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TULSEQUAH CHIEF and BIG BULL PROJECTS, NORTHWESTERN B.C.

1994 EXPLORATION PROGRAM: DIAMOND DRILLING, GEOLOGY and RESERVE ESTIMATION OF THE

TULSEQUAH CHIEF MINE

NTS 104K/12
Latitude: 58°43' N, Longitude: 133°35' W

for

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SUMMARY

The Tulsequah Chief property, situated in Northwestern British Columbia, is located 100 km south of Atlin, B.C. and 64 km northeast of Juneau, Alaska.

The Tulsequah Chief deposit was discovered in 1923 and the nearby Big Bull deposit in 1929. Cominco Ltd. acquired the properties in 1948. Mining began in 1951 and continued until 1957 at which time low metal prices forced its closure. Production during that period totalled 935,536 tonnes grading 1.59% copper, 1.54% lead, 7.0% zinc, 3.84 grams/tonne gold, and 126.52 grams/tonne silver. Of that total, 575,463 tonnes were mined from the Tulsequah Chief and the remainder from the Big Bull.

The Tulsequah Chief property lay dormant from 1957 to 1971. In 1971, the deposits were interpreted as volcanogenic massive sulphide (VMS) deposits similar to the "Kuroko" deposits in Japan. A similar deposit in British Columbia is the Myra Falls deposit (Westmin Resources Ltd.) on Vancouver Island. Total production (January, 1993) from the Myra deposits is 13.5 million tonnes grading 1.8% copper, 0.6% lead, 5.9% zinc. 2.3 grams/tonne gold and 63 grams/tonne silver. Geological reserves now total 12.9 million tonnes grading 2.1% copper, 0.4% lead, 6.3% zinc, 2.1 grams/tonne gold and 43 grams/tonne silver.

Using the VMS model, significant new tonnage was defined by diamond drilling (57 holes totalling 26,245m) at the Tulsequah Chief deposit between 1978 and 1992 by Cominco Ltd. and Redfern Resources Ltd. In June, 1992, Redfern Resources Ltd. purchased Cominco's interest (60%) in the Tulsequah Chief property.

The Tulsequah Chief deposits are precious metal-rich massive sulphide deposits hosted within the Devonian to Permian Mount Eaton suite. The Mount Eaton suite is primarily a bimodal volcanic suite that is mainly subalkalic and calc-alkaline in composition typical of an island-arc setting. It has been subdivided into three major series -- Footwall series (unit 1), Mine series (unit 2), and Hanging Wall series (unit 3). Within the Mine series, the I, H, AB_2, AB_1, massive sulphide lenses and their faulted extensions (F- and G-zone) are spatially and genetically related to felsic volcanic rocks. The deposits consist of thinly banded chert, barite, gypsum and massive sulphides. Local debris flow facies containing clasts of altered volcanics, massive sulphide, chert and barite indicate deposition in an unstable slope environment. The sulphides in order of abundance are pyrite, sphalerite, chalcopyrite, galena and tetrahedrite. Native gold is a common accessory.

The Mount Eaton suite is folded into a northwesterly plunging anticlinal-synclinal fold pairs in the vicinity of the Tulsequah Chief Mine. These upright to steeply overturned parasitic folds are on the western limb of the regional Mount Eaton anticline. Faulting sub-parallel to the axial plane of these folds has offset stratigraphy right laterally across the 4400E and 5300E faults by a small amount. These faults divide the mine area into three mine blocks-- Western Mine Block (west of 4400E fault), Central Mine Block (between 4400E and 5300E fault) and Eastern Mine Block (east of 5300E fault).

In 1994 underground diamond drilling totalled 5940 meters and focussed on extending the northeastern flanks of the H and G deposits. Surface drilling (1700 meters) concentrated on felsic stratigraphy to the west of the Central Mine Block. This drilling extended the main ore horizon a further 300m down from previous interpretations and outlined a significant area of exploration potential for future drilling.

In conjunction with diamond drilling, underground and surface mapping and sampling programs were completed in 1994. Rehabilitation of the 5200 level allowed for detailed mapping of over 1000m of drift and allowed access to significant sulphide zones exposed during the 1950's production era. Detailed structural and lithological mapping of the 5400 level was also completed in 1994.

Surface mapping and geochemical sampling during the 1994 field season concentrated on the altered felsic volcanic package exposed around the 5200 level portal and its southward strike projection.

Inclined plan polygonal reserve estimates were prepared for the H-AB_2, AB_1 and G sulphide lenses. Probable reserves for these lenses total 5,170,905 tonnes, grading 1.43% copper, 1.21% lead, 6.47% zinc, 2.62 grams/tonne gold and 105.89 grams/tonne silver. Possible reserves are 2,905,902 tonnes grading 1.05% copper, 1.12% lead, 5.95% zinc, 2.35 grams/tonne gold and 104.74 grams/tonne silver. In addition to the reserves calculated in this report, the probable and possible reserves remaining above the 5000 Level from the 1950's mining operation total 707,616 tonnes grading 1.30% copper, 1.60% lead, 8.00% zinc, 2.40 grams/tonne gold and 116.5 grams/tonne silver. The total reserve for the Tulsequah Chief deposit (all horizons and classes of reserve) is 8,784,424 tonnes grading 1.30% copper, 1.21% lead, 6.42% zinc, 2.51 grams/tonne gold and 106.36 grams/tonne silver.

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A. INTRODUCTION

A.1 Location and Access

The Tulsequah Chief property is situated along the Tulsequah River in Northwestern B.C. (Fig.. 1). It is centered on latitude 58°43'N and longitude 133°35'W (NTS 104K/12). Access is by air from Atlin, B.C. 100 km to the north, or by air from Juneau, Alaska, 64 km to the southwest. The exploration base camp is situated on the east bank of the Tulsequah River at an elevation of 108m above sea level. A gravel airstrip beside the Tulsequah River 7 km south of the Tulsequah Chief Mine site is suitable for aircraft up to DC-3 or Shorts SkyVan in size. The property is comprised of a total of 53 located mineral claims and 25 reverted crown granted mineral claims for a total of 16,638.69 ha. (Fig.. 2)

A.2 History of Exploration

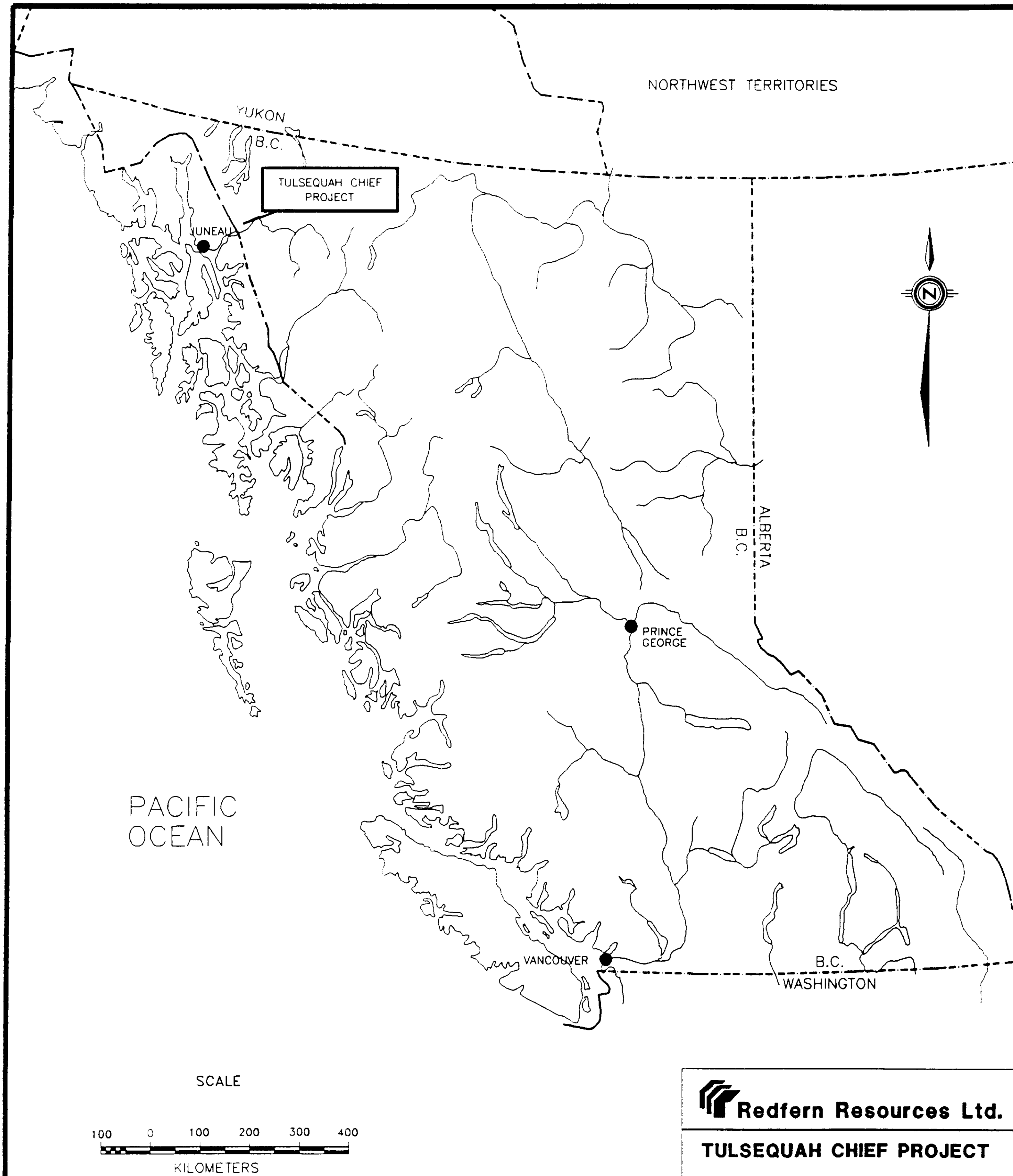
The Tulsequah Chief deposit was discovered in 1923 by W. Kirkham of Juneau. He located high-grade barite, pyrite, sphalerite, galena, and chalcopyrite mineralization outcropping in a gully above the 6500 Level adit. Development of this showing between 1923 and 1929 attracted about 40 prospectors to the area. In 1929, V. Manville discovered the Big Bull massive sulphide deposit. Other discoveries that year included the Potlatch (Sparling), Banker and the Whitewater (Polaris Taku) vein deposits. The Erickson-Ashby sulphide deposit was discovered later in 1930.

Cominco Ltd. acquired the Tulsequah Chief and Big Bull deposits in 1946. Production started in 1951 and continued to 1957 when low metal prices closed the mine. Production averaged 482 tonnes (530 tons) per day. Total production was 935,536 tonnes comprised of 575,463 tonnes from the Tulsequah Chief and 360,073 tonnes from the Big Bull deposit. Average grade of ore was 1.59% Cu, 1.54% Pb, 7.0% Zn, 3.84 g/tonne Au, and 126.52 g/tonne Ag. The mines produced 14,756 tons Cu, 11,439 tons Pb, 54,910 tons Zn, 95,340 oz Au, and 3,329,938 oz Ag at a recovery of about 88% Cu, 94% Pb, 87% Zn, 77% Au, and 89% Ag. At shutdown, ore reserves at the Tulsequah Chief were 707,616 tonnes grading 1.3% Cu, 1.6% Pb, 8.0% Zn, 2.40 g/tonne Au, and 116.50 g/tonne Ag, and at the Big Bull were 57,541 tonnes grading 1.1% Cu, 1.5% Pb, 5.6% Zn, 3.43g/tonne Au, and 154.3 g/tonne Ag. Tulsequah Chief reserves consisted of 73,408 tonnes in the Upper Deposits (I horizon) and 634,208 tonnes in the Lower Deposits (H,AB2, AB1 horizons). In the Lower Deposits, 307,063 tonnes were above, and 327,145 tonnes were below the 5200 Level.

The Tulsequah Chief and Big Bull deposits lay dormant until 1971. At this time the deposits were interpreted as volcanogenic massive sulphides, rather than hydrothermal veins as originally described. Geological mapping (1:2500) over the Tulsequah Chief and Big Bull deposits was completed in 1981. The property was flown by Dighem and Input EM/Mag in 1982, however, these surveys failed to define any significant conductors. A joint venture between Cominco Ltd. and Redfern Resources Ltd. led to extensive exploration programs from 1987 to 1991.

The 1987 Exploration Program (Casselman, 1988) was funded by Redfern Resources Ltd. (100%). Surface mapping was completed over the property and five surface diamond drill holes (3,524m) tested the down dip extension of the Tulsequah Chief deposit. The mineralized horizon was intersected on approximately 90m spacings, 450 to 600m below surface, and 40-240m below previous drilling.

The 1988 Exploration Program (Casselman, 1989) was funded by Redfern Resources Ltd. (100%). Outside the Tulsequah Chief Mine area, mapping, prospecting, and soil sampling were completed over areas of felsic volcanic units. Inside the mine area, 900 metres of underground workings were rehabilitated on the 5400 Level and 3,530m of underground and surface diamond drilling were completed. Nine drill holes tested areas below the old workings, of which, eight holes intersected significant base and precious metal mineralization. Four holes tested other targets on the property.



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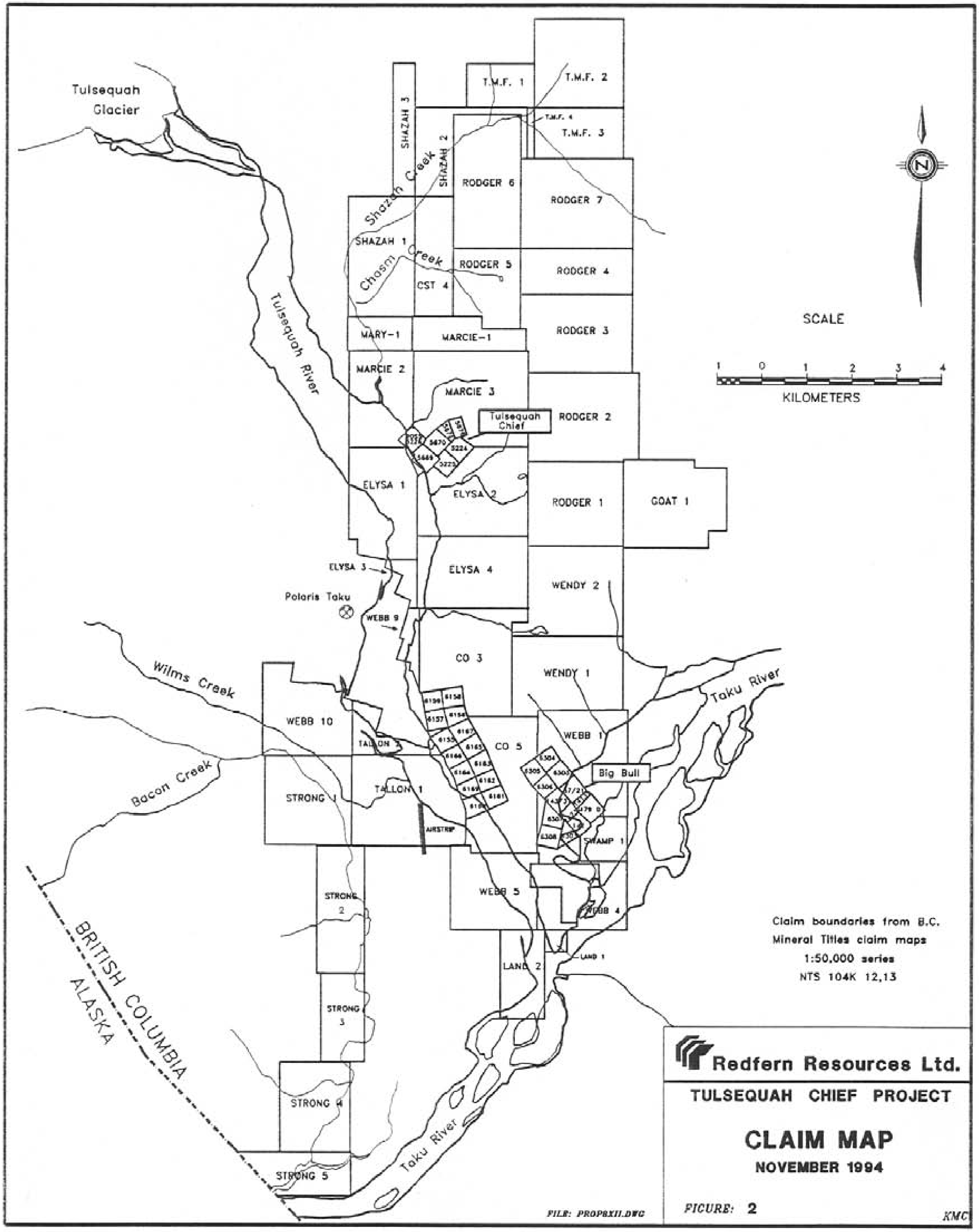
TULSEQUAH CHIEF PROJECT

PROJECT LOCATION

FILE: D:DWG:8x11:BCLOC

FIGURE: 1


Tulsequah Glacier
Tulsequah River
Shazah Creek
Chasm Creek
T.M.F. 1
T.M.F. 2
T.M.F. 3
T.M.F. 4
SHAZAH 3
SHAZAH 2
SHAZAH 1
RODGER 6
RODGER 7
RODGER 5
RODGER 4
RODGER 3
RODGER 2
RODGER 1
CST 4
MARY-1
MARCIE-1
MARCIE 2
MARCIE 3
Tulsequah Chief
ELYSA 1
ELYSA 2
ELYSA 3
ELYSA 4
GOAT 1
WENDY 2
WENDY 1
Polaris Taku
WEBB 9
CO 3
CO 5
Wilms Creek
WEBB 10
TALLON 2
TALLON 1
Bacon Creek
STRONG 1
STRONG 2
STRONG 3
STRONG 4
STRONG 5
AIRSTRIP
WEBB 1
Big Bull
SWAMP 1
WEBB 5
WEBB 4
LAND 1
LAND 2
Taku River
BRITISH COLUMBIA
ALASKA
SCALE
1 0 1 2 3 4
KILOMETERS
Claim boundaries from B.C.
Mineral Titles claim maps
1:50,000 series
NTS 104K 12,13
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TULSEQUAH CHIEF PROJECT
CLAIM MAP
NOVEMBER 1994
FILE: PROP8XII.DWG
FIGURE: 2
KMC

The 1989 Exploration Program (Casselman, 1990) was jointly funded by Redfern Resources Ltd. (40%) and Cominco Ltd. (60%). The program consisted of re-ballasting track, 175m of drifting in the 5400 Level crosscut, and 4,890m of underground drilling. Ten drill holes from the extended 5400 Level crosscut tested the down dip extension of the A, B, C, E, and G sulphide bodies. Eight holes intersected significant base and precious metals. Specific gravity measurements were made on all 1987, 1988, and 1989 mineralized drill intersections. Redfern calculated a possible resource including previous reserves above the 5200 Level of 5.27 million tonnes grading 1.6 % Cu, 1.3% Pb, 7.0% Zn, 2.74 g/tonne Au, and 99.43 g/tonne Ag.

The 1990 Exploration Program (Aulis, 1991) jointly funded by Redfern Resources Ltd.(40%) and Cominco Ltd. (60%) consisted of underground rehabilitation, 180m of drifting, slashing two drill stations on the 5400 Level and 5,908m of underground drilling. Seven drill holes tested the down-dip extension of the H-AB sulphide bodies. An eighth drill hole was abandoned due to ground problems. A resource estimate by Cominco Ltd. totalled 6.27 million tonnes grading 1.58% Cu, 1.33% Pb, 7.59% Zn, 2.74 g/tonne Au, and 114.86 g/tonne Ag, including the 1957 reserve. Redfern prepared their own estimate, using different cutoffs, which totalled 7.3 million tonnes grading 1.55% Cu, 1.23% Pb, 6.81% Zn, 2.74 g/tonne Au, and 109.37 g/tonne Ag.

The 1991 Exploration Program was operated and funded by Redfern Resources Ltd. (100%). The program was restricted by agreement with Cominco to infill drilling on the H and AB lenses between the 3400 and 4900 Levels. Six drill holes (3,090m) were collared from the 5400 Level crosscut. All holes intersected the targeted massive sulphide horizon. Cambria Data Services Ltd. (M^cGuigan et al., 1991 and 1992) prepared a probable and possible reserve estimate of 7.60 million tonnes grading 1.62% copper, 1.19% lead, 6.51% zinc, 2.88 g/tonne Au and 116.57 g/tonne Ag, inclusive of Cominco's 1957 shutdown reserve.

Redfern Resources Ltd. purchased Cominco's interest (60%) in the Tulsequah Chief property in June, 1992. Consequently, Redfern Resources became the 100% owner of the Tulsequah Chief and Big Bull deposits and adjacent ground.

The 1992 Exploration Program (M^cGuigan et al., 1993) consisted of surface and underground geological mapping, core re-logging (1987-1991) and underground diamond drilling (4,579 m. in 13 holes). Cambria Geological Ltd. prepared a reserve estimate (all horizons and classes) of 8,500,592 tonnes grading 1.48% copper, 1.17% lead, 6.85% zinc, 2.56 grams/tonne gold and 103.42 grams/tonne silver. Tonto Mining Ltd. completed a Pre-Feasibility study which outlined a fully diluted mineable reserve (at 1993 metal prices) of 6.93 million tonnes grading 1.40% copper, 1.07% lead, 6.42% zinc, 2.40 grams/tonne gold and 93.37 grams/tonne silver (M^cLatchy, 1993).

Redfern conducted a comprehensive exploration program in 1993 consisting of 6,238 metres of underground drilling (14 holes) at the Tulsequah Chief Mine and 5,368 metres of surface drilling - 1,812 m in 6 holes in the Tulsequah Chief Mine area and 3,556 m in 12 holes in the Big Bull Mine area (Chandler et al, 1994;Carmichael et al, 1994). Extensions were added to existing grids at the Tulsequah Chief Mine and the Big Bull Mine areas as well as new grids covering prospective stratigraphy south of Tulsequah Chief and at the Banker prospect (Curtis, 1994). This work generated an additional 76 line-kilometres of grid which was geologically mapped at 1:2000 scale and covered by various combinations of gradient array IP, magnetometer and VLF-EM geophysical surveys. The geophysical surveys also covered the previous grid areas at Tulsequah Chief and Big Bull. Reconnaissance geological mapping was conducted in selected areas .

Based on these results Redfern calculated a revised polygonal sectional and longitudinal reserve in all categories totalling 8,489,885 tonnes grading 1.41% Cu, 1.23% Pb, 6.65% Zn, 2.52 g/tonne Au and 105.66 g/tonne Ag.

A.3 1994 Exploration Program

In 1994 Redfern completed 4,241 meters of underground diamond drilling in 11 holes and 1,700 meters of surface diamond drilling in 4 holes - for a program total of 5942 m in 15 holes (see Fig. 5, Map 2).

Underground and surface mapping and sampling programs were completed on the 5400 level main drift (Map 64). Over 1 km of underground rehabilitation was completed on the 5200 level main drift which allowed for detailed geological mapping and sampling programs in an area not accessible since the 1950's production era (Map 65).

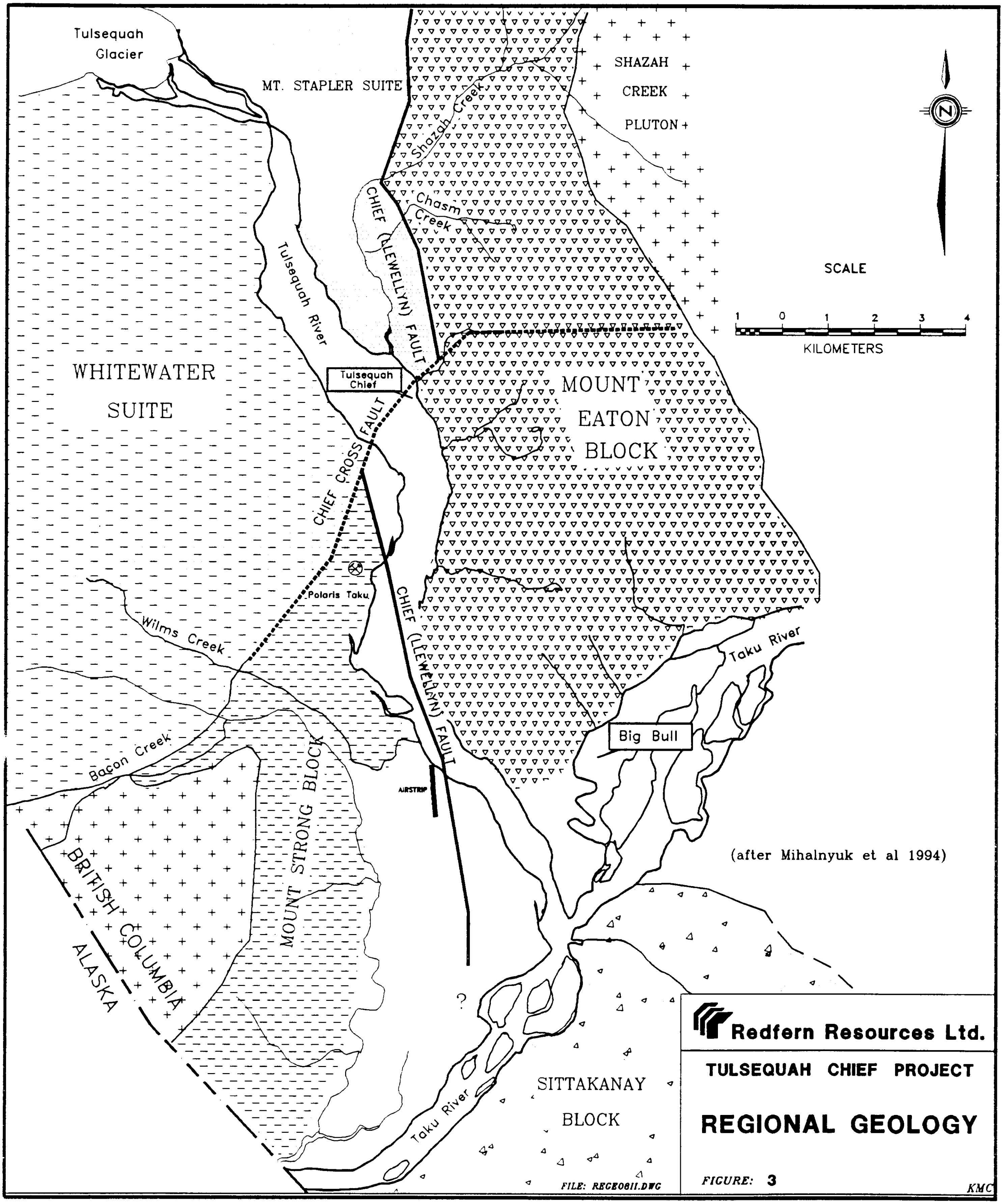
Surface work included the establishment of an additional 10.7 kilometers of I.P. standard cut survey grid over altered felsic volcanic rocks exposed to the south of the 5200 level portal. During the course of geological mapping (Map 55) and sampling (Maps 56 to 63) over this and adjacent parts of the existing grid a total of 71 trace element and 14 lithogeochemical samples were collected from selected rock outcrops.

During 1994 underground drilling (see Maps 2, and 5 to 51) at the Tulsequah Chief mine was directed primarily at exploring the northwestern flanks of the H/AB_2 and G horizons (holes TCU94-061,062,063,064,066,067). All holes intersected massive to semi-massive sulphide horizons of limited (<4m) widths and generally lower grades than intersected in the central deposits. Drill hole TCU94-065 was directed at an area of the central H/AB_2 deposit with lower drill density. This hole successfully intersected a thick and high grade portion of the H deposit (13.55m grading 2.92% Cu, 1.15% Pb, 11.65% Zn, 159.02 g/T Ag and 3.07 g/T Au). Four underground drill holes were directed at infill drilling the G deposit. Three of these holes (TCU94-063, 069 and 071) intersected ore grade material and are included in the revised mineral reserve calculation. Drill hole TCU94-070 intersected a late, crosscutting quartz-porphyritic dyke emplaced at the mineralized horizon (see Map 54).

Surface drilling at Tulsequah Chief concentrated on felsic volcanic horizons to the west of the 4400E fault (Fig. 5, Map 2). Holes TC94-015 and TC94-017 were fence drilled to delineate the western projection of the F-Horizon. These holes were successful in extending the altered and weakly mineralized horizon a further 300 m down dip from previously known limits (Maps 11 to 32). Hole TC94-016 (Map 3) was directed at altered felsic stratigraphy located immediately to the east of the 5200 level portal. This hole intersected a narrow section of altered felsic fragmentals and flows near the collar. A wider than expected series of footwall mafic volcanics and lesser intrusives was intersected throughout the remaining hole effectively closing the area for future drilling. Surface hole TC94-018 (see Map 4) was collared approximately 200 m south of the 5200 Level portal and was designed to intersect the southward strike projection of the altered volcanics located at this portal. This hole collared in weakly mineralized (disseminated chalcopyrite, sphalerite and pyrite) mafic fragmentals of Unit 1 (footwall basalts) and continued into a series of quartz-phyric massive and lesser fragmental ryholites identical to those exposed at the 5200L portal. The hole ended by crossing a wide fault zone (called the Chief Splay fault) and intersecting carbonate rich sediments interpreted as part of the older Mount Stapler suite.

A.4 Regional Geology

The regional geology of the Tulsequah area is characterized by fault juxtaposition of several diverse Paleozoic to Mesozoic tectonostratigraphic terranes in fault juxtaposition which have been variably deformed, intruded by Jurassic to Cretaceous age Coast intrusions and unconformably overlain by Tertiary Sloko volcanics. The regional geology is discussed in more detail in a companion Redfern report (Curtis, 1994) that draws heavily on interpretations from recent field work by the B.C. Geological Survey Branch (Mihalynuk et al, 1994) as well as earlier workers (Fig. 3).



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TULSEQUAH CHIEF PROJECT

REGIONAL GEOLOGY

FIGURE: **3**

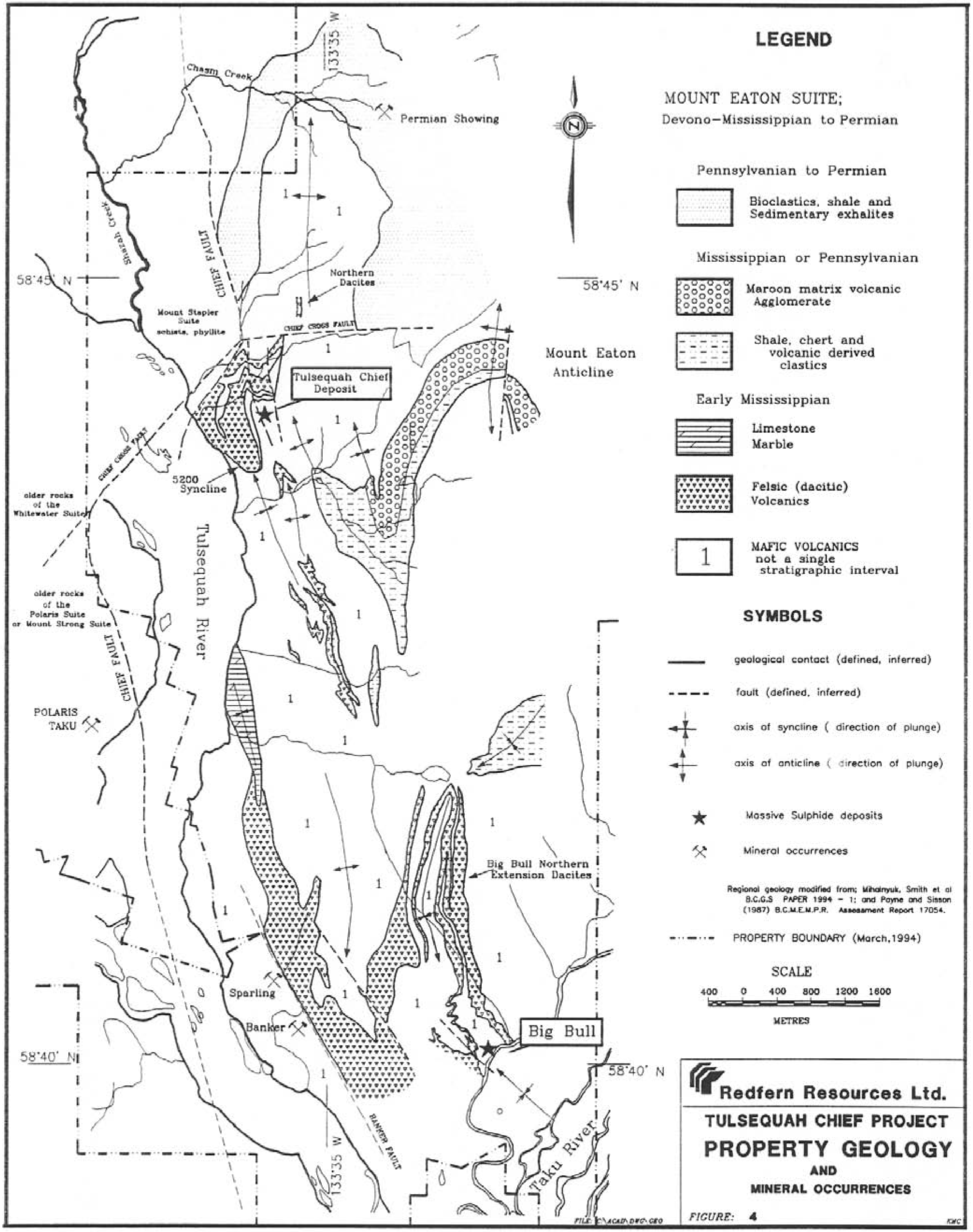
The dominant structural feature of the region is the **Llewellyn fault** (known locally as the **Chief Fault**) which divides higher grade metamorphic rocks of Paleozoic and older ages on the west and weakly metamorphosed Paleozoic and Mesozoic rocks on the east. West of the fault three suites of rocks are recognized: the **Whitewater suite** which consists of an amphibolite grade metamorphic sequence of sedimentary origin, the **Boundary Ranges suite** (not shown on Fig 3), consisting of schists of volcanic and sedimentary origin, and the **Mount Stapler suite**, a low-grade metamorphic package which shares characteristics of both the Whitewater and Boundary Range suites and may be gradational to both. East of the fault Paleozoic rocks of the Stikine Assemblage include the **Mount Eaton block** - low metamorphic grade volcanic rocks of island arc affinity which host the Tulsequah Chief and Big Bull sulphide deposits. South of the Taku river the **Sittakanay block** appears to be more deformed but lithologically similar to the Mount Eaton block whereas the **Mount Strong block**, located west of the Tulsequah river, is more sediment dominated and thought to represent a more distal equivalent of the Mount Eaton and Sittakanay volcanics.

Deformation and metamorphic grade in the Tulsequah region decreases from west to east. It ranges from polyphase deformed high grade gneisses in the Boundary Ranges suite to lower greenschist grade volcanics of the Mount Eaton block. The latter has been affected by an upright to steeply overturned north trending, open to isoclinal fold event. A second, less well developed, fold event overprints the first. North trending, steeply dipping faults show evidence of numerous re-activations and intrusion by late Tertiary Sloko dykes.

A.5 Property Geology

The Tulsequah property is dominantly underlain by rocks of the Mount Eaton Block, an island arc volcanic sequence of Devono-Mississippian to Permian age (Mihalynuk et al, 1994; Curtis, 1994). These rocks are located east of the Chief (Llewelyn) fault and are predominantly located east of the Tulsequah River and north of the Taku River. Other Stikine Assemblage rocks on the property are represented by the sediment dominated Mount Strong block which hosts the advanced exploration Polaris-Taku gold deposit on the west side of the Tulsequah River and extends southward to underlie the southwestern portions of the property (Fig. 2,3,4). West of the Chief fault, older more deformed rocks of the Mount Stapler and Whitewater suites impinge on the northern and western extremities of the property.

The Mount Eaton block hosts the Tulsequah Chief and Big Bull volcanogenic massive sulphide deposits and a number of other similar occurrences and prospects. Work by the BCGS (Mihalynuk et al ,1994), Mineral Deposits Research Unit (MDRU) (Sherlock et al, 1993) and Redfern (Curtis, 1994) has crudely defined the stratigraphy of the Mount Eaton block (Fig. 4,7) based on recent mapping, biochronology, lithogeochemistry and isotopic age determinations. This work has subdivided the stratigraphy into three divisions. The Lower Division is dominated by Devonian to early Mississippian age bimodal volcanic units which include the Mine series felsic rocks (unit 2) hosting the Tulsequah Chief deposit and tentatively correlated with the felsic rocks hosting the Big Bull deposit. The Middle Division, Mississippian to Pennsylvanian in age, is composed dominantly of pyroxene bearing mafic breccias and agglomerates with locally extensive accumulations of mafic ash tuffs and volcanic sediments. The transition from the Middle to Upper Divisions is marked by polymictic debris flows and/or conglomerate. The Pennsylvanian to Permian Upper Division rocks primarily consist of volcanic derived and clastic sediments with lesser mafic flows. Distinctive bioclastic rudite and intercalated chert, shales and occasional sulphidic exhalite occur near the top of the Upper Division. Late Tertiary Sloko rhyolite and mafic dykes cut the Paleozoic units and commonly intrude along re-activated north-trending faults.


LEGEND
MOUNT EATON SUITE;
Devono–Mississippian to Permian
Pennsylvanian to Permian
Bioclastics, shale and Sedimentary exhalites
Mississippian or Pennsylvanian
Maroon matrix volcanic Agglomerate
Shale, chert and volcanic derived clastics
Early Mississippian
Limestone Marble
Felsic (dacitic) Volcanics
1
MAFIC VOLCANICS not a single stratigraphic interval
SYMBOLS
geological contact (defined, inferred)
fault (defined, inferred)
axis of syncline (direction of plunge)
axis of anticline (direction of plunge)
Massive Sulphide deposits
Mineral occurrences
Regional geology modified from; Mihalnyuk, Smith et al B.C.G.S PAPER 1994 – 1; and Payne and Sisson (1987) B.C.M.E.M.P.R. Assessment Report 17054.
PROPERTY BOUNDARY (March,1994)
SCALE
400 0 400 800 1200 1600
METRES
133°35' W
Chasm Creek
Permian Showing
Shazah Creek
CHIEF FAULT
Northern Dacites
58°45' N
Mount Stapler Suite schists, phyllite
CHIEF CROSS FAULT
Tulsequah Chief Deposit
Mount Eaton Anticline
5200 Syncline
older rocks of the Whitewater Suite
Tulsequah River
older rocks of the Polaris Suite or Mount Strong Suite
POLARIS TAKU
Big Bull Northern Extension Dacites
Sparling
Banker
Big Bull
58°40' N
BANKER FAULT
Taku River
Redfern Resources Ltd.
TULSEQUAH CHIEF PROJECT
PROPERTY GEOLOGY
AND
MINERAL OCCURRENCES
FIGURE: 4

Structure in the Mount Eaton block is dominated by the north trending, eastward verging Mount Eaton anticline which plunges moderately north and dips steeply west (Fig. 4). A number of parasitic, upright to overturned, folds (F_1) that which range from open to near isoclinal occur on the western limb of this anticline . Penetrative fabric is weak or poorly developed except in extremely appressed folds. This first phase of folding (F_1) is refolded by a second, east-west fold phase (F_2) that is irregularly expressed across the property and locally produces a cross-cutting cleavage (S_2). The F_2 folds are generally upright and open. F_1 folds are not significantly re-oriented by the F_2 second phase of folding although they do exhibit variable plunge attitudes. F_1 fold axes generally plunge to the north in the northern half of the property with southern plunges more common in the southern areas. In the Tulsequah Chief mine area folds are open, and plunge at 55 to 60 degrees to the north with steep westerly dipping axial planes.

North to northwest trending faults are most common and generally exhibit long-lived, complex displacement histories. Displacement appears to be small on these faults except for the major Chief fault. Most faults are marked by topographic depressions in the form of steep-sided gullies and ravines. The north trending faults are commonly associated with the hinge zones of F_1 folds, as at the Tulsequah Chief deposit, and intruded by Sloko rhyolite dykes.

Younger east-west faults are less common on the property. However, based on regional mapping (Mihalynuk et al, 1994), these faults may have significant displacements. In particular, the Chief Cross fault was identified as potentially offsetting the regional Llewellyn (Chief) fault in a dextral sense by as much as two kilometres. This fault has important economic implications for extensions of the Tulsequah Chief Mine series stratigraphy across the fault to the north.

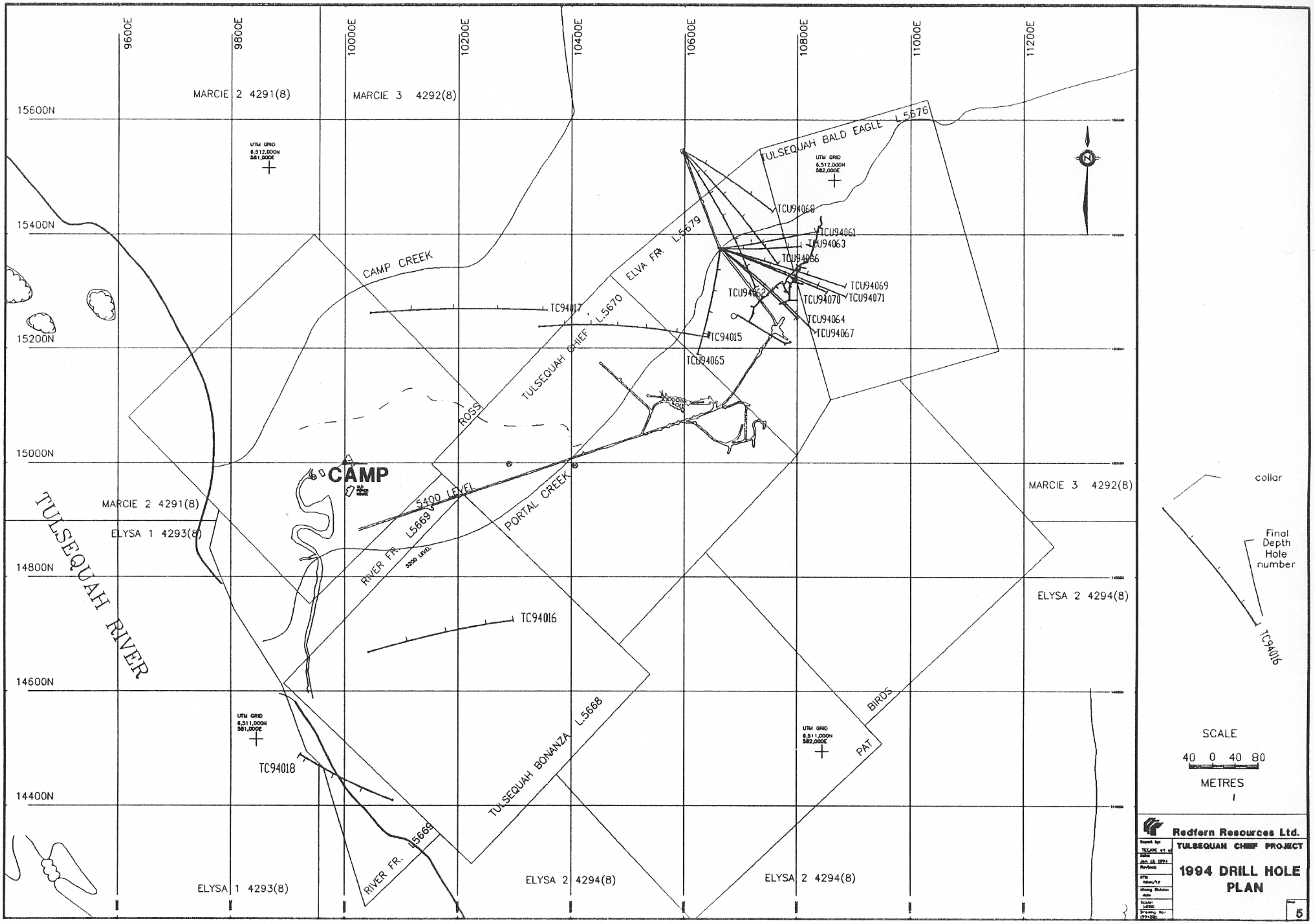
B. TULSEQUAH CHIEF MINE - GEOLOGY

B.1 Introduction

The Tulsequah Chief Mine is a precious metal-rich massive sulphide deposit hosted by the Devonian to Permian Mount Eaton suite (Fig. 3,4). In the mine area, the Mount Eaton suite forms a northward younging package of felsic and mafic rocks that are sub-divided into the Footwall series (unit 1), the Mine series (unit 2) and the Hanging Wall series (unit 3) (Fig. 7).

Footwall series (unit 1) forms the lowest stratigraphic unit in the Tulsequah Chief Mine area. It consists primarily of amygdaloidal mafic flows with minor interflow ash tuff, volcanic sediment and chert. Mine series (unit 2) forms a laterally extensive, mainly felsic unit that stratigraphically overlies unit 1. It consists of felsic volcaniclastics, flows and sills that are host to a number of *en echelon* sulphide deposits that include the I, H, AB_2, and AB_1 horizons. The I zone, previously called the Upper Deposits, was mined from 1951 to 1957 between the 6100 and 6500 Levels (+300 to +500m elevation). The upper portions of the AB_2 horizon previously called the Lower Deposits was mined from 1951 to 1957 between the 5200 and 5700 Level (+50 to 200m elevation). Additional discoveries below the 5200 Level (+50m elevation) identified since 1987 include the H, AB_2 (extension of the Lower Deposits), G (offset extension of the H. AB_2 east of the 5300E fault), and AB_1 massive sulphide horizons. Hanging Wall series (unit 3) is the highest unit recognized in the Tulsequah Chief Mine area. It consists of mafic flows, sills and lesser interflow volcanic sediment and volcaniclastics. The above units are intruded by subvolcanic mafic intrusions (unit 4) which form thin sills and dykes that feed a large sill-like body that dilates unit 2 felsic volcanic rocks.

Tertiary Sloko intrusions (unit 5) form narrow dykes emplaced along faults in the Tulsequah Chief Mine area. They consist of flow banded rhyolite and quartz-feldspar porphyritic dacite.


9600E
9800E
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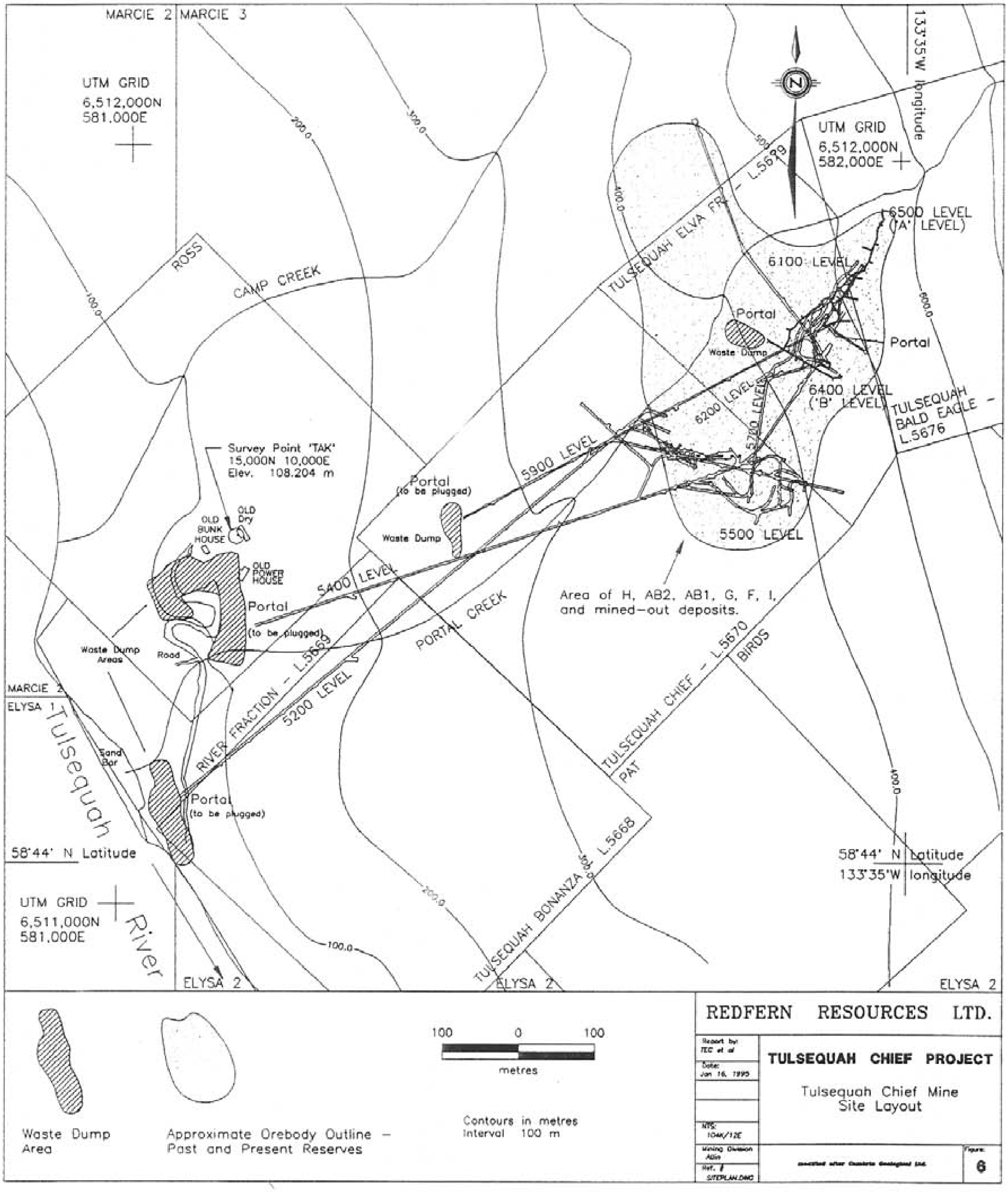
10200E
10400E
10600E
10800E
11000E
11200E
15600N
15400N
15200N
15000N
14800N
14600N
14400N
MARCIE 2 4291(8)
MARCIE 3 4292(8)
TULSEQUAH BALD EAGLE L.5676
ELVA FR. L.5679
TULSEQUAH CHIEF L.5670
CAMP CREEK
ROSS
CAMP
5400 LEVEL
PORTAL CREEK
RIVER FR. L5669
5200 LEVEL
TULSEQUAH RIVER
ELYSA 1 4293(8)
ELYSA 2 4294(8)
TULSEQUAH BONANZA L.5668
BIRDS
PAT
TCU94068
TCU94061
TCU94063
TCU94066
TCU94069
TCU94070
TCU94071
TCU94062
TCU94064
TCU94067
TCU94065
TC94017
TC94015
TC94016
TC94018
collar
Final Depth Hole number
TC9406
SCALE
40 0 40 80
METRES
Redfern Resources Ltd.
TULSEQUAH CHIEF PROJECT
1994 DRILL HOLE PLAN
5


MARCIE 2
MARCIE 3
UTM GRID
6,512,000N
581,000E
133°35'W longitude
UTM GRID
6,512,000N
582,000E
ROSS
CAMP CREEK
TULSEQUAH ELVA FR. - L.5679
6500 LEVEL
('A' LEVEL)
6100 LEVEL
Portal
Waste Dump
Portal
6400 LEVEL
('B' LEVEL)
6200 LEVEL
5700 LEVEL
TULSEQUAH BALD EAGLE - L.5676
5900 LEVEL
5500 LEVEL
Survey Point 'TAK'
15,000N 10,000E
Elev. 108.204 m
OLD BUNK HOUSE
OLD Dry
OLD POWER HOUSE
Portal
(to be plugged)
Waste Dump
5400 LEVEL
Portal
(to be plugged)
Area of H, AB2, AB1, G, F, I, and mined-out deposits.
Waste Dump Areas
Road
PORTAL CREEK
TULSEQUAH CHIEF - L.5670
BIRDS
MARCIE 2
ELYSA 1
Tulsequah
River
Sand Bar
RIVER FRACTION - L.5669
5200 LEVEL
PAT
Portal
(to be plugged)
58°44' N Latitude
58°44' N Latitude
133°35'W longitude
UTM GRID
6,511,000N
581,000E
TULSEQUAH BONANZA - L.5668
ELYSA 2
ELYSA 2
ELYSA 2
100.0
200.0
300.0
400.0
500.0
600.0
100 0 100
metres
Waste Dump Area
Approximate Orebody Outline - Past and Present Reserves
Contours in metres
Interval 100 m
REDFERN RESOURCES LTD.
Report by: TEC et al
Date: Jan 16, 1995
TULSEQUAH CHIEF PROJECT
Tulsequah Chief Mine
Site Layout
NTS: 104K/12E
Mining Division Atlin
Ref. # SITEPLAN.DWG
Figure: 6

Mesozoic or older deformation has folded the Mount Eaton suite into northwesterly plunging anticlinal-synclinal fold pairs in the vicinity of the Tulsequah Chief Mine. These upright to steeply overturned parasitic folds are on the western limb of the regional Mount Eaton anticline. Faulting sub-parallel to the axial plane of these folds has offset stratigraphy right laterally along the 4400E and the 5300E faults by a small amount (<50m). These faults divide the Tulsequah Chief Mine into three Mine Blocks: Western Mine Block (west of 4400E fault), Central Mine Block (between 4400E and 5300E fault) and Eastern Mine Block (east of 5300E fault). These relationships are portrayed in an unfolded schematic section in Figure 8.

B.2 Mount Eaton suite (units 1-4)

B.2.a Footwall series (unit 1)

The Footwall series (unit 1) forms a thick, laterally extensive unit that crops out in the southern part of the map area (Map 1). It is bounded by the Mine series (unit 2) along its upper contact and its lower contact is beyond the limit of present mapping. The unit is comprised mainly of amygdaloidal mafic flows, pillowed flows, flow breccias, tuffs (hyaloclastic), lesser volcanic sediment and minor chert.

The mafic flows are generally massive with minor intervals of flow breccia. They are dark green, fine grained to aphanitic and rarely feldspar and/or pyroxene phyric. The top of the unit is commonly amygdaloidal, hyaloclastic textured and strongly silica + sericite + pyrite altered where it underlies unit 2 mineralization. Amygdules are up to 1cm in diameter and filled with quartz, pyrite and chalcopyrite. Cordierite porphyroblasts are best developed in these units and appear to nucleate on the quartz amygdules. The hyaloclastic deposits consist of fine ash to lapilli tuff (aquagene tuff). Lapilli are aphanitic, <1 cm in diameter, cuspate in outline and clast supported. Matrix consists of fine ash, chert or silica, and disseminated pyrite.

Interflow, thinly laminated turbiditic volcanic sediment and minor chert form thin units up to 20 metres thick which infill small basins between and on top of flow units. These units mark periods of quiescence between deposition of individual flows and in some areas directly underlie AB_1 mineralization.

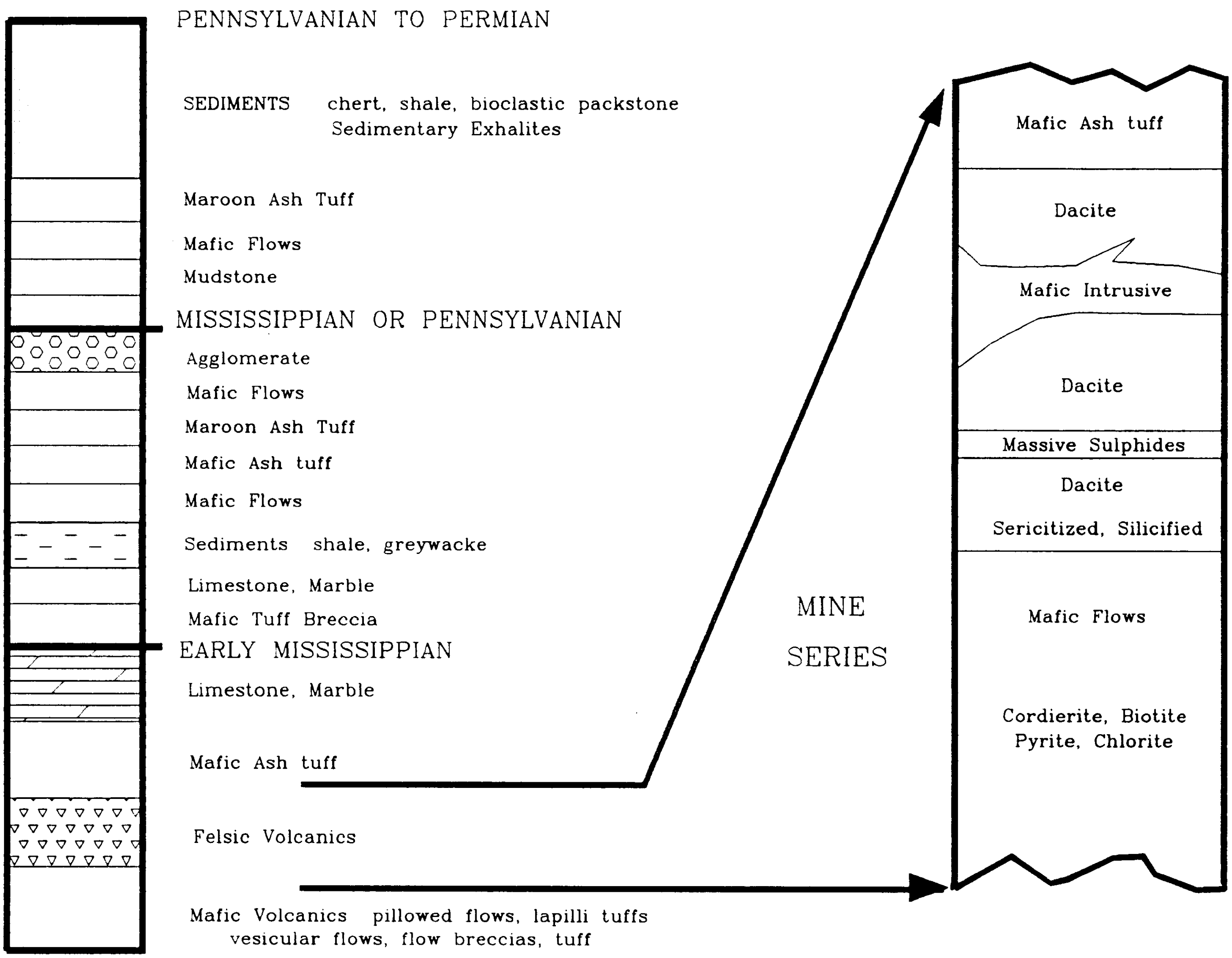
Whole rock analysis of relatively unaltered massive flows plot in the alkalic and sub-alkalic field on a alkali versus silica diagram with the subalkalic samples plotting in the calc-alkaline field on a AFM diagram (McGuigan et al., 1993). Recent work by the Mineral Deposit Research Unit (MDRU) at the University of British Columbia (Sherlock and Barrett, 1994) using immobile trace elements indicate the flows are mainly andesite in composition and can be subdivided into low and high zirconium types (Fig. 11). The high zirconium variety are commonly quartz amygdaloidal in texture.

B.2.b Mine series - Felsic Volcanic, H-AB horizon (unit 2)

The Mine series is mainly comprised of felsic volcanics which are the principle host to a number of *en echelon* sulphide deposits that include the I, H, AB_2, and AB_1 horizons. The unit has a maximum thickness of approximately 200 metres in the western and central half of the map and is less than 10 metres in the vicinity of the I horizon in the northeast area of the map (Map 1).

The lowest sulphide horizon, termed the AB_1 horizon, consists of zinc-rich facies mineralization which passes into mainly massive pyrite and exhalitive chert above the -200 meter elevation. This horizon is separated from the overlying AB_2 horizon by up to 50 metres of felsic flows, volcaniclastics, amygdaloidal mafic flows and their altered equivalents.

MOUNT EATON SUITE; Arc succession of the STIKINE ASSEMBLAGE
[modified after Mihalynuk et al, BCGS PAPER 1994 - 1]



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TULSEQUAH CHIEF PROJECT

PROPERTY STRATIGRAPHY 1994

FILE: C:\ACAD\DWG\TCSTRAT.DWG

FIGURE: 7

KMC

The AB_2 horizon was first discovered during development of the 5700 Level (+200 m elevation). It extends from this elevation down dip to -660 metre elevation, the deepest area tested by drilling (TCU92-36). It was mined in part from the A, B and C stopes of the Lower Deposits and comprises the 1957 D and E Reserve Blocks. The horizon is separated from the overlying H horizon by a westward thickening wedge of altered volcanic debris flows, and unaltered felsic and mafic volcanics. The separation varies from less than 10 meters on the east to greater than 30 metres at the western margin of the AB_2 lens as presently defined.

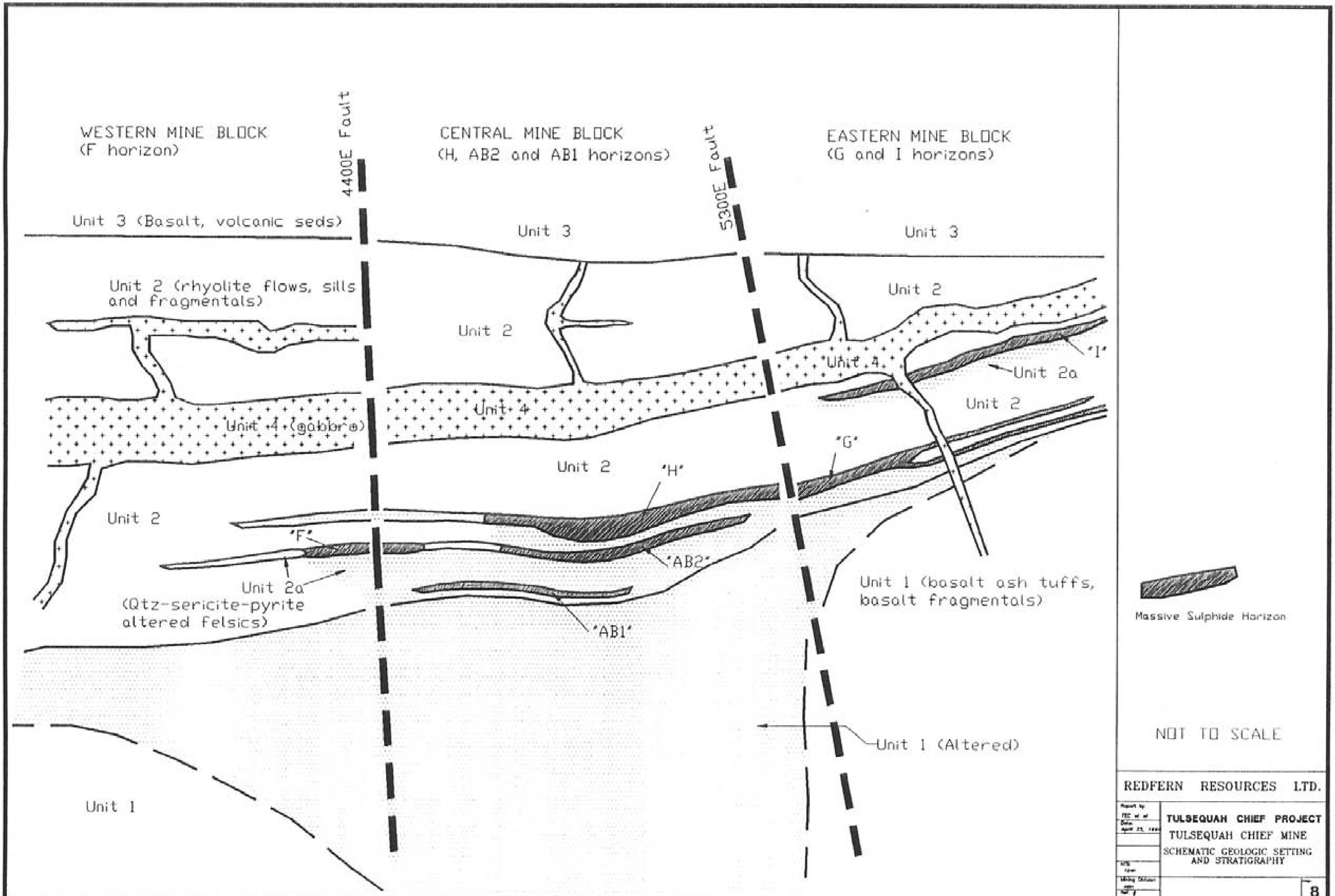
The H horizon has been the focus of exploration since it was discovered during surface drilling in 1987. It is delineated from the +100 metre elevation to the -700 metre elevation by 64 underground drill holes within the Central Mine Block. Above the -400m level, holes are separated on approximately 45 m centres; below this level the average separation increases to 80 - 120 meters. The horizon obtains its maximum thickness (approximately 29 metres in drill hole TCU90-22) where it merges with the AB_2 horizon along the axis of the H-syncline.

West of the 4400E fault (Western Mine Block), mineralization discovered above the 5200 Level in drilling before 1957 was referred to as the F-zone. It is stratigraphically equivalent to the H-AB_2 horizon, however it has been displaced right laterally across the 4400E fault by a small amount (<50 metres) where it passes through an anticlinal closure. West of the fault, the horizon strikes north-south and dips moderately westward. Thinly laminated dacitic tuffs and volcanic sediments overlying this unit are intersected in the 5400 Level crosscut and on surface where the unit is traceable for over 600 metres.

East of the 5300E fault (Eastern Mine Block), mineralization referred to as the G-zone is interpreted to be stratigraphically equivalent to H-AB_2 horizon (Central Mine Block), however it is displaced right laterally across the 5300E fault by a small amount (<30 metres). The horizon tapers in thickness from 25 to <5m approximately 300m northeast of the 5300E fault. Vertically, it pinches out at the +50m elevation; it is not exposed on surface. Below the +50m elevation, mineralization has been intersected to the -150 m elevation in drill hole TCU94-63.

The I horizon forms an *en echelon* lens stratigraphically above the G-zone and was the focus of historic mining (Upper Deposits) between 1951 and 1957. It is delineated between surface and the +100 metre elevation by underground workings and definition drilling within the Eastern Mine Block. It tapers from 10 metres near the 5300E fault to < 1 metres where it pinches out in a creek bed approximately 300 metres to the northeast. Mineralization grades from thinly banded sphalerite, galena, chalcopyrite, barite and chert near the 6500 portal, to mainly weakly banded pyrite in the creek bed. In the Central Mine Block mineralization potentially correlative to the I horizon has been intersected on the west flank of the deposit in underground holes TCU90-27 and TCU93-60 approximately 80 metres stratigraphically above the H horizon. Alteration consistent with a mineralized horizon at this position has also been encountered in a number of other drill holes. The current interpretation suggests that the I zone stratigraphy was displaced by the thick cross-cutting mafic intrusion of Unit 4 in the centre of the deposit. This offset extension of the I horizon is under-explored and merits further drilling to determine if economic mineralization is present.

The I, H, AB_2 and AB_1 horizons are primarily thinly laminated chert, gypsum, pyrite and sericitically altered tuff (mass flows) which contain a number of discrete precious metal-rich polymetallic massive sulphide bodies. Sulphide bodies were likely deposited in paleotopographic lows at a number of stratigraphic intervals. Locally, the sulphide horizons are clastic (debris flow) indicating deposition in an unstable slope environment. Deformation has mobilized and thickened the sulphide horizons along parasitic fold axes and attenuated them along fold limbs.



WESTERN MINE BLOCK
(F horizon)
4400E Fault
CENTRAL MINE BLOCK
(H, AB2 and AB1 horizons)
5300E Fault
EASTERN MINE BLOCK
(G and I horizons)
Unit 3 (Basalt, volcanic seds)
Unit 3
Unit 3
Unit 2 (rhyolite flows, sills and fragmentals)
Unit 2
Unit 2
Unit 4
Unit 4
Unit 4 (gabbro)
'I'
Unit 2a
Unit 2
'G'
Unit 2
'H'
Unit 2
'F'
'AB2'
Unit 2a
(Qtz-sericite-pyrite altered felsics)
'AB1'
Unit 1 (basalt ash tuffs, basalt fragmentals)
Unit 1 (Altered)
Unit 1
Massive Sulphide Horizon
NOT TO SCALE
REDFERN RESOURCES LTD.
TULSEQUAH CHIEF PROJECT
TULSEQUAH CHIEF MINE
SCHEMATIC GEOLOGIC SETTING AND STRATIGRAPHY
8

The sulphide bodies consist of thinly banded to massive pyrite, sphalerite, chalcopyrite and galena. Accessory minerals include tetrahedrite-tennantite and native gold. Gangue consists of barite (averaging 6%), chert, gypsum and sericite ± silica altered volcaniclastics. Visually the sulphides can be divided into three distinct sulphide facies: copper facies (CUF), zinc facies (ZNF) and pyrite facies (PYF). CUF-mineralization (>30% total sulphides) is characterized by massive to banded pyrite and chalcopyrite with minor sphalerite and galena. ZNF-mineralization (>30% total sulphides) consists primarily of sphalerite, galena, and lesser pyrite and chalcopyrite. PYF-mineralization (>30% total sulphides) consists of massive pyrite with little economic sulphides.

The I and H-AB horizon and their faulted extensions (F- and G-zone) are overlain and hosted by felsic flows, flow breccias, lesser volcaniclastics and minor sills. The flows, flow breccias and sills are greyish green, feldspar and quartz (1-3 mm) phyric, fine grained to aphanitic dacite (field classification). The volcaniclastics range from thinly laminated dacitic tuff and volcanic sediment to heterolithic lapilli tuffs. Some units are maroon in colour from finely disseminated hematite. Major element analysis of massive dacite from this unit indicated it is sub-alkalic and calc-alkaline in composition (McGuigan et al., 1993). More recent immobile trace element analysis of samples from this unit indicate units mapped as dacites in the field are mostly of rhyolite to rhyodacite in composition (Fig. 9) and can be divided into two types termed rhyolite A and rhyolite B (Fig. 10) based on their distinct alteration lines (Sherlock and Barrett, 1993). The strongly altered volcaniclastic mass flows units which are the main host to mineralization are rhyolite B in composition, whereas the overlying massive flows, flow breccias and sills are rhyolite A in composition. Rhyolite A is the most fractionated of the two rhyolites. It also occurs above the subvolcanic mafic sill (unit 4) which is consistent with unit 2 being dilated by the intrusion.

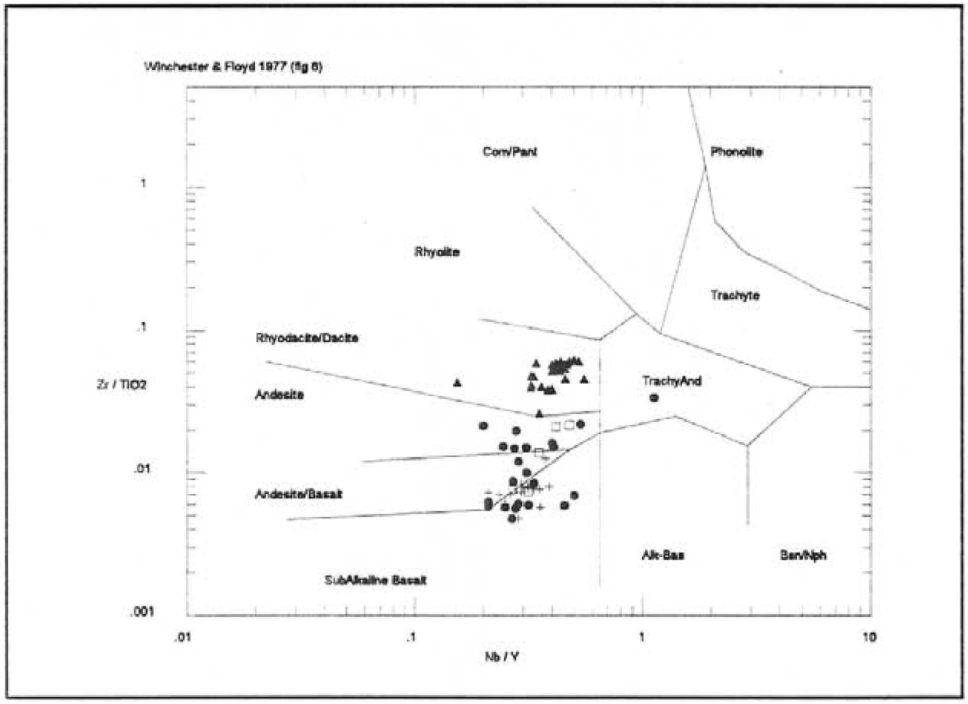


Figure 9. Winchester & Floyd compositional diagram

• Unit 1 FW Mafics ▴ Unit 2 Felsics □ Unit 3 HW Mafics + Unit 4 Mafic sill

The more massive felsic flows and flow breccias grade into volcaniclastic units near the top of unit 2 where they are in gradational contact with unit 3. This contact is well exposed in the 5400 Level drift extension where green and maroon heterolithic dacite lapilli tuff is interbedded with dark brown to black volcanic sediments and mafic flows or sills.

West of the 4400E fault (Western Mine Block), the large surface extent of unit 2 felsic rocks is a result of structural repetition by an overturned syncline. Near the 5400 and 5200 Level portal, unit 2 is mainly volcaniclastic with units varying from fine ash to large angular breccia-size clasts of pumiceous and lithic fragments. The large size and angularity of the fragments indicate the unit is not highly reworked and suggests a nearby source.

East of the 5300E fault (Eastern Mine Block), the surface extent of unit 2 felsic rocks taper out approximately 100 metres north of the last exposure of I-zone mineralization. In this area, the contact with overlying unit 3 has been intruded by mafic subvolcanic sill (unit 4).

Radiometric (U-Pb zircon) dating of unit 2 gave an age of 353.4 +15.8/-0.9 Ma (Sherlock et al., 1994). The sample dated was a coarse grained, felsic volcaniclastic rock collected near the 6400 Level portal.

B.2.c Hanging Wall series (unit 3)

Hanging Wall series (unit 3) is a thick, laterally extensive unit that conformably overlies unit 2 in the northern area of the map (Map 1). The unit consists mainly of mafic flows, sills, volcaniclastics and volcanic sediment. The similarity of the flows and/or sills makes them hard to differentiate both in drill core and in small surface exposures. In general, some intrusive bodies can be recognized by their occurrence as thin units with chilled contacts. They are dark green to black, fine grained to aphanitic and mafic in composition. Volcaniclastic units consist of dark green to maroon, mainly mafic ash and lapilli tuff. Interflow sediments are thinly laminated, brownish green to grey, tuffaceous argillite, siltstone, and minor chert. The brown colour of the sediments is imparted by fine grained biotite hornfels likely caused by the intrusion of the mafic sills. Chemically the mafic flows (and/or sills) are basalt (and /or gabbro) and have identical major and trace element compositions as the unit 4 subvolcanic mafic sill suggesting they were derived from the same parent magma (Sherlock and Barrett, 1994) (Fig. 11).

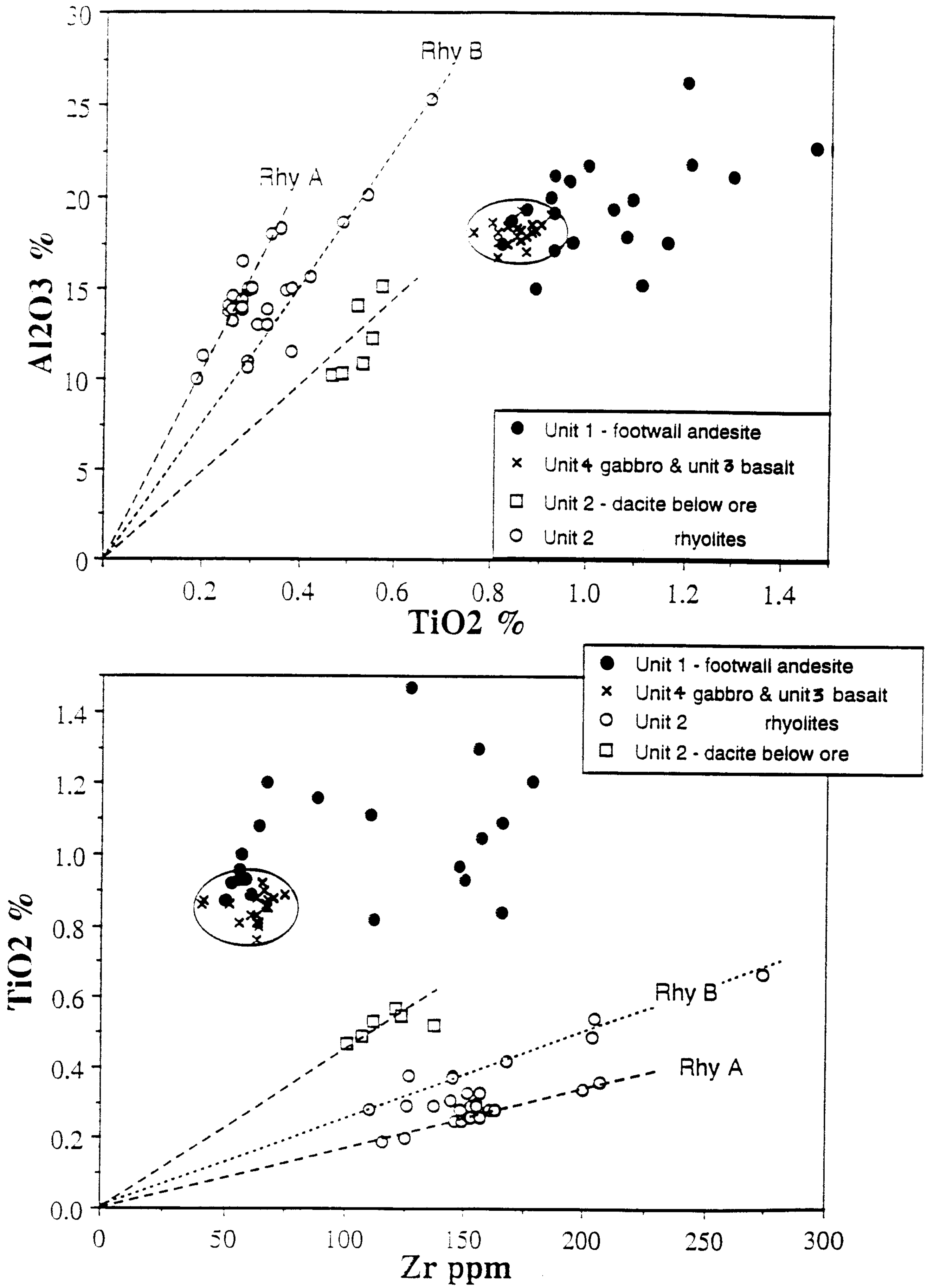
B.2.d Mafic Subvolcanic Intrusion (unit 4)

Mafic subvolcanic intrusion (unit 4) forms a thick (50 metres), massive, mostly conformable body that dilates units 2 felsic volcanic rocks (Map 1). Margins of the sill are black, chilled and commonly contain thin dyke- and sill-like apophyses that extend out into unit 2 from the main body. The core of the sill is distinctly coarser grained than the margins and has a diabasic texture. It is medium to dark green, plagioclase (2-3 mm) $\pm$ augite (2 mm) $\pm$ olivine phyric in a fine grained feldspathic matrix. The primary mineralogy is overprinted by an assemblage of medium to coarse grained amphibole (actinolite ?) and chlorite that may be metamorphic in origin (Sherlock et al., 1994). Thin mafic intrusions which cut unit 1 and 2 may be feeder dykes to this unit. The unit is unaltered suggesting it was emplaced after the mineralizing event. Major element analysis of samples from this unit indicate it is sub-alkalic and calc-alkaline in composition (McGuigan et al., 1993). Trace element analysis of samples from this unit by MDRU indicate they are gabbro in composition and their high nickel and chromium contents suggest they contain olivine and spinel (Sherlock and Barrett, 1994) (Fig. 11).

B.3 Mount Stapler suite (unit 5)

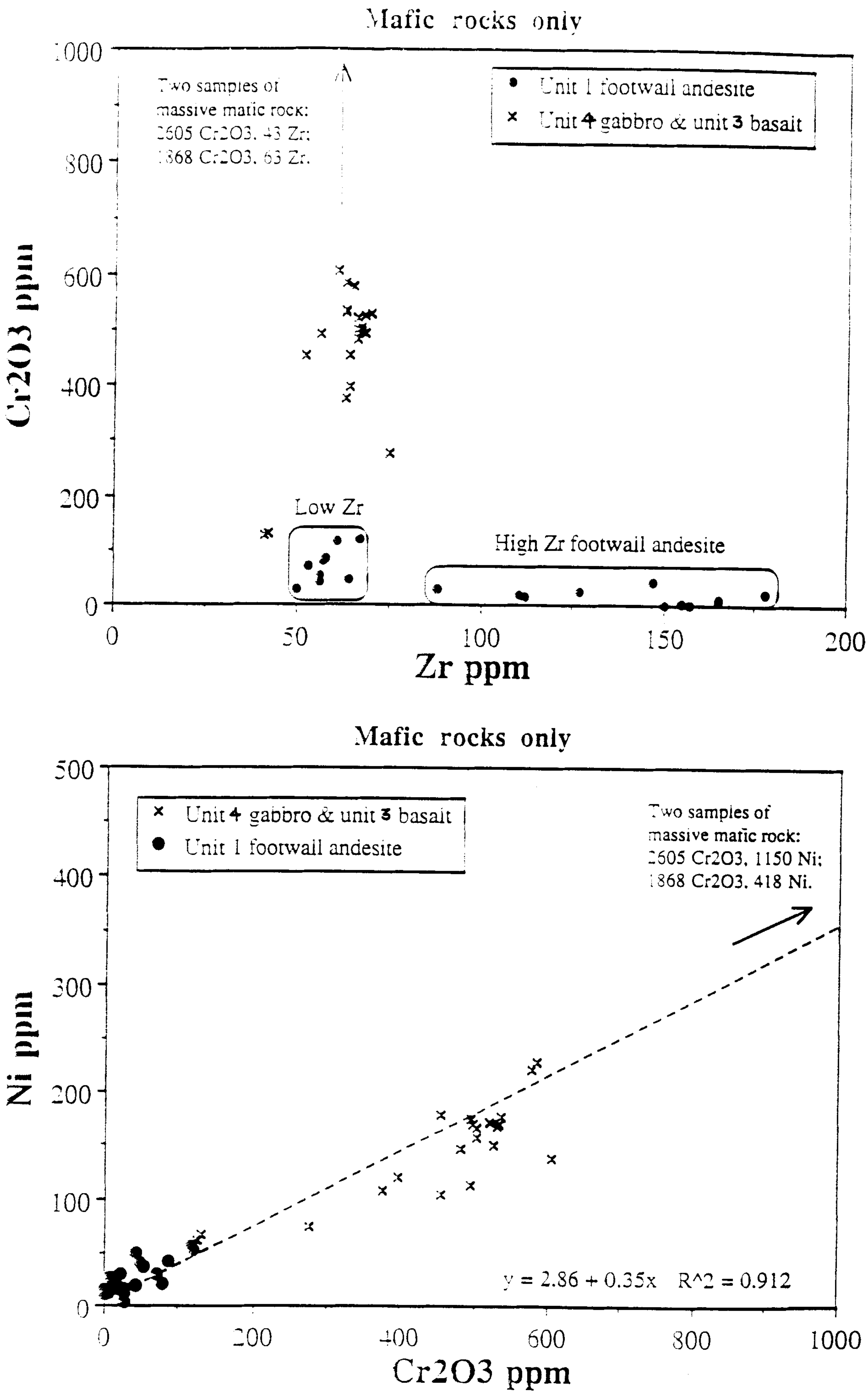
Mount Stapler suite (unit 5) crops out north of the Chief fault in the northwest area of the map (Map 1). It consists of strongly deformed, metamorphosed felsic to mafic volcanics, tuffaceous sediment and limestone that are now schists, phyllites and marble. Chlorite-carbonate schists consist of altered feldspar phyric intermediate to mafic volcanic and carbonate. Some schists have well developed kink bands. Less deformed rocks consist of moderately foliated, dark green to black, chloritic, fine grained mafic flows and tuffs. Limestone is laminated to bedded, grey to white, fine to medium grained, and recrystallized to marble.

Figure 10



Rhy A
Rhy B
Al2O3 %
TiO2 %
Unit 1 - footwall andesite
Unit 4 gabbro & unit 3 basalt
Unit 2 - dacite below ore
Unit 2 rhyolites
TiO2 %
Zr ppm

Figure 11



Mafic rocks only
Two samples of massive mafic rock:
2605 Cr2O3, 43 Zr;
1868 Cr2O3, 63 Zr.
Unit 1 footwall andesite
Unit 4 gabbro & unit 3 basalt
Low Zr
High Zr footwall andesite
Cr2O3 ppm
Zr ppm
0
200
400
600
800
1000
0
50
100
150
200
Mafic rocks only
Unit 4 gabbro & unit 3 basalt
Unit 1 footwall andesite
Two samples of massive mafic rock:
2605 Cr2O3, 1150 Ni;
1868 Cr2O3, 418 Ni.
y = 2.86 + 0.35x R^2 = 0.912
Ni ppm
Cr2O3 ppm
0
100
200
300
400
500
0
200
400
600
800
1000

B.4 Intrusive Rocks (unit 6)

Tertiary Sloko rhyolite dykes (unit 6a) form narrow (< 10 m) dykes emplaced along northwest to northeast striking and moderate to steep dipping faults. On surface, they form resistive, strongly jointed outcrops. They are cream coloured, quartz (< 1mm) phyric, fine grained to aphanitic, and flow banded parallel to contacts.

Quartz and feldspar porphyritic dacite (unit 7b) forms a dyke up to 15 m thick which strikes AZ 048° and dips 56° to the southeast. It is mapped on surface and in the 5900, 5400 and 5200 Level crosscuts as well as intersected in drilling. It is massive, medium green in colour and has a phenocryst assemblage of quartz (< 1mm) + feldspar (< 1cm, euhedral, zoned plagioclase) ± amphibole (< 3mm).

B.5 Structure

B.5.a Folding

Mount Eaton suite rocks are deformed into anticlinal-synclinal fold pairs (Fig. 4, Map 1). These folds are easterly verging, parasitic folds on the western limb of the regional Mount Eaton anticline. The Mount Eaton anticline axial plane lies east of the map area along the western upper flanks of Mount Eaton and Mount Manville (Mihalynuk et al., 1994).

In detail, parasitic folds between the 4400E and 5300E fault (Central Mine Block) are upright to overturned and have moderate interlimb angles. Axial planes strike AZ166° and dip 79°W; the fold axis plunges 56° in the direction of AZ 329°. These small-scale fold structures have an amplitude of 30-50m and a frequency of 50m. Weak foliation and small scale folds are locally observed within unit 2 exhalitive horizons and in quartz + sericite + pyrite altered volcanic rocks in surface exposures, drill core and underground exposures.

West of the 4400E fault (Western Mine Block), bedding generally strikes north-northeast and dips moderately to steeply west. An overturned, north plunging synclinal fold is interpreted between the F-zone and the 5200 Level alteration zone. The synclinal closure between unit 1 mafic flows and the overlying unit 2 felsic volcanics free airs approximately 500 metres southeast of the 5200 Level portal.

East of the 5300E fault, bedding strikes northeast and dips vertically to steeply westward.

B.5.b Faulting

Two major periods of faulting are identified in the Tulsequah Chief Map area. The first period of faulting is Mesozoic or older and related to deformation that produced the Mount Eaton anticline. These faults include the 4400E and 5300E faults.

The 4400E fault has a prominent surface expression; it is traceable from the Tulsequah Chief Mine area to the Big Bull Mine, 8km to the south. Underground at the Tulsequah Chief Mine the fault is identified on the 5200, 5400 and 5900 Level crosscuts by 1m of clay gouge. It strikes AZ 355-003° and dips 75-80° east. Stratigraphy is displaced less than 50m right laterally across this fault. Sloko rhyolite dykes are emplaced along part of this fault.

The 5300E fault has a faint surface expression that is traceable to the south where it intersects the 4400E fault 3.5 km south of the Tulsequah Chief Mine. The fault has a number of sub-parallel subsidiary splays that are identified in drilling and in underground workings. Underground the main fault splay is identified in the 5200, 5400, 5500, 5700, 5900 and 6200 Level crosscuts by 1m of clay gouge; locally it is intruded by Sloko Rhyolite dykes. It strikes AZ 001° and dips 80°east; apparent displacement across this fault is less than 30m in a right lateral sense.

A second younger period of faulting is displayed by the Chief fault which juxtaposes strongly deformed rocks of the Mount Stapler suite against less deformed rocks of the Mount Eaton suite. Within the Tulsequah Mine area, the fault strikes north-northeast and dips moderately to steeply west. Slickensides on associated parallel fractures are shallow which suggests mainly strike-slip displacement.

B.6 Alteration

Alteration associated with the H-AB horizon (unit 2) is mainly confined to the top of the Footwall series (unit 1). The alteration is characterized by an assemblage of silica ± sericite ± chlorite ± pyrite. Silica occurs as thin fracture envelopes to pervasive zones of silica flooding which cause the mafic volcanics to have a bleached grey to white colour. These zones are often crosscut by white quartz ± pyrite ± chalcopyrite ± chlorite veins (< 30 cm).

West of the 4400E fault, footwall alteration on surface persists but decreases in intensity as the H-AB horizon pinches out to the south. It grades from an assemblage of pervasive silica, sericite, chlorite and pyrite directly below unit 2 mineralization to chlorite and disseminated pyrite up to 500 m south of the last exposure of exhalitive tuff in unit 2.

East of the 5300E fault, footwall alteration rapidly decreases in intensity and thickness as the I and G horizon pinches out to the north.

Hanging wall alteration is poorly developed and is confined to dacite flows and tuffs within and directly above the I and H-AB horizon (unit 2). It characterized by an assemblage of albite, epidote, chlorite, silica and magnetite (± hematite). Albite occurs as thin, white to grey fracture envelopes. Where fracture density is higher or alteration more intense, albite forms irregular pervasive zones, and primary textures are often obscured.

B.7 Metamorphism

Mount Eaton suite is a weakly penetratively deformed sequence that is overprinted by sub-greenschist to middle greenschist facies metamorphism (Mihalynuk et al., 1994). It is characterized by the breakdown of pyroxene and amphibole to chlorite and epidote, and potassium feldspar to sericite. Locally, the Mount Eaton suite in the Tulsequah Chief Mine area has undergone contact metamorphism. It is characterized by quartz ± epidote, chlorite, actinolite, magnetite and garnet veinlets which crosscut pervasive biotite and cordierite. Biotite is fine grained to aphanitic and phlogopitic in composition (Raudsepp, 1992). Cordierite forms subhedral to euhedral porphyroblasts (< 1 cm) and often appears to be replacing quartz amygdules within altered basalt flows of unit 1.

Lower grade zeolite to prehnite-pumpellyite facies metamorphism overprints the older higher grade greenschist facies metamorphism. It occurs as white, fibrous to platy, soft minerals in fractures. X-Ray diffraction work determined the minerals to be a mixture of prehnite and laumontite (Raudsepp, 1992).

B.8 Geological Interpretation

The Mount Eaton suite in the Tulsequah Chief Mine area is characterized by felsic volcanism that is spatially and genetically related to precious metal-rich massive sulphide mineralization. The postulate geology of the Mount Eaton suite is outlined below and diagrammatically in Figure 8.

Footwall series (unit 1) is the lowest unit recognized in the map area. It is a thick succession of basalt flows with tuffaceous sediment and minor chert infilling small basins on top and between individual flows during periods of waning volcanic activity. Graded beds within the turbiditic tuffaceous sediments indicate the unit is right way up.

Amygdaloidal flows and aquagene tuffs near the top of unit 1 suggest a rising seafloor and/or a drop in sea level. These deposits form where the overlying seawater is < 1000m (Wohletz, 1986).

Mine series (Unit 2) marks the change from mafic to mainly felsic volcanism and associated exhalitive activity. The unit is dominated by dacite flows, flow breccias and volcaniclastics. It forms an extensive unit that is approximately 200 metres thick in the western and central area of the map and tapers to < 10m in the northeast area of the map. U-Pb radiometric dating of zircon from this unit gave an age of 353 $\pm$ 1 Ma. (Sherlock et al., 1994).

Sulphides and chemical sediments were deposited at a number of stratigraphic intervals within unit 2, however, the H, AB_1 and AB_2 sulphide horizons are the most extensive and economically important. The laminated nature of the deposits suggests quiescent conditions during deposition of most of the massive sulphides. Locally, however, debris flow containing clasts of altered volcanics and accessory clasts of sulphide, chert and barite indicate deposition in an unstable slope environment. These units are similar to the 'ore clast breccias' present in the HW/Myra Formation at the Buttle Lake Deposit on Vancouver Island, B.C.

AB_1 horizon was deposited on top of mafic hyaloclastic breccias and volcanic sediments of unit 1. Locally, AB_1 mineralization infills voids and alters clasts of the breccia. The AB_1 horizon demonstrates a distinct mineralogical zoning. From the +200m (5700 Level) to -200m elevation, the horizon is banded pyrite, sericite + silica altered tuff, and gypsum (up to 10m thick) that grades into high grade zinc-rich facies mineralization below the -200m elevation.

AB_1 horizon is overlain mainly by dacite flows and volcaniclastics, and altered volcanics which in turn are overlain and interfinger with volcanic sediments and amygdaloidal mafic flows.

The H and AB_2 horizons are collectively the most extensive and economically important. They consist of discontinuous pyrite lenses above +200m elevation (5700 Level). Below the +200m elevation the horizon(s) pass into zinc-rich and copper-rich facies massive sulphides which extends to -650 metre elevation, the deepest intersection (TCU92-36) on the property. In aggregate, the H and AB_2 horizons vary between 5 and 60m in true thickness. The H horizon is the uppermost mineralized horizon and is separated by 10-20m of sericite + silica + pyrite altered volcanics from the AB_2 horizon. Locally the two horizons merge and are collectively termed the H/AB_2 horizon. The immediate hanging wall to the H horizon varies from mineralized ore-clast bearing debris flow to massive, relatively unaltered, felsic flows and fragmentals of unit 2.

The lateral extent of the H/AB_2 horizon is poorly known; the horizon is open down-dip and to the west. The greatest thicknesses occur along section E2650i. Eastward, the horizon is cut by the 5300E fault. In the Eastern Mine Block, the H/AB_2 horizon correlates with the G-zone. G-horizon thins and pinches out above the +100m elevation (5400 Level) and along strike to the northeast; mineralization is weak in hole TCU92-44. Westward, the H/AB_2 horizon is a mixture of chert and pyrite with some sections of polymetallic base-metal massive sulphides. In areas tested, the footwall basalts to the H/AB_2 horizon are strongly altered.

West of the 4400E fault, the F-zone is correlated with the H/AB_2 horizon. The F-zone(near section E2350i and +100m elevation) is mainly chert and pyrite, however, some intersections contained significant base metals; hole 530 intersected 5.94m of 0.70% Cu, 5.67% Pb, 18.11% Zn, 0.049 oz/t Au, and 2.51 oz/t Ag. Surface hole TC94-017 extended the altered dacite package hosting the F-zone a further 300m down dip from previously known limits (see section N2120I). Weak mineralization in the form of chalcopyrite and sphalerite filled amygdales combined with strong sericite-chlorite alteration indicate further potential for massive sulphide zones in this location.

In almost all intersections of H horizon, the interval above the massive sulphides is a debris flow which contains clasts of sericite + silica + pyrite altered volcanic and lesser pyrite, sphalerite, chert and barite. The presence of debris flow indicates H horizon was deposited within a basin that locally had moderate to high topographic relief. Except in hole TCU92-36, debris flow facies does not contain economic mineralization.

Revised structural and stratigraphic interpretation has significant implications for exploration within unit 2. Four discrete mineralized horizons are recognized that contain a mixture of copper-rich facies, zinc-rich facies and massive pyrite facies mineralization. Most intersections contain intervals of all three massive sulphide facies. However, the dominance of zinc-rich facies and fringing pyrite-chert suggest most known horizons are distal to a copper-rich feeder zone. The thickness of Unit 2 stratigraphy, and the strength of footwall alteration, decreases eastward, and upwards in the Central and Eastern Mine Blocks. Westward, and downwards, the volcanics thicken and alteration increases. These trends indicate F (AB_2) targets below the -100m elevation on the F-anticline (Western Mine Block).

I horizon mineralization is best defined east of the 5300E fault (Eastern Mine Block) where it underlies thinly laminated tuffaceous sediments and dacitic volcanics. The mineralization grades from thinly laminated sphalerite, galena, chalcopyrite, chert and barite (< 10 m) near the 5300E fault to thinly banded pyrite (< 1 metre) where it pinches out in a creek bed located approximately 300 m to the northeast. This mineralization from surface to +100 m elevation forms the Upper Deposits that were largely mined out between 1951 and 1957. Revisions to the stratigraphy in the western Central Mine Block interpret the I-horizon to be crosscut (at an originally shallow angle) by Unit 4 intrusives. West of the 4400E fault and across the closure of the F-anticline, the I- horizon has been drill tested over a limited strike length and remains prospective for discovery of additional economic mineralization.

Hanging wall series (unit 3) is the highest unit in the Mount Eaton suite recognized in the Tulsequah Chief Mine area. It consists primarily of mafic flows, sills, volcaniclastics, volcanic sediment and minor chert. Contact with the underlying Felsic Volcanics on the Mine series (unit 2) is gradational and is chosen where the mafic volcanics predominate over the underlying felsic volcanics.

C. TULSEQUAH CHIEF MINE - RESERVE ESTIMATION

C.1 Methods

A polygonal sectional reserve method was used to estimate the in-situ reserves of the Tulsequah Chief Deposit. Probable and Possible drill-indicated reserves are reported for the H-AB_2 and AB_1 deposits in the Central Mine Block and the G deposit in the Eastern Mine Block (Appendix 5). Previous reserves above the 5000 Level (Central and Eastern Mine Blocks) reported by Cominco Ltd. at closing (1957) are also included (Appendix 5).

H-AB_2 and AB_1 reserve estimates for recent drilling are based on diamond drill holes (1987-1994) which pierce the mineralized horizon at 35 to 100 m spacings; in general, holes are spaced at 35-60 m centres in the upper half of the deposit in areas of higher grade and thickness. Old reserves (1957) above the 5200 Level are based on closely spaced definition drill holes, stope records and sampling in mine workings. In general, individual massive sulphide intersections have good correlations from hole to hole. A minor number of intersections consist of heavily disseminated sulphides in altered mass flow material. No sulphide intersections used in the reserve have been obtained from feeder-zone type mineralization. A minimum mining width of 2m and a minimum Net Smelter Return (NSR) cutoff of CAN$45.00 was chosen based on preliminary examination of mining costs and milling operating costs. The NSR calculation is based on metal price and smelter contract assumptions utilized in the pre-feasibility study carried out by Tonto Mining on behalf of Redfern in 1993 (McClatchy, 1993) and detailed herein in Appendix 3.

C.1.a Tonnage Calculation (H+AB_2, AB_1 and G horizons)

Fundamental to volume calculation is the adoption of reliable section orientations. Sections prepared along the principle directions of the fold geometry include:

* Inclined north sections (AZ059°/34.5°S), oriented perpendicular to the fold axis and spaced 20m apart were used for interpretation of fold structures and outline of reserve blocks in the Central and

Eastern Mine Blocks (H, AB_2, AB_1 and G horizons, Maps 5-51). These sections portray the true thickness and shape of geological units.

* Longitudinal sections (AZ082.83/57.84N) for both the H/AB_2 and AB_1 horizons oriented parallel to the fold axis and perpendicular to the axial plane were used to plot the area of influence for each drill hole intersection (Maps 52, 53). A separate longitudinal section (AZ008.25/66.5N) was constructed to portray the polygon influence for intersections in the G horizon (Map 54). Since intersection influence was projected a greater distance down the plunge of the folds than laterally across the limbs, a rectangle was used to model the area of influence. Probable reserves are based on extending the drill hole influence 40 metres up plunge or down plunge and 25 metres laterally on either side of the hole. Possible reserves extend the influence a further 40 metres in the up or down plunge direction and a further 25 metres on either side of the hole perpendicular to the plunge line. The probable and possible width around each drill hole was obtained by measuring 25 and 50 metres along strike of the folded mineralized horizon respectively, on the north inclined sections. This distance was then projected perpendicular to the longitudinal section to determine areas of influence on sections between drill holes. The areas of influence were selected to conform with previous ore reserve calculations conducted by Redfern in 1993 (Chandler et al, 1994).

Tonnage for the H+AB_2 , AB_1 and G lens reserve is obtained by summing the product of the specific gravity (SG), the vertical range of the reserve polygon block (generally half the distance between the underlying and overlying section i.e. 20 metres), and the area (m^2) of the defined probable or possible polygons of each drill hole on the north inclined sections. Polygons were drawn on the north inclined sections using the NSR cutoff and minimum true width criteria and guided by the geological interpretation of the enclosing horizon. Areas were calculated within AutoCad for each polygon and transferred to a calculation spreadsheet (Appendix 5). Individual polygon grades were weighted by tonnage to arrive at average weighted grades for each horizon and reserve category. This sectional method is especially useful in the Central Mine Block because of small-scale fold structures (amplitude: 30-50m, frequency: 50m).

For reserves in the Central and Eastern Mine Blocks, the polygons were trimmed by the 5300E fault; reserves were not projected across the fault.

C.1.b Net Smelter Return Calculation

A Net Smelter Return formula was derived in order to place realistic bounds to the selection of sulphide intervals for the reserve estimate. In most cases, the boundary between massive sulphide and the enclosing host rocks is quite sharp and the determination of ore bounds is not as intrinsically dependent on arbitrary NSR cutoff selection. A pre-feasibility study conducted by Tonto Mining (McClatchy, 1993) on behalf of Redfern established an estimated operating production cost of CAN$46/tonne. At the same time expanded metallurgical studies and research into the terms of smelter contracts on an average long term basis established a basis for calculation of the Net Smelter Return for the estimated average run of mine ore. This was extrapolated to enable calculation of probable NSR values for any given intersection grade. The details of the expected metallurgical balance, breakdown of percentage recovery by weight of mill feed to the respective concentrates and expected smelter terms for the various concentrates is detailed in Appendix 3. An example of the resulting formula for NSR calculation for any given grade of intersection is given at the end of the Appendix and reproduced here as follows:

NSR ($CAN) per tonne = $16.473 x Cu% + $6.963 x Pb% + $8.066 x Zn% + $10.306 x Au grams/tonne + $0.089 x Ag grams/tonne.

For the purposes of this study the calculation factors for NSR values were input into the PC-EXPLOR database and calculated for any given intersection above the CAN$45 NSR cutoff.

C.2 Sectional Reserve Estimate

The in-situ reserves of the Tulsequah Chief Mine derived using the assumptions in Section D.1. are as follows:

Zone	Cu%	Pb%	Zn%	Au (g/tonne)	Ag (g/tonne)	Probable tonnes	Possible tonnes
H+AB2	1.47	1.16	6.76	2.63	106.52	3,998,696	
	1.08	1.06	6.15	2.32	106.07		2,256,059
AB1	0.72	2.32	8.62	1.78	127.07	206,996	
	0.64	1.82	8.10	1.71	127.64		146,667
G	1.42	1.17	4.81	2.75	98.72	965,214	
	1.03	1.16	4.40	2.66	92.12		503,177
Total Probable	1.43	1.21	6.47	2.62	105.89	5,170,905	
Total Possible	1.05	1.12	5.95	2.35	104.74		2,905,902
TOTAL	**1.30**	**1.18**	**6.28**	**2.52**	**105.47**		**8,076,808 tonnes or** 8,884,489 tons

The upper boundary of the polygonal reserve estimation was set at the lower boundary of blocks laid out in the 1957 Cominco reserve. The Cominco reserves are in the measured and probable category. For comparative purposes with past tabulations, the total reserves, including 1957 Reserves, are as follows:

Zone	Cu%	Pb%	Zn%	Au (g/tonne)	Ag (g/tonne)	Probable tonnes	Possible tonnes
H,AB2,AB1,G							
Total Probable	1.43	1.21	6.47	2.62	105.89	5,170,905	
Total Possible	1.05	1.12	5.95	2.35	104.74		2,905,902
1957 Reserves at Closure							
Total Measured and							
Indicated	1.30	1.60	8.00	2.40	116.50	707,616	
Total All Zones:							
Probable	1.42	1.26	6.66	2.59	107.16	5,878,521	
Possible	1.05	1.12	5.95	2.35	104.74		2,905,902
Grand Total	**1.30**	**1.21**	**6.42**	**2.51**	**106.36**		**8,784,424 tonnes or** 9,662,866 tons

D. UNDERGROUND STUDIES

Geological mapping and sampling of the 5400 and 5200 levels was completed in 1994 by G. Price. Complete details of this program are compiled in a report presented in Appendix 8 "Tulsequah Chief, 5200 and 5400 Levels Mapping Project" by G. Price. The program provided detailed accounts of lithological, structural, alteration and mineralization trends on both levels of the deposit. The geological mapping provided more detailed refinements of the stratigraphic and structural relationships within the immediate deposit area and substantiates the overall interpretation within the drilled reserve.

Rehabilitation of the 5200 level drift allowing safe access to 1.05 km of underground exposures was completed prior to mapping. Access to the 5400 level has been annually maintained since 1987 to allow for underground drilling programs.

In addition to increasing the level of geological knowledge in both drifts, increased confidence in the continuity of sulphide mineralization was established at the back of the 5200 level. Over 60 linear meters of sulphide material (see Map 65) grading an average of 1.1% Cu and 4.6% Zn was encountered at this location (Price, G. 1994). Reference to 1950's era Cominco drill holes within this zone indicates an overall higher grade and a true thickness of approximately 20 metres.

E. SURFACE MAPPING AND GEOCHEMISTRY

Surface programs in 1994 focused on detailed evaluation of altered and weakly mineralized felsic volcanic units exposed at the 5200 level portal and their on-strike equivalents exposed to the south of this location (see Map 55).

In order to gain increased control over outcrop distribution a total of 10.72 km of cut survey line was established over areas of known felsic volcanic rocks. Subsequent geological mapping and geochemical sampling, including trace element and lithogeochemical analysis, were completed by Redfern geologists.

A total of 71 samples were collected for nine element I.C.P. analysis conducted by Chemex Laboratories of North Vancouver, B.C.. A total of 14 lithogeochemical samples were collected across the grid area and submitted to the Department of Earth and Planetary Sciences at McGill University in Montreal for pressed pellet and in some cases glass bead X.R.F. analysis. Analytical certificates and description of analysis are provided in Appendix 7

E.1 Surface Geology (Map 55)

Geological mapping confirmed the extent of altered felsic volcanic rocks (unit 2) from the south of the 5200 level portal to line 4+00S where the main altered package strikes southward beneath the floodplain of the Tulsequah River. South and east of this location occur extensive massive and fragmental sequences of dacites (also unit 2), commonly containing disseminated magnetite. Minor zones of sericitic alteration (unit 2a) are mapped within this area (L7S 50+00W and L8S 2+00E) however these appear to represent isolated zones absent of lateral extent and possibly reflective of deep footwall structurally controlled hydrothermal alteration.

Detailed mapping of the area immediately south of the 5200 level portal extended the northward limits of footwall mafic volcanic fragmentals (unit 1c) by approximately 200 meters to line 4S.

E.2 Trace Element Geochemistry (Maps 57 to 61)

Trace element geochemical sampling was utilized across the map area to characterize mineralization abundance within zones of alteration. Generally these zones are limited to felsic or dacitic rock types.

Sample sites within the area immediately surrounding the 5200 level portal contain the highest amounts of base metal enrichment on the map sheet. This is consistent with disseminated sphalerite, pyrite and sericite alteration identified during mapping of the area. Values of 4008 ppm Zn, 232 ppm Cu and 1192 As (sample KG94007) reflect the highest degree of mineralization encountered.

Geochemical levels of Au, Ag, and Pb are notably low across the area of sampling. Single sample high values of 65 ppb Au (MG94020), 368 ppm Pb (MG94016), 1.5 ppm Ag (KL94007) were obtained however lack of continuity indicates stringer style mineralization in these locations.

E.3 Lithogeochemistry (Maps 62 to 63)

Lithogeochemical sampling was initiated during the course of field mapping with the goal of outlining protolith composition and degree of alteration.

Samples KL94001 and KL94002 returned CR2O3/Ni contents comparable to similar samples of footwall mafic volcanics (unit 1c,d) taken from the Central Mine Block (see Fig 11). Low SiO2 and high TiO2 contents of these samples are also consistent with those of average mafic volcanic composition.

Samples KL94009 and KL94010 taken from the 5200 portal area felsics display intense chemical alteration as reflected by low (<0.5%) Na2O and subsequent K2O (>4.0%) enrichment. SiO2, TiO2 values from these samples are also consistent with those of average rhyolitic composition.

Samples KL94005 to KL94007 were taken from exposures of sericite altered dacites located on L8S at 2+50E. Lithogeochemical analysis of these rocks indicate protolith compositions within the rhyodacitic field. Limited Na2O3 depletion is evident in sample KL94006 (0.77%).

F. CONCLUSIONS and RECOMMENDATIONS

F.1 Conclusions

The 1994 exploration program at the Tulsequah Chief deposit area consisted of 4,241 metres of drilling in 11 underground holes and an additional 1,700 metres of surface drilling in 4 holes. This drilling information was integrated with previous data obtained from prior programs in the period 1987 - 1993 to allow detailed interpretation and reserve estimation. In addition, detailed underground and surface mapping and sampling programs were conducted to better characterize the mineralization, alteration and enclosing host stratigraphy for application on other exploration targets.

Re-interpretation of the Mine series and enclosing stratigraphy concluded that the felsic rocks of unit 2 (formerly subdivided into Lower and Upper units) belonged to one coherent unit intruded by a gabbroic dyke (unit 4) which cross-cuts the felsic stratigraphy at low to moderate angles in the immediate deposit area. Re-interpretation of the western extensions of the Mine series stratigraphy concluded that the H/AB2 horizons are not as acutely folded or separated at depth as was believed in 1993. Conversely, the uppermost mineralized and altered horizon on the western flank of the deposit is now thought to represent a distinct mineralized interval which may correlate with the I horizon, displaced and dilated by the unit 4 mafic intrusion. Recognition of the dilation of one felsic sequence by the sill/dyke has the important aspect of bringing the I horizon into the same felsic stratigraphy, although it still appears to lie at a slightly higher level relative to the G, H/AB_2 and AB_1 horizons.

The 1994 modifications to the structural interpretation of the Tulsequah area was also extended to the prevalent faulting. The 4400E fault is now believed to maintain a near constant attitude dipping steeply to the east and subparallel to the 5300E fault.

Ore reserve estimates were completed for each of the ore-bearing massive sulphide horizons. This work has established a total reserve (all categories and horizons, including 1957 shutdown reserves) of 8,784,424 tonnes grading 1.30% copper, 1.21% lead, 6.42% zinc, 2.51 grams/tonne gold and 106.36 grams/tonne silver. This figure represents an increase in tonnage but slight loss in grade relative to the 1993 figure of 8,489,885 tonnes grading 1.41% copper, 1.23% lead, 6.65% zinc, 2.52 grams/tonne gold and 105.66 grams/tonne silver. This change is principally due to the addition of lower grade reserves along the northeastern limb margins of the H/AB_2 and G zones on both sides of the 5300E fault. Also, infill drilling of the G zone reduced the area of influence of some previous high grade holes. In partial compensation the single infill hole (TCU94065) in the main H/AB_2 horizon returned an intersection with excellent width and grade, further bolstering confidence in the central portion of the reserve. An important improvement in the 1994 reserve estimate is the increase in the proportion of probable to possible ore (66.9% probable ore in 1994 versus 56.5% probable in 1993).

F.2 Recommendations

Modified structural and stratigraphic interpretation of the Tulsequah Chief mine area geology has indicated several new target areas for possible reserve expansion. In addition, a number of valid targets based on prior years' recommendations remain untested. The following recommendations are made in approximate order of priority:

- Underground drilling from existing stations on the 5400 level can evaluate extensions of the G horizon up dip and south of the present drill information . This area is bounded on the southwest by the 5300E fault. Mapping on the 5200 level suggests a thick section of the sulphide stratigraphy exists in the upper elevations immediately east of the 5300E fault.

- Depending on results from the on-going final feasibility study, further infill drilling may be required in parts of the G zone and mid-elevation H/AB_2 horizon.

- Further drilling is warranted on the F zone and the down-dip/plunge extensions of the interpreted I horizon stratigraphy in the Central Mine Block.

- The present reserve remains open at depth and poorly defined by wide-spaced holes below the -440 metre elevation. Deep drilling to extend the deposit to depth will require extension of the 5400 level north drift to establish a suitable drilling platform. This work should be deferred until the means and method of final definition drilling and/or development is established for the final feasibility study. If new decline development is required, the deep drilling could presumably be carried out from the new mine workings.

- Reconnaissance mapping and lithogeochemistry is required to expand the mine stratigraphy in both the footwall and hanging wall and to evaluate the significance and potential displacements along the Chief Cross fault and Chief splay faults. If current ideas of dextral movement are correct there may be potential for defining offset extensions to the ore-bearing Mine series stratigraphy north and east of the current grid areas.

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STATEMENT OF QUALIFICATIONS

Terence E. Chandler

I, Terence E. Chandler do hereby certify:

- I hold a Bachelor of Science (Honours) degree in Geology granted by Carleton University, Ottawa in 1975
- I am a registered Professional Geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia, Registration No. 20400
- I am a registered Licencee Professional Geologist with the Northwest Territories Association of Professional Engineers, Geologists and Geochemists, Licencee No. L565
- I have worked continuously in the field of geology and mineral exploration for the past 19 years and have held senior positions with several major mining companies.
- I have been employed by Redfern Resources Ltd. since January, 1993 as Vice President, Exploration.
- I am personally aware of all of the work which is described in this report and I supervised the personnel who conducted the said work.

Dated at Richmond, B.C., this 16th day of January, 1995

PROFESSIONAL PROVINCE OF T. E. CHANDLER BRITISH COLUMBIA GEOSCIENTIST

Terence E. Chandler, P.Geo

STATEMENT OF QUALIFICATIONS

Kerry M. Curtis, **P.Geo.**

I, Kerry M. Curtis, do hereby certify

1. I obtained a Bachelor of Science degree in Geology from the University of British Columbia in 1989;

2. I am registered as a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia;

3. I have worked in the mineral exploration industry since graduation, and previously held positions with Minnova Inc. and Kennecott Canada Inc.;

4. I have been employed by Redfern Resources Ltd. as a Project Geologist since June of 1993.

Dated at Richmond, B.C., this 16th day of January, 1995.

Kerry M. Curtis, P.Geo.

STATEMENT of QUALIFICATIONS

Georgina A. Price

I, Georgina A. Price, do hereby certify:

- I hold a Masters of Science degree in Geology granted by Oregon State University in 1986.
- I am a registered Professional Geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia, Registration No. 18871.
- I have worked continuously in geology with major exploration companies since 1982.
- I was an employee of Mipoz Consulting, contracted to Redfern Resources Ltd., at the time of this work.
- I have not received, nor do I expect to receive any interest directly or indirectly in Redfern Resources Ltd.
- This report is based in part on the geological field work I carried out during the period June 1 to October 31, 1994 - namely underground geological mapping, sampling and structural studies and detailed logging of surface and underground drill holes.

Dated at Richmond, B.C., this 16th day of January, 1995.

____

Georgina A. Price

STATEMENT of QUALIFICATIONS

Roger B. March

I, Roger B. March, do hereby certify:

- I hold a Bachelor of Science, Honours degree in Geology granted by Memorial University, Newfoundland in 1992.
- I am a Geoscientist-in-training with the Association of Professional Engineers and Geoscientists of Newfoundland.
- I have worked in the field of geology and mineral exploration since 1992.
- I worked on the Tulsequah Chief project during the period June 1, 1994 to present.
- I have not received, nor do I expect to receive any interest directly or indirectly in Redfern Resources Ltd.

Dated at Richmond, B.C., this 16th day of January, 1995.

Roger B. March

Roger B. March

STATEMENT of QUALIFICATIONS

Brian T. McGrath

I, Brian T. McGrath, do hereby certify:

- I hold a Bachelor of Science degree in Geology granted by Memorial University, Newfoundland in 1992.
- I have worked in the field of geology and mineral exploration since 1992.
- I worked on the Tulsequah Chief project during the period June 1, 1994 to present.
- I have not received, nor do I expect to receive any interest directly or indirectly in Redfern Resources Ltd.

Dated at Richmond, B.C., this 16th day of January, 1995.

Brian T. McGrath

COST STATEMENT/ALLOCATION

The tables of Appendix 9 summarize the expenditures by category for the various principal exploration activities conducted in 1994 on the Tulsequah Chief project claims. The costs were compiled to derive unit costs for these activities. A separate table allocates the costs on a claim per claim basis based on the actual amount of work conducted on each individual claim.

Separate work programs were conducted on the claims in the vicinity of the Big Bull and Banker properties although the programs shared some of the same personnel and camp costs. The apportionment of costs for work conducted on the Big Bull/Banker project is documented separately in a companion volume to this assessment report (Volume 2.0) titled as follows:

Carmichael, R.G., March, R.B. and McGrath, B.J (1995): Tulsequah Chief and Big Bull Projects, Northwest B.C., 1994 Exploration Program: Diamond drilling, Geology, Geophysics and Geochemistry at the Big Bull Mine and Banker Area, Redfern Resources Ltd.

APPENDIX 1

List of Mineral Claims and Crown Granted Claims

TULSEQUAH CHIEF PROPERTY - CLAIM STATUS

PROPERTY AREA		RECORD NO.	TITLE NO.	UNITS	AREA (ha.)	EXPIRY DATE
Tulsequah Chief	Birds	5224	203794	1	25	30-May-2004
	Pat	5225	203795	1	25	30-May-2004
	Ross	5226	203796	1	25	30-May-2004
	Mary 1	4289	203385	20	500	05-Aug-2004
	Marcie 1	4290	203386	20	500	05-Aug-2004
	Marcie 2	4291	203387	20	500	05-Aug-2004
	Marcie 3	4292	203388	20	500	05-Aug-2004
	Elysa 1	4293	203389	20	500	05-Aug-2004
	Elysa 2	4294	203390	20	500	05-Aug-2004
	Elysa 3	4295	203391	6	150	03-Aug-2004
	Elysa 4	4296	203392	20	500	05-Aug-2004
	Wendy 1		320163	20	500	31-Jul-2004
	Wendy 2		320164	20	500	01-Aug-2004
	Strong 1		320339	16	400	17-Aug-2004
	Strong 2		320340	12	300	18-Aug-2004
	Strong 3		320341	8	200	18-Aug-2004
	Strong 4		320342	12	300	19-Aug-2004
	Strong 5		320343	10	250	19-Aug-2004
	Rodger 1		322046	20	500	21-Oct-94
	Rodger 2		322053	20	500	21-Oct-94
	Rodger 3		322054	20	500	21-Oct-94
	Rodger 4		322055	10	250	21-Oct-94
	Rodger 5		322056	12	300	21-Oct-94
	Rodger 6		322057	18	450	21-Oct-94
	Rodger 7		322058	20	500	21-Oct-94
	T.M.F. 1		324199	6	150	22-Mar-95
	T.M.F. 2		324200	16	400	22-Mar-95
	T.M.F. 3		324201	12	300	22-Mar-95
	T.M.F. 4		324202	3	75	22-Mar-95
	Shazah 1		323102	18	450	22-Dec-94
	Shazah 2		323103	20	500	22-Dec-94
	Shazah 3		323104	6	150	22-Dec-94
	CST 4		323358	18	450	27-Jan-95
Crown Grants:						
	River Fr.	5669		1	7.99	03-Jul-95
	Tulsequah Bonanza	5668		1	20.9	03-Jul-95
	Tulsequah Bald Eagle	5676		1	14.16	03-Jul-95
	Tulsequah Chief	5670		1	20.9	03-Jul-95
	Tulsequah Elva Fr.	5679		1	9.7	03-Jul-95
Big Bull	Big Bull Extension	37/21	203965	1	25	18-Jul-2004
	Bruce Fr.	303	203781	1	25	17-Aug-2004
	Bull 2	141/32	203966	1	25	19-Jul-2004
	Bull 3	142/32	203967	1	25	19-Jul-2004
	Bull 4	143/32	203968	1	25	19-Jul-2004
	Bull 8	142	203779	1	25	16-Jul-2004
	Bull 9	179	203780	1	25	25-Apr-2003
	CO 3	997	201802	20	500	04-Mar-2003
	CO 5	998	201803	18	450	04-Mar-2003
	Goat 1	1707	201925	16	400	23-Jul-2004
	Swamp 1	1708	201926	4	100	23-Jul-2004

TULSEQUAH CHIEF PROPERTY - CLAIM STATUS

PROPERTY AREA		RECORD NO.	TITLE NO.	UNITS	AREA (ha.)	EXPIRY DATE
	Swamp 2	1709	201927	1	25	23-Jul-2004
	Swamp 3	1710	201928	1	25	23-Jul-2004
	Webb 1	2766	202279	20	500	27-Nov-2000
	Webb 4	2769	202282	20	500	27-Nov-2000
	Webb 5	2770	202283	20	500	27-Nov-2000
	Webb 9	2774	202284	10	250	27-Nov-2000
	Webb 10	2775	202285	16	400	27-Nov-2000
Big Bull						
Crown Grants:						
	Big Bull	6303		1	20.65	03-Jul-95
	Bull No. 1	6304		1	16.95	03-Jul-95
	Bull No. 5	6306		1	14.57	03-Jul-95
	Bull No. 6	6305		1	17.22	03-Jul-95
	Hugh	6308		1	20.71	03-Jul-95
	Jean	6307		1	17.02	03-Jul-95
Banker	Tallon No. 1	1979	202030	20	500	08/02/2003
	Tallon No. 2	1980	202031	9	225	08/02/2003
Crown Grants:						
	Vega No. 1	6155		1	20.9	03-Jul-95
	Vega No. 2	6156		1	17.62	03-Jul-95
	Vega No. 3	6157		1	18.97	03-Jul-95
	Vega No. 4	6158		1	19.85	03-Jul-95
	Vega No. 5	6159		1	14.94	03-Jul-95
	Janet W. No. 1	6160		1	18.95	03-Jul-95
	Janet W. No. 2	6161		1	18.75	03-Jul-95
	Janet W. No. 3	6162		1	16.6	03-Jul-95
	Janet W. No. 4	6163		1	20.76	03-Jul-95
	Janet W. No. 5	6164		1	18.2	03-Jul-95
	Janet W. No. 6	6165		1	19.02	03-Jul-95
	Janet W. No. 7	6166		1	18.78	03-Jul-95
	Janet W. No. 8	6167		1	17.98	03-Jul-95
	Joker	6169		1	16.6	03-Jul-95
					16,638.69	

1 Maintained through annual tax payments due July 2 of each year.

N.B: Expiry dates reflect claim status as of October 19, 1994 at time of current assessment filing.

APPENDIX 2

Tulsequah Chief 1994 Diamond Drill Collars

TULSEQUAH CHIEF 1994 DIAMOND DRILL COLLARS

HOLE	EASTING	NORTHING	ELEVATION	DEPTH	AZIMUTH	DIP
Surface Holes						
TC94015	10,342.31	15,238.43	297.00	600.46	86.78	-63.13
TC94016	10,041.92	14,668.60	152.51	367.90	73.50	-45.92
TC94017	10,045.25	15,262.50	143.50	410.57	87.50	-45.50
TC94018	10,845.50	14,601.00	50.51	321.56	290.00	(55.50)
TOTAL				1,700.49		
Underground Holes						
TCU94061	10,663.50	15,376.50	112.80	310.00	85.47	-56.68
TCU94062	10,597.71	15,544.10	113.14	578.21	145.02	-65.33
TCU94063	10,663.24	15,375.50	112.59	356.00	91.12	-66.69
TCU94064	10,662.92	15,375.21	112.56	367.30	129.75	-56.62
TCU94065	10,662.89	15,375.44	112.61	492.56	186.92	-68.06
TCU94066	10,598.16	15,544.86	113.00	480.67	133.39	-59.20
TCU94067	10,662.33	15,375.70	112.74	386.80	124.26	-56.28
TCU94068	10,597.69	15,545.59	113.24	395.97	116.44	-64.99
TCU94069	10,664.18	15,375.42	112.65	284.70	105.21	-37.76
TCU94070	10,663.54	15,375.34	112.80	331.90	110.74	-51.94
TCU94071	10,664.79	15,375.03	112.70	257.30	109.14	(25.07)
TOTAL				4,241.41		
TOTAL ALL HOLES				5,941.90		

APPENDIX 3

Net Smelter Return Calculation Summary

NSR CALCULATION TABLE - TULSEQUAH CHIEF DEPOSIT

Metal Price Assumptions:

Metal price US$		Metal price CAN$	
		Exchange	0.8
US$Cu	$1.00	CAN$Cu	$1.25
US$Pb	$0.35	CAN$Pb	$0.44
US$Zn	$0.60	CAN$Zn	$0.75
US$Ag	$4.00	CAN$Ag	$5.00
US$Au	$375.00	CAN$Au	$468.75

Metallurgical Balance - Weight % Grades

	Wt%	Cu	Pb	Zn	Fe	Sb	As	Au g/T	Ag g/T
Gravity	0.09%	0.00%	0.00%	0.00%	NA	NA	NA	800.00	1100.00
Cu Conc	4.68%	25.70%	0.27%	5.40%	28.00%	0.20%	0.90%	5.00	1029.00
Pb Conc	1.63%	5.00%	60.00%	5.20%	6.00%	0.10%	0.50%	65.00	1550.00
Zn Conc	9.81%	0.45%	0.12%	57.00%	6.00%	0.00%	0.00%	1.00	65.00
Tailing	83.80%	0.09%	0.08%	0.59%	9.60%	0.00%	0.02%	0.40	15.00
Feed	100.00%	1.40%	1.07%	6.42%	10.00%	0.01%	0.05%	2.40	93.37

Metallurgical Balance - % Distribution

	Wt%	Cu	Pb	Zn	Fe	Sb	As	Au	Ag
Gravity	0.09%	0.00%	0.00%	0.00%	NA	NA	NA	28.33%	1.00%
Cu Conc	4.68%	85.82%	1.18%	3.93%	13.09%	85.00%	89.52%	9.74%	51.52%
Pb Conc	1.63%	5.83%	91.46%	1.32%	0.98%	14.83%	17.35%	44.17%	27.08%
Zn Conc	9.81%	3.15%	1.10%	87.05%	5.88%	0.00%	0.00%	4.09%	6.83%
Tailing	83.80%	5.39%	6.27%	7.70%	80.45%	30.47%	26.75%	13.97%	13.46%
Feed	100.00%	100.18%	100.00%	100.01%	100.40%	130.30%	133.62%	100.30%	99.89%

ALL VALUES IN CANADIAN DOLLARS UNLESS OTHERWISE SPECIFIED

Copper Concentrate Sale:

	Metal Pric	Refining Charge	Net price	Unit
Au	$468.75	$6.80	$461.95	Troy Oz.
Ag	$5.00	$0.45	$4.55	Troy Oz.
Cu	$1.25	$0.12	$1.13	pound

Payables Metal	# Units	Deduction	Remaining Units	Pay%	Payable Units	Net Payment	Equivalent US$/DMT
Au	0.146	0.000	0.146	96.0%	0.140	$64.66	$56.91
Ag	30.009	0.000	30.009	94.0%	28.208	$128.35	$112.95
Cu	514.000	20.000	494.000	100.0%	494.000	$558.22	$491.23
Total Payables						$751.23	$661.08
Deductions							
Basic treatment						$102.27	$90.00
Pb + Zn penalty						$10.00	$8.80
As + Sb penalty						$20.00	$17.60
Total deductions						$132.27	$116.40
NSR FOB Smelter (Total Payables - total deductions)						$618.96	$544.69
Concentrate freight from Juneau						$30.23	$26.60
NSR FOB Juneau						$588.73	$518.08
NSR FOB Juneau per short dry ton mill feed						$27.52	$24.22
NSR FOB Juneau per metric dry tonne mill feed						$30.28	$24.22

Lead Concentrate Sale:

	Metal Pric	Refining Charge	Net price	Unit
Au	$468.75	$6.80	$461.95	Troy Oz.
Ag	$5.00	$0.25	$4.75	Troy Oz.
Cu	$1.25	$0.20	$1.05	pound
Pb	$0.44		$0.44	pound

Payables Metal	# Units	Deduction	Remaining Units	Pay%	Payable Units	Net Payment	Equivalent US$/DMT
Au	1.896	0.029	1.866	95.0%	1.773	$819.09	$720.80
Ag	45.203	1.000	44.203	95.0%	41.993	$199.46	$175.53
Cu	100.000	10.000	90.000	40.0%	36.000	$37.80	$33.26
Pb	1200.000	0.000	1200.000	95.0%	1140.000	$498.75	$438.90
Total Payables						$1,555.10	$1,368.49
Deductions							
Basic treatment						$220.00	$193.60
As + Sb penalty						$10.00	$8.80
Total deductions						$230.00	$202.40
NSR FOB Smelter (Total Payables - total deductions)						$1,325.10	$1,166.09
Concentrate freight from Juneau						$30.23	$26.60
NSR FOB Juneau						$1,294.87	$1,139.49
NSR FOB Juneau per short dry ton mill feed						$21.12	$18.59
NSR FOB Juneau per metric dry tonne mill feed						$23.23	$18.59

Zinc Concentrate Sale:

	Metal Pric	Refining Charge	Net price	Unit
Au	$468.75	$9.38	$459.38	Troy Oz.
Ag	$5.00	$0.35	$4.65	Troy Oz.
Zn	$0.75	$0.00	$0.75	pound

Payables Metal	# Units	Deduction	Remaining Units	Pay%	Payable Units	Net Payment	Equivalent US$/DMT
Au	0.029	0.050	0.000	96.0%	0.000	$0.00	$0.00
Ag	1.896	3.000	0.000	96.0%	0.000	$0.00	$0.00
Zn	1140.000	160.000	980.000	100.0%	980.000	$735.00	$646.80
Total Payables						$735.00	$646.80
Deductions							
Basic treatment						$218.18	$192.00
Hg penalty						$6.00	$5.28
Total deductions						$224.18	$197.28
NSR FOB Smelter (Total Payables - total deductions)						$510.82	$449.52
Concentrate freight from Juneau						$30.72	$27.03
NSR FOB Juneau						$480.10	$422.49
NSR FOB Juneau per short dry ton mill feed						$47.07	$41.42
NSR FOB Juneau per metric dry tonne mill feed						$51.78	$41.42

Gravity Concentrate Sale:

	Metal Pric	Refining Charge	Net price	Unit
Au	$468.75		$468.75	Troy Oz.
Ag	$5.00		$5.00	Troy Oz.

Payables Metal	# Units	Deduction	Remaining Units	Pay%	Payable Units	Net Payment	Equivalent US$/DMT
Au	23.330	0.000	23.330	97.0%	22.631	$10,608.05	$9,335.08
Ag	32.079	0.000	32.079	95.0%	30.475	$152.38	$134.09
Total Payables						$10,760.43	$9,469.17
NSR FOB Smelter						$10,760.43	$9,469.17
Concentrate freight from Juneau						$29.00	$25.52
NSR FOB Juneau						$10,731.43	$9,443.65
NSR FOB Juneau per short dry ton mill feed						$9.12	$8.03
NSR FOB Juneau per metric dry tonne mill feed						$10.03	$8.03

Total Concentrate Sales Summary:

	NSR FOB Juneau/DMT	
Gravity Conc.	$10.03	$8.03
Copper Conc.	$30.28	$24.22
Lead Conc.	$23.23	$18.59
Zinc Conc.	$51.78	$41.42
TOTAL	$115.32	$92.26

Total Contribution of Metals to NSR:

	Cu	Pb	Zn	Au	Ag	Total
Gravity Conc.	$0.00	$0.00	$0.00	$9.89	$0.14	$10.03
Copper Conc.	$22.50	$0.00	$0.00	$2.61	$5.17	$30.28
Lead Conc.	$0.56	$7.45	$0.00	$12.24	$2.98	$23.23
Zinc Conc.	$0.00	$0.00	$51.78	$0.00	$0.00	$51.78
TOTAL	$23.06	$7.45	$51.78	$24.73	$8.29	$115.32
% of total NSR	20.00%	6.46%	44.90%	21.45%	7.19%	100.00%
Gross Value/tonne	$38.50	$10.30	$105.93	$36.09	$14.98	$205.79
NSR as Payable %	59.90%	72.35%	48.88%	68.54%	55.38%	56.04%

Contribution to NSR per grade unit	Cu %	Pb %	Zn %	Au g/T	Ag g/T
Dollar value factor (NSR per metal/Grade of original feed sample)	$16.4726	$6.9633	$8.0656	$10.3059	$0.0888

Example of NSR calculation for a given grade of intersection:

	Cu %	Pb %	Zn %	Au g/T	Ag g/T	Total NSR/tonne
Sample grade	1.99	1.01	8.32	4.15	166.6	
x Dollar factor above	$16.4726	$6.9633	$8.0656	$10.3059	$0.0888	
= NSR value	$32.78	$7.03	$67.11	$42.77	$14.80	$164.49

APPENDIX 4

Tulsequah Chief Drill Intersection Summary (1987 - 1994)

TULSEQUAH CHIEF DRILL INTERSECTION SUMMARY (1987 - 1994)

HOLE	ZONE	FROM (m)	TO (m)	DRILLED WIDTH (m)	TRUE WIDTH (m)	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR ($CAN)
TC-87-1	G	552.45	556.26	3.81	3.58	2.94	0.67	0.80	3.01	1.36	60.85	$60.28
TC-87-1	G	566.01	572.26	6.25	6.00	3.81	1.37	2.77	7.98	6.35	221.07	$191.38
TC-87-5	G	640.69	644.80	4.11	4.00	3.31	1.31	1.08	6.03	2.81	85.09	$114.16
TCU-88-2	AB1	194.31	200.25	5.94	3.07	3.00	1.12	0.08	0.97	1.78	23.15	$47.11
TCU-88-2	AB1	213.66	217.93	4.27	3.15	3.81	0.50	1.54	11.58	0.54	60.35	$123.35
TCU-88-3	H	172.52	194.92	22.40	14.50	4.41	4.06	0.23	2.56	2.98	57.45	$124.95
TCU-88-4	G	166.73	173.22	6.49	4.26	3.39	0.67	0.63	3.56	2.06	70.45	$71.63
TCU-88-5	G	211.37	215.03	3.66	3.00	3.05	0.64	0.64	3.39	1.32	77.24	$62.75
TCU-88-5	G	219.15	226.53	7.38	4.48	3.30	0.79	0.54	4.17	1.10	29.71	$64.47
TCU-88-7	G	145.39	152.83	7.44	4.64	3.16	0.93	1.10	5.39	2.03	91.73	$95.53
TCU-88-7	G	160.63	165.20	4.57	3.15	3.22	0.34	1.43	3.75	1.63	91.74	$70.78
TCU-88-8	G	232.71	236.22	3.51	3.00	4.23	5.03	0.18	3.02	2.84	54.69	$142.73
TCU89-12	H	281.48	285.47	3.99	3.00	3.37	2.05	0.44	3.47	1.07	41.92	$79.53
TCU89-13	H	374.90	391.67	16.77	14.30	3.45	0.97	1.34	5.60	2.25	84.22	$101.11
TCU89-15	AB2	390.27	396.12	5.85	3.11	3.32	0.35	0.28	7.06	0.53	28.33	$72.72
TCU89-15	AB2	414.22	419.86	5.64	3.10	3.93	0.97	1.56	9.93	2.06	36.22	$131.43
TCU89-16	AB1	562.57	568.51	5.94	3.00	3.86	0.54	1.72	8.20	2.42	246.40	$133.90
TCU89-18	AB1	536.45	549.52	13.07	7.29	3.58	0.74	1.82	10.01	2.66	150.42	$146.43
TCU89-19	H	375.30	382.37	7.07	4.00	3.82	1.32	1.75	11.86	2.11	116.54	$161.68
TCU89-20	H	264.23	270.51	6.28	5.48	3.59	0.75	0.43	3.86	2.10	38.73	$71.52
TCU89-21	H	502.01	523.07	21.06	9.67	3.80	1.20	1.16	5.99	3.64	117.88	$124.16
TCU90-22	H/AB2	544.22	593.90	49.68	28.50	4.08	2.94	1.58	9.13	3.92	171.40	$188.70
TCU90-23	H/AB2	635.51	662.79	27.28	19.23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29
TCU90-24	H	626.06	631.85	5.79	3.78	2.79	0.12	0.97	2.22	2.27	152.53	$63.57
TCU91-30	H	569.30	575.30	6.00	4.21	3.05	0.43	0.79	4.08	1.41	41.48	$63.77
TCU91-31	H	506.40	511.80	5.40	3.64	2.94	0.57	1.20	4.28	2.79	82.27	$88.33
TCU91-31	H	518.40	522.52	4.12	3.00	3.68	1.28	0.25	1.31	2.73	97.56	$70.26
TCU91-31	AB1	619.90	624.50	4.60	3.27	2.95	0.36	1.30	5.07	1.10	143.06	$79.84
TCU91-32	H	303.10	312.80	9.70	8.23	3.23	2.25	1.12	2.56	2.62	89.31	$100.48
TCU91-33	H	327.40	331.80	4.40	3.00	3.60	2.37	0.90	4.80	1.76	61.89	$107.61
TCU91-33	H	338.50	363.00	24.50	15.24	3.32	1.27	1.30	6.99	2.42	82.18	$118.53
TCU91-34	H	308.65	316.25	7.60	4.33	4.02	0.67	1.46	9.25	1.99	73.04	$122.69
TCU91-35	H	459.65	464.97	5.32	3.30	3.56	1.52	2.32	13.50	2.76	126.01	$189.72
TCU91-35	H	479.85	488.60	8.75	5.90	3.93	3.50	0.94	7.71	2.02	228.34	$167.55
TCU92-36	H	701.00	718.35	17.35	11.40	3.49	0.79	1.11	8.60	0.81	68.82	$104.59
TCU92-36	AB2	743.75	750.00	6.25	3.80	3.10	0.55	0.36	4.47	1.31	67.87	$67.21
TCU92-36	AB2	754.00	774.40	20.40	12.30	3.32	1.18	0.83	5.74	2.70	61.04	$104.73
TCU92-37	H	300.43	305.43	5.00	3.50	3.17	0.85	1.10	5.30	2.35	70.90	$94.94
TCU92-37	H	313.77	322.90	9.13	7.86	4.00	1.77	1.37	10.67	4.00	70.69	$172.27
TCU92-37	H	327.45	331.35	3.90	3.08	3.05	0.12	1.22	3.38	1.30	44.53	$55.06
TCU92-42	G	245.42	248.74	3.32	3.32	3.33	1.45	0.81	6.32	0.42	54.93	$89.78
TCU92-42	G	257.80	260.92	3.12	3.12	3.52	2.14	0.39	3.24	3.19	59.28	$102.17
TCU92-43	G	288.56	294.50	5.94	5.94	3.11	0.85	1.01	3.71	2.41	87.36	$83.58
TCU92-44	G	201.63	204.63	3.00	3.00	3.00	0.84	0.89	2.72	1.16	57.71	$59.06
TCU92-46	H	216.95	224.69	7.74	5.50	3.88	0.66	0.51	10.71	1.52	47.14	$120.77
TCU92-46	AB1	290.26	295.00	4.74	3.07	4.01	0.84	4.46	8.29	0.92	111.37	$131.11
TCU93-48	H	455.24	479.25	24.01	22.00	3.45	1.27	2.50	12.97	3.02	130.72	$185.59
TCU93-48	AB2	493.50	498.30	4.80	4.50	3.00	1.18	0.36	3.92	1.30	39.24	$70.44
TCU93-49	G	227.30	244.65	17.35	11.50	3.82	4.09	1.20	6.30	2.80	137.00	$167.53
TCU93-50	G	103.43	109.50	6.07	5.00	3.07	0.76	0.65	3.65	1.70	51.20	$68.51
TCU93-50	G	114.50	118.60	4.10	3.00	3.20	0.31	2.27	5.32	6.24	152.15	$141.71
TCU93-52	H	284.50	288.90	4.40	4.20	2.94	0.65	0.77	2.51	0.82	46.07	$48.81
TCU93-53	H	471.67	475.33	3.66	3.00	3.35	0.63	1.67	9.41	4.10	192.74	$157.27
TCU93-54	H	302.24	305.90	3.66	3.00	3.48	1.71	0.46	3.21	0.98	36.20	$70.58
TCU93-55	H	237.56	244.60	7.04	4.10	3.62	0.61	2.64	6.71	7.12	264.57	$179.50
TCU93-55	AB2	261.65	266.00	4.35	3.00	4.14	1.63	1.10	3.56	2.84	30.43	$95.16
TCU93-56	H	487.32	497.35	10.03	8.63	3.26	0.88	1.02	5.37	3.08	66.24	$102.57
TCU93-60	H	225.65	229.35	3.70	3.00	3.18	0.26	2.32	4.71	0.41	57.28	$67.81
TCU94062	H	468.8	471.58	2.78	2.52	3.30	1.21	0.52	3.52	0.96	58.09	$66.92
TCU94062	H	514.72	517.94	3.22	2.92	2.86	0.43	0.73	2.63	1.56	61.28	$54.86
TCU94063	G	283.3	288.9	5.60	4.31	2.85	0.98	0.61	3.38	0.92	33.38	$60.18
TCU94065	H	407.05	420.6	13.55	11.00	3.92	2.92	1.15	11.65	3.07	159.02	$195.94
TCU94065	AB2	430	432.25	2.25	2.00	3.57	0.48	2.36	11.77	3.27	116.86	$163.33
TCU94066	H	385.34	388.58	3.24	2.60	2.99	0.74	0.75	2.65	2.77	164.69	$82.01
TCU94068	H	353.65	356.55	2.90	2.31	3.03	0.51	0.88	2.58	2.74	92.91	$71.76
TCU94069	G	249	251	2.00	2.01	2.97	0.33	2.08	5.54	6.17	166.01	$142.97
TCU94071	G	227.3	231.4	4.10	4.07	3.03	0.75	0.72	4.02	1.98	69.43	$76.34

APPENDIX 5

Sectional Ore Reserve Summary

TULSEQUAH CHIEF DEPOSIT - 1994 RESERVE SUMMARY

CATEGORY	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR_RR	TONNES
PROBABLE	3.50	1.43	1.21	6.47	2.62	105.89	$120.59	5,170,905
POSSIBLE	3.40	1.05	1.12	5.95	2.35	104.74	$106.56	2,905,902
OLD RESERVE (COMINCO, 1957)	3.50	1.30	1.60	8.00	2.40	116.50	$132.16	707,616
TOTAL	3.47	1.30	1.21	6.42	2.51	106.36	$116.88	8,784,424

TULSEQUAH CHIEF DEPOSIT RESERVE SUMMARY (BELOW 0 LEVEL)

Zone	Cu%	Pb%	Zn%	Au (g/tonne)	Ag (g/tonne)	Probable tonnes		Possible tonnes
H+AB2	1.47	1.16	6.76	2.63	106.52	3,998,696		
	1.08	1.06	6.15	2.32	106.07			2,256,059
AB1	0.72	2.32	8.62	1.78	127.07	206,996		
	0.64	1.82	8.10	1.71	127.64			146,667
G	1.42	1.17	4.81	2.75	98.72	965,214		
	1.03	1.16	4.40	2.66	92.12			503,177
Total Probable	1.43	1.21	6.47	2.62	105.89	5,170,905		
Total Possible	1.05	1.12	5.95	2.35	104.74			2,905,902
Total all Categories	1.30	1.18	6.28	2.52	105.47		8,076,808 tonnes or 8,884,489 tons	

TULSEQUAH CHIEF DEPOSIT CONSOLIDATED RESERVE SUMMARY

Zone	Cu%	Pb%	Zn%	Au (g/tonne)	Ag (g/tonne)	Probable tonnes		Possible tonnes
H,AB2,AB1,G								
Total Probable	1.43	1.21	6.47	2.62	105.89	5,170,905		
Total Possible	1.05	1.12	5.95	2.35	104.74			2,905,902
1957 Reserves at Closure Total Measured and Indicated	1.30	1.60	8.00	2.40	116.50	707,616		
Total All Zones:								
Probable	1.42	1.26	6.66	2.59	107.16	5,878,521		
Possible	1.05	1.12	5.95	2.35	104.74			2,905,902
Grand Total	1.30	1.21	6.42	2.51	106.36		8,784,424 tonnes or 9,662,866 tons	

TULSEQUAH CHIEF DEPOSIT - RESERVE CALCULATION TABLE
H/AB2 LENSES

										PROBABLE RESERVE				PROBABLE RESERVE			
N_SECT	BLOCK	HOLE	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR	AREA	VERT RANGE	VOLUME	TONNES	AREA	VERT RANGE	VOLUME	TONNES
1860	H3A	TCU-88-3	4.41	4.06	0.23	2.56	2.98	57.45	$124.95	115.93	20.0	2318.6	10229.1				
1860	H46A	TCU92-46	3.88	0.66	0.51	10.71	1.52	47.14	$120.77	154.40	20.0	3088.0	11988.9				
1860	H46B	TCU92-46	3.88	0.66	0.51	10.71	1.52	47.14	$120.77					11.66	20.0	233.2	905.4
1880	H3A	TCU-88-3	4.41	4.06	0.23	2.56	2.98	57.45	$124.95	346.09	20.0	6921.8	30537.4				
1880	H46A	TCU92-46	3.88	0.66	0.51	10.71	1.52	47.14	$120.77	289.41	20.0	5788.3	22472.5				
1880	H55A	TCU93-55	3.62	0.61	2.64	6.71	7.12	264.57	$179.50	172.22	20.0	3444.5	12480.1				
1900	H3A	TCU-88-3	4.41	4.06	0.23	2.56	2.98	57.45	$124.95	701.04	20.0	14020.9	61857.1				
1900	H3B	TCU-88-3	4.41	4.06	0.23	2.56	2.98	57.45	$124.95					31.82	20.0	636.4	2807.5
1900	H46A	TCU92-46	3.88	0.66	0.51	10.71	1.52	47.14	$120.77	195.48	20.0	3909.7	15178.9				
1900	H55AU	TCU93-55	3.62	0.61	2.64	6.71	7.12	264.57	$179.50	267.37	20.0	5347.4	19374.7				
1900	H55BUE	TCU93-55	3.62	0.61	2.64	6.71	7.12	264.57	$179.50					41.83	20.0	836.5	3031.0
1900	H55AM	TCU93-55	4.14	1.63	1.10	3.56	2.84	30.43	$95.16	180.72	20.0	3614.3	14953.3				
1900	H55BMW	TCU93-55	4.14	1.63	1.10	3.56	2.84	30.43	$95.16					102.15	20.0	2043.0	8452.3
1900	H55BME	TCU93-55	4.14	1.63	1.10	3.56	2.84	30.43	$95.16					17.96	20.0	359.3	1486.4
1920	H3A	TCU-88-3	4.41	4.06	0.23	2.56	2.98	57.45	$124.95	490.07	20.0	9801.4	43241.8				
1920	H3B	TCU-88-3	4.41	4.06	0.23	2.56	2.98	57.45	$124.95					80.72	20.0	1614.3	7122.1
1920	H46A	TCU92-46	3.88	0.66	0.51	10.71	1.52	47.14	$120.77	128.75	20.0	2575.1	9997.5				
1920	H55A	TCU93-55	3.62	0.61	2.64	6.71	7.12	264.57	$179.50	85.76	20.0	1715.3	6214.8				
1920	H55AL	TCU93-55	4.14	1.63	1.10	3.56	2.84	30.43	$95.16	142.33	20.0	2846.5	11776.8				
1940	H32B	TCU91-32	3.23	2.25	1.12	2.56	2.62	89.31	$100.48					570.14	20.0	11402.9	36783.7
1940	H34B	TCU91-34	4.02	0.67	1.46	9.25	1.99	73.04	$122.69					330.06	20.0	6601.3	26553.1
1940	H52A	TCU93-52	2.94	0.65	0.77	2.51	0.82	46.07	$48.81	289.96	20.0	5799.1	17049.5				
1960	H32A	TCU91-32	3.23	2.25	1.12	2.56	2.62	89.31	$100.48	428.38	20.0	8567.7	27637.8				
1960	H34B	TCU91-34	4.02	0.67	1.46	9.25	1.99	73.04	$122.69					323.35	20.0	6466.9	26012.7
1960	H52B	TCU93-52	2.94	0.65	0.77	2.51	0.82	46.07	$48.81					327.47	20.0	6549.3	19255.0
1980	H34A	TCU91-34	4.02	0.67	1.46	9.25	1.99	73.04	$122.69	495.52	20.0	9910.5	39864.1				
1980	H32A	TCU91-32	3.23	2.25	1.12	2.56	2.62	89.31	$100.48	132.21	20.0	2644.2	8529.8				
1980	H37A	TCU92-37	4.00	1.77	1.37	10.67	4.00	70.69	$172.27	340.21	20.0	6804.2	27225.8				
1980	H52A	TCU93-52	2.94	0.65	0.77	2.51	0.82	46.07	$48.81	280.94	20.0	5618.8	16519.1				
2000	H34A	TCU91-34	4.02	0.67	1.46	9.25	1.99	73.04	$122.69	475.81	20.0	9516.2	38278.1				
2000	H32A	TCU91-32	3.23	2.25	1.12	2.56	2.62	89.31	$100.48	424.59	20.0	8491.8	27393.0				
2000	H37AU	TCU92-37	3.17	0.85	1.10	5.30	2.35	70.90	$94.94	143.65	20.0	2873.0	9118.8				
2000	H37AM	TCU92-37	4.00	1.77	1.37	10.67	4.00	70.69	$172.27	180.95	20.0	3619.1	14481.2				
2000	H52A	TCU93-52	2.94	0.65	0.77	2.51	0.82	46.07	$48.81	252.17	20.0	5043.3	14827.3				
2000	H52B	TCU93-52	2.94	0.65	0.77	2.51	0.82	46.07	$48.81					68.86	20.0	1377.1	4048.7
2020	H12A	TCU89-12	3.37	2.05	0.44	3.47	1.07	41.92	$79.53	140.59	20.0	2811.8	9478.3				
2020	H34BW	TCU91-34	4.02	0.67	1.46	9.25	1.99	73.04	$122.69					104.14	20.0	2082.8	8377.9
2020	H34A	TCU91-34	4.02	0.67	1.46	9.25	1.99	73.04	$122.69	427.62	20.0	8552.3	34400.9				
2020	H34BE	TCU91-34	4.02	0.67	1.46	9.25	1.99	73.04	$122.69					44.31	20.0	886.2	3564.7
2020	H37AU	TCU92-37	3.17	0.85	1.10	5.30	2.35	70.90	$94.94	236.75	20.0	4734.9	15028.6				
2020	H37BUW	TCU92-37	3.17	0.85	1.10	5.30	2.35	70.90	$94.94					30.03	20.0	600.5	1906.0
2020	H37AL	TCU92-37	4.00	1.77	1.37	10.67	4.00	70.69	$172.27	351.76	20.0	7035.2	28150.3				
2020	H37BLW	TCU92-37	4.00	1.77	1.37	10.67	4.00	70.69	$172.27					44.85	20.0	897.0	3589.1
2020	H54A	TCU93-54	3.48	1.71	0.46	3.21	0.98	36.20	$70.58	214.07	20.0	4281.5	14885.3				

TULSEQUAH CHIEF DEPOSIT - RESERVE CALCULATION TABLE
H/AB2 LENSES

										----------PROBABLE RESERVE----------				----------PROBABLE RESERVE----------			
											VERT				VERT		
N_SECT	BLOCK	HOLE	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR	AREA	RANGE	VOLUME	TONNES	AREA	RANGE	VOLUME	TONNES
2040	H12A	TCU89-12	3.37	2.05	0.44	3.47	1.07	41.92	$79.53	151.82	20.0	3036.4	10235.4				
2040	H20A	TCU89-20	3.59	0.75	0.43	3.86	2.10	38.73	$71.52	179.81	20.0	3596.1	12893.7				
2040	H33AU	TCU91-33	3.60	2.37	0.90	4.80	1.76	61.89	$107.61	186.57	20.0	3731.4	13429.6				
2040	H33BUW	TCU91-33	3.60	2.37	0.90	4.80	1.76	61.89	$107.61					34.41	20.0	688.2	2476.9
2040	H33BUE	TCU91-33	3.60	2.37	0.90	4.80	1.76	61.89	$107.61					12.31	20.0	246.3	886.4
2040	H33AL	TCU91-33	3.32	1.27	1.30	6.99	2.42	82.18	$118.53	711.89	20.0	14237.8	47281.8				
2040	H33BLW	TCU91-33	3.32	1.27	1.30	6.99	2.42	82.18	$118.53					376.05	20.0	7521.0	24976.2
2040	H33BLE	TCU91-33	3.32	1.27	1.30	6.99	2.42	82.18	$118.53					33.44	20.0	668.8	2220.9
2040	H34A	TCU91-34	4.02	0.67	1.46	9.25	1.99	73.04	$122.69	325.93	20.0	6518.5	26220.3				
2040	H34BE	TCU91-34	4.02	0.67	1.46	9.25	1.99	73.04	$122.69					33.12	20.0	662.3	2664.0
2040	H54A	TCU93-54	3.48	1.71	0.46	3.21	0.98	36.20	$70.58	215.78	20.0	4315.7	15004.1				
2040	H54B	TCU93-54	3.48	1.71	0.46	3.21	0.98	36.20	$70.58					25.59	20.0	511.8	1779.4
2060	H12A	TCU89-12	3.37	2.05	0.44	3.47	1.07	41.92	$79.53	138.13	20.0	2762.7	9312.7				
2060	H20A	TCU89-20	3.59	0.75	0.43	3.86	2.10	38.73	$71.52	142.24	20.0	2844.9	10200.2				
2060	H33AU	TCU91-33	3.60	2.37	0.90	4.80	1.76	61.89	$107.61	166.57	20.0	3331.5	11990.2				
2060	H33BUE	TCU91-33	3.60	2.37	0.90	4.80	1.76	61.89	$107.61					12.53	20.0	250.5	901.7
2060	H33AL	TCU91-33	3.32	1.27	1.30	6.99	2.42	82.18	$118.53	866.15	20.0	17323.0	57527.2				
2060	H33BLW	TCU91-33	3.32	1.27	1.30	6.99	2.42	82.18	$118.53					117.45	20.0	2349.1	7800.9
2060	H34AUW	TCU91-34	4.02	0.67	1.46	9.25	1.99	73.04	$122.69	198.99	20.0	3979.7	16008.2				
2060	H34BUE	TCU91-34	4.02	0.67	1.46	9.25	1.99	73.04	$122.69					14.31	20.0	286.2	1151.1
2060	H54A	TCU93-54	3.48	1.71	0.46	3.21	0.98	36.20	$70.58	222.22	20.0	4444.3	15451.4				
2080	H12A	TCU89-12	3.37	2.05	0.44	3.47	1.07	41.92	$79.53	187.06	20.0	3741.2	12611.3				
2080	H20A	TCU89-20	3.59	0.75	0.43	3.86	2.10	38.73	$71.52	252.38	20.0	5047.6	18097.6				
2080	H20B	TCU89-20	3.59	0.75	0.43	3.86	2.10	38.73	$71.52					14.48	20.0	289.7	1038.7
2080	H33AL	TCU91-33	3.60	2.37	0.90	4.80	1.76	61.89	$107.61	478.54	20.0	9570.9	34446.4				
2080	H33AU	TCU91-33	3.32	1.27	1.30	6.99	2.42	82.18	$118.53	119.02	20.0	2380.5	7905.2				
2080	H48A	TCU93-48	3.45	1.27	2.50	12.97	3.02	130.72	$185.59	618.41	20.0	12368.2	42729.2				
2080	H48B	TCU93-48	3.45	1.27	2.50	12.97	3.02	130.72	$185.59					388.02	20.0	7760.4	26810.3
2080	H54A	TCU93-54	3.48	1.71	0.46	3.21	0.98	36.20	$70.58	372.18	20.0	7443.6	25879.0				
2100	H65BUW	TCU94-65	3.92	2.92	1.15	11.65	3.07	159.02	$195.84					80.05	20.0	1600.9	6275.5
2100	H13A	TCU89-13	3.45	0.97	1.34	5.60	2.25	84.22	$101.11	550.07	20.0	11001.4	37929.4				
2100	H13B	TCU89-13	3.45	0.97	1.34	5.60	2.25	84.22	$101.11					103.23	20.0	2064.5	7117.9
2100	H48AU	TCU93-48	3.45	1.27	2.50	12.97	3.02	130.72	$185.59	778.70	20.0	15574.0	53804.4				
2100	H48BU	TCU93-48	3.45	1.27	2.50	12.97	3.02	130.72	$185.59					312.71	20.0	6254.3	21607.1
2100	H19B	TCU89-19	3.82	1.32	1.75	11.86	2.11	116.54	$161.68					372.80	20.0	7456.1	28462.6
2100	H66B	TCU94-66	2.99	0.74	0.75	2.65	2.77	164.69	$81.96					315.65	20.0	6313.0	18876.0
2120	H65BU	TCU94-65	3.92	2.92	1.15	11.65	3.07	159.02	$195.84					60.21	20.0	1204.3	4720.7
2120	H65AU	TCU94-65	3.92	2.92	1.15	11.65	3.07	159.02	$195.84	469.48	20.0	9389.6	36807.4				
2120	H13B	TCU89-13	3.45	0.97	1.34	5.60	2.25	84.22	$101.11					34.34	20.0	686.8	2367.8
2140	H13A	TCU89-13	3.45	0.97	1.34	5.60	2.25	84.22	$101.11	461.52	20.0	9230.5	31823.9				
2120	H19BW	TCU89-19	3.82	1.32	1.75	11.86	2.11	116.54	$161.68					23.56	20.0	471.1	1798.4
2120	H19A	TCU89-19	3.82	1.32	1.75	11.86	2.11	116.54	$161.68	316.23	20.0	6324.6	24143.2				
2120	H19BE	TCU89-19	3.82	1.32	1.75	11.86	2.11	116.54	$161.68					153.83	20.0	3076.6	11744.4
2120	H48AU	TCU93-48	3.45	1.27	2.50	12.97	3.02	130.72	$185.59	436.26	20.0	8725.1	30143.3				

TULSEQUAH CHIEF DEPOSIT - RESERVE CALCULATION TABLE
H/AB2 LENSES

										----------PROBABLE RESERVE----------				----------PROBABLE RESERVE----------			
											VERT				VERT		
N_SECT	BLOCK	HOLE	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR	AREA	RANGE	VOLUME	TONNES	AREA	RANGE	VOLUME	TONNES
2120	H48AL	TCU93-48	3.00	1.18	0.36	3.92	1.30	39.24	$70.44	174.68	20.0	3493.6	10480.7				
2120	H66BW	TCU94-66	2.99	0.74	0.75	2.65	2.77	164.69	$81.96					154.22	20.0	3084.4	9222.2
2120	H66A	TCU94-66	2.99	0.74	0.75	2.65	2.77	164.69	$81.96	261.21	20.0	5224.2	15620.4				
2120	H66BE	TCU94-66	2.99	0.74	0.75	2.65	2.77	164.69	$81.96					29.82	20.0	596.3	1783.1
2120	H68BW	TCU94-68	3.03	0.51	0.88	2.58	2.74	92.91	$71.83					36.93	20.0	738.6	2237.9
2120	H68A	TCU94-68	3.03	0.51	0.88	2.58	2.74	92.91	$71.83	167.28	20.0	3345.7	10137.4				
2120	H68BE	TCU94-68	3.03	0.51	0.88	2.58	2.74	92.91	$71.83					16.34	20.0	326.8	990.2
2140	H65BUW	TCU94-65	3.92	2.92	1.15	11.65	3.07	159.02	$195.84					111.35	20.0	2226.9	8729.5
2140	H65AU	TCU94-65	3.92	2.92	1.15	11.65	3.07	159.02	$195.84	567.85	20.0	11356.9	44519.1				
2140	H65AL	TCU94-65	3.57	0.48	2.36	11.77	3.27	116.86	$163.35	81.22	20.0	1624.5	5799.3				
2140	H65BUE	TCU94-65	3.92	2.92	1.15	11.65	3.07	159.02	$195.84					57.82	20.0	1156.5	4533.3
2140	H66BW	TCU94-66	2.99	0.74	0.75	2.65	2.77	164.69	$81.96					95.60	20.0	1912.0	5717.0
2140	H66A	TCU94-66	2.99	0.74	0.75	2.65	2.77	164.69	$81.96	169.40	20.0	3388.0	10130.2				
2140	H66BE	TCU94-66	2.99	0.74	0.75	2.65	2.77	164.69	$81.96					82.67	20.0	1653.5	4943.9
2140	H68BW	TCU94-68	3.03	0.51	0.88	2.58	2.74	92.91	$71.83					24.37	20.0	487.4	1476.7
2140	H68A	TCU94-68	3.03	0.51	0.88	2.58	2.74	92.91	$71.83	124.12	20.0	2482.4	7521.8				
2140	H68BE	TCU94-68	3.03	0.51	0.88	2.58	2.74	92.91	$71.83					40.38	20.0	807.6	2447.0
2140	H13B	TCU89-13	3.45	0.97	1.34	5.60	2.25	84.22	$101.11					49.77	20.0	995.5	3432.1
2140	H13A	TCU89-13	3.45	0.97	1.34	5.60	2.25	84.22	$101.11	791.92	20.0	15838.3	54605.6				
2140	H19A	TCU89-19	3.82	1.32	1.75	11.86	2.11	116.54	$161.68	293.00	20.0	5860.0	22369.8				
2140	H19B	TCU89-19	3.82	1.32	1.75	11.86	2.11	116.54	$161.68					111.20	20.0	2224.0	8489.9
2140	H48A	TCU93-48	3.45	1.27	2.50	12.97	3.02	130.72	$185.59	154.95	20.0	3099.1	10706.6				
2160	H65BUW	TCU94-65	3.92	2.92	1.15	11.65	3.07	159.02	$195.84					89.77	20.0	1795.4	7038.0
2160	H65AU	TCU94-65	3.92	2.92	1.15	11.65	3.07	159.02	$195.84	555.31	20.0	11106.1	43536.1				
2160	H65AL	TCU94-65	3.57	0.48	2.36	11.77	3.27	116.86	$163.35	89.43	20.0	1788.5	6385.0				
2160	H65BUE	TCU94-65	3.92	2.92	1.15	11.65	3.07	159.02	$195.84					59.24	20.0	1184.8	4644.3
2160	H13BL	TCU89-13	3.45	0.97	1.34	5.60	2.25	84.22	$101.11					70.91	20.0	1418.2	4889.5
2160	H13B	TCU89-13	3.45	0.97	1.34	5.60	2.25	84.22	$101.11					50.33	20.0	1006.6	3470.5
2160	H13A	TCU89-13	3.45	0.97	1.34	5.60	2.25	84.22	$101.11	784.94	20.0	15698.7	54124.4				
2160	H19A	TCU89-19	3.82	1.32	1.75	11.86	2.11	116.54	$161.68	255.07	20.0	5101.4	19474.0				
2160	H19B	TCU89-19	3.82	1.32	1.75	11.86	2.11	116.54	$161.68					81.69	20.0	1633.8	6236.9
2160	H66BW	TCU94-66	2.99	0.74	0.75	2.65	2.77	164.69	$81.96					83.31	20.0	1666.2	4982.0
2160	H66A	TCU94-66	2.99	0.74	0.75	2.65	2.77	164.69	$81.96	164.30	20.0	3285.9	9824.8				
2160	H66BE	TCU94-66	2.99	0.74	0.75	2.65	2.77	164.69	$81.96					17.35	20.0	346.9	1037.4
2160	H68BW	TCU94-68	3.03	0.51	0.88	2.58	2.74	92.91	$71.83					18.73	20.0	374.5	1134.8
2160	H68A	TCU94-68	3.03	0.51	0.88	2.58	2.74	92.91	$71.83	115.96	20.0	2319.1	7026.9				
2160	H68BE	TCU94-68	3.03	0.51	0.88	2.58	2.74	92.91	$71.83					53.29	20.0	1065.9	3229.6
2180	H19A	TCU89-19	3.82	1.32	1.75	11.86	2.11	116.54	$161.68	140.86	20.0	2817.2	10754.3				
2180	H18A	TCU89-18	3.81	0.42	0.95	3.92	2.01	50.63	$70.36	896.81	20.0	17936.3	68337.3				
2180	H18B	TCU89-18	3.81	0.42	0.95	3.92	2.01	50.63	$70.36					52.20	20.0	1044.0	3977.7
2180	H65AU	TCU94-65	3.92	2.92	1.15	11.65	3.07	159.02	$195.84	546.06	20.0	10921.2	42811.0				
2180	H65B	TCU94-65	3.92	2.92	1.15	11.65	3.07	159.02	$195.84					90.70	20.0	1813.9	7110.7
2180	H65AL	TCU94-65	3.57	0.48	2.36	11.77	3.27	116.86	$163.35	88.18	20.0	1763.6	6295.9				
2180	H56A	TCU93-56	3.26	0.88	1.02	5.37	3.08	66.24	$102.57	253.92	20.0	5078.3	16538.0				

TULSEQUAH CHIEF DEPOSIT - RESERVE CALCULATION TABLE
H/AB2 LENSES

										PROBABLE RESERVE				PROBABLE RESERVE			
N_SECT	BLOCK	HOLE	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR	AREA	VERT RANGE	VOLUME	TONNES	AREA	VERT RANGE	VOLUME	TONNES
2180	H62A	TCU94-62	3.30	1.21	0.52	3.52	0.96	58.09	$67.00	164.42	20.0	3288.4	10851.6				
2180	H62B	TCU94-62	3.30	1.21	0.52	3.52	0.96	58.09	$67.00					32.08	20.0	641.6	2117.4
2180	H66B	TCU94-66	2.99	0.74	0.75	2.65	2.77	164.69	$81.96					34.65	20.0	693.0	2072.2
2180	H66A	TCU94-66	2.99	0.74	0.75	2.65	2.77	164.69	$81.96	124.52	20.0	2490.4	7446.2				
2180	H66B	TCU94-66	2.99	0.74	0.75	2.65	2.77	164.69	$81.96					17.77	20.0	355.3	1062.4
2180	H68B	TCU94-68	3.03	0.51	0.88	2.58	2.74	92.91	$71.83					16.63	20.0	332.7	1008.0
2180	H68A	TCU94-68	3.03	0.51	0.88	2.58	2.74	92.91	$71.83	119.95	20.0	2398.9	7268.8				
2200	H15AU	TCU89-15	3.32	0.35	0.28	7.06	0.53	28.33	$72.72	101.23	20.0	2024.7	6715.4				
2200	H15BU	TCU89-15	3.32	0.35	0.28	7.06	0.53	28.33	$72.72					18.17	20.0	363.4	1205.5
2200	H15AL	TCU89-15	3.93	0.97	1.56	9.93	2.06	36.22	$131.43	156.76	20.0	3135.3	12324.7				
2200	H15BL	TCU89-15	3.93	0.97	1.56	9.93	2.06	36.22	$131.43					32.01	20.0	640.3	2516.9
2200	H19A	TCU89-19	3.82	1.32	1.75	11.86	2.11	116.54	$161.68	123.36	20.0	2467.1	9418.0				
2200	H35AU	TCU91-35	3.56	1.52	2.32	13.50	2.76	126.01	$189.72	107.72	20.0	2154.5	7668.5				
2200	H35AL	TCU91-35	3.93	3.50	0.94	7.71	2.02	228.34	$167.55	155.88	20.0	3117.6	12244.9				
2200	H18A	TCU89-18	3.81	0.42	0.95	3.92	2.01	50.63	$70.36	211.70	20.0	4233.9	16131.3				
2200	H53A	TCU93-53	3.35	0.63	1.67	9.41	4.10	192.74	$157.27	56.62	20.0	1132.4	3794.0				
2200	H56A	TCU93-56	3.26	0.88	1.02	5.37	3.08	66.24	$102.57	191.06	20.0	3821.1	12443.8				
2200	H62A	TCU94-62	3.30	1.21	0.52	3.52	0.96	58.09	$67.00	102.73	20.0	2054.6	6780.2				
2200	H62B	TCU94-62	3.30	1.21	0.52	3.52	0.96	58.09	$67.00					55.74	20.0	1114.7	3678.5
2220	H15AU	TCU89-15	3.32	0.35	0.28	7.06	0.53	28.33	$72.72	66.95	20.0	1339.0	4441.1				
2220	H15AL	TCU89-15	3.93	0.97	1.56	9.93	2.06	36.22	$131.43	53.23	20.0	1064.6	4184.8				
2220	H15BL	TCU89-15	3.93	0.97	1.56	9.93	2.06	36.22	$131.43					10.68	20.0	213.6	839.6
2220	H35AU	TCU91-35	3.56	1.52	2.32	13.50	2.76	126.01	$189.72	79.21	20.0	1584.2	5638.6				
2220	H35AL	TCU91-35	3.93	3.50	0.94	7.71	2.02	228.34	$167.55	77.48	20.0	1549.5	6086.0				
2220	H18A	TCU89-18	3.81	0.42	0.95	3.92	2.01	50.93	$70.39	193.18	20.0	3863.6	14720.3				
2220	H53A	TCU93-53	3.35	0.63	1.67	9.41	4.10	192.74	$157.27	124.13	20.0	2482.6	8318.0				
2220	H56A	TCU93-56	3.26	0.88	1.02	5.37	3.08	66.24	$102.57	290.22	20.0	5804.4	18902.5				
2220	H62A	TCU94-62	3.30	1.21	0.52	3.52	0.96	58.09	$67.00	104.31	20.0	2086.1	6884.2				
2220	H62B	TCU94-62	3.30	1.21	0.52	3.52	0.96	58.09	$67.00					53.63	20.0	1072.6	3539.6
2240	H31BL	TCU91-31	3.68	1.28	0.25	1.31	2.73	97.56	$70.26					19.89	20.0	397.7	1462.3
2240	H31AL	TCU91-31	3.68	1.28	0.25	1.31	2.73	97.56	$70.26	37.25	20.0	745.0	2739.1				
2240	H31AU	TCU91-31	2.94	0.57	1.20	4.28	2.79	82.27	$88.33	102.65	20.0	2053.1	6031.4				
2240	H35AU	TCU91-35	3.56	1.52	2.32	13.50	2.76	126.01	$189.72	150.00	20.0	3000.0	10677.9				
2240	H35AL	TCU91-35	3.93	3.50	0.94	7.71	2.02	228.34	$167.55	186.37	20.0	3727.5	14640.0				
2240	H35BUE	TCU91-35	3.93	3.50	0.94	7.71	2.02	228.34	$167.55					122.94	20.0	2458.8	9657.1
2240	H35BLW	TCU91-35	3.56	1.52	2.32	13.50	2.76	126.01	$189.72					63.88	20.0	1277.6	4547.3
2240	H62A	TCU94-62	3.30	1.21	0.52	3.52	0.96	58.09	$67.00	75.48	20.0	1509.6	4981.6				
2240	H62B	TCU94-62	3.30	1.21	0.52	3.52	0.96	58.09	$67.00					7.90	20.0	158.0	521.3
2240	H53A	TCU93-53	3.35	0.63	1.67	9.41	4.10	192.74	$157.27	79.43	20.0	1588.6	5322.7				
2240	H56A	TCU93-56	3.26	0.88	1.02	5.37	3.08	66.24	$102.57	157.74	20.0	3154.7	10273.7				
2240	H25BW	TCU90-25	3.72	0.48	0.11	4.29	2.18	18.04	$67.34					9.06	20.0	181.2	674.2
2240	H25A	TCU90-25	3.72	0.48	0.11	4.29	2.18	18.04	$67.34	81.16	20.0	1623.3	6038.5				
2240	H25BE	TCU90-25	3.72	0.48	0.11	4.29	2.18	18.04	$67.34					47.71	20.0	954.2	3549.7
2260	H21A	TCU89-21	3.80	1.20	1.16	5.99	3.64	117.88	$124.16	145.90	20.0	2918.0	11088.6				

TULSEQUAH CHIEF DEPOSIT - RESERVE CALCULATION TABLE
H/AB2 LENSES

										----------PROBABLE RESERVE----------------				----------PROBABLE RESERVE-------------			
											VERT				VERT		
N_SECT	BLOCK	HOLE	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR	AREA	RANGE	VOLUME	TONNES	AREA	RANGE	VOLUME	TONNES
2260	H31AU	TCU91-31	2.94	0.57	1.20	4.28	2.79	82.27	$88.33	145.41	20.0	2908.2	8543.7				
2260	H31BU	TCU91-31	2.94	0.57	1.20	4.28	2.79	82.27	$88.33					27.13	20.0	542.6	1594.0
2260	H31BL	TCU91-31	3.68	1.28	0.25	1.31	2.73	97.56	$70.26					49.55	20.0	991.1	3643.8
2260	H31AL	TCU91-31	3.68	1.28	0.25	1.31	2.73	97.56	$70.26	163.34	20.0	3266.7	12010.7				
2260	H35AU	TCU91-35	3.56	1.52	2.32	13.50	2.76	126.01	$189.72	90.81	20.0	1816.1	6464.1				
2260	H35AL	TCU91-35	3.93	3.50	0.94	7.71	2.02	228.34	$167.55	250.83	20.0	5016.7	19703.6				
2260	H35BL	TCU91-35	3.93	3.50	0.94	7.71	2.02	228.34	$167.55					96.29	20.0	1925.9	7564.0
2260	H53A	TCU93-53	3.35	0.63	1.67	9.41	4.10	192.74	$157.27	198.28	20.0	3965.5	13286.6				
2260	H53B	TCU93-53	3.35	0.63	1.67	9.41	4.10	192.74	$157.27					58.27	20.0	1165.4	3904.8
2260	H53B	TCU93-53	3.35	0.63	1.67	9.41	4.10	192.74	$157.27					92.17	20.0	1843.4	6176.4
2260	H25BW	TCU90-25	3.86	0.80	0.18	7.08	3.60	29.77	$111.31					51.91	20.0	1038.2	4010.8
2260	H25A	TCU90-25	3.86	0.80	0.18	7.08	3.60	29.77	$111.31	114.72	20.0	2294.3	8863.8				
2260	H25BE	TCU90-25	3.86	0.80	0.18	7.08	3.60	29.77	$111.31					60.90	20.0	1218.0	4705.6
2280	H16B	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90					105.82	20.0	2116.5	8179.8
2280	H25BW	TCU90-25	3.86	0.80	0.18	7.08	3.60	29.77	$111.31					17.50	20.0	349.9	1351.8
2280	H25A	TCU90-25	3.86	0.80	0.18	7.08	3.60	29.77	$111.31	78.09	20.0	1561.9	6034.1				
2280	H25BE	TCU90-25	3.86	0.80	0.18	7.08	3.60	29.77	$111.31					37.16	20.0	743.2	2871.2
2280	H21A	TCU89-21	3.80	1.20	1.16	5.99	3.64	117.88	$124.16	164.48	20.0	3289.7	12500.8				
2280	H31AU	TCU91-31	2.94	0.57	1.20	4.28	2.79	82.27	$88.33	215.85	20.0	4317.0	12682.4				
2280	H31BLW	TCU91-31	3.68	1.28	0.25	1.31	2.73	97.56	$70.26					54.84	20.0	1096.8	4032.5
2280	H31AL	TCU91-31	3.68	1.28	0.25	1.31	2.73	97.56	$70.26	161.26	20.0	3225.3	11858.3				
2280	H35AU	TCU91-35	3.56	1.52	2.32	13.50	2.76	126.01	$189.72	160.76	20.0	3215.2	11444.0				
2280	H35BLE	TCU91-35	3.93	3.50	0.94	7.71	2.02	228.34	$167.55					56.24	20.0	1124.9	4418.0
2280	H35AL	TCU91-35	3.93	3.50	0.94	7.71	2.02	228.34	$167.55	211.38	20.0	4227.7	16604.7				
2280	H53BW	TCU93-53	3.35	0.63	1.67	9.41	4.10	192.74	$157.27					51.44	20.0	1028.7	3446.8
2280	H53BE	TCU93-53	3.35	0.63	1.67	9.41	4.10	192.74	$157.27					15.93	20.0	318.6	1067.4
2280	H53A	TCU93-53	3.35	0.63	1.67	9.41	4.10	192.74	$157.27	206.62	20.0	4132.4	13845.8				
2300	H16BE	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90					199.83	20.0	3996.5	15446.0
2300	H21A	TCU89-21	3.80	1.20	1.16	5.99	3.64	117.88	$124.16	421.68	20.0	8433.6	32047.8				
2300	H21BL	TCU89-21	3.80	1.20	1.16	5.99	3.64	117.88	$124.16					152.66	20.0	3053.1	11601.9
2300	H21BU	TCU89-21	3.80	1.20	1.16	5.99	3.64	117.88	$124.16					171.77	20.0	3435.4	13054.5
2300	H25B	TCU90-25	3.86	0.80	0.18	7.08	3.60	29.77	$111.31					114.24	20.0	2284.9	8827.2
2300	H25A	TCU90-25	3.86	0.80	0.18	7.08	3.60	29.77	$111.31	54.38	20.0	1087.6	4201.8				
2300	H30B	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77					251.55	20.0	5031.0	15321.9
2300	H31A	TCU91-31	2.94	0.57	1.20	4.28	2.79	82.27	$88.33	613.47	20.0	12269.4	36044.7				
2300	H31B	TCU91-31	2.94	0.57	1.20	4.28	2.79	82.27	$88.33					211.11	20.0	4222.2	12403.9
2300	H53B	TCU93-53	3.35	0.63	1.67	9.41	4.10	192.74	$157.27					239.95	20.0	4799.1	16079.5
2320	H16BW	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90					35.24	20.0	704.9	2724.2
2320	H16A	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90	120.10	20.0	2402.0	9283.5				
2320	H16BE	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90					84.85	20.0	1696.9	6558.3
2320	H21A	TCU89-21	3.80	1.20	1.16	5.99	3.64	117.88	$124.16	637.00	20.0	12740.0	48412.0				
2320	H21BU	TCU89-21	3.80	1.20	1.16	5.99	3.64	117.88	$124.16					196.58	20.0	3931.6	14940.0
2320	H21BL	TCU89-21	3.80	1.20	1.16	5.99	3.64	117.88	$124.16					139.40	20.0	2788.0	10594.6
2320	H22A	TCU90-22	4.08	2.94	1.58	9.13	3.92	171.40	$188.70	1149.11	20.0	22982.2	93829.9				

TULSEQUAH CHIEF DEPOSIT - RESERVE CALCULATION TABLE										----------PROBABLE RESERVE----------				----------PROBABLE RESERVE----------			
H/AB2 LENSES											VERT				VERT		
N_SECT	BLOCK	HOLE	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR	AREA	RANGE	VOLUME	TONNES	AREA	RANGE	VOLUME	TONNES
2320	H22B	TCU90-22	4.08	2.94	1.58	9.13	3.92	171.40	$188.70					55.47	20.0	1109.3	4529.0
2320	H25A	TCU90-25	3.86	0.80	0.18	7.08	3.60	29.77	$111.31	41.91	20.0	838.1	3238.0				
2320	H25B	TCU90-25	3.86	0.80	0.18	7.08	3.60	29.77	$111.31					20.04	20.0	400.8	1548.4
2320	H30BW	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77					55.57	20.0	1111.4	3384.8
2320	H30BE	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77					52.03	20.0	1040.7	3169.4
2320	H30AL	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77	200.53	20.0	4010.5	12214.1				
2320	H30AU	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77	469.28	20.0	9385.6	28583.9				
2340	H16BW	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90					48.57	20.0	971.3	3754.1
2340	H16A	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90	163.73	20.0	3274.6	12655.8				
2340	H16BE	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90					115.48	20.0	2309.6	8926.5
2340	H21A	TCU89-21	3.80	1.20	1.16	5.99	3.64	117.88	$124.16	850.04	20.0	17000.8	64603.1				
2340	H21B	TCU89-21	3.80	1.20	1.16	5.99	3.64	117.88	$124.16					601.07	20.0	12021.5	45681.7
2340	H22A	TCU90-22	4.08	2.94	1.58	9.13	3.92	171.40	$188.70	1168.09	20.0	23361.8	95379.9				
2340	H22B	TCU90-22	4.08	2.94	1.58	9.13	3.92	171.40	$188.70					124.74	20.0	2494.8	10185.6
2340	H30AL	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77	240.61	20.0	4812.1	14655.3				
2340	H30BU	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77					33.07	20.0	661.4	2014.3
2340	H30BL	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77					52.48	20.0	1049.7	3196.8
2340	H30AU	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77	200.68	20.0	4013.6	12223.3				
2360	H16BW	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90					38.52	20.0	770.4	2977.6
2360	H16A	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90	117.23	20.0	2344.5	9061.4				
2360	H16BE	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90					78.14	20.0	1562.8	6039.8
2360	H21B	TCU89-21	3.80	1.20	1.16	5.99	3.64	117.88	$124.16					461.92	20.0	9238.3	35105.6
2360	H22A	TCU90-22	4.08	2.94	1.58	9.13	3.92	171.40	$188.70	1555.42	20.0	31108.4	127007.0				
2360	H22BE	TCU90-22	4.08	2.94	1.58	9.13	3.92	171.40	$188.70					576.50	20.0	11530.1	47074.1
2360	H22BW	TCU90-22	4.08	2.94	1.58	9.13	3.92	171.40	$188.70					123.88	20.0	2477.6	10115.5
2360	H30AU	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77	179.50	20.0	3590.1	10933.6				
2360	H30BU	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77					35.86	20.0	717.2	2184.3
2360	H30AL	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77	324.93	20.0	6498.6	19791.6				
2360	H30BL	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77					74.04	20.0	1480.8	4509.9
2380	H16BW	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90					24.73	20.0	494.7	1911.8
2380	H16A	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90	130.98	20.0	2619.7	10124.7				
2380	H16BE	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90					162.38	20.0	3247.6	12551.7
2380	H21B	TCU89-21	3.80	1.20	1.16	5.99	3.64	117.88	$124.16					630.61	20.0	12612.2	47926.3
2380	H22A	TCU90-22	4.08	2.94	1.58	9.13	3.92	171.40	$188.70	1382.04	20.0	27640.8	112849.6				
2380	H22BW	TCU90-22	4.08	2.94	1.58	9.13	3.92	171.40	$188.70					600.61	20.0	12012.3	49042.8
2380	H22BE	TCU90-22	4.08	2.94	1.58	9.13	3.92	171.40	$188.70					133.67	20.0	2673.5	10915.0
2380	H30AU	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77	179.33	20.0	3586.6	10922.9				
2380	H30BU	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77					41.95	20.0	839.0	2555.1
2380	H30AL	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77	315.20	20.0	6303.9	19198.6				
2380	H30BL	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77					59.35	20.0	1187.1	3615.3
2400	H16BW	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90					28.98	20.0	579.5	2239.7
2400	H16A	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90	142.67	20.0	2853.4	11028.0				
2400	H16BE	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90					102.91	20.0	2058.2	7954.8
2400	H22BW	TCU90-22	4.08	2.94	1.58	9.13	3.92	171.40	$188.70					509.28	20.0	10185.7	41585.3

TULSEQUAH CHIEF DEPOSIT - RESERVE CALCULATION TABLE
H/AB2 LENSES

										----------PROBABLE RESERVE----------				----------PROBABLE RESERVE----------			
N_SECT	BLOCK	HOLE	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR	AREA	VERT RANGE	VOLUME	TONNES	AREA	VERT RANGE	VOLUME	TONNES
2400	H22A	TCU90-22	4.08	2.94	1.58	9.13	3.92	171.40	$188.70	1233.65	20.0	24672.9	100732.7				
2400	H22BE	TCU90-22	4.08	2.94	1.58	9.13	3.92	171.40	$188.70					107.34	20.0	2146.9	8765.1
2400	H24B	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57					787.67	20.0	15753.5	43960.3
2400	H30BU	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77					21.40	20.0	428.0	1303.5
2400	H30BL	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77					80.09	20.0	1601.8	4878.2
2400	H30AU	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77	170.40	20.0	3407.9	10378.8				
2400	H30AL	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77	325.43	20.0	6508.7	19822.2				
2420	H16B	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90					264.74	20.0	5294.8	20463.6
2420	H22B	TCU90-22	4.08	2.94	1.58	9.13	3.92	171.40	$188.70					356.52	20.0	7130.3	29111.1
2420	H23B	TCU90-23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29					606.40	20.0	12128.0	40766.0
2420	H24A	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57	1052.45	20.0	21049.0	58737.6				
2420	H24BLW	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57					204.01	20.0	4080.2	11385.8
2420	H24BUW	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57					169.48	20.0	3389.5	9458.5
2420	H24BE	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57					92.92	20.0	1858.4	5186.0
2420	H30BU	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77					92.92	20.0	1858.4	5659.8
2420	H30BL	TCU91-30	3.05	0.43	0.79	4.08	1.41	41.48	$63.77					257.80	20.0	5156.1	15702.8
2440	H16B	TCU89-16	3.86	0.54	1.72	8.20	2.42	246.40	$133.90					205.09	20.0	4101.7	15852.8
2440	H24A	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57	488.78	20.0	9775.6	27279.0				
2440	H24BUW	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57					123.16	20.0	2463.2	6873.5
2440	H24BE	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57					337.90	20.0	6758.0	18858.3
2440	H23A	TCU90-23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29	885.10	20.0	17702.1	59502.4				
2440	H23BW	TCU90-23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29					258.14	20.0	5162.7	17353.7
2440	H23BE	TCU90-23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29					148.25	20.0	2964.9	9966.1
2460	H23A	TCU90-23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29	952.64	20.0	19052.8	64042.8				
2460	H23BW	TCU90-23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29					201.93	20.0	4038.6	13575.2
2460	H23BE	TCU90-23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29					236.63	20.0	4732.6	15907.7
2460	H24A	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57	281.13	20.0	5622.5	15689.8				
2460	H24BW	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57					93.85	20.0	1877.1	5238.0
2460	H24BE	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57					224.13	20.0	4482.6	12508.8
2480	H23A	TCU90-23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29	1050.75	20.0	21015.0	70638.4				
2480	H23BW	TCU90-23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29					256.734	20	5134.7	17259.3
2480	H23BE	TCU90-23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29					297.579	20	5951.6	20005.2
2480	H24A	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57	367.022	20	7340.4	20483.6				
2480	H24BW	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57					86.8281	20	1736.6	4845.9
2480	H24BE	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57					236.607	20	4732.1	13205.1
2500	H23A	TCU90-23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29	1137.81	20.0	22756.2	76491.1				
2500	H23BE	TCU90-23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29					282.361	20	5647.2	18982.2
2500	H23BW	TCU90-23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29					182.364	20	3647.3	12259.7
2500	H24BW	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57					112.252	20	2245.0	6264.8
2500	H24A	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57	450.94	20.0	9018.7	25166.9				
2500	H24BE	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57					249.268	20	4985.4	13911.7
2520	H23AU	TCU90-23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29	276.05	20.0	5521.1	18558.2				
2520	H23AL	TCU90-23	3.36	1.19	1.15	5.42	3.62	142.68	$121.29	281.01	20.0	5620.1	18891.1				
2520	H24B	TCU90-24	2.79	0.12	0.97	2.22	2.27	152.53	$63.57					295.213	20	5904.3	16475.9

TULSEQUAH CHIEF DEPOSIT - RESERVE CALCULATION TABLE
H/AB2 LENSES

										----------PROBABLE RESERVE----------				----------PROBABLE RESERVE----------			
N_SECT	BLOCK	HOLE	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR	AREA	VERT RANGE	VOLUME	TONNES	AREA	VERT RANGE	VOLUME	TONNES
2520	H36AL	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59	377.682	20	7553.6	26379.8				
2520	H36AU	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21	329.203	20	6584.1	20419.3				
2540	H36AU	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59	842.773	20	16855.5	58864.9				
2540	H36BUW	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59					274.993	20	5499.9	19207.3
2540	H36BUE	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59					188.911	20	3778.2	13194.8
2540	H36AL	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73	614.247	20	12284.9	40750.4				
2540	H36BLW	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73					117.46	20	2349.2	7792.5
2540	H36BLE	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73					173.631	20	3472.6	11519.0
2560	H36A	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59	790.577	20	15811.5	55219.2				
2560	H36BE	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59					271.1	20	5422.0	18935.5
2560	H36BW	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59					575.735	20	11514.7	40213.2
2560	B36AU	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21	184.249	20	3685.0	11428.3				
2560	B36BUW	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21					159.471	20	3189.4	9891.4
2560	B36BUE	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21					251.264	20	5025.3	15585.0
2560	B36AL	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73	513.628	20	10272.6	34075.2				
2560	B36BLW	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73					195.326	20	3906.5	12958.3
2560	B36BLE	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73					216.081	20	4321.6	14335.3
2580	H36A	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59	775.74	20.0	15514.9	54183.2				
2580	H36BW	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59					535.702	20	10714.0	37417.0
2580	H36BE	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59					259.761	20	5195.2	18143.4
2580	B36AU	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21	282.759	20	5655.2	17538.5				
2580	B36BUW	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21					100.171	20	2003.4	6213.2
2580	B36BUE	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21					314.474	20	6289.5	19505.7
2580	B36AL	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73	587.651	20	11753.0	38986.0				
2580	B36BLW	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73					231.759	20	4635.2	15375.4
2580	B36BLE	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73					223.766	20	4475.3	14845.1
2600	H36A	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59	803.57	20.0	16071.5	56127.0				
2600	H36BW	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59					537.955	20	10759.1	37574.4
2600	H36BE	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59					265.282	20	5305.6	18529.0
2600	B36BUW	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21					149.62	20	2992.4	9280.4
2600	B36BUE	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21					183.946	20	3678.9	11409.5
2620	H36BW	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59					578.95	20.0	11579.1	40438.1
2620	H36A	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59	762.996	20	15259.9	53292.7				
2620	H36BE	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59					216.84	20.0	4336.9	15145.9
2620	B36AU	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21	118.837	20	2376.7	7371.0				
2620	B36BUW	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21					120.148	20	2403.0	7452.3
2620	B36BUE	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21					87.5018	20	1750.0	5427.4
2620	B36AL	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73	594.076	20	11881.5	39412.2				
2620	B36BLW	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73					312.902	20	6258.0	20758.5
2620	B36BLE	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73					263.405	20	5268.1	17474.8
2640	H36BUW	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59					618.90	20.0	12378.1	43228.4
2640	H36BU	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59					753.524	20.0	15070.5	52631.1
2640	H36BUE	TCU92-36	3.49	0.79	1.11	8.60	0.81	68.82	$104.59					247.781	20.0	4955.6	17306.7
2640	B36BMW	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21					160.053	20	3201.1	9927.5

SUMMARY - SECTIONAL ORE RESERVE 1994

TULSEQUAH CHIEF DEPOSIT - RESERVE CALCULATION TABLE
H/AB2 LENSES

										PROBABLE RESERVE				PROBABLE RESERVE			
N_SECT	BLOCK	HOLE	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR	AREA	VERT RANGE	VOLUME	TONNES	AREA	VERT RANGE	VOLUME	TONNES
2640	B36BM	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21					245.59	20	4911.8	15233.0
2640	B36BME	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21					137.861	20	2757.2	8551.0
2640	B36BLW	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73					315.062	20	6301.2	20901.8
2640	B36BLM	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73					631.461	20	12629.2	41892.4
2640	B36BLE	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73					270.87	20	5417.4	17970.0
2660	H36BUW	TCU92-36	3.10	0.55	0.36	4.47	1.31	67.87	$67.21					618.90	20.0	12378.1	38388.4
2660	H36BU	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73					753.524	20.0	15070.5	49990.3
2660	H36BUE	TCU92-36	3.32	1.18	0.83	5.74	2.70	61.04	$104.73					247.781	20.0	4955.6	16438.3
PROBABLE RESERVE			3.55	1.47	1.16	6.76	2.63	106.52	$123.42				3,998,696				2,256,059
POSSIBLE RESERVE			3.44	1.08	1.06	6.15	2.32	106.07	$108.17				2,256,059				
TOTAL			3.51	1.33	1.13	6.54	2.52	106.36	$117.92				6,254,755				

TULSEQUAH CHIEF DEPOSIT - RESERVE CALCULATION TABLE

AB1 LENS

N_SECT	BLOCK	HOLE	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR	PROBABLE RESERVE AREA	PROBABLE RESERVE VERT RANGE	PROBABLE RESERVE VOLUME	PROBABLE RESERVE TONNES	POSSIBLE RESERVE AREA	POSSIBLE RESERVE VERT RANGE	POSSIBLE RESERVE VOLUME	POSSIBLE RESERVE TONNES
1860	B46A	TCU92-46	4.01	0.84	4.46	8.29	0.92	111.37	$131.11	186.819	20	3736.4	14996.0				
1880	B2B	TCU-88-2	3.81	0.50	1.54	11.58	0.54	60.35	$123.35					117.741	20	2354.8	8971.9
1880	B46A	TCU92-46	4.01	0.84	4.46	8.29	0.92	111.37	$131.11	298.124	20	5962.5	23930.4				
1880	B46BLW	TCU92-46	4.01	0.84	4.46	8.29	0.92	111.37	$131.11					90.5058	20	1810.1	7264.9
1900	B2A	TCU-88-2	3.81	0.50	1.54	11.58	0.54	60.35	$123.35	71.7997	20	1436.0	5471.1				
1900	B2BW	TCU-88-2	3.81	0.50	1.54	11.58	0.54	60.35	$123.35					40.7843	20	815.7	3107.8
1900	B46AL	TCU92-46	4.01	0.84	4.46	8.29	0.92	111.37	$131.11	163.146	20	3262.9	13095.7				
1900	B46BLW	TCU92-46	4.01	0.84	4.46	8.29	0.92	111.37	$131.11					102.127	20	2042.5	8197.8
1920	B2A	TCU-88-2	3.81	0.50	1.54	11.58	0.54	60.35	$123.35	121.648	20	2433.0	9269.6				
1920	B2BW	TCU-88-2	3.81	0.50	1.54	11.58	0.54	60.35	$123.35					30.8594	20	617.2	2351.5
2120	B13AL	TCU89-13	3.45	0.97	1.34	5.60	2.25	84.22	$101.11	96.59	20	1931.7	6659.9				
2120	B48BLW	TCU93-48	3.00	1.18	0.36	3.92	1.30	39.24	$70.44	121.796	20	2435.9	7307.8				
2120	B48BLE	TCU93-48	3.00	1.18	0.36	3.92	1.30	39.24	$70.44					167.291	20	3345.8	10037.5
2220	B18B	TCU89-18	3.58	0.74	1.82	10.01	2.66	150.42	$146.43					252.64	20	5052.8	18070.9
2240	B18B	TCU89-18	3.58	0.74	1.82	10.01	2.66	150.42	$146.43	575.244	20	11504.9	41146.2				
2260	B18BW	TCU89-18	3.58	0.74	1.82	10.01	2.66	150.42	$146.43					181.555	20	3631.1	12986.3
2260	B18A	TCU89-18	3.58	0.74	1.82	10.01	2.66	150.42	$146.43	253.507	20	5070.1	18132.9				
2260	B18BE	TCU89-18	3.58	0.74	1.82	10.01	2.66	150.42	$146.43					39.2651	20	785.3	2808.6
2280	B18BW	TCU89-18	3.58	0.74	1.82	10.01	2.66	150.42	$146.43					204.515	20	4090.3	14628.6
2280	B18A	TCU89-18	3.58	0.74	1.82	10.01	2.66	150.42	$146.43	352.969	20	7059.4	25247.2				
2280	B18BE	TCU89-18	3.58	0.74	1.82	10.01	2.66	150.42	$146.43					75.6915	20	1513.8	5414.1
2300	B18A	TCU89-18	3.58	0.74	1.82	10.01	2.66	150.42	$146.43	165.227	20	3304.5	11818.4				
2300	B18B	TCU89-18	3.58	0.74	1.82	10.01	2.66	150.42	$146.43					129.307	20	2586.1	9249.1
2300	B31A	TCU91-31	2.95	0.36	1.30	5.07	1.10	143.06	$79.84	117.198	20	2344.0	6917.8				
2320	B31B	TCU91-31	2.95	0.36	1.30	5.07	1.10	143.06	$79.84					45.0244	20	900.5	2657.6
2320	B31BE	TCU91-31	2.95	0.36	1.30	5.07	1.10	143.06	$79.84					71.6452	20	1432.9	4229.0
2320	B31BW	TCU91-31	2.95	0.36	1.30	5.07	1.10	143.06	$79.84					94.7061	20	1894.1	5590.2
2340	B31A	TCU91-31	2.95	0.36	1.30	5.07	1.10	143.06	$79.84	165.148	20	3303.0	9748.1				
2340	B31BW	TCU91-31	2.95	0.36	1.30	5.07	1.10	143.06	$79.84					12.2802	20	245.6	724.9
2340	B31BE	TCU91-31	2.95	0.36	1.30	5.07	1.10	143.06	$79.84					76.8124	20	1536.2	4534.0
2360	B31A	TCU91-31	2.95	0.36	1.30	5.07	1.10	143.06	$79.84	150.713	20	3014.3	8896.1				
2360	B31BW	TCU91-31	2.95	0.36	1.30	5.07	1.10	143.06	$79.84					73.7901	20	1475.8	4355.6
2360	B31BE	TCU91-31	2.95	0.36	1.30	5.07	1.10	143.06	$79.84					69.8762	20	1397.5	4124.5
2380	B31A	TCU91-31	2.95	0.36	1.30	5.07	1.10	143.06	$79.84	73.846	20	1476.9	4358.9				
2380	B31BW	TCU91-31	2.95	0.36	1.30	5.07	1.10	143.06	$79.84					95.5353	20	1910.7	5639.1
2400	B31B	TCU91-31	2.95	0.36	1.30	5.07	1.10	143.06	$79.84					150.303	20	3006.1	8871.9
2420	B31B	TCU91-31	2.95	0.36	1.30	5.07	1.10	143.06	$79.84					48.3102	20	966.2	2851.6
PROBABLE RESERVE			3.55	0.72	2.32	8.62	1.78	127.07	$127.17				206,996				146,667
POSSIBLE RESERVE			3.38	0.64	1.82	8.10	1.71	127.64	$117.56				146,667				
TOTAL			3.48	0.69	2.11	8.40	1.75	127.31	$123.18				353,663				

TULSEQUAH CHIEF DEPOSIT - RESERVE CALCULATION TABLE
G LENS

										PROBABLE RESERVE				POSSIBLE RESERVE			
N_SECT	BLOCK	HOLE	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR	AREA	VERT RANGE	VOLUME	TONNES	AREA	VERT RANGE	VOLUME	TONNES
1740	G4B	TCU-88-4	3.39	0.67	0.63	3.56	2.06	70.45	$71.63			0.0	0.0	99.365	20	1987.3	6736.9
1760	G4B	TCU-88-4	3.39	0.67	0.63	3.56	2.06	70.45	$71.63			0.0	0.0	457.973	20	9159.5	31050.6
1780	G4BW	TCU-88-4	3.39	0.67	0.63	3.56	2.06	70.45	$71.63			0.0	0.0	144.465	20	2889.3	9794.7
1780	G4A	TCU-88-4	3.39	0.67	0.63	3.56	2.06	70.45	$71.63	293.064	20	5861.3	19869.8			0.0	0.0
1780	G4BE	TCU-88-4	3.39	0.67	0.63	3.56	2.06	70.45	$71.63			0.0	0.0	113.856	20	2277.1	7719.5
1780	G50BW	TCU93-50	3.20	0.31	2.27	5.32	6.24	152.15	$141.71			0.0	0.0	210.029	20	4200.6	13421.3
1780	G50AU	TCU93-50	3.07	0.76	0.65	3.65	1.70	51.20	$68.51	252.351	20	5047.0	15515.6			0.0	0.0
1780	G50AL	TCU93-50	3.20	0.31	2.27	5.32	6.24	152.15	$141.71	196.761	20	3935.2	12573.5			0.0	0.0
1780	G50BUE	TCU93-50	3.07	0.76	0.65	3.65	1.70	51.20	$68.51			0.0	0.0	87.7257	20	1754.5	5393.8
1780	G50BLE	TCU93-50	3.20	0.31	2.27	5.32	6.24	152.15	$141.71			0.0	0.0	58.4352	20	1168.7	3734.2
1800	G4BW	TCU-88-4	3.39	0.67	0.63	3.56	2.06	70.45	$71.63			0.0	0.0	144.015	20	2880.3	9764.2
1800	G4A	TCU-88-4	3.39	0.67	0.63	3.56	2.06	70.45	$71.63	317.892	20	6357.8	21553.1			0.0	0.0
1800	G4BE	TCU-88-4	3.39	0.67	0.63	3.56	2.06	70.45	$71.63			0.0	0.0	114.135	20	2282.7	7738.3
1800	G50BW	TCU93-50	3.20	0.31	2.27	5.32	6.24	152.15	$141.71			0.0	0.0	228.311	20	4566.2	14589.6
1800	G50AU	TCU93-50	3.07	0.76	0.65	3.65	1.70	51.20	$68.51	253.27	20	5065.4	15572.2			0.0	0.0
1800	G50AL	TCU93-50	3.20	0.31	2.27	5.32	6.24	152.15	$141.71	193.408	20	3868.2	12359.2			0.0	0.0
1800	G50BUE	TCU93-50	3.07	0.76	0.65	3.65	1.70	51.20	$68.51			0.0	0.0	69.7949	20	1395.9	4291.3
1800	G50BLE	TCU93-50	3.20	0.31	2.27	5.32	6.24	152.15	$141.71			0.0	0.0	44.295	20	885.9	2830.6
1820	G4BW	TCU-88-4	3.39	0.67	0.63	3.56	2.06	70.45	$71.63			0.0	0.0	137.281	20	2745.6	9307.6
1820	G4A	TCU-88-4	3.39	0.67	0.63	3.56	2.06	70.45	$71.63	265.352	20	5307.0	17990.9			0.0	0.0
1820	G4BE	TCU-88-4	3.39	0.67	0.63	3.56	2.06	70.45	$71.63			0.0	0.0	102.653	20	2053.1	6959.9
1820	G50BW	TCU93-50	3.20	0.31	2.27	5.32	6.24	152.15	$141.71			0.0	0.0	147.306	20	2946.1	9413.2
1820	G50AU	TCU93-50	3.07	0.76	0.65	3.65	1.70	51.20	$68.51	306.035	20	6120.7	18816.4			0.0	0.0
1820	G50AL	TCU93-50	3.20	0.31	2.27	5.32	6.24	152.15	$141.71	184.614	20	3692.3	11797.3			0.0	0.0
1820	G50BUE	TCU93-50	3.07	0.76	0.65	3.65	1.70	51.20	$68.51			0.0	0.0	61.6579	20	1233.2	3791.0
1820	G50BLE	TCU93-50	3.20	0.31	2.27	5.32	6.24	152.15	$141.71			0.0	0.0	54.0684	20	1081.4	3455.1
1820	G6BU	TCU88-6	2.94	0.43	1.00	4.00	0.49	39.30	$54.85			0.0	0.0	93.252	20	1865.0	5483.2
1820	G6BL	TCU88-6	2.94	0.43	1.00	4.00	0.49	39.30	$54.85			0.0	0.0	73.3422	20	1466.8	4312.5
1840	G5BW	TC-87-5	3.31	1.31	1.08	6.03	2.81	85.09	$114.16			0.0	0.0	57.9846	20	1159.7	3838.6
1840	G5A	TC-87-5	3.31	1.31	1.08	6.03	2.81	85.09	$114.16	141.066	20	2821.3	9338.6			0.0	0.0
1840	G5BE	TC-87-5	3.31	1.31	1.08	6.03	2.81	85.09	$114.16			0.0	0.0	49.212	20	984.2	3257.8
1840	G4B	TCU-88-4	3.39	0.67	0.63	3.56	2.06	70.45	$71.63			0.0	0.0	45.8202	20	916.4	3106.6
1840	G50B	TCU93-50	3.20	0.31	2.27	5.32	6.24	152.15	$141.71			0.0	0.0	108.872	20	2177.4	6957.2
1840	G50A	TCU93-50	3.20	0.31	2.27	5.32	6.24	152.15	$141.71	319.121	20	6382.4	20392.6			0.0	0.0
1840	G1AU	TC-87-1	2.94	0.67	0.80	3.01	1.36	60.85	$60.28	232.937	20	4658.7	13696.7			0.0	0.0
1840	G1AL	TC-87-1	3.81	1.37	2.77	7.98	6.35	221.07	$191.38	212.68	20	4253.6	16206.2			0.0	0.0
1840	G6BU	TCU88-6	2.94	0.43	1.00	4.00	0.49	39.30	$54.85			0.0	0.0	176.354	20	3527.1	10369.6
1840	G6BL	TCU88-6	2.94	0.43	1.00	4.00	0.49	39.30	$54.85			0.0	0.0	182.967	20	3659.3	10758.4
1840	G71BU	TCU94-71	3.03	0.75	0.72	4.02	1.98	69.43	$76.34			0.0	0.0	39.1369	20	782.7	2371.7
1840	G71BL	TCU94-71	3.03	0.75	0.72	4.02	1.98	69.43	$76.34			0.0	0.0	36.9948	20	739.9	2241.9
1840	G44B	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06			0.0	0.0	282.213	20	5644.3	16938.4
1860	G88-5A	TCU-88-5	3.30	0.79	0.54	4.17	1.10	29.71	$64.47	75.0365	20	1500.7	4947.5			0.0	0.0
1860	G5A	TC-87-5	3.31	1.31	1.08	6.03	2.81	85.09	$114.16	236.964	20	4739.3	15687.0			0.0	0.0
1860	G5B	TC-87-5	3.31	1.31	1.08	6.03	2.81	85.09	$114.16			0.0	0.0	102.659	20	2053.2	6796.1

TULSEQUAH CHIEF DEPOSIT - RESERVE CALCULATION TABLE
G LENS

										----------PROBABLE RESERVE----------------				----------POSSIBLE RESERVE--------------			
N_SECT	BLOCK	HOLE	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR	AREA	VERT RANGE	VOLUME	TONNES	AREA	VERT RANGE	VOLUME	TONNES
1860	G50B	TCU93-50	3.20	0.31	2.27	5.32	6.24	152.15	$141.71			0.0	0.0	289.849	20	5797.0	18522.0
1860	G1B	TC-87-1	3.81	1.37	2.77	7.98	6.35	221.07	$191.38			0.0	0.0	133.863	20	2677.3	10200.3
1860	G1AU	TC-87-1	2.94	0.67	0.80	3.01	1.36	60.85	$60.28	225.841	20	4516.8	13279.4			0.0	0.0
1860	G1AL	TC-87-1	3.81	1.37	2.77	7.98	6.35	221.07	$191.38	341.196	20	6823.9	25999.1			0.0	0.0
1860	G71AU	TCU94-71	3.03	0.75	0.72	4.02	1.98	69.43	$76.34	226.609	20	4532.2	13732.5			0.0	0.0
1860	G71AL	TCU94-71	3.03	0.75	0.72	4.02	1.98	69.43	$76.34			0.0	0.0	50.765	20	1015.3	3076.4
1860	G44B	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06			0.0	0.0	270.895	20	5417.9	16259.1
1880	G88-5AU	TCU-88-5	3.05	0.64	0.64	3.39	1.32	77.24	$62.75	124.537	20	2490.7	7597.2			0.0	0.0
1880	G88-5AL	TCU-88-5	3.30	0.79	0.54	4.17	1.10	29.71	$64.47	162.101	20	3242.0	10688.1			0.0	0.0
1880	G5A	TC-87-5	3.31	1.31	1.08	6.03	2.81	85.09	$114.16	166.22	20	3324.4	11003.7			0.0	0.0
1880	G5B	TC-87-5	3.31	1.31	1.08	6.03	2.81	85.09	$114.16			0.0	0.0	146.845	20	2936.9	9721.2
1880	G50B	TCU93-50	3.20	0.31	2.27	5.32	6.24	152.15	$141.71			0.0	0.0	66.7208	20	1334.4	4263.6
1880	G7B	TCU-88-7	3.22	0.34	1.43	3.75	1.63	91.74	$70.78			0.0	0.0	167.221	20	3344.4	10768.3
1880	G7AU	TCU-88-7	3.16	0.93	1.10	5.39	2.03	91.73	$95.53	208.83	20	4176.6	13198.0			0.0	0.0
1880	G7AL	TCU-88-7	3.22	0.34	1.43	3.75	1.63	91.74	$70.78	201.962	20	4039.2	13005.4			0.0	0.0
1880	G1AU	TC-87-1	2.94	0.67	0.80	3.01	1.36	60.85	$60.28	208.624	20	4172.5	12267.1			0.0	0.0
1880	G1AL	TC-87-1	3.81	1.37	2.77	7.98	6.35	221.07	$191.38	371.736	20	7434.7	28326.3			0.0	0.0
1880	G71A	TCU94-71	3.03	0.75	0.72	4.02	1.98	69.43	$76.34	189.92	20	3798.4	11509.2			0.0	0.0
1880	G71B	TCU94-71	3.03	0.75	0.72	4.02	1.98	69.43	$76.34			0.0	0.0	31.614	20	632.3	1915.8
1880	G44BW	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06			0.0	0.0	28.0916	20	561.8	1686.1
1880	G44A	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06	230.391	20	4607.8	13828.1			0.0	0.0
1880	G44BE	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06			0.0	0.0	56.4681	20	1129.4	3389.2
1900	G88-5AU	TCU-88-5	3.05	0.64	0.64	3.39	1.32	77.24	$62.75	191.767	20	3835.3	11698.5			0.0	0.0
1900	G88-5AL	TCU-88-5	3.30	0.79	0.54	4.17	1.10	29.71	$64.47	239.733	20	4794.7	15806.8			0.0	0.0
1900	G88-5B	TCU-88-5	3.05	0.64	0.64	3.39	1.32	77.24	$62.75			0.0	0.0	252.297	20	5045.9	15390.9
1900	G49B	TCU93-49	3.82	4.09	1.20	6.30	2.80	137.00	$167.53			0.0	0.0	162.788	20	3255.8	12430.3
1900	G7B	TCU-88-7	3.16	0.93	1.10	5.39	2.03	91.73	$95.53			0.0	0.0	140.197	20	2803.9	8860.5
1900	G7AU	TCU-88-7	3.16	0.93	1.10	5.39	2.03	91.73	$95.53	150.2	20	3004.0	9492.7			0.0	0.0
1900	G7AM	TCU-88-7	3.16	0.93	1.10	5.39	2.03	91.73	$95.53	178.282	20	3565.6	11267.4			0.0	0.0
1900	G7AL	TCU-88-7	3.22	0.34	1.43	3.75	1.63	91.74	$70.78	217.654	20	4353.1	14015.9			0.0	0.0
1900	G1AU	TC-87-1	2.94	0.67	0.80	3.01	1.36	60.85	$60.28	132.841	20	2656.8	7811.0			0.0	0.0
1900	G1AL	TC-87-1	3.81	1.37	2.77	7.98	6.35	221.07	$191.38	107.474	20	2149.5	8189.5			0.0	0.0
1900	G71A	TCU94-71	3.03	0.75	0.72	4.02	1.98	69.43	$76.34	338.3	20	6766.0	20501.0			0.0	0.0
1900	G71B	TCU94-71	3.03	0.75	0.72	4.02	1.98	69.43	$76.34			0.0	0.0	22.0849	20	441.7	1338.3
1900	G44BW	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06			0.0	0.0	17.5266	20	350.5	1051.9
1900	G44A	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06	157.665	20	3153.3	9463.1			0.0	0.0
1900	G44BE	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06			0.0	0.0	44.761	20	895.2	2686.6
1920	G88-5AU	TCU-88-5	3.05	0.64	0.64	3.39	1.32	77.24	$62.75	87.6407	20	1752.8	5346.4			0.0	0.0
1920	G88-5AL	TCU-88-5	3.30	0.79	0.54	4.17	1.10	29.71	$64.47	285.305	20	5706.1	18811.6			0.0	0.0
1920	G88-5BU	TCU-88-5	3.05	0.64	0.64	3.39	1.32	77.24	$62.75			0.0	0.0	98.9578	20	1979.2	6036.8
1920	G88-5BL	TCU-88-5	3.30	0.79	0.54	4.17	1.10	29.71	$64.47			0.0	0.0	118.106	20	2362.1	7787.3
1920	G49B	TCU93-49	3.82	4.09	1.20	6.30	2.80	137.00	$167.53			0.0	0.0	209.194	20	4183.9	15973.8
1920	G7B	TCU-88-7	3.16	0.93	1.10	5.39	2.03	91.73	$95.53			0.0	0.0	137.959	20	2759.2	8719.0
1920	G7AU	TCU-88-7	3.16	0.93	1.10	5.39	2.03	91.73	$95.53	340.613	20	6812.3	21526.7			0.0	0.0

TULSEQUAH CHIEF DEPOSIT - RESERVE CALCULATION TABLE
G LENS

										PROBABLE RESERVE				POSSIBLE RESERVE			
N_SECT	BLOCK	HOLE	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR	AREA	VERT RANGE	VOLUME	TONNES	AREA	VERT RANGE	VOLUME	TONNES
1920	G7AL	TCU-88-7	3.22	0.34	1.43	3.75	1.63	91.74	$70.78	207.702	20	4154.0	13375.0			0.0	0.0
1920	G42AU	TCU92-42	3.33	1.45	0.81	6.32	0.42	54.93	$89.78	93.7069	20	1874.1	6244.3			0.0	0.0
1920	G42AL	TCU92-42	3.52	2.14	0.39	3.24	3.19	59.28	$102.17	84.2605	20	1685.2	5925.4			0.0	0.0
1920	G69A	TCU94-69	2.97	0.33	2.08	5.54	6.17	166.01	$142.97	263.332	20	5266.6	15641.9			0.0	0.0
1920	G69B	TCU94-69	2.97	0.33	2.08	5.54	6.17	166.01	$142.97			0.0	0.0	97.0237	20	1940.5	5763.2
1920	G44BW	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06			0.0	0.0	53.8516	20	1077.0	3232.2
1920	G44A	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06	184.366	20	3687.3	11065.6			0.0	0.0
1920	G44BE	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06			0.0	0.0	80.525	20	1610.5	4833.1
1940	G8A	TCU-88-8	4.23	5.03	0.18	3.02	2.84	54.69	$142.73	263.376	20	5267.5	22281.6			0.0	0.0
1940	G49A	TCU93-49	3.82	4.09	1.20	6.30	2.80	137.00	$167.53	510.368	20	10207.4	38971.1			0.0	0.0
1940	G49B	TCU93-49	3.82	4.09	1.20	6.30	2.80	137.00	$167.53			0.0	0.0	54.9034	20	1098.1	4192.4
1940	G7B	TCU-88-7	3.16	0.93	1.10	5.39	2.03	91.73	$95.53			0.0	0.0	53.1844	20	1063.7	3361.3
1940	G7AU	TCU-88-7	3.16	0.93	1.10	5.39	2.03	91.73	$95.53	167.702	20	3354.0	10598.7			0.0	0.0
1940	G7AL	TCU-88-7	3.22	0.34	1.43	3.75	1.63	91.74	$70.78	213.641	20	4272.8	13757.5			0.0	0.0
1940	G42AU	TCU92-42	3.33	1.45	0.81	6.32	0.42	54.93	$89.78	239.519	20	4790.4	15960.7			0.0	0.0
1940	G42AL	TCU92-42	3.52	2.14	0.39	3.24	3.19	59.28	$102.17	117.252	20	2345.0	8245.5			0.0	0.0
1940	G69A	TCU94-69	2.97	0.33	2.08	5.54	6.17	166.01	$142.97	159.817	20	3196.3	9493.1			0.0	0.0
1940	G69B	TCU94-69	2.97	0.33	2.08	5.54	6.17	166.01	$142.97			0.0	0.0	38.2899	20	765.8	2274.4
1940	G44BW	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06			0.0	0.0	28.8566	20	577.1	1732.0
1940	G44A	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06	222.686	20	4453.7	13365.6			0.0	0.0
1940	G44BE	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06			0.0	0.0	72.804	20	1456.1	4369.7
1960	G8A	TCU-88-8	4.23	5.03	0.18	3.02	2.84	54.69	$142.73	103.047	20	2060.9	8717.8			0.0	0.0
1960	G49A	TCU93-49	3.82	4.09	1.20	6.30	2.80	137.00	$167.53	436.021	20	8720.4	33294.1			0.0	0.0
1960	G49B	TCU93-49	3.82	4.09	1.20	6.30	2.80	137.00	$167.53			0.0	0.0	207.262	20	4145.2	15826.3
1960	G67B	TCU94-67	3.61	1.47	0.76	4.97	1.23	85.37	$89.87			0.0	0.0	102.617	20	2052.3	7408.9
1960	G42B	TCU92-42	3.33	1.45	0.81	6.32	0.42	54.93	$89.78			0.0	0.0	32.9635	20	659.3	2196.6
1960	G42AU	TCU92-42	3.33	1.45	0.81	6.32	0.42	54.93	$89.78	177.827	20	3556.5	11849.8			0.0	0.0
1960	G42AL	TCU92-42	3.52	2.14	0.39	3.24	3.19	59.28	$102.17	41.394	20	827.9	2910.9			0.0	0.0
1960	G69A	TCU94-69	2.97	0.33	2.08	5.54	6.17	166.01	$142.97	249.389	20	4987.8	14813.7			0.0	0.0
1960	G69B	TCU94-69	2.97	0.33	2.08	5.54	6.17	166.01	$142.97			0.0	0.0	53.622	20	1072.4	3185.1
1960	G44B	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06			0.0	0.0	295.5	20	5910.0	17735.9
1980	G8A	TCU-88-8	4.23	5.03	0.18	3.02	2.84	54.69	$142.73	51.179	20	1023.6	4329.7			0.0	0.0
1980	G49A	TCU93-49	3.82	4.09	1.20	6.30	2.80	137.00	$167.53	539.571	20	10791.4	41201.1			0.0	0.0
1980	G67A	TCU94-67	3.61	1.47	0.76	4.97	1.23	85.37	$89.87	148.338	20	2966.8	10710.0			0.0	0.0
1980	G42B	TCU92-42	3.33	1.45	0.81	6.32	0.42	54.93	$89.78			0.0	0.0	28.4231	20	568.5	1894.0
1980	G42A	TCU92-42	3.33	1.45	0.81	6.32	0.42	54.93	$89.78	129.872	20	2597.4	8654.3			0.0	0.0
1980	G69A	TCU94-69	2.97	0.33	2.08	5.54	6.17	166.01	$142.97	181.127	20	3622.5	10758.9			0.0	0.0
1980	G69B	TCU94-69	2.97	0.33	2.08	5.54	6.17	166.01	$142.97			0.0	0.0	58.7041	20	1174.1	3487.0
1980	G61B	TCU94-61	2.74	0.47	0.42	2.39	1.16	39.81	$45.32			0.0	0.0	70.6999	20	1414.0	3874.4
1980	G44B	TCU92-44	3.00	0.84	0.89	2.72	1.16	57.71	$59.06			0.0	0.0	161.366	20	3227.3	9685.2
2000	G49A	TCU93-49	3.82	4.09	1.20	6.30	2.80	137.00	$167.53	129.914	20	2598.3	9920.1			0.0	0.0
2000	G67A	TCU94-67	3.61	1.47	0.76	4.97	1.23	85.37	$89.87	79.0558	20	1581.1	5707.8			0.0	0.0
2000	G43A	TCU92-43	3.11	0.85	1.01	3.71	2.41	87.36	$83.58	67.8072	20	1356.1	4215.6			0.0	0.0
2000	G42B	TCU92-42	3.33	1.45	0.81	6.32	0.42	54.93	$89.78			0.0	0.0	53.2482	20	1065.0	3548.3

SUMMARY - SECTIONAL ORE RESERVE 1994

TULSEQUAH CHIEF DEPOSIT - RESERVE CALCULATION TABLE

G LENS

										----------PROBABLE RESERVE----------------				----------POSSIBLE RESERVE--------------			
											VERT				VERT		
N_SECT	BLOCK	HOLE	SG	CU%	PB%	ZN%	AU g/T	AG g/T	NSR	AREA	RANGE	VOLUME	TONNES	AREA	RANGE	VOLUME	TONNES
2000	G69B	TCU94-69	2.97	0.33	2.08	5.54	6.17	166.01	$142.97			0.0	0.0	40.7027	20	814.1	2417.7
2020	G43A	TCU92-43	3.11	0.85	1.01	3.71	2.41	87.36	$83.58	204.843	20	4096.9	12735.3			0.0	0.0
2020	G43B	TCU92-43	3.11	0.85	1.01	3.71	2.41	87.36	$83.58			0.0	0.0	57.7163	20	1154.3	3588.3
2020	G63B	TCU94-63	3.00	0.98	0.61	3.38	0.92	33.38	$60.18			0.0	0.0	34.5169	20	690.3	2071.0
2040	G43A	TCU92-43	3.11	0.85	1.01	3.71	2.41	87.36	$83.58	239.083	20	4781.7	14864.0			0.0	0.0
2040	G43B	TCU92-43	3.11	0.85	1.01	3.71	2.41	87.36	$83.58			0.0	0.0	48.8567	20	977.1	3037.5
2040	G63A	TCU94-63	3.00	0.98	0.61	3.38	0.92	33.38	$60.18	95.2897	20	1905.8	5717.4			0.0	0.0
2040	G63B	TCU94-63	3.00	0.98	0.61	3.38	0.92	33.38	$60.18			0.0	0.0	36.1155	20	722.3	2166.9
2060	G43A	TCU92-43	3.11	0.85	1.01	3.71	2.41	87.36	$83.58	102.141	20	2042.8	6350.2			0.0	0.0
2060	G63A	TCU94-63	3.00	0.98	0.61	3.38	0.92	33.38	$60.18	185.706	20	3714.1	11142.4			0.0	0.0
2080	G63A	TCU94-63	3.00	0.98	0.61	3.38	0.92	33.38	$60.18	128.554	20	2571.1	7713.2			0.0	0.0
2080	G63B	TCU94-63	3.00	0.98	0.61	3.38	0.92	33.38	$60.18			0.0	0.0	79.8981	20	1598.0	4793.9
PROBABLE RESERVE			3.31	1.42	1.17	4.81	2.75	98.72	$107.45				965,214			156,241	503,177
POSSIBLE RESERVE			3.22	1.03	1.16	4.40	2.66	92.12	$96.14				503,177				
TOTAL			3.28	1.29	1.17	4.67	2.72	96.46	$103.58				1,468,390				

APPENDIX 6

Trace Element Analyses

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

o: ... ERN ...URC.. LIMITED
205 - 10711 CAMBIE RD.
RICHMOND, B.C.
V6X 3G5

Project : TULSEQUAH
Comments: CC: C/O KAWAY VENTURES

Certificate Date: 30-JUN-94
Invoice No. : I9418690
P.O. Number :
Account : PL

CERTIFICATE OF ANALYSIS A9418690

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Co ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Zn ppm
KL94001	248	294	10	< 0.5	27	102	6.28	760	< 1	15	< 2	70
KL94002	248	294	< 5	< 0.5	22	79	4.39	910	< 1	18	< 2	70
KL94003	248	294	< 5	< 0.5	9	14	3.11	565	< 1	< 1	< 2	74
KL94004	248	294	20	< 0.5	15	7	1.49	25	1	< 1	8	6
KL94005	248	294	< 5	< 0.5	19	9	1.85	85	2	< 1	4	22
KL94006	248	294	15	1.5	16	19	2.81	105	1	< 1	22	42
KL94007	248	294	15	< 0.5	16	23	4.59	545	1	1	30	128
KL94008	248	294	< 5	< 0.5	24	35	5.61	715	< 1	19	< 2	92
KL94009	248	294	20	0.5	33	27	0.68	10	2	4	42	672
KL94010	248	294	5	< 0.5	15	19	0.81	5	1	< 1	12	64
ML94001	248	294	30	< 0.5	13	4	0.47	< 5	1	< 1	10	54

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Project : TULSEQUAH
Comments: CC: REDFERN RESOURCES - ATLIN, BC

Total Pages : 1
Certificate Date: 13-JUL-94
Invoice No. : I9419699
P.O. Number :
Account : PL

CERTIFICATE OF ANALYSIS A9419699

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	As ppm	Bi ppm	Cu ppm	Hg ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm
GL94005	1646	226	25	0.2	2	< 2	19	< 1	< 1	2	< 2	24
GL94013	1646	226	20	< 0.2	< 2	< 2	14	1	1	2	< 2	1680
ML94002	1646	226	15	0.2	22	< 2	27	< 1	1	12	< 2	152

CERTIFICATION: ____________

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PHONE: 604-984-0221

To: REDFERN RESOURCES LIMITED

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RICHMOND, B.C.
V6X 3G5

Project : TULSEQUAH
Comments: CC:REDFERN RESOURCES LTD.

Page Number : 1
Total Pages : 1
Certificate Date: 16-JUL-94
Invoice No. : I9419847
P.O. Number :
Account : PL

CERTIFICATE OF ANALYSIS A9419847

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	As ppm	Bi ppm	Cu ppm	Hg ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm
ML 94003	1646	226	< 5	0.6	18	4	16	1	< 1	18	4	134
ML 94004	1646	226	< 5	1.2	22	< 2	56	1	1	22	12	76

CERTIFICATION: Hart Bichler

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To: REDFERN RESOURCES LIMITED

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RICHMOND, B.C.
V6X 3G5

Project : TULSEQUAH
Comments: CC: C/O KAWAY VENTURES

Page Number : 1
Total Pages : 1
Certificate Date: 30-JUN-94
Invoice No. : I9418691
P.O. Number :
Account : PL

CERTIFICATE OF ANALYSIS A9418691

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm Aqua R	As ppm	Bi ppm	Cu ppm	Hg ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm
KG94001	205	294	< 5	< 0.2	2	< 2	10	7	4	6	4	2140
KG94002	205	294	< 5	< 0.2	20	< 2	10	1	< 1	8	4	34
KG94003	205	294	< 5	< 0.2	6	< 2	5	2	1	2	2	10
KG94004	205	294	< 5	< 0.2	22	< 2	48	< 1	< 1	12	28	32
KG94005	205	294	< 5	< 0.2	20	< 2	143	1	1	10	50	1680
KG94006	205	294	< 5	< 0.2	16	< 2	49	< 1	1	2	6	84
KG94007	205	294	10	< 0.2	1190	< 2	232	1	1	12	48	4010
KG94008	205	294	< 5	< 0.2	12	< 2	73	< 1	1	18	34	1820
KG94009	205	294	< 5	< 0.2	8	< 2	18	< 1	1	6	2	64
KG94010	205	294	< 5	< 0.2	22	< 2	64	< 1	< 1	12	20	158
KG94011	205	294	15	< 0.2	42	< 2	14	< 1	3	20	6	78
KG94012	205	294	40	0.4	70	< 2	7	< 1	9	52	26	40
MG94001	205	294	60	< 0.2	90	< 2	14	2	1	20	8	192
MG94002	205	294	< 5	< 0.2	8	< 2	2	< 1	< 1	2	6	50
MG94003	205	294	< 5	< 0.2	16	< 2	4	< 1	6	8	12	102
MG94004	205	294	< 5	0.4	64	< 2	10	< 1	1	14	14	10
MG94005	205	294	< 5	< 0.2	2	< 2	17	< 1	2	12	2	6
MG94006	205	294	< 5	0.2	18	< 2	35	2	< 1	14	6	108
MG94007	205	294	< 5	0.4	54	< 2	7	< 1	1	20	12	8
MG94008	205	294	< 5	< 0.2	2	< 2	75	< 1	< 1	2	4	84
MG94009	205	294	< 5	< 0.2	8	< 2	4	< 1	< 1	8	< 2	2
RG94001	205	294	< 5	0.4	136	< 2	93	< 1	< 1	12	12	442
RG94002	205	294	< 5	< 0.2	8	< 2	45	1	< 1	4	8	50
RG94003	205	294	< 5	< 0.2	12	< 2	14	< 1	< 1	8	4	64
RG94004	205	294	< 5	< 0.2	14	< 2	11	1	1	6	8	132
RG94005	205	294	< 5	0.6	20	< 2	6	< 1	3	6	4	30
RG94006	205	294	< 5	< 0.2	20	< 2	13	< 1	< 1	84	2	334
RG94007	205	294	10	1.0	12	< 2	5	< 1	2	66	60	22
RG94008	205	294	< 5	0.4	142	< 2	32	< 1	1	12	12	38
RG94009	205	294	< 5	< 0.2	22	< 2	9	< 1	< 1	2	4	16
RG94010	205	294	< 5	< 0.2	40	< 2	2	< 1	< 1	2	24	6

CERTIFICATION: [signature]

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British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: REDFERN RESOURCES LIMITED

205 - 10711 CAMBIE RD.
RICHMOND, B.C.
V6X 3G5

Project : TULSEQUAH
Comments: CC: REDFERN RESOURCES - ATLIN, BC

Page Number : 1
Total Pages : 1
Certificate Date: 13-JUL-94
Invoice No. : I9419698
P.O. Number :
Account : PL

CERTIFICATE OF ANALYSIS A9419698

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	As ppm	Bi ppm	Cu ppm	Hg ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm
GG94001	205	226	< 5	0.2	16	< 2	71	< 1	1	4	4	44
GG94002	205	226	< 5	< 0.2	16	< 2	65	< 1	2	8	2	64
GG94003	205	226	< 5	< 0.2	20	< 2	23	< 1	1	8	2	140
GG94004	205	226	< 5	0.2	12	< 2	166	< 1	< 1	< 2	8	56
GG94005	205	226	< 5	0.2	8	< 2	138	< 1	< 1	72	< 2	34
GG94006	205	226	< 5	0.2	46	< 2	149	< 1	< 1	6	18	34
GG94007	205	226	< 5	0.2	136	< 2	215	< 1	1	8	60	54
GG94008	205	226	< 5	0.4	234	< 2	370	< 1	2	< 2	100	98
GG94009	205	226	< 5	0.2	200	< 2	134	< 1	1	6	28	262
GG94010	205	226	< 5	0.2	16	< 2	178	1	< 1	4	48	562
GG94011	205	226	< 5	< 0.2	22	< 2	17	< 1	1	22	< 2	46
GG94012	205	226	< 5	< 0.2	8	< 2	81	< 1	2	4	8	92
GG94013	205	226	< 5	< 0.2	2	< 2	12	1	1	6	< 2	712
GG94014	205	226	< 5	< 0.2	14	< 2	16	< 1	1	2	2	24
MG94010	205	226	< 5	< 0.2	2	< 2	9	< 1	2	4	< 2	20
MG94011	205	226	35	0.4	70	< 2	53	< 1	2	18	2	276
MG94012	205	226	< 5	< 0.2	20	< 2	7	< 1	1	2	2	8
MG94013	205	226	< 5	< 0.2	8	< 2	19	< 1	1	2	6	6
MG94014	205	226	< 5	0.2	12	< 2	11	< 1	1	16	< 2	4
MG94015	205	226	< 5	< 0.2	6	< 2	6	< 1	3	8	< 2	6
MG94016	205	226	< 5	0.4	20	< 2	18	< 1	1	368	< 2	66
RG94011	205	226	< 5	< 0.2	4	< 2	19	< 1	1	4	6	44
RG94012	205	226	< 5	< 0.2	4	< 2	23	< 1	1	6	4	242
RG94013	205	226	< 5	0.2	8	< 2	11	< 1	4	38	< 2	10
RG94014	205	226	< 5	0.4	12	< 2	20	< 1	1	16	2	36
RG94015	205	226	< 5	0.6	46	< 2	19	1	1	32	6	82
RG94016	205	226	< 5	0.2	4	< 2	8	< 1	1	6	< 2	18

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Project : TULSEQUAH
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Total Pages : 1
Certificate Date: 16-JUL-94
Invoice No. : I9419844
P.O. Number :
Account : PL

CERTIFICATE OF ANALYSIS A9419844

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	As ppm	Bi ppm	Cu ppm	Hg ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm
MG 94017	205	226	25	0.6	78	2	10	1	2	36	2	26
MG 94018	205	226	< 5	0.2	24	2	8	< 1	1	22	< 2	28
MG 94019	205	226	< 5	0.4	18	< 2	22	1	< 1	22	4	62
MG 94020	205	226	65	1.2	38	4	8	1	2	10	2	14
MG 94021	205	226	< 5	0.6	82	4	32	< 1	1	16	2	88
MG 94022	205	226	< 5	0.2	8	< 2	5	< 1	1	16	2	42
MG 94023	205	226	< 5	0.4	378	2	6	1	< 1	6	6	70
MG 94024	205	226	< 5	< 0.2	2	< 2	10	< 1	< 1	20	4	40
MG 94025	205	226	< 5	< 0.2	46	2	5	1	< 1	12	< 2	58
MG 94026	205	226	< 5	< 0.2	< 2	< 2	6	< 1	< 1	6	< 2	70
MG 94027	205	226	< 5	< 0.2	< 2	2	11	1	1	2	2	126
MG 94028	205	226	< 5	< 0.2	2	2	17	< 1	< 1	4	2	114
MG 94029	205	226	< 5	< 0.2	44	2	7	< 1	< 1	8	8	84
MG 94030	205	226	< 5	< 0.2	10	< 2	11	< 1	< 1	8	4	94
RG 94017	205	226	< 5	< 0.2	10	< 2	4	< 1	2	116	< 2	18
RG 94018	205	226	< 5	< 0.2	< 2	< 2	14	< 1	2	12	< 2	52
RG 94019	205	226	< 5	< 0.2	4	< 2	21	< 1	< 1	8	2	44
RG 94020	205	226	< 5	< 0.2	8	2	6	< 1	1	10	4	14
RG 94021	205	226	< 5	< 0.2	20	2	7	< 1	2	10	4	96
RG 94022	205	226	< 5	< 0.2	< 2	2	15	< 1	< 1	14	4	110
RG 94023	205	226	< 5	0.4	20	2	37	< 1	< 1	6	12	146
RG 94024	205	226	< 5	0.4	< 2	4	19	< 1	< 1	8	10	70
RG 94025	205	226	< 5	< 0.2	16	8	29	1	< 1	6	8	48
RG 94026	205	226	< 5	0.4	4	4	5	< 1	1	2	4	66
RG 94027	205	226	< 5	< 0.2	< 2	4	2	< 1	2	6	2	102
RG 94028	205	226	< 5	0.2	4	4	6	< 1	< 1	16	8	128
RG 94029	205	226	< 5	< 0.2	18	6	6	< 1	1	8	6	72

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Project : TULSEQUAH
Comments: CC: C/O KAWDY VENTURES

Certificate Date: 15-AUG-94
Invoice No. : I9422089
P.O. Number :
Account : PL

CERTIFICATE OF ANALYSIS A9422089

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	As ppm	Bi ppm	Cu ppm	Hg ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm
TCU8919	1646	226	10	< 0.2	< 2	< 2	29	< 1	1	12	< 2	98
TCU9466A	1646	226	< 5	< 0.2	4	< 2	29	< 1	< 1	6	< 2	36
TCU9466B	1646	226	< 5	< 0.2	< 2	< 2	91	< 1	1	8	< 2	46
9454004	1646	226	< 5	0.6	50	< 2	2010	< 1	1	42	< 2	156
9454007	1646	226	< 5	< 0.2	< 2	< 2	10	< 1	2	4	< 2	6
9454008	1646	226	20	0.2	14	< 2	6	< 1	1	20	< 2	12

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V6X 3G5

Project : TULSEQUAH
Comments: CC: C/O KAWDY VENTURES

Certificate Date: 15-AUG-94
Invoice No. : I9422091
P.O. Number :
Account : PL

CERTIFICATE OF ANALYSIS A9422091

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	As ppm	Bi ppm	Cu ppm	Hg ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm
PS94001	205	226	< 5	< 0.2	578	< 2	55	< 1	1	6	10	56
RG94030	205	226	< 5	< 0.2	34	< 2	67	< 1	2	20	8	12
RG94031	205	226	< 5	< 0.2	< 2	< 2	17	< 1	< 1	10	2	62
RG94032	205	226	< 5	< 0.2	6	< 2	1	< 1	< 1	2	< 2	18

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Project : TULSEQUAH
Comments: ATTN: K. CURTIS CC: REDFERN RES. - ATLIN, BC

Page Number : 1
Total Pages : 1
Certificate Date: 15-SEP-94
Invoice No. : I9425209
P.O. Number :
Account : PL

CERTIFICATE OF ANALYSIS A9425209

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	As ppm	Bi ppm	Cu ppm	Hg ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm
KL94011	1646	226	< 5	< 0.2	20	< 2	92	1	< 1	< 2	< 2	70

CERTIFICATION: Hart Bichler

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V6X 3G5

Project : TULSEQUAH
Comments: CC: REDFERN RESOURCES

Certificate Date: 29-SEP-94
Invoice No. : I9426702
P.O. Number :
Account : PL

CERTIFICATE OF ANALYSIS A9426702

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	As ppm	Bi ppm	Cu ppm	Hg ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm
TC9418-1	1646	226	55	< 0.2	10	< 2	13	1	3	10	< 2	12
TC9418-2	1646	226	15	< 0.2	20	< 2	11	< 1	< 1	8	2	12
TC9418-3	1646	226	< 5	0.6	4	< 2	61	1	< 1	14	2	112
5200L 94L1	1646	226	5	0.2	28	2	18	< 1	4	12	< 2	30
5200L 94L2	1646	226	< 5	0.6	6	< 2	296	1	1	12	6	144
5200L 94L3	1646	226	30	0.2	32	< 2	19	< 1	1	10	2	20
5200L 94L4	1646	226	150	2.6	40	< 2	58	< 1	5	56	4	62

CERTIFICATION:

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V6X 3G5

Project : BIG BULL
Comments: CC: REDFERN RESOURCES

Page Number : 1
Total Pages : 1
Certificate Date: 29-SEP-94
Invoice No. : I9426704
P.O. Number :
Account : PL

CERTIFICATE OF ANALYSIS A9426704

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	As ppm	Bi ppm	Cu ppm	Hg ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm
145881	1646	226	< 5	0.4	4	< 2	30	< 1	< 1	16	2	98
145882	1646	226	< 5	0.4	22	< 2	80	< 1	< 1	12	2	82
145883	1646	226	< 5	0.4	14	2	16	< 1	< 1	12	4	276
145884	1646	226	20	0.2	< 2	< 2	178	< 1	< 1	8	2	74

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APPENDIX 7

Lithogeochemical Analyses

Geochemical Laboratories
Earth & Planetary Sciences
McGill University, 3450 University Street
Montreal, QC CANADA H3A 2A7

X-ray fluorescence analysis of 34 powders submitted by Dr. K. Curtis/Dr. R. March, Redfern Resources on November 10, 1994.

Any values given in the results tables which are less than the given detection limits are not significant.

Major element analyses:

Analyses done on fused beads prepared from ignited samples

Total iron present has been recalculated as Fe_2O_3. In cases where most of the iron was originally in the ferrous state (usually the case with unaltered rocks) a higher total is the result.

Trace element analyses:

Analyses done on pressed powder pellets

Detection limits are based on three times the background sigma values.

"int" indicates that there is interference from unusually high quantities of other trace elements.

A copy of the correlation list follows the results.

S.T. Ahmedali, Geochemist
December 15, 1994

Curtis/March 34 Powders Nov. 10/94

LONGLOI - PP for those noted

Sample No.	Lab No.	Remarks		
145881	94-068	Basalt	<1%	
145882	069	Basalt	<1%	
145883	070	Basalt	1%	
145884	071	Basalt	1%	
52009411	072	Basalt	15-20%	
520094L2	073	Basalt	<1%	
520094L3	074	Basalt	5-8%	
520094L4	075	Rhyolite	10-15%	
BCL001	076	Basalt	<1%	
BCL002	077	Dacite	1%	
BCL003	078	Basalt	1%	
BCL004	079	Basalt	<1%	
BCL005	080	Dacite	1%	
BCL006	081	Dacite	1%	
KL94011	082			
ML94005	083	Dacite	<1%	MAJORS ONLY
ML94006	084	Dacite	1-2%	MAJORS ONLY
ML94008	085	Dacite	<1%	MAJORS ONLY
ML94009	086	Rhyolite	<1%	MAJORS ONLY
ML94010	087	Rhyolite	<1%	MAJORS ONLY
ML94011	088	Dacite	<1%	MAJORS ONLY
ML94012	089	Rhyolite	<1%	MAJORS ONLY

Curtis/March

Sample No.	Lab No.	Remarks	
RL94013	94-090	Dacite 1%	MAJORS ONLY
RL94014	091	Dacite 1%	
RL94016	092	Dacite (<5% S)	
RL94017	093	Basalt (1%) S	
RL94018	094	Dacite <1%	
RL94019	095	Basalt <1%	
RL94020	096	Basalt <1%	
RL94021	097	Dacite <1%	
RL94022	098	Dacite <1%	
TC9418-1	099	Rhyolite 3-5%	
TC9418-2	100	Rhyolite 5-7%	
TC9418-3	101	Basalt 5-7%	

Geochemical Laboratories
Earth and Planetary Sciences
McGill University, 3450 University Street
Montreal, QC CANADA H3A 2A7

Major Element Package

Sample		SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	BaO	Ce	Co	Cr2O3	Cu	Ni	Sc	V	Zn	LOI	Total
CURTIS	001	51.25	0.72	16.71	10.99	0.15	4.64	6.07	2.33	1.37	0.15	208	7	35	68	92	67	33	227	63	5.83	100.30
CURTIS	002	44.54	0.95	16.53	7.62	0.18	2.65	13.27	2.21	2.20	0.18	406	28	24	158	93	50	55	274	59	9.67	100.11
CURTIS	003	68.89	0.46	13.99	5.09	0.11	0.86	1.97	4.35	2.05	0.11	730	70	4	25	44	26	21	12	68	2.07	100.07
CURTIS	004	69.34	0.30	16.11	2.54	0.02	1.06	0.09	4.92	3.29	0.04	882	54	16	6	27	11	18	27	20	2.46	100.27
CURTIS	005	72.17	0.30	13.83	3.11	0.03	1.23	0.12	3.19	3.12	0.06	744	30	26	54	39	35	15	14	27	2.57	99.82
CURTIS	006	68.64	0.38	14.20	5.19	0.04	1.57	0.14	0.77	5.03	0.09	944	58	14	10	53	19	15	30	73	3.90	100.07
CURTIS	007	65.72	0.59	14.50	7.62	0.14	2.87	0.70	2.27	3.42	0.13	805	45	14	24	49	23	20	70	130	2.12	100.19
CURTIS	008	52.81	0.90	15.07	9.28	0.15	7.77	4.18	2.72	2.21	0.18	463	30	27	135	48	42	36	204	80	4.99	100.38
CURTIS	009	74.25	0.29	13.12	0.92	0.00	0.06	0.02	0.26	9.04	0.05	5800	20	29	19	39	21	7	13	596	2.33	101.00
CURTIS	010	71.62	0.35	15.48	1.30	0.01	0.94	0.00	0.29	7.33	0.06	3085	41	18	23	44	31	11	19	74	2.33	100.06
CURTIS	011	76.11	0.29	13.23	0.78	0.01	0.87	0.00	0.10	6.47	0.02	2755	31	9	2	31	13	10	17	67	2.00	100.18
Detection Limits(ppm):		**60**	**35**	**120**	**30**	**30**	**95**	**15**	**75**	**25**	**35**	**50**	**50**	**10**	**2**	**15**	**3**	**10**	**10**	**2**	**100**	**100**

July 19, 1994

Geochemical Laboratories
Earth and Planetary Sciences
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Major Element Package

	Sample		SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	BaO	Co	Cr2O3	Cu	Ni	V	Zn	LOI	Total
GL 94002	CURTIS	012	75.67	0.45	11.69	2.45	0.06	1.56	0.00	0.41	4.67	0.03	1968	15	51	34	18	54	168	2.85	100.08
GL 94003	CURTIS	013	66.85	0.52	15.52	5.89	0.14	1.49	1.53	4.90	2.30	0.13	1175	5	28	43	21	8	118	1.44	100.86
GL 94004	CURTIS	014	47.28	0.93	16.63	10.14	0.18	8.17	5.33	2.46	3.47	0.21	1393	34	167	86	52	260	73	5.30	100 31
GL 94005	CURTIS	015	69.01	0.37	13.60	5.12	0.11	1.72	0.45	2.93	2.89	0.08	1574	21	57	31	62	43	26	3.73	100.20
GL 94013	CURTIS	016	65.28	0.39	15.55	4.17	0.13	3.11	0.45	1.79	4.50	0.06	2365	18	34	35	30	51	1715	4.17	100.02
	Detection Limits(ppm):		**60**	**35**	**120**	**30**	**30**	**95**	**15**	**75**	**25**	**35**	**35**	**10**	**2**	**15**	**3**	**10**	**2**	**100**	**100**

July 28, 1994

Geochemical Laboratories
Earth and Planetary Sciences
McGill University, 3450 University Street
Montreal, QC CANADA H3A 2A7

Major Element Package

					1.00								1									
	Sample		**SiO2**	**TiO2**	**Al2O3**	**Fe2O3**	**MnO**	**MgO**	**CaO**	**Na2O**	**K2O**	**P2O5**	**BaO**	**Co**	**Cr2O3**	**Cu**	**Ni**	**V**	**Zn**	**LOI**	**Total**
28919	**CURTIS**	**017**	49.25	0.62	22.78	7.38	0.12	5.83	6.09	4.43	2.43	0.14	1470	24	93	48	43	149	348	1.16	100.45
294664A	**CURTIS**	**018**	54.43	0.90	21.28	8.49	0.09	3.27	6.01	3.76	1.09	0.20	110	33	178	49	42	254	52	0.83	100.43
294666B	**CURTIS**	**019**	46.63	0.97	21.80	10.02	0.14	6.24	8.84	3.00	1.65	0.17	841	38	197	111	81	235	73	1.03	100.65
9454004	**CURTIS**	**020**	49.26	1.06	13.40	16.50	0.20	7.48	1.12	0.16	1.84	0.82	1228	40	28	1467	34	250	146	8.31	100.46
9454007	**CURTIS**	**021**	77.27	0.34	12.51	2.07	0.02	0.68	0.17	0.68	4.31	0.06	7878	2	-3	36	2	18	6	2.19	101.10
9454008	**CURTIS**	**022**	73.54	0.36	13.13	3.20	0.01	0.55	0.22	1.11	4.92	0.07	4130	4	6	30	0	7	14	2.63	100.16
94001	**CURTIS**	**023**	75.93	0.23	12.80	1.84	0.05	0.77	0.36	1.48	4.56	0.04	1361	6	18	49	3	21	42	1.69	99.89
94002	**CURTIS**	**024**	72.50	0.26	14.36	3.41	0.10	0.61	0.21	6.64	1.05	0.05	793	18	34	67	5	20	60	0.83	100.13
94003	**CURTIS**	**025**	70.36	0.48	14.98	4.25	0.06	1.23	0.16	4.67	2.44	0.10	712	13	12	122	10	20	50	1.54	100.37
94004	**CURTIS**	**026**	50.40	0.87	13.40	9.55	0.18	6.05	6.09	2.97	3.43	0.57	1753	22	283	159	73	204	116	5.58	99.36
94005	**CURTIS**	**027**	77.30	0.23	12.84	1.89	0.02	0.54	0.05	1.36	3.68	0.06	1526	4	0	24	-2	10	55	2.00	100.12
94006	**CURTIS**	**028**	76.85	0.24	13.28	2.00	0.02	0.64	0.02	0.70	4.16	0.03	1511	5	31	45	21	13	54	1.89	100.00
94007	**CURTIS**	**029**	75.13	0.27	12.42	2.94	0.10	0.86	1.00	0.18	4.31	0.05	755	5	20	60	0	12	71	2.49	99.84
94008	**CURTIS**	**030**	74.98	0.26	14.27	2.02	0.07	0.66	0.04	0.15	4.75	0.05	1318	7	14	38	3	19	34	2.31	99.71
94009	**CURTIS**	**031**	72.80	0.34	13.49	3.64	0.04	1.15	0.12	0.63	5.33	0.09	1102	5	9	28	4	31	118	2.42	100.17
94010	**CURTIS**	**032**	73.96	0.23	12.78	2.67	0.14	1.04	1.09	3.38	2.61	0.04	783	2	13	49	4	21	151	1.77	99.82
94011	**CURTIS**	**033**	75.37	0.22	13.18	2.37	0.01	0.40	0.11	3.41	3.01	0.05	1087	3	19	53	1	18	24	1.65	99.90
94012	**CURTIS**	**034**	70.12	0.33	14.39	4.06	0.15	0.88	0.85	4.88	2.42	0.06	969	8	69	57	3	32	64	1.40	99.66
94001	**CURTIS**	**035**	59.93	2.18	14.80	9.94	0.00	0.71	0.68	0.20	4.00	0.53	315	15	517	68	60	81	54	7.24	100.32
94030	**CURTIS**	**036**	72.53	0.36	13.93	2.60	0.03	1.19	0.11	1.23	4.40	0.07	2084	3	162	84	1	20	19	3.17	99.85
94031	**CURTIS**	**037**	64.31	0.41	15.66	4.29	0.09	2.18	3.01	0.51	5.45	0.10	1237	10	86	35	4	47	66	4.11	100.27
94032	**CURTIS**	**038**	82.18	0.20	9.30	1.85	0.03	0.52	0.10	4.05	0.54	0.06	50	0	137	34	1	22	11	0.82	99.66
	Detection Limits(ppm)		**60**	**35**	**120**	**30**	**30**	**95**	**15**	**75**	**25**	**35**	**35**	**10**	**2**	**15**	**3**	**10**	**2**	**100**	

August 14, 1994

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Sample		SIO2	TIO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	BaO	Co	Cr2O3	Cu	NI	V	Zn	LOI	Total
CURTIS	**068**	49.05	0.91	20.30	10.25	0.14	5.06	3.14	3.04	3.19	0.09	847	16	66	55	31	193	140	4.70	100.00
CURTIS	**069**	49.92	0.93	17.87	9.60	0.16	4.86	7.97	4.40	0.07	0.18	265	30	106	86	37	274	112	4.33	100.38
CURTIS	**070**	46.94	1.08	18.65	11.62	0.23	6.84	3.50	5.04	0.73	0.39	420	22	71	49	45	384	355	5.50	100.65
CURTIS	**071**	48.27	0.84	18.11	10.07	0.21	7.05	7.77	3.50	1.47	0.20	508	22	341	127	75	232	127	2.72	100.35
CURTIS	**072**	64.54	0.86	14.66	7.47	0.06	2.02	0.76	0.58	3.97	0.31	2598	9	8	46	2	79	71	5.17	100.68
CURTIS	**073**	53.98	0.99	12.95	14.12	0.18	5.50	1.53	0.34	2.49	0.26	2230	18	35	281	6	223	197	7.74	100.38
CURTIS	**074**	69.70	0.36	12.75	6.46	0.02	1.04	0.18	-0.03	4.44	0.06	2976	10	12	51	4	37	72	4.88	100.18
CURTIS	**075**	71.48	0.38	14.05	4.64	0.03	0.63	0.37	1.06	4.06	0.07	1736	4	13	61	6	17	126	3.61	100.58
CURTIS	**076**	66.30	0.56	14.05	6.98	0.09	3.02	1.00	4.42	1.24	0.13	459	8	15	62	9	117	120	2.72	100.59
CURTIS	**077**	66.54	0.57	15.98	5.74	0.06	1.99	0.36	5.52	1.81	0.14	689	8	14	73	1	73	96	1.73	100.54
CURTIS	**078**	50.01	0.96	18.84	10.24	0.12	7.13	1.99	2.82	3.23	0.10	895	30	101	38	40	104	129	5.34	100.91
CURTIS	**079**	48.23	0.90	18.96	9.59	0.24	8.98	5.03	2.37	2.45	0.07	593	33	247	33	64	213	186	3.64	100.60
CURTIS	**080**	80.41	0.19	8.60	1.90	0.07	0.65	2.10	0.26	2.59	0.04	659	5	0	37	2	57	65	3.11	100.00
CURTIS	**081**	88.77	0.16	5.19	1.28	0.01	0.25	0.07	0.00	1.24	0.03	16210	13	0	46	5	47	51	1.24	99.88
CURTIS	**082**	50.35	0.99	18.31	9.90	0.16	6.32	4.67	2.46	4.47	0.28	1128	27	102	87	26	225	110	2.56	100.64
CURTIS	**083**	74.96	0.26	13.69	2.03	0.05	0.67	0.36	3.35	3.13	0.05	1326	11	7	15	3	31	78	1.39	100.09
CURTIS	**084**	74.68	0.22	12.68	2.38	0.15	0.55	0.97	4.08	2.05	0.11	836	5	45	39	13	33	101	1.84	99.82
CURTIS	**085**	74.01	0.24	13.67	2.44	0.08	1.17	0.76	0.60	4.59	0.05	1788	6	2	29	8	14	81	2.55	100.35
CURTIS	**086**	75.81	0.24	13.37	2.40	0.05	0.85	0.27	0.12	4.62	0.05	1262	8	4	31	0	24	135	2.17	100.10
CURTIS	**087**	74.98	0.28	12.77	2.52	0.09	0.57	1.09	3.11	2.82	0.07	960	0	5	22	0	11	92	2.00	100.41
CURTIS	**088**	75.74	0.24	13.72	2.22	0.04	0.77	0.03	0.03	4.77	0.03	1470	4	16	35	0	11	102	2.16	99.91
CURTIS	**089**	73.77	0.23	13.49	3.30	0.08	0.59	0.42	3.41	3.29	0.05	1293	12	2	34	0	28	116	1.56	100.34
CURTIS	**090**	76.53	0.05	13.69	0.23	0.01	0.00	0.18	3.35	5.35	0.02	358	16	14	22	3	6	124	0.58	100.04
CURTIS	**091**	76.65	0.07	13.79	0.88	0.07	0.04	0.02	2.44	4.96	0.02	981	10	18	8	0	6	61	1.09	100.14
CURTIS	**092**	73.37	0.25	13.49	2.65	0.11	1.32	0.73	0.94	4.37	0.04	1404	4	13	36	5	38	288	2.25	99.70
CURTIS	**093**	54.74	0.94	16.87	11.00	0.16	2.80	3.43	4.47	1.68	0.33	675	20	11	29	0	173	158	4.33	100.86
CURTIS	**094**	73.84	0.33	13.53	2.10	0.04	0.83	1.59	1.30	3.53	0.08	1043	2	7	29	5	30	96	2.87	100.16
CURTIS	**095**	52.25	0.65	15.03	9.56	0.18	6.92	6.78	3.23	0.07	0.13	34	85	618	24	192	217	115	5.60	100.53
CURTIS	**096**	49.12	0.87	17.24	9.27	0.20	2.44	9.43	4.22	0.96	0.26	423	15	5	71	8	243	140	6.08	100.18
CURTIS	**097**	51.73	1.02	18.32	11.44	0.21	3.14	7.46	3.65	0.52	0.33	307	22	0	73	4	155	164	2.79	100.68
CURTIS	**098**	55.91	0.81	16.64	9.13	0.14	5.37	3.39	5.24	0.42	0.16	237	24	73	38	41	159	128	3.95	101.23
CURTIS	**099**	72.86	0.43	14.42	4.31	0.00	0.07	0.14	0.17	4.06	0.10	469	19	49	16	12	45	46	3.89	100.52
CURTIS	**100**	71.25	0.31	13.63	3.97	0.04	1.45	0.33	0.17	4.48	0.07	1371	11	1	33	2	22	58	4.16	100.01

December 15, 1994

Geochemical Laboratories
Earth and Planetary Sciences
McGill University, 3450 University Street
Montreal, QC CANADA H3A 2A7

Major Element Package

Sample	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	BaO	Co	Cr2O3	Cu	Ni	V	Zn	LOI	Total
CURTIS 101	45.59	0.87	15.54	9.89	0.41	6.96	8.01	1.87	1.60	0.16	1149	29	137	67	31	256	132	8.62	99.70
Detection Limits(ppm):	60	35	120	30	30	95	15	75	25	35	17	10	2	15	3	10	2	100	

December 15, 1994

Geochemical Laboratories
Earth and Planetary Sciences
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Trace Element Package

	Sample		Ga	Nb	Pb	Rb	Sr	Th	U	Y	Zr
KL 94001	CURTIS	001	15	6	5	25	75	1	0	21	47
KL 94002	CURTIS	002	16	9	0	37	118	0	0	20	66
KL 94008	CURTIS	008	15	9	2	45	76	0	0	28	74
	Detection Limits		**1**	**1**	**2**	**1**	**1**	**1**	**1**	**1**	**1**

August 1, 1994

Geochemical Laboratories
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Trace Element Package

	Sample		Ga	Nb	Pb	Rb	Sr	Th	U	Y	Zr
ML 94004	CURTIS	014	16	8	4	74	198	0	0	22	71
	Detection Limits		1	1	2	1	1	1	1	1	1

August 1, 1994

Geochemical Laboratories
Earth and Planetary Sciences
McGill University, 3450 University Street
Montreal, QC CANADA H3A 2A7

Trace Element Package

	Sample		Ga	Nb	Pb	Rb	Sr	Th	U	Y	Zr
TCUE919	CURTIS	017	24	12	19	56	483	5	1	47	256
TCU9466A	CURTIS	018	19	4	10	26	428	0	0	25	61
TCU9466B	CURTIS	019	19	5	3	42	798	0	0	22	66
TC9454004	CURTIS	020	16	7	38	36	33	0	8	50	74
TC9454007	CURTIS	021	8	11	5	45	183	0	0	43	145
TC9454008	CURTIS	022	13	12	20	52	53	0	0	40	159
RL94002	CURTIS	024	15	18	17	19	142	5	0	44	261
RL94003	CURTIS	025	16	17	7	47	322	2	0	42	156
RL94004	CURTIS	026	15	6	14	61	393	2	0	29	76
RL94010	CURTIS	032	12	11	17	48	107	0	0	23	123
RL94012	CURTIS	034	15	15	13	46	288	5	0	41	218
	Detection Limits:		1	1	2	1	1	1	1	1	1

August 15, 1994

Geochemical Laboratories
Earth and Planetary Sciences
McGill University, 3450 University Street
Montreal, QC CANADA H3A 2A7

Trace Element Package

Sample		Ga	Nb	Pb	Rb	Sr	Th	U	Y	Zr
CURTIS	**068**	18	3	9	79	183	0	6	19	48
CURTIS	**069**	17	2	6	1	546	0	int	22	62
CURTIS	**070**	20	4	8	15	196	0	6	25	63
CURTIS	**071**	18	1	5	35	536	0	int	26	54
CURTIS	**072**	16	8	15	69	73	0	11	26	84
CURTIS	**073**	16	4	11	49	35	1	18	23	47
CURTIS	**074**	19	9	11	78	21	0	13	36	132
CURTIS	**075**	18	11	52	61	31	0	11	42	149
CURTIS	**076**	16	9	8	29	82	0	8	33	129
CURTIS	**077**	17	9	8	40	171	0	4	30	147
CURTIS	**078**	19	3	3	54	163	0	7	25	54
CURTIS	**079**	18	2	54	51	304	0	2	17	49
CURTIS	**080**	12	10	5	46	31	0	6	14	109
CURTIS	**081**	2	6	0	18	137	0	0	11	43
CURTIS	**082**	16	3	3	90	185	0	8	23	48
CURTIS	**092**	13	9	83	80	85	0	7	16	109
CURTIS	**093**	19	6	4	37	129	0	10	31	82
CURTIS	**094**	15	9	2	65	64	0	5	20	125
CURTIS	**095**	15	2	4	2	431	0	0	17	45
CURTIS	**096**	16	3	7	25	356	0	3	27	59
CURTIS	**097**	19	4	9	11	576	2	int	32	92
CURTIS	**098**	18	5	4	12	164	0	6	25	74
CURTIS	**099**	10	9	7	39	15	0	11	19	125
CURTIS	**100**	15	8	3	84	26	0	11	30	134
CURTIS	**101**	16	4	7	30	69	0	11	18	42
Detection Limits(ppm):		**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

APPENDIX 8

Tulsequah Chief, 5200 and 5400 Levels Mapping Project (G. Price)

Tulsequah Chief
5200 & 5400 Levels
Mapping Project

G. Price
rough draught

Nov. 4, 1994

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8	Stereonet - Poles to shears - Western structural domain
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10	Stereonet - Poles to flat shears - Western structural domain
11	Geology 5200 level (1:250)
12	NSR values 5200 level (1:250)

Introduction

During the 1994 field season the 5200 and 5400 levels at the Tulsequah Chief Mine were remapped and over sixty rock samples collected and analyzed for a variety of elements. Increased confidence in the continuity of sulphide mineralization was established at the back of the 5200 level. There are over 60 linear meters of material that grades an average of 1.1% Cu and 4.6% Zn (NSR = $CAN 62) at this location. The underground exposures also provide an excellent study area for Chris Sebert of the MDRU, in his ongoing research of the facies relationships of the volcanic stratigraphy that hosts ore at Tulsequah. And finally, a clearer understanding of the style of structural disruption of the ore body and surrounding rock may be gleaned from the good 3-d underground exposures.

Purpose of Study

Two underground levels at the Tulsequah Chief mine were remapped during the summer of 1994 to provide detailed geological data (lithology, structure, alteration and mineralization). These data may be used to further the understanding of the F-zone and 5200 alteration zone in terms of both their compositions and locations. The 3-dimensional mapping may also allow for a more comprehensive understanding of the core area mineralization regarding continuity and metal zoning. Interpretations of the structural data may contribute to both the mine scale geotechnical study and the property scale structural model.

Location and Access

The 5400 level is at the same elevation as the exploration camp at Tulsequah, and the portal is less than 5 minutes walk from the camp. It takes about 20 minutes to walk to the 1.3 km to the face. The 5200 level portal is about 10 minutes walk away, and it requires about 20 minutes also to walk 1.05 km to the face.

Work Completed
Historical

1954-1957 Cominco Limited. All underground exposures of 5200 level (61 meters above sea level) and 5400 level (122 meters above sea level) were mapped at a scale of 1"=40' (1:480). Specific ore zones were also mapped at 1"=20' (1:240). Backs and both walls were detailed everywhere except the main drifts leading to the portals. The floors are tracked. Average drift size is 8'x8' (2.4m x 2.4m). Apparent dips of structures were measured on both walls. Descriptions of textures, alteration and mineralogy are good, although rock types were not identified using modern volcano-stratigraphic nomenclature. In areas that have high proportions of sulphide minerals, this historical mapping is probably the best achieved to date, due to the availability of freshly blasted and washed rock faces, and the skills of the mappers. Iron oxide currently coats the highly sulphidic rock and contacts are not readily recognizable, especially in the back that cannot be easily reached. These original hand coloured maps are bound and located in Redfern's library.

1987-1989 Cominco Limited. Generalized compilation maps were made at a scale of 1:1000. It is not known if any areas were remapped at this time.

1993 Cambria Geological for Redfern Resources Ltd. Garnet Dawson mapped at 1:1000 much of the 5400 level and the main drift of the 5200 level to about 15000N, using a compass and hipchain. The information he provided consists of three to four letter rock codes, some structural data and delineation of major contacts. The mapping was done in concert with resurveying on the 5400 level. Cambria rotated the mine grid about 2° and converted to the metric system.

Peter Lewis of the Mineral Deposits Research Unit (MDRU - University of British Columbia) spent 2.5 days doing structural mapping. His interests were the two faults that bound the core area. Ross Sherlock, Tim Barrett and Fiona Childe (MDRU) collected a several samples of which ten were analyzed for whole rock geochemistry.

1994 Field Season

1994 Redfern Resources Ltd. Compilation maps were made of the two levels. This involved plotting by hand most details from the "old grid" 1"=40' maps onto 1:500 sheets of the "new grid." Much of the back and walls of 5400 level main drift was washed and remapped from the face to the shaft by G. Price. The remainder of the main drift was remapped by C. Sebert (MDRU) at 1:200. Other areas of the 5400 level were deemed inaccessible due to flooding, bad ground or cave-ins. The main drift of the 5200 level was remapped by G.Price at 1:250. In total, approximately 35 person days were allocated to the mapping. Survey pegs and a metric chain were used for control. Although strongly rusted, and commonly illegible, the survey pegs were easy to locate (if chained continuously from one to the next, with the aid of the map). Data were replotted at 1:500 (with the exception of the 5400 main drift from shaft to portal). All data, including that collected from 1954-1993, were entered into Autocad to enable reproduction at 1:1000. Structural data were also entered into the Fieldlog and Spheristat programs.

Bill Barclay, a structural consultant, spent 1 day measuring structures using a compass on the 5200 level, from the portal to about 10700E.

An assortment of rock samples was collected for a variety of purposes. Three grab samples from 5400 level and six from 5200 level were sent for whole rock geochemistry analysis by Sebert and Price. A number of whole rock geochemistry, isotope geochemistry and possibly fluid inclusion analyses will be done on samples collected by Sherlock, Childe and Barrett of the MDRU. Fourteen grab samples were taken at 2 meter intervals from the portal area of the 5200 level. These were analyzed for trace element geochemistry. Thirty-seven contiguous rock chip samples were collected from the south wall of an ore zone in the back of the 5200 level. These were analyzed for 30 element ICP, assayed for Cu, Pb, Zn, Au, and Ag, and specific gravity was measured. Sample width ranges from 0.9 to 2.6 meters, and the area sampled extends over a total of 73 meters.

Chris Sebert has much valuable work in progress, including thin section examination, and whole and trace element analyses. This work will culminate in the completion of MSc thesis on the facies relationships and chemostratigraphy of the volcanic sequence at Tulsequah. In addition other members of the MDRU are currently researching other aspects of the doposit.

Rehabilitation work was done on both levels. Some track was shored up and/or replaced in the main drift on the 5400 level. This was done to permit regular traffic of men and equipment to two operating diamond drills. The main drift of 5200 level was cleared of mud and water to some degree. The rails were clear of mud, and ditches had 20 to >60 cm of mud, as of September 20, 1994. Some track required replacing, and three or four areas were cleaned of rock debris and timbered. Pipe for compressed air was hung from the 5200 portal to about 10680E. Scaling was done in the back. The walls were scaled in areas of concern, and where the rock chip sampling was done. Most cross-cuts on both levels are flooded and/or caved. Tracks in the main drifts of both levels are in passable but rapidly deteriorating condition.

Equipment available on site for use underground includes; two diesel locomotives, two flat cars, and one air track muck machine. There is also at least 250 meters of good quality 2.5" rubber hose. Miscellaneous underground parts/equipment (ie. lamps, hydraulic fittings, rail, pipe, pumps, etc.) are documented in an inventory. A Connors and a Boyles 38 electric diamond drills were removed from underground, greased and painted. Currently there are diamond drills on the market that are better suited for underground drilling. These modern drills require smaller (cheaper) cut-outs; they are smaller and lighter making moving/rotating a less time consuming and cumbersome exercise, and resulting in more accurate positioning. And unfortunately, repairs due to rust and deterioration of the hydraulic systems on the Boyles and Connors contributed to low rates of productivity (<30 meters per shift).

Stratigraphy

Remapping, of the 5200 level in particular has allowed the addition of details to the current descriptions of mine stratigraphy. Lithologies are described below in order from portal to face. This corresponds to traversing most of the mine stratigraphy: the 5200 'syncline', F-zone anticline, the footwall alteration to the core mineralization, 4400E fault, core area

(AB) syncline mineralization and alteration, and the 5300E fault. The G-zone, located to the east of the 5300E fault, was not observed in this mapping exercise. Current mine stratigraphy nomenclature is applied.

"2c" Dacite-basalt lapilli tuff to agglomeratic lapilli tuff (DLT): Pale grey (tan) to bleached grey-white, >80% grey siliceous phyric and aphyric rounded elongate (aspect ratio @ 5:1) dacite clasts, locally feldspar phyric (1-2mm strongly resorbed subhedral white blocky crystals), <10% pale creamy tan biotitic pumiceous rounded elongate basalt clasts, matrix is a fine to medium grained admixture of sericite + pyrite + quartz, well sorted, clast supported, massive (ie. no graded beds), strong penetrative foliation that may parallel former bedding, 2-20% fine to medium grained pyrite as disseminations and lesser veinlets, trace disseminated red-brown sphalerite. Rocks of this unit are essentially the same on both levels, however updip on the 5400 level, it contains more tuffaceous beds and minor dacite flows. Bedding was measured at 130/85-90° on the 5200 level. On the 5400 level it was measured at 180/64° to 185/56°. Minimum thickness of this unit is about 185 meters. The dacite is eroded but presumably continues to the west under the Tulsequah River. The eastern contact with basalt intrusive unit 4b is unclear and is disrupted over about 55 meters on the 5200 level. It is a fault contact on the 5400 level. These heterolithic dacite dominant sulphidic rocks are believed to be a facies equivalent to the dacite clastics and flows that host ore in the core area. Structurally they are thought to define the western limb of an easterly verging syncline. The rocks are commonly referred to as the '5200 alteration zone'.

4b Basalt intrusive (BIN): Dark green to green-black, fine to medium grained equigranular, pyroxene-actinolite-chlorite-biotite bearing, blocky jointed, cross-cut by <5% calcite-quartz veins. The basalt is exposed for about 300m in a northeast-southwest direction (subparallel to 5200 and 5400 main drifts). The basalt intrusive is drastically "thinned" to 10 meters to the south as is constrained by diamond drill hole TC94016. It is thought to be conformable (sill) and hypabyssal.

2 Dacite lapilli tuff and flow breccia (DLT and DFX): Pale green, bleached, local distinct flow banding or discontinuous fine grained siliceous 'cherty' beds, sell sorted, round clasts to 15 cm, strong pervasive silicification, <2% fine grained disseminated pyrite. This unit is not exposed on 5200 level and was not mapped by the author. It is present in drill core in holes TCU8810 and TCU8811 (about 30 meters north and 70 meters lower in elevation than the 5200 level). Exposures are clear on 5400 level, where bedding (parallel to foliation) is oriented 171/50° and 181/56°. It is about 10-20 meters thick, and in fault contact with adjacent units. Similar to the aforementioned 5200 alteration zone, these dacites are thought to be correlative to the dacites that host ore in the core region. The exposure of these felsic rocks on the 5200 level is thought to represent the western limb of an east verging anticline, called the 'F-anticline'. The absence of this unit on the 5200 level may be because it has been cut off by either a fault or the basalt intrusion, or the unit thinned locally.

1c Amygdaloidal basalt flow (BFL5): Dark green, massive, fine grained, variably amygdaloidal, local flow contacts defined by wispy/wavy 10-30 cm thick concentrations of chlorite-epidote, moderate pervasive chlorite alteration, amygdules range in concentration from 0-40% and average less than 2%, amygdule composition is generally quartz-calcite, (amygdule fillings seen only in core includes pyrite, chalcopyrite, sphalerite, biotite, and cordierite). The contact with adjacent basalt intrusive on the 5200 level is both faulted and 'conformable' (ie. sharp no obvious chill margin or breccia).

1d Bleached, quartz-sericite-pyrite altered "basalt flows and flow breccia" (QSP, BFL, BFX): Pale grey-white to locally pale green-grey, protolith texture is strongly obscured by alteration although "vague flow clasts" were observed by Sebert on the 5400 level, strong pervasive quartz-sericite alteration with local patchy chlorite alteration, medium grained "grainy" texture, pyrite varies from 0-20% as disseminations and minor veinlets, where pyrite content is high there is a strong yellow to red-brown iron oxide weathering surface. A fabric (foliation, schistosity, bedding, etc.) is not present in this unit on either level. Between about 13500E and 14000E on the 5200 level, Cominco has these bleached rocks mapped as a dacite plug. It is assumed to define the core of the F-anticline in these exposures. Thickness here may be >80 meters.

4400E fault: This structure is defined by a 2 to 7 meter wide zone of fissile and friable white clay, sericite and flattened augens of quartz-sericite altered 'dacite'. Clay gouge comprises about 30% of the total volume. Although some caving has occurred since drifting in the 1950's, the ground has not opened up in the backs, and timbering was not required on either level. As calculated from the two level plans, this curviplanar fault has an average orientation of about 165/60°. Actual measurements of the fault planes are highly variable. Flow banded Sloko rhyolite dyke(s) bound the fault to the west, and quartz-sericite schist (dacite) lies to the east. This fault defines the boundary between the F-anticline and the core area syncline. Neither P.Lewis (MDRU) nor B.Barclay recorded having seen any indicators that would allow one to determine sense of movement. However Lewis does say, "on surface, outcrop distribution is compatible with up to 100 m of right lateral strike separation of contacts."

2a Quartz-sericite schist (and lesser massive siliceous rock) (QSP): Pale grey-white, fissile to massive, minor sugary white gypsum (?), caved and timbered on 5200 level. This is probably a strongly altered dacite clastic rock. Thickness is up to 20 meters.

2i Dacite lapilli tuff (DLT): Pale grey-white, well defined rounded flattened clasts up to 15 cm, clast supported, strong pervasive quartz-sericite alteration, well defined fabric is probably parallel to bedding (270/78°). Thickness is about 25 meters on the 5200 level.

2b Gypsum healed breccia and brecciated gypsum: Pale mauve-pink, western contact is a 10 cm thick band, fragments are angular and up to 5 cm, gypsum is matrix to sericite-quartz-chlorite fragments, and as breccia clasts healed by quartz-sericite. Thickness is about 10 meters on the 5200 level and <3 meters on the 5400 level. Less than 5% 2-20 cm bands of massive pyrite and sphalerite cut this unit.

2a Chlorite-sericite-quartz-pyrite schist(QSP): Pale to medium green-grey, trace gypsum, sphalerite and chalcanthite, cut by <25% 1-3 meter bands of massive sphalerite-galena/pyrite. Thickness is variable, as on 5400 level this strongly altered dacite clastic defines the core of the AB syncline. Whereas on the 5200 level, the core of the AB syncline is made up of a less altered dacite flow and clastics.

2j Dacite flow (DFL): Medium-pale green, feldspar phyric (<25% 1-2 mm subhedral white crystals), well defined flow banding (bedding?) at 165/66, moderate pervasive quartz-sericite alteration.

2i Dacite lapilli tuff (DLT): Similar to aforementioned unit 2i. Bedding ranges from 198/63 to 255/66.

2a Quartz-sericite schist(QSP): Similar to aforementioned unit 2a quartz-sericite schist.

"5000E & 5100E faults: These faults were named by Cominco, and are seen only on the 5200 level. They may be splays of the 5300E fault that can be traced through level plans from surface to 200 meters below sea level. Both are timbered and not well exposed. The 5000E fault has an associated flow banded Sloko rhyolite dyke lying immediately to the west. The 5100E fault appears to contain fragments of Sloko dyke.

2f,d,e Massive pyrite, massive pyrite+chalcopyrite, massive banded sphalerite+galena+barite+chalcopyrite+tetrahedrite, stringer sphalerite+galena+tetrahedrite+barite: Approximately 75 meters of continuous massive sulphide is exposed at the eastern end of the main drift on 5200 level. A very clean sublevel that has massive polymetallic sulphides exposed over >25m can be accessed at 10735E (5200 level). Mineralization from the 5200 level will be discussed here as it is more clearly exposed and accessible than that on the 5400 level.

Generalized zoning from west to east is as listed above, ie. from massive pyrite to Cu-pyrite to polymetallic pyrite-poor banded ore to stringer polymetallic. The initial and simplistic interpretation of this apparent gross zoning is that tops are towards the east. Thus this ore is occupying the western limb of an anticline, the eastern limb being the G-zone.

On a more detailed scale, there appears to be much syn- and post-depositional disruption of sulphide beds. Syndepositional to diagenetic deformation is recognized with less confidence and may be evidenced by the discontinuity of thinly banded polymetallic sulphides (growth faults?), and local irregular thickening and thinning of bands. Post-depositional disruption includes: recrystallization resulting in coarser grained rock, development of compositional layering due to rheological differences of sulphide minerals under stress, formation of piercement structures, and dismemberment of lenses by faulting and dyking. Strain appears to have been accommodated by recrystallization, layering and offset, rather than by folding. The only minor folds present are those that abut faults and exhibit flexure of beds immediately adjacent to the fault planes. Because of the degree of intensity of post-depositional disruption, primary structures cannot be used to interpret tops directions.

Strongly chlorite-altered mafic dykes appear to cross-cut the sulphides. There are also fragments of dyke 'floating' in massive sulphide, and flame-like piercements of sulphides 'intruding' the dykes. Post-depositional ductile and brittle deformation must account for these relationships.

Few gouge-filled structures cross-cut the massive sulphides, and in general it exhibits good competency. Such brittle structures are present at contacts that separate different sulphide types (ie. massive pyrite - polymetallic sulphides).

As previously mentioned, mapping from the 1950's in these highly sulphidic areas is of much better quality than that done at present. The contacts are more clearly delineated. However, the assaying of samples allowed for a better understanding of metal distribution. Assay results will be discussed in a following section on Mineralization.

2a Quartz-sericite-pyrite-(chlorite) schist (QSP): Pale yellow-white, strongly foliated and fissile, 2-15% medium-fine grained pyrite, schistosity diminishes to the east and rock gradationally contains more chlorite, assay results indicate absence of Cu-Pb-Zn-Au-Ag mineralization.

5300 fault This fault is clearly exposed in two places on the 5400 level, and near the face of the main drift on the 5200 level. It also cuts two inaccessible crosscuts on the 5400 level. The structure can be traced through level plans from surface to 200 meters below sea level. Based on correlation this curviplanar fault is oriented at 000-018/75-90°. Younger faults appear to have offset and rotated it, thus confusing correlation and recognition of splays.

On 5400 level the fault is a 1-2 meter wide clay-chlorite shear. The southern exposure is described by Lewis as having "a well developed internal foliation, compositional layering parallel to the foliation, and crosscutting minor faults." Here, the fault juxtaposes dacites to the south against basalt intrusive to the north. A banded Sloko rhyolite dyke is present about 15 meters to the south. The fault cuts basalt intrusive rocks in the northern exposure on 5400 level. At this location it contains angular blocks of jasper-bearing mafic rock up to 30 cm in diameter. It also appears to have a 2-30 cm thick mylonitic band at the southern margin. According to previous mapping in the area of the two inaccessible exposures on 5400 level, the fault is spatially associated with Sloko rhyolite dykes.

On the 5200 level, the 5300 fault (or a splay ?) is only about 35 cm wide, and dips about 60°. It juxtaposes QSP with a 2 meter exposure of mafic dyke.

Lewis concluded that based on reidel shear geometry, the fault has a dextral sense of movement and a net slip vector that plunges 28° north. This author concurs with the right-lateral sense of movement, however the orientation of net slip is not that clear. Measurements of slickensides were made at the three exposures (from south to north): 9°→013°, 46°→176°, and 50→198°. There may be a rotational aspect to this fault, or multiple movements (as Lewis indicates).

Structure

Over 350 structures were measured and located in the two underground levels, by Sebert and Price. (Classical underground mapping methods were used; chaining for azimuth and brunton compass for dip only). The vast majority of features are brittle shears. Slickensides, schistosities, beds and fractures account for less than 5% of the total observed structures.

Brittle shears range in width from millimeters to about 2 meters. Gouge composition is generally clay/sericite/chlorite. Slickensides are common. A minority of shears has an internal reidel fabric, and even fewer have associated brittle filled fractures or flexed planar marker features. Direction of movement was determined on less than 15% of the structures. Where marker 'horizons' are present, apparent offset is negligible (<20 cm).

In the following discussion, the data will be initially discussed as a whole, then separated into structural domains, and finally grouped into populations.

Poles to all shears are plotted on a stereonet. Although the population is diffuse, there is a well defined dominant steep north-south pattern. The peak position is 197/65°. These steep north-south shears are parallel-subparallel to the major regional scale Llewellan (sinestral), Nahlin (thrust), and King Salmon (thrust) Faults (Mihalynuk, 1994). Movement on the nearby LLwewllan Fault was determined to be initially ductile and sinestral, with local west verging thrusting. Later brittle movement on the Llewellan Fault is postulated to be coeval with the thrusting on the Nahlin and King Salmon Faults (pre-Sloko deposition). As noted by Mihalynuk and observed underground, Sloko dykes are commonly offset along the brittle faults, indicating a third possible period of movement.

Poles to all right (18) and left lateral (30) shears are plotted on two stereonets. By numbers alone one may infer that sinestral offset is more common than dextral. The two groups exhibit roughly the same dominant north-south spread of data, indicating generally: the populations are inseparable, and steep north-south faults are more likely to show lateral movement than faults of other orientations. The populations are so small and diffuse that only inferences can be made.

Slickenlines are shown on the stereonet in figure x. Two principal trends are evident: shallow north plunging (15°→000°) and moderate west plunging (30°→270°). However there is a 360° girdle of data.

Data were grouped by western, core and eastern structural domains. The 4400E and 5300E mark the boundaries of the domains. The western domain hosts the 5200 alteration zone, the F-anticline dacites, a vast thickness of basalt intrusive, and weakly to strongly altered footwall basalts. The core domain comprises moderately to strongly altered dacites, sulphide mineralization, a few Sloko dykes, and footwall basalts. The eastern domain (seen only on 5400 level over a short distance) is hosted by basalt intrusive.

A unique feature of the core area is the presence of quartz-sericite (pyrite/chlorite) schist. Variable protolith fabric (massive intrusive versus clastic), intensity of hydrothermal alteration, and/or differential strain may account for the presence/absence of schistosity. There are clastic rocks that have well preserved protolith fabric in the core area. Quartz-sericite-pyrite altered rocks are present in the western domain, however they are massive and non-foliated. Differential strain over narrow areas is common to the Tulsequah area (Mihalynuk, per comm.).

Poles to shears of the core area are illustrated on steronet figure x. The resultant peak plane (197/65°) is the same as that for the combined data set (figure x). However the data have a considerably more concentrated distribution. There is a higher density of north-south shears in the core area, and fewer east-west and low angle shears.

Poles to shears of the western structural domain are shown on stereonet figure x. The peak plane is steeper (195/75°) than that of the combined data set. The data have a more diffuse spread than the data of the core area.

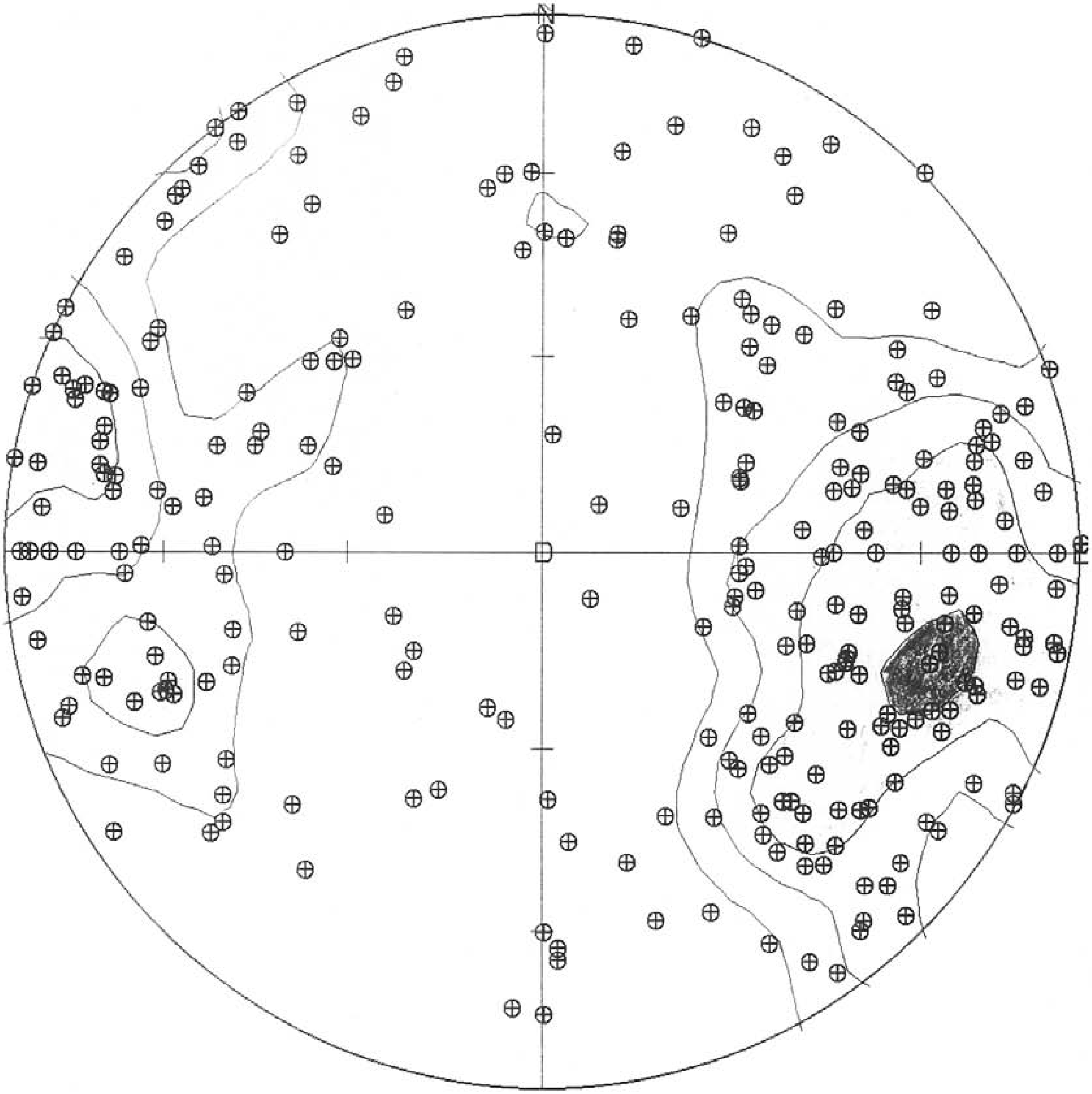
The population of the eastern structural domain is too small to discuss with any confidence.

Measurements were grouped into three populations: north-south, east-west, and shallow. This was done for two reasons. It was a test to see if any other major populations would emerge as a result of removing the dominant north-south data. The shallow data were isolated to determine if they have a regular distribution. Information from the western structural domain was used.

As is shown on the stereonet figure x, Poles to EW shears, these EW shears tend to be oriented; ENE-WSW and moderately NW dipping, and WNW-ESE and moderately S dipping. This relationship may define a conjugate pairing of a-c joints (constituting

Tulsequah Chief - Poles to Shears

5200 & 5400 Levels

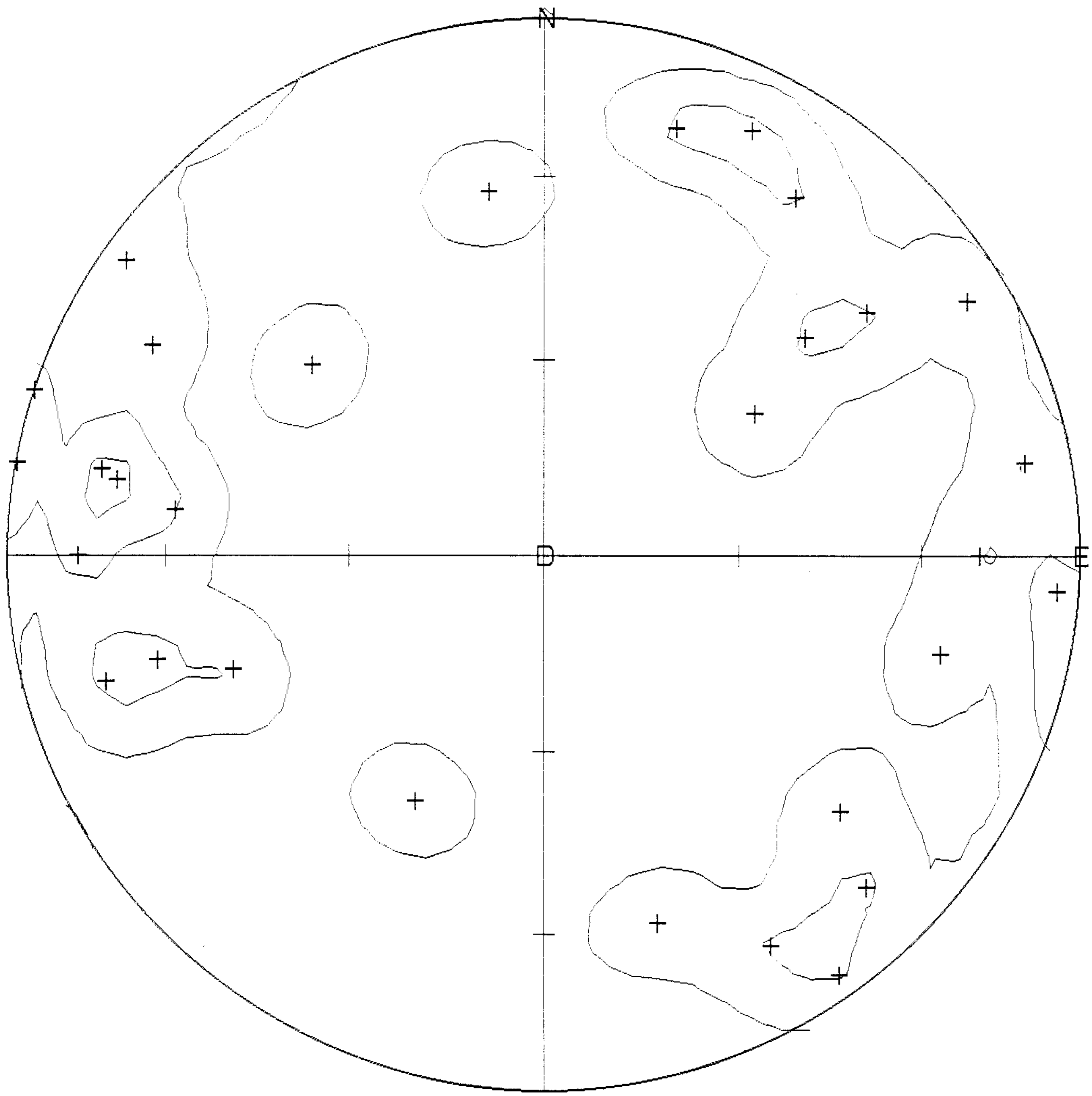


N = 280
k = 64.22
(Peak - E)/Sigma = 6.8
Peak position : 107.1°/ 25.4°

E = 4.36
Sigma = 1.45

Tulsequah Chief - Poles to Left Lateral Shears

5200 & 5400 Levels



N = 30

k = 100.00

(Peak - E)/Sigma = 4.7

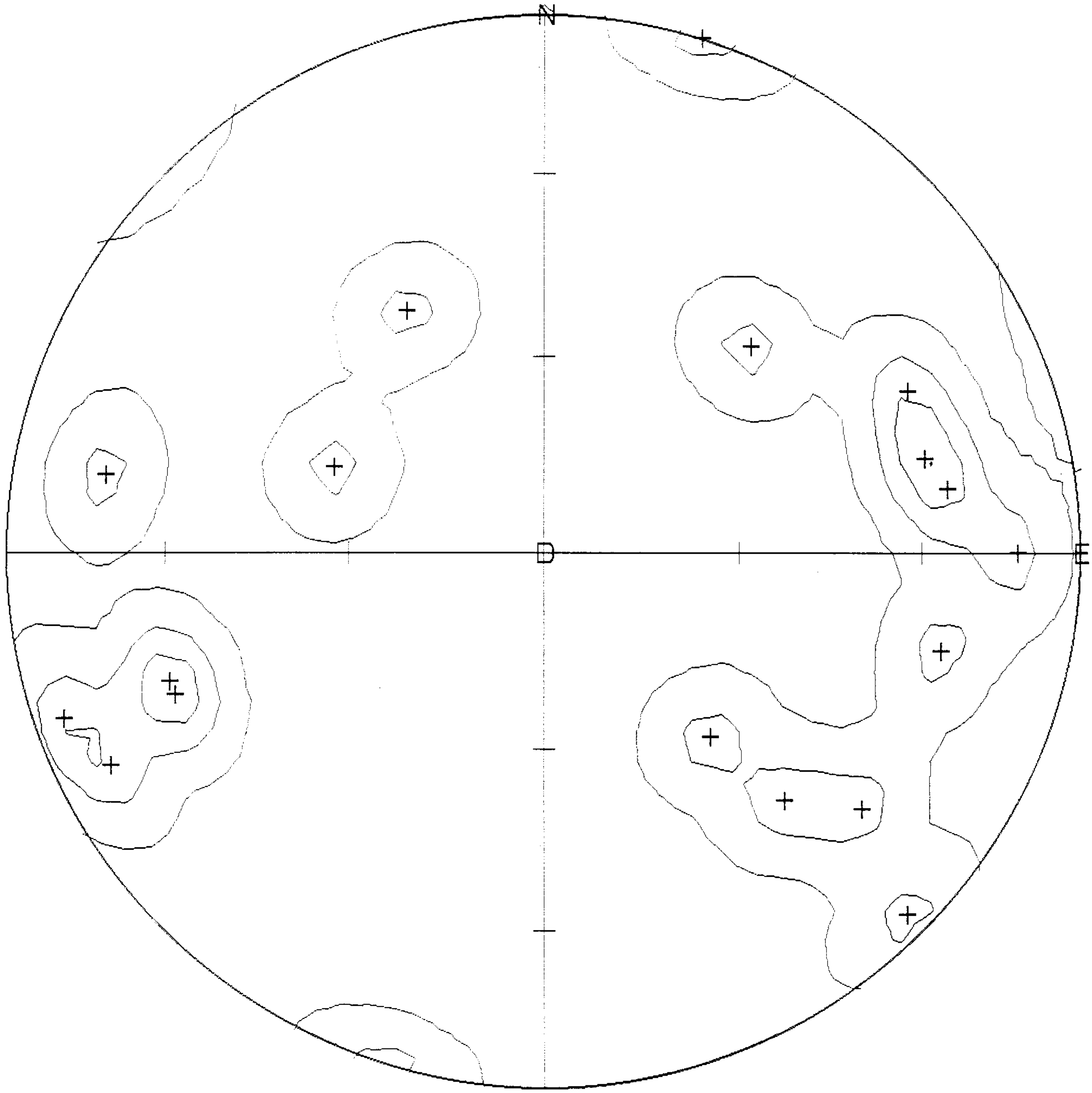
Peak position : 277.6°/ 17.1°

E = 0.30

Sigma = 0.38

Tulsequah Chief - Poles to Right Lateral Shears

5200 & 5400 Levels



N = 18

k = 100.00

(Peak - E)/Sigma = 6.1

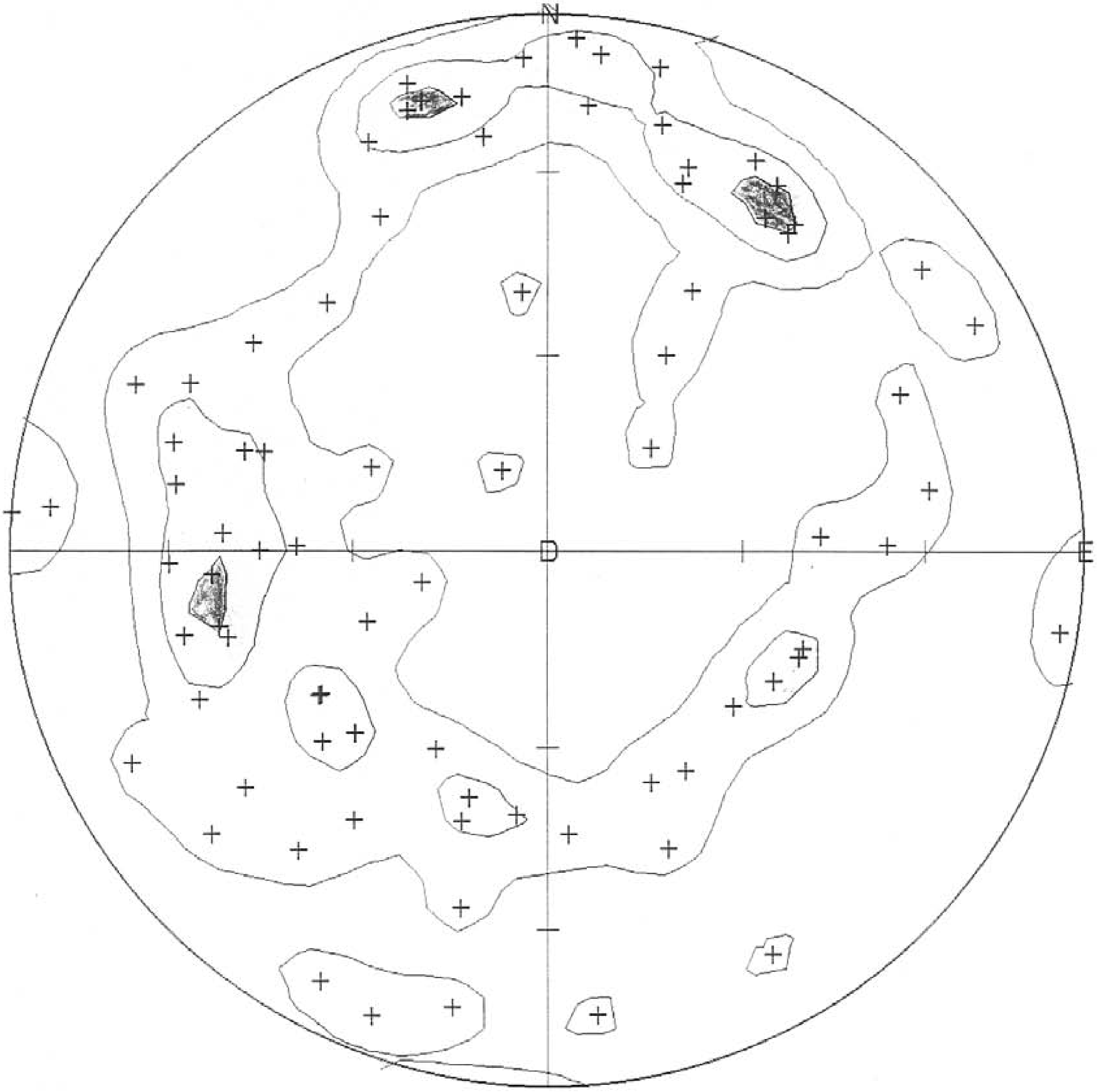
Peak position : 77.0°/ 26.8°

E = 0.18

Sigma = 0.30

Tulsequah Chief - Slickenlines

5200 & 5400 Levels



N = 81

k = 100.00

(Peak - E)/Sigma = 4.9

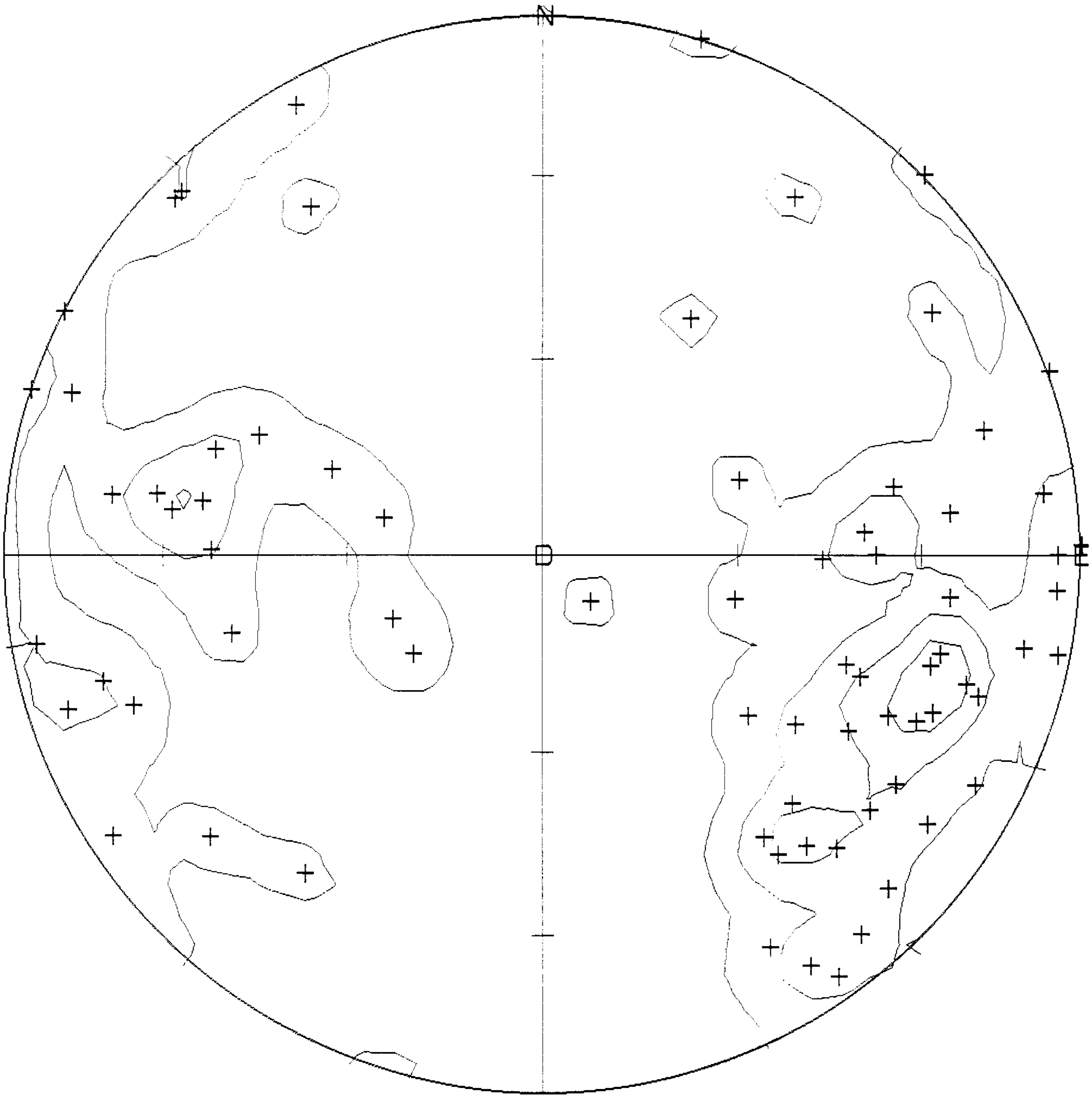
Peak position : 345.1°/ 14.8°

E = 0.81

Sigma = 0.63

Tulsequah Chief - Poles to Shears

Core Structural Domain 5200 & 5400 Levels



N = 75

E =   0.75

k = 100.00

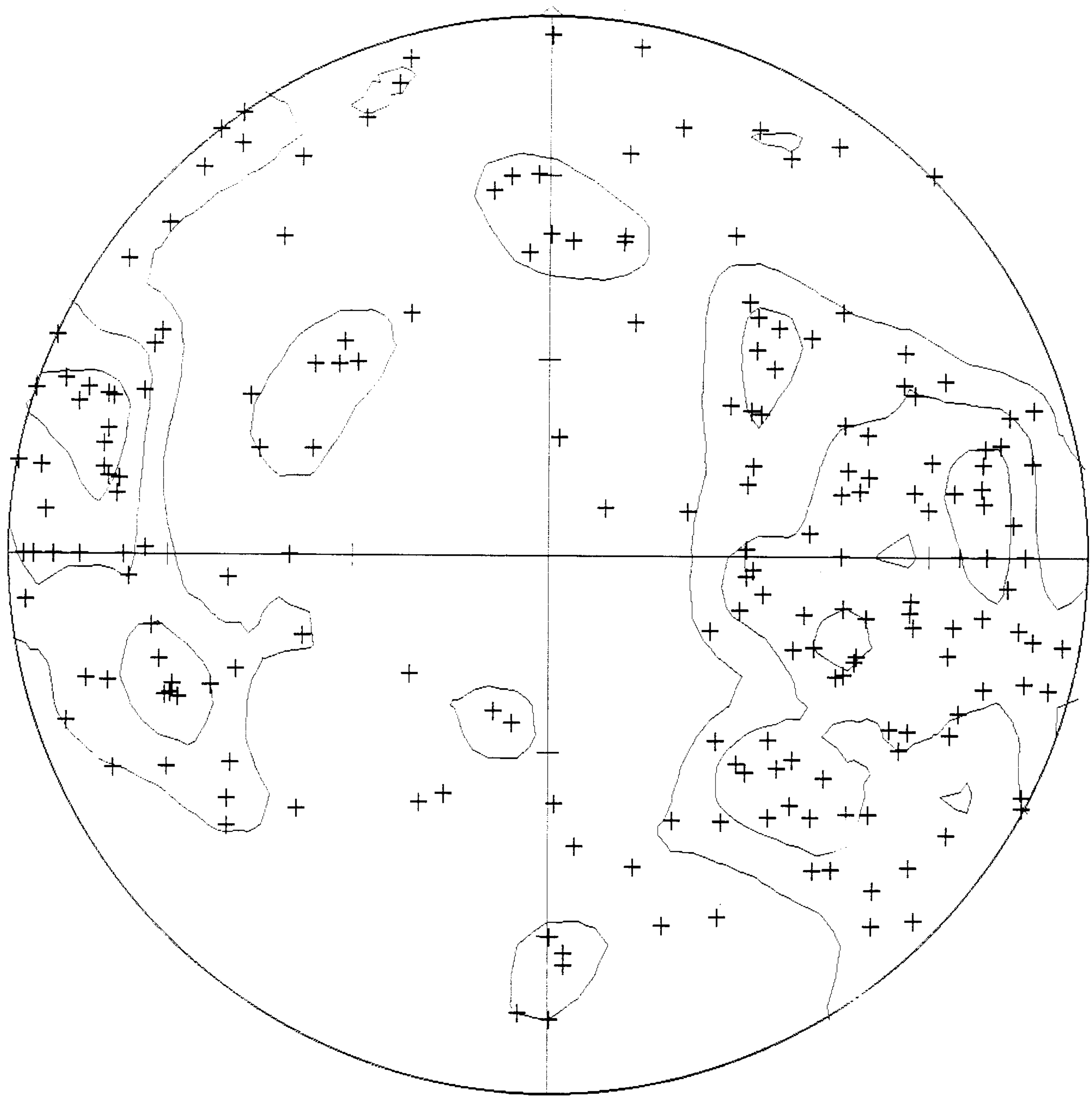
Sigma =   0.61

(Peak - E)/Sigma = 8.0

Peak position : 107.1°/ 25.4°

Tulsequah Chief - Poles to Shears

Western Structural Domain 5200 & 5400 Levels



N = 205

k = 100.00

(Peak - E)/Sigma = 5.5

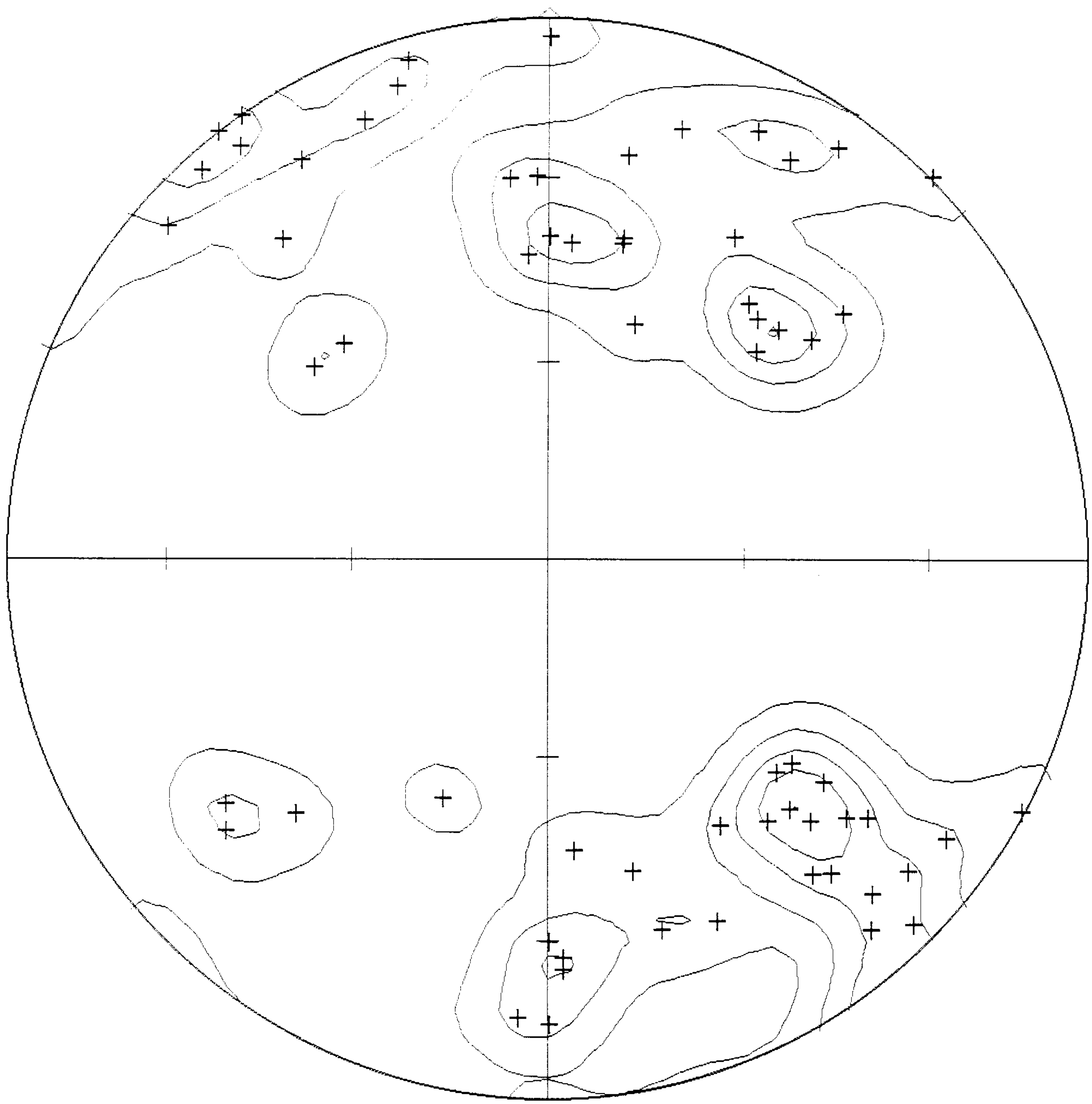
Peak position : 284.9°/ 14.8°

E = 2.05

Sigma = 1.00

Tulsequah Chief Poles to EW Shears

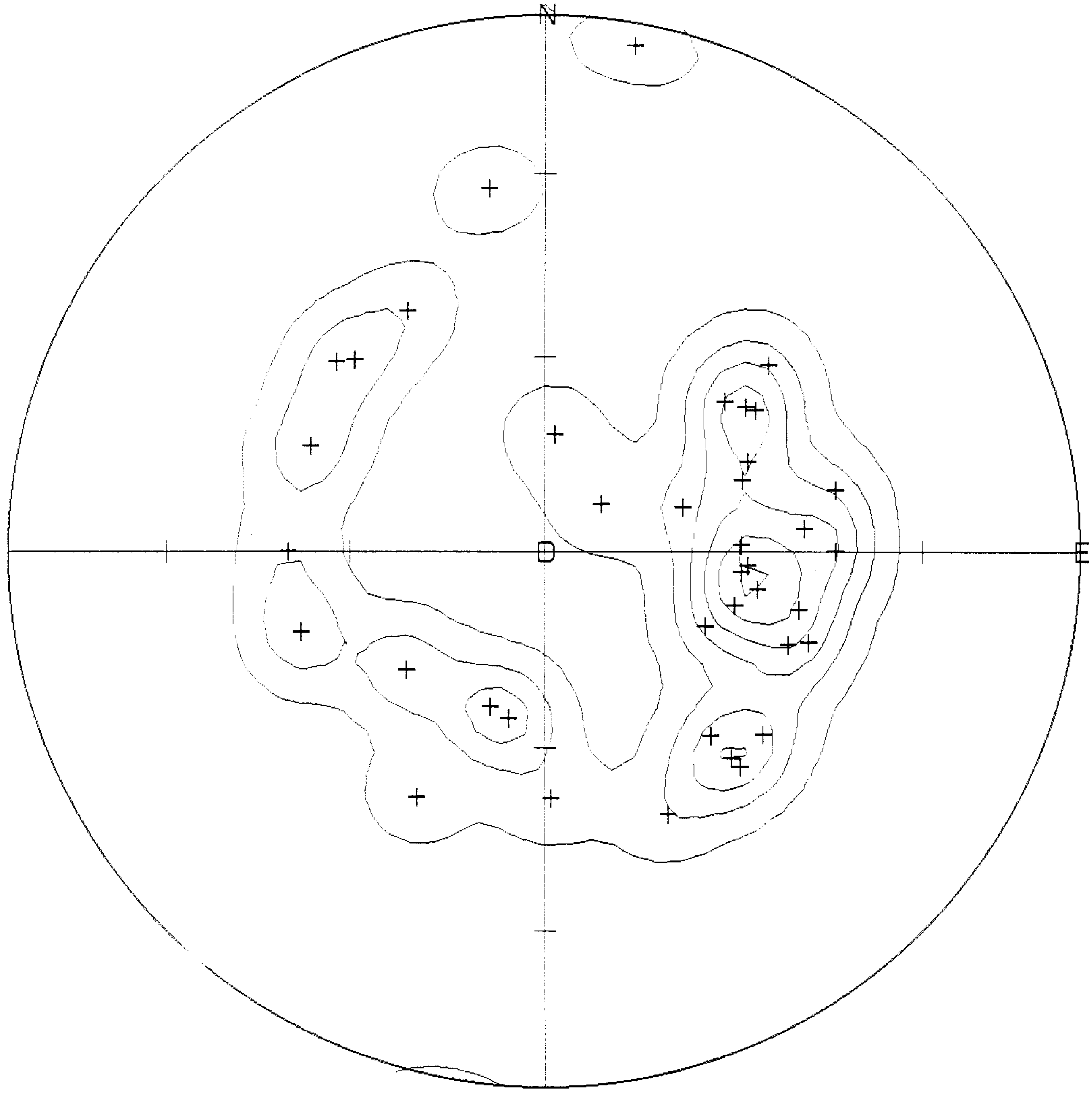
Western Structural Domain 5200 & 5400 Levels



N = 64
E = 0.64
k = 100.00
Sigma = 0.56
(Peak - E)/Sigma = 8.0
Peak position : 135.0°/ 35.4°

Tulsequah Chief Poles to Flat Shears

Western Structural Domain 5200 & 5400 Levels



N = 44

k = 100.00

(Peak - E)/Sigma = 10.4

Peak position : 96.3°/ 59.1°

E = 0.44

Sigma = 0.46

another major population).

Flat shears tend to be oriented north-south, and a greater proportion dip moderately to the west. Refer to figure x, stereonet. Flat shears (<45°) constitute less than 15% of all the brittle structures. According to Brennan ? of "The Rock Group" (geotechnical consulting firm), flat shears were recorded daily in the mining shift reports. This author observed very few in both the underground and drawn on the historical maps.

In conclusion, the interpretation of these brittle structures neither contradicted nor reputed the current understanding of fold geometry on the property. The north-south shears may be interpreted as re-activated axial planar cleavage. And the east-west shears may be viewed as re-activated a-c joints. Or, both might be unrelated to the ductile deformation that resulted in the development of the various folds. Minor folds were not observed. It is recognized that the overall fold geometry is best viewed on sections cut perpendicular to the fold axis (62°→355°) on the plane 085°/32°. A level plan will show an exaggerated thickness and overlapping in the hinge area.

Geochemistry and Alteration

Much attention has been paid to the determination of original chemostratigraphy by viewing the relationships amongst immobile and incompatible elements. The techniques used are described by Barrett et al. (1992). Over 135 core and grab samples have been collected by Barrett and other MDRU associates during 1993-94, and analyzed for whole rock and trace element geochemistry (Sherlock and Barrett, 1994; Barrett per comm.) Thus the nineteen samples that come from 5200 and 5400 level are discussed in the context of the entire population. Results are pending for the four samples taken from the 5200 level by Redfern, and the 2 samples collected by Sherlock. These 19 samples were collected and analysed in 1993-94.

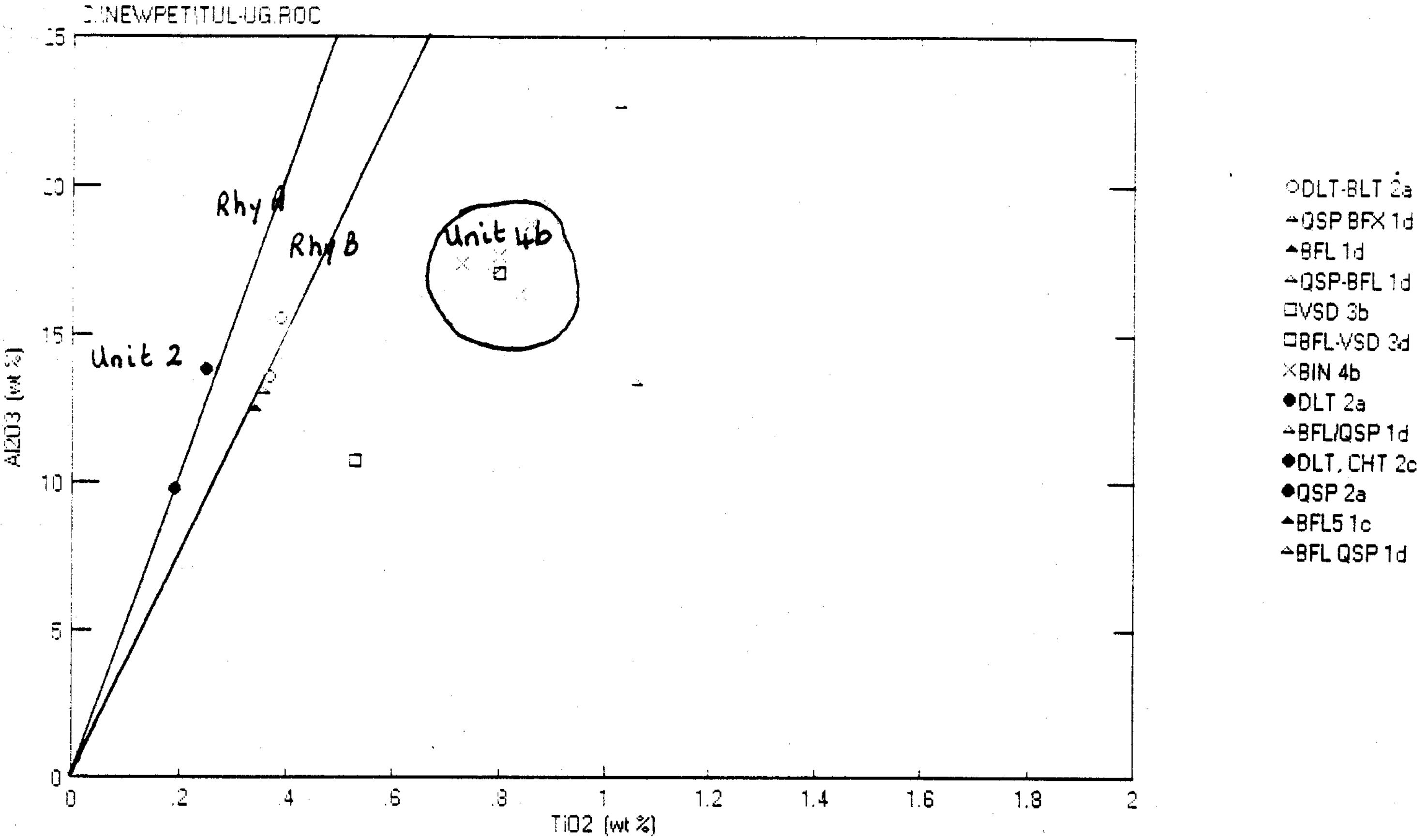
Analyses are plotted in table form and on x-y plots. Some samples were not anaylsed for Zr, thus do not appear on all graphs. Results are discussed in stratigraphic order.

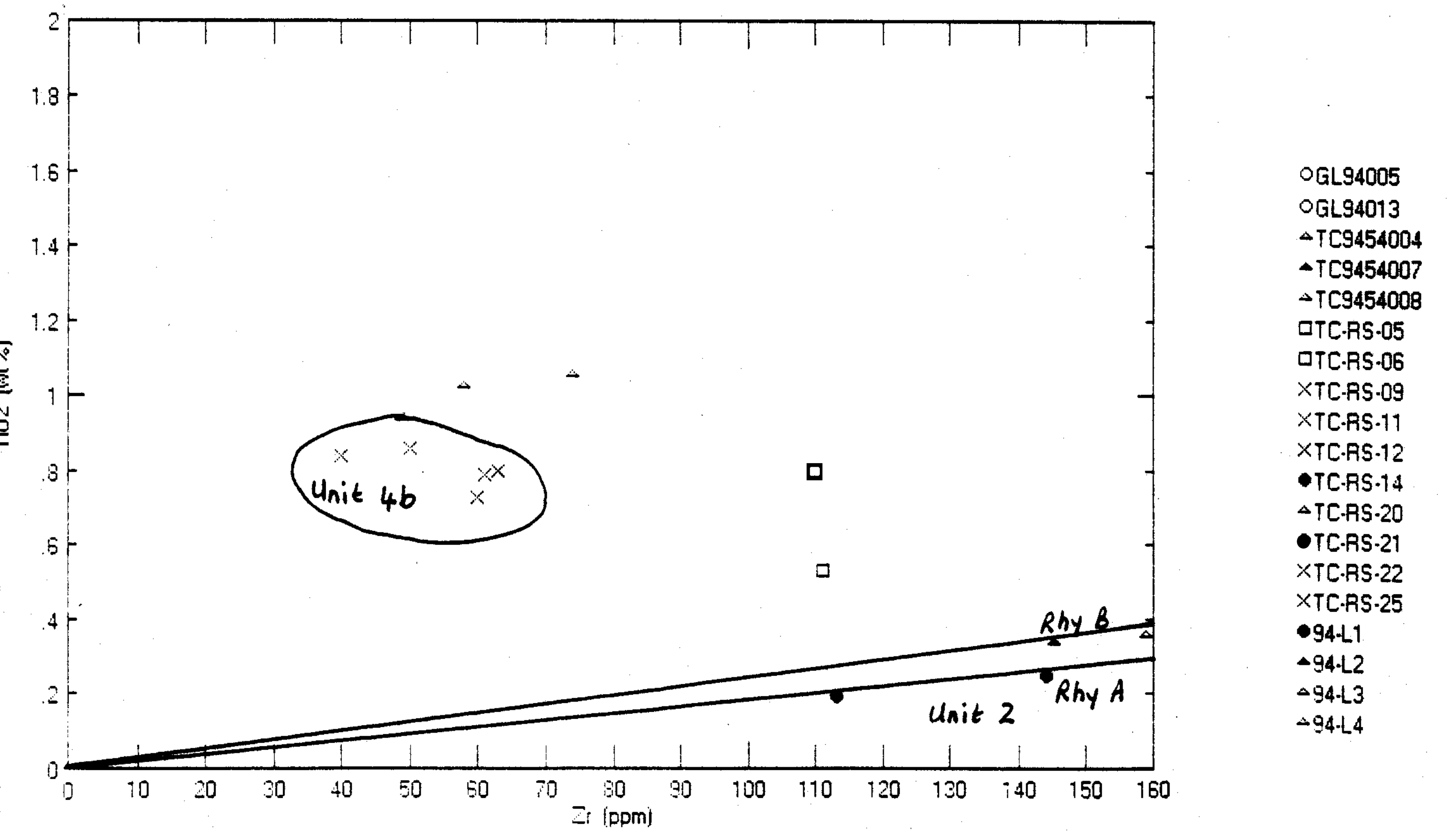
Four of the five basalt intrusive (BIN Unit 4b) samples clearly group as a distinct population (crosses), similar in composition and immobile/incompatible ratios to the gabbro and equivalent basalts as described by Sherlock and Barrett (1994). In general these rocks are more sodic than one would expect a typical gabbro to be. One specimen has a low Cr value that places it nearer the footwall basalt (andesite) field.

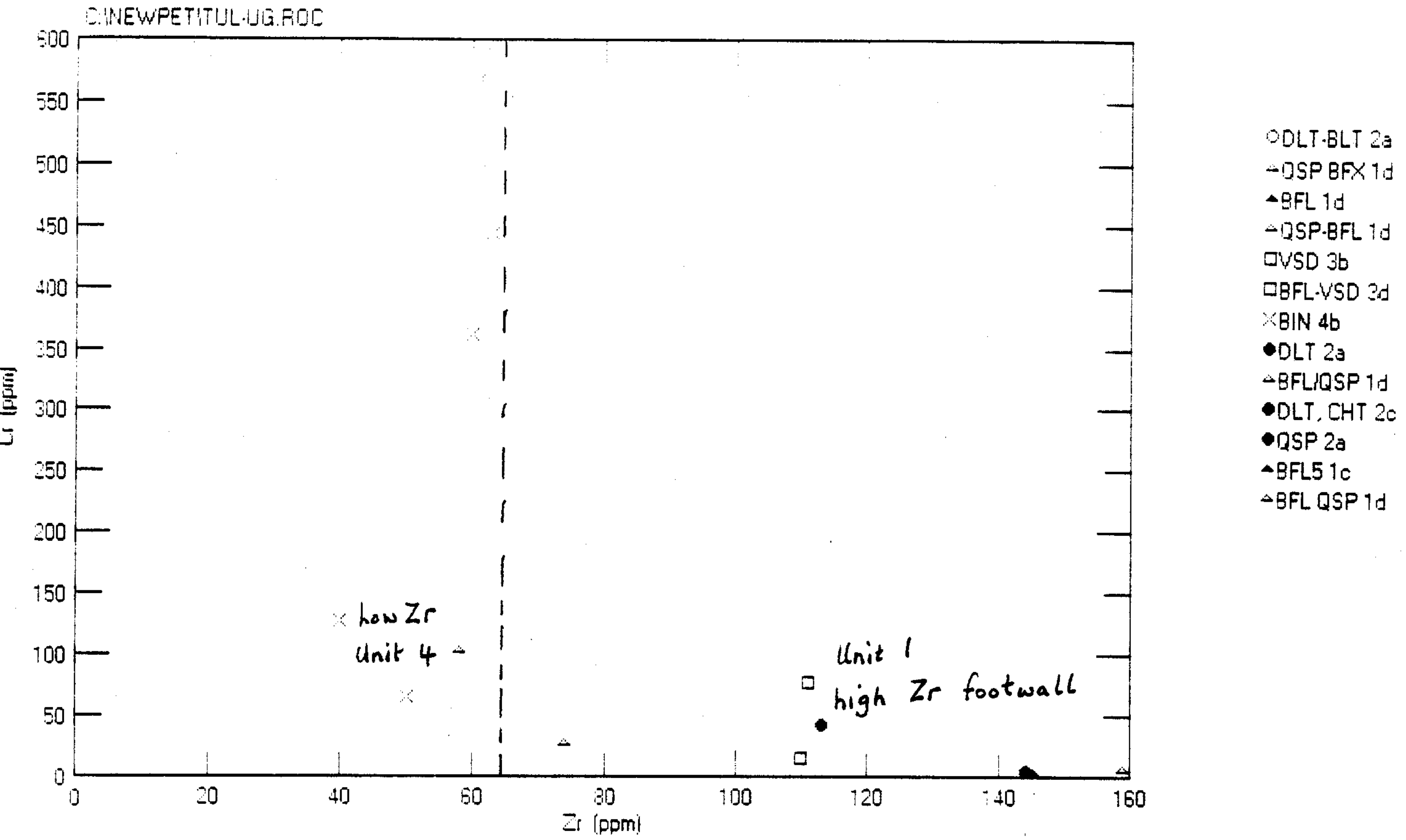
The two hangingwall basalt samples (VSD-BFL Unit 3) collected by Sherlock in 1993 also clearly group as a distinct population (boxes). However one has a sufficiently high Al content to appear with the aforementioned gabbro.

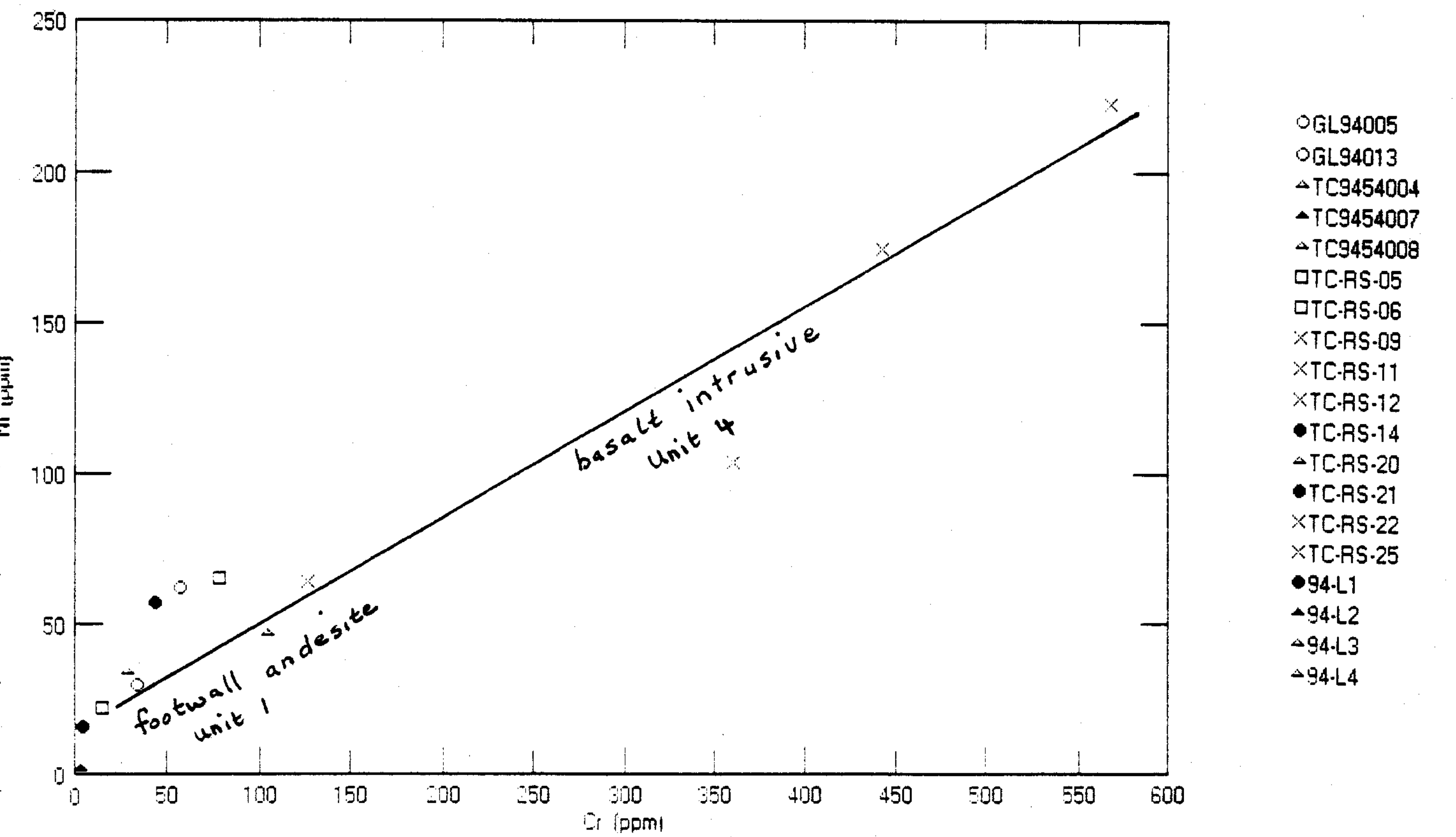
The two dacite samples (DLT, CHT, QSP Unit 2: filled circles) plot clearly as Rhyolite A (Sherlock and Barrett, 1994). Results are pending for a QSP sample collected from near the face of the 5200 level.

The two heterolithic dacite-basalt samples (Unit 2)


NEWPETITUL-UG.ROC
Al2O3 (wt %)
TiO2 (wt %)
Rhy A
Rhy B
Unit 2
Unit 4b
DLT-BLT 2a
QSP BFX 1d
BFL 1d
QSP-BFL 1d
VSD 3b
BFL-VSD 3d
BIN 4b
DLT 2a
BFL/QSP 1d
DLT, CHT 2c
QSP 2a
BFL5 1c
BFL QSP 1d


TiO2 (wt %)
Zr (ppm)
Unit 4b
Rhy B
Rhy A
Unit 2
GL94005
GL94013
TC9454004
TC9454007
TC9454008
TC-RS-05
TC-RS-06
TC-RS-09
TC-RS-11
TC-RS-12
TC-RS-14
TC-RS-20
TC-RS-21
TC-RS-22
TC-RS-25
94-L1
94-L2
94-L3
94-L4


C:\NEWPETIT\UL-UG.ROC
Cr (ppm)
Zr (ppm)
low Zr
Unit 4
Unit 1
high Zr footwall
DLT-BLT 2a
QSP BFX 1d
BFL 1d
QSP-BFL 1d
VSD 3b
BFL-VSD 3d
BIN 4b
DLT 2a
BFL/QSP 1d
DLT, CHT 2c
QSP 2a
BFL5 1c
BFL QSP 1d


Ni (ppm)
Cr (ppm)
basalt intrusive
Unit 4
footwall andesite
unit 1
GL94005
GL94013
TC9454004
TC9454007
TC9454008
TC-RS-05
TC-RS-06
TC-RS-09
TC-RS-11
TC-RS-12
TC-RS-14
TC-RS-20
TC-RS-21
TC-RS-22
TC-RS-25
94-L1
94-L2
94-L3
94-L4

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ample	GL94005	GL94013	TC9454004	TC9454007	TC9454008	TC-RS-05	TC-RS-06	TC-RS-09	TC-RS-11	TC-RS-12
ocality 1	5200 level	5200 level	5400 level	5400 level	5400 level	5400 level	5400 level	5400 level	5400 level	5400 level
ocality 2	9940E, 146	9945E, 146	10510E, 15	10490E, 15	10446E, 15	10610E, 15	10645E, 15	10715E, 15	10760E, 15	10745E, 15
Plot Symbol	1	1	7	8	7	4	4	12	12	12
Plot Colour	1	1	2	3	2	1	1	1	1	1
ock Type	DLT-BLT 2a	DLT-BLT 2a	QSP BFX 1d	BFL 1d	QSP-BFL 1d	VSD 3b	BFL-VSD 3d	BIN 4b	BIN 4b	BIN 4b
SiO2	69.01	65.28	49.26	77.27	73.54	74.01	61.53	50.82	49.80	48.79
TiO2	0.37	0.39	1.06	0.34	0.36	0.53	0.80	0.[illegible]	0.79	0.84
1203	13.60	15.55	13.40	12.51	13.13	10.79	17.09	17.66	17.04	16.38
e2O3	5.12	4.17	16.50	2.07	3.20	7.22	6.90	8.36	8.57	11.05
nO	0.11	0.13	0.20	0.02	0.01	0.07	0.07	0.18	0.17	0.19
MgO	1.72	3.11	7.48	0.68	0.55	2.46	2.67	7.23	8.77	10.44
CaO	0.45	0.45	1.12	0.17	0.22	0.76	2.40	8.67	7.80	4.56
a2O	2.93	1.79	0.16	0.68	1.11	1.05	0.77	4.02	4.31	4.01
2O	2.89	4.50	1.84	4.31	4.92	2.26	5.80	0.55	0.54	0.46
P2O5	0.08	0.06	0.82	0.06	0.07	0.07	0.27	0.15	0.14	0.19
Total	96.28	95.43	91.84	98.11	97.11	99.22	98.30	97.72	97.93	96.91
OI	3.73	4.17	8.31	2.19	2.63	1.12	1.88	1.70	2.41	3.29
Mg #	39.95	59.63	47.31	39.41	25.39	40.29	43.39	63.14	66.96	65.17
r	57	34	28	3	6	78	15	443	568	127
i	62	30	34	2	-	65	22	175	223	64
Co	21	18	40	2	4	21	-	35	32	34
Sc	-	-	-	-	-	18	23	22	29	33
	43	51	250	18	7	196	80	212	207	299
u	31	35	1467	36	30	111	58	101	81	167
b	- 2?	- 2	38	5	20	25	9	10	12	6
Zn	26	1715	146	6	14	134	113	79	90	158
As	2	-	50							
Au	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	-
	23991	37356	15274	35779	40842	-	-	-	-	-
b	-	-	36	45	52	62	153	11	8	6
a	1574	2365	1228	7878	4130	3800	1900	300	200	1000
Sr	-	-	33	183	53	69	155	210	248	91
Ga	-	-	16	8	13	13	16	15	14	13
	-	-	7.0	11.0	12.0	10.0	13.0	6.0	5.0	4.0
Zr	-	-	74	145	159	111	110	63	61	40
Ti	2218	2338	6355	2038	2158	-	-	-	-	-
	-	-	50	43	40	24	37	18	17	14
	-	-	8.00	-	-	-	-	-	-	-
Ce	-	-	-	-	-	58.00	60.00	10.00	5.00	-
nsity	2.36	2.37	2.53	2.31	2.32	2.37	2.41	2.53	2.55	2.55

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ample	TC-RS-14	TC-RS-20	TC-RS-21	TC-RS-22	TC-RS-25	94-L1	94-L2	94-L3	94-L4
ocality 1	5400 level	5400 level	5400 level	5400 level	5400 level	5200 level	5200 level	5200 level	5200 level
ocality 2	10705E, 15	10550E, 15	10335E, 14	10220E, 14		10780E, 15	10495E, 15	10465E, 15	10375E, 15
Plot Symbol	3	7	3	12	12	1	13	13	13
Plot Colour	1	1	1	1	1	1	1	1	1
ock Type	DLT 2a	BFL/QSP 1d	DLT, CHT 2	BIN 4b	BIN 4b	QSP 2a	BFL5 1c	BFL QSP 1d	BFL QSP 1d
SiO2	73.69	38.63	77.29	51.09	48.44	-	-	-	-
TiO2	0.25	1.03	0.19	0.73	0.86	-	-	-	-
1203	13.86	22.72	9.79	17.40	18.73	-	-	-	-
e2O3	2.06	16.93	2.22	8.50	9.90	-	-	-	-
nO	0.03	0.01	0.06	0.16	0.19	-	-	-	-
MgO	0.72	0.94	1.23	6.61	6.82	-	-	-	-
CaO	2.97	0.36	3.96	8.82	6.56	-	-	-	-
a2O	2.22	0.44	1.29	3.05	1.14	-	-	-	-
2O	2.86	6.78	1.49	0.21	1.67	-	-	-	-
P2O5	0.04	0.01	0.03	0.17	0.13	-	-	-	-
Total	98.70	87.85	97.55	96.74	94.44	0.00	0.00	0.00	0.00
OI	1.33	12.15	2.21	3.53	4.81	-	-	-	-
Mg #	40.90	9.91	52.32	60.63	57.70	0.00	0.00	0.00	0.00
r	4	104	43	361	66	-	-	-	-
i	16	47	57	104	-	-	-	-	-
Co	33	32	36	34	37	-	-	-	-
Sc	8	37	6	29	39	-	-	-	-
	14	357	13	220	302	-	-	-	-
u	30	82	58	66	143	-	-	-	-
b	7	46	10	8	20	-	-	-	-
Zn	54	49	47	80	-	[illegible]	144	20	52
Au	-	-	-	-	-	5.0	<5	30.0	150.0
	-	-	-	-	-	-	-	-	-
b	45	124	34	3	33	-	-	-	-
a	1600	800	-	300	125000	-	-	-	-
Sr	222	32	535	321	139	-	-	-	-
a	10	32	7	14	17	-	-	-	-
b	10.0	5.0	7.0	5.0	4.0	-	-	-	-
Zr	144	58	113	60	50	-	-	-	-
Ti	-	-	-	-	-	-	-	-	-
	22	18	16	17	19	-	-	-	-
	-	-	-	-	-	-	-	-	-
Ce	37.00	52.00	20.00	38.00	37.00	71.00	-	-	-
nsity	2.34	2.50	2.34	2.54	2.54	0.00	0.00	0.00	0.00

collected from the 5200 level portal plot on the Rhyolite B alteration line.

The footwall basalts and altered equivalents (QSP-BFL Unit 1d) remain the most enigmatic rocks in terms of elemental signature (triangles). Results are pending for three of the six samples collected. The author recognizes that this is insufficient sampling required to characterize this unit, particularly complicated by the possibility that some of this unit is in fact a dacite intrusive as is postulated by Cominco.

As chemostratigraphy has been the main focus of the whole rock geochemistry study, few comments have been made about alteration, either regional metamorphic or deposit scale hydrothermal alteration. Perhaps with the examinations of thin sections to take place this year by MDRU (Barrett, per comm.) considerations of alteration will arise. A study of the distribution of sericite, chlorite, quartz, biotite and cordierite in concert with examination of associated rock geochemistry could aid in the locating of new ore.

Mineralization

Two areas were samples for base metal mineralization. Grab samples were collected on a two meter interval from the portal area of the 5200 level. Chip sampling of massive sulphide was done near the face on the 5200 level.

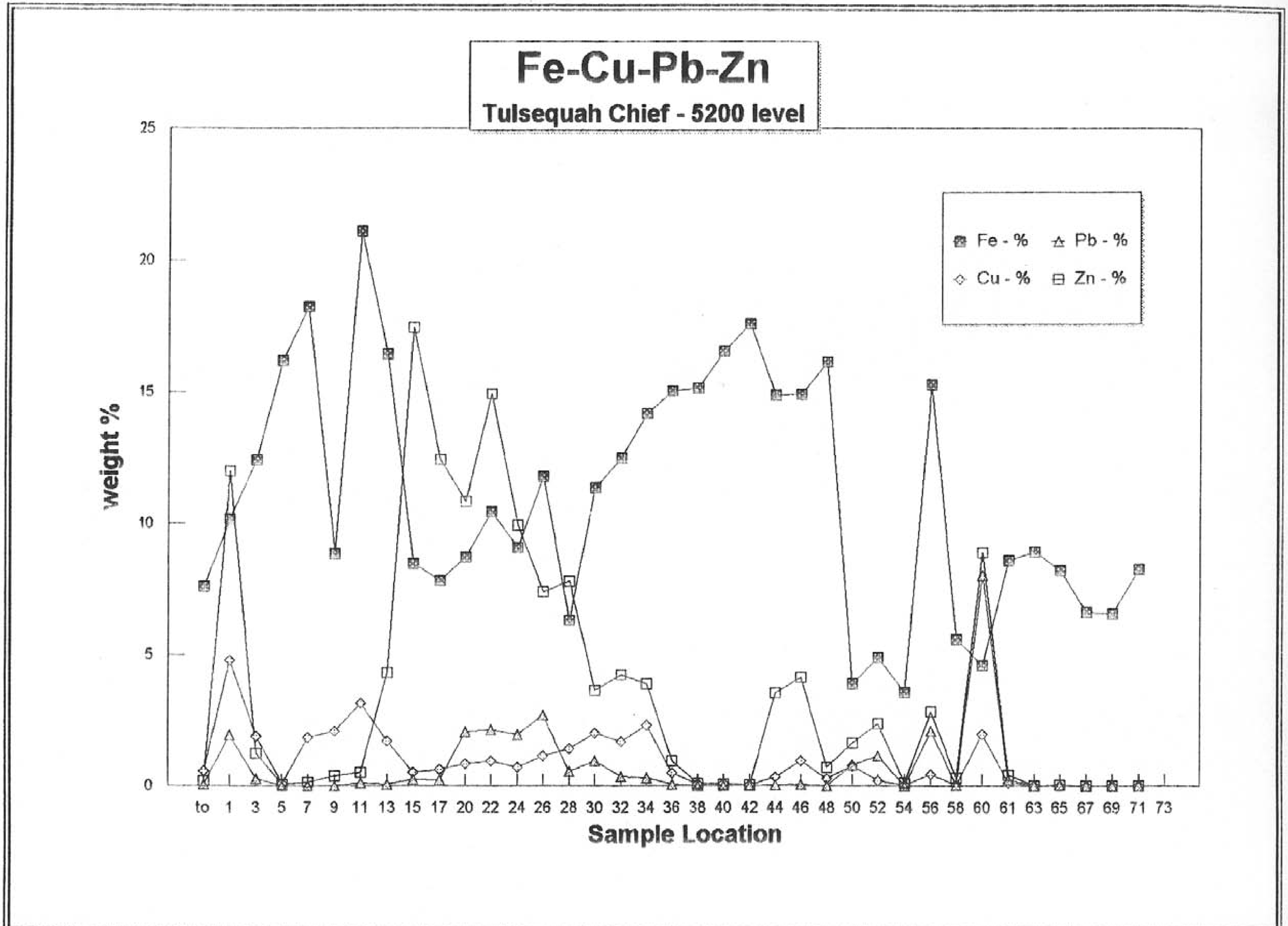
Results from the analyses of the dacite-basalt altered clastics of the 5200 zone are in Appendix x. Background versus anomalous values have not been calculated using statistical analyses, however these results may be visually inspected. Of the fourteen samples, all have background values of Au, Ag, Bi, Hg, and Mo (</= 5ppb, 0.4 ppm, 2 ppm, 1 ppm and 2 ppm respectively). Three of the samples have >100 ppm As, seven have >100 ppm Cu, one has >100 ppm Sb, and four have >100 ppm Zn. The highest metal value is that of zinc at 712 ppm. Although these values do not represent economic metal concentrations, and do not even constitute stringer mineralization, they do appear to be above background. The results may indicate that proximal mineralization is nearby or in the same stratigraphy.

The best exposure of economic mineralization is found in the back of the 5200 level and up an adjacent sublevel. Analytical results from 37 contiguous chip samples are summarized on Table 1, Assays - 5200 level, and plotted on three graphs. Complete 30 element ICP results are in Appendix X. Sample locations are plotted on Figure x at 1:250 scale.

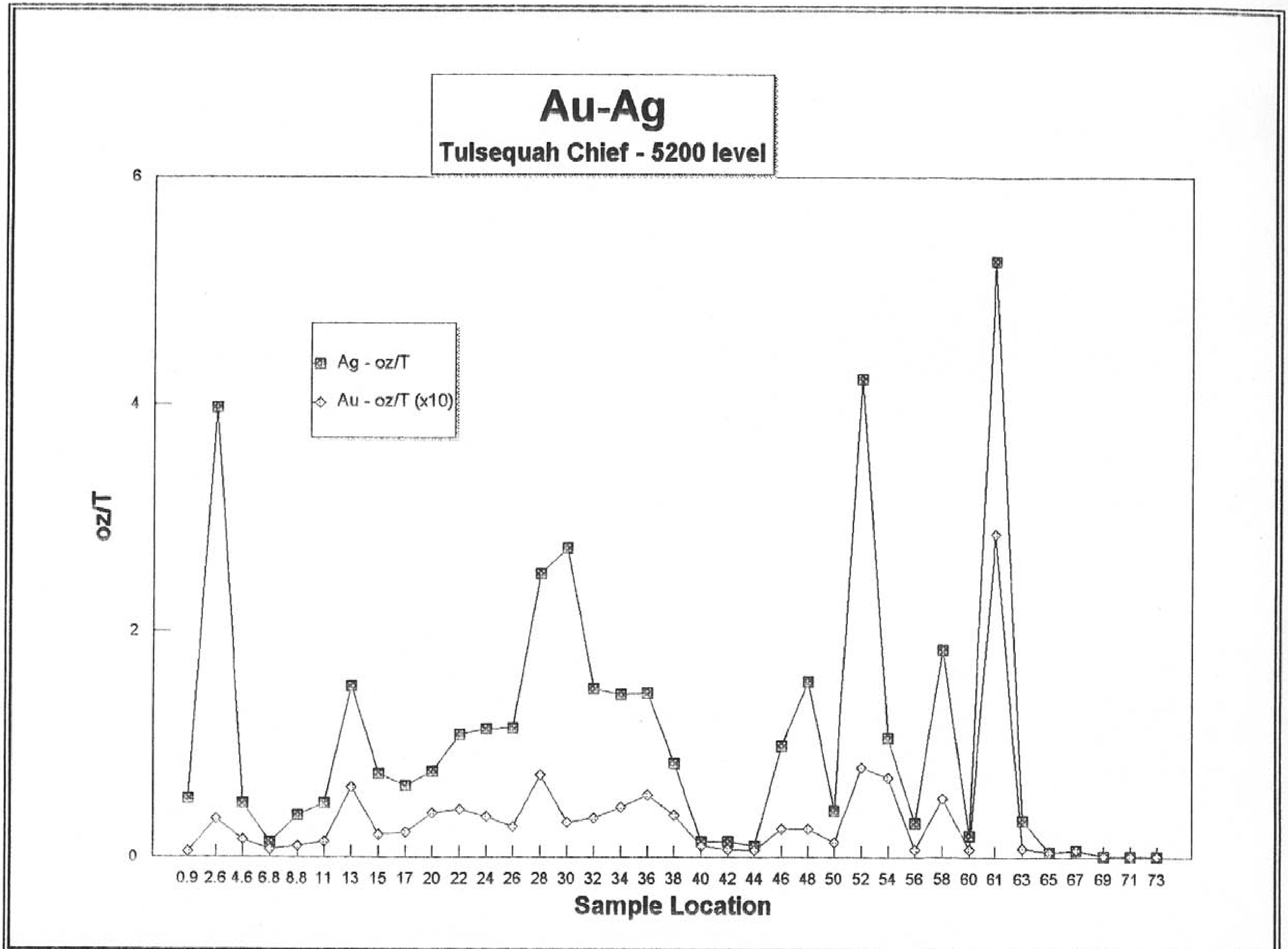
Correlation co-efficients were calculated for the economic elements listed below, using samples E145352-E145381. The obvious relationships that appear from these calculations are the high affinity between gold and silver and lead. Within this small and varied group of samples other correlations do not appear to be significant. If one examines the Fe-Cu-Pb-Zn graph visually, lead and zinc do appear to follow similar trends, and, copper and iron appear to behave independently. Visual inspection of the As-Cd-Sb-Cr graph shows their compatible

Assays - 5200 level

SAMPLES	from	to	interval	Cu	Pb	Zn	Ag**	Au**	S.G.	nsr
	m	m	m	%	%	%	oz/t	oz/t	-	
E 145351	0	0.9	0.9	0.575	0.06	0.2	0.52	0.005	2.94	$11.60
E 145352	0.90	2.60	1.70	4.802	1.96	11.97	3.97	0.034	3.98	$190.00
E 145353	2.60	4.60	2.00	1.905	0.27	1.26	0.48	0.016	3.11	$43.63
E 145354	4.60	6.80	2.20	0.084	0.01	0.05	0.13	0.007	3.82	$1.94
E 145355	6.80	8.80	2.00	1.841	0.02	0.13	0.37	0.01	4	$31.65
E 145356	8.80	11.40	2.60	2.094	0.02	0.38	0.48	0.014	2.92	$37.88
E 145357	11.40	13.40	2.00	3.132	0.11	0.53	1.51	0.062	4.14	$57.41
E 145358	13.40	15.40	2.00	1.711	0.05	4.3	0.74	0.02	3.88	$63.49
E 145359	15.40	17.40	2.00	0.514	0.25	17.43	0.63	0.022	3.93	$151.07
E 145360	17.40	20.00	2.60	0.622	0.22	12.41	0.76	0.039	3.8	$112.34
E 145361	20.00	22.00	2.00	0.856	2.05	10.81	1.08	0.042	3.96	$116.09
E 145362	22.00	24.00	2.00	0.969	2.14	14.9	1.13	0.036	4.02	$151.51
E 145363	24.00	26.00	2.00	0.707	1.94	9.91	1.14	0.027	4.09	$105.46
E 145364	26.00	28.00	2.00	1.126	2.67	7.37	2.5	0.073	3.87	$97.56
E 145365	28.00	30.00	2.00	1.419	0.55	7.79	2.73	0.031	3.23	$90.60
E 145366	30.00	32.00	2.00	2.001	0.95	3.61	1.49	0.035	3.49	$69.19
E 145367	32.00	34.00	2.00	1.671	0.36	4.21	1.44	0.044	3.26	$64.57
E 145368	34.00	36.00	2.00	2.307	0.31	3.88	1.45	0.055	3.36	$72.15
E 145369	36.00	38.00	2.00	0.507	0.05	0.95	0.83	0.037	3.47	$16.82
E 145370	38.00	40.00	2.00	0.065	0.02	0.09	0.14	0.01	3.46	$2.05
E 145371	40.00	42.00	2.00	0.097	0.01	0.05	0.14	0.007	3.94	$2.16
E 145372	42.00	44.00	2.00	0.03	0.01	0.03	0.1	0.006	4.09	$0.88
E 145373	44.00	46.00	2.00	0.341	0.04	3.52	0.98	0.025	3.84	$34.63
E 145374	46.00	48.00	2.00	0.96	0.06	4.12	1.55	0.025	3.73	$49.86
E 145375	48.00	50.00	2.00	0.28	0.02	0.72	0.41	0.013	4.55	$10.73
E 145376	50.00	52.00	2.00	0.751	0.8	1.64	4.22	0.079	2.84	$32.36
E 145377	52.00	54.00	2.00	0.202	1.15	2.35	1.05	0.07	2.88	$31.10
E 145478	54.00	55.50	1.50	0.048	0.02	0.1	0.3	0.007	2.77	$1.84
E 145379	55.50	57.90	2.40	0.434	2.08	2.83	1.83	0.052	3.64	$45.16
E 145380	57.90	59.60	1.70	0.046	0.04	0.31	0.19	0.007	2.85	$3.63
E 145381	59.60	61.40	1.80	1.957	8.01	8.86	5.26	0.285	3.8	$162.88
E 145382	61.40	63.00	1.60	0.105	0.23	0.41	0.33	0.008	2.89	$6.75
E 145383	63.00	65.00	2.00	0.006	0.01	0.02	0.04	0.004	2.89	$0.37
E 145384	65.00	67.00	2.00	0.012	0.04	0.04	0.06	0.007	2.87	$0.88
E 145385	67.00	69.00	2.00	0.002	0.01	0.01	0.01	0.001	2.84	$0.19
E 145386	69.00	71.00	2.00	0.001	0.01	0.01	0.01	0.001	2.81	$0.18
E 145387	71.00	73.00	2.00	0.001	0.01	0.01	0.01	0.001	2.79	$0.18

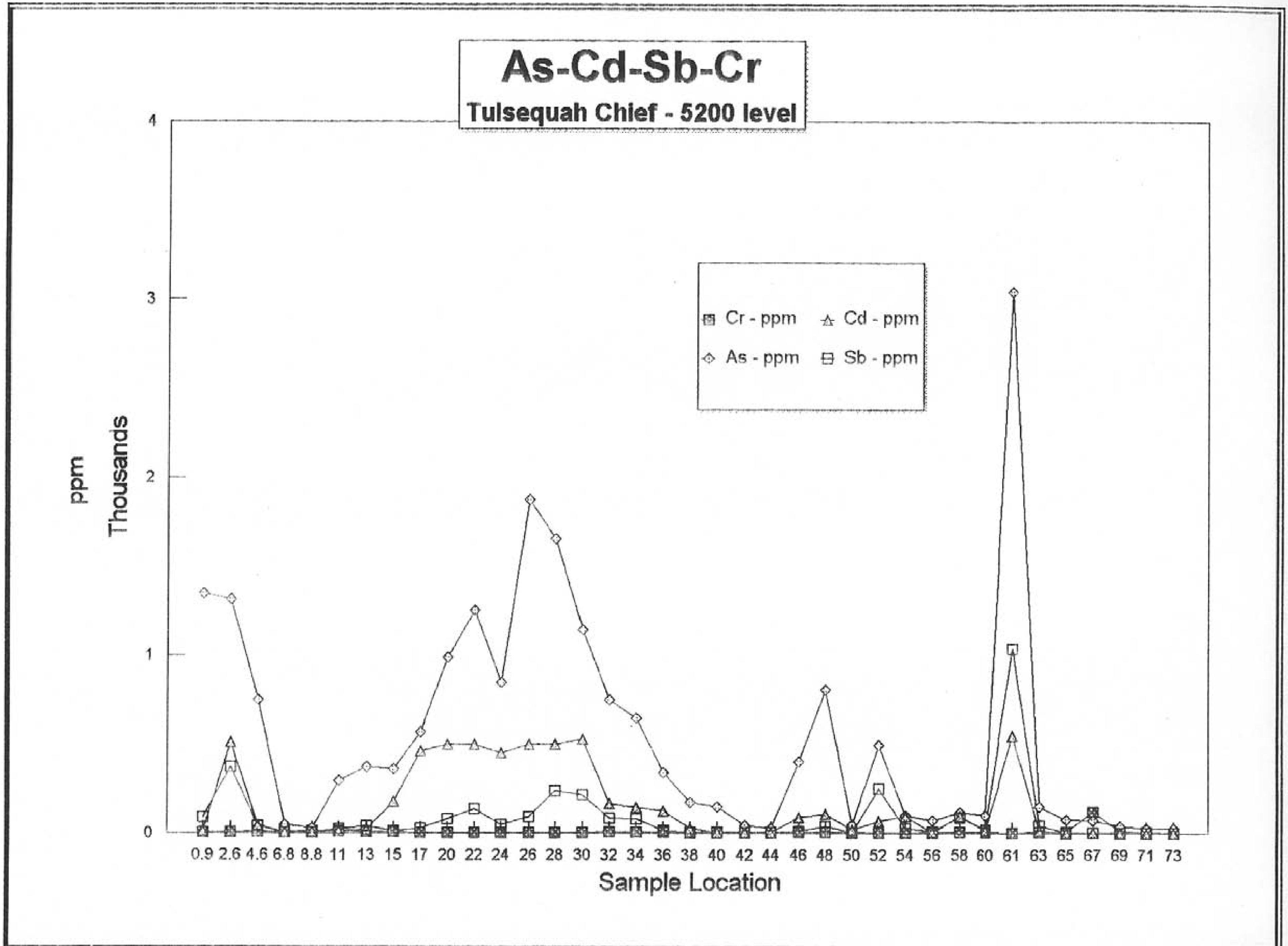


Fe-Cu-Pb-Zn
Tulsequah Chief - 5200 level
weight %
25
20
15
10
5
0
Fe - %
Pb - %
Cu - %
Zn - %
to 1 3 5 7 9 11 13 15 17 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 61 63 65 67 69 71 73
Sample Location



5200.WK4

21/10/94



5200.WK4

21/10/94

behavior.

Table listing correlation co-efficients for elements for sample interval 0.9-61.4 meters

Elements	correlation
Cu-Au	0.24
Cu-Ag	0.50
Cu-Pb	0.23
Cu-Zn	0.23
Cu-Fe	0.10
Pb-Zn	0.43
Pb-Ag	0.73
Pb-Au	0.89
Zn-Ag	0.36
Zn-Au	0.26
Ag-Au	0.77

From reviewing these limited results in concert with mapping data, the author would group the metals as follows;

Massive Sulphides
- Fe = massive pyrite (barren of economic metals)
- Cu-Fe-(+/-Au) = pyrite-chalcopyrite
- Cu-Pb-Zn-Ba-As-Cd = sphalerite-galena-chalcopyrite-tetrahedrite-barite-pyrite
- Zn-(+/-Pb-Ag) = sphalerite (+/- galena)

Stringer Sulphides
- Fe = barren pyrite
- Pb-Zn-Au-Ag-Cu = galena-sphalerite-tetrahedrite

These groupings are somewhat similar to those used at Myra Falls volcanogenic massive sulphide mine, where they are thought to reflect primary metal zoning, and aid in grade control during mine planning. Categories used at Myra Falls, from base to top are; gold enriched massive pyrite, massive pyrite-chalcopyrite, "pipes" of bornite-chalcopyrite-pyrite precious-metal rich, massive banded chalcopyrite-sphalerite-barite, massive and stringer polymetallic (precious-metal rich). A Buchans-style clastic ore is also included, but remains yet to be mined.

A further note of similarity with Myra Falls is the presence of arsenic and cadmium. The former is a penalty, and the latter a bonus in net smelter return calculations. Thus both require some attention when making metallurgical studies.

Length and length-density weighted averages were calculated for the aforementioned 60.5 meter sample interval that constituted massive sulphide mineralization. Approximately half of this length is made up of material of less than $50 NSR, however one quarter is in the $30-50 range. If a bulk mining method is used, it is likely that all the massive sulphide will be taken for ore. The only difference between the results of the two methods of calculation appears to be in the zinc grade. The higher zinc grade recorded in the length-density weighted calculation may be related to the presence of barium associated with zinc. (Unfortunately barium is not detected with any accuracy in ICP analyses although it is recorded with the results).

Table comparing length versus length-density weighted average calculations for sample interval 0.9-61.4 meters

element	length only	length-density
Cu	1.11%	1.11%
Pb	0.84%	0.87%
Zn	4.57%	4.77%
Au	0.39oz/T	0.39 oz/T
Ag	1.27 oz/T	1.26 oz/T
NSR	$61.51	$66.59

Summary and Recommendations

The purpose of this report is to allow the author to record some observations and resultant interpretations in a coherent manner. Data are also documented.

Studies that may be carried out in the future, to aid in locating new ore, and finding ore of higher grade include:

1) Metal zoning - Define the sulphide types using a more complex set of categories than Cu or Zn ore. Colour code the resultant ore types. Using the established computer system and data base, create a set of equations to calculate ore types (ie. Cu-pyrite ore = Fe>10%, Cu>1.5%, Zn<2%, Pb<1%). Include Ba, Cd, As, and Sb as well as Cu, Pb, Zn, Au, and Ag in the calculations. Review historical mining/production data to confirm/dispute the selection of ore types. Consult with the metallurgists to see if they have any opinions regarding ore types (although undoubtably the geologists supply the metallurgists with the ore types).

Attempt a first pass plotting of data on the gross scale (ie. a dozen or so widely space inclined sections, and 3-5 long sections). As confidence is gained with the selection of the sulphide types, a suite of examples could be collected. An arrangement could be made with a university to donate the suite in exchange for an ore petrography and petrogenesis study (possibly including SEM-EDS work). Many geology departments would be very appreciative of such a collection of sulphide samples. The combined information from petrography and ore zoning (even gross scale) could allow one to define vent areas and vectors for deposition. It is recognized that the sulphides are folded and 'chopped up', but it is postulated that remobilization of metals has only occurred over short distances and will not have affected the overall geometry of the deposit. This information about zoning and sulphide types is useful and is requested by a variety of people: planning and production engineers, metallurgists, environmental scientists, and to a lesser extent geotechnical engineers (problems with sulphide blasts, strength of stringer mineralization, ore-waste contact coherency, etc.)

2) Alteration zoning - The distribution of alteration minerals and mineral assemblages can provide valuable information about alteration haloes associated with ore. In concert with the ore zoning data, morphology of the ore vents and lateral facies, and vectors of depostion may be determined. Assuming a certain level of trust in the observational skills of all the geologists who have logged core, recognizing that cordierite was only recently identified, and realizing that the proportional determination of minerals such as biotite, chlorite and sericite is difficult, the present computer data base could be used for an alteration study. It is assumed that the thin section work being done by MDRU/Chris Sebert will contribute to the overall understanding of alteration. Such classical geochemical studies involving sodium depletion (Gibson, 1993) and the 'Kuroko index' could also be considered.

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C "CASING"
CASE "CASING"
CAVE "CAVE"
OVBD "OVER BURDEN"
OVB "OVER BURDEN"
EOH "EOH"

F "FAULT"
FALT "FAULT"
FLT "FAULT"
SCH "SCHISTOSE"
FO "FOLIATED"
FOL "FOLIATED"
FG "FINE GRAINED"
MG "MEDIUM GRAINED"
CG "COARSE GRAINED"
IGN "IGNIMBRITE"
SPH "SPHERULITIC"

1 "Unit 1"
1A "Unit 1A"
1B "Unit 1B"
2 "Unit 2"
2A "Unit 2A"
3 "Unit 3"
3A "Unit 3A"
4 "Unit 4"
4A "Unit 4A"
4B "Unit 4B"
4C "Unit 4C"
5 "Unit 5"
6 "Unit 6"
7 "Unit 7"
7A "Unit 7A"
8 "Unit 8"
9 "Unit 9"
AB "Zone AB"
I "Zone I"
H "Zone H"

BDY "BASALT DYKE"
BDY1 "FELDSPAR PHYRIC BASALT DYKE"
BDY3 "AMPHIBOLE-PHYRIC BASALT DYKE"
ADY "ANDESITE DYKE"
FDK "FELSIC DYKE"
DDY "DACITE DYKE"
SRD "SLOKO RHYOLITE DYKE"
SRD1 "FELDSPAR -PHYRIC SLOKO RHYOLITE DYKE"
SD "SLOKO RHYOLITE DYKE - (COMINCO UNIT 9)"
QFP "QUARTZ FELDSPAR PORPHYRY DYKE"
QF "QUARTZ FELDSPAR PORPHYRY DYKE - (COMINCO UNIT 8)"

BIN "BASALTIC INTRUSION"
BIN1 "FELDSPAR PHYRIC BASALT INTRUSIVE"
BIN3 "AMPHIBOLE PHYRIC BASALT INTRUSIVE"
BIN4 "PYROXENE PHYRIC BASALT INTRUSIVE"
BIN5 "VESICULAR BASALT INTRUSIVE"
DIN "DACITE INTRUSIVE"
DIN1 "FELDSPAR PHYRIC DACITE INTRUSION"
RIN "RHYOLITE INTRUSIVE"

BAU "BASALT UNDIFFERENTIATED"
BAU1 "FELDSPAR-PHYRIC BASALT UNDIFFERENTIATED"

BFL "BASALT FLOW"
BFL1 "FELDSPAR PHYRIC BASALT FLOW"
BAU5 "BASALT UNDIFFERENTIATED - AMYGDALOIDAL"
BFL5 "AMYGDALOIDAL BASALT FLOWS"
BFX2 "QUARTZ-AMYGDALOIDAL BASALT FLOW BRECCIA"
BFX "BASALT FLOW BRECCIA"
BFX1 "BASALT FLOW BRECCIA - FELDSPAR PHYRIC"
BFX5 "AMYGDALOIDAL BASALT FLOW BRECCIA"
BTF "BASALT TUFF UNDIFFERENTIATED"
BAT "BASALT ASH TUFF"
BAT1 "FELDSPAR BEARING BASALT ASH TUFF"
BXT "BASALT CRYSTAL TUFF"
BLT "BASALT LAPILLI TUFF"
BLT5 "AMYGDALOIDAL BASALT LAPILLI TUFF"

AN "BASALTIC ANDESITE - (COMINCO UNIT 7)"
A "ANDESITE VOLCANICS"
AFL "BASALTIC ANDESITE FLOWS"
AFL1 "FELDSPAR PHYRIC BASALTIC ANDESITE FLOWS"
AFX "BASALTIC ANDESITE BRECCIA"
ATF "BASALTIC ANDESITE TUFF"
ADT "BASALTIC ANDESITE DUST TUFF"
AAT "BASALTIC ANDESITE ASH TUFF"
ALT "BASALTIC ANDESITE LAPILLI TUFF"
AA "ALTERED ANDESITE VOLCANICS"

DAU "DACITE - UNDIFFERENTIATED"
DS "ALTERED DACITE - (COMINCO UNIT 3A)"
DP "DACITE PORPHYRY - (COMINCO UNIT 7A)"
DF "DACITE FLOWS - (COMINCO UNIT 6)"
DFL "DACITE FLOWS"
DFL1 "FELDSPAR PHYRIC DACITE FLOWS"
DFX "DACITE FLOW BRECCIA"
DFX1 "FELDSPAR PHYRIC DACITE FLOW BRECCIA"
DDT "DACITE DUST TUFF"
DAT "DACITE ASH TUFF"
DAT1 "FELDSPAR-PHYRIC DACITE ASH TUFF"
DTF "DACITE TUFF"
DXT "DACITE FELDSPAR CRYSTAL TUFF"
DLT "DACITE LAPILLI TUFF"

DLT1 "FELDSPAR PHYRIC DACITE LAPILLI TUFFS"
DBX "DACITE BRECCIA"

RFL "RHYOLITE FLOW"
RFL1 "FELDSPAR PHYRIC RHYOLITIC FLOWS"
RFX "RHYOLITE FLOW BRECCIAS"
RAT "RHYOLITE ASH TUFF"
RLT "RHYOLITE LAPILLI TUFF"
RTL "RHYOLITE TUFFACEOUS LAPILLISTONE"

VSD "VOLCANIC SEDIMENTS"
CHT "CHERT"
CHF "CHERT FACIES"
JSP "(JASPER)"
EXT "ALTERED EXHALITE - SULPHIDE BEARING"
ARG "ARGILLITE OR TUFFACEOUS ARGILLITE"
SLT "SILTSTONE OR TUFFACEOUS SILTSTONE"
SST "SANDSTONE"
GWK "GREYWACKE"
CGL "CONGLOMERATE"

STF "ALTERED TUFF FACIES"
STF5 "ALTERED TUFF FACIES - AMYGDALOIDAL"
QSP "QUARTZ-SERICITE-PYRITE"
QV "QUARTZ VEIN"
QS "QUARTZ SERICITE"
SER "SERICITIZATION"
CAL "CARBONATE ALTERED"
CARB "CARBONATE ALTERED"
QCV "QUARTZ CARBONATE VEINS"
QCS "QUARTZ CARBONATE STRINGERS"
SIL "SILICIFICATION"
FUC "FUCHSITE"
FUCH "FUCHSITE"
HEM "DISSEMINATED HEMATITE - MAROON COLOURED"
MAR "MAROON"
CHL "CHLORITIZATION"
EPI "EPIDOTIZATION"
MAG "magnetite"
BIO "BIOTITIZATION"
BAR "BARITE"
GYP "GYPSUM"
PRO "PROPYLITIC"
COR "CORDIERITE PORPHYROBLASTS"
MAL "MALACHITE"
GRAP "GRAPHITIC"
BLCH "BLEACHED"

SMS "SEMI-MASSIVE SULPHIDES"
MH "MINERALIZED HORIZON - (COMINCO UNIT 2,2A)
MS "MASSIVE SULPHIDE ZONE"
PYF "PYRITE FACIES"

DPY "DISSEMINATED PYRITE"
SMPY "SEMI-MASSIVE PYRITE"
BPY "BANDED PYRITE"
MPY "MASSIVE PYRITE"
SPY "STRINGER PYRITE"
ZNF "ZINC FACIES"
MZN "MASSIVE SULPHIDES - SPHALERITE"
DSL "DISSEMINATED SPHALERITE"
BSL "BANDED SPHALERITE"
MSL "MASSIVE SPHALERITE"
SSL "STRINGER SPHALERITE"
DGN "DISSEMINATED GALENA"
BGN "BANDED GALENA"
MGN "MASSIVE GALENA"
SGN "STRINGER GALENA"
CUF "COPPER FACIES"
DCP "DISSEMINATED CHALCOPYRITE
BCP "BANDED CHALCOPYRITE"
MCP "MASSIVE CHALCOPYRITE"
SCP "STRINGER CHALCOPYRITE"

! old data set codes
!
AND "ANDESITE: GENERALLY MASSIVE"
ORSC "SERICITE +- QUARTZ +- CHLORITE SCHIST"
ORSU "MASSIVE SULPHIDES"
MADK "MAFIC DYKES"
FEVL "VOLCANICS, FELSIC, NON-SCHISTOS"
ORPY "MASSIVE PYRITE"
ANFR "ANDESITE: FRAGMENTAL"
ORDS "DISSEMINATED SULPHIDES"
DUM "NO GEOLOGY LOGGED"
NOCO "NO CORE"
AGGL "AGGLOMERATE"
FEDK "FELSIC DYKES"
SH "SHALE (PRE-PERMIAN)"

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Redfern Resources Ltd. PROJECT TULSEQUAH CHIEF File # 94-3182 Page 1

207 - 10711 Cambie Road, Richmond BC V6X 3G5

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
E 145351	5	6980	661	2102	19.7	6	7	53	7.60	1346	<5	<2	6	58	10.4	88	<2	<2	.29	<.001	4	2	.10	14	<.01	6	.39	.04	.18	<1
E 145352	26	40516	11027	99999	126.6	8	5	100	10.16	1315	<5	<2	<2	21	512.4	374	<2	6	.12	<.001	<2	4	.23	34	<.01	4	.26	.01	.04	<1
E 145353	29	18948	2406	11183	16.6	30	4	196	12.39	748	<5	<2	6	22	41.6	39	3	6	.48	<.001	<2	8	2.87	60	<.01	4	1.80	.02	.18	<1
E 145354	3	700	125	319	3.8	10	1	83	16.18	45	<5	<2	4	7	3.0	<2	<2	3	.16	.001	<2	7	1.46	47	<.01	5	.99	.03	.11	<1
E 145355	3	16196	205	1058	10.7	10	1	131	18.20	27	<5	<2	4	8	5.1	<2	3	4	.08	<.001	<2	9	1.94	56	<.01	7	1.19	.01	.05	<1
E 145356	8	20552	138	3983	18.1	12	2	539	8.85	296	<5	<2	2	12	11.2	21	5	16	.30	<.001	<2	12	7.88	63	<.01	3	5.48	.02	.12	<1
E 145357	13	25759	854	4727	39.9	8	2	30	21.08	373	<5	<2	4	9	16.6	37	10	2	.18	<.001	<2	5	.17	70	<.01	7	.26	.01	.05	<1
E 145358	10	16334	341	41991	21.5	14	1	98	16.44	362	<5	<2	3	14	178.2	10	<2	3	.09	<.001	<2	7	.30	59	<.01	4	.38	.01	.07	<1
E 145359	8	3601	1941	99999	13.7	7	2	72	8.46	567	<5	<2	<2	17	464.4	29	<2	2	.06	<.001	<2	2	.08	62	<.01	2	.09	<.01	.02	8
E 145360	8	4230	1837	99999	17.7	6	2	64	7.82	987	<5	<2	2	22	500.5	80	<2	<2	.05	<.001	<2	1	.03	23	<.01	2	.03	<.01	.01	<1
RE E 145360	7	4205	1927	99999	17.7	6	2	66	7.94	966	<5	<2	<2	21	484.2	75	<2	<2	.05	<.001	<2	1	.04	26	<.01	2	.03	<.01	.01	<1
E 145361	8	8082	5965	99999	30.5	9	1	57	8.70	1253	<5	<2	<2	10	498.4	137	<2	2	.12	<.001	<2	1	.03	3	<.01	3	.03	<.01	.01	<1
E 145362	7	7447	9561	99999	23.9	8	2	81	10.44	847	<5	<2	<2	9	452.0	47	<2	2	.07	<.001	<2	4	.04	5	<.01	3	.03	<.01	.01	8
E 145363	9	6507	12484	99999	33.3	8	3	74	9.05	1871	<5	<2	2	14	500.7	93	<2	2	.03	<.001	<2	2	.03	6	<.01	2	.03	<.01	.01	<1
E 145364	19	10645	5935	74480	73.0	13	3	331	11.76	1651	<5	<2	2	11	498.0	238	9	8	.07	.003	<2	4	1.42	7	<.01	<2	.78	<.01	.02	<1
E 145365	29	14274	5355	86575	84.7	11	4	479	6.29	1143	<5	<2	3	35	525.5	215	10	8	.13	<.001	<2	4	2.56	73	<.01	3	1.74	.02	.14	4
E 145366	10	19103	8529	36009	48.6	12	3	203	11.33	747	<5	<2	2	27	163.5	82	<2	5	.20	<.001	<2	5	1.09	52	<.01	5	.79	.01	.10	<1
E 145367	15	15510	2972	39734	43.1	11	4	190	12.45	645	<5	<2	3	23	143.8	80	7	3	.09	<.001	<2	6	1.09	49	<.01	4	.88	.02	.13	<1
E 145368	12	20524	2347	35214	41.2	15	4	303	14.16	341	<5	<2	3	21	124.0	14	<2	8	.36	<.001	<2	7	1.99	57	<.01	2	1.42	.02	.10	<1
E 145369	7	4462	371	7263	21.9	10	3	677	15.03	173	10	<2	3	16	25.0	<2	<2	8	.43	<.001	<2	5	5.40	33	<.01	<2	3.43	.02	.05	<1
E 145370	7	555	135	567	4.0	5	4	721	15.12	150	12	<2	4	11	3.2	<2	<2	6	.15	<.001	<2	6	7.30	21	<.01	<2	4.28	.01	.01	<1
RE E 145370	9	566	141	572	3.9	5	4	724	15.04	156	<5	<2	3	11	3.3	<2	<2	6	.15	<.001	<2	5	7.39	22	<.01	<2	4.30	.01	.01	<1
E 145371	2	798	88	342	3.2	3	3	423	16.54	44	<5	<2	3	7	2.7	<2	5	8	.06	<.001	<2	5	4.02	6	<.01	<2	2.32	.02	.01	<1
E 145372	3	191	76	177	2.6	3	1	281	17.56	26	9	<2	3	6	2.4	<2	<2	7	.07	.001	<2	6	3.23	8	<.01	3	1.73	.02	.01	<1
E 145373	6	2709	273	30218	22.7	19	5	490	14.86	402	<5	<2	3	20	89.6	10	<2	14	.44	<.001	<2	6	3.89	15	<.01	<2	2.30	.03	.02	<1
E 145374	8	8371	410	35546	40.9	24	3	501	14.89	803	14	<2	3	11	107.4	39	<2	9	.47	<.001	<2	7	4.24	54	<.01	2	2.60	.02	.05	<1
E 145375	3	2202	165	5896	9.6	5	1	58	16.13	48	<5	<2	2	9	17.4	3	<2	2	.19	<.001	<2	5	.23	81	<.01	<2	.20	.01	.02	<1
E 145376	5	8797	8931	17299	157.6	12	5	274	3.88	494	5	<2	2	26	68.8	253	8	6	.21	.006	7	4	2.10	21	<.01	3	1.84	.05	.49	3
E 145377	7	2127	12597	26207	34.9	8	7	342	4.87	101	<5	<2	<2	56	94.1	26	<2	17	.89	.042	3	4	1.84	13	.02	4	1.88	.11	.53	<1
E 145378	2	503	221	1093	9.9	8	7	452	3.54	70	<5	<2	<2	42	2.4	9	<2	12	.72	.040	6	6	2.01	24	.01	4	2.12	.09	.65	<1
E 145379	8	3661	3322	24830	43.5	8	3	218	15.28	117	<5	<2	3	10	95.4	88	2	12	.59	.017	<2	6	.87	14	.02	<2	1.13	.06	.27	<1
E 145380	2	461	347	3706	6.0	8	13	535	5.58	101	<5	<2	<2	48	12.1	20	<2	52	.80	.087	<2	6	2.63	31	.09	3	2.79	.12	.92	<1
RE E 145380	2	462	341	3746	5.9	7	13	541	5.65	101	<5	<2	<2	49	12.4	20	<2	52	.80	.088	<2	6	2.69	28	.09	<2	2.81	.12	.89	<1
E 145381	4	16865	23995	99999	140.3	16	5	86	4.56	3044	<5	3	<2	22	548.2	1037	<2	6	.14	.004	<2	2	.08	22	<.01	<2	.24	.02	.11	7
E 145382	6	1011	2160	4548	9.6	15	11	582	8.57	151	<5	<2	<2	45	12.6	41	<2	22	.62	.048	<2	6	2.12	26	.01	2	1.89	.07	.44	<1
E 145383	5	59	90	178	2.0	9	16	757	8.89	75	<5	<2	<2	46	.6	<2	<2	46	.54	.098	<2	5	2.74	17	.06	<2	2.35	.08	1.19	<1
E 145384	7	108	320	381	1.0	60	17	694	8.18	72	<5	<2	<2	23	.9	<2	<2	55	.36	.093	<2	120	2.64	13	.07	3	2.22	.05	1.37	<1
STANDARD C	20	62	40	124	6.9	73	32	1049	3.96	39	20	6	37	52	16.6	14	22	61	.49	.090	40	60	.92	183	.08	34	1.88	.06	.15	10

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: ROCK Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: SEP 15 1994 DATE REPORT MAILED: Sept 30/94 SIGNED BY.......... D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Redfern Resources Ltd. PROJECT TULSEQUAH CHIEF FILE # 94-3182

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
E 145385	5	42	40	114	.3	8	13	931	6.59	39	<5	<2	<2	19	<.2	<2	6	76	.30	.064	<2	9	2.35	20	.12	2	2.05	.04	1.44	2
E 145386	5	15	13	83	.4	5	12	976	6.53	29	<5	<2	<2	24	<.2	<2	11	79	.37	.064	<2	8	2.91	31	.14	2	2.63	.05	1.62	2
E 145387	1	21	11	100	<.1	5	18	1185	8.22	27	<5	<2	2	24	<.2	<2	4	103	.45	.111	<2	4	3.97	28	.12	2	3.55	.03	1.22	1
RE E 145387	2	19	12	95	<.1	4	17	1142	7.95	29	<5	<2	<2	23	<.2	<2	8	100	.43	.106	<2	4	3.80	29	.11	<2	3.40	.03	1.19	1

Sample type: ROCK. Samples beginning 'RE' are duplicate samples.

ASSAY CERTIFICATE

modem. 251 1611

Redfern Resources Ltd. PROJECT TULSEQUAH CHIEF File # 94-3182 Page 1

207 - 10711 Cambie Road, Richmond BC V6X 3G5

SAMPLE#	Cu %	Pb %	Zn %	Ag** oz/t	Au** oz/t	S.G. -
E 145351	.575	.06	.20	.52	.005	2.94
E 145352	4.802	1.96	11.97	3.97	.034	3.98
E 145353	1.905	.27	1.26	.48	.016	3.11
E 145354	.084	.01	.05	.13	.007	3.82
E 145355	1.841	.02	.13	.37	.010	4.00
E 145356	2.094	.02	.38	.48	.014	2.92
E 145357	3.132	.11	.53	1.51	.062	4.14
E 145358	1.711	.05	4.30	.74	.020	3.88
E 145359	.514	.25	17.43	.63	.022	3.93
E 145360	.622	.22	12.41	.76	.039	3.80
RE E 145360	.613	.22	12.24	.74	.038	3.79
E 145361	.856	2.05	10.81	1.08	.042	3.96
E 145362	.969	2.14	14.90	1.13	.036	4.02
E 145363	.707	1.94	9.91	1.14	.027	4.09
E 145364	1.126	2.67	7.37	2.50	.073	3.87
E 145365	1.419	.55	7.79	2.73	.031	3.23
E 145366	2.001	.95	3.61	1.49	.035	3.49
E 145367	1.671	.36	4.21	1.44	.044	3.26
E 145368	2.307	.31	3.88	1.45	.055	3.36
E 145369	.507	.05	.95	.83	.037	3.47
E 145370	.065	.02	.09	.14	.010	3.46
RE E 145370	.067	.02	.08	.16	.009	3.46
E 145371	.097	.01	.05	.14	.007	3.94
E 145372	.030	.01	.03	.10	.006	4.09
E 145373	.341	.04	3.52	.98	.025	3.84
E 145374	.960	.06	4.12	1.55	.025	3.73
E 145375	.280	.02	.72	.41	.013	4.55
E 145376	.751	.80	1.64	4.22	.079	2.84
E 145377	.202	1.15	2.35	1.05	.070	2.88
E 145478	.048	.02	.10	.30	.007	2.77
E 145379	.434	2.08	2.83	1.83	.052	3.64
E 145380	.046	.04	.31	.19	.007	2.85
RE E 145380	.044	.04	.30	.24	.008	2.84
E 145381	1.957	8.01	8.86	5.26	.285	3.80
E 145382	.105	.23	.41	.33	.008	2.89
E 145383	.006	.01	.02	.04	.004	2.89
E 145384	.012	.04	.04	.06	.007	2.87
STANDARD R-1/AG-1/AU-1	.844	1.28	2.40	1.02	.097	-

1 GM SAMPLE LEACHED IN 75 ML AQUA - REGIA, DILUTE TO 250 ML, ANALYSIS BY ICP.
AG** & AU** BY FIRE ASSAY FROM 1 A.T. SAMPLE.
- SAMPLE TYPE: ROCK <u>Samples beginning 'RE' are duplicate samples.</u>

DATE RECEIVED: SEP 15 1994 DATE REPORT MAILED: Sept 30/94 SIGNED BY.......... .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

SAMPLE#	Cu %	Pb %	Zn %	Ag** oz/t	Au** oz/t	S.G. -
E 145385	.002	.01	.01	.01	.001	2.84
E 145386	<.001	.01	.01	<.01	.001	2.81
E 145387	<.001	<.01	.01	<.01	<.001	2.79

Sample type: ROCK.

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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

REDFERN RESOURCES LIMITED

205 - 10711 CAMBIE RD.
RICHMOND, B.C.
V6X 3G5

Project : TULSEQUAH
Comments: CC: REDFERN RESOURCES - ATLIN, BC

Page Number : 1
Total Pages : 1
Certificate Date: 13-JUL-94
Invoice No : I9419698
P.O. Number :
Account : PL

CERTIFICATE OF ANALYSIS A9419698

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	As ppm	Bi ppm	Cu ppm	Hg ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm
GG94001	205	226	< 5	0.2	16	< 2	71	< 1	1	4	4	44
GG94002	205	226	< 5	< 0.2	16	< 2	65	< 1	2	8	2	64
GG94003	205	226	< 5	< 0.2	20	< 2	23	< 1	1	8	2	140
GG94004	205	226	< 5	0.2	12	< 2	166	< 1	< 1	< 2	8	56
GG94005	205	226	< 5	0.2	8	< 2	138	< 1	< 1	72	< 2	34
GG94006	205	226	< 5	0.2	46	< 2	149	< 1	< 1	6	18	34
GG94007	205	226	< 5	0.2	136	< 2	215	< 1	1	8	60	54
GG94008	205	226	< 5	0.4	234	< 2	370	< 1	2	< 2	100	98
GG94009	205	226	< 5	0.2	200	< 2	134	< 1	1	6	28	262
GG94010	205	226	< 5	0.2	16	< 2	178	1	< 1	4	48	562
GG94011	205	226	< 5	< 0.2	22	< 2	17	< 1	1	22	< 2	46
GG94012	205	226	< 5	< 0.2	8	< 2	81	< 1	2	4	8	92
GG94013	205	226	< 5	< 0.2	2	< 2	12	1	1	6	< 2	712
GG94014	205	226	< 5	< 0.2	14	< 2	16	< 1	1	2	2	24
MG94010	205	226	< 5	< 0.2	2	< 2	9	< 1	2	4	< 2	20
MG94011	205	226	35	0.4	70	< 2	53	< 1	2	18	2	276
MG94012	205	226	< 5	< 0.2	20	< 2	7	< 1	1	2	2	8
MG94013	205	226	< 5	< 0.2	8	< 2	19	< 1	1	2	6	6
MG94014	205	226	< 5	0.2	12	< 2	11	< 1	1	16	< 2	4
MG94015	205	226	< 5	< 0.2	6	< 2	6	< 1	3	8	< 2	6
MG94016	205	226	< 5	0.4	20	< 2	18	< 1	1	368	< 2	66
RG94011	205	226	< 5	< 0.2	4	< 2	19	< 1	1	4	6	44
RG94012	205	226	< 5	< 0.2	4	< 2	23	< 1	1	6	4	242
RG94013	205	226	< 5	0.2	8	< 2	11	< 1	4	38	< 2	10
RG94014	205	226	< 5	0.4	12	< 2	20	< 1	1	16	2	36
RG94015	205	226	< 5	0.6	46	< 2	19	1	1	32	6	82
RG94016	205	226	< 5	0.2	4	< 2	8	< 1	1	6	< 2	18

CERTIFICATION:

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

To: REDFERN RESOURCES LIMITED

205 - 10711 CAMBIE RD.
RICHMOND, B.C.
V6X 3G5

Project : TULSEQUAH
Comments: CC: C/O KAWDY VENTURES

Page Number : 1
Total Pages : 1
Certificate Date: 15-AUG-94
Invoice No. : I9422089
P.O. Number :
Account : PL

CERTIFICATE OF ANALYSIS A9422089

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	As ppm	Bi ppm	Cu ppm	Hg ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm
TCU8919	1646	226	10	< 0.2	< 2	< 2	29	< 1	1	12	< 2	98
TCU9466A	1646	226	< 5	< 0.2	4	< 2	29	< 1	< 1	6	< 2	36
TCU9466B	1646	226	< 5	< 0.2	< 2	< 2	91	< 1	1	8	< 2	46
9454004	1646	226	< 5	0.6	50	< 2	2010	< 1	1	42	< 2	156
9454007	1646	226	< 5	< 0.2	< 2	< 2	10	< 1	2	4	< 2	6
9454008	1646	226	20	0.2	14	< 2	6	< 1	1	20	< 2	12

CERTIFICATION: [signature]

APPENDIX 9

Summary of Expenditures (1994)

1994 TULSEQUAH CHIEF PROJECT EXPENDITURES

ALLOCATION OF COSTS TO MAJOR WORK AREAS

COST CATEGORY	DESCRIPTION	CATEGORY EXPENDITURE	U/G & SURFACE DRILLIN %	U/G & SURFACE DRILLIN Amount	LINE-CUTTING %	LINE-CUTTING Amount	U/G REHAB/MAPPING %	U/G REHAB/MAPPING Amount	SURFACE GEOL/GEOCHE %	SURFACE GEOL/GEOCHE Amount	TOTALS %	TOTALS Amount
Computer software & support	Maintenance fee - LOGII, supplies	$344.48	80%	$275.58	0%	$0.00	10%	$34.45	10%	$34.45	100%	$344.48
Communications	Satellite phone rental, phone, courier	$31,692.10	85%	$26,938.29	2%	$633.84	10%	$3,169.21	3%	$950.76	100%	$31,692.10
Office supplies	Office supplies, misc.	$587.36	75%	$440.52	1%	$5.87	14%	$82.23	10%	$58.74	100%	$587.36
Publication/book/map	Photos, topo maps etc.	$43.50	55%	$23.93	0%	$0.00	5%	$2.18	40%	$17.40	100%	$43.50
Air/land commercial travel	Air fares, taxi, bus - To/From property	$39,013.02	75%	$29,259.77	2%	$780.26	18%	$7,022.34	5%	$1,950.65	100%	$39,013.02
Accomodation/meals	Hotels, meals - to/from property	$3,941.55	75%	$2,956.16	2%	$78.83	18%	$709.48	5%	$197.08	100%	$3,941.55
Vehicle lease, rental	Vehicle rentals - Whitehorse/Atlin	$1,049.04	80%	$839.23	0%	$0.00	10%	$104.90	10%	$104.90	100%	$1,049.04
Helicopter	Charter helicopter hours	$91,086.19	84%	$76,512.40	3%	$2,732.59	10%	$9,108.62	3%	$2,732.59	100%	$91,086.19
Helicopter fuel	Charter helicopter fuel	$16,339.22	84%	$13,724.94	3%	$490.18	10%	$1,633.92	3%	$490.18	100%	$16,339.22
Fixed wing	Fixed wing charters	$50,023.16	80%	$40,018.53	5%	$2,501.16	8%	$4,001.85	7%	$3,501.62	100%	$50,023.16
Fixed wing fuel	Fixed wing Fuel	$8,020.51	80%	$6,416.41	5%	$401.03	8%	$641.64	7%	$561.44	100%	$8,020.51
Freight/shipping	Freight to/from property	$13,308.95	65%	$8,650.82	2%	$266.18	23%	$3,061.06	10%	$1,330.90	100%	$13,308.95
Employee Wages - Geology	Geological personnel cost	$104,663.74	70%	$73,264.61	1%	$1,046.64	21%	$21,979.38	8%	$8,373.10	100%	$104,663.74
Employee Wages - Support	Support Personnel (Cooks, camp & U/G mgr., splitte	$116,995.60	70%	$81,896.92	0%	$0.00	25%	$29,248.90	5%	$5,849.78	100%	$116,995.60
Contract labour	Temporary labour	$3,110.15	100%	$3,110.15	0%	$0.00	0%	$0.00	0%	$0.00	100%	$3,110.15
Geological Consulting	Petrographic services/Structural studies	$1,803.15	20%	$360.63	0%	$0.00	40%	$721.26	40%	$721.26	100%	$1,803.15
Draft/plot/reproduction	Misc. map/plan copying	$2,578.20	80%	$2,062.56	0%	$0.00	15%	$386.73	5%	$128.91	100%	$2,578.20
Assay and analysis	Drill core and surface assays and analysis	$10,700.04	67%	$7,169.03	0%	$0.00	5%	$535.00	28%	$2,996.01	100%	$10,700.04
Drilling	Direct contractor footage, time and materials	$519,028.62	100%	$519,028.62	0%	$0.00	0%	$0.00	0%	$0.00	100%	$519,028.62
Expediting	Atlin/Juneau expediting costs	$18,622.09	75%	$13,966.57	5%	$931.10	15%	$2,793.31	5%	$931.10	100%	$18,622.09
Surveying/line cutting	Line-cutting, drill pads, heli-pads	$12,375.00	25%	$3,093.75	75%	$9,281.25	0%	$0.00	0%	$0.00	100%	$12,375.00
Equipment purchase	Core saw, blades, power washer, altimeter	$2,843.41	90%	$2,559.07	0%	$0.00	0%	$0.00	10%	$284.34	100%	$2,843.41
Equipment rental	Survey, Light Log, Sperry Sun , computer etc.	$33,015.22	92%	$30,374.00	1%	$330.15	5%	$1,650.76	2%	$660.30	100%	$33,015.22
Field/technical supplies	Sample bags, notebooks, plotter supplies etc.	$5,926.29	75%	$4,444.72	0%	$0.00	10%	$592.63	15%	$888.94	100%	$5,926.29
Camp/Construction supplies	Misc. hardware, lumber, safety, etc.	$23,642.00	86%	$20,332.12	2%	$472.84	10%	$2,364.20	2%	$472.84	100%	$23,642.00
Groceries	Groceries for crew	$38,134.84	80%	$30,507.87	1%	$381.35	16%	$6,101.57	3%	$1,144.05	100%	$38,134.84
Fuel, camp, drilling	Diesel, propane, regular gas	$23,215.19	85%	$19,732.91	1%	$232.15	12%	$2,785.82	2%	$464.30	100%	$23,215.19
Fuel, other	Regular gas for vehicles	$410.77	85%	$349.15	0%	$0.00	10%	$41.08	5%	$20.54	100%	$410.77
Lubricant/additives	Motor oils, grease, fluids	$1,280.79	85%	$1,088.67	3%	$38.42	10%	$128.08	2%	$25.62	100%	$1,280.79
Spare parts	Equipment maintenance	$813.99	80%	$651.19	0%	$0.00	15%	$122.10	5%	$40.70	100%	$813.99
Repairs	Repairs to U/G drills, U/G electrical system re-wiring	$37,354.12	60%	$22,412.47	0%	$0.00	40%	$14,941.65	0%	$0.00	100%	$37,354.12
Drilling supplies	Core boxes, racks, mud, cement	$14,149.31	100%	$14,149.31	0%	$0.00	0%	$0.00	0%	$0.00	100%	$14,149.31
TOTAL		$1,226,111.60		$1,056,610.91		$20,603.84		$113,964.36		$34,932.49		$1,226,111.60
		Units	metres	5,941.00	km.	10.72	metres	2,240.00	km.	10.72		
		Unit Costs	$/m	$177.85	$/km	$1,922.00	$/m	$50.88	$/km	$3,258.63		

1994 TULSEQUAH CHIEF PROJECT EXPENDITURES

ALLOCATION OF EXPENDITURES BY CLAIM

Claim Name	Record #	Title No.	Expiry Date	Drilling metres	Line Cutting line-km.	U/G Rehab/Mappin metres	Geol. mapping line-km.	Apportioned Expenditures by unit cost: Drilling	Line Cutting	U/G Rehab/Mappin	Geol. mapping	TOTAL
Ross	5226	203795	30-May-2004	75.00		80.00		$13,338.80	$0.00	$4,070.16	$0.00	$17,408.96
Marcie 3	4292	203388	05-Aug-2004	985.00		90.00		$175,182.92	$0.00	$4,578.93	$0.00	$179,761.85
Elysa 1	4293	203389	05-Aug-2004	96.00				$17,073.67	$0.00	$0.00	$0.00	$17,073.67
Elysa 2	4294	203390	05-Aug-2004		5.00		5.00	$0.00	$9,610.00	$0.00	$16,293.14	$25,903.14
River Fr.	5,669.00		03-Jul-95	225.00	0.10	170.00	0.10	$40,016.40	$192.20	$8,649.08	$325.86	$49,183.55
Tulsequah Bonan	5,668.00		03-Jul-95	368.00	5.62	350.00	5.62	$65,449.05	$10,801.64	$17,806.93	$18,313.49	$112,371.11
Tulsequah Bald E	5,676.00		03-Jul-95	532.00				$94,616.56	$0.00	$0.00	$0.00	$94,616.56
Tulsequah Chief	5,670.00		03-Jul-95	380.00		1,100.00		$67,583.26	$0.00	$55,964.64	$0.00	$123,547.90
Tulsequah Elva Fr	5,679.00		03-Jul-95	3,280.00		450.00		$583,350.24	$0.00	$22,894.63	$0.00	$606,244.87
TOTALS				5,941.00	10.72	2,240.00	10.72	$1,056,610.91	$20,603.84	$113,964.36	$34,932.49	$1,226,111.60
Unit Costs				$177.85	$1,922.00	$50.88	$3,258.63					