2002 Geological & Geochemical Report

on the Kit Group

Skeena Mining Division

British Columbia

Lat. 55° 45" Long. 129° 05"

NTS 103P/11E & 11W

For-Teck Cominco Ltd.

February, 2003
By G.Evans

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APPENDICES

1.0 – Introduction

This large property has seen a prolonged period of exploration from 1910 to the present. The Kit Group property (8775 ha) is owned 100% by Teck Cominco Ltd. Work in 2002 by Teck Cominco was focused on the central Big Bulk portion of the property. Work consisted of more detailed mapping and sampling of this large complex porphyry system. Work was focussed on determining the alteration system and assessing the size and tenor of mineralized areas as well as defining mineralized trends. The recognized lower Jurassic intrusives equated to Goldslide intrusives appear very analogous to the Sulphurets style porphyry Cu-Au and Brucejack Au-Ag system.

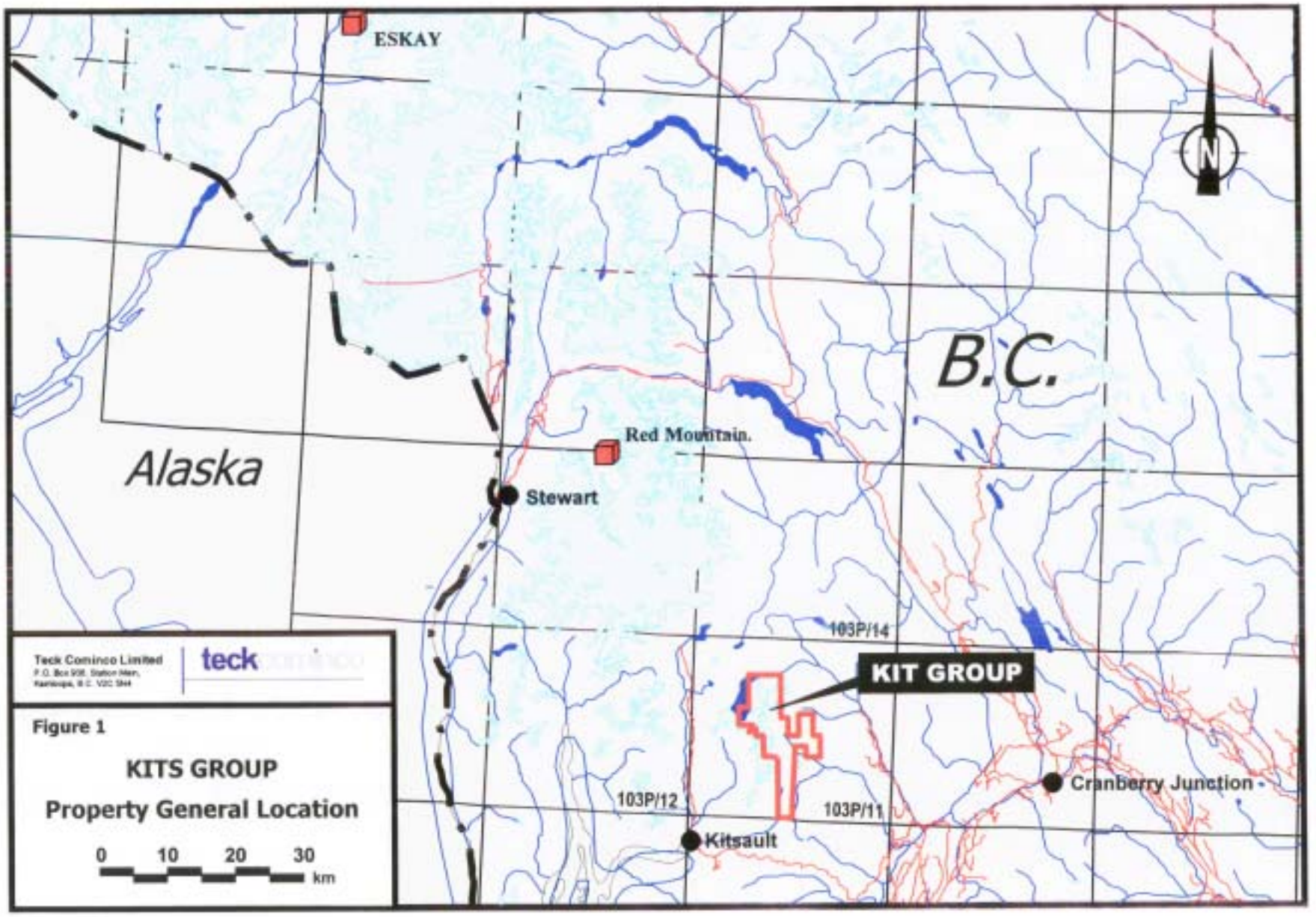
Location and Access (Fig.1)

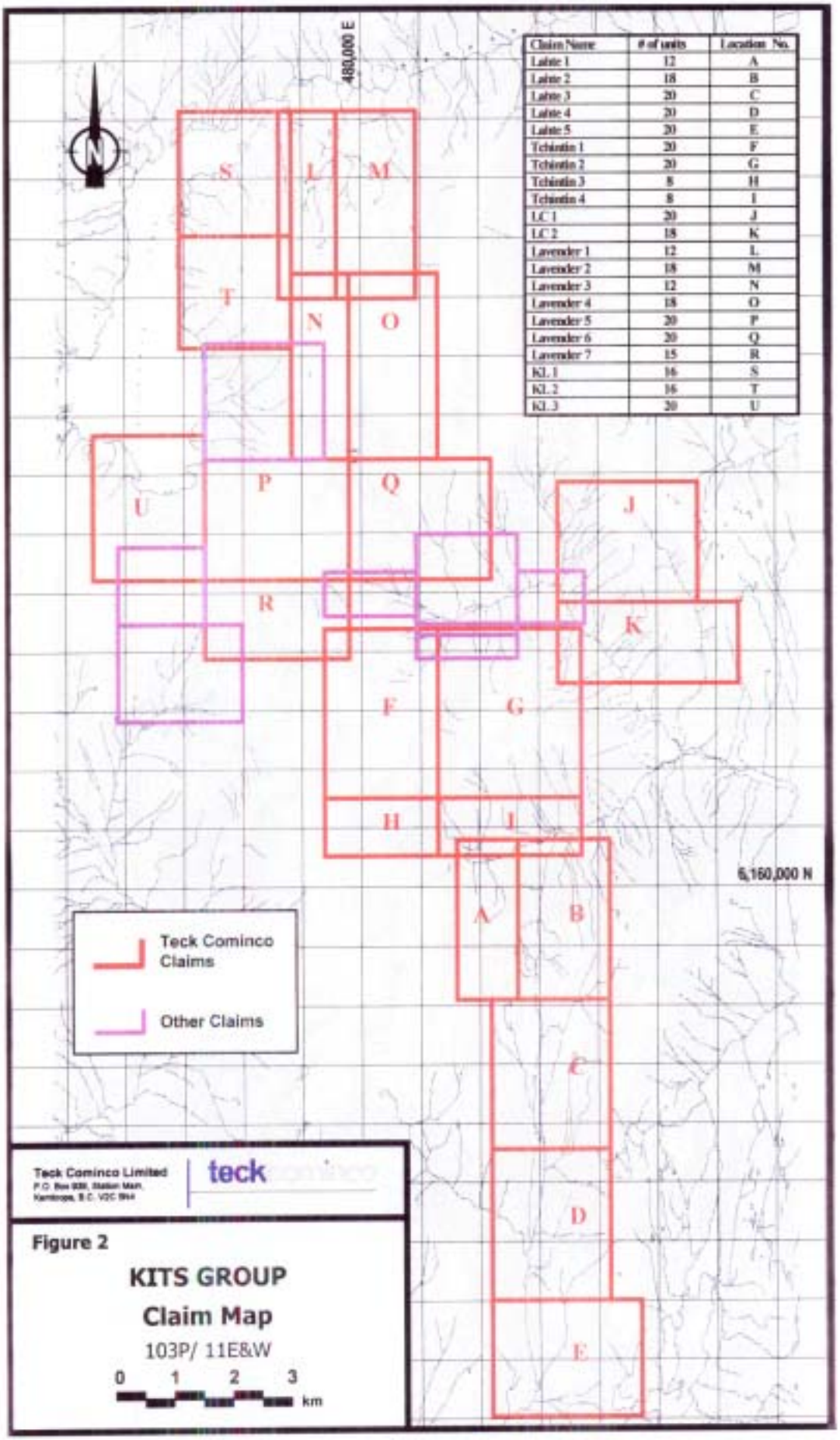
The Kitsault group of claims extends along the Illiance River valley from 15 km east to 25 km northeast of Alice Arm This property extends up past the east and south end of Kinskuch Lake. This property is located approximately 50 kilometres southeast of Stewart on NTS 103P/11E and 103P/11W centred near 55 degrees 45 minutes north, 129 degrees, 10 minutes east. The property is approximately 12 kilometres east of the Dolly Varden camp and is accessed by helicopter from Stewart. Logging roads up the Tchitin and Kinscuch rivers are within 7 and 4 kms of the eastern side of the property.

1.2 - Property Status (Fig.2)

The Kit group property consists of the 21 claims owned 100% by Teck Cominco Ltd, for a total of 351 units located in the Skeena M.D.

Claim Name	# of units	Tenure No.	Expiry Date
Lahte 1	12	383011	Nov.28, 2004
Lahte 2	18	383012	Nov.28, 2004
Lahte 3	20	383013	Nov.28,2004
Lahte 4	20	383014	Nov.28,2004
Lahte 5	20	383277	Nov.28,2004
Tchintin 1	20	385605	April 03, 2005
Tchintin 2	20	385606	April 03, 2005
Tchintin 3	8	385607	April 03, 2005
Tchintin 4	8	385608	April 03, 2005
LC 1	20	385609	April 04, 2005
LC 2	18	385610	April 04, 2005
Lavender 1	12	385589	April 03, 2004
Lavender 2	18	385590	April 03, 2004
Lavender 3	12	385591	April 03, 2009*
Lavender 4	18	385592	April 03, 2009*
Lavender 5	20	385602	April 03, 2009*
Lavender 6	20	385603	April 03, 2009*


ESKAY
B.C.
Alaska
Red Mountain
Stewart
103P/14
KIT GROUP
Cranberry Junction
103P/12
103P/11
Kitsault
N
Teck Cominco Limited
teck
Figure 1
KITS GROUP
Property General Location
0 10 20 30
km


480,000 E
6,160,000 N
Claim Name | # of units | Location No.
Lalste 1 | 12 | A
Lalste 2 | 18 | B
Lalste 3 | 20 | C
Lalste 4 | 20 | D
Lalste 5 | 20 | E
Tchintin 1 | 20 | F
Tchintin 2 | 20 | G
Tchintin 3 | 8 | H
Tchintin 4 | 8 | I
LC 1 | 20 | J
LC 2 | 18 | K
Lavender 1 | 12 | L
Lavender 2 | 18 | M
Lavender 3 | 12 | N
Lavender 4 | 18 | O
Lavender 5 | 20 | P
Lavender 6 | 20 | Q
Lavender 7 | 15 | R
KL 1 | 16 | S
KL 2 | 16 | T
KL 3 | 20 | U
Teck Cominco Claims
Other Claims
Teck Cominco Limited
teck
Figure 2
KITS GROUP
Claim Map
103P/ 11E&W
0 1 2 3
km

Lavender 7	15	385604	April 03, 2009*
KL 1	16	385585	April 03, 2004
KL 2	16	385586	April 03, 2009*
KL 3	20	385587	April 03, 2009*

* upon acceptance of the assessment report

1.3 - Physiography and Climate

The property lies within the Skeena coast physiographic unit and locally covers a variety of topograhic styles ranging from alpine mountainous to heavily wooded valleys. Mountain topography of the property varies from moderate to extreme with elevations ranging from 500 to2020 meters. The mountainous terrain is variable with numerous areas covered with glacial ice and snowfields and areas with very steep, unstable rock walls. Varying amounts of glacial and glacial-fluvial debris occur in the valleys and along valley walls. Alpine style vegetation occurs above elevations of approximately 1000 metres while forest vegetation below this elevation consists of mountain varieties of fir, hemlock, spruce and cedar with areas of thick brush comprised of alder, willow and devil's club. Prolific summer seasonal plants are common at lower elevations, forming a thick vegetable mass in some areas. Glaciers within the valleys extend down to elevations of 1000 metres below the ridges

Precipitation within the coastal climatic zone is very high with winter precipitation resulting in heavy snowfalls of 5-12 meters. Snow covers the property from late September to late June and coastal weather strongly affects airborne access to the property during the summer exploration season.

1.4 - History

The area has seen an extended exploration history dating back to approximately 1910. Earliest recorded information dates back to provincial government Annual Reports from 1915. The primary area of exploration has been centred in the Kitsault River area with lesser exploration in the Lahte Creek-Illiance River valley, the Dak River area and the area surrounding Kinskuch Lake.

The Dolly Varden, North Star and Torbit mines are past-producing mines, which operated in the Kitsault River valley at intermittent times from 1919 to 1959, and produced silver, lead, zinc, copper and gold. These deposits were originally considered to be "veins" hosted along a tensional fault system but were later studied by Devlin and Godwin (1987) and interpreted to be an exhalative, stratiform deposit. The Kitsault River valley as well as the surrounding area saw extensive exploration for a number of metals during the early part of the 20th century. Copper and gold mineralization was extensively explored in an area historically known as the "Copper Belt", located west of

the Kitsault River near its headwaters. A number of showings, such as the Homestake Ridge, Vanguard Copper, Red Point and Vanguard Gold are located in this area. Numerous other showings such as the Sault, Ace/Galena and Wolf are all located in the Kitsault River/Kisault Lake area.

The Homestake Ridge trend has seen numerous exploration programs of trenching, surface work and underground development during the period from 1914 to 1939. Numerous programs involving prospecting, geological mapping, rock and soil geochemistry, geophysics and diamond drilling have been carried out by Canex Aerial Explorations Limited, 196(?); Dwight Collison, 1964–1979; Newmont Canada, 1979-80; S.Coombes, D. Nelles and Cambria Resources Limited, 1986-88; Noranda Exploration Company Limited, 1989-91; Lac Minerals(Barrick Resources), 1994; Teck Corp., 2000; and Teck-Cominco, 2001.

The Red Point prospect, also within the "CopperBelt", was discovered during the 1910's and was subsequently explored by adits on the higher-grade copper prospects. The prospect was acquired by Dolly Varden Minerals Incorporated and was explored by geological, geochemical and geophysical methods and was later trenched and drilled.

Sporadic exploration throughout the Kitsault River valley has been conducted over many of the known showings. Of note are the silver lead zinc deposits of the Dolly Varden, Wolf, Torbit and Northstar deposits, which were explored during the period 1964 to 1990. These deposits have been explored by geophysical, geological and geochemical methods and in some cases have been trenched and /or drilled.

South of Kitsault Lake, the Sault property was discovered in 1966 by Cominco Ltd. and was explored intermittently until 1990. The property has been described by Tupper and McCartney (1990), as referenced from company reports by MacRobbie, as mineralized carbonate deposits restricted to syn-sedimentary grabens which acted as traps for local accumulation of carbonate, sulphate and minor sulphide mineralization. Cominco (1984) and Oliver Gold Corporation and joint venture partners Aber Resources Limited and Tanqueray Resources Limited (1989) drilled the property and conducted geological geochemical and geophysical work.

The area of the Illiance River and Lahte Creek saw numerous discoveries of relatively small veins commonly hosted within shear structures with high silver values associated with lead and zinc mineralization. The area first received attention during the period from early 1910's through the 1920's. Exploration activity increased again during the 1950's- 1960's, during which time numerous companies were active in the area. Hudson Bay Exploration and Development Co. explored this same area during 1980-81 to explore the rhyolite hosted lead-silver float and occurrences, which were discovered originally in 1916 and were re-discovered in 1980. The occurrence is known as the Left Over showing.

Exploration to the northwest of the Illiance River and southwest of Lahte Creek near Mt. McGuire was focused on a porphyry molybdenum deposit known as the Ajax. Minfile inventory reports 178,540,000 t combined reserves at 0.070% molybdenum.

Northwest of Lahte Creek in the area south and east of Kinskuch Lake copper showings were first explored in the 1930's. The area was sampled by Brittania Mines in 1939 and was drilled in 1955-56 by Northwestern Explorations Limited, establishing a small reserve of a few million tons of 0.4% copper on the Bonnie zone. Forest Kerr Mines Ltd. conducted geological, geophysical and diamond drilling during 1965. Cyprus Exploration Corp. explored the property by geological, geochemical surveys and diamond drilling during 1966. In 1970 Kerr Addison Mines Ltd. conducted geophysical surveys and a limited diamond drill program. The property was restaked in 1979 as the Big Bulk and was mapped and sampled by Prism Resources in 1980. Procan Resources drilled five diamond drill holes in 1982. The property was again looked at in 1990 and 1991 by the joint venture partnership of Oliver Gold Corporation, Aber Resources Ltd. and Tanqueray Resources Ltd. The joint venture conducted extensive geological mapping, geochemical sampling, trenching and prospecting. During 1989 the joint venture also carried out a regional survey. The 1991 program focused on the Big Bulk area and was primarily a blast trench, geological mapping and prospecting program. The author's results and conclusions of the 1990-1991 programs suggest porphyry copper-gold deposit potential as evidenced by the alteration assemblage of the Big Bulk area.

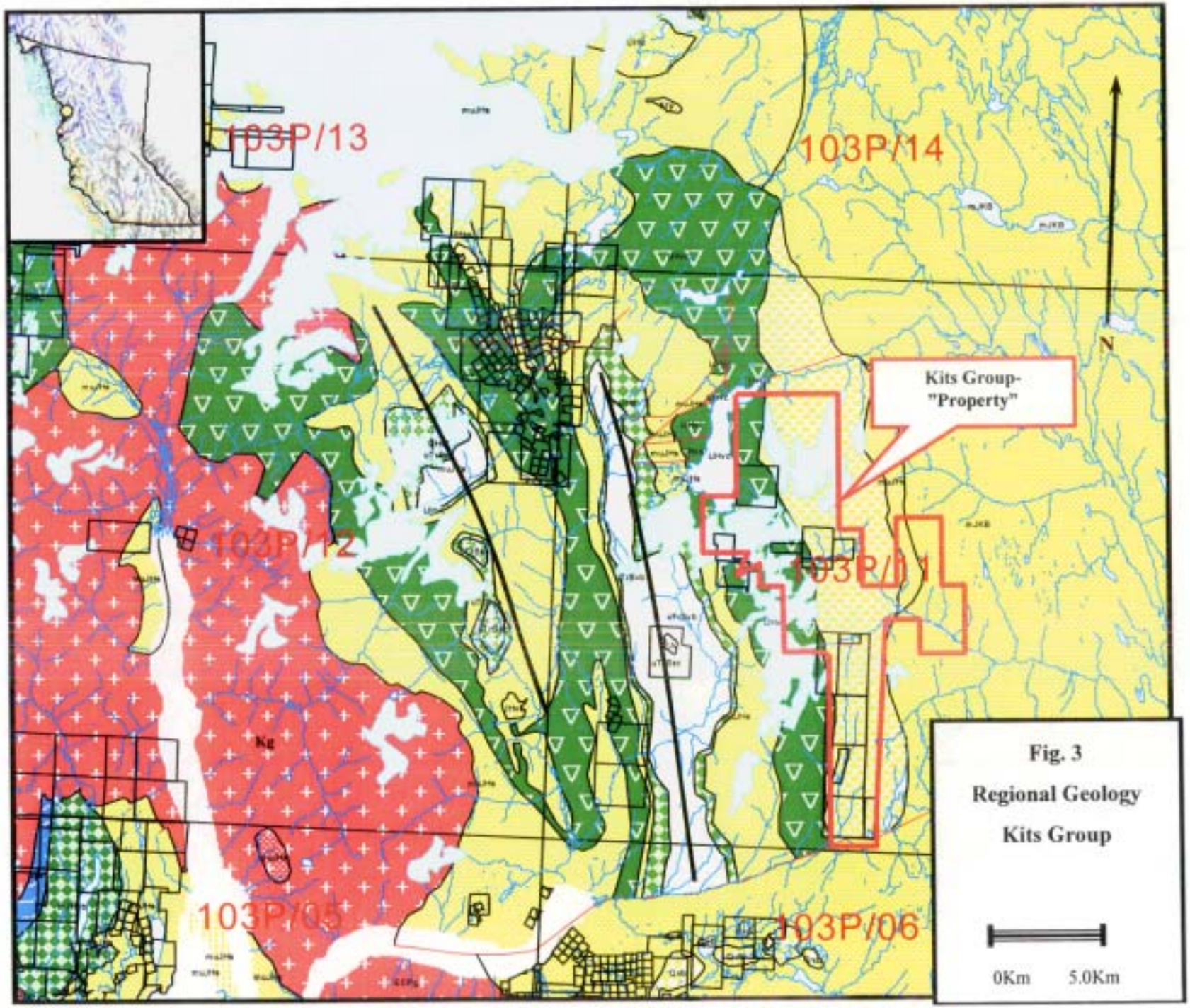
2.0-2002 Program

During a period from July 20 to September 11, 2002 a program of recconaissance geological mapping and geochemical sampling was carried out by a field crew consisiting of up to four geologists and two student geologists. Geological mapping was conducted over the Big Bulk portion of the property to determine the geology, alteration and mineral potential in better detail than the initial 2001 program. Also channel sampling with rock saws was conducted on the Bonnie zone to follow up previous results along with initial detailed mapping at 1:1,000 scale. After the initial work on the Bonnie Zone work consisted of examining a number of occurences and conducting more detailed mapping and sampling at 1:5,000 Scale. A total of 150 rock samples of more representative mineralization were collected for analysis by ICP and Au geochem. A total of 63 mandays was spent on the property during this program.

3.0 - Geology

3.1 – Regional Geology (fig.3)

The Kit group property is primarily located over lower to middle Jurassic volcanics and sediments deposited in a marine environment along the western margin of the Bowser basin. This sequence is collectively known as the "Hazelton Group" which consists of a well-mineralized sequence formed in an island arc environment. This


103P/13
103P/14
Kits Group-
"Property"
103P/12
103P/11
Kg
103P/05
103P/06
N
Fig. 3
Regional Geology
Kits Group
0Km
5.0Km

sequence in the Kitsault area is bounded by Tertiary intrusives to the west and the marine-lacustrine Bowser basin to the east. The Hazelton Group in the Kitsault area has undergone west to east compression, which has resulted in assymetric folding and thrusting, and produced only low grade greenschist metamorphism of the rocks.

The Kitsault area is the southern limit of a continuous belt of the Hazelton group which hosts the highly profitable Eskay Creek VMS deposit, owned and operated by Barrick Resources and located 90 km northwest of the Kit Group property. This unusual high precious metal content VMS system has a total resource of 2.558 MT grading 48.4 g/T Au, 2152 g/T Ag, 2.5% Pb, 4.16% Zn and 0.54% Cu. This highgrade resource is within a substantially larger resource of lower grade material. The Eskay deposit occurs in sediments overlying felsic volcanics in a setting at the top of the Hazelton volcanics. Another system that remains undeveloped is the Red Mountain deposit with a resource of 13.2 Mt @ 0.074 opt Au. Seabridge Resources Inc. is presently exploring the potential of developing a higher grade portion of this system. The system is related to ~190 mya Goldslide intrusions which are also present throughout the area including intrusions along the southern shore of Kinskuch Lake.

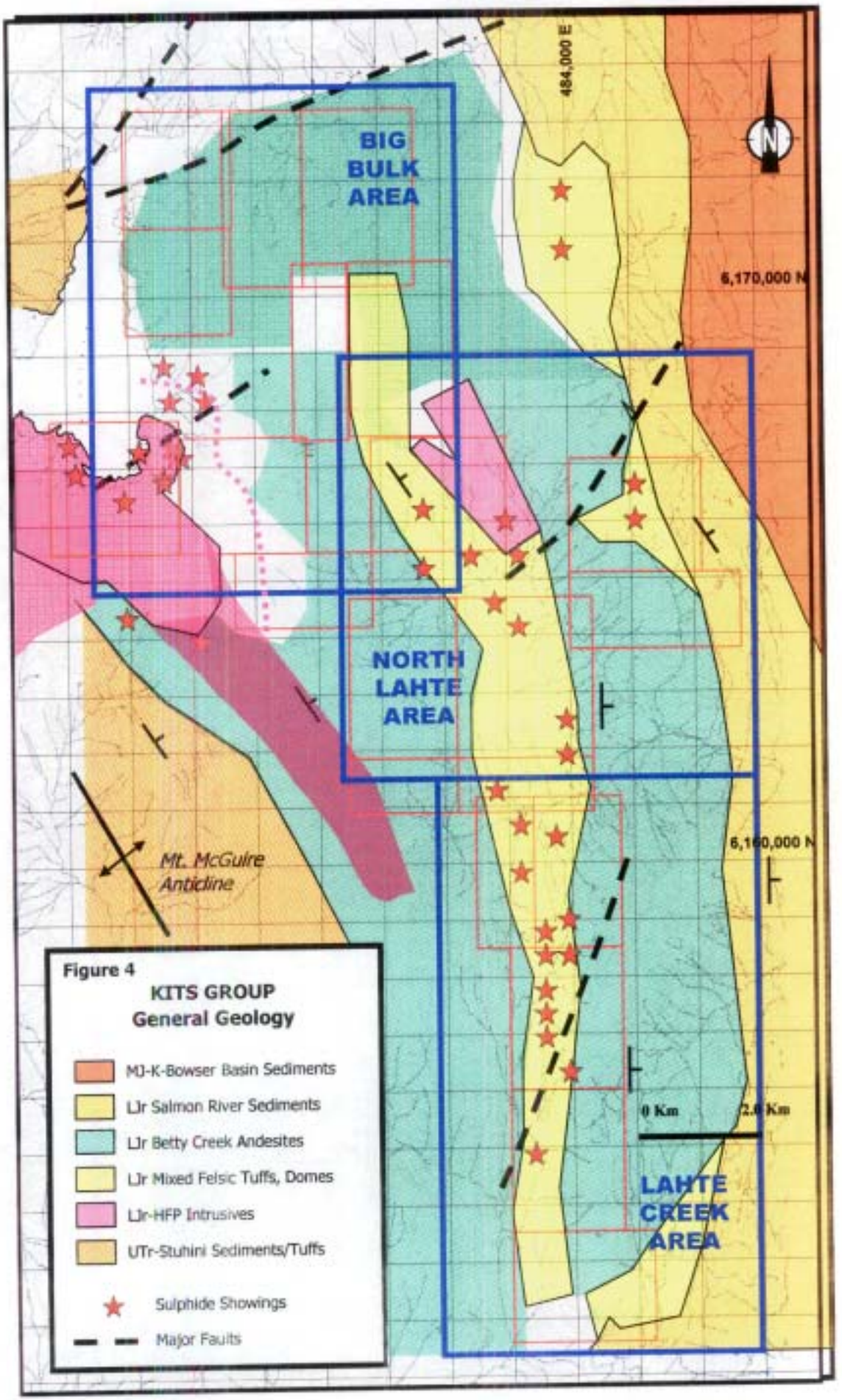
Another undeveloped system is the Sulphurets camp where Seabridge and Noranda are assesssing the potential in a complex system of Cu-Au porphyries (Kerr 135Mt @ 0.76% Cu, 0.34 g/t Au) , Au porphyriies (Snowfield 7 Mt @ 2.8 g/t Au) and high grade Au-Ag vein systems (West Zone @ 15.4 g/t Au, 650 g/t Ag) again related to Mitchell intrusions ~190MY aged Goldslide –Texas creek equivalents.

The Dolly Varden camp owned by New Dolly Varden Minerals Inc. is located in the Kitsault River valley approximately 20 km north of Alice Arm. The Dolly Varden Camp hosts an existing resource of 515 Kt grading 11.04 opt Ag. Previous production from the Dolly Varden, North Star and Torbrit mines totalled 19.9 million oz. Ag, and 11 million lbs of Pb. Recent work (Devlin, 87 and others) suggests this system is a possible VMS system.

3.2 – Property Geology (fig.4)

As previously mentioned the Big Bulk area was the focus of work in 2002. Stratigraphy is complex reflecting a high energy volcanic submarine environment with local rapid facies changes. In general units strike NW with common moderately to steep easterly dips. Some open folds were noted in the sediments , this is compatible with observed folds in the region (Dawson, Alldrick and Greig).

The Kit property covers the east limb of a large scale antiform gently plunging to the northwest known as the Mt. McGuire anticline. Tops evidence seen in several locations supports this structure which exposes upper Triassic Stuhini group sediments and mafic volcanics west of the property. The property covers a thick sequence of lower


484,000 E
N
BIG BULK AREA
6,170,000 N
NORTH LAHTE AREA
6,160,000 N
Mt. McGuire Anticline
LAHTE CREEK AREA
0 Km
2.0 Km
Figure 4
KITS GROUP
General Geology
MJ-K-Bowser Basin Sediments
LJr Salmon River Sediments
LJr Betty Creek Andesites
LJr Mixed Felsic Tuffs, Domes
LJr-HFP Intrusives
UTr-Stuhini Sediments/Tuffs
Sulphide Showings
Major Faults

Jurassic Hazelton volcanic rocks with lesser sediments and subvolcanic intrusives. The eastern side of the property in the LC claim area covers the top of the Hazelton volcanic sequence and the transition into overlying Salmon River and Bowser sediments. Numerous large NE faults are apparent on the topography and orthophotos but no significant offset has been noted. Some of these faults have alteration along them and often coincide with dramatic facies changes perhaps reflecting a primary structure (ie. graben faults), these have clearly had late offset with several senses of offset and perhaps block faulting in Cretaceous or Tertiary time.

A number of target areas exist and are discussed separately in the section on alteration and mineralization. In general these include a large complex subvolcanic Cu-Au porphyry system in the Big Bulk area. This system is related to a "Goldslide" type intrusive complex and there maybe potential for high grade structural gold zones as well in this Sulphurets style system. Stratigraphically higher and located to the SE the Lahte – Illiance felsic volcanic horizon contains extensive areas of Zn, Pb, Ag mineralization in a possible VMS environment. This stratigraphy is within a thick sequence of andesitic pyroclastics but has a metal signature similar to Eskay creek ie. Au, Ag, Cu, Pb, Zn, As, Hg and Sb. The LC claims cover the highest stratigraphic section on the property where a dacite dome complex intrudes the hazelton volcanic / Salmon River sediment contact. Sulphide stringers within the dacite dome are anomalous in Zn, As and Hg.

3.3 ROCKTYPES

The following is a description of the individual rocktypes encountered on the property. A main decision was to map the geology based on lithologic units rather than mapping stratigraphically to allow the geologic picture to develop without too many biases.

Unit 1.0 Mafic Basaltic Volcanics

1.1 Basalt Flows –

These units are a distinctive package along the southwestern portion of the property and are easily distinguished in the field by the presence of pyroxene phenocrysts. The matrix is a fine grained mafic matrix with pervasive chlorite carbonate alteration which develops a distinctive brown coloration when weathered. These typically contain 10-50% 1-3mm pyroxene phenocrysts and a strong magnetite component which allows easy identification in the field. The discrete flows commonly contain 5-20mm amygdules and margins are commonly autobrecciated. Large amounts of reworked basalt fragments are common in the debris flows adjacent to basalt flows.

1.2 Flow Breccias –Autobreccia-

These units are discussed above.

1.3 Flows -Resedimented/ w volc. wackes

1.4 Tuffs

Components of Basalt wackes and tuffs are present proximal to basalt flows but are lumped into unit 2.4 for mapping purposes.

LOWER JURASSIC
Betty Creek Formation

Unit 2.0 Intermediate-Andesitic Volcanics

2.1 Andesite Flows

Commonly green to maroon in colour and varying from aphanitic to feldspar phyric. Feldspars vary from euhedral to anhedral crystals. Rare amygdaloidal flows with quartz ?? or calcite infill. This unit represents a small percentage of the rocks mapped in the area.

2.2 Maroon/Green Flow Breccias-volcanoclastics *

Dominantly maroon with lesser green volcaniclastic rocks are the most prominent unit within the map area. The volcaniclastic rocks are generally subdivided into autoclastic breccias and pyroclastics. The flow breccias appear to be restricted to minor flow top or flow breccias with angular, monolithic fragments incorporated in a matrix of similar composition. The pyroclastic breccia deposits represent the largest proportion of rocks exposed in the mapped area. These rocks likely interfinger with debris flow deposits and in some cases are indistinguishable due to rapid facies changes. Breccias range from lapilli to block sized fragments commonly matrix supported in a fine maroon matrix. Fragments are commonly fine grained to feldspar phyric and can be either heterolithic or homolithic. These rocks comprise the majority of the Betty Creek Fm. seen on the property.

2.3 Maroon/Green Epiclastics

Maroon with lesser green epiclastics occur throughout the Upper Betty Creek formation in the map area. The epiclastics range in fragment/clast size from mudstone to conglomerate and are found at any level within the local stratigraphy, although they appear to be more prominent within the upper rock units. This unit is dominated by moderate to poorly bedded silty mudstone. Thickness and lateral continuity of these finer grained sediments appears to be restricted possibly due to deposition within restricted, minor basins.

2.4 Debris Flow mixed tuffs/sediments w/ mafic, felsic , HFP intrusive and sediment fragments .

Debris flow and/or lahar deposits were recognized interfingered with volcaniclastic and flow deposits along the western portion of the map area. Lapilli to ash tuffs composed of lithic and crystal fragments as well as epiclastic and sedimentary rocks occur within the intermediate andesitic package. This unit contains both mudstones and pervasive sericite altered andesitic tuffaceous matrix with a complex variety of rock fragments. This sequence shows a large diversity reflecting rapid localized facies changes. In the central portion of the property the unit consists of a mudstone matrix dominated by subangular HFP and Felsic fragments with a gradation upsection to the west into sericite altered andesite tuffs. To the south this section becomes a more sericite altered andesitic matrix with mudstone fragments and lesser felsic and HFP fragmentals. Proximal to basalt flows this unit contains an abundance of Px rich basalt fragments and grades into basalt matrix lahars.

Unit 3.0 Felsic Volcanics- Dacite/Rhyolite

3.1 FP Dacite Flows/Domes/Dykes

Dacite flows and domes appear to be restricted to a central portion of the Betty Creek formation and the uppermost interval of the Betty Creek formation as well as in the overlying Salmon River formation in the LC claim area. The dacite is commonly darker weathering than the rhyolite, and generally is composed of a strong proportion of hyaloclastite. The dacite is aphanitic, medium to dark coloured and siliceous with some chlorite in the matrix and as cross cutting veinlets. Spherulites are common within the upper two metres of the flows. Flow domes encountered during the current mapping were restricted in lateral extent to a few hundred metres . The leading edge of the flows were commonly lobate and were very distinctive in mapping the front or leading edge of the unit. The dacites near the Salmon River sediments are likely Mt. Dilworth formation equivalents.

3.2 FP Dacite Flow Breccias volcanoclastics

Within the dacitic flows, flow top and flow breccias were commonly recognized. Near the top of the Betty Creek formation pyroclastic breccias were mapped as either dacitic or rhyolitic breccias. These pyroclastic deposits were difficult to classify as either dacitic or rhyolitic and a field determination based on the dominance of fragments of either dacite or rhyolite composition determined the classification of these units. A distinctive dacitic pyroclastic horizon forms an apron at the base of the rhyolite domes and in the contact area above Betty Creek andesites and below the Salmon River mudstones. This forms a distinctive marker horizon at the stratigraphic

equivalent of the base of the felsic domes with distinctive felsic and chlorite altered angular 1-10cm fragments in a fine grained dacitic matrix.

3.3 Dacite Tuff

Limited areas of very finely laminated dacitic tuffs were obserevd with a maximum of 10 meters thickness. These units display the the typical aphanitic pale to dark green dacitic matrix but contain well laminated 2-3mm scale 0.5-1.0mm diameter ash beds.

3.4 Flow Banded Rhyolite domes/dykes

The rhyolite is typically pale cream to buff or variably pale green-grey. It is siliceous, aphanitic to weakly feldspar porphyritic with rare quartz eyes. Weak iron stain on the weathered surface is commonly associated with fine-grained pyrite. Features of the rhyolite include distinct flow banding which is commonly disrupted and irregular near the margins, and minor spherulites observed over narrow intervals near flow tops. Near the margins of the rhyolite occur distinct black hyaloclastites and peperites produced due to contamination from introduced material resulting in colour and possibly chemistry changes. The hyaloclastites typically form on the top and margin of the domes with contamination of generally mudstones. Owing to the viscous nature of the rhyolite flow domes the lateral continuity of the rhyolite is very limited. The distal portions of the domes typically display lobate structures and occasional pillows. Theses rhyolites have been interpreted to be Mt. Dilworth formation equivalents.

3.5 Mixed Rhyolite Hyaloclastites

(Included in rhyolite package)

3.6 Rhyolite Volcanoclastics*

Rhyolite volcaniclastics can be subdivided into flow breccia, pyroclastic and epiclastic units. Flow top breccias and flow breccias appear to have limited areal distribution within the mapped area and are mapped as strictly a local feature. The breccias commonly have distinct fragments visible only on a weathered surface.

Rhyolite and dacite pyroclastic breccias are difficult to distiguish between each other in a field relationship. The fragments of these breccias are commonly white to light weathering ranging in size from mm to centimetres. Fragments are subrounded to angular and are variable in composition. These breccias are easily mapped as they have a greater lateral distribution relative to the felsic domes and are distinct in appearance with the predominance of light weathering fragments and in some cases are likely redoposited hyaloclastites.

Epiclastic rocks stratigraphically above the rhyolite are commonly light buff to orange brown in colour. The epiclastic rocks are coarse immature sand to poorly sorted conglomerate composed dominantly of rhyolite fragments. These units grade laterally into brecciated fragmental rocks of similar composition.

3 .7 Tuffs

Rhyolite tuffs were subdivided into lapilli, crystal and ash tuffs, or any combination of these fragments. The felsic tuffs are generally light weathering and are composed of fragments similar to the rhyolites described in unit **3.4**. Crystal tuffs commonly display white, subhedral feldspar crystals ranging in size up to 2 mm. set in variably coloured matrix of ash.

Unit 4.0 Sediments-

4.1 Mudstone/Siltstone

The mudstone/siltstone is dark grey to black with fine bedding/laminae common on a millimetre scale. The sediments vary from well-sorted siltstone to massive featureless mudstone. Bedding features such as slumping, load casts, soft sediment deformation and rip-up clasts are common. The weathered surface commonly displays varying iron stain due to pyrite/marcasite content and coarser material forms a distinctive orange color likely due to carbonate content. Immediately above the interpreted Betty Creek formation lies a fossiliferous sedimentary package with belemnites and brachiopods. This was clearly seen in the LC claim area and consists of a basal mudstone, wacke and felsic conglomerate unit 20-30m's thick grading upwards into a fossil rich mudstone with 5-40 cm carbonate concretions with a thickness of 20-30 meters, and a final gradation into mudstones with increasing laminations from 5% 1-5cm siltstone laminations to 50% 10-50cm siltstone laminations reflecting a gradation into a more quiescent basin over a 40-50 meter thickness.

4.2 Shale/Argillite (Generally equates to upper Salmon River Fm. And Lower Bowser Fm.)

Dark grey to black shale/argillite displays varying degrees of shaley cleavage. Bedding varies between rhythmically bedded alternating dark and light coloured, thin beds/laminae to relatively massive featureless units. Rusty weathering surfaces are common resulting from weathering of diagenetic pyrite/marcasite. Within this unit carbonate/marcasite concretions from 1-10cm. in diameter are quite common. Interbeds of mudstone are quite common as thicker 0.5-1.0m beds. This unit according to C.Greig (pers. Comm.) is probably part of the Salmon River Fm. rather than the Bowser Group.

4.3 Wacke

Wacke is medium to dark grey, moderate to poorly sorted, fine to coarse grained and rarely pebbly. Massive to well bedded. Clasts are commonly feldspar, volcanic and mudstone/siltstone fragments. Features within the wackes

4.4 Chert

At the south end of the property within the mudstone/siltstone sediments a distinctive chert breccia unit is present. This unit is 20-30 meters thick and consists of a siliceous matrix with polylithic chert and possibly rhyolite fragmentals. The fragments are sobrounded 0.5-3.0 cm brown, white and green siliceous and aphanitic fragments.

4.5 Conglomerate

Poorly sorted, relatively immature with variably sized clasts from pebble to boulder in size. Composition from felsic volcanic to andesitic in a wacke matrix. A restricted sequence as part of the Salmon River Fm.

4.6 Limestone

Not observed on the property.

Unit 5.0 Intrusives

5.1 Feldspar/Hornblende Porphyritic Monzonite (FHP)
(Goldslide –Texas Creek Intrusive Equivalents)

The intrusive is commonly medium grey-green on a fresh surface, but displays many variations of colour due to sericite, silica, carbonate, chlorite and hematite alteration. This unit has been equated by Greig to be equivalent of the Goldslide intrusions dated at Red Mtn. at 190 Mya. The plagioclase phenocrysts vary from widely spaced to crowded and vary in size from less than 1mm. to 1 cm. Euhedral to subhedral crystals commonly make up 60-80% of the total composition. Hornblende phenocrysts are less than 10% of the total rock composition and are lath-shaped, commonly 1mm. x 3mm. Hornblende is commonly altered to biotite and it appears there may be a component of primary biotite. The matrix of the rock appears as a medium green, aphanitic mass of feldspar. The intrusion has been altered to a major degree over much of the property making differentiation between the FHP and porphyritic flows difficult.

This unit covers large portions of the Big Bulk portion of the property and is clearly a subvolcanic intrusive which in many areas displays a fine grained trachytic nature. Late coarse grained dykes and sills were identified in a number of areas in 2002.

5.2 Granodiorite

Not seen other than as glacial morraine material from outside the property.

5.3 Diorite

Not seen other than as glacial morraine material from outside the property.

5.4 Lamprophyre

Lamprophyres occur as minor dykes and intrusions which are dark brown-green, of poor competency, coarsely crystalline and commonly weakly iron stained. They appear to be composed dominantly of pyroxenes and biotite. The lamprophyres commonly react with weak acid solution suggesting alteration of the primary minerals. These dykes are generally adjacent NE trending faults and are believed to be Tertiary in age.

3.4-Big Bulk Area

The Big Bulk area covers a large prominent gossanous area around the southern and eastern sides of Kinscuch Lake. Retreating glaciers continue to expose additional gossans in this region. Originally the area was staked on the premise that the large sulphide stringer zones could represent stringers feeding into an overlying felsic volcanic sequence to the east. The 2002 work has continued to develop the fundamentals of this area which occupies the lower Hazelton volcanic sequence well below the Salmon River Fm. On the positive side the mapping has outlined extensive zones of Cu-Au mineralization associated with a large subvolcanic "Goldslide" type intrusive complex. In many ways this complex has many similarities to that of the Sulphurets camp located 105 km's to the NW and the Red Mtn. area located 35 km's to the NW as a diverse high level Cu-Au porphyry system.

The area covers the east limb of the Mt. McGuire anticline and units generally dip moderately to the east and the sequence is upright with occasional open folds. Several groups have previously worked in the area and the most recent work by Greig (1992) confirm basal Late Triassic Stuhini clastic sediments with a deformation history predating deposition of the Hazelton rocks are located west of the property. The basal lower Jurassic Hazelton group in the area consists of variable mafic volcanic and volcaniclastic material mixed with limy clastic rocks. The next sequence is a thick sequence of green and maroon andesitic pyroclastics and epiclsatics of the Betty Creek. This is the highest stratigraphic sequence seen in the Big Bulk area. Intruding through the lower Hazelton clastics and well into the Betty Creek andesites is a large HFP subvolcanic intrusive "lopolith like" complex equated to "Goldslide intrusives" in the Red Mtn. area. On the property this complex is diagnostic with the presence of Hb phenocrysts and is typically fine grained and trachytic with both intrusive and extrusive textures and now is known to consist of multiple intrusive phases ranging from fine grained early varieties to coarse

grained late sills and dykes. Several areas display multiple phases with grain size and compositional variations as well as crosscutting relationships. This intrusive complex covers approximately 26 square kilometers with the strongest alteration and mineralization developed on the northeastern half of the subvolcanic intrusive complex. This complex has been traced for at least 8 kilometrs of strike length to the southwest , west of Tchitin Peak where the lopolith is very narrow (200-300 meters).

This early Jurassic intrusive complex has undergone the same Cretaceous folding as the rest of the Hazelton rocks and the surface expression is likely a cross section with the top of the intrusive and alteration system exposed on the south and east side of Kinscuch lake. The intrusive complex appears much more extensive along the south shore of the lake and further to the south with more restricted sills, dykes and plugs forming the northern contact of the intrusive complex along the northern Dolly Varden claim boundary area.

Historical work has been limited in the area considering the areal extent of the alteration and mineralization and there has been only limited diamond drilling. More recent work by Oliver Gold (AR#20574, 21975) added substantially to the size of the target and recognition of appreciable gold values. Historic zones mainly on the Big Bulk ground presently held by New Dolly Varden Minerals include the: Twyla, Tracey, Metallica, and Marla zones. Showings on the Teck Cominco Ltd. ground include the Bonnie, Seabee, Nickie, Brianne, and Darcy zones while 2.5 Km's to the south of the southern end of Kinscuch Lake the Midnite Blue occurrence is also part of this large Cu-Au porphyry system which covers a minimum of 5-6 square kilometers. The use of specific zones is somewhat deceptive as the entire area is altered and mineralized but glaciers, morraines and outwash cover portions of the area and the term "zones" largely reflects areas of exposure.

Generally altered zones of pervasive chlorite-sericite-pyrite and/or sericite-pyrite , alteration obliterates all primary rock textures making protolith identification almost impossible. A core area of weak K-spar/epidote alteration at the south end of the lake is now believed to be the core of the alteration system. The mineralized areas are in early field terms , hosted in either recognizable HFP fine grained monzonites or chlorite altered aphanitic HFP. Thin section work of this fine grained aphanitic rock has confirmed it is a fine grained intrusive phase.

There is a clear relationship of an earlier chlorite-sericite-pyrite alteration being crosscut by structures with later sericite- pyrite alteration along NE and SE trending structures. This is consistent over much of the area and many of the sulphide stringers in the chlorite alteration have a 070-110 strike. Carbonate alteration is ubiquitous with all alteration types. Several styles of mineralization have been found and in general terms are described here.

The chlorite-sericite-pyrite alteration appears the earliest mineralization and can have wide areas of appreciable Cu-Au mineralization. In general these zones contain 10-

30% sulphides (dominated by pyrite) as stringers with chlorite selvages and as disseminations. The best example of this style of mineralization includes the Bonnie zone as well as Bonnie East and the Marla, Metallica, Twyla and Seabee zones.

BONNIE ZONE

At the Bonnie zone Oliver Gold had channel sampled the NW end of the penninsula with an average grade of 1.25% Cu, 0.029opt Au across 27.9 meters in a N-S sample direction. This was extended an additional 40 m's to the south in 2001 for a cummulative average of 0.89% Cu, 0.83 g/t Au and 5.2 g/t Ag across 70 meters. This zone is open to the south and demonstrates a signifigant size potential. In limited sampling to date copper and gold correlate quite well in this alteration as does Ag although some high gold values can occur with high pyrite ie# 257975 with 3.95 g/t Au with 30% pyrite but only containing 0.40% Cu. Limited sampling of this material indicates anomalous values of As (100-300ppm), Hg (200-7900ppb) are present but are at much lower levels than seen elsewhere on the property.

A program of field mapping and sampling to determine the style and occurrence of mineralization as well as the alteration, stratigraphy and structure in the Big Bulk area was conducted during the 2002 field season. The Bonnie Zone located on the peninsula on the southeast side of Kinskuch Lake was examined in detail to establish descriptive, standardized nomenclature for the alteration intensity and types and textures observed at this location as well as at other locations on the property. The Bonnie Zone was mapped at a scale of 1:1000 and geologists involved in the mapping devised a standard scale of chalcopyrite mineralization and alteration intensity, which was employed over the entire property. Textural features of the area as well as lithotypes were given standardized descriptive names to help provide consistency in mapping.

A channel sampling program was incorporated into the detailed geological mapping of the Bonnie Zone. This channel sampling program involved layout of a semi-continuous channel across the west end of the zone near the area previously sampled during an exploration program in 1991(Tupper1991), and 2001(Evans2001). The focus of the current sampling was to confirm grades previously encountered as well as extending the channel sampling in areas previously un-sampled. In addition, a continuous channel sample was established east of the area previously sampled in an attempt to determine the average grade in the Bonnie Zone on the peninsula. The sampling was accomplished using a gas-powered saw with an abrasive or diamond blade to cut a channel approximately 2 to 3 cm. deep. The sample was then chipped along the length of the channel cut by the saw and sent for assay. Results of the two major channels are shown in the table below. Additional areas of mineralization exist in the Bonnie zone area and include a 10 metre chip sample, 30511, located immediately northeast of the Bonnie zone peninsula , which was sampled in moderately chlorite altered HFP. This sample returned values of 5250ppm copper and 1.33ppm gold. This grade compares with channel sampling at Trench 1 of the Bonnie zone.

Big Bulk Channel Samples: Bonnie Zone

Sample Area	Sample Interval	Percent copper	Gold g/t
Trench 1	82.6m	0.554	0.329
Trench 2	39.0m	0.138	0.096

Detailed mapping of the Bonnie Zone determined that most of the area is underlain by feldspar porphyry or feldspar hornblende porphyry, all of which are pervasively sericite and chlorite altered. Minor dykes of lamprophyre were mapped as a late Tertiary? intrusive unit. Other mapping criteria utilized for the 2002 program are chlorite alteration intensity, chalcopyrite concentration and degree of brecciation of the host rock. All the criteria were given a numerical value for intensity with low values indicating the least amount in all categories of alteration, chalcopyrite concentration and brecciation. Late stage carbonate alteration, which parallels fault structures, appears to be restricted to within metres of these structures but commonly is exposed over large areas as a dip-slope exposures and appears very late in the alteration sequence. Strong sericite-pyrite altered, gossanous, discontinuous shear zones generally have limited strike and are either displaced by later fault structures or have very limited strike length. These sericite-pyrite shear zones are commonly observed and are very difficult to obtain a sense of motion. These sericite alterd structures appear generally post the pervasive sericite/chlorite alteration event and could represent late advanced-argillic alteration. In general, the rocks of the Bonnie Zone are very difficult to map since they are compositionally similar and have been the subject of varying hydrothermal brecciation and alteration. Structurally the rock units are very discontinuous and numerous small-scale faults, some with barely discernible fault planes, were observed to displace features in the order of a few metres.

Large areas of chlorite–sericite alteration appear to be the earliest alteration package observed over the map area. A very distinct "breccia" unit was observed at the Bonnie Zone as well as at other locations on the property. This unit appears to host the most significant grades of copper mineralization and is distinctive in appearance due to the combination of sericite and chlorite coupled to form a breccia unit which in some cases appears to have been strongly sericite altered and subsequently chlorite altered or chloritic altered first then sericite altered later.

Structural measurements from the peninsula were analysed using GEOrient, a computer stereographic equal area net plotter. Structural measurements were divided into 5 categories faults, veins, foliation, carbonate faults and quartz-sericite-pyrite veins(QSPV). All planar measurements were recorded using right hand rule. A plot of 33 fault measurements has two distinct populations and a third weaker population whose planar orientations are; 1) N-NW 346/71, 2) SW-NE 211/57 & 040/62 and 3) steeply dipping SW-NE 219/85 & 046/87. Plotting of 26 measurements of veins at the Bonnie

zone indicate a single population oriented at 050/50 suggesting a single veining/structural event controlling emplacement of the veins. A data set of only five carbonate fault/veins is insufficient to determine strong trends in the map area. Six measurements of quartz-sericite-pyrite veins show a relatively strong preferred planar direction of 058/49. No foliation measurements were recorded in the Bonnie Zone.

The Bonnie Zone is considered a priority target at this point and is the most advanced target with respect to mapping and sampling. The target has a minimum exposure of 200 by 250 meters and remains open into the lake on the south, west and north sides. The next stage on this target is drill testing to demonstrate size and grade continuity.

Other Targets In The Big Bulk Area

Mapping at a scale of 1:5000 in the Big Bulk area during the 2002 season, utilized criteria that were established on a small scale at the Bonnie Zone. It was determined that the rock types observed in the map area are dominantly intrusive feldspar porphyry,(FP), hornblende feldspar porphyry,(HFP) and hornblende, biotite feldspar porphyry, (HBFP). Finer grained, altered rocks of sub-volcanic to volcanic origin are likely Stuhini group rocks or lower Hazelton group rocks. All rocks have undergone varying degrees of alteration and faulting, resulting in blocks of varying mappable alteration units juxtaposed at fault boundaries. The varying composition, grain size and field relationships of the rock types indicate a multiphase intrusion of a large intrusive complex.

Results of the mapping program indicate a crude alteration zoning of the Big Bulk area. Relatively unaltered rock on west and east appear to bound alteration packages in the Big Bulk area. On the south end of Kinskuch Lake, a large zone of weakly potassic alteration was identified. Fault contacts bound this unit on the south, east and west side of the alteration package and the lake bordered the north side. Potassic alteration consists of relatively fresh HFP with minor amounts of pink K-spar, with or without magnetite and rare biotite. Chalcopyrite was observed in minor amounts throughout this potassic alteration zone. Although the block is described as potassic, it appears to be propylitic in some areas as the relatively fresh HFP and the occurrence of epidote suggest propylitic grade alteration, in part, although this maybe magmatic epidote analogous to alkaline porphyry systems in parts of B.C.. Sampling of this unit returned a best value of 2530ppm copper and 0.104ppm gold sampled over an area of 100 square metres from sample 30438. Overall, the grade of the area appears to be in the order of 300-500ppm copper with 0.030-0.040ppm gold. This area was identified in 2001 as the Brianne, Nickie and Darcy zone zone but sampling in 2002 does not indicate it has sufficient grades to be of economic interest as a bulk tonnage target. One noticeable difference in this area is the region is dominated by the presence of identifiable HFP intrusives which noticeably decrease in appearance onto the New Dolly Varden ground. This suggests a general E-W trending intrusive contact and alteration trend under the lake and under the overburden covered areas of the New Dolly Varden ground.

Large areas of chlorite–sericite alteration appear to be the earliest alteration package observed over the map area. A very distinct "breccia" unit was observed at the Bonnie Zone as well as at other locations on the property and as previously mentioned this unit contains the highest Cu-Au values. Another area on the property which host mineralization with sericite and chlorite alteration similar to the Bonnie zone is located east of the Bonnie Zone 'hence Bonnie East zone". Approximately 1200 metres east of the Bonnie Zone, sample 30502 returned 5120ppm copper and 0.278ppm gold over a 10 metre representative sample in moderately chlorite altered HFP. In the same area, sample 30504 assayed 3830ppm copper and 0.149ppm gold over a 20 metre sample length of moderate chlorite-sericite altered HFP. This area is known as the Bonnie East zone and while extensions of this area are covered by glaciers it is considered a priority target area. Exposed area to date on this target support a minimum strike length of 400 m's in a E-W direction.

Later stage sericite-pyrite alteration generally shows a well developed foliation within moderate to strong pervasive sericite alteration. Sulphides are dominated by pyrite in quantities ranging from 5-20% generally as disseminations with lesser veinlets. Quartz veinlets and stockwork and 5-40cm veins are common throughout the system but appear most common associated with sericite alteration. Signifigant Cu values are found in sericite alteration at the Twyla, Tracey, Metallica and Marla zones but gold values tend to be 1 g/t or less. Sericite-pyrite altered zones in the Bonnie east areas have generally low Cu values but contain higher 1-3 g/t Au values. Examples of these include #'s 258757 with 1.84% Cu and 7.32 g/t Au over a 1.0 m chip, #258405 0.27% Cu, 1.70 g/t Au, #285406 0.01% Cu, 1.54 g/t Au.

Samples from the Marla zone located to the north of this area on the New Dolly Varden ground, include similar values including sample 30506 which returned values of 6330ppm copper and 0.178ppm gold from an 8 metre chip sample in moderately sericite altered HFP. Immediately south, sample 30477 from a fractured and foliated FP returned 0.082ppm gold and 3990 ppm copper from a grab sample over a 50 metre interval. In an area bounded by glacial ice on the south and east, and by a large moraine to the north, this target is a structurally complex area which hosts numerous styles of mineralization such as sphalerite-galena veining, quartz-chalcopyrite veining and numerous discontinuous fault/alteration zones. Sample 30467 from this area returned values of 3360ppm copper and 0.226ppm gold. A float sample, 30466, from a nunatuk located in the glacial ice returned values of 2940ppm copper and 0.153ppm gold. Additional sampling is required but this alteration and mineralized zone covers an minimum area of 800 meters NW by 400 meters NE and is open in both strike directions.

Another large area of mineralization and alteration is included in the northern portions of the Marla zone on the New Dolly Varden ground. This consists of very highly visible, small to large, rusty and foliated gossanous zones are alteration zones of intense sericite alteration. The sericite alteration intensity varies from moderate to complete replacement, obliterating most textures. Intense pyritization, up to 20%, produces large, rusty, weeping gossans, which in turn produce ferricrete in the moraine, which greatly

enlarges the areal extent of the gossan. Chalcopyrite mineralization is commonly located near the margins of these strong sericite altered zones as the transition phase to chloritic alteration. Best assay results from these QSPV zones appear to be high in gold relative to copper content such as sample 30480 which has 0.769 ppm gold and 497 ppm copper. Minor localized zones of clay alteration occur within the sericite-altered zones. Theses zones appear analogous to the Snowfield zone at Sulphurets and may reflect a later structurally controlled advanced argillic alteration event.

Western extensions of the Marla zone are largely covered by a large outwash area with extensive mineralized float. This area is of unknown size due to cover but previous drill holes have resulted in signifigant values in Cu and Au in this recessive area known as the Marla West zone. The recessive nature of this area is believed to be due to erosion of extensive areas of sericite and chlorite alteration which typically are well mineralized. This area is covered by extensive moraine cover but offers a target size equivalent to or larger than the Marla zone.

Quartz veining and quartz stockwork was noted sporadically over the entire property. Quartz veins rarely exceed one metre in width and strike lengths are generally limited due to pinch outs and/or faulting. These veins are quartz or quartz carbonate with varying chalcopyrite content. A second carbonate rich, with subordinate quartz, vein system hosts sphalerite and galena in sporadic concentrations. Alteration, outside of the mapped area, as well as discrete mappable blocks within the area are propylitic altered. Chlorite with epidote and calcite are common within the propylitc altered HFP. Minor anhydrite was noted in vein float south of Kinskuch Lake.

As mentioned quartz stockwork and quartz veining are common throughout the system, particularly with sericite alteration. Veins display a wide diversity including quartz-calcite-pyrite veins with chlorite selvages (#257477 with low Cu and 2.46 g/t Au). Quartz veins with carbonate +/- barite margins and variable chalcopyrite ie. 258853 1.3% Cu, 19.54 g/t Au. Vuggy high level veins with variable amounts of py, sp, ga, cpy (#258403 .21% Cu, 3.23% Pb, 8.15% Zn, 1.60 g/t Au and 37.8 g/t Ag). These veins do not display a clear zonation but appear to overprint each other likely reflecting a large multiple phase intrusive and porphyry alteration system.

A study of the plots of alteration patterns combined with copper/gold values indicates a crude alteration/mineralization zoning. Copper/gold mineralization is strongly associated with pervasive sericite alteration combined with chlorite alteration. On a large scale, this alteration appears to be located in an area near the outer margin of a central pottasic alteration core. The crude zoning appears to go from pottasic altered rocks, to chlorite-sericite, to strongly sericite +/- siliceous alteration at the peripheries. This zone appears to roughly trend from south to north in the area from the Brianne Zone through the Bonnie zones to the Marla Zone at the north end.

Little work has been done in additional altered and mineralized zones at the very northern limits of this system. These zones are known as the Twyla and Tracey zones and

have seen a moderate amount of previous exploration and are the northern limits of the alteration and mineralized system. These zones consist of extensive sericite +/- chlorite alteration and are hosted in Betty Creek andesites at the north end of the hydrothermal system. Present work supports previous work with generally lower Au:Cu ratios in this more peripheral area. These zones appear offset by late NE trending faults but may have originally formed a more coherent zone 700-800 meters long in a NE direction by 200-250 meters wide. These targets are not the top priority but further work is warranted to evaluate these targets.

Structure

Structural measurements from the 2002 mapping outside of the Bonnie Zone were plotted with GEOrient. The measurements were divided into five categories: veins, faults, carbonate veins/faults, foliation and quartz-sericite-pyrite veins, (QSPV). Measurement of 23 veins in the Big Bulk area outside of the Bonnie zone showed three primary vein directions: 1) W-NW 290/52, 2) E-SE 115/58 and 3) E-NE 060/90 with a weak N-S vein system dipping moderately 50-60° east or west. Two primary strike directions were determined from analysis of 45 measurements of faults in the Big Bulk area. A strong NW-SE fault set has average values of 142/62 and 300/73, and a second fault has an average of 220/63. Carbonate veins/faults were measured individually with 13 measurements. Two primary directions were determined from the density plot at 130/70 and a weaker average orientation at 216/65. These two directions correspond closely to averages determined for fault structures (see above). A total of 19 foliation measurements were analysed and indicated three major directions: 1) 276/77, 2) 204/40 and 3) 150/65. All three foliation orientations are compatible with the average fault directions determined from the stereonet plot, suggesting that foliations measured are likely fracture foliation. Seventeen measurements of quartz-sericite pyrite veins produced a scattered plot with one weak preferred orientation at 335/68. This orientation does not appear to correspond to plots of previous structures and appears to be the result of a separate event.

Results of the 2002 program suggest the Big Bulk area appears to be underlain by a complex, multiphased intrusive system. The rocks are compositionally and texturally different and have been overprinted with varying alteration patterns. In addition, numerous faults of varying generations have segmented the area making reconstruction of the original relationships difficult.

Metal Correlations

The general rock sampling from 2002 in the area has allowed us to develop a simple gross scale correlation co-efficient for various metals in the Big Bulk area. There are at least two populations of metal association grouped in this data but many more sample points would be required to separate the data. The best correlations include only a moderate r factor of 0.40 between Cu:Au and a surprising r factor of 0.59 between As:Au, the As values being generally less than 100 ppm but showing a good Au

correlation. Hg shows a strong correlation to gold of 0.523 while Ag shows a poor r factor of only 0.16 to Cu which is unusually low for porphyry systems. Pb, Zn, Hg and Ag show strong correlations.

Data on this is limited at this point but there is a suggestion that metal zoning is occuring over a large portion of this complex alteration system. This may provide a key method for resolving this system but alteration has both spatial and temporal relationships as the hydrothermal cell developed and collapsed on itself.

Correlation Coefficients (r value) for 2002 Big Bulk Rock Samples
150 samples

	Ag	Cu	Pb	Zn	As	Hg	Bi	Mo
Au	0.349	**0.400**	**0.417**	**0.513**	**0.590**	**0.523**	0.321	0.051
Ag	-	0.160	**0.688**	**0.614**	0.388	**0.629**	0.060	-0.030
Cu	-	-	-0.041	-0.005	0.185	0.044	0.382	0.326
Pb	-	-	-	**0.915**	**0.434**	**0.888**	-0.001	-0.106
Zn	-	-	-	-	**0.585**	**0.969**	0.132	-0.033
As	-	-	-	-	-	**0.612**	0.229	-0.033
Hg	-	-	-	-	-	-	0.139	-0.086
Bi	-	-	-	-	-	-	-	0.178

Comparison To Kerr Sulphurets System

The Big Bulk area displays many analogous features to the Kerr Sulphurets area including:

- High Level HFP intrusives ie. Goldslide –Mitchell intrusives of probable 190-195Mya age.
- Similar stratigraphic position at the upper upper Stuhini-Lower hazelton boundary.
- A general zonation in alteration from a KF core to peripheral chlorite-sericite alteration with more peripheral sericite-argillic alteration. This appears part of a multistage high level porphyry-epithermal system.
- Several styles of mineralization including Cu-Au porphyry mineralization with pottasic alteration, Cu-Au porphyry-stockwork mineralization with chlorite/sericite alteration, disseminated Au associated with pyrite-sericite alteration, and late vuggy epithermal style ba-qtz-adularia veins with precious and base metal values.

4.-CONCLUSIONS & RECOMMENDATIONS

The Kit Group property has a early to middle Jurassic sequence of volcanics and sediments covering most of the Hazelton volcanic sequence along the upright east limb of the Mt. McGuire anticline and the property has a diverse variety of mineralized systems.

The Big Bulk area covers a large prominent gossanous area around the southern and eastern sides of Kinscuch Lake. The 2002 mapping has shown this area occupies the lower Hazelton volcanic sequence well below the Salmon River Fm. and the area has extensive Cu-Au mineralization associated with a large subvolcanic "Goldslide" type multiphase intrusive complex. In many ways this complex has many similarities to that of the Sulphurets camp located 105 km's to the NW and the Red Mtn. area located 35 km's to the NW as a diverse high level Cu-Au porphyry-epithermal system with several styles of mineralization. These include widespread areas of Cu-Au porphyry style mineralization with the unusual chlorite/sericite association , Au with advanced argillic alteration and high grade Au-Ag epithermal vein systems, present over a 6.0+ square kilometer area. Mineralization is complex with spatial and temporal relationships reflecting a high level porphyry and transitional epithermal style system with several styles of quartz vein and stockwork mineralization associated with pervasive chlorite/sericite/pyrite and later sericite/pyrite mineralization. This system is a large complex multiphase porphyry system with good potential for both bulk tonnage Cu-Au and high grade gold potential.

Alteration mapping is an effective tool and has developed a gross scale model with a pottasic core in the southern portion of the area , transitional to the north into argillic phases and eventually overprinted by advanced argillic alteration phases. Primary structure is complex and has several controls on mineralization, this has been further complicated by late extensional block faulting.

Coherent bulk tonnage targets have been generally outlined in the 2002 program and include in order of priority, the Bonnie Zone, Bonnie East, Marla zone, Marla West, Tracey and Twyla zones. Numerous other targets exist but the 2002 work indicates the above areas demonstrate the best continuity of mineralization. Future work should now focus on these specific target areas.

The next phase of work for each of the areas in the Big Bulk region should include:

1/ Option the New Dolly Varden ground to cover balance of the hydrothermal system.
2/ Drill test the "Bonnie zone" to develop limits and grades of mineralization in this area.
3/ Detailed mapping and chip sampling as well as channel sampling on the Bonnie East, Marla, Tracey and Twyla zones. Alteration indexes and detailed structural mapping are required to develop these targets.
4/ In conjunction an I.P. survey should be conducted to help define the system and test areas of overburden cover. The high sulphide content of the system and resistivity

contrasts of lithologies and alteration would make this a valuable survey. The combination of this will prepare the targets for drill testing. This is necessary in the Marla west area and areas of moraine cover.

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APPENDIX 1

ROCK DESCRIPTION TABLE

	A ROCK SAMPLES	B	C	D	E	F	G HOMESTAKE RIDGE	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	Sample No	General Location	E	N	Sampler	R Type	Description	Au g/t	Ag g/t	Cu %	Pb %	Zn %	As %	Au ppm	Ag ppm	Cu ppm	Fe %	Mo ppm	Pb ppm	Zn ppm
2	30201	Big Bulk	467094	6177142	P.G.		Knob channel sample-3.5m's			1.27				0.693	6	10,000	6.06	74	8	101
3	30202	Big Bulk	467094	6177140	P.G.		Knob channel sample-2.8m's			1.17				0.794	4.3	10000	6.2	14	3	83
4	30203	Big Bulk	467094	6177137	P.G.		Knob channel sample3.6m's							0.315	3.1	7640	4.24	8	3	82
5	30204	Big Bulk	467094	6177135	P.G.		Knob channel sample3.6m's							0.348	2.7	7110	4.53	10	4	73
6	30205	Big Bulk	467094	6177132	P.G.		Knob channel sample2.2 m's			1.15				0.485	5.4	10000	5.77	7	3	71
7	30206	Big Bulk	467092	6177130	P.G.		Knob channel sample3.3m's							0.252	1.9	4590	5.18	7	5	58
8	30207	Big Bulk	467092	6177127	P.G.		Knob channel sample3.0m's							0.412	2	5620	4.56	8	7	75
9	30208	Big Bulk	467092	6177124	P.G.		Knob channel sample4.0m's							0.298	1.5	4120	5.14	14	4	73
10	30209	Big Bulk	467092	6177120	P.G.		Knob channel sample1.4m's							0.347	2.1	5190	6.43	9	3	97
11	30210	Big Bulk	467094	6177112	P.G.		Knob channel sample3.8m's							0.455	2.4	5550	6.31	4	4	112
12	30211	Big Bulk	467094	6177110	P.G.		Knob channel sample4.6m's							0.189	1.8	3160	4.39	5	11	83
13	30212	Big Bulk	467094	6177108	P.G.		Knob channel sample1.7m's							0.288	2.1	4900	4.15	4	2	72
14	30213	Big Bulk	467098	6177104	P.G.		Knob channel sample4.1m's							0.282	2.4	4420	5.21	10	6	71
15	30214	Big Bulk	467102	6177098	P.G.		Knob channel sample5.0m's							0.432	2.6	5200	5.75	18	15	192
16	30215	Big Bulk	467105	6177094	P.G.		Knob channel sample5.4m's							0.335	3	4400	6.9	8	5	70
17	30216	Big Bulk	467105	6177090	P.G.		Knob channel sample5.0m's							0.381	2.6	4840	5.58	5	20	76
18	30217	Big Bulk	467108	6177083	P.G.		Knob channel sample5.0m's							0.224	3	5230	6.39	9	27	192
19	30218	Big Bulk	467103	6177078	P.G.		Knob channel sample5.0m's							0.223	2.6	4800	4.69	3	6	87
20	30219	Big Bulk	467105	6177076	P.G.		Knob channel sample5.6m's							0.215	2.5	4630	4.44	2	6	86
21	30220	Big Bulk	467110	6177068	P.G.		Knob channel sample5.0m's							0.224	3.5	4670	5.98	2	10	80
22	30221	Big Bulk	467115	6177063	P.G.		Knob channel sample5.0m's							0.133	1.2	1925	5.96	2	11	106
23	30222	Big Bulk	467100	6177051	P.G.		Knob channel sample1.7m's							0.127	1.7	695	5.34	3	15	70
24	30223	Big Bulk	467185	6167085	Nick Mitche	Fhp	Channel sample 5m. vein mineralization, mod chl alteration 2% cp/py							0.123	2.4	2620	5.26	5	15	80
25	30224	Big Bulk	467185	6167092	Nick Mitche	Fhp	Channel sample 7m. Fine grain disseminated Cp/Py 1%. Mod/min chl alteration, Minor py/ser veinlets dis con't.							0.11	1.4	2310	5.07	4	10	94
26	30225	Big Bulk	467185	6167097	Nick Mitche	Fhp	Channel sample 5m. Spotty mineralization, Cp 1%, Py 1%. Min Chl alteration, minor qtz veins with bordering chl salvages. Ser localized around Py blebs.							0.048	0.6	1435	5.08	12	10	77
27	30226	Big Bulk	467185	6167102	Nick Mitche	Andicite	Channel sample 5m. 1% Cp, 1% Py, fine grained disseminated, mineralization focused and gathers along fractures. Mod chl alteration with minor qtz veinlets.							0.098	0.5	1365	6.75	12	7	86
28	30227	Big Bulk	467185	6167104	Nick Mitche	Fhp	Channel sample 2m. 1% Cp, 1% Py fine grained seems to be fracture controlled.							0.16	0.4	976	6.93	13	28	130
29	30228	Big Bulk	467185	6167109	Nick Mitche	Fhp	Channel sample 5m. 1% Cp, 1% Py, fine grained disseminated, mineralization focused and gathers along fractures. Mod chl alteration with minor qtz veinlets.							0.135	0.8	1000	5.83	12	125	2140
30	30229	Big Bulk	467185	6167114	Nick Mitche	Fhp	Channel sample 5m. 1% Cp, 1% Py, fine grained disseminated, mineralization focused and gathers along fractures. Mod chl alteration with minor qtz veinlets.							0.034	0.2	401	6.08	4	8	82
31	30230	Big Bulk	467185	6167119	Nick Mitche	Fhp	Channel sample 5m. 1% Cp, 1% Py, fine grained disseminated, mineralization focused and gathers along fractures. Mod chl alteration with minor qtz veinlets.							0.09	0.4	292	6.98	7	18	98
32	30251	Big Bulk	477852	6166983	Phil Gordon	F.H.P.(?)	Select sample taken from gossanous qtz-ser. vein 032/32. Vein and strong ser. altrd. zone is approx. 3.5m wide. Qtz vein is vuggy and calcite has filled vugs. Hang wall strong carb altrd. Fine dissem. Py. 15-20%, Cp trace.							0.431	11.3	658	4.56	3	34	12
33	30252	Big Bulk	477852	6166985	Phil Gordon	F.H.P.(?)	Select sample taken from a small shoot off of qtz.-ser vein. Vein is 2cm wide orient. 280/64 and is qtz. and calcite. Mineralization appears to be on the margin of the vein. Fine dissem. and blebs of Py.10-15%, Cp. trace Gl. trace.							0.111	1.1	289	4.65	3	391	1135
34	30253	Big Bulk	477844	6166970	Phil Gordon	F.H.P.(?)	Select sample taken from Qtz.-ser. vein 264/90. Strong ser. altrd. with massive Py. blebs. Host rock strong carb. altrd. due to late calcite veins. Py. is massive and finely dissem 10-15%.							0.14	1.7	53	3.64	3	12	20
35	30254	Big Bulk	477844	6166974	Phil Gordon	F.H.P.(?)	Select sample taken from qtz.-ser. vein. Vein contians massive blebs of Cp.2% and fine dissem. Py.3-5% in ser. altrd rock.			6.65				0.038	8.6	10000	7.64	4	2	10
36	30255	Big Bulk	477860	6166885	Phil Gordon	F.H.P.(?)	1.5m grab across discontinuous vein blow out orient. 096/87. Grab zone is strongly ser. altrd. Qtz. and carb. veinlets throughout. Fine dissem. Py.25-30%, Cp. trace, Gl. trace.							1.29	37.9	2870	10.95	7	490	1180
37	30256	Big Bulk	477895	6166888	Phil Gordon	F.H.P.(?)	rock is strongly carb. altrd. and occurs after ser. altrn. Blebs, veinlets, and fine dissem. Py.3-5%, Cp. trace. Secondary Mc and Cc abundant.							0.044	0.5	1465	3.43	7	6	50

	A ROCK	SAMPLESB	C	D	E	F	G HOMESTAKE RIDGE	H	I	J	K	L	M	N	O	P	Q	R	S	T
38	30301	Big Bulk knob	477120	6167067	DB	HFP	vnlts							2.39	3.6	4480	7.14	3	22	163
39	30302	Big Bulk knob	477103	6167100	DB	HFP	ser+?carb alt wallrk w/ chl-sulf strgr stockwork (located within 30215 chip sample)							0.143	1.6	2600	7.92	5	6	81
40	30303	Big Bulk knob	477081	6167151	DB	HFP	least-alt hfp: prim text preserved but hb chloritized and feld sericitized. Cut by mm-scale py-cpy-qtz-carb-ep vnlts. 3% dis py							0.375	3.8	9830	6.66	15	5	82
41	30304	Big Bulk knob	477075	6167130	DB	HFP	cpy-py brec vns w/ chl selv, wallrk is ser-alt HFP - represents the obvious Cu mineralization at the end of the knob			2.93				2.21	10.9	10000	9.19	4	12	130
42	30305	Big Bulk knob	477077	6167112	DB	HFP	alteration breccia unit ("CHAMPS"), lt grey ser-?sil w/ irreg, cm-scale chl blebs & 3-6% dis + vn py and common vuggy q.v.s							0.056	0.2	314	4.71	2	2	80
43	30306	Big Bulk	478030	6167125	DB	HFP	rep chip of wkly ser-alt 5.1 w/ 2% dis py, typical of this area							0.029	0.2	90	4.61	4	18	1085
44	30307	Big Bulk	478030	6167125	DB	vein	1-3 cm thick massv gl-sp w/ minor cb-qz & 10% f py, 40% gl, 30% sp		181		30	6.26		0.106	100	790	3.06	1	10000	10000
45	30308	Big Bulk	478060	6167150	DB	CSB	chl-ser+/-sil "breccia" (i.e. CHAMPS) in contact along irreg, soupy contact w/ typical mod ser-carb 5.1, minor dis py							0.023	0.8	52	5	1	1360	448
46	30309	Big Bulk			DB	HFP	c. gr 5.1 w/ 3-4% dis py; chl-alt hb in ser-alt grey grdmass							0.028	0.2	55	6.35	1	390	162
47	30310	Big Bulk	478046	6167254	DB	CSB	chl-ser+/-sil "breccia" (i.e. CHAMPS); 10% dis & vnlt py + tr cpy, distinct chl spotted texture							0.242	1.1	59	7.43	1	106	185
48	30311	Big Bulk	477750	6167450	DB									0.008	0.2	421	4.36	3	25	67
49	30312	Big Bulk			DB	HFP	70 cm chip across mod ser altd structure 1-2%py							0.061	1.8	108	2.06	1	711	489
50	30313	Big Bulk			DB	HFP	*vein and carb altd HFP w/ small qtz/carb veinlets 3%py tr ga, cpy*							0.346	1	359	1.88	1	559	340
51	30314	Big Bulk	475935	6166575	DB	HFP	intense chl atn w/ 7% py, 1% cpy area of 10 m's-rep							0.843	6.8	809	3.23	1	382	2160
52	30315	Big Bulk	475960	6166560	DB	HFP	mod chl altn 3% py, tr cpy across 5m							0.018	0.7	640	4.9	11	6	476
53	30316	Big Bulk	476060	6166560	DB	HFP	mod-strong chl /ser. Altn w/ 1% py vnlts but no cpy							0.014	0.7	450	4.72	18	11	146
54	30351	Big Bulk	476680	6165477	Nick mitche	HFP	Srong ser, mod chl with 3% Cp/Py combined. Zone is 2m wide and 20m along strike.							0.023	0.6	73	6.6	3	11	101
55	30352	Big Bulk	476789	6165435	Nick mitche	HFP	Strong ser alteration with 1% Py, 2% Cp. Strong gossen							0.052	0.8	1420	5.72	24	8	64
56	30356	Big Bulk	476747	6165684	Nick mitche	andicite	*Stong ser alteration and minor/mod carb alteration and carb veininng.* minneralization is diseminnated and fine grain 2% Py, 2% Cp.							0.013	0.2	1680	4.68	2	25	66
57	30357	Big Bulk	476786	6165682	Nick mitche	Fhp	Strong Chl with mod ser and secondary carb alteration. Minor carb veining, hosts high grade veins (sample 30357).							0.006	0.2	154	4.5	1	141	1080
58	30358	Big Bulk	476786	6165682	Nick mitche	Fhp	Ancorite/Qtz veins 2m wide exposed for 3m bearing 300. Mineralization, 2% galena, 3% sphalrite, 1%.				1.62	6.25		1.405	13.3	1185	4.01	1	10000	10000
59	30359	Big Bulk	476832	6165696	Nick mitche	andicite	Strong carb alteration wwith qtz veining and strong chl. 4% Cp, *malicite staining, strong* gossen. OC 20m by 20m . Possibly a vein structure looking at dip slope.			1.61				1.14	25.4	10000	10.2	8	99	245
60	30360	Big Bulk	476844	6165801	Nick mitche	Fhp	Mod ser, strong Chl, mod carb. Rep sample of the whole OC.							0.1	1.2	824	5.25	8	50	272
61	30401	Big Bulk	477465	6167083	PB		FHP, Str silicified, 7-10% py diss and minor veinig							0.069	0.4	65	6.7	3	8	38
62	30402	Big Bulk	477467	6167058	PB		FHP, Mod silicified, 7-10% py diss and minor veinig							0.04	0.2	183	4.12	7	6	37
63	30403	Big Bulk	477482	6166950	PB		90cm wide qtz-ser-py vein, 100/75 south							0.319	6.1	812	7.53	6	34	18
64	30404	Big Bulk	477564	6167118	PB		FHP Wk-mod perv ser, wk sil, 5-7% py							0.016	0.5	224	4.86	3	12	521
65	30405	Big Bulk	477562	6167093	PB		FHP Wk-mod perv ser, wk-mod sil, 5-10% py diss and fine vnlts							0.02	0.2	133	5.01	3	7	92
66	30406	Big Bulk	477562	6167075	PB		vns							0.024	0.2	43	6.28	2	15	78
67	30407	Big Bulk	477567	6167041	PB		FHP Mod-str sil, mod ser, 7-10% py mostly diss							0.01	0.2	158	5.23	4	7	55
68	30408	Big Bulk	477558	6166994	PB		FHP mottled variable sil and ser alt (wk-mod) 5-10% py							0.019	0.5	283	5.94	17	54	434
69	30409	Big Bulk	477497	6166938	PB		FHP mod Fe carb alt adjacent to fault, 5-7% py diss and vnlts							0.117	0.7	512	4.94	17	30	530
70	30410	Big Bulk	477511	6166932	PB		FHP wk-mod qtz-ser, 7-8% py diss and vnlts							0.069	1.6	680	7.81	11	12	150
71	30411	Big Bulk	477550	6166936	PB		FHP wk ser alt, 3% py							0.079	0.6	341	5.47	3	184	436
72	30412	Big Bulk	477520	6166938	PB		HFP, wk perv ser and chl, 5m chip & grab, includes 2, 60cm ser py veins, 5-7% py							0.485	1.4	553	6.51	5	15	30
73	30413	Big Bulk	477375	6166888	PB		sp,							0.244	2.3	376	1.39	3	16	32
74	30414	Big Bulk	477334	6166836	PB		2m wide Fe Carb alt HFP? 3-4% py							0.057	0.2	133	4.36	6	4	24
75	30415	Big Bulk	477334	6166834	PB		0.25m layered wht qtz-chl-dk qtz. 1-3% py							0.055	0.2	8	1.35	3	4	12
76	30416	Big Bulk	477334	6166837	PB		80cm sample of qtz vein and ser-py. orientation 110/80							0.155	0.9	241	2.24	7	16	25
77	30417	Big Bulk	477365	6166837	PB		15cm banded and bxd qtz vn, 3-5% cpy clots, 1-2% py, aspy?			2.6				0.064	13.5	10000	2.81	2	6	13
78	30418	Big Bulk	477570	6166865	PB		10cm qtz-calc-sp-gn-py. 3% sp, 1% gn, 1-2% cpy, 1% py					3.73		0.554	6.8	1170	5.81	1	7420	10000
79	30419	Big Bulk	477570	6166865	PB		FHP, carb alt host for 30418, 1-2% diss py							0.028	0.3	196	3.93	1	28	126
80	30420	Big Bulk	477634	6166826	PB		float sample, side of glacier, 40cm3, qtz-py-sp-gn-cpy vn. 20-40% py, 5-7% sp, 1% gn, 1% cpy					1.55		2.86	16.5	2920	13.3	3	5940	10000
81	30421	Big Bulk	477647	6166848	PB		10-30cm qtz-py-sp-cpy-gn vein.							0.752	6.2	4290	13.2	15	999	3080
82	30422	Big Bulk	477647	6166849	PB		FHP, mod-str carb alt, 3m chip sample host for 30421							0.147	2.1	218	6.44	11	687	1450
83	30423	Big Bulk	477678	6166887	PB		2m chip of FHP mod ser alt, 10-12% diss and vein py							0.12	1	498	5.65	9	382	230
84	30424	Big Bulk	477653	6166820	PB		FHP?, mod ser, wk chl, 3-5% diss py, 2-3m2 area							0.1	1	566	5.24	4	16	55
85	30425	Big Bulk	477726	6166852	PB		sample							0.039	0.3	113	2.63	6	8	26

	A ROCK	SAMPLES B	C	D	E	F	G HOMESTAKE RIDGE	H	I	J	K	L	M	N	O	P	Q	R	S	T
86	30426	Big Bulk	477611	6166695	PB		Bleached FHP? wk sil, mod-str ser, wk ser, 1% fine diss py w/in grey patches							0.083	0.5	635	0.24	1	2	10
87	30427	Big Bulk	476678	6166290	PB		tr py							0.083	0.3	1025	4.45	1	2	41
88	30428	Big Bulk	476751	6166485	PB		FP, FHP? massive, str alt of fsp and str sil/ser alt of groundmass. tr diss cpy and tr py							0.025	0.2	204	1.16	1	2	23
89	30429	Big Bulk	476838	6166513	PB		FHP, str silicified, 1% py,cpy							0.141	1	2100	1.7	12	9	109
90	30430	Big Bulk			PB	FHP	STANDARD							0.005	0.2	92	5.13	1	2	462
91	30431	Big Bulk	476843	6166443	PB	FHP	FHP, mod ser, destruction of primary text, 1% py, 1% cp along fract, 3 4% remnant grey grains (mt)							0.055	0.2	412	1.64	2	16	49
92	30432	Big Bulk	476900	6166480	PB	FHP	sulf							0.13	0.7	1775	1.31	10	9	50
93	30433	Big Bulk	476893	6166456	PB	FHP	fine py							0.215	2.3	3460	1.49	2	2	25
94	30434	Big Bulk	476898	6166462	PB	FHP	10x10m area, random grabs, mix of material like 30433 and rock that is sulfide destructive, str sil, 1% total sulfides.							0.114	0.8	1950	1.54	2	5	31
95	30435	Big Bulk	476880	6166475	PB	FHP	FHP, 7x7m area, wk-mod ser, patchy str sil, poss Kspar?, patchy sulfides from 2-3% diss cp and 2-3% py to 1% total sulfides.							0.187	0.7	2230	1.72	12	12	35
96	30436	Big Bulk	476856	6166445	PB	FHP	FHP, 7X7m area, mod-str sil/ser tr-1% py, cpy, locally 2-3% faint black specks							0.016	0.2	101	1.06	1	6	29
97	30437	Big Bulk	476855	6166440	PB	FHP	FHP, carb alt, 1-2-3% diss cpy, locally 1-2% aspy,							0.079	0.2	1420	1.73	2	7	39
98	30438	Big Bulk	476872	6166427	PB	FHP	FHP, 10x10m area grabs, mod ser alt, overprinted by str sil that is sulf destructive. mix of sulf rich and sulf poor material.1-3% cpy.							0.104	1.2	2530	1.84	2	10	37
99	30439	Big Bulk	476805	6166400	PB	FHP	FHP wk ser, minor kspar, tr py vnlts							0.009	0.2	64	2.35	1	12	94
100	30440	Big Bulk	476880	6166538	PB	FHP	m-str carb overprint, ser/chl w/ diss cpy, str ser/sil destroying sulf.							0.147	0.2	447	1.12	2	8	33
101	30441	Big Bulk	476895	6166542	PB	FHP	mod chl, wk brown kspar +/- hem?, tr py, tr cpy on fracts							0.013	0.2	252	3.01	2	6	53
102	30442	Big Bulk	476980	6166648	PB	FHP	wk ser, wk ep, minor qtz vnlts, tr cpy on fracts, 1% tot sulfides							0.065	0.4	655	1.86	3	15	94
103	30443	Big Bulk	476973	6166678	PB	FHP	[illegible] 1.5m							0.035	0.2	187	0.64	2	3	6
104	30444	Big Bulk	476964	6166684	PB	FHP	[illegible] py, cpy							0.018	0.2	872	1.01	1	2	23
105	30445	Big Bulk	477021	6166727	PB	FHP	2m wide qtz-cpy vn, stockwk, and ser alt FHP, large clots of cpy w/in qtz vns, 2-3% diss py in FHP.							0.067	0.9	2740	2.75	4	3	17
106	30446	Big Bulk	476805	6166677	PB	FHP	FHP wk perv kspar, wk-mod magnetic, 1% diss py, tr cpy							0.008	0.3	257	4.77	1	2	850
107	30447	Big Bulk	477215	6166817	PB	FHP	FHP?, str carb alt, diss chl-cpy text, mod ser/sil overprint of chl-cpy text, 2-3% py, 1-1% cpy							0.16	1.2	1840	2.96	8	4	389
108	30448	Big Bulk	477216	6166895	PB	FHP	FHP, wk ser, wk kspar, 3-4% py							0.047	0.8	509	4.56	18	2	199
109	30449	Regional	477704	6165555	PB		Andesite, chlorite spotted, 1% py							0.005	0.4	156	4.35	1	2	168
110	30450	Regional	477710	6165555	PB	FHP	FP carb alt, 3-5% py, wk-mod ser, sheared seams of seds							0.025	1.1	24	5.22	1	19	111
111	30451	Big Bulk	477642	6166880	JL	FP	throughout. PY 10% as ff and diss. Mod. SE & SI alt. Calcite strgrs. Near sample= 15 cm QZ-CB vein @105/90, PY and MA stain. Second vein10 cm @100/50 - qz-cb + Ma + Py +Gn(Tr). N-S QZ-CB vein wi SP +PY.							0.045	0.5	198	6.24	2	5	46
112	30452	Big Bulk	478046	666975	JL	FP	Random chip across 5 m (N-S). Mod.-wk CA alt. 5-7% diss. PY as cubes(0.5mm). Minor calcite stringers 5m 1-2mm width.							0.007	0.3	20	4.67	1	8	89
113	30453	Big Bulk	478131	6166949	JL	FP?	Random chip across 5-6 m (NE-SW). Mod.-st Sl-SE alt. Wk CB alt. 10% diss. and ff PY. Minor calcite stringers 3 mm width.							0.008	0.3	91	4.58	1	22	150
114	30454	Big Bulk	478075	6166892	JL	FP?	Random grab sample over 5x4m area. Zone =strong SE +/-Sl (variable) with gy QZ. strgrs (poor density). PY stgrs + diss PY total 10%. Weak MA stain on rare fractures.							0.016	0.5	106	4.8	1	26	71
115	30455	Big Bulk	478071	6166838	JL	FP?	Random grab over 15 m of mod.-st SE +/- Sl alt. Rare metre scale zones of CH altd.FP. PY 10-12 % as ff and diss. Common QZ-CB veining @ 280/55. Sample direction SE-NW.							0.021	0.4	467	3.54	4	11	47
116	30456	Big Bulk	478052	6166901	JL	?	Select sample over 1.7 m. Strong SE +PY altn along fault bounded structure @ 312/82, gossanous. Minor 15 cm and. dyke following SE-PY zone. Thinner parallel zones @334/75. PY 7% diss.							0.034	0.7	91	4.37	4	48	68
117	30457	Big Bulk	478012	6166961	JL	FP	Select sample over 2.5m of carbonate altd FP. Alt'n zone parallel to SE-PY alt'n/faults. PY 3% diss.							0.005	0.2	77	4.3	1	5	80
118	30458	Big Bulk	477941	6166941	JL	FHP	Random grab sample over 4.0m. Med. gn weak-mod.CH alt.FHP(relatively fresh). PY 3% diss. Numerous CA stringers 5mm and CA filled tension gashes.							0.011	0.2	30	4.73	1	3	112

	A ROCK	SAMPLES B	C	D	E	F	G HOMESTAKE RIDGE	H	I	J	K	L	M	N	O	P	Q	R	S	T
119	30459	Big Bulk	477882	6166906	JL	FP	Random grab over 4x2 m area in mod-st fractured & stringered, m-SE, w-SI altd FP. PY 8% as ff and diss. Stringers random, with one preferred directon, 344/70.							0.019	0.4	362	3.77	9	19	120
120	30460	Big Bulk	477921	6166892	JL	FP	*Random grab over 2.5 m of gossanous SE-Py zone. 116/80. minor* SI +SI stringers. Zones of CY alt'n. PY 5% diss.							0.769	9	497	8.48	4	44	36
121	30461	Big Bulk	477906	6166850	JL	FP	in SE alt'd. FP. Angular to rounded to "amygdaloidal" CH. PY 7-10% as diss and ff. CB stringers. Numerous fractures @ 055 to 065 with st. MA stain.							0.132	1.2	433	6.37	3	21	102
122	30462	Big Bulk	479122	6166848	JL	FP	Sample over 1.0 m of fracture/minor stringer zone in patchy CH alt'd m SE alt'd FP. Fracture zone with mod. MA, secondary CC, CP 1%, *PY 8-10%. Fracture zone @245/75. CH* alt wallrock strongly *PY +/-* CP stringered.							0.226	3.6	7510	6.21	4	27	177
123	30463	Big Bulk	477836	6166894	JL	Vein	Grab over 0.5m of vein Sx +QZ +CB @ 077/87. Vein = semi-massive SP,GN,PY +/-CP. Zones of massive SP/GN (80:20). Strike extent = 5m. Pinch to the west and under snow cover to the east. Vein extends to the west at a diminished size.				3.22	6.62		1.46	41.9	2020	9.94	1	10000	10000
124	30464	Big Bulk	477907	6166854	JL	FP	Random grab over 6.0 m of CH alt'd St SE alt'd FP. Patchy, fragmental, mottled amygdaloidal appearance. Pale frags + CH frags. PY diss + ff 10-12%. Same location as 30462 and 30463.							0.08	1.4	2020	6.19	2	96	222
125	30465	Big Bulk	477813	6166858	JL	FP	Random grab over 4 m of "CHAMPS" (chlorite, amygdaloidal, mottled, patchy,sericite altered FP). PY diss and ff 15%. SP trace in CO3/QZ 1 cm stringers. O/C exposed in snowfield. St CH.							0.092	1.3	634	6.65	4	72	367
126	*30466*	*Big Bulk*	*477861*	*6166818*	*JL*	*FP*	Float @ top of Nunatuk = wk CH altd CHAMPS/FP? PY 8%, *CP1/2%. Similar material in O/C.*							0.153	1.5	2940	4.34	2	67	174
127	30467	Big Bulk	477850	6166832	JL	Fault	Fault/alt'n. zone @248/70. Heavy FE stain with st MA +CC on fracture surfaces PY 10%, Tr CP.							0.226	1.9	3360	7.34	2	16	112
128	30468	Big Bulk	477754	6166909	JL	QZ-CB vein	Grab over 1.3 m of QZ-CB veined zone. 7% black SP, 10% PY. Zone @320/55.							0.732	3.6	826	8.12	4	585	394
129	30469	Big Bulk	476889	6166096	JL	FP?	Float @ front of glacial ice. Strong SE alt. 10-15% PY, w CH, CP tr.							0.038	0.4	92	5.23	3	9	26
130	30470	Big Bulk	476793	6165895	JL	CSB	FHP. Breccia zone similar to CHAMPS with lesser SE alt. Well defined frags in some locations. Numerous fractures with QZ/CB?PY+/-CP in stringers.							0.099	0.5	792	6.66	12	10	118
131	30472	Big Bulk	476700	6166671	JL	FP	Random grab over 7.0 m of mCH altd. FP. Minor CB veins 1.0 cm. roughly II to 140 faulting. PY 3% as diss. &in CB veins. CP tr. Similar to "The Knob" but less sx veining.							0.034	0.2	405	5.21	6	10	83
132	30473	Big Bulk	476647	6166657	JL	FP	Random grab over 7.0 m of mCH altd. FP. Similar to sample above.							0.047	0.2	361	5.6	4	6	103
133	30474	Big Bulk	476453	6166592	JL	FHBP	Random grab over 6x6m area of weak K-spar alt'd FHBP. Weak EP alt'n. Diss. CP in all samples. 0.25%.							0.041	0.2	513	4.41	3	5	29
134	30475	Big Bulk	478172	6167591	JL	FHP	Random grab over 2.5 m. FHP. Mod. CH to st SE alt. Weak CB veining. "Gobby" CP pods II to 295/50 faults/veins. Very strong fracture cleavage @ 200/40-60. Sample location not strongly cleaved(?). Sx up to 15% = PY, CP1%.							0.01	0.2	1105	3.84	16	9	57
135	*30476*	Big Bulk	*478227*	*6167526*	*JL*	QS	Grab of scree at base of large gossanous knob. Very strong SE, *+/-SI, +/-CY alteration. PY 10%, tr CP.*							*0.019*	*0.3*	93	5.31	2	25	23
136	30477	Big Bulk	478512	6167688	JL	FP?	Random grab of strongly fracture foliated FP? @ 295/72. St CH anSE alt. 3% PY, CP1%. Lots of MA, AZ, CC on fracture surfaces. Cross-cutting CB/QZ veins. Sample taken along 50 m of strike.							0.082	1	3990	4.48	1	13	249
137	30478	Big Bulk	478464	6167610	JL	FP?	gobby CP. Some specular hematite. PY 5 % overall. CP 1% or less. Strongly fractured and stringered. South end of sample=sx on fracture surfaces.							0.089	0.2	722	3.83	3	3	46
138	30479	Big Bulk	478426	6167666	JL	FP?	Grab sample over 6m of mCH altd., strongly QV'd O/C with up to 2m QV @ 275/70. Large QV not included in sample. Fracture fill PY and CP. QV's with CP and PY. 1% CP.							0.336	1.6	8600	4.49	3	4	40
139	30480	Big Bulk	477935	6167550	JL	FP?	Grab from SE side of strongly schistose CY/SE altd FP. Zone @270/87. Zone sampled = St SE, mSI, mCO, PY 15%.							0.012	0.3	26	4.22	3	2	87
140	30501	Big Bulk	478240	6167150	GE	HFP	10 m rep. of HFP w/ wk ser/chl pervasive alteration w/3-5% dissem py, tr cpy, Crse gr. HFP w/ xenoliths							0.017	0.2	91	4.72	2	14	106
141	30502	Big Bulk	478420	6167200	GE	HFP	10 m rep of HFP mod/strong chl altn w/ 2-3 % cpy, cpy py.							0.278	1.2	5120	4.66	56	3	34
142	30503	Big Bulk	478230	6167240	GE	HFP	30 m rep of wk chl/ser pervasive alteration w/ 3-4% py , tr cpy							0.071	0.2	1410	3.81	3	2	26
143	30504	Big Bulk	478510	6167300	GE	HFp	throughout							0.149	0.2	3830	5.24	10	2	47
144	30505	Big Bulk	478580	6167830	GE	HFP	10 m rep of pervasive strong ser. Altn. w/10% qtz veinlets and 4-5% dissem py							0.122	2.5	549	4.69	3	16	57

	A ROCK	SAMPLES B	C	D	E	F	G HOMESTAKE RIDGE	H	I	J	K	L	M	N	O	P	Q	R	S	T
145	30506	Big Bulk	478560	6167850	GE	HFP	8 m chip across foln (340/60E) in mod pervasive ser. Altn w/ 2-3% py 0.5% cpy, strong malachite							0.178	0.7	6330	3.68	3	5	93
146	30507	Big Bulk	478350	6168090	GE	HFP	HFP strong silicn. Moderate ser altn w/ 3-4% dissem py 4m chip							0.017	0.2	407	2.08	2	8	13
147	30508	Big Bulk	478400	6167920	GE	HFP	rep of vuggy 10 cm QV in silicd ser altd talus , QV has 1% dissem py							0.986	1.8	1870	1.47	1	4	2
148	30509	Big Bulk	477350	6167300	GE	HFP	HFP chip 4m's mod ser wk chl w/ 5% py, 1%cpy							0.257	0.9	320	6.39	1	42	493
149	30510	Big Bulk	477320	6167260	GE	HFP	HFP rep of 8 m area of strong chl altn w/ 2-3% py, 1% cpy							0.502	6.8	1480	9.04	2	163	1230
150	30511	Big Bulk	477310	6167200	GE	HFP	HFP 10 m chip of moderate chl altn w/ 3-4% dissem py, 1-2% cpy							1.325	12.1	5250	13.7	2	1515	9360
151	30512	Big Bulk			GE	HFP	Rep of a 20m area on nunatak SE of Bonnie zone 2.5 kms Se, mod ser, chl altn w/ 3-4% py tr cpy							0.257	2.5	1115	6.53	2	43	272

APPENDIX 2

CERTIFICATES OF ANALYSIS - ROCKS

ALS Chemex

EXCELLENCE IN ANALYTICAL CHEMISTRY

Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **TECK EXPLORATION LTD.**
MAIN STATION, BOX 938
KAMLOOPS BC V2C 5N4

Date : 26-Aug-2002
Account: HPQ

Project : 203300

CERTIFICATE OF ANALYSIS VA02002766

Sample Description	Method	WEI-21	Au-AA24	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOR	0.02	0.005	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01
30201		1.26	0.693	6.0	2.08	54	<10	40	<0.5	7	2.58	0.5	23	30	>10000	6.06
30202		0.94	0.794	4.3	1.85	82	<10	40	<0.5	5	1.90	<0.5	28	26	>10000	6.20
30203		1.84	0.315	3.1	1.24	208	<10	60	<0.5	3	1.72	<0.5	23	21	7640	4.24
30204		1.82	0.348	2.7	1.62	51	<10	40	<0.5	<2	1.55	<0.5	26	19	7110	4.53
30205		0.80	0.485	5.4	1.66	42	<10	30	<0.5	4	0.57	<0.5	29	24	>10000	5.77
30206		2.64	0.252	1.9	1.48	54	<10	30	<0.5	5	1.89	<0.5	32	17	4590	5.18
30207		0.84	0.412	2.0	1.26	77	<10	30	<0.5	4	1.52	<0.5	27	24	5620	4.56
30208		0.54	0.298	1.5	1.29	68	<10	30	<0.5	2	1.15	<0.5	22	17	4120	5.14
30209		0.86	0.347	2.1	1.24	81	<10	50	<0.5	3	1.74	0.6	28	23	5190	6.43
30210		0.76	0.455	2.4	1.96	72	<10	40	<0.5	2	2.50	0.5	24	27	5550	6.31
30211		2.94	0.189	1.8	1.44	78	<10	40	<0.5	4	2.01	<0.5	22	21	3160	4.39
30212		0.54	0.288	2.1	1.31	52	<10	60	<0.5	4	2.89	<0.5	17	16	4900	4.15
30213		1.08	0.282	2.4	1.48	64	<10	30	<0.5	3	2.71	<0.5	23	20	4420	5.21
30214		1.14	0.432	2.6	1.82	77	<10	50	<0.5	3	1.53	1.0	26	17	5200	5.75
30215		1.34	0.335	3.0	1.95	70	<10	30	<0.5	3	1.68	<0.5	26	23	4400	6.90

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MAIN STATION, BOX 938
KAMLOOPS BC V2C 5N4

Date : 26-Aug-2002
Account: HPQ

Project : 203300

CERTIFICATE OF ANALYSIS VA02002766

Sample Description	Method Analyte Units LOR	ME-ICP41 Ga ppm 10	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Tl % 0.01
30201		10	0.22	<10	1.82	1295	74	0.03	9	1510	8	2.90	11	8	61	<0.01
30202		10	0.20	<10	1.57	974	14	0.02	8	1530	3	3.51	11	6	35	<0.01
30203		10	0.28	<10	1.30	976	8	0.02	7	1210	3	2.53	224	6	74	<0.01
30204		10	0.24	<10	1.43	1100	10	0.03	7	1200	4	2.39	5	5	41	<0.01
30205		10	0.21	<10	1.49	913	7	0.03	8	1310	3	3.00	4	5	24	<0.01
30206		10	0.21	<10	1.47	928	7	0.04	7	1340	5	3.74	2	5	45	<0.01
30207		10	0.20	<10	1.38	789	8	0.03	7	1160	7	3.32	4	4	50	<0.01
30208		10	0.28	<10	1.39	1175	14	0.02	5	1250	4	3.31	5	5	66	<0.01
30209		<10	0.34	<10	1.33	1565	9	0.01	7	1310	3	4.13	7	6	125	<0.01
30210		10	0.25	<10	2.07	1825	4	0.02	7	1910	4	3.85	5	9	56	<0.01
30211		10	0.26	<10	1.46	1425	5	0.03	6	1310	11	3.45	2	5	43	<0.01
30212		10	0.21	10	1.34	1120	4	0.03	7	1560	2	2.96	<2	6	52	<0.01
30213		10	0.25	<10	1.30	1310	10	0.02	6	1410	6	3.94	<2	5	55	<0.01
30214		10	0.26	<10	1.59	1655	18	0.01	4	1360	15	3.57	<2	5	27	<0.01
30215		10	0.24	<10	1.59	1645	8	0.02	6	1460	5	4.32	<2	6	35	0.01

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MAIN STATION, BOX 938
KAMLOOPS BC V2C 5N4

Date : 26-Aug-2002
Account: HPQ

Project : 203300

CERTIFICATE OF ANALYSIS VA02002766

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Hg-CV41 Hg ppm 0.01	Cu-AA46 Cu % 0.01
30201		<10	10	116	<10	101	0.30	1.27
30202		<10	10	106	<10	83	0.29	1.17
30203		<10	<10	68	<10	82	2.79	
30204		<10	<10	82	<10	73	0.10	
30205		<10	<10	96	<10	71	0.09	1.15
30206		<10	<10	86	<10	58	0.09	
30207		<10	<10	70	<10	75	0.07	
30208		<10	<10	58	<10	73	0.08	
30209		<10	<10	33	<10	97	0.05	
30210		<10	10	110	<10	112	0.13	
30211		<10	10	73	<10	83	0.06	
30212		<10	10	88	<10	72	0.07	
30213		<10	10	75	<10	71	0.13	
30214		<10	<10	79	<10	192	0.17	
30215		<10	10	100	<10	70	0.07	

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MAIN STATION, BOX 938
KAMLOOPS BC V2C 5N4

Date : 28-Aug-2002
Account: HPQ

Project : Big Bulk

CERTIFICATE OF ANALYSIS VA02002799

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA24 Au ppm 0.005	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
030301		0.76	2.39	3.6	1.67	60	<10	60	<0.5	3	2.82	0.9	20	25	4480	7.14
030302		0.58	0.143	1.6	2.61	58	<10	60	<0.5	8	1.43	0.6	24	29	2600	7.92
030303		0.90	0.375	3.8	2.46	132	<10	60	<0.5	6	1.54	<0.5	28	40	9830	6.66
030304		1.26	2.21	10.9	2.58	101	<10	50	<0.5	7	1.97	<0.5	43	38	>10000	9.19
030305		1.22	0.056	0.2	1.99	11	<10	90	<0.5	4	1.70	0.6	1	37	314	4.71
030216		2.42	0.381	2.6	1.51	113	<10	40	<0.5	6	2.55	0.5	24	26	4840	5.58
030217		0.84	0.224	3.0	1.36	108	<10	40	<0.5	6	2.44	1.4	29	35	5230	6.39
030218		1.78	0.223	2.6	1.76	55	<10	50	<0.5	2	2.56	<0.5	16	22	4800	4.89
030219		1.16	0.215	2.5	1.71	72	<10	100	<0.5	<2	3.10	<0.5	14	25	4630	4.44
030220		1.92	0.224	3.5	1.63	64	<10	70	<0.5	9	2.37	0.7	14	26	4670	5.98
030221		0.90	0.133	1.2	2.07	90	<10	60	<0.5	<2	3.75	0.8	11	28	1925	5.96
030222		0.86	0.127	1.7	0.51	49	<10	40	0.6	<2	4.01	0.7	19	17	695	5.34
032057		0.76	<0.005	0.2	2.34	19	<10	210	0.5	<2	0.14	<0.5	11	69	90	4.22

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MAIN STATION, BOX 938
KAMLOOPS BC V2C 5N4

Date : 28-Aug-2002
Account: HPQ

Project : Big Bulk

CERTIFICATE OF ANALYSIS VA02002799

Sample Description	Method Analyte Units LOR	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1
030301		<10	<1	0.32	<10	1.87	1540	3	0.03	7	3690	22	5.40	5	13	55
030302		10	<1	0.39	<10	1.75	2010	5	0.02	7	1590	6	4.53	<2	9	30
030303		<10	<1	0.34	<10	2.11	1490	15	0.03	9	1510	5	4.31	4	13	45
030304		10	<1	0.14	<10	2.82	1315	4	0.05	16	2810	12	6.47	6	18	49
030305		<10	<1	0.31	<10	1.96	1345	2	0.04	3	1240	2	3.39	<2	7	42
030216		<10	<1	0.30	<10	1.47	1250	5	0.04	7	1400	20	4.92	2	7	57
030217		<10	<1	0.37	<10	1.13	1330	9	0.02	5	1480	27	6.16	<2	5	49
030218		<10	<1	0.25	<10	1.76	1210	3	0.04	8	1660	6	3.51	<2	9	69
030219		<10	<1	0.27	<10	1.57	1500	2	0.05	8	1660	6	2.86	<2	7	77
030220		<10	<1	0.28	<10	1.26	1255	2	0.03	14	1790	10	4.22	4	6	54
030221		10	<1	0.27	<10	1.54	2090	2	0.02	10	2030	11	3.43	3	7	89
030222		<10	2	0.34	<10	0.96	1590	3	0.01	5	1340	15	4.51	6	11	76
032057		<10	<1	0.19	<10	1.49	680	2	0.03	81	690	9	0.56	<2	6	17

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MAIN STATION, BOX 938
KAMLOOPS BC V2C 5N4

Date : 28-Aug-2002
Account: HPQ

Project : Big Bulk

CERTIFICATE OF ANALYSIS VA02002799

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Hg-CV41 Hg ppm 0.01	Cu-AA46 Cu % 0.01
030301		<0.01	<10	<10	91	<10	163	0.21	
030302		<0.01	<10	<10	128	<10	81	0.06	
030303		0.01	<10	<10	126	<10	82	0.08	
030304		0.01	<10	<10	162	<10	130	0.42	2.93
030305		0.02	<10	<10	73	<10	80	0.06	
030216		0.01	<10	<10	93	<10	76	0.12	
030217		<0.01	<10	<10	67	<10	192	0.27	
030218		0.02	<10	<10	113	<10	87	0.20	
030219		<0.01	<10	<10	93	<10	86	0.18	
030220		<0.01	<10	<10	81	<10	80	0.33	
030221		<0.01	<10	<10	92	<10	108	0.20	
030222		<0.01	<10	<10	18	<10	70	1.18	
032057		<0.01	<10	<10	59	<10	112	0.13	

ALS Chemex

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Phone: 604 984 0221 Fax: 604 984 0218

To: TECK EXPLORATION LTD.
MAIN STATION, BOX 938
KAMLOOPS BC V2C 5N4

Date : 9-Sep-2002
Account: HPQ

Project : 203300

CERTIFICATE OF ANALYSIS VA02002936

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA24 Au ppm 0.005	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
30223		1.80	0.123	2.4	1.50	64	<10	40	<0.5	<2	1.97	<0.5	27	28	2620	5.26
30224		2.42	0.110	1.4	1.50	54	<10	30	<0.5	<2	1.71	<0.5	23	25	2310	5.07
30225		2.28	0.048	0.6	1.60	32	<10	40	<0.5	<2	1.95	<0.5	25	23	1435	5.08
30226		6.48	0.098	0.5	2.09	30	<10	30	<0.5	<2	2.31	<0.5	27	32	1365	6.75
30227		5.32	0.160	0.4	2.71	45	<10	30	<0.5	<2	1.89	<0.5	20	40	976	6.93
30228		2.84	0.135	0.8	1.89	39	<10	20	<0.5	<2	2.16	12.2	20	21	1000	5.83
30229		2.98	0.034	0.2	1.78	18	<10	30	<0.5	<2	2.03	<0.5	23	23	401	6.08
30230		3.00	0.090	0.4	1.59	32	<10	20	<0.5	<2	1.06	<0.5	23	28	292	6.98
30251		0.50	0.431	11.3	0.27	72	<10	30	<0.5	<2	1.59	<0.5	9	91	658	4.56
30252		0.38	0.111	1.1	0.27	107	<10	30	<0.5	<2	5.45	6.0	12	48	289	4.65
30253		0.82	0.140	1.7	0.24	70	<10	30	<0.5	<2	3.11	<0.5	6	95	53	3.64
30254		0.48	0.038	8.6	0.19	21	<10	10	<0.5	<2	0.10	<0.5	6	74	>10000	7.64
30255		0.60	1.290	37.9	0.22	321	<10	10	<0.5	<2	5.79	6.2	13	45	2870	10.95
30256		1.28	0.044	0.5	0.92	14	<10	70	<0.5	<2	4.23	<0.5	16	26	1465	3.43
30401		1.90	0.069	0.4	1.26	20	<10	20	<0.5	<2	1.04	<0.5	16	44	65	6.70
30402		2.12	0.040	0.2	1.20	31	<10	40	<0.5	<2	1.44	<0.5	13	35	183	4.12
30403		1.84	0.319	6.1	0.18	134	<10	10	<0.5	<2	0.79	<0.5	10	121	812	7.53
30404		1.40	0.016	0.5	1.76	54	<10	50	<0.5	<2	2.38	1.7	14	27	224	4.86
30405		1.26	0.020	0.2	1.61	17	<10	30	<0.5	<2	0.68	<0.5	17	68	133	5.01
30406		1.38	0.024	<0.2	1.55	33	<10	20	<0.5	<2	0.81	<0.5	12	39	43	6.28
30407		1.36	0.010	<0.2	1.59	12	<10	40	<0.5	<2	1.01	<0.5	17	53	158	5.23
30408		1.66	0.019	0.5	1.93	73	<10	40	<0.5	<2	2.40	1.7	17	35	283	5.94
30409		1.36	0.117	0.7	0.70	67	<10	30	<0.5	<2	2.44	2.4	22	32	512	4.94
30410		1.42	0.069	1.6	1.42	169	<10	20	<0.5	<2	2.22	0.5	35	44	680	7.81
30411		1.14	0.079	0.6	1.93	101	<10	40	<0.5	<2	2.37	1.9	15	31	341	5.47
30412		2.28	0.485	1.4	0.90	183	<10	20	<0.5	<2	2.82	<0.5	14	39	553	6.51
30413		1.52	0.244	2.3	0.21	126	<10	40	<0.5	<2	1.40	1.3	9	119	376	1.39
30414		1.52	0.057	<0.2	0.40	84	<10	40	<0.5	<2	3.09	<0.5	22	33	133	4.36
30415		1.74	0.055	0.2	0.24	76	<10	60	<0.5	<2	3.72	<0.5	5	97	8	1.35
30416		1.84	0.155	0.9	0.19	130	<10	30	<0.5	<2	0.60	<0.5	11	108	241	2.24
30417		1.64	0.064	13.5	0.17	16	<10	20	<0.5	<2	1.01	<0.5	4	135	>10000	2.81
30418		1.42	0.554	6.8	0.31	320	<10	20	<0.5	<2	10.35	177.5	5	24	1170	5.81
30419		1.28	0.028	0.3	0.83	38	<10	40	<0.5	<2	1.79	0.6	18	34	196	3.93
30420		1.90	2.86	16.5	0.29	334	<10	10	<0.5	5	6.63	77.3	14	34	2920	13.30
30421		1.38	0.752	6.2	0.29	238	<10	10	<0.5	<2	4.79	19.6	18	48	4290	13.20
30422		1.78	0.147	2.1	0.49	58	<10	30	<0.5	<2	5.84	8.9	17	29	218	6.44
30423		1.18	0.120	1.0	1.21	59	<10	30	<0.5	<2	3.35	1.1	17	37	498	5.65
30424		1.06	0.100	1.0	1.26	68	<10	30	<0.5	<2	3.32	<0.5	18	21	566	5.24
30425		0.90	0.039	0.3	0.56	50	<10	50	<0.5	<2	5.88	<0.5	9	33	113	2.63
30426		0.50	0.083	0.5	0.34	2	<10	110	<0.5	<2	4.10	<0.5	<1	15	635	0.24

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EXCELLENCE IN ANALYTICAL CHEMISTRY

Aurora Laboratory Services Ltd.
212 Brooksbank Avenue
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Phone: 604 984 0221 Fax: 604 984 0218

To: **TECK EXPLORATION LTD.**
MAIN STATION, BOX 938
KAMLOOPS BC V2C 5N4

Date : 9-Sep-2002
Account: HPQ

Project : 203300

CERTIFICATE OF ANALYSIS VA02002936

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA24 Au ppm 0.005	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
30427		0.70	0.083	0.3	1.59	2	<10	620	<0.5	<2	3.25	<0.5	13	40	1025	4.45
30428		1.02	0.025	0.2	0.96	<2	<10	90	<0.5	<2	4.04	<0.5	2	32	204	1.16
30429		1.24	0.141	1.0	1.14	4	<10	360	<0.5	<2	3.22	0.8	4	35	2100	1.70
30430		0.58	<0.005	<0.2	2.44	<2	<10	40	<0.5	<2	1.39	<0.5	17	51	92	5.13
30451		1.34	0.045	0.5	1.44	15	<10	30	<0.5	<2	2.12	<0.5	14	39	198	6.24
30452		0.88	0.007	0.3	1.72	117	<10	30	<0.5	<2	3.58	<0.5	13	31	20	4.67
30453		0.96	0.008	0.3	1.05	21	<10	20	<0.5	<2	2.66	0.5	16	50	91	4.58
30454		1.00	0.016	0.5	0.33	19	<10	20	<0.5	<2	2.78	<0.5	17	50	106	4.80
30455		1.28	0.021	0.4	0.74	17	<10	40	<0.5	<2	3.50	<0.5	14	41	467	3.54
30456		1.58	0.034	0.7	0.26	41	<10	40	<0.5	<2	1.44	<0.5	12	58	91	4.37
30457		1.30	<0.005	<0.2	1.04	31	<10	90	<0.5	<2	1.03	<0.5	12	25	77	4.30
30458		1.34	0.011	<0.2	2.13	26	<10	130	<0.5	<2	3.86	<0.5	16	35	30	4.73
30459		1.32	0.019	0.4	0.58	29	<10	20	<0.5	<2	3.64	0.5	15	39	362	3.77
30460		1.40	0.769	9.0	0.29	211	<10	10	<0.5	<2	0.17	<0.5	8	111	497	8.48
30461		1.02	0.132	1.2	1.22	87	<10	20	<0.5	<2	0.93	<0.5	28	50	433	6.37
30462		1.02	0.226	3.6	0.55	97	<10	10	<0.5	<2	1.42	1.3	13	60	7510	6.21
30463		1.54	1.460	41.9	0.18	268	<10	<10	<0.5	<2	8.27	383	4	54	2020	9.94
30464		1.56	0.060	1.4	1.25	80	<10	30	<0.5	<2	3.27	1.1	11	41	2020	6.19
30465		1.46	0.092	1.3	1.27	50	<10	40	<0.5	<2	3.20	2.3	24	39	634	6.65
30466		1.70	0.153	1.5	0.87	100	<10	30	<0.5	<2	2.62	0.7	12	39	2940	4.34
30467		1.60	0.226	1.9	1.03	95	<10	20	<0.5	<2	0.97	<0.5	14	43	3360	7.34
30468		1.48	0.732	3.6	0.20	308	<10	10	<0.5	<2	4.88	2.7	19	83	826	8.12
30469		0.96	0.038	0.4	1.03	14	<10	30	<0.5	<2	1.79	<0.5	33	41	92	5.23
30470		1.04	0.099	0.5	2.31	30	<10	40	<0.5	<2	2.60	<0.5	17	42	792	6.66
30471		0.84	<0.005	<0.2	2.29	2	<10	30	<0.5	<2	2.27	<0.5	17	52	101	4.87

ALS Chemex
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MAIN STATION, BOX 938
KAMLOOPS BC V2C 5N4

Date : 9-Sep-2002
Account: HPQ

Project : 203300

CERTIFICATE OF ANALYSIS VA02002936

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ga	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Ti
	Units	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	%
	LOR	10	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1	1	0.01
30223		20	0.31	10	1.46	1295	5	0.03	5	1300	15	3.62	<2	6	45	0.01
30224		20	0.27	10	1.54	1325	4	0.03	4	1310	10	3.52	2	5	39	0.01
30225		10	0.26	10	1.61	1090	12	0.04	5	1280	10	3.17	2	6	38	0.01
30226		20	0.29	10	1.96	1555	12	0.03	8	1350	7	3.87	3	9	45	0.02
30227		30	0.33	10	2.46	2120	13	0.01	7	1420	28	3.56	3	11	21	0.01
30228		20	0.35	10	1.74	1800	12	0.01	5	1240	125	3.74	<2	7	28	0.01
30229		20	0.37	10	1.66	1390	4	0.03	5	1210	8	4.15	2	7	25	0.02
30230		20	0.34	10	1.58	1200	7	0.02	8	1240	18	5.47	3	6	6	0.03
30251		10	0.22	10	0.04	375	3	0.01	4	270	34	4.39	18	1	13	<0.01
30252		20	0.22	10	1.02	1505	3	0.01	4	820	391	4.25	4	5	69	<0.01
30253		10	0.22	10	0.03	523	3	0.01	3	430	12	3.64	<2	2	39	<0.01
30254		<10	0.18	10	0.02	67	4	0.01	11	480	<2	5.71	4	1	<1	<0.01
30255		20	0.19	20	0.41	1840	7	0.01	4	490	490	>10.0	17	1	49	<0.01
30256		10	0.33	10	0.65	1020	7	0.01	5	1380	6	2.49	<2	5	59	<0.01
30401		10	0.12	10	1.34	524	3	0.09	9	1260	8	5.76	<2	9	18	0.03
30402		10	0.26	10	1.24	711	7	0.05	6	1090	6	3.34	<2	5	32	<0.01
30403		<10	0.16	10	0.02	87	6	0.01	6	160	34	7.65	5	1	<1	<0.01
30404		10	0.28	10	1.76	1150	3	0.04	6	1290	12	3.00	5	9	58	<0.01
30405		10	0.22	10	2.30	739	3	0.07	16	990	7	4.47	<2	9	23	0.03
30406		10	0.19	10	1.83	699	2	0.09	12	1300	15	5.47	<2	8	23	0.05
30407		10	0.17	10	1.96	797	4	0.09	12	1100	7	4.55	<2	9	36	0.05
30408		20	0.30	10	1.76	1190	17	0.03	11	1280	54	3.79	2	8	34	<0.01
30409		10	0.34	10	0.69	586	17	0.02	7	1190	30	3.58	3	9	41	<0.01
30410		10	0.22	10	1.43	965	11	0.04	13	1020	12	6.94	3	11	31	<0.01
30411		20	0.38	10	1.42	1685	3	0.01	4	1420	184	2.91	4	5	38	<0.01
30412		10	0.30	10	0.50	611	5	0.01	6	960	15	5.75	5	3	30	<0.01
30413		<10	0.20	<10	0.03	155	3	0.01	4	440	16	1.20	68	1	25	<0.01
30414		10	0.38	10	0.61	855	6	0.01	6	1220	4	3.48	6	7	62	<0.01
30415		10	0.18	<10	0.21	857	3	0.01	3	330	4	0.86	<2	2	145	<0.01
30416		<10	0.18	<10	0.02	97	7	0.01	5	380	16	2.15	23	1	9	<0.01
30417		<10	0.17	<10	0.02	119	2	0.01	3	260	6	2.29	27	1	9	<0.01
30418		60	0.10	20	2.08	5070	<1	0.01	2	180	7420	5.77	3	3	260	<0.01
30419		10	0.43	10	0.81	640	1	0.01	9	1400	28	3.08	<2	7	25	<0.01
30420		20	0.15	20	0.43	1765	3	0.01	2	330	5940	>10.0	17	<1	85	<0.01
30421		20	0.23	20	0.74	2000	15	0.01	4	600	999	>10.0	35	2	109	<0.01
30422		20	0.30	10	0.91	1840	11	0.01	3	1020	687	6.00	6	5	107	<0.01
30423		20	0.35	10	0.98	1280	9	0.01	7	1250	382	4.77	<2	4	66	<0.01
30424		10	0.35	10	0.97	1105	4	0.01	4	1250	16	4.05	3	4	65	<0.01
30425		10	0.29	10	0.26	921	6	0.01	3	1200	8	2.25	<2	6	95	<0.01
30426		<10	0.27	<10	0.07	318	<1	0.07	<1	30	2	0.09	2	<1	79	<0.01

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CERTIFICATE OF ANALYSIS VA02002936

Sample Description	Method Analyte Units LOR	ME-ICP41 Ga ppm 10	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Tl % 0.01
30427		10	0.16	10	1.72	946	1	0.05	6	1490	2	0.16	<2	15	94	0.04
30428		10	0.12	10	1.02	813	1	0.06	3	1040	2	0.11	<2	9	76	0.02
30429		10	0.14	10	1.09	1135	12	0.06	8	1360	9	0.36	2	11	75	0.04
30430		30	0.05	10	2.61	2460	1	0.04	12	1170	<2	0.01	<2	8	25	0.05
30451		10	0.23	10	1.53	875	2	0.03	5	1180	5	5.09	2	7	57	0.01
30452		20	0.18	10	1.74	1815	1	0.02	4	1350	8	2.76	2	8	63	<0.01
30453		20	0.24	10	1.63	1885	1	0.02	6	1250	22	3.72	<2	7	37	<0.01
30454		10	0.19	10	0.70	837	1	0.01	7	1270	26	4.97	3	5	44	<0.01
30455		10	0.29	10	0.71	657	4	0.02	4	1350	11	3.32	<2	4	68	<0.01
30456		10	0.23	10	0.09	509	4	0.01	6	920	48	3.93	<2	2	24	<0.01
30457		20	0.24	10	1.61	1410	1	0.04	4	1310	5	1.09	2	12	86	<0.01
30458		20	0.21	10	2.10	2010	1	0.02	6	1370	3	0.97	2	11	99	<0.01
30459		10	0.26	10	0.60	907	9	0.01	4	1060	19	3.75	2	3	153	<0.01
30460		<10	0.23	10	0.05	99	4	0.01	5	430	44	8.20	12	1	<1	<0.01
30461		10	0.25	10	0.81	471	3	0.01	4	1230	21	4.74	2	2	18	<0.01
30462		10	0.21	10	0.30	431	4	0.01	6	980	27	5.93	11	2	94	<0.01
30463		50	0.06	10	2.01	4480	<1	0.01	2	160	>10000	>10.0	12	2	98	<0.01
30464		10	0.22	10	1.00	1070	2	0.01	4	1280	96	4.94	4	5	36	<0.01
30465		10	0.27	10	1.23	1130	4	0.01	4	1310	72	5.78	<2	3	46	<0.01
30466		10	0.32	10	0.51	621	2	0.01	4	1220	67	3.37	2	2	52	<0.01
30467		10	0.26	10	0.51	535	2	0.01	6	1330	16	5.42	8	3	1	<0.01
30468		20	0.18	10	0.26	1265	4	0.01	5	590	585	8.40	3	1	46	<0.01
30469		10	0.20	10	0.74	507	3	0.03	5	860	9	4.28	<2	3	20	<0.01
30470		20	0.28	10	1.65	1695	12	0.01	5	1180	10	2.47	2	4	42	<0.01
30471		30	0.05	10	2.40	2450	<1	0.04	12	1090	4	0.02	2	9	35	0.05

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CERTIFICATE OF ANALYSIS VA02002936

Sample Description	Method Analyte Units LOR	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Hg-CV41 Hg ppm 0.01	Cu-AA46 Cu % 0.01	Pb-AA46 Pb % 0.01	Zn-AA46 Zn % 0.01
30427		<10	50	185	<10	41	0.02			
30428		<10	<10	90	<10	23	0.01			
30429		<10	10	121	<10	109	0.09			
30430		<10	30	187	<10	462	<0.01			
30451		<10	20	120	<10	46	0.04			
30452		<10	<10	87	<10	89	0.04			
30453		<10	<10	54	<10	150	0.24			
30454		<10	<10	19	<10	71	0.28			
30455		<10	<10	28	<10	47	0.29			
30456		<10	<10	9	<10	68	0.44			
30457		<10	<10	47	<10	80	0.02			
30458		<10	<10	97	<10	112	0.05			
30459		<10	<10	24	<10	120	0.56			
30460		<10	<10	9	10	36	1.24			
30461		<10	<10	29	<10	102	0.19			
30462		<10	<10	17	10	177	0.63			
30463		<10	<10	8	10	>10000	>10.0		3.22	6.62
30464		<10	<10	50	10	222	0.43			
30465		<10	<10	48	<10	367	0.59			
30466		<10	<10	16	<10	174	0.49			
30467		<10	<10	26	10	112	0.81			
30468		<10	<10	6	<10	394	0.26			
30469		<10	10	92	<10	28	0.08			
30470		<10	<10	68	10	118	0.11			
30471		<10	10	181	<10	381	0.01			

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EXCELLENCE IN ANALYTICAL CHEMISTRY
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212 Brooksbank Avenue
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To: TECK EXPLORATION LTD.
MAIN STATION, BOX 938
KAMLOOPS BC V2C 5N4

Date : 11-Sep-2002
Account: HPQ

Project : 203300

CERTIFICATE OF ANALYSIS VA02003154

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt kg 0.02	Au-AA24 Au ppm 0.005	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
30306		0.40	0.029	<0.2	2.10	96	<10	60	<0.5	<2	3.48	5.9	15	28	90	4.61
30307		0.74	0.106	>100	0.79	107	<10	10	<0.5	<2	0.66	>500	7	33	790	3.06
30308		0.48	0.023	0.8	1.22	89	<10	30	<0.5	3	3.06	3.0	21	48	52	5.00
30309		0.46	0.028	<0.2	2.00	26	<10	10	<0.5	4	2.23	1.4	19	31	55	6.35
30310		0.72	0.242	1.1	1.92	100	<10	10	<0.5	<2	2.27	1.3	27	51	59	7.43
30311		1.24	0.008	<0.2	1.68	4	<10	90	<0.5	<2	1.31	<0.5	17	24	421	4.36
30356		0.80	0.013	<0.2	0.81	27	<10	60	<0.5	<2	12.25	1.1	8	18	1680	4.68
30357		0.76	0.006	<0.2	3.02	7	<10	680	<0.5	<2	2.78	3.8	10	23	154	4.50
30358		0.50	1.405	13.3	0.37	122	10	30	<0.5	<2	6.18	291	8	51	1185	4.01
30359		1.06	1.140	25.4	0.51	219	<10	10	<0.5	<2	0.25	1.4	5	123	>10000	10.20
30360		0.54	0.100	1.2	2.04	30	<10	40	<0.5	<2	2.06	1.1	18	33	824	5.25
30431		1.20	0.055	<0.2	1.18	12	<10	630	<0.5	<2	5.88	<0.5	3	27	412	1.64
30432		1.64	0.130	0.7	1.27	<2	<10	630	<0.5	<2	4.01	<0.5	3	18	1775	1.31
30433		1.18	0.215	2.3	0.93	5	<10	180	<0.5	2	5.32	<0.5	4	18	3460	1.49
30434		1.12	0.114	0.8	1.17	<2	<10	730	<0.5	<2	5.71	<0.5	3	13	1950	1.54
30435		1.36	0.187	0.7	1.40	6	<10	230	<0.5	<2	3.20	<0.5	4	21	2230	1.72
30436		0.96	0.016	<0.2	0.90	6	<10	130	<0.5	<2	6.34	<0.5	2	15	101	1.06
30437		0.82	0.079	0.2	1.32	2	<10	400	<0.5	3	5.30	<0.5	4	13	1420	1.73
30438		1.42	0.104	1.2	1.23	5	<10	250	<0.5	3	5.29	<0.5	4	13	2530	1.84
30472		1.28	0.034	<0.2	2.62	9	<10	290	<0.5	2	3.79	1.4	18	11	405	5.21
30473		0.88	0.047	<0.2	2.65	19	<10	200	<0.5	<2	2.94	0.7	24	14	361	5.60
30474		1.08	0.041	<0.2	1.93	3	<10	240	<0.5	<2	2.00	0.5	13	33	513	4.41
30475		0.94	0.010	<0.2	1.50	8	<10	80	<0.5	3	2.72	<0.5	29	17	1105	3.84
30476		1.06	0.019	0.3	0.56	17	<10	20	<0.5	<2	0.20	<0.5	14	43	93	5.31
30501		1.10	0.017	<0.2	1.94	35	<10	30	<0.5	2	3.77	0.9	18	20	91	4.72
30502		1.12	0.278	1.2	1.76	6	<10	160	<0.5	3	1.89	0.5	27	25	5120	4.66
30503		1.12	0.071	<0.2	1.54	7	<10	90	<0.5	<2	2.76	<0.5	19	20	1410	3.81
30504		1.32	0.149	<0.2	2.25	4	<10	130	<0.5	4	1.55	<0.5	23	52	3830	5.24
32002		0.94	0.034	1.5	1.34	34	<10	30	<0.5	<2	0.43	<0.5	12	28	68	5.86

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EXCELLENCE IN ANALYTICAL CHEMISTRY

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MAIN STATION, BOX 938
KAMLOOPS BC V2C 5N4

Date : 11-Sep-2002
Account: HPQ

Project : 203300

CERTIFICATE OF ANALYSIS VA02003154

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Ga ppm 10	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01
30306		20	0.36	10	1.47	2030	4	0.01	4	1340	18	2.24	2	8	69	<0.01
30307		10	0.16	<10	0.55	625	<1	0.01	2	480	>10000	>10.0	209	2	30	<0.01
30308		10	0.47	10	0.79	1335	1	0.02	8	1190	1360	4.53	<2	6	79	<0.01
30309		10	0.26	10	2.00	1795	1	0.01	6	1110	390	5.26	<2	7	44	<0.01
30310		30	0.25	10	1.91	2540	1	0.01	28	700	106	6.44	<2	7	36	<0.01
30311		<10	0.38	10	1.74	386	3	0.05	5	1250	25	1.23	2	7	49	<0.01
30356		30	0.23	20	0.62	3080	2	0.01	2	620	25	2.70	2	4	193	<0.01
30357		10	0.32	10	1.95	1610	<1	0.02	6	1170	141	0.08	<2	9	79	<0.01
30358		30	0.16	10	0.22	2760	<1	0.01	2	440	>10000	5.83	19	2	138	<0.01
30359		<10	0.15	10	0.17	103	8	0.01	3	290	99	9.12	30	1	<1	<0.01
30360		10	0.31	10	1.46	1160	8	0.02	5	1060	50	2.68	<2	7	38	<0.01
30431		10	0.23	10	0.85	1060	2	0.06	2	830	16	0.30	5	8	127	<0.01
30432		10	0.14	10	1.34	879	10	0.08	6	1240	9	0.29	3	14	99	0.04
30433		10	0.20	10	0.66	744	2	0.07	7	1100	2	0.52	6	10	97	<0.01
30434		10	0.18	10	0.92	818	2	0.05	7	1150	5	0.28	6	8	142	<0.01
30435		<10	0.21	10	1.29	637	12	0.06	9	1130	12	0.55	<2	12	69	0.01
30436		10	0.14	10	0.84	738	1	0.07	2	870	6	0.11	9	10	131	<0.01
30437		10	0.21	10	1.06	878	2	0.06	4	1100	7	0.36	<2	11	120	<0.01
30438		10	0.20	10	1.02	879	2	0.06	4	1080	10	0.61	<2	11	115	<0.01
30472		10	0.23	10	2.04	1345	6	0.04	6	1450	10	0.32	<2	19	121	0.03
30473		10	0.30	20	1.57	1210	4	0.02	6	1690	6	0.51	6	13	67	0.01
30474		<10	0.16	10	1.67	605	3	0.06	4	1360	5	0.06	<2	9	79	0.07
30475		<10	0.36	10	0.94	468	16	0.01	5	1360	9	2.13	3	4	68	<0.01
30476		<10	0.35	10	0.11	19	2	0.02	4	570	25	5.49	<2	1	<1	<0.01
30501		20	0.29	10	1.63	1770	2	0.01	5	1150	14	3.04	<2	7	112	<0.01
30502		<10	0.35	10	1.51	648	56	0.03	6	1200	3	0.92	2	5	49	<0.01
30503		<10	0.32	10	1.14	599	3	0.04	5	1170	2	1.43	<2	5	105	0.03
30504		<10	0.21	10	2.09	551	10	0.04	12	980	<2	1.12	2	11	47	0.06
32002		<10	0.28	10	1.28	287	2	0.04	3	1390	88	4.09	2	2	<1	<0.01

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To: TECK EXPLORATION LTD.
MAIN STATION, BOX 938
KAMLOOPS BC V2C 5N4

Date : 11-Sep-2002
Account: HPQ

Project : 203300

CERTIFICATE OF ANALYSIS VA02003154

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	Hg-CV41	Ag-AA46	Cu-AA46	Pb-AA46	Zn-AA46
	Analyte	Tl	U	V	W	Zn	Hg	Ag	Cu	Pb	Zn
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%
	LOR	10	10	1	10	2	0.01	1	0.01	0.01	0.01
30306		<10	<10	59	<10	1085	2.68				
30307		<10	<10	20	10	>10000	>10.0	181		>30.0	6.26
30308		<10	<10	30	<10	448	1.11				
30309		<10	<10	77	<10	162	0.35				
30310		<10	<10	72	10	185	0.26				
30311		<10	<10	62	<10	67	0.05				
30356		<10	<10	17	<10	66	0.11				
30357		<10	<10	85	<10	1080	0.07				
30358		<10	<10	8	10	>10000	>10.0			1.62	6.25
30359		<10	<10	13	20	245	2.81		1.61		
30360		<10	<10	71	<10	272	0.54				
30431		<10	<10	56	<10	49	0.06				
30432		<10	<10	142	<10	50	0.10				
30433		<10	<10	73	<10	25	0.04				
30434		<10	<10	62	<10	31	0.03				
30435		<10	<10	114	<10	35	0.03				
30436		<10	<10	71	<10	29	0.02				
30437		<10	<10	81	<10	39	0.03				
30438		<10	<10	80	<10	37	0.04				
30472		<10	<10	195	10	83	0.01				
30473		<10	<10	136	<10	103	0.03				
30474		<10	20	199	<10	29	0.01				
30475		<10	<10	26	<10	57	0.81				
30476		<10	<10	11	<10	23	0.89				
30501		<10	<10	76	<10	106	0.14				
30502		<10	<10	90	10	34	0.44				
30503		<10	<10	58	<10	26	0.04				
30504		<10	<10	151	<10	47	0.09				
32002		<10	<10	36	10	73	0.03				

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MAIN STATION, BOX 938
KAMLOOPS BC V2C 5N4

Date : 12-Sep-2002
Account: HPQ

Project : 203300

CERTIFICATE OF ANALYSIS VA02003260

Sample Description	Method	WEI-21	Au-AA24	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Recvd Wt	Au	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe
	Units	kg	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%
	LOR	0.02	0.005	0.2	0.01	2	10	10	0.5	2	0.01	0.5	1	1	1	0.01
30312		0.36	0.061	1.8	0.78	260	<10	200	<0.5	<2	1.63	4.2	8	46	108	2.06
30313		0.46	0.346	1.0	0.57	35	<10	130	<0.5	<2	2.76	1.4	9	37	359	1.88
30439		0.88	0.009	<0.2	1.46	2	<10	430	<0.5	2	4.85	<0.5	5	39	64	2.35
30440		0.64	0.147	<0.2	0.97	2	<10	980	<0.5	2	4.15	<0.5	2	26	447	1.12
30441		0.94	0.013	<0.2	2.00	<2	<10	1230	<0.5	3	6.05	0.9	9	21	252	3.01
30442		0.80	0.065	0.4	1.34	6	<10	540	<0.5	<2	3.11	<0.5	6	31	655	1.86
30443		0.80	0.035	<0.2	0.26	13	<10	50	<0.5	<2	1.24	<0.5	2	156	187	0.64
30444		1.82	0.018	0.2	0.61	10	<10	120	<0.5	<2	4.24	<0.5	12	45	872	1.01
30445		1.02	0.067	0.9	0.75	37	<10	100	<0.5	<2	2.51	<0.5	14	74	2740	2.75
30477		1.70	0.082	1.0	1.93	6	<10	250	<0.5	<2	1.63	0.9	19	33	3990	4.48
30478		1.74	0.089	<0.2	1.67	26	<10	60	<0.5	<2	3.35	0.7	13	39	722	3.83
30479		1.20	0.336	1.6	1.53	41	<10	80	<0.5	<2	2.88	0.6	14	47	8600	4.49
30505		1.02	0.122	2.5	0.39	21	<10	170	<0.5	<2	0.08	<0.5	5	89	549	4.69
30506		1.24	0.178	0.7	1.52	8	<10	200	<0.5	<2	0.99	0.7	13	41	6330	3.68
30507		1.08	0.017	0.2	0.50	12	<10	260	<0.5	<2	0.09	<0.5	3	65	407	2.08
30508		1.28	0.986	1.8	0.13	8	<10	510	<0.5	2	0.02	<0.5	1	170	1870	1.47

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KAMLOOPS BC V2C 5N4

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CERTIFICATE OF ANALYSIS VA02003260

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr
	Units	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOR	10	1	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1	1
30312		10	<1	0.27	10	0.26	1215	1	0.01	5	1230	711	0.70	6	4	34
30313		10	<1	0.27	10	0.58	1235	1	0.01	5	1150	559	0.34	3	8	41
30439		10	<1	0.11	10	1.47	1255	<1	0.07	5	1170	12	0.14	2	13	84
30440		10	<1	0.18	10	1.10	710	2	0.07	4	1250	6	0.17	3	11	106
30441		<10	<1	0.29	10	1.67	652	2	0.02	5	1370	6	0.10	<2	13	192
30442		<10	<1	0.14	10	1.41	625	3	0.07	4	1160	15	0.26	4	13	72
30443		<10	<1	0.10	<10	0.14	309	2	0.01	5	170	3	0.18	<2	2	25
30444		10	<1	0.31	10	0.44	547	1	0.02	4	1090	2	0.33	7	5	86
30445		<10	2	0.35	10	0.42	370	4	0.01	5	1240	3	1.70	4	6	71
30477		10	1	0.28	10	1.70	855	1	0.03	5	1110	13	0.74	<2	8	36
30478		10	<1	0.31	10	1.53	822	3	0.03	3	1380	3	1.54	3	6	195
30479		10	<1	0.24	10	1.15	659	3	0.03	6	990	4	2.03	<2	5	50
30505		<10	1	0.25	10	0.05	75	3	0.01	4	510	16	1.19	3	1	14
30506		10	<1	0.25	10	1.21	842	3	0.02	6	1030	5	0.93	3	5	23
30507		<10	<1	0.22	<10	0.14	136	2	0.02	3	830	8	0.51	<2	2	217
30508		<10	<1	0.08	<10	0.01	51	1	0.01	5	170	4	0.29	2	<1	16

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MAIN STATION, BOX 938
KAMLOOPS BC V2C 5N4

Date : 12-Sep-2002
Account: HPQ

Project : 203300

CERTIFICATE OF ANALYSIS VA02003260

Sample Description	Method Analyte Units LOR	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Hg-CV41 Hg ppm 0.01
30312		<0.01	<10	<10	22	<10	489	0.22
30313		<0.01	<10	<10	25	<10	340	0.12
30439		0.05	<10	<10	109	<10	94	0.02
30440		<0.01	<10	<10	61	<10	33	0.02
30441		<0.01	<10	<10	73	<10	53	0.02
30442		0.08	<10	<10	111	<10	94	0.03
30443		<0.01	<10	<10	10	<10	6	0.02
30444		<0.01	<10	<10	20	<10	23	0.16
30445		<0.01	<10	<10	35	<10	17	0.09
30477		0.04	<10	<10	85	10	249	0.07
30478		<0.01	<10	<10	66	<10	46	0.02
30479		<0.01	<10	<10	58	10	40	0.14
30505		<0.01	<10	<10	16	<10	57	0.13
30506		<0.01	<10	<10	63	10	93	0.03
30507		<0.01	<10	<10	18	<10	13	0.33
30508		<0.01	<10	<10	4	<10	<2	0.02

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KAMLOOPS BC V2C 5N4

Date : 19-Sep-2002
Account: HPQ

CERTIFICATE VA02003269

Project : 20330

P.O. No:

This report is for 29 ROCK samples submitted to our lab in North Vancouver, BC, Canada on 9-Sep-2002.

The following have access to data associated with this certificate:

GRAEME EVANS
RANDY FARMER

SAMPLE PREPARATION

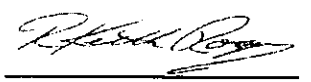
ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA24	Au 50g FA AA finish	AAS
ME-ICP41	34 element aqua regia ICP-AES	ICP-AES
Hg-CV41	Trace Hg - cold vapor/AAS	FIMS
Pb-AA46	Ore grade Pb - aqua regia/AA	AAS
Zn-AA46	Ore grade Zn - aqua regia/AA	AAS

To: **TECK EXPLORATION LTD.**
ATTN: GRAEME EVANS
MAIN STATION, BOX 938
KAMLOOPS BC V2C 5N4

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

Signature: 

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CERTIFICATE OF ANALYSIS VA02003269

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA24 Au ppm 0.005	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
30314		0.92	0.843	6.8	0.33	113	<10	30	<0.5	<2	0.19	7.1	6	26	809	3.23
30315		0.58	0.018	0.7	1.77	16	<10	50	<0.5	<2	3.64	1.3	16	20	640	4.90
30316		0.54	0.014	0.7	0.57	29	<10	10	<0.5	<2	2.89	<0.5	15	15	450	4.72
30317		1.04	0.049	5.0	0.10	40	<10	20	<0.5	<2	2.25	>500	25	23	172	1.40
30318		0.42	0.335	22.7	0.05	17	<10	20	<0.5	<2	0.42	>500	22	33	116	0.82
30446		0.72	0.008	0.3	2.04	14	<10	200	<0.5	<2	4.47	6.8	18	14	257	4.77
30447		1.40	0.160	1.2	0.56	53	<10	100	<0.5	<2	3.30	2.5	25	15	1840	2.96
30448		0.60	0.047	0.8	1.89	20	<10	40	<0.5	<2	4.35	1.1	25	16	509	4.56
30449		1.04	0.005	0.4	2.49	21	<10	160	<0.5	<2	4.70	0.7	14	15	156	4.35
30450		0.94	0.025	1.1	1.46	52	<10	40	<0.5	2	3.74	0.6	20	15	24	5.22
30480		1.12	0.012	0.3	0.30	16	<10	20	<0.5	<2	2.16	<0.5	30	19	26	4.22
30481		1.60	<0.005	0.2	1.10	13	<10	30	<0.5	2	4.89	0.9	17	11	30	4.53
30482		1.52	<0.005	0.2	2.31	6	<10	130	0.5	<2	0.25	<0.5	13	22	23	3.42
30483		1.66	0.007	1.7	4.77	15	<10	50	0.7	<2	3.62	22.3	6	29	70	2.59
30484		1.38	0.306	41.7	0.06	21	<10	20	<0.5	<2	2.57	>500	34	28	110	1.08
30485		1.06	<0.005	15.5	0.08	765	<10	<10	<0.5	<2	0.11	28.2	1	39	31	12.05
30509		1.08	0.257	0.9	2.34	84	<10	30	<0.5	<2	1.86	4.1	15	53	320	6.39
30510		1.04	0.502	6.8	1.04	102	<10	10	<0.5	14	4.85	8.9	19	17	1480	9.04
30511		1.26	1.325	12.1	0.52	431	<10	<10	<0.5	9	3.00	52.6	8	25	5250	13.70
30512		1.20	0.257	2.5	1.59	57	<10	10	<0.5	3	2.07	1.3	25	17	1115	6.53
30513		1.26	<0.005	0.3	2.13	10	<10	400	<0.5	<2	2.01	0.6	17	21	230	5.03
30514		1.44	0.014	0.7	0.37	381	<10	20	<0.5	<2	7.96	11.1	15	31	17	2.41
30515		1.58	0.031	31.1	0.06	19	<10	10	<0.5	<2	3.42	>500	20	26	91	1.56
30551		1.22	0.080	1.9	0.81	71	<10	20	<0.5	<2	0.28	5.9	11	15	43	6.11
30552		1.30	0.365	3.8	1.95	355	<10	10	<0.5	5	0.72	3.2	20	17	804	9.13
30553		0.88	0.006	1.6	0.40	56	<10	20	<0.5	4	1.67	1.9	13	14	284	5.05
30554		0.86	1.115	2.3	0.83	130	<10	20	<0.5	<2	0.77	1.1	6	41	25	2.08
30555		0.92	0.058	1.8	0.24	72	<10	10	<0.5	2	0.24	<0.5	14	14	81	5.17
30556		1.12	0.027	5.8	0.48	16	<10	10	<0.5	<2	0.09	343	30	28	488	>15.0

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CERTIFICATE OF ANALYSIS VA02003269

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Ga	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Ti
	Units	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	%
	LOR	10	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1	1	0.01
30314		<10	0.23	<10	0.06	80	1	0.01	3	900	382	2.81	6	2	3	<0.01
30315		<10	0.18	<10	1.47	2270	11	0.01	7	1250	6	2.83	3	6	50	<0.01
30316		<10	0.14	<10	1.26	1355	18	0.01	6	1310	11	4.28	15	7	62	<0.01
30317		10	0.02	<10	0.31	388	3	0.01	24	130	224	2.70	7	1	102	<0.01
30318		10	0.04	<10	0.02	223	6	0.01	5	190	1275	4.53	10	1	11	<0.01
30446		<10	0.14	<10	1.65	1000	<1	0.02	6	1580	2	0.53	<2	12	185	0.01
30447		<10	0.17	<10	1.16	1010	8	0.02	5	1120	4	1.20	20	7	129	<0.01
30448		<10	0.08	<10	1.95	1010	18	0.03	7	1640	<2	1.77	<2	16	128	0.01
30449		<10	0.15	<10	2.11	2550	<1	0.02	6	1190	<2	0.63	<2	9	162	<0.01
30450		<10	0.15	<10	1.59	1820	<1	0.01	6	1230	19	3.18	2	11	87	<0.01
30480		<10	0.23	<10	0.10	161	3	0.01	10	1520	<2	4.68	3	4	41	<0.01
30481		<10	0.12	<10	0.96	1035	1	0.02	13	1850	<2	4.00	3	5	172	<0.01
30482		<10	0.76	<10	1.53	253	1	0.11	9	30	<2	1.42	2	3	50	0.05
30483		10	0.04	<10	0.06	151	22	0.32	51	750	2	2.46	4	1	395	0.04
30484		30	0.03	<10	0.01	296	5	0.01	5	100	>10000	7.69	7	1	31	<0.01
30485		<10	0.01	<10	0.02	21	11	0.01	1	510	2760	>10.0	149	<1	85	<0.01
30509		<10	0.13	<10	2.15	1140	1	0.03	15	990	42	3.09	<2	11	40	0.02
30510		<10	0.16	<10	0.66	1270	2	0.01	3	770	163	8.42	2	3	88	<0.01
30511		<10	0.08	<10	1.18	1830	2	0.02	3	480	1515	>10.0	13	4	37	0.01
30512		<10	0.15	<10	1.32	1160	2	0.02	5	1490	43	3.98	<2	7	62	<0.01
30513		10	0.08	<10	2.03	1370	<1	0.04	7	1290	2	0.05	7	14	80	0.03
30514		<10	0.03	<10	0.16	2270	30	0.01	4	160	217	1.73	25	1	908	<0.01
30515		10	0.02	<10	0.26	617	3	0.01	7	90	8420	5.19	13	2	328	<0.01
30551		<10	0.17	<10	0.35	147	2	0.01	5	1300	63	4.26	<2	4	<1	<0.01
30552		10	0.16	<10	1.28	696	1	0.01	6	1080	41	5.78	2	6	30	<0.01
30553		<10	0.19	<10	0.20	988	<1	0.01	2	1540	265	5.41	<2	<1	18	<0.01
30554		<10	0.06	<10	0.11	124	4	0.02	21	390	12	1.23	5	1	7	0.02
30555		<10	0.18	<10	0.03	45	2	0.01	4	1040	50	5.41	29	1	19	<0.01
30556		10	0.02	<10	0.22	584	1	0.01	32	210	42	>10.0	<2	1	<1	<0.01

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Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	Hg-CV41	Pb-AA46	Zn-AA46
	Analyte	Tl	U	V	W	Zn	Hg	Pb	Zn
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	%
	LOR	10	10	1	10	2	0.01	0.01	0.01
30314		<10	<10	7	10	2160	1.10		
30315		<10	<10	62	20	476	0.15		
30316		<10	<10	29	20	146	0.37		
30317		<10	<10	8	<10	>10000	>10.0		11.90
30318		<10	<10	2	<10	>10000	>10.0		12.50
30446		<10	<10	127	20	850	0.26		
30447		<10	<10	39	10	389	0.24		
30448		<10	<10	176	10	199	0.11		
30449		<10	<10	101	20	168	0.44		
30450		<10	<10	94	20	111	0.10		
30480		<10	<10	9	20	87	0.80		
30481		<10	<10	31	10	152	0.33		
30482		<10	<10	17	20	66	0.02		
30483		<10	<10	34	<10	1480	0.16		
30484		<10	<10	1	<10	>10000	>10.0	1.79	24.8
30485		10	<10	4	20	3500	>10.0		
30509		<10	<10	129	20	493	0.19		
30510		<10	<10	35	20	1230	1.14		
30511		<10	<10	43	10	9360	>10.0		
30512		<10	<10	57	20	272	0.26		
30513		<10	<10	171	20	160	0.30		
30514		<10	<10	6	<10	4140	6.70		
30515		<10	<10	3	<10	>10000	>10.0		14.05
30551		<10	<10	29	20	737	0.39		
30552		<10	<10	78	20	417	0.24		
30553		<10	<10	4	20	416	0.07		
30554		<10	<10	25	10	158	0.06		
30555		<10	<10	9	20	60	0.39		
30556		<10	<10	27	40	>10000	0.25		2.77

APPENDIX 3

ANALYTICAL PROCEDURES

TECHNICAL INFO

Geological Principles - Sample Preparation Procedures

Introduction

Geological samples are highly variable and encompass a broad range of sample types that includes soils, silts, drill core, rocks and panning concentrates. The purpose of sample preparation is to produce a small, dry and manageable sample suitable for laboratory scale analysis while at the same time ensuring that the prepared sample is homogeneous and fully representative of the original field material. Experience has shown that the potential risk for contamination is greater in the sample preparation process than in any other part of laboratory operations. For this reason particular care and attention must be paid to sample handling and there must be strict adherence to standard operating procedures and good work practices. The physical plant facilities must be designed for an orderly workflow, possess sufficient crushing and grinding equipment to allow for specialized usage, and have a comprehensive dust control system.

- For sample preparation procedures and prices, see the Sample Preparation Services.

Contamination Control during Sample Preparation

We take many steps to minimize the risk of cross contamination between samples during the preparation process. One of the most important steps is to sort and classify samples according to matrix type and expected metal concentrations as soon as they enter the laboratory. The samples will then be routed through the laboratory in different batch streams. Physically separated areas are maintained as much as possible so that, for example, concentrates and vegetation samples would never be processed in the same area.

Once samples are classified, they are prepared using equipment which has been designated for certain matrix types and expected metal concentration ranges. Equipment is color-coded and numbered so that it is clear for which sample type it is intended to be used.

In all our sample preparation laboratories, we have invested a considerable amount of time and energy in designing proper dust control systems. Our experience has shown that the fine dust which can otherwise collect will invariably contain trace amounts of gold and base metals. We are progressively updating all our sample preparation laboratories, for example by building enhanced dust control systems in which crushing and grinding equipment is virtually completely enclosed. The end result is an improved dust control system which reduces the risk of sample contamination and which provides a healthier work environment for our employees.

It is unfortunate that all machinery grinding surfaces impart some degree of metal content to samples during pulverization. As a result, there will always be some degree of contamination when crushing and grinding procedures are used. However at Chemex we have a great variety of grinding surfaces that vary widely in their chemical composition. We offer equipment made of hardened manganese steel, chrome steel or carbon steel as well as non-ferrous materials such as zirconia and tungsten carbide. Hence an explorationist can choose one of these options in such a way as to eliminate the possibility of contaminating a sample with an element of potential exploration significance.

- The issues of contamination from grinding surfaces, the elements imparted to the sample, and their likely concentration ranges, are discussed more fully in the Contamination Introduced by Sample Preparation Equipment section.

Sample Preparation Equipment

The main equipment in use at Chemex consists of:

- crushers (roll, traditional jaw and oscillating jaw)
- pulverizers (small ring, large ring, plate)
- ball mills
- drying ovens
- an assortment of splitters, screens and homogenizing equipment

Drying Ovens

The sample drying process is more critical than may appear at first. Many samples arrive at the laboratory sopping wet and drying time for these samples is invariably a major contributor to lengthened turnaround times. Hence it would be tempting to improve turnaround time by using blast furnace drying techniques. However there is a considerable risk to sample integrity by taking such an approach in that some samples will appreciable oxidize at higher temperatures (especially sulfides) and some potentially volatile elements (arsenic, antimony, mercury-all key pathfinder elements for gold exploration) will be lost at elevated drying temperatures. Of course, even if these elements are not of immediate interest, the samples will be rendered useless for any future analysis.

At Chemex we use two different drying temperatures and once again the choice of temperature depends on the sample classification. For rocks, rock chips, drill core and other "coarse" material with a relatively low surface area, we employ a drying temperature in the range of 110-120 deg C (230-250 deg F). Independent studies of these sample types have shown that the potentially volatile elements will not be lost at this temperature. However for soils, silts, sediments and other "fine" materials with a proportionately higher surface area, we limit the drying temperature to 60 deg C (140 deg F).

Our ovens are all large, gas-heated forced air furnaces; samples are pre-loaded onto moveable drying racks before being rolled into an oven. This avoids the potential contamination risk that is inherent in fixed shelving units. Large samples are placed into stainless steel trays to ensure efficient heat transfer and minimal drying times.

Crushers

In recent years improvements have been made to the traditional jaw crusher by the introduction of the oscillating jaw crusher. These new crushers, built specifically for laboratory usage, provide enhanced crushing by ensuring that the sample receives continuous grinding as it passes between the plates. The end result is a finer product in a single step, typically >50% is -1mm whereas only about 10% is -1mm in the traditional jaw crusher. These new crushers are also much easier to clean and therefore chances of cross contamination between samples are reduced. We have replaced all our old jaw crushers with these improved oscillating crushers.

We also use roll crushers at Chemex as these crushers are ideal for processing larger reverse circulation drilling samples due to their higher throughput. Our roll crushers are fitted with vibratory feeders to ensure a smooth sample delivery at a more or less constant rate. One of the limitations of these crushers is that the rolls will physically separate when the material fed into the machines contains very coarse particles. Of course this will result in some coarse material passing through the rolls. A further disadvantage is that roll crushers are not as easy to clean as jaw crushers. However as we use roll crushers for samples that are typically large, the carryover should only amount to a fraction of a percent.

A third kind of crusher that Chemex employs is a ball mill used exclusively for the preparation of secondary reference materials in bulk.

- The ball mill, and the secondary reference materials that it produces, are described in greater detail in the Quality Assurance section.

Pulverizers

At Chemex we use two different types of pulverizers, ring mills and plate pulverizers. Ring mills have become the industry standard in recent years. Basically they consist of a bowl which contains either a small puck and one or more rings, or a large saucer. Crushed samples are added to the bowl, the bowls are sealed and then subjected to centrifugal force by mechanical action. The puck and/or ring(s), being free to move inside the bowl, subject the sample to considerable grinding action, resulting in a very fine sample. Bowls are manufactured in different sizes ranging from 50 g capacity to 5 kg capacity. At Chemex we use two sizes primarily, 250 g and 2 kg. The bowls themselves are made of different materials including manganese steel, chrome steel, zirconia and tungsten carbide so that it is easy to avoid contaminating a sample with an element of potential interest.

The second type of pulverizer that we use is the vertical plate pulverizer. In these units, a stationary plate stands on end while the rotating plate is pushed into it from the side. In our pulverizers, even plate pressure is guaranteed by a unique pneumatic plate closure system; this system also allows for the two plates to separate completely when cleaning between samples, thus minimizing chances of sample contamination. Our plate pulverizers are typically fitted with a vibratory feeding system to prevent overfeeding of the sample which would result in a widened gap between the grinding surfaces. Vertical plate pulverizers are applicable to coarse gold projects because the plates are capable of breaking up soft gold nuggets and reducing its particle size, thereby producing less variance in the gold assays. Although the gold will initially "smear" on the plates, it will be subsequently ground off by the harder matrix material.

Screens

Screens are used to sieve soil samples in order that the fine fraction can be analyzed. At Chemex we use stainless steel screens exclusively. Brass screens are a potential source of contamination for both copper and zinc, especially if the sample contains hard, abrasive particles.

Contamination Introduced by Sample Preparation Equipment

The intense grinding action produced by crushers and pulverizers results in wear metals being added to the samples being ground. The elements that are added will depend on the composition of the grinding surfaces. The amount of the elements added is harder to determine as it will depend on a number of factors including the hardness of the grinding surface, the hardness of the sample and the length of grinding time.

- The Table shows typical levels of contaminating elements that can be added for each type of grinding medium. It

must be stressed that these are typical ranges which may not apply to exceptional samples.

Table: *Contamination Levels Observed in Granite for Different Grinding Media*

Composition of Pulverizer Rings or Plates					
Element	**Manganese steel (ppm)**	**Chrome steel (ppm)**	**Carbon steel (ppm)**	**Zirconia (ppm)**	**Tungsten carbide (ppm)**
Chromium	2-10	20-500	5-25	<1	
Iron	0.2-1.5%	0.1-0.5%	0.2-1.5%	<10	
Manganese	10-100	5-20	10-125	<1	
Molybdenum	<1	1	1	<1	
Nickel	1-2	1-5	6	<1	
Lead		2	3	<2	
Vanadium		1	<1	<1	
Tungsten					30-300
Cobalt					10-100
Zirconium				30-300	
Hafnium				1-5	

Sample Preparation Procedures

Crushing

Samples that require crushing are dried at 110-120 deg C and then crushed with either an oscillating jaw crusher or a roll crusher. The Chemex QC specifications for crushed material is that >70% of the sample must pass a 10 mesh (2 mm) screen (see Graph 1). Crushing charges are based on the sample weight. The entire sample is crushed but only a portion of the crushed material is carried through to the pulverizing stage. That amount, typically 250 g to 1 kg, is subdivided from the main sample by use of a riffle splitter. In either case, a substantial part of the sample (the "reject") remains. Ordinarily we retain a 1-2 kg split of this reject, but if a client wishes to pay a small additional charge, then we will retain the entire reject.

- For more details, please consult the Pulp and Reject Storage Policy section.

Pulverizing

A crushed split derived from the crushing process is pulverized using either a ring mill or a plate pulverizer. The size of the split is determined by the client based on the pulverizing procedure that is selected. Split sizes for manganese or chrome steel rings are typically 250 g to 1 kg; however split sizes for zirconia rings are 100 g and those for tungsten carbide rings are only 75 g. Because of the relative lightness of these latter two materials, the size of the sample to be pulverized must necessarily be reduced to these weights in order to achieve the Chemex QC specification for final pulverizing, namely that >95% of the sample be less than 150 mesh (106 microns) (see Graph 3).

For those samples which require enhanced homogeneity, such as samples which are known to exhibit coarse gold behavior, intermediate pulverization of the entire sample (or a representative split) is also available. The Chemex QC specification for intermediate pulverizing is that 90% of the sample must pass a 250 micron (-60 mesh) screen (see Graph 2).

Screening

Soil and sediment samples are typically sieved through a -80 mesh (180 micron) screen and the fine fraction is retained for analysis. This procedure is satisfactory for smaller (i.e. 500 g or less) samples where the exploration target is base

metals. However, when gold is the exploration target, we recommend that the particle size of the minus fraction be further reduced using ring mill pulverization to 95% -150 mesh (106 microns) in order to obtain more reproducible gold data.

With today's emphasis on gold exploration, many "soil" samples weigh in at several kilograms or more. In this latter case, the samples often contain larger components such as pebbles or agglomerations of clay and other material. For samples like this, we recommend that after disaggregation the sample is sieved through a -10 mesh (2 mm) screen to remove the coarse material. Following this intermediate screening, the -10 mesh (2 mm) material is then split to about 500g using a riffle screen and then sieved through a standard -80 mesh (180 micron) to obtain a minimum of 150 g of fine material. We still recommend further ring mill pulverization if gold is the exploration target, for the reasons outlined above.

- Detailed flow sheets which outline our screening procedures for all sample weights are available. Please contact a Chemex Client Services representative for more information.

Special Procedures

Vegetation and humus samples require special procedures because they are easily contaminated, difficult to reduce in particle size and awkward to homogenize. This type of sample tends to be highly variable, ranging from well-rotted humus to bits of tree trunk. All vegetation sample preparation is done in our main Vancouver laboratory because we have special facilities available. Samples submitted to branch offices will be shipped to the Vancouver laboratory and this may result in some extra shipping charges to the client if the weights are judged to be excessive.

- For more specific information on the preparation of your particular sample type, please contact a Chemex Client Services representative.

Composites

Composite samples are normally prepared on a volumetric basis and the composite is homogenized by mixing the samples in vials which are mounted in dual orbiting mixers. Composites can be prepared on a weight basis if desired but the charges are greater because the labor costs are significantly higher.

Quality Control Procedures for Sample Preparation

- Detailed information is provided in the Quality Assurance section.

Pulp and Reject Policy

Pulps are retained until the end of the calendar year and then clients are contacted in writing and asked to select one of three options:

- returning the pulp to the client
- continued storage subject to a warehousing charge
- discarding the pulp

Reject material can be saved in part or in total according to instructions received from the client. If no specific instructions are received, the Chemex default policy is to retain the entire reject. There is no charge for storage of a 1-2 kg reject split. The charges for storing the entire reject vary according to sample weight. We guarantee that we will retain the reject for a minimum of 90 days; in practice, most reject is retained until the end of the calendar year and clients are contacted to determine how they wish to dispose of the reject.

We can provide reports about your pulps and rejects at any time upon request. These reports will include information about Chemex workorder numbers, your project name or number, and numbers of samples.

Please note that when local tipping fees are significant, we reserve the right to bill clients for the cost of disposing rejects to landfill.

[Home] [Overview] [Contact Info] [Technical Info] [Fee Schedule]
[Quality Assurance] [Electronic Data Retrival] [Environmental Division]
[Feedback] [Email] [Search] [Site Map] [Help] [Useful Links]
[Click here for the Frames Version]

TECHNICAL INFO

Multi-Element Packages - Trace Geochemical Analysis by ICP Spectroscopy

Introduction

Inductively-coupled plasma atomic emission spectroscopy (ICP spectroscopy) has been a highly successful and popular analytical technique for a number of reasons which have been outlined in the section entitled Plasma Emission Spectroscopy.

- Several of the most successful packages that have traditionally been offered by Chemex are outlined below.

G32 - 32 Element Partial Leach Multielement ICP Analysis

The most important traditional ICP package in use at Chemex has been denoted G32 and has historically been our most popular and successful ICP package. Data for 32 elements are reported, giving the explorationist the widest possible range of information. Even though the leach has been designated "partial", it is still sufficiently strong to dissolve 18 of the elements in a quantitative manner. The remaining 14 elements are dissolved in a manner which is usually incomplete

- These elements are outlined both in our Fee Schedule and on our Certificates of Analysis.

In addition to offering the widest range of information about elemental concentrations, the G32 package is also the most economical of the large scale packages, thus providing extremely good value.

The G32 package has been designed for soils, silts, lake and stream sediment analysis. Rock characterization is better accomplished using the ICP package outlined below.

- For a complete list of G32 elements, detection limits, and upper limits, see the Nitric Aqua-Regia Leach Packages (ICP-32) section of the 1998 Fee Schedule .

The Fire Assay-Gravimetric Procedure for Ore Grade Samples

The classic technique of gold measurement is the fire assay fusion followed by cupellation and a gravimetric finish (Chemex codes 996 and 997 primarily). This is still the preferred procedure for the analysis of high grade ores. There is no upper limit applied for these procedures but clients should note that the detection limit is significantly higher than for procedures which use spectroscopic measurement techniques.

Fire Assay-Atomic Absorption procedures for Low Grade Ore and Exploration Samples

With the increase in the price of gold and the discovery of large low grade gold deposits throughout the world, many samples reach the laboratory which have "intermediate" levels of gold, that is in the range of 5-15 g/t (0.1-0.4 oz/ton). These samples are best analyzed using FA-AA procedures (Chemex codes 877, 398 and 998 primarily).

Exploration samples require a better detection limit than that offered by gravimetric procedures. The combination of a fire assay fusion with atomic absorption spectroscopy (AAS) offers the advantages of a large subsample together with a very sensitive analytical technique to yield detection limits in the range of 1-5 ppb (Chemex codes 100, 983 and 3993 primarily). The best detection limit of 1 ppb is provided by Chemex code 3993 which includes a fire assay fusion followed by a solvent extraction and then a final measurement using AAS. Because of the additional extraction step, the code 3993 procedure is more expensive than the code 100 and 983 procedures. However for explorationists looking for the best resolution of low level gold anomalies, this procedure is excellent.

Advantages of the Fire Assay Process

- A large subsample (10-50g or more) can be taken for analysis, helping to ensure that the subsample is truly representative of the field material
- The fire assay fusion is considered to provide a "total" gold
- All samples are amenable to the fire assay procedure in the hands of a skilled assayer
- The fire assay procedure is universally accepted as the definitive method for the analysis of gold
- The fire assay fusion quantitatively dissolves and extracts the entire platinum metal group in addition to gold and silver.

Limitations of the Fire Assay Process

- When a gravimetric finish is used, it is essential that the separation ("parting") of silver and gold is complete; if the silver is incompletely removed, then the gold results will be artificially high and the silver results will be low.
- Inquarting (the addition of a known amount of silver) is a normal procedure in the gravimetric analysis of silver and gold. In order to determine silver, the value of the inquart must be subtracted from the total silver weight. In the event that the samples contain low silver, the resulting gravimetric silver analyses can suffer from high uncertainty.
- A certain amount of silver (usually estimated to be in the range of 2%) is lost by volatilization during the cupellation process.
- When an atomic absorption spectroscopy finish is selected, the upper reporting limit is set at 0.5 oz/ton (15 g/t) and samples higher than this must be re-analyzed using a gravimetric finish.
- Samples containing coarse gold can give erratic results making it difficult to determine the true ore grade; however this problem is caused by sample heterogeneity rather than the fire assay process.
- Soil samples (typically -80 mesh, 180 micron material) can also give erratic results but again for the same reason
- It can take many years of experience before a fire assayer has the necessary degree of skill and knowledge to flux difficult ore types.
- Some ores such as chromites and tellurides can be more difficult to fuse, resulting in the need to take smaller subsamples for analysis and consequently yielding higher detection limits than normal.

Alkaline Cyanidation

G32m - 32 Element Partial Leach Package with Quantitative Low Detection Mercury

The analytical sensitivity for mercury using ICP spectroscopy is adequate for some sample types but in many cases explorationists require a better sensitivity than the 1 ppm detection limit offered by conventional ICP spectroscopy. In the G32m package, we substitute a quantitative geochemical procedure for mercury (Chemex code 20). This procedure uses conventional cold vapor atomic absorption spectroscopy with a detection limit for Hg of 10 ppb, a one hundred fold improvement over that offered in the G32 package.

The G9 Multielement ICP Packages

Introduction

Not all explorationists require the comprehensive information provided by the G32 and the G32m packages. As a result Chemex designed a number of condensed 9-element packages which offer quantitative data for the elements reported.

- For a complete list of elements for the various G9 procedures and prices, see the ICP-AES Multielement Analysis section of the 1998 Fee Schedule.

The G9g Package

The G9g package includes pathfinder elements likely to be of interest to those explorationists searching for gold.

The G9m Package

The G9m package contains the same 9 elements as the G9g package. The only difference is that in the G9g package, mercury is determined by ICP spectroscopy to a detection limit of 1 ppm, whereas in the G9m package, mercury is determined by cold vapor atomic absorption spectroscopy to a detection limit of 10 ppb.

The G9b Package

The G9b multielement package has been designed to be of interest to those explorationists looking for base metals and the G9b package includes elements such as nickel, cobalt, iron and manganese instead of gold pathfinders.

The VG Multielement Package for Vegetation and Humus

The VG package consists of a suite of 33 elements (including gold) which has been designed to offer the best possible detection limits for the analysis of highly organic samples. The VG package uses both ICP spectroscopy and instrumental neutron activation analysis (NAA) to obtain exceptionally low detection limits, e.g. 0.1 ppb Au.

Many laboratories offer some form of multielement ICP package roughly equivalent to the Chemex G32 package but subtle differences exist from one package to another and complete agreement between these various packages cannot necessarily be expected. Some of the features of the G32 package which should be borne in mind by explorationists are as follows:

Digestion or Leaching Procedure

Chemex uses a nitric acid-aqua regia digestion for the G32 package. The use of pure nitric acid in the early stage of the digestion facilitates both the dissolution of sulfide minerals and the destruction of organic matter. Consequently the nitric-aqua regia digestion is stronger than a 3:1 HCl:HNO3 aqua regia digestion or a 3:1:2 HCl:HNO3:H2O digestion used by other laboratories. Data produced with the Chemex G32 package is often fractionally higher than the data generated using weaker aqua regia systems. However, none of these partial leach digestion systems completely dissolves all elements, especially those shaded in yellow in the 1998 Fee Schedule . This issue is discussed in greater detail below. For explorationists requiring totally quantitative data, the Chemex T24 package described below offers an attractive alternative.

Detection Limits

A brief glance at the list of detection limits in the G32 package shows that there is a wide variation from one element to another. Several different factors such as analytical sensitivity of an elemental spectral line and interelement interferences have a major effect on the detection limit offered. The G32 package represents a compromise, an attempt to offer the most meaningful detection limit for the largest number of elements.

Accuracy and Precision

The precision of the G32 elements at the detection limits is +/- 100%. At concentration values 5 times higher than the detection limit, the precision is typically +/- 40%; at values 100 times the detection limit, the precision is typically +/- 10%. An explorationist who requires extremely precise data within the range of 1-5 times the detection limit of an element within the G32 package should consider using one of our ultratrace G32 package instead. These ultratrace packages have been designed to be quantitative and offer significantly lower detection limits.

Interelement Effects

The concentration values of some elements in the G32 package are routinely corrected for interelement effects caused by spectral line overlap. Great care and attention is taken to ensure that these corrections are made properly. Certain major elements such as Al and Fe have significant effects on some trace element concentrations (e.g. Be), depending on the analytical wavelength that has been selected. Although these interelement effects can usually be compensated for, in extreme cases the effect may be sufficiently great as to prevent the measurement of a small number of elements as stated in our Fee Schedule.

Evaluation of data for incompletely dissolved elements

Silicates, clays and resistant minerals are incompletely dissolved in all partial leach aqua regia digestion systems. Elements such as Al, Ba, Ti, Na and K (those shaded in yellow in the 1998 Fee Schedule will rarely be fully dissolved and so data for these elements will never match data generated by stronger digestion techniques such as total digestions or whole rock analyses.

Cautionary Notes

The explorationist should keep in mind the comments made above regarding the digestion efficiency of the various aqua regia digestion systems. Concentration values for many elements, especially those that are incompletely dissolved, are more likely to be higher with a nitric-aqua regia digestion than with other weaker aqua regia digestions.

Professional opinion varies significantly on the potential usefulness of data derived from incompletely dissolved elements. Analysts have traditionally urged caution but at least one school of thought among exploration geochemists believes that much of this data may be potentially useful.

APPENDIX 4

STATEMENT OF COSTS

STATEMENT OF COSTS

1. Wages

Graeme Evans – Geologist (BSc) P.Geo @ (July 20- Sept 11th) Field Time
5 days @ $ 425.00/day $2,125.00

Jim Lehtinen – Geologist (BSc) P.Geo @ (July 20th-Sept 11th) Field Time
17 days @ $ 385.00/day $6,545.00

Paul Baxter – Geologist (BSc) P.Geo @ (July 20th-Sept 11th) Field Time
14 days @ $ 360.00/day $5,040.00

Darcy Baker– Geologist PhD candidate @ (July 20-Sept 11th) Field Time
9 days @ $ 322.00/day $2,898.00

Phil Gordon– Geology Student 3rd Yr-UBC @ (July 20th-Sept 01) Field Time
8 days @ $ 231.00/day $1,848.00

Nicholas Mitchell Geology Student 4th Yr-UVIC (July 20th-Sept 01th) Field Time
10 days @ $266.00/day $2,660.00

2. Accom. And Field Suplies

Lodging at a camp at Homestake camp Aug 01-Sept 10 total 63 man days @ $180/ man day (meals & accom. Costs –direct daily costs)
$11,340.00

Camp Costs -satphones, camp rental, support personnel, expediting etc. $16,089.00

Field Supplies (field equipment, saws etc.) $ 4,870.00

3. Helicopter & Transportation Costs

Vancouver Island Helicopters 206LR @ $1050.00/hr (includes. Fuel) contract

1/Mob-Demob of portion of camp and supplies for work at Big Bulk (18.2 hrs)
2/Setout and pickup 17 days @ 1.4 hrs/day (23.8 hrs)
July 20-Sept.11th for a total of 42.0 hrs $44,100.00

Portion of Truck Leases June 18th- Sept. 26th 2-Chev. 4X4 PU's (incl. Fuel, mileage, service) $1,540.00

4. Rock Analyses

150 rocks analyzed for Au geochem & 33 element ICP total digestion,

and Hg cold fusion @ $24.65/sample	$3,697.50
rocks analyzed for 1 Ag assays, 7 Cu assays, 3 Pb assays, 5 Zn assays @ $4.90/sample assay	$ 78.40
Sample Shipments via. Greyhound (Smithers to Vancouver)	$ 292.00
5. Report Writing & Compiling	
G. Evans 10 days @ $425/day	$4250.00
J. Lehtinen 8 days @ $385/day	$3080.00
S. Archibald -Draftsman 16 days @ $200/day	$3200.00
Materials & Copy Costs	$ 140.00
TOTAL COST	**$114,792.00**

APPENDIX 5

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I , Graeme Evans , do certify that:

1) I am a geologist and have practiced my profession for the last twenty years.

2) I graduated from the University of British Columbia, Vancouver, British Columbia with a Bachelor of Science degree in Geology (1983).

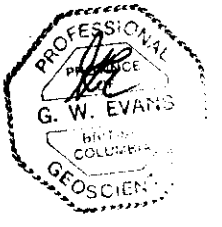
3) I am a member in good standing with the APEGBC as a professional geoscientist.

4) I was actively involved and supervised the Kit Group program and authored the report herein. I was present and actively involved in mapping and co-ordinating the field crew for the entire field program.

5) All data contained in this report and conclusions drawn from it are true and accurate to the best of my knowledge.

6) I hold no direct or indirect personal interest, in the Kit Group property which is the subject of this report .

Graeme Evans
Senior Geologist
February , 2003



6169000 mN

6168000 mN

K I N S K U C H

88H3995

KL-3

(5Sx4W)

"TRACEY"

"METALLICA"

"MARLA"

"SEABEE"

"NICKIE ZONE"

"BONNIE ZONE"

"BONNIE EAST"

"BRIANNE ZONE"

"DARCY ZONE"

SEE Figure 8 FOR DETAIL

BIG BULK

(4Nx4W)

LAVENDER 3

(6Nx2W)

LAVENDER 5

(4Sx5W)

MORAINE

GLACIER

ICEFIELD

LEGEND

MAFIC BASALTIC VOLCANICS

- 2.1 Basalt Flows (pillowed)
- 2.2 Flow Breccias - Autobreccia
- 2.3 Flows - Resedimented / with volcanic wackes
- 2.4 Tuffs

INTERMEDIATE - ANDESITIC VOLCANIC

- 3.1 Andesite Flows
- 3.2 Maroon / Green Flow Breccias - Volcaniclastics
- 3.3 Maroon / Green Epiclastics
- 3.4 Debris Flow mixed tuffs / sediments with mafic, felsic and sediment fragments

FELSIC VOLCANICS - DACITE / RHYOLITE

- 6.1 FP Dacite Flows / Domes / Dykes
- 6.2 FP Dacite Flow Breccias Volcaniclastics
- 6.3 Dacite Tuffs
- 5.4 Flow Banded Rhyolite
- 5.5 Mixed Rhyolite Hyaloclastites
- 5.6 Rhyolite Volcaniclastics
- 5.7 Tuffs

SEDIMENTS

- 4.1 Mudstone / Siltstone
- 4.2 Shale / Argillite
- 4.4 Wacke
- 4.6 Chert
- 4.5 Conglomerate
- 4.6 Limestone

INTRUSIVES

- 8.1 Fp / Hb Monzonite
- 8.2 Granodiorite
- 8.3 Diorite
- 8.4 Lamprophyre

Sphalerite, Galena Veins

Sulphide Veins and Massive Sulphides

ALTERATION

CHLORITE · SERICITE · SILICA · POTASSIUM FELDSPAR · CARBONATE · EPIDOTE

■ 2001 SAMPLING

■ *2002 SAMPLING*

0 250 500

metres

27122

(1)

Teck Cominco Limited
P.O. Box 968, Station Main,
Kamloops, B.C. V2C 5N4

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BIG BULK AREA

KITSAULT AREA, B.C.

General Geology, Alteration and Sample Locations

SCALE: 1:5,000	DATA BY: G. Evans	NTS No: 103P-064,074	Figure: 5
DATE: MARCH 31, 2003	DRAWN BY: S.A.	DWG: BigBulk Geo Alt Samp M3X	

6169000 mN

6168000 mN

K I N S K U C H

"TRACEY"

"METALLICA"

"MARLA"

MORAINE

88H3995

KL-3

(5Sx4W)

"SEABEE"

MORAINE

SEE Figure 9 FOR DETAIL

"BONNIE ZONE"

"BONNIE EAST"

"NICKIE ZONE"

"BRIANNE ZONE"

"DARCY ZONE"

GLACIER

GLACIER

GLACIER

ICEFIELD

LAVENDER

LAVENDER 3

(6Nx2W)

BIG BULK

(4Nx4W)

LAVENDER 5

(4Sx5W)

LEGEND

MAFIC BASALTIC VOLCANICS

- Basalt Flows (pillowed)
- Flow Breccias - Autobreccia
- Flows - Resedimented / with volcanic wackes
- Tuffs

INTERMEDIATE - ANDESITIC VOLCANIC

- Andesite Flows
- Marroon / Green Flow Breccias - Volcaniclastics
- Marroon / Green Epiclastics
- Debris Flow mixed tuffs / sediments with mafic, felsic and sediment fragments

FELSIC VOLCANICS - DACITE / RHYOLITE

- FP Dacite Flows / Domes / Dykes
- FP Dacite Flow Breccias Volcaniclastics
- Dacite Tuffs
- Flow Banded Rhyolite
- Mixed Rhyolite Hyaloclastites
- Rhyolite Volcaniclastics
- Tuffs

SEDIMENTS

- Mudstone / Siltstone
- Shale / Argillite
- Wackie
- Chert
- Conglomerate
- Limestone

INTRUSIVES

- Fp - Hb Monzonite
- Granodiorite
- Diorite
- Lamprophyre

- Sphalerite, Galena Veins
- Sulphide Veins and Massive Sulphides

ALTERATION

CHLORITE · SERICITE · SILICA · POTASSIUM FELDSPAR · CARBONATE · EPIDOTE

Rocks by Au (ppb)

- > 1,000
- 1000 to 1,000
- 100 to 500
- 50 to 100
- < 50

0 250 500
metres

27/22
(2)

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BIG BULK AREA
KITSAULT AREA, B.C.

Au (ppb)
values in Rocks

SCALE: 1:5,000	DATA BY: G. Evans	NTS No: 103P-064,074	Figure: 6
DATE: MARCH 31, 2003	DRAWN BY: S.A.	DWG: bulk Au values RCR	

6169000 mN

6168000 mN

KINSKUCH

88H3995

KL-3

(5Sx4W)

LAVENDER 3

(6Nx2W)

LAVENDER 5

(4Nx5W)

BIG BULK

(4Nx4W)

"SEABEE"

"NICKIE ZONE"

"BONNIE ZONE"

"BONNIE EAST"

"BRIANNE ZONE"

"DARCY ZONE"

"TRACEY"

"METALLICA"

"MARLA"

SEE Figure 10 FOR DETAIL

MORAINE

GLACIER

ICEFIELD

LAVENDE

PE

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

27,122

LEGEND

MAFIC BASALTIC VOLCANICS

- Basalt Flows (pillowed)
- Flow Breccias - Autobreccia
- Flows - Reworked/mixed / with volcanic wackes
- Tuffs

INTERMEDIATE - ANDESITIC VOLCANIC

- Andesite Flows
- Maroon / Green Flow Breccias - Volcaniclastics
- Maroon / Green Epiclastics
- Debris Flow mixed tuffs / sediments with mafic, felsic and sediment fragments

FELSIC VOLCANICS - DACITE / RHYOLITE

- FP Dacite Flows / Domes / Dykes
- FP Dacite Flow Breccias Volcaniclastics
- Dacite Tuffs
- Flow Banded Rhyolite
- Mixed Rhyolite Hyaloclastites
- Rhyolite Volcaniclastics
- Tuffs

SEDIMENTS

- Mudstone / Siltstone
- Shale / Argillite
- Wacke
- Chert
- Conglomerate
- Limestone

INTRUSIVES

- Fp / Hb Monzonite
- Granodiorite
- Diorite
- Lamprophyre

Sphalerite, Galena Veins

Sulphide Veins and Massive Sulphides

ALTERATION

CHLORITE · SERICITE · SILICA · POTASSIUM FELDSPAR · CARBONATE · EPIDOTE

Rocks by Cu (ppm)

- 10,000
- 2,000 to 10,000
- 500 to 2,000
- 100 to 500
- 100

0 250 500
metres

27122
(3)

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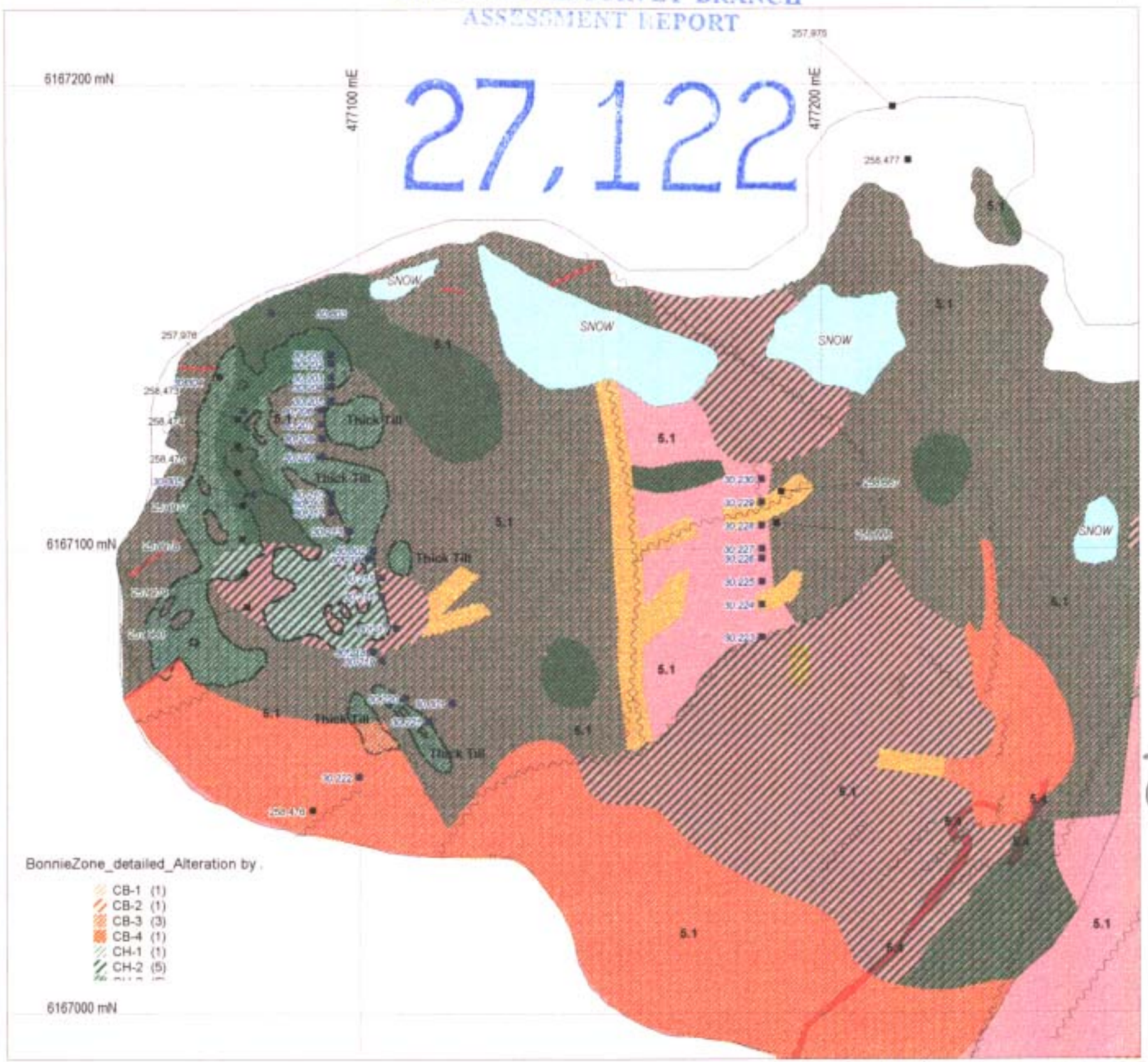
BIG BULK AREA
KITSAULT AREA, B.C.

Cu (ppm)
values in Rocks

SCALE: 1:5,000	DATA BY: G. Evans	NTS No: 103P-064,074	Figure: 7
DATE: MARCH 21, 2003	DRAWN BY: S.A.	DWG: figBulk Cu values.WOR	



LEGEND

MAFIC BASALTIC VOLCANICS

- 1.1 Basalt Flows (pillowed)
- 1.2 Flow Breccias - Autobreccia
- 1.3 Flows - Resedimented / with volcanic wacke
- 1.5 Tuffs

INTERMEDIATE - ANDESITIC VOLCANIC

- 2.1 Andesite Flows
- 2.2 Maroon / Green Flow Breccias - Volcaniclastics
- 2.3 Maroon / Green Epiclastics
- 2.4 Debris Flow mixed tuffs / sediments with mafic, felsic and sediment fragments

FELSIC VOLCANICS - DACITE / RHYOLITE

- 3.1 FP Dacite Flows / Domes / Dykes
- 3.2 FP Dacite Flow Breccias Volcaniclastics
- 3.3 Dacite Tuffs
- 3.4 Flow Banded Rhyolite
- 3.5 Mixed Rhyolite Hyaloclastites
- 3.6 Rhyolite Volcaniclastics
- 3.7 Tuffs

SEDIMENTS

- 4.1 Mudstone / Siltstone
- 4.2 Shale / Argillite
- 4.3 Wacke
- 4.4 Chert
- 4.5 Conglomerate
- 4.6 Limestone

INTRUSIVES

- 5.1 Fp / Hb Monzonite
- 5.2 Granodiorite
- 5.3 Diorite
- 5.4 Lamprophyre

ALTERATION

CHLORITE | SERICITE | SILICA

POTASSIUM FELDSPAR | CARBONATE | EPIDOTE

27/122
(4)

PROFESSIONAL ENGINEER
G. W. EVANS
BRITISH COLUMBIA
GEOSCIENTIST

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Kamloops, B.C. V2C 5N4

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BIG BULK AREA

KITSAULT AREA, B.C.

BONNIE ZONE

Detail Alteration & Sample Locations

SCALE: 1:1,000	DATA BY: G. Evans	NTS No: 103P-064,074	Figure: 8
DATE: MAR 28, 2003	DRAWN BY: S.A.	DWG: bonnie2mc_AlterationMap.WOR	

6167200 mN

6167100 mN

6167000 mN

477100 mE

477200 mE

3,950

2,460

2,440

SNOW

Thick Till

5.1

Rocks by Au (ppb)

- > 1,000
- 500 to 1,000
- 100 to 500
- 50 to 100
- < 50

LEGEND

MAFIC BASALTIC VOLCANICS

- 1.1 Basalt Flows (pillowed)
- 1.2 Flow Breccias - Autobreccia
- 1.3 Flows - Resedimented / with volcanic wackes
- 1.4 Tuffs

INTERMEDIATE - ANDESITIC VOLCANIC

- 2.1 Andesite Flows
- 2.2 Maroon / Green Flow Breccias - Volcaniclastics
- 2.3 Maroon / Green Epiclastics
- 2.4 Debris Flow mixed tuffs / sediments with mafic, felsic and sediment fragments

FELSIC VOLCANICS - DACITE / RHYOLITE

- 3.1 FP Dacite Flows / Domes / Dykes
- 3.2 FP Dacite Flow Breccias Volcaniclastics
- 3.3 Dacite Tuffs
- 3.4 Flow Banded Rhyolite
- 3.5 Mixed Rhyolite Hyaloclastites
- 3.6 Rhyolite Volcaniclastics
- 3.7 Tuffs

SEDIMENTS

- 4.1 Mudstone / Siltstone
- 4.2 Shale / Argillite
- 4.3 Wacke
- 4.4 Chert
- 4.5 Conglomerate
- 4.6 Limestone

INTRUSIVES

- 5.1 Fg / Hb Monzonite
- 5.2 Granodiorite
- 5.3 Diorite
- 5.4 Lamprophyre

ALTERATION

CHLORITE — SERICITE — SILICA

POTASSIUM FELDSPAR — CARBONATE — EPIDOTE

Moderate / Strong / Intense

27/22

5

PROFESSIONAL ENGINEER
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BRITISH COLUMBIA
GEOSCIENTIST

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teckcominco

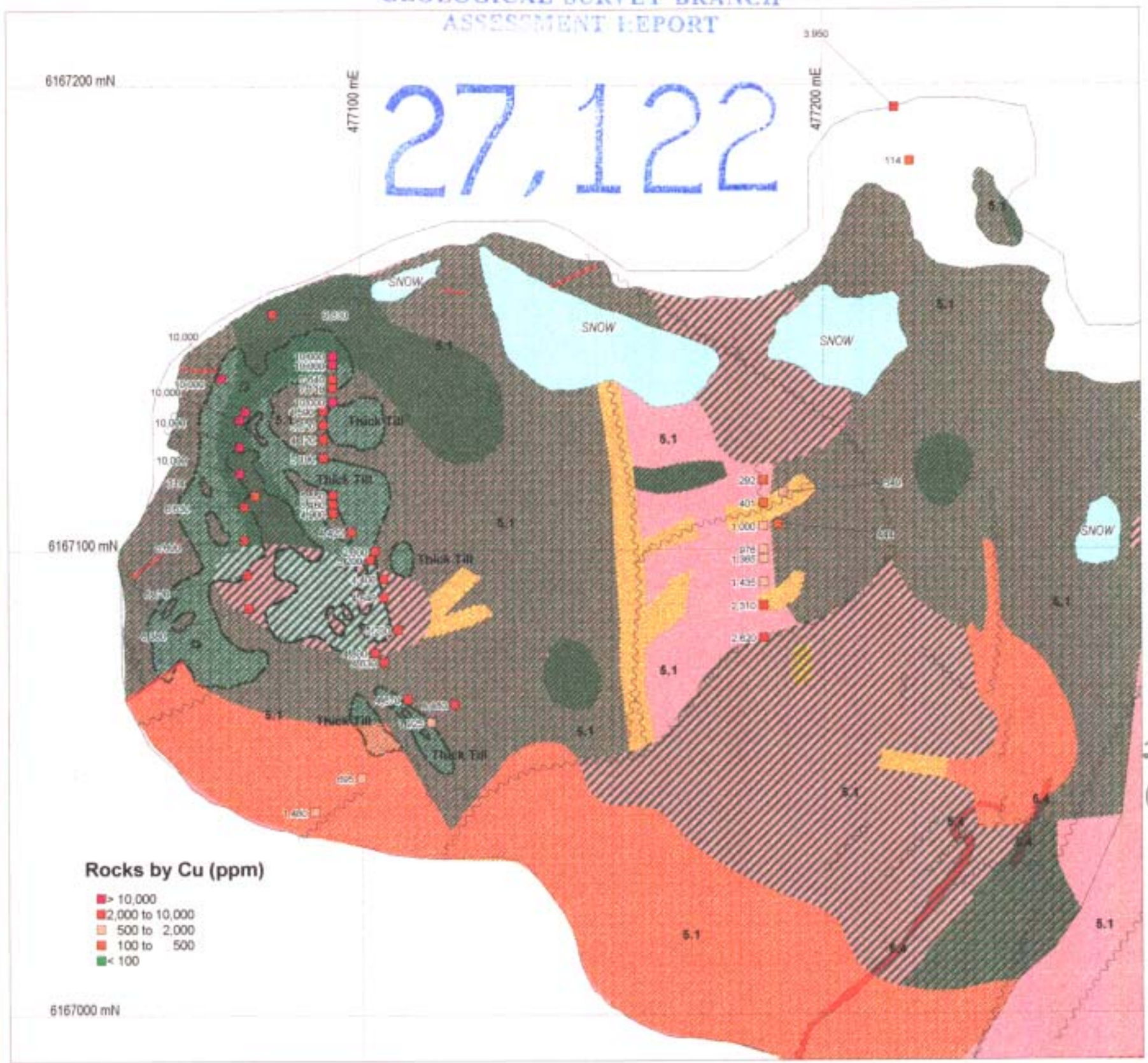
BIG BULK AREA

KITSAULT AREA, B.C.

BONNIE ZONE DETAIL

Au (ppb) values in Rocks

SCALE: 1:1,000	DATA BY: G. Evans	NTS No: 103P/064,074	Figure: 9
DATE: MAR 28, 2003	DRAWN BY: S.A.	DWG:	



LEGEND

MAFIC BASALTIC VOLCANICS

- 1.1 Basalt Flows (pillowed)
- 1.2 Flow Breccias - Autobreccia
- 1.3 Flows - Resedimented / with volcanic wackes
- 1.6 Tuffs

INTERMEDIATE - ANDESITIC VOLCANIC

- 2.1 Andesite Flows
- 2.2 Maroon / Green Flow Breccias - Volcaniclastics
- 2.3 Maroon / Green Epiclastics
- 2.4 Debris Flow mixed tuffs / sediments with mafic, felsic and sediment fragments

FELSIC VOLCANICS - DACITE / RHYOLITE

- 3.1 FP Dacite Flows / Domes / Dykes
- 3.2 FP Dacite Flow Breccias Volcaniclastics
- 3.3 Dacite Tuffs
- 3.4 Flow Banded Rhyolite
- 3.5 Mixed Rhyolite Hyaloclastites
- 3.6 Rhyolite Volcaniclastics
- 3.7 Tuffs

SEDIMENTS

- 4.1 Mudstone / Siltstone
- 4.2 Shale / Argillite
- 4.3 Wacke
- 4.4 Chert
- 4.5 Conglomerate
- 4.6 Limestone

INTRUSIVES

- 5.1 Fp / Hb Monzonite
- 5.2 Granodiorite
- 5.3 Diorite
- 5.4 Lamprophyre

ALTERATION

CHLORITE — SERICITE — SILICA

POTASSIUM FELDSPAR — CARBONATE — EPIDOTE

27122
(6)

Teck Cominco Limited
P.O. Box 930, Station Main,
Kamloops, B.C. V2C 5N4

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BIG BULK AREA

KITSAULT AREA, B.C.

BONNIE ZONE DETAIL

Cu (ppm) values in Rocks

SCALE: 1:1,000	DATA BY: G. Evans	MTS No. 103P-064,074	Figure: 10
DATE: MAR 28, 2003	DRAWN BY: S.A.	DWG:	