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[ARIS11A]

ARIS Summary Report

Regional Geologist, Kamloops	Date Approved:	1999.03.08	Off Confidential:	1999.10.21
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ASSESSMENT REPORT: 25759	Mining Division(s):	Clinton
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Property Name:	Taseko						
Location:	NAD 27	Latitude:	51 05 00	Longitude:	123 24 00	UTM:	10 5658949 471982
	NAD 83	Latitude:	51 05 00	Longitude:	123 24 05	UTM:	10 5659169 471885
	NTS:	092O03W					
Camp: 035	Taseko - Blackdome Area						
Claim(s):	New Gold 2, New Buzz, Mars 5-9						
Operator(s):	Great Quest Metals Ltd.						
Author(s):	Osborne, W.						
Report Year:	1998						
No. of Pages:	74 Pages						
Commodities Searched For:	Gold, Copper, Molybdenum/Molybdenite						
General Work Categories:	GEOL, GEOG						
Work Done:	Geochemical						
	ROCK Rock (20 sample(s);)						
	Elements Analyzed For : Multielement						
	SOIL Soil (69 sample(s);)						
	Elements Analyzed For : Multielement						
	Geological						
	GEOL Geological (100.0 ha;)						
Keywords:	Andesites, Chalcopyrite, Coast Range Plutonic Complex, Cretaceous-Tertiary, Dacites, Pyrite, Pyrophyllite, Taylor Creek Group, Tuffs						
Statement Nos.:	3126217, 3124217						
MINFILE Nos.:	092O 033						
Related Reports:	02874, 17871, 19350, 20889, 21985, 22160, 22696, 23361, 24088, 24753, 25262						

REPORT ON THE 1998 EXPLORATION PROGRAM
of the
TASEKO PROPERTY

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DEC 15 1998

Gold Commissioner's Office
VANCOUVER, B.C.

GREAT QUEST METALS LTD.

Vancouver, BC

Clinton Mining Division, BC

NTS 920/3W

Latitude 51°05', Longitude 123°24'W

WILLIS W. OSBORNE, M.Sc., F.G.A.G.
Geological Survey Branch
December 14, 1998 **ASSESSMENT REPORT**

25.759

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SUMMARY

Property - The Taseko Property is located 225 km north of Vancouver in southwestern British Columbia along the eastern flank of the Coast Range. The property consists of 108 units and is in the Clinton Mining Division. Access is by four-wheel drive vehicle from Williams Lake (270 km) through the town of Hanceville, south to Taseko Lakes, then east along Taseko River.

History - Gold was discovered at the Taylor-Windfall mine in the 1920's. The area in and around the Taseko Property was actively explored between 1969 - 1976 as a porphyry copper-molybdenum target, and again in 1985, for its epithermal gold potential. Geochemical, geophysical and drilling programs were carried out during these periods. From 1988 through 1991 a new phase of geochemical, prospecting and drilling was implemented by Westpine Metals Ltd., the present owner of the property, and associated companies. A small program of mapping, whole-rock analysis and diamond drilling was completed in 1993.

Property Geology - The property occurs along an east-west contact between Cretaceous-age granitic intrusives of the Coast Plutonic Complex to the south and a thick sequence of volcanic strata of the Taylor Creek Formation to the north and west. An intense alteration zone up to 3 km in width occurs within the volcanic assemblage north of and adjacent to intrusive rock.

The main showing occurs in the Empress area where copper-gold mineralization is found in intensely altered volcanic rock. A pre-feasibility study of the Empress, using a cut-off of 0.40% copper (not copper equivalent) showed in situ resources to be 11,078,000 tons of 0.61% copper and 0.023 opt gold. The East Zone, 3,300 feet east of the Empress, is similar to the Empress, but only three holes have been drilled into it. The Buzzer and Rowbottom zones consist of chalcopyrite and molybdenite which is disseminated and in vugs in granitic rock.

1998 Program & Results - The 1998 exploration program consisted of a soil sampling and geological mapping over a 1970 copper and molybdenum soil anomaly located 5,000 to 7,000 feet west of the Buzzer Zone, where Quintana outlined a mineral resource of 5.5 million tons of 0.35% copper, 0.031% molybdenum and gold values. In comparing the 1970 and 1998 copper and molybdenum soil sample results, it was found that the copper and molybdenum results matched the old results very well. Gold was found to be anomalous where copper and/or molybdenum were anomalous.

The mapping program resulted in the discovery of two Buzzer look-alike rocks, located 6,200 and 7,900 feet west of the Buzzer Zone. The sample 7,900 feet west of the Buzzer Zone was particularly interesting because it was found in an area of residual soil near the center of a 1970, 2,000 foot long, copper soil anomaly. A lithogeochemical study was done on these and other rock samples using the Pearce element ratio analysis, and these results were incorporated into the results from a 1994 study. It was found that the two 1998 samples were co-genetic with the samples of Buzzer rock and that they belong to the same phase of intrusive activity.

Additional geological mapping is recommended for the area where the soils are highly anomalous in copper and where one of the Buzzer look-alike samples was found in preparation for a drill program.

INTRODUCTION

Program - A 5 day program of geological reconnaissance and soil sampling was carried out by V. Guinet and R. Yorston in August, 1998. Transportation was by helicopter from Pemberton. The purpose of the program was to investigate the large area of soils anomalous in copper and molybdenum west of the Buzzer West area.

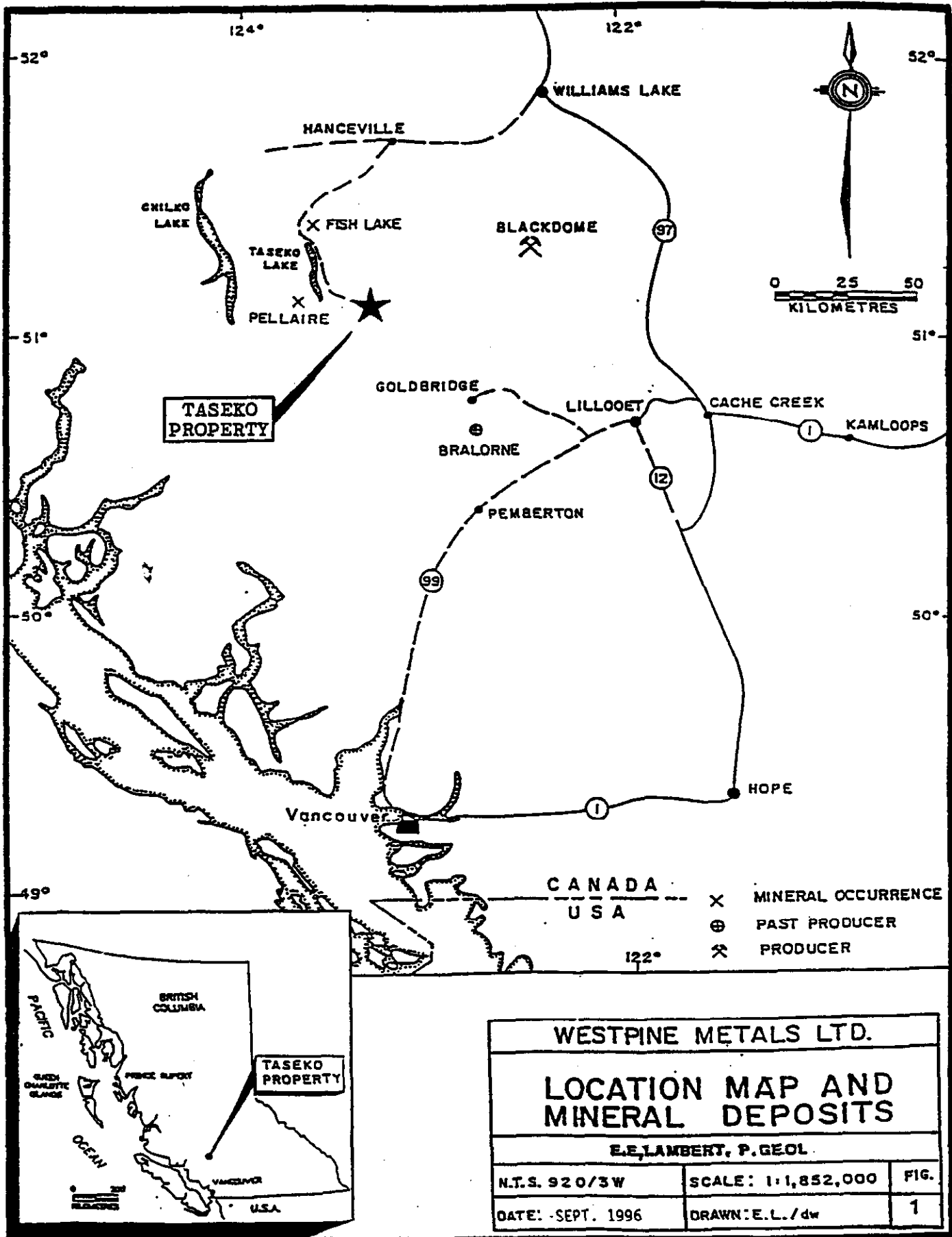
A total of 69 soil samples and 11 rock samples were assayed. Following the assays, 9 rocks were run for whole rock analysis, and the results were interpreted by Hans Madeisky, using Pearce element ratio analysis, and this information was compared with results from data reported in 1994 on 48 samples from the property.

Because the old grid is still used for control on the property, and because it is in feet, feet rather than metres will be used in this report. This has been approved by the B.C. Geological Survey for previous reports.

Location - The Taseko Property is located 225 km north of Vancouver, British Columbia, in the Clinton Mining Division (Figure 1). It lies 10 km southeast of the southern end of Upper Taseko Lake along the Taseko River, at 51°05' latitude and 123°24' west longitude, NTS Map 92O/3W.

Access - The property can be reached by road from Williams Lake (270 km) or by helicopter from Gold Bridge (48 km), Pemberton (100 km), Lillooet (120 km) or Williams Lake (215 km). Access to the property from Williams Lake is via Route 20 west to Hanceville on paved roads, southwesterly along dirt roads to the Taseko Lakes, then southeasterly along the Taseko River to the claim area. Four-wheel drive vehicles are necessary for sections of the road south of Hanceville, and approximate travel time from Williams Lake is 6 hours. At the present time there is no bridge over the Taseko River for access to the southern portion of the property. The river can be forded in the vicinity of Granite Creek by a 4WD truck during low water levels, but it is risky when water level rises during spring runoff and after major rain storms. A second crossing exists near Battlement Creek and is the preferred crossing during high water. The property contains a network of old mining roads in various stages of overgrowth which provides easy access to trenches, drill sites and mineralized showings in the area.

Physiography - Physiography of the claims area consists of a broad, U-shaped valley occupied by the Taseko River and its numerous tributaries. Elevation on the property ranges from 4,900' (1,500 m) in the valley to 7700' (2350 m) at mountain crests. At lower elevations the terrain is covered by lodgepole pine trees, with balsam fir and white pine occurring at higher elevations. Glacial cover consists of morainal deposits and glacial drift that appear to be relatively thin but extensive (typical depth is 3-8 m). Rock exposures are scarce and generally confined to creeks and peaks on ridges.



CLAIMS INFORMATION

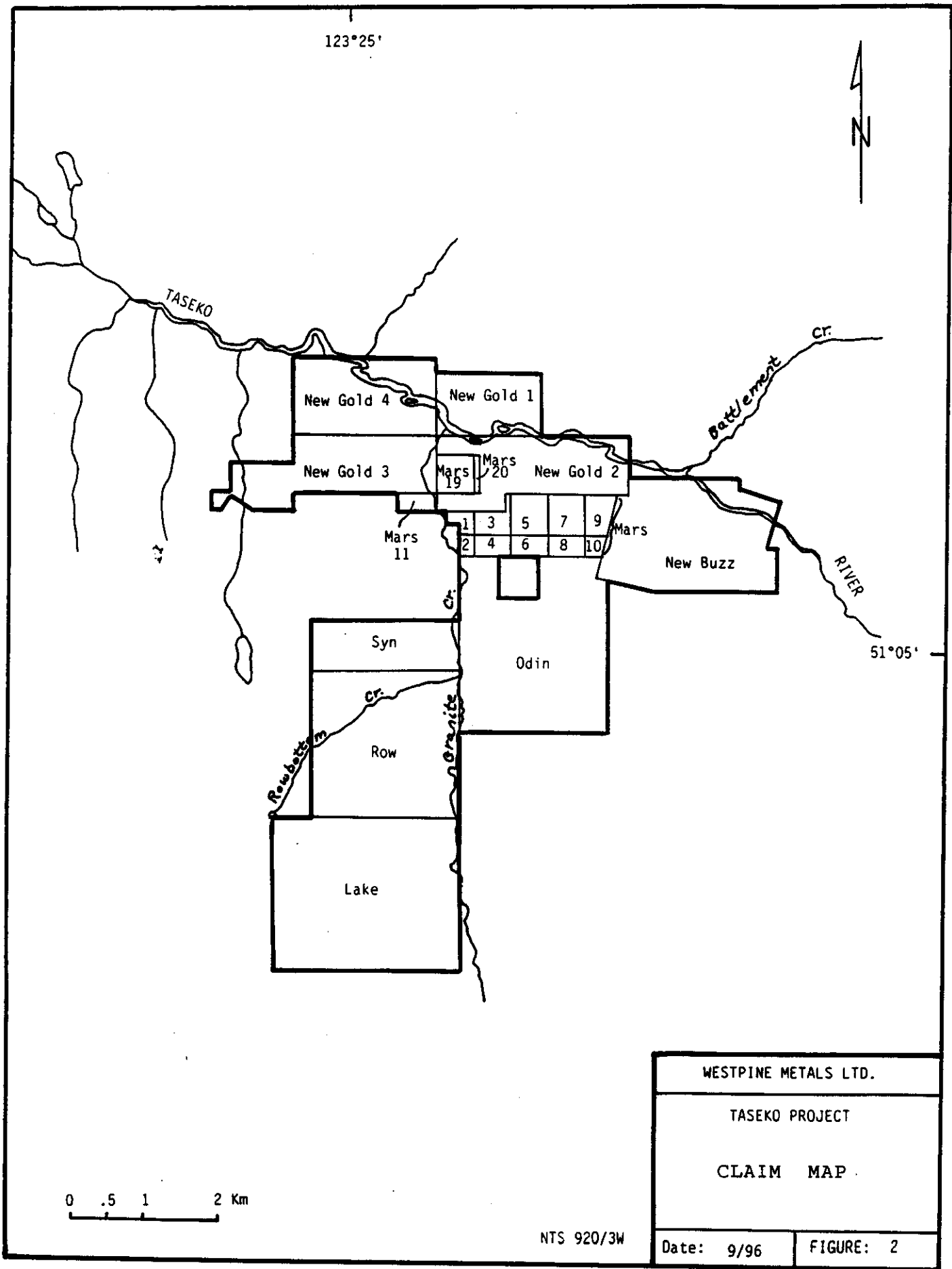
The property is comprised of 8 four-post and 13 two-post mineral claims totalling 108 units held by Great Quest Metals Ltd. From 1989 to July 2, 1998 the Property was held under the name of Westpine Metals Ltd., but on July 3, 1998, the name was changed to Great Quest Metals Ltd. The claims are as follows (Figure 2):

Claim Name	Units	Record #	Expiry Date
New Gold 1	6	208506	Sep. 24, 1999
New Gold 2	10	208503	Aug. 30, 1999
New Gold 3	12	208502	Sep. 12, 1999
New Gold 4	8	208507	Sep. 24, 1999
New Buzz	15	208505	Sep. 26, 1999
Mars 1	1	208579	Oct. 21, 1999
Mars 2	1	208580	Oct. 21, 1999
Mars 3	1	208581	Oct. 21, 1999
Mars 4	1	208582	Oct. 21, 1999
Mars 5	1	208583	Oct. 21, 1999
Mars 6	1	208584	Oct. 21, 1999
Mars 7	1	208585	Oct. 21, 1999
Mars 8	1	208586	Oct. 21, 1999
Mars 9	1	208587	Oct. 21, 1999
Mars 10	1	208588	Oct. 21, 1999
Mars 11	1	208589	Oct. 21, 1999
Mars 19	1	208590	Oct. 21, 2000
Mars 20	1	208591	Oct. 21, 2000
Row	16	208791	Aug. 14, 2000
Syn	8	208601	Nov. 4, 1999
Odin	20	209156	Jul. 13, 1999

PROPERTY HISTORY

Between 1909 and 1920, may large, bog-iron deposits were discovered by prospectors in the Taseko Lakes area. Gold was discovered at the Taylor-Windfall mine in the 1920's, followed by the discovery of copper-gold porphyry mineralization in the vicinity of the current Taseko Property, in 1922. From 1930 - 1969, sporadic exploration for copper-gold mineralization was conducted in the Taseko River basin by numerous companies. Activity increased between 1969 - 1976 when the area was investigated for its porphyry copper-molybdenum potential by Scurry Rainbow Oils Ltd., Sumitomo Metals Mining Canada Ltd., and Quintana Minerals Corp. In the mid-1980's, Westmin Resources Limited and Esso Minerals Canada explored for epithermal gold-silver mineralization in the Taylor Windfall area, which also included a program of surface mapping and geophysical surveys on part of the Taseko Property.

Alpine Exploration Corporation and Westley Mines Limited optioned the Taseko Property from New World Mines Development Ltd. in 1988 after Scurry Rainbow allowed the claims to expire. A small exploration program was implemented that field season, then in early 1989 the two companies vended their interest in the property to Westpine Metals Ltd. The property was then optioned to ASARCO Exploration Company of Canada Limited in 1990 and 1991. ASARCO funded approximately one million dollars of exploration in search of copper-gold porphyry systems but dropped the option in 1992. Westpine has continued to conduct small drilling, geophysical and sampling programs to the present.



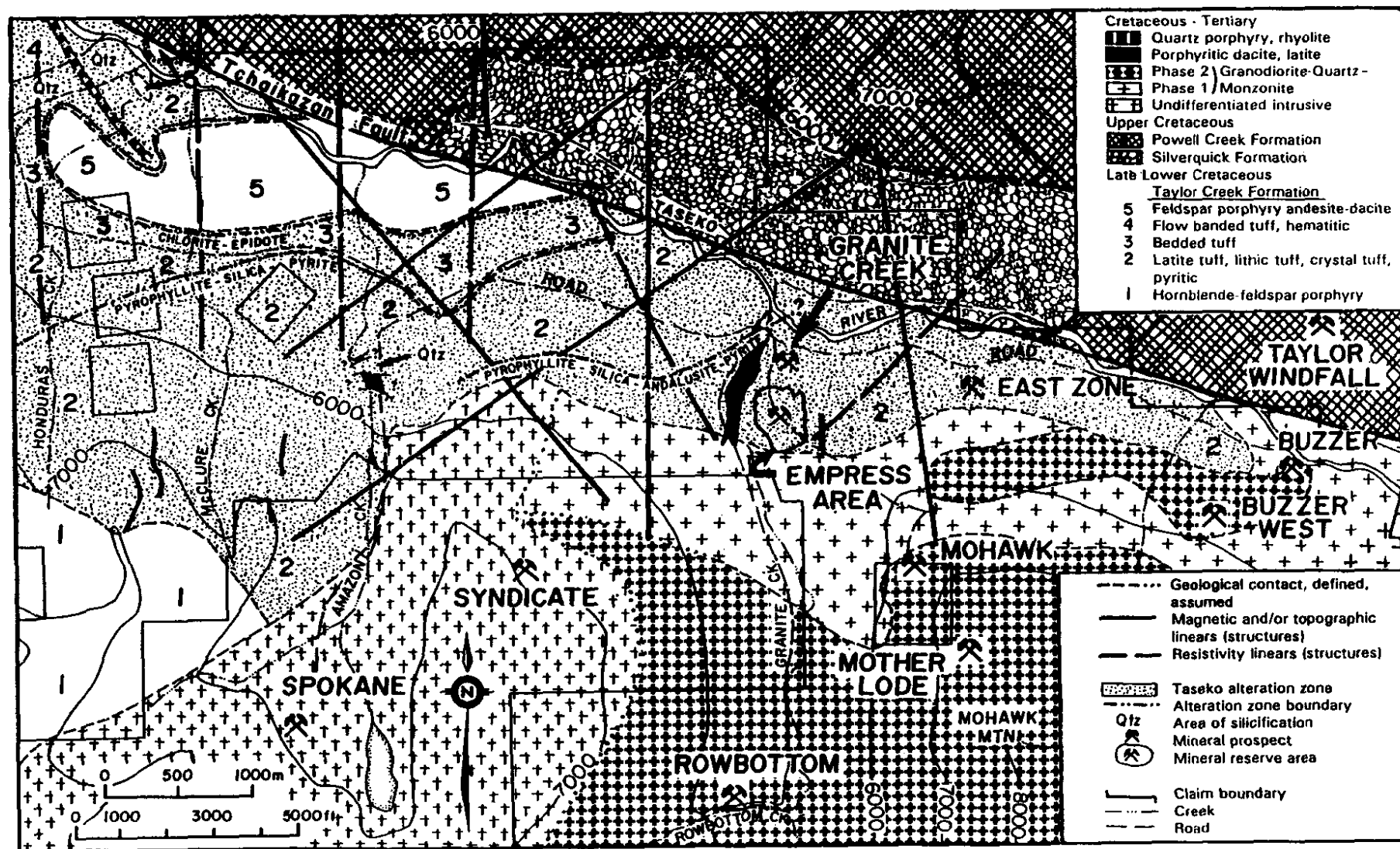


FIGURE 3: Geological Map of the Taseko Property and surrounding area (From Osborne and Allen, 1995).

REGIONAL GEOLOGIC SETTING AND MINERALIZATION

Regional Geology

The Taseko Property occurs on the northeastern margin of the Coast Plutonic Complex (CPC), as mapped by Tipper (1969, 1978), Glover and Schiarizza (1987), Glover et al. (1986) and McLaren and Rouse (1989). Granitic magma of the CPC intruded Middle Jurassic to Upper Cretaceous sedimentary and volcanic strata that had accumulated within the Tyaughton basin. Coarse clastic sedimentary rocks, which dominate the axial regions of the trough, interfinger with volcanic lithologic in the Taseko to Chilko Lake area (McLaren and Rouse). The volcanic rock includes three main groups: intermediate to felsic pyroclastics and flows correlative with the late-Lower Cretaceous Taylor Creek Group; conglomerates, sandstones, argillite and volcanic flows of the Upper Cretaceous Silverquick Formation; and a thick succession of massive volcanic breccias, agglomerate, tuffs and basic flows of the Upper Cretaceous Powell Creek Formation (Figure 3).

Intrusive rocks in the Taseko area include quartz diorite to quartz monzonite. An extensive, advanced argillic alteration zone exists at the contact between the CPC intrusives and adjacent volcanic - sedimentary strata, and can be traced for over 18 km in an east-west direction.

Extensive thrust faulting of Late Cretaceous age has been documented in rocks adjacent to the CPC. The Tyaughton basin underwent west-vergent thrusting from ca 100 Ma to 90 Ma, closely followed by east-vergent thrusting (Rusmore and Woodsworth, 1991). As much as 100 km of crustal shortening occurred across the basin. The youngest structural patterns that dominate the area are strike-slip faults that developed in Early Tertiary, which include the Yalakom and Tchaikazan faults. The Tchaikazan fault has been interpreted as trending east-southeast along the Taseko River valley (Glover, et al., 1986).

Significant mineral deposits in the region east of the Coast Ranges and within 100 km of the Taseko Property include Blackdome, Bralorne, and Fish Lake (see Figure 1).

PROPERTY GEOLOGY

Geology

The Taseko Property and surrounding area has been mapped in detail by a number of company and government geologists (see References). Because of an extensive blanket of glacial till covering most areas below treeline, outcrops are sparse and geologic mapping has been confined to exposures in creeks and the upper parts of ridges and mountain tops. A wealth of information exists, however, in diamond drill core which totals over 11,000 m (37,000 ft) to date.

The property is underlain mainly by the Late Lower Cretaceous Taylor Creek Formation and late Cretaceous to Tertiary quartz monzonite, granodiorite and quartz diorite of the Coast Plutonic Complex (Figure 3). The contact between the intrusive and volcanic rock is not exposed but is inferred from drilling and geophysics to trend roughly east-west across the property. The contact dips steeply to the north then becomes sub-horizontal at a depth of 100 to 200 m for a distance of at least 640 metres. This sub-horizontal, granitic "bench" has been defined by drill holes to extend at least 1480 m east and 2800 m west of the Empress area.

The Taylor Creek Formation consists of 5 units within the Taseko area. Osborne and Allen (1994) differentiated six types of intrusive rock within the batholithic complex exposed on the property, including varieties of quartz diorite, granodiorite and quartz monzonite. Quartz monzonite-granodiorite is thought to underlie much of the area beneath the alteration zone. North of the Taseko River the Upper Cretaceous Silverquick Formation, mainly chest-pebble conglomerate, sandstone and argillite, and the Powell Creek Formation, mainly volcanic breccia and tuff, occur.

Breccia pipes and andesite to felsic dikes and stocks that postdate the batholith and alteration occur within the plutonic and volcanic units. Dike trends closely match those of prominent joint sets in the area: NW-SE and NE-SW. Faults exposed in outcrop generally trend northwesterly (Allen, 1991), and fault zones in drill core are common.

Structure

The main structural element on the Taseko are on the Tchaikazan which goes along the Taseko River. This fault has not been identified in field work in the area.

Evidence for other faults comes from field work, geophysical information and drill core. West of Amazon creek faults are fairly common and trend mainly northwesterly. Geophysical information from a Dighem Survey was interpreted by Windels (1991). He concluded that major northerly - trending resistivity linears dominate west of Amazon creek, whereas east of Amazon creek there is one northeasterly and one northwesterly linear. The major magnetic linears are north, northeasterly and northwesterly.

Many examples of brecciation and gouge were seen in drill core.

Alteration

A large portion of the Taseko Property covers the 3 km wide alteration zone within the volcanic rocks north of the batholith (see Figure 3). Rocks within this zone have undergone silicification and propylitic, argillic and aluminosilicate alteration. A description of alteration of surface outcrops is found in Allen's (1991) report, and the remainder of this report will concentrate on alteration seen in drill core.

Alteration of rock seen in most drill holes is so intense that determination of original lithologies is difficult if not impossible. In these strongly altered zones, the degree of alteration and mineral variety is very diverse, often changing over short distances (sometimes only tens of centimetres), which results in a very complex suite of rock types. For this reason many units have been divided and labelled according to the dominant minerals present rather than by protolith (see descriptions below). Enough drilling has been completed in adjacent, less altered areas to indicate that these intensely altered lithologies were most likely original volcanic rocks. One of the main reasons for suspecting this is the preservation of volcanic textures, which include breccias, compositional banding, and porphyritic features.

Overall, the most pervasive type of alteration observed from drilling is a fine grained overprint of quartz and a pale green mica. The green mica occurs locally within the Empress area as coarse clusters and has been identified by x-ray diffraction to be pyrophyllite. Staining of numerous pieces of core from this area showed only minor potassium, which suggests that pyrophyllite is prevalent here. It is not known, however, whether all of the green mica seen throughout the property is pyrophyllite, or if some of it is instead sericite. Pyrophyllite-bearing rocks appear to be an advanced argillic alteration assemblage. Alunite has also been identified in this assemblage from surface outcrops (Bradford, 1985).

Other alteration minerals include quartz, pyrophyllite, andalusite, plagioclase, perthite(?), clay, chlorite, magnetite, hematite, and more rarely corundum. Accessory minerals include dumortierite(?), tourmaline, fluorite, rutile, sericite, apatite, and bastnaesite (a mineral identified by x-ray analysis containing the rare-earth elements lanthanum and cerium). Gypsum, quartz, calcite and white or green clay are common as fracture fillings.

Some totally altered rock units have a consistent mineralogy and are repeatedly encountered in drill holes. The following is a description of these units:

- (1) **QAS¹: QUARTZ-ANDALUSITE-PYROPHYLLITE ROCK:** this rock is characterized by a mainly equigranular texture composed of these three minerals in varying proportions. Additional minerals in QAS include finely disseminated magnetite, clots of chlorite, specks of clay, and gypsum veining (locally up to 1 m in width). It is assumed that QAS represents an altered tuffaceous unit, probably crystal-rich and mafic in original composition.
- (2) **PQSA: PLAGIOCLASE-QUARTZ-PYROPHYLLITE-ANDALUSITE ROCK:** rocks of this unit are the most complex mineralogically of any on the property due to multiple interconnected textures and wide diversity of mineral assemblages. It is presumed at this point that the complexity is a result of multiple episodes of fracturing of the QAS unit with additional alteration imposed from subsequent hydrothermal activity. The mineralogy of PQSA consists of plagioclase (which is white, green or pink in colour) and quartz that appear to have been introduced along fractures in QAS. Associated minerals include pyrophyllite, andalusite, magnetite, chlorite, carbonate, corundum, and clay (commonly an alteration product of plagioclase).
- (3) **QR: QUARTZ ROCK:** QR is presently thought to represent intense silicification. Typical mineralogy consists of over 90% quartz with the remaining 10% being comprised of one or more of the following minerals: interstitial pyrophyllite, clay, magnetite, chlorite, carbonate, rutile, or sphene. The quartz in QR frequently occurs as fine to coarse surrounded grains with a texture resembling quartzite. Numerous volcanic features are perfectly preserved by the quartz and include breccias, compositional banding and welded-tuff textures.
- (4) **QM: QUARTZ-MAGNETITE ROCK:** this unit is very similar to QR, but contains greater than 5% magnetite. Chlorite, hematite and sulphides are common in this unit. Magnetite constitutes 10 to 20% by volume of the rock and is locally massive, reaching 50 to 75%. It occurs interstitial to quartz grains or as fracture fillings. Intervals on the order of tens of meters of brecciated QR healed by a magnetite matrix are common. QM is typically the deepest altered unit intersected in drill holes, situated below quartz rock and above quartz diorite.

In addition to these units, vugs are common and contain coarse-grained minerals (>1 cm in size) of white quartz (often as terminated crystals), plagioclase, calcite, books of chlorite, euhedral magnetite and pyrite and gobs of chalcopyrite. Other, more rare minerals are molybdenite, apatite, sphene and rutile.

¹Note: S stands for pyrophyllite.

Mineralization

Prior to 1991, copper-gold mineralization was known to occur in four localities on the Taseko Property, historically referred to as the Empress, Buzzer, Rowbottom and Mother Lode Showings (Figure 3). In 1991, two new zones were discovered through drilling and are referred to as the Granite Creek Zone and East Zone.

Empress Showing: this is the main mineralized zone discovered to date on the property. Here, sulphides of pyrite and chalcopyrite and, more rarely, molybdenite, pyrrhotite, bornite and native copper, are typically disseminated or in fractures within intensely altered, aluminosilicate units. Microscopic examination of gravity concentrates of mineralized core indicates the additional presence of trace galena, spalerite and free gold (Harris, 1988). In situ resources are currently estimated to be 11,078,000 tonnes grading 0.61% Cu and 0.023 oz/t AU (using a cutoff of 0.4% Cu - not copper-equivalent). A study by James Askew Associates, Inc. of Englewood, Colorado (1991) calculated 9,502,000 tonnes of mineable reserves in an open pit operation grading 0.582% Cu and 0.754 g/t Au.

East Zone: this zone is located 1000 m east of the Empress Showing and has been defined by three holes to date. Here, copper-gold mineralization occurs over significant widths within altered volcanic strata. The geological setting is similar to that found in the Empress area.

Buzzer, Rowbottom, Motherlode and Granite Creek Zones: these zones occur within the intrusive rock of the batholith. Mineralization typically consists of pyrite, chalcopyrite, molybdenite and microscopic gold, either disseminated or as replacements of mafic minerals. Another recently discovered zone, the Buzzer West Zone, consists of chalcopyrite and molybdenite in intrusive rock.

1998 PROGRAM AND RESULTS

Introduction - A series soils anomalous in copper with greater than 200 parts per million (ppm) copper extend for a length of over 8,000 feet west of the Buzzer Showing (See Figure 4). A previous examination of some of the copper anomalies southwest of the Buzzer resulted in the discovery of the Buzzer West Zone. The Buzzer and Buzzer West appear to be similar in that disseminated copper and molybdenum mineralization and mineralization in fractures occur in granitic rock. Gold is also present. This contrasts with the Empress Showing to the west northwest where copper and gold occur in intensely altered volcanic rock.

For the 1998 exploration program it was decided to conduct a geological reconnaissance program as well as to re-sample some of the soils in and around the area referred to as the Central Zone, 5,000 to 7,000 feet west of the Buzzer, where there has previously been little exploration. In addition it was decided to do a lithogeological study on some of the rocks found there to compare them in particular to those in the Buzzer and Buzzer West areas.

Soil Geochemical Survey - The purpose for re-sampling some of the area in the Central Zone was three-fold. First, it was thought important to confirm some of the 1970 results on copper and molybdenum. In addition, because the 1970 rocks had only been tested for copper and molybdenum, it was thought necessary to determine the distribution of gold in the soils as well as determining the distribution of other elements through the ICP analysis.

Figures 5, 6 and 7 show the results of determinations on copper, molybdenum and gold respectively from the soils collected. Soils were taken on parts of the old lines 52, 56, 60, 64, 68, 76 and 88 East. The old lines, run in 1970 can still be easily followed. Samples were taken at 100 feet intervals.

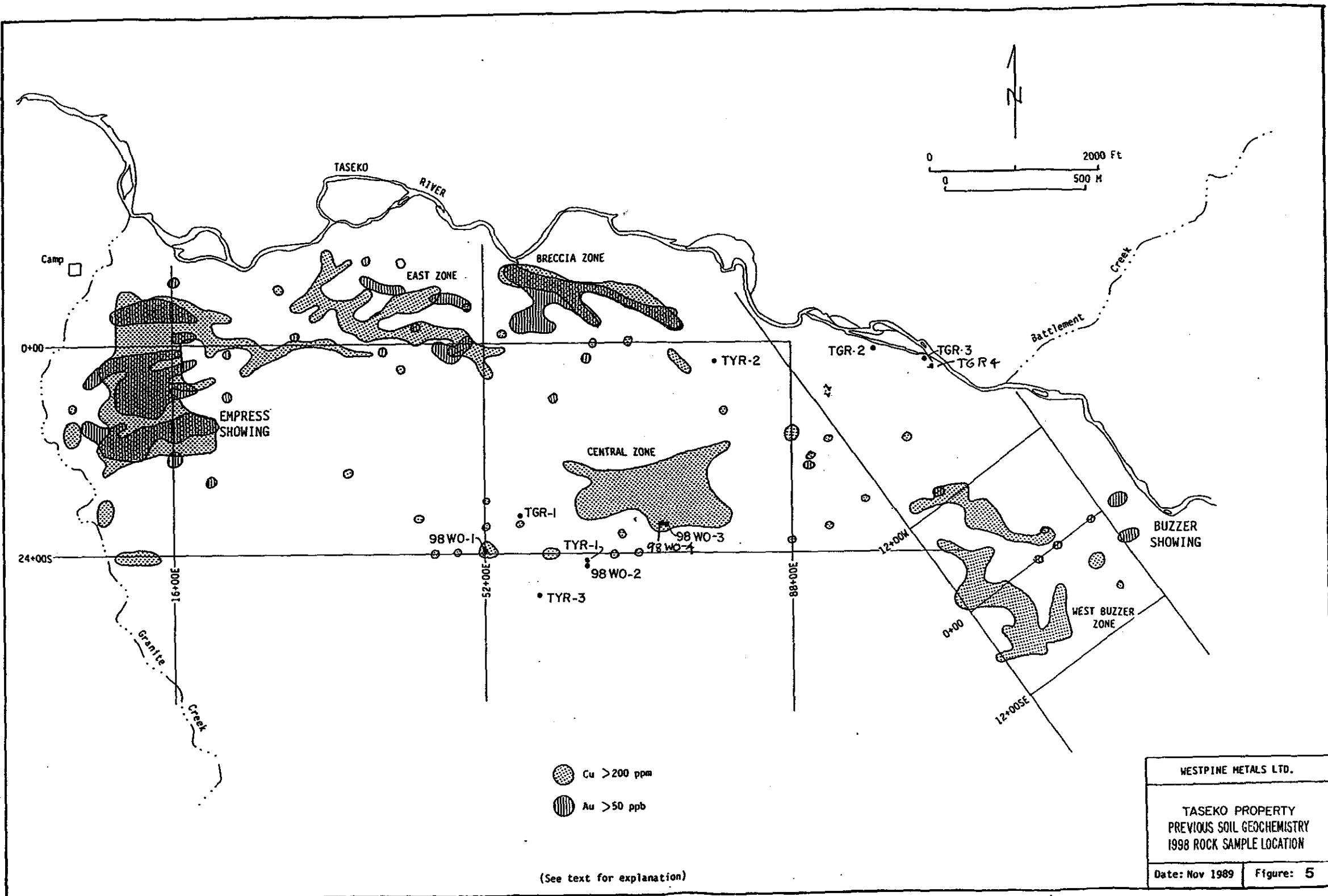
The results on copper and molybdenum for 1998 were remarkably similar to the results on soil samples from the program in the early 1970's. The contour line for the 1998 results is 100 ppm as opposed to 200 ppm for the 1970 results, so the area within the 1998 100 ppm contour line is larger and more continuous.

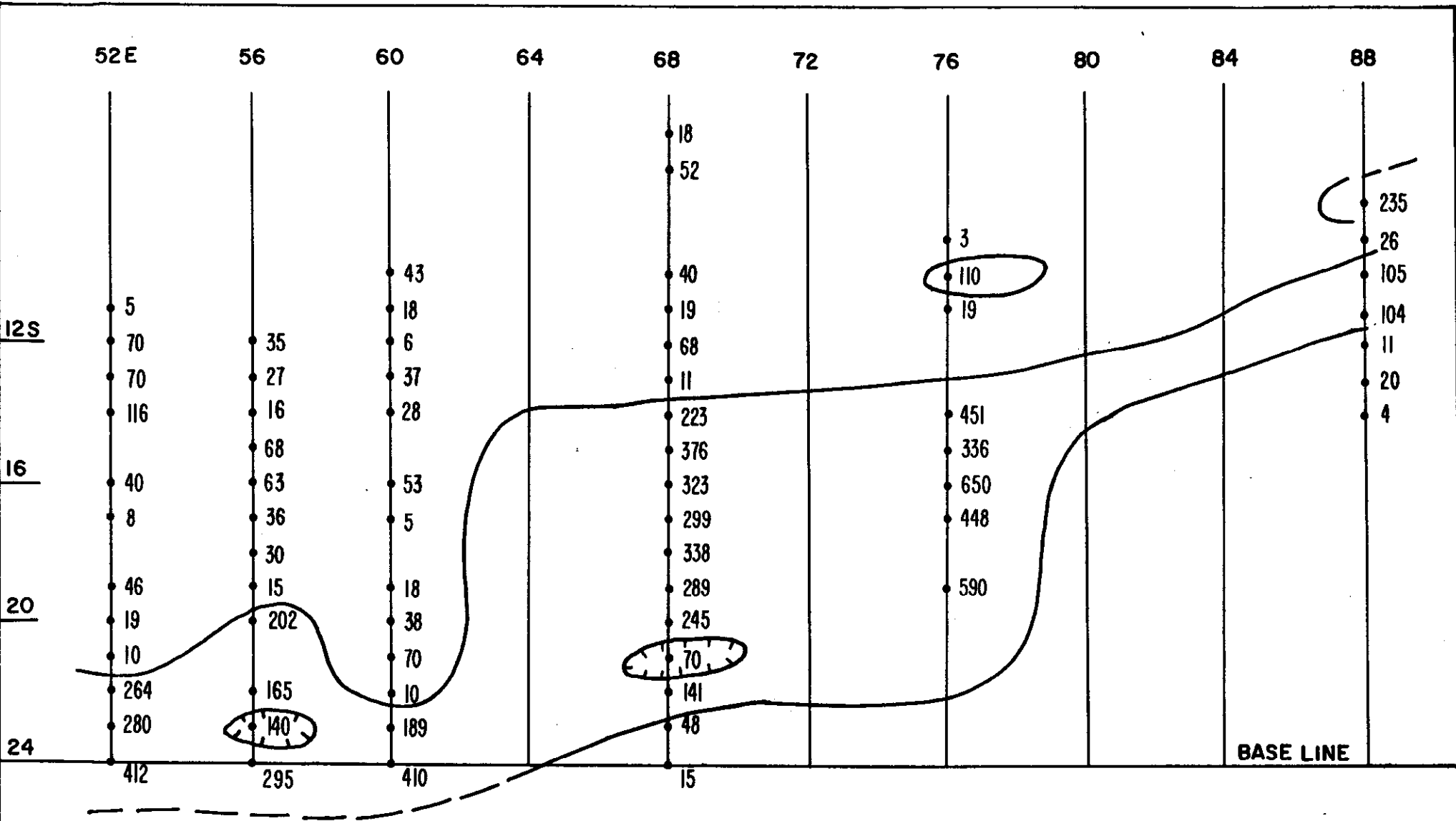
The area enclosed by the 15 ppm contour for molybdenum is coincident with the copper anomaly in the center of the map, however it is terminated to the east and it is much broader to the west. For the most part gold (10 parts per billion) is generally anomalous in soils from the area when either copper or molybdenum is anomalous.

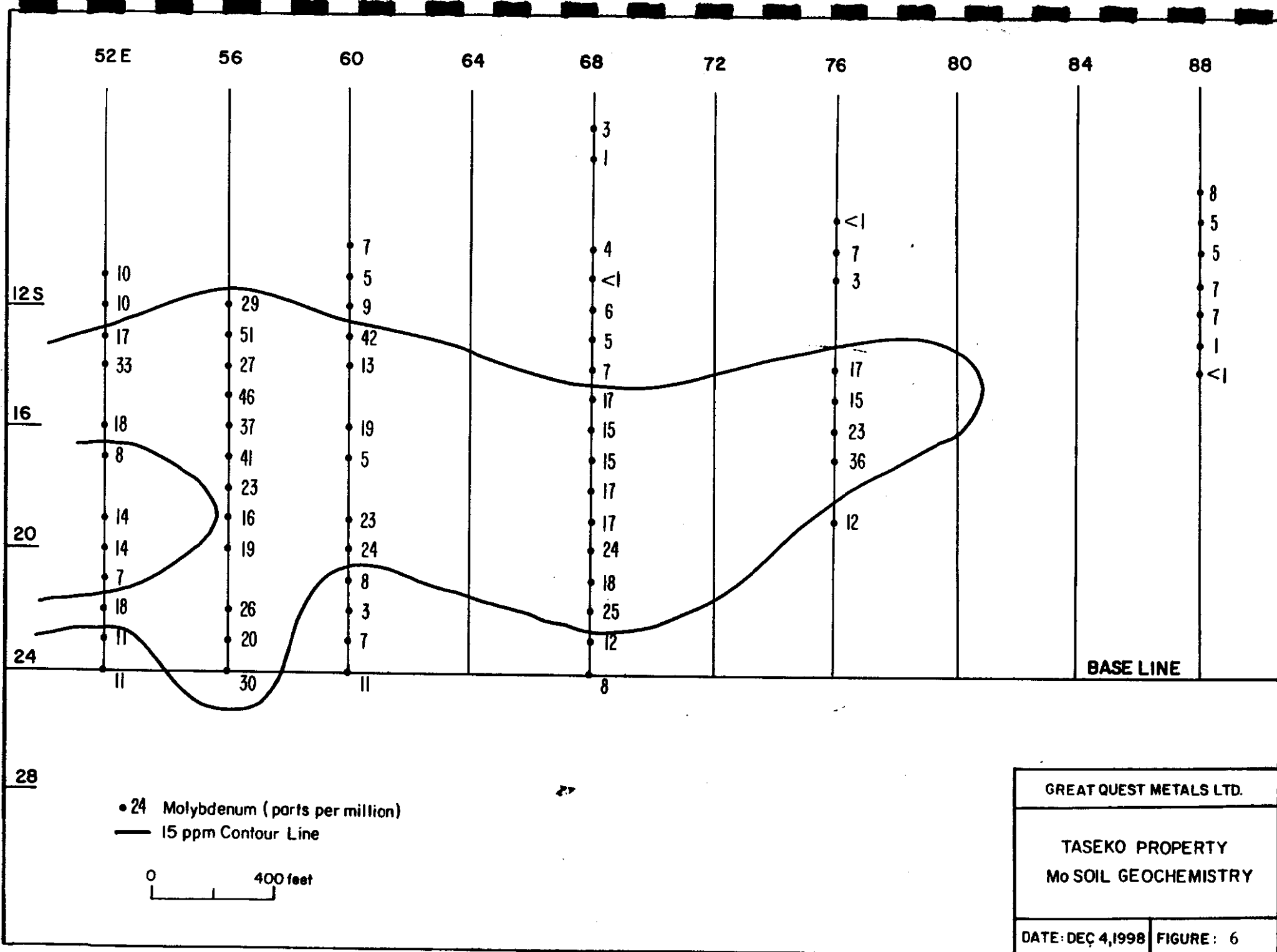
Geological Reconnaissance - The Central Zone lies in an area north of a large mountain peak. Much of the Central Zone is covered by glacial till (see Southern Limit of Till on Map 8). Areas covered with rock slide and talus from the mountain peak to the south can be seen on the map. Much of the Central Zone soil anomaly occurs over the area of glacial till with smaller anomalous areas south of the till.

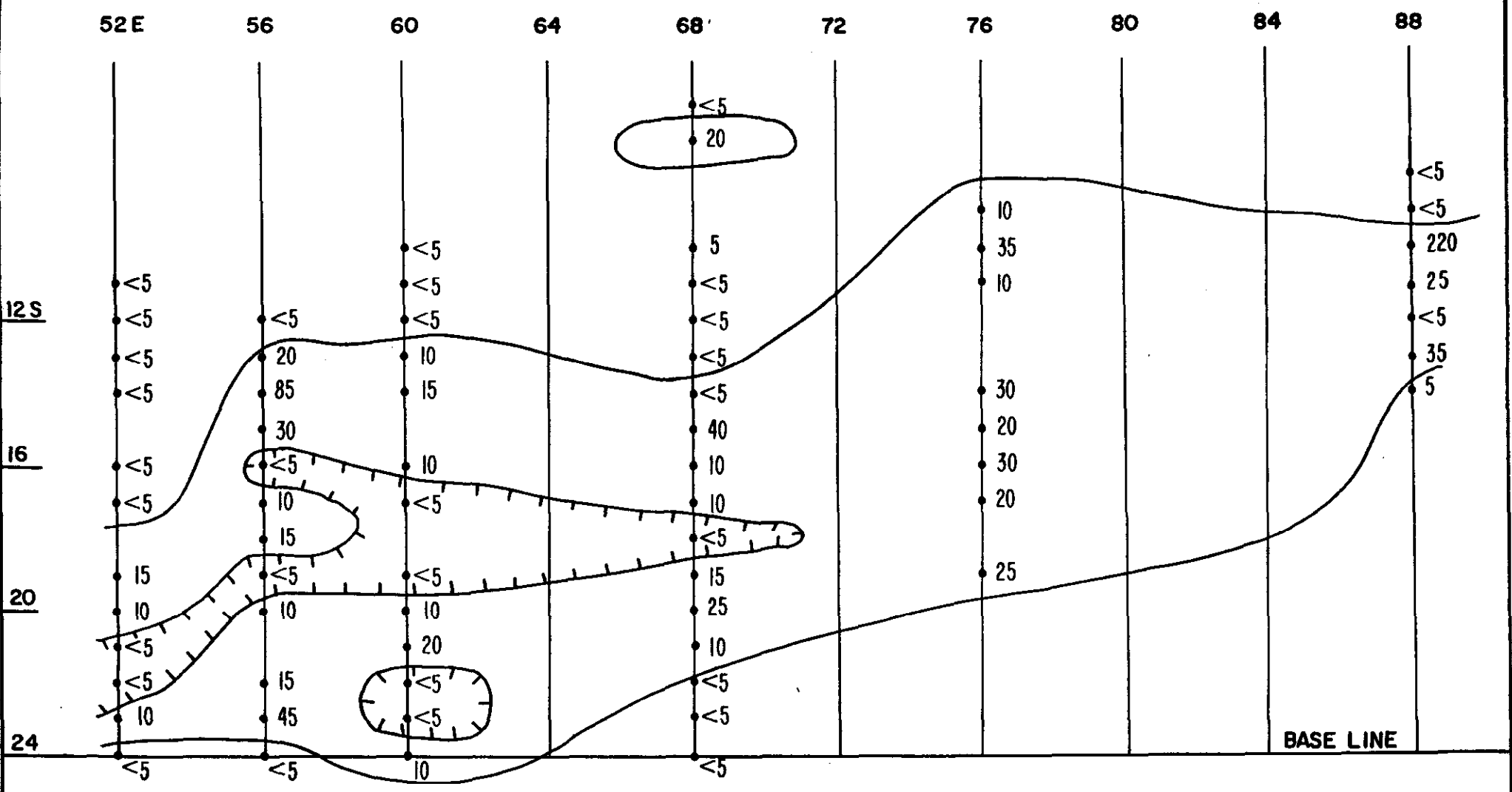
The most significant information from the geological investigation was the discovery of two highly altered Buzzer-like rock fragments. These are TYR-1 (at 64E - 26S on Map 4) and 98WO-1 (on the 52E line just south of 24S). These two rocks carried 6,850 and 3,030 ppm copper, 5 and 113 ppm molybdenum and 15 and 180 gold respectively. TYR-1 is located in an area of rock slide and talus whereas W98-1 is north in an area of residual soil not covered by talus or glacial till. These rocks also carried 14 and 224 ppm lead and 146 and 712 ppm zinc.

TGR-1, TYR-3, 98WO-3 and 98WO-4 are all from a distinctive, dark, biotitic granodiorite. Copper content ranges from 57 to 508 ppm which is typical of this rock which outcrops on the northern side of the mountain upslope to the south. TYR-3 is cut by a quartz vein with molybdenite. With the exception of TGR-1, which is in glacial till, all of the samples were found in rock slide and talus. 98WO-2 is a highly siliceous granitic rock with 327 ppm molybdenum in fractures. It was in talus.





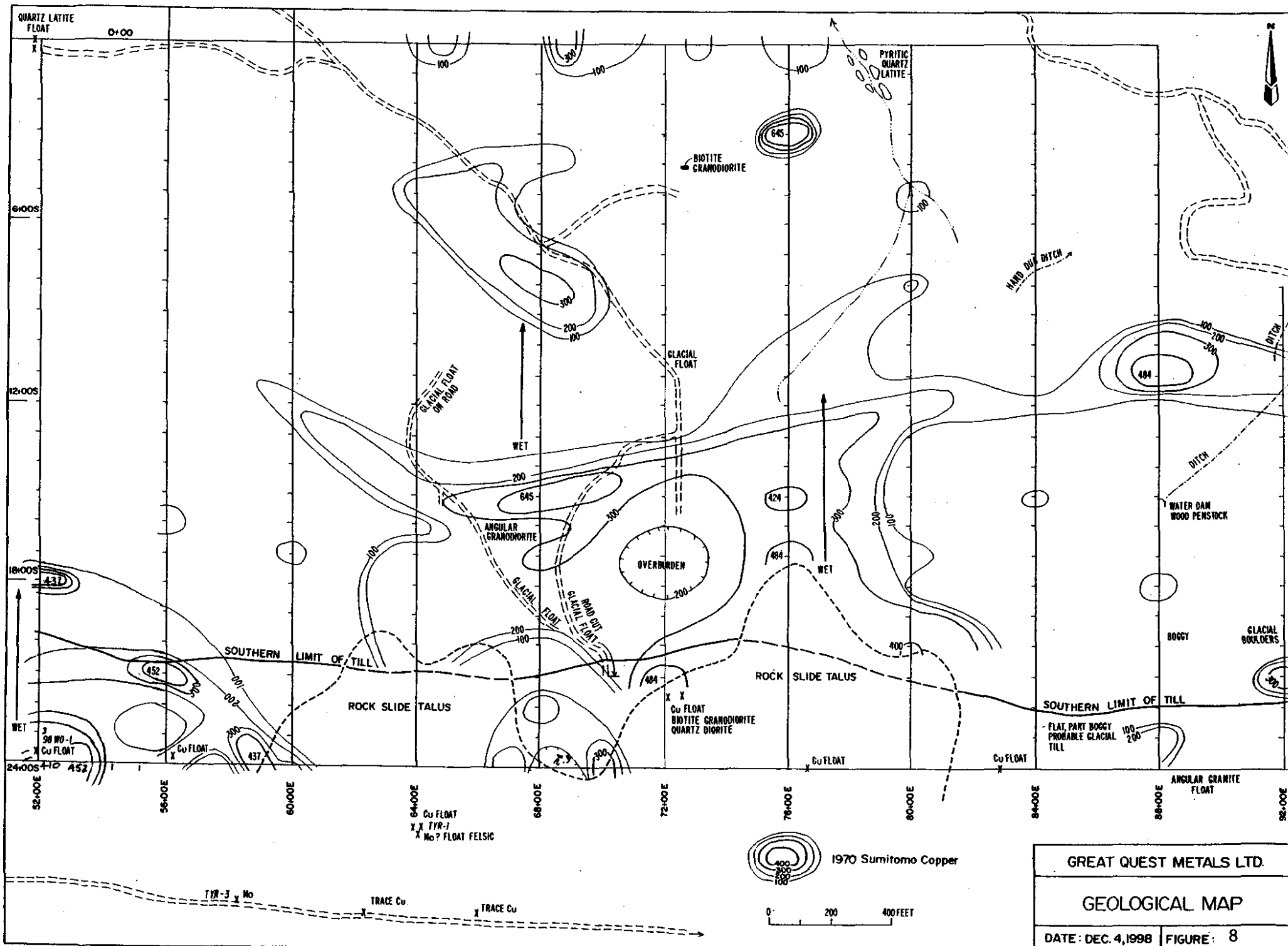




GREAT QUEST METALS LTD.

TASEKO PROPERTY
Au SOIL GEOCHEMISTRY

DATE: DEC 4, 1998 | FIGURE: 7



TGR-2, 3, 4 and TYR-2 are all highly sericitized volcanic rock with 3% pyrite. TGR-2 showed 145 ppb gold and 383 ppm copper. These rocks were found northeast of the Central Zone as seen on Figure 4.

Lithogeochemical Study - Because of the intense alteration encountered in the Empress area and because of the fact that several different places of intrusives had been identified through mapping of the Taseko Property, Dr. Hans Madeisky was asked to do a lithogeochemical study on 48 rock samples in 1994. In the study, the results of whole-rock determinations by Chemex Labs Ltd. were subject to Pearce element ratio analysis. With this method it is possible to determine the original rock type regardless of the degree of alteration. In addition, it is possible to identify the intrusive rock in a co-genetic intrusive suite as well as distinguishing different phases.

A number of questions were answered as a result of the study. On the basis of plotting the results for the conserved elements Al_2O_3 and Zr from the rock samples, the rock in the Empress area was divided into two separate groups of possible tuffaceous sediments, an intermediate to basic volcanic suite and some granitic rock. The intrusive rock on the property was shown to consist of a single co-genetic suite with two separate phases (Groups 3 and 4). Granitic rock from the Buzzer and Buzzer West Zones as well as that mentioned above in the Empress Zone were shown to be in the same phase (Group 4). It was also found that copper and gold were found preferentially in highly altered volcanic and sedimentary rock from the Empress area, whereas molybdenum was found in Groups 3 and 4 and that Group 4 rocks were generally more altered.

In order to understand the relationship of the two Buzzer-like rocks (TYR-1 and 98WO-1) which were found approximately 6,800 and 8,000 feet west of the Buzzer Zone, Dr. Madeisky was asked to incorporate results from these rocks as well as the results from seven other rock samples into the old data. A copy of Dr. Madeisky's old report as well as a report on the new data can be seen as an addendum to the report.

Base and precious mineralization in the two mineralized intrusives phases is associated with alkali loss of from 20 to 70% resulting from sericitic or prophyllitic alteration in addition to calcium metasomatism and some silicification. The Buzzer and Buzzer West samples, however, show losses from 20 to 35%.

In the 1998 study, it was found that the 2 Buzzer look-alike rocks found 6,700 and 7,900 feet west of the Buzzer belong to Group 4 along with the intrusive rocks found in the Buzzer and Buzzer West Zone. In contrast to the Buzzer and Buzzer West samples, however, the 2 samples are almost completely sericitized.

The other samples in the 1998 study showed no surprises. The gray biotite granitic rock fell within Group 4, and the volcanic rocks fell within the intermediate to mafic volcanic class. The problem with the highly altered rocks is that it is commonly difficult in hand specimen identification to tell which class they belong.

CONCLUSIONS

The most important information to come out of the 1998 exploration program on the Taseko Property was the discovery of two occurrences of highly altered intrusive rock with copper, gold and molybdenum. TYR-1 was found in an area of rock slide and at talus 6,200 feet west of the Buzzer Zone. Its source is uncertain because it is in talus. It must be said, however, that in several traverses across the talus and slide material below the peak and above the locations of this sample, no similar rock has been found. This may indicate that it is close to its source. W98-1 was found within a strong copper soil anomaly 7,900 feet west of the Buzzer in an area covered neither by glacial till nor talus. The copper soil anomaly in which it was found extends another 800 feet to the west for a total length of 2,000 feet.

In observing the Geological Map (Figure 8), biotitic granodiorite fragments were found in the southeastern part of the map, and an outcrop occurs in the north central part of the map. The rock also outcrops on the north side of the mountain peak to the south. Where assayed, the rock typically has 100 to 500 ppm copper in tight fractures. The rock is also generally unaltered. Could it be that there is a large dike of Buzzer type rock within the biotite granodiorite which extends east to the Buzzer and is defined by the high copper soil anomalies. Another possibility is that there are a series of small plugs of Buzzer-type rocks. The Buzzer would be one, the area of the Buzzer West would represent another, and the new occurrences at 52E - 24S would represent a third. A third possibility is that the series of copper soil anomalies is caused by a combination of the Buzzer-type intrusives and the weakly mineralized biotite granodiorite.

Some comments must be made about the large central anomaly. This is found in glacial till and not in residual soil, so what does it really represent? Much of the ground in the area is very wet with numerous little creeks which originate from springs. There are three possibilities. The first is that water passes through the talus and rock slide, much of which is composed of the copper bearing biotite granodiorite, picks up copper from the rock, and re-precipitates it as it comes to the surface through the glacial drift. Another possibility is that the water passes deeper, picks up copper in the rock below the talus and glacial till and precipitates it as it comes to the surface. The third possibility is that it was transported by the glacier, and that the source of the copper anomaly is in the till.

It is thought that the second possibility is most likely. The mineralized fragment found within the area of the copper soil anomaly at the southwest corner of the map may give a clue to the source of this anomaly. This is close to the large Central Zone anomaly. The anomaly could actually be the result of the first two possibilities. If the source of the anomaly was the glacial till, one would expect fragments of rock mineralized with copper. As is, there is very little mineralization evident in the boulders in the glacial till.

RECOMMENDATIONS

The next exploration program on the Taseko Property should include a continuation of the work along the area anomalous in copper where the Buzzer look-alike sample 98W0-1 was found. The 1998 mapping shows this to be an area of residual soil, so the fragment should be not far from its source. Soil sampling has been done only as far south as line 24S, but in observing some of the old soil data, it can be seen that this anomaly extends 2,000 feet along line 24S from line 40E to line 60E. Information from this survey may help to explain the large Central Zone anomaly. In addition, samples should be taken of the angular granodiorite along a cat trail in the western part of the Central Zone anomaly. Finally, geological mapping should be done between the Central Zone anomaly and the West Buzzer Zone. The cost of this program would be \$10,000. The information from the 1998 program and the new program would be used in configuration with the 1995 IP Survey to spot diamond drill holes.

STATEMENT OF COSTS

Helicopter (2.9 hours)	\$ 2,349
Geology and Soil Sampling (2 men for 5 days)	2,250
Vehicle	275
Food	181
Miscellaneous	42
Soils sample analysis (69 samples at \$15.08 per sample)	1,041
Rock analysis (11 samples at \$17.48 per sample)	192
Whole rock analysis (9 samples at \$24.00 per sample)	216
Lithogeochemical Analysis	300
Supervision and Administration	600
Report	1,275

\$ 8,721.00

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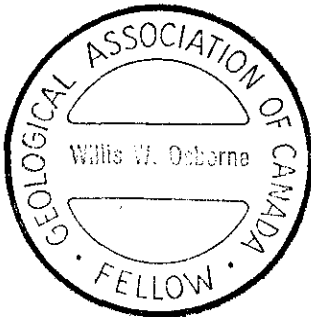
STATEMENT OF QUALIFICATIONS

I, Willis W. Osborne of 905 - 2324 West First Avenue, Vancouver, British Columbia, hereby certify that:

1. I am a Fellow of the Geological Association of Canada.
2. I have a B.Sc. in geology from the University of Minnesota (1961) and a M.Sc. in geology from the University of British Columbia (1966).
3. I have practiced as a geologist full and part-time since 1963 in Canada and the United States. Since 1980 I have managed small companies involved in mineral exploration as well as being involved in the geological mapping and interpretation etc. of the projects.
4. I am the President of Great Quest Metals Ltd. as well as acting as a Director. I directly and indirectly own 573,752 shares as well as holding an option on 50,000 shares.
5. I have been responsible for managing the program on the Taseko Property from 1988 through 1998. My management style is a hands-on approach. This report is based on all of the data available on the Taseko Property as well as the experience picked-up over the years on the project.

December 14, 1998


Willis W. Osborne
M.Sc., FGAC



ADDENDUM

December 1998 Report on Lithogeochemical Data Analysis - Taseko Porphyry Cu-Au Project,
Central B.C. by H.E. Madeisky

February, 1994 Report on Lithogeochemical Data Analysis - Taseko Porphyry Cu-Au Project,
Central B.C. by H.E. Madeisky

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REPORT

To: W.W. Osborne, C.E.O. - Great Quest Metals Ltd.
From: Dr. H.E. Madeisky PGeo
Date: 4 December 1998
Subject: Lithogeochemical Data Analysis - Taseko Porphyry Cu-Au Project, Central B.C.

Introduction

Nine (9) rock samples collected from the Taseko project during the 1998 exploration season were analyzed for major oxides and trace elements. The analytical data have been examined to determine if any of these eight samples belong to the same co-genetic group as the "Buzzer" (B) and "West Buzzer" (W) rocks analyzed in 1994, and to identify the nature and estimate the extent of the hydrothermal alteration associated with Cu-Au mineralization. The analyses of the samples collected in 1998 were added to the spreadsheet containing the 1994 analyses, and the combined data set was then re-examined using the models and parameters established in 1994. On the graphs in this report, the samples analyzed in 1994 are shown as empty squares and the samples collected and analyzed in 1998 as filled squares. Copies of the 1994 and 1998 assay results, the author's qualifications, and a statement of costs (invoice) are appended to this report.

Analytical Procedures

All samples were analyzed by Chemex Labs, using their XRF Whole-Rock Package (A-412) for SiO_2 , Al_2O_3 , CaO , Cr_2O_3 , Fe_2O_3 , K_2O , MnO , Na_2O , P_2O_5 , TiO_2 , Ba, Nb, Rb, Sr, Y and Zr determinations. The standard ICP-32 Package was used for Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, Hg, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Sc, Sr, Ti, Tl, U, V, W and Zn determinations. The accuracy of the high quality whole-rock XRF procedure is necessary for lithogeochemical data analysis. The aqua-regia ICP procedure, despite reasonable detection limits of the elements in solution, is limited by the incomplete digestion of elements bound up in rock-forming silicates and in refractory minerals. Although much useful information can be obtained from ICP analyses, in particular the base metal concentrations, they cannot be used to construct fractionation, molar linear co-variation, or mixing models. This method of quantitative analysis of hydrothermal alteration requires accurate analyses of major oxides and conserved trace elements, and in the presence of carbonate alteration, also requires CO_2 analyses.

Lithogeochemical Data Analysis

In addition to measurement error and closure, two other sources of variability exist in geochemical analyses obtained from altered host rocks of hydrothermal mineralization: i) igneous processes which are controlled by the rock-forming mineral assemblage, and ii) metasomatism which is controlled by the stability and/or solubility of rock-forming minerals in hydrothermal fluids. Molar linear co-variation diagrams are used to model the petrologically controlled variation in chemistry of

the host rocks, while residuals to these linear models are used to characterize and quantify hydrothermal alteration.

Conserved Elements and Co-genetic Groups

Often, but not always, co-genetic groups of igneous rocks can be identified by a unique conserved element ratio. The conserved nature of elements and the existence of co-genetic groups can be tested by examining the behaviour of concentrations of suspected conserved elements on an X-Y scatterplot (e.g., TiO_2 vs. Zr). If, given analytical error, the data plot either at a single point, or form an array co-linear with the origin, then both elements can be considered to be conserved, and those samples which plot at a point, or lie within a linear array probably belong to a co-genetic group.

Figures 1a & 1b are TiO_2 vs. Zr scatterplots of the complete data set, and the "Buzzer", "West Buzzer", and the 1998 samples, respectively. On these plots, two linear arrays of samples can be observed (Volcanics, and Intrusives). Nearly all intrusive rocks plot along a single array co-linear with the origin, with a TiO_2 :Zr ratio of about 0.003. The other linear array of samples has a higher TiO_2 :Zr ratio of about 0.006, and includes a sample identified (in 1994) as an un-altered volcanic rock. The remaining samples are scattered. The following conclusions can be reached: i) the intrusive samples were all taken from a single co-genetic suite, and both Ti and Zr are conserved elements in this group of rocks; ii) a second group of co-genetic rocks exists among the samples, which, based on their higher TiO_2 :Zr ratio are probably mafic to intermediate volcanics, and Ti and Zr may be conserved; and iii) four (b, c, d, and f) of the nine samples collected in the 1998 campaign belong to the mafic to intermediate volcanics, while the other five samples (a, e, h, i, and j) are intrusive rocks cogenetic with the "Buzzer" and "West Buzzer" samples.

Figures 2a & 2b are Al_2O_3 vs. Zr immobile element scatterplots of the complete data set, and the "Buzzer", "West Buzzer" and the 1998 samples, respectively. These plots are used to identify individual intrusive phases. Given that Zr is conserved, and that the composition of the intrusive suite varies as a consequence of feldspar and quartz fractionation (both are observed as phenocryst phases in these rocks), then as these rocks become more evolved, Zr concentration increases accompanied by a gradual decrease in Al_2O_3 concentration. The negative trend in the data represents igneous fractionation. The positive trends through the origin are a consequence of simultaneous dilution or enrichment of Al_2O_3 and Zr by some mass transfer process not involving either of these two elements. This could be fractionation or crystal sorting of mafic minerals or quartz, metasomatic gains or losses, or mixing. Five positively sloping linear trends (1 - 5) are distinguished on this scatterplot. Trends 1 and 2 are formed by the strongly altered (silicified) rocks identified in the field as QR, QM and QMC, but what these rocks were before they became altered and silicified is difficult to say. Trends 3 and 4 are two separate phases of a co-genetic intrusive suite, but which of the two intrusive phases is the earlier cannot be reliably determined on this, or any other diagram. The late phase may well be the less evolved (i.e., group 4) if it originated in the deeper part of a magma chamber. Anomalous Cu, Au, and Mo are associated with both intrusive phases. The 1998 samples TYR1 (e) and 98WO-1 (h) appear to belong to the "West Buzzer" phase (4). The rocks in trend 5 are most likely mafic to intermediate volcanics (they include an un-altered volcanic sample). These volcanic rocks are also geochemically anomalous in Cu and Au, but not in Mo.

Feldspar Model

The principal fractionating mineral phases in the intrusive suite (quartz-diorite to quartz-monzonite) probably consist of feldspar, hornblende and minor clino- or orthopyroxene, quartz, and perhaps some biotite. The main phases in the volcanics are likely to be feldspar, clino- or orthopyroxene, and possibly magnetite. In the sediments mixing rather than fractionation is likely to be the mass transfer process affecting alkali elements and Al. On the molar linear co-variation model

(2Ca + Na + K)/Zr vs. Al/Zr the effect of fractionation and/or crystal sorting (and mixing) of anorthite $\text{CaAl}_2\text{Si}_2\text{O}_8$, albite $\text{NaAlSi}_3\text{O}_8$, and orthoclase KAlSi_3O_8 , and biotite $\text{K}(\text{Fe},\text{Mg})_3\text{AlSi}_3\text{O}_{10}(\text{OH})_2$ in unaltered rocks plots along a line with a slope of 1.0. In other words, the bulk alkali:Al ratio in unaltered igneous rocks fractionating only those minerals is 1:1. If clinopyroxene $\text{Ca}(\text{Fe},\text{Mg})\text{Si}_2\text{O}_6$ is involved, the slope of this line becomes steeper (greater than 1.0), defined by the clinopyroxene:plagioclase ratio. Quartz SiO_2 and orthopyroxene $(\text{Mg},\text{Fe})\text{SiO}_3$ have no effect on this diagram. The slope of the line is also affected by the involvement of hornblende $(\text{Na},\text{K})_0$. ${}_1\text{Ca}_2(\text{Mg},\text{Fe},\text{Al})_5\text{Si}_{6-7}\text{Al}_{2-1}\text{O}_{22}(\text{OH},\text{F})_2$, but this effect cannot be defined without some knowledge of the hornblende composition(s) and the amount(s) involved. In practical terms, this means that the slope of the line defining unaltered rocks cannot be precisely defined, but rather must be observed. If clinopyroxene, and hornblende compositions and amounts vary in these rocks then a diffuse linear trend, rather than a single line will define the unaltered rock compositions. Hydrothermally altered rocks, depending on whether they have gained or lost alkalis, will plot either above or below the unaltered line (or trend), respectively. Since neither Na nor K form igneous or alteration minerals with alkali:Al molar ratios greater than 1.0, only rocks containing igneous and metasomatic Ca minerals will plot above the model line ($m = 1.0$).

Figures 3a and 3b are Al based feldspar fractionation - sorting models of the complete data set, and the "West Buzzer" and the 1998 samples, respectively. Since Al is immobile in most hydrothermal regimes, the distance of from a sample to the fractionation model line is a quantitative measure of alkali depletion. The angular distance (i.e., $1 - (2\text{Ca} + \text{Na} + \text{K})/\text{Al}$) measures the relative amount of alkali depletion suffered by these rocks. Because the relative amount of alkali depletion is not sensitive to Zr concentrations, it is a very practical and effective means of quantifying alkali metasomatism. Mis-classified samples or compositionally mixed rocks have no effect at all on this measurement. On this model, most of the samples collected in 1994 (including the "Buzzer" and "West Buzzer" samples) are only slightly alkali depleted. In contrast, nearly all of the samples collected in 1998 are strongly alkali depleted. Samples TYR1 (e) and 98WO-1 (h) are completely sericitized, and probably are more strongly altered examples of the mineralized "West Buzzer" rocks encountered in the 1994 sampling campaign. The volcanics (b, c, and d) sampled in 1998 are the most severely altered rocks in the data set. Having lost more than 80% of their alkalis, these rocks are now mainly chloritized and probably contain a small amount of sericite.

Discussion

On the basis of the TiO_2 vs. Zr conserved element scatterplots, two separate co-genetic groups of rocks can be identified, felsic intrusives and intermediate volcanics. The 1998 samples TYR1 (e) and 98WO-1 (h) are intrusive rocks belonging to the same co-genetic group as the "Buzzer" and "West Buzzer" rocks collected in 1994.

On the basis of the Al_2O_3 vs. Zr immobile element scatterplots, five separate groups of rocks can be identified, including two mineralized intrusive phases (3 & 4), and one group of mafic to intermediate volcanics (5). These groups can be distinguished by their different Al_2O_3 :Zr ratios. The 1998 samples TYR1 (e) and 98WO-1 (h) are intrusive rocks which appear to belong to the same intrusive phase (4) as the "West Buzzer" rocks analyzed in 1994.

Two distinct styles of mineralization are recognized: i) Au, Ag and Cu mineralization in the two intrusive phases (4) and in the volcanics (5), associated with alkali loss, Ca metasomatism, and some silicification, and ii) Au, Ag and Cu mineralization associated with pervasive silicification of one of the sediment groups (2), perhaps representing an altered roof pendant to the intrusive complex. Mineralization in the intrusives is further distinguishable from mineralization in the other rocks by the presence of anomalous Mo.

Base and precious metal mineralization in the two mineralized intrusive phases (3 & 4) is associated with alkali loss of from 20% to 70% (i.e., alteration facies ranging from propylitic to sericitic, respectively), and with Ca metasomatism as indicated by the presence of aqua regia soluble Ca minerals in the mineralized samples. Mineralization in the volcanics (5) is related to severe alkali loss (up to 90%, i.e., chloritization).

Although the spatial distribution of the mineralized intrusive cannot yet be defined with the limited number of samples collected and analyzed so far, the strongly altered and mineralized rock samples collected in 1998 (TYR1 and 98WO-1) corroborate the small Cu soil geochemical anomalies in their immediate vicinity, and may be related to the much larger and coherent Cu soil geochemical anomaly in the Central Zone. Whether the Central Zone Cu anomaly represents nearby hydrothermal mineralization in the intrusives, or is an hydromorphic anomaly at a break in slope can probably be determined by obtaining whole-rock analyses of the coarse (+ 80 mesh) rejects of the soil samples, or by obtaining abrasion pH measurements from these rejects. Whole-rock analyses of the coarse rejects can be used to determine the alteration facies of the rock fragments within the soil anomaly. If the rock fragments are altered, then the Cu soil anomaly is most likely related to hydrothermal mineralization, conversely, if the rock fragments are unaltered then the anomaly is probably hydromorphic. Although less precise than lithogeochemical modelling, abrasion pH can be used to estimate the alteration facies (i.e. the amount of alkali depletion) of the coarse rejects of the soil samples. If the abrasion pH is between 3 and 5, then the rocks are probably hydrothermally altered and the anomaly is related to hydrothermal mineralization, and if the abrasion pH is greater than 7, then the rocks are probably unaltered and the anomaly is hydromorphic. Because abrasion pH is not a commonly used technique in mineral exploration it may be worthwhile to read the scientific literature on the topic before employing this technique, especially the paper: *Stevens R.E., and Carron M.K., 1948, A simple field test for distinguishing minerals by abrasion pH, American Mineralogist, vol. 33, pp. 31 - 49.* Abrasion pH could potentially be a very useful and economic adjunct to soil geochemical surveys in glaciated areas. It could be used to determine whether the - 80 mesh fraction of glacial till is derived from altered or un-altered rocks, estimate the degree of alteration, and corroborate and rank soil geochemical anomalies. It is important to understand that the abrasion pH technique cannot distinguish between hydrothermal clays (and micas) and weathering clays.

Respectfully submitted,

Dr. Hans E. Madeisky PGeo



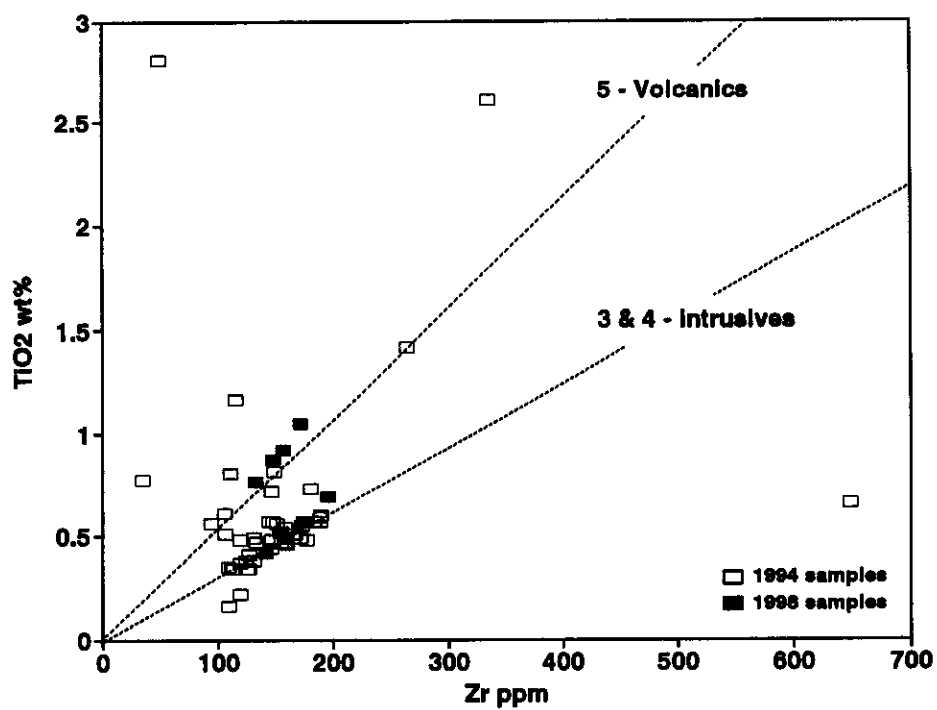


Figure 1a - TiO_2 vs. Zr Conserved Element Scatterplot (all samples)

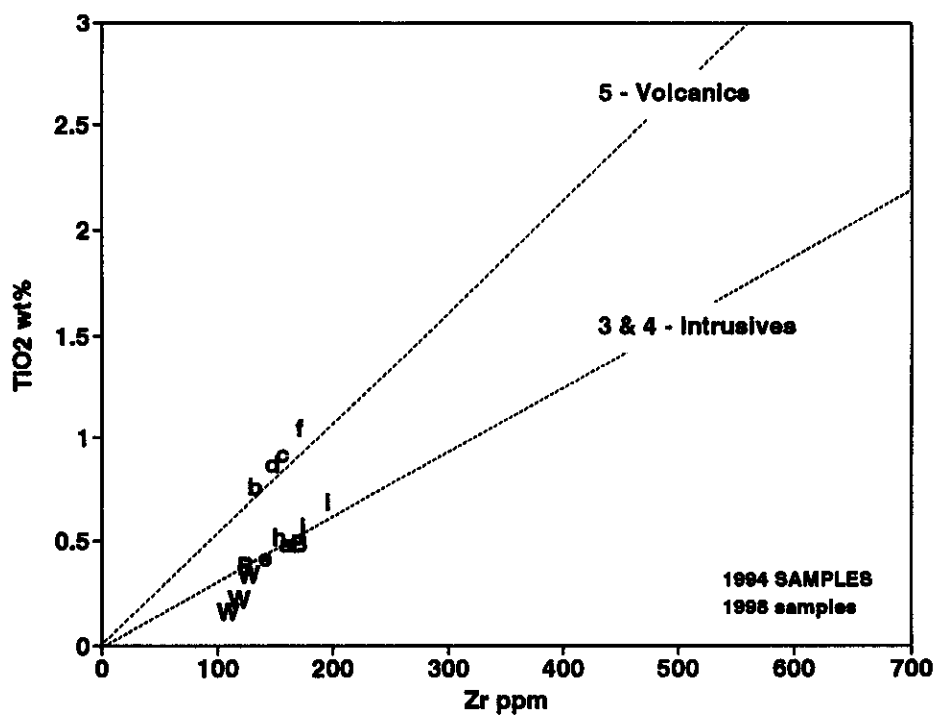


Figure 1b - TiO_2 vs. Zr Conserved Element Scatterplot (B, W, and 1998 samples)

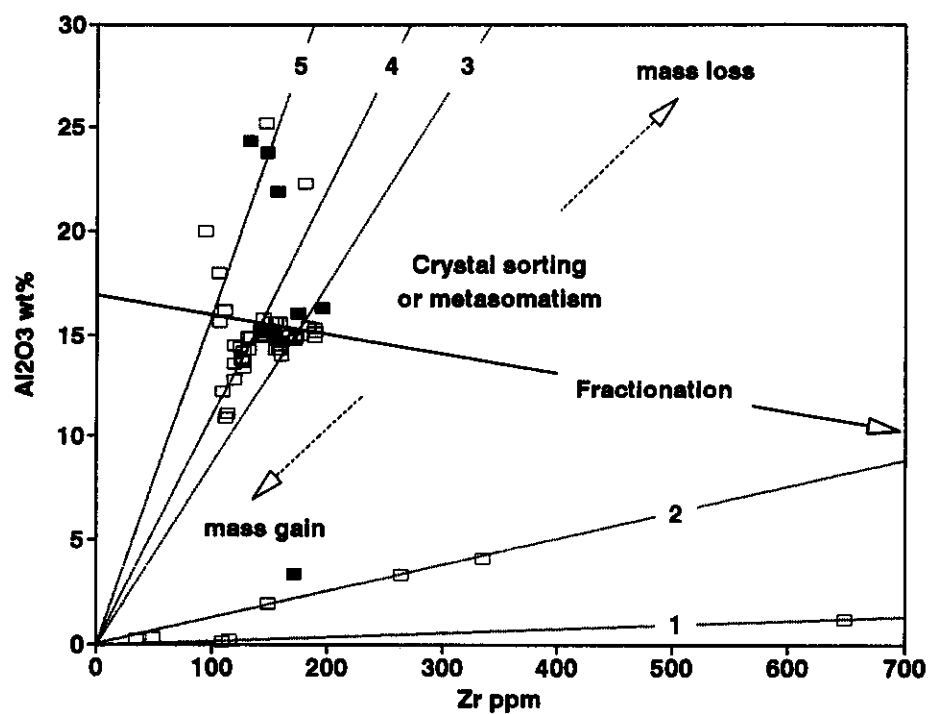


Figure 2a - Al_2O_3 vs. Zr Immobile Element Scatterplot (all samples)

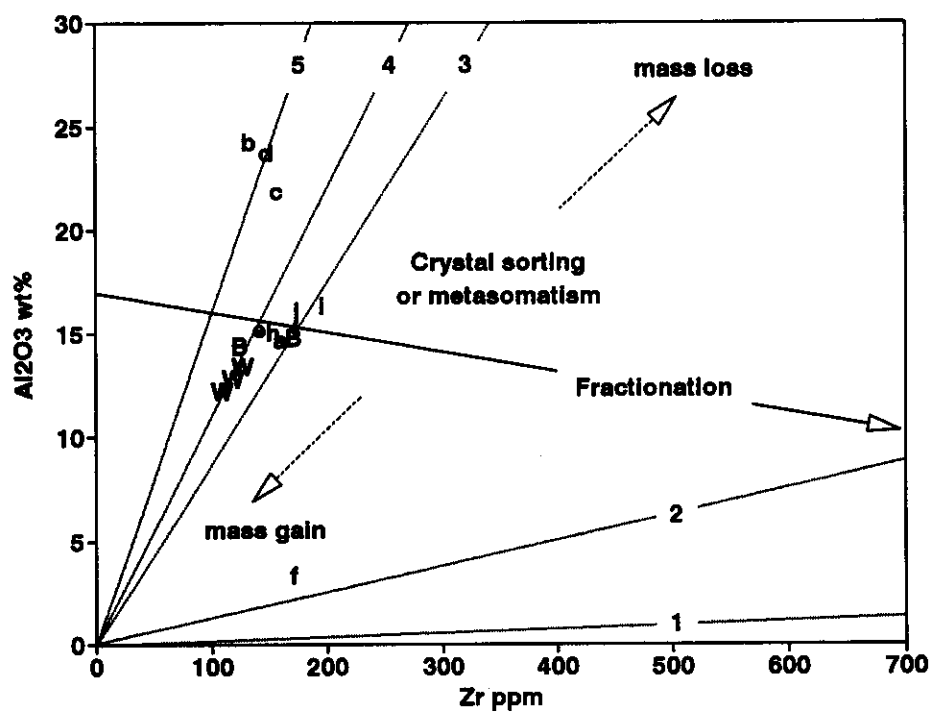


Figure 2b - Al_2O_3 vs. Zr Immobile Element Scatterplot (B, W, and 1998 samples)

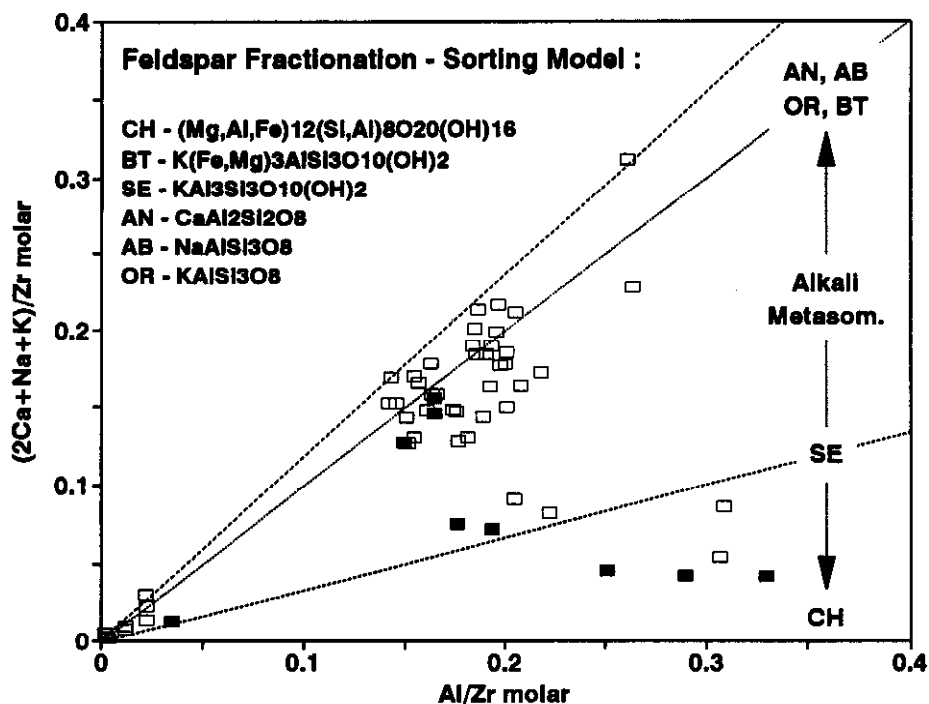


Figure 3a - Al Based Feldspar Fractionation and Sorting Model (all samples)

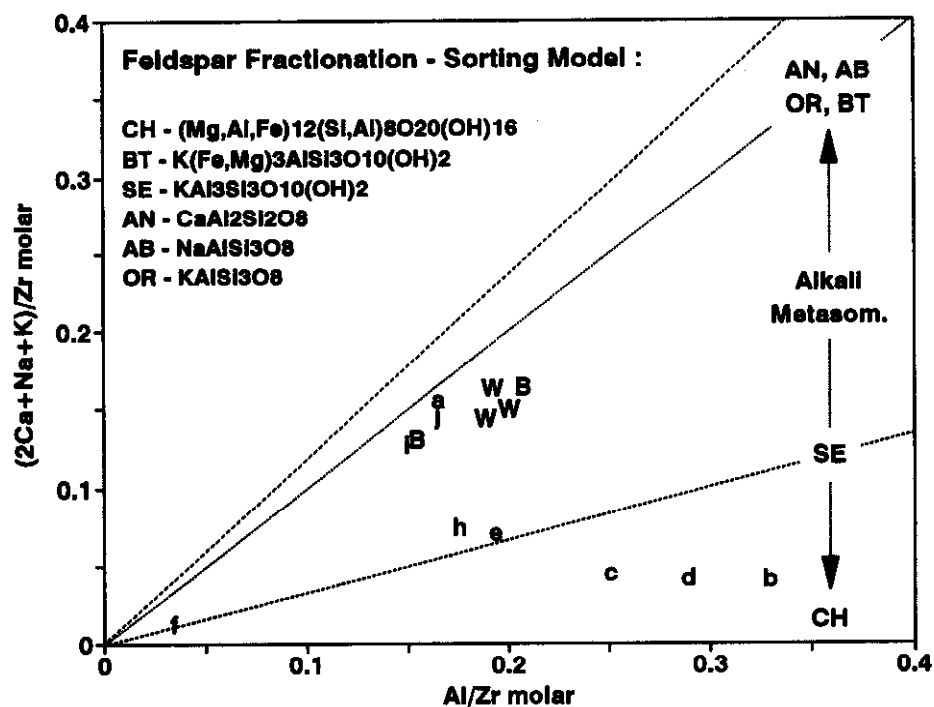


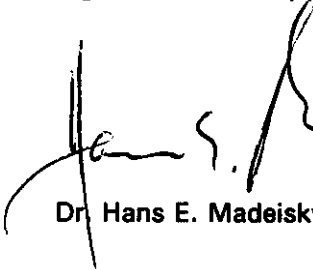
Figure 3b - Al Based Feldspar Fractionation and Sorting Model (B, W, and 1998 samples)

Statement of Author's Qualifications

I, Hans Eberhard Madeisky, President of HEMAC Exploration Ltd., do hereby certify that:

1. I am a Consulting Geologist, and my address is 704 - 1995 Beach Avenue, Vancouver, B.C., V6G 2Y3, Canada.
2. I am a graduate of the University of Ottawa, 1980, with a degree of Bachelor of Science in Geology; the Royal School of Mines, Imperial College, University of London, U.K., 1990, with a degree of Master of Science in Mineral Exploration and a Diploma of Imperial College; and the University of London, 1996, with degree of Doctor of Philosophy in Geology.
3. I have been a practising geologist since 1967. I have been a Registered Member in good standing of the British Columbia Association of Professional Engineers and Geoscientists since 1992. I am a Fellow of the Geological Association of Canada and the Association of Exploration Geochemists, and a Member of the Society of Economic Geologists.
4. This report is based on data and material made available to me by Mr W.W. Osborne of Great Quest Metals Ltd..
5. I neither have nor beneficially own any direct or indirect interest, nor do I expect to receive any direct or indirect interest, in the properties or securities of Great Quest Metals Ltd. or any affiliate.
6. I consent to the use of this report for submittal for Assessment Credits.

Signed this 4th day of December, 1998.


Dr. Hans E. Madeisky PGeo



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REPORT

To: W.W. Osborne, C.E.O. - Westpine Metals Ltd.
From: H.E. Madeisky MSc DIC PGeo
Date: 20 February 1994
Subject: Lithogeochemical Data Analysis - Taseko Porphyry Cu-Au Project, Central B.C.

Pearce element ratio (PER) analysis of 48 samples (including 4 duplicates) representing various rock types from the Taseko project has been completed. The objective was to determine which samples belong to co-genetic groups, to examine the relationship of Cu-Au mineralization to one or more of these groups, and where possible to determine the nature and the extent of the hydrothermal alteration associated with mineralization. In addition, seven specific questions were to be answered:

1. Are intrusives (I-1) through (I-5) really different phases?
2. To which phase is the Buzzer quartz-diorite (W93-207) related? Is it related to the Rowbottom phase (intrusive I-4)?
3. Does Buzzer sample W93-209 fit anywhere?
4. How does the Buzzer "altered" felsite compare with the Buzzer West samples?
5. Where do the various intrusive drill-core samples fit into the intrusive picture?
6. With which phase does intrusive (I-?) fit?
7. What does the whole-rock analysis show about the Volcanic (?) rocks?

Lithogeochemical data and PER analysis on diskette

The results of the PER analysis are summarized in this report. A complete set of assays and PER analysis data is in the QUATTRO PRO 4™ spreadsheet file TASEKO.WQ!, which along with this report, WP5.1™ file TASEKO-1.RPT, are on the attached diskette. In addition to the diagrams in this report, a comprehensive set of PER analysis diagrams is combined into a slide show in the spreadsheet file. These diagrams may be viewed by loading the file, and invoking the /GRAPH/Name/Slide command to launch the slide show. Pressing any key or clicking the left mouse button advances through the slides, pressing the <BACKSPACE> key or clicking the right mouse button returns to the previous slide (graph) to the screen. A list of graph names and descriptions is appended. Diagrams can be viewed through the /GRAPH/Name/Display/graph name command, and can be printed by using the /PRINT menu in the spreadsheet.

Analytical procedures

All 48 samples were analyzed by Chemex Labs, using their XRF Whole-Rock Package (A-412) for SiO₂, Al₂O₃, CaO, Cr₂O₃, Fe₂O₃, K₂O, MnO, Na₂O, P₂O₅, TiO₂, Ba, Nb, Rb, Sr, Y and Zr determinations. In addition, their standard ICP-32 Package was used for Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, Hg, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Sc, Sr, Ti, Tl, U, V, W and Zn

determinations. Au concentrations were determined using a Fire Assay - AA finish procedure. The accuracy of the high quality whole-rock XRF procedure is necessary for PER analysis (or for any other data analysis of this type). The aqua-regia ICP procedure, despite reasonable detection limits of the elements in solution, is severely handicapped by the incomplete digestion of elements bound up in silicate and other refractory minerals. And although some useful information can be obtained from the ICP data, in particular the base metal concentrations, it cannot be used to construct fractionation, molar co-variation, or mixing models for PER analysis. This particular method of lithogeochemical data analysis depends on accurate analyses of major oxides and certain (conserved) trace elements, as well as on reasonably good analyses of base, precious, and pathfinder metals. And therefore all three analytical procedures (XRF whole-rock, 32 element ICP, and FA-AA for Au) will need to be used. It may be more efficient (and economical) to combine these three procedures into one, however at present no commercial lab is offering such an option.

PER analysis

In addition to measurement error (i.e., nugget effect, analytical inaccuracies, bias) and closure, two other fundamentally different sources of geochemical variability exist in altered host rocks of hydrothermal mineralization: i) rock-forming processes which are petrologically controlled, and ii) metasomatism which is controlled by mineral stability and solubility in hydrothermal fluids. PER analysis uses linear variation diagrams to model the petrologically controlled variation in host rocks, and uses the residuals to these petrologic models to characterize and quantify hydrothermal alteration. By removing the background petrologic variations, geochemical contrast is substantially improved, and even the effects of weak hydrothermal alteration can be recognized. Using either PER or molar co-variation models, metal deposition can be correlated with specific hydrothermal alteration facies. By quantifying metasomatism, PER analysis can provide lithogeochemical vectors which can point to the core of a hydrothermal system, and to potential mineralization.

PER analysis requires that three basic assumptions be met: i) the rocks must be derived from a homogeneous source (i.e., from a single co-genetic group), ii) at least one, but preferably more, conserved elements must be present in these rocks (used to identify co-genetic groups, to overcome the effect of closure, and to monitor mass changes), and iii) mass transfer processes must have acted on these rocks (i.e., fractionation, metasomatism) to produce the geochemical heterogeneity now present in these rocks.

Conserved elements and co-genetic groups

Before proceeding with an analysis of lithogeochemical data, and especially when igneous rocks are involved, it is necessary to determine which samples belong to a co-genetic group (i.e., to a particular magma batch). It makes no sense to compare the geochemical variability among rock samples coming from different co-genetic groups, because that variability may well be a function of the different chemistries of separate co-genetic groups to begin with. Often, but not always, individual co-genetic groups can be identified by unique constant conserved element ratios. Whenever possible, several conserved element pairs should be examined to confirm a co-genetic group. The conserved nature of elements and the existence of co-genetic groups is determined by examining the behaviour of concentrations of conserved elements on an X-Y scatterplot (TiO_2 , Nb, Y vs. Zr). If, given analytical error, the data plot either at a single point, or form an array co-linear with the origin, then these elements are conserved, and those samples which plot at that point, or lie within that linear array belong to a co-genetic group. When no conserved element pair is present in the rocks, then the conserved nature of an element must be assumed on the basis of geochemical knowledge (e.g., Zr has a K_D near zero and is insoluble in hydrothermal fluids - that's why it is so difficult to take Zr into solution using acid digestion techniques), and co-genetic groups of rocks must then be identified on the basis of field relationships.

The XRF whole-rock data include analyses of TiO_2 , P_2O_5 , Nb, Y and Zr, all of which are potentially

conserved elements. Each of these elements was plotted against Zr (the element most likely to be conserved). Both, the Nb vs. Zr, and the Y vs. Zr scatterplots are inconclusive, failing to yield distinct data groupings probably because of analytical error in Nb and Y determinations. On the P_2O_5 vs. Zr scatterplot the un-altered intrusives form a cluster roughly co-linear with the origin. The remaining data are scattered.

Figure 1 is a TiO_2 vs. Zr conserved element scatterplot on which one distinct (3 & 4), and one less distinct (5) group of data can be recognized. With the exception of two felsite samples (W93-173 and W93-190), all other intrusive rocks plot along a single array co-linear with the origin, with a TiO_2 :Zr ratio of about 0.003. The other group is more scattered, has a higher TiO_2 :Zr ratio of about 0.006, and includes a sample (W90-34 206-207) identified as an un-altered volcanic rock. The remaining samples are scattered. On the basis of this scatterplot the following conclusions can be reached: i) the intrusive samples (with two possible exceptions) were all taken from a single co-genetic suite, and Ti and Zr are conserved in this group of rocks; ii) a second group of co-genetic rocks exists among the samples (based on the higher TiO_2 :Zr ratio they are probably mafic to intermediate volcanics), and Ti and Zr may be conserved; and iii) the strongly altered rocks do not form a coherent group, either because they are not related or because Ti or Zr are not conserved, or all of the above.

Figure 2 is an Al_2O_3 vs. Zr immobile element scatterplot used to identify individual intrusive phases. Given that Zr is conserved, and that the composition of this intrusive suite varies as a consequence of feldspar and quartz fractionation (both are present as phenocryst phases in these rocks), then as these rocks become more evolved the Zr concentration increases, accompanied by a gradual decrease in Al_2O_3 concentration. This general relationship has been used to very good effect as a chemo-stratigraphic correlation tool in volcanic rocks of the Noranda camp. The negative trend with the Y-axis intercept represents igneous fractionation. The positive trends through the origin are a consequence of simultaneous dilution or enrichment of Al_2O_3 and Zr by some mass transfer process not involving either of these two elements. This other process could be fractionation or crystal sorting of mafic minerals or quartz, metasomatic gains or losses, or mixing. Five positively sloping linear trends (1 - 5) are distinguished on this scatterplot. Trends 1 and 2 are formed by the strongly altered (silicified) rocks identified as QR, QM and QMC, and are probably mixing lines. What these rocks were before they became altered and silicified is difficult to say. Considering the magnitude and the range of Zr and TiO_2 concentrations, and the fact that these rocks do not plot within either co-genetic group, it is not likely that these rocks are derived from either the intrusive or the volcanic suite. The remarkable linearity of trends 1 and 2 leads one to suspect that either some Zr and Al bearing mineral, or an igneous glass is involved. Both could explain the behaviour of the Zr concentrations and the constant Al_2O_3 :Zr ratio. Trends 3 and 4 are two separate phases of the co-genetic intrusive suite. Which of the two intrusive phases is the earlier cannot be reliably determined on this, or any other PER diagram. The late phase may well be the less evolved (i.e., group 4) if it originated in the deeper part of a magma chamber. Anomalous Cu and Au are preferentially associated with trend 4 rocks, whereas anomalous Mo is present in both trend 3 and 4 rocks. Trend 5 rocks are probably the volcanics (they include the un-altered volcanic sample). These volcanic rocks are geochemically anomalous in Cu and Au, but not in Mo.

Fractionation - Sorting (Mixing) models

The principal fractionating mineral phases in the intrusive suite (quartz-diorite to quartz-monzonite) probably consist of feldspar, hornblende and minor clino- or orthopyroxene, quartz, and perhaps some biotite. The main phases in the volcanics are likely to be feldspar, clino- or orthopyroxene, and possibly magnetite. In the sediments mixing rather than fractionation is likely to be the mass transfer process affecting alkali elements and Al. On the PER model $(2Ca + Na + K)/Zr$ vs. Al/Zr the effect of fractionation and/or crystal sorting (and mixing) of anorthite $CaAl_2Si_2O_8$, albite $NaAlSi_3O_8$, and orthoclase $KAlSi_3O_8$, and biotite $K(Fe,Mg)_3AlSi_3O_{10}(OH)_2$ in un-altered rocks plots along a line with a slope of 1.0. In other words, the bulk alkali:Al ratio in un-altered igneous rocks

fractionating only those minerals is 1:1. If clinopyroxene $\text{Ca}(\text{Fe,Mg})\text{Si}_2\text{O}_6$ is involved, the line becomes steeper (greater than 1.0), defined by the clinopyroxene:feldspar ratio. Quartz SiO_2 and orthopyroxene $(\text{Mg,Fe})\text{SiO}_3$ have no effect on this diagram. The slope of the line is also affected by the involvement of hornblende $(\text{Na,K})_{0-1}\text{Ca}_2(\text{Mg,Fe,Al})_5\text{Si}_{6-7}\text{Al}_{2-1}\text{O}_{22}(\text{OH,F})_2$, but this effect cannot be defined without knowledge of the actual hornblende composition(s) and the amount(s) involved. In practical terms this means that the slope of the line defining un-altered rocks cannot be precisely defined, but rather must be observed. If clinopyroxene, and hornblende compositions and amounts vary in these rocks then a diffuse linear trend, rather than a single line will define the un-altered rock compositions. Hydrothermally altered rocks, depending on whether they have gained or lost alkalis, will plot either above or below the un-altered line (or trend), respectively. Since neither Na nor K are form igneous or alteration minerals with alkali:Al molar ratios greater than 1.0, only rocks containing igneous and metasomatic Ca minerals will plot above the model line ($m = 1.0$).

Because igneous Ca minerals cannot be distinguished from metasomatic Ca minerals on this model, it is useful to plot the data on a fractionation model where Ca has no effect, i.e., the alkali feldspar fractionation model $(\text{Na} + \text{K})/\text{Zr}$ vs. Al/Zr . If anorthite and other Al and Ca bearing minerals are present, then the model line defining alkali feldspars and biotite in un-altered rocks will have positive intercept on the Al/Zr axis. The magnitude of this intercept is a bulk measure of the amount of Al involved in Ca minerals.

Another means of assessing the impact of Ca metasomatism is to plot a Si based feldspar - clinopyroxene - biotite fractionation model $(2\text{Ca} + 3\text{Na} + 3\text{K})/\text{Zr}$ vs. Si/Zr . On this diagram clinopyroxene, feldspar, and biotite plot along a line with the slope of 1.0, quartz and orthopyroxene plot along the Si axis, and hornblende plots along a line with a slope of 1/2 to 1/3 depending on its composition. Alkali metasomatism acts along the vertical axis and Si metasomatism acts along the horizontal axis. In rocks which contain quartz as a fractionating mineral phase the slope of the line defining un-altered rocks is less than 1.0, and is defined by the bulk feldspar : quartz ratio in the rocks. This diagram can be an effective means of identifying and quantifying silicification in altered rocks, but depends on reliable identification of un-altered rocks and on a constant quartz:feldspar ratio during fractionation.

Figures 3 and 4 are Al based feldspar fractionation - sorting models on which all samples are plotted and are identified by trend number, respectively. The data form four distinct groups: i) groups 1 and 2 (probably sediments) plot near the origin because of their high Zr and low Ca, Na, K, and Al concentrations, with alkali:Al ratios ranging from 1.2 to 0.4; ii) group 3 forms a cluster at the centre of the Al/Zr range, with alkali:Al ratios varying from 1.2 (probably in un-altered rocks) to 0.7 in altered rocks; iii) group 4 forms a cluster to the right of group 3, with alkali:Al ratios ranging from 1.2 in un-altered rocks to 0.35 in rocks that contain primarily sericite as the alkali bearing mineral phase; iv) group 5 (the volcanics) plots to the right of group 4, with alkali:Al ratios ranging from 1.2 to 0.25. In all groups, the samples plotting below the line with a slope of 1.0 are considered to have suffered metasomatic alkali losses.

Since Al is immobile in most hydrothermal regimes, the vertical distance of from a sample to the fractionation model line is a quantitative measure of the absolute amount alkali depletion within each group. The angular distance (i.e., the inverse $(2\text{Ca} + \text{Na} + \text{K})/\text{Al}$ molar ratio) measures the relative amount of alkali depletion suffered by these rocks. Because the relative amount of alkali depletion is not sensitive to Zr concentrations, it is a very practical and effective means of quantifying alkali metasomatism. Mis-classified samples or compositionally mixed rocks (group 1 and 2 sediments) have no effect at all on this measurement. Group 5 rocks (volcanics ?) have suffered the greatest alkali depletion, followed by groups 4, 2 and 1. Group 3 represents the least altered rocks (at least from the perspective of alkali metasomatism. They have neither lost nor gained significant amounts of Ca, Na or K.

Figures 5 and 6 are Si based feldspar - clinopyroxene fractionation - sorting models on which the

data are plotted and are identified by group, respectively. The most substantially silicified rocks belong, not surprisingly, to groups 1 and 2. Both igneous phases are quartz bearing, and are also silicified, with group 4 rocks more frequently and slightly more strongly silicified. The volcanics (group 5) have undergone the least amount of silicification.

Distribution of metals in rock units, and the relationship to hydrothermal alteration

The objective of this data analysis is to examine the relationship of the Cu-Au mineralization present in these rocks to specific recognisable rock types (or igneous phases), and to specific types and degrees of hydrothermal alteration, and, if possible, to develop an exploration strategy that can exploit these relationships as a geochemical tool in the further exploration of the property. On the TiO_2 vs. Zr conserved element scatterplot (Figure 1) at least one (the intrusives), and possibly a second (the volcanics) co-genetic group of rocks have been identified. The sediments do not appear to form a single co-genetic group (or one or both of these elements are not conserved). All rock units, intrusives, volcanics, and sediments contain anomalous amounts of Au, Ag and Cu. The intrusives also contain anomalous amounts of Mo. The Al_2O_3 vs. Zr immobile element scatterplot permits the identification of five separate groups of rocks, two groups of sediments, two phases of intrusive rocks, and one group of volcanic rocks.

Figures 7, 8, 9, 10, 11, 12, 13 and 14 are "bubble plots" of Au ppb, Ag ppm, Cu ppm, Mo ppm, Pb ppm, Zn ppm, As ppm and Sb ppm, respectively, on the Al_2O_3 vs. Zr scatterplot. The diameter of the "bubbles" is scaled from 0.0 to the maximum amount (identified on the plot) of an element present in a sample. These "bubbles" have the same maximum diameter for each element on each individual plot, and should not be used to compare concentrations of the different elements. Of the sediments, group 1 contains relatively minor amounts of Au, Ag, Cu, Mo, Pb, Zn, As and Sb. In contrast, group 2 sediments contain from 5 to 10 times as much of these elements. However, compared to the intrusives (groups 3 and 4), neither sediment group contains any significant Mo. Of the two intrusive phases, only group 4 contains significant amounts of Au, Ag, Cu, As and Sb. Both groups 3 and 4 contain Mo, Pb, and Zn, although with the exception of Zn, these elements are clearly more abundant in group 4. The volcanics (group 5) contain anomalous amounts of Au, Ag and Cu, but they do not contain significant amounts of Mo, Pb, Zn, As or Sb.

Figures 15, 16, 17, 18, 19 and 20 are "bubble plots" of all the above metals on the feldspar fractionation - sorting model $(2\text{Ca} + \text{Na} + \text{K})/\text{Zr}$ vs. Al/Zr . The purpose of plotting metal concentrations on this model is to examine the relationship between mineralization and the degree of alkali metasomatism.

In groups 1 and 2 (the sediments) Au, Ag, Cu, Pb and Zn are present throughout the entire range of alkali:Al ratios (1.0 - 0.4), suggesting that silicification rather than alkali depletion, may play the significant role in deposition of these metals.

In the group 3 intrusive phase, Pb and Zn, Pb and Zn are present throughout the entire range of alkali:Al ratios in these rocks, whereas Mo is found only in relatively un-altered rocks.

Group 4 is the preferentially mineralized intrusive phase. Alkali:Al ratios range from un-altered rocks (at 1.2) to completely sericitized rocks (at 0.35). Au and Ag are present both in un-altered rocks (alk:Al = 1.0), as well as in highly altered rocks (alk:Al = 0.35), but are most abundant in rocks whose alk:Al ratio is about 0.75. Likewise Cu and Mo are most also abundant in rocks whose alk:Al ratios about 0.75, whereas As and Sb are concentrated in the completely sericitized rocks. Group 5 rocks (volcanics) do not contain Mo, As or Sb, but they do contain anomalous Au, Ag and Cu, but only in completely sericitized rocks. Here the term sericitized refers to rocks whose bulk alkali:Al ratio is 0.33 or less. When these rocks are metamorphosed it is probable that no sericite will actually be present. Instead, an assemblage comprised of, for example, biotite, sillimanite and anthophyllite may be present, but in strict molar proportions constrained by the bulk alkali:Al ratio of these rocks (for each mole of biotite, two moles of an alumino-silicate mineral containing no alkalis must then also be present).

Figures 21a, b, c, d, e and f are scatterplots of TiO_2 , Al_2O_3 , Fe_2O_3 , CaO , Na_2O and K_2O wt% XRF (Metaborate) whole-rock vs. Ti, Al, Fe, Ca, Na and K wt% ICP (Aqua Regia) analyses, respectively. Although detection limits of elements in solution for both XRF and ICP analytical procedures are practically equal, the ICP method suffers significant degradation of analytical data quality because of incomplete and variable digestion of elements bound up in silicate and other refractory minerals. This means that lithogeochemical data obtained by the ICP (Aqua Regia) method cannot be used in constructing PER models. However, most Fe analyses correspond reasonably well (see Figure 25c), as do some of the Ca analyses (see Figure 25d). Fe bearing minerals, both sulphides and silicates seen to be adequately soluble in aqua regia. Likewise, metasomatic Ca minerals, sulphates, carbonates, and perhaps some hydrothermal silicates, also appear to be soluble in aqua regia. This means that a CaO - XRF (Metaborate) vs. Ca - ICP (Aqua Regia) plot can be used to identify rocks that contain significant amounts of metasomatic Ca minerals.

Figures 22, 23, 24 and 25 are "bubble plots" of Au, Ag, Cu and Mo on scatterplots of CaO - XRF (Metaborate) vs. Ca - ICP (Aqua Regia) analyses. The object of these plots is to demonstrate that the bulk of the mineralization in the intrusive phase (4) is associated with Ca metasomatism. This is confirmed by field observations of gypsum (or anhydrite) found with Cu-Mo mineralization in the intrusives (W.W. Osborne, pers. comm.). In the sediments (1 and 2) and the volcanics (5) Au, Ag and Cu is directly associated with soluble Ca minerals (i.e., alteration minerals). Likewise, Au, Cu and Mo in the mineralized intrusive phase (4) are also associated exclusively with soluble Ca minerals. The same relationship holds for Ag, except for two samples (W93-173 and W93-190) of the mineralized intrusive phase (4).

Answers to questions 1 - 7

1. Intrusives (I-1) through (I-5) belong to a single co-genetic group, which is suggested by the constant TiO_2 :Zr ratio (about 0.003) for all these rocks. Two separate phases of intrusives are recognized on the Al_2O_3 vs. Zr plot, one is mineralized and the other is not. The mineralized intrusive phase (4) includes samples from each of the intrusive phases (I-1 through I-5) distinguished in the field mapping. Sample numbers of the mineralized intrusive phase (4) are identified on Table 1. The barren intrusive phase (3) contains two samples of I-2 and the I-7 samples. These are also identified on Table 1.
2. The Buzzer quartz-diorite sample W93-207 belongs to the mineralized intrusive phase (4), and may well be related to the Rowbottom I-4 intrusive, which is also a member of the mineralized intrusive phase (4).
3. Buzzer sample W93-209 is part of the barren intrusive phase (3).
4. On the basis of the Al_2O_3 vs. Zr plot, the Buzzer altered felsite and the Buzzer West felsite samples appear to be members of the mineralized intrusive phase (4), although the Buzzer West felsite samples both plot outside the co-genetic intrusive group on the TiO_2 vs. Zr plot. This may be a function of analytical error, and without resort to additional samples cannot be resolved further.
5. The relationship of the various drill-core samples with respect to the intrusives is illustrated on Table 1. All groups of rocks (1 - 5) are represented in the drill core samples.
6. Intrusive I-7 belongs to the barren intrusive phase (3).
7. PER analysis of the whole-rock data from the volcanic rocks suggest that they are intermediate to mafic rocks. On the basis of a rather scattered trend on the TiO_2 vs. Zr plot, they appear to belong to one co-genetic group, and also plot as a separate group (5) on the Al_2O_3 vs. Zr plot. The un-altered volcanic sample (W90-34 206-207) has a bulk alkali:Al molar ratio of 1.2, indicating that Ca bearing minerals other than feldspars were involved in fractionation. The

volcanics are the most altered rocks of the samples analyzed. Mineralization in the volcanics is restricted to completely "sericitized" rocks, meaning those rocks which have a bulk alkali:Al ratio of 0.33 or less. This however does not mean that where these rocks are strongly metamorphosed (i.e., completely de-volatilized) that sericite will necessarily be present as the alteration mineral phase.

Conclusions

On the basis of a TiO_2 vs. Zr conserved element scatterplot, two separate co-genetic groups of rocks can be identified in the data, the intrusives (3 and 4) and the volcanics (5). Other co-genetic groups may exist (i.e., the sediments) but they cannot be identified on this plot because one or both of the elements may not be conserved.

On the basis of an Al_2O_3 vs. Zr immobile element scatterplot, five separate groups of rocks can be identified. There are two groups of what may well be silicified sediments (1 and 2), also two intrusive phases, one barren (3) and one mineralized (4), and one group of mafic to intermediate volcanics (5), and they can be distinguished by their different Al_2O_3 :Zr ratios.

Two distinct, probably un-related, styles of mineralization are recognized: i) Au, Ag and Cu mineralization in one of the two separate intrusive phases (4) and in the volcanics (5), associated with significant alkali loss, Ca metasomatism, and some silicification, and ii) Au, Ag and Cu mineralization associated with pervasive silicification of one of the sediment groups (2), probably representing an altered roof pendant to the intrusive complex. Mineralization in the intrusives is further distinguishable from mineralization in the other rocks by the presence of anomalous Mo.

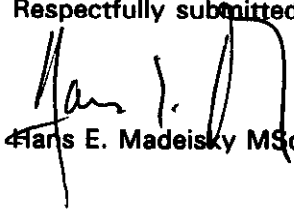
Base and precious metal mineralization in the sediments (1 and 2) is probably associated with pervasive silicification. Base and precious metal mineralization in the mineralized intrusive phase (4) is associated with moderate alkali loss, and with Ca metasomatism as indicated by the presence of aqua regia soluble Ca minerals in mineralized samples. Mineralization in the volcanics (5) is related to severe alkali loss. In all groups the mineralized samples appear to contain aqua regia soluble Ca minerals, which may be exploitable as an exploration guide.

In addition to having suffered alkali loss, mineralized intrusive samples are also silicified. However since un-altered samples cannot be reliably identified (because of the involvement of Ca minerals in fractionation and their presence in hydrothermally altered rocks), silicification in these rocks cannot be quantified.

Recommendation

The spatial distribution of the mineralized intrusive phase (4), or of the alteration facies associated with the other mineralized rock types (1 and 5) cannot be properly defined with the limited number of samples available in this study. There are two ways to take advantage of relationships uncovered in this lithogeochemical data analysis: i) re-examine the field data (maps, notes and type samples) to see if some visually distinguishing feature, common to all samples from the mineralized intrusive phase (4) can be recognized (this is relatively inexpensive), and failing that, ii) analyze the remainder of the samples available by the same procedures (and by the same lab) as the samples used in this study, and if the presently observed relationships are confirmed, plan an appropriate lithogeochemical sampling campaign to cover all prospective areas on the property.

Respectfully submitted,


Hans E. Madeisky MSc DIC PGeo

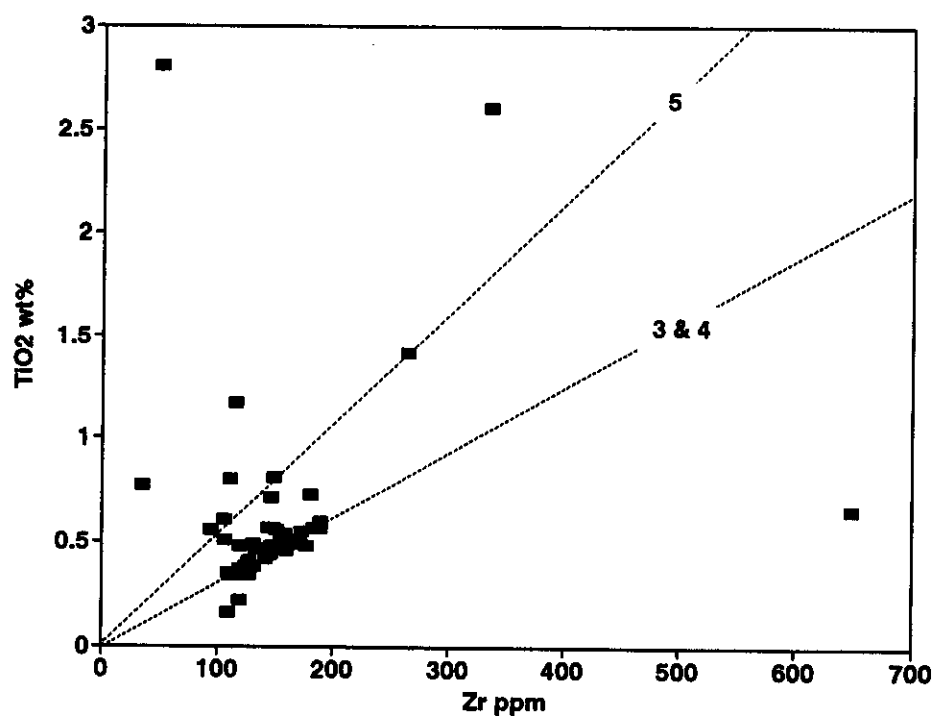


Figure 1 - TiO_2 vs. Zr Conserved Element Scatterplot

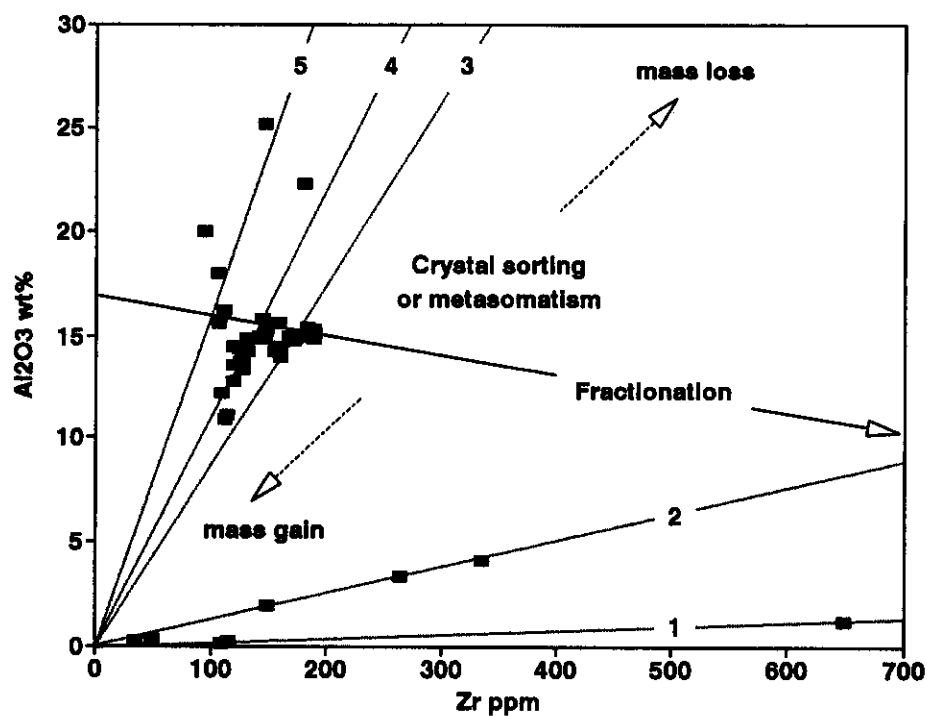


Figure 2 - Al_2O_3 vs. Zr Immobile Element Scatterplot

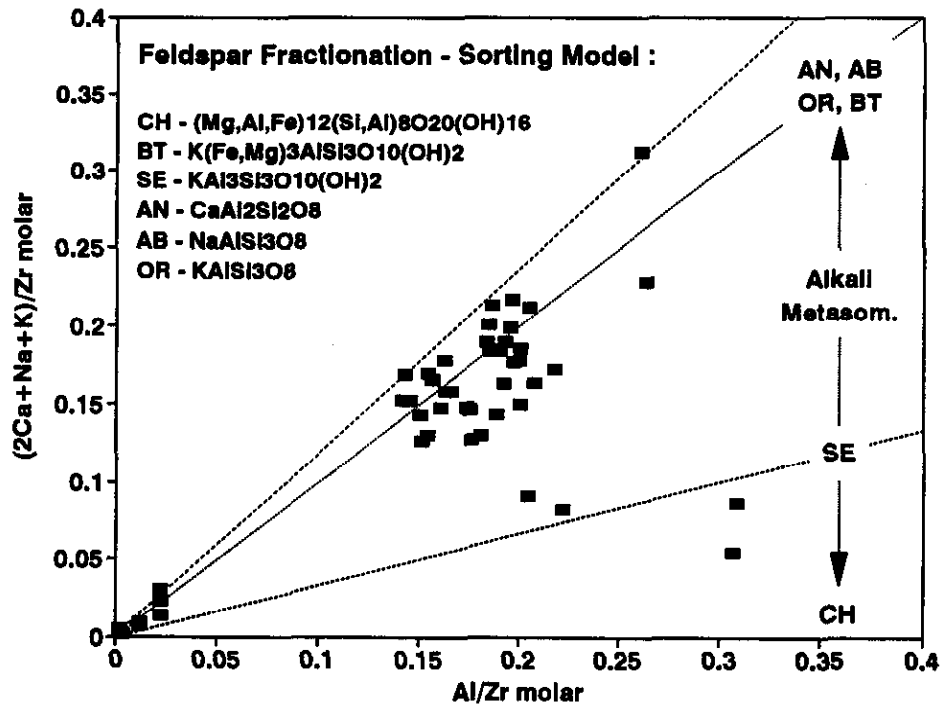


Figure 3 - Al Based Feldspar Fractionation and Sorting Model (all samples)

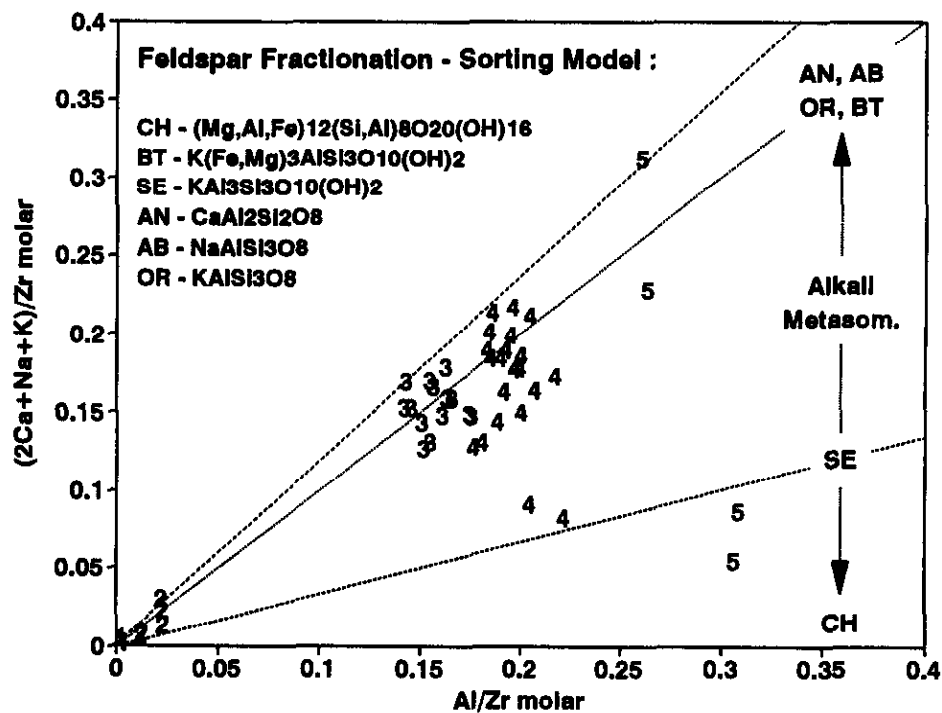


Figure 4 - Al Based Feldspar Fractionation and Sorting Model (Group Numbers)

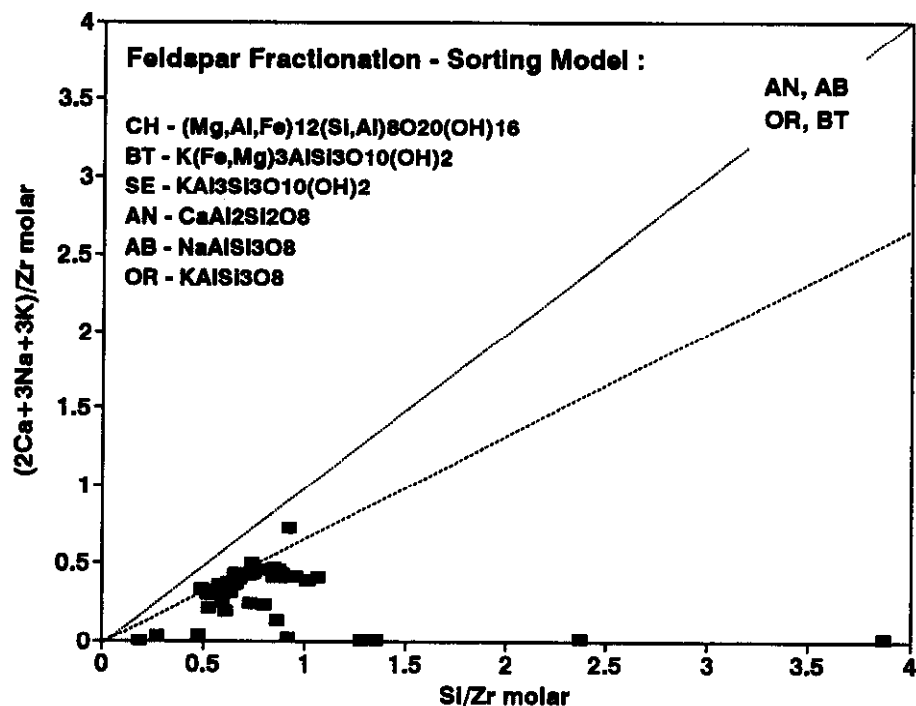


Figure 5 - Si Based Feldspar Fractionation and Sorting Model (all samples)

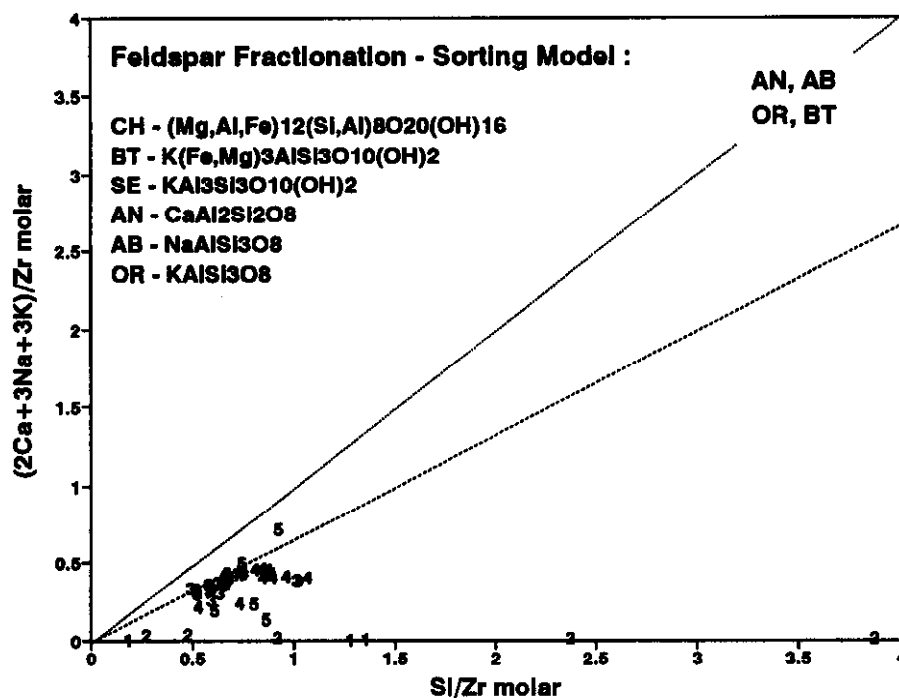


Figure 6 - Si Based Feldspar Fractionation and Sorting Model (Group Numbers)

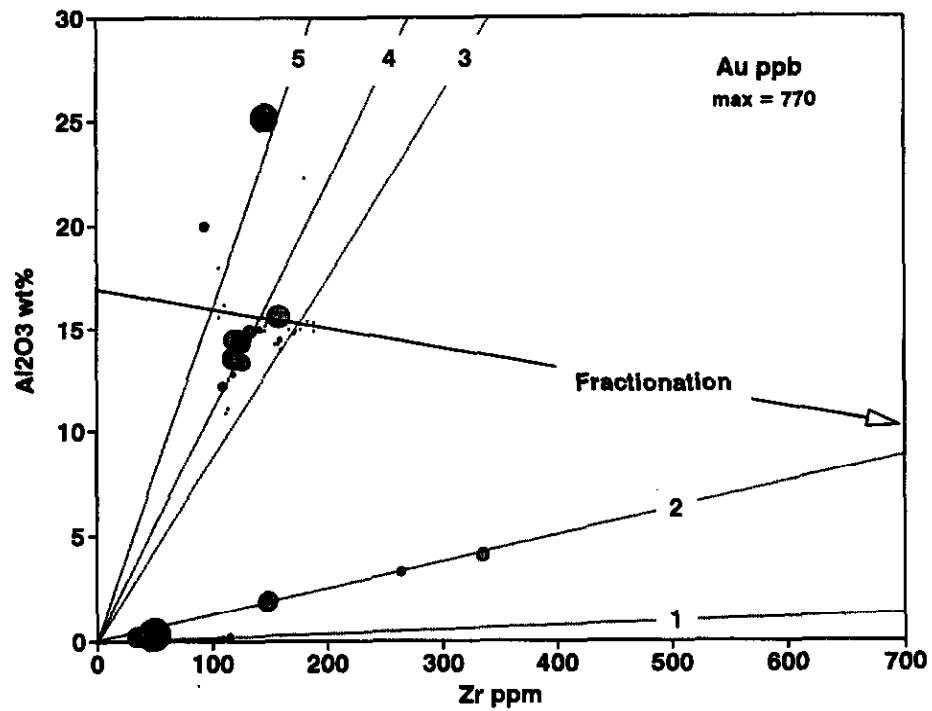


Figure 7 - Au ppb on Al_2O_3 v.s Zr Immobile Element Scatterplot (all samples)

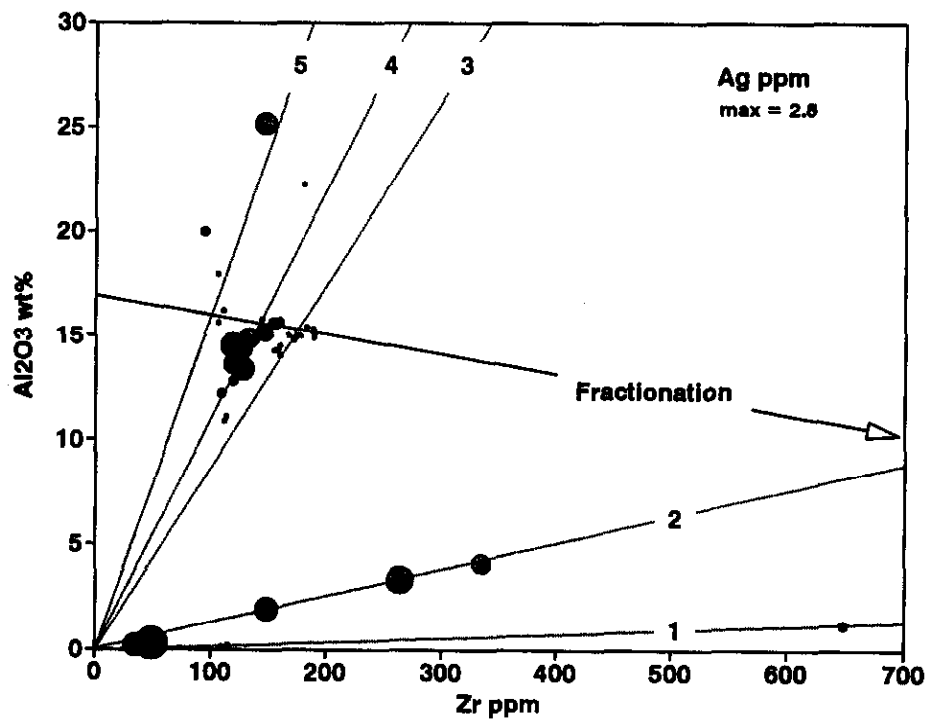


Figure 8 - Ag ppm on Al_2O_3 vs. Zr Immobile Element Scatterplot (all samples)

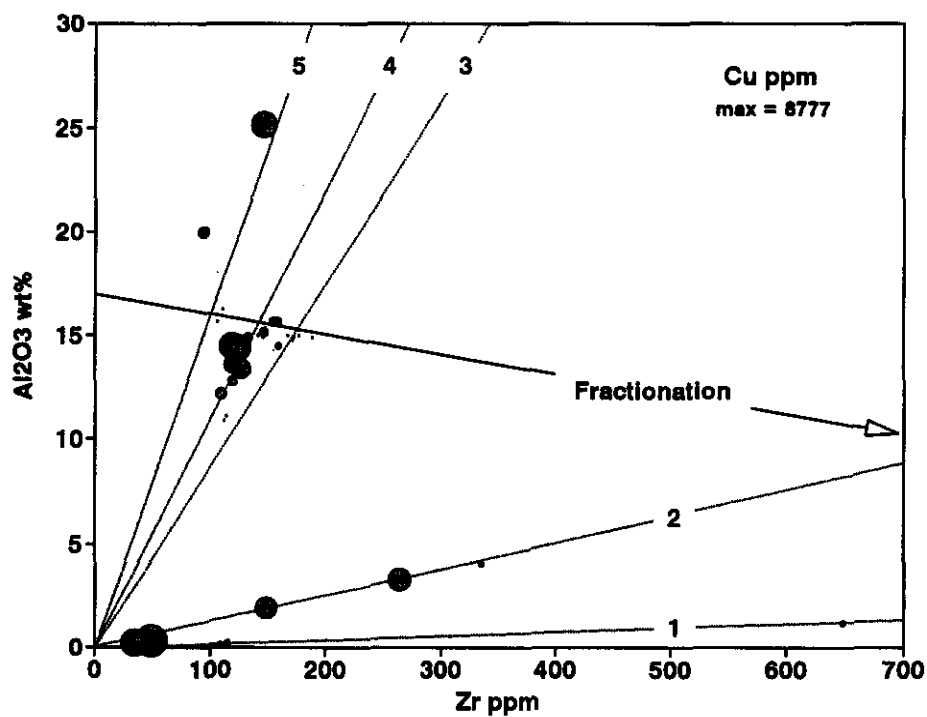


Figure 9 - Cu ppm on Al_2O_3 v.s Zr Immobile Element Scatterplot (all samples)

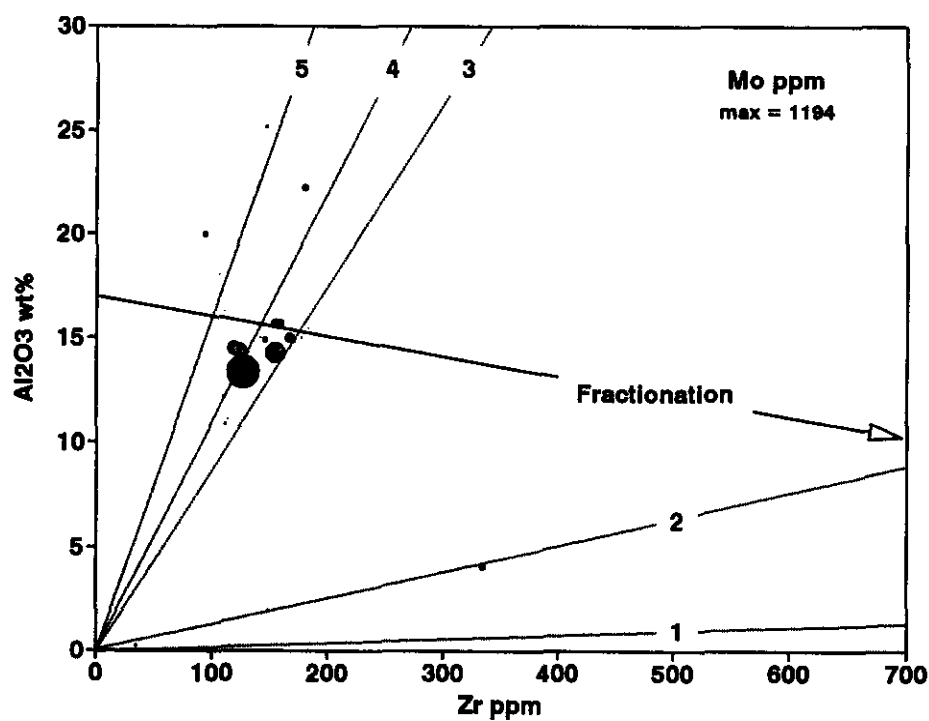


Figure 10 - Mo ppm on Al_2O_3 vs. Zr Immobile Element Scatterplot (all samples)

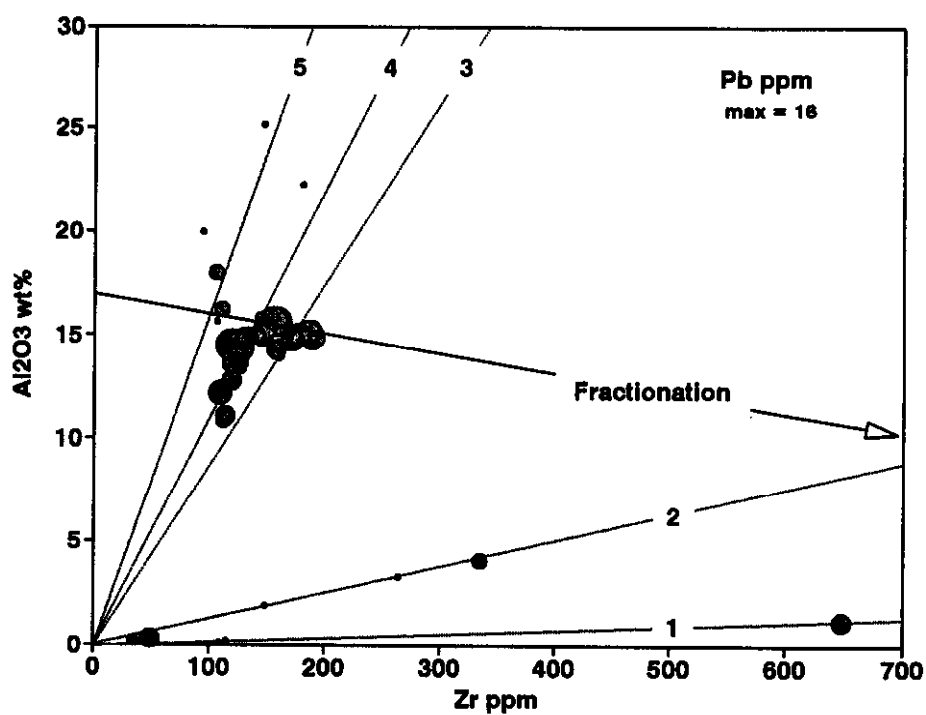


Figure 11 - Pb ppm on Al_2O_3 v.s Zr Immobile Element Scatterplot (all samples)

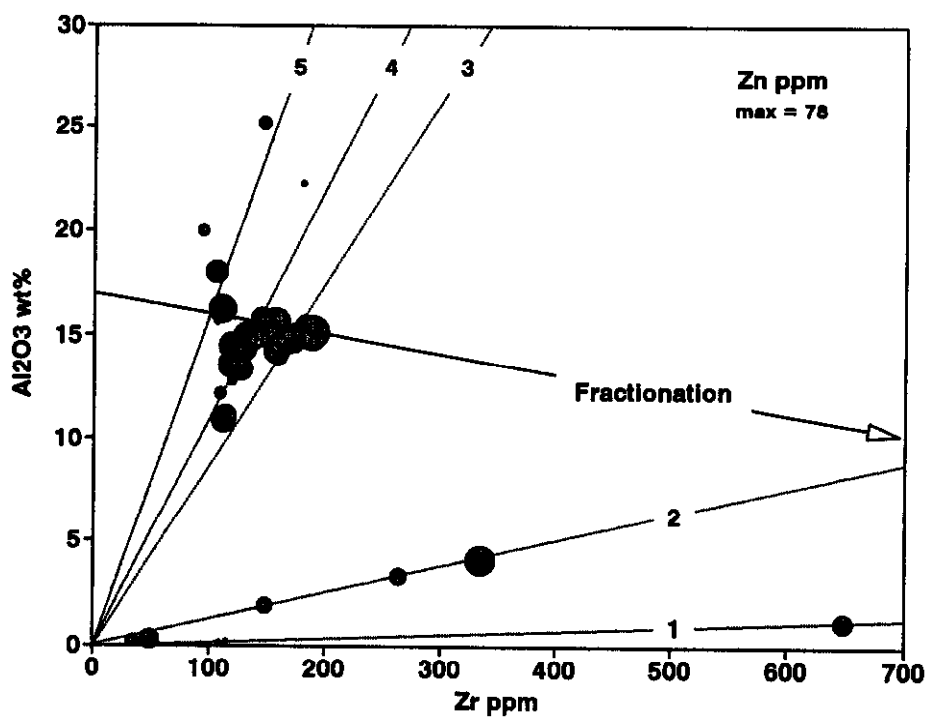


Figure 12 - Zn ppm on Al_2O_3 vs. Zr Immobile Element Scatterplot (all samples)

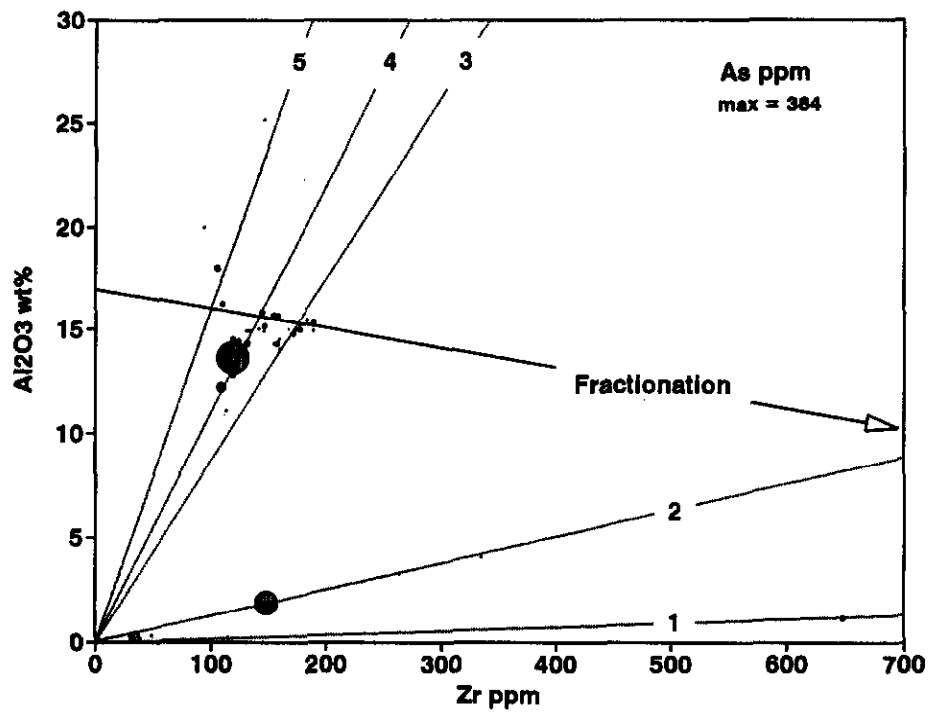


Figure 13 - As ppm on Al_2O_3 v.s Zr Immobile Element Scatterplot (all samples)

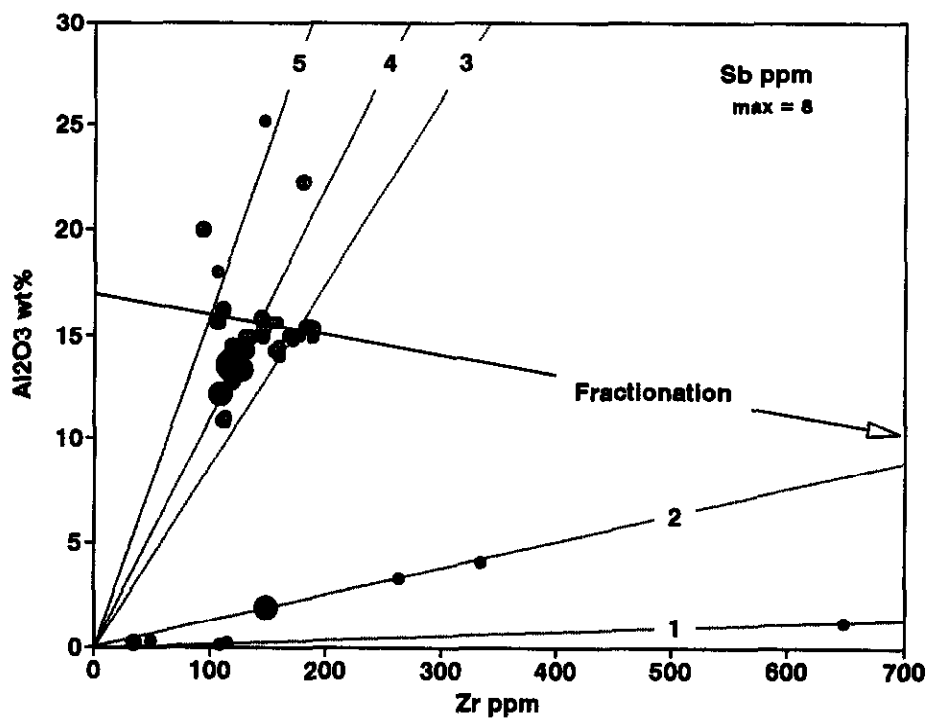


Figure 14 - Sb ppm on Al_2O_3 vs. Zr Immobile Element Scatterplot (all samples)

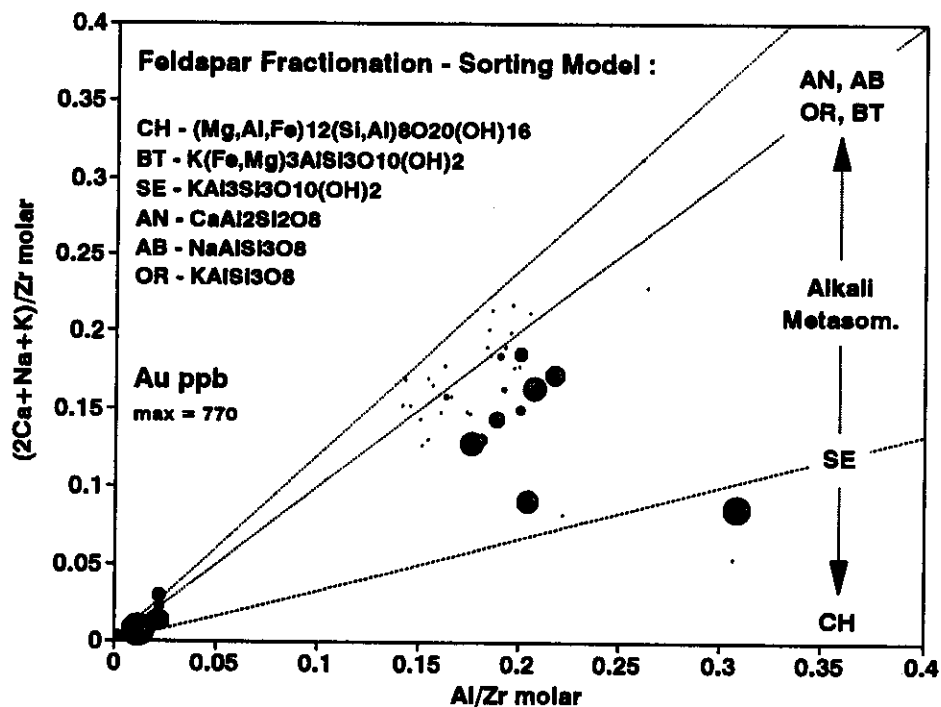


Figure 15 - Au ppb on Feldspar Fractionation Model (all samples)

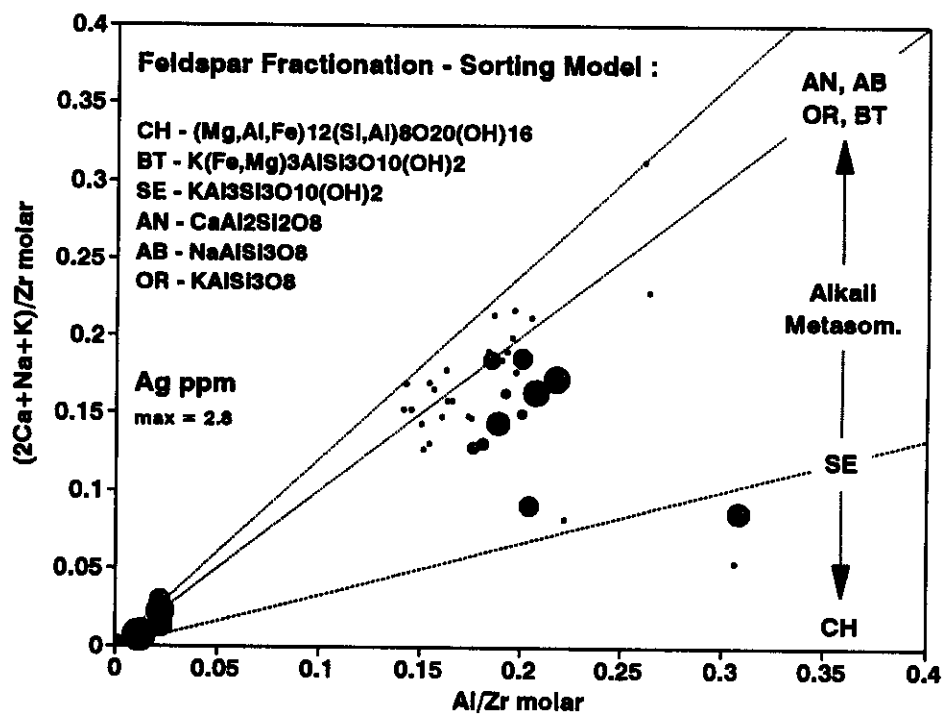


Figure 16 - Ag ppm on Feldspar Fractionation Model (all samples)

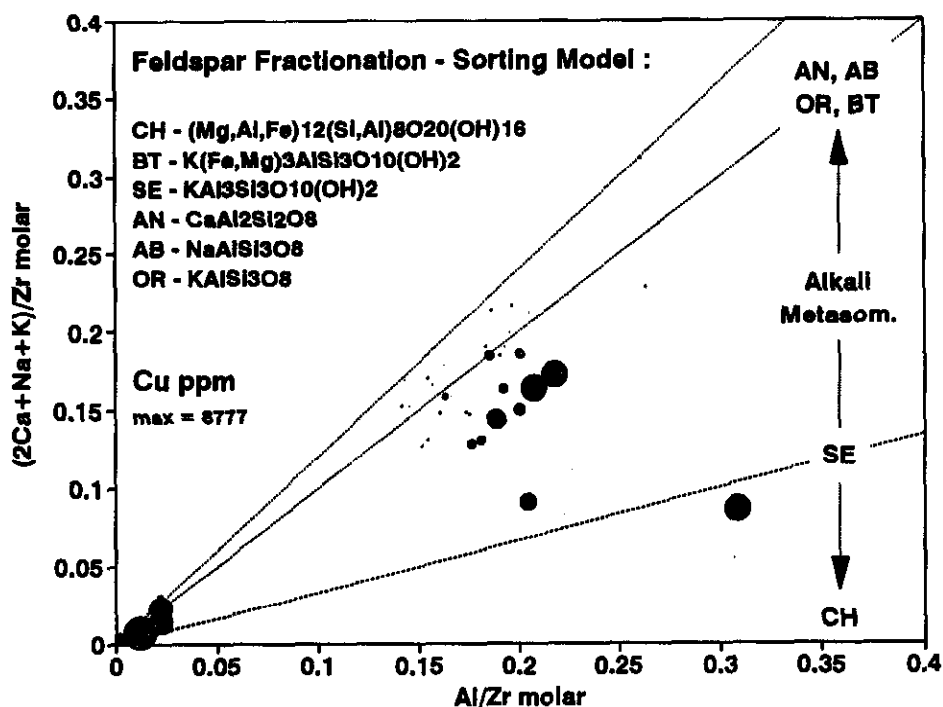


Figure 17 - Cu ppm on Feldspar Fractionation Model (all samples)

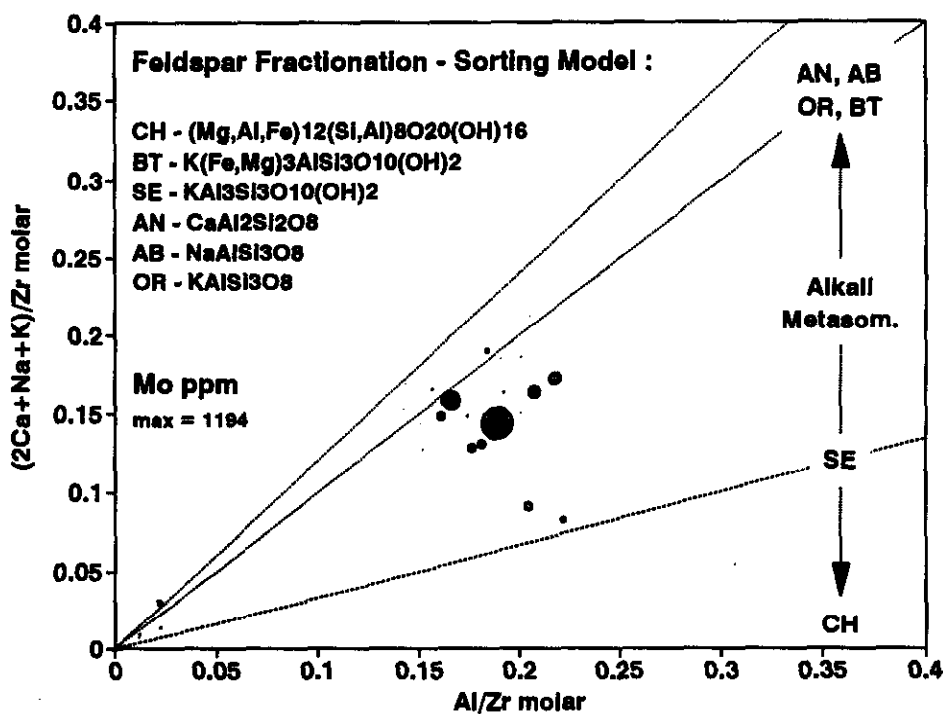


Figure 18 - Mo ppm on Feldspar Fractionation Model (all samples)

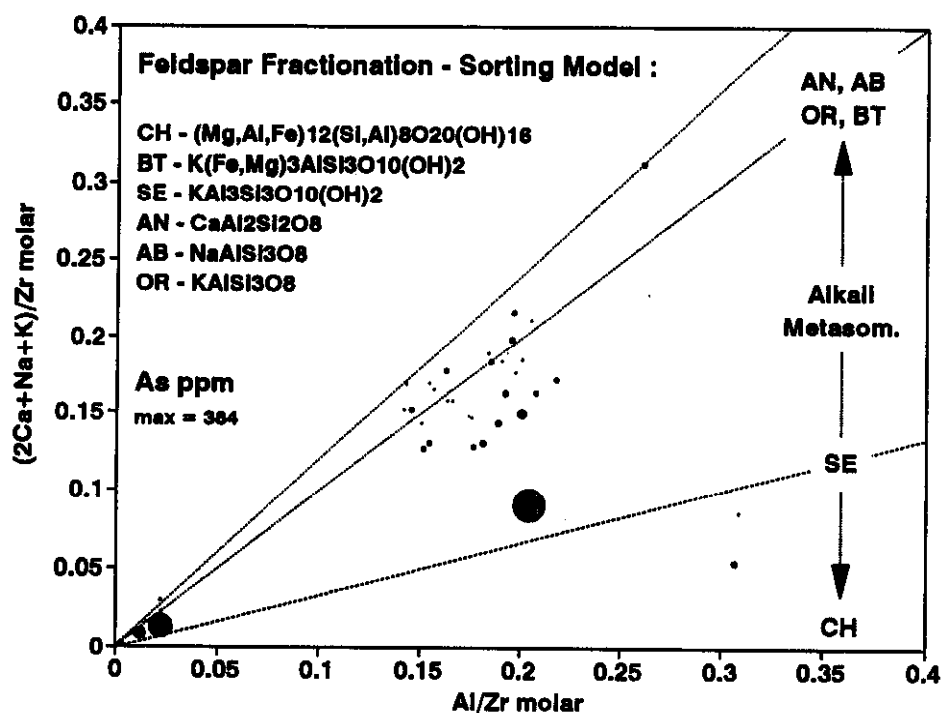


Figure 19 - As ppm on Feldspar Fractionation Model (all samples)

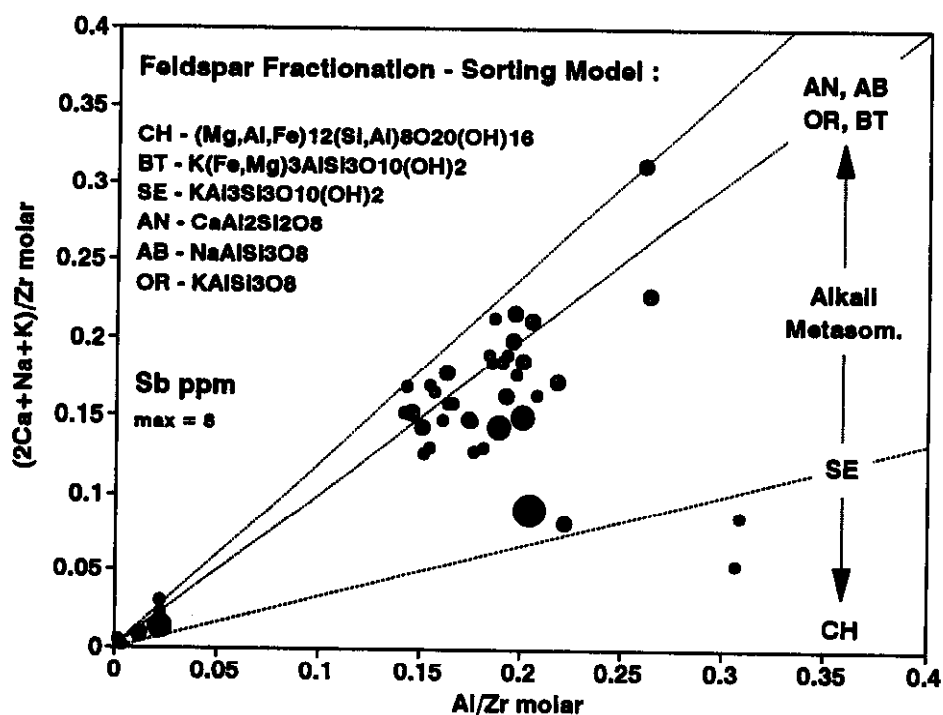


Figure 20 - Sb ppm on Feldspar Fractionation Model (all samples)

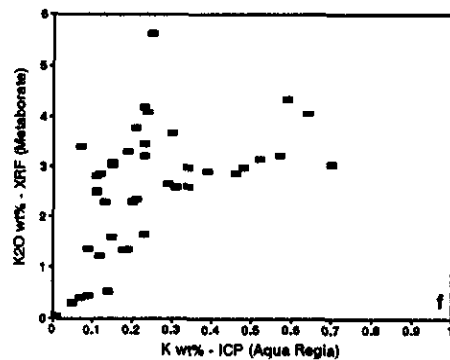
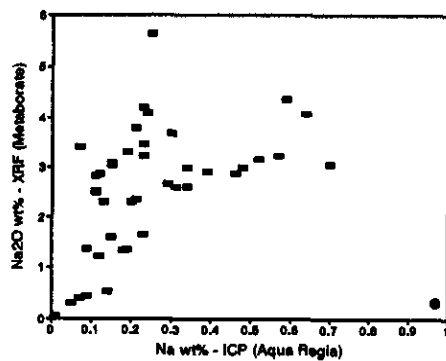
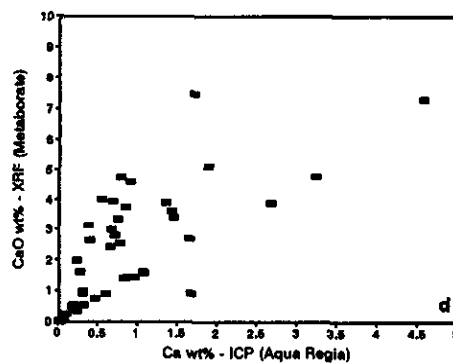
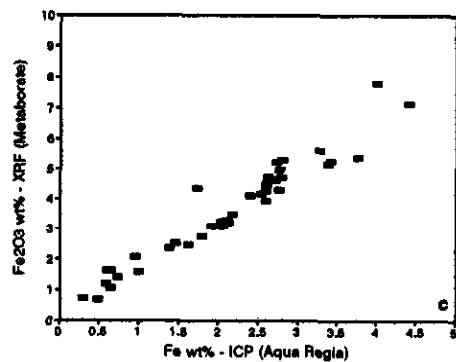
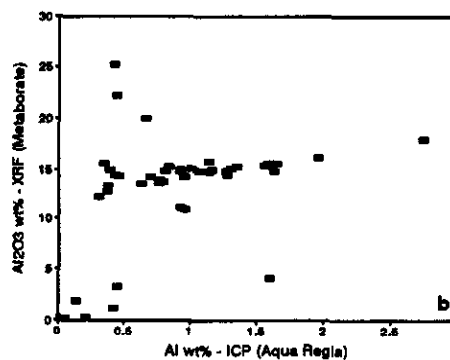
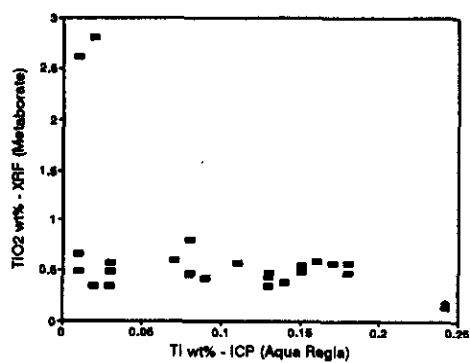


Figure 21 - Comparison Plots of XRF (Metaborate) and ICP (Aqua Regia) Analyses

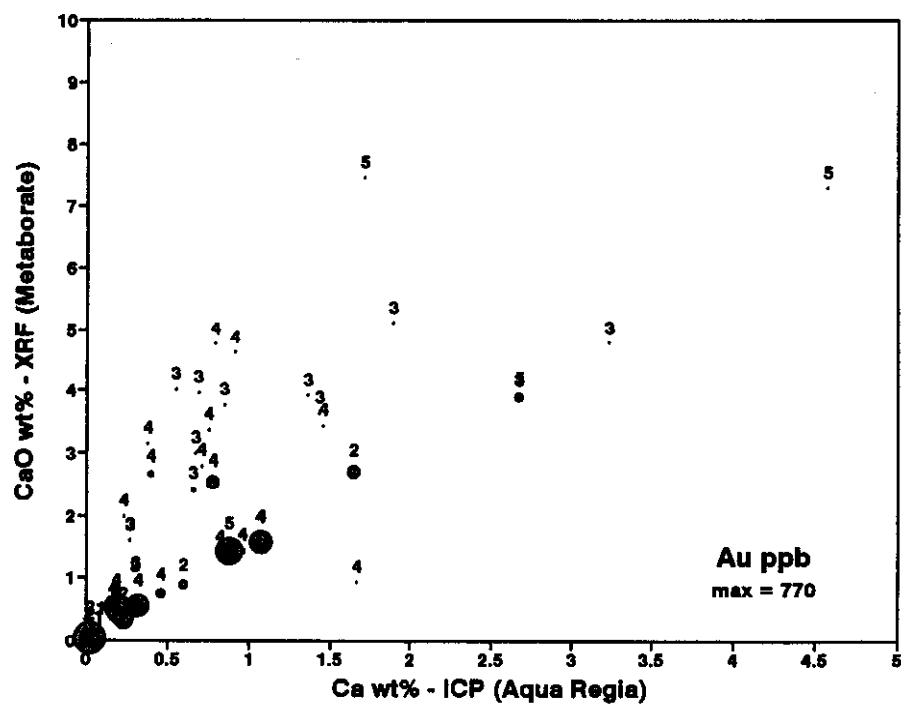


Figure 22 - Au ppb on CaO wt% (XRF) vs. Ca wt% (ICP) Plot (all samples)

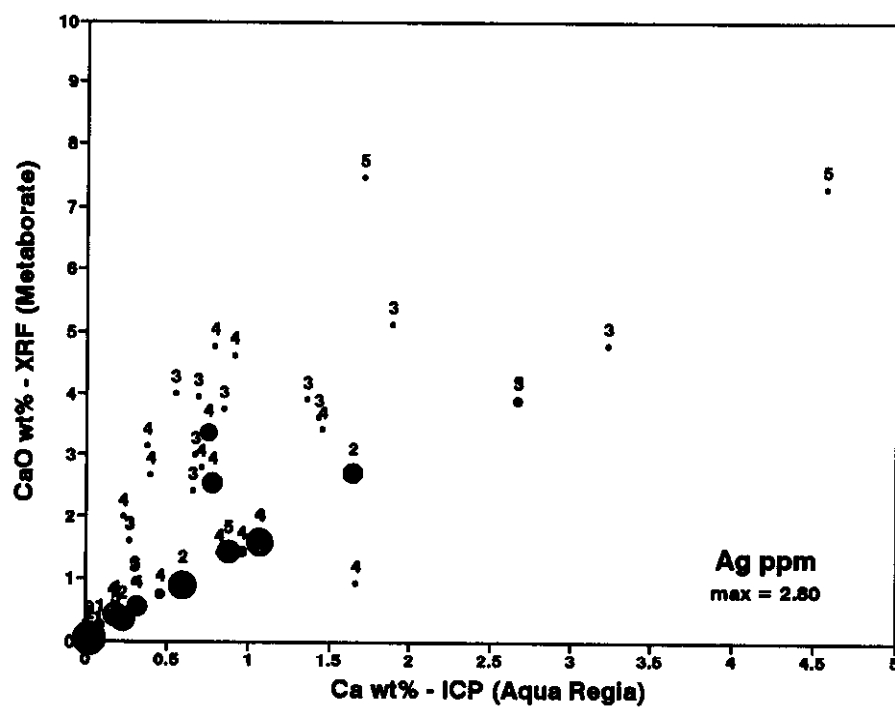


Figure 23 - Ag ppm on CaO wt% (XRF) vs. Ca wt% (ICP) Plot (all samples)

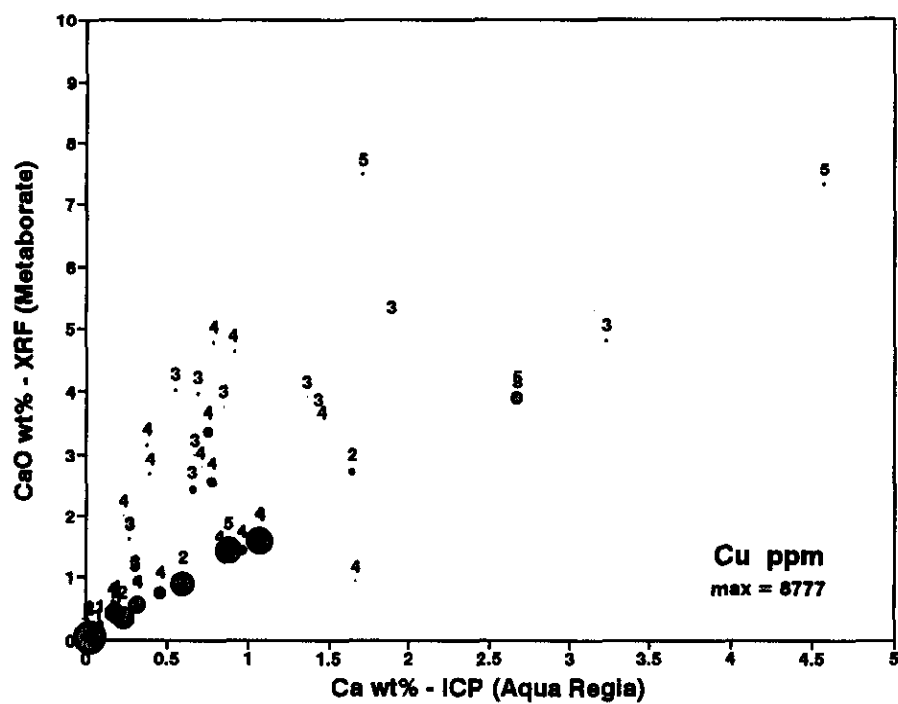


Figure 24 - Cu ppm on CaO wt% (XRF) vs. Ca wt% (ICP) Plot (all samples)

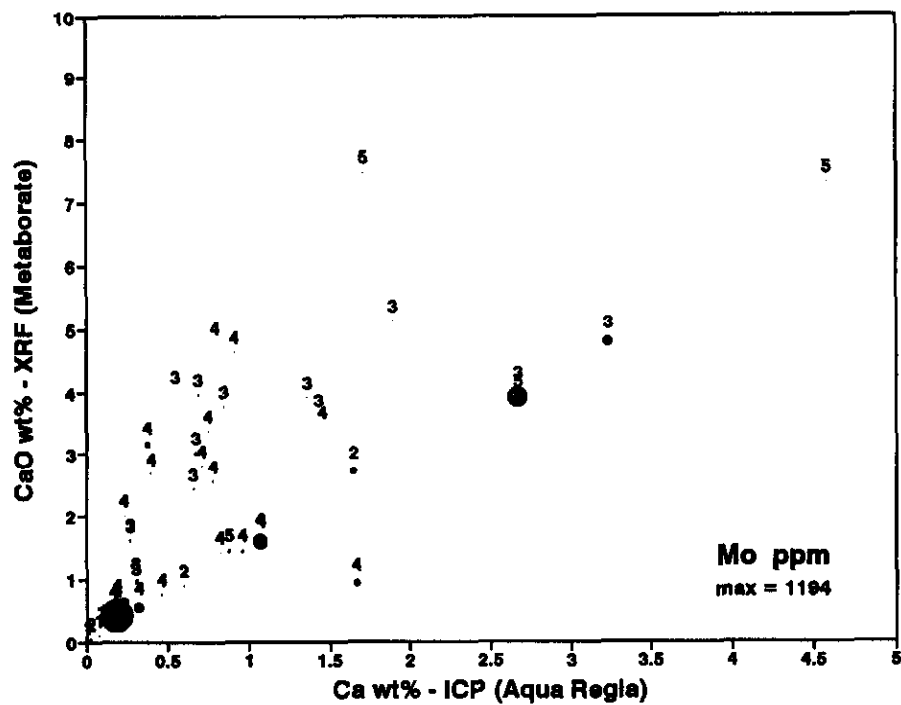


Figure 25 - Mo ppm on CaO wt% (XRF) vs. Ca wt% (ICP) Plot (all samples)

TASEKO, WQI
Whole-rock litho geochem data
from W.W. Osborne

Aqua Regia ICP analyses

Sample No.	Location	HEM Sample No.	Rock Type Code	WVO Alteration Code	HEM Rocktype Code	Ag ppm	Au ppb	Cu ppm	Mo ppm
W90-18 66-67	Empress	35	QR	1	1	0.1	15	564	3
W90-19 575-576	Empress	41	QMC	1	1	0.2	5	343	2
W90-18 279-280	Empress	37	QR	1	1	0.1	30	465	3
W90-18 449-450	Empress	39	QM	1	2	2.8	770	8777	3
W90-18 400-401	Empress	38	QR	1	2	1.2	295	6649	13
W89-3 50-51	Empress	34	QMC	1	2	1.0	140	355	57
W89-2 310-311	Empress	33	QMC	1	2	2.0	65	4467	3
W89-2 156-157	Empress	32	QR	1	2	1.4	275	4203	17
A 337	Mohawk-Motherlode	1	I2	2	3	0.1	5	46	1
W91-54 785-786	East Zone	28	EZ	2	3	0.1	5	29	1
W93-187	W of Buzzer West	11	I2	2	3	0.1	5	31	4
W91-48 714-715	Empress	23	E	2	3	0.1	5	3	1
W93-209 (dupl)	Buzzer	45	GD p	2	3	0.1	5	116	3
W93-209	Buzzer	17	GD p	2	3	0.1	5	118	2
W91-37 494-495	Empress	21	E	2	3	0.1	5	111	0.5
W90-21 724-725	Empress	20	E	2	3	0.1	5	34	9
W91-49 367-368	Granite Creek	25	GC	2	3	0.1	5	69	114
W91-41 642-643	Empress - East	22	EE	2	3	0.1	5	33	2
W91-49 788-790	Granite Creek	27	GC	2	3	0.1	15	438	1
W91-49 477-479	Granite Creek	26	GC	2	3	0.1	5	22	422
W93-228 (dupl)	E of Mohawk Mtn.	46	I?	2	3	0.1	5	58	5
W93-228	E of Mohawk Mtn.	19	I?	2	3	0.1	5	55	3
W93-207 (dupl)	Buzzer	43	QD f	6	4	0.4	390	601	87
W93-207	Buzzer	15	QD f	6	4	0.4	85	685	89
A 344	Mohawk Mtn.	8	I4	5	4	0.1	5	52	22
W91-90	S of Mohawk Mtn.	47	I1	3	4		5		
A 341	Rowbottom	5	I4	5	4	0.8	5	639	3
A 343	Rowbottom	7	I4	5	4	0.1	5	80	0.5
W93-182	Buzzer West	10	F	7	4	1.4	160	3167	1194
W93-222	Mohawk Mtn.	18	I3	5	4	0.1	35	87	1
W93-173	Buzzer West	9	F	7	4	0.2	25	735	8
A 338	Mohawk Mtn.	2	I5	4	4	0.1	5	7	0.5
W93-204	Mohawk Mtn.	14	I1	5	4	0.1	5	28	0.5
W93-201	Mohawk Mtn.	13	I2	4	4	0.1	5	53	0.5
A 339	Mohawk Mtn.	3	I5	5	4	0.1	5	7	0.5
W93-203	Mohawk Mtn.	48	I1	5	4		5		
W93-190	Buzzer West	12	F	7	4	0.2	50	909	4
A 340	Rowbottom	4	I4	6	4	1.0	115	833	2
W90-18 227-228.5	Empress	36	PSA	?	4	1.0	320	2448	110
A 342	S of Rowbottom	6	I4	6	4	0.1	5	10	1
W93-208	Buzzer	16	F a	7	4	1.8	400	5884	224
W93-208 (dupl)	Buzzer	44	F a	7	4	1.8	285	5685	203
W91-49 138-139	Granite Creek	24	GC	?	4	0.1	5	30	64
W90-34 206-207	NW of Empress	42	UAV	1	5	0.1	5	99	0.5
W89-1 238-239	Empress	30	AR	1	5	0.1	5	56	0.5
W89-1 171-172	Empress	29	SAR	1	5	0.1	5	25	3
W90-19 274-275	Empress	40	OAS	1	5	1.2	565	5586	17
W89-2 97-98	Empress	31	KSA	1	5	0.2	55	972	31

Table 1 - Details of Samples (ID numbers, location, rocktype codes, Au, Ag, Cu & Mo analyses)



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

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VANCOUVER, BC
V6C 2B3

Project:
Comments: ATTN: WILLIS W. OSBORNE

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Certificate Date: 11-JAN-94
Invoice No. :19326341
P.O. Number :
Account :LJI

CERTIFICATE OF ANALYSIS

A9326341

SAMPLE	PREP CODE	Al2O3 % XRF	CaO % XRF	Cr2O3 % XRF	Fe2O3 % XRF	K2O % XRF	MgO % XRF	MnO % XRF	Na2O % XRF	P2O5 % XRF	SiO2 % XRF	TiO2 % XRF	LOI % XRF	TOTAL %	Ba ppm	Rb ppm	Sr ppm	Nb ppm	Zr ppm	Y ppm
A 337	208 274	14.90	4.01	0.03	4.72	3.04	2.46	0.08	3.32	0.12	64.60	0.57	0.72	98.60	723	88	408	7	188	21
A 338	208 274	13.70	1.99	0.01	2.47	3.68	1.13	0.03	3.56	0.07	70.70	0.34	0.70	98.40	792	89	334	6	127	16
A 339	208 274	13.80	1.41	0.02	1.40	1.24	1.49	0.04	5.14	0.16	71.60	0.34	1.80	98.40	314	73	245	8	125	9
A 340	208 274	14.90	2.55	< 0.01	4.30	3.41	2.02	0.07	3.32	0.11	65.60	0.47	1.60	98.30	910	143	345	5	133	12
A 341	208 274	15.10	3.37	0.01	4.48	2.86	1.93	0.07	3.53	0.11	65.20	0.48	1.45	98.60	728	105	397	4	146	17
A 342	208 274	14.90	3.44	< 0.01	4.18	2.83	1.98	0.08	3.69	0.11	64.40	0.49	2.35	98.40	701	85	364	8	130	19
A 343	208 274	15.30	4.63	< 0.01	4.74	2.91	2.23	0.08	3.64	0.13	63.60	0.57	1.15	99.00	760	76	441	7	147	21
A 344	208 274	14.90	3.15	< 0.01	3.30	2.99	1.60	0.05	3.91	0.11	67.00	0.44	0.55	98.00	779	87	466	7	145	12
W93-173	208 274	12.80	1.43	0.02	0.72	4.11	0.24	0.04	2.32	0.04	75.30	0.22	2.15	99.40	1020	92	128	7	119	15
W93-182	208 274	13.40	0.43	0.01	1.56	1.59	0.32	0.05	4.68	0.09	74.50	0.34	2.10	99.10	750	53	190	9	127	11
W93-187	208 274	15.30	3.76	0.02	4.98	2.88	2.58	0.06	3.70	0.13	64.80	0.59	1.20	100.00	695	98	505	5	188	24
W93-190	208 274	12.20	0.75	0.02	1.19	3.30	0.26	0.03	2.56	0.03	76.60	0.16	1.40	98.50	675	76	91	5	109	7
W93-201	208 274	15.80	4.78	0.01	5.23	2.59	2.71	0.06	3.62	0.13	63.20	0.57	0.95	99.70	706	80	462	6	144	17
W93-204	208 274	14.30	2.81	0.01	3.23	3.21	1.38	0.05	3.64	0.09	69.40	0.38	1.25	99.70	749	90	330	6	131	13
W93-207	208 274	15.60	0.50	0.01	3.08	1.35	2.36	0.05	5.39	0.13	67.40	0.52	1.90	98.30	1010	58	360	6	154	7
W93-208	208 274	14.40	1.58	< 0.01	2.34	2.35	0.59	0.05	3.61	0.10	69.30	0.38	2.35	97.10	810	85	91	6	124	11
W93-209	208 274	14.80	1.59	0.01	5.25	2.52	1.53	0.08	4.20	0.13	66.60	0.49	1.55	98.80	1540	55	562	8	171	17
W93-222	208 274	15.00	2.68	0.01	3.49	2.61	1.64	0.04	4.15	0.11	67.70	0.42	0.95	98.80	768	70	451	5	141	13
W93-228	208 274	11.10	0.93	0.03	2.75	3.07	1.20	0.07	2.60	0.04	75.10	0.34	1.25	98.50	671	74	135	6	113	10
W91-21 724-725	208 274	14.00	3.00	0.01	4.28	3.79	1.56	0.05	3.20	0.10	67.60	0.46	1.05	99.10	1450	92	415	7	160	23
W91-37 494-495	208 274	14.90	3.97	0.02	4.53	3.23	2.14	0.05	3.40	0.12	65.10	0.55	0.85	98.90	875	94	438	7	172	21
W91-41 642-643	208 274	14.30	3.92	< 0.01	4.12	3.15	1.66	0.06	3.13	0.11	64.50	0.47	2.75	98.20	1180	86	433	5	157	21
W91-48 714-715	208 274	15.40	3.63	0.02	4.62	1.65	2.59	0.05	3.83	0.16	63.10	0.57	2.70	98.30	439	77	460	6	183	13
W91-49 138-139	208 274	22.30	0.93	0.01	1.59	5.63	0.57	0.02	0.31	0.08	62.30	0.73	4.30	98.80	1830	157	115	7	180	18
W91-49 367-368	208 274	15.00	4.79	0.02	1.62	4.21	1.16	0.11	0.35	0.15	64.90	0.51	5.55	98.40	776	123	136	9	167	11
W91-49 477-479	208 274	14.30	3.91	0.01	2.05	3.46	2.39	0.06	1.69	0.14	64.00	0.47	4.45	96.90	1190	91	177	5	154	14
W92-49 788-790	208 274	14.50	2.43	0.02	3.94	4.08	2.03	0.03	3.19	0.07	66.30	0.47	1.05	98.10	995	127	434	7	159	15
W91-54 785-786	208 274	15.10	5.13	0.01	5.30	2.66	1.89	0.08	3.46	0.14	61.00	0.60	3.15	98.50	814	75	431	7	189	20
W89-1 171-172	208 274	18.00	0.43	0.01	7.14	1.37	4.84	0.05	0.58	0.17	59.50	0.61	6.60	99.30	610	47	66	6	105	5
W89-1 238-239	208 274	15.60	7.31	< 0.01	5.61	0.05	0.10	0.02	0.11	0.15	55.80	0.51	7.95	93.20	96	7	217	4	106	27
W89-2 97-98	208 274	20.00	3.90	< 0.01	4.37	4.38	0.17	0.06	3.37	0.50	57.00	0.56	3.55	97.90	1550	71	368	5	94	12
W89-2 156-157	208 274	1.89	0.36	0.03	4.46	0.30	0.14	0.03	0.10	0.08	89.50	0.81	1.90	99.60	234	12	32	6	148	4
W89-2 310-311	208 274	3.32	0.91	0.05	8.41	0.40	0.17	0.06	0.78	0.03	82.30	1.42	0.35	98.20	235	14	37	8	264	< 2
W89-3 50-51	208 274	4.10	2.73	0.03	24.10	0.44	1.16	0.11	0.14	0.36	60.30	2.61	3.90	100.00	301	21	24	13	335	13
W90-18 66-67	208 274	0.14	0.11	0.05	1.05	< 0.01	0.05	0.03	0.07	0.03	97.40	0.35	0.50	99.80	51	6	6	5	109	2
W90-18 227-228.5	208 274	13.60	0.55	0.02	16.60	2.99	0.35	0.09	1.10	0.14	57.30	0.48	6.75	100.00	1730	63	165	3	119	4
W90-18 279-280	208 274	0.23	< 0.01	0.06	0.67	0.04	0.03	0.02	0.06	0.02	97.00	1.17	0.30	99.60	1910	6	75	9	115	< 2
W90-18 400-401	208 274	0.24	0.04	0.03	5.37	< 0.01	0.10	0.04	0.07	0.02	89.20	0.77	2.65	98.50	160	6	11	7	35	< 2
W90-18 449-450	208 274	0.33	0.04	0.04	15.90	< 0.01	0.19	0.15	0.08	0.02	76.50	2.81	1.60	97.70	333	6	11	17	49	< 2
W90-19 274-275	208 274	25.20	1.44	0.02	4.66	2.30	0.10	0.02	1.18	0.12	58.30	0.72	4.10	98.20	683	44	524	6	146	9

CERTIFICATION *Adriana Fernandez*



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CERTIFICATE OF ANALYSIS

A9326341

SAMPLE	PREP CODE		Al2O3 %	CaO %	Cr2O3 %	Fe2O3 %	K2O %	MgO %	MnO %	Na2O %	P2O5 %	SiO2 %	TiO2 %	LOI %	TOTAL	Ba	Rb	Sr	Nb	Zr	Y
			XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	%	ppm	ppm	ppm	ppm	ppm	ppm
M90-19 575-576	208	274	1.18	0.26	0.04	17.70	0.04	0.24	0.05	0.16	0.06	79.10	0.66	0.60	100.10	104	7	6	4	649	3
M90-34 206-207	208	274	16.20	7.48	0.02	7.79	0.53	5.35	0.13	3.17	0.19	53.90	0.80	2.65	98.20	321	18	670	6	111	10
M93-207	214	--	15.60	0.53	< 0.01	3.22	1.36	2.38	0.06	5.39	0.14	67.60	0.54	2.25	99.10	1070	60	352	7	158	5
M93-208	214	--	14.50	1.60	< 0.01	2.53	2.30	0.58	0.04	3.70	0.10	69.40	0.37	2.80	97.90	802	80	91	5	119	15
M93-209	214	--	15.00	1.61	< 0.01	5.17	2.49	1.49	0.08	4.20	0.13	67.60	0.48	1.70	99.90	1530	53	578	7	177	15
M93-228	214	--	10.90	0.98	< 0.01	3.09	3.03	1.19	0.07	2.58	0.04	75.10	0.34	1.25	98.60	674	71	142	5	112	9

Adriana Hernandez
CERTIFICATION:



Chemex Labs Ltd.

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212 Brooksbank Ave., North Vancouver
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PHONE: 604-984-0221

To: WESTPINE METALS LTD.

900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

Project :
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CERTIFICATE OF ANALYSIS

A9410205

SAMPLE	PREP		Al2O3 %	CaO %	Cr2O3 %	Fe2O3 %	K2O %	MgO %	MnO %	Na2O %	P2O5 %	SiO2 %	TiO2 %	LOI %	TOTAL	Ba	Rb	Sr	Nb	Zr	Y
	CODE		XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	%	ppm	ppm	ppm	ppm	ppm	ppm
W91-90	208	226	15.60	4.28	0.01	4.61	2.63	2.25	0.08	3.84	0.13	64.80	0.56	1.25	100.00	710	68	447	4	151	18
W93-203	208	226	14.20	1.60	0.01	2.69	3.40	1.46	0.05	3.68	0.09	70.10	0.41	2.10	99.80	684	104	245	8	127	18

CERTIFIED BY *Adriana Alexandra*



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: WESTPINE METALS LTD.

900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

Project :
Comments: ATTN: BILL OSBORNE

Page Number : 1-A
Total Pages : 2
Certificate Date: 18-JAN-94
Invoice No. : 19410334
P.O. Number :
Account : LJL

CERTIFICATE OF ANALYSIS

A9410334

SAMPLE	PREP CODE	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm
A 337	244 229	< 0.2	1.07	2	120	< 0.5	< 2	0.55	< 0.5	11	182	46	2.79	< 10	< 1	0.70	10	1.12	325	1
A 338	244 229	< 0.2	0.76	< 2	60	< 0.5	< 2	0.23	< 0.5	6	100	7	1.62	< 10	< 1	0.30	< 10	0.68	100	< 1
A 339	244 229	< 0.2	0.80	4	90	< 0.5	2	0.82	< 0.5	4	117	7	0.73	< 10	< 1	0.12	10	0.71	155	< 1
A 340	244 229	1.0	1.63	2	20	< 0.5	< 2	0.78	< 0.5	9	72	833	2.76	< 10	< 1	0.07	10	1.17	360	2
A 341	244 229	0.8	1.31	6	40	< 0.5	< 2	0.75	< 0.5	10	106	639	2.60	< 10	< 1	0.12	10	0.88	295	3
A 342	244 229	< 0.2	1.27	4	30	0.5	< 2	1.46	< 0.5	11	90	10	2.53	< 10	< 1	0.11	20	1.14	460	1
A 343	244 229	< 0.2	0.84	< 2	110	< 0.5	2	0.91	< 0.5	10	131	60	2.62	< 10	< 1	0.39	10	0.85	320	< 1
A 344	244 229	< 0.2	0.81	2	100	< 0.5	< 2	0.38	< 0.5	8	124	52	2.10	< 10	< 1	0.48	10	0.77	185	22
W93-173	244 229	0.2	0.37	14	780	< 0.5	< 2	0.96	< 0.5	1	144	735	0.29	< 10	5	0.24	10	0.02	170	8
W93-182	244 229	1.4	0.38	14	520	< 0.5	< 2	0.19	< 0.5	3	103	3170	0.99	< 10	4	0.15	< 10	0.05	280	1195
W93-187	244 229	< 0.2	1.35	8	110	< 0.5	< 2	0.85	< 0.5	9	175	31	2.76	< 10	< 1	0.46	10	0.97	180	4
W93-190	244 229	0.2	0.31	28	290	< 0.5	< 2	0.46	< 0.5	1	148	909	0.58	< 10	< 1	0.19	< 10	0.02	65	4
W93-201	244 229	< 0.2	1.14	8	90	< 0.5	< 2	0.79	< 0.5	9	148	53	2.72	< 10	< 1	0.31	10	0.78	150	< 1
W93-204	244 229	< 0.2	0.95	18	90	< 0.5	2	0.71	< 0.5	5	113	28	2.03	< 10	< 1	0.23	10	0.75	230	< 1
W93-207	244 229	0.4	1.59	14	550	< 0.5	< 2	0.17	< 0.5	24	137	685	2.05	< 10	< 1	0.18	10	1.36	285	89
W93-208	244 229	1.8	0.46	8	460	< 0.5	< 2	1.08	< 0.5	7	87	5880	1.38	< 10	< 1	0.21	10	0.15	200	224
W93-209	244 229	< 0.2	1.14	12	230	< 0.5	< 2	0.27	< 0.5	10	124	118	3.40	< 10	< 1	0.11	10	0.87	395	2
W93-222	244 229	< 0.2	0.93	2	120	< 0.5	< 2	0.40	< 0.5	8	116	87	2.17	< 10	< 1	0.34	10	0.90	135	1
W93-228	244 229	< 0.2	0.93	2	150	< 0.5	2	0.30	< 0.5	6	188	55	1.78	< 10	< 1	0.15	< 10	0.65	380	3
W91-21 724-725	244 229	< 0.2	0.77	2	120	< 0.5	< 2	0.67	< 0.5	11	125	34	2.60	< 10	< 1	0.21	10	0.74	190	9
W91-37 494-495	244 229	< 0.2	0.92	4	140	< 0.5	< 2	0.69	< 0.5	11	161	111	2.61	< 10	< 1	0.57	10	0.89	190	< 1
W91-41 642-643	244 229	< 0.2	0.70	6	240	< 0.5	< 2	1.36	< 0.5	13	113	33	2.39	< 10	< 1	0.52	10	0.99	300	2
W91-48 714-715	244 229	< 0.2	1.56	4	120	< 0.5	< 2	1.43	< 0.5	14	156	3	2.71	< 10	< 1	0.23	10	1.44	215	1
W91-49 138-139	244 229	< 0.2	0.44	< 2	100	< 0.5	< 2	1.67	< 0.5	1	94	30	0.60	< 10	< 1	0.25	10	0.16	265	64
W91-49 367-368	244 229	< 0.2	0.39	< 2	80	< 0.5	< 2	3.23	< 0.5	2	128	69	0.64	< 10	< 1	0.23	< 10	0.35	650	114
W91-49 477-479	244 229	< 0.2	0.96	2	120	< 0.5	< 2	2.67	< 0.5	6	119	22	0.95	< 10	< 1	0.23	20	0.88	295	422
W91-49 788-790	244 229	< 0.2	1.28	4	90	< 0.5	< 2	0.66	< 0.5	15	182	438	2.59	< 10	< 1	0.64	10	1.25	150	1
W91-54 785-786	244 229	< 0.2	1.01	2	90	< 0.5	< 2	1.89	< 0.5	14	122	29	2.79	< 10	< 1	0.29	10	1.00	465	1
W89-1 171-172	244 229	< 0.2	2.75	16	40	< 0.5	< 2	0.19	< 0.5	18	87	25	4.40	< 10	< 1	0.09	< 10	2.38	240	3
W89-1 238-239	244 229	< 0.2	0.35	< 2	< 10	< 0.5	< 2	4.58	< 0.5	13	41	56	3.26	< 10	< 1	< 0.01	< 10	0.01	30	< 1
W89-2 97-98	244 229	0.2	0.66	2	760	< 0.5	< 2	2.67	< 0.5	5	65	972	1.73	< 10	< 1	0.59	< 10	0.02	355	31
W89-2 156-157	244 229	1.4	0.14	164	80	< 0.5	< 2	0.23	< 0.5	6	205	4200	2.60	< 10	< 1	0.05	< 10	0.05	130	17
W89-2 310-311	244 229	2.0	0.45	2	30	< 0.5	< 2	0.60	< 0.5	12	324	4470	5.45	< 10	< 1	0.07	< 10	0.07	360	3
W89-3 50-51	244 229	1.0	1.60	2	30	< 0.5	< 2	1.65	< 0.5	28	232	355	14.10	< 10	< 1	0.09	10	0.61	635	57
W90-18 66-67	244 229	< 0.2	0.02	< 2	< 10	< 0.5	< 2	0.08	< 0.5	2	274	564	0.64	< 10	< 1	< 0.01	< 10	< 0.01	45	3
W90-18 227-228.5	244 229	1.0	0.63	334	450	< 0.5	< 2	0.32	< 0.5	13	126	2450	9.36	< 10	< 1	0.34	< 10	0.15	525	110
W90-18 279-280	244 229	< 0.2	0.02	2	1360	< 0.5	< 2	0.01	< 0.5	2	399	465	0.48	< 10	< 1	0.01	< 10	< 0.01	30	3
W90-18 400-401	244 229	1.2	0.05	36	60	< 0.5	< 2	0.03	< 0.5	41	187	6650	3.75	< 10	< 1	< 0.01	< 10	0.04	170	13
W90-18 449-450	244 229	2.8	0.21	2	130	< 0.5	< 2	0.03	< 0.5	52	337	8780	9.95	< 10	< 1	< 0.01	< 10	0.09	1050	3
W90-19 274-275	244 229	1.2	0.42	4	40	< 0.5	< 2	0.88	< 0.5	23	84	5590	2.72	< 10	< 1	0.13	10	< 0.01	50	17

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Analytical Chemists * Geochemists * Registered Assayers
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To: WESTPINE METALS LTD.

900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

Project :
Comments: ATTN: BILL OSBORNE

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Total Pages : 2
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Invoice No. : 19410334
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Account : LJI

CERTIFICATE OF ANALYSIS

A9410334

SAMPLE	PREP CODE	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
A 337	244 229	0.10	20	390	10	< 2	5	23	0.18	< 10	< 10	95	< 10	48
A 338	244 229	0.06	11	240	4	< 2	4	13	0.13	< 10	< 10	47	< 10	20
A 339	244 229	0.06	10	660	4	< 2	1	11	< 0.01	< 10	< 10	15	< 10	28
A 340	244 229	0.03	11	410	6	2	6	15	0.08	< 10	< 10	65	20	66
A 341	244 229	0.06	12	440	4	< 2	3	17	0.15	< 10	< 10	69	< 10	42
A 342	244 229	0.05	13	460	6	2	8	57	0.01	< 10	< 10	71	< 10	44
A 343	244 229	0.09	15	440	8	< 2	6	29	0.11	< 10	< 10	89	< 10	46
A 344	244 229	0.08	16	320	6	< 2	3	17	0.13	< 10	< 10	64	< 10	30
W93-173	244 229	0.03	2	90	6	2	1	44	< 0.01	< 10	< 10	3	< 10	6
W93-182	244 229	0.05	7	360	2	4	1	20	< 0.01	< 10	< 10	11	< 10	44
W93-187	244 229	0.07	18	450	4	2	4	22	0.16	< 10	< 10	92	< 10	30
W93-190	244 229	0.03	3	40	8	4	< 1	16	< 0.01	< 10	< 10	4	< 10	10
W93-201	244 229	0.08	14	400	2	2	3	21	0.17	< 10	< 10	98	< 10	28
W93-204	244 229	0.05	9	300	2	2	5	14	0.14	< 10	< 10	54	< 10	26
W93-207	244 229	0.07	27	550	14	< 2	3	14	< 0.01	< 10	< 10	49	< 10	52
W93-208	244 229	0.03	14	330	16	< 2	3	15	< 0.01	< 10	< 10	15	< 10	50
W93-209	244 229	0.06	11	480	8	< 2	5	24	0.03	< 10	< 10	60	< 10	48
W93-222	244 229	0.07	18	410	4	< 2	4	19	0.09	< 10	< 10	66	< 10	32
W93-228	244 229	0.03	9	80	6	< 2	2	10	0.02	< 10	< 10	30	< 10	38
W91-21 724-725	244 229	0.06	14	340	2	< 2	4	28	0.08	< 10	< 10	60	< 10	24
W91-37 494-495	244 229	0.08	18	380	4	< 2	5	38	0.15	< 10	< 10	86	< 10	24
W91-41 642-643	244 229	0.06	18	390	6	2	9	62	0.13	< 10	< 10	62	< 10	46
W91-48 714-715	244 229	0.06	38	580	2	2	7	45	0.03	< 10	< 10	69	< 10	32
W91-49 138-139	244 229	0.01	4	370	< 2	2	1	72	< 0.01	< 10	< 10	4	< 10	4
W91-49 367-368	244 229	0.02	4	530	< 2	< 2	1	107	< 0.01	< 10	< 10	3	< 10	8
W91-49 477-479	244 229	0.02	17	530	< 2	< 2	3	90	< 0.01	< 10	< 10	23	< 10	24
W91-49 788-790	244 229	0.07	16	230	2	< 2	10	24	0.18	< 10	< 10	98	< 10	30
W91-54 785-786	244 229	0.05	19	500	6	< 2	10	62	0.07	< 10	< 10	80	< 10	78
W89-1 171-172	244 229	0.03	27	660	4	< 2	3	10	< 0.01	< 10	< 10	41	< 10	38
W89-1 238-239	244 229	0.01	16	570	< 2	2	1	197	< 0.01	< 10	< 10	16	< 10	4
W89-2 97-98	244 229	0.03	13	2140	< 2	2	< 1	139	< 0.01	< 10	< 10	58	< 10	8
W89-2 156-157	244 229	< 0.01	27	260	< 2	4	1	11	< 0.01	< 10	< 10	66	< 10	18
W89-2 310-311	244 229	0.02	54	50	< 2	< 2	1	12	< 0.01	< 10	< 10	108	< 10	24
W89-3 50-51	244 229	< 0.01	123	1370	4	< 2	8	20	0.01	< 10	< 10	312	10	64
W90-18 66-67	244 229	< 0.01	5	20	< 2	< 2	< 1	2	< 0.01	< 10	< 10	10	< 10	4
W90-18 227-228.5	244 229	0.01	53	490	6	8	1	46	< 0.01	< 10	< 10	65	< 10	54
W90-18 279-280	244 229	< 0.01	6	10	< 2	< 2	< 1	54	< 0.01	< 10	< 10	2	< 10	2
W90-18 400-401	244 229	< 0.01	49	< 10	2	2	< 1	4	< 0.01	< 10	< 10	6	< 10	14
W90-18 449-450	244 229	< 0.01	81	< 10	6	< 2	1	7	0.02	< 10	< 10	35	< 10	26
W90-19 274-275	244 229	0.03	38	340	< 2	< 2	< 1	204	< 0.01	< 10	< 10	11	< 10	14

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Phai D Ma



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212 Brooksbank Ave., North Vancouver
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To: WESTPINE METALS LTD.

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VANCOUVER, BC
V6C 2B3

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CERTIFICATE OF ANALYSIS

A9410334

SAMPLE	PREP CODE	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm
M90-19 575-576	244 229	0.2	0.42	6	10	< 0.5	< 2	0.09	< 0.5	20	267	343	9.67	< 10	< 1	0.01	< 10	0.07	260	2
M90-34 206-207	244 229	< 0.2	1.96	10	60	< 0.5	< 2	1.71	< 0.5	25	207	99	3.99	< 10	< 1	0.14	10	1.87	485	< 1
M93-207	244 229	0.4	1.65	8	460	< 0.5	< 2	0.19	< 0.5	24	52	601	2.12	< 10	< 1	0.19	10	1.40	300	87
M93-208	244 229	1.8	0.43	8	350	< 0.5	< 2	1.07	< 0.5	6	37	5690	1.45	< 10	< 1	0.20	10	0.15	210	203
M93-209	244 229	< 0.2	1.16	8	240	< 0.5	< 2	0.27	< 0.5	9	50	116	3.37	< 10	< 1	0.11	10	0.88	390	3
M93-228	244 229	< 0.2	0.96	< 2	150	< 0.5	< 2	0.31	< 0.5	6	48	58	1.91	< 10	< 1	0.15	10	0.68	405	5
M91-90	244 229	< 0.2	1.05	4	90	< 0.5	< 2	0.66	< 0.5	8	109	68	2.35	< 10	< 1	0.31	10	0.85	265	< 1
M93-203	244 229	0.2	1.42	6	60	< 0.5	< 2	0.59	< 0.5	8	157	176	1.82	< 10	< 1	0.29	20	0.86	205	1

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Yhai D Ma



Chemex Labs Ltd.

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Total Pages :2

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CERTIFICATE OF ANALYSIS

A9410334

SAMPLE	PREP CODE	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
N90-19 575-576	244 229	< 0.01	86	150	6	< 2	1	3	0.01	< 10	< 10	13	< 10	28
N90-34 206-207	244 229	0.18	59	680	4	2	6	137	0.08	< 10	< 10	121	< 10	56
N93-207	244 229	0.08	27	550	14	< 2	3	14	< 0.01	< 10	< 10	49	< 10	52
N93-208	244 229	0.04	13	320	16	2	3	14	< 0.01	< 10	< 10	14	< 10	48
N93-209	244 229	0.06	10	460	8	< 2	4	24	0.03	< 10	< 10	56	< 10	48
N93-228	244 229	0.04	9	80	4	2	2	10	0.03	< 10	< 10	31	< 10	40
N91-90	244 229	0.10	11	450	6	< 2	3	25	0.17	< 10	< 10	76	< 10	28
N93-203	244 229	0.10	10	320	16	2	4	19	< 0.01	< 10	< 10	38	< 10	38

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Project :
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Certificate Date: 28-JAN-94
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CERTIFICATE OF ANALYSIS

A9410601

SAMPLE	PREP CODE	Au ppb FA+AA										
A 337	244 --	< 5										
A 338	244 --	< 5										
A 339	244 --	< 5										
A 340	244 --	115										
A 341	244 --	< 5										
A 342	244 --	< 5										
A 343	244 --	< 5										
A 344	244 --	< 5										
W93-173	244 --	25										
W93-182	244 --	160										
W93-187	244 --	< 5										
W93-190	244 --	50										
W93-201	244 --	< 5										
W93-204	244 --	< 5										
W93-207	244 --	85										
W93-208	244 --	400										
W93-209	244 --	< 5										
W93-222	244 --	35										
W93-228	244 --	< 5										
W91-21 724-725	244 --	< 5										
W91-37 494-495	244 --	< 5										
W91-41 642-643	244 --	< 5										
W91-48 714-715	244 --	< 5										
W91-49 138-139	244 --	< 5										
W91-49 367-368	244 --	< 5										
W91-49 477-479	244 --	< 5										
W91-49 788-790	244 --	15										
W91-54 785-786	244 --	< 5										
W89-1 171-172	244 --	< 5										
W89-1 238-239	244 --	< 5										
W89-2 97-98	244 --	55										
W89-2 156-157	244 --	275										
W89-2 310-311	244 --	65										
W89-3 50-51	244 --	140										
W90-18 66-67	244 --	15										
W90-18 227-228.5	244 --	320										
W90-18 279-280	244 --	30										
W90-18 400-401	244 --	295										
W90-18 449-450	244 --	770										
W90-19 274-275	244 --	565										

CERTIFICATION:

Theresa V. V. V.



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CERTIFICATE OF ANALYSIS

A9410601

SAMPLE	PREP CODE	Au ppb FA+AA										
W90-19 575-576	244 --	5										
W90-34 206-207	244 --	< 5										
W93-207	244 --	390										
W93-208	244 --	285										
W93-209	244 --	< 5										
W93-228	244 --	< 5										
W91-90	244 --	< 5										
W93-203	244 --	< 5										

CERTIFICATION:

APPENDIX

1998 Rock Sample Descriptions

Soil Sample Assay Results

Rock Sample Assay Results

Whole Rock Determinations

1998 ROCK SAMPLE DESCRIPTIONS

- TGR-1 (a)** Gray, biotite quartz diorite - granodiorite. Some epidote altering biotite. 0.2 % pyrite. One crystal of plagioclase with disseminated chalcopyrite.
- TGR-2 (b)** Volcanic rock completely altered to pyrophyllite and some quartz with 3% pyrite and heavy limonite stain.
- TGR-3 (c)** Same as above but somewhat vuggy.
- TGR-4 (d)** Volcanic rock altered to pyrophyllite and quartz with 2.5 disseminated pyrite.
- TYR-1 (e)** Highly weathered, limonite with some malachite. This is a highly altered intrusive rock. On surface it has a similar appearance as rock from the Buzzer Zone.
- TYR-2 (f)** Volcanic rock completely altered to quartz, andalusite and pyrophyllite.
- TYR-3 (g)** Somewhat bleached gray biotite quartz diorite granodiorite with molybdenite in quartz vein.
- 98WO-1 (h)** Similar to TYR-1 with 1 quartz vein. Much malachite along vein. Vein obscured by limonite.
- 98WO-2 (i)** Highly siliceous granitic rock with minor chalcopyrite and molybdenite on fractures. On fracture with some plagioclase. Probably a siliceous quartz monzonite.
- 98WO-3 (j)** Dark gray, biotite quartz diorite granodiorite with quartz veinlet, malachite, pyrite and chalcopyrite.
- 98WO-4 (k)** Same as above with copy in fracture 1 mm wide.



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: GREAT QUEST METALS

900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

A9830807

Comments: ATTN:BILL OSBORNE

CERTIFICATE

A9830807

(QLY) - GREAT QUEST METALS

Project:
P.O. #:

Samples submitted to our lab in Vancouver, BC.
This report was printed on 22-SEP-1998.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
201	69	Dry, sieve to -80 mesh
202	69	save reject
229	69	ICP - AQ Digestion charge

* NOTE 1.

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	69	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	69	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
2119	69	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	69	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	69	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	69	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	69	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	69	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	69	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
2126	69	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	69	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	69	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	69	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	69	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	69	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	69	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	69	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	69	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	69	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	69	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	69	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
2138	69	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	69	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	69	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	69	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	69	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	69	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	69	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
2145	69	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	69	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	69	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	69	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	69	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000



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To: GREAT QUEST METALS

900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

Project:

Comments: ATTN: BILL OSBORNE

Page Number : 1-A

Total Pages : 2

Certificate Date: 22-SEP-1998

Invoice No. : 19830807

P.O. Number :

Account : QLY

CERTIFICATE OF ANALYSIS

A9830807

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
L52E 10S	-- --	NotRed	NotRed	NotRed	NotRed	NotRed	NotRed	NotRed	NotRed	NotRed	NotRed	NotRed	NotRed	NotRed	NotRed	NotRed	NotRed	NotRed	NotRed	NotRed
L52E 11S	201 202	< 5	< 0.2	0.32	2	70	< 0.5	< 2	0.13	< 0.5	1	19	5	1.34	< 10	< 1	0.04	< 10	0.07	50
L52E 12S	201 202	< 5	< 0.2	1.34	< 2	390	< 0.5	< 2	0.56	< 0.5	9	19	70	2.16	< 10	< 1	0.04	30	0.36	530
L52E 13S	201 202	< 5	< 0.2	1.13	6	220	< 0.5	< 2	0.25	< 0.5	8	25	70	2.15	< 10	< 1	0.03	10	0.57	125
L52E 14S	201 202	< 5	< 0.2	2.39	22	420	0.5	< 2	0.81	0.5	11	31	116	3.23	< 10	< 1	0.04	50	0.35	515
L52E 16S	201 202	< 5	< 0.2	1.15	< 2	240	< 0.5	< 2	0.16	< 0.5	7	21	40	2.18	< 10	< 1	0.04	10	0.36	125
L52E 17S	201 202	< 5	< 0.2	0.55	6	100	< 0.5	< 2	0.11	< 0.5	4	19	8	1.79	< 10	< 1	0.04	< 10	0.16	80
L52E 19S	201 202	15	< 0.2	1.23	10	260	< 0.5	< 2	0.11	< 0.5	8	32	46	2.62	< 10	< 1	0.05	10	0.41	300
L52E 20S	201 202	10	< 0.2	1.00	6	110	< 0.5	< 2	0.12	< 0.5	6	34	19	2.45	< 10	< 1	0.07	< 10	0.46	110
L52E 21S	201 202	< 5	< 0.2	0.78	< 2	110	< 0.5	< 2	0.16	< 0.5	5	20	10	2.39	< 10	< 1	0.04	< 10	0.28	130
L52E 22S	201 202	< 5	< 0.2	1.72	16	640	0.5	< 2	0.99	< 0.5	8	29	264	2.65	< 10	< 1	0.08	30	0.59	495
L52E 23S	201 202	10	< 0.2	1.84	28	560	< 0.5	< 2	0.63	< 0.5	10	39	280	3.08	< 10	< 1	0.14	10	0.76	305
L52E 24S	201 202	< 5	< 0.2	2.53	50	1030	0.5	< 2	1.22	< 0.5	11	43	412	3.11	< 10	< 1	0.19	40	0.91	385
L56E 12S	201 202	< 5	< 0.2	1.48	2	230	< 0.5	< 2	0.26	< 0.5	10	48	35	3.28	< 10	< 1	0.12	< 10	0.86	140
L56E 13S	201 202	20	< 0.2	1.10	2	60	< 0.5	< 2	0.10	< 0.5	5	33	27	2.65	< 10	< 1	0.04	< 10	0.40	80
L56E 14S	201 202	85	< 0.2	0.93	< 2	60	< 0.5	< 2	0.09	< 0.5	4	36	16	2.43	< 10	< 1	0.06	< 10	0.33	80
L56E 15S	201 202	30	< 0.2	1.66	< 2	270	< 0.5	< 2	0.43	< 0.5	10	40	68	3.04	< 10	< 1	0.08	< 10	0.79	150
L56E 16S	201 202	< 5	< 0.2	1.29	8	280	< 0.5	< 2	0.44	< 0.5	5	20	63	2.40	< 10	< 1	0.05	10	0.27	160
L56E 17S	201 202	10	< 0.2	0.97	< 2	140	< 0.5	< 2	0.17	< 0.5	5	24	36	1.85	< 10	< 1	0.06	< 10	0.41	75
L56E 18S	201 202	15	< 0.2	1.08	< 2	80	< 0.5	< 2	0.12	< 0.5	7	39	30	2.77	< 10	< 1	0.07	< 10	0.44	100
L56E 19S	201 202	< 5	< 0.2	1.01	< 2	120	< 0.5	< 2	0.08	< 0.5	5	13	15	1.54	< 10	< 1	0.04	< 10	0.28	90
L56E 20S	201 202	10	< 0.2	2.05	10	140	< 0.5	< 2	0.24	< 0.5	16	50	202	3.59	< 10	< 1	0.16	< 10	1.34	325
L56E 22S	201 202	15	< 0.2	1.91	14	330	< 0.5	< 2	0.60	< 0.5	13	39	165	3.00	< 10	< 1	0.15	< 10	1.14	305
L56E 23S	201 202	45	< 0.2	1.34	< 2	160	< 0.5	< 2	0.22	< 0.5	7	30	40	2.62	< 10	< 1	0.07	< 10	0.66	170
L56E 24S	201 202	< 5	< 0.2	2.47	8	690	0.5	< 2	0.61	0.5	15	34	296	3.02	< 10	< 1	0.15	20	1.11	665
L60E 10S	201 202	< 5	< 0.2	1.36	< 2	100	< 0.5	< 2	0.08	< 0.5	7	21	43	2.18	< 10	< 1	0.04	< 10	0.40	115
L60E 11S	201 202	< 5	< 0.2	0.98	< 2	60	< 0.5	< 2	0.06	< 0.5	5	23	18	1.98	< 10	< 1	0.03	< 10	0.22	90
L60E 12S	201 202	< 5	< 0.2	0.54	< 2	40	< 0.5	< 2	0.05	< 0.5	2	11	6	1.04	< 10	< 1	0.02	< 10	0.14	50
L60E 13S	201 202	10	< 0.2	1.41	< 2	80	< 0.5	< 2	0.09	< 0.5	7	37	37	3.26	< 10	< 1	0.03	< 10	0.48	95
L60E 14S	201 202	15	< 0.2	0.69	< 2	70	< 0.5	< 2	0.07	< 0.5	4	22	28	1.64	< 10	< 1	0.03	< 10	0.21	65
L60E 16S	201 202	10	< 0.2	1.32	< 2	150	< 0.5	< 2	0.13	< 0.5	8	37	53	2.64	< 10	< 1	0.06	< 10	0.54	110
L60E 17S	201 202	< 5	< 0.2	0.42	< 2	40	< 0.5	< 2	0.11	< 0.5	4	16	5	1.39	< 10	< 1	0.05	< 10	0.19	85
L60E 19S	201 202	< 5	< 0.2	0.79	< 2	100	< 0.5	< 2	0.14	< 0.5	6	40	18	2.43	< 10	< 1	0.13	< 10	0.39	85
L60E 20S	201 202	10	< 0.2	1.31	< 2	160	< 0.5	< 2	0.13	< 0.5	6	24	38	2.06	< 10	< 1	0.09	< 10	0.60	100
L60E 21S	201 202	20	< 0.2	1.59	4	450	< 0.5	< 2	0.21	< 0.5	8	25	70	2.20	< 10	< 1	0.04	< 10	0.51	155
L60E 22S	201 202	< 5	< 0.2	0.48	< 2	100	< 0.5	< 2	0.09	< 0.5	3	11	10	1.33	< 10	< 1	0.03	< 10	0.10	80
L60E 23S	201 202	< 5	< 0.2	2.52	12	810	< 0.5	< 2	0.65	< 0.5	9	24	189	2.52	< 10	< 1	0.10	< 10	0.63	225
L60E 24S	201 202	10	< 0.2	3.69	20	1250	0.5	< 2	0.57	< 0.5	13	39	410	3.27	< 10	< 1	0.17	30	0.99	310
L68E 06S	201 202	< 5	< 0.2	1.04	< 2	80	< 0.5	< 2	0.19	< 0.5	3	15	18	1.31	< 10	< 1	0.04	< 10	0.29	90
L68E 07S	201 202	20	< 0.2	1.28	< 2	120	< 0.5	< 2	0.22	< 0.5	6	22	52	1.65	< 10	< 1	0.05	< 10	0.43	105

CERTIFICATION:

Hartmann



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: GREAT QUEST METALS

900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

Project :

Comments: ATTN:BILL OSBORNE

Page Number :2-B

Total Pages :2

Certificate Date: 22-SEP-1998

Invoice No. :19830807

P.O. Number :

Account :QLY

CERTIFICATE OF ANALYSIS

A9830807

SAMPLE	PREP CODE	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
L68E 10S	201 202	4 < 0.01		10	320	2 < 2		2	12	0.06 < 10	< 10	< 10	72 < 10		24
L68E 11S	201 202	< 1 0.01		5	220	6 < 2		1	15	0.05 < 10	< 10	< 10	47 < 10		20
L68E 12S	201 202	6 < 0.01		14	490	6 < 2		3	8	0.06 < 10	< 10	< 10	78 < 10		44
L68E 13S	201 202	5 < 0.01		6	150	6 < 2		1	35	0.09 < 10	< 10	< 10	52 < 10		22
L68E 14S	201 202	7 0.01		12	390	10 < 2		7	250	0.05 < 10	< 10	< 10	43 < 10		46
L68E 15S	201 202	17 0.01		27	1160	6 < 2		11	111	0.06 < 10	< 10	< 10	73 < 10		66
L68E 16S	201 202	15 < 0.01		29	510	8 < 2		8	148	0.07 < 10	< 10	< 10	72 < 10		54
L68E 17S	201 202	15 < 0.01		29	430	8 < 2		6	84	0.05 < 10	< 10	< 10	72 < 10		56
L68E 18S	201 202	17 0.01		21	500	8 < 2		9	125	0.05 < 10	< 10	< 10	60 < 10		84
L68E 19S	201 202	17 0.01		16	580	8 < 2		7	145	0.04 < 10	< 10	< 10	48 < 10		52
L68E 20S	201 202	24 0.01		15	460	8 < 2		9	70	0.04 < 10	< 10	< 10	51 < 10		42
L68E 21S	201 202	18 0.01		11	300	10 < 2		3	66	0.06 < 10	< 10	< 10	60 < 10		52
L68E 22S	201 202	25 0.02		12	810	10 < 2		3	126	0.04 < 10	< 10	< 10	57 < 10		48
L68E 23S	201 202	12 0.02		10	170	10 < 2		3	25	0.08 < 10	< 10	< 10	58 < 10		44
L68E 24S	201 202	8 0.01		4	120	6 < 2		1	18	0.03 < 10	< 10	< 10	35 < 10		26
L76E 09S	201 202	< 1 0.01		1	100	2 < 2		< 1	8	0.03 < 10	< 10	< 10	26 < 10		10
L76E 10S	201 202	7 < 0.01		7	170	8 < 2		1	40	0.04 < 10	< 10	< 10	57 < 10		46
L76E 11S	201 202	3 0.03		4	50	4 < 2		1	26	0.06 < 10	< 10	< 10	42 < 10		18
L76E 14S	201 202	17 < 0.01		25	430	18 < 2		11	90	0.05 < 10	< 10	< 10	78 < 10		52
L76E 15S	201 202	15 0.01		21	720	10 < 2		8	81	0.05 < 10	< 10	< 10	68 < 10		46
L76E 16S	201 202	23 < 0.01		29	620	18 < 2		12	101	0.04 < 10	< 10	< 10	75 < 10		56
L76E 17S	201 202	36 0.01		22	760	14 < 2		9	123	0.04 < 10	< 10	< 10	78 < 10		44
L76E 19S	201 202	12 0.01		23	780	18 < 2		12	106	0.04 < 10	< 10	< 10	56 < 10		46
L88E 08S	201 202	8 < 0.01		17	310	6 < 2		4	38	0.02 < 10	< 10	< 10	71 < 10		38
L88E 09S	201 202	5 < 0.01		9	260	6 < 2		3	22	0.04 < 10	< 10	< 10	61 < 10		32
L88E 10S	201 202	5 < 0.01		15	410	10 < 2		4	23	0.06 < 10	< 10	< 10	76 < 10		74
L88E 11S	201 202	7 < 0.01		15	310	16 < 2		4	18	0.06 < 10	< 10	< 10	78 < 10		72
L88E 12S	201 202	7 0.02		4	120	2 < 2		< 1	34	0.08 < 10	< 10	< 10	43 < 10		16
L88E 13S	201 202	1 < 0.01		8	200	4 < 2		2	9	0.05 < 10	< 10	< 10	58 < 10		24
L88E 14S	201 202	< 1 0.02		5	100	2 < 2		1	8	0.09 < 10	< 10	< 10	49 < 10		22

CERTIFICATION:



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To: GREAT QUEST METALS

900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

A9830811

Comments: ATTN: BILL OSBORNE

CERTIFICATE

A9830811

(QLY) - GREAT QUEST METALS

Project:
P.O. #:

Samples submitted to our lab in Vancouver, BC.
This report was printed on 19-SEP-1998.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	11	Geochem ring to approx 150 mesh
226	11	0-3 Kg crush and split
3202	11	Rock - save entire reject
229	11	ICP - AQ Digestion charge

* NOTE 1.

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	11	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	11	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
2119	11	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	11	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	11	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	11	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	11	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	11	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	11	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500
2126	11	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	11	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	11	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	11	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	11	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	11	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	11	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	11	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	11	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	11	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	11	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	11	Na %: 32 element, soil & rock	ICP-AES	0.01	10.00
2138	11	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	11	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	11	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	11	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	11	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	11	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	11	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00
2145	11	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	11	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	11	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	11	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	11	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000



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Certificate Date: 19-SEP-1998
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Account :QLY

CERTIFICATE OF ANALYSIS

A9830811

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
TGR-1	205 226	20	< 0.2	1.40	6	100	< 0.5	< 2	0.55	< 0.5	8	173	84	1.92	< 10	< 1	0.65	10	1.18	200
TGR-2	205 226	145	0.4	1.18	32	60	< 0.5	2	0.17	< 0.5	34	63	383	4.80	< 10	< 1	0.18	< 10	< 0.01	30
TGR-3	205 226	< 5	< 0.2	2.28	< 2	190	< 0.5	< 2	0.16	< 0.5	5	47	46	3.17	< 10	< 1	0.38	< 10	0.35	85
TGR-4	205 226	10	< 0.2	1.31	4	100	< 0.5	< 2	0.17	< 0.5	6	34	18	1.75	< 10	< 1	0.29	< 10	0.31	30
TYR-1	205 226	15	0.4	0.85	28	110	< 0.5	< 2	0.32	1.0	7	84	6850	0.87	< 10	< 1	0.34	< 10	0.13	900
TYR-2	205 226	35	< 0.2	0.34	2	140	< 0.5	< 2	0.08	< 0.5	1	232	63	1.59	< 10	2	0.15	< 10	0.01	30
TYR-3	205 226	< 5	< 0.2	1.40	8	80	< 0.5	< 2	0.46	< 0.5	3	145	57	0.81	< 10	2	0.41	< 10	1.13	175
98WO-1	205 226	180	1.4	0.54	54	100	< 0.5	8	0.78	10.5	14	104	3030	1.89	< 10	< 1	0.25	< 10	0.11	210
98WO-2	205 226	10	< 0.2	0.46	16	130	< 0.5	< 2	0.94	< 0.5	< 1	90	120	0.18	< 10	< 1	0.21	50	0.04	60
98WO-3	205 226	120	< 0.2	1.47	8	90	< 0.5	2	0.36	< 0.5	7	138	407	1.44	< 10	< 1	0.81	10	1.37	125
98WO-4	205 226	50	< 0.2	1.35	< 2	120	< 0.5	< 2	0.82	< 0.5	11	146	508	2.15	< 10	< 1	0.58	< 10	1.40	260

CERTIFICATION:

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Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: GREAT QUEST METALS

900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

Project :
Comments: ATTN:BILL OSBORNE

Page Number : 1-B
Total Pages : 1
Certificate Date: 19-SEP-1998
Invoice No. : 19830811
P.O. Number :
Account : QLY

CERTIFICATE OF ANALYSIS

A9830811

SAMPLE	PREP CODE	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
TGR-1	205 226	4	0.13	17	320	2	< 2	7	27	0.11	< 10	< 10	70	< 10	30
TGR-2	205 226	6	0.04	18	910	10	< 2	2	36	< 0.01	< 10	< 10	17	< 10	8
TGR-3	205 226	2	0.08	6	780	< 2	4	4	46	< 0.01	< 10	< 10	42	< 10	14
TGR-4	205 226	4	0.03	3	820	< 2	< 2	2	22	< 0.01	< 10	< 10	17	< 10	4
TYR-1	205 226	5	0.01	15	290	14	< 2	2	9	< 0.01	< 10	< 10	11	< 10	146
TYR-2	205 226	11	0.01	4	870	2	< 2	3	10	< 0.01	< 10	< 10	19	< 10	2
TYR-3	205 226	7710	0.08	14	330	22	< 2	4	20	0.02	< 10	< 10	42	< 10	34
98WO-1	205 226	113	0.01	8	340	244	< 2	3	6	< 0.01	< 10	< 10	12	< 10	712
98WO-2	205 226	327	0.07	3	120	22	< 2	< 1	23	< 0.01	< 10	< 10	< 1	< 10	16
98WO-3	205 226	7	0.12	16	260	12	< 2	9	19	0.17	< 10	< 10	68	< 10	30
98WO-4	205 226	8	0.12	20	390	2	2	9	34	0.11	< 10	< 10	78	< 10	36

CERTIFICATION:

David Richler



Chemex Labs Ltd.

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To: GREAT QUEST METALS

900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

A9833521

Comments: ATTN: BILL OSBORNE

CERTIFICATE

A9833521

(QLY) - GREAT QUEST METALS

Project:
P.O. #:

Samples submitted to our lab in Vancouver, BC.
This report was printed on 16-OCT-1998.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
244	9	Pulp; prev. prepared at Chemex

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
902	9	Al2O3 %: XRF	XRF	0.01	100.00
906	9	CaO %: XRF	XRF	0.01	100.00
2590	9	Cr2O3 %: XRF	XRF	0.01	100.00
903	9	Fe2O3 %: XRF	XRF	0.01	100.00
908	9	K2O %: XRF	XRF	0.01	100.00
905	9	MgO %: XRF	XRF	0.01	100.00
1989	9	MnO %: XRF	XRF	0.01	100.00
907	9	Na2O %: XRF	XRF	0.01	100.00
909	9	P2O5 %: XRF	XRF	0.01	100.00
901	9	SiO2 %: XRF	XRF	0.01	100.00
904	9	TiO2 %: XRF	XRF	0.01	100.00
910	9	LOI %: XRF	XRF	0.01	100.00
2540	9	Total %	CALCULATION	0.01	105.00
2891	9	Ba ppm: XRF	XRF	5	50000
2067	9	Rb ppm: XRF	XRF	2	50000
2898	9	Sr ppm: XRF	XRF	2	50000
2973	9	Nb ppm: XRF	XRF	2	50000
2978	9	Zr ppm: XRF	XRF	3	50000
2974	9	Y ppm: XRF	XRF	2	50000



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To: GREAT QUEST METALS

900 - 475 HOWE ST.
VANCOUVER, BC
V6C 2B3

Project :

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Page Number : 1

Total Pages : 1

Certificate Date: 16-OCT-1998

Invoice No. : 19833521

P.O. Number :

Account : QLY

CERTIFICATE OF ANALYSIS

A9833521

SAMPLE	PREP CODE		Al2O3	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI	TOTAL	Ba	Rb	Sr	Nb	Zr	Y
			% XRF	% XRF	% XRF	% XRF	% XRF	% XRF	% XRF	% XRF	% XRF	% XRF	% XRF	% XRF	%	ppm	ppm	ppm	ppm	ppm	ppm
TGR-1	244	--	14.67	2.78	< 0.01	3.07	3.29	1.96	0.04	3.18	0.07	67.81	0.49	1.35	98.71	645	122	322	6	159	22
TGR-2	244	--	24.32	0.30	< 0.01	7.64	1.86	0.02	0.01	0.33	0.29	56.73	0.76	6.18	98.44	1335	52	200	4	132	46
TGR-3	244	--	21.87	0.28	< 0.01	5.71	2.43	0.84	0.02	0.52	0.20	60.98	0.92	4.95	98.72	760	80	276	8	156	8
TGR-4	244	--	23.79	0.24	< 0.01	3.41	2.61	0.83	0.01	0.16	0.20	62.09	0.87	4.66	98.87	790	80	100	8	147	10
TYR-1	244	--	15.24	0.51	< 0.01	1.69	3.78	0.65	0.13	0.38	0.09	71.81	0.42	3.93	98.63	425	136	34	6	141	20
TYR-2	244	--	3.34	0.13	< 0.01	2.63	0.91	< 0.01	0.01	< 0.01	0.20	88.99	1.05	1.49	98.75	325	44	16	10	171	6
98WO-1	244	--	15.04	1.15	< 0.01	3.38	3.99	0.55	0.04	< 0.01	0.12	69.34	0.52	4.43	98.56	930	104	8	6	153	12
98WO-2	244	--	16.33	2.39	< 0.01	0.45	4.01	0.22	0.01	3.18	0.07	69.68	0.69	2.31	99.34	1245	108	310	18	195	150
98WO-3	244	--	16.06	3.07	0.01	2.46	1.72	2.26	0.03	4.12	0.08	67.32	0.57	1.28	98.98	395	100	416	6	174	36

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