	190	0.070
111554		0.26	241	0.066
111555		0.26	168	0.039
111556		0.24	368	0.081
111557		0.28	219	0.045
111558		0.26	255	0.047
111559		0.26	518	0.089
111560		0.26	937	0.110
111561		0.28	358	0.078
111562		0.26	362	0.081
111563		0.28	10	0.008
111564		0.24	6	0.001
111565		0.26	5	0.001
111566		0.26	<5	0.008
111567		0.24	11	0.012
111568		0.24	295	0.092
111569		0.28	417	0.103
111570		0.26	227	0.104
111571		0.26	232	0.103
111572		0.24	21	0.013
111573		0.24	246	0.091
111574		0.26	228	0.127
111575		0.24	223	0.127
111576		0.28	14	0.014
111579		0.24	8	0.004
111580		0.26	130	0.103
111581		0.24	383	0.120
111582		0.26	191	0.013
111583		0.24	209	0.013
111584		0.26	<5	0.010
111585		0.24	<5	0.011
111586		0.26	<5	0.008
111587		0.26	<5	0.006
111588		0.24	<5	0.006
111589		0.24	<5	0.001
111590		0.24	<5	0.002
111591		0.26	<5	0.002
111592		0.24	<5	0.001
111593		0.24	<5	0.001

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Date : 28-Nov-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02006291

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppb 5	Cu-AA49 Cu % 0.001
111594		0.26	7	0.010
111595		0.26	56	0.035
111596		0.26	<5	0.001
111597		0.28	39	0.061
111598		0.26	8	0.025
111599		0.24	<5	0.002
111600		0.24	8	0.006
111651		0.28	271	0.057
111652		0.26	<5	0.002
111653		0.26	<5	0.002
111654		0.24	<5	0.008
111655		0.20	<5	0.002
111656		0.26	<5	0.002
111657		0.26	<5	0.010
111658		0.26	<5	0.002
111659		0.26	<5	0.005
111660		0.24	<5	0.014
111661		0.24	<5	0.004
111662		0.28	8	0.024
111663		0.28	<5	0.010
111664		0.28	<5	0.010
111665		0.26	<5	0.007
111666		0.26	<5	0.005
111667		0.28	<5	0.010
111668		0.24	<5	0.012
111669		0.26	<5	0.009
111670		0.26	<5	0.004
111671		0.26	<5	0.004
111672		0.28	<5	0.004
111673		0.26	<5	0.001
111674		0.24	<5	0.006
111675		0.26	<5	0.010
111676		0.26	8	0.004
111677		0.28	62	0.019
111678		0.26	<5	0.012
111679		0.24	53	0.016
111680		0.26	<5	0.004
111681		0.28	<5	0.003
111682		0.26	<5	0.006
111683		0.26	<5	0.003

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Project : Brenda

CERTIFICATE OF ANALYSIS VA02006291

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppb 5	Cu-AA49 Cu % 0.001
111684		0.26	<5	0.003
111685		0.26	12	0.008
111686		0.24	263	0.032
111687		0.26	369	0.036
111689		0.26	506	0.043
111690		0.26	9	0.002
111691		0.26	312	0.045
111692		0.26	12	0.006
111693		0.26	183	0.038
111694		0.26	<5	0.004
111695		0.26	844	0.014
111696		0.24	39	0.004
111697		0.26	6	0.003
111698		0.26	15	0.003
111699		0.26	7	0.003
111700		0.26	8	0.003
111701		0.26	15	0.003
111702		0.24	<5	0.003
111703		0.24	164	0.035
111704		0.26	9	0.005
111705		0.26	71	0.042
111706		0.22	7	0.003

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CERTIFICATE VA02006187

Project : Brenda

P.O. No: 266490

This report is for 51 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 23-Nov-2002.

The following have access to data associated with this certificate:

MIKE HIBBITTS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
PUL-31	Pulverize split to 85% <75 um
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS

To: **KEMESS MINES LTD.**
ATTN: MIKE HIBBITTS
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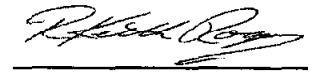
Signature: 

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Project : Brenda

CERTIFICATE OF ANALYSIS VA02006187

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppb 5	Cu-AA49 Cu % 0.001
111527		0.26	236	0.059
111528		0.26	595	0.003
111529		0.24	273	0.015
111530		0.26	226	0.015
111531		0.26	562	0.002
111532		0.24	160	0.001
111533		0.26	264	0.003
111534		0.24	384	0.030
111535		0.26	57	0.016
111536		0.26	17	0.006
111537		0.26	158	0.031
111538		0.24	50	0.029
111539		0.26	128	0.018
111540		0.26	110	0.027
111541		0.26	48	0.028
111542		0.24	72	0.027
111543		0.24	258	0.030
111544		0.26	174	0.032
111545		0.26	103	0.031
111546		0.24	119	0.029
111547		0.26	38	0.014
111548		0.26	127	0.041
111549		0.26	130	0.041
111550		0.26	162	0.051
111551		0.20	6	0.003
111602		0.24	67	0.053
111603		0.26	53	0.051
111604		0.26	47	0.063
111605		0.24	63	0.063
111606		0.24	40	0.041
111607		0.26	33	0.053
111608		0.26	56	0.056
111609		0.28	40	0.039
111610		0.24	66	0.062
111611		0.26	132	0.082
111612		0.26	70	0.079
111613		0.26	7	0.014
111614		0.26	5	0.009
111615		0.24	40	0.041
111616		0.26	120	0.078

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Date : 28-Nov-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02006187

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppb 5	Cu-AA49 Cu % 0.001
111617		0.26	48	0.065
111618		0.24	40	0.046
111619		0.26	57	0.056
111620		0.24	52	0.095
111621		0.26	58	0.335
111622		0.26	86	0.073
111623		0.26	89	0.094
111624		0.26	77	0.094
111625		0.26	86	0.062
111626		0.28	121	0.069
111627		0.24	9	0.014

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CERTIFICATE VA02006185

Project : Brenda

P.O. No: 266490

This report is for 28 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 22-Nov-2002.

The following have access to data associated with this certificate:

MIKE HIBBITTS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
PUL-31	Pulverize split to 85% <75 um
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS

To: **KEMESS MINES LTD.**
ATTN: MIKE HIBBITTS
PO BOX 3519
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Signature: 

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Date : 28-Nov-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02006185

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppb 5	Cu-AA49 Cu % 0.001
111501		0.24	8	0.007
111502		0.24	6	0.008
111503		0.24	12	0.004
111504		0.24	<5	0.003
111505		0.24	11	0.006
111506		0.16	20	0.006
111507		0.16	108	0.014
111508		0.10	73	0.014
111509		0.10	45	0.018
111510		0.10	50	0.026
111511		0.10	76	0.026
111512		0.14	93	0.020
111513		0.14	115	0.022
111514		0.14	38	0.032
111515		0.18	23	0.024
111516		0.22	19	0.021
111517		0.22	22	0.014
111518		0.22	29	0.002
111519		0.20	9	0.005
111520		0.20	13	0.005
111521		0.22	85	0.025
111522		0.24	230	0.032
111523		0.24	289	0.072
111524		0.24	543	0.071
111525		0.26	325	0.034
111526		0.06	982	<0.001
111577		0.20	110	0.042
111578		0.22	242	0.061

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Page # : 1
Date : 11-Nov-2002
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CERTIFICATE VA02005582

Project : Brenda

P.O. No: 266490

This report is for 27 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 5-Nov-2002.

The following have access to data associated with this certificate:

MIKE HIBBITTS
CARL EDMUNDS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
ME-ICP41	34 element aqua regia ICP-AES	ICP-AES

To: **KEMESS MINES LTD.**
ATTN: MIKE HIBBITTS
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Project : Brenda

CERTIFICATE OF ANALYSIS VA02005582

Sample Description	Method	WEI-21	Au-AA23	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOR	0.02	0.005	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01
400375		0.26	<0.005	0.3	1.17	<2	<10	90	<0.5	<2	0.83	<0.5	8	28	84	4.16
400376		0.26	<0.005	0.4	2.29	4	<10	130	0.6	<2	2.48	<0.5	8	19	81	4.74
400377		0.26	0.133	0.6	1.18	3	<10	50	<0.5	<2	1.03	<0.5	10	25	303	5.87
400378		0.26	<0.005	<0.2	1.23	<2	<10	150	<0.5	<2	1.08	<0.5	6	20	3	1.66
400379		0.24	<0.005	0.2	1.46	2	<10	80	<0.5	<2	1.34	1.2	6	24	34	1.83
400380		0.24	<0.005	<0.2	1.19	<2	<10	40	<0.5	<2	1.00	<0.5	6	19	10	1.75
400381		0.26	<0.005	<0.2	1.42	<2	<10	90	<0.5	<2	1.40	<0.5	6	20	3	1.96
400382		0.26	<0.005	0.2	1.86	<2	<10	330	<0.5	<2	1.52	3.1	8	15	34	2.48
400383		0.26	0.031	1.4	1.44	4	<10	40	<0.5	<2	1.74	4.3	11	21	1005	4.89
400384		0.24	0.013	0.4	1.05	2	<10	60	<0.5	2	1.14	2.4	6	19	112	4.20
400385		0.24	0.019	0.4	1.29	4	<10	80	<0.5	<2	1.20	<0.5	9	20	115	4.01
400386		0.26	0.020	0.5	1.69	6	<10	130	<0.5	<2	1.58	1.4	7	19	99	3.87
400387		0.26	0.019	0.4	1.25	5	<10	70	<0.5	<2	1.16	1.0	8	22	147	3.97
400388		0.26	0.021	0.5	1.17	<2	<10	370	<0.5	3	1.25	2.4	5	22	460	3.36
400389		0.24	0.101	1.2	1.23	11	<10	30	<0.5	3	1.17	8.5	10	23	166	4.80
400391		0.26	<0.005	0.2	3.47	4	<10	170	0.5	<2	5.00	5.8	25	24	288	6.03
400392		0.30	0.056	0.6	1.24	19	<10	50	<0.5	<2	1.81	0.5	8	18	280	3.99
400393		0.26	0.023	0.8	1.52	8	<10	60	<0.5	<2	1.70	1.9	9	14	363	3.49
400394		0.26	0.084	2.0	0.36	18	<10	20	<0.5	5	3.88	2.1	10	18	331	4.50
400395		0.26	0.073	1.8	1.30	42	<10	30	<0.5	<2	1.11	9.1	16	21	1870	5.68
400396		0.26	0.102	1.3	1.10	46	<10	20	<0.5	<2	0.90	49.8	15	27	253	5.10
400397		0.24	0.048	1.1	1.49	21	<10	50	<0.5	<2	0.88	11.5	17	21	247	5.00
400398		0.24	0.067	0.8	1.56	8	<10	40	<0.5	<2	0.90	10.5	11	26	391	3.97
400399		0.26	<0.005	0.4	1.23	<2	<10	50	<0.5	<2	0.86	4.3	6	23	54	1.95
400400		0.26	0.020	0.4	1.21	4	<10	210	<0.5	<2	1.30	3.7	6	33	605	3.43
400401		0.26	<0.005	0.4	1.31	5	<10	180	<0.5	<2	0.73	3.1	8	25	42	2.37

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KEMESS MINES LTD.
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 11-Nov-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02005582

Sample Description	Method Analyte Units LOR	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1
400375		10	<1	0.12	<10	0.66	995	3	0.03	2	580	4	0.65	4	2	102
400376		10	<1	0.10	<10	0.78	902	1	0.05	1	690	6	0.36	<2	2	232
400377		10	<1	0.17	<10	0.59	601	3	0.03	2	600	13	3.36	2	1	114
400378		10	<1	0.10	10	0.83	880	<1	0.04	1	660	13	0.01	<2	1	108
400379		10	<1	0.13	10	0.78	931	<1	0.03	2	620	18	0.02	2	1	115
400380		10	<1	0.09	10	0.77	805	<1	0.04	2	590	11	0.01	<2	2	87
400381		10	<1	0.07	10	0.81	924	1	0.04	1	590	4	0.01	<2	2	115
400382		10	<1	0.08	10	1.14	1655	1	0.03	2	820	16	0.03	2	3	181
400383		10	<1	0.16	<10	0.69	1120	13	0.03	1	640	43	2.30	<2	2	203
400384		10	<1	0.10	<10	0.70	794	1	0.04	<1	730	17	0.32	<2	3	66
400385		10	<1	0.11	<10	0.77	1060	2	0.04	1	720	29	1.34	<2	2	107
400386		10	<1	0.12	<10	0.78	928	2	0.04	2	710	42	1.07	2	2	131
400387		10	<1	0.13	<10	0.73	863	7	0.03	1	690	12	2.16	3	1	104
400388		10	<1	0.13	<10	0.73	940	4	0.03	1	700	16	0.55	<2	2	133
400389		10	<1	0.20	<10	0.59	883	16	0.03	2	720	106	3.94	3	1	112
400391		20	<1	0.12	<10	2.15	2130	<1	0.04	22	1020	6	0.22	<2	12	123
400392		10	<1	0.16	<10	0.83	1390	2	0.02	3	900	9	2.82	<2	1	99
400393		10	<1	0.16	<10	0.78	1600	9	0.02	2	790	20	1.70	<2	1	142
400394		<10	<1	0.20	<10	0.14	171	1	0.01	4	750	75	7.47	<2	<1	332
400395		10	<1	0.21	<10	0.84	1700	3	0.02	2	840	24	4.42	3	1	89
400396		10	<1	0.21	<10	0.70	1135	5	0.02	4	850	88	4.14	<2	1	72
400397		10	<1	0.21	<10	0.89	1960	3	0.03	4	910	97	3.08	<2	1	53
400398		10	<1	0.19	<10	0.85	1790	7	0.03	2	900	24	2.25	<2	1	97
400399		10	<1	0.10	10	0.78	1305	3	0.04	1	570	25	0.11	<2	2	63
400400		10	<1	0.12	<10	0.75	960	3	0.03	1	690	17	0.64	<2	2	132
400401		10	<1	0.11	<10	0.88	1445	3	0.03	2	700	11	0.67	2	2	78

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Date : 11-Nov-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02005582

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
400375		0.02	<10	<10	40	<10	77
400376		0.01	<10	<10	54	<10	85
400377		0.01	<10	<10	38	<10	82
400378		0.07	<10	<10	31	<10	141
400379		0.07	<10	<10	33	<10	187
400380		0.06	<10	<10	31	<10	94
400381		0.05	<10	<10	37	<10	78
400382		0.06	<10	<10	48	<10	382
400383		0.01	<10	<10	34	<10	340
400384		0.03	<10	<10	57	<10	235
400385		0.04	<10	<10	43	<10	147
400386		0.02	<10	<10	47	<10	189
400387		0.03	<10	<10	36	<10	157
400388		0.05	<10	<10	43	<10	295
400389		0.02	<10	<10	27	<10	863
400391		0.14	<10	10	153	<10	504
400392		0.04	<10	<10	29	<10	200
400393		0.04	<10	<10	29	<10	286
400394		0.01	<10	10	6	<10	180
400395		0.03	<10	<10	23	<10	997
400396		0.03	<10	<10	23	<10	4630
400397		0.03	<10	<10	26	<10	1390
400398		0.04	<10	<10	23	<10	1220
400399		0.06	<10	<10	38	<10	488
400400		0.05	<10	<10	42	<10	350
400401		0.07	<10	<10	31	<10	467

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CERTIFICATE VA02005287

Project : Brenda

P.O. No:

This report is for 156 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 30-Oct-2002.

The following have access to data associated with this certificate:

MIKE HIBBITTS
CARL EDMUNDS

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
ME-ICP41	34 element aqua regia ICP-AES	ICP-AES
Cu-AA46	Ore grade Cu - aqua regia/AA	AAS

To: **KEMESS MINES LTD.**
ATTN: MIKE HIBBITTS
PO BOX 3519
SMITHERS BC V0J 2N0

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

ALS Chemex

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Date : 6-Nov-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02005287

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10.0	ME-ICP41 Ba ppm 10.0	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
400219		0.24	0.025	1.8	0.98	21	<10.0	40	0.6	<2	1.25	0.8	12	12	19	2.79
400220		0.26	<0.005	0.2	1.24	8	<10.0	50	<0.5	<2	0.90	1.7	9	24	42	1.42
400221		0.24	0.032	0.8	1.12	3	<10.0	50	<0.5	<2	1.10	0.9	10	9	8	2.71
400222		0.26	<0.005	0.2	1.40	4	<10.0	60	<0.5	<2	1.04	1.2	10	18	35	2.30
400223		0.26	0.006	0.5	1.31	4	<10.0	70	<0.5	<2	1.17	1.9	8	12	11	2.29
400224		0.24	0.005	1.8	1.09	6	<10.0	70	<0.5	2	0.92	5.9	6	28	33	2.44
400225		0.24	<0.005	0.4	1.45	5	<10.0	40	<0.5	<2	0.55	<0.5	9	7	4	3.01
400226		0.24	<0.005	0.5	1.79	4	<10.0	60	<0.5	<2	1.30	1.6	9	21	25	2.82
400227		0.26	<0.005	0.4	1.15	10	<10.0	120	<0.5	<2	0.94	1.5	8	18	37	1.88
400228		0.26	0.007	0.4	0.92	10	<10.0	90	<0.5	<2	0.90	1.2	7	22	34	2.05
400229		0.26	<0.005	0.4	0.65	3	<10.0	60	<0.5	<2	0.65	2.8	5	21	19	1.38
400230		0.26	<0.005	<0.2	0.95	2	<10.0	40	<0.5	<2	0.55	0.9	6	28	39	1.49
400231		0.26	<0.005	0.2	1.11	<2	<10.0	50	<0.5	<2	0.50	1.0	8	19	63	1.89
400232		0.24	<0.005	2.5	1.19	<2	<10.0	70	<0.5	3	0.55	6.7	7	24	262	2.67
400233		0.24	<0.005	0.4	1.34	<2	<10.0	60	<0.5	<2	0.82	1.9	8	16	62	2.33
400234		0.26	<0.005	<0.2	1.23	<2	<10.0	90	<0.5	<2	0.92	<0.5	9	21	18	2.20
400235		0.26	<0.005	0.3	1.80	<2	<10.0	100	<0.5	2	1.16	1.0	7	13	53	2.11
400236		0.26	<0.005	<0.2	1.09	<2	<10.0	50	<0.5	<2	0.77	<0.5	9	21	5	2.22
400237		0.26	0.005	<0.2	1.06	<2	<10.0	40	<0.5	<2	0.82	<0.5	8	14	13	2.29
400238		0.26	<0.005	<0.2	1.18	<2	<10.0	60	<0.5	<2	0.95	<0.5	8	21	4	2.28
400239		0.24	<0.005	0.3	1.05	2	<10.0	40	<0.5	<2	0.78	0.5	7	17	17	2.29
400240		0.24	0.007	0.4	0.63	<2	<10.0	70	<0.5	<2	0.52	<0.5	3	23	<1	1.20
400241		0.24	<0.005	0.3	1.30	<2	<10.0	70	<0.5	<2	0.90	1.1	7	15	46	1.99
400242		0.26	<0.005	0.8	1.48	<2	<10.0	100	<0.5	<2	1.66	2.4	8	24	152	2.13
400243		0.24	<0.005	0.5	1.09	2	<10.0	90	<0.5	<2	0.71	0.8	4	19	11	1.30
400244		0.06	0.963	<0.2	0.19	2	<10.0	<10.0	<0.5	<2	0.33	<0.5	1	1	<1	0.24
400246		0.24	0.005	1.1	1.50	4	<10.0	80	<0.5	2	1.01	5.8	7	21	131	2.09
400247		0.26	<0.005	<0.2	3.17	11	<10.0	50	1.1	<2	2.44	1.1	24	46	65	5.50
400248		0.26	<0.005	0.7	1.66	<2	<10.0	110	<0.5	<2	1.50	2.4	7	20	54	1.82
400249		0.24	<0.005	0.5	1.81	3	<10.0	60	<0.5	<2	1.27	3.8	8	9	66	1.89
400250		0.26	<0.005	0.5	1.47	<2	<10.0	90	<0.5	<2	0.79	4.6	8	18	142	2.12
400251		0.26	<0.005	0.7	1.51	<2	<10.0	70	<0.5	<2	0.99	4.4	8	12	70	2.18
400252		0.24	0.015	2.7	1.61	38	<10.0	30	<0.5	3	1.25	19.9	15	14	51	4.51
400253		0.26	<0.005	<0.2	0.71	<2	<10.0	90	<0.5	<2	0.82	0.8	1	19	19	0.41
400254		0.32	<0.005	0.5	1.96	<2	<10.0	120	<0.5	<2	1.65	1.7	3	22	25	0.90
400255		0.28	<0.005	1.7	1.94	3	<10.0	110	<0.5	<2	1.47	3.0	7	14	142	1.94
400256		0.24	<0.005	0.3	1.43	2	<10.0	40	0.5	<2	2.05	0.6	8	8	6	3.80
400257		0.24	0.008	0.4	1.07	4	<10.0	40	<0.5	<2	2.59	1.0	9	6	7	3.46
400258		0.26	<0.005	0.3	1.97	5	<10.0	40	<0.5	<2	2.39	1.1	9	9	13	3.75
400259		0.28	<0.005	0.3	1.21	6	<10.0	40	<0.5	<2	1.91	1.0	9	6	9	3.57

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Date : 6-Nov-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02005287

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10.0	ME-ICP41 Ba ppm 10.0	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
400260		0.24	<0.005	0.2	1.12	6	<10.0	50	<0.5	2	2.92	<0.5	9	12	7	3.41
400261		0.24	<0.005	<0.2	1.34	5	<10.0	50	<0.5	<2	2.14	0.6	9	8	10	3.63
400262		0.24	<0.005	0.3	1.32	4	<10.0	40	<0.5	<2	2.56	0.7	9	14	8	3.54
400263		0.24	<0.005	<0.2	1.11	7	<10.0	50	<0.5	<2	1.77	0.8	10	9	11	3.69
400264		0.24	<0.005	<0.2	1.30	3	<10.0	50	<0.5	<2	2.06	0.7	9	15	19	3.43
400265		0.26	<0.005	<0.2	1.61	6	<10.0	40	<0.5	<2	2.82	1.6	9	7	10	3.58
400266		0.24	<0.005	0.2	1.47	3	<10.0	50	<0.5	2	2.33	4.3	10	16	8	3.53
400267		0.24	<0.005	<0.2	1.40	2	<10.0	50	<0.5	<2	1.81	<0.5	9	9	5	3.63
400268		0.24	<0.005	<0.2	1.86	<2	<10.0	50	<0.5	<2	1.75	<0.5	7	13	3	2.78
400269		0.24	<0.005	<0.2	1.54	2	<10.0	30	<0.5	<2	1.58	0.9	8	9	5	3.00
400270		0.24	0.021	<0.2	2.11	<2	<10.0	600	<0.5	<2	2.21	<0.5	13	10	25	3.63
400271		0.28	<0.005	<0.2	1.89	<2	<10.0	120	<0.5	<2	2.21	<0.5	10	13	25	3.04
400272		0.26	<0.005	1.7	2.03	4	<10.0	70	<0.5	<2	2.08	2.3	10	13	86	2.80
400273		0.26	<0.005	0.6	1.56	<2	<10.0	70	<0.5	<2	1.99	2.3	9	8	20	2.77
400274		0.26	<0.005	0.4	1.81	<2	<10.0	90	<0.5	2	1.80	3.0	7	13	113	2.17
400275		0.26	<0.005	0.2	1.34	5	<10.0	70	<0.5	<2	1.26	<0.5	7	6	45	2.63
400276		0.30	<0.005	0.2	1.53	<2	<10.0	50	<0.5	<2	2.37	2.6	8	12	14	2.79
400277		0.26	<0.005	<0.2	1.60	<2	<10.0	50	<0.5	<2	1.03	<0.5	8	5	7	3.07
400278		0.28	0.006	0.2	0.84	10	<10.0	50	<0.5	<2	2.13	<0.5	8	13	2	3.53
400279		0.26	<0.005	0.7	1.39	<2	<10.0	70	<0.5	3	1.02	1.5	11	11	13	2.77
400280		0.26	<0.005	0.4	1.27	<2	<10.0	80	<0.5	<2	0.84	<0.5	8	20	73	2.17
400281		0.26	<0.005	0.2	1.27	<2	<10.0	80	<0.5	<2	0.80	<0.5	11	12	9	2.71
400282		0.24	<0.005	0.6	0.95	2	<10.0	80	<0.5	<2	0.78	<0.5	7	17	11	2.16
400283		0.26	<0.005	0.6	1.02	<2	<10.0	50	<0.5	<2	0.56	1.2	7	17	<1	1.79
400284		0.26	<0.005	0.7	1.29	2	<10.0	70	<0.5	<2	0.68	2.6	5	23	108	1.70
400285		0.26	<0.005	1.0	1.26	2	<10.0	70	<0.5	2	0.61	2.5	8	18	423	2.40
400286		0.26	0.006	1.6	1.25	2	<10.0	80	<0.5	<2	1.00	2.8	7	21	215	2.15
400287		0.26	<0.005	<0.2	3.10	2	<10.0	100	1.5	<2	2.70	1.0	16	15	93	4.87
400288		0.24	<0.005	0.5	1.42	<2	<10.0	80	<0.5	<2	1.12	2.9	7	19	58	1.87
400289		0.26	<0.005	<0.2	1.18	<2	<10.0	110	<0.5	<2	0.75	2.1	7	12	22	1.82
400290		0.26	<0.005	<0.2	1.36	<2	<10.0	100	<0.5	<2	1.22	0.7	7	17	19	2.28
400291		0.26	<0.005	<0.2	1.26	<2	<10.0	90	<0.5	<2	1.12	<0.5	7	13	16	1.96
400292		0.24	<0.005	<0.2	4.05	<2	<10.0	40	2.5	<2	4.28	1.5	25	33	94	6.88
400293		0.26	<0.005	<0.2	1.26	<2	<10.0	90	<0.5	<2	1.25	<0.5	7	13	21	2.11
400294		0.24	0.012	0.3	1.71	2	<10.0	40	0.5	<2	1.07	0.7	10	10	182	2.86
400295		0.26	0.018	0.5	1.73	3	<10.0	110	0.5	<2	1.08	4.6	8	9	144	2.59
400296		0.06	0.946	<0.2	0.21	<2	<10.0	<10.0	<0.5	<2	0.34	<0.5	<1	1	<1.00	0.26
400297		0.26	<0.005	0.2	2.14	3	<10.0	200	0.5	3	1.73	<0.5	5	14	16	2.21
400298		0.26	<0.005	<0.2	1.33	<2	<10.0	770	<0.5	<2	1.76	<0.5	4	11	10	1.80
400299		0.28	<0.005	<0.2	1.61	3	<10.0	720	<0.5	<2	1.59	<0.5	4	14	10	1.94

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Date : 6-Nov-2002
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CERTIFICATE OF ANALYSIS VA02005287

Sample Description	Method	WEI-21	Au-AA23	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOR	0.02	0.005	0.2	0.01	2	10.0	10.0	0.5	2	0.01	0.5	1	1	1	0.01
400300		0.26	<0.005	0.5	2.34	2	<10.0	340	0.7	4	1.61	5.8	5	36	72	2.22
400301		0.26	<0.005	0.3	2.31	2	<10.0	210	0.7	<2	1.91	2.1	5	21	75	2.37
400302		0.26	<0.005	0.7	1.55	<2	<10.0	300	<0.5	<2	1.60	6.9	6	31	258	2.48
400303		0.24	<0.005	<0.2	1.45	<2	<10.0	170	<0.5	<2	1.55	1.7	7	28	30	2.20
400304		0.24	<0.005	<0.2	1.33	<2	<10.0	110	<0.5	<2	1.16	1.4	8	36	33	2.18
400305		0.26	<0.005	0.4	1.78	<2	<10.0	20	0.5	<2	1.99	2.7	10	17	29	2.63
400306		0.24	<0.005	<0.2	1.19	<2	<10.0	80	<0.5	<2	1.09	0.7	8	35	13	2.32
400307		0.24	<0.005	0.2	1.40	<2	<10.0	110	<0.5	<2	1.34	<0.5	8	29	11	2.30
400308		0.32	<0.005	<0.2	1.60	<2	<10.0	150	0.5	<2	1.62	<0.5	7	30	2	2.24
400309		0.24	<0.005	0.2	1.35	<2	<10.0	60	<0.5	<2	1.06	2.0	6	38	3	2.03
400310		0.26	<0.005	<0.2	1.34	2	<10.0	170	<0.5	<2	1.06	1.2	5	39	9	1.93
400311		0.26	<0.005	0.3	1.37	<2	<10.0	330	<0.5	<2	1.30	3.5	5	43	15	1.86
400312		0.26	<0.005	0.3	1.83	2	<10.0	170	0.5	<2	1.83	<0.5	5	37	7	1.67
400313		0.24	<0.005	0.3	1.73	2	<10.0	210	<0.5	<2	1.29	0.6	6	37	25	2.14
400314		0.24	<0.005	<0.2	1.40	<2	<10.0	200	<0.5	<2	1.35	0.9	7	35	59	2.35
400315		0.24	0.005	<0.2	1.45	<2	<10.0	200	<0.5	<2	1.28	<0.5	6	30	9	2.40
400316		0.26	<0.005	0.4	1.38	<2	<10.0	230	<0.5	<2	1.22	<0.5	7	28	20	2.73
400317		0.26	<0.005	0.2	1.60	<2	<10.0	80	<0.5	<2	1.12	<0.5	6	28	74	2.26
400318		0.26	0.070	2.4	1.45	9	<10.0	40	<0.5	4	0.96	0.8	9	33	517	4.68
400319		0.24	<0.005	<0.2	4.03	3	<10.0	70	0.8	<2	3.13	0.7	23	11	75	5.41
400320		0.26	0.068	0.9	1.20	7	<10.0	60	<0.5	2	0.93	4.1	11	36	169	3.83
400321		0.26	0.060	0.9	0.79	6	<10.0	40	<0.5	5	0.53	12.1	10	33	117	4.17
400322		0.26	<0.005	0.2	1.47	<2	<10.0	130	0.5	<2	1.40	<0.5	8	30	10	2.37
400323		0.32	0.041	0.6	1.04	4	<10.0	50	<0.5	<2	0.65	<0.5	8	41	228	3.56
400324		0.26	0.088	1.4	0.88	14	<10.0	30	<0.5	<2	0.51	4.6	11	37	175	4.33
400325		0.28	0.013	0.6	1.42	<2	<10.0	130	<0.5	<2	0.67	0.8	7	32	268	4.07
400326		0.26	0.017	0.7	1.39	5	<10.0	70	<0.5	<2	0.97	<0.5	10	35	178	4.16
400327		0.24	0.019	0.2	1.26	5	<10.0	70	<0.5	3	0.99	<0.5	12	33	96	3.82
400328		0.34	0.021	0.2	1.26	2	<10.0	60	<0.5	<2	0.66	2.2	8	28	95	3.83
400329		0.26	0.019	0.2	1.18	<2	<10.0	60	<0.5	2	0.57	<0.5	7	29	239	4.20
400330		0.26	0.015	0.4	1.19	3	<10.0	60	<0.5	<2	0.99	<0.5	9	30	140	3.86
400331		0.32	<0.005	<0.2	4.42	6	<10.0	50	0.9	<2	3.68	0.8	20	21	57	5.10
400332		0.30	<0.005	<0.2	2.49	3	<10.0	70	0.7	<2	4.75	0.6	14	5	15	4.63
400333		0.26	0.007	0.5	1.50	2	<10.0	120	<0.5	<2	0.97	0.8	8	26	100	2.76
400334		0.26	<0.005	0.6	1.52	<2	<10.0	70	<0.5	<2	1.05	0.8	8	23	314	3.07
400335		0.26	<0.005	0.4	1.50	<2	<10.0	120	<0.5	3	1.06	<0.5	7	27	98	2.64
400336		0.26	<0.005	0.4	1.74	3	<10.0	70	0.7	<2	1.55	<0.5	6	15	257	3.42
400337		0.34	<0.005	0.7	1.56	<2	<10.0	250	<0.5	2	1.03	<0.5	6	21	324	2.92
400338		0.26	<0.005	0.3	1.74	<2	<10.0	200	0.5	<2	1.41	0.6	6	16	66	2.78
400339		0.26	<0.005	0.3	1.33	2	<10.0	60	0.5	<2	1.31	<0.5	6	30	86	3.14

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Sample Description	Method	WEI-21	Au-AA23	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOR	0.02	0.005	0.2	0.01	2	10.0	10.0	0.5	2	0.01	0.5	1	1	1	0.01
400340		0.26	<0.005	0.4	1.30	<2	<10.0	50	<0.5	<2	0.85	0.9	7	16	25	2.19
400341		0.34	<0.005	0.3	1.80	<2	<10.0	90	<0.5	<2	1.18	<0.5	7	14	23	2.12
400342		0.26	<0.005	<0.2	3.70	3	<10.0	100	0.8	5	6.18	1.2	23	1	47	6.60
400343		0.24	<0.005	0.2	1.48	<2	<10.0	40	<0.5	<2	1.34	<0.5	7	17	<1.00	2.19
400344		0.26	<0.005	0.5	1.66	<2	<10.0	70	<0.5	<2	1.35	0.5	8	13	124	2.47
400345		0.26	<0.005	<0.2	3.17	2	<10.0	70	0.8	<2	5.96	0.9	20	3	46	5.30
400346		0.26	<0.005	0.2	1.45	<2	<10.0	40	<0.5	<2	1.48	<0.5	8	16	27	2.12
400347		0.26	<0.005	0.2	1.53	<2	<10.0	50	<0.5	<2	1.51	<0.5	8	11	7	2.58
400348		0.06	1.005	<0.2	0.21	<2	<10.0	<10.0	<0.5	<2	0.34	<0.5	<1	1	<1.00	0.25
400349		0.26	0.022	0.5	1.21	5	<10.0	60	<0.5	<2	0.93	<0.5	12	19	77	4.59
400350		0.24	0.018	0.7	1.19	2	<10.0	60	<0.5	<2	0.89	<0.5	6	17	273	3.88
400351		0.26	0.009	0.5	1.26	5	<10.0	100	<0.5	2	1.61	0.5	8	21	122	3.57
400352		0.20	1.300	11.5	0.39	5	<10.0	20	<0.5	8	0.50	2.3	8	24	>10000	5.35
400353		0.28	0.308	6.0	0.26	2	<10.0	40	<0.5	5	0.51	0.8	4	27	5970	3.38
400354		0.24	0.137	3.9	0.33	<2	<10.0	50	<0.5	4	0.94	0.9	6	28	2670	3.08
400355		0.26	0.155	5.9	0.19	5	<10.0	30	<0.5	4	3.54	1.7	6	24	2550	3.87
400356		0.30	0.095	1.5	0.87	2	<10.0	50	<0.5	2	2.64	<0.5	9	20	316	3.72
400357		0.28	0.058	0.7	1.01	<2	<10.0	60	<0.5	<2	1.87	0.8	5	29	229	4.47
400358		0.24	0.101	1.0	0.81	3	<10.0	40	<0.5	<2	3.40	1.7	7	16	302	3.27
400359		0.26	0.084	1.5	0.29	6	<10.0	30	<0.5	2	3.85	5.3	7	24	319	3.51
400360		0.26	0.071	0.9	0.20	4	<10.0	20	<0.5	<2	3.03	1.3	5	28	74	3.51
400361		0.24	0.145	1.0	0.29	6	<10.0	30	<0.5	5	3.23	2.9	6	30	242	4.15
400362		0.26	0.054	1.1	0.99	2	<10.0	40	<0.5	<2	1.51	3.0	7	26	209	5.12
400363		0.24	0.031	0.3	0.87	3	<10.0	40	<0.5	2	1.67	1.2	13	32	71	5.08
400364		0.22	0.028	0.9	1.13	5	<10.0	40	<0.5	<2	1.28	2.0	11	29	157	4.96
400365		0.26	0.011	0.6	1.14	<2	<10.0	40	<0.5	<2	1.13	<0.5	11	31	159	5.04
400366		0.24	0.009	0.6	1.08	<2	<10.0	50	<0.5	<2	1.27	<0.5	9	28	115	4.91
400367		0.26	0.005	0.3	1.18	<2	<10.0	130	<0.5	<2	1.39	<0.5	8	30	51	3.51
400368		0.24	<0.005	0.4	1.54	<2	<10.0	110	<0.5	<2	1.05	<0.5	7	24	28	2.16
400369		0.24	<0.005	0.2	1.68	<2	<10.0	150	0.5	<2	1.40	<0.5	6	27	25	1.90
400370		0.26	<0.005	0.3	1.25	<2	<10.0	180	<0.5	<2	1.23	0.8	6	24	<1.00	1.80
400371		0.26	<0.005	0.2	1.61	2	<10.0	600	0.5	3	1.72	0.5	6	25	2	1.72
400372		0.26	<0.005	0.3	1.62	2	<10.0	470	<0.5	<2	1.42	<0.5	6	19	12	1.89
400373		0.26	0.007	0.4	1.42	<2	<10.0	100	<0.5	<2	1.02	<0.5	13	23	109	5.10
400374		0.26	0.083	0.6	0.23	6	<10.0	30	<0.5	<2	3.03	0.9	5	30	83	3.43
400390		0.24	0.074	1.7	0.23	6	<10.0	30	<0.5	5	4.07	5.7	9	30	345	5.17

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Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOR	10	1	0.01	10	0.01	5	1	0.01	1.000	10	2	0.01	2	1	1.00
400219		10	<1	0.23	10	0.45	556	13	0.02	2	830	38	3.10	<2	1	42
400220		20	<1	0.13	10	0.76	935	1	0.03	2	740	28	0.71	<2	1	62
400221		10	<1	0.21	10	0.42	478	9	0.02	2	700	27	2.95	<2	1	47
400222		20	<1	0.07	10	0.94	1090	2	0.04	2	980	57	0.96	<2	1	97
400223		10	1	0.15	10	0.71	804	11	0.03	2	840	181	2.24	<2	1	63
400224		10	<1	0.12	10	0.49	715	25	0.03	2	470	520	2.41	<2	1	53
400225		30	<1	0.18	10	0.94	1710	5	0.04	2	820	33	1.32	<2	1	27
400226		20	<1	0.07	10	0.78	990	5	0.04	2	710	140	2.35	<2	2	92
400227		20	<1	0.07	10	0.74	953	2	0.03	2	680	46	1.28	<2	1	77
400228		20	<1	0.14	10	0.60	953	13	0.03	2	700	34	1.43	<2	1	64
400229		10	<1	0.11	10	0.41	662	21	0.03	1	370	57	0.90	<2	1	43
400230		10	1	0.08	10	0.69	780	3	0.04	2	500	30	0.43	<2	1	53
400231		10	<1	0.05	10	0.86	974	3	0.04	2	580	25	0.48	<2	1	62
400232		20	<1	0.11	10	0.72	935	14	0.03	2	560	644	2.08	<2	1	55
400233		20	<1	0.06	10	0.90	963	5	0.04	2	650	171	0.77	<2	2	70
400234		10	<1	0.07	10	0.90	725	2	0.04	2	690	16	0.32	<2	2	89
400235		20	<1	0.06	10	0.85	1040	3	0.04	2	650	36	0.72	<2	2	127
400236		10	<1	0.07	10	0.87	642	2	0.04	2	650	17	0.74	<2	2	57
400237		10	<1	0.06	10	0.85	672	2	0.04	2	640	25	1.20	<2	2	51
400238		10	<1	0.07	10	0.84	591	2	0.05	2	630	11	0.78	<2	2	61
400239		10	<1	0.07	10	0.82	840	2	0.04	2	630	75	1.30	<2	2	48
400240		<10	<1	0.13	10	0.19	258	3	0.04	1	180	23	1.26	<2	1	60
400241		20	<1	0.06	10	0.91	1175	2	0.03	2	620	46	0.89	<2	2	75
400242		20	<1	0.07	10	0.83	1300	7	0.03	2	580	59	1.50	<2	2	155
400243		10	<1	0.10	10	0.45	656	6	0.03	1	380	68	0.85	<2	1	64
400244		<10	<1	0.02	<10	0.05	29	<1	0.12	2	660	4	<0.01	<2	<1	5
400246		20	<1	0.07	10	0.86	1400	4	0.03	2	650	193	1.13	<2	1	87
400247		40	<1	0.07	10	2.64	1925	<1	0.04	32	1270	53	0.26	2	12	107
400248		20	<1	0.06	10	0.82	1105	3	0.03	2	640	96	0.78	<2	1	123
400249		20	<1	0.06	10	0.80	1035	3	0.03	2	640	161	1.03	<2	2	150
400250		20	<1	0.07	10	0.89	1310	3	0.04	2	680	60	1.11	<2	2	106
400251		20	<1	0.07	10	0.88	1305	4	0.03	2	740	89	1.46	<2	2	110
400252		20	<1	0.13	10	0.92	961	19	0.03	7	1040	874	4.56	<2	2	75
400253		<10	<1	0.08	10	0.06	173	2	0.03	<1.00	30	30	0.52	<2	<1	89
400254		10	<1	0.10	10	0.25	516	3	0.03	<1.00	230	142	0.72	<2	1	179
400255		10	1	0.10	10	0.44	676	17	0.04	1	410	167	1.61	<2	1	546
400256		10	<1	0.20	10	0.72	823	2	0.03	1	860	20	4.46	<2	1	171
400257		10	<1	0.19	10	0.51	735	4	0.03	2	950	24	4.67	<2	1	186
400258		10	<1	0.13	10	0.55	670	8	0.06	2	900	49	4.68	<2	2	214
400259		10	<1	0.14	10	0.64	693	8	0.05	2	920	25	4.41	<2	2	160

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Sample Description	Method Analyte Units LOR	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1.000	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1.00
400260		10	<1	0.17	10	0.67	653	15	0.04	2	890	16	5.00	<2	2	172
400261		20	<1	0.14	10	0.74	1015	6	0.08	1	920	15	4.69	<2	2	161
400262		10	<1	0.13	10	0.65	796	19	0.07	2	910	16	4.57	<2	2	178
400263		10	1	0.14	10	0.44	709	24	0.07	1	910	14	4.33	<2	2	130
400264		10	<1	0.12	10	0.68	794	7	0.06	2	950	10	3.92	<2	2	115
400265		10	<1	0.10	10	0.71	800	3	0.06	1	910	10	4.52	<2	2	215
400266		10	<1	0.10	10	0.75	565	4	0.09	2	910	10	4.25	<2	2	205
400267		10	1	0.13	10	0.75	615	1	0.07	1	940	7	4.04	<2	2	148
400268		20	<1	0.11	10	1.09	999	<1	0.07	2	960	9	2.19	<2	2	146
400269		10	<1	0.10	10	0.91	583	2	0.06	2	980	23	2.85	<2	2	88
400270		10	<1	0.11	10	1.31	754	1	0.14	4	470	10	0.03	2	9	220
400271		20	<1	0.08	10	1.19	738	2	0.04	4	630	3	0.52	<2	4	93
400272		20	<1	0.12	10	0.92	1160	2	0.04	3	640	182	1.91	<2	3	114
400273		10	<1	0.10	10	0.81	744	1	0.04	2	900	28	3.03	<2	1	205
400274		10	<1	0.07	10	0.91	676	1	0.05	1	900	13	1.75	<2	2	132
400275		10	<1	0.21	10	0.56	460	2	0.03	1	790	14	2.49	<2	1	116
400276		10	<1	0.07	10	0.79	671	3	0.04	1	910	20	3.35	<2	1	133
400277		10	<1	0.15	10	0.81	799	1	0.05	1	980	9	2.20	<2	1	116
400278		10	<1	0.27	10	0.29	226	9	0.02	1	1120	21	4.97	<2	1	203
400279		10	<1	0.10	10	0.81	635	3	0.04	<1.00	1020	22	2.32	<2	1	110
400280		10	<1	0.06	10	0.84	646	3	0.04	1	960	9	1.41	<2	1	87
400281		10	<1	0.08	10	0.93	734	3	0.03	1	980	10	1.98	<2	1	71
400282		10	<1	0.20	10	0.59	474	8	0.03	2	700	9	2.00	<2	1	110
400283		10	<1	0.10	10	0.62	394	2	0.04	2	550	17	1.31	<2	1	58
400284		10	<1	0.10	10	0.70	598	3	0.04	2	550	20	0.92	<2	1	76
400285		10	<1	0.08	10	0.89	666	3	0.04	2	680	10	1.26	<2	2	61
400286		10	<1	0.06	10	0.87	721	1	0.04	2	690	10	1.16	<2	2	80
400287		40	<1	0.04	10	1.99	1780	1	0.04	7	1300	6	0.50	2	14	106
400288		10	<1	0.06	10	0.80	749	2	0.04	2	630	21	0.71	<2	2	130
400289		10	<1	0.05	10	0.86	647	2	0.03	2	620	10	0.17	<2	2	102
400290		10	<1	0.07	10	0.88	799	2	0.04	2	690	10	0.05	<2	2	95
400291		10	<1	0.06	10	0.83	834	2	0.04	2	650	14	0.17	<2	2	102
400292		40	<1	0.07	10	2.86	2220	<1	0.03	29	1030	9	0.04	2	23	78
400293		10	<1	0.06	10	0.87	844	2	0.04	2	660	10	0.09	<2	2	100
400294		20	<1	0.16	10	0.81	916	29	0.04	2	780	41	1.51	<2	2	99
400295		20	<1	0.19	10	0.72	846	41	0.03	1	840	23	1.51	<2	1	105
400296		<10	<1	0.02	<10	0.05	31	<1	0.13	2	710	5	<0.01	<2	1	5
400297		10	<1	0.09	<10	0.84	867	2	0.05	1	770	7	0.03	<2	2	151
400298		10	<1	0.21	10	0.72	853	2	0.03	<1.00	740	7	0.07	<2	2	93
400299		10	<1	0.15	10	0.73	849	2	0.04	<1.00	760	8	0.04	<2	2	137

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Date : 6-Nov-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02005287

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOR	10	1	0.01	10	0.01	5	1	0.01	1.000	10	2	0.01	2	1	1.00
400300		20	1	0.18	<10	0.85	1135	3	0.05	2	860	12	0.19	<2	2	201
400301		20	<1	0.13	<10	0.85	1150	5	0.05	1	860	28	0.05	<2	2	187
400302		10	1	0.16	<10	0.75	1105	4	0.05	2	770	72	0.12	<2	2	93
400303		10	<1	0.15	10	0.84	1080	3	0.05	3	730	72	0.04	<2	2	90
400304		10	<1	0.14	10	0.83	1005	3	0.05	3	700	106	0.06	<2	2	85
400305		20	1	0.15	10	1.16	1480	3	0.04	1	1520	254	0.13	<2	3	142
400306		10	<1	0.10	10	0.84	742	2	0.06	3	690	27	0.02	<2	3	70
400307		10	<1	0.10	<10	0.84	819	2	0.06	3	720	36	0.01	<2	3	93
400308		10	<1	0.13	10	0.99	946	1	0.06	2	970	20	0.01	<2	2	122
400309		10	<1	0.12	<10	0.85	900	1	0.06	2	740	10	0.03	<2	2	69
400310		10	<1	0.12	10	0.76	927	1	0.06	1	710	6	0.06	<2	1	74
400311		10	<1	0.14	10	0.77	1020	1	0.05	2	720	115	0.15	<2	2	85
400312		10	<1	0.17	<10	0.70	994	2	0.05	1	700	6	0.10	<2	2	127
400313		10	<1	0.14	<10	0.83	1000	2	0.06	2	780	12	0.07	<2	2	101
400314		10	<1	0.13	10	0.81	1000	2	0.07	1	770	13	0.05	<2	2	89
400315		10	<1	0.14	10	0.90	1085	3	0.06	2	840	10	0.04	<2	2	85
400316		10	<1	0.12	<10	0.94	1130	3	0.07	1	930	9	0.04	<2	2	96
400317		10	1	0.12	<10	0.96	1135	2	0.06	1	920	8	0.16	2	2	106
400318		10	<1	0.31	<10	0.68	678	11	0.03	3	780	24	3.57	<2	2	256
400319		20	1	0.07	<10	2.03	1220	2	0.11	22	1100	6	0.06	<2	8	221
400320		10	<1	0.32	<10	0.40	388	7	0.03	3	780	18	3.46	<2	2	183
400321		<10	<1	0.29	<10	0.27	277	3	0.02	3	750	52	4.15	<2	1	48
400322		10	<1	0.11	10	0.87	833	2	0.06	3	720	29	0.02	<2	3	99
400323		10	<1	0.27	<10	0.63	664	4	0.03	2	770	14	2.82	<2	1	117
400324		10	<1	0.32	<10	0.38	469	5	0.02	3	770	34	4.32	<2	1	111
400325		10	1	0.18	<10	0.88	1000	4	0.04	2	770	10	0.85	<2	1	89
400326		10	<1	0.16	<10	0.89	959	4	0.04	2	780	11	1.68	<2	1	80
400327		10	<1	0.18	<10	0.79	840	5	0.04	2	760	7	1.72	<2	1	115
400328		10	<1	0.21	<10	0.74	778	4	0.05	2	750	9	1.64	<2	2	63
400329		10	<1	0.16	<10	0.85	892	3	0.05	2	780	5	0.70	<2	2	43
400330		10	1	0.19	<10	0.76	835	3	0.05	2	770	12	1.12	<2	2	101
400331		30	<1	0.07	10	2.35	1145	3	0.11	34	1260	9	0.14	<2	10	262
400332		20	<1	0.29	10	1.51	1505	1	0.04	4	1680	8	0.03	<2	6	112
400333		10	<1	0.24	10	0.88	921	3	0.05	2	780	100	0.64	<2	3	113
400334		10	<1	0.13	10	0.98	1005	2	0.06	2	790	30	0.05	2	3	87
400335		10	<1	0.10	10	0.91	870	2	0.06	2	800	8	0.02	<2	3	107
400336		20	<1	0.11	10	0.98	994	2	0.07	2	990	6	0.04	<2	5	114
400337		10	<1	0.09	10	0.98	885	2	0.06	2	950	8	0.06	<2	3	127
400338		20	<1	0.09	10	0.94	974	2	0.07	2	900	57	0.03	<2	4	218
400339		10	<1	0.11	10	0.71	856	2	0.08	2	940	5	0.02	<2	4	89

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Project : Brenda

CERTIFICATE OF ANALYSIS VA02005287

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1.000	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1.00
400340		10	<1	0.07	<10	0.87	964	3	0.04	2	710	44	0.07	<2	2	100
400341		10	<1	0.10	<10	0.86	973	3	0.04	2	720	7	0.01	<2	2	151
400342		20	1	0.24	10	1.95	1720	2	0.18	4	1140	8	0.02	<2	16	390
400343		10	1	0.10	10	0.92	969	3	0.04	2	660	19	0.01	<2	2	112
400344		10	<1	0.10	<10	0.97	1040	3	0.04	2	690	12	0.10	<2	2	127
400345		20	<1	0.23	10	1.63	1465	2	0.14	4	990	9	0.07	3	11	412
400346		10	<1	0.09	<10	0.94	996	2	0.04	2	760	13	0.02	<2	2	118
400347		10	<1	0.09	10	0.94	887	3	0.05	2	780	6	0.05	<2	3	88
400348		<10	<1	0.02	<10	0.05	31	<1	0.13	<1.00	680	3	<0.01	<2	1	5
400349		10	<1	0.15	<10	0.74	772	3	0.03	2	710	12	2.11	<2	2	59
400350		10	<1	0.10	<10	0.79	1015	3	0.04	2	750	6	0.55	2	2	71
400351		10	<1	0.13	<10	0.75	1035	3	0.03	2	770	20	1.14	<2	3	269
400352		<10	<1	0.21	<10	0.11	158	3	0.01	2	470	27	5.78	<2	1	83
400353		<10	<1	0.20	<10	0.02	72	3	0.01	1	380	17	3.94	<2	<1	129
400354		<10	<1	0.20	<10	0.07	211	2	0.01	2	560	16	3.42	<2	1	131
400355		<10	<1	0.16	<10	0.01	19	3	0.01	2	490	22	7.46	<2	<1	459
400356		10	<1	0.20	<10	0.50	811	3	0.01	2	570	11	3.61	<2	1	289
400357		10	<1	0.16	<10	0.67	897	2	0.02	2	670	6	1.94	<2	1	141
400358		10	<1	0.19	<10	0.43	637	2	0.02	2	600	99	4.68	2	1	284
400359		<10	<1	0.19	<10	0.08	99	3	0.01	2	530	191	7.24	<2	<1	424
400360		<10	<1	0.17	<10	0.01	20	3	0.01	1	310	52	6.65	<2	<1	339
400361		<10	<1	0.16	<10	0.11	92	2	0.01	2	430	16	7.39	<2	<1	404
400362		10	<1	0.14	<10	0.71	691	3	0.03	2	670	20	2.00	<2	2	108
400363		10	<1	0.13	<10	0.62	633	4	0.03	3	670	46	4.93	<2	1	133
400364		10	<1	0.13	<10	0.77	942	4	0.03	2	720	10	2.54	<2	1	110
400365		10	<1	0.09	<10	0.76	1085	3	0.03	2	690	10	1.26	<2	2	96
400366		10	<1	0.10	<10	0.74	979	3	0.03	3	720	12	0.84	<2	2	85
400367		10	<1	0.10	<10	0.72	1090	3	0.03	2	720	49	0.61	<2	2	158
400368		10	<1	0.11	10	0.92	1235	1	0.04	2	720	11	0.01	<2	2	114
400369		10	1	0.10	10	0.76	1000	1	0.05	2	630	7	0.01	<2	2	142
400370		10	<1	0.09	10	0.73	963	1	0.05	2	620	41	0.01	<2	2	154
400371		10	<1	0.15	20	0.73	1225	1	0.04	2	620	16	0.02	2	2	172
400372		10	1	0.12	10	0.83	1235	3	0.04	2	710	19	0.06	<2	2	175
400373		20	<1	0.13	<10	0.75	1360	5	0.04	2	680	7	1.12	2	2	110
400374		<10	<1	0.18	<10	0.01	20	3	0.01	1	310	45	6.46	<2	<1	331
400390		<10	<1	0.17	<10	0.02	33	3	0.01	3	460	103	9.31	<2	<1	524

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CERTIFICATE OF ANALYSIS VA02005287

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Tl % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10.0	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Cu-AA46 Cu % 0.01
400219		0.04	<10	<10.0	12	<10	97	
400220		0.06	<10	<10.0	15	<10	176	
400221		0.05	<10	<10.0	12	<10	89	
400222		0.09	<10	<10.0	35	<10	197	
400223		0.05	<10	<10.0	15	<10	218	
400224		0.05	<10	<10.0	20	<10	742	
400225		0.04	<10	<10.0	20	<10	210	
400226		0.07	<10	<10.0	31	<10	267	
400227		0.04	<10	<10.0	21	<10	210	
400228		0.05	<10	<10.0	17	<10	193	
400229		0.04	<10	<10.0	12	<10	324	
400230		0.06	<10	<10.0	23	<10	138	
400231		0.07	<10	<10.0	32	<10	186	
400232		0.06	<10	<10.0	30	<10	825	
400233		0.07	<10	<10.0	38	<10	302	
400234		0.08	<10	<10.0	44	<10	90	
400235		0.06	<10	<10.0	33	<10	184	
400236		0.06	<10	<10.0	38	<10	89	
400237		0.06	<10	<10.0	40	<10	95	
400238		0.06	<10	<10.0	43	<10	73	
400239		0.06	<10	<10.0	40	<10	134	
400240		0.02	<10	<10.0	9	<10	31	
400241		0.05	<10	<10.0	34	<10	194	
400242		0.04	<10	<10.0	30	<10	333	
400243		0.03	<10	<10.0	15	<10	176	
400244		<0.01	<10	<10.0	1	<10	6	
400246		0.06	<10	<10.0	30	<10	755	
400247		0.27	<10	20	164	<10	148	
400248		0.06	<10	<10.0	29	<10	357	
400249		0.07	<10	<10.0	29	<10	512	
400250		0.08	<10	<10.0	29	<10	603	
400251		0.07	<10	<10.0	30	<10	585	
400252		0.05	<10	<10.0	39	<10	1640	
400253		<0.01	<10	<10.0	2	<10	104	
400254		0.02	<10	<10.0	9	<10	237	
400255		0.04	<10	<10.0	20	<10	387	
400256		0.02	<10	<10.0	16	<10	109	
400257		0.04	<10	<10.0	18	<10	91	
400258		0.07	<10	<10.0	28	<10	124	
400259		0.05	<10	<10.0	23	<10	133	

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Sample Description	Method Analyte Units LOR	ME-ICP41 Tl % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10.0	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Cu-AA46 Cu % 0.01
400260		0.05	<10	<10.0	21	<10	76	
400261		0.06	<10	<10.0	30	<10	84	
400262		0.05	<10	<10.0	30	<10	88	
400263		0.07	<10	<10.0	29	<10	68	
400264		0.07	<10	<10.0	35	<10	89	
400265		0.06	<10	<10.0	36	<10	200	
400266		0.05	<10	<10.0	38	<10	400	
400267		0.05	<10	<10.0	31	<10	61	
400268		0.07	<10	<10.0	33	<10	98	
400269		0.06	<10	<10.0	31	<10	137	
400270		0.06	<10	<10.0	111	<10	81	
400271		0.07	<10	<10.0	83	<10	49	
400272		0.07	<10	<10.0	45	<10	249	
400273		0.06	<10	<10.0	22	<10	277	
400274		0.07	<10	<10.0	35	<10	325	
400275		0.03	<10	<10.0	19	<10	68	
400276		0.06	<10	<10.0	22	<10	262	
400277		0.06	<10	<10.0	25	<10	73	
400278		0.02	<10	<10.0	12	<10	49	
400279		0.07	<10	<10.0	26	<10	205	
400280		0.07	<10	<10.0	26	<10	103	
400281		0.06	<10	<10.0	26	<10	96	
400282		0.04	<10	<10.0	16	<10	48	
400283		0.05	<10	<10.0	21	<10	161	
400284		0.06	<10	<10.0	22	<10	274	
400285		0.07	<10	<10.0	34	<10	277	
400286		0.09	<10	<10.0	34	<10	289	
400287		0.31	<10	60	153	<10	195	
400288		0.08	<10	<10.0	31	<10	286	
400289		0.08	<10	<10.0	36	<10	243	
400290		0.09	<10	<10.0	52	<10	140	
400291		0.08	<10	<10.0	42	<10	111	
400292		0.36	<10	80	259	<10	217	
400293		0.09	<10	<10.0	48	<10	86	
400294		0.08	<10	<10.0	33	<10	188	
400295		0.06	<10	<10.0	23	<10	540	
400296		<0.01	<10	<10	1	<10	8	
400297		0.08	<10	<10	42	<10	98	
400298		0.04	<10	<10	23	<10	99	
400299		0.07	<10	<10	31	<10	95	

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Date : 6-Nov-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02005287

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10.0	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Cu-AA46 Cu % 0.01
400300		0.10	<10	<10	31	<10	577	
400301		0.10	<10	<10	36	<10	314	
400302		0.07	<10	<10	41	<10	810	
400303		0.08	<10	<10	42	<10	246	
400304		0.11	<10	<10	44	<10	207	
400305		0.11	<10	<10	44	<10	418	
400306		0.12	<10	<10	53	<10	122	
400307		0.12	<10	<10	55	<10	79	
400308		0.10	<10	<10	40	<10	113	
400309		0.09	<10	<10	30	<10	260	
400310		0.08	<10	<10	28	<10	201	
400311		0.07	<10	<10	23	<10	412	
400312		0.06	<10	<10	23	<10	93	
400313		0.08	<10	<10	32	<10	148	
400314		0.10	<10	<10	42	<10	175	
400315		0.08	<10	<10	41	<10	100	
400316		0.10	<10	<10	48	<10	126	
400317		0.09	<10	<10	30	<10	113	
400318		0.04	<10	<10	28	<10	117	
400319		0.32	<10	<10	188	<10	79	
400320		0.03	<10	<10	22	<10	475	
400321		0.01	<10	<10	12	<10	1260	
400322		0.12	<10	<10	57	<10	80	
400323		0.02	<10	<10	23	<10	81	
400324		<0.01	<10	<10	12	<10	497	
400325		0.05	<10	<10	47	<10	140	
400326		0.05	<10	<10	41	<10	83	
400327		0.04	<10	<10	36	<10	71	
400328		0.05	<10	<10	45	<10	268	
400329		0.06	<10	<10	62	<10	81	
400330		0.05	<10	<10	50	<10	79	
400331		0.30	<10	<10	158	<10	87	
400332		0.12	<10	<10	97	<10	144	
400333		0.01	<10	<10	35	<10	122	
400334		0.10	<10	<10	66	<10	156	
400335		0.09	<10	<10	52	<10	104	
400336		0.13	<10	<10	71	<10	91	
400337		0.10	<10	<10	57	<10	108	
400338		0.08	<10	<10	58	<10	155	
400339		0.14	<10	<10	75	<10	63	

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Project : Brenda

CERTIFICATE OF ANALYSIS VA02005287

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10.0	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Cu-AA46 Cu % 0.01
400340		0.08	<10	<10	39	<10	191	
400341		0.08	<10	<10	39	<10	102	
400342		0.20	<10	<10	190	<10	99	
400343		0.10	<10	<10	40	<10	121	
400344		0.10	<10	<10	45	<10	147	
400345		0.11	<10	<10	128	<10	98	
400346		0.09	<10	<10	41	<10	137	
400347		0.06	<10	<10	55	<10	92	
400348		<0.01	<10	<10	1	<10	5	
400349		0.01	<10	<10	44	<10	83	
400350		0.03	<10	<10	52	<10	124	
400351		0.02	<10	<10	44	<10	118	
400352		<0.01	<10	<10	5	<10	219	1.22
400353		<0.01	<10	<10	2	<10	73	
400354		<0.01	<10	<10	5	<10	83	
400355		<0.01	<10	<10	2	<10	173	
400356		0.01	<10	<10	25	<10	79	
400357		0.02	<10	<10	42	<10	116	
400358		<0.01	<10	<10	19	<10	216	
400359		<0.01	<10	<10	4	<10	575	
400360		<0.01	<10	<10	2	<10	105	
400361		<0.01	<10	<10	3	<10	263	
400362		0.04	<10	<10	50	<10	334	
400363		0.03	<10	<10	35	<10	164	
400364		0.04	<10	<10	42	<10	274	
400365		0.05	<10	<10	52	<10	99	
400366		0.04	<10	<10	54	<10	93	
400367		0.04	<10	<10	45	<10	121	
400368		0.08	<10	<10	39	<10	129	
400369		0.06	<10	<10	35	<10	100	
400370		0.07	<10	<10	34	<10	143	
400371		0.05	<10	<10	28	<10	144	
400372		0.08	<10	<10	32	<10	124	
400373		0.03	<10	<10	50	<10	97	
400374		<0.01	<10	<10	2	<10	85	
400390		<0.01	<10	<10	3	<10	537	

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CERTIFICATE VA02005021

Project : Brenda

P.O. No:

This report is for 76 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 24-Oct-2002.

The following have access to data associated with this certificate:

MIKE HIBBITTS
MYLES GAO
CARL EDMUNDS
B LAPEARE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
ME-ICP41	34 element aqua regia ICP-AES	ICP-AES

To: **KEMESS MINES LTD.**
ATTN: MIKE HIBBITTS
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This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

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Date : 31-Oct-2002
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Project : Brenda

CERTIFICATE OF ANALYSIS VA02005021

Sample Description	Method	WEI-21	Au-AA23	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOR	0.02	0.005	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01
400143		0.26	<0.005	0.3	1.52	2	<10	60	0.5	<2	1.60	0.7	7	73	14	2.51
400144		0.26	<0.005	0.3	1.65	<2	<10	220	<0.5	<2	1.48	0.9	7	74	16	2.33
400145		0.26	<0.005	0.3	2.00	3	<10	120	0.5	2	1.52	1.3	6	89	38	2.50
400146		0.28	<0.005	0.2	1.58	6	<10	180	<0.5	<2	1.37	1.8	7	66	10	2.26
400147		0.26	<0.005	0.3	1.58	<2	<10	140	0.5	<2	1.34	1.6	6	81	34	2.30
400148		0.24	<0.005	0.2	1.71	3	<10	100	0.5	3	1.48	0.6	6	106	27	2.44
400149		0.26	<0.005	0.2	1.45	<2	<10	110	0.5	8	1.33	<0.5	7	120	10	2.44
400150		0.24	<0.005	0.2	1.54	<2	<10	150	<0.5	7	1.35	<0.5	6	128	33	2.24
400151		0.26	<0.005	<0.2	1.22	<2	<10	70	<0.5	4	1.05	<0.5	5	124	28	2.07
400152		0.26	<0.005	0.2	1.35	<2	<10	80	0.5	6	1.07	<0.5	7	124	20	2.41
400153		0.26	<0.005	0.4	1.99	<2	<10	250	0.5	7	1.80	0.9	8	80	40	2.48
400154		0.26	<0.005	0.4	2.34	<2	<10	380	0.6	11	2.12	1.2	7	86	31	2.55
400155		0.26	<0.005	0.3	1.74	<2	<10	170	0.5	6	1.69	1.0	7	103	34	2.58
400156		0.24	<0.005	<0.2	1.82	<2	<10	220	0.5	10	1.74	<0.5	6	100	15	2.61
400157		0.26	0.112	1.3	0.76	2	<10	20	<0.5	9	3.15	1.1	13	123	307	3.75
400158		0.24	0.056	1.0	1.34	3	<10	30	<0.5	13	2.40	0.8	11	92	485	3.63
400159		0.24	0.205	0.8	0.82	8	<10	20	<0.5	14	5.30	<0.5	10	81	257	3.53
400160		0.28	0.058	0.6	1.90	18	<10	20	<0.5	8	1.70	2.5	31	68	118	5.01
400161		0.26	0.015	0.2	2.10	10	<10	130	<0.5	3	1.59	<0.5	25	99	83	4.28
400162		0.24	<0.005	0.4	3.44	12	<10	50	1.2	10	4.04	<0.5	14	19	39	5.36
400163		0.26	0.031	0.6	3.09	7	<10	170	0.8	11	2.95	1.9	15	24	197	4.54
400164		0.24	<0.005	<0.2	1.64	<2	<10	130	0.5	10	2.28	<0.5	9	66	22	3.10
400165		0.26	<0.005	0.3	1.44	<2	<10	110	0.5	7	1.86	3.6	10	95	58	2.84
400166		0.26	<0.005	<0.2	1.62	<2	<10	90	0.5	8	2.48	<0.5	9	67	21	2.88
400167		0.28	<0.005	0.2	1.49	4	10	190	<0.5	5	1.44	1.6	7	115	10	2.42
400168		0.26	<0.005	<0.2	1.93	<2	<10	110	0.6	5	2.65	0.7	9	52	34	2.63
400169		0.24	<0.005	0.4	2.29	<2	<10	280	0.6	13	2.01	2.5	8	90	194	2.58
400170		0.26	0.043	2.0	1.90	3	<10	60	<0.5	10	1.20	0.6	19	19	736	4.79
400171		0.26	<0.005	0.2	1.33	<2	<10	60	<0.5	7	1.60	0.7	9	29	43	2.42
400172		0.26	<0.005	<0.2	1.22	<2	<10	50	<0.5	7	1.41	1.1	7	25	30	2.17
400173		0.26	<0.005	0.2	1.46	<2	<10	100	<0.5	8	1.61	1.9	6	25	45	1.99
400174		0.26	<0.005	0.4	1.28	<2	<10	50	0.5	8	1.32	6.1	7	26	49	2.35
400175		0.26	<0.005	0.2	1.20	<2	<10	40	0.6	9	1.32	<0.5	7	27	5	2.39
400176		0.26	<0.005	0.3	1.29	2	<10	40	0.6	5	1.24	1.3	7	25	71	2.55
400177		0.26	<0.005	0.2	1.68	3	<10	150	<0.5	4	0.84	0.5	9	29	23	3.06
400178		0.26	<0.005	0.3	1.58	<2	<10	60	0.5	4	0.73	<0.5	7	27	29	2.82
400179		0.26	<0.005	0.3	2.02	2	<10	100	0.6	6	1.31	0.6	7	26	35	3.04
400180		0.26	<0.005	0.5	1.67	7	<10	40	0.7	2	1.08	<0.5	9	49	31	3.91
400181		0.26	0.011	0.2	1.29	<2	<10	90	<0.5	3	0.81	<0.5	8	33	25	2.47
400182		0.24	<0.005	0.4	2.18	<2	<10	60	0.6	5	1.31	0.6	15	50	98	4.49

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CERTIFICATE OF ANALYSIS VA02005021

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
400183		0.24	<0.005	0.2	1.60	<2	<10	100	0.5	3	0.86	0.8	9	38	41	3.33
400184		0.26	<0.005	0.4	1.67	3	<10	470	0.5	<2	0.15	0.9	2	9	32	3.75
400185		0.24	<0.005	0.2	0.51	4	<10	20	<0.5	<2	0.06	<0.5	7	35	20	4.76
400186		0.26	<0.005	0.2	2.23	<2	<10	60	<0.5	<2	0.16	17.5	13	11	14	4.68
400187		0.26	<0.005	0.4	0.69	9	<10	40	0.7	<2	0.42	0.7	12	21	25	3.69
400188		0.26	<0.005	0.3	2.52	3	<10	60	0.7	<2	0.44	1.2	8	10	6	5.16
400189		0.24	<0.005	0.5	2.09	3	<10	90	0.8	<2	0.58	4.4	7	15	5	3.24
400190		0.24	0.013	5.5	3.63	<2	<10	50	0.6	8	2.61	11.5	7	14	245	2.71
400191		0.26	<0.005	2.8	1.51	<2	<10	60	<0.5	<2	0.89	10.9	7	21	164	2.69
400192		0.26	<0.005	0.9	2.60	7	<10	100	1.0	<2	1.76	1.1	15	25	65	5.00
400193		0.06	1.035	<0.2	0.22	2	<10	10	<0.5	<2	0.32	<0.5	1	1	2	0.26
400194		0.26	<0.005	0.3	1.45	6	<10	70	<0.5	<2	0.45	<0.5	7	18	9	3.08
400195		0.24	0.005	2.7	1.58	11	<10	90	0.5	<2	0.57	0.5	8	14	13	3.07
400196		0.26	<0.005	0.5	1.98	<2	<10	70	0.7	6	1.87	<0.5	8	11	17	2.79
400197		0.24	<0.005	0.5	1.79	<2	<10	100	0.6	5	1.94	<0.5	7	16	8	2.49
400198		0.26	<0.005	0.4	2.10	<2	<10	100	0.6	5	2.48	0.5	7	9	14	3.40
400199		0.26	<0.005	1.0	2.15	<2	<10	50	0.6	9	2.36	1.5	6	14	45	2.35
400200		0.26	<0.005	0.4	1.86	2	<10	170	0.6	4	1.64	<0.5	5	11	20	2.60
400201		0.26	0.008	0.6	0.31	4	<10	30	<0.5	<2	6.41	<0.5	5	13	6	3.07
400202		0.26	0.008	2.0	1.56	10	<10	50	0.7	5	2.01	<0.5	8	18	11	2.74
400203		0.26	<0.005	0.4	1.91	2	<10	90	0.5	3	2.23	<0.5	10	19	11	2.28
400204		0.28	<0.005	0.3	2.08	<2	10	140	0.6	10	2.00	<0.5	10	17	17	2.64
400205		0.26	0.005	0.7	1.68	<2	<10	90	<0.5	6	1.46	0.9	8	23	15	2.32
400206		0.26	0.007	0.9	1.34	3	<10	60	0.5	<2	0.83	2.1	6	30	30	2.16
400207		0.26	<0.005	0.5	1.92	<2	<10	90	0.6	9	2.23	0.7	6	28	21	1.73
400208		0.26	<0.005	0.3	0.87	<2	<10	200	<0.5	4	1.12	<0.5	2	48	9	0.69
400209		0.26	<0.005	0.5	1.59	3	<10	40	0.6	4	1.31	<0.5	10	27	30	2.10
400210		0.26	0.005	1.7	1.50	24	<10	40	0.7	10	1.30	0.6	7	30	12	3.39
400211		0.26	<0.005	0.5	1.77	3	<10	60	0.5	7	1.69	<0.5	7	21	5	2.64
400212		0.26	0.006	0.6	1.67	3	<10	70	0.6	5	1.82	0.9	7	26	10	2.47
400213		0.24	0.015	1.6	1.71	14	<10	60	0.6	2	1.72	1.8	10	30	18	2.71
400214		0.24	0.005	0.5	1.35	6	<10	70	0.6	4	1.38	<0.5	9	31	32	2.11
400215		0.26	<0.005	0.4	1.31	3	<10	50	0.6	2	1.22	<0.5	10	34	14	2.05
400216		0.26	<0.005	0.3	1.26	5	<10	80	0.6	9	1.15	<0.5	9	30	10	2.24
400217		0.26	<0.005	0.4	1.31	10	<10	80	0.6	<2	1.26	<0.5	8	33	11	2.15
400218		0.24	0.016	0.4	2.80	6	<10	610	0.5	4	2.32	<0.5	13	14	33	4.02

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CERTIFICATE OF ANALYSIS VA02005021

Sample Description	Method Analyte Units LOR	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1
400143		10	<1	0.13	<10	0.85	894	1	0.08	4	850	14	0.04	6	4	107
400144		10	<1	0.13	<10	0.88	1005	1	0.07	3	880	35	0.29	3	3	156
400145		10	<1	0.11	<10	0.94	933	3	0.08	3	840	11	0.25	<2	3	128
400146		<10	<1	0.12	<10	0.91	936	2	0.08	2	850	7	0.12	<2	3	138
400147		<10	1	0.14	<10	0.89	1005	<1	0.08	3	840	58	0.10	<2	3	135
400148		<10	2	0.13	<10	0.90	1030	1	0.08	3	850	42	0.08	6	3	138
400149		<10	2	0.11	<10	0.94	982	1	0.08	3	890	6	0.13	<2	3	124
400150		<10	1	0.12	<10	0.86	1040	2	0.08	3	790	17	0.06	<2	3	128
400151		<10	<1	0.15	10	0.69	775	3	0.07	3	530	5	0.01	3	2	71
400152		<10	1	0.13	10	0.88	1040	4	0.08	3	770	4	0.38	2	3	77
400153		<10	<1	0.11	<10	0.92	1155	4	0.08	2	840	6	0.53	2	3	149
400154		10	1	0.13	<10	0.85	1050	3	0.08	2	870	33	0.54	6	3	178
400155		<10	<1	0.11	<10	0.95	1085	4	0.09	2	890	14	0.29	3	3	128
400156		<10	2	0.10	10	0.97	978	4	0.09	3	880	5	0.17	4	3	168
400157		<10	1	0.42	<10	0.23	333	13	0.02	4	930	22	5.66	2	1	159
400158		<10	<1	0.36	<10	0.86	1035	8	0.04	4	920	19	3.99	<2	2	153
400159		<10	2	0.31	<10	0.42	436	10	0.03	3	860	15	7.12	<2	1	343
400160		<10	<1	0.27	<10	1.26	1285	3	0.06	4	1120	31	4.04	3	2	111
400161		10	2	0.19	<10	1.18	1380	2	0.10	4	1080	5	1.87	5	3	149
400162		10	2	0.18	<10	1.80	1810	1	0.09	2	1660	6	0.39	4	10	155
400163		10	<1	0.31	10	1.14	1610	5	0.08	1	1260	27	1.45	2	6	178
400164		10	<1	0.15	10	0.94	1055	2	0.07	3	630	6	0.09	2	7	115
400165		<10	1	0.16	10	0.98	1150	2	0.07	4	580	364	0.17	<2	5	203
400166		<10	<1	0.15	10	0.89	967	3	0.07	3	590	39	0.08	<2	6	137
400167		<10	2	0.11	<10	0.94	948	2	0.07	2	890	5	0.12	6	3	134
400168		10	<1	0.13	10	0.88	916	2	0.06	3	580	5	0.08	5	6	171
400169		10	<1	0.13	10	0.94	1470	2	0.07	3	770	18	0.21	2	4	180
400170		10	<1	0.21	<10	1.19	1495	65	0.04	1	820	60	2.25	7	3	154
400171		<10	1	0.08	<10	0.86	1155	3	0.05	1	680	67	0.05	3	4	136
400172		<10	2	0.12	10	0.75	1140	3	0.05	1	630	100	0.09	3	3	98
400173		<10	<1	0.13	<10	0.71	1085	1	0.05	1	620	197	0.12	<2	3	124
400174		<10	<1	0.10	10	0.74	1175	1	0.05	1	660	472	0.08	3	3	100
400175		<10	<1	0.09	<10	0.78	1025	1	0.06	2	640	7	0.03	<2	4	79
400176		<10	1	0.10	<10	0.86	1275	1	0.06	1	680	74	0.05	2	4	91
400177		<10	2	0.10	<10	1.03	719	4	0.08	5	660	7	0.23	<2	5	63
400178		<10	2	0.11	<10	1.08	569	1	0.07	7	630	9	0.15	2	4	49
400179		<10	<1	0.11	<10	1.09	725	1	0.10	6	710	10	0.30	4	4	78
400180		<10	<1	0.07	<10	1.31	747	1	0.07	19	890	7	0.13	4	4	58
400181		<10	1	0.09	<10	0.65	515	1	0.06	8	610	10	0.19	3	3	47
400182		10	2	0.14	<10	1.35	628	<1	0.17	19	980	2	0.12	6	5	63

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PO BOX 3519
SMITHERS BC V0J 2N0

Date : 31-Oct-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02005021

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1
400183		<10	<1	0.13	<10	0.90	560	1	0.09	8	700	4	0.30	4	4	58
400184		<10	<1	0.20	<10	0.50	2820	<1	0.05	1	720	18	0.30	2	2	99
400185		<10	<1	0.09	<10	0.05	207	1	0.04	3	320	14	5.19	2	1	80
400186		<10	2	0.20	<10	1.23	3150	1	0.01	3	650	19	2.14	3	2	77
400187		<10	1	0.22	<10	0.06	212	2	0.02	3	1260	17	4.10	5	2	51
400188		10	1	0.19	<10	1.45	5210	<1	0.06	2	1130	7	0.68	3	3	83
400189		10	<1	0.22	<10	0.83	3720	<1	0.06	3	1280	9	1.01	5	3	104
400190		10	<1	0.19	<10	0.46	1970	3	0.03	3	870	984	2.55	7	2	182
400191		10	1	0.17	<10	0.60	2700	3	0.04	2	910	1230	2.17	2	2	66
400192		10	<1	0.13	<10	1.34	1720	<1	0.13	17	1160	85	0.61	6	5	115
400193		<10	<1	0.02	<10	0.05	32	<1	0.13	1	670	5	<0.01	2	1	5
400194		<10	1	0.22	<10	1.04	1505	<1	0.05	2	1030	32	1.88	4	2	31
400195		<10	1	0.23	<10	1.06	1495	1	0.05	2	1280	31	1.80	2	2	43
400196		<10	<1	0.26	<10	1.14	1685	1	0.05	2	910	15	2.06	3	2	151
400197		<10	<1	0.27	<10	0.94	1655	<1	0.04	2	930	14	1.73	3	3	113
400198		10	3	0.22	<10	1.21	2280	1	0.04	2	930	10	1.77	2	3	144
400199		<10	<1	0.19	<10	0.82	1770	<1	0.04	2	940	93	2.11	4	2	138
400200		<10	1	0.30	<10	0.81	1315	1	0.03	2	970	10	1.25	4	2	121
400201		<10	<1	0.19	<10	0.02	23	2	0.01	2	870	8	8.91	<2	1	402
400202		<10	1	0.29	<10	0.52	862	1	0.03	2	910	29	3.18	<2	2	167
400203		<10	1	0.19	<10	0.84	1355	1	0.04	3	880	8	1.73	2	2	131
400204		<10	1	0.18	<10	1.11	1570	1	0.05	1	840	5	1.06	4	2	147
400205		<10	2	0.17	<10	0.63	950	3	0.05	3	820	21	2.07	3	2	105
400206		<10	<1	0.22	<10	0.59	908	6	0.03	4	670	84	1.57	3	1	62
400207		10	<1	0.10	<10	0.66	1060	2	0.04	3	580	54	1.27	3	2	165
400208		<10	<1	0.13	10	0.11	310	4	0.04	1	130	28	0.73	<2	<1	107
400209		<10	<1	0.11	<10	0.87	1240	1	0.04	3	670	23	0.81	2	3	123
400210		<10	<1	0.25	<10	0.65	870	2	0.03	2	1010	32	3.50	<2	2	101
400211		<10	1	0.17	<10	0.70	934	1	0.05	3	860	25	2.53	<2	2	111
400212		<10	1	0.21	<10	0.61	906	3	0.04	3	890	20	2.56	4	2	113
400213		<10	2	0.22	<10	0.66	1095	9	0.03	3	840	53	2.73	3	2	104
400214		<10	<1	0.08	<10	0.79	1070	4	0.06	3	780	57	1.27	<2	3	116
400215		<10	<1	0.09	<10	0.80	965	2	0.05	3	750	14	0.77	<2	2	107
400216		<10	<1	0.10	10	0.82	953	2	0.06	2	730	11	0.25	3	3	93
400217		<10	<1	0.10	<10	0.79	925	1	0.05	3	770	22	0.44	<2	3	101
400218		<10	1	0.16	<10	1.52	775	1	0.15	6	550	11	0.01	7	12	198

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Date : 31-Oct-2002
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Project : Brenda

CERTIFICATE OF ANALYSIS VA02005021

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Tl % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
400143		0.10	<10	<10	53	<10	161
400144		0.08	<10	<10	43	<10	174
400145		0.10	<10	<10	47	<10	220
400146		0.09	<10	<10	43	<10	318
400147		0.11	<10	<10	44	<10	261
400148		0.13	<10	<10	49	<10	134
400149		0.11	<10	<10	44	<10	90
400150		0.09	<10	<10	38	<10	94
400151		0.06	<10	<10	37	<10	67
400152		0.09	<10	<10	40	<10	68
400153		0.09	<10	<10	40	<10	185
400154		0.08	<10	<10	43	<10	213
400155		0.08	<10	<10	44	<10	193
400156		0.10	<10	<10	47	<10	122
400157		<0.01	<10	<10	10	<10	155
400158		<0.01	<10	<10	26	<10	175
400159		<0.01	<10	<10	17	<10	47
400160		0.06	<10	<10	39	<10	327
400161		0.11	<10	<10	57	<10	117
400162		0.20	<10	<10	123	<10	86
400163		0.05	<10	<10	62	<10	271
400164		0.01	<10	<10	75	<10	73
400165		0.05	<10	<10	67	<10	500
400166		0.02	<10	<10	70	<10	107
400167		0.08	<10	<10	42	<10	328
400168		0.01	<10	<10	65	<10	100
400169		0.05	<10	<10	43	<10	312
400170		0.02	<10	<10	43	<10	175
400171		0.05	<10	<10	50	<10	165
400172		0.04	<10	<10	43	<10	213
400173		0.05	<10	<10	39	<10	301
400174		0.07	<10	<10	50	<10	824
400175		0.09	<10	<10	53	<10	83
400176		0.10	<10	<10	58	<10	216
400177		0.11	<10	<10	82	<10	79
400178		0.13	<10	<10	70	<10	72
400179		0.14	<10	<10	77	<10	102
400180		0.28	<10	<10	110	<10	77
400181		0.11	<10	<10	52	<10	71
400182		0.24	<10	<10	144	<10	90

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CERTIFICATE OF ANALYSIS VA02005021

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
400183		0.15	<10	<10	75	<10	73
400184		0.16	<10	<10	32	<10	144
400185		<0.01	<10	<10	6	<10	15
400186		<0.01	<10	<10	20	<10	185
400187		<0.01	<10	<10	7	<10	68
400188		0.16	<10	<10	64	<10	298
400189		0.14	<10	<10	37	<10	204
400190		0.10	<10	<10	23	<10	1065
400191		0.10	<10	<10	24	<10	1325
400192		0.35	<10	<10	179	<10	203
400193		<0.01	<10	<10	1	<10	4
400194		0.08	<10	<10	26	<10	155
400195		0.08	<10	<10	27	<10	182
400196		0.10	<10	<10	26	<10	141
400197		0.11	<10	<10	27	<10	120
400198		0.13	<10	<10	49	<10	215
400199		0.09	<10	<10	24	<10	270
400200		0.07	<10	<10	21	<10	84
400201		0.01	<10	<10	3	<10	<2
400202		0.09	<10	<10	15	<10	84
400203		0.09	<10	<10	22	<10	113
400204		0.10	<10	<10	29	<10	133
400205		0.08	<10	<10	21	<10	162
400206		0.08	<10	<10	17	<10	273
400207		0.11	<10	<10	30	<10	148
400208		0.05	<10	<10	5	<10	44
400209		0.13	<10	<10	37	<10	111
400210		0.08	<10	<10	21	<10	126
400211		0.08	<10	<10	27	<10	126
400212		0.10	<10	<10	21	<10	123
400213		0.09	<10	<10	22	<10	201
400214		0.13	<10	<10	39	<10	108
400215		0.12	<10	<10	39	<10	78
400216		0.13	<10	<10	50	<10	84
400217		0.12	<10	<10	45	<10	87
400218		0.09	<10	<10	133	<10	85

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CERTIFICATE VA02004878

Project : Brenda

P.O. No:

This report is for 80 PULP samples submitted to our lab in North Vancouver, BC, Canada on 22-Oct-2002.

The following have access to data associated with this certificate:

CARL EDMUNDS
JEAN PAUTLER

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
ME-ICP41	34 element aqua regia ICP-AES	ICP-AES

To: **KEMESS MINES LTD.**
ATTN: CARL EDMUNDS
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This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

ALS Chemex

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Date : 30-Oct-2002
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Project : Brenda

CERTIFICATE OF ANALYSIS VA02004878

Sample Description	Method	WEI-21	Au-AA23	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOR	0.02	0.005	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01
111761		0.24	0.005	0.3	1.62	4	<10	80	0.8	<2	0.97	0.7	9	36	34	3.09
111762		0.26	0.006	0.5	1.62	12	<10	110	0.8	<2	1.03	0.6	14	61	88	3.84
111763		0.26	<0.005	0.3	2.06	5	<10	60	0.9	9	1.52	3.5	19	1	70	3.96
111764		0.24	<0.005	0.5	1.62	10	<10	100	0.7	5	0.97	<0.5	12	59	82	3.70
111765		0.26	0.009	0.4	1.77	5	<10	60	0.7	4	1.24	<0.5	11	70	70	3.66
111766		0.24	<0.005	0.3	3.64	<2	<10	30	0.6	<2	2.56	1.2	16	20	107	4.72
111767		0.24	<0.005	0.8	2.96	2	<10	70	1.0	<2	1.97	2.4	14	9	151	3.94
111768		0.24	<0.005	0.6	2.03	7	<10	30	1.0	3	1.50	0.8	14	8	136	4.11
111769		0.26	<0.005	0.6	1.92	19	<10	40	0.9	<2	1.09	0.9	14	15	51	2.97
111770		0.26	<0.005	0.3	1.03	8	<10	100	<0.5	<2	0.64	0.5	5	36	13	0.91
111771		0.26	<0.005	0.6	1.63	15	<10	10	0.8	<2	1.09	0.7	13	10	29	3.06
111772		0.28	<0.005	0.4	1.09	12	<10	<10	0.7	<2	1.07	<0.5	7	13	11	1.53
111773		0.26	0.010	1.4	2.66	14	<10	10	0.8	<2	1.36	0.6	23	24	184	4.72
111774		0.26	0.008	2.0	2.49	33	<10	10	1.0	2	1.05	3.9	46	31	60	6.42
111775		0.26	<0.005	1.3	2.86	43	<10	20	0.7	<2	0.95	0.8	44	29	131	8.36
400001		0.24	<0.005	0.3	1.72	<2	<10	90	0.9	<2	1.37	0.9	9	18	30	2.73
400002		0.26	<0.005	0.6	2.43	13	<10	20	0.9	<2	1.38	1.5	30	36	87	8.16
400003		0.26	0.005	1.3	2.53	38	<10	10	0.8	<2	1.25	8.5	38	16	93	6.06
400004		0.26	<0.005	0.7	1.49	21	<10	80	0.7	<2	0.92	0.7	11	9	46	2.91
400005		0.28	<0.005	0.5	1.41	14	<10	50	0.7	2	1.33	0.6	11	15	89	2.67
400006		0.24	<0.005	0.7	2.28	40	<10	40	0.7	<2	1.46	<0.5	21	15	170	4.07
400007		0.26	0.005	1.1	2.38	34	<10	30	0.7	<2	1.88	0.7	30	22	279	4.32
400008		0.26	0.005	2.3	2.42	17	<10	40	0.6	6	1.68	14.1	22	8	189	4.57
400009		0.28	0.012	1.6	2.49	40	<10	30	0.7	<2	2.69	5.8	21	18	112	3.73
400010		0.28	0.024	2.3	2.69	98	<10	10	0.9	<2	2.76	5.1	25	14	262	5.67
400011		0.24	<0.005	0.4	2.20	<2	<10	80	0.9	<2	1.90	1.9	7	27	47	2.25
400012		0.26	<0.005	0.8	3.94	6	<10	170	1.5	<2	4.06	2.3	19	18	158	5.29
400013		0.24	<0.005	0.7	2.75	<2	<10	20	0.9	5	2.47	0.8	20	16	191	5.56
400014		0.26	0.008	1.0	2.41	5	<10	40	1.0	6	2.44	6.5	21	21	191	4.04
400015		0.26	0.018	0.2	2.48	2	<10	580	0.6	3	2.18	0.5	13	17	38	3.84
400016		0.26	<0.005	0.6	2.25	<2	<10	10	0.8	3	1.85	2.1	17	51	101	7.21
400017		0.24	<0.005	0.9	3.70	<2	<10	<10	1.3	<2	4.35	32.3	15	55	137	3.90
400018		0.24	<0.005	1.1	2.34	9	<10	20	1.0	<2	2.13	12.0	30	49	192	6.45
400019		0.26	<0.005	0.8	1.88	2	<10	60	1.1	4	1.87	0.5	11	36	88	3.71
400020		0.28	<0.005	0.7	1.92	<2	<10	20	1.2	2	1.47	4.4	31	63	173	8.23
400021		0.26	0.016	0.7	1.82	38	<10	20	0.8	<2	4.75	4.7	24	35	58	5.26
400022		0.24	0.015	1.3	2.23	22	<10	60	1.0	3	2.50	4.8	13	27	135	4.04
400023		0.24	<0.005	0.4	2.26	12	<10	90	0.9	4	2.39	1.5	8	44	34	2.64
400024		0.26	<0.005	0.4	2.31	<2	<10	100	0.7	<2	1.80	4.6	7	19	39	3.06
400025		0.24	<0.005	1.0	3.02	2	<10	70	1.6	<2	2.39	1.5	18	22	88	5.75

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Date : 30-Oct-2002
Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02004878

Sample Description	Method	WEI-21	Au-AA23	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOR	0.02	0.005	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01
400026		0.24	<0.005	1.1	2.76	<2	<10	110	0.8	6	2.31	8.3	7	19	86	3.08
400027		0.24	<0.005	0.4	2.59	2	<10	60	1.0	2	2.07	0.8	7	38	24	3.20
400028		0.26	<0.005	0.5	2.39	<2	<10	60	0.9	<2	2.15	0.9	7	18	43	3.21
400029		0.32	<0.005	0.4	2.90	2	<10	60	0.9	4	2.34	0.9	7	24	48	3.32
400030		0.24	<0.005	0.5	2.55	<2	<10	70	0.9	6	1.93	1.2	8	17	54	3.29
400031		0.24	<0.005	0.3	2.23	<2	<10	60	0.8	<2	1.60	0.5	7	25	27	3.23
400032		0.24	<0.005	0.4	2.76	<2	<10	60	1.0	<2	2.08	0.9	8	18	7	3.45
400033		0.26	<0.005	0.6	3.32	5	<10	100	1.1	<2	3.19	3.5	10	24	30	3.51
400034		0.26	0.005	0.7	2.61	10	<10	50	1.2	3	2.82	2.4	10	23	41	3.85
400035		0.24	<0.005	1.0	5.08	8	<10	40	1.2	11	4.82	2.4	10	6	26	4.55
400036		0.24	<0.005	0.8	2.53	<2	<10	60	0.6	10	1.90	2.1	7	24	44	3.18
400037		0.26	<0.005	3.5	1.36	7	<10	20	<0.5	20	1.14	20.9	8	33	122	3.78
400038		0.24	<0.005	0.9	2.15	<2	<10	50	0.5	8	1.92	4.4	7	31	100	3.33
400039		0.26	<0.005	0.3	2.03	<2	<10	50	0.6	8	1.46	<0.5	8	34	28	3.19
400040		0.32	<0.005	1.2	2.89	4	<10	60	0.7	10	2.50	5.2	8	24	54	3.72
400041		0.26	<0.005	0.7	2.85	<2	<10	30	0.6	8	2.01	<0.5	8	30	30	3.17
400042		0.26	<0.005	0.2	1.97	6	<10	60	0.6	4	1.78	2.7	8	33	21	3.38
400043		0.26	0.005	0.5	2.16	4	<10	40	0.7	12	1.86	1.0	8	35	38	3.45
400044		0.26	<0.005	0.3	1.94	<2	<10	40	0.6	6	1.49	<0.5	8	30	24	3.56
400045		0.26	<0.005	0.4	2.27	5	<10	110	0.7	14	2.19	2.1	8	30	51	3.19
400046		0.22	<0.005	0.9	2.44	<2	<10	70	0.7	11	1.97	7.1	7	20	46	3.26
400047		0.24	<0.005	<0.2	2.24	<2	<10	120	<0.5	13	3.00	0.6	2	66	8	0.68
400048		0.26	<0.005	0.2	1.65	4	<10	60	<0.5	10	1.47	0.5	5	29	8	1.59
400049		0.28	<0.005	0.2	1.45	<2	<10	150	<0.5	7	1.27	0.5	5	46	26	1.89
400050		0.28	<0.005	0.3	1.42	<2	<10	190	<0.5	7	1.08	1.4	5	30	42	1.79
400051		0.26	0.015	0.7	2.87	9	<10	110	0.9	11	2.20	1.1	9	20	40	3.03
400052		0.26	<0.005	0.3	1.53	2	<10	150	0.6	6	1.63	1.6	7	23	20	2.63
400053		0.24	<0.005	0.3	1.52	<2	<10	320	0.5	11	1.89	<0.5	7	31	28	2.59
400054		0.28	0.125	5.5	1.19	2	<10	20	<0.5	8	1.64	0.5	15	32	2070	3.13
400055		0.26	0.076	4.2	1.35	<2	<10	30	<0.5	10	2.03	<0.5	17	52	1985	3.29
400056		0.26	0.160	3.0	1.13	5	<10	20	<0.5	7	1.61	1.3	11	54	1245	3.09
400057		0.26	0.057	0.7	1.30	7	<10	90	<0.5	5	1.69	1.4	7	55	301	2.61
400058		0.24	0.121	1.7	1.24	<2	<10	30	<0.5	8	1.55	1.4	10	41	693	3.13
400059		0.26	0.132	1.5	0.88	<2	<10	20	<0.5	12	3.14	1.6	9	85	518	2.83
400060		0.26	0.072	1.8	1.67	5	<10	50	<0.5	3	2.27	1.7	15	48	659	3.65
400061		0.26	<0.005	0.6	3.35	6	<10	30	1.0	13	3.32	<0.5	26	66	51	6.18
400062		0.26	0.016	0.6	1.51	2	<10	140	<0.5	4	1.23	<0.5	10	31	64	2.38
400063		0.26	<0.005	0.3	1.95	5	<10	140	0.5	11	1.68	<0.5	5	49	78	2.00
400064		0.26	<0.005	0.6	3.11	5	<10	30	1.3	11	4.09	0.7	18	34	51	4.88
400065		0.26	0.015	0.2	2.56	<2	<10	620	0.5	4	2.53	<0.5	14	16	37	4.14

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Account: PIL

Project : Brenda

CERTIFICATE OF ANALYSIS VA02004878

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1
111761		<10	<1	0.10	<10	1.17	720	2	0.07	11	870	12	0.17	2	4	62
111762		<10	1	0.09	<10	1.10	601	2	0.09	23	720	12	1.20	6	4	135
111763		10	<1	0.09	<10	1.32	576	2	0.14	41	1190	8	0.35	7	5	74
111764		10	4	0.09	<10	1.07	558	1	0.09	24	700	7	1.03	6	4	126
111765		<10	3	0.10	<10	0.92	451	1	0.15	21	830	5	0.36	4	4	80
111766		10	1	0.11	<10	1.19	649	1	0.32	13	860	8	0.42	4	6	291
111767		10	3	0.09	<10	1.41	1240	3	0.04	6	1210	29	1.48	<2	6	181
111768		10	3	0.11	<10	1.36	1075	1	0.11	6	1600	7	0.54	<2	6	91
111769		10	2	0.02	<10	1.62	1435	<1	0.05	7	1400	13	1.13	<2	3	129
111770		<10	2	0.05	<10	0.36	321	1	0.06	4	320	8	0.41	3	1	52
111771		<10	<1	0.04	<10	1.39	1210	1	0.06	7	1630	11	0.95	2	5	92
111772		<10	1	0.01	<10	0.88	639	1	0.06	6	1470	6	0.48	2	3	117
111773		10	2	0.06	<10	1.89	1340	1	0.13	25	320	19	1.29	5	8	155
111774		10	4	0.02	<10	2.57	2270	1	0.03	50	200	32	3.57	3	8	144
111775		10	6	0.04	<10	3.01	1985	1	0.07	62	350	17	4.92	5	4	95
400001		10	1	0.08	<10	0.87	786	2	0.07	6	640	10	0.40	<2	5	61
400002		10	1	0.04	<10	1.87	1585	1	0.15	34	400	6	1.94	6	5	174
400003		10	5	0.03	<10	2.27	2200	1	0.03	31	460	36	3.75	12	7	163
400004		<10	2	0.09	<10	1.15	1280	1	0.04	6	1480	11	1.55	2	3	72
400005		10	2	0.08	<10	1.01	1140	1	0.05	4	1450	9	1.58	4	3	96
400006		10	4	0.02	<10	2.21	2130	1	0.03	16	1800	11	2.06	<2	4	120
400007		10	4	0.02	<10	2.23	1830	1	0.03	15	1780	13	2.52	4	5	154
400008		10	1	0.04	<10	2.13	2690	2	0.03	9	1160	36	2.69	<2	7	128
400009		10	1	0.03	<10	2.01	2100	2	0.03	16	1350	17	2.71	10	6	240
400010		10	3	0.06	<10	1.76	1935	11	0.03	11	1570	180	4.94	<2	5	169
400011		10	3	0.06	<10	0.84	898	1	0.05	3	640	20	0.74	<2	3	184
400012		10	<1	0.02	<10	2.01	1280	1	0.05	19	1130	15	0.52	<2	15	114
400013		10	1	0.10	<10	1.82	1175	2	0.07	22	270	12	1.35	<2	10	236
400014		10	1	0.05	<10	1.62	1190	2	0.04	13	1260	35	2.57	3	5	180
400015		10	1	0.13	<10	1.42	760	1	0.15	6	470	12	0.01	2	12	199
400016		10	3	0.05	<10	1.52	1115	1	0.14	33	250	57	0.75	7	8	233
400017		10	2	0.01	<10	1.56	1355	1	0.02	15	1240	18	2.53	2	7	397
400018		10	4	0.06	<10	1.85	1310	1	0.07	32	350	34	1.50	2	11	219
400019		10	4	0.06	<10	1.21	1000	2	0.05	13	940	100	0.93	7	6	147
400020		10	4	0.05	<10	2.05	1240	1	0.06	41	610	15	0.60	7	8	156
400021		10	1	0.03	<10	1.50	1015	2	0.03	25	850	27	6.75	4	8	332
400022		10	<1	0.08	<10	1.42	1255	1	0.06	8	1580	48	2.31	<2	8	202
400023		10	1	0.13	<10	0.55	1185	3	0.04	5	1000	44	1.99	<2	4	200
400024		10	<1	0.10	<10	1.15	1800	1	0.04	3	950	81	1.21	2	3	137
400025		10	2	0.18	<10	1.82	1800	2	0.11	20	1090	161	1.10	<2	10	306

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CERTIFICATE OF ANALYSIS VA02004878

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOR	10	1	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1	1
400026		10	5	0.16	<10	1.07	1855	7	0.05	4	910	544	1.62	8	4	155
400027		10	2	0.08	<10	1.19	1550	1	0.07	5	960	45	0.72	<2	5	159
400028		10	1	0.09	<10	1.13	1470	1	0.06	3	960	62	0.99	5	5	154
400029		10	1	0.10	<10	1.16	1350	1	0.06	4	960	51	0.89	<2	5	160
400030		10	3	0.10	<10	1.23	1470	1	0.06	4	1080	91	1.26	2	4	142
400031		10	2	0.10	<10	1.27	1615	1	0.07	4	930	12	0.76	<2	4	109
400032		10	<1	0.09	<10	1.39	1635	1	0.06	3	1020	15	0.95	6	4	136
400033		10	3	0.09	<10	1.10	1210	3	0.06	6	790	40	2.19	6	7	192
400034		10	1	0.15	<10	0.79	1130	4	0.05	5	1060	46	2.79	<2	5	157
400035		10	2	0.09	<10	1.23	1955	18	0.09	2	1070	50	0.95	2	10	228
400036		10	1	0.10	<10	1.21	1535	4	0.06	3	840	125	1.86	<2	3	139
400037		<10	<1	0.18	<10	0.65	1125	28	0.04	3	840	250	3.30	4	2	89
400038		10	<1	0.11	<10	1.04	1400	3	0.06	2	860	81	1.87	4	3	121
400039		<10	<1	0.10	<10	1.15	1255	1	0.08	3	910	15	0.64	2	3	103
400040		10	<1	0.11	<10	1.15	1570	11	0.06	2	980	121	2.06	2	4	147
400041		10	<1	0.08	<10	1.32	1465	<1	0.07	3	950	9	0.97	<2	2	138
400042		10	2	0.09	<10	1.17	1275	<1	0.09	3	970	9	0.72	<2	3	103
400043		10	<1	0.11	<10	1.17	1200	1	0.08	2	920	15	0.65	4	3	131
400044		<10	2	0.11	<10	1.18	1385	<1	0.09	3	960	22	0.44	5	4	105
400045		10	<1	0.10	<10	1.06	1375	1	0.06	3	940	293	1.14	4	3	158
400046		10	<1	0.10	<10	1.21	1350	4	0.07	2	930	842	0.99	5	3	130
400047		<10	5	0.07	10	0.09	193	3	0.05	2	70	55	1.24	<2	1	182
400048		<10	<1	0.10	10	0.61	763	2	0.05	1	460	81	0.55	7	2	102
400049		<10	1	0.09	10	0.75	920	2	0.05	3	520	32	0.24	<2	2	99
400050		<10	<1	0.10	10	0.62	776	3	0.05	1	470	29	0.60	5	2	97
400051		10	4	0.28	10	0.82	1045	2	0.06	3	880	34	0.89	7	4	296
400052		<10	<1	0.10	<10	0.90	1020	2	0.05	2	730	5	0.04	<2	4	163
400053		<10	<1	0.09	<10	0.87	1040	3	0.05	2	750	10	0.13	3	4	194
400054		<10	<1	0.25	<10	0.69	961	55	0.03	3	770	13	2.49	4	1	98
400055		<10	1	0.22	<10	0.88	1305	112	0.04	4	790	9	1.80	3	2	131
400056		<10	1	0.24	<10	0.71	894	72	0.03	3	820	96	2.75	3	1	134
400057		<10	2	0.16	<10	0.91	1040	15	0.05	4	880	15	1.22	<2	2	145
400058		<10	<1	0.23	<10	0.80	900	14	0.04	3	870	20	2.16	2	2	107
400059		<10	<1	0.24	<10	0.57	634	94	0.02	5	760	64	3.92	<2	1	215
400060		<10	2	0.22	<10	0.98	1045	24	0.06	4	920	14	1.94	<2	3	122
400061		10	<1	0.04	<10	3.95	2100	1	0.05	70	1310	<2	0.11	4	18	133
400062		<10	3	0.15	<10	0.88	832	9	0.05	3	880	13	0.97	3	2	102
400063		<10	1	0.12	<10	0.73	744	7	0.05	3	800	9	0.37	<2	2	157
400064		10	<1	0.06	<10	2.29	1265	2	0.06	26	1190	7	0.10	2	14	242
400065		<10	2	0.14	<10	1.53	795	1	0.15	5	510	8	0.01	7	11	207

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CERTIFICATE OF ANALYSIS VA02004878

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ti	Tl	U	V	W	Zn
	Units	%	ppm	ppm	ppm	ppm	ppm
	LOR	0.01	10	10	1	10	2
111761		0.19	<10	<10	89	<10	113
111762		0.20	<10	<10	103	<10	89
111763		0.28	<10	<10	131	<10	93
111764		0.20	<10	<10	101	<10	78
111765		0.19	<10	<10	122	<10	58
111766		0.17	<10	<10	187	<10	74
111767		0.23	<10	<10	87	<10	198
111768		0.24	<10	<10	135	<10	115
111769		0.21	<10	<10	62	<10	164
111770		0.07	<10	<10	20	<10	45
111771		0.21	<10	<10	84	<10	141
111772		0.19	<10	<10	48	<10	91
111773		0.22	<10	<10	162	<10	179
111774		0.31	<10	<10	163	<10	625
111775		0.27	<10	<10	177	<10	214
400001		0.14	<10	<10	79	<10	161
400002		0.33	<10	<10	320	<10	210
400003		0.27	<10	<10	138	<10	971
400004		0.23	<10	<10	50	<10	159
400005		0.22	<10	<10	43	<10	123
400006		0.22	<10	<10	89	<10	202
400007		0.24	<10	<10	108	<10	195
400008		0.21	<10	<10	119	<10	1905
400009		0.23	<10	<10	98	<10	840
400010		0.23	<10	<10	104	<10	627
400011		0.14	<10	<10	53	<10	238
400012		0.36	<10	<10	207	<10	256
400013		0.25	<10	<10	234	<10	127
400014		0.25	<10	<10	107	<10	639
400015		0.07	<10	<10	132	<10	80
400016		0.31	<10	<10	319	<10	271
400017		0.30	<10	<10	119	<10	3310
400018		0.33	<10	<10	271	<10	1330
400019		0.29	<10	<10	115	<10	121
400020		0.39	<10	<10	364	<10	463
400021		0.25	<10	<10	118	<10	521
400022		0.27	<10	<10	122	<10	475
400023		0.15	<10	<10	43	<10	183
400024		0.15	<10	<10	58	<10	437
400025		0.41	<10	<10	208	<10	277

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CERTIFICATE OF ANALYSIS VA02004878

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
400026		0.17	<10	<10	58	<10	1080
400027		0.20	<10	<10	72	<10	155
400028		0.18	<10	<10	71	<10	164
400029		0.19	<10	<10	74	<10	177
400030		0.18	<10	<10	72	<10	215
400031		0.17	<10	<10	72	<10	173
400032		0.19	<10	<10	75	<10	206
400033		0.18	<10	<10	85	<10	459
400034		0.18	<10	<10	68	<10	346
400035		0.27	<10	<10	135	<10	343
400036		0.12	<10	<10	51	<10	341
400037		0.09	<10	<10	34	<10	2740
400038		0.10	<10	<10	51	<10	706
400039		0.12	<10	<10	60	<10	135
400040		0.14	<10	<10	67	<10	745
400041		0.09	<10	<10	57	<10	139
400042		0.12	<10	<10	64	<10	231
400043		0.14	<10	<10	70	<10	174
400044		0.13	<10	<10	71	<10	143
400045		0.10	<10	<10	58	<10	307
400046		0.13	<10	<10	62	<10	981
400047		0.01	<10	<10	4	<10	72
400048		0.05	<10	<10	24	<10	100
400049		0.07	<10	<10	33	<10	130
400050		0.07	<10	<10	28	<10	184
400051		0.13	<10	<10	54	<10	151
400052		0.13	<10	<10	57	<10	209
400053		0.14	<10	<10	55	<10	114
400054		0.08	<10	<10	21	<10	109
400055		0.06	<10	<10	31	<10	115
400056		0.06	<10	<10	21	<10	220
400057		0.08	<10	<10	40	<10	236
400058		0.06	<10	<10	32	<10	235
400059		0.01	<10	<10	16	<10	217
400060		0.05	<10	<10	41	<10	242
400061		0.37	<10	<10	187	<10	79
400062		0.08	<10	<10	27	<10	66
400063		0.10	<10	<10	32	<10	53
400064		0.33	<10	<10	167	<10	79
400065		0.06	<10	<10	128	<10	82

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CERTIFICATE VA02004876

Project : Brenda

P.O. No:

This report is for 77 samples submitted to our lab in North Vancouver, BC, Canada on 22-Oct-2002.

The following have access to data associated with this certificate:

CARL EDMUNDS
JEAN PAUTLER

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
ME-ICP41	34 element aqua regia ICP-AES	ICP-AES

RECEIVED NOV 12 2002

To: **KEMESS MINES LTD.**
ATTN: CARL EDMUNDS
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This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

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Project : Brenda

CERTIFICATE OF ANALYSIS VA02004876

Sample Description	Method	WEI-21	Au-AA23	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOR	0.02	0.005	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01
400066		0.26	<0.005	<0.2	1.24	<2	<10	40	<0.5	<2	1.01	<0.5	7	18	18	2.46
400067		0.26	<0.005	<0.2	2.11	6	<10	80	0.5	<2	1.79	0.6	7	14	26	3.16
400068		0.24	<0.005	<0.2	1.46	<2	<10	80	<0.5	<2	1.17	<0.5	6	13	41	2.26
400069		0.26	<0.005	<0.2	1.40	2	<10	140	<0.5	<2	0.96	<0.5	7	14	2	1.46
400070		0.26	<0.005	<0.2	2.55	4	<10	90	<0.5	<2	2.94	<0.5	8	1	18	2.94
400071		0.26	<0.005	<0.2	1.58	<2	<10	40	<0.5	<2	1.09	<0.5	5	13	2	1.84
400072		0.24	<0.005	0.2	1.36	<2	<10	40	0.5	<2	1.25	<0.5	6	9	88	2.97
400073		0.28	<0.005	0.4	2.08	<2	<10	520	<0.5	<2	1.81	<0.5	5	9	237	2.13
400074		0.26	<0.005	<0.2	1.87	<2	<10	70	0.5	<2	1.30	<0.5	6	7	11	1.76
400075		0.24	0.114	<0.2	1.51	<2	<10	130	<0.5	2	1.10	<0.5	4	20	35	1.37
400076		0.24	<0.005	<0.2	2.14	<2	<10	340	<0.5	<2	1.80	<0.5	5	8	22	2.10
400077		0.26	<0.005	<0.2	2.40	<2	<10	50	0.8	<2	3.95	0.5	14	3	111	4.45
400078		0.28	<0.005	<0.2	1.67	<2	<10	80	<0.5	<2	1.36	<0.5	6	10	14	2.01
400079		0.26	<0.005	<0.2	1.58	<2	<10	120	<0.5	<2	1.12	<0.5	6	14	20	1.68
400080		0.26	<0.005	0.6	1.73	<2	<10	70	<0.5	<2	1.16	<0.5	6	10	33	1.67
400081		0.26	<0.005	<0.2	1.38	<2	<10	130	<0.5	2	0.92	<0.5	5	17	9	1.50
400082		0.24	<0.005	<0.2	1.17	<2	<10	130	<0.5	<2	1.00	<0.5	6	11	26	1.92
400083		0.24	<0.005	<0.2	3.53	<2	<10	20	0.6	3	3.19	<0.5	20	19	67	4.73
400084		0.24	<0.005	<0.2	1.24	<2	<10	40	<0.5	<2	0.91	<0.5	6	11	38	1.98
400085		0.28	0.115	0.9	1.31	5	<10	50	<0.5	<2	1.67	2.9	9	11	384	2.71
400086		0.26	0.073	0.9	1.41	3	<10	50	<0.5	<2	1.91	1.2	8	12	302	2.56
400087		0.26	0.127	1.2	1.98	<2	<10	80	<0.5	7	2.07	1.6	12	16	626	2.96
400088		0.26	0.021	0.9	3.27	<2	<10	180	1.1	8	3.95	0.9	21	46	197	5.15
400089		0.26	<0.005	<0.2	1.51	<2	<10	120	<0.5	<2	1.40	<0.5	6	18	45	1.69
400090		0.26	0.013	0.8	3.49	<2	<10	270	1.1	7	4.42	0.6	20	50	164	5.17
400091		0.26	<0.005	0.2	1.37	<2	<10	270	<0.5	7	0.97	<0.5	4	17	62	1.86
400092		0.28	<0.005	0.4	1.50	<2	<10	210	<0.5	5	1.19	<0.5	5	11	164	2.26
400093		0.24	<0.005	0.3	1.48	<2	<10	330	<0.5	4	1.48	1.7	7	13	47	2.45
400094		0.26	0.147	2.1	1.01	3	<10	30	<0.5	7	0.85	<0.5	13	6	454	3.44
400095		0.28	0.228	2.5	0.37	4	<10	10	<0.5	8	2.64	3.4	11	10	255	3.73
400096		0.28	0.314	3.7	0.50	4	<10	20	<0.5	11	2.59	0.9	10	9	669	3.67
400097		0.28	0.020	1.3	1.29	<2	<10	90	<0.5	7	2.17	2.9	7	19	563	2.29
400098		0.26	0.092	3.1	0.84	4	<10	30	<0.5	8	2.13	0.8	11	10	990	2.78
400099		0.24	0.156	1.3	0.61	3	<10	30	<0.5	7	2.23	<0.5	13	14	522	3.19
400100		0.26	0.087	1.1	1.10	4	<10	50	<0.5	7	1.51	5.3	9	20	341	2.59
400101		0.26	0.037	1.0	1.07	4	<10	40	<0.5	10	1.64	11.6	6	26	276	2.25
400102		0.24	0.105	1.1	1.01	<2	<10	40	<0.5	7	1.88	2.2	6	24	198	2.36
400103		0.24	0.128	1.8	1.42	5	<10	50	<0.5	9	1.48	1.4	8	22	620	3.29
400104		0.26	0.034	1.7	1.55	3	<10	40	<0.5	12	1.26	5.3	8	13	2	3.91
400105		0.26	0.015	0.6	0.95	9	<10	80	<0.5	8	1.32	<0.5	6	24	30	2.02

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Page # : 3 - A
Total # of pages : 3 (A - C)
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CERTIFICATE OF ANALYSIS VA02004876

Sample Description	Method	WEI-21	Au-AA23	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOR	0.02	0.005	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01
400106		0.24	0.042	0.9	0.97	<2	<10	20	<0.5	6	1.52	<0.5	9	16	210	3.09
400107		0.26	0.065	1.2	1.03	12	<10	20	<0.5	7	1.57	0.6	8	18	279	2.97
400108		0.26	0.029	0.9	1.06	<2	<10	20	<0.5	11	1.53	<0.5	14	14	59	3.66
400109		0.24	0.008	0.6	1.12	<2	<10	100	<0.5	6	1.17	0.6	7	23	138	2.06
400110		0.26	0.110	2.2	0.99	5	<10	20	<0.5	13	2.28	1.1	10	14	460	3.90
400111		0.24	0.067	1.1	1.31	8	<10	60	<0.5	10	1.23	<0.5	9	19	444	3.48
400112		0.26	0.081	1.6	1.35	<2	<10	30	<0.5	9	1.32	2.1	10	14	696	4.27
400113		0.24	0.467	11.5	1.43	<2	<10	30	<0.5	7	1.59	19.0	12	16	920	4.46
400114		0.26	0.170	2.4	1.19	<2	<10	40	<0.5	3	1.10	4.3	12	10	892	3.79
400115		0.26	0.019	0.4	2.20	<2	<10	620	0.5	4	2.45	<0.5	14	11	43	3.88
400116		0.26	0.069	1.0	0.95	<2	<10	70	<0.5	7	1.62	1.2	8	16	389	3.52
400117		0.26	0.100	1.4	0.97	<2	<10	30	<0.5	9	2.16	3.4	10	11	504	3.23
400118		0.24	0.075	1.0	0.99	3	<10	70	<0.5	5	1.92	3.5	8	11	359	3.09
400119		0.26	0.052	0.9	1.25	10	<10	50	<0.5	10	1.79	3.2	12	13	386	3.21
400120		0.26	0.032	0.7	1.09	2	<10	40	<0.5	7	1.84	2.1	11	14	268	3.02
400121		0.24	0.199	3.6	0.67	2	<10	10	<0.5	7	3.04	9.9	10	27	369	4.01
400122		0.24	0.034	1.9	1.31	<2	<10	70	<0.5	6	1.49	5.5	10	21	513	2.57
400123		0.24	0.044	1.8	1.28	2	<10	80	<0.5	9	1.37	1.4	8	33	534	2.99
400124		0.26	0.326	3.4	1.14	9	<10	60	<0.5	4	1.17	1.3	8	27	824	3.02
400125		0.26	0.157	1.0	0.45	<2	<10	30	<0.5	11	2.14	<0.5	7	33	150	2.40
400126		0.26	0.072	1.6	1.22	6	<10	120	<0.5	4	1.17	1.3	8	28	601	2.96
400127		0.28	0.124	1.4	0.38	6	<10	40	<0.5	11	2.15	<0.5	4	49	54	1.61
400128		0.26	0.050	1.0	1.16	6	<10	90	<0.5	7	1.51	1.3	8	29	238	2.46
400129		0.26	0.068	1.4	1.19	<2	<10	90	<0.5	5	1.31	3.0	8	38	449	2.46
400130		0.26	0.110	0.8	0.85	<2	<10	50	<0.5	4	1.97	4.2	5	29	238	1.72
400131		0.26	0.051	0.6	1.09	<2	<10	70	<0.5	2	1.33	2.4	6	36	163	2.89
400132		0.26	0.165	1.6	0.98	7	<10	50	<0.5	6	1.46	2.2	11	29	325	2.97
400133		0.24	0.125	1.0	1.27	<2	<10	80	<0.5	3	1.33	3.1	8	35	365	3.05
400134		0.26	0.096	1.1	1.10	5	<10	80	<0.5	7	1.45	1.2	7	30	482	2.11
400135		0.26	0.095	1.6	1.13	<2	<10	70	<0.5	8	1.38	2.1	9	37	623	2.89
400136		0.26	0.084	1.2	1.07	4	<10	50	<0.5	7	1.77	1.5	10	30	311	3.17
400137		0.26	0.023	0.4	0.98	2	<10	80	<0.5	7	1.55	0.9	10	32	208	2.58
400138		0.26	0.023	1.1	1.32	2	<10	110	<0.5	6	1.17	12.7	10	28	351	3.10
400139		0.26	0.065	0.4	1.30	2	<10	60	<0.5	4	0.89	1.3	8	34	246	3.25
400140		0.26	0.027	0.4	1.53	3	<10	50	0.5	3	1.05	1.7	8	23	179	2.99
400141		0.26	0.007	0.3	1.40	5	<10	80	0.5	7	1.17	<0.5	7	26	18	2.33
400142		0.06	0.974	<0.2	0.23	<2	<10	10	<0.5	<2	0.35	<0.5	<1	1	2	0.27

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CERTIFICATE OF ANALYSIS VA02004876

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOR	10	1	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1	1
400066		10	1	0.07	10	0.82	825	3	0.04	1	770	20	0.15	<2	2	85
400067		20	<1	0.06	10	0.93	863	2	0.05	1	930	4	0.21	<2	3	131
400068		10	<1	0.06	10	0.85	711	2	0.04	1	850	4	0.04	<2	2	98
400069		10	<1	0.07	10	0.72	611	3	0.04	1	780	4	0.21	<2	1	100
400070		20	<1	0.07	10	0.84	834	1	0.06	1	980	2	0.02	<2	2	157
400071		10	<1	0.07	10	0.78	651	1	0.04	1	790	5	0.04	<2	1	129
400072		10	<1	0.07	10	0.84	685	2	0.05	2	800	4	0.03	<2	4	68
400073		10	<1	0.08	10	0.78	662	1	0.04	1	740	20	0.08	<2	2	160
400074		10	<1	0.09	10	0.67	612	3	0.04	1	740	11	0.56	<2	1	132
400075		10	<1	0.11	10	0.69	721	2	0.04	1	760	13	0.13	<2	1	123
400076		20	<1	0.09	10	0.93	785	<1	0.04	1	680	10	0.07	<2	2	173
400077		20	<1	0.23	10	1.18	1405	1	0.05	2	850	16	0.05	<2	7	274
400078		10	<1	0.09	10	0.84	687	1	0.04	2	660	30	0.04	<2	2	119
400079		10	<1	0.12	10	0.75	808	2	0.04	2	620	23	0.04	<2	1	128
400080		10	<1	0.10	10	0.77	800	1	0.04	1	640	43	0.09	<2	1	127
400081		10	<1	0.12	10	0.80	887	3	0.03	1	810	29	0.10	<2	1	115
400082		10	<1	0.06	10	0.84	778	1	0.04	1	790	9	0.07	<2	1	106
400083		20	<1	0.07	10	2.00	1110	1	0.05	21	960	5	0.02	<2	9	121
400084		10	<1	0.06	10	0.85	776	2	0.05	1	790	8	0.20	<2	2	101
400085		20	<1	0.15	10	0.88	907	21	0.03	3	890	39	1.99	<2	1	152
400086		20	<1	0.13	10	0.83	915	17	0.04	3	850	43	1.84	<2	1	132
400087		<10	1	0.17	<10	1.04	1155	52	0.04	5	970	20	1.64	4	2	174
400088		10	<1	0.07	<10	2.57	1370	6	0.05	32	1180	11	0.64	4	14	194
400089		<10	<1	0.14	<10	0.81	951	1	0.03	2	810	16	0.27	2	2	122
400090		10	<1	0.06	<10	2.61	1415	3	0.05	33	1210	12	0.57	6	14	224
400091		<10	<1	0.21	<10	0.87	1065	<1	0.03	2	850	2	0.15	6	2	95
400092		<10	<1	0.11	<10	1.00	1015	2	0.03	3	860	13	0.22	<2	2	84
400093		<10	<1	0.11	<10	1.03	1115	1	0.04	2	940	132	0.21	<2	3	91
400094		<10	<1	0.23	10	0.48	582	73	0.02	3	770	24	3.03	2	1	81
400095		<10	<1	0.22	<10	0.11	133	43	0.01	2	690	136	5.81	<2	1	177
400096		<10	1	0.21	<10	0.25	284	47	0.01	2	760	25	5.40	2	1	171
400097		<10	<1	0.17	<10	0.84	1215	13	0.03	2	740	37	1.70	5	2	146
400098		<10	<1	0.21	<10	0.60	684	41	0.02	2	710	44	3.72	<2	1	113
400099		<10	<1	0.23	<10	0.37	410	32	0.01	3	720	12	4.53	2	1	131
400100		<10	<1	0.19	<10	0.84	1305	15	0.02	3	680	82	2.23	3	1	83
400101		<10	<1	0.20	<10	0.78	1430	8	0.02	3	710	79	1.87	<2	1	126
400102		<10	<1	0.18	<10	0.73	1170	7	0.02	3	680	45	2.17	3	1	134
400103		<10	<1	0.19	<10	1.07	1600	60	0.03	3	750	18	2.20	3	2	79
400104		<10	<1	0.19	<10	1.22	1735	11	0.03	3	790	19	2.31	2	2	86
400105		<10	1	0.18	<10	0.57	869	2	0.03	2	830	8	1.24	3	1	89

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Date : 30-Oct-2002
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Project : Brenda

CERTIFICATE OF ANALYSIS VA02004876

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1
400106		<10	<1	0.21	<10	0.67	1010	24	0.03	2	670	7	2.81	<2	2	136
400107		<10	<1	0.21	<10	0.69	1020	34	0.03	2	680	16	2.54	4	2	112
400108		<10	<1	0.21	<10	0.78	1130	16	0.02	2	730	22	3.32	2	1	86
400109		<10	<1	0.15	<10	0.74	1065	3	0.03	2	850	49	1.12	<2	1	80
400110		<10	<1	0.22	<10	0.67	865	13	0.02	3	730	24	4.32	2	2	170
400111		<10	1	0.21	<10	0.93	1190	21	0.03	2	740	10	1.98	<2	2	79
400112		<10	<1	0.17	<10	0.99	1225	24	0.03	2	760	49	2.52	<2	2	97
400113		<10	<1	0.21	<10	0.87	1285	18	0.04	3	770	597	2.94	<2	2	103
400114		<10	<1	0.21	<10	0.86	1135	24	0.03	2	830	172	2.56	<2	1	80
400115		<10	<1	0.12	<10	1.42	815	<1	0.15	5	490	12	0.03	8	10	212
400116		<10	<1	0.19	<10	0.56	952	12	0.04	3	840	25	1.96	2	2	88
400117		<10	2	0.18	<10	0.59	1070	29	0.04	1	920	121	2.78	<2	2	144
400118		<10	<1	0.16	<10	0.62	1330	14	0.04	1	930	77	2.03	4	2	100
400119		<10	2	0.20	<10	0.85	1635	13	0.03	4	1250	163	2.27	<2	2	113
400120		<10	<1	0.17	<10	0.78	1525	5	0.03	3	850	145	2.13	<2	2	106
400121		<10	<1	0.23	<10	0.43	789	145	0.02	5	830	749	5.80	3	1	171
400122		<10	1	0.18	<10	1.00	1835	6	0.02	4	810	102	1.58	2	2	103
400123		<10	1	0.18	<10	1.00	1345	4	0.04	4	920	44	1.28	<2	3	74
400124		<10	<1	0.20	<10	0.82	978	8	0.04	4	910	20	1.63	2	2	68
400125		<10	<1	0.28	<10	0.10	80	37	0.02	3	940	50	3.82	<2	1	221
400126		<10	1	0.15	<10	0.86	998	4	0.04	4	870	16	1.11	2	2	86
400127		<10	<1	0.25	10	0.06	86	41	0.01	3	820	14	3.08	<2	1	148
400128		<10	1	0.16	<10	0.79	1265	2	0.04	3	800	32	1.47	8	2	119
400129		<10	<1	0.19	<10	0.81	1315	14	0.04	3	810	59	1.26	<2	2	86
400130		<10	<1	0.19	<10	0.64	767	13	0.03	3	740	156	2.08	2	2	105
400131		<10	<1	0.13	<10	0.84	806	3	0.05	4	800	32	1.02	2	2	77
400132		<10	3	0.26	<10	0.66	850	5	0.02	4	860	100	2.56	2	2	86
400133		<10	<1	0.22	<10	0.94	1230	20	0.04	4	860	51	1.22	<2	3	83
400134		<10	<1	0.18	<10	0.79	1055	11	0.03	3	760	21	1.32	4	2	84
400135		<10	<1	0.20	<10	0.78	957	4	0.04	4	760	32	1.37	<2	2	82
400136		<10	<1	0.21	<10	0.70	1040	26	0.03	4	820	22	2.73	<2	1	135
400137		<10	2	0.13	<10	0.63	859	4	0.05	3	830	13	1.29	<2	2	92
400138		<10	<1	0.20	<10	0.77	1255	7	0.04	4	870	161	1.78	<2	2	87
400139		10	<1	0.14	<10	0.81	842	5	0.06	4	850	12	0.24	3	3	51
400140		10	<1	0.13	<10	0.91	972	3	0.05	4	880	17	0.26	3	2	63
400141		<10	<1	0.09	<10	0.88	927	3	0.05	2	860	58	0.12	<2	3	108
400142		<10	<1	0.02	<10	0.06	32	<1	0.14	2	700	5	<0.01	<2	1	5

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CERTIFICATE OF ANALYSIS VA02004876

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ti	Tl	U	V	W	Zn
	Units	%	ppm	ppm	ppm	ppm	ppm
	LOR	0.01	10	10	1	10	2
400066		0.06	<10	<10	47	<10	97
400067		0.07	<10	<10	63	<10	137
400068		0.08	<10	<10	44	<10	71
400069		0.05	<10	<10	25	<10	40
400070		0.07	<10	<10	69	<10	63
400071		0.06	<10	<10	32	<10	55
400072		0.10	<10	10	68	<10	69
400073		0.06	<10	<10	39	<10	90
400074		0.05	<10	<10	23	<10	61
400075		0.06	<10	<10	20	<10	77
400076		0.07	<10	<10	40	<10	80
400077		0.07	<10	<10	105	<10	164
400078		0.06	<10	<10	41	<10	79
400079		0.05	<10	<10	30	<10	122
400080		0.05	<10	<10	27	<10	99
400081		0.06	<10	<10	24	<10	102
400082		0.07	<10	<10	37	<10	75
400083		0.18	<10	30	144	<10	81
400084		0.08	<10	<10	40	<10	85
400085		0.04	<10	<10	33	<10	386
400086		0.06	<10	<10	39	<10	193
400087		0.07	<10	<10	39	<10	283
400088		0.26	<10	<10	152	<10	143
400089		0.06	<10	<10	26	<10	109
400090		0.26	<10	<10	155	<10	116
400091		0.05	<10	<10	28	<10	92
400092		0.05	<10	<10	39	<10	<2
400093		0.05	<10	<10	44	<10	320
400094		<0.01	<10	<10	14	<10	103
400095		<0.01	<10	<10	6	<10	355
400096		<0.01	<10	<10	8	<10	101
400097		0.04	<10	<10	31	<10	420
400098		0.01	<10	<10	16	<10	150
400099		0.01	<10	<10	13	<10	65
400100		0.01	<10	<10	21	<10	698
400101		<0.01	<10	<10	19	<10	1325
400102		0.01	<10	<10	17	<10	340
400103		0.02	<10	<10	33	<10	315
400104		0.01	<10	<10	39	<10	724
400105		0.02	<10	<10	18	<10	65

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CERTIFICATE OF ANALYSIS VA02004876

Sample Description	Method Analyte Units LOR	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
400106		0.01	<10	<10	21	<10	95
400107		0.01	<10	<10	22	<10	181
400108		0.02	<10	<10	21	<10	92
400109		0.04	<10	<10	21	<10	152
400110		0.02	<10	<10	22	<10	239
400111		0.04	<10	<10	36	<10	189
400112		0.04	<10	<10	48	<10	352
400113		0.04	<10	<10	51	<10	2260
400114		0.04	<10	<10	22	<10	642
400115		0.05	<10	<10	123	<10	102
400116		0.05	<10	<10	33	<10	249
400117		0.04	<10	<10	37	<10	437
400118		0.05	<10	<10	44	<10	499
400119		0.05	<10	<10	34	<10	497
400120		0.04	<10	<10	33	<10	408
400121		0.01	<10	<10	18	<10	1530
400122		0.03	<10	<10	25	<10	745
400123		0.08	<10	<10	53	<10	218
400124		0.04	<10	<10	44	<10	208
400125		<0.01	<10	<10	7	<10	23
400126		0.07	<10	<10	49	<10	222
400127		<0.01	<10	<10	5	<10	28
400128		0.05	<10	<10	35	<10	211
400129		0.06	<10	<10	34	<10	414
400130		0.04	<10	<10	27	<10	480
400131		0.08	<10	<10	53	<10	322
400132		0.02	<10	<10	26	<10	299
400133		0.08	<10	<10	49	<10	385
400134		0.05	<10	<10	28	<10	210
400135		0.06	<10	<10	43	<10	295
400136		0.04	<10	<10	27	<10	244
400137		0.08	<10	<10	45	<10	160
400138		0.06	<10	<10	32	<10	1530
400139		0.08	<10	<10	64	<10	193
400140		0.08	<10	<10	56	<10	270
400141		0.10	<10	<10	45	<10	147
400142		<0.01	<10	<10	1	<10	3

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CERTIFICATE VA02004759

Project : ~~Kemess North~~ BRENDA
P.O. No: 262275

This report is for 22 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 18-Oct-2002.

The following have access to data associated with this certificate:

MIKE HIBBITTS
MYLES GAO
CARL EDMUNDS
B LAPEARE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
ME-ICP41	34 element aqua regia ICP-AES	ICP-AES

To: **KEMESS MINES LTD.**
ATTN: MIKE HIBBITTS
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This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

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CERTIFICATE OF ANALYSIS VA02004759

Sample Description	Method	WEI-21	Au-AA23	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	kg	ppb	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOR	0.02	5	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01
111756		0.24	<5	<0.2	1.57	<2	<10	260	<0.5	2	0.90	<0.5	8	67	4	2.82
111757		0.26	<5	<0.2	1.33	<2	<10	130	<0.5	2	0.89	<0.5	7	43	3	2.42
111758		0.26	<5	<0.2	1.23	4	<10	60	0.6	2	1.00	<0.5	6	78	4	2.44
111759		0.26	<5	<0.2	1.23	9	<10	50	0.6	2	1.14	<0.5	6	54	2	2.30
111760		0.26	<5	<0.2	1.18	<2	<10	60	0.7	4	1.33	<0.5	6	64	3	2.38
111984		0.24	<5	<0.2	0.54	<2	<10	390	<0.5	3	1.18	<0.5	2	66	5	0.93
111985		0.24	<5	<0.2	0.52	2	<10	250	<0.5	2	0.92	<0.5	2	112	28	0.96
111986		0.24	<5	<0.2	0.47	<2	<10	560	<0.5	<2	0.74	<0.5	2	73	5	0.98
111987		0.26	<5	<0.2	0.41	2	<10	690	<0.5	3	0.98	<0.5	1	102	2	0.87
111988		0.24	<5	<0.2	0.40	<2	<10	780	<0.5	5	1.31	<0.5	1	76	1	0.80
111989		0.26	<5	<0.2	0.41	3	<10	460	<0.5	5	0.89	<0.5	1	92	2	0.80
111990		0.24	<5	<0.2	0.43	<2	<10	320	<0.5	<2	1.10	<0.5	1	56	1	0.81
111991		0.26	<5	<0.2	0.43	<2	<10	160	<0.5	2	1.10	<0.5	1	78	1	0.79
111992		0.24	<5	<0.2	0.37	<2	<10	450	<0.5	4	1.08	<0.5	2	60	1	0.80
111993		0.24	<5	<0.2	0.44	4	<10	2150	<0.5	6	1.37	<0.5	1	68	2	0.80
111994		0.24	<5	<0.2	0.58	<2	<10	70	<0.5	<2	0.94	<0.5	3	61	3	1.16
111995		0.28	<5	0.4	0.85	<2	<10	70	<0.5	3	1.42	<0.5	4	57	17	1.94
111996		0.26	26	0.3	0.93	5	<10	50	<0.5	2	1.68	<0.5	7	69	164	3.65
111997		0.24	<5	<0.2	1.36	2	<10	320	<0.5	4	1.41	<0.5	7	75	5	2.53
111998		0.24	<5	<0.2	1.45	<2	<10	50	0.5	2	0.93	<0.5	7	50	3	2.40
111999		0.26	<5	<0.2	1.73	<2	<10	80	0.7	<2	1.09	<0.5	7	75	21	2.43
112000		0.26	<5	<0.2	1.36	2	<10	160	<0.5	<2	0.95	<0.5	7	46	2	2.50

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Page # : 2 - B
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Project : Kemess North

CERTIFICATE OF ANALYSIS VA02004759

Sample Description	Method Analyte Units LOR	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1
111756		<10	<1	0.18	<10	0.93	1720	8	0.03	4	790	3	0.08	<2	2	81
111757		<10	<1	0.13	<10	0.88	1400	7	0.03	3	770	5	0.05	<2	2	63
111758		<10	<1	0.10	<10	0.85	1225	2	0.06	4	690	4	0.08	4	3	63
111759		<10	2	0.10	<10	0.82	1150	2	0.05	3	660	4	0.02	<2	3	60
111760		<10	<1	0.11	<10	0.83	1070	2	0.07	4	670	4	0.01	<2	4	63
111984		<10	<1	0.23	10	0.19	682	2	0.04	2	210	4	0.07	<2	1	126
111985		<10	<1	0.20	10	0.20	672	3	0.05	3	190	5	0.22	<2	1	54
111986		<10	1	0.16	10	0.21	580	3	0.06	2	170	4	0.05	<2	1	53
111987		<10	<1	0.18	10	0.13	421	3	0.05	3	160	4	0.07	<2	1	61
111988		<10	<1	0.20	10	0.09	349	2	0.05	2	150	4	0.09	<2	1	131
111989		<10	1	0.19	10	0.11	346	3	0.06	3	130	3	0.06	<2	1	66
111990		<10	<1	0.18	10	0.14	440	3	0.05	2	140	5	0.11	<2	1	68
111991		<10	<1	0.18	10	0.11	381	2	0.06	2	140	5	0.05	<2	1	41
111992		<10	<1	0.16	10	0.08	330	2	0.06	2	130	4	0.02	<2	1	73
111993		<10	2	0.21	10	0.11	462	2	0.06	3	180	4	0.10	<2	1	199
111994		<10	<1	0.14	10	0.28	685	2	0.06	2	230	4	0.05	<2	1	45
111995		<10	<1	0.17	10	0.40	1130	3	0.06	2	340	5	0.08	<2	2	43
111996		<10	<1	0.14	<10	0.53	1195	7	0.04	5	400	20	1.50	<2	3	105
111997		<10	<1	0.13	10	0.83	1505	3	0.05	4	680	3	0.04	<2	4	90
111998		<10	<1	0.17	<10	0.80	1545	6	0.04	3	680	<2	0.02	<2	3	58
111999		10	<1	0.23	<10	0.79	1820	32	0.02	4	660	5	0.17	<2	2	126
112000		<10	<1	0.14	<10	0.81	1540	7	0.04	3	680	3	0.14	<2	3	86

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CERTIFICATE OF ANALYSIS VA02004759

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
111756		0.09	<10	<10	43	<10	104
111757		0.09	<10	<10	42	<10	86
111758		0.11	<10	<10	54	<10	76
111759		0.11	<10	<10	50	<10	68
111760		0.13	<10	<10	59	<10	62
111984		<0.01	<10	<10	10	<10	35
111985		0.01	<10	<10	9	<10	29
111986		<0.01	<10	<10	11	<10	30
111987		<0.01	<10	<10	8	<10	26
111988		<0.01	<10	<10	7	<10	26
111989		<0.01	<10	<10	7	<10	25
111990		<0.01	<10	<10	8	<10	26
111991		<0.01	<10	<10	7	<10	29
111992		<0.01	<10	<10	6	<10	27
111993		<0.01	<10	<10	8	<10	33
111994		0.01	<10	<10	16	<10	50
111995		0.01	<10	<10	29	<10	117
111996		0.01	<10	<10	28	<10	134
111997		0.05	<10	<10	44	<10	83
111998		0.08	<10	<10	35	<10	78
111999		0.09	<10	<10	32	<10	94
112000		0.09	<10	<10	40	<10	81

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CERTIFICATE OF ANALYSIS VA02004396

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppb 5	Cu-AA49 Cu % 0.001
111854		0.26	192	0.029
111855		0.24	105	0.004
111856		0.26	99	0.003
111857		0.26	21	0.009
111858		0.24	202	0.005
111859		0.26	298	0.004
111860		0.24	50	0.005
111861		0.24	34	0.002
111862		0.26	33	0.001
111863		0.26	30	0.027
111864		0.26	37	0.003
111865		0.26	27	0.014
111866		0.24	23	0.004
111867		0.26	80	0.002
111868		0.26	213	0.002
111869		0.26	120	0.003
111870		0.26	20	0.001
111871		0.26	40	0.002
111872		0.24	21	0.086
111873		0.26	27	0.200
111874		0.24	<5	0.046
111875		0.24	20	0.050
111876		0.26	5	0.027
111877		0.24	<5	0.011
111878		0.24	<5	0.004
111879		0.26	43	0.005
~~113359~~		0.24	<5	0.003
~~113360~~		0.26	<5	0.003
~~113361~~		0.26	<5	<0.001
~~113362~~		0.26	5	0.001
~~113363~~		0.26	5	0.010
~~113364~~		0.26	31	0.030
~~113365~~		0.26	7	0.003
~~113366~~		0.26	31	0.027
~~113367~~		0.24	<5	0.004
~~113368~~		0.26	<5	0.008
~~113369~~		0.24	10	0.017
~~113370~~		0.26	<5	0.003
~~113371~~		0.24	<5	0.009
~~113372~~		0.26	6	0.011

From Myrtle Inv & Cedarbrook

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CERTIFICATE VA02004248

Project : Kemess North

P.O. No: 266490

This report is for 155 PULP samples submitted to our lab in North Vancouver, BC, Canada on26-Sep-2002.

The following have access to data associated with this certificate:

MIKE HIBBITTS
MYLES GAO
CARL EDMUNDS
B LAPEARE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LOG-21	Sample logging - ClientBarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP41	34 element aqua regia ICP-AES	ICP-AES

To: **KEMESS MINES LTD.**
ATTN: MIKE HIBBITTS
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This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

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CERTIFICATE OF ANALYSIS VA02004248

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm
	LOR	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01	10	1
111527		8.4	1.07	7	<10	30	<0.5	17	2.30	6.5	6	13	587	3.88	<10	1
111528		9.6	0.26	25	<10	20	<0.5	18	3.70	<0.5	7	9	34	3.76	<10	<1
111529		7.3	1.72	37	<10	40	<0.5	10	1.09	2.2	8	7	150	4.65	<10	<1
111530		4.4	2.20	32	<10	60	0.5	4	1.03	17.7	6	14	142	3.77	<10	<1
111531		17.6	0.24	35	<10	30	<0.5	24	2.71	<0.5	7	8	18	3.80	<10	<1
111532		2.1	0.33	43	<10	30	<0.5	8	4.09	<0.5	7	18	12	3.28	<10	<1
111533		4.2	0.22	23	<10	30	<0.5	20	4.80	<0.5	6	7	28	3.23	<10	<1
111534		11.8	0.52	25	<10	30	<0.5	20	2.03	3.9	7	21	306	4.18	<10	<1
111535		4.5	1.12	11	<10	30	<0.5	11	1.04	8.4	7	15	156	2.54	<10	<1
111536		0.7	2.94	16	<10	20	1.0	7	3.53	0.6	21	3	53	6.10	10	1
111537		2.9	1.10	17	<10	40	<0.5	8	1.67	1.6	9	10	295	3.14	<10	<1
111538		1.5	2.71	21	<10	90	0.6	9	3.20	4.4	11	14	279	3.58	10	<1
111539		1.6	0.62	11	<10	50	<0.5	6	1.61	<0.5	7	11	174	3.05	<10	1
111540		1.6	1.04	13	<10	60	<0.5	6	1.54	0.8	7	24	260	2.59	<10	1
111541		1.0	1.26	8	<10	60	<0.5	4	1.24	1.4	14	15	271	2.59	<10	<1
111542		1.0	1.26	9	10	80	<0.5	6	1.50	0.9	8	26	257	2.91	<10	1
111543		1.2	1.00	6	<10	70	<0.5	9	1.42	3.2	5	17	284	2.48	<10	1
111544		1.4	1.14	2	<10	70	<0.5	7	1.57	4.7	7	26	319	3.03	<10	<1
111545		1.0	1.18	5	<10	50	<0.5	8	1.57	2.5	6	15	299	2.78	<10	<1
111546		1.5	0.89	<2	<10	40	<0.5	6	1.64	4.9	10	32	280	3.01	<10	<1
111547		0.5	0.62	2	<10	60	<0.5	8	1.36	4.5	4	19	133	1.85	<10	2
111548		1.1	1.22	<2	<10	40	<0.5	4	1.19	0.6	7	39	390	2.71	<10	1
111549		1.7	1.14	<2	<10	40	<0.5	6	1.25	6.9	7	32	404	2.88	<10	2
111550		2.4	1.12	<2	<10	40	<0.5	5	1.14	1.6	7	32	502	2.84	<10	<1
111551		<0.2	2.57	<2	<10	340	0.5	<2	2.73	<0.5	14	6	25	4.26	<10	<1
111602		1.4	1.33	6	<10	40	<0.5	5	1.73	0.7	10	23	523	4.61	<10	<1
111603		1.1	1.07	8	<10	30	<0.5	7	2.22	1.4	8	11	511	3.95	<10	<1
111604		1.3	1.08	<2	<10	30	<0.5	2	2.15	2.2	8	24	627	4.13	<10	2
111605		1.0	1.13	8	<10	30	<0.5	8	2.63	0.8	11	16	620	4.77	<10	<1
111606		1.1	1.41	<2	<10	40	<0.5	7	1.97	0.6	11	23	418	4.56	<10	<1
111607		1.0	1.12	<2	<10	40	<0.5	4	2.32	<0.5	8	15	519	3.83	<10	2
111608		1.0	1.45	8	<10	30	<0.5	4	1.84	0.5	10	20	567	4.40	<10	2
111609		0.6	1.50	<2	<10	50	<0.5	6	1.88	0.5	10	16	373	4.41	<10	<1
111610		1.4	1.51	8	<10	50	<0.5	7	2.23	7.7	10	16	601	4.35	<10	<1
111611		3.5	1.13	7	<10	30	<0.5	12	1.81	11.2	9	17	838	4.97	<10	<1
111612		1.0	0.84	<2	<10	50	<0.5	5	1.12	2.8	10	41	835	3.67	<10	1
111613		0.4	1.64	<2	<10	50	<0.5	4	1.52	2.5	7	14	141	2.23	<10	1
111614		0.3	1.54	<2	<10	50	<0.5	5	1.51	1.0	6	27	81	2.11	<10	<1
111615		0.9	1.63	4	<10	130	<0.5	8	1.32	0.8	11	45	414	4.22	10	<1
111616		0.7	1.54	4	<10	80	<0.5	3	1.29	0.6	12	57	768	4.13	<10	<1

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Date : 9-Oct-2002
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Project : Kemess North

CERTIFICATE OF ANALYSIS VA02004248

Sample Description	Method Analyte Units LOR	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1
111617		1.1	1.49	7	<10	70	<0.5	3	1.61	0.5	10	72	652	4.43	10	2
111618		0.8	1.59	<2	<10	110	<0.5	8	1.88	0.7	9	60	460	4.92	10	<1
111619		1.4	1.53	<2	<10	90	<0.5	9	1.65	1.3	10	81	558	5.41	10	1
111620		3.3	1.00	<2	<10	20	<0.5	10	2.61	2.6	11	40	949	5.40	<10	<1
111621		6.3	1.05	<2	<10	30	<0.5	6	1.68	12.3	12	31	3710	5.85	<10	<1
111622		2.8	1.10	7	<10	20	<0.5	5	2.10	7.7	11	23	756	5.18	10	<1
111623		3.4	0.77	<2	<10	40	<0.5	4	1.24	<0.5	12	26	986	5.18	<10	2
111624		1.7	0.86	7	<10	30	<0.5	6	1.67	1.1	10	25	982	4.64	<10	<1
111625		1.7	0.55	2	<10	30	<0.5	10	1.52	<0.5	11	27	620	5.33	<10	<1
111626		1.4	0.63	6	<10	40	<0.5	7	1.72	<0.5	10	35	692	5.36	<10	<1
111627		0.4	1.62	5	<10	50	<0.5	6	1.50	2.4	7	16	133	2.23	<10	1

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CERTIFICATE OF ANALYSIS VA02004248

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Ti	Tl
	Units	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm
	LOR	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1	1	0.01	10
111527		0.16	10	0.95	1080	7	0.01	6	620	204	5.12	<2	1	185	<0.01	<10
111528		0.12	<10	0.12	184	8	0.01	4	660	52	7.16	<2	1	237	<0.01	<10
111529		0.16	10	1.57	2970	6	0.01	2	940	171	3.96	<2	2	67	<0.01	<10
111530		0.22	10	2.03	4080	2	0.01	2	850	205	2.52	<2	2	103	<0.01	<10
111531		0.15	<10	0.02	41	4	0.01	2	660	33	6.43	<2	2	166	<0.01	<10
111532		0.21	<10	0.02	46	5	0.01	2	730	11	7.00	<2	2	258	<0.01	<10
111533		0.15	<10	0.01	30	5	0.01	2	690	23	7.44	<2	3	402	<0.01	<10
111534		0.22	<10	0.21	277	4	0.02	3	790	68	6.12	<2	1	114	<0.01	<10
111535		0.14	<10	0.68	2150	3	0.02	2	580	331	2.04	<2	2	53	0.05	<10
111536		0.09	<10	1.86	2400	1	0.07	9	1340	3	0.81	<2	14	110	0.26	<10
111537		0.19	<10	0.67	1115	16	0.03	2	600	34	3.86	<2	1	114	0.01	<10
111538		0.16	<10	1.09	2220	7	0.07	4	780	31	2.21	<2	6	175	0.06	<10
111539		0.19	<10	0.39	833	8	0.01	2	650	13	4.00	<2	1	94	<0.01	<10
111540		0.22	<10	0.68	1480	9	0.03	3	620	19	2.88	<2	1	97	0.02	<10
111541		0.13	<10	0.81	1925	9	0.04	3	650	17	2.13	<2	1	79	0.02	<10
111542		0.18	<10	0.86	1985	10	0.04	3	660	13	2.46	<2	1	113	0.02	<10
111543		0.12	<10	0.75	1290	9	0.04	3	670	13	2.19	<2	1	95	0.02	<10
111544		0.19	<10	0.76	1590	9	0.04	3	650	34	2.61	<2	1	111	0.01	<10
111545		0.12	10	0.87	1890	13	0.03	3	610	18	2.23	<2	1	83	<0.01	<10
111546		0.21	<10	0.59	1105	19	0.03	3	700	51	3.45	<2	1	114	<0.01	<10
111547		0.13	<10	0.37	970	9	0.03	2	580	20	2.19	<2	1	93	0.01	<10
111548		0.14	<10	0.94	1225	8	0.04	6	710	18	1.81	<2	2	69	0.02	<10
111549		0.13	<10	0.92	1250	9	0.03	7	720	32	2.38	3	2	85	0.02	<10
111550		0.17	<10	0.86	1325	10	0.04	6	660	76	2.48	<2	2	74	0.02	<10
111551		0.09	<10	1.69	1135	1	0.14	4	710	<2	0.02	<2	10	155	0.04	<10
111602		0.23	<10	0.64	1765	47	0.04	2	820	21	3.37	<2	2	118	0.05	<10
111603		0.21	10	0.55	1695	24	0.03	2	820	40	3.09	<2	2	137	0.02	<10
111604		0.25	10	0.60	1850	25	0.03	2	780	31	3.37	<2	2	94	<0.01	<10
111605		0.16	<10	0.71	1685	14	0.03	2	810	10	4.25	<2	2	131	0.02	<10
111606		0.19	<10	0.94	1975	14	0.03	2	850	35	3.48	<2	3	98	0.03	<10
111607		0.14	<10	0.65	1820	17	0.02	1	800	10	3.13	<2	2	133	0.04	<10
111608		0.17	<10	0.97	1950	16	0.03	2	840	13	3.43	<2	2	110	0.06	<10
111609		0.12	<10	1.11	2130	16	0.03	2	840	7	2.70	<2	2	105	0.03	<10
111610		0.18	<10	1.04	2290	14	0.03	1	1020	239	2.87	2	2	118	0.02	<10
111611		0.17	<10	0.69	1805	13	0.02	2	1150	102	3.49	<2	2	110	0.01	<10
111612		0.18	<10	0.42	1150	23	0.03	3	620	34	2.18	<2	1	60	0.04	<10
111613		0.09	<10	1.09	2360	4	0.03	2	810	13	0.17	<2	3	99	0.06	<10
111614		0.13	<10	0.90	2250	1	0.03	3	710	20	0.07	<2	4	88	0.05	<10
111615		0.10	<10	1.21	1975	9	0.03	11	690	14	1.14	<2	5	110	0.02	<10
111616		0.13	<10	1.19	1470	10	0.04	13	720	37	0.88	<2	5	68	0.02	<10

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CERTIFICATE OF ANALYSIS VA02004248

Sample Description	Method Analyte Units LOR	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10
111617		0.10	<10	1.10	1950	9	0.03	17	720	21	1.13	<2	4	77	0.03	<10
111618		0.15	<10	1.07	2170	10	0.04	11	710	49	1.06	<2	4	73	0.03	<10
111619		0.09	<10	1.23	2380	7	0.03	17	670	94	1.30	<2	4	75	0.06	<10
111620		0.19	<10	0.55	2110	13	0.03	5	550	262	4.44	4	2	85	<0.01	<10
111621		0.17	<10	0.61	2130	13	0.02	6	600	457	4.69	<2	2	51	0.01	<10
111622		0.19	<10	0.62	1905	11	0.03	3	680	544	4.18	<2	2	150	0.03	<10
111623		0.16	<10	0.38	1555	16	0.03	2	750	28	4.34	<2	2	58	0.03	<10
111624		0.25	<10	0.36	1425	18	0.03	2	910	22	4.13	<2	2	147	0.02	<10
111625		0.17	<10	0.23	869	15	0.03	2	720	11	4.14	<2	1	86	0.01	<10
111626		0.18	<10	0.25	1060	12	0.04	2	820	11	3.07	<2	1	94	0.01	<10
111627		0.09	<10	1.09	2350	4	0.03	2	810	11	0.17	<2	3	95	0.06	<10

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CERTIFICATE OF ANALYSIS VA02004248

Sample Description	Method Analyte Units LOR	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
111527		<10	16	<10	794
111528		10	4	<10	34
111529		<10	28	<10	410
111530		<10	37	<10	2140
111531		10	4	<10	19
111532		10	5	<10	18
111533		10	5	<10	6
111534		10	8	<10	430
111535		<10	29	<10	975
111536		<10	209	<10	77
111537		<10	10	<10	222
111538		<10	69	<10	498
111539		<10	6	<10	58
111540		<10	14	<10	169
111541		<10	14	<10	265
111542		<10	18	<10	201
111543		<10	19	<10	454
111544		<10	20	<10	609
111545		<10	18	<10	381
111546		<10	12	<10	583
111547		<10	8	<10	574
111548		<10	24	<10	168
111549		<10	26	<10	893
111550		<10	23	<10	282
111551		<10	132	<10	72
111602		<10	28	<10	182
111603		<10	24	<10	241
111604		<10	22	<10	364
111605		<10	31	<10	171
111606		<10	36	<10	166
111607		<10	25	<10	107
111608		<10	35	<10	151
111609		<10	42	<10	167
111610		<10	39	<10	1305
111611		<10	33	<10	1410
111612		<10	28	<10	434
111613		<10	42	<10	433
111614		<10	36	<10	247
111615		<10	49	<10	206
111616		<10	63	<10	171

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Sample Description	Method Analyte Units LOR	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
111617		<10	60	<10	187
111618		<10	60	<10	234
111619		<10	71	<10	291
111620		<10	26	<10	465
111621		<10	31	<10	2120
111622		<10	39	<10	1280
111623		<10	27	<10	79
111624		<10	24	<10	195
111625		<10	30	<10	58
111626		<10	42	<10	58
111627		<10	41	<10	423

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Project : Kemess North

P.O. No: 266490

This report is for 235 PULP samples submitted to our lab in North Vancouver, BC, Canada on26-Sep-2002.

The following have access to data associated with this certificate:

MIKE HIBBITTS
MYLES GAO
CARL EDMUNDS
B LAPEARE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LOG-21	Sample logging - ClientBarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP41	34 element aqua regia ICP-AES	ICP-AES

To: **KEMESS MINES LTD.**
ATTN: MIKE HIBBITTS
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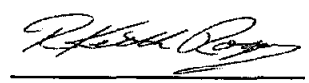
Signature: 

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Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm
	LOR	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01	10	1
111628		0.9	1.05	2	10	50	<0.5	11	2.04	<0.5	10	23	362	4.17	<10	1
111629		0.8	1.29	4	<10	70	<0.5	7	1.62	0.6	7	26	464	3.66	<10	<1
111630		1.4	1.35	<2	<10	50	<0.5	6	1.42	7.1	14	23	571	4.46	<10	2
111631		1.0	1.36	3	<10	40	<0.5	8	1.89	0.8	10	24	250	4.36	<10	2
111632		1.0	1.01	<2	10	30	<0.5	5	1.47	1.0	19	24	330	5.07	<10	<1
111633		0.7	1.41	20	<10	50	<0.5	7	1.79	3.0	11	27	178	4.05	<10	4
111634		1.5	1.34	8	<10	50	<0.5	8	2.13	2.0	11	25	252	4.25	10	<1
111635		4.7	1.21	2	10	40	<0.5	11	1.46	6.6	14	35	673	6.26	<10	<1
111636		<0.2	1.14	4	10	230	<0.5	7	1.85	<0.5	8	29	41	2.69	<10	<1
111637		<0.2	1.14	<2	10	220	<0.5	10	1.80	<0.5	9	31	38	2.67	<10	2
111707		0.4	2.83	6	10	30	1.0	5	3.19	<0.5	13	6	31	5.29	10	1
111708		2.2	1.75	11	<10	110	0.5	2	1.07	4.4	10	34	975	3.39	10	3
111709		0.5	1.30	2	10	130	<0.5	<2	0.74	9.0	6	24	134	1.93	<10	<1
111710		6.0	1.03	15	<10	30	0.9	4	0.59	5.1	15	35	550	5.55	<10	<1
111711		1.6	1.44	3	10	20	<0.5	2	0.66	4.9	11	32	719	3.17	<10	1
111712		1.6	1.31	2	<10	70	<0.5	<2	0.72	1.4	11	33	1140	4.28	<10	3
111713		1.8	1.07	<2	<10	70	<0.5	8	0.72	1.3	10	19	789	4.47	<10	<1
111714		1.6	1.39	8	<10	110	<0.5	5	0.89	2.3	10	37	722	4.10	<10	1
111715		0.3	1.55	4	<10	80	<0.5	2	1.12	10.4	6	23	133	1.94	<10	<1
111716		0.6	1.39	2	10	60	0.5	<2	0.85	10.9	7	35	120	2.02	<10	<1
111717		1.2	1.64	<2	10	210	0.5	7	1.00	26.0	6	20	319	2.41	<10	1
111718		2.0	3.12	7	<10	140	0.7	<2	2.32	10.5	9	20	571	4.03	10	1
111719		1.5	1.98	<2	<10	200	0.5	8	1.33	36.2	6	29	658	2.53	<10	1
111720		<0.2	2.69	3	<10	520	0.6	8	2.36	1.5	6	31	74	1.87	<10	3
111721		2.3	1.77	8	<10	30	0.5	5	1.06	4.7	13	21	863	5.80	10	<1
111722		<0.2	1.43	2	<10	50	<0.5	4	1.66	<0.5	9	30	25	2.69	10	<1
111723		1.8	1.82	3	<10	60	<0.5	7	1.21	1.9	11	22	565	5.49	<10	<1
111724		2.2	1.37	6	<10	30	<0.5	5	1.09	1.6	13	48	639	5.21	<10	<1
111725		1.4	1.16	7	<10	80	<0.5	10	1.39	3.2	8	27	403	3.12	<10	1
111726		0.7	1.33	5	<10	140	<0.5	8	1.25	3.2	7	34	291	2.74	<10	1
111727		1.3	1.21	<2	<10	90	<0.5	7	1.42	1.6	9	32	685	3.09	<10	<1
111728		2.4	1.28	3	<10	50	<0.5	6	1.81	2.8	10	52	1015	3.69	<10	<1
111729		1.7	1.43	2	<10	90	<0.5	6	1.58	1.6	9	45	664	3.33	<10	<1
111730		3.3	1.23	5	<10	70	<0.5	5	1.33	5.0	13	64	735	3.55	<10	<1
111731		1.6	1.48	16	<10	70	<0.5	8	1.82	4.6	13	69	409	4.42	<10	<1
111732		<0.2	0.52	<2	<10	10	<0.5	<2	0.37	<0.5	1	98	6	0.39	<10	<1
111733		2.0	1.72	13	<10	60	<0.5	8	1.73	27.6	11	90	350	4.51	<10	<1
111734		2.8	0.81	4	<10	40	<0.5	13	2.34	6.0	11	46	834	4.35	<10	<1
111735		0.3	1.37	<2	<10	190	<0.5	7	1.54	1.3	9	25	147	2.66	<10	3
111736		0.4	2.02	8	<10	150	<0.5	10	1.95	0.5	12	33	106	3.34	<10	<1

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CERTIFICATE OF ANALYSIS VA02004247

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10
111628		0.15	<10	0.68	1625	12	0.03	2	830	9	2.51	<2	2	110	0.02	<10
111629		0.14	<10	0.94	1635	12	0.05	2	830	6	0.90	3	3	93	0.04	<10
111630		0.11	<10	1.10	1750	16	0.04	2	920	253	2.44	<2	3	84	0.05	<10
111631		0.12	<10	1.10	1990	16	0.03	2	760	19	3.23	<2	2	94	0.02	<10
111632		0.08	<10	0.78	1060	14	0.04	2	750	12	3.13	<2	2	80	0.04	<10
111633		0.09	<10	1.19	1525	6	0.04	2	790	20	2.52	<2	3	107	0.05	<10
111634		0.11	<10	1.06	1865	12	0.03	3	850	47	3.07	<2	3	105	0.01	<10
111635		0.14	<10	0.83	1565	16	0.03	2	570	613	4.47	<2	3	73	0.03	<10
111636		0.12	10	0.89	1100	3	0.03	3	580	21	0.24	<2	4	86	0.02	<10
111637		0.13	10	0.89	1085	3	0.03	3	590	20	0.23	<2	4	83	0.02	<10
111707		0.12	<10	1.49	1785	1	0.06	2	1650	8	0.18	<2	9	89	0.22	<10
111708		0.15	<10	0.83	1390	5	0.06	4	900	87	1.04	<2	2	88	0.09	<10
111709		0.08	<10	0.73	1435	2	0.04	2	520	50	0.24	<2	2	130	0.07	<10
111710		0.25	<10	0.42	915	19	0.03	3	780	80	5.27	<2	2	50	0.07	<10
111711		0.15	<10	0.70	1435	11	0.04	7	580	23	1.40	<2	1	52	0.04	<10
111712		0.16	<10	0.63	1315	11	0.05	4	650	16	0.72	<2	2	51	0.06	<10
111713		0.14	<10	0.41	1070	13	0.05	2	730	42	2.44	<2	2	50	0.04	<10
111714		0.20	<10	0.57	1470	12	0.05	2	820	24	1.75	<2	2	68	0.03	<10
111715		0.09	<10	0.72	1330	2	0.04	2	540	30	0.26	<2	2	107	0.03	<10
111716		0.10	<10	0.71	1340	3	0.05	3	530	36	0.24	<2	2	96	0.07	<10
111717		0.11	<10	0.70	1560	4	0.05	2	550	53	0.67	<2	3	120	0.06	<10
111718		0.16	<10	0.50	1150	11	0.09	3	730	232	1.80	<2	2	166	0.03	<10
111719		0.13	<10	0.67	1540	4	0.05	2	510	40	0.84	<2	3	117	0.05	<10
111720		0.08	10	0.70	960	4	0.08	3	590	39	0.23	<2	2	205	0.03	<10
111721		0.11	<10	0.92	2000	10	0.04	1	1010	33	2.77	<2	3	60	0.04	<10
111722		0.06	<10	0.94	1205	2	0.05	5	570	4	0.07	<2	5	78	0.04	<10
111723		0.12	<10	1.13	3050	7	0.04	2	1080	116	3.29	<2	3	247	0.04	<10
111724		0.14	<10	0.84	2400	9	0.04	3	800	117	4.38	<2	2	160	0.05	<10
111725		0.18	<10	0.77	2220	12	0.02	4	620	92	2.25	<2	2	120	0.02	<10
111726		0.16	<10	0.95	2900	5	0.03	6	620	11	1.38	<2	2	107	0.02	<10
111727		0.13	<10	0.87	2650	9	0.03	5	630	14	1.69	<2	2	123	0.02	<10
111728		0.15	<10	0.98	2010	9	0.03	6	630	46	2.71	<2	2	130	0.02	<10
111729		0.13	<10	1.11	2680	10	0.03	8	660	26	1.81	<2	2	116	0.03	<10
111730		0.17	<10	0.92	2110	8	0.03	14	670	92	2.43	<2	3	99	0.05	<10
111731		0.12	<10	1.16	3060	6	0.02	14	640	55	2.64	<2	3	121	0.04	<10
111732		0.03	<10	0.06	55	1	0.41	4	660	5	0.02	<2	1	7	<0.01	<10
111733		0.16	<10	1.38	3370	9	0.02	20	750	261	2.90	<2	3	94	0.02	<10
111734		0.22	<10	0.46	1335	21	0.02	4	670	197	4.54	<2	1	152	0.01	<10
111735		0.09	<10	1.03	1980	1	0.03	3	780	108	0.30	<2	3	109	0.08	<10
111736		0.09	<10	1.47	2620	1	0.03	3	1040	52	0.33	<2	5	157	0.09	<10

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CERTIFICATE OF ANALYSIS VA02004247

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
111628		<10	40	<10	126
111629		<10	52	<10	180
111630		<10	55	<10	1255
111631		<10	44	<10	214
111632		<10	58	<10	182
111633		<10	53	<10	440
111634		<10	44	<10	363
111635		<10	43	<10	927
111636		<10	62	<10	88
111637		<10	63	<10	86
111707		<10	134	<10	101
111708		<10	56	<10	542
111709		<10	37	<10	990
111710		<10	24	<10	565
111711		<10	29	<10	635
111712		<10	59	<10	242
111713		<10	43	<10	209
111714		<10	40	<10	333
111715		<10	34	<10	1130
111716		<10	40	<10	1185
111717		<10	42	<10	2680
111718		10	40	<10	1210
111719		<10	43	<10	3690
111720		<10	33	<10	205
111721		<10	55	<10	595
111722		<10	70	<10	76
111723		<10	47	<10	376
111724		<10	28	<10	322
111725		<10	18	<10	519
111726		<10	23	<10	516
111727		<10	24	<10	306
111728		<10	28	<10	415
111729		<10	29	<10	322
111730		<10	36	<10	631
111731		<10	49	<10	663
111732		<10	2	<10	7
111733		<10	50	<10	3130
111734		<10	23	<10	741
111735		<10	50	<10	295
111736		<10	62	<10	244

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Project : Kemess North

P.O. No: 266490

This report is for 228 PULP samples submitted to our lab in North Vancouver, BC, Canada on26-Sep-2002.

The following have access to data associated with this certificate:

MIKE HIBBITTS
MYLES GAO
CARL EDMUNDS
B LAPEARE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LOG-21	Sample logging - ClientBarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP41	34 element aqua regia ICP-AES	ICP-AES

To: **KEMESS MINES LTD.**
ATTN: MIKE HIBBITTS
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This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

ALS Chemex

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CERTIFICATE OF ANALYSIS VA02004246

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm
	LOR	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01	10	1
111552		2.3	1.28	7	<10	50	<0.5	<2	1.78	5.7	10	68	411	3.00	30	<1
111553		3.7	1.29	32	<10	60	<0.5	<2	1.67	1.3	10	53	695	4.14	30	<1
111554		4.3	1.57	17	<10	60	<0.5	<2	1.88	1.9	7	60	671	4.65	40	<1
111555		1.5	1.49	7	<10	50	<0.5	<2	1.98	2.0	8	55	381	4.17	40	<1
111556		1.8	1.31	5	<10	70	<0.5	<2	2.34	3.5	9	70	829	4.27	30	<1
111557		1.2	1.40	3	<10	90	<0.5	<2	2.08	2.1	8	45	453	3.81	30	<1
111558		1.3	1.40	4	<10	80	<0.5	<2	1.64	1.0	8	46	454	4.06	20	<1
111559		2.2	0.95	2	<10	110	<0.5	<2	1.54	0.7	8	54	918	3.75	20	<1
111560		2.4	1.41	4	<10	140	<0.5	<2	1.19	1.9	7	59	1140	4.11	30	<1
111561		1.8	1.20	2	<10	70	<0.5	<2	1.37	4.2	9	26	829	3.50	30	<1
111562		1.9	1.18	2	<10	70	<0.5	<2	1.35	4.3	9	26	821	3.43	30	<1
111563		0.2	1.46	<2	<10	110	<0.5	<2	1.66	0.9	6	31	74	2.21	20	<1
111564		<0.2	1.19	<2	<10	100	<0.5	<2	1.40	<0.5	5	11	14	1.79	20	<1
111565		<0.2	1.19	<2	<10	100	<0.5	<2	1.39	<0.5	5	11	14	1.80	20	<1
111566		0.2	1.55	<2	<10	60	<0.5	<2	1.54	1.9	6	25	82	2.11	30	1
111567		0.2	1.43	<2	<10	130	<0.5	<2	1.38	1.4	5	31	127	2.26	30	<1
111568		2.4	1.28	2	<10	130	<0.5	<2	2.15	7.9	8	40	944	3.83	30	<1
111569		2.1	1.43	3	<10	60	<0.5	<2	1.49	2.0	10	52	1030	3.61	20	<1
111570		2.2	1.25	7	<10	40	<0.5	<2	2.32	1.5	9	34	1080	4.00	30	<1
111571		2.2	1.24	8	<10	40	<0.5	<2	2.31	1.1	9	34	1050	3.96	30	<1
111572		0.2	3.08	37	<10	40	1.0	<2	4.84	1.6	23	9	127	6.74	40	1
111573		1.6	1.26	5	10	40	<0.5	<2	2.16	<0.5	10	49	919	4.36	20	<1
111574		3.8	0.87	6	<10	60	<0.5	<2	1.83	17.4	12	28	1310	4.44	20	<1
111575		3.8	0.86	8	<10	60	<0.5	<2	1.82	17.9	12	28	1310	4.46	20	<1
111576		0.9	3.10	66	<10	30	1.3	<2	4.83	2.0	24	6	136	6.81	40	<1
111579		<0.2	3.09	4	<10	340	0.5	<2	3.01	0.9	17	14	39	4.66	20	<1
111580		2.4	1.07	4	<10	60	<0.5	<2	2.20	4.1	10	58	1070	3.80	30	<1
111581		2.5	0.85	4	<10	60	<0.5	<2	2.68	3.2	12	60	1220	3.32	10	<1
111582		0.8	0.93	3	10	80	<0.5	<2	2.17	1.1	10	27	138	3.04	20	<1
111583		0.9	0.92	4	<10	100	<0.5	<2	2.13	0.8	10	27	133	2.99	20	<1
111584		0.5	1.37	<2	<10	200	<0.5	<2	1.50	1.8	7	9	101	2.23	30	<1
111585		0.4	1.36	3	<10	220	<0.5	<2	1.48	1.8	7	10	97	2.22	30	<1
111586		0.2	1.51	<2	<10	130	<0.5	<2	1.32	1.1	5	39	83	2.28	30	<1
111587		0.3	1.24	<2	10	160	<0.5	<2	1.17	1.2	6	9	60	2.19	30	<1
111588		0.3	1.27	<2	<10	170	<0.5	<2	1.21	1.1	6	9	61	2.18	30	<1
111589		<0.2	1.18	<2	<10	100	<0.5	<2	1.25	<0.5	6	44	10	1.70	20	<1
111590		<0.2	1.24	<2	<10	20	0.5	<2	2.06	<0.5	9	10	20	3.06	20	<1
111591		<0.2	1.25	2	<10	20	0.5	<2	2.07	<0.5	9	10	19	3.08	20	<1
111592		<0.2	1.42	<2	<10	70	0.5	<2	1.65	<0.5	8	20	16	2.30	20	<1
111593		0.2	1.42	<2	<10	70	0.5	<2	1.65	<0.5	8	19	17	2.25	20	<1

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CERTIFICATE OF ANALYSIS VA02004246

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm
	LOR	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01	10	1
111594		0.5	1.37	<2	<10	50	<0.5	<2	1.16	6.0	8	23	111	2.58	30	<1
111595		1.0	1.91	5	<10	130	<0.5	2	1.33	4.5	9	37	344	3.35	40	<1
111596		0.6	2.58	2	<10	310	0.6	<2	2.90	2.4	7	17	12	2.10	30	<1
111597		1.7	1.50	3	10	120	<0.5	<2	1.11	7.5	10	46	607	3.56	30	<1
111598		1.0	1.51	<2	<10	170	<0.5	<2	1.24	9.5	8	20	253	2.45	30	<1
111599		<0.2	1.48	3	<10	60	0.6	<2	2.12	<0.5	9	30	21	2.87	20	<1
111600		0.2	1.71	4	<10	50	0.5	<2	2.24	2.8	9	17	60	3.09	20	<1
111651		2.2	1.75	10	<10	60	0.5	<2	0.91	12.5	10	43	591	4.82	30	<1
111652		<0.2	2.00	<2	<10	100	0.6	<2	2.32	<0.5	9	17	22	2.71	20	<1
111653		<0.2	1.59	<2	10	60	0.6	<2	1.98	<0.5	9	29	23	2.93	30	<1
111654		0.3	1.44	<2	<10	70	0.5	<2	1.70	1.3	9	15	84	2.98	30	<1
111655		<0.2	3.03	5	<10	300	0.5	<2	2.68	0.5	16	8	23	4.36	20	<1
111656		0.4	1.16	6	<10	30	<0.5	<2	1.63	<0.5	9	12	21	2.82	<10	<1
111657		0.2	1.43	<2	<10	130	0.5	6	1.89	4.6	9	31	89	2.88	<10	<1
111658		<0.2	1.33	3	<10	60	0.5	10	1.63	<0.5	9	15	18	2.82	<10	<1
111659		<0.2	1.61	3	<10	160	0.6	7	1.70	1.0	9	21	57	3.15	<10	<1
111660		0.9	1.18	4	<10	80	<0.5	5	1.33	25.3	10	19	122	2.81	<10	<1
111661		0.2	1.27	2	<10	90	<0.5	6	1.02	5.7	7	37	36	2.17	<10	<1
111662		1.1	1.49	<2	<10	80	<0.5	4	1.10	14.5	6	18	224	2.39	<10	1
111663		0.3	1.35	2	<10	180	<0.5	3	0.97	1.1	5	32	98	1.99	<10	1
111664		0.2	1.37	3	<10	30	<0.5	<2	0.93	2.6	5	22	90	1.95	<10	<1
111665		0.2	1.60	2	<10	110	<0.5	4	1.05	0.9	4	31	71	1.63	<10	<1
111666		0.2	1.35	2	<10	130	<0.5	11	1.06	0.5	4	20	44	1.65	<10	1
111667		0.3	1.22	<2	<10	50	<0.5	6	0.90	0.9	5	32	95	1.81	<10	<1
111668		0.2	1.16	<2	<10	30	<0.5	4	0.73	<0.5	5	21	123	1.86	<10	<1
111669		0.2	1.21	5	<10	90	<0.5	8	0.97	<0.5	6	33	86	1.92	<10	<1
111670		0.2	1.23	<2	<10	70	<0.5	6	0.93	<0.5	6	21	38	1.91	<10	<1
111671		<0.2	1.43	2	<10	250	<0.5	3	1.01	<0.5	4	32	42	1.82	<10	<1
111672		0.3	1.52	<2	<10	190	<0.5	<2	1.14	1.7	3	19	37	1.63	<10	<1
111673		0.2	1.19	2	<10	40	<0.5	5	0.96	1.1	3	33	9	1.68	<10	1
111674		0.3	1.34	2	<10	40	<0.5	<2	0.81	1.1	5	19	57	1.96	<10	<1
111675		0.2	1.31	3	<10	230	<0.5	4	0.86	0.6	4	30	93	1.80	<10	<1
111676		0.3	1.32	2	<10	110	<0.5	9	0.84	1.0	6	18	44	2.09	<10	<1
111677		1.4	1.47	3	<10	30	<0.5	<2	0.51	3.3	14	40	185	4.23	<10	2
111678		0.4	1.06	2	<10	180	<0.5	5	0.67	0.5	5	18	113	1.89	<10	<1
111679		0.7	1.34	<2	<10	50	<0.5	<2	0.62	2.3	10	31	154	2.91	<10	<1
111680		0.4	1.19	<2	<10	40	<0.5	<2	0.76	0.8	5	21	41	1.89	<10	<1
111681		0.2	1.25	2	<10	70	<0.5	4	0.93	<0.5	5	36	37	1.92	<10	<1
111682		0.3	1.24	6	<10	90	<0.5	2	0.78	0.5	7	23	60	1.91	<10	1
111683		<0.2	1.29	2	<10	90	<0.5	5	0.77	<0.5	4	30	33	1.96	<10	1

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Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm
	LOR	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01	10	1
111684		0.2	1.31	<2	<10	70	<0.5	2	0.81	1.6	5	17	28	2.06	<10	<1
111685		0.3	1.38	2	<10	80	<0.5	4	0.93	1.0	6	19	84	2.16	<10	<1
111686		2.5	1.22	5	<10	60	<0.5	3	0.69	4.3	9	17	319	3.21	<10	2
111687		4.3	0.93	21	<10	40	<0.5	8	0.59	12.6	12	15	372	4.60	<10	<1
111689		6.5	0.90	31	<10	20	<0.5	7	0.41	17.9	10	15	443	5.10	<10	<1
111690		0.2	1.59	3	<10	70	<0.5	4	0.92	0.6	6	14	12	2.02	<10	<1
111691		3.3	1.17	23	<10	30	0.5	8	0.48	20.6	11	16	455	5.34	<10	1
111692		0.3	1.33	5	<10	90	<0.5	<2	0.67	5.7	6	15	58	2.28	<10	<1
111693		1.9	1.23	20	<10	30	<0.5	9	0.51	6.8	12	14	359	4.83	<10	1
111694		0.2	1.33	5	10	80	<0.5	3	0.78	<0.5	6	13	33	1.95	<10	<1
111695		7.2	0.78	13	<10	30	0.5	<2	0.55	6.7	10	13	139	4.46	<10	2
111696		0.6	3.62	13	10	40	1.1	11	3.25	3.9	13	3	39	5.17	10	<1
111697		0.4	3.81	4	10	40	0.9	<2	3.39	0.5	13	2	26	5.04	10	4
111698		0.3	5.02	<2	10	30	1.0	6	4.41	0.6	13	1	24	4.78	10	<1
111699		0.3	5.94	8	10	50	1.1	<2	4.98	0.6	13	1	26	4.78	10	<1
111700		0.3	4.40	5	10	80	1.0	6	3.75	0.5	13	1	26	4.88	10	2
111701		0.2	4.33	5	10	100	1.1	8	3.98	<0.5	13	1	26	5.05	10	1
111702		0.4	3.19	3	10	40	1.0	5	3.04	<0.5	12	1	25	5.10	10	<1
111703		3.3	2.37	13	10	50	0.6	12	2.85	14.6	11	6	340	4.27	10	<1
111704		0.5	3.55	10	10	80	1.2	9	3.45	1.5	14	<1	49	5.39	10	<1
111705		1.3	2.47	13	<10	60	0.6	6	2.43	5.7	8	12	401	2.82	10	<1
111706		<0.2	2.81	<2	<10	300	0.5	6	2.79	0.5	15	5	25	4.32	10	<1

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Sample Description	Method / Analyte / Units / LOR	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10
111552		0.25	10	0.86	1660	10	0.04	6	640	51	3.06	<2	2	139	0.03	<10
111553		0.23	10	0.90	1940	9	0.04	6	640	28	3.63	<2	2	97	0.01	<10
111554		0.19	10	1.07	2450	9	0.05	7	660	18	3.51	<2	2	92	0.01	<10
111555		0.17	20	1.13	2220	7	0.04	7	680	26	2.82	<2	2	117	0.01	<10
111556		0.26	10	0.85	1610	12	0.04	7	570	17	2.73	<2	2	151	<0.01	<10
111557		0.19	20	1.05	1650	11	0.04	5	640	16	1.97	2	2	115	<0.01	<10
111558		0.17	20	1.07	1435	12	0.05	5	670	15	1.64	<2	2	73	0.01	<10
111559		0.22	20	0.58	989	16	0.04	4	650	6	1.72	<2	1	94	<0.01	<10
111560		0.24	10	0.90	1475	16	0.07	5	570	5	0.84	<2	2	70	0.01	<10
111561		0.16	10	0.84	1700	13	0.03	4	650	11	1.85	<2	2	94	0.02	<10
111562		0.16	10	0.82	1665	12	0.03	5	650	12	1.87	<2	2	91	0.02	<10
111563		0.22	10	0.87	1515	4	0.03	1	770	29	0.46	2	3	64	0.03	<10
111564		0.09	10	0.85	995	1	0.02	1	770	7	0.28	<2	2	80	0.05	<10
111565		0.09	10	0.86	998	2	0.02	1	780	7	0.29	<2	2	79	0.05	<10
111566		0.17	10	0.87	1655	3	0.03	1	800	12	0.55	2	2	114	0.08	<10
111567		0.13	10	0.92	1610	5	0.04	1	820	11	0.37	2	3	91	0.08	<10
111568		0.13	10	0.86	1575	11	0.05	5	670	16	1.68	<2	3	160	0.03	<10
111569		0.16	10	0.94	1385	12	0.06	5	650	9	1.40	<2	3	159	0.06	<10
111570		0.17	20	0.89	1530	12	0.03	6	690	11	2.71	<2	2	75	0.02	<10
111571		0.16	20	0.89	1520	12	0.03	5	670	11	2.68	<2	2	72	0.02	<10
111572		0.13	20	2.44	2190	1	0.08	8	1300	3	0.47	3	18	107	0.36	<10
111573		0.18	10	0.88	1415	16	0.04	5	630	10	2.60	<2	2	79	0.06	<10
111574		0.20	10	0.54	962	20	0.03	5	660	34	3.50	<2	1	94	0.02	<10
111575		0.19	10	0.54	964	19	0.02	5	640	35	3.54	<2	1	92	0.02	<10
111576		0.15	20	2.34	2250	1	0.06	9	1350	7	1.07	4	18	96	0.42	<10
111579		0.12	10	2.02	1265	<1	0.15	4	680	2	0.04	4	12	142	0.07	<10
111580		0.20	10	0.66	1490	11	0.04	6	660	42	3.03	2	2	105	0.04	<10
111581		0.32	20	0.39	837	25	0.02	6	640	13	4.32	<2	1	305	<0.01	<10
111582		0.22	10	0.55	1275	9	0.02	3	790	19	2.63	<2	2	328	0.01	<10
111583		0.22	10	0.54	1260	10	0.02	3	790	18	2.51	<2	2	324	0.01	<10
111584		0.13	10	0.91	2250	3	0.02	1	890	18	0.76	<2	2	105	0.04	<10
111585		0.13	10	0.90	2240	3	0.02	1	860	18	0.77	<2	2	106	0.04	<10
111586		0.13	10	0.91	1845	2	0.04	1	840	15	0.41	<2	2	85	0.08	<10
111587		0.09	10	0.91	1920	3	0.02	1	840	8	0.56	<2	2	99	0.05	<10
111588		0.09	10	0.91	1945	2	0.02	1	840	7	0.54	<2	2	104	0.06	<10
111589		0.12	10	0.71	1245	2	0.05	2	490	41	0.16	2	3	112	0.05	<10
111590		0.06	10	1.01	1170	2	0.04	2	720	10	0.03	<2	6	56	0.14	<10
111591		0.06	10	1.02	1170	1	0.04	2	690	9	0.03	3	7	58	0.15	<10
111592		0.08	10	0.87	1320	2	0.04	2	590	25	0.06	<2	5	111	0.06	<10
111593		0.08	10	0.86	1315	1	0.04	2	600	28	0.05	<2	4	111	0.06	<10

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Account: PIL

Project : Kemess North

CERTIFICATE OF ANALYSIS VA02004246

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Ti	Tl
	Units	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm
	LOR	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1	1	0.01	10
111594		0.07	10	0.95	1975	3	0.04	2	610	27	0.15	2	4	107	0.05	<10
111595		0.13	10	0.94	2290	9	0.05	4	670	19	1.37	<2	3	104	0.02	<10
111596		0.06	10	0.76	1650	2	0.05	2	520	55	0.07	2	4	176	0.01	<10
111597		0.11	10	0.91	2090	7	0.05	5	670	23	1.41	<2	3	67	0.02	<10
111598		0.13	10	0.98	1775	4	0.04	2	620	146	0.50	2	3	81	0.08	<10
111599		0.14	10	0.82	1010	1	0.06	2	700	8	0.07	<2	6	88	0.15	<10
111600		0.09	10	0.92	1355	2	0.05	2	690	110	0.31	<2	5	78	0.12	<10
111651		0.26	10	1.05	1585	11	0.03	4	650	77	3.33	<2	2	46	0.04	<10
111652		0.09	10	0.92	1310	1	0.05	2	660	27	0.05	3	5	116	0.14	<10
111653		0.12	10	1.06	1785	1	0.06	2	710	88	0.05	<2	5	99	0.17	<10
111654		0.10	10	1.02	1905	1	0.04	2	720	269	0.16	2	4	65	0.14	<10
111655		0.12	10	1.90	1090	1	0.15	3	680	4	0.01	2	11	141	0.05	<10
111656		0.06	<10	0.97	1045	3	0.04	3	740	9	0.01	<2	4	53	0.11	<10
111657		0.08	<10	0.96	1205	2	0.05	3	750	12	0.11	<2	5	93	0.09	<10
111658		0.06	<10	1.02	982	1	0.05	3	760	5	0.01	<2	4	61	0.11	<10
111659		0.12	<10	1.03	1745	<1	0.05	3	800	129	0.08	<2	6	78	0.08	<10
111660		0.12	<10	0.67	1465	2	0.03	3	690	675	1.80	<2	2	119	0.05	<10
111661		0.09	10	0.78	1715	3	0.04	3	560	35	0.23	<2	3	151	0.05	<10
111662		0.09	<10	0.88	2150	4	0.03	2	630	54	0.23	<2	3	70	0.04	<10
111663		0.11	<10	0.68	1610	4	0.04	2	740	69	0.44	<2	1	71	0.08	<10
111664		0.09	<10	0.71	1500	11	0.03	2	780	90	0.31	<2	1	70	0.06	<10
111665		0.11	<10	0.72	1725	5	0.04	2	780	111	0.26	<2	1	85	0.06	<10
111666		0.09	<10	0.62	1455	4	0.03	1	750	70	0.33	<2	1	78	0.04	<10
111667		0.11	<10	0.65	1430	8	0.03	2	780	84	0.46	<2	1	84	0.07	<10
111668		0.10	<10	0.70	1495	3	0.03	2	800	110	0.34	<2	1	51	0.06	<10
111669		0.10	<10	0.64	1390	8	0.04	2	770	28	0.32	<2	2	87	0.06	<10
111670		0.09	<10	0.70	1285	2	0.03	2	800	73	0.38	<2	1	90	0.05	<10
111671		0.10	<10	0.71	1280	2	0.04	2	750	32	0.22	<2	2	90	0.05	<10
111672		0.10	<10	0.66	1495	9	0.03	2	810	123	0.29	<2	1	102	0.05	<10
111673		0.15	<10	0.61	1445	7	0.02	2	740	143	0.52	<2	1	71	0.04	<10
111674		0.10	<10	0.75	1680	5	0.03	2	810	50	0.60	<2	1	61	0.07	<10
111675		0.10	<10	0.69	1500	3	0.04	2	740	47	0.44	<2	1	74	0.07	<10
111676		0.10	<10	0.75	1510	7	0.03	2	780	66	0.72	<2	1	65	0.06	<10
111677		0.17	<10	0.99	2120	26	0.03	4	670	235	2.76	<2	1	44	0.03	<10
111678		0.07	<10	0.62	1045	3	0.04	1	770	58	0.34	<2	1	62	0.07	<10
111679		0.14	<10	0.80	1425	9	0.04	2	830	151	1.45	<2	2	51	0.07	<10
111680		0.07	<10	0.74	1270	3	0.04	1	750	165	0.43	<2	1	62	0.07	<10
111681		0.10	<10	0.70	1265	2	0.04	2	770	68	0.35	<2	2	93	0.06	<10
111682		0.07	<10	0.72	1355	5	0.04	2	800	25	0.35	<2	1	75	0.07	<10
111683		0.07	<10	0.78	1480	4	0.05	2	790	19	0.21	<2	1	65	0.07	<10

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CERTIFICATE OF ANALYSIS VA02004246

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Ti	Tl
	Units	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm
	LOR	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1	1	0.01	10
111684		0.07	<10	0.83	1510	3	0.04	2	790	31	0.26	<2	1	66	0.06	<10
111685		0.09	<10	0.75	1440	3	0.04	2	800	32	0.52	<2	2	115	0.05	<10
111686		0.18	<10	0.60	936	8	0.04	3	790	70	2.21	<2	2	54	0.03	<10
111687		0.26	<10	0.38	711	17	0.02	2	780	467	3.97	<2	2	30	0.04	<10
111689		0.24	<10	0.54	906	12	0.02	2	1050	658	5.10	<2	1	26	0.02	<10
111690		0.08	<10	0.84	862	2	0.05	1	760	20	0.24	<2	2	85	0.05	<10
111691		0.26	<10	0.62	1145	12	0.02	3	970	477	5.17	<2	2	31	0.02	<10
111692		0.08	<10	0.85	924	2	0.05	1	820	22	0.41	<2	2	67	0.08	<10
111693		0.22	<10	0.63	907	17	0.03	3	900	70	4.26	<2	2	31	0.02	<10
111694		0.06	<10	0.74	761	2	0.05	1	750	18	0.12	<2	2	74	0.07	<10
111695		0.25	<10	0.19	337	8	0.02	3	870	335	4.72	<2	1	37	0.02	<10
111696		0.14	<10	1.50	1950	1	0.07	2	1580	80	0.96	<2	9	144	0.17	<10
111697		0.12	<10	1.47	1665	<1	0.09	2	1740	7	0.05	<2	8	177	0.19	<10
111698		0.09	<10	1.35	1480	<1	0.13	2	1700	5	0.05	<2	7	269	0.20	<10
111699		0.09	<10	1.32	1360	1	0.17	3	1700	3	0.06	<2	7	348	0.21	<10
111700		0.12	<10	1.32	1375	<1	0.12	2	1710	4	0.07	<2	7	227	0.19	<10
111701		0.12	<10	1.43	1485	<1	0.10	2	1730	4	0.13	<2	8	238	0.20	<10
111702		0.13	<10	1.40	1525	1	0.07	2	1740	5	0.19	<2	8	129	0.21	<10
111703		0.18	<10	1.02	1480	7	0.05	2	1110	435	3.54	<2	5	119	0.12	<10
111704		0.10	<10	1.71	1875	1	0.07	2	1620	24	0.51	<2	11	157	0.24	<10
111705		0.13	<10	0.86	1090	5	0.06	3	860	34	1.39	<2	3	166	0.10	<10
111706		0.10	<10	1.77	1195	1	0.14	4	700	5	0.01	<2	11	151	0.05	<10

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CERTIFICATE OF ANALYSIS VA02004246

Sample Description	Method Analyte Units LOR	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
111552		<10	24	<10	746
111553		<10	27	<10	268
111554		<10	35	<10	333
111555		<10	36	<10	342
111556		<10	39	<10	477
111557		<10	34	<10	343
111558		<10	41	<10	263
111559		<10	32	<10	176
111560		<10	39	<10	330
111561		<10	31	<10	587
111562		<10	30	<10	570
111563		<10	30	<10	190
111564		<10	27	<10	100
111565		<10	27	<10	99
111566		<10	30	<10	287
111567		<10	36	<10	253
111568		<10	44	<10	921
111569		<10	44	<10	323
111570		<10	37	<10	258
111571		<10	37	<10	256
111572		100	243	<10	180
111573		<10	42	<10	149
111574		<10	27	<10	1990
111575		<10	27	<10	2040
111576		120	249	<10	210
111579		20	150	<10	101
111580		<10	32	<10	477
111581		<10	14	<10	341
111582		<10	22	<10	152
111583		<10	22	<10	141
111584		<10	25	<10	308
111585		<10	24	<10	303
111586		<10	35	<10	236
111587		<10	28	<10	235
111588		<10	28	<10	237
111589		<10	30	<10	106
111590		20	90	<10	62
111591		20	93	<10	62
111592		<10	54	<10	106
111593		<10	52	<10	105

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Sample Description	Method Analyte Units LOR	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
111594		<10	52	<10	718
111595		<10	29	<10	607
111596		<10	41	<10	359
111597		<10	34	<10	912
111598		<10	41	<10	1100
111599		20	78	<10	77
111600		<10	79	<10	308
111651		<10	35	<10	1460
111652		<10	74	<10	108
111653		<10	80	<10	170
111654		<10	74	<10	231
111655		10	132	<10	75
111656		<10	81	<10	78
111657		<10	77	<10	504
111658		<10	82	<10	80
111659		<10	86	<10	209
111660		<10	29	<10	3190
111661		<10	42	<10	748
111662		<10	45	<10	1845
111663		<10	25	<10	230
111664		<10	24	<10	415
111665		<10	22	<10	211
111666		<10	18	<10	153
111667		<10	20	<10	185
111668		<10	22	<10	126
111669		<10	25	<10	113
111670		<10	23	<10	135
111671		<10	25	<10	97
111672		<10	22	<10	293
111673		<10	16	<10	236
111674		<10	22	<10	241
111675		<10	21	<10	172
111676		<10	21	<10	236
111677		<10	21	<10	538
111678		<10	31	<10	136
111679		<10	26	<10	367
111680		<10	25	<10	207
111681		<10	25	<10	156
111682		<10	26	<10	154
111683		<10	28	<10	137

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Sample Description	Method Analyte Units LOR	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
111684		<10	29	<10	295
111685		<10	30	<10	223
111686		<10	25	<10	491
111687		<10	30	<10	1220
111689		<10	10	<10	1715
111690		<10	37	<10	157
111691		<10	12	<10	2090
111692		<10	39	<10	675
111693		<10	11	<10	776
111694		<10	37	<10	125
111695		<10	13	<10	625
111696		<10	115	<10	451
111697		<10	128	<10	90
111698		<10	121	<10	84
111699		<10	123	<10	83
111700		<10	122	<10	85
111701		<10	130	<10	87
111702		<10	129	<10	94
111703		<10	67	<10	1535
111704		<10	137	<10	211
111705		<10	47	<10	586
111706		<10	138	<10	74

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Date : 2-Oct-2002
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CERTIFICATE VA02004153

Project : Kemess North

P.O. No: 266490

This report is for 233 PULP samples submitted to our lab in North Vancouver, BC, Canada on27-Sep-2002.

The following have access to data associated with this certificate:

MIKE HIBBITTS
MYLES GAO
CARL EDMUNDS
B LAPEARE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
LOG-21	Sample logging - ClientBarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-ICP41	34 element aqua regia ICP-AES	ICP-AES

RECEIVED OCT 10 2002

To: **KEMESS MINES LTD.**
ATTN: MIKE HIBBITTS
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Brenda

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

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CERTIFICATE OF ANALYSIS VA02004153

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm
	LOR	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01	10	1
111501		0.2	1.70	3	<10	60	<0.5	<2	0.79	<0.5	7	53	72	3.10	10	1
111502		0.3	1.67	5	<10	40	<0.5	<2	0.80	<0.5	12	85	79	3.78	<10	<1
111503		0.2	2.05	3	<10	90	<0.5	4	0.86	<0.5	11	87	43	3.84	<10	<1
111504		0.2	1.45	4	<10	50	<0.5	<2	0.77	<0.5	7	31	27	2.73	<10	<1
111505		0.3	1.67	4	<10	60	<0.5	<2	0.63	0.5	8	55	53	3.47	<10	1
111506		0.7	2.12	8	<10	40	<0.5	<2	0.84	<0.5	5	22	57	2.92	10	<1
111507		1.4	1.42	11	<10	70	<0.5	<2	0.29	<0.5	1	56	133	2.72	<10	1
111508		1.3	1.39	2	<10	90	<0.5	<2	0.19	<0.5	2	38	135	3.06	10	<1
111509		1.5	1.47	7	<10	90	<0.5	<2	0.26	<0.5	1	48	179	3.87	<10	<1
111510		2.3	1.34	12	<10	80	<0.5	<2	0.29	1.3	4	43	252	4.07	<10	<1
111511		1.3	1.75	13	<10	60	<0.5	<2	0.36	1.3	3	45	262	3.80	10	<1
111512		1.7	0.94	9	<10	60	<0.5	<2	0.22	0.8	3	37	198	2.99	<10	<1
111513		1.7	1.18	20	<10	60	<0.5	<2	0.16	0.6	6	44	219	4.02	<10	<1
111514		1.1	1.38	24	<10	100	<0.5	<2	0.32	16.8	7	19	313	3.15	<10	<1
111515		0.8	1.67	18	<10	60	<0.5	<2	0.30	57.3	7	18	229	3.10	<10	<1
111516		0.6	1.25	14	<10	80	<0.5	<2	0.36	12.3	6	19	203	2.28	<10	<1
111517		0.5	1.27	16	<10	100	<0.5	<2	0.41	12.4	7	20	131	2.27	<10	<1
111518		0.2	1.20	6	<10	110	<0.5	<2	0.56	9.2	6	21	22	2.08	<10	<1
111519		0.4	1.17	3	<10	140	<0.5	<2	0.58	5.0	6	21	48	1.86	<10	<1
111520		0.2	1.14	19	<10	110	<0.5	2	1.18	4.8	7	19	56	2.49	<10	1
111521		1.0	1.51	19	<10	70	<0.5	5	1.24	3.2	7	40	265	4.02	<10	<1
111522		1.8	1.37	9	<10	50	<0.5	<2	1.11	4.7	6	34	316	3.79	<10	<1
111523		7.2	1.31	24	<10	60	<0.5	4	2.45	10.2	8	32	749	3.68	<10	1
111524		10.6	0.95	22	<10	30	<0.5	11	2.23	4.9	9	24	739	4.31	<10	1
111525		8.3	0.85	2	<10	40	<0.5	2	2.00	5.2	10	28	336	3.29	<10	<1
111526		<0.2	0.20	<2	<10	10	<0.5	<2	0.36	<0.5	<1	1	2	0.25	<10	<1
111577		4.0	1.52	14	<10	50	<0.5	<2	1.37	20.5	6	27	425	4.44	<10	<1
111578		7.1	1.21	20	<10	40	<0.5	6	1.73	20.5	8	31	614	3.68	<10	<1

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SMITHERS BC V0J 2N0

Date : 2-Oct-2002
Account: PIL

Project : Kemess North

CERTIFICATE OF ANALYSIS VA02004153

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Ti	Tl
	Units	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm
	LOR	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1	1	0.01	10
111501		0.09	<10	1.13	554	1	0.09	18	750	5	0.18	<2	4	57	0.17	<10
111502		0.09	<10	1.33	484	1	0.08	32	820	4	0.32	<2	3	49	0.17	<10
111503		0.12	<10	1.37	501	2	0.08	28	790	8	0.18	<2	4	98	0.16	<10
111504		0.07	<10	0.85	561	2	0.08	8	690	14	0.40	<2	3	64	0.13	<10
111505		0.10	<10	1.21	651	2	0.07	16	840	38	0.26	<2	4	59	0.14	<10
111506		0.10	<10	1.32	1045	3	0.14	4	660	8	0.21	<2	7	55	0.12	<10
111507		0.15	<10	0.95	1365	7	0.07	4	590	39	0.26	<2	3	58	0.09	<10
111508		0.12	<10	1.05	1660	9	0.05	5	480	39	0.31	<2	3	45	0.08	<10
111509		0.16	<10	1.01	1325	8	0.06	5	830	67	0.51	<2	2	70	0.10	<10
111510		0.20	<10	0.83	1060	24	0.04	6	1010	284	1.45	<2	2	154	0.07	<10
111511		0.21	<10	1.21	1570	11	0.05	6	790	57	1.20	<2	2	106	0.05	<10
111512		0.19	<10	0.70	660	14	0.05	3	840	17	0.93	<2	2	86	0.02	<10
111513		0.17	<10	0.90	1295	7	0.04	8	660	75	2.60	<2	2	81	0.01	<10
111514		0.17	<10	1.12	2240	6	0.02	2	1010	681	1.49	<2	2	63	0.02	<10
111515		0.20	<10	1.30	2800	3	0.02	2	870	175	1.53	<2	2	16	0.01	<10
111516		0.16	<10	0.94	1880	4	0.02	3	870	215	1.14	<2	1	27	0.02	<10
111517		0.19	<10	0.91	1730	4	0.02	2	820	209	1.13	<2	2	36	0.02	<10
111518		0.14	<10	0.99	1810	2	0.02	2	780	135	0.82	<2	1	28	0.03	<10
111519		0.13	<10	0.90	1605	2	0.04	2	770	46	0.47	<2	1	35	0.03	<10
111520		0.15	<10	0.91	1645	5	0.02	2	880	50	1.39	<2	2	39	0.01	<10
111521		0.15	<10	1.29	2050	9	0.04	7	780	42	2.69	<2	2	41	0.01	<10
111522		0.11	<10	1.11	1855	9	0.05	8	770	45	1.70	2	2	59	0.01	<10
111523		0.18	<10	0.99	1950	12	0.03	7	700	185	3.69	<2	2	155	<0.01	<10
111524		0.16	10	0.69	1240	20	0.02	7	680	139	5.21	<2	2	138	<0.01	<10
111525		0.23	10	0.60	703	14	0.01	5	810	109	4.38	<2	1	157	<0.01	<10
111526		0.02	<10	0.05	30	<1	0.14	1	690	4	<0.01	<2	1	5	<0.01	<10
111577		0.12	<10	1.33	2470	9	0.03	9	750	125	3.46	<2	2	69	0.01	<10
111578		0.20	10	0.90	1635	13	0.02	6	720	96	3.64	<2	2	113	<0.01	<10

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Date : 2-Oct-2002
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Project : Kemess North

CERTIFICATE OF ANALYSIS VA02004153

Sample Description	Method Analyte Units LOR	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
111501		<10	91	<10	65
111502		<10	102	<10	68
111503		<10	97	<10	70
111504		<10	71	<10	67
111505		<10	79	<10	96
111506		<10	78	<10	111
111507		<10	39	<10	147
111508		<10	40	<10	158
111509		<10	40	<10	159
111510		<10	36	<10	144
111511		<10	38	<10	239
111512		<10	27	<10	131
111513		<10	28	<10	175
111514		<10	31	<10	1930
111515		<10	29	<10	6250
111516		<10	23	<10	1480
111517		<10	22	<10	1285
111518		<10	22	<10	1165
111519		<10	25	<10	629
111520		<10	25	<10	654
111521		<10	42	<10	533
111522		<10	47	<10	725
111523		<10	30	<10	1295
111524		<10	16	<10	667
111525		<10	11	<10	641
111526		<10	1	<10	4
111577		<10	34	<10	2560
111578		<10	20	<10	2430

APPENDIX V
Diamond Drill Logs

Brenda Project 2002 - Diamond Drill Log

Northgate Exploration Ltd

Hole Number: ***BR-02-01***

Northing:	6348216	**Total Depth:**	436.8m
Easting:	628169	**Azimuth:**	235 °
Elevation:	1415	**Dip:**	-70 °

Geologist: J. Pautler

Logged Date: 9/20/2002

Survey Depth	Azimuth	Dip
106 m	251 °	-67 °
174 m	244 °	-70 °
183 m	248 °	-70 °
366 m	246 °	-71 °

Brenda Project 2002 - Summary Drill Log

Northgate Exploration Ltd

Hole Number: *BR-02-01*

From (m)	To (m)	Rock Type	Comments
0	4.57	CASING	
4.57	34.1	BASALT FLOW	Basalt flow with variable % (10-20%) of plag (some laths) and augite phenocrysts; generally magnetic; narrow quartz monzonite dykes (~10%); core is ground and broken.
34.1	35.6	MONZONITE DYKE	Monzonite dyke, aphanitic - fine grained with 10-40% feldspar phenocrysts, commonly sauseritized; stronger sericite, limonite altn above 35.3m; chilled margin below
35.6	36.4	ANDESITE DYKE	Possible andesite fsp porphyry dyke with trace sphalerite
36.4	47.5	MONZONITE DYKE	Well fractured with weak limonite, minor epidote replacing fsp and along fractures
47.5	71.2	BASALT FLOW	Augite fsp porphyry flow; up to 5% py @47.6-.7m, commonly in chlorite-epidote-gypsum fractures
71.2	73.1	MONZONITE DYKE	Monzonite dyke with plag + ksp phenos - similar to 36.4-47.5m; minor zeolite; upper chilled margin for 25cm., minor gouge zone bottom 15cm; py-clay- ser - zeol.stringers at 43° ^ CA; minor ser chl stringers; Lower Contact gradational, defined by zeol - gyp vein @ 45° CA.
73.1	74	BASALT DYKE	Late mafic (basalt) dyke; very fine grained - aphanitic with calcite amygdules at dyke margins; contacts 45° ^ CA
74	121	BASALT FLOW	Stringers also at 00 CA; @ 75.2m to end of section higher py - 2%
121	130.1	MONZONITE DYKE	Monzonite dyke, aphanitic - fine grained with 3% feldspar phenocrysts, commonly sauseritized; epidote also in fractures with pyrite, sericite; minor magnetite - chlorite clots - << 1% ; upper ctc 22° CA; variable patchy sericite alteration, hard siliceous.
130.1	136.6	BASALT FLOW	Mottled chlorite - epidote - hematite and weak sericite altered mafic flow with magnetite - chlorite +/-cp patches; moderately fractured @ 25,30,75°^CA.
136.6	137.9	MAFIC DYKE	Aphanitic mafic dyke. Calcite amygdules near upper contact; lower contact - 80° ^CA, upper ctc - irregular; abundant -calcite stringers; @ 137.0m -10cm of mottled unit as above.

Hole Number: *BR-02-01*

From (m)	To (m)	Rock Type	Comments
137.9	139.5	BASALT FLOW	Mottled unit with chlorite - magnetite clots , epidote -sericite stringers, pyrite - gypsum stringers up to 0.5 cm; hard.
139.5	139.7	MAFIC DYKE	Mafic dyke ; as in 36.6 - 137.9 - not sampled.
139.7	143.4	BASALT FLOW	Mottled unit with more pyrite in veinlets and disseminations; veinlets @ 45 + 90° ^ CA; hard; magnetite - chlorite patches and stringers, trace cp.
143.4	144.7	MAFIC DYKE	Upper contact 90°^CA; massive basalt (mafic) dyke with calcite (< 1mm, very fine) amygdules near contacts; fragments of mottled unit up to 5 cm in center with pyrite; Lower contact 10° CA.
144.7	150.1	BASALT FLOW	Trace fine chalcopyrite in fractures assoc with gypsum-quartz stringers, hard.
150.1	173.7	MONZONITE DYKE	Calcite- gypsum stringers; hematite along fractures; sauseritized fsps and along fractures.
173.7	175.3	BASALT FLOW	Contact 10°^CA, granitized basalt flow, quartz ±chlorite stringers with epidote, pyrite , also minor calcite- zeolite stringers; sauseritized phenocrysts; albitized ?? phenocrysts ≈5%, anhedral. Fault contact 10-15°CA; at Lower contact calcite- chlorite - clay gouge.
175.3	176.3	MONZONITE DYKE	Monzonite sill. Magnetite -chlorite as small clots replacing mafic phenocrysts? (<5%) phenocrysts; also sauseritized phenocrysts and ep-ser stringers.
176.3	178.1	BASALT FLOW	Granitized basalt flow ; magnetite -chlorite stringers ±quartz and gypsum quartz stringers; also epidote- chlorite; magnetite -chlorite replacing phenocrysts; gradational lower contact ≈ 30°^CA.
178.1	183.2	MONZONITE DYKE	Monzonite sill as above (to 176.3 m); magnetite -chlorite clots (after phenocrysts) and trace stringers.
183.2	184.7	BASALT FLOW	Fault at upper contact 35 CA, well fractureured; still have 3 % quartz or albite phenocrysts (anhedral); patchy qtz veinlets, str, ± pyrite; Mag S 0.56 through most of section; bottom 50cm. - in + out of monzonite sill with 20°^CA ctcs; more pyrite in this section (5%).
184.7	228.8	MONZONITE DYKE	Monzonite as above in 115599, rare epidote -calcite -sericite stringers.
228.8	229.7	BASALT FLOW	Less potassic, not that hard; fracture, breccia zones up to 3cm wide; - @ 229.1m with sericite - epidote , quartz- pyrite ± tr mag; lower contact 70°^CA.
229.7	242.6	MONZONITE DYKE	Spotted epidote unit. Contact 45°^CA.

Hole Number: *BR-02-01*

From (m)	To (m)	Rock Type	Comments
242.6	247.6	BASALT FLOW	Upper contact 50° ^CA, lower contact 70° ^CA; FAULT gouge some clay; internal gouge zone 45° CA, some pyrite and qtz -zeolite stringers @ 00° ^CA, bottom 10 cm - magnetic - 5.7 Mags.
247.6	248.8	MONZONITE DYKE	Upper contact 40°^CA, well fractured, small epidote spots but no stripes (stringers) - more typical of Monz sill - smaller few mm spots -replacing phenocrysts, fragments; lower contact 35° ^CA - alignment of stringers along contact for 3cm. (stringers: zeolite,chlorite+epidote/sericite).
248.8	251.1	BASALT FLOW	Alt'n due to fault same as 243.7-247.6; gouge @ 35°^CA; NB Fault from 242.2-259.7.
251.1	253.9	MONZONITE DYKE	Monz sill, typical, sericite-calcite epidote replacing plag phenocrysts.
253.9	256.1	BASALT FLOW	FAULT 0 5 CA; strong sericite overprint due to fault; brecciated, gouge zones ≈15% qtz patches, veins; clay along fractures and sericite- chlorite, some zeolite stringers, very minor calcite; some remnant epidote spots (altered Mnz or Bas?).
256.1	259.7	MONZONITE DYKE	Contact 05°^CA; 30% epidote spots ≈5 mm size - more typical; contact 05°^CA but 45°^CA - stringers of epidote sericite zeolite at contact
259.7	274.7	BASALT FLOW	10-15% augite phenocrysts grading into fine grained feldspar rich; fsps 1-2 mm size (70%) minor calcite agygdules; augite altering to chlorite/sericite and at 278m, calcite; later minor brecciated zones, slippage along 45°^CA structures; altered zone from 261.2- .6 -higher sericite with 2% py, highly magnetic.
274.7	276.7	MONZONITE DYKE	Monz sill? synmineralization; 40cm of augite porphyry in center; epidote spots; sharp contacts, 35°^CA contact grades to 05
276.7	281.8	BASALT FLOW	Augite porphyry, magnetic, altn of augites to chlorite/sericite to calcite at end of section; at start - frags of mafic dy? in augite porphyry.
281.8	282.2	FAULT	FAULT gouge with fragments of wallrock - gouge 00°^CA , L Ctc 55°^CA.
282.2	289.6	BASALT FLOW	Well fractured.
289.6	299.7	MONZONITE DYKE	Vague alteration contact
299.7	300.5	BASALT FLOW	cp in altered flow
300.5	302	MONZONITE DYKE	

Hole Number: *BR-02-01*

From (m)	To (m)	Rock Type	Comments
302	321.2	BASALT FLOW	Fractured, less mottled, trace cp.
321.2	324.9	MONZONITE DYKE	
324.9	345.5	BASALT FLOW	Mottled - altered mafic flow, magnetite - chlorite clots, quartz ± calcite - chlorite - pyrite and epidote -sericite stringers with pyrite; pyrite as disseminations and in stringers ; trace magnetite at stringer selvages; NB all quartz stringers are grey; well fract. - commonly 30°^CA: epidote-calcite replacing phenocrysts ± potassic rims on quartz str. - very hard - siliceous.
345.5	348.7	MONZONITE DYKE	(NB mottling due to alt'n but variation due to? –> volc bx to flw breccia variations); monzonite porphyry sill ≈40% phenocrysts - red - brown groundmass with sauseritized and red brown Ksp or hematitic phenocrysts; few calcite stringers and less, very fine epidote - chlorite - sericite stringers.
348.7	384.2	BASALT FLOW	Fragment of monzonite 5cm x 2 cm @ 350.3, partly digested - irregular margins; molybdenite in interval; quartz - magnetite-pyrite and sericite- epidote-pyrite stringers ; both ± potassic haloes.
384.2	401	MONZONITE DYKE	Hematite alt'n on fractures and throughout; aphanitic matrix; 20-40% fsp phenos, mtagnetite aggregates; calcite -zeolite stringers - very. Fine.
401	403	MAFIC DYKE DYKE	Basaltic dyke, calcite amygdules.
403	403.7	MONZONITE DYKE	Chilled monzonite sill with minor Basalt flow fragment with 2%py; Lower ctc 45 degrees to core axis, magnetic.
403.7	417.6	BASALT FLOW	
417.6	423.3	MONZONITE DYKE	More equigranular looking but appears to be altered monzonite porphyry dyke with potassic, epidote alteration, silicification; magnetite aggregates +/- chl , secondary ksp with magnetite and epidote giving equigranular texture.
423.3	424.4	BASALT FLOW	More anhydrite and calcite- zeol str; more qtz str +/- ep, ser, py; - darker col- gradational upper ctc; more potassic with equigranular texture - possible basalt flow interval; Lctc - 40 degrees to core axis.
424.4	426.4	MONZONITE FLOW	
426.4	430	MONZONITE DYKE	

Hole Number: *BR-02-01*

From (m)	To (m)	Rock Type	Comments
430	431.7	BASALT FLOW	Chalcpyrite (cp) in gypsum-ep- py vein (1 cm) with potassic selvages 40 degrees to core axis.
431.7	434.6	MONZONITE DYKE	Equigranular looking Monzonite porphyry sill.
434.6	436.5	BASALT FLOW	
436.5	436.8	BASALT DYKE	Upper Ctc 80 degrees to core axis; rare epidote (ep) spots after plagioclase? Volcanic dyke - latite or monzonite equivalent.

Brenda Project - Detail Drill Log

Northgate Exploration Ltd

Hole Number: BR-02-01

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
0	4.57	**CASING**								
0.00	4.57							1	0	0
4.57	34.1	**BASALT FLOW**								
4.57	12.19	Fine-grained dark grey porphyritic limonitic	0.1	*14*		0	Basalt flow with variable % (10-20%) of plag (some laths) and augite phenocrysts; generally magnetic; narrow quartz monzonite dykes (~10%); core is ground and broken.	111501	0.007	0.008
12.19	15.24		0.1	*21*		0	as above; minor (1%) chert at 13.7m; less ground and broken to 13.5 and after 14.7m	111502	0.008	0.006
15.24	16.00	Fine-grained brecciated limonitic sericitic		*6* FLT	33	0	Fault zone with limonite bx with clasts of mafic flow and 10% quartz monzonite; locally (20%) silicified; sericite, pyrite alteration of clasts especially at margins; limonitic fractures 50 CA; 10 cm sand seam @ 15.5m	111503	0.004	0.012
16.00	18.70	Fine-grained dark grey porphyritic sericitic limonitic	0.1	*19* LIM	50	1	Basalt flow with anhedral feldspar phenocrysts evident at top, grading to augite dominant at bottom; quartz monzonite dykes at 16.76-17m and 18.9-19.03m (0.5% pyrite in latter) with 40% feldspar, 5% quartz and 5% biotite; MagS in quartz monzonite 13.4;	111504	0.003	-2
18.70	20.60	Fine-grained dark grey porphyritic limonitic	0.1	*3* FLT	30	1	Highly oxidized broken core, in fault zone; dominantly feldspar (anhedral and laths), aug porph flow with 5% silicified zones with pyrite to 1%; quartz monzonite dy at 19.81-20 m; MagS in quartz monzonite 6.4;	111505	0.005	0.011
20.60	21.34	Fine-grained dark grey porphyritic sericitic limonitic	0.0	*0*	30	1	Feldspar,lesser augite porph flow with local more augite rich, more magnetic zones; less broken	111506	0.006	0.02
21.34	24.38	Fine-grained porphyritic sericitic limonitic	0.1	*0*	30	1	Weak, sericite altered basalt flow with 0.5% py, limonite on fract;ures very broken	111507	0.013	0.108
24.38	27.34		0.1	*1*	30	1	Moderate sericite altered basalt flow with 0.5% py, lim on fractures	111508	0.014	0.073
27.34	28.80		0.1	*1*	30	1	Mod sericite altered basalt flow with 0.5% py, lim on fractures; not as broken, dominant fract 33^CA, others 90	111509	0.018	0.045
28.80	29.30		1.0	*0*	30	1	Strong sericite altered basalt flow with 0.5% py, local weak silicification; lim on fract; contacts 45, 33^CA	111510	0.025	0.05

Hole Number: BR-02-01

From	To	Rock Type	Py-Cpy-Mt		Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
29.30	30.50	Fine-grained porphyritic sericitic limonitic	2.0		0	FLT	55	1	More py to 3%; strong sericite; strong lim, well fractured, minor gouge at 30.2-30.5	111511	0.026	0.076
30.50	32.10		1.0		0	FLT	75	1	1cm clay gouge zones at 30.7, 30.8m; lim fault zone, with clay gouge and breccia at 31.8m	111512	0.02	0.093
32.10	34.10		3.0		0	SCH	30	1	Moderate-strong sericite alteration, weak chlorite, local silicified zones, py as disseminations and stringers	111513	0.022	0.115
34.1	35.6	**MONZONITE DYKE**										
34.10	35.60	Fine-grained porphyritic sericitic	0.5		0	ZCC	30	0	Monzonite dyke, aphanitic - fine grained with 10-40% feldspar phenocrysts, commonly sauseritized; stronger sericite, limonite altn above 35.3m; chilled margin below	111514	0.031	0.038
35.6	36.4	**ANDESITE DYKE**										
35.60	36.40	Fine-grained medium grey porphyritic sericitic limonitic	2.0		0	GLIM	30	0	Possible andesite fsp porphyry dyke with trace sphalerite	111515	0.023	0.023
36.4	47.5	**MONZONITE DYKE**										
36.40	37.70	Fine-grained porphyritic chloritic	0.5		0	G	30	0	Well fractured with weak limonite, minor epidote replacing fsp and along fractures	111516	0.02	0.019
37.70	39.70		0.5		0	FLT	10	1	Few mm black, chloritic gouge zone @ 39.1m, minor sericite on fractures	111517	0.013	0.022
39.70	41.70		0.5		0	CHS	45	0	More chlorite, weak sericite altered, primarily on fractures, minor vugs with pyrite-epidote-chlorite	111518	0.002	0.029
41.70	44.60		0.5		0	G	10	0		111519	0.005	0.009
44.60	47.50	Fine-grained pink brown porphyritic chloritic	0.1	1	0	GCH	45	0	Trace magnetite with trace py, chlorite replacing phenocrysts	111520	0.006	0.013
47.5	71.2	**BASALT FLOW**										
47.50	49.30	Fine-grained dark grey porphyritic chloritic	1.0		2	GCH	45	0	Augite fsp porphyry flow; up to 5% py @47.6-.7m, commonly in chlorite-epidote-gypsum fractures	111521	0.027	0.085
49.30	49.60	Fine-grained medium grey porphyritic chloritic	2.0	**0.1**	17	GCH	45	0	trace cp	111577	0.043	0.11
49.60	51.50		2.0	**0.1**	1	QGCHZ	45	0		111522	0.032	0.23
51.50	53.50		1.0	1	1	ESG	45	5	Ground core at top, minor epidote, +/- magnetite, trace cp	111523	0.075	0.289
53.50	54.20	Fine-grained medium grey porphyritic sericitic chloritic	1.0	**0.1**	2	SG	45	10	At 53.9-54.2 flow top breccia with cp; sericite-gypsum-py stringers; trace cp; possible flow banding with tops downhole.	111524	0.074	0.543
54.20	55.50	Fine-grained light grey porphyritic sericitic chloritic	1.0	**0.1**	0	SG	45	10	trace cp	111578	0.061	0.242

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
55.50	57.50	Fine-grained light grey porphyritic sericitic chloritic	1.0	0	SG	45 10	More sericite altered	111525	0.034	0.325
57.50	58.50	Fine-grained medium grey porphyritic chloritic	1.0 **0.1**	1	GSQ	45 15	As above with more stringers and with qtz in str ± trace cp in qtz @ 57.8m	111527	0.059	0.236
58.50	59.90	Fine-grained light grey green porphyritic chloritic	5.0	0	GSCHQ	35 10	More intense ser alt'd - less qtz str; @ 58.9 - 1.5 cm gypsum-qtz chl stringers	111528	0.003	0.595
59.90	61.90	Fine-grained dark grey porphyritic chloritic	2.0	0	GSCHQ	45 3	Much less sericite, chlorite more visible with patchy sericite alteration, - basalt flow with 20% augite, 5% fsp; ser - py- gyp stringers	111529	0.015	0.273
61.90	63.00		1.0	0	FLT	45	@ 62.3 - 15cm fault gouge with clay, chlorite	111530	0.014	0.226
63.00	65.00	Fine-grained light grey porphyritic chloritic	2.0	1	GSCH	45 5	Sericite alt'd but less than in 111528 - top 15cm is flow top	111531	0.002	0.562
65.00	67.00		2.0	1		45 1	Strong sericite alt'd flow	111532	0.001	0.16
67.00	69.00		2.0	0		45 1		111533	0.003	0.264
69.00	71.20		2.0	0		45 1		111534	0.031	0.384
71.2	73.1	**MONZONITE DYKE**								
71.20	73.10	Medium-grained pink brown porphyritic chloritic	0.5	0	GCHZ	45 2	Monzonite dyke with plag + ksp phenos - similar to 36.4-47.5m; minor zeolite; upper chilled margin for 25cm., minor gouge zone bottom 15cm; py-clay- ser - zeol.stringers at 43° ^ CA; minor ser chl stringers; Lower Contact gradational, defined by zeol - gyp vein @ 45° CA.	111535	0.016	0.057
73.1	74	**BASALT DYKE**								
73.10	74.00	Fine-grained black weak sericite		19	ZCCG	45 0	Late mafic (basalt) dyke; very fine grained - aphanitic with calcite amygdules at dyke margins; contacts 45° ^ CA	111536	0.005	0.017
74	121	**BASALT FLOW**								
74.00	76.30	Fine-grained medium grey porphyritic sericitic silicic	1.0	0	ZGCH	45 7	Stringers also at 00 CA; @ 75.2m to end of section higher py - 2%	111537	0.03	0.158
76.30	77.30	Fine-grained medium grey porphyritic sericitic potassic	1.0	0	ZGCH	30 1	Stringers also at 45 and 00 CA, @ 76.7m - 15cm graphitic zone with upper contact (ctc) 33 CA; lower contact 45 CA; strong potassic altn from 76.3 - 76.7m; @77.1 -77.3 more stringers 43° CA; @ 77.3m fault gouge.	111538	0.028	0.05
77.30	78.30		1.0	0	CHG	45 10		111539	0.017	0.128

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From	To	Rock Type	Py-Cpy-Mt		Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
78.30	80.30	Fine-grained medium grey porphyritic chloritic sericitic	2.0		*0*	FLT	20	1	Chlorite altered with augite and epidote altered phenocrysts; @79.6m 20 cm zone more pyic (5%) - fractures at 20 to CA, weak gouge.	111540	0.026	0.11
80.30	82.30		1.0	**0.1**	*1*	ZEGCH	45	10	Weakly fractured ; epidote replacing augite phenocrysts , less sericite than above; zeolite - gypsum ± epidote stringers, chlorite ± pyrite, trace cp; more epidote than above , very weak pervasive silification to end of 111550	111541	0.027	0.048
82.30	84.30		1.0	**0.1**	*1*	ZGECH	45	7	Gypsum / pyrite / epidote stringers with trace chalcopyrite	111542	0.026	0.072
84.30	85.70		1.0	**0.1**	*3*	ZGECH	45	5	Possible very trace chalcopyrite in gypsum / py / epidote stringers @ 84.5 m, 65° CA	111543	0.028	0.258
85.70	87.70		1.0		*0*	GZ	45	2	Magnetite - chlorite clots few mm, up to 1 cm,trace cp.	111544	0.032	0.174
87.70	89.70		1.0		*0*	GZ	45	2	Magnetite / chlorite clots up to 1 cm, trace cp.	111545	0.03	0.103
89.70	91.40	Fine-grained medium grey porphyritic sericitic chloritic	1.0		*0*	GZ	45	0	More sericitic less epidote	111546	0.028	0.119
91.40	92.80	Fine-grained red brown mottled potassic chloritic	2.0		*0*	GZ	45	0	Potassic altn but did not stain.	111547	0.013	0.038
92.80	94.80	Fine-grained medium grey mottled sericitic chloritic	1.0	**0.1**	2 *0*	CHG	30	0	Locally Mag S to 11 or so, local potassic envelope around chlorite / gypsum stringers +/- cp	111548	0.039	0.127
94.80	96.80		1.0	**0.1**	3 *1*	CHGEZ	30	2	as above	111549	0.04	0.13
96.80	98.80		1.0	**0.1**	*0*	CHGES	30	1	Still minor potassic stringers, also sericite-epidote and gypsum-py- +/- trace cp; magnetite - chl clots	111550	0.05	0.162
98.80	100.50	Fine-grained medium grey mottled chloritic sericitic	1.0	**0.1**	*0*	FLTGE	45	2	NB mottled texture to 121.1; same rock, w potassic altered throughout (did not stain), moderately fractured, patchy chlorite-sericite-epidote alteration; possible albitization, also local w silification. Gouge zone @100.45 - 10cm; start to get qtz stringers; qtz eyes. - 1 noted at 99.9m.	111552	0.041	0.123
100.50	102.80	Fine-grained mottled chloritic	1.0		*0*	QG	45	7	Mag - chlorite clots, epidote - gypsum stringers, trace calcite in stringers , gypsum- quartz- mag ± gypsum veins.	111553	0.07	0.19
102.80	104.80		2.0	**0.1**	*1*	ZQ	45		Mag - chlorite clots +/- cp, blue quartz stringers; NB less sericite	111554	0.067	0.241
104.80	106.80		1.0	**0.1**	*18*	QCHG	20	3	Magnetite - chlorite clots, quartz stringers ± magnetite, chlorite, gypsum.	111555	0.038	0.168
106.80	108.80		0.5	**0.1**	*10*	QCHG	20	3	Magnetite- chlorite clots +/-cp.	111556	0.083	0.368
108.80	110.80		0.5	**0.1**	*23*	QCHG	20	3	mag chlorite clots+/-cp	111557	0.045	0.219

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From	To	Rock Type	Py-Cpy-Mt		Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
110.80	112.80	Fine-grained mottled chloritic	1.0	**0.1**	*9*	QCHG	20	3	mag chlorite clots+/-cp	111558	0.045	0.255
112.80	114.80		2.0	**0.1**	*24*	QCHG	45	5	Magnetite- chlorite clots +/-cp; pyrite-gypsum stringers	111559	0.092	0.518
114.80	116.80		1.0	**0.1** 0	*32*	QZGCH	30	1	Mottled textured; patchy alteration, magnetic -chlorite clots +/-cp, epidote as stringers patches, around magnetite - chlorite clots; epidote assoc with pyrite-gypsum- quartz stringers; pyrite disseminated and as stringers with chlorite, local silicfied patches; albite overprint? as 5% anhedral phenocrysts.	111560	0.114	0.937
116.80	118.90		1.0	**0.1** 0	*4*	QZGCH	45	1	As above - grades less fractured	111561	0.083	0.358
118.90	121.00		1.0	**0.1** 0	*13*	QZGCH	30	1		111562	0.082	0.362
121	130.1	**MONZONITE DYKE**										
121.00	123.00	Fine-grained red brown porphyritic sericitic	0.1		*0*	ESCH	15	0	Monzonite dyke, aphanitic - fine grained with 3% feldspar phenocrysts, commonly sauseritized; epidote also in fractures with pyrite, sericite; minor magnetite - chlorite clots - << 1% ; upper ctc 22° CA; variable patchy sericite alteration, hard siliceous.	111563	0.007	0.01
123.00	125.00		0.1	0	*1*	ESCH	15	0	Minor weak magnetite patches.	111564	0.001	0.006
125.00	127.00		0.1	0	*4*	ESCH	15	1	minor weak magnetite patches	111565	0.001	0.005
127.00	129.00		0.5	0	*0*	ESCH	15	0	Trace magnetite associated with epidote -pyrite, + magnetic patches; more pyrite along fractures	111566	0.008	-2
129.00	130.10		0.1	0	*1*	ESCHC	15	0	Minor weak magnetic patches (magnetite - chlorite); lower ctc - 30° ^CA; well fractured with calcite stringers parallel to contact.	111567	0.013	0.011
130.1	136.6	**BASALT FLOW**										
130.10	132.10	Fine-grained grey brown mottled potassic propyllitic	0.1	**0.1** 0	*10*	GCC	15	1	Mottled chlorite - epidote - hematite and weak sericite altered mafic flow with magnetite - chlorite +/-cp patches; moderately fractured @ 25,30,75°^CA.	111568	0.094	0.295
132.10	133.80		0.5	**0.1** 0	*2*	GCC	15	1	Magnetite-chlorite +/-cp; pyrite along 20°^CA fractures @ 153.7-8m.	111569	0.103	0.417
133.80	134.80		0.1	**0.1** 0	*3*	QGCC	15	1	Quartz stringers evident +/-cp with minor calcite ± trace magnetite associated with stringers.	111570	0.108	0.227
134.80	136.60		0.5	**0.1** 0	*4*	QGCC	15	1	Chilled margin - increases towards 136.6m; minor cp.	111571	0.105	0.232
136.6	137.9	**MAFIC DYKE**										

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
136.60	137.90	Fine-grained black		*31*	CCZ	45 5	Aphanitic mafic dyke. Calcite amygdules near upper contact; lower contact - 80° ^CA, upper ctc - irregular; abundant -calcite stringers; @ 137.0m -10cm of mottled unit as above.	111572	0.013	0.021
137.9	139.5	**BASALT FLOW**								
137.90	139.50	Fine-grained grey brown mottled chloritic	2.0	2 *16*	GQ	10 5	Mottled unit with chlorite - magnetite clots , epidote - sericite stringers, pyrite - gypsum stringers up to 0.5 cm; hard.	111573	0.092	0.246
139.5	139.7	**MAFIC DYKE**								
139.50	139.70	Fine-grained black		*31*	CC	45 1	Mafic dyke ; as in 36.6 - 137.9 - not sampled.	2	0	0
139.7	143.4	**BASALT FLOW**								
139.70	141.70	Fine-grained mottled chloritic	3.0 **0.1**	1 *50*	QSEG	5 5	Mottled unit with more pyrite in veinlets and disseminations; veinlets @ 45 + 90° ^ CA; hard; magnetite - chlorite patches and stringers, trace cp.	111574	0.131	0.228
141.70	143.40		1.0 **0.1**	5 *3*	QSEG	15 4	trace cp.	111575	0.131	0.223
143.4	144.7	**MAFIC DYKE**								
143.40	144.70	Fine-grained black	0.1	*33*	CCZ?	90 1	Upper contact 90°^CA; massive basalt (mafic) dyke with calcite (< 1mm, very fine) amygdules near contacts; fragments of mottled unit up to 5 cm in center with pyrite; Lower contact 10° CA.	111576	0.014	0.014
144.7	150.1	**BASALT FLOW**								
144.70	147.00	Fine-grained mottled sericitic	5.0 **0.1**	3 *22*	QSEG	45 1	Trace fine chalcopyrite in fractures assoc with gypsum-quartz stringers, hard.	111580	0.107	0.13
147.00	149.30	Fine-grained grey-green mottled sericitic	8.0 **0.1**	2 *1*	QSEGC	80 1	Generally well fractured, - trace 0.1% goldfieldite @ 147.3 assoc with 5 cm wide pyic zone (contact = 90°, 45° CA) and gypsum, quartz ; adjacent to 5 cm epidote sericite altered zone; @ 148.1 fault zone, with minor gouge with 4% pyrite, brecciated - 25 cm wide; pyic str assoc with qtz + gyp - very fine py stringers throughout and as disseminations.	111581	0.122	0.383
149.30	150.10	Fine-grained grey-green mottled sericitic chloritic	1.0	*0*	FLT	5 0	Fault zone; graphitic; chlorite seams; gouge; upper contact - 05°CA; lower contact 40° ^CA.	111582	0.014	0.191
150.1	173.7	**MONZONITE DYKE**								
150.10	152.10	Fine-grained red brown porphyritic sericitic	0.1	*2*	CCGHZ	5 0	Calcite- gypsum stringers; hematite along fractures; sauseritized fsps and along fractures.	111583	0.013	0.209

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From	To	Rock Type	Py-Cpy-Mt		Ms	Veins (CA-%)			Comments	Sample#	Cu %	Au ppm
152.10	154.10	Fine-grained red brown porphyritic sericitic	0.1		0	CCECH	30	0	NB 05-15° structure is late, dip ≈80° or 60° - prob 80°; @ 153.8 7 cm chlorite rich patch.	111584	0.01	-2
154.10	156.10		0.1		1	CCECH	10	0		111585	0.01	-2
156.10	158.10		0.1		2	CCECH	30	0		111586	0.008	-2
158.10	160.10		0.1		0	CCECH	30	0		111587	0.006	-2
160.10	162.20		0.1		0	CCECH	30	0		111588	0.006	-2
162.20	163.70	Fine-grained orange brown porphyritic potassic	0.1	0	2	CCZ	30	0	Contact 45° CA - sharp but appears to be alteration contact. Potassic altered monzonite dyke, overprints sauseritization; lower contact ≈45° CA - gradational, epidote at margin for 2cm.	111589	0.001	-2
163.70	165.70	Fine-grained red brown porphyritic chloritic hematitic	0.1	1	16	CCZ	80	0	magnetite	111590	0.002	-2
165.70	167.70		0.1	1	13	CCZ	15	0		111591	0.002	-2
167.70	169.40	Fine-grained red brown porphyritic chloritic potassic	0.1	1	12	CCZ	80	0	Potassic altered section from 168.4 - 168.9; 1 cm of epidote alteration at upper contact - 30°; lower contact is gradational but ≈15°CA;,some epidote - magnetite - sericite clots to 3 cm in rest of section.	111592	0.002	-2
169.40	171.50	Fine-grained red brown porphyritic hematitic	0.1	1	1	CCZ	80	0		111593	0.002	-2
171.50	173.70		0.1	1	9	CCZ	80	0		111594	0.011	0.007
173.7	175.3	**BASALT FLOW**										
173.70	175.30	Fine-grained sericitic	2.0		4	CCZ	15	0	Contact 10°^CA, granitized basalt flow, quartz ±chlorite stringers with epidote, pyrite , also minor calcite- zeolite stringers; sauseritized phenocrysts; albitized ?? phenocrysts ≈5%, anhedral. Fault contact 10-15°CA; at Lower contact calcite- chlorite - clay gouge.	111595	0.034	0.056
175.3	176.3	**MONZONITE DYKE**										
175.30	176.30	Fine-grained red brown porphyritic hematitic	0.1	1	5	CCZ	30	0	Monzonite sill. Magnetite -chlorite as small clots replacing mafic phenocrysts? (<5%) phenocrysts; also sauseritized phenocrysts and ep-ser stringers.	111596	0.001	-2
176.3	178.1	**BASALT FLOW**										
176.30	178.10	Fine-grained chloritic	2.0	0.1	1	1	CCZQC	30	0	Granitized basalt flow ; magnetite -chlorite stringers ±quartz and gypsum quartz stringers; also epidote-chlorite; magnetite -chlorite replacing phenocrysts; gradational lower contact ≈30°^CA.	111597	0.061	0.039

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From	To	Rock Type	Py-Cpy-Mt		Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
178.1	183.2	**MONZONITE DYKE**										
178.10	180.10	Fine-grained red brown porphyritic hematitic	0.5		1 7	ECHSC	45	0	Monzonite sill as above (to 176.3 m); magnetite -chlorite clots (after phenocrysts) and trace stringers.	111598	0.025	0.008
180.10	182.10		2.0		1 16	CCZ	70	0	as above but no fault	111599	0.002	-2
182.10	183.20		0.1		1 8	CCZ	35	0		111600	0.006	0.008
183.2	184.7	**BASALT FLOW**										
183.20	184.70	Fine-grained chloritic	0.1	**0.1**	7	QCHCC	30	5	Fault at upper contact 35 CA, well fractureured; still have 3 % quartz or albite phenocrysts (anhedral); patchy qtz veinlets, str, ± pyrite; Mag S 0.56 through most of section; bottom 50cm. - in + out of monzonite sill with 20°^CA ctcs; more pyrite in this section (5%).	111651	0.059	0.271
184.7	228.8	**MONZONITE DYKE**										
184.70	186.70	Fine-grained red brown porphyritic hematitic	0.1		1 12	CCZES	40	0	Monzonite as above in 115599, rare epidote -calcite - sericite stringers.	111652	0.002	-2
186.70	188.70		0.1		1 6	CCZES	40	0	Occasional basalt flow fragments.	111653	0.002	-2
188.70	190.70		0.1		1 14	CCZES	40	0	occ basalt flow frag	111654	0.008	-2
190.70	192.70		0.1		1 14	CCZES	40	0	Less magnetite as stringers going down hole.	111656	0.002	-2
192.70	194.70		0.1		1 15	CCZ	75	0	Occ basalt flow fragment with more sauseritization; grades less potassic.	111657	0.009	-2
194.70	196.70		0.1		1 17	CCZ	75		less potassic	111658	0.002	-2
196.70	197.80		0.1		14	CCZ	60	0		111659	0.006	-2
197.80	198.10		10.0	**0.1**	1	CCZ	60	0	Upper contact 15°CA, tuffisite dyke?; trace cp and 1% gf (graphite) assoc with pyrite, in finely bxed zone with banding parallel to contact; lower contact 55°^CA, 20cm wide.	111660	0.012	-2
198.10	199.70		0.1		1 6	CCZ	60	0		111661	0.004	-2
199.70	201.90	Fine-grained green brown porphyritic hematitic	1.0		2	CCZES	60	0	Upper contact- vague 05°^CA; mixed zone red- brown monzonite and spotted epidote - 20 -30cm intevals of spotted epidote alt'n comprising 35% of interval.	111662	0.022	0.008

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
201.90	203.90	Fine-grained spotted and striped chloritic	1.0	1	2 EQSCC 30 10	Spotted epidote alteration with spots of sausserite (epidote - calcite- sericite) and along fractures; spots ≈ 15% - round, mm to 1cm, avg 0.5cm size; propylitic alt'n evident, epidote-chlorite-sericite - quartz; matrix is fine grained with fine magnetite and mte-chl aggregates ± py; altered monz dy or?? -not as porphyritic as dy and fg as opposed to aph matrix., some fragments of mafic volc that are ep alt'd; NB. 2 striger types ≈90° to each other, qtz str ±mgte and py and qtz-ep-ser -cal str ; also zeol-calcite str which are at 090°.	111663	0.01	-2
203.90	205.90		1.0	1	1 EQSCC 30 10		111664	0.009	-2
205.90	207.90		1.0	1	3 EQSCC 30 10		111665	0.007	-2
207.90	209.90		1.0	1	2 EQSCC 30 10		111666	0.004	-2
209.90	211.90		1.0	1	0 EQSCC 30 10		111667	0.01	-2
211.90	213.90		1.0 **0.1**	1	5 EQSCC 30 10		111668	0.012	-2
213.90	215.90		1.0	1	8 EQSCC 30 10		111669	0.009	-2
215.90	217.90		1.0	1	2 EQSCC 30 10	Eepidote spots are smaller - few mm. Largest 0.5cm.	111670	0.004	-2
217.90	219.90		1.0	1	5 EQSCC 30 10	epidote spots are smaller - few mm. Largest 0.5cm	111671	0.004	-2
219.90	221.20		1.0	1	0 EQSCC 60 10	Fault at 220.0m - 1 cm of gouge, 60 CA.	111672	0.004	-2
221.20	222.80	Fine-grained porphyritic chloritic sericitic	2.0	1	0 EQSCC 60 10	Tan (flesh coloured) alteration (sericite-ksp)? with epidote up to 4 cm wide as veinlets - fragments of epidote spotted unit in regular Monzonite sill -->intrusive breccia??, some large epidote/sericite/frags to 4cm.	111673	0.001	-2
222.80	224.00	Fine-grained porphyritic chloritic	1.0	1	0 EQSCC 30 10		111674	0.006	-2
224.00	226.80		1.0	1	0 EQSCC 30 10		111675	0.009	-2
226.80	228.80		1.0	2	0 EQSCC 30 10	@228.1 - 20cm interval of basalt flow; upper contact 35 and lower contact 25°^CA.	111676	0.004	0.008
228.8	229.7	**BASALT FLOW**							
228.80	229.70	Fine-grained dark grey chloritic	2.0	1	1 QEESC 20 5	Less potassic, not that hard; fracture, breccia zones up to 3cm wide; - @ 229.1m with sericite -epidote , quartz-pyrite ± tr mag; lower contact 70°^CA.	111677	0.019	0.062
229.7	242.6	**MONZONITE DYKE**							
229.70	230.40	Fine-grained red brown spotted and striped chloritic	0.5		1 ESCCZ 30 1	Spotted epidote unit. Contact 45°^CA.	111678	0.011	-2

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
230.40	231.60	Fine-grained red brown spotted and striped chloritic	1.0	0	*1* ESCCZ 30 1	Mixed zone spotted epidote monzonite and 35% basalt with 5-20°^CA contacts; much less quartz stringers in basalt.	111679	0.015	0.053
231.60	233.60		0.5	0	*2* ESCCZ 30 5	Spotted epidote unit	111680	0.004	-2
233.60	235.60		0.5	0	*0* ESCCZ 30 5		111682	0.006	-2
235.60	237.60		1.0	0	*2* ESCCZ 30 5	Grading less epidote especially as spots but also as stringers, ≈5 % total; py generally with epidote/sericite replacing altered mafic fragments.	111683	0.003	-2
237.60	239.60		1.0	0	*1* ESCCZ 30 5	More epidote again ≈ 10%.	111684	0.003	-2
239.60	241.60		1.0	0	*5* ESCCZ 30 10	5% breccia zones with epidote/sericite /calcite in veinlets with frags of wallrock - up to 4 cm wide.	111685	0.008	0.012
241.60	242.60		1.0	0	*1* ESCCZ 30 10	Same but less epidote as stringers + spots (≈5% epidote).	111686	0.032	0.263
242.6	247.6	**BASALT FLOW**							
242.60	243.70	Fine-grained medium grey brecciated sericitic chloritic	10.0	1	*0* QZCH 30 3	Upper contact 50° ^CA, lower contact 70° ^CA; FAULT gouge some clay; internal gouge zone 45° CA, some pyrite and qtz -zeolite stringers @ 00° ^CA, bottom 10 cm - magnetic - 5.7 Mags.	111687	0.037	0.369
243.70	245.60		10.0	0	*0* QCHCC 30 5	Alteration due to fault - sericite ± patchy silification; quartz stringers + chlorite' less calcite-zeolite stringers, rare epidote-sericite, some brecciation and minor gouge generally crackled texture - weak breccia.	111688	0	0
245.60	247.60		10.0	0	*0* QCHCC 30 5	Alt'n due to fault - as above; @ 247.4 - dk grey mineral, monmagn; H3 , assoc with pyrite + surrounding ep-sericite, possible tetrahedrite.	111689	0.044	0.506
247.6	248.8	**MONZONITE DYKE**							
247.60	248.80	Fine-grained red brown porphyritic potassic	0.5	1	*6* ESCCZ 30 0	Upper contact 40°^CA, well fractured, small epidote spots but no stripes (stringers) - more typical of Monz sill - smaller few mm spots -replacing phenocrysts, fragments; lower contact 35° ^CA - alignment of stringers along contact for 3cm. (stringers: zeolite,chlorite+epidote/sericite).	111690	0.001	0.009
248.8	251.1	**BASALT FLOW**							
248.80	251.10	Fine-grained medium grey brecciated sericitic chloritic	10.0	0	*1* QCHCC 30 0	Alt'n due to fault same as 243.7-247.6; gouge @ 35°^CA; NB Fault from 242.2-259.7.	111691	0.046	0.312
251.1	253.9	**MONZONITE DYKE**							

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
251.10	253.90	Fine-grained red brown porphyritic potassic	0.1	1	*14* QZESC	30	0	Monz sill, typical, sericite-calcite epidote replacing plag phenocrysts.	111692	0.006	0.012
253.9	256.1	**BASALT FLOW**									
253.90	256.10	Fine-grained light grey green brecciated sericitic chloritic	7.0	0	*2* SCHCL	5	15	FAULT 0 5 CA; strong sericite overprint due to fault; brecciated, gouge zones ≈15% qtz patches, veins; clay along fractures and sericite- chlorite, some zeolite stringers, very minor calcite; some remnant epidote spots (altered Mnz or Bas?).	111693	0.036	0.183
256.1	259.7	**MONZONITE DYKE**									
256.10	258.10	Fine-grained red brown porphyritic potassic	0.5	0	*12* CCZ	5	0	Contact 05°^CA; 30% epidote spots ≈5 mm size - more typical; contact 05°^CA but 45°^CA - stringers of epidote sericite zeolite at contact	111694	0.003	-2
258.10	259.70	Fine-grained light grey green brecciated sericitic chloritic	7.0		*1* CCZ	5		Fault as in 111693; internal gouge @ 05°^CA, lower contact 65°CA.	111695	0.014	0.844
259.7	274.7	**BASALT FLOW**									
259.70	261.70	Fine-grained porphyritic sericitic potassic	0.1		*29* CCZCH	10	0	10-15% augite phenocrysts grading into fine grained feldspar rich; fsps 1-2 mm size (70%) minor calcite agygdules; augite altering to chlorite/sericite and at 278m, calcite; later minor brecciated zones, slippage along 45°^CA structures; altered zone from 261.2- .6 - higher sericite with 2% py, highly magnetic.	111696	0.004	0.039
261.70	263.70		0.1		*19* CCZ	45	0	Augite porphyry.	111697	0.003	0.006
263.70	265.70			1	*26* CCZ	10		Grades to more fine grained feldspar porphyry less augite; 70% feldspar phenocrysts.	111698	0.002	0.015
265.70	267.70	Fine-grained light grey brown porphyritic sericitic potassic		1	*28* CCZCH	45		+ fsp porphyritic	111699	0.003	0.007
267.70	269.70				*27* CCZCH	10		80% feldspar phenocrysts	111700	0.003	0.008
269.70	271.70				*32* CCZCH	45		80% feldspar porphyry	111701	0.003	0.015
271.70	273.00				*27* CCZCH	10		80% augite porphyritic, grades less potassic	111702	0.003	-2
273.00	273.50	Fine-grained light grey brown porphyritic sericitic	0.5		*1* QZ	45	1	Altered zone 55°^CA contacts, more sericite, minor qtz patches, few cm , + as stringers.	111703	0.034	0.164
273.50	274.70	Fine-grained light grey brown porphyritic sericitic potassic			*30* CCZCH	30	0	80% augite porphyritic - small altered zone as in 111703 at 273.8m; lower contact 60°^CA.	111704	0.005	0.009
274.7	276.7	**MONZONITE DYKE**									

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
274.70	276.70	Fine-grained porphyritic sericitic	0.5 **0.1** 1	*2* QCZHE 45 1		Monz sill? synmineralization; 40cm of augite porphyry in center; epidote spots; sharp contacts, 35°^CA contact grades to 05	111705	0.04	0.071
276.7	281.8	**BASALT FLOW**							
276.70	278.50	Fine-grained dark grey-green porphyritic chloritic		*8* CCZ 70 0		Augite porphyry, magnetic, altn of augites to chlorite/sericite to calcite at end of section; at start - frags of mafic dy? in augite porphyry.	111707	0.003	-2
278.50	280.10	Fine-grained mottled potassic chloritic	0.5 **0.1** 1	*6* QCHE 30 0		Mottled unit; chalcopyrite @ 279.6 in 30°^CA quartz stringers with graphite, chlorite, zeol; fault @ 279.8 - 280.1 at 45°^CA; chlorite graphite clay gouge; altered mafic frags - 3cm. Epidote altered phenocrysts throughout.	111708	0.098	0.138
280.10	281.80	Fine-grained porphyritic potassic sericitic	1.0 1	*1* Z 45		More potassic altered than rest; brecciated texture; more sericite and epidote rich matrix, more potassic altered fragments up to 2-3cm; epidote altered phenocrysts 50°^CA.	111709	0.013	0.005
281.8	282.2	**FAULT**							
281.80	282.20	Fine-grained brecciated sericitic chloritic	6.0	*2* CHGF 45 5		FAULT gouge with fragments of wallrock - gouge 00°^CA , L Ctc 55°^CA.	111710	0.055	0.278
282.2	289.6	**BASALT FLOW**							
282.20	283.70	Fine-grained porphyritic potassic chloritic	2.0 1	*7* Z 45		Well fractured.	111711	0.072	0.081
283.70	285.60		1.0 **0.1** 2	*16* QCH 45 1		Well fractured , more sericite ; magnetite, trace cp in quartz stringers.	111712	0.114	0.147
285.60	287.60		7.0 **0.1** 2	*6* QCHES 45 2		Well fractured.	111713	0.079	0.093
287.60	289.60		6.0 **0.1** 2	*7* QCHES 45		Some faulting ≈5-10°^CA; graphitic fractures, brecciation; minor chlorite- graphite clay gouge; L Ctc 45°CA.	111714	0.072	0.105
289.6	299.7	**MONZONITE DYKE**							
289.60	291.60	Medium-grained porphyritic potassic chloritic	0.1 1	*3* Z 85 0		Vague alteration contact	111715	0.013	-2
291.60	293.70		0.1	*2* ZQ 85 0		+ 20-30 cm wide more potassic altered zones; some frags of altered mafic clasts (epidote magnetite sericite chlorite); L Ctc vague alt'n contact 45°^CA.	111716	0.012	-2
293.70	295.70	Fine-grained red brown porphyritic potassic chloritic	1.0 1	*4* 45 0			111717	0.032	-2

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
295.70	296.40	Fine-grained red brown porphyritic potassic sericitic	0.5 **0.1**	1	*3* CCZ 45	Trace cp.	111718	0.057	0.133
296.40	297.60		1.0 **0.1**	5	*4* CCZGF 35	Fault zone - gouge @ 296.5 - graphite, chlorite, clay; brecciated - 70°^CA; trace sp, cp.	111719	0.066	-2
297.60	299.70	Medium-grained orange brown porphyritic potassic sericitic	0.5	1	*2* CCZGF 20 0	5 cm mafic dyke at lower contact (45°^CA) with frags of Monzonite, some quartz, chlorite stingers.	111720	0.007	0.021
299.7	300.5	**BASALT FLOW**							
299.70	300.50	Fine-grained mottled potassic	2.0 **0.2**	1	*3* CCZEC 35 1	cp in altered flow	111721	0.086	0.385
300.5	302	**MONZONITE DYKE**							
300.50	302.00	Medium-grained red brown porphyritic potassic sericitic	0.1	1	*4* CCZEC 35 0		111722	0.003	-2
302	321.2	**BASALT FLOW**							
302.00	303.30	Fine-grained weakly mottled chloritic	1.0 **0.1**	1	*2* CCZEC 20	Fractured, less mottled, trace cp.	111723	0.057	0.183
303.30	304.30		3.0 **0.1**	0	*1* CCZEC 0 2	Some potassic selvages ± ep around quartz veins; molybdenite assoc with quartz rich fracture zones @ 40° +75°^CA around 304.1m; increase in potassic alt'n in last 60cm.	111724	0.064	0.139
304.30	306.30	Fine-grained weakly mottled sericitic	2.0	0	*0* CHEQZ 20 0	@306.3 - 306.55 graphitic fault, minor gouge 35°^CA; breccia (bx) followed by sericite altered zone.	111725	0.04	0.041
306.30	308.30	Fine-grained mottled potassic chloritic	1.0	0	*1* CHEQZ 35 1	More quartz stringers ± potassic selvages.	111726	0.029	0.025
308.30	310.30		2.0	1	*31* CHEQZ 55 1		111727	0.069	0.062
310.30	312.30		3.0 **0.1**	0	*4* QESCH 30 2	Some pyrite stringers with sericite/potassic? Selvages; trace cp.	111728	0.102	0.138
312.30	314.30		1.0	1	*8* QESCH 30 3		111729	0.066	0.077
314.30	316.30		1.0 **0.1**	1	*5* QESCH 25 10	Trace cp.	111730	0.074	0.174
316.30	317.90		4.0	1	*2* QE 5 5		111731	0.041	0.142
317.90	319.20		3.0 **0.1**	1	*5* QES 30 10	Minor molybdenite, trace cp.	111733	0.035	0.075
319.20	321.20		10.0 **0.1**	1	*6* QES 45 20	Strong quartz vein zone @ 320.3 -12cm; trace cp.	111734	0.083	0.142
321.2	324.9	**MONZONITE DYKE**							
321.20	323.60	Fine-grained red brown porphyritic potassic sericitic	0.1	1	*2* QES 45 5		111735	0.015	-2

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
323.60	324.90	Fine-grained porphyritic potassic	0.1 0	2	Z 45 1	Mixed zone - Monzonite with abundant fragments up to 40cm of epidote, sericite, chlorite altered basalt flow.	111736	0.011	-2
324.9	345.5	**BASALT FLOW**							
324.90	326.90	Fine-grained mottled chloritic potassic	8.0 0	4	QCCES 0 8	Mottled - altered mafic flow, magnetite - chlorite clots, quartz ± calcite - chlorite - pyrite and epidote -sericite stringers with pyrite; pyrite as disseminations and in stringers ; trace magnetite at stringer selvages; NB all quartz stringers are grey; well fract. - commonly 30°^CA: epidote-calcite replacing phenocrysts ± potassic rims on quartz str. - very hard - siliceous.	111602	0.052	0.067
326.90	328.90		5.0 **0.1** 0	*0*	QCCES 80 10	trace cp	111603	0.051	0.053
328.90	330.90		3.0 **0.1** 0	*4*	QCCES 80 10	Molybdenite, trace cp, in grey quartz stringers ≈.1; grades mod-weakly fractured and very hard, siliceous (silicified?) down hole.	111604	0.063	0.047
330.90	332.90		5.0 **0.1** 0	*0*	QCCES 80 10	trace cp	111605	0.062	0.063
332.90	334.90		3.0 0	*1*	QCCES 80 10		111606	0.042	0.04
334.90	336.90	Fine-grained mottled potassic	2.0 **0.1** 0	*1*	QCCES 80 10	more potassic	111607	0.052	0.033
336.90	338.90	Fine-grained mottled chloritic potassic	4.0	*1*	QCCES 80 10		111608	0.057	0.056
338.90	340.90		2.0	*0*	QCCES 80 5		111609	0.037	0.04
340.90	342.90	Fine-grained dark grey-green mottled chloritic potassic	1.0 **0.1**	*1*	QCCES 80 15	gypsum in stringers	111610	0.06	0.066
342.90	344.90		4.0 **0.1** 0	22	QCCES 80 20	Gypsum in stringers, large quartz-epidote-sericite-pyrite-magnetite vein @343.7 for 25cm, moly - as stringers.	111611	0.084	0.132
344.90	345.50	Fine-grained red brown mottled potassic chloritic	3.0 **0.1** 0	2	QCC 80 1	Upper contact 85°^CA; pervasively potassically altered mafic flow @ contact with monzonite sill - very hard, chilled margin; quartz-magnetite-pyrite stringers; lower contact 30°^CA - minor molybdenite.	111612	0.084	0.07
345.5	348.7	**MONZONITE DYKE**							
345.50	347.10	Fine-grained red brown porphyritic potassic		*1*	CCESC 45 0	(NB mottling due to alt'n but variation due to? --> volc bx to flw breccia variations); monzonite porphyry sill ≈40% phenocrysts - red - brown groundmass with sauseritized and red brown Ksp or hematitic phenocrysts; few calcite stringers and less, very fine epidote - chlorite - sericite stringers.	111613	0.014	0.007
347.10	348.70			3	CCESC 45	Lower contact - 15°^CA.	111614	0.008	0.005

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
348.7	384.2	**BASALT FLOW**							
348.70	350.70	Fine-grained mottled chloritic potassic	1.0	1	*15* QSECC 0 2	Fragment of monzonite 5cm x 2 cm @ 350.3, partly digested - irregular margins; molybdenite in interval; quartz - magnetite-pyrite and sericite- epidote-pyrite stringers ; both ± potassic haloes.	111615	0.041	0.04
350.70	352.70		1.0 **0.1**	1	*10* QSECC 10 2	grades slightly less mottled	111616	0.077	0.12
352.70	354.70		1.0 **0.1**	1	*31* QSECC 80 1		111617	0.065	0.048
354.70	356.70		1.0 **0.1**	2	*46* QSECC 10 0	Chalcopyrite occurs very fine grained in quartz stringers + quartz epidote stringers ±magnetite.	111618	0.046	0.04
356.70	358.70	Fine-grained mottled potassic chloritic	1.0 **0.2**	1	*11* QSECC 45 2	Chalcopyrite occurs vfg in quartz stringers + quartz epidote stringers ±magnetite, grades more potassic.	111619	0.056	0.057
358.70	359.60		4.0 **0.2**	1	*4* QSECC 45		111620	0.095	0.052
359.60	360.00		6.0 **1.0**	2	*11* QSECC 5 20	Higrade Cu; molybdenite; assoc with gypsum- quartz stringers and 0.5-1cm wide tan (flesh) coloured vein of sericite -Mn carbonate???-quartz, magnetite along selvages, magnetite commonly surrounds chalcopyrite.	111621	0.371	0.058
360.00	361.10		3.0 **0.1**	1	*10* QSECC 30 5	Molybdenite, trace chalcopyrite -v.f.g.	111622	0.076	0.086
361.10	363.10		6.0 **0.1**	1	*11* QSECC 85 5	molybdenite, tr chalcopyrite -v.f.g.	111623	0.099	0.089
363.10	364.50		2.0 **0.1**	1	*1* QCHES 5 3	Minor gouge 10 degrees to core axis at 365.0; silicified from 363.1 - 384.5m.	111624	0.098	0.077
364.50	366.50	Fine-grained red brown mottled potassic chloritic	5.0	2	*70* QCHES 80 5	Grades more highly potassic. Trace moly . Epidote/potassic alteration around chlorite- magnetite altered clots (orig. mafic flow). Still have qtz-magnetite veins +/- epidote- sericite through section.	111625	0.062	0.086
366.50	368.50		5.0 **0.1**	2	*19* CHESQ 45 2	More py-chl-magnetite-stringers up to .5 cm, magnetite patches up to 3-5 cm long with 15% py .	111626	0.069	0.121
368.50	370.40	Fine-grained mottled chloritic potassic	2.0 **0.1**	2	*2* QGCHE 45 2	Less potassic down hole; still very hard.	111628	0.036	0.065
370.40	372.40		1.0	2	*28* QGCHE 45 2		111629	0.046	0.059
372.40	374.40		2.0 **0.1**	2	*0* QGCHE 45 3	Moly @ 373.7m; 8cm zone (fracture? zone) at 35 degrees to core axis, with 10% moly, minor quartz.	111630	0.057	0.101
374.40	376.40		5.0	2	*6* QGCHE 45 5		111631	0.025	0.058
376.40	378.40		4.0 **0.1**	2	*18* QGCHE 45 2	Grades less mottled - more massive down hole.	111632	0.033	0.059
378.40	380.40		1.0 **0.1**	2	*10* QGCHE 45 3		111633	0.018	0.066

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
380.40	382.40	Fine-grained mottled chloritic potassic	3.0	2	*8* QGCHE 45 1		111634	0.025	0.046
382.40	384.20		5.0	2	*6* QGCHE 45 1	moly	111635	0.067	0.151
384.2	401	**MONZONITE DYKE**							
384.20	385.40	Fine-grained porphyritic hematitic	0.1 **0.1**	2	*11* CCZ 45 0	Hematite alt'n on fractures and throughout; aphanitic matrix; 20-40% fsp phenos, mtagnetite aggregates; calcite -zeolite stringers - very. Fine.	111636	0.004	-2
387.40	389.40			1	*4* CCZ 45 0		111639	0.002	-2
389.40	391.40			2	*6* CCZ 45 0		111640	0.013	-2
391.40	393.40		0.5	2	*8* CCZ 45 0	At 393.2m fault gouge 35 degree to core axis with clay, chl, py aggregates and disseminations, local silicification.	111641	0.002	-2
393.40	395.40			2	*9* CCZ 45 0	Minor clay-epidote-sericite alteration.	111642	0.003	-2
395.40	397.40			2	*4* CCZ 45 0		111643	0.014	-2
397.40	399.40			2	*13* CCZ 45 0		111644	0.005	-2
399.40	401.00			2	*10* CCZ 45 0	Minor clay-epidote-sericite alteration, ctc 85 degrees to core axis.	111645	0.005	-2
401	403	**MAFIC DYKE DYKE**							
401.00	403.00	Aphanitic black chloritic hematitic		2	*21* CCZ 45 0	Basaltic dyke, calcite amygdules.	111646	0.006	-2
403	403.7	**MONZONITE DYKE**							
403.00	403.70	Fine-grained porphyritic hematitic potassic	0.1	2	*7* CCZEC 45 0	Chilled monzonite sill with minor Basalt flow fragment with 2%py; Lower ctc 45 degrees to core axis, magnetic.	111647	0.009	-2
403.7	417.6	**BASALT FLOW**							
403.70	405.40	Fine-grained grey-green mottled silicic	3.0	2	*1* GQESC 45 0		111648	0.022	0.048
405.40	406.90	Fine-grained mottled silicic potassic	2.0 **0.1**	2	*1* GQESC 45 0	Mottled with epidote clots and stringers, potassic zones +/- magnetic - altered basalt or intrusive???, cp in gypsum-epidote-pyrite veinlets.	111649	0.045	0.072
406.90	408.90	Fine-grained mottled potassic silicic	1.0	2	*22* GQESC 45 0	Grades more potassic.	111650	0.041	0.042
408.90	410.90		1.0	1	*2* GQESC 45 0	grades more potassic	111737	0.048	0.131
410.90	412.70				*0* GQESC 45 0	More gypsum.	111738	0.045	0.057
412.70	413.90		2.0 **0.1**		*0* GQESC 45 0	Gypsum-qtz-py stringers. Epidote-sericite breccia veins - few cm; cp in epidote - ser veinlets/fractures.	111739	0.079	0.108

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From	To	Rock Type	Py-Cpy-Mt		Ms	Veins (CA-%)			Comments	Sample#	Cu %	Au ppm
413.90	415.80	Fine-grained mottled propyllitic	2.0		0	GSQEC	45	20	Sericite overprint to 417.3m, some anhydrite at 70 degrees to core axis; qtz str more white.	111740	0.024	0.173
415.80	417.60	Medium-grained mottled sericitic chloritic	2.0		0	GSQEC	45	10	Upper Ctc 80 degrees to core axis; @ 417.3 less sericite. Py-ser-ep stringers with black margins (chl?); Lower Ctc @55 degrees to core axis.	111741	0.035	0.121
417.6	423.3	**MONZONITE DYKE**										
417.60	419.60	Medium-grained mottled propyllitic	1.0		3	10 ESGQ	45	0	More equigranular looking but appears to be altered monzonite porphyry dyke with potassic, epidote alteration, silicification; magnetite aggregates +/- chl , secondary ksp with magnetite and epidote giving equigranular texture.	111742	0.024	0.021
419.60	421.60	Medium-grained mottled potassic	1.0			2 ESGQ	45	0		111743	0.023	0.026
421.60	423.30		1.0		2	12 ESGQ	45	0		111744	0.02	0.025
423.3	424.4	**BASALT FLOW**										
423.30	424.40	Medium-grained mottled chloritic	1.0		2	4 ACCZ	35	0	More anhydrite and calcite- zeol str; more qtz str +/- ep, ser, py; - darker col- gradational upper ctc; more potassic with equigranular texture - possible basalt flow interval; Lctc - 40 degrees to core axis.	111745	0.04	0.102
424.4	426.4	**MONZONITE FLOW**										
424.40	426.40	Medium-grained mottled potassic	2.0			1 ACCZ	35	0		111746	0.021	0.025
426.4	430	**MONZONITE DYKE**										
426.40	428.40	Medium-grained mottled potassic	1.0		2	11 ACCZ	35	0		111747	0.028	0.028
428.40	430.00		1.0		2	10 ESGQA	35	0		111749	0.004	0.017
430	431.7	**BASALT FLOW**										
430.00	431.70	Medium-grained mottled sericitic	2.0	**0.1**	1	8 GQES	40	20	Chalcpyrite (cp) in gypsum-ep- py vein (1 cm) with potassic selvages 40 degrees to core axis.	111750	0.036	0.051
431.7	434.6	**MONZONITE DYKE**										
431.70	433.20	Medium-grained red brown equigranular potassic	1.0			2 ESGQ	30	0	Equigranular looking Monzonite porphyry sill.	111751	0.017	0.017
433.20	434.60					1 ESGQ	46	0		111752	0.024	0.018
434.6	436.5	**BASALT FLOW**										
434.60	435.80	Medium-grained mottled silicic chloritic	2.0		1	12 ESGQ	55	30		111753	0.045	0.032

Hole Number: BR-02-01

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
435.80	436.50	Medium-grained mottled silicic chloritic		*11*	ESGQ	55	0		111754	0.036	0.018
436.5	436.8	**BASALT DYKE**									
436.50	436.80	Aphanitic red brown silicic chloritic		*0*	ESGQ	55	0	Upper Ctc 80 degrees to core axis; rare epidote (ep) spots after plagioclase? Volcanic dyke - latite or monzonite equivalent.	111755	0.002	-2

436.8 EOH

Brenda Project 2002 - Diamond Drill Log

Northgate Exploration Ltd

Hole Number: ***BR-02-02***

Northing:	6348586	**Total Depth:**	420.6m
Easting:	629285	**Azimuth:**	235 °
Elevation:	1370	**Dip:**	-70 °

Geologist: J. Pautler

Logged Date: 9/25/2002

Survey Depth	Azimuth	Dip
55 m	234 °	-70 °
146 m	236 °	-76 °
238 m	339 °	-82 °
329 m	219 °	-84 °
421 m	302 °	-76 °

Brenda Project 2002 - Summary Drill Log

Northgate Exploration Ltd

Hole Number: *BR-02-02*

From (m)	To (m)	Rock Type	Comments
0	3.1	CASING	
3.1	9.5	OVERBURDEN	
9.5	15.2	RHYOLITE FLOW	Yellow weathering felsic volcanic to subvolcanic or silicified andesite with variably clay altered fsp phenos (after Ksp 5-10%), rare fine biotite; oxidized to yellow-orange colour to 15.2 m with fine qtz str + drusy, possible Toodoggone or silicified Takla??
15.2	16.8	LOST CORE	No Core
16.8	44.2	ANDESITE FLOW	Yellowish green weathering, fine qtz stringers, grades less silicified.
44.2	59.6	MONZONITE DYKE	Monzonite dyke with 20-30% fsp phenos; plag phenos (10-15%), mostly altered to epidote /sericite /clay and +/-pyrite, magnetite; also epidote /sericite stringers; sericite ± pyrite; minor gypsum as rounded clots replacing phenocrysts??
59.6	88.8	ANDESITE FLOW	Altered basalt, weak calcite with abundant calcite stringers ± gypsum.
88.8	90.2	FELSITE DYKE	50°^CA, flesh - salmon coloured felsite dyke, weakly feldspar porphyritic, 50°^CA- minor fault gouge at contact.
90.2	93.7	ANDESITE FLOW	Still have bio clots; trace sphalerite,galena.
93.7	95.7	ANDESITE DYKE	
95.7	102.3	FELSITE DYKE	Gypsum stringers. Contact 85°CA; dyke; mafic clots altering to epidote, pyrite some pyrite as cubes.
102.3	199.3	ANDESITE FLOW	
199.3	199.9	MONZONITE DYKE	Epidote replacing fsps and mafics; contact with Andesite flow ≈30°^CA

Hole Number: *BR-02-02*

From (m)	To (m)	Rock Type	Comments
199.9	200.5	ANDESITE FLOW	Fragment? caught up in dyke with 5% sphalerite (honey + blackjack); pyrite, in qtz- sericite-weak gypsum vein 40°□^CA; Lower contact 65 CA.
200.5	220.9	MONZONITE DYKE	With fragment of andesite flow (broken) parallel to core axis.
220.9	222.9	ANDESITE FLOW	Hydrothermal breccia - FAULT ZONE to 244.3m - pervasive sericite altered due to fault. Pyrite. Local silification; possible andesite flow protolith; abundant gypsum - anhydrite stringers.
222.9	225.1	INTERFLOW SEDIMENT FLOW	
225.1	269.3	ANDESITE FLOW	Upper ctc 45°^CA, ± weak breccia zones.
269.3	270.3	MONZONITE DYKE	With vague Lower contact.
270.3	271.4	ANDESITE FLOW	
271.4	275.9	MONZONITE DYKE	Epidote spots to 5mm.
275.9	277	ANDESITE FLOW	Weak hematite - caught up in dyke? Large clots and stringers of epidote, remnant hornblende; gradational lower contact.
277	281.3	MONZONITE DYKE	
281.3	290.5	ANDESITE	Gypsum veins, minor breccia trace sphalerite in gypsum veins, minor fault gouge 45°^CA @ 282.1-.3.
290.5	292.1	MONZONITE DYKE	Contact's 50° and 45°CA; epidote spots; fractures, gouge zone at upper contact with clay, chlorite.
292.1	322.9	ANDESITE FLOW	Pyrite as disseminations + stringers, some remnant epidote altered phenocrysts.
322.9	334.9	MONZONITE DYKE	Epidote- sericite altered plagioclase phenocrysts; red-brown Ksp phenocrysts (30-40% feldspar phenocrysts).
334.9	348.3	ANDESITE FLOW	More pyrite near upper contact, weakly magnetic.
348.3	364.1	MONZONITE DYKE	Same as Monzonite before but clay alteration as well - NB magnetite in with epidote clots.

Hole Number: *BR-02-02*

From (m)	To (m)	Rock Type	Comments
364.1	366	ANDESITE FLOW	Ms locally to 2.1, -aphanitic chilled margin with 2% pyrite ; hematite on fractures with sericite-pyrite altered zones 20-30cm and quartz - pyrite veins; remnant augite ± hornblende phenocrysts; silicified to 373m.
366	369	BASALT FLOW	More altered - (potassic) with magnetite stringers, trace chalcopyrite with magnetite, overprinting chlorite alteration.
369	371	MONZONITE DYKE	Granitized BASALT or monzonite digesting BASALT; contact 45°^CA.
371	373	BASALT FLOW	Contact 45°^CA.
373	403.8	LATITE DYKE	Brownish latite to monzonite dyke with 50cm chilled margin (same as in bottom of hole 1); aphanitic to fine grained, ≈15% phenocrysts- ksp and augite, hornblende alrering to epidote sericite.
403.8	404.9	BASALT FLOW	Digested BASALT? Quartz-magnetite ±hematite veins with pyrite; weak epidote -sericite stringers; Contact 45 CA.
404.9	409.4	LATITE DYKE	More epidote chlorite altered; Some mafic xenoliths; well fractured.
409.4	411.4	MONZONITE DYKE	Grading coarser grained ≈30-40% phenocrysts; rare mafic xenoliths.
411.4	415.4	LATITE DYKE	More and larger mafic xenoliths to 20cm ≈25% of interval.
415.4	420.6	MONZONITE DYKE	10 cm BASALT interval @ 416.7 - coarser grained phenocrysts 5 mm range and ≈40%-50% - middle of large sill ?? - looks like more typical monzonite.

Brenda Project - Detail Drill Log

Northgate Exploration Ltd

Hole Number: BR-02-02

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
0	3.1	**CASING**									
0.00	3.10		0.0 **0.0**	0	*0*	0	0		2.2	0	0
3.1	9.5	**OVERBURDEN**									
3.10	9.50								2.3	0	0
9.5	15.2	**RHYOLITE FLOW**									
9.50	12.20	Fine-grained silicic clay	5.0		*0* Q	30	5	Yellow weathering felsic volcanic to subvolcanic or silicified andesite with variably clay altered fsp phenos (after Ksp 5-10%), rare fine biotite; oxidized to yellow-orange colour to 15.2 m with fine qtz str + drusy, possible Toodoggone or silicified Takla??	111776	0.007	0.015
12.20	15.20	Fine-grained sericitic silicic	5.0		*0* Q	30	5	as above	111777	0.005	0.005
15.2	16.8	**LOST CORE**									
15.20	16.80	Fine-grained						No Core	3	0	0
16.8	44.2	**ANDESITE FLOW**									
16.80	18.30	Fine-grained medium grey sericitic clay	5.0		*0*		5	Yellowish green weathering, fine qtz stringers, grades less silicified.	111778	0.005	0.011
18.30	19.80		5.0		*0*			As above with grey clay ± ser gouge zones due to fault - 15°^CA -->contact? OR alt'n change + less oxididized.	111779	0.009	0.009
19.80	21.80		10.0		*0* Z	35	0	Still some fault gouge but bit more competent; remnant ksp phenos - py replacing phenos as aggregates and disseminations and in fractures, rare graphite seams; Quartz Sericite Pyrite alteration from 19.8 to 44.2m.	111780	0.003	0.009
21.80	23.80		8.0		*0* QSGFZ	45	5	Some Fault gouge @ 30°^CA ; qtz -sericite - py stringers and graphite (gf) in seams.	111781	0.002	0.01
23.80	25.80		4.0		*0* QSGFZ	60	1	As above, some gouge.	111782	0.003	0.015
25.80	27.40		4.0		*0* QSGFZ	45	0	Very. minor gouge, trace sp, ga.	111783	0.01	0.009
27.40	30.50		4.0		*0* QSGFZ	45	0	Weak epidote replacing fsp?	111784	0.003	-2
30.50	44.20		3.0		*0* QSGFZ	45	0	NB no core from 32 or 33.5 to 41.2 (2 blx for 32).	111785	0.001	0.006
44.2	59.6	**MONZONITE DYKE**									

Hole Number: BR-02-02

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
44.20	46.20	Fine-grained red brown porphyritic epidote sericitic	1.0	5	3 ESGF	30	5	Monzonite dyke with 20-30% fsp phenos; plag phenos (10-15%), mostly altered to epidote /sericite /clay and +/- pyrite, magnetite; also epidote /sericite stringers; sericite ± pyrite; minor gypsum as rounded clots replacing phenocrysts??	111786	0.01	-2
46.20	48.20		1.0	5	5 ESGF	30	5		111787	0.003	-2
48.20	50.20		1.0	5	12 ESGF	30	2		111788	0.005	-2
50.20	51.80		1.0	5	2 ESGF	30	1		111789	0.002	-2
51.80	54.80		1.0	1	0 ESGF	30	1		111790	0.005	-2
54.80	56.20	Fine-grained red brown porphyritic sericitic epidote	1.0		0 ESGF	30	1	Grades more sericitic.	111791	0.007	0.005
56.20	57.60		1.0		0 ESGF	30	1		111792	0.015	-2
57.60	59.60	Fine-grained red brown porphyritic epidote sericitic	1.0	1	0 ESCHG	20	5	Epidote (ep)-sericite-chlorite altered phenocrysts ± magnetite; Lower Ctc 45 CA.	111793	0.008	-2
59.6	88.8	**ANDESITE FLOW**									
59.60	60.90	Fine-grained lt green-grey sericitic chloritic	3.0		0 CCG	45	3	Altered basalt, weak calcite with abundant calcite stringers ± gypsum.	111794	0.004	0.016
60.90	61.90	Fine-grained lt green-grey porphyritic sericitic chloritic	3.0		0 CCG	45	10	@61.5 - 10cm vein zone, sphalerite- honey coloured and minor galena in calcite - gypsum vein @ 45°CA.	111795	0.002	0.013
61.90	63.90	Fine-grained green-grey porphyritic chloritic epidote	2.0		0 CCG	45	0	Epidote altered phenocrysts, smaller 1-2 mm size; chlorite altered augite; propylitic alteration.	111796	0.001	0.006
63.90	65.90	Fine-grained light grey green porphyritic sericitic chloritic	4.0		0 SECCG	35	0	More altered, sericite carbonate overprint; @65.1 -65.6 more pyrite and gypsum and cherty veins.	111797	0.001	0.012
65.90	67.90		5.0		0 SECCG	35	0	Slightly less sericite/carbonate alteration - can see remnant feldspar phenocrysts.	111798	0.001	0.009
67.90	69.90		5.0		0 SECCG	35	0	Less sericite and epidote; still epidote stringers ± fsp phenocrysts; sample for TS - Toodoggone or Takla.	111799	0.001	0.008
69.90	71.90		1.0		SECCG	35	0		111800	0.001	0.007
71.90	73.90	Fine-grained grey-green porphyritic chloritic epidote	8.0	1	0 ESG	45	1	Chlorite alteration more pronounced; feldspar phenocrysts; N/B start to see small black phenocrysts (1-2mm), altering to pyrite, epidote, chlorite (primary biotite)	111802	0.002	0.009
73.90	75.90	Fine-grained green-grey porphyritic chloritic epidote	3.0		0 EGGF	45	1		111803	0.001	0.008
75.90	77.90	Fine-grained green-grey porphyritic	3.0		0 EGGF	45	1		111804	0.001	0.011

Hole Number: BR-02-02

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
77.90	79.90	Fine-grained green-grey porphyritic	3.0	0	EGGF	45	1	@ 49.5 graphite(gf) (or moly) - gf streak in gypsum/pyrite vein.	111805	0.001	0.01
79.90	81.90		3.0	0	EGGF	45	1		111806	0.003	0.008
81.90	83.90		3.0	0	EGGF	45	1	Grades ≈dioritic, less altered.	111807	0.003	0.016
83.90	85.90		3.0	1	EGGF	45	1		111808	0.001	0.01
85.90	87.40		3.0 **0.1**	0	GGFA	45	7	Chalcopyrite @ 86.4m in gypsum graphite vein.	111809	0.003	0.012
87.40	88.80		3.0	0	GGFA	45	1	More dioritic; less altered in bottom 40cm.	111810	0.002	0.006
88.8	90.2	**FELSITE DYKE**									
88.80	90.20	Fine-grained	3.0	1	CHG	35	0	50°^CA, flesh - salmon coloured felsite dyke, weakly feldspar porphyritic, 50°^CA- minor fault gouge at contact.	111811	0.0006	-2
90.2	93.7	**ANDESITE FLOW**									
90.20	91.40	Fine-grained green-grey chloritic epidote	3.0	1	GEPS	35	1	Still have bio clots; trace sphalerite,galena.	111812	0.017	0.069
91.40	92.50	Fine-grained medium grey sericitic chloritic	3.0	0	G	35	1	FAULT ZONE with trace sphalerite.	111813	0.002	0.499
92.50	93.70	Fine-grained green-grey sericitic chloritic	3.0	0	GS	35	5		111814	0.004	0.174
93.7	95.7	**ANDESITE DYKE**									
93.70	95.70	Fine-grained green weak sericite	2.0	1	GS	35	5		111815	0.0007	0.047
95.7	102.3	**FELSITE DYKE**									
95.70	97.70	Fine-grained red brown weak epidote	2.0	1	GS	35	0	Gypsum stringers. Contact 85°CA; dyke; mafic clots altering to epidote, pyrite some pyrite as cubes.	111816	0.002	-2
97.70	99.50	Fine-grained red brown	2.0	0	CHSG	5	5		111817	0.004	0.006
99.50	100.90		2.0	0	FLT	5	5	More sericite; trace sphalerite.	111818	0.002	0.005
100.90	102.30		2.0	0		5	5	More sericite, contact 80° CA.	111819	0.0006	0.005
102.3	199.3	**ANDESITE FLOW**									
102.30	104.30	Fine-grained green-grey porphyritic sericitic chloritic	2.0	0		5	5		111820	0.002	0.078
104.30	106.30	Fine-grained grey-green porphyritic sericitic chloritic	2.0	0	GAS	30	10	More sericitic, gypsum/ anhydrite veins especially at 103.6m.	111821	0.0009	0.037
106.30	108.30		3.0	0	GAS	35	10		111822	0.0007	0.143
108.30	110.30		2.0	0	GAS	35	5	Less altered.	111823	0.001	0.094

Hole Number: BR-02-02

From	To	Rock Type	Py-Cpy-Mt		Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
110.30	112.30	Fine-grained grey-green porphyritic sericitic chloritic	4.0		0	GAS	35	10	More sericitic, trace sphalerite, galena in gypsum vein @111.2m.	111824	0.0009	0.164
112.30	113.70		4.0		0	GAS	35	10	More sericitic .	111825	0.001	0.076
113.70	115.30		7.0		1	GAS	35	3	Grades less altered.	111826	0.001	0.071
115.30	118.20	Medium-grained green porphyritic chloritic epidote	2.0		0	GAS	35	0	Less altered biotite, feldspar(fsp) phenocrysts, coarser.	111828	0.005	0.092
118.20	120.30	Medium-grained grey-green porphyritic sericitic chloritic	2.0		0	GAS	35	10	More sericite alt'd, gypsum as stringers and replacing occasional clasts.	111829	0.0005	0.215
120.30	122.40		3.0		0	GAS	35	10	lLss altered for 60cm @ top.	111830	0.0004	0.179
122.40	125.00		3.0		0	GAS	35	3	Trace sphalerite @ 122.7m in gypsum vein - slightly less sericite	111831	0.001	0.048
125.00	126.50		3.0	0.1	0	GASEQ	35	6	cp @ 125.7m + sp + lesser ga in 2 cm wide, dark coloured vein (gfic?) with qtz + gypsum.	111832	0.081	0.01
126.50	128.10		3.0		0	GAS	35	3	More sericite; trace sphalerite, galena in gyp -anhydrite-ser-stringers.	111833	0.013	0.048
128.10	130.10	Medium-grained green porphyritic chloritic epidote	3.0	0		GASE	30	1	Much less sericite; green chlorite altered phenocrysts ; epidote altered phenos 1-2 mm size ; bio clots ; sphalerite @ 128.7, +galena in 1cm gypsum -anhydrite vein with epidote margins; +/- very weak potassic alteration to 140.1m.	111834	0.003	0.059
130.10	132.10		3.0	0		GASE	30	0	Much less sericite.	111835	0.002	0.058
132.10	134.10	Medium-grained grey-green porphyritic sericitic chloritic	3.0	0		GASE	30	1	More sericitic minor graphite in fine stringers; trace sphalerite to 111844.	111836	0.002	0.073
134.10	136.10		4.0	0		GASE	45	5	More gypsum ; minor brecciation; minor fault at start, 10°^CA with chlorite; trace sphalerite in stringers to 150.1m.	111837	0.004	0.155
136.10	138.10		5.0	1		GASE	10	3	Minor breccia.	111838	0.003	0.199
138.10	140.10		5.0	1		GASE	45	2		111839	0.011	0.119
140.10	142.10		5.0	2		GASE	10	5	minor breccia ; start to get fluorite in with stringers	111840	0.005	0.309
142.10	144.10		8.0	1		GASE	45	4		111841	0.006	0.311
144.10	146.10		2.0	0		GASEC	10	5		111842	0.003	0.192
146.10	148.10		2.0	0		GASE	45	2	Some less sericite altered intervals 10-20cm in center.	111843	0.004	0.048
148.10	150.10		2.0	20		GASE	55	1	some less sericite altered intervals 10-20cm in center	111844	0.006	0.139

Hole Number: BR-02-02

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
150.10	152.10	Medium-grained green porphyritic chloritic epidote	2.0 19		GASE 55	Less sericite; more epidote stringers ± sericite.	111845	0.004	0.102
152.10	154.10	Medium-grained grey-green porphyritic sericitic chloritic	3.0 **0.1** 1	*1*	GAESZ 45 10	Sericite; magnetite in quartz epidote-chl-sericite veins up to 5 cm, chalcopyrite + sphalerite ± galena in gypsum-quartz-sericite veins.	111846	0.006	0.065
154.10	155.70		4.0	*0*	GAESZ 55 10	sphalerite	111847	0.004	0.164
155.70	157.00	Medium-grained green porphyritic chloritic epidote	2.0 1	*1*	GAESQ 45 1	Some epidote spots + stringers, minor potassic selvages on magnetite - quartz stringers @ 155.2m.	111848	0.005	0.106
157.00	158.50	Medium-grained grey-green porphyritic chloritic epidote	4.0	*0*	GAESQ 50 2	Sericitic; fluorite in veins often assoc with higher pyrite, + sphalerite in gypsum/anhydrite vein @ 158.5m.	111849	0.001	0.15
158.50	160.00		3.0	*0*	GAESC 50 1	Trace sphalerite + graphite.	111850	0.004	0.088
160.00	161.50		2.0 **0.1**	*0*	GAESC 50 0	Chalcopyrite? in quartz-gypsum ± chlorite stringers + sphalerite.	111851	0.002	0.087
161.50	163.50		2.0 **0.1**	*0*	GESCH 90 1	Sphalerite in gypsum stringers (generally honey sphalerite with blackjack margins); epidote-sericite stringers ± pyrite especially along margins ± gypsum in centre, some veinlets are brecciated; dark quartz stringers (fine); fractures also 10 CA; grades more siliceous downhole.	111852	0.014	0.036
163.50	164.10	Medium-grained grey-green porphyritic chloritic silicic	2.0 **0.1**	*0*	GESQ 45 0	More sphalerite in dark quartz stringers - grades less epidote more siliceous.	111854	0.029	0.192
164.10	165.90		2.0 **0.1**	*0*	GESQ 90 0	Sphalerite in gypsum and lesser dark quartz stringers.	111855	0.004	0.105
165.90	167.60	Fine-grained green-grey porphyritic chloritic epidote	3.0	*0*	GESCH 15 1	Healed breccia texture with later silification overprinting earlier sericite alteration more pyrite stringers; minor sphalerite ± galena in gypsum stringers, occasional epidote-sericite stringers.	111856	0.003	0.099
167.60	169.10	Fine-grained green-grey porphyritic chloritic silicic	2.0	*0*	GESCH 45 1	More epidote-sericite ± gypsum stringers as in 111852.	111857	0.009	0.021
169.10	171.30		2.0	*0*	GESCH 80 25	Sphalerite in gypsum stringers - in more siliceous zone near bottom; more sericitic zone at top for 70cm @ 55°^CA with lots gypsum - pyrite @ margins, around gypsum stringers.	111858	0.005	0.202
171.30	173.50		2.0	*0*	GESCH 45 5	Sphalerite +/- cp, ga in gypsum stringers; more ser + gypsum rich section from 171.6 - 171.9m.	111859	0.004	0.298
173.50	175.50	Fine-grained green-grey porphyritic chloritic epidote	3.0 **0.1**	*0*	GESCH 30 1	Sphalerite in gypsum stringers; @ 175m epidote-sericite vein with potassic margins ± local breccia zone 5cm wide. Silification after sericite.	111860	0.005	0.05

Hole Number: BR-02-02

From	To	Rock Type	Py-Cpy-Mt			Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
175.50	177.50	Fine-grained green-grey porphyritic chloritic silicic	3.0			0	GESCH	30	0	Local breccia zones as in 861; remnant augite phenocrysts.	111861	0.002	0.034
177.50	179.50	Fine-grained green-grey porphyritic chloritic epidote	3.0			0	GESCH	11	0	Sphalerite ± galena in epidote sericite gypsum stringers, minor black chlorite ; very weak qtz str in section.	111862	0.001	0.033
179.50	181.50		2.0	0.1		0	GESCH	30	1	Remnant feldspar, qtz? phenocrysts still visible; chalcopyrite, sphalerite, galena in epidote sericite gypsum veins; also stringers @ 05 CA .	111863	0.027	0.03
181.50	183.50	Fine-grained green-grey porphyritic chloritic silicic	2.0			0	GESCH	75	1		111864	0.003	0.037
183.50	185.50	Fine-grained green-grey porphyritic epidote silicic	3.0	0.1		0	GESCH	50	1	Cp± galena ± sphalerite and sphalerite in epidote sericite gypsum ± anhydrite veins.	111865	0.014	0.027
185.50	187.50	Fine-grained green-grey porphyritic chloritic epidote	3.0			0	GESCH	11	0	NB silification overprints earlier sericite.	111866	0.004	0.023
187.50	189.50		3.0			0	GESCH	30	2	Still see quartz? phenocrysts.	111867	0.002	0.08
189.50	191.10		5.0			0	GESCH	80	1	FAULT @ 15 CA	111868	0.002	0.213
191.10	192.80	Fine-grained green-grey porphyritic chloritic silicic	4.0			0	GSCHL	15	30	Local sericite patches associated with fault; local brecciation due to fault to 198.1m.	111869	0.003	0.12
192.80	194.80					0	GSCHL	30	5		111870	0.001	0.02
194.80	196.80					0	GSCHL	75	1	Minor trace sphalerite in gypsum stingers, local sericite patches.	111871	0.002	0.04
196.80	198.10			0.1		0	GSCHL	75	1	Trace chalcopyrite + sphalerite in gypsum stringers @ 197.7m.	111872	0.086	0.021
198.10	199.30			0.2		0	GSCHQ	85	1	Sphalerite and chalcopyrite @ 199.1-2 (10cm) zone; very local potassic alteration not assoc with sphalerite, cp.	111873	0.2	0.027
199.3	199.9	**MONZONITE DYKE**											
199.30	199.90	Fine-grained red brown porphyritic epidote potassic	1.0		1	0	CCZQ	40	0	Epidote replacing fsps and mafics; contact with Andesite flow ≈30°^CA	111874	0.046	-2
199.9	200.5	**ANDESITE FLOW**											
199.90	200.50	Fine-grained red brown porphyritic sericitic silicic	8.0	0.2		0	QSGFZ	40	70	Fragment? caught up in dyke with 5% sphalerite (honey + blackjack); pyrite, in qtz- sericite- weak gypsum vein 40°□^CA; Lower contact 65 CA.	111875	0.05	0.02
200.5	220.9	**MONZONITE DYKE**											
200.50	201.70	Fine-grained red brown porphyritic epidote potassic	1.0		1	0	CCZ	40		With fragment of andesite flow (broken) parallel to core axis.	111876	0.027	0.005
201.70	202.90		1.0		1	0	CCZQ	40			111877	0.011	-2

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
202.90	204.90	Fine-grained red brown porphyritic epidote sericitic	0.5 1	0	CCZ	10 0	Less potassic .	111878	0.004	-2
204.90	206.90		0.5 1	0	CCZES	20 5	Minor trace sphalerite in epidote-sericite stringers.	111880	0.01	-2
206.90	208.90		0.5 1	0	CCZES	20 0		111881	0.008	-2
208.90	210.90	Fine-grained red brown porphyritic epidote potassic	0.5 1	5	CCZES	20 0	More potassic zone.	111882	0.018	-2
210.90	212.90	Fine-grained red brown porphyritic epidote sericitic	0.5 1	0	CCZES	20 5	Less potassic.	111883	0.006	-2
212.90	214.90		0.5 1	1	CCZES	20 5		111884	0.007	-2
214.90	216.90		0.5 1	0	CCZES	20 0	Possible fragment of Andesite - caught up in Monzonite - 60° ^CA contacts.	111885	0.029	-2
216.90	218.90		0.5 1	3	CCZES	20 1	More potassic margin at top.	111886	0.011	-2
218.90	220.90		0.5 1	1	CCZES	20 0	Lower contact 55°^CA	111887	0.003	-2
220.9	222.9	**ANDESITE FLOW**								
220.90	222.90	Fine-grained light grey crackle-textured sericitic silicic	3.0	0	GA	40 2	Hydrothermal breccia - FAULT ZONE to 244.3m - pervasive sericite altered due to fault. Pyrite. Local silification; possible andesite flow protolith; abundant gypsum - anhydrite stringers.	111888	0.003	0.324
222.9	225.1	**INTERFLOW SEDIMENT FLOW**								
222.90	224.60	Fine-grained light grey sericitic silicic	4.0	0	GA	40 30		111889	0.004	0.194
224.60	225.10		5.0 **0.2**	0	GAFL	80 50	PY- CP stringer 1 cm wide @ 224.7 -75° ^CA with cp in adjacent gypsum - anhydrite breccia vein; fragments of wallrock; possible fluorite; vein cuts mudstone (interflow sediment) with sp in fine gyp stringers.	111890	0.822	0.124
225.1	269.3	**ANDESITE FLOW**								
225.10	227.10	Fine-grained light grey crackle-textured sericitic chloritic	1.0	0	GA	65 3	Upper ctc 45°^CA, ± weak breccia zones.	111891	0.003	0.136
227.10	227.90	Fine-grained light grey brecciated sericitic chloritic	3.0	0	GA	65 3	Brecciated zone; more chloritic.	111892	0.01	0.215
227.90	229.90	Fine-grained light grey crackle-textured sericitic silicic	3.0	0	FLT	45 0	Minor fluorite - in gypsum- anhydrite veins.	111893	0.004	0.976
229.90	231.90	Fine-grained light grey brecciated sericitic silicic	5.0	0	GA	45 0	Brecciated with py replacing fragments and in stringers; frags altering to gypsum; matrix more sericitic +/- silicified.	111894	0.001	0.08

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From	To	Rock Type	Py-Cpy-Mt		Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
231.90	233.90	Fine-grained light grey crackle-textured sericitic silicic	1.0		0	GAFL	70	1	Brecciated zone for 30cm at bottom of section,;fluorite in gyp-anhydrite veins @ 233.8m; crushed zone 53°^CA and offset along fault plane @ 05°^CA	111895	0.0007	0.187
233.90	235.90	Fine-grained light grey brecciated sericitic silicic	3.0		0	GAFL	45	30	More brecciated zone with py -sericite- gypsum altered fragments after chlorite.	111896	0.002	0.221
235.90	237.90		2.0		0	GA	45	30	With sericite ± silicified matrix.	111897	0.003	0.343
237.90	239.90		2.0		0	GA	45	2		111898	0.002	0.237
239.90	241.80		2.0		0	GA	45	2		111899	0.002	0.177
241.80	242.30		2.0	0.1	0	GAFL	45	5	Cp ± sp in darker col qtz- chl stringers, fluorite	111900	0.106	0.092
242.30	244.30		3.0		0	GAFL	65	0		111901	0.0008	0.405
244.30	244.80	Fine-grained light grey crackle-*textured sericitic silicic*	7.0		0	QGAS	50	50	20cm vein zone with fine py in qtz - gyp anhyd -sericite *breccia vein.*	111902	0.005	0.51
244.80	246.80	Fine-grained light grey green porphyritic silicic chloritic	2.0		0	GAFLS	30	1	+fluorite - minor ghost breccia zone in center; remnant augite phenocrysts; NB possibly gone through Toodoggone/Takla contact in hydrothermal breccia zone.	111903	0.002	0.451
246.80	248.80		1.0		0	GAFLS	70	0	Local sericitic zones up to 20cm wide.	111904	0.003	0.377
248.80	250.80	*Fine-grained light grey green* porphyritic chloritic epidote	1.0		0	GAFLS	30	1	*7cm fluorite- gyp- anhydrite vein with py margins @ 249.5* m.	111906	0.003	0.275
250.80	252.80		1.0		0	GAFLS	45	1		111907	0.005	0.087
252.80	254.10	Fine-grained light grey green crackle-textured chloritic epidote	1.0		0	GAFLS	30	1		111908	0.006	0.095
254.10	256.00	*Fine-grained light grey green crackle-*textured sericitic silicic	1.0		0	GAGFQ	20	5	*Gyp-anh-gf stringers/veins with sphalerite assoc with* gyp -gf.	111909	0.05	0.429
256.00	257.20		2.0		0	GAGFQ	50	5	gyp-anh-gf str/vns with sphalerite assoc with gyp -gf	111910	0.008	0.202
257.20	258.30	Fine-grained light grey green brecciated silicic sericitic	10.0		0	GAGFQ	30	5	FLT @ 05 CA	111911	0.005	0.217
258.30	260.30	*Fine-grained medium grey* porphyritic silicic sericitic	8.0	0.1	0	G	30	0	Some remnant hornblende (hbl) phenos - BAS or AND, highly sericitic; py in str and mainly as concentrated disseminations - originally fragments.	111912	0.007	0.287
260.30	262.30	Fine-grained medium grey porphyritic sericitic silicic	2.0		0	GQGF	60	10	Trace sph, cp in qtz and gf-qfz str grading silicified.	111913	0.008	0.162
262.30	264.10	Fine-grained medium grey porphyritic silicic sericitic	4.0		0	G	30	0	Siliceous, minor fault gouge 30°^CA.	111914	0.006	0.102
264.10	265.50	Fine-grained medium grey porphyritic sericitic silicic			0	CHGS	30	0	Siliceous.	111915	0.018	0.198

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
265.50	266.80	Fine-grained medium grey mottled sericitic silicic	8.0		0 CHGS	30	0		111916	0.018	0.201
266.80	268.30	Fine-grained medium grey mottled sericitic chloritic	10.0 **0.1**		0 GQGF	40	0	Sphalerite + chalcopyrite in qtz - graphite veins @ 40°^CA ;variable sil remnant hornblende phenocrysts, 10cm gouge zone at bottom 45°^CA	111917	0.185	0.052
268.30	269.30	Fine-grained medium grey mottled chloritic sericitic	5.0 **0.1**		0 GCHS	40	10	Trace sphalerite, probable trace chalcopyrite; Lower Ctc 45°^CA.	111918	0.056	0.011
269.3	270.3	**MONZONITE DYKE**									
269.30	270.30	Fine-grained red brown mottled epidote chloritic	1.0		0 EH	40		With vague Lower contact.	111919	0.027	-2
270.3	271.4	**ANDESITE FLOW**									
270.30	271.40	Fine-grained medium grey mottled epidote chloritic	3.0		0 GQECH	40	6		111920	0.075	0.014
271.4	275.9	**MONZONITE DYKE**									
271.40	273.60	Fine-grained red brown porphyritic epidote hematitic	1.0		1 ESH	30	0	Epidote spots to 5mm.	111921	0.007	-2
273.60	275.90		1.0		1 ESH	30	0	Lower contact 45°^CA.	111922	0.004	-2
275.9	277	**ANDESITE FLOW**									
275.90	277.00	Fine-grained grey-green mottled epidote chloritic	1.0		0 GHE	45	1	Weak hematite - caught up in dyke? Large clots and stringers of epidote, remnant hornblende; gradational lower contact.	111923	0.009	-2
277	281.3	**MONZONITE DYKE**									
277.00	279.00	Fine-grained red brown mottled epidote hematitic	1.0		0 GHE	45	1		111924	0.015	-2
279.00	281.30		1.0		2 GHE	45	1	Lower contact chilled for 20cm.	111925	0.004	-2
281.3	290.5	**ANDESITE**									
281.30	283.30	Fine-grained green-grey crackle-textured sericitic chloritic	8.0		0 GHE	45	1	Gypsum veins, minor breccia trace sphalerite in gypsum veins, minor fault gouge 45°^CA @ 282.1-.3.	111926	0.005	0.23
283.30	284.60		8.0		0 GHE	45	1	@283.5 -.6 - monzonite dyke followed by 25cm fault gouge - 80°^CA.	111927	0.014	0.279
284.60	286.20		4.0		1 GHE	45	1	Note remnant mafic fragments to few cm (have been altered to epidote -chlorite - pyrite).	111928	0.006	0.102
286.20	287.80		3.0		0 GHE	45	1		111929	0.007	0.144
287.80	289.80		12.0		0 GHE	45	1		111930	0.003	0.073

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From	To	Rock Type	Py-Cpy-Mt		Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
289.80	290.50	Fine-grained green-grey crackle-textured sericitic chloritic	2.0		*1*	GHE	45	1	Contact zone - granitized volcanic, remnant hornblende phenocrysts and fragments.	111932	0.003	0.058
290.5	292.1	**MONZONITE DYKE**										
290.50	292.10	Fine-grained red brown porphyritic epidote sericitic	1.0		*0*	ES	45	1	Contact's 50° and 45°CA; epidote spots; fractures, gouge zone at upper contact with clay, chlorite.	111933	0.007	0.018
292.1	322.9	**ANDESITE FLOW**										
292.10	294.10	Fine-grained grey-green crackle-textured silicic sericitic	10.0		*0*	ES	45	1	Pyrite as disseminations + stringers, some remnant epidote altered phenocrysts.	111934	0.004	0.128
294.10	296.10	Fine-grained medium grey crackle-textured silicic sericitic	2.0		*0*	ES	45	1	Some gouge 05, 45°CA.	111935	0.004	0.129
296.10	298.10		2.0		*0*	ES	45	1	Some graphitic stringers.	111936	0.008	0.271
298.10	300.10		3.0		*0*	ES	45	1		111937	0.015	0.359
300.10	302.10		3.0		*1*	ES	45	1		111938	0.004	0.226
302.10	304.10				*0*	ES	45	1		111939	0.024	0.343
304.10	306.10	Fine-grained medium grey crackle-textured sericitic epidote	10.0		*0*	GES	80	0		111940	0.024	0.354
306.10	307.80		3.0		*1*	GESQ	80	0	Trace potassic alteration around quartz-pyrite stringers.	111941	0.023	0.221
307.80	309.80	Fine-grained green-grey porphyritic chloritic epidote	1.0	1	*18*	G	80	1	Epidote spots and stringers; epidote-chlorite spots.	111942	0.023	0.219
309.80	311.80	Fine-grained grey-green crackle-textured chloritic epidote	2.0		*0*	G	80	1	Some sphalerite in gypsum stringers.	111943	0.015	0.124
311.80	313.80		2.0 **0.1**		*0*	G	40	1	Some sphalerite and chalcopyrite in gypsum stringers.	111944	0.021	0.155
313.80	315.80	Fine-grained grey-green crackle-textured sericitic chloritic	2.0		*0*	G	40	1	Bit more sericite; potassic altered fragment- 4cm.	111945	0.02	0.149
315.80	317.00	Fine-grained grey-green porphyritic sericitic chloritic			*0*	GES	40	1	Epidote spots +stringers.	111946	0.031	0.111
317.00	319.00	Fine-grained grey-green crackle-textured chloritic epidote	2.0		*2*	GES	40	1	epidote spots +stringers	111947	0.048	0.263
319.00	320.00	Fine-grained grey-green crackle-textured sericitic chloritic	5.0 **0.1**		*0*	GES	40	1	Epidote/sericite/quartz altered clast @ 320; trace chalcopyrite.	111948	0.055	0.98
320.00	321.80	Fine-grained blue grey crackle-textured sericitic magnetite-silica	5.0 **0.1**	1	*0*	GCH	40	1	Grades to blue -grey colour (due to magnetite); trace chalcopyrite.	111949	0.055	2
321.80	322.90		5.0	1	*1*	GCH	40	1	Contact 50°^CA.	111950	0.025	0.231
322.9	334.9	**MONZONITE DYKE**										

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
322.90	324.90	Fine-grained red brown porphyritic epidote chloritic	1.0	5	EGSGF	40	0	Epidote- sericite altered plagioclase phenocrysts; red-brown Ksp phenocrysts (30-40% feldspar phenocrysts).	111951	0.025	0.221
324.90	326.90		1.0	2	EGSGF	40	0		111952	0.001	0.007
326.90	328.90		1.0	1	EGSGF	40	0		111953	0.002	-2
328.90	330.90		1.0	1	EGSGF	40	0		111954	0.002	-2
330.90	332.90		1.0	3	EGSGF	40	0		111955	0.001	-2
332.90	334.90		1.0	1	EGSGF	40	0	Gradational lower contact.	111956	0.005	-2
334.9	348.3	**ANDESITE FLOW**									
334.90	336.90	Fine-grained medium grey porphyritic epidote chloritic	1.0	1	36	EGSGF	40 1	More pyrite near upper contact, weakly magnetic.	111958	0.04	0.222
336.90	338.40		1.0	1	4	EGQAH	40 2	Weakly magnetic.	111959	0.048	0.355
338.40	340.30	Fine-grained green-grey porphyritic chloritic epidote	2.0		2	CHESG	60 0	Weak potassic overprint; remnant hornblende, some alrering to epidote.	111960	0.032	0.174
340.30	342.30	Fine-grained green-grey crackle-textured chloritic epidote	2.0		31	CHESG	60 0	Potassic altered zones + fragments? Pyrite- epidote-sericite ± chlorite in stringers ± gypsum and gypsum as separate stringers.	111961	0.037	0.137
342.30	344.30		2.0		8	CHESG	60 0		111962	0.062	0.138
344.30	346.30		1.0		5	CHESG	60 0		111963	0.057	0.126
346.30	348.30		1.0		12	CHESG	60 0	Lower contact 75°^CA.	111964	0.064	0.106
348.3	364.1	**MONZONITE DYKE**									
348.30	350.30	Fine-grained red brown porphyritic epidote chloritic		1	4	GESCH	30 0	Same as Monzonite before but clay alteration as well - NB magnetite in with epidote clots.	111965	0.017	-2
350.30	352.30			1	4	GESCH	40 0		111966	0.003	-2
352.30	354.30			1	5	GESCH	65 0	Magnetite/chlorite clots and magnetite aggregates.	111967	0.003	-2
354.30	356.30			1	6	GESCH	45 0	magnetite/chlorite clots and magnetite aggregates	111968	0.002	-2
356.30	357.50			3	2	GESCH	55 1	@357.1 - 357.5 fragment of altered (chlorite-sericite-epidote) Andesite? Flow with magnetite stringers; upper contact 55°^CA, lower contact 85°^CA, hematite on fractures.	111969	0.001	-2
357.50	358.80			1	2	GESCH	55 1		111970	0.0003	-2
358.80	360.30			1	1	GAESC	55 1	Minor fragments (to 5cm) of basalt flow; epidote-sericite breccia stringers.	111971	0.0006	-2
360.30	362.10			1	8	GAESC	55 1		111972	0.0002	-2

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
362.10	364.10	Fine-grained red brown porphyritic epidote chloritic		1	*8* GAESC	55	1		111973	0.0001	-2
364.1	366	**ANDESITE FLOW**									
364.10	366.00	Fine-grained green-grey chloritic sericitic	3.0	1	*0* QHGAC	55	1	Ms locally to 2.1, -aphanitic chilled margin with 2% pyrite ; hematite on fractures with sericite- pyrite altered zones 20-30cm and quartz - pyrite veins; remnant augite ± hornblende phenocrysts; silicified to 373m.	111974	0.082	0.479
366	369	**BASALT FLOW**									
366.00	368.00	Fine-grained grey brown mottled potassic chloritic	2.0	2	*13* QHGAC	55	1	More altered - (potassic) with magnetite stringers, trace chalcopyrite with magnetite, overprinting chlorite alteration.	111975	0.083	0.09
368.00	369.00		1.0	1	*15* QHGAE	45	1	@ 368.1 -10cm quartz hematite vein; minor epidote, contact 30°^CA.	111976	0.024	0.014
369	371	**MONZONITE DYKE**									
369.00	371.00	Fine-grained grey brown mottled potassic epidote	0.5	1	*13* GAESC	50	1	Granitized BASALT or monzonite digesting BASALT; contact 45°^CA.	111977	0.004	-2
371	373	**BASALT FLOW**									
371.00	373.00	Fine-grained grey brown mottled chloritic epidote	0.5		*1* GAESC	50	1	Contact 45°^CA.	111978	0.012	-2
373	403.8	**LATITE DYKE**									
373.00	375.00	Fine-grained red brown porphyritic epidote chloritic	0.5	1	*8* ESCH	30	0	Brownish latite to monzonite dyke with 50cm chilled margin (same as in bottom of hole 1); aphanitic to fine grained, ≈15% phenocrysts- ksp and augite, hornblende alrering to epidote sericite.	111979	0.0008	-2
375.00	377.00		0.5	1	*5* ESCHG	45	0	Down the hole alteration grades to very weak - mostly in stringers.	111980	0.0009	-2
377.00	379.00	Fine-grained red brown porphyritic weak epidote chloritic	0.5	1	*5* CESCH	45	0	As above, quite fresh except for stringers.	111981	0.0005	-2
379.00	381.00		0.5	1	*2* CESCH	30	0	as above, quite fresh except for stringers	111982	0.0003	-2
381.00	383.00		0.5		*0* CESCH	25	1	Hematite with minor quartz veins up to 2cm; more fractured .	111984	0.0005	-2
383.00	385.00		0.5	1	*201* CESCH	30	0	Grades more poryphyritic ≈20% phenocrysts.	111985	0.003	-2
385.00	387.00		0.5	1	*3* CESCH	30	0		111986	0.0005	-2
387.00	389.00		0.5		*1* CESCH	30	0		111987	0.0002	-2

Hole Number: BR-02-02

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
389.00	391.00	Fine-grained red brown porphyritic weak epidote chloritic	0.5	2	CESCH 35 1	More fractured 05°^CA.	111988	0.0001	-2
391.00	393.00		0.5	1 3	CESCH 35 0		111989	0.0002	-2
393.00	395.00		0.5	1 4	CESCH 35 0		111990	0.0001	-2
395.00	397.00		0.5	1	CESCH 35 0		111991	0.0001	-2
397.00	399.00		0.5	1	CESCH 35 0		111992	0.0001	-2
399.00	401.00		0.5	1	CESCH 35 2	Bleached zone with minor gouge @ 35°^CA; carbonate altered + sericite; more fractured.	111993	0.0002	-2
401.00	402.30		0.5	1 5	CESCH 35 0	More fractured 05°^CA.	111994	0.0003	-2
402.30	403.80		0.5	1 0	CESCH 35 1	More fractured, some mafic xenoliths altered to magnetite- chlorite; contact 15°^CA.	111995	0.002	-2
403.8	404.9	**BASALT FLOW**							
403.80	404.90	Fine-grained red brown mottled propyllitic potassic	1.0	5	21 QGAES 40 30	Digested BASALT? Quartz-magnetite ±hematite veins with pyrite; weak epidote -sericite stringers; Contact 45 CA.	111996	0.016	0.026
404.9	409.4	**LATITE DYKE**							
404.90	406.90	Fine-grained red brown porphyritic epidote chloritic	0.5	1	6 GAESC 15 2	More epidote chlorite altered; Some mafic xenoliths; well fractured.	111997	0.0005	-2
406.90	407.80		0.5	1	6 GAESC 15 0		111998	0.0003	-2
407.80	409.40		0.5	1	3 GESCZ 15 0	50% altered BASALT - @ ≈05°^CA.	111999	0.002	-2
409.4	411.4	**MONZONITE DYKE**							
409.40	411.40	Fine-medium-grained red brown porphyritic epidote chloritic		1	12 GESCZ 35 0	Grading coarser grained ≈30-40% phenocrysts; rare mafic xenoliths.	112000	0.0002	-2
411.4	415.4	**LATITE DYKE**							
411.40	413.40	Fine-medium-grained red brown porphyritic epidote chloritic		1	12 ESGCC 35	More and larger mafic xenoliths to 20cm ≈25% of interval.	111756	0.0004	-2
413.40	415.40			1	3 ESGCC 35	Some mafic xenoliths (5cm) alrered to epidote chlorite sericite.	111757	0.0003	-2
415.4	420.6	**MONZONITE DYKE**							
415.40	416.80	Medium-grained red brown porphyritic epidote chloritic		1	3 ESGCC 35	10 cm BASALT interval @ 416.7 - coarser grained phenocrysts 5 mm range and ≈40%-50% - middle of large sill ?? - looks like more typical monzonite.	111758	0.0004	-2
416.80	418.60			1	13 ESGCC 35		111759	0.0002	-2

Hole Number: BR-02-02

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
418.60	420.60	Medium-grained red brown porphyritic epidote chloritic	1	*15*	ESGCC 35		111760	0.0003	-2
420.6 EOH									

Brenda Project 2002 - Diamond Drill Log

Northgate Exploration Ltd

Hole Number: ***BR-02-03***

Northing:	6348103	**Total Depth:**	346.9m
Easting:	627839	**Azimuth:**	55 °
Elevation:	1348	**Dip:**	-60 °

Geologist: J. Pautler

Logged Date: 10/3/2002

Survey Depth	Azimuth	Dip
64 m	51 °	-60 °
156 m	51 °	-60 °
247 m	55 °	-59 °
338 m	59 °	-57 °

Brenda Project 2002 - Summary Drill Log

Northgate Exploration Ltd

Hole Number: *BR-02-03*

From (m)	To (m)	Rock Type	Comments
0	4.57	CASING	
4.57	16.76	OVERBURDEN	Rubble- boulders, cobbles of (pebble - cobble pieces in core) of BASALT flow and monzonite porphyry dyke; local equigranular coarse grained qtz monzonite and equigranular medium grained bio hornblende Gdi with magnetite.
16.76	19.81	DYKE	- bio hornblende Gdi- start to get consistent lithology and 5-7cm pieces as opposed to rubble.
19.81	21.34	FAULT	Sericite- clay-chlorite seams @ 15 CA in Granodiorite.
21.34	25.5	DYKE	
25.5	26.7	FELSITE DYKE	Felsite - quartz and Ksp bearing dyke; minor vuggy quartz - clay stringers. Occasional grey quartz patches with trace sulfide - pyrite? Occasional chlorite-sericite stringers, patches, minor yellow stains.
26.7	30.5	DYKE	Minor Feox stain on fractures.
30.5	33.9	DIORITE DYKE	Zone of diotite at margin of Granodiorite dyke minor felsite veins (few cm wide) @ 45°^CA.
33.9	39.8	BASALT FLOW	Variably fractured BASALT augite ± hornblende porphyry ± variable silification, possibly Toodogone but looks here like Takla - quite altered ANDesite or BASALT???
39.8	42.9	MONZONITE DYKE	Internal fault noted by drill crew @ 42.5m
42.9	51.8	DIORITE DYKE	Diorite
51.8	55.7	MONZONITE DYKE	Graphite - pyrite on fractures.
55.7	64	BASALT FLOW	Dioritized, granitized basalt or andesite => Possibly originally andesite porphyry flow =>>Toodoggone???.
64	67	MONZONITE DYKE	50% phenocrysts - almost equigranular texture; contact 30°^CA.

Hole Number: *BR-02-03*

From (m)	To (m)	Rock Type	Comments
67	68	BASALT DYKE	Post Mineral Dyke ; mafic (basalt) dyke with calcite stringers and amydules, strongly magnetic.
68	80.4	INTRUSION BRECCIA	30% mafic dyke sections, strongly magnetic, invading section.
80.4	81.2	MONZONITE DYKE	Dominated by monzonite with more mafic zones (partly invaded by mafic dyke? and remnant Andesite-Basalt porphyry flow.
81.2	85.5	ANDESITE FLOW	Original porphyritic flow; probably intermediate ANDesite - LatiTE with minor qtz eyes => Toodogzone ?? With qradational darker intervals that are probably due to mafic dyke.
85.5	86.2	MAFIC DYKE DYKE	Mafic dyke with calcite amygdules and calcite -zeolite stringers, lower contact 45^°CA; strongly magnetic.
86.2	100.6	ANDESITE FLOW	Same as 81.2 -85.5 - NB distal alteration - entirely propylitic - no silicification or potassic alteration; 1 % fine disseminated pyrite; feldspar phenocrysts 15-20% and minor augite.
100.6	103.5	MONZONITE DYKE	Mafic dyke intruding along fracture 5-15° ^CA => imparts more grey colour to monzonite; lineation development in monzonite parallel to contact with dyke.
103.5	105.2	CONTACT ZONE	Contact zone with gradational contact from monzonite to mafic dyke to minor mottled ANDesite flow, upper contact 60°^CA ; pyrite disseminations and aggregates.
105.2	106	MAFIC DYKE DYKE	Mafic dyke with calcite amygdules and stringers; Lower contact 10°CA - strong magnetic.
106	125.6	ANDESITE FLOW	Altered ANDesite flow, porphyritic feldspar and lesser augite / hornblende.
125.6	127.4	FELSITE DYKE	Salmon coloured crackled to weakly brecciated quartz feldspar bearing dyke; lower contact 40°^CA.
127.4	132.4	MONZONITE DYKE	Altered monzonite dyke chlorite, epidote altered phenocrysts, epidote, sericite stringers.
132.4	133.1	FAULT	Graphitic fault zone with fragments of monzonite dyke; 30-40°^CA lineations, contact 60°CA.
133.1	136.9	MONZONITE DYKE	More hematite altered dyke below fault
136.9	150.4	ANDESITE FLOW	Upper contact- 4 cm graphitic zone 50°^CA; variably altered with potassic zones and more sericitic zones; generally pervasive chlorite with patchy epidote-sericite ± sericite ± potassic; occasional magnetite in stringers.

Hole Number: *BR-02-03*

From (m)	To (m)	Rock Type	Comments
150.4	150.9	MAFIC DYKE DYKE	Calcite zeolite stringers and amygdules; contacts 55°^CA - magnetic.
150.9	155.3	MONZONITE DYKE	Grades into monzonite dyke over 20cm.; phenocrysts alrering to epidote sericite.
155.3	156.6	MAFIC DYKE DYKE	Mafic dyke with calcite - zeolite stingers and amygdules with 10% wallrock intervals - includes 10cm past Lower contact. Lower contact 70^CA - internal contacts ≈70^CA.
156.6	164.2	MONZONITE DYKE	Monzonite dyke more porphyritic at margins with mafic dyke and more epidote/sericite altered; phenocrysts feldspar and lesser hornblende altering to chlorite.
164.2	166.1	MAFIC DYKE DYKE	Mafic dyke; Lower contact 15°CA.
166.1	175.6	MONZONITE DYKE	
175.6	176	MAFIC DYKE DYKE	Calcite + calcite-zeolite amygdules + stringers, Lower contact 85°^CA.
176	185.9	MONZONITE DYKE	15%, ≈5mm epidote spots ≈15% ghost Ksp phenocrysts.
185.9	186.8	MAFIC DYKE DYKE	Gabbroic dyke with augite/feldspar/hornblende; magnetic upper contact 35°^CA, Lower contact 40°^CA.
186.8	187.7	MONZONITE DYKE	fine epidote spots
187.7	188.4	ZONE	Contact 45°^CA - chlorite at contact - possibly altered monzonite dyke.
188.4	193.3	MONZONITE DYKE	Sericite- pyrite altered zone; minor quartz (quartz - sericite - pyrite).
193.3	194.7	MAFIC DYKE DYKE	Contact 75°^CA, mafic dyke with calcite amygdules and stringers contact 70°^CA with 20 cm interval of monzonite in centre, fine epidote spots - some new sericitic zones in this interval.
194.7	202.5	MONZONITE DYKE	
202.5	213.4	BASALT FLOW	Contact 55°^CA; quartz - sericite - pyrite alteration due to fault parallel to core axis - remnant augite porphyry phenocrysts.
198.7	220.7	MONZONITE DYKE	Contact 45CA
219.1	220.8	BASALT FLOW	

Hole Number: *BR-02-03*

From (m)	To (m)	Rock Type	Comments
220.8	222.5		As above - qtz - magnetite vein 1.5 cm. @ end of section.
222.5	224.1	MONZONITE	Contact 50°^CA.
224.1	229.3	BASALT FLOW	15 cm sericite - py alteration at start ; minor fault @ 224.5m, fault 30°^CA.
229.3	230.6	MONZONITE DYKE	45°^CA contact,;fine epidote spots; Lower contact 40°^CA contact.
230.6	252.1	BASALT FLOW	Weak fluorite in fault zone in center ≈20°^CA.
252.1	252.7	MONZONITE DYKE	Med (3mm.) avg epidote spots ± variable potassic alteration. Contact 35°^CA - contact has chlorite - graphite along contact.
252.7	280.9	CONTACT ZONE	Contact zone; NB magnetite appears to be 2° - possible altered monzonite or granitized BASALT? Grades back and forth; alteration blankets protolith; contact 30°^CA - with chlorite - sericite alteration.
280.9	311.1	MONZONITE DYKE	Contact 50°^CA, definite dyke or sill - generally weakly magnetic - possibly primary; fine epidote spots; magnetic from 280.9 to 311.1m.
311.1	316.8	BASALT FLOW	Contact 20°^CA, generally sericite altered basalt flow at contact.
316.8	317.8	MONZONITE DYKE	
317.8	318.3	BASALT FLOW	Contact 90°^CA; basalt flow or mafic dyke with augite phenocrysts, 75°^CA contact.
318.3	323.2	MONZONITE DYKE	Mixed with BASALT flows; graphitic zones few cm wide; and more chlorite near bottom; contact 50°^CA.
323.2	323.4	MAFIC DYKE	
323.4	330	MONZONITE DYKE	Mafic (basalt) post mineral dyke, calcite - zeolite amygdules; Lower contact 60°^CA, no sample upper contact - 70°^CA.
330	330.7	BASALT FLOW	≈5% pyrite near upper contact, contact 45°^CA, magnetic.
330.7	346.9	MONZONITE DYKE	

Brenda Project - Detail Drill Log

Northgate Exploration Ltd

Hole Number: BR-02-03

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
0	4.57	**CASING**							
0.00	4.57		0.0 **0.0** 0	*0*	0 0		33.3	0	0
4.57	16.76	**OVERBURDEN**							
4.57	7.62	Fine-coarse grained chloritic silicic				Rubble- boulders, cobbles of (pebble - cobble pieces in core) of BASALT flow and monzonite porphyry dyke; local equigranular coarse grained qtz monzonite and equigranular medium grained bio hornblende Gdi with magnetite.	111761	0.003	0.005
7.62	10.67						111762	0.009	0.006
10.67	13.72						111763	0.007	-2
13.72	16.76			*14*		Large boulder -25 cm of qtz monzonite.	111765	0.007	0.009
16.76	19.81	**DYKE**							
16.76	19.81	Medium-grained dark grey equigranular chloritic sericitic	1.0 2	*18*		- bio hornblende Gdi- start to get consistent lithology and 5-7cm pieces as opposed to rubble.	111766	0.011	-2
19.81	21.34	**FAULT**							
19.81	21.34	Fine-medium-grained ground clay sericitic	1.0 2	*11* FLT	15	Sericite- clay-chlorite seams @ 15 CA in Granodiorite.	111767	0.015	-2
21.34	25.5	**DYKE**							
21.34	24.40	Medium-grained dark grey equigranular chloritic weak sericite	1.0 2	*9*			111768	0.014	-2
24.40	25.50	Fine-grained medium grey equigranular sericitic epidote	1.0 2	*0* ESCH		Minor orange stain on fractures (Feox) more sericite / epidote altered; Contact 15°^CA .	111769	0.005	-2
25.5	26.7	**FELSITE DYKE**							
25.50	26.70	Fine-medium-grained pink	1.0	*0* QCHSC	15 1	Felsite - quartz and Ksp bearing dyke; minor vuggy quartz - clay stringers. Occasional grey quartz patches with trace sulfide - pyrite? Occasional chlorite-sericite stringers, patches, minor yellow stains.	111770	0.001	-2
26.7	30.5	**DYKE**							
26.70	29.00	Medium-grained medium grey equigranular	1.0 1	*0* CHSE	20 0	Minor Feox stain on fractures.	111771	0.003	-2

Hole Number: BR-02-03

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
29.00	30.50	Medium-fine-grained medium grey equigranular sericitic epidote	1.0	1	*0* CHSE	20	0	More altered more sericitic, 15% felsite dy (late); Feox.	111772	0.001	-2
30.5	33.9	**DIORITE DYKE**									
30.50	33.90	Medium-grained dark grey chloritic epidote	1.0	1	*1* CHESQ	50	0	Zone of diotite at margin of Granodiorite dyke minor felsite veins (few cm wide) @ 45°^CA.	111773	0.018	0.01
33.9	39.8	**BASALT FLOW**									
33.90	37.00	Fine-grained medium grey massive chloritic epidote	1.0	1	*3* ES	75	1	Variably fractured BASALT augite ± hornblende porphyry ± variable silification, possibly Toodogone but looks here like Takla - quite altered ANDesite or BASALT???	111774	0.006	0.008
37.00	39.80		1.0	1	*14* ES	75	1		111775	0.013	-2
39.8	42.9	**MONZONITE DYKE**									
39.80	42.90	Fine-grained red brown porphyritic chloritic weak sericite		1	*13* CCZ	15	1	Internal fault noted by drill crew @ 42.5m	400001	0.003	-2
42.9	51.8	**DIORITE DYKE**									
42.90	49.40	Medium-grained equigranular chloritic sericitic		2	*33* ESCH		0	Diorite	400002	0.009	-2
49.40	51.80	Medium-grained medium green grey equigranular chloritic sericitic	1.0		*1* ESCH	20	0		400003	0.009	0.005
51.8	55.7	**MONZONITE DYKE**									
51.80	54.30	Coarse-grained pink equigranular chloritic sericitic	1.0	1	*0* CCZES	30	0	Graphite - pyrite on fractures.	400004	0.005	-2
54.30	55.70	Coarse-grained grey-green equigranular chloritic sericitic	1.0	1	*1*			Contact 40°^CA.	400005	0.009	-2
55.7	64	**BASALT FLOW**									
55.70	57.10	Medium-grained grey-green heterogeneous chloritic epidote	2.0		*0* GES	45	0	Dioritized, granitized basalt or andesite => Possibly originally andesite porphyry flow =>>Toodoggone???.	400006	0.017	-2
57.10	58.50		2.0		*2* GES	45	0	As above.	400007	0.028	0.005
58.50	59.60	Fine-grained grey-green mottled chloritic potassic	1.0		*0* ES	45	0	Qtz Monzonite dyke 5cm @ end of section.	400008	0.019	0.005
59.60	62.00	Fine-grained grey-green mottled epidote sericitic	1.0		*0* ESZQG	30	5		400009	0.011	0.012
62.00	64.00	Fine-grained grey-green mottled sericitic epidote	2.0		*0* QGAGF	5	2	25cm gypsum-chlorite-gypsum-vein zone with 5% pyrite at end of section; contact 55°^CA.	400010	0.026	0.024
64	67	**MONZONITE DYKE**									

Hole Number: BR-02-03

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
64.00	67.00	Medium-grained red brown porphyritic weak epidote weak sericite	0.5 1	6	Z	60	0	50% phenocrysts - almost equigranular texture; contact 30°^CA.	400011	0.005	-2
67	68	**BASALT DYKE**									
67.00	68.00	Aphanitic green black massive chloritic		27	CC	50	0	Post Mineral Dyke ; mafic (basalt) dyke with calcite stringers and amydules, strongly magnetic.	400012	0.016	-2
68	80.4	**INTRUSION BRECCIA**									
68.00	70.30	mottled epidote chloritic		76	ESCH	50	0	30% mafic dyke sections, strongly magnetic, invading section.	400013	0.019	-2
70.30	72.50		1.0	1	ESCH	50	0	Intrusion with abundant mafic xenothiths and narrow intervals of mafic dyke; intrusion breccia monzonite/Diorite?, mottled BAS-AND fragments.	400014	0.019	0.008
72.50	73.80	Aphanitic massive epidote chloritic	1.0	11	ESGA	50	0		400016	0.010	-2
73.80	74.70	mottled epidote chloritic	1.0	1	ESGA	50	0		400017	0.014	-2
74.70	77.30		1.0	8	GHES	50	0		400018	0.019	-2
77.30	78.60	Coarse-grained pink equigranular epidote chloritic	1.0	17	GHES	50	0		400019	0.009	-2
78.60	79.80	mottled epidote chloritic	1.0	20	GHES	50	0	Mafic post mineral dyke at start.	400020	0.017	-2
79.80	80.40		1.0	9	GHES	50	0	Includes 30cm gypsum - anhydrite - pyrite graphite vein (8% pyrite); contact at 85 and 35°CA.	400021	0.006	0.016
80.4	81.2	**MONZONITE DYKE**									
80.40	81.20	Medium-grained pink equigranular epidote chloritic	0.5	42	ESCCZ	30	0	Dominated by monzonite with more mafic zones (partly invaded by mafic dyke? and remnant Andesite-Basalt porphyry flow.	400022	0.014	0.015
81.2	85.5	**ANDESITE FLOW**									
81.20	83.40	Fine-grained dark grey-green mottled epidote sericitic	1.0	2	ESCCZ	30	1	Original porphyritic flow; probably intermediate ANDesite - LatiTE with minor qtz eyes => Toodogzone ?? With qradational darker intervals that are probably due to mafic dyke.	400023	0.003	-2
83.40	85.50	dark grey-green mottled epidote sericitic	1.0	6		30	1	Upper contact 20°^CA with calcite zeolite stringers along contact.	400024	0.004	-2
85.5	86.2	**MAFIC DYKE DYKE**									
85.50	86.20	Aphanitic black massive		13	C	30	0	Mafic dyke with calcite amygdules and calcite -zeolite stringers, lower contact 45^°CA; strongly magnetic.	400025	0.009	-2
86.2	100.6	**ANDESITE FLOW**									

Hole Number: BR-02-03

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
86.20	88.20	Fine-grained dark grey-green mottled epidote sericitic	1.0	*12*	ESCCZ	30	1	Same as 81.2 -85.5 - NB distal alteration - entirely propylitic - no silicification or potassic alteration; 1 % fine disseminated pyrite; feldspar phenocrysts 15-20% and minor augite.	400026	0.009	-2
88.20	90.20		1.0	*21*	ESCCZ	30	1		400027	0.002	-2
90.20	92.20		1.0	*20*	ESCCZ	30	1		400028	0.004	-2
92.20	94.20		1.0	*6*	ESCCZ	30	2	Occasional potassic rims on rare epidote clasts.	400029	0.005	-2
94.20	96.20		1.0	*4*	ESCCZ	30	1		400030	0.005	-2
96.20	98.40		1.0	*12*	ESCCZ	30	1		400031	0.003	-2
98.40	100.60		1.0	*16*	ESCCZ	30	1	With 10cm mafic basalt Post Mineral dyke interval at bottom, upper contact 20°^CA.	400032	0.0007	-2
100.6	103.5	**MONZONITE DYKE**									
100.60	103.50	Fine-grained pink grey porphyritic sericitic chloritic	1.0	*1*	CCZ	10	1	Mafic dyke intruding along fracture 5-15° ^CA => imparts more grey colour to monzonite; lineation development in monzonite parallel to contact with dyke.	400033	0.003	-2
103.5	105.2	**CONTACT ZONE**									
103.50	105.20	Fine-grained heterogeneous sericitic chloritic	2.0	*1*	CCZES	10	2	Contact zone with gradational contact from monzonite to mafic dyke to minor mottled ANDesite flow, upper contact 60°^CA ; pyrite disseminations and aggregates.	400034	0.004	0.005
105.2	106	**MAFIC DYKE DYKE**									
105.20	106.00	Aphanitic hematitic		*0*	CCZ	10	0	Mafic dyke with calcite amygdules and stringers; Lower contact 10°CA - strong magnetic.	400035	0.003	-2
106	125.6	**ANDESITE FLOW**									
106.00	108.20	Fine-grained mottled sericitic chloritic	1.0	*0*	CCZES	20	0	Altered ANDesite flow, porphyritic feldspar and lesser augite / hornblende.	400036	0.004	-2
108.20	110.60		4.0	*2*		20	0	Pyritic stringers/veins and disseminations.	400037	0.012	-2
110.60	112.60		1.0	*15*	CCZES	21	2	More gypsum stringers with very minor quartz.	400038	0.01	-2
112.60	114.60		1.0	*15*		22	0		400039	0.003	-2
114.60	115.70		1.0	*17*		10	0	Epidote spots to 1cm (altered fragments) within 15cm zone..	400041	0.003	-2
115.70	117.60	Fine-grained porphyritic chloritic epidote	1.0	*17*	CCZES	30	0	Less altrered; more dark grey zones of AND-BASALT porphyritic flow with 15-20% feldspar and 5% augite phenocrysts.	400042	0.002	-2

Hole Number: BR-02-03

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
117.60	119.60	Fine-grained porphyritic chloritic epidote	1.0	*13*	CCZES	20	0	Same as above.	400043	0.004	0.005
119.60	121.60	Fine-grained mottled sericitic epidote	1.0	*10*	CCZES	60	0	More altered.	400044	0.002	-2
121.60	123.60		1.0	*14*	CCZES	60	0		400045	0.005	-2
123.60	125.60		1.0	*9*	CCZES	60	0	Contact 30°^CA.	400046	0.005	-2
125.6	127.4	**FELSITE DYKE**									
125.60	127.40	Fine-grained pink crackle-textured sericitic epidote		*1*	CCZGF	60	0	Salmon coloured crackled to weakly brecciated quartz feldspar bearing dyke; lower contact 40°^CA.	400047	0.0008	-2
127.4	132.4	**MONZONITE DYKE**									
127.40	128.40	Fine-grained brown porphyritic epidote sericitic	0.5	*3*	CCZES	45	1	Altered monzonite dyke chlorite, epidote altered phenocrysts, epidote, sericite stringers.	400048	0.0008	-2
128.40	130.40		0.5	*0*	CCZES	50	1		400049	0.003	-2
130.40	132.40		0.5	*0*	CCZES	50	1	Contact 40°^CA .	400050	0.004	-2
132.4	133.1	**FAULT**									
132.40	133.10	Fine-grained black brecciated graphite sericitic		*1*	CCZES	50	1	Graphitic fault zone with fragments of monzonite dyke; 30-40°^CA lineations, contact 60°CA.	400051	0.004	0.015
133.1	136.9	**MONZONITE DYKE**									
133.10	135.10	Fine-grained porphyritic epidote hematitic	0.5	1	2	CCZES	50	1	More hematite altered dyke below fault	400052	0.002	-2
135.10	136.90		0.5	1	*1*	CCZES	60	1		400053	0.003	-2
136.9	150.4	**ANDESITE FLOW**									
136.90	138.90	Fine-grained mottled epidote chloritic	1.0	1	*2*	QGESC	45	3	Upper contact- 4 cm graphitic zone 50°^CA; variably altered with potassic zones and more sericitic zones; generally pervasive chlorite with patchy epidote-sericite ± sericite ± potassic; occasional magnetite in stringers.	400054	0.207	0.125
138.90	140.50	mottled epidote chloritic	1.0	1	*6*	QGESC	50	1	Variably magnetic patches - chlorite - magnetite.	400055	0.199	0.076
140.50	142.50		1.0	1	*0*	QGESC	50	1		400056	0.125	0.16
142.50	144.40		2.0	2	*4*	QGESC	60	1	more pyritic	400057	0.030	0.057
144.40	146.40		1.0	1	*0*	QGESC	75	1		400058	0.069	0.121
146.40	148.40		1.0	1	*3*	GESCH	15	5	Large gypsum vein at 147.0m - 10cm @ 70°^CA; less potassic more sericitic.	400059	0.052	0.132
148.40	150.40		1.0		*2*	QESCH	75	1	15 cm Mafic dyke at start 50°^CA.	400060	0.066	0.072

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From	To	Rock Type	Py-Cpy-Mt		Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
150.4	150.9	**MAFIC DYKE DYKE**										
150.40	150.90	Aphanitic black massive			*20*	CZ	15		Calcite zeolite stringers and amygdules; contacts 55°^CA - magnetic.	400061	0.005	-2
150.9	155.3	**MONZONITE DYKE**										
150.90	153.10	Fine-grained red brown porphyritic epidote sericitic	0.5		*0*	CZQES	45	1	Grades into monzonite dyke over 20cm.; phenocrysts alrering to epidote sericite.	400062	0.006	0.016
153.10	155.30	Fine-grained porphyritic epidote sericitic	0.5		*4*	CZQES	60	1		400063	0.008	-2
155.3	156.6	**MAFIC DYKE DYKE**										
155.30	156.60	Aphanitic black massive			*4*	CZ	45	0	Mafic dyke with calcite - zeolite stingers and amygdules with 10% wallrock intervals - includes 10cm past Lower contact. Lower contact 70^CA - internal contacts ≈70^CA.	400064	0.005	-2
156.6	164.2	**MONZONITE DYKE**										
156.60	158.60	Fine-grained red brown porphyritic epidote potassic	0.5		*14*	CZES	80	0	Monzonite dyke more porphyritic at margins with mafic dyke and more epidote/sericite altered; phenocrysts feldspar and lesser hornblende altering to chlorite.	400066	0.002	-2
158.60	160.60	Fine-grained porphyritic epidote sericitic	0.5		*11*	CZES	45	0		400067	0.003	-2
160.60	162.40		0.5		*2*	CZES	5	0		400068	0.004	-2
162.40	164.20		0.5		*0*	CZES	80	0	More epidote and sericite altered phenocrysts.	400069	0.0002	-2
164.2	166.1	**MAFIC DYKE DYKE**										
164.20	166.10	Aphanitic massive weak biotite sericitic	0.5		*3*	CZ	60	1	Mafic dyke; Lower contact 15°CA.	400070	0.002	-2
166.1	175.6	**MONZONITE DYKE**										
166.10	168.20	Fine-grained red brown porphyritic epidote sericitic	0.5	1	*5*	CZES	20	0		400071	0.0002	-2
168.20	170.70		0.5	**0.1** 1	*13*	GCZES	10	0	Less epidote and sericite as spots - fresher ; chalcopyrite in epidote magnetite clots.	400072	0.009	-2
170.70	172.50		0.5	1	*4*	CZ	5	0	Epidote spots ≈2-3mm ≈15-20%.	400073	0.024	-2
172.50	174.00		1.0	1	*2*	ES	85	0		400074	0.001	-2
174.00	174.90		0.5	1	*0*	ES	15	0	More epidote rich with 1-2 mm epidote spots ≈40%.	400075	0.004	0.114
174.90	175.60		0.5	1	*4*	ES	10	0	25°^CA upper contact.	400076	0.002	-2
175.6	176	**MAFIC DYKE DYKE**										

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
175.60	176.00	Aphanitic black porphyritic epidote sericitic		*18*	CZ	20	0	Calcite + calcite-zeolite amygdules + stringers, Lower contact 85°^CA.	400077	0.011	-2
176	185.9	**MONZONITE DYKE**									
176.00	178.00	Fine-grained red brown porphyritic epidote sericitic	0.5	1	*5* CZESC	20	0	15%, ≈5mm epidote spots ≈15% ghost Ksp phenocrysts.	400078	0.001	-2
178.00	180.00		0.5		*4*	20			400079	0.002	-2
180.00	182.00		0.5		*4*	20			400080	0.003	-2
182.00	183.60		0.5		*1*	20		fine epidote spots.	400081	0.0009	-2
183.60	185.90		0.5		*1*	20		Occastional epidote/chlorite altered fragments.	400082	0.003	-2
185.9	186.8	**MAFIC DYKE DYKE**									
185.90	186.80	Coarse-grained black equigranular chloritic			27 CZ	5	0	Gabbroic dyke with augite/feldspar/hornblende; magnetic upper contact 35°^CA, Lower contact 40°^CA.	400083	0.007	-2
186.8	187.7	**MONZONITE DYKE**									
186.80	187.70	Fine-grained red brown porphyritic epidote sericitic	0.5	1	*8* CZES	10	0	fine epidote spots	400084	0.004	-2
187.7	188.4	**ZONE**									
187.70	188.40	Fine-grained light grey crackle-textured sericitic	5.0		*0* GS	10	0	Contact 45°^CA - chlorite at contact - possibly altered monzonite dyke.	400125	0.015	0.157
188.4	193.3	**MONZONITE DYKE**									
188.40	189.70	Fine-grained red brown porphyritic sericitic epidote	3.5	2	*1* CZES	10	0	Sericite- pyrite altered zone; minor quartz (quartz - sericite - pyrite).	400085	0.038	0.115
189.70	191.70	Fine-grained red brown porphyritic epidote sericitic	0.5	1	*20* CZES	75	0		400086	0.030	0.073
191.70	193.30		0.5	1	*3* CZ	75	0		400087	0.063	0.127
193.3	194.7	**MAFIC DYKE DYKE**									
193.30	194.70	Aphanitic black porphyritic			*18* ESCZC	75	0	Contact 75°^CA, mafic dyke with calcite amygdules and stringers contact 70°^CA with 20 cm interval of monzonite in centre, fine epidote spots - some new sericitic zones in this interval.	400088	0.02	0.021
194.7	202.5	**MONZONITE DYKE**									
194.70	196.70	Fine-grained red brown porphyritic epidote sericitic	0.1	1	*0* ESCZC	30	0		400089	0.005	-2
196.70	198.70		0.1	1	*0* ESCZC	45	0		400091	0.006	-2

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
220.70	202.50	Fine-grained red brown porphyritic epidote sericitic	0.1	1	2 ESCZC	30	0		400093	0.005	-2
202.5	213.4	**BASALT FLOW**									
202.50	203.90	Fine-grained grey crackle-textured sericitic silicic	2.0	1	0 FLT	0	0	Contact 55°^CA; quartz - sericite - pyrite alteration due to fault parallel to core axis - remnant augite porphyry phenocrysts.	400094	0.045	0.147
203.90	205.90			1	0 CZGCH	10	45		400095	0.026	0.228
205.90	207.90			1	1	20			400096	0.067	0.314
207.90	209.90	Fine-grained massive potassic epidote	1.0		2 ESCZG	80	0	Potassic altered zone.	400097	0.056	0.02
209.90	211.40	Fine-grained light grey massive sericitic potassic	2.0		0	80		Potassic at start but grades more qtz sericite altered.	400098	0.099	0.092
211.40	213.40	Fine-grained light grey massive sericitic silicic	3.0		1	80		Qtz-sericite-py altered.	400099	0.052	0.156
220.70	202.50	Fine-grained red brown porphyritic epidote sericitic	0.1	1	2 ESCZC	30	0		400093	0.005	-2
198.7	220.7	**MONZONITE DYKE**									
198.70	220.70	Fine-grained red brown porphyritic epidote sericitic	0.1	1	1 ESCZC	45	0		400092	0.016	-2
202.50	203.90	Fine-grained grey crackle-textured sericitic silicic	2.0	1	0 FLT	0	0	Contact 55°^CA; quartz - sericite - pyrite alteration due to fault parallel to core axis - remnant augite porphyry phenocrysts.	400094	0.045	0.147
203.90	205.90			1	0 CZGCH	10	45		400095	0.026	0.228
205.90	207.90			1	1	20			400096	0.067	0.314
207.90	209.90	Fine-grained massive potassic epidote	1.0		2 ESCZG	80	0	Potassic altered zone.	400097	0.056	0.02
209.90	211.40	Fine-grained light grey massive sericitic potassic	2.0		0	80		Potassic at start but grades more qtz sericite altered.	400098	0.099	0.092
211.40	213.40	Fine-grained light grey massive sericitic silicic	3.0		1	80		Qtz-sericite-py altered.	400099	0.052	0.156
213.40	215.40	Fine-grained porphyritic epidote chloritic	0.5		0 QGESC	0	5	Contact 45CA	400100	0.034	0.087
215.40	217.40	Fine-grained red brown porphyritic epidote chloritic	1.0		0 QGESC	50	5		400101	0.028	0.037
217.40	219.10				1 QGESC	0	5	Contact 45°^CA.	400102	0.02	0.105

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
220.70	202.50	Fine-grained red brown porphyritic epidote sericitic	0.1	1	2 ESCZC	30	0		400093	0.005	-2
219.1	220.8	**BASALT FLOW**									
219.10	220.80	Fine-grained grey-green massive	0.5	2	1 QESG	50	0		400103	0.062	0.128
220.70	202.50	Fine-grained red brown porphyritic epidote sericitic	0.1	1	2 ESCZC	30	0		400093	0.005	-2
220.8	222.5										
220.80	222.50		1.0	1	6 GQES	50	0	As above - qtz - magnetite vein 1.5 cm. @ end of section.	400104	0.0002	0.034
222.5	224.1	**MONZONITE**									
222.50	224.10	Fine-grained red brown porphyritic	0.5		1 ESCHG	70	0	Contact 50°^CA.	400105	0.003	0.015
224.1	229.3	**BASALT FLOW**									
224.10	226.00	Fine-grained massive potassic chloritic	1.0		0 FLT	30		15 cm sericite - py alteration at start ; minor fault @ 224.5m, fault 30°^CA.	400106	0.021	0.042
226.00	228.00	Fine-grained massive chloritic epidote	1.0		1 ESGQC	30	0		400107	0.028	0.065
228.00	229.30	Fine-grained massive potassic chloritic	2.0		0 ESGQC	50	1	More quartz stringers but no magnetite.	400108	0.006	0.029
229.3	230.6	**MONZONITE DYKE**									
229.30	230.60	Fine-grained red brown porphyritic epidote sericitic	1.0		0 ESGZ	55	0	45°^CA contact,;fine epidote spots; Lower contact 40°^CA contact.	400109	0.014	0.008
230.6	252.1	**BASALT FLOW**									
230.60	232.60	Fine-grained massive chloritic epidote	2.0	1	5 QGES	30	10	Weak fluorite in fault zone in center ≈20°^CA.	400110	0.046	0.11
232.60	234.90		1.0	1	6 QGESC	30		Remnant augite phenocrysts; weak potassic alteration.	400111	0.044	0.067
234.90	236.40	Fine-grained weakly mottled potassic chloritic	5.0	1	44	30		NB potassic altered zones are very hard, possible also silicification.	400112	0.07	0.081
236.40	238.40		1.0	1	0 QGESZ	35	1	Quartz + quartz-magnetite veins.	400113	0.092	0.467
238.40	240.20		1.0		1 QGESZ	35	1	Quartz veins.	400114	0.089	0.17
240.20	242.20		1.0	1	5 QGESZ	35	1	More potassic; less quartz veins.	400116	0.039	0.069
242.20	244.20		1.0	1	22 QGESZ	40	1	more potassic less quartz veins	400117	0.050	0.1
244.20	246.50		1.0		QGESZ	50	1	Minor fluorite.	400118	0.036	0.075

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From	To	Rock Type	Py-Cpy-Mt		Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
246.50	248.50	Fine-grained weakly mottled epidote chloritic	1.0		0	QGESZ	50	1	Less mottled - more masssive texture.	400119	0.039	0.052
248.50	250.50	Fine-grained weakly mottled propyllitic potassic	1.0		13	ESCZG	50	1		400120	0.027	0.032
250.50	252.10	Fine-grained light grey weakly mottled sericitic chloritic	4.0		0	CHGFQ	50	5	Contact 65°^CA, disseminated pyrite and pyrite stringers, sphalerite in gypsum stringers in potassic altered zone near end of section; contact 45°^CA.	400121	0.037	0.199
252.1	252.7	**MONZONITE DYKE**										
252.10	252.70	Fine-grained porphyritic sericitic epidote	1.0		1	C		5	Med (3mm.) avg epidote spots ± variable potassic alteration. Contact 35°^CA - contact has chlorite - graphite along contact.	400122	0.051	0.034
252.7	280.9	**CONTACT ZONE**										
252.70	254.40	Fine-grained red brown weakly mottled potassic chloritic	1.0	2	19	ESCHC		5	Contact zone; NB magnetite appears to be 2° - possible altered monzonite or granitized BASALT? Grades back and forth; alteration blankets protolith; contact 30°^CA - with chlorite - sericite alteration.	400123	0.053	0.044
254.40	256.10		1.0	2	14	ESCHC	25	5	± sericite altered zones with more pyrite ± chlorite; chalcopyrite in chloritic sericite altered zone not assoc with obvious fracture.	400124	0.082	0.326
256.10	257.90		1.0 **0.1**	2	3	ESCHC	35	0	Trace chalcopyrite in quartz stringers.	400126	0.060	0.072
257.90	259.30	Fine-grained light grey porphyritic sericitic chloritic	1.0	7	1	GQF	50	0	Probably altered monzonite sill (contact zone).	400127	0.005	0.124
259.30	261.30	Fine-grained red brown mottled potassic chloritic	2.0	2	4	ESCZG	40	1	Some tan coloured veins (sericite -epidote + ?).	400128	0.024	0.05
261.30	263.20		2.0 **0.1**	2	1	ESCZG	40	1	Chalcopyrite in quartz stringers (purplish - blue colour).	400129	0.045	0.068
263.20	264.50	Fine-grained light grey mottled sericitic potassic	1.0	1	17		40	1	Primarily sericite altered but grades potassic.	400130	0.024	0.11
264.50	265.70	Fine-grained red brown mottled potassic chloritic	1.0	2	14	ESCZH	45	0	More porphyritic.	400131	0.016	0.051
265.70	267.60	Fine-grained mottled potassic sericitic	1.0	2	5	GQESC	75	0	Variable more sericitic zones.	400132	0.033	0.165
267.60	269.10		1.0	2	7	GQESC	75	0	same as above	400133	0.037	0.125
269.10	270.90		1.0	2	12	ESQGC	10	1	More epidote spots in zones.	400134	0.048	0.096
270.90	272.80	Fine-grained mottled potassic chloritic	1.0	3	12	ESCZG	45	0	More potassic less quartz veins.	400135	0.062	0.095

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From	To	Rock Type	Py-Cpy-Mt		Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
272.80	274.80	Fine-grained mottled sericitic chloritic	2.0		1	*1* ESCZG	10	1	More sericitic + pyrite- chlorite altered zone with contacts ≈35, 75°^CA.	400136	0.031	0.084
274.80	276.30	Fine-grained red brown mottled potassic chloritic	1.0		2	*9* ESCZG	45	0	Hematite on fractures.	400137	0.021	0.023
276.30	277.20		1.0	**0.1**	2	*5* ESCZG	45	0		400138	0.035	0.023
277.20	279.20		1.0		2	*15* CZESG	45	0		400139	0.025	0.065
279.20	280.90		1.0		2	*1*	45	0		400140	0.018	0.027
280.9	311.1	**MONZONITE DYKE**										
280.90	282.90	Fine-grained porphyritic propyllitic hematitic	0.5			*10* ESCHH	45	0	Contact 50°^CA, definite dyke or sill - generally weakly magnetic - possibly primary; fine epidote spots; magnetic from 280.9 to 311.1m.	400141	0.002	0.007
282.90	285.10		0.5			9 ESCHH	45	0		400143	0.001	-2
285.10	287.10		0.5			*0* CZES	45	0		400144	0.002	-2
287.10	289.10		0.5			*4* CZES	45	0	@ 28.2 - 10 cm sericite - chlorite - pyrite altered zone with larger epidote spots.	400145	0.004	-2
289.10	291.10		0.5			*12* CZES	45	0		400146	0.001	-2
291.10	293.10	Fine-grained red brown porphyritic propyllitic hematitic	0.5			*10* CZES	75	0		400147	0.003	-2
293.10	295.10		0.5			*15* CZES	30	0		400148	0.003	-2
295.10	297.10		0.5			8 CZES	40	0		400149	0.001	-2
297.10	299.10		0.5			*6* CZES	40	0		400150	0.003	-2
299.10	301.10		0.5			*7* CZES	75	0		400151	0.003	-2
301.10	303.10		0.5			*2* CZES	30	0		400152	0.002	-2
303.10	305.10		0.5			*7* CZES	30	0		400153	0.004	-2
305.10	307.10		0.5			*1* CZES	30	0		400154	0.003	-2
307.10	309.10		0.5			*6* CZES	30	0		400155	0.003	-2
309.10	311.10		0.5			*5* CZES	30	0		400156	0.002	-2
311.1	316.8	**BASALT FLOW**										
311.10	312.70	Fine-grained medium grey crackle-textured sericitic chloritic	3.0			*0* GQ	45	0	Contact 20°^CA, generally sericite altered basalt flow at contact.	400157	0.031	0.112
312.70	314.70		3.0			*1*	45	0		400158	0.049	0.056
314.70	315.40		5.0			*0*	45	5		400159	0.026	0.205

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
315.40	316.80	Fine-grained crackle-textured chloritic sericitic	1.0	0	CZG	45	1		400160	0.012	0.058
316.8	317.8	**MONZONITE DYKE**									
316.80	317.80	Fine-grained pink green porphyritic silicic chloritic	1.0	2	3 CZESG	45	0		400161	0.008	0.015
317.8	318.3	**BASALT FLOW**									
317.80	318.30	Fine-grained dark grey-green porphyritic chloritic hematitic		2	17 CZG	45	0	Contact 90°^CA; basalt flow or mafic dyke with augite phenocrysts, 75°^CA contact.	400162	0.004	-2
318.3	323.2	**MONZONITE DYKE**									
318.30	320.60	Fine-grained crackle-textured sericitic hematitic	1.0	1	1 CZ	45	1	Mixed with BASALT flows; graphitic zones few cm wide; and more chlorite near bottom; contact 50°^CA.	400163	0.02	0.031
320.60	323.20	Fine-grained red brown porphyritic sericitic hematitic	1.0	2	10	45			400164	0.002	-2
323.2	323.4	**MAFIC DYKE**									
323.20	323.40	Aphanitic black massive			22 CZ	30	0		-9999	0	0
323.4	330	**MONZONITE DYKE**									
323.40	325.40	Fine-grained red brown porphyritic hematitic potassic	0.5	1	4 CZGES	70	0	Mafic (basalt) post mineral dyke, calcite - zeolite amygdules; Lower contact 60°^CA, no sample upper contact - 70°^CA.	400165	0.006	-2
325.40	327.40			1	5 CZGES	30	0		400166	0.002	-2
327.40	328.80	Fine-grained red brown porphyritic	0.5	1	3 CZGES	70	0	Minor chlorite - graphite zones (fewcm) at top.	400168	0.003	-2
328.80	330.00	Fine-grained porphyritic epidote sericitic	1.0	1	6 CZES	45	0	More epidote contact 45°^CA.	400169	0.019	-2
330	330.7	**BASALT FLOW**									
330.00	330.70	Fine-grained medium grey crackle-textured chloritic sericitic	2.0		10 CZESG	45	1	~5% pyrite near upper contact, contact 45°^CA, magnetic.	400170	0.074	0.043
330.7	346.9	**MONZONITE DYKE**									
330.70	332.80	Fine-grained red brown porphyritic epidote sericitic	0.5	1	13 ESCHE	85	0		400171	0.004	-2
332.80	335.30		0.5	1	6 ESCHE	85	0		400172	0.003	-2
335.30	338.00		0.5	1	11 ESCHE	45	0		400173	0.005	-2
338.00	341.00		0.5	1	6 ESCHE	85	0	Grades less epidote altered.	400174	0.005	-2
341.00	343.80		0.5	1	16 ESCHE	85	0	Weak albite phenocrysts, or possible quartz??	400175	0.0005	-2

Hole Number: BR-02-03

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
343.80	346.90	Fine-grained red brown porphyritic epidote sericitic	0.5	1	9 ESCHE 45 0		400176	0.007	-2
346.9 EOH									

Brenda Project 2002 - Diamond Drill Log

Northgate Exploration Ltd

Hole Number: ***BR-02-04***

Northing:	6347826	**Total Depth:**	445m
Easting:	628074	**Azimuth:**	55 °
Elevation:	1472	**Dip:**	-65 °

Geologist: J. Pautler

Logged Date: 10/12/200

Survey Depth	Azimuth	Dip
259 m	54 °	-62 °
351 m	59 °	-61 °
442 m	59 °	-59 °

Brenda Project 2002 - Summary Drill Log

Northgate Exploration Ltd

Hole Number: *BR-02-04*

From (m)	To (m)	Rock Type	Comments
0	1.5	CASING	
1.5	16.5	OVERBURDEN	Assorted boulders - pebble to cobble size of intermediate volcanic fragmental with lesser quartz monzonite and monzonite.
16.5	18.3	BASALT	Dominantly silicified, altered Basalt flow, some oxid on fractures; qtz etes =>Ttoodoggone.
18.3	22.9	BASALT	Mixed pebbles, lesser cobbles; includes ANDesite and assorted intrusive fragments, including 1 cobble of monzonite.
22.9	25.9	ANDESITE	Oxidized andesite (start to get consistent lithology) fragmental; angular pebbles; very weathered bedrock.
25.9	32	LOST CORE	No recovery.
32	33.5	ANDESITE	Same as at 183m; silicified, sericite pyrite altered andesite fragmental with feldspar phenocrysts (10%) max; looks like Takla => must be toodoggone.
33.5	38.1	LOST CORE	No recovery.
38.1	39.6	ANDESITE FLOW	Weakly porphyritic with feldspar, fine augite phenocrysts.
44.2	47.2	LOST CORE	no recovery
47.2	56.4	CRYSTAL-LITHIC TUFF	magnetic
56.4	61	BASALT	Mixed pebbles to 59.9 m of andesite fragmental and magnetic basalt fragmental; basalt has quartz etes => Toodoggone.
61	64	CRYSTAL-LITHIC TUFF	Gravel to pebble size.
64	70.1	LOST CORE	

Hole Number: *BR-02-04*

From (m)	To (m)	Rock Type	Comments
70.1	71.3	CRYSTAL-LITHIC TUFF	Porphyritic ANDesite fragmental -> XL lithic tuff with clasts up to 15cm of AND (to basalt) with feldspar, augite phenocrysts = (similar composition to Granodiorite).
71.3	73.7		As above, contact 65°^CA; minor gouge @ contact.
73.7	76.2	ANDESITE FLOW	Contact 30°^CA.
76.2	78.3	CRYSTAL-LITHIC TUFF	Some and fragments at upper contact; contact 45°^CA.
78.3	81.1	ANDESITE FLOW	Some fragments in center; similar to fragments in IFG- XL lithic tuff.
81.1	81.8	MUDSTONE	Contact 45°^CA; mudstone.
81.8	86.5	CRYSTAL-LITHIC TUFF	Contact 60°^CA; dry fracture - gouge zone @ bottom of interval with graphite, chlorite, sericite - grades more sericitic.
86.5	88.7	CRYSTAL-LITHIC TUFF	Possible Toodogone/Takla contact but difficult to say due to alteration increase (sericite); still appears to be intermediate fragmental XL lithic tuff, but some structural breccia? Quartz eyes not visable possibly due to alteration.
88.7	89.2	CONTACT ZONE	Could be contact of fragmental flows => some reworking; contact zone adjacent to FAULT, 15cm of potassic alteration followed by chloritic gouge.
89.2	91.7		More gypsum stringers - similar to 400209 section, contact 50°f^CA.
91.7	93.8	FELSITE DYKE	Felsite dyke - fine porphyritic texture; contact 55°^CA.
93.8	96		10-20% phenocrysts to 5mm - possible contact zone around sill; granitized; 55°^CA contact.
96	96.7	FAULT	FAULT zone - gouge, contact 30°^CA; quartz - graphite vein (2cm) at contact.
96.7	102.6	CRYSTAL-LITHIC TUFF	Still appears to befragmental - XL tuff, also lithic fragments.
102.6	110.8	MONZONITE SILL	More sericitic at margins and bit more pyrite.
110.8	113.5	CRYSTAL-LITHIC TUFF	Contact 80°^CA.
113.5	116.1	MONZONITE SILL	Gradational somewhat with intermediate fragmental but good contact.

Hole Number: *BR-02-04*

From (m)	To (m)	Rock Type	Comments
116.1	117.4	CRYSTAL-LITHIC TUFF	FLT at contact, ground; weak gouge 45°^CA.
117.4	118.3	MONZONITE SILL	Chilled margin of monzonite sill.
118.3	118.9	ANDESITE	Pebbles of f.g. andesite, possibly out of place from above 224?
118.9	123.8	MONZONITE SILL	More sericitic, some graphite seams, very fine qtz- graphite stringers.
123.8	125.7	CRYSTAL-LITHIC TUFF	??? Volcanic fragmental??? Poor ctc ^ 80°^CA, but sharp; fault 10CA.
125.7	157.5	MONZONITE SILL	Chilled margin at contact.
157.5	158.1	MAFIC DYKE	Mafic dyke with cal/zeolite amygdules especially at upper contact; contact 45^CA.
158.1	165.4	MONZONITE SILL	NB qtz-graphite-stringers, few mm.
165.4	167.5	CONTACT ZONE	Bottom 40 cm very mottled due to stringers including blue grey qtz- graphite? or galena - very fine; contact 55^CA; some epidote patches; carb/zeol stringers
167.5	171.8	FELSITE DYKE	Appears to be chilled margin; py flecks and graphite stringers + flecks.
171.8	196.1	FELSPAR PORPHYRY SILL	Somewhat chilled- less porphyritic; very graphitic+qtz-sericite-pyrite alteration; sillcification is variable, increases down hole; some gouge at 173.5 - 20cm, +/-bxation.
196.1	211.2	ANDESITE FLOW	
211.2	212.4	MONZONITE DYKE	Chilled margin; FAULT at top - at top - graphitic gouge about 50^ CA; fractures about 10^CA.
212.4	218.5	MONZONITE SILL	
218.5	220.5	ANDESITE FLOW	Contact or chilled zone? Some of above unit in center- gradational; vien of ? with epidote sericite at margins, qtz- sericite in centre, 25 cm wide, med grey colour; contacts - 75 + 40 ^ CA.)
220.5	225.2	CONTACT ZONE	Contact zone with some monzonite porphyry intervals and andesite intervals, highly altered
225.2	227.9	MONZONITE SILL	Definite sill, strong porphyritic texture 30-40% phenocrysts, few mm to 5 mm across, altered to ep/ser/ chl with some pyrite.

Hole Number: *BR-02-04*

From (m)	To (m)	Rock Type	Comments
227.9	228.9	MAFIC DYKE	Basaltic mafic dyke with calcite amygdules and calcite-zeolite stringers with monzonite interval from 228.4-.7 meters; contact 60^CA.
228.9	237.2	MONZONITE SILL	monzonite sill, same as above dyke.
237.2	238.3	MAFIC DYKE	Calcite amygdules and stringers in basaltic mafic dyke; contact 70^ CA.
238.3	258.9	MONZONITE SILL	monzonite sill, same as above dyke.
258.9	259.9	ANDESITE	Possibly partly assimilated andesite fragments; some monzonite porphyry; hazy 35^ CA contact - minor anhydrite stringers.
259.9	283.1	MONZONITE SILL	Occasional andesite fragments to 3 cm.
283.1	285	HIGHLY ALTERED ZONE SILL	Some remnants of mafic dyke - possible fault @ 283.8 - 30^CA; qtz stringers +/- py +/- chlorite; contact 15^CA.
285	286.5	MAFIC DYKE SILL	Mafic basaltic dyke with calcite- zeol amygdules and stringers; fine cal amygdules parallel to contact; near top "frothy"; L contact 20^ CA ; possibly late potassic overprint?
286.5	303.8	MONZONITE SILL	Qtz stringers +/- pyrite; qtz-sericite-pyrite altered - highly altered sill; strong sericite overprint after qtz.
303.8	308.1	MAFIC DYKE	Basaltic mafic dyke with calcite amygdules and stringers with minor interval (40 cm) of monzonite porphyry - possible late potassic overprint.
308.1	324	MONZONITE SILL	
324	326.8	HORNBLENDE-FSPAR PORPHYRY	Hornblende - feldspar porphyry - probably fresh equivalent of above - unaltered, trace hematite, magnetite.
326.8	331.7	MONZONITE SILL	More altered.
331.7	333	MAFIC DYKE	L ctc - broken.
333	339	MONZONITE SILL	Typical sill with epidote spots few mm - 5 mm.
339	342.4	MAFIC DYKE	Basaltic mafic dyke with calcite amygdules; contact 30^ CA.

Hole Number: *BR-02-04*

From (m)	To (m)	Rock Type	Comments
342.4	352	MONZONITE SILL	As at 400343.
352	361.6	MONZONITE HIGHLY ALTERED ZONE	Highly altered - anhydrite, pyrite overprints earlier magnetite silica - anhydrite flooding along structural zone.
361.6	425.1	MONZONITE SILL	Contact 65^ CA; - less altered; remanant qtz py stringers.
425.1	425.6	MAFIC DYKE	Basaltic mafic dyke minor calcite amygdules + stringers; contact 50^ CA; gouge at contact.
425.6	429.8	MONZONITE SILL	Epidote sericite altered MONZONITE in center with 50 cm of graphite-chlorite gouge/breccia; fault at top and grading potassic altered at bottom with magnetite; pyrite content >> at bottom (3%) pyrite.
429.8	431	LOST CORE	VOID LOST CORE
431	445	MONZONITE SILL	Minor qtz - magnetite stringers; some anhydrite - gypsum overprinting top 30cm.
39.6	47.2	ANDESITE	Same as at 32 - 33.5 - possibly related to FAULT => structural breccia with fault gouge - strong clay, from 39.6 -41.1 and minor clay through interval.

Brenda Project - Detail Drill Log

Northgate Exploration Ltd

Hole Number: BR-02-04

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
0	1.5	**CASING**							
0.00	1.50						4	0	0
1.5	16.5	**OVERBURDEN**							
1.50	6.10	silicic chloritic	1.0		*0*	Assorted boulders - pebble to cobble size of intermediate volcanic fragmental with lesser quartz monzonite and monzonite.	400177	0.002	-2
6.10	9.10				*10*	As above, some oxidized fractures and orange - brown soil; cobbles and pebbles of intermediate volc fragmental and qtz monzonite, also silification, bio alteration.	400178	0.003	-2
9.10	12.20				*14*	BASALT, some soil; qtz eyes =>Toodoggone.	400179	0.004	-2
12.20	13.70		**0.1**		*14*	Chalcopyrite in qtz pebble at start followed by very mixed pebbles, few cobbles of Qtz Monzonite, volc fragmental (AND) probably Toodoggone.	400180	0.003	-2
13.70	16.50					Oxidized fractures in intermediate fragmental. Some monzonite and fg bio Granodiorite.	400181	0.003	0.011
16.5	18.3	**BASALT**							
16.50	18.30	silicic			*0*	Dominantly silicified, altered Basalt flow, some oxid on fractures; qtz etes =>Ttoodoggone.	400182	0.01	-2
18.3	22.9	**BASALT**							
18.30	22.90				*16*	Mixed pebbles, lesser cobbles; includes ANDesite and assorted intrusive fragments, including 1 cobble of monzonite.	400183	0.004	-2
22.9	25.9	**ANDESITE**							
22.90	25.90	Fine-grained limonitic			*2*	Oxidized andesite (start to get consistent lithology) fragmental; angular pebbles; very weathered bedrock.	400184	0.003	-2
25.9	32	**LOST CORE**							
25.90	32.00					No recovery.	4.32	0	0
32	33.5	**ANDESITE**							

Hole Number: BR-02-04

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
32.00	33.50	Fine-grained medium grey porphyritic silicic weak sericite	1.0	*0*			Same as at 183m; silicified, sericite pyrite altered andesite fragmental with feldspar phenocrysts (10%) max; looks like Takla => must be toodoggone.	400185	0.002	-2
33.5	38.1	**LOST CORE**								
33.50	38.10		2.0				No recovery.	4.381	0	0
38.1	39.6	**ANDESITE FLOW**								
38.10	39.60	Fine-grained green-grey porphyritic chloritic	2.0	*0*			Weakly porphyritic with feldspar, fine augite phenocrysts.	400186	0.001	-2
44.2	47.2	**LOST CORE**								
39.60	47.20	Fine-grained medium grey porphyritic silicic weak sericite	1.0	*0*	FLT	35	Same as at 32 - 33.5 - possibly related to FAULT => structural breccia with fault gouge - strong clay, from 39.6 -41.1 and minor clay through interval.	400187	0.003	-2
44.20	47.20						no recovery	4.472	0	0
47.2	56.4	**CRYSTAL-LITHIC TUFF**								
47.20	50.30	Medium-grained porphyritic chloritic sericitic	0.5	*23*			magnetic	400188	0.0006	-2
50.30	53.30		0.5	*2*	CZ	45	≈40% phenocrysts of feldspar and augite (10%) - crystal - lithic tuff - polylithic; porphyritic; minor orange stains on fractures; magnetic.	400189	0.0005	-2
53.30	54.20	Medium-fine-grained grey-green brecciated sericitic silicic	2.0	*0*	QGCQ N	25	@ 53.3 - .6 - silification, sericite altered graphitic breccia => FAULT. Followed by more chloritic fragmental with pyrite and bxed ± v weak epidote.	400190	0.025	0.013
54.20	56.40	Medium-grained grey-green porphyritic chloritic sericitic	1.0 **0.1**	*0*	QGCQ N	5	Trace chalcopyrite and graphite in quartz gypsum stringers.	400191	0.016	-2
56.4	61	**BASALT**								
56.40	61.00	Fine-grained grey-green massive chloritic silicic	0.5	*35*	ZCARB		Mixed pebbles to 59.9 m of andesite fragmental and magnetic basalt fragmental; basalt has quartz etes => Toodoggone.	400192	0.007	-2
61	64	**CRYSTAL-LITHIC TUFF**								
61.00	62.00	Medium-grained grey-green porphyritic chloritic sericitic	1.0	*0*	CARBZ		Gravel to pebble size.	400194	0.0009	-2
62.00	64.00		1.0	*0*			More gravel.	400195	0.001	0.005
64	70.1	**LOST CORE**								
64.00	70.10							4.70.1	0	0

Hole Number: BR-02-04

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
70.1	71.3	**CRYSTAL-LITHIC TUFF**									
70.10	71.30	Fine-grained grey-green porphyritic chloritic sericitic	1.0	*0*	CZESA		0	Porphyritic ANDesite fragmental -> XL lithic tuff with clasts up to 15cm of AND (to basalt) with feldspar, augite phenocrysts = (similar composition to Granodiorite).	400196	0.002	-2
71.3	73.7										
71.30	73.70	Fine-grained grey-green porphyritic chloritic sericitic	1.0	*0*	CZESA		0	As above, contact 65°^CA; minor gouge @ contact.	400197	0.0008	-2
73.7	76.2	**ANDESITE FLOW**									
73.70	76.20	Fine-grained green-grey massive chloritic epidote	0.5	*1*	CZESA	30	0	Contact 30°^CA.	400198	0.001	-2
76.2	78.3	**CRYSTAL-LITHIC TUFF**									
76.20	78.30	Fine-grained green-grey crackle-textured chloritic epidote	0.5	*0*	CZESA	30	1	Some and fragments at upper contact; contact 45°^CA.	400199	0.005	-2
78.3	81.1	**ANDESITE FLOW**									
78.30	81.10	Fine-grained green-grey massive chloritic epidote	0.5	*0*	CZESA	30	1	Some fragments in center; similar to fragments in IFG-XL lithic tuff.	400200	0.002	-2
81.1	81.8	**MUDSTONE**									
81.10	81.80	Fine-grained light grey massive sericitic epidote	0.5	*0*	G	50	1	Contact 45°^CA; mudstone.	400201	0.0006	0.008
81.8	86.5	**CRYSTAL-LITHIC TUFF**									
81.80	82.30	Fine-grained green-grey crackle-textured sericitic chloritic	0.5	*0*	CZESA	5	1	Contact 60°^CA; dry fracture - gouge zone @ bottom of interval with graphite, chlorite, sericite - grades more sericitic.	400202	0.001	0.008
82.30	84.50	Fine-grained green-grey crackle-textured chloritic epidote	0.5	*0*	CZESA	90	0	More chloritic, generally less altered - some quartz eyes evident so probably Toodoggone - finally porphyritic but crowded.	400203	0.001	-2
84.50	86.50	Fine-grained crackle-textured chloritic epidote	0.5	*1*	CZESA	90		Contact 85°^CA - minor gouge.	400204	0.002	-2
86.5	88.7	**CRYSTAL-LITHIC TUFF**									
86.50	88.70	Fine-grained lt green-grey crackle-textured sericitic epidote	0.5	*1*	CZESA	90		Possible Toodogone/Takla contact but difficult to say due to alteration increase (sericite); still appears to be intermediate fragmental XL lithic tuff, but some structural breccia? Quartz eyes not visable possibly due to alteration.	400205	0.002	0.005

Hole Number: BR-02-04

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
88.7	89.2	**CONTACT ZONE**									
88.70	89.20	Fine-grained crackle-textured chloritic potassic	0.5	0	CZESA	50	0	Could be contact of fragmental flows => some reworking; contact zone adjacent to FAULT, 15cm of potassic alteration followed by chloritic gouge.	400206	0.003	0.007
89.2	91.7										
89.20	91.70	Fine-grained porphyritic sericitic epidote	0.5	0	CZESA	50	1	More gypsum stringers - similar to 400209 section, contact 50°f^CA.	400207	0.002	-2
91.7	93.8	**FELSITE DYKE**									
91.70	93.80	Fine-grained pink crackle-textured weak sericite	0.5	0	GAS	30	5	Felsite dyke - fine porphyritic texture; contact 55°^CA.	400208	0.0009	-2
93.8	96										
93.80	96.00	Fine-grained porphyritic epidote sericitic	0.5	0	ESAZQ	30	0	10-20% phenocrysts to 5mm - possible contact zone around sill; granitized; 55°^CA contact.	400209	0.003	-2
96	96.7	**FAULT**									
96.00	96.70	Fine-grained green-grey brecciated chloritic sericitic	1.0	0	ESAZQ	30	3	FAULT zone - gouge, contact 30°^CA; quartz - graphite vein (2cm) at contact.	400210	0.001	0.005
96.7	102.6	**CRYSTAL-LITHIC TUFF**									
96.70	98.60	Fine-grained green-grey crackle-textured sericitic epidote	0.5	0	ESAZQ	30	1	Still appears to befragmental - XL tuff, also lithic fragments.	400211	0.0005	-2
98.60	100.60		0.5	0	ESAZQ	30	1	same	400212	0.001	0.006
100.60	102.60		0.5	0	ESAZQ	30	1	Fault @ 101.7 - chloritic, weak gouge for 10cm ≈40°^CA.	400213	0.002	0.015
102.6	110.8	**MONZONITE SILL**									
102.60	104.60	Fine-grained red brown porphyritic weak epidote sericitic	0.5	2	7 ES	20	0	More sericitic at margins and bit more pyrite.	400214	0.003	0.005
104.60	106.60		0.5	2	12 ES	50	0		400215	0.001	-2
106.60	108.60	Fine-grained red brown porphyritic epidote chloritic		3	10 ESG	50	0	More coarsely porphyritic in center of sill, less sericitic.	400216	0.001	-2
108.60	110.80	Fine-grained red brown porphyritic sericitic epidote	0.5	2	1 ESG	50	0		400217	0.001	-2
110.8	113.5	**CRYSTAL-LITHIC TUFF**									
110.80	111.40	Fine-grained crackle-textured chloritic epidote	0.5	0	ZESGA	50	1	Contact 80°^CA.	400219	0.002	0.025
111.40	112.50		0.5	0	ZESGA	20	1	Contact 60°^CA.	400220	0.004	-2

Hole Number: BR-02-04

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
112.50	113.50	Fine-grained medium grey crackle-textured chloritic epidote	0.5		0 SAZ	10	0	Possible Inter Flow Sediment @ top 35 cm; contact @55-65°^CA, gouge zone at contact.	400221	0.0008	0.032
113.5	116.1	**MONZONITE SILL**									
113.50	116.10	Fine-grained medium brown porphyritic chloritic epidote	0.5		0 ESGFC	25	0	Gradational somewhat with intermediate fragmental but good contact.	400222	0.004	-2
116.1	117.4	**CRYSTAL-LITHIC TUFF**									
116.10	117.40	Fine-grained green crackle-textured sericitic epidote	0.5		0 ES	25	2	FLT at contact, ground; weak gouge 45°^CA.	400223	0.001	0.006
117.4	118.3	**MONZONITE SILL**									
117.40	118.30	Fine-grained red brown porphyritic potassic silicic	0.5		0 GAGF	25	0	Chilled margin of monzonite sill.	400224	0.003	0.005
118.3	118.9	**ANDESITE**									
118.30	118.90	Fine-grained grey-green porphyritic chloritic	0.5		0	25	0	Pebbles of f.g. andesite, possibly out of place from above 224?	400225	0.0004	-2
118.9	123.8	**MONZONITE SILL**									
118.90	120.90	Fine-grained porphyritic sericitic epidote	0.5		0 ESGFQ	25	0	More sericitic, some graphite seams, very fine qtz-graphite stringers.	400226	0.003	-2
120.90	123.80	Fine-grained porphyritic epidote sericitic	0.5		0 ESGFQ	25		Gradational contact.	400227	0.004	-2
123.8	125.7	**CRYSTAL-LITHIC TUFF**									
123.80	125.70	Fine-grained lt green-grey crackle-textured epidote sericitic	1.0		0 ESGF	15	30	??? Volcanic fragmental??? Poor ctc ^ 80°^CA, but sharp; fault 10CA.	400228	0.003	0.007
125.7	157.5	**MONZONITE SILL**									
125.70	126.40	Fine-grained red brown porphyritic potassic silicic	0.5	1	0 CZESC	10	0	Chilled margin at contact.	400229	0.002	-2
126.40	128.40	Fine-grained red brown porphyritic epidote chloritic	0.5	1	4 CZESC	40	0	Aggregates of magnetite to 3mm +/-chlorite.	400230	0.004	-2
128.40	130.70		0.5	1	0 CZESC	40	0		400231	0.006	-2
130.70	132.70		1.0	1	0 CZESC	40	0	More pyrite due to pyrite in graphitic fractures and stringers especially @131.4 meters.	400232	0.026	-2
132.70	134.80		0.5	1	4 CZESC	40	0	More coarsely porphyritic.	400233	0.006	-2
134.80	137.00		0.5	1	6 CZESC	40	0		400234	0.002	-2

Hole Number: BR-02-04

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
137.00	139.00	Fine-grained red brown porphyritic epidote chloritic	0.5	1	7 CZESC	5	0	Zzeol-carb vein and fragments at start in top 30 cm; grades more chlorite and sericite altered +graphitic.	400235	0.005	-2
139.00	141.00		0.5	1	8 CZESC	40	0		400236	0.0005	-2
141.00	143.00		0.5	1	4 CZESC	5			400237	0.001	0.005
143.00	145.00			1	2 CZESC	5			400238	0.0004	-2
145.00	146.70				0 CZESC	5		Less porphryritic, more sericite; slightly chilled margin (gradational).	400239	0.002	-2
146.70	147.10	Fine-grained grey massive chloritic			0 CZ	5		Chilled margin; ctc 65 ^ CA, very sharp with dark grey 1cm band @ contact.	400240	-2	0.007
147.10	149.10	Fine-grained red brown porphyritic epidote chloritic	1.0		1 CZ	5		Pyrite in epidote -graphite -chlorite clots.	400241	0.005	-2
149.10	151.10		1.0		0 CZ	40			400242	0.015	-2
151.10	153.30		1.0		0 CZ	5		FAULT at top about 05°^CA, grading into chilled margin down hole, local pot alteration.	400243	0.001	-2
153.30	155.50				1 CZ	5			400245	0	0
155.50	157.50				1 CZ	5		Contact 30 ^ CA.	400246	0.013	0.005
157.5	158.1	**MAFIC DYKE**									
157.50	158.10	Aphanitic black massive chloritic			31 CCCZ	40		Mafic dyke with cal/zeolite amygdules especially at upper contact; contact 45^CA.	400247	0.007	-2
158.1	165.4	**MONZONITE SILL**									
158.10	160.10	Fine-grained red brown porphyritic chloritic epidote	0.5		0 ESCHG	5	1	NB qtz-graphite-stringers, few mm.	400248	0.005	-2
160.10	162.10	Fine-grained porphyritic chloritic			0 ESCHG	45	1		400249	0.007	-2
162.10	163.60				0 ESCHG	45	1		400250	0.014	-2
163.60	165.40		1.0		0 ESCHG	45	1	Contact 40^ CA.	400251	0.007	-2
165.4	167.5	**CONTACT ZONE**									
165.40	167.50	Fine-grained medium grey crackle-textured sericitic chloritic	4.0		0 ESCHG	45	1	Bottom 40 cm very mottled due to stringers including blue grey qtz- graphite? or galena - very fine; contact 55^CA; some epidote patches; carb/zeol stringers	400252	0.005	0.015
167.5	171.8	**FELSITE DYKE**									
167.50	169.50	Fine-grained pink crackle-textured potassic	1.0		0 CBZ	90	2	Appears to be chilled margin; py flecks and graphite stringers + flecks.	400253	0.002	-2

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
169.50	171.20	Fine-grained pink crackle-textured chloritic potassic	1.0	0	CBZES	45	1	More chlorite, graphite,+/- sericite, grading porphyritic.	400254	0.003	-2
171.20	171.80	Fine-grained pink grey crackle-textured chloritic sericitic	1.0	0	CBZES	45	1	More graphitic last 30cm- contact zone; contact 45 ^ CA - 3 cm graphitic gouge .	400255	0.014	-2
171.8	196.1	**FELSPAR PORPHYRY SILL**									
171.80	173.80	Fine-grained medium grey porphyritic sericitic graphite	2.0	0	GESQZ	45	0	Somewhat chilled- less porphyritic; very graphitic+qtz-sericite-pyrite alteration; silicification is variable, increases down hole; some gouge at 173.5 - 20cm, +/- bxation.	400256	0.0006	-2
173.80	175.80		2.0	0	GAZCC	45	0	Grades more porphyritic - still chilled.	400257	0.0007	0.008
175.80	177.80		2.0	0	GAZCC	5	1	176.3 -graphitic gouge zone @45^ CA.	400258	0.001	-2
177.80	179.80	Fine-grained medium grey porphyritic sericitic silicic	4.0	0	GCCZA	30	1	Qtz-sericite-pyrite alteration; NB fine py - dissem throughout quite uniform.	400259	0.0009	-2
179.80	181.80		4.0	0	GCCZA	30	1		400260	0.0007	-2
181.80	183.80		4.0	0	GCCZA	30	1		400261	0.001	-2
183.80	185.80		4.0	0	GCCZA	30	1		400262	0.0008	-2
185.80	187.80		4.0	1	GCCZA	30	1		400263	0.001	-2
187.80	190.00		4.0	0	GCCZA	30	1		400264	0.002	-2
190.00	192.00		4.0	0	GCCZA	45	1		400265	0.001	-2
192.00	194.10		3.0	0	GCCZA	45	1	Grades less porphyritic- grading chilled, contact 80 ^ CA, 3 cm chilled margin.	400266	0.0008	-2
194.10	196.10		3.0	0	GCCZA	80	1		400267	0.0005	-2
196.1	211.2	**ANDESITE FLOW**									
196.10	197.90	Fine-grained medium grey porphyritic chloritic epidote	1.0	0	ESGAC	80	1		400268	0.0003	-2
197.90	199.50	Fine-grained medium grey porphyritic chloritic sericitic	1.0	0	ESGAC	81	1	Lower chilled margin, about 80 ^CA contact, minor gouge.	400269	0.0005	-2
199.50	201.40	Fine-grained red brown porphyritic hematitic sericitic	1.0	8	GACCZ	82	0	Oxidized flow top; fragments -5%, more abundant at top; minor 3 cm mafic dyke near 201.3 meters.	400271	0.003	-2
201.40	203.30	Fine-grained crackle-textured chloritic sericitic	1.0	0	GACCZ	83	2	Grophitic fractures.	400272	0.009	-2
203.30	205.30		1.0	0	GESGF	35	1	@204 meters -1 cm gypsum vien; less crackled texture; graphitic fractures, minor qtz stringers.	400273	0.002	-2
205.30	207.20		1.0	0	GESGF	35	1	More chlortic, less epidote.	400274	0.011	-2

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
207.20	208.70	Fine-grained crackle-textured chloritic sericitic	1.0	*1*	GESGF	35	1	Fracture zone with chlorite @ 208.5; epidote patches.	400275	0.005	-2
208.70	209.90		1.0	*0*	GESGF	35	1	Some py stringers, epidote patches.	400276	0.001	-2
209.90	211.20	Fine-grained dk green-grey crackle-textured chloritic sericitic	1.0	*0*	GESGF	35	0		400277	0.0007	-2
211.2	212.4	**MONZONITE DYKE**									
211.20	212.40	Fine-grained grey-green crackle-textured chloritic sericitic	1.0	*0*	ZGF	35	0	Chilled margin; FAULT at top - at top - graphitic gouge about 50^ CA; fractures about 10^CA.	400278	0.0002	0.006
212.4	218.5	**MONZONITE SILL**									
212.40	214.50	Fine-grained crackle-textured chloritic epidote	1.0	*0*	ZGFGE	80	1		400279	0.001	-2
214.50	216.50	Fine-grained crackle-textured chloritic sericitic	1.0	*0*	ZGFGE	80	1		400280	0.007	-2
216.50	218.50	Fine-grained porphyritic epidote chloritic	1.0	*0*	ZGFGE	80	0	Irregular lowercontact 45-80^ CA.	400281	0.0009	-2
218.5	220.5	**ANDESITE FLOW**									
218.50	220.50	Fine-grained green-grey massive chloritic	2.0	*0*	ZGFGE	80	0	Contact or chilled zone? Some of above unit in center-gradational; vien of ? with epidote sericite at margins, qtz- sericite in centre, 25 cm wide, med grey colour; contacts - 75 + 40 ^ CA.)	400282	0.001	-2
220.5	225.2	**CONTACT ZONE**									
220.50	222.50	Fine-grained green-grey chloritic epidote	1.0	*0*	ESZGF	15	1	Contact zone with some monzonite porphyry intervals and andesite intervals, highly altered	400283	-2	-2
222.50	225.20		1.0	*0*	ESZGF	20	1	Some monzonite in lower part of interval, gradational contact.	400284	0.011	-2
225.2	227.9	**MONZONITE SILL**									
225.20	227.00	Fine-grained red brown porphyritic epidote chloritic	1.0	*0*	ESZQ	80	0	Definite sill, strong porphyritic texture 30-40% phenocrysts, few mm to 5 mm across, altered to ep/ser/ chl with some pyrite.	400285	0.042	-2
227.00	227.90		1.0	*0*	ESZ	20	0	Irregular contact about 60^ CA	400286	0.022	0.006
227.9	228.9	**MAFIC DYKE**									
227.90	228.90	Aphanitic black massive chloritic		*28*	CCZ	45	0	Basaltic mafic dyke with calcite amygdules and calcite-zeolite stringers with monzonite interval from 228.4-.7 meters; contact 60^CA.	400287	0.009	-2

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
228.9	237.2	**MONZONITE SILL**									
228.90	231.00	Fine-grained red brown porphyritic epidote chloritic	0.5		0 ESCCZ	45	0	monzonite sill, same as above dyke.	400288	0.006	-2
231.00	233.00		0.5	1	8 ESCCZ	45	0		400289	0.002	-2
233.00	235.00		0.5	1	1 ESCCZ	45	0		400290	0.002	-2
235.00	237.20		0.5	1	11 ESCCZ	45	0	Contact 45^CA.	400291	0.002	-2
237.2	238.3	**MAFIC DYKE**									
237.20	238.30	Aphanitic black massive chloritic chloritic	0.5		9 EC	5	0	Calcite amygdules and stringers in basaltic mafic dyke; contact 70^ CA.	400292	0.009	-2
238.3	258.9	**MONZONITE SILL**									
238.30	240.40	Fine-grained red brown porphyritic epidote chloritic	0.5	1	6 ESGF	5	0	monzonite sill, same as above dyke.	400293	0.002	-2
240.40	242.50	Fine-grained porphyritic epidote epidote	3.0		0 ESCCZ	45	0	More finely porphyritic monzonite with darker chlortic intervals and @ 241.8 - 242.1 blue grey qtz stringers with graphite; surrounded by fine pyrite.	400294	0.018	0.012
242.50	244.50	Fine-grained porphyritic chloritic epidote	0.5	1	2 CCZES	45	0	As above with chloritic+epidote+pyrite zone from 243 - 243.4m; broken dry gouge; contact 80^ CA followed by chloritic monzonite; ctc 45^ CA .	400295	0.014	0.018
244.50	247.20	Fine-grained red brown porphyritic chloritic epidote		1	4 CCZES	45	0	Weak sericite especially near bottom; finely porphyritic monzonite; contact 40^ CA.	400297	0.002	-2
247.20	247.80			1	1 CCZES	45	0	Darker 50 cm contact zone, possibly chilled, but unit below is same as above; fine porphyrytic monzonite-possible f.g. bio alteration in chilled zone.	400298	0.001	-2
247.80	250.40			1	4 CCZES	5	0		400299	0.001	-2
250.40	251.80	Fine-grained porphyritic epidote chloritic		1	3 CCZES	50	1	More epidote patches and chlorite-graphite zone @251.4 - .8m.	400300	0.007	-2
251.80	253.20			1	4 CCZES	50	1	Slightly less epidote, and less chlorite.	400301	0.008	-2
253.20	254.20	Fine-grained red brown porphyritic epidote chloritic		1	5 CCZES	50	2	Slightly less epidote, and less chlorite; lower broken contact.	400302	0.026	-2
254.20	256.50	Fine-grained red brown porphyritic epidote		1	11 ESCH	35	0	lLess porphryritic texture, possilbly overprinted by potassic? Alteration occasional minor anhydrite stringers; magnetite chlorite clots to 0.6 mm, generally 2mm.	400303	0.003	-2
256.50	258.90			1	8	35	0	60^ CA contact.	400304	0.003	-2

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
258.9	259.9	**ANDESITE**									
258.90	259.90	Fine-grained medium green massive epidote sericitic		1	7 ES(A)	35	0	Possibly partly assimilated andesite fragments; some monzonite porphyry; hazy 35^ CA contact - minor anhydrite stringers.	400305	0.003	-2
259.9	283.1	**MONZONITE SILL**									
259.90	262.50	Fine-grained red brown porphyritic epidote potassic		1	7 ESCH(	35	0	Occasional andesite fragments to 3 cm.	400306	0.001	-2
262.50	265.00			1	6 ESCH+	35	0	as above	400307	0.001	-2
265.00	266.00	Fine-grained porphyritic epidote chloritic		1	4 ESCH+	35	0	As above but 40% altered andesite fragment or dyke; contact 45^ CA; more epidote sericite alteration in Andesite.	400308	0.0002	-2
266.00	268.00	Fine-grained red brown porphyritic epidote chloritic		1	6 ESCH+	35	0	Similar to 400307- finely porphyrytic monzonite, 1mm-2mm epidorized phenocrysts.	400309	0.0003	-2
268.00	270.00		1.0	1	1 ESCH+	35	1	Some pyrite stringers.	400310	0.0009	-2
270.00	272.00		1.0	1	3 ESCH+	35	1		400311	0.002	-2
272.00	273.00	Fine-grained porphyritic chloritic epidote	0.5		1 ESCH+	35	0	More chlorite - epidote - sericite altered patches, probably andesite fragmental.	400312	0.0007	-2
273.00	275.00	Fine-grained red brown porphyritic epidote chloritic		1	10 ESCH+	50	0	As at 400307 - finely porphryrtic monzonite.	400313	0.003	-2
275.00	277.50			1	15 ESCH+	75	0		400314	0.006	-2
277.50	280.00			1	9 ESCH+	75	0		400315	0.0009	0.005
280.00	282.00			1	11 ESCH+	75	0		400316	0.002	-2
282.00	283.10	Fine-grained porphyritic epidote chloritic	0.5		1 ESCH+	75	0	Less red brown colour, more greenish, more epidote - chlorite - sericite alteration due to contamination with mafic unit; L ctc 45^ CA.	400317	0.007	-2
283.1	285	**HIGHLY ALTERED ZONE SILL**									
283.10	285.00	Fine-grained mottled chloritic sericitic	2.0	1	4 QESCH	20	5	Some remnants of mafic dyke - possible fault @ 283.8 - 30^CA; qtz stringers +/- py +/- chlorite; contact 15^CA.	400318	0.052	0.07
285	286.5	**MAFIC DYKE SILL**									
285.00	286.50	Aphanitic black chloritic weak potassic			3 CCZ	30		Mafic basaltic dyke with calcite- zeol amygdules and stringers; fine cal amygdules parallel to contact; near top "frothy"; L contact 20^ CA ; possibly late potassic overprint?	400319	0.008	-2
286.5	303.8	**MONZONITE SILL**									

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From	To	Rock Type	Py-Cpy-Mt		Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
286.50	288.00	Fine-grained grey porphyritic sericitic chloritic	2.0	1	*6*	QESZK	45	3	Qtz stringers +/- pyrite; qtz-sericite-pyrite altered - highly altered sill; strong sericite overprint after qtz.	400320	0.017	0.068
288.00	289.60		2.0		*0*	QESZK	75	2		400321	0.012	0.06
289.60	290.80		2.0		*1*	QESZK	45	2		400323	0.023	0.041
290.80	292.30		2.0		*1*	QESZK	75	2	Some less altered zones especially in center; contact 50^ CA with minor gouge;some ground core @contact.	400324	0.018	0.088
292.30	294.50	Fine-grained red brown porphyritic epidote potassic	1.0	5	*104*	QESZ	75	3	Good monzonite sill with qtz - magnetite stringers, also qtz stringers.	400325	0.027	0.013
294.50	296.50		1.0	2	*22*	ESQZ	75	2		400326	0.018	0.017
296.50	298.50		1.0	2	*13*		80	2	Qtz stringers - 60^ CA; qtz- magnetite 45^ CA, opposite direction.	400327	0.01	0.019
298.50	299.90		1.0	2	*21*		60	2		400328	0.01	0.021
299.90	301.70		1.0	2	*35*		5	2		400329	0.024	0.019
301.70	303.80		1.0	2	*29*	QESZ	30	1	Minor fine qtz - magnetite stringers but 1.5 vein @ 203.6 meters 30^ CA; contact 45^ CA.	400330	0.014	0.015
303.8	308.1	**MAFIC DYKE**										
303.80	306.00	Aphanitic black massive chloritic weak potassic			*26*	CC	45	0	Basaltic mafic dyke with calcite amygdules and stringers with minor interval (40 cm) of monzonite porphyry - possible late potassic overprint.	400331	0.006	-2
306.00	308.10	Fine-grained black massive chloritic weak potassic		1	*10*	CC	70	0	Basaltic mafic dyke; ctc 45^ CA.	400332	0.002	-2
308.1	324	**MONZONITE SILL**										
308.10	309.90	Fine-grained porphyritic epidote chloritic	1.0	1	*7*	ESQZ	60	0		400333	0.01	0.007
309.90	312.00	Fine-grained red brown porphyritic epidote weak chlorite	0.5	1	*16*	ESZCC	45	0	No more qtz stringers.	400334	0.031	-2
312.00	315.00		0.1	1	*19*	ESZCC	45	0	Still have magnetite - chlorite +/- epidote spots (few mm) in monzonite.	400335	0.01	-2
315.00	318.00		0.1	1	*17*	ESZCC	45	0		400336	0.026	-2
318.00	321.00		0.1	1	*16*	ESZCC	45	0		400337	0.032	-2
321.00	324.00		0.1	1	*21*	ESZCC	45	0	Contact 45^ CA.	400338	0.007	-2
324	326.8	**HORNBLENDE-FSPAR PORPHYRY**										

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From	To	Rock Type	Py-Cpy-Mt			Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
324.00	326.80	Fine-grained purple porphyritic			1	*19*	ESZEC	45	0	Hornblende - feldspar porphyry - probably fresh equivalent of above - unaltered, trace hematite, magnetite.	400339	0.009	-2
326.8	331.7	**MONZONITE SILL**											
326.80	329.70	Fine-grained red brown porphyritic epidote weak chlorite	0.1		1	*6*		45	0	More altered.	400340	0.003	-2
329.70	331.70	Fine-grained red brown porphyritic epidote sericitic	0.1		1	*0*		45	0	NB pale green sericite; more altered - ep - chl altered zone for 50 cm at end of section; contact about 45^ CA.	400341	0.002	-2
331.7	333	**MAFIC DYKE**											
331.70	333.00	Aphanitic black massive				*32*	CCZ	80	0	L ctc - broken.	400342	0.005	-2
333	339	**MONZONITE SILL**											
333.00	336.00	Fine-grained red brown porphyritic epidote chloritic	0.1		1	*5*	CCZES	75	0	Typical sill with epidote spots few mm - 5 mm.	400343	-2	-2
336.00	339.00		0.1		1	2	CCZES	30	0	Upper contact 5-10 ^ CA.	400344	0.012	-2
339	342.4	**MAFIC DYKE**											
339.00	342.40	Aphanitic black porphyritic				*57*	CCZ	10	0	Basaltic mafic dyke with calcite amygdules; contact 30^ CA.	400345	0.005	-2
342.4	352	**MONZONITE SILL**											
342.40	345.20	Fine-grained red brown porphyritic epidote chloritic	0.1		1	*4*	CCZES	10	0	As at 400343.	400346	0.003	-2
345.20	347.20		0.1		1	*14*		10	0	Magnetite - chlorite - epidote clots; start to get qtz+/-py+ qtz-magnetite stringers as well as magnetite in aggregates with chlorite +/- epidote; some py stringers; possible trace chalcopyrite.	400347	0.0007	-2
347.20	348.80	Fine-grained red brown porphyritic potassic chloritic	1.0	**0.1**	2	*18*	QESZE	40	1		400349	0.008	0.022
348.80	350.40		1.0	**0.1**	2	*18*	QESZE	85	1	Trace chalcopyrite.	400350	0.027	0.018
350.40	352.00	Fine-grained red brown porphyritic potassic	1.0	**0.1**	1	*3*	QESZE	5	1	Trace chalcopyrite; NB -epidote sericite stringers cut qtz stringers; contact 55^ CA.	400351	0.012	0.009
352	361.6	**MONZONITE HIGHLY ALTERED ZONE**											
352.00	354.10	Fine-grained light grey brecciated anhydrite	7.0			*0*	GA	30	50	Highly altered - anhydrite, pyrite overprints earlier magnetite silica - anhydrite flooding along structural zone.	400352	-2	1.3

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
354.10	356.10	Fine-grained light grey brecciated anhydrite chloritic	7.0	0	GA	45	50	Low temp stockwork-bx; remnant clasts of monzonite, vague remanant qtz- magnetite stringers; very minor trace pyrite.	400353	0.597	0.308
356.10	358.10	Fine-grained light grey brecciated anhydrite	7.0	0	GA	45	50		400354	0.267	0.137
358.10	360.20		7.0	0	GA	45	50	same as above	400355	0.255	0.155
360.20	361.60		7.0	2	GA	45	50	same as above; more chlorite; contact 53CA with epidote/sericite.	400356	0.032	0.095
361.6	425.1	**MONZONITE SILL**									
361.60	362.30	Fine-grained porphyritic anhydrite chloritic	2.0		QGA	45	50	Contact 65^ CA; - less altered; remanant qtz py stringers.	400390	0.035	0.074
362.30	363.50	Fine-grained red brown porphyritic potassic weak epidote	1.0	2	21 QGES	60	1	Qtz stringers with py; magnetite- chlorite aggregates about few mm in size; contact 65^ CA.	400357	0.023	0.058
363.50	364.70	Fine-grained porphyritic anhydrite potassic	3.0	1	21 GAQES	60	20	Gradational into ANHYDRITE STWK - BX ZONE (ASBZ); contact 65^ CA.	400358	0.030	0.101
364.70	366.20	Fine-grained light grey brecciated anhydrite chloritic	5.0		0 GQA	30	50	Anhydrite Stwk Breccia Zone to 369.2m; as above from 354.1 - 361.6m.	400359	0.032	0.084
366.20	367.70	Fine-grained light grey anhydrite chloritic	8.0		1 GQA	30	50		400360	0.007	0.071
367.70	369.20		10.0		1 GQA	30	50	Contact 30^ CA - concentration of hornblende, below contact.	400361	0.024	0.145
369.20	371.00	Fine-grained red brown porphyritic potassic chloritic	1.0	3	38 QES	50	1	Back into potassic altered monzonite; local more chlorite +/- epidote and sericite alrered qtz stringers + qtz magnetite stringers, possible zones generally less than 30cm with trace chalcopyrite.	400362	0.021	0.054
371.00	373.00		1.0	2	35 QES	80	1		400363	0.007	0.031
373.00	375.00		1.0	5	61 QES	80	1	More magnetite in qtz stringers; @373.5 - 10 cm sericite pyrite- epidote zone 80 ^ CA.	400364	0.016	0.028
375.00	377.00		1.0	3	47 QES	45	1		400365	0.016	0.011
377.00	378.50		1.0	3	38 QES	45	1		400366	0.012	0.009
378.50	380.00		1.0	2	16 QES	45	1		400367	0.005	0.005
380.00	382.00	Fine-grained porphyritic epidote chloritic	0.5	1	1 CCZES	30	0	Less altered, possibly with potassic; epidote sericite spots (after phenocrysts) and stringers; +/- local sercitized zones.	400368	0.003	-2
382.00	384.50		0.5	1	5 CCZES	30	0		400369	0.003	-2

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From	To	Rock Type	Py-Cpy-Mt		Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
384.50	387.00	Fine-grained porphyritic epidote chloritic	0.5	1	5	CCZES	30	0		400370	-2	-2
387.00	389.00		0.5	1	0	CCZES	50	0	More sericitic.	400371	0.0002	-2
389.00	391.00		1.0	1	5	CCZES	75	0		400372	0.001	-2
391.00	393.00	Fine-grained porphyritic potassic epidote	1.0	2	59	QESCC	60	1	Potassic alrered qtz-magnetite stringered monzonite. Presence of qtz - magnetite stringers +/- py and +/- chalcopyrite; very rare gypsum stringers.	400373	0.011	0.007
393.00	395.00	Fine-grained red brown porphyritic potassic epidote	1.0	2	34	QESCC	80	1		400375	0.008	-2
395.00	397.40		1.0	2	14	QESCC	45	1	More weathered looking - sericitic, less potassic.	400376	0.008	-2
397.40	399.80		1.0 **0.1**	2	37	QESCC	80	1	Less sericitic as in 400373, 375; chalcopyrite in qtz-pyrite-magnetite-chlorite vein @398m; contact 55^CA	400377	0.030	0.133
399.80	402.00	Fine-grained porphyritic epidote sericitic	0.5	1	1	ESCCZ	55	0	No qtz stringers; good monzonite; epidote spots (after phenocrysts); epidote-sericite, cal-zeol stringers +/- chlorite.	400378	0.0003	-2
402.00	405.00		0.5	1	5	ESCCZ	55	0		400379	0.003	-2
405.00	408.00		0.5	1	5	ESCCZ	55	0		400380	0.001	-2
408.00	411.00		0.5	1	4	ESCCZ	55	0		400381	0.0003	-2
411.00	412.60	Fine-grained porphyritic epidote hematitic	0.5	1	2	ESCCZ	55	0	@ 411.4 - 412m - epidote altered, no qtz stringers; contact 50 ^ CA.	400382	0.003	-2
412.60	414.70	Fine-grained porphyritic chloritic potassic	3.0 **0.1**	2	12	QES	50	5	40 cm chlorite +/- graphite alteration at start with trace chalcopyrite in qtz-pyrite stringers and along fractures.	400383	0.101	0.031
414.70	416.70	Fine-grained red brown porphyritic potassic epidote	2.0	3	32	QES	50	5	Qtz-pyrite+/- magnetite stringers.	400384	0.011	0.013
416.70	418.70		3.0	3	35	QES	50	5	416.9 - 5cm qtz vein with 1 cm py in center + mte	400385	0.012	0.019
418.70	420.70		2.0	2	4	QES	50	3		400386	0.01	0.02
420.70	422.70		2.0 **0.1**	2	11	QES	50	3	Trace chalcopyrite at margins of qtz - magnetite stringers.	400387	0.015	0.019
422.70	423.70		2.0	2	6	QESG	50	3		400388	0.046	0.021
423.70	425.10		5.0	2	2	QESG	45	0	Minor gouge and broken core at start; pyritzation along fault/fractures at 10^ CA; contact 75 ^ CA.	400389	0.017	0.101
425.1	425.6	**MAFIC DYKE**										
425.10	425.60	Aphanitic black massive			24	CCZ	70	0	Basaltic mafic dyke minor calcite amygdules + stringers; contact 50^ CA; gouge at contact.	400391	0.029	-2
425.6	429.8	**MONZONITE SILL**										

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
425.60	429.80	Fine-grained porphyritic epidote sericitic	1.0	2	*18* CCZGE	75		Epidote sericite altered MONZONITE in center with 50 cm of graphite-chlorite gouge/breccia; fault at top and grading potassic altered at bottom with magnetite; pyrite content >> at bottom (3%) pyrite.	400392	0.028	0.056
429.8	431	**LOST CORE**									
429.80	431.00							VOID LOST CORE	44	.0	0
431	445	**MONZONITE SILL**									
431.00	431.80	Fine-grained red brown weakly mottled potassic epidote	1.0	1	*8* GQES	40	1	Minor qtz - magnetite stringers; some anhydrite - gypsum overprinting top 30cm.	400393	0.036	0.023
431.80	433.20	Fine-grained grey crackle-textured anhydrite chloritic	5.0	1	*0* GAQ	45	40	Anhydrite-pyrite alteration; contact 80^ CA.	400394	0.033	0.084
433.20	434.70	Fine-grained grey brown mottled potassic anhydrite	4.0	1	*1* QG	80	1	Qtz-pyrite stringers at ctc - 2 cm; some overprint of ANHYDRITE-PY ALTERATION.	400395	0.187	0.073
434.70	436.20		3.0	1	*0* QGCCZ	45	1	+hem on fractures; rare calcite-zeol stringers; potassic magnetite-silica alteration but anhydite-pyrite overprint.	400396	0.025	0.102
436.20	438.30		3.0	1	*1* QGCCZ	80	1	Potassic magnetite-silica but anhydrite -pyrite overprint.	400397	0.025	0.048
438.30	440.30		3.0	1	*1* QGCCZ	45	2	Some more epidote-chlorite-pyrite altered patches @ 439-439.5; contact 30^ CA -with gouge just above-chl-clay gouge.	400398	0.039	0.067
440.30	442.30	Fine-grained red brown porphyritic epidote	0.5	1	*3* CCZES	30	0	Uniform monzonite.	400399	0.005	-2
442.30	445.00	Fine-grained red brown porphyritic epidote chloritic	1.0	1	*3* CCZES	30	1	Some chlorite-epidote-pyrite altered volcanic? fragments.	400401	0.004	-2
39.6	47.2	**ANDESITE**									
39.60	47.20	Fine-grained medium grey porphyritic silicic weak sericite	1.0		*0* FLT	35		Same as at 32 - 33.5 - possibly related to FAULT => structural breccia with fault gouge - strong clay, from 39.6 -41.1 and minor clay through interval.	400187	0.003	-2
44.20	47.20							no recovery	4.472	0	0
47.2 EOH											