Report

on

Some

Veins and Alterations

(preliminary petrography, magnetic susceptibility and density studies)

of

Kringle-consolidated Claims

Tlowils Lake to Rooney Lake Arear

in

092L/08 (or 092L080)

at

50 deg. 9 min. N and 126 deg. 06 min. W

Nanaimo Mining Division

for

Mikkel Schau, owner

November 5 2006

submitted March 9, 2007

Mikkel Schau, P.Geo.

0.0 SUMMARY

Kringle-consolidated Claims, covering some 44914.89 ha., lie mainly west of the Island Highway, southeast of Rooney Lake, near the 255 km marker and reach southward past Keta Lake at 245 Km to Tlowils Lake along Adams Main south logging road. The group is staked on a hydrothermal system associated with a contact between the Triassic Vancouver Group and the Jurassic Adam River granodiorite pluton. The main copper mineral occurrences are in shears, veins, amygdales and dispersed disseminations found in a highly magnetic bounding fringe along the edge of the pluton, and are locally exposed in logging road cuts.

Previous work in the general area has located copper mineralization. In the sixties a few mineral samples with 25% copper and 0.78 opt gold from Boyes Creek excited the prospecting community. Exploration work was carried out in the area over the next 4 decades. The Kringle-consolidated Claims currently covers about 5700 ha, a large area of local mineralized showings including Minfiles 092L-163, 170 and 249 in the north and 092L-165, 166, 167, 168, and 222 in the south. They also include several newly located showings as noted in several recent ARIS Reports. Early trenching at minfile 092L165 (Boyes Creek) showed by chip sampling 13 trenches over a length of 300 m an average 3.25% over 1.3 m width.(AR3795) At 092L222 11 trenches over 450 m showed about 0.89% over approximately 5 m width. A chip sample from a new locality (Puff) yielded .98%. copper over 2.2 m. (AR27070)

Previous drilling on the property is documented in several minfiles. The best results were obtained at minfile 092L-222 (Adam West) where 6 Xray drill holes and 11 BQ drill holes were drilled. A several metres thick mineralized zone was outlined some 10's of meters below a thin limestone member for about 300 m along strike and about 200 metres downdip. The best intersection was A6 which yielded 2.11% copper over 5 m. (AR22409). At minfile 092L-163, 5 holes were drilled, only a small part of the core was analysed, and the best result was including 0.53% over 1.5 m, at hole 1. At minfile 092L-249 a partially analysed hole yielded 0.48% over 3.6 m..(AR 1993)

New showings found by author have been noted in recent assessment reports (ARIS: 26930, 27070, 27463, 27736, 27745, and one AR still in review) with at least fourteen locations with large (1 kg or larger) grab samples containing well over a percent copper, silver values up to 67 ppm and gold values up to 1169 ppb. They are shown on a map in appendix B. These values indicate the presence of locally interesting mineralization but give no indication of grades or volumes.

These prospects and showings lie along a sixteen km length of a three km wide magnetic anomaly developed along the edge of Adam River pluton. The localities and anomaly are shown on figures within the body of the report.

The geology has been verified from previous sources and new field work. It reveals that a sequence of the Vanouver group comprising the Triassic Karmutsen Formation, consisting largely of feldspar phyric basalt but with intraformational limestone lenses intercalated near the top; the overlying Quatsino limestone; and siliciclastic and limy sediments of the largely upper Triassic Parsons Bay formation was deformed and faulted along orogen parallel transverse faults, along which later mid Jurassic plutons were emplaced. Later geologic history, known to be complex and including faulting, is not yet understood in this area. The presence of early deformation, mainly of the brittle type, allowed circulation of fluids supplied and energized by the pluton yielding local alteration and mineralized volumes.

Work reported here include some new prospecting and associated geochem analyses, as well as petrophysical and petrographic work.

17 samples from a set of new showings were analysed using aqua regia dissolution metods. Anomalous copper values were derived from alkalic felsdspar bearing veins and chlorite selvage cutting basalts.

21 samples were analysed using a lithium borate fusion (whole rock analyses). These give indications of bulk changes in composition of dykes and basalts.

181 stations with new magnetic susceptibilities have been collected and compiled They show large positive values within the aeromagnetic anomaly, with locally low values associated with veining. This indicates that an aeromagnetic survey would delineate altered and vein rich areas.

136 density determinations provide evidence of local influx of clinozoisite-epidote alteration. This data may be useful in planning for an airborne gravity survey.

A collection of thin sections (N=120) made from samples collected on various prospecting trips allow a study of the types of alteration of the area. The area under claim is underlain largely by feldspar phyric basalt regionally metamorphosed to pumpellyite zone of prehnite- pumpellyite facies. The location of veins with alkalic feldspar, including potassic feldspar alteration assemblages, in association with copper bearing locations, is documented. Several sections show platy calcite or silica pseudomorphous after platy calcite in thin section. This host rock and vein alteration is contrasted with the propylitic alteration and mineralization found in sheared zones and associated veins. The most intense alteration of host rocks seems centred around a magnetic low, near the contact with the Jurassic Intrusive pluton but current sampling density is not adequate verify this suggestion.

This is a grass roots project and the extent of the postulated hydrothermal system is still being explored. Hence estimates of volumes and concentrations will require definition by geophysical and other sampling methods. It is postulated that all mineralized locations in the claims are part of a single possibly telescoped mineralizing system. The entire Kringle-consolidated Claims currently covers a contiguous area some 15 km by 3 km over locally mineralized rock..

A possible exploration scenario costing about $300,000 would provide enough new information to make an informed decision as to where to commence drilling. The property is available for sale or option.

0.1 TABLE OF CONTENT

FIGURES

1.0 INTRODUCTION

Northern Vancouver Island has been prospected actively since the first world war. The general Adam's River region has been prospected in particular, since logging opened up the area in the 1960's. Previous operators have staked parts of the area of the Kringle-consolidated Claims.

The Kringle showings, east of the Adam River, were first noted and sampled by the author in September 2000 and since then the property has grown as continuing prospecting has yielded more and more mineralized localities. They occur within an area defined by an aeromagnetic anomaly and near the intrusive contact complex, in associated mineralized shear zones and distal skarn zones. The current report discusses showings found in the context of a regional magnetic anomaly and local alteration patterns.

The entire Kringle-consolidated Claims cover about 5700 ha, a large area of local mineralized showings discussed in Minfiles 092L-163, 170, 249, 165, 166, 167, 168, and 222 and references cited therein. The following AR documents by the author are available at ARIS: 26930, 27070, 27463, 27736, 27745, and one AR still in review.

The work so far has been focused on locating a center of alteration. This report is a step in this process.

The locating, staking, geological work and report writing has been performed by, and paid for, by the sole owner of the claims.

An exploration program which could locate potential drill targets, would include an low level airborne mag and EM survey, as well as ground checking and would cost about $300,000.

2.0 PROPERTY LOCATION, ACCESS, AND TITLE

The Kringle-consolidated Claims are located on northern Vancouver Island, BC (Figures 1, 2). They stradle the Adam River, as well as the Island Highway (19), and contain the easily identifiable 250 km marker located within NTS 092L, and more specifically, within the 092L040 trim sheet (Figure 2). Many logging roads traverse the area, so that most of the claims are accessible. Off road, the landscape is rugged and difficult to travel in.

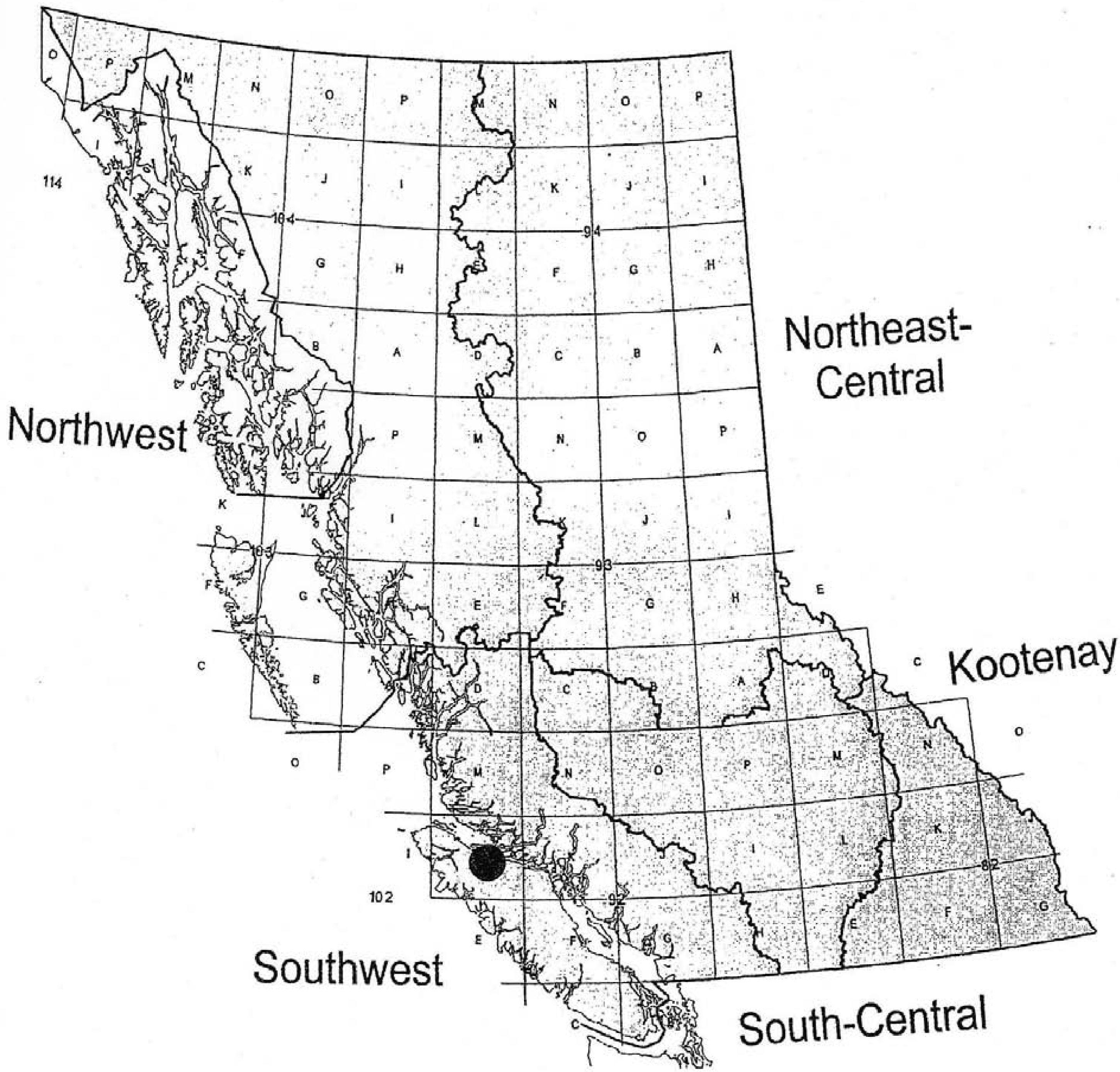
Some claims were staked by location, other using MTO. The claims cover some 4914.89 ha. and are called the Kringle-consolidated Claims. They include the claims numbers listed on the next page.

Name	Record	Ha	Good to Date
pastry5	402270	25.0	May 27, 2008
kranse	504026	516.076	May 17, 2008
kage	504357	432.832	May 20, 2008
loaf	505622	515.917	May 02, 2008
bun	506339	515.905	May 08, 2008
	509556	165.19	Feb. 19, 2009
Klejne-wrap	513280	516.14	May 25, 2008
	515027	247.37	Feb. 18, 2009
	515028	226.82	Jun. 15, 2008
	515029	82.50	Feb. 15, 2009
	515030	123.67	Apr. 26, 2009
	515032	20.62	May 27, 2008
	515033	61.86	May 27, 2008
	515034	103.08	Jun. 15, 2008
kringle-last	515386	20.61	Jun 27, 2008
	515924	41.23	Apr. 27,2008
	515925	20.61	Apr. 27, 2008
	515926	20.62	Apr 27, 2008
	515930	206.21	May 17, 2008
	516017	20.62	Apr. 27, 2008
kringle-2	521073	495.08	Feb 18, 2009
kringle-nw	529363	329.87	May 03, 2008
kringle-mi.	529780	206.30	May 08, 2008

The anniversary date of the claims listed is adjusted to take into account the work listed herein.

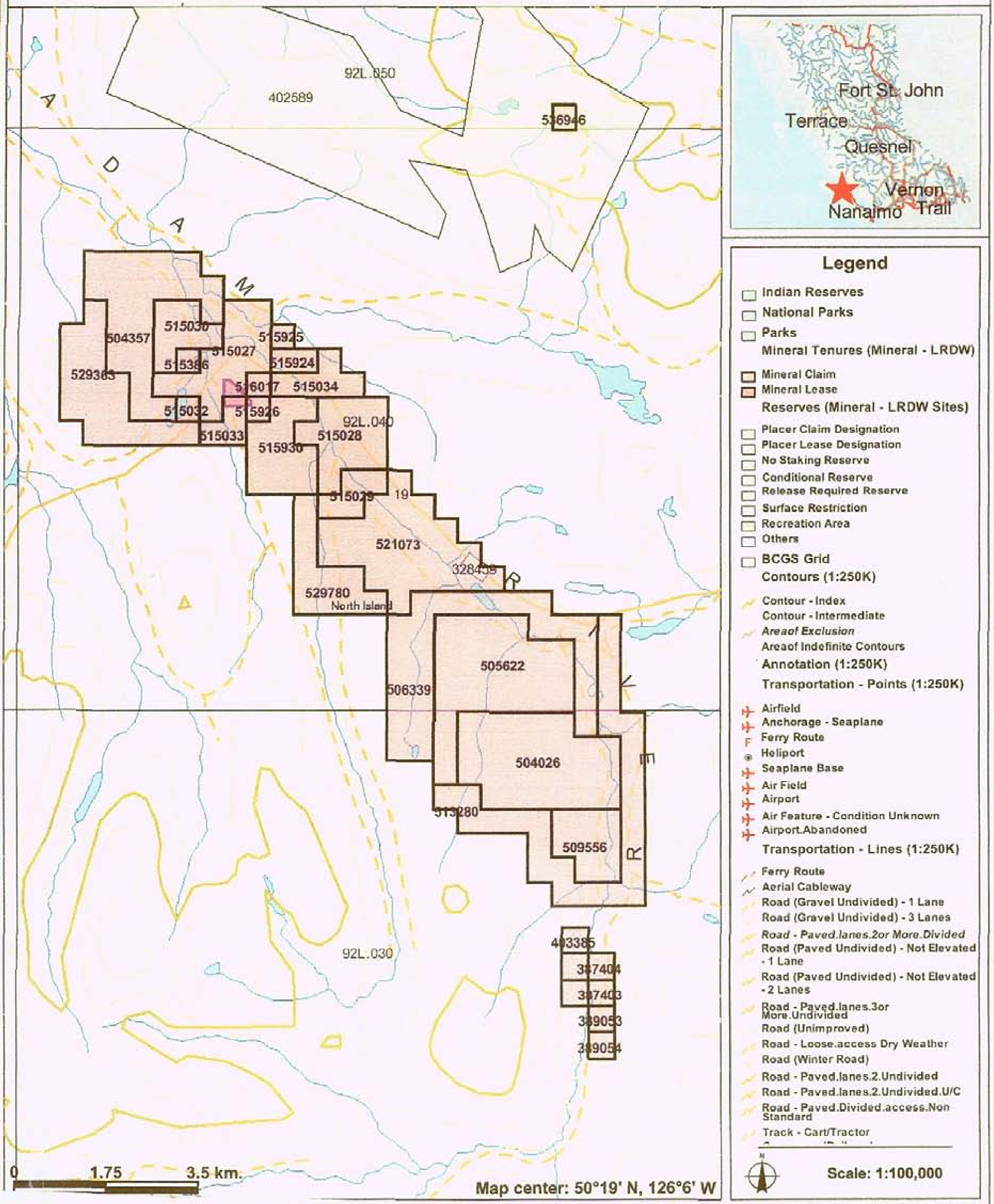
All claims are focused on copper and silver mineralization, but include an ancillary interest in gold and palladium as well as other base and industrial metals. They are wholly owned by Mikkel Schau.

The land situation is typical; I believe I have claimed and hold the mineral rights in a lawful manner. The region, including the claimed area, is in a Timber License previously logged and reforested; and to the best of my knowledge the land claim treaty process has not directly discussed these lands. It is, however, listed on MapPlace as part of the Kwakiutl_Laich_Kuul_Tach SOI. There has been no impediment to my claiming or working the land to time of writing. And I have no expectation of any. In fact, people of nearby communities would like there to be more exploration, and possibly mining, to shore up the local economy.



.Fig. 1. Location Map of Kringle-consolidated claims in BC

Fig. 2. Location of Kringle-consolidated claims



3.0 PREVIOUS WORK

Prospecting work has been carried out in the general Adam River region for about a century. Minfiles 092L 163, 165-167 inclusive, 222 and 249 are located within the Kringle-consolidated Claims. Newer showings from the claims have been reported in recent ARIS: 26930, 27070, 27463, 27736, 27745, and a AR still in review.for the first time.

The ground was prospected for silver and gold in the first quarter of the century and showings of copper and gold veins were reported. Some distance south of the claims, but in the same geological context, a showing (Lucky Jim) of a contact deposit with copper (5.92%), silver (1.8 opt) and gold (.9 opt) has been described as early as 1918 (page K270, 1918 BC Minister of Mines Report).

Logging opened up the area in the 60's and regional prospecting campaigns located scattered copper rich showings. A large block was staked in 1965 by W.R. Boyes, and was taken over shortly thereafter by Western Standard Silver Mines.

AR 1859, was the first formal report of copper showings near Rooney Lake in 1969.

AR 1993, commissioned by Bethlehem Copper Corporation, and carried out by W.M. Sharp, P.Eng., in 1969 sketched in the regional geology of a large area, some of which includes the area currently claimed. He noted the presence of a large NW trending granodiorite pluton emplaced in a sequence of Karmutsen "basalt-andesites" and the Quatsino Limestone. He noted that much mineralisation of the area is mainly in veins. The report focused on the Boyes Creek occurrence (minfile 092L-165) and adjacent showings (092L-166,7,8). The first mention of the Billy Claims occurs in this report as a parcel covering widely dispersed copper mineralization. The geological framework presented by Mr. Sharp has not changed substantially, although he mentioned the occurrence of Bonanza volcanics in the general region; this latter conclusion has not been confirmed by later workers.

AR 3795, commissioned by Sayward Explorations Ltd, and carried out by Sheppard and Associates in 1972, reported on the geology of the Billy Claims Group and documents showings now known as Minfile 092L163 (in Billy 19) and 092L249 in (Billy 11). These showings are west of the Adam River. They reported that amygdaloidal portions of basalts and adjacent faults are mineralized.

At 092L-222 stratabound copper mineralization was found below thin limestone beds within the Karmutsen basalts in early seventies, south of the Billy Claims and north of Boyes Creek. The details of this prospect are discussed in AR 14284, 22409, and 23906.

In 1974 the GSC published a map of the area (Mueller et al, 1974) that generally follows the geology determined by previous consultants. Quatsino limestone was shown as less widely spread than indicated by Sheppard's mapping (see above).

A later AR (18255) focused on land near Rooney Lake. The exploration results were neither accurate nor useful.

A geological compilation of area in digital form (Massey, 1994, 2005) contains contacts assembled in part from previous assessment reports. The Quatsino limestone in this compilation occupies a larger area in the vicinity of the claims than on Muller's map (ibid).

The author has been active in the area since 2000 and several prospectors grant reports and assessment reports have been filed. They document location of several newly located mineralized showings, possibly all part of a single large hydrothermal system (see AR 26930, 27070, 27463, 27736, 27745, 28327, 28328 and one in review).

Thus, work to date has shown sporadic and widespread mineralization of copper and silver with occasional gold values occurs in veins, amygdales and shears in basaltic country rock adjacent to a large granodiorite batholith. The country rock is part of the Karmutsen Formation comprising mainly feldspar-phyric basalt, as amygdaloidal or massive flows, or as thin sills with intercalated with minor beds of limestone and associated clastics, overlain by thicker beds of Quatsino limestone. New roads have exposed new subcrops and the area under discussion is mainly underlain by Karmutsen Formation.

4.0 SUMMARY OF WORK DONE

The area has been partially prospected as laid out in several previous assessment reports. In this report only another 200 ha have been newly prospected. Prospecting and mapping took place along logging roads, trails, and aided by excursions into the dense second growth timber and steep river valleys. The geological map, presented in Appendix A is a copy from MapPlace (Massey 2005). It is adequate for the discussion in the report.

17 Samples, in mineralized areas near 092L222, were collected, crushed and analysed for 30 aqua regia soluble elements (ACME Labs, 1D) includes standards...

17 samples as above have been analyzed for precious elements (Pt, Pd, and Au) by fire assay and ICP-ES- Finish (ACME Labs, 3B) includes standards..

21 whole rock analyses (ACME Lab 4A and B, 1DX) includes standards..

1+ 1 standard test for free gold was conducted(ACME Lab Labs, Group 6)

A summary compilation map of previously located mineralization is shown on an aeromagnetic anomaly map with the Adam River pluton superposed. from MapPlace is shown in appendix B

Locations of new and selected significant samples as well as sample locations of studied samples is shown in Figure 3. The detailed location of the geochem samples is shown in Figure 4. with sample name and Cu, Ag, Au, Pd data. The geochemical data is tabulated for convenience in appendices C and complete analytical certificates are shown in appendix G.

181 locations with magnetic susceptibility determinations Their distribution can be seen in Figure 5 and are tabulated in appendix D.

136 locations with specific gravity determinations Their distribution can be seen in Figure 6, and are tabulated in appendix E.

120 thin sections have been studied. Their locations, alteration style and vein fillcan be seen in Figures 7 and 8 and are tabulated in appendix .F and G.

The whole rock samples noted above are tabulated in appendix H for convenience and complete certificates for all analytical data are given in Appendix I.

Field costs of this current project have been previously shared with prior assessment reports. The costs reported here have not been previously charged.

5.0 DETAILED DATA AND INTERPRETATION

5.1/ Purpose

This work is aimed at understanding the nature of the mineralizing events along and in the vicinity of a bent tectonized contact between basalt, limestone and granodiorite batholith with the aim of locating a region with significant mineralization. A bounding aeromagnetic anomaly (with a local low) encloses most of the showings located so far. Previous experience with this highly prospective combination of lithologies and structural setting makes it likely that metal concentrations of value may have accumulated in the rocks adjacent to the pluton in structurally prepared rocks.

5.2/ General surficial geology

The Kringle-Consolidated Claim group straddles the north-north west flowing Adam River south of its confluence with Eve River. The river runs in a typical U shaped valley, between tall hills trending roughly the same northerly direction. Local areas of till have been noted in lower areas where road construction has laid it bare. At least three different terraces along the shoes of the river indicate that the river has had a complex geomorphic history. The river is currently incising its course through thick, earlier river and till deposits. Bedrock occurs sporadically in the river bottom.

The river largely follows the outcrop trend of the Quatsino Limestone. Adjacent creeks seem to occupy north or northwest trending high strain/fault zones. The hills are variably covered with colluvium which overlie thin till deposits; only where logging roads expose subcrops, or in outcrops on cliff faces and/or steep sided valleys are bedrock visible.

5.3/ Regional Geology

Contacts between country rock and batholith are possible regions of metal concentrations. Basalts of the Karmutsen Formation, limestones of the Quatsino Formation and slivers of the Parson bay Formation are deformed, metamorphosed and metasomatised in the locally sulphidized contact of the Adam River Batholith (See appendix A).

5.3.1 Units

Vancouver Group

The units are generally as described by Massey (1994, 2005) but many lithological details are taken from Carlisle (1972). Greene has published details of the petrology of the basalts (Greene et al, 2006, 2007) and Nixon has published maps and descriptions of these units to the west (Nixon et al, 2007).

The Vancouver Group (Karmutsen, Quatsino, and Parson Bay Formations) underlies much of the region of the claims.

The *Karmutsen Formation* (or "subgroup" of Carlisle, 1972) is a low potash tholeiite basalt mass of remarkably consistent structure and thickness that constitutes the lower third of the Vancouver Group in this area. The lower 2500 to 3000 m. invariably consists of classical closely packed pillow lava. the next 600 to 1000m consist of pillow breccia and aquagene tuff, typically with unsorted beds ½ to 2 m thick in the lower half.

The upper 3000m is composed of amygdaloidal and non-amygdaloidal basalt flows intercalated with, particularly in the upper third of the unit, sporadic and commonly incomplete sequences of 3 to 20 m thick consisting of thin discontinuous bioclastic, micritic, cherty or tuffaceous limestone. These are overlain by closely packed pillows, which are in turn overlain by pillow breccia and then, thick massive flows.

The structure of the unit is marked by gently folded and locally severely faulted areas. The folding is part of a regional shallowly north plunging antiform. The faults and well developed linears trend north and north westerly directions as well as easterly directions and separate large panels of gently dipping lavas. Slickenlines indicat that the preserved directions of slip are largely transverse.

The volcanic rocks have been regionally metamorphosed into upper zeolite ranging upward into lower greenschist grades. Albitized feldspars, amygdules and veins of pumpellyite, prehnite, epidote, calcite, and chlorite are widely noted. Near contacts with later intrusives, higher grade amphibolite bearing assemblages are more common.

Considerable regional variation is shown on aeromagnetic map, including local positive anomalies, within the area underlain by the Karmutsen, indicating that magnetite concentrations of the volcanic rocks are not uniform and/or area is underlain by highly magnetic bodies. It would appear that the northwest trending aeromagnetic anomaly crosses the regional north north east dip of the basalts. Recently it has been demonstrated that more magnesian members are much less likely to be magnetic.

The *Quatzino Formation* is a thin ribbon traversing the country in a north-northwest direction, to the northeast of the Karmutsen Formation. Regionally, it is seen to stratigraphically overlie the Karmutsen, and is known to vary in thickness from as much as 500 m to the west near Alice Lake to a thinner 150 m or so further east. In the Adam River area it is a distinct, easily recognizable unit, but the thickness is in doubt, because where best exposed it is in a ductilely deformed contact with the granodiorite. The Adam River follows part of its outcrop pattern.

The formation consists of grey limestone beds. Where undeformed it is a coarsely bioclastic, light grey, indistinctly bedded and non fissile (Carlisle, 1972). Where deformed near plutons it becomes a light grey, finely recrystallized limestone. Fossils indicate that the Quatsino Formation is upper Triassic in age (mainly Karnian, perhaps partly lower Norian (Muller et al, 1974, Nixon, 2007).

The expected negative aeromagnetic signature is poorly defined on large scale geophysical maps shown on MapPlace although the limestone is not magnetic. More detailed aeromagnetic surveys are necessary to delineate in detail, the outcrop pattern.

The *Parson Bay Formation* is considered to overlie the Quatsino Limestone. According to Carlisle, 1972, it is characterized by thinly laminated alternating fissile and non fissile black carbonaceous limestone with extremely fine grained siliceous matrix. Small slivers were recognized along the contact with the pluton, mainly northwest of Keta Lake, but it seems to disappear to the northwest, as the Adam Lake Pluton cuts through the unit to impinge directly on the Quatsino further to the northwest. Other outcrops are located in the vicinity of Tlowils Lake. It is also possible that some of the silty reaction skarns intercalated with black limestone noted on the property, north of the 250km marker may represent some hitherto unrecognized relic thin lenses of Parson Bay Formation along the western flank of the Adam River Batholith.

Jurassic Intrusives

Jurassic granodiorite to diorite underlies the area to the east-northeast of the Adam River. It has been called the Adam River Batholith (Carson, 1973, Muller, et al, 1974). It is about 4 km wide and trends northwesterly in excess of 10km.

It consists mainly of mesozonal granodiorite. Rocks studied are mainly medium to fine grained biotite hornblende granodiorite and quartz diorite with a locally elevated content of mafic minerals. In thin section, pyroxene cores to amphibole grains are noted. Local veining of darker phases by lighter more feldspathic phases are common. At contacts the volcanic rock inclusions are transformed into dioritic inclusions and limestones become skarn and marble rafts.

Carson (1973), suggested that the Adam River was emplaced as a sill, along the Quatsino Formation horizon. He suggested that the sill was shaped as a gentle syncline and figured the geology in the general Adam River area on his Fig. 15 (Carson, op cit). An anticline has been postulated to the west currently expressed at surface by the Karmutsen Formation. The sense of movement of a synkinematic sill would be upper units to move away from the synclinal core. That would predict an east over west component in folds and faults. Continued examination of this hypothesis over five years of field work by this author has resulted in it being rejected. The intrusive contact is vertical and crosscuts units, cross cutting the Parsons Bay Formation in the vicinity of Keta and Tlowils Lakes and intruding the underlying Quatsino further to the northwest. The Karmutsen Formation across the Adam River to the west, has dips that are directed to the north-north-east and would be expected to young in that direction. Instead they seem to be structurally thickened by cross faults. The younger Quatsino and Parsons Bay Formations rocks are found adjacent to (ie along strike length) and in probably fault contact with a thick section of basalt, and the predicted Quatsino and Parsons Bay Formations have not been located at the top of the dipping basalts to the north as mentioned above.

Instead, given that an apophyses of granodiorite crosses the Adam River (and the Quatsino limestone), and is emplaced in the Karmutsen (see Appendix A), it seems highly likely that the Batholith was intruded along a pre-existing north westerly directed steep fault between the Karmutsen Formation to the west and the younger Quatsino limestone and Parson Bay to the east.

K-Ar dates of 160 on Hornblende and 155 on biotite from a quartz diorite of this batholith confirm the mid Jurassic age and suggest it to be intruded contemporaneously with the deposition of the andesitic volcanic Bonanza Group (which is well displayed to the west, near Bonanza and Nimpkish lake.

Contacts are known to be hornfelsed for short distances, with local skarnification near and in limestone beds. Locally, as near 250 km marker on Highway 19, ore skarns are well exposed. Orientations are steep and complex at near the contact. There is much evidence that the Karmutsen is in fault contact with the overlying Quatsino Limestone, and not in a simple stratigraphic relationship.

The high concentrations of magnetite in these I-type intrusions are well reflected in the regional positive aeromagnetic anomalies over these plutons.

Felsic dykes

Based on very preliminary evidence, supported in part by observations made by Carlisle (1972), there appears to be at least three sets of granitoid dykes in area.

From oldest to youngest they are:

Feldspar Porphyry "folded into tight folds" may predate the main plutonic mass.

Deformed, and argillically altered and mineralized porphyries (locally brecciated).

and later "fresh" Feldspar and Hornblende porphyries with planar or irregular contacts.

In the northern part of the claim group late basaltic dykes cut metamorphosed basalts and are metamorphosed themselves.

5.3.2 Regional structures

The area of interest lies within the shallow east north east dipping homocline of Triassic rocks and the Adam River Batholith, called by Muller et al (1974), the White River Block. It is bounded to the west by a major fault, the north northwest trending Eve River

Fault. To the north the Johnson Strait Fault terminates the block, the eastern and southern borders are faults on adjacent map sheets. The faults in the claimed area are sub parallel to the border faults, or are second or third order subsidiaries of it. It is thought that these faults contain a large normal component but a dextral transverse component is often mentioned in reports and shown in outcrop as sub horizontal slickenlines. A bend in a fault marking the western contact of the pluton provides some potential; for an altertation zone.

Dip directions af the massive basalt flows within each fault panel differ somewhat suggesting some jostling of fault blocks. .The majority of dips of flow tops and intercalated bedding recorded by the author are more northerly than easterly. On a regional scale a northerly directed shallowly plunging anticline is suggested by scarce bedding determinations. The Kringle-consolidated claims are the east side of such a postulated structure.

The area is more structurally complex than implied by a simple homocline, since the regional structure predicts that the youngest rocks should be to the north, instead, the Parsons Bay Formation (the youngest in this sequence) in this area, are found near Keta Lake, or far southeast of where they would be expected, in the simpler structural milieu.

As noted above, the intrusive rocks were probably emplaced along prior faults in the vicinity of where the Adam River now flows. These are faults that are parallel to the length of the cordillera, hence are called orogen parallel faults. This type of faulting plays a large role in localising some mineral deposit models. It is highly likely that these faults have stayed active during later transverse faulting episodes.

The region is noted for copper bearing veins and have been described as " copper veins in basalts. Muller et al.(1974) repeat this categorization and assigns the showings in the vicinity of the claims to his category C; "veins in basalts". Minfiles in area include 092L-163, 170, 249, 222, 165, 166, 167, and 168.

5.3.3 Regional Geophysics

The magnetic character of the Adam River Batholith is well expressed on regional aeromagnetic maps. Of some interest is a magnetic domain of similar magnitude seemingly located over Karmutsen Basalts as shown in Appendix B. The contact, between the magnetic batholithic rocks and the non magnetic limestone is not well defined on the low resolution aeromagnetic map. Instead a sharp magnetic boundary is located several km to the west separating non magnetic basalt from magnetic basalt. The boundary is not parallel with strikes and dips determined for the basalts, but cross cuts across them instead, to be roughly parallel with the contact of the Adam River pluton.

The Cu-Ag vein showings and prospects are located within in this anomalously magnetic region.

5.4/ Geology of Kringle-consolidated Claims

5.4.1 Introduction

Karmutsen Formation of the Vancouver Group largely underlies the claims under discussion, especially west of the river, the Quatsino Formation underlies the Adam River and the Jurassic Intrusives are found largely on the northeast side of the river. (see Appendix A).

5.4.2 Formations

The area to the west of the Adam River is mainly underlain by the upper part of the *Karmutsen Formation* stratigraphy, comprising mainly thick massive flows with local intercalations of amygdaloidal basalt and pods of autoclastic breccias, pillowed and massive flows with thin intercalations of volcaniclastic and limey sandstones all cut by thin dolerite/gabbro sills. Several textural types of basalt have been noted in area. Most common are feldpar phyric fine grained basalts. Local variant incide those with abundant microlites and altered glass in the groundmass. Others are some what coarser of grain. All varieties are locally amygdaloidal, varying from showing small occassional spherical amygdales filled with low temperatre minerals to specimens with large irregular and locally joined amygdales. Coarser versions may represent later sills or possibly the centers of thick slowly cooled basalt flows.

The basalts are locally seen in stacked, massive, many metre thick units. Locally lava tops have been recognized. Local pillow basalts are well exposed quarries (where they yield excellent road metal); locally a pillow sequence of closely packed, sub meter sized pillows have been seen to pass laterally into a massive flow. The basalt units generally dip north to northeasterly with shallow to moderate dips. The basalts are variously veined and fractured.

Previously a suite of "unaltered" basalts from this general area show background values of about 110 ppm copper and 0.3 or less ppm silver.

The *Quatzino Formation* is a thin ribbon traversing the country in a north-northwest direction, to the northeast of the Karmutsen Formation. It is seen in recrystallized and deformed ribbon in roadcuts along the highway. The thickness is not known. The Adam River follows part of its outcrop pattern. Where deformed near plutons, as in these claims, it becomes a light grey, finely recrystallized limestone. The limestones are remarkably pure calcite. Small elliptical grains of calcite and the prominent cleavage direction are elongated in direction of the layering. Locally, where intruded, they host reaction and ore skarns.

The expected negative aeromagnetic signature is scarcely noticeable on a map of aeromagnetic field (Appendix B) although the limestone is not magnetic. More detailed aeromagnetic surveys are necessary to delineate the outcrop pattern.

The *Parson Bay Formation* is considered to overlie the Quatsino Limestone. According to Carlisle, 1972, it is characterized by thinly laminated alternating fissile and non fissile black carbonaceous limestone with extremely fine grained siliceous matrix. Several skarnified outcrops on the east side of the river, near the granodiorite contact were visited and sampled. Although rusty, economically interesting mineral concentrations have not been found to date.

5.4.3 Jurassic Intrusives

In the claims under discussion Jurassic *granodiorite to diorite* underlies the area to the east-northeast of the Adam River. It consists mainly of mesozonal granodiorite. Rocks studied are mainly medium to fine grained biotite hornblende granodiorite and quartz diorite with a locally elevated content of mafic minerals. In thin section, pyroxene cores to amphibole grains are noted. Local veining of darker phases by lighter more feldspathic phases are common. At contacts the mafic volcanic rock inclusions are transformed into dioritic inclusions, limestones become skarn and marble rafts and siliceous siltstones become rusty hornfels. At the contact, orientations of bedded host rocks are steep and complex. Locally, in the southern portions of the Claim a logging road passes through locally malachite stained, potash feldspar altered and chlorite veined granodiorite. Highway 19 exposes some wonder ful ore skarns near 250 km marker.

Based on observations from a few locations, *porphyry dykes* of granodioritic composition (sensu lato) with planar walls have been seen to cut Karmutsen basalt and Quatsino limestone.

5.4.4 Mineralization

Mineralization in the form of amygdular fillings, shear zones and veins filled with quartz, epidote, bornite (+/-local chalcocite) were noted in the earlier prospecting. Locations of stations with grab samples with an excess of .4% copper are shown in appendix B,

Previous work in the general area has located copper mineralization. In the sixties a few mineral samples with 25% copper and 0.78 opt gold from Boyes Creek excited the prospecting community. Exploration work was carried out in the area over the next 4 decades. The Kringle-consolidated Claims currently covers about 5700 ha, a large area of local mineralized showings including Minfiles 092L-163, 170 and 249 in the north and 092L-165, 166, 167, 168, and 222 in the south. They also include several newly located showings as noted in several recent ARIS Reports. Early trenching at minfile 092L165 (Boyes Creek) showed by chip sampling 13 trenches over a length of 300 m an average 3.25% over 1.3 m width.(AR1993, 3795) At 092L222 11 trenches over 450 m showed about 0.89% over approximately 5 m width. A chip sample from a new locality (Puff) yielded .98%. copper over 2.2 m. (AR27070)

Previous drilling on the property is documented in several minfiles. The best results were obtained at minfile 092L-222 (Adam West) where 6 Xray drill holes and 11 BQ drill holes were drilled. A several metres thick mineralized zone was outlined some 10's of meters below a thin limestone member for about 300 m along strike and about 200 metres downdip. The best intersection was A6 which yielded 2.11% copper over 5 m. (AR22409). At minfile 092L-163, 5 holes were drilled, only a small part of the core was analysed, and the best result was including 0.53% over 1.5 m, at hole 1. At minfile 092L-249 a partially analysed hole yielded 0.48% over 3.6 m..(AR 3795)

New showings, found by the author, have been detailed in recent assessment reports (ARIS: 26930, 27070, 27463, 27736, 27745, and one AR still in review) with at least fourteen locations with large (1 kg or larger) grab samples containing well over a percent copper, silver values up to 67 ppm and gold values up to 1169 ppb. They are shown on a map in appendix B. These values indicate the presence of locally interesting mineralization but give no indication of grades or volumes.

5-5 Detailed sampling results

Work reported here is in several parts: New samples have been collected and geochemical analysis are presented in 5.5.1, Figure 4 and appendix C. A summary of magnetic susceptibility is presented in 5.5.2, shown in Figure 5 and presented in detail in Appendix D. A summary of specific gravity performed on cutoffs to selected sections are summarized in 5.5.3, shown on Figure 6 and presented in detail in Appendix E.The alteration part is presented in three parts in 5.5.4 shown on Figures 7 and 8 and presented in detail in appendices F, and G. Whole rock analyses have been performed on fresh and altered rock to identify the extent of change in composition and are discussed in 5.5.5, and presented in detail in appendix H. Analytical certificates are shown in Appendix I.

5-5-1, **New geochemical data**

Prospecting near the Adam West Prospect yielded new mineralized locations. Aqua regia soluble assay data from the environs of Minfile 092L-222 (Adam West) returns anomalous copper values from pink veins and chlorite selvage. The mineralization is distributed in irregular fashion, subject to the nugget affect (Appendix C and Figure 4). Samples with visible sulphides were submitted for analyses but the results were less than expected; hence the suggestion of a nugget effect. Other workers in this area have also noted that copper mineralization appeared in "bunches".

5-5-2 **Magnetic susceptibility**

Magnetic susceptibility measurements of that veins and faults are much lower (by one or two orders of magnitude) than their basaltic hosts. These measurements indicate that detailed aeromagnetic surveys can delineate faults and vein distributions over a survey area.(Complete data for alteration of the rock is in Appendix D and is shown on

Figure 5.

5-5-3 Specific gravity

Density measurements were carried out on 116 suitable offcuts from the thin section study. The data show a median of 3.0, and upper and lower quartile of 3.2 and 2.8 respectively. This compares favourably with other determinations of basalt from the general region which cluster about 2.95. Limestones/marbles return 2.7 as expected. The regions with higher densities mark locales where metasomatism (epidotisation) has been particularly effective. Should a modern airborne sgravity urvey be conducted, these data will serve as preliminary ground based data. (Complete data is in Appendix E and is shown on Figure 6)

5-5-4 Petrography focusing on alteration suites

Alteration suites (Complete data is in Appendix F and is shown on Figure 7)

5-5-4-a Minerals identified

Minerals were identified under a binocular microscope and in thin section under a Nikon Labophot-pol Petrographic microscope. A small number of primary pyrogenic minerals, a larger assortment of secondary alteration minerals as well as a suite of opague minerals were noted. A number of sections with unidentified fibrous and blocky zeolites and related minerals have been set aside for further study and are not reported on here..

Primary minerals (in basalts)

Plagioclase phenocrysts, often glomeroporphyritic, show compositional zoning, largely normal with calcic cores and albitic exteriors. They are commonly partially altered, the cores being more attacked than the rims.

Augite is common in subtly altered basalts. Ilt is locally partially altered to uralite.

Grains of magnetite/ilmenite are locally seen in "fresh basalts". They are generally altered to brown leucoxene and small black magnetite grains.

Secondary minerals

Quartz is seen as local groundmass, and as a amygdale filling mineral

Albite is seen to replace completely, or in part plagioclase crystals, both phenocrysts and microlites. When replacing primary plagioclase it is often found with small aligned pumpellyite crystals aligned along the cleavage. Albite is also found as a vein mineral, with a thin veneer of orange stained clay, giving a characteric salmon colour to the veins.

Potash feldspar, which has been confirmed by staining, and chemical analysis, is much less abundant than at first suggested, since the salmon colured mineral has turned out to be albite. Small grains are intergrown with albite in the veins.

Epidote/clinozoisite is particularly abundant, both as small granular aggregates and also in a particular habit, showing a mildly pleochroic high refractive index clinozoisite manifestation with radial habit which may be pseudomorphous after prehnite.

Pumpellyite is seen as small grains along some cleavage traces of altered feldspars, as an important component of recrystallized matrix, and less commonly as radial spherulitic fill in amygdales

Hydrogrossular has been located previously, and more localities are repoted in this report. It is found in a shear zone with very fine grained quartz and radiating epidote. (This assemblage is the hotter (less water rich) equivalent of prehnite).

Magnetite dust grains and leucoxene/titanite dust finely dispersed in the groundmass.

Calcite is common in many forms. In one location flat platy calcite laths are seen to growing a complex mesh.

Chlorite, is pleochroic and varies in its anomalous birefringence indicating minor variation in Fe-Mg ratio.but the cleavage is length slow indicating that chlorite is generally Fe-Mg chlorite. It fills interstices, replacing glass areas, replaces some mafics, is sometimes replacing melt inclusions in plagioclases.

Actinolite is present, locally as uralite, replacing some mafic grains in the basalt, or as very small needles overprinted on a previous primary texture.

Phengite very small crystals are found in veins especially in the occasional potash feldspar crystals in veins.

Sulphides include pyrite (as cubes and fine grains or as coatings on joints), chalcopyrite as veinlets and selvage to larger veins, bornite and chalcocite as small grains in veins, amygdales and disseminations near veins.

Malachite stain is locally widespread.

5-5-4-b-1 Alteration of matrix, phenocrysts and amygdales (in basalt)

Basalts of the Karmutsen come in several textural types.

Very fine feldspar microlites (and possibly augite crystals) set in opague choked glassy matrix range to the usual very fine grained microlites and interspaced augite grains with scattered magnetite.ilmenite intergrowths up to fine to medium grained micro-ophitic textures. Each of these textural varieties may contain a few phenocrysts or they may contain a lot of fplagioclase phenocrysts, Similarly there may be only a few amygdales, a lot or a very large number anr/or interconnected series of amygdales in each of the textural varieties. Each of the textural elements may have been altered differently.

On the whole, the alteration of the basalts can be said to be largely metamorphosed in the pumpelleyite zone of the prehnite-pumpellyite facies of metamorphism. Locally, presumably associated with areas of increased hydrothermal activity, propylitic alteration is well displayed. In the contact zone with the Jurassic Intrusive, hornfelses preserve microlitic, feldspar phyric and augite bearing textures.

5-5-4-b-2 Alteration of limestones

The limestones, both from the Quatsino and upper Karmutsen formations are remarkly pure Ca CO3 and composed of almost 100% mm sized slighfy elliptical and strained calcite crystals.

5-5-4-b-2 alteration of plutonic and other felsic rocks

Granodiorite and diorite have been locally altered Local sericite and chlorite veining have been located. More work is needed to estimate amount and extent of alteration in plutonic rocks.

The other felsic rocks are examples from the Parsons Bay Formation. These samples come from the near the contact and skarns and gornfelsed siliciclastic rocks with pyrite are interesting, but no clear relationships with regional alyrtation have been established.the mineral associations reported reflect that position,

5-5-4-c alteration in veins and breccias

Veins and breccias occur throughout the area. Reference to Appendix B notes the widespread location of samples with over 0.4% copper. These are largely in veins or breccias.

The veins studied in this report divide into those that carry alkalic feldspars and those that don't. The alkalic feldspar bearing ones are the pink veins. They are composed of feldspar, quartz and an easily recognizable clinozoisite with a radial habit. This habit indicated that the veins were filled in a stress free andvironment. Such stress free environments could be available during burial or during exhumation. Bladed cystals of calcite and pseudomorphed by silica and mimicked by potash feldspar are reminiscent of textures associated with boiling. Should this be correct, this would imply near surface vein filling. The implication is that the pink veins may be a manifestation of a low sulphidation epithermal system.

Mineralized veins also are found in shear zones and local breccia zones in or near these shears. They contrast sharply with the pink veins, carrying large amounts of epidote. They would seem to be like veins in the propylitic parts of a deeper rooted hydrothermal system. Previous work has established that fragments of intrusive felsic rocks are seen in shear zones within the Karmutsen. At two such localities the breccia matrix is sulphide, containing chalcopyrite and returning intereting copper assays on grab samples.

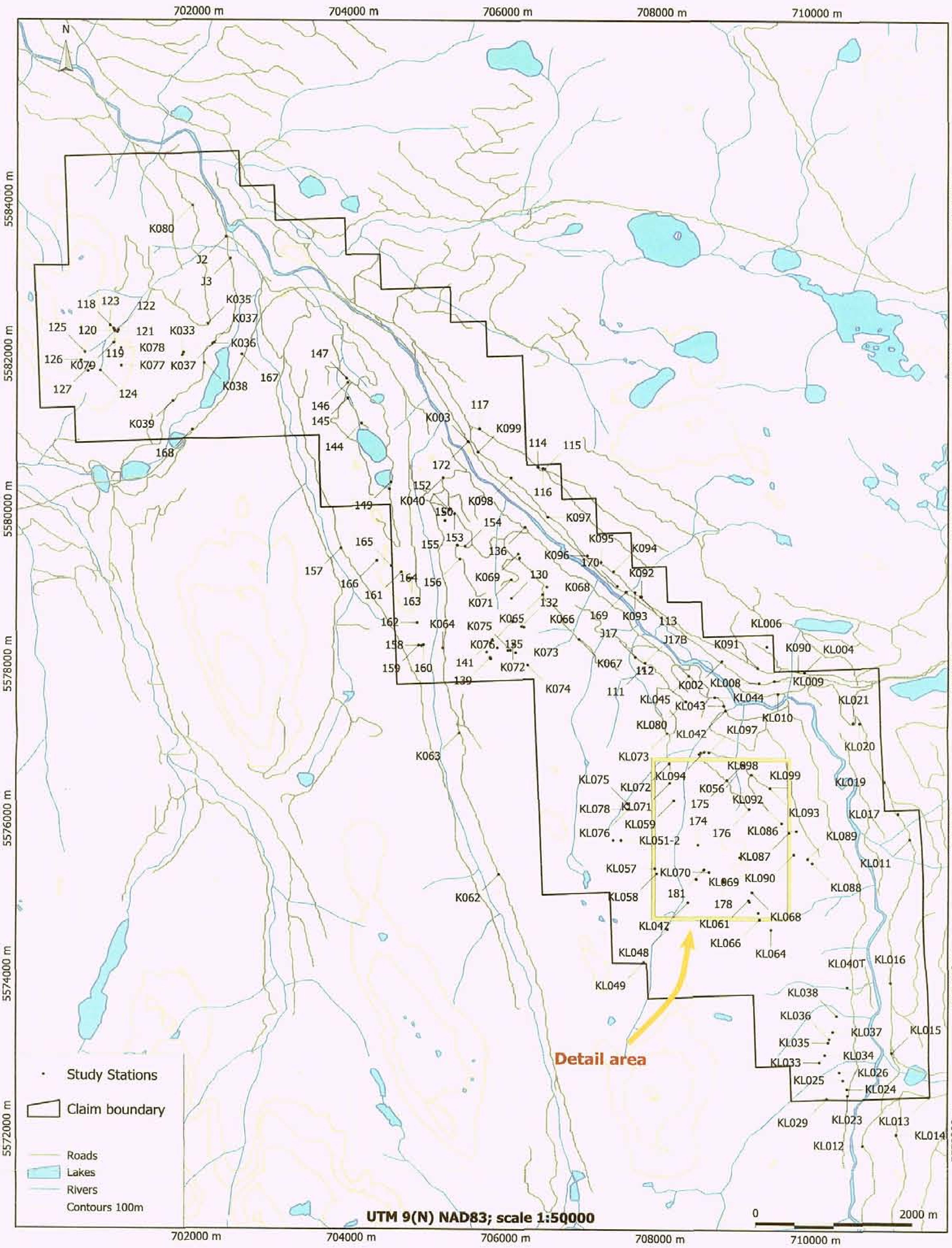


Fig. 3. Location map of study locations in Kringle-consolidated claims

Kringle Consolidated 2007
Location of Study Stations
March 2007

GIS/mapping by TBT

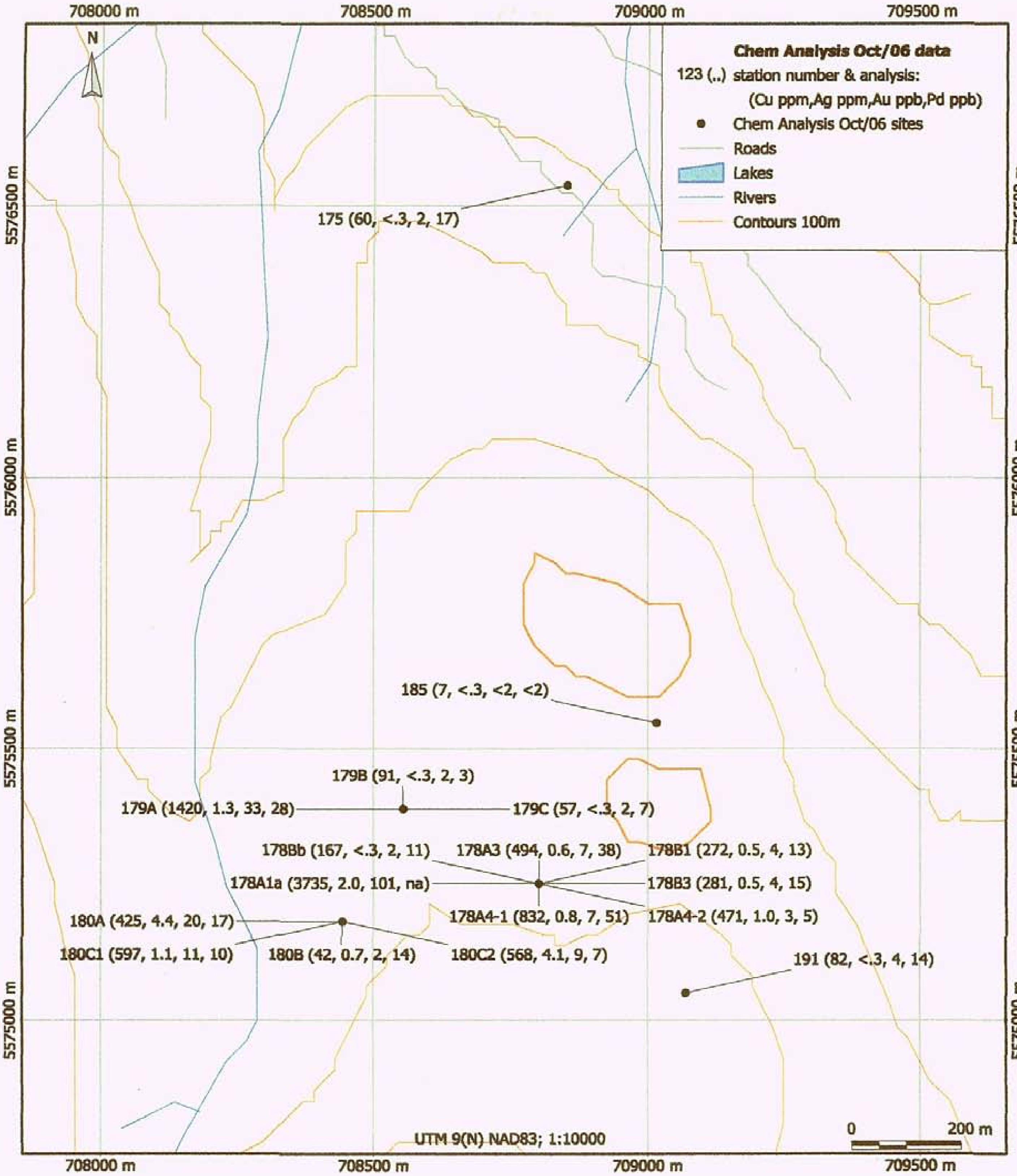


Fig 4. Detail map showing locations of Assays and Cu, Ag, Au, and Pd.

Geochemical sampling near Adam West
March 2007

GIS by TBT, Mar/2007

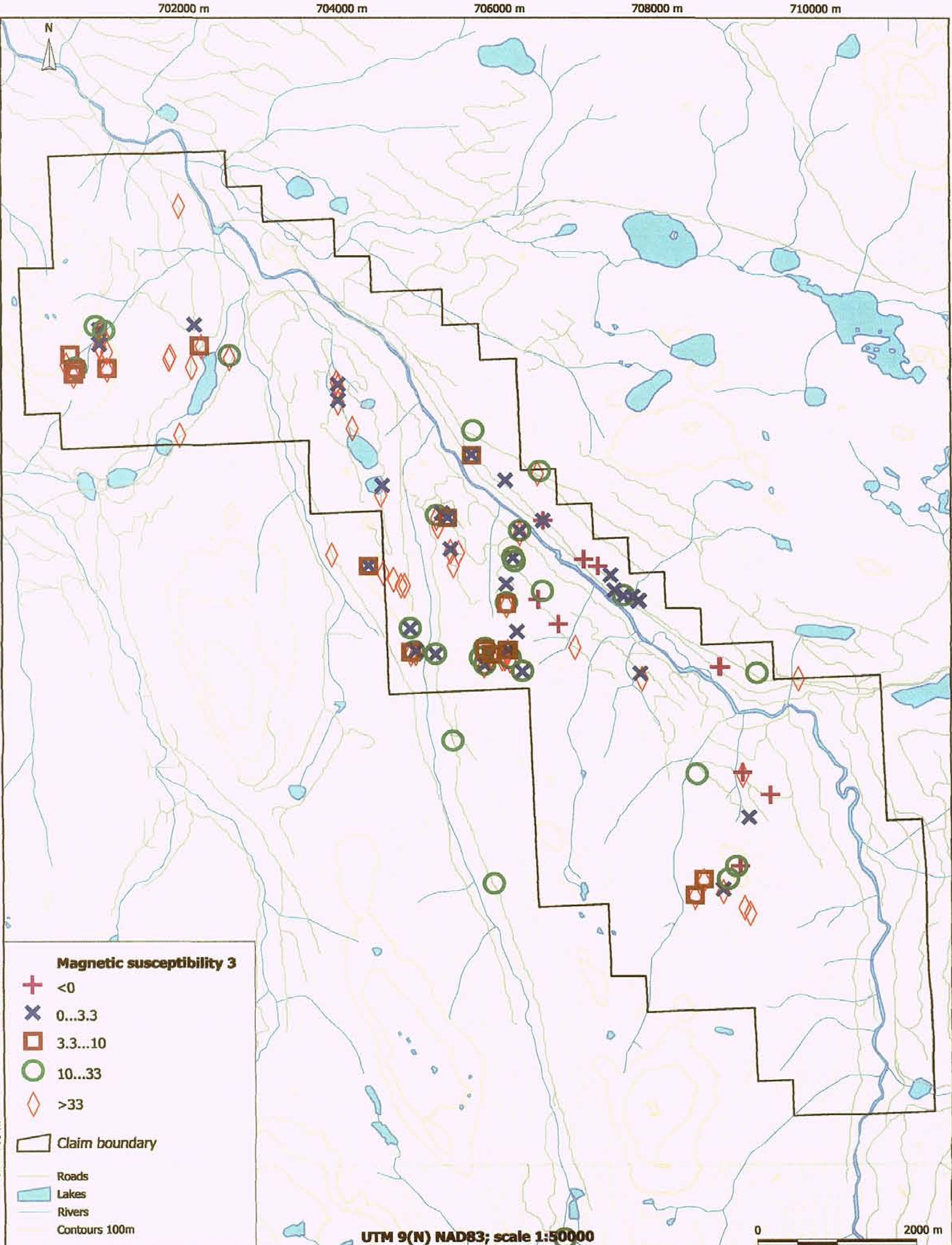


Fig. 5. Map showing distribution of magnetic susceptibilities.

Kringle Consolidated 2007
Magnetic Susceptibility
March 2007

GIS/mapping by TBT

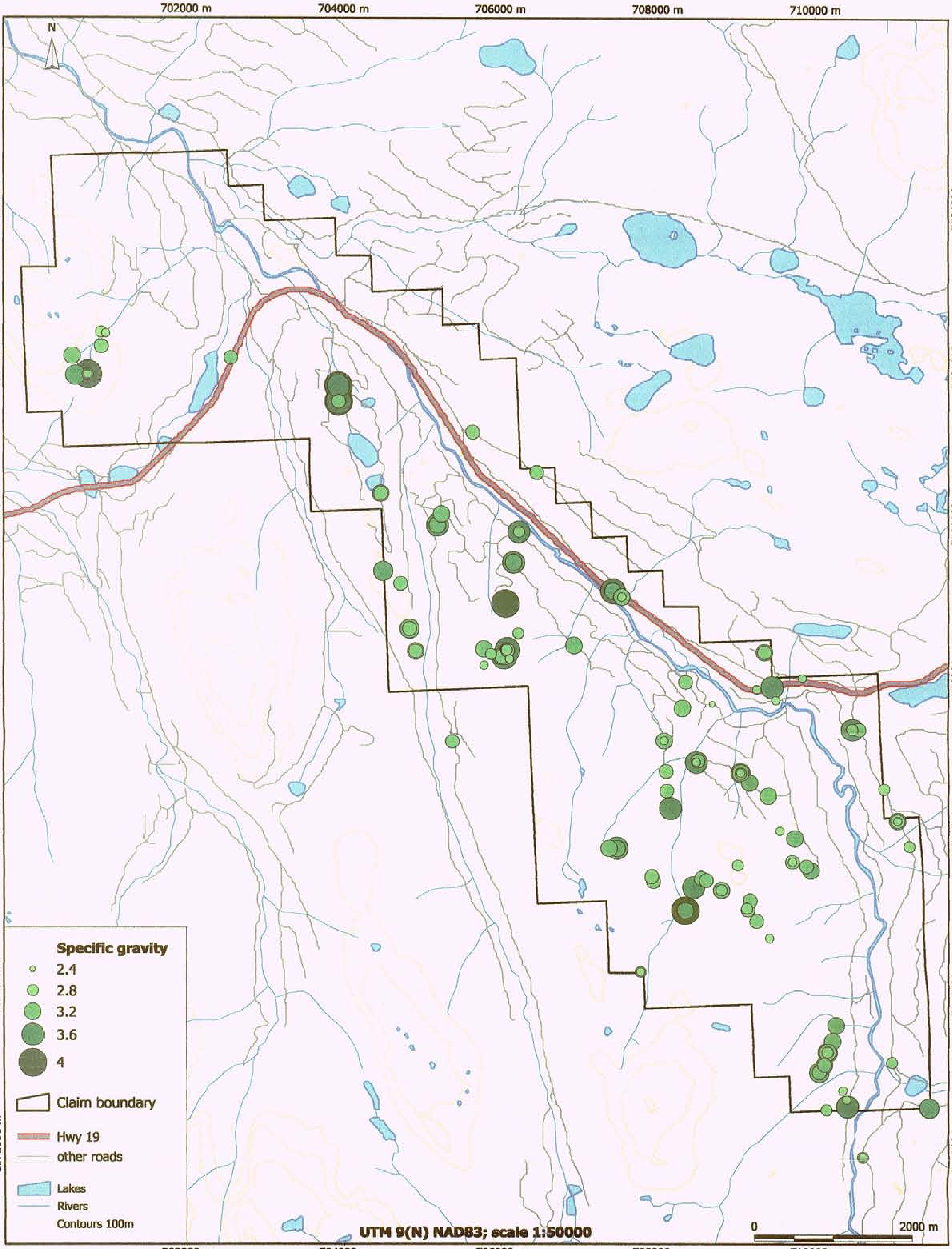


Fig. 6. Map showing distribution of specific gravity of samples.

Kringle Consolidated 2007
Specific Gravity of Rock Samples
March 2007

GIS/mapping by TBT

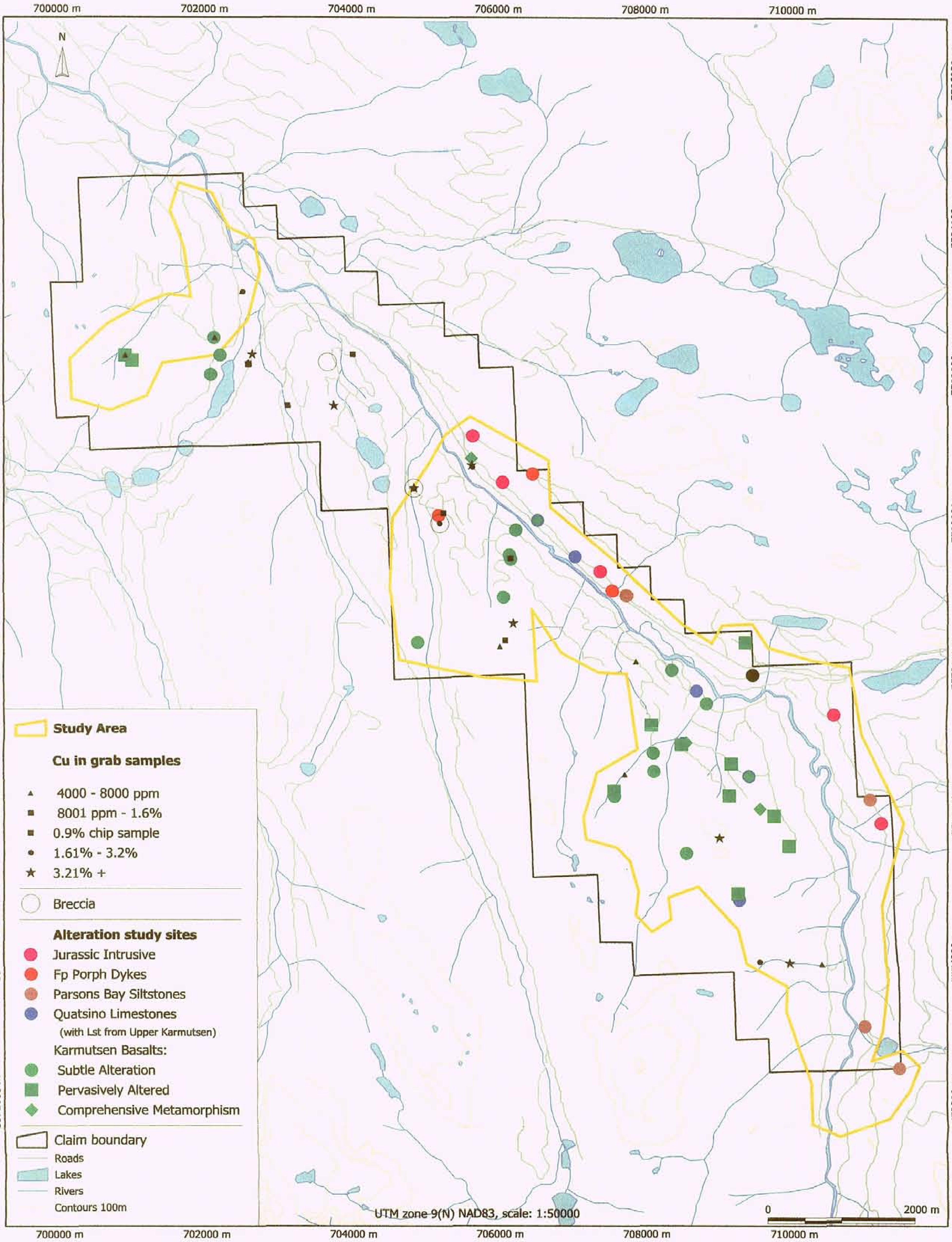


Fig. 7. Map showing distribution of alteration of studied samples.

Alteration in Kringle Consolidated
March 2007

GIS by TBT, Mar/2007

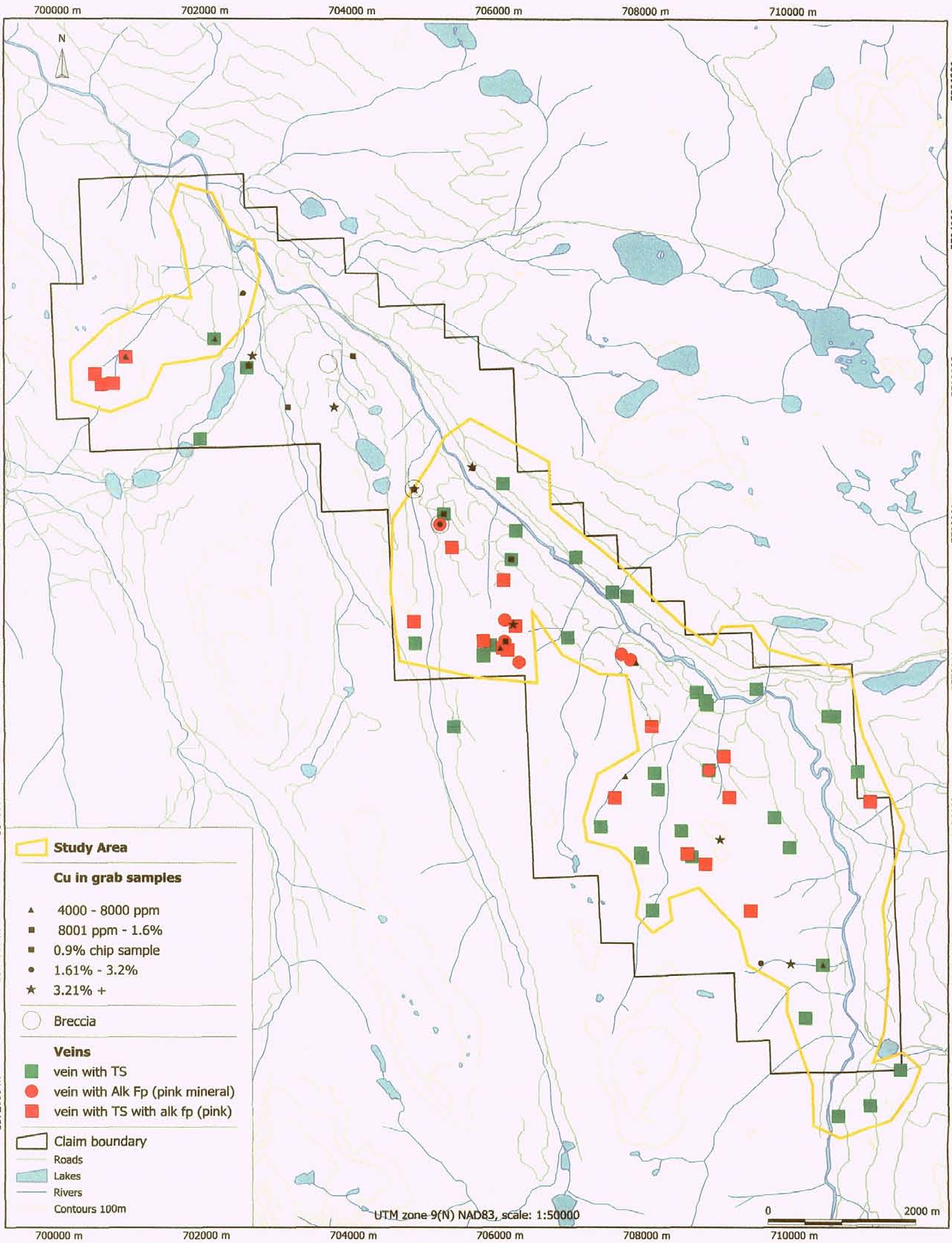


Fig. 8. Map showing distribution of veins studied in samples

Veins in Kringle Consolidated
March 2007

GIS by TBT, Mar/2007

5.6/ Interpretation

Elevated copper values in shears, amygdales and veins located at surface may be indicators of a larger deposit at depth. The elevation of surface exposures vary by several hundred meters indicating some vertical extension.The placement of showings within the stratigraphy and the proximity to deep regional linears and the possible relationship of later dykes is suggestive but not clearly established at this time. The locations of showings and prospects also seem to be concentrated along the positive magnetic anomaly ridge that shadows the intrusive contact (Appendix B).

The upper Karmutsen may be exceedingly well differentiated along a tholeiitic trend. Hence this iron (and associated Ti, V, Mn and possibly Cu) enrichment should have regional and stratigraphic expression. Currently, very few systematic lithochemical studies have been conducted on the regional stratigraphy of the Karmutsen Formation (Surdam, Greene et al, 2006). It is not known whether the Karmutsen Formation is chemically zoned, through time and space. Although compositional variation is known.

The Karmutsen Formation basalts accumulated rapidly and upon burial certain elements may have become redistributed during the burial metamorphism (the so called subtle alteration noted in the section on petrography).

Alternately, if the magnetite that forms the aeromagnetic anomaly is metasomatic in origin (Eastwood, 1965), then the possibility of iron oxide-copper deposits should be considered. Locally sulphide concentrations are associated with magnetite and/or hematite within these claims. The local more dense specimens suggest metasomatism. Perhaps the rocks called pervasively altered, are propylites associated with such metasomatism.

Since a large area is underlain by rocks with silicate and sulphide specked amygdales and sulphide bearing veins, as well as containing enhanced magnetite in the groundmass and veins, a reasonable hypothesis is that large scale metasomatism of some type took place.

Preliminary work suggest two different mineralizing event have affected area.

The potassic and magnesian alteration, locally anomalously mineralized, albeit poorly exposed, of the Jurassic intrusive near the contact, and adjacent mineralized regions suggest that the pluton had some role in the localisation of the mineralisation. Large scale propylitisation would be a natural consequence. On the other hand the pink veins are suggestive of low sulphidation epithermal processes at work. Telescoping mineralising environments may provide an explanation.

5.7 Conclusions

Kringle-consolidated Claims lie mainly west of the Island Highway, southeast of Rooney Lake, near the 255 km marker and reach southward past Keta Lake at 245 Km to Tlowils Lake along Adams Main south looging road. The group is staked on a hydrothermal system associated with a contact between the Triassic Vancouver Group and the Jurassic Adam River granodiorite pluton. The main copper mineral occurrences are in shears, veins, amygdales and dispersed disseminations found in a highly magnetic bounding fringe along the edge of the pluton, and are locally exposed in logging road cuts.

New geochemical data (both aqua regia soluble and whole rock results) further characterizes the "pink" veins as potash feldspar bearing and their selvages as chloritic with local copper sulphide mineralisation.

These prospects and showings lie along a sixteen km length of a three km wide magnetic anomaly developed along the edge of Adam River pluton. The localities and anomaly are shown on figures within the body of the report.

The geology has been verified from previous sources and new field work. It reveals that a sequence of the Vanouver group comprising the Triassic Karmutsen Formation, consisting largely of feldspar-phyric basalt but with intraformational limestone lenses intercalated near the top; the overlying Quatsino limestone; and siliciclastic and limy sediments of the largely upper Triassic Parsons Bay formation was deformed and faulted along orogen parallel transverse faults, along which later mid Jurassic plutons were emplaced. Later geologic history, known to be complex and including faulting, is not yet understood in this area. The presence of early deformation, mainly of the brittle type, allowed circulation of fluids supplied and energised by the pluton yielding local alteration and mineralized volumes.

Within the Kringle-consolidated Claims sulphide accumulations studied over the years, include laminated bornite bearing calcite veins, local iron sulphide rich veins and replacement masses, more common chalcopyrite veins, molybdenite bearing garnet veins, pyritic veins and disseminations in granodiorites and dykes, and pyrrhotite layers in reaction skarns. Pyrite and chalcopyrite are found in mineralized shear zones. Another mode of mineralization is found in sheared, feldspar porphyry bearing, sulphide cemented breccias within the Karmutsen Formation. In several parts of the claims, along with chalcopyrite-bornite-chalcocite found in veins associated with pink (feldspar) and clinozoisite (after prehnite) and quartz alteration raises the possibility of an epithermal srtting..

181 stations with new magnetic susceptibilities have been collected and compiled They show large positive values within the aeromagnetic anomaly, with locally low values associated with veining. This indicates that an aeromagnetic survey could delineate altered and vein rich areas.

136 new density determinations provide evidence of local influx of clinozoisite-epidote alteration and could provide local constraints on a gravity survey..

A suite (N=120) extracted from a collection of thin sections made from samples collected on various prospecting trips has allowed a study of the various types of alteration of the area. The area under claim is underlain largely by feldspar phyric basalt regionally metamorphosed to pumpellyite zone of prehnite- pumpellyite facies. The location of veins with alkalic feldspar, including potassic feldspar alteration assemblages (the so called "pink" veins), in association with copper bearing locations, is documented Several show platy calcite or silica pseudomorphous after platy calcite in thin section. This type of host rock and vein alteration is contrasted with the mineralization found in sheared zones and associated veins. The most intense alteration of host rocks seems centred around a magnetic low, near the contact with the Adam pluton (a Jurassic Intrusive) but current sampling density is not adequate verify this suggestion.

This is a grass roots project and the extent of the postulated hydrothermal system is still being explored. Hence estimates of volumes and concentrations require defining by geophysical and other methods. There is a possibility that all new showings and already located Minfile locations in the country rock are part of a single and large mineralizing system, in which case, this region may become a significant prospect. The values of selected grab samples discussed in this report indicate only that local enrichment of copper and associated elements occur as amygdale fillings, shear zone and vein materials. The results of the alteration study indicates that precipitated minerals (in matrix, amygdale and veins) show gradients that imply that part of the mineralizing water system was hotter in some localities than in others.

A number of mineral deposit models may be appropriate to describe mineralization in the region. It is possible that several types of mineralizing mechanisms have been telescoped.

6. FUTURE WORK

Metals should be considered a principal asset of the total property, but it may also be that industrial minerals (such as wollastonite and magnetite) are present in sufficient amounts (in the skarns) to be exploited.

The magnetic low zone should be verified, accurately located, and further studied. Special consideration to be given to alteration mineral identification using modern methods. Future work should focus on establishing the areal extent of the various types of mineralization and gangue alteration in amygdale fillings, shear zones and skarn bodies.

To find the extent the magnetic phases (magnetite, pyrrhotite) of the ore skarn (positive anomalis) and local shears and veins (negative anomalies), a magnetic survey is clearly indicated. To find the extent of conductive portions (sulphide concentrations) of the mineralized zones one of several types of survey can be contemplated; the size of the exploration commitment would seem to dictate the method. A low flying helicopter survey combining aeromagnetic and EM methods may be most efficient method to focus ground based exploration. With enough interest, perhaps an airborne gravity survey could also be appended. The extensive magnetic susceptibility and density database would provide local control data.

Interpretations of the surveys will be challenge the geophysiscist. The presence of the many roads with their infill of materials trucked in from unknown sources will pose a problem. The Adam River valley with the deep (glacio)- fluvial fill will shield anomalies located along the (major) fault traces in the valley bottom. Nevertheless, if enough surface anomalies along the valley sides are successfully tested, then deeper exploration (in part under the river or creek channels) will be easier to justify.

A possible exploration scenario is given below. Many others can be proposed, the main determinant is the amount of money available for further work.

A POSSIBLE EXPLORATION SCENARIO

1/ A program which fulfills the needs outlined above, is a small helicopter survey (about 15 km by 6 km, 100 m spacing) measuring the magnetic and electromagnetic parameters simultaneously. This would focus the ground search.

ESTIMATED COST ; $150,000 (recent, but unofficial quote)

2/ After the airborne survey, a more accurate GPS survey of any newly located (see above) near- surface geophysical targets would be appropriate. (Using a BeepMat to help locate thinly covered magnetic and/or sulphide mineralization could also be useful). Trench and sample best locations

ESTIMATED COST: $100,000

3/ Petrographic analysis and detailed mapping of rock types near the contact/anomalous areas can establish the locations of hydrothermal ore bearing channels and the nature of the mineralizing fluids, and, possibly, with the help of the geophysics, estimate their extent.

More litho-geochemistry and systematic assaying of new and old showings on the property will help decide as to which type of mineralizing fluid the pluton might have generated. The possible presence of low sulphidation epithermal and the possible presence of a larger "porphyry" system will help in focusing interest in appropriate host rocks and alteration types.

Both methods will result in finding vectors towards ore targets. And the results will also help in establishing the extent of industrial minerals such as magnetite, wollastonite or garnet.

ESTIMATED COST: $50,000

At the end of this phase of this exploration cycle, costing about $300,000.00, several target regions, of coincident geological and geophysical anomalies, will probably have been established. At this point there should be enough information to decide on the feasibility and design of a drill campaign.

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Prospecting Report on the Kringle Consolidated Property Central Portion; Assessment report in review, BC Dept of Energy and Mines

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8.0 AUTHOR'S QUALIFICATIONS

I have been a rock hound, prospector and geologist for over 40 years. My mineral exploration experience has been with Shell, Texas Gulf Sulfur, Kennco, Geophoto, Cogema and several public and private mining juniors. I have worked 10 years in southern BC and spent 23 years with the GSC as a field officer focused on mapping in northeastern Arctic Canada. For the last 11 years I have prospected and mapped in Nunavut, Nunavik, Yukon, Ontario and BC.

I reside at 1007 Barkway Terrace, Brentwood Bay, BC, V8M 1A4

I am currently a BC Free Miner, # 142134, paid up until September 20, 2007.

During 2000 and 2001, I received Prospector's Assistance Program (PAP) grants to prospect on Vancouver Island. In 2002 I received YMIP grant to prospect in the Yukon.

My formal education is that of a geologist, I graduated with an honours B.Sc. in 1964 and Ph.D. in Geology in 1969, both, from UBC.

I am a P.Geol. licensed (L895) in Nunavut and NT, and a P.Geo. (25977) in BC and Ontario (1047).

The information, opinions, and recommendations in this report are based on fieldwork carried out by myself, and on published and unpublished literature.

I am sole owner of the claims in question.

Signed

Mikkel Schau,

Dated March 9, 2007.

9.0 ITEMIZED COST STATEMENT

Wages for field work				
Mikkel Schau, geologist, in field Oct 9, 10, 11, 12, 2007				
4 x day x 500			$2000.00	
Alec Tebbutt, contract helper(AT) in field as above				
4x day at 250			$1000.00	
TOTAL Wages				$3,000.00
Food and Accommodation for three nights				
2 x 3 x 758.69				$472.14

Some of the samples were collected in prior trips and these field costs and analytical costs have already been claimed in previous assessment reports.

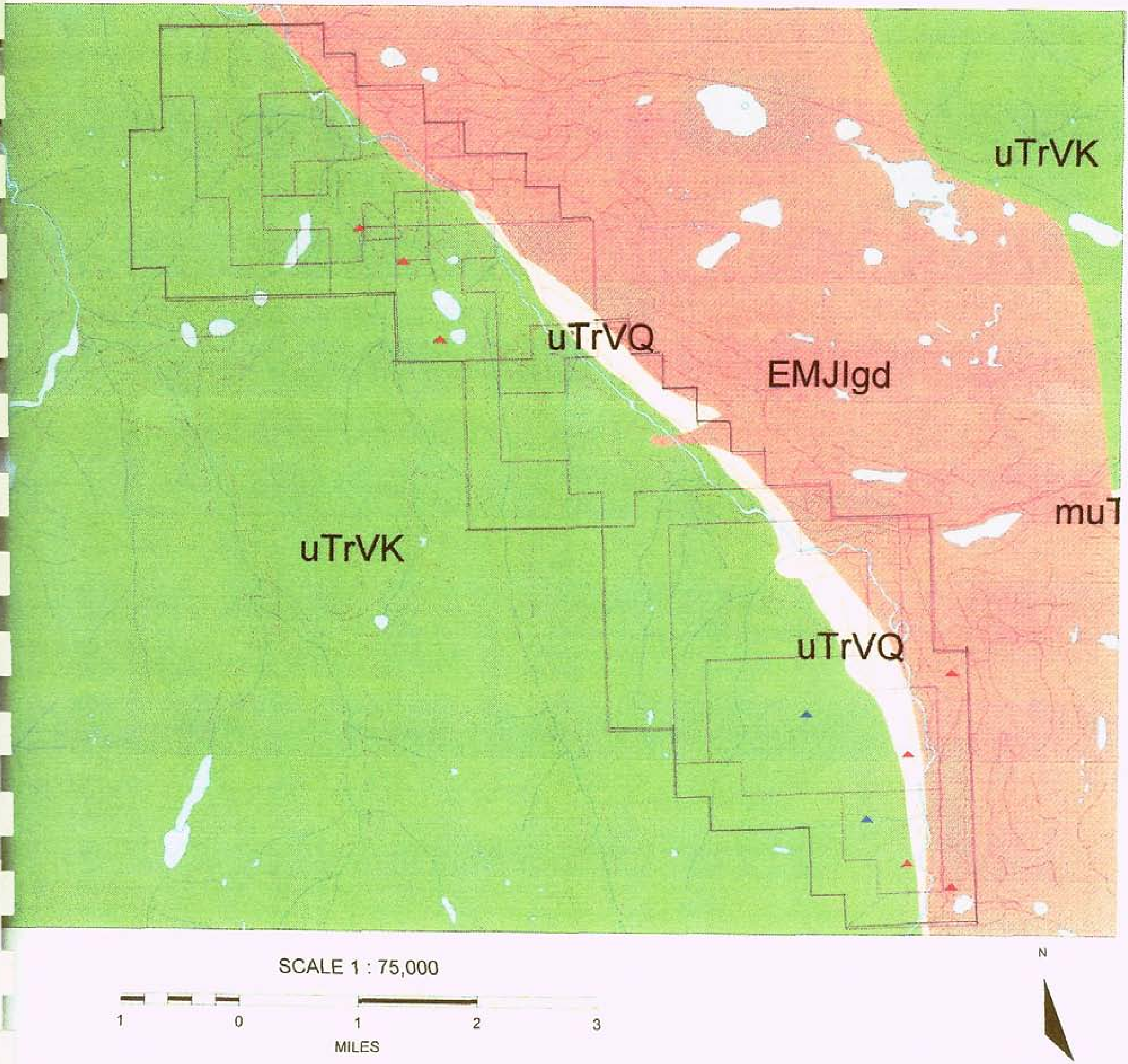
Analyses of newly collected rocks:				
ACME inv A607951				
16 prepare and crush rocks	@5.09		81.44	
1 prepare powder	@7.56		7.56	
Geo4 (ICP-ES of AR dissolved elementsand PGE (Pt, Pd, Au)				
FA with ICP-ES finish @ 17.96			305.32	
10 Whole Rock (4A and B)	@41.58		415.80	
11 Whole Rock (4A and B)	@41.58		457.38	
1 Group 6 metallic Au	@21.29		21.29	
2 diskette,			3.00	
GST			49.97	
TOTAL:				$ 1341.74
Magnetic susceptibilities				
181 station determinations @ $ 6.00/ station,				$1086.00
Density determinations				
136 determinations @ $5.00/determination				$ 680.00
Petrography				
Thin section preparation				
Vancouver petrographics	invoice 060662	603.14		
	invoice 060663	1414.04		
	invoice 060893	392.20		
Total (Van Pet)			$2409.38	
Alteration study				
55 TS @ 60.00			$3300.00	
Vein study				
^65 TS @ 55.00			$3575.00	
Total petrography				$9284.38
Maps and drafting	14 @ 30/hr ( )			$ 420.00
Report preparation	(2 Days @ $500/day)			$ 1,000.00
Total project cost		**$17,000.02**		

APPENDICES
10. Appendix A Geology Map from MapPlace.
LEGEND for symbols on map

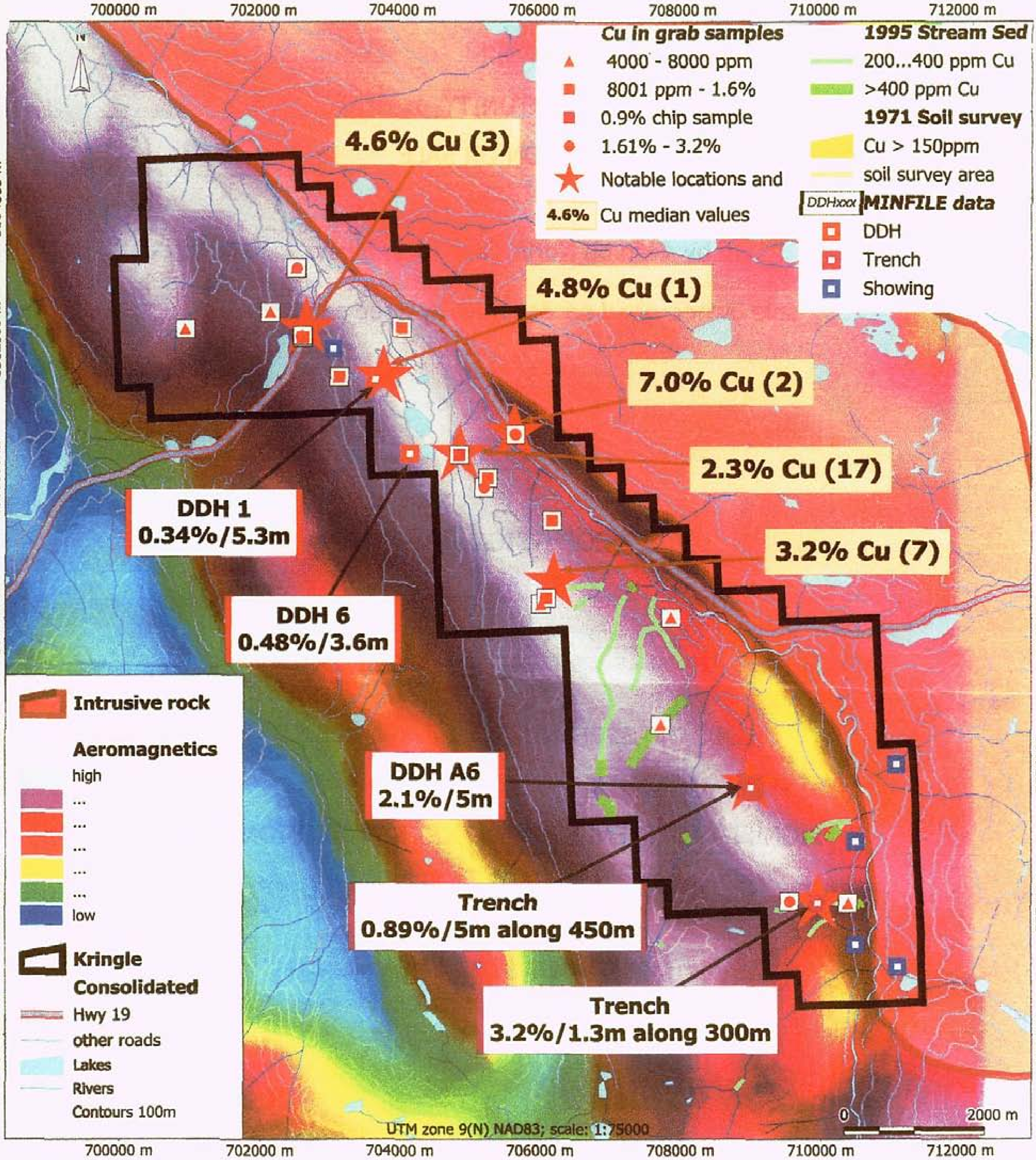
Geological units

EMJIgd	**Early to Middle Jurassic granodiorite**
uTrVQ	**upper Triassic Vancouver Group, Quatsino Formation**
uTrVK	**upper Triassic Vancouver Group, Karmutsen Formation**
triangles	**minfile locations**

Kringle-consolidated-geology



10.2 Appendix B Aeromagnetic map from Map Place (shows bounding aeromagnetic anomaly and compilation of copper bearing localities.)



PROPERTY FOR OPTION
Kringle Consolidated
North Vancouver Island
January 2007

GIS by TBT, Jan/07

10.3 Appendix C Rock Descriptions of Analysed Samples, with Cu, Ag, Au, Pt, and Pd tabulated

All samples located in Zone 9, using NAD83/ alternate number is number on lab sheets
The majority of samples in this table are from ACME # A607951

Station UTME UTMN	Cu, ppm	Ag, ppm	Au, ppb	Pt, ppb	Pd ppb
175", 708851,5576536, also 331663, propylite w/ py and cpy **	0060	<.3	2	6	17
178A1a",708801,5575252, also 331665, pink and epidote vein (test for free gold) from Acme report #A607954	3735	2.0	101	na	na
1178A3",708801,5575252, also 331664, pink and epidote vein **	494	0.6	7	4	38
"178 A4-1 ",708801,5575252, also 116447, chlorite selvage to vein	832	0.8	7	5	51
178 A4-2",708801,5575252, also 116446 , pink vein Ba = 1326 ppm, K2O = 3.29%.	471	1.0	3	<3	5
178B1",708801,5575252, also 116448, pink and epidote vein	272	0.5	4	3	13
178Bb",708801,5575252, also 116449 copper minerals in pink vein bo, cpy, cc (what happened?)	167	<.3	2	3	11
178B3",708801,5575252, also 116450 copper minerals in calcite vein	281	0.5	4	<3	15
179A",708554,5575389, also 331660, propylite	1420	1.3 1476	33 1.3	9 17.5	28
179B",708554,5575389, also 331661, "magnetic fresh basalt"	91	<.3	2	<3	3
179C",708554,5575389, 49.1 also 331662, "hematite stained calcite vein"	57	<.3	2	4	7
"180A",708443,5575182, also 116441 magnetic basalt w/ pink amygdales	425	4.4	20	8	17

Station UTME UTMN	Cu, ppm	Ag, ppm	Au, ppb	Pt, ppb	Pd ppb
"180C2",708443,5575182, also 116442 alk feldspar vein w/ gossan	568	4.1	9	8	7
"180C1",708443,5575182, also 116443 altered rusty vein material	597	1.1	11	10	10
"180B",708443,5575182, also 116444 epidotized dyke **	42	0.7	2	7	14
"185",709017,5575547, also 116445 Limestone from trench	7	<.3	<2	<3	<2
"191",709070,5575050, also 331659, scoria with filled voids	82	<.3	4	3	14

10. 4 Appendix D Magnetic Susceptibility Measurements

Lowe, 1997 has provided a good operational definition and a crude conversion of Magnetic Susceptibility measurements into volume percent magnetite in the volume measured. Crude, because various factors such as grain size and remanent magnetism also play a part in the values determined. Also, at least three different calibration curves add to the uncertainty.

The table below is extracted from Lowe, 1997, table 5)

A value of 1000 SI is approximately 33% magnetite per volume.

333 SI	15%
100 SI	3.3%
60 SI	2 %
33 SI	1.5%
10 SI	0.3 %

Magnetic Susceptibility readings have been reported in previous AR for parts of this area. These determinations are not reported here. A representative value (or two values if local veins were recorded) are shown on Fig **. The data in these tables constitute the actual measurements taken.

All locations are NAD83 in Zone 9.

```
"K001",708763,5578076, 241.1,  at L edge,          -0.46,0,-0.36,0,-0.36,-0.46,,
,,,,,              between vein 1&2m    -0.18,-0.07,-0.08,-0.07,-0.18,-0.08,,
,,,,,              on vein 2,         -0.26,-0.05,-0.26,-0.05,-0.28,-0.26,,
,,,,,              bedding to R of contact,-0.17,0.63,0.28,0.63,-0.17,-0.12,0.32,0.28

"K002",708779,5578073, 245.1,  L of contact        ,-0.31,0.06,-0.16,0.06,-0.31,-0.16,,
,,,,,              rusty, just R of contact,-0.29,-0.02,-0.07,-0.29,-0.07,-0.02,,

"K033",701799,5581994,346.9,   massive,            53.8,57.8,55.5,55.5,53.8,57.8,,

"K034",701813,5582027,340.2,   outcrop w/ amygdules    33.3,36.1,37.1,37.1,38.1,33.3,,

"K035",702123,5582398,323.7,"  at sample A",        1.81,16.7,3.22,3.22,4.11,16.7,1.81,2.38
,,,,,"             at sample B",78.1,110,99.8,99.8,110,78.1,108,65.7
,,,,,"             at 1, see diagram, face of bit sticking out in middle of quarry",60.4,76,67.1,76,60.4,67.1,,
,,,,,"             at 2, see diagram; on R side of bit sticking out in middle of quarry",6.27,47.6,36,47.6,36,29.1,6.27,39.3
,,,,,"             at 2, base of face 1m below readings at 2 above",1.76,4.5,2.12,1.76,2.12,4.5,,
,,,,,"             at sample C",21.1,24.8,23.7,23.7,24.8,21.1,,
,,,,,"             at sample D, black",43,47.6,44.3,47.6,43,44.3,,
,,,,,"             at E, 1m L of dike",26.9,49.6,36.8,26.9,30.3,49.6,36.8,44.5
,,,,,"             on F, brown dike",64.1,85.4,64.9,64.1,85.4,64.9,,
,,,,,"             just L of dike F",43.2,46.6,46.4,43.2,46.4,46.6,,
,,,,,"             just R of dike F",31.4,36.7,36.1,36.7,31.4,35.1,,
,,,,,"             at G, black",35.4,39.8,35.6,35.6,39.8,35.4,,
,,,,,"             at H, vein",2.24,3.33,2.44,2.44,3.33,2.24,,
,,,,,"             just R of sample I",17.1,25.7,24.8,24.8,17.1,25.7,,
,,,,,"             just L of sample I",2.19,2.75,2.37,2.75,2.37,2.19,,
,,,,,"             just L of sample K-small white veins",19.5,25.8,24.2,19.5,24.2,25.8,,

"K036",702186,5582143,259.4,   at A, fault surface",6.11,18.4,8.7,8.7,15.4,6.11,18.4,7.41

"K037",702208,5582157,255.7,"  at sample",38.7,82.2,60,75.3,38.7,82.2,60,49.1

"K038",702081,5581892,244.4," outcrop",49.6,64.5,59,59,64.5,49.6,,

"K056",709053,5576731,339.9,"  at A, green",0.12,0.4,0.31,0.31,0.4,0.12,,
,,,,,"             at B, feldspar vein",-0.17,-0.08,-0.09,-0.17,-0.08,-0.09,,
,,,,,"             1m L of B vein",8.48,12.7,11.7,11.7,12.7,8.48,,
```

....." vein at C,D green",0.28,0.92,0.8,0.28,0.92,0.8,,
....." 1m L off vein, L of E",23.9,49.9,45.8,49.9,45.8,23.9,36.1,47.7
....." 1m R of vein, near F, small veins in rock",4,5.42,4.3,4.3,4,5.42,,
....." at G, green alteration",3.27,4.38,3.7,3.7,4.38,3.27,,
....." 1m L of G",59.3,70.5,64.2,59.3,64.2,70.5,,
....." 1m R of G",71.8,81.9,79.1,71.8,81.9,79.1,,
....." at H brown rusty",16.2,41.6,21.3,41.6,21.3,17.2,23.8,16.2
....." at I, 1m R of H, green w/ Kspar, horizontal vein",0.06,0.51,0.43,0.51,0.43,0.06,,
....." 1m below F",12.7,14,13.6,13.6,14,12.7,,
....." Karmutsen R of vein section JKLMNO",18.9,22.3,20.5,22.3,20.5,18.9,,
....." Karmutsen in middle of veins JKLMNO",41.2,62.5,56.9,56.9,41.2,62.5,,
....." Karmutsen 1m L of vein section JKLMNO",66.9,72.6,69.4,69.4,66.9,72.6,,

"K057",707267,5568438,573.9," outcrop, as far as got on KCMain",17,17.2,17.1,17.1,17.2,17,,

"K058",707147,5568485,591.6," med grain black",0.44,0.55,0.51,0.51,0.44,0.55,,
....." fine grain grey",0.07,0.31,0.29,0.07,0.31,0.29,,

"K060",706665,5569904,623.9," on breccia",0.43,0.63,0.47,0.43,0.63,0.47,,

"K061",706781,5570809,601.4," not breccia",19,26.6,22,22,19,26.6,,

"K062",705895,5575317,516.3," not on basalt",29.1,32,30.9,32,29.1,30.9,,

"K063",705381,5577128,476.1," on massive",26.6,28.1,27.2,26.6,28.1,27.2,,

"K064",705166,5578232,432.8," at R of quarry, basalt?",0.19,1.96,0.34,0.34,1.96,0.19,,
....." at spot with veining",22.8,23.5,23,22.8,23.5,23,,

"K065",706464,5578922,368.2," limestone",-0.13,0.03,-0.03,-0.03,0.03,-0.13,,

"K066",706720,5578610,375.5," limestone to S",-0.41,-0.34,-0.38,-0.38,-0.34,-0.41,,
....." limestone to N",-0.41,-0.36,-0.41,-0.41,-0.41,-0.36,,
....." limestone to N, blacker, 5m N of first reading",-0.36,-0.32,-0.33,-0.36,-0.32,-0.33,,
....." green dike, porphyry",0.22,0.5,0.36,0.5,0.22,0.36,,
....." dike, 1m N of first reading",0.5,1.23,0.59,1.23,0.5,0.59,,

"K067",706934,5578348,375.8," on porphyry",9.1,51.5,35.3,9.1,35.1,45.9,35.3,51.5

"K068",706520,5579023,381.2," on outcrop beside blasted rock",17.6,19.2,18.9,18.9,17.6,19.2,,

"K069",706147,5579453,339.9," on green",3.1,8.04,3.84,3.84,3.18,8.04,3.1,7.31
....." intrusion, porphyry",6.84,14.4,8.94,8.2,14.4,6.84,8.94,14
....." other green",0.94,1.45,0.99,1.45,0.99,0.94,,
....." other intrusion",9.64,13.9,10.7,10.7,13.9,9.64,,

"K070",706165,5579402,324.6," on outcrop",58.3,85.7,77.7,77.7,78.9,58.3,63.4,85.7
....." on outcrop",22.2,31.1,26.1,22.2,31.1,26.1,,

"K071",706060,5579121,404.5," dk grey, porphyry",0.47,1.11,0.85,1.11,0.47,0.85,,
....." dk grey, porphyry",0.09,2.08,1.18,0.09,1.09,1.21,1.18,2.08
....." fine grained",1.21,3.3,2.73,1.21,3.3,2.73,,
....." at A",0.77,0.94,0.79,0.77,0.94,0.79,,
....." see diagram, well L of A",5.18,6.37,6.34,5.18,6.37,6.34,,

"K072",706076,5578293,631.2," just above A",60.9,70.5,65.5,70.5,65.5,60.9,,
....." at R of B",3.96,8.56,5,5,3.96,8.56,,

"K073",706110,5578178,652.6," just above vein",44.1,45.5,45.5,45.5,44.1,45.5,,

"K074",706268,5578013,670.3," epidote below pink",22,23.9,22.5,22,22.5,23.9,,
....." on pink",1.54,2.12,1.63,1.63,2.12,1.54,,
....." black",80.3,93.2,92,80.3,92,93.2,,

"K075",706045,5578208,653.8," on malachite surface",87.8,92.8,88.2,92.8,88.2,87.8,,

"K077",701016,5581856,655," on epidote",5.9,8.39,6.4,6.4,5.9,8.39,,
....." basalt/porphyry, just off epidote",29.9,39.7,35.4,35.4,39.7,29.9,,
....." other porphyry",45.1,47.7,45.9,45.1,47.7,45.9,,

"K078",701013,5582083,614.8," on black",32.3,41.6,33.1,41.6,32.3,33.1,,

"K079",700923,5582154,605.9," outcrop w/ pink",59,72.2,67,59,72.2,67,,

"K080",701929,5583930,237.7," on black",36.5,65.4,64.6,36.5,65.9,66.4,64.6,63.1
.....," on yellow",26.1,63.1,29.9,29.9,40.2,26.5,26.1,63.1

"K090",709761,5577956,279.5," gabbro",43.5,54,44.5,54,44.5,43.5,,

"K091",709239,5577992,281.9," no notes",12.9,14.3,13.3,13.3,14.3,12.9,,

"K092",707746,5578906,237.4," not so black",0.53,0.78,0.64,0.64,0.78,0.53,,
....." black",0.42,1.28,1.07,1.07,0.42,1.08,1.28,1.02

"K093",707663,5578959,235," B - felsic feldspar porphyry",0,0.01,0.01,0,0.01,0.01,,
....." A - black bluey green",0.54,0.74,0.68,0.74,0.68,0.54,,

"K094",707385,5579229,242.3," granodiorite",-0.03,0.1,0.05,-0.02,-0.03,0.05,0.1,0.05

"K095",707223,5579347,236.5," limestone",-0.1,-0.03,-0.08,-0.08,-0.03,-0.1,,

"K096",707044,5579432,235," A-rusty contact?, tuff",0.09,0.13,0.12,0.13,0.12,0.09,,
....." B-limestone",-0.15,-0.14,-0.15,-0.15,-0.14,-0.15,,

"K097",706529,5579924,226.2," B-limestone",-0.11,-0.06,-0.1,-0.06,-0.1,-0.11,,
....." A-rusty",1.16,2.21,1.95,1.95,2.21,1.16,,

"K098",706052,5580437, boulders at sample site",0.35,2.26,0.51,2.26,0.5,0.35,1.75,0.51
....." in place, to L",0.25,3.02,0.42,0.42,0.25,2.96,0.37,3.02

"K099",705625,5580762,244.8," dike A",7.88,9.19,9.02,9.19,9.02,7.88,,
....." main wall",0.89,1,0.95,1,0.89,0.95,,
....." sample B",4.85,7.3,4.89,4.89,7.3,4.85,,

"111, 707763,5577986, 111 no description 1.52 1.07 9.10 2.43 2.25

"112, 707784,5577950, 112 volcanic breccia 71.5 146 104 83.2 102

"113, 707733,5578903, 113 parson's bay 0.12 0.32 -0.01
113 parson's bay 0.28 0.28 0.29

"115, 706487,5580547, 115 rip up granodiorite 12.2 11.2 10.9

"116, 706461,5580552, 116 porphyry 32.7 33.2 35.0

"117, 705643,5581063, 117 no description 25.1 23.5 25.3

"118, 700920,5582331, 118 epidote 1.28 1.35 3.02
118 non epidote 34.8 40.7 38.9

"119, 700933,5582309, 119 at A (no pink) 38.1 44.4 68.5 36.2 65.2

"120, 700935,5582301, 120 S side of culvert 14.7 14.3 19.1
120 N side of culvert 39.8 46.0 43.6

"121, 700965,5582289, 121 not pink 71.1 63.8 74.7
121 pink 31.1 13.7 26.9 12.9 41.7

"122, 700976,5582315, 122 sample site 13.0 13.8 39.7 16.2 12.9

"123, 700874,5582372, 123 N (right) of white veining 17.6 17.5 17.3
123 S (right) of white veining 39.0 27.8 40.5 23.5 38.4

"125, 700550,5582029, 125 basalts 12.1 8.81 8.34

"126, 700503,5581923, 126 left of white veins 35.7 50.5 34.5 44.5 51.1
126 right of white veins 20.1 16.2 18.6
126 on white veins 12.3 12.7 13.3

"127, 700618,5581845, 127 above sample 31.6 35.9 29.7
127 below sample 8.95 5.42 8.18
127 at sample 4.65 4.08 4.42

"128, 700593,5581782, 128 N (left) of vein 37.5 58.8 45.3
128 S (right) of vein 52.8 42.1 45.6

128 on vein 9.37 9.96 9.91

"129, 700919,5582151, 129 E of sample B 23.1 27.4 41.2 39.2 26.0
129 W of sample B 56.3 33.6 63.4 53.5 62.5
129 at sample B 14.9 10.0 16.3
129 E of sample C (near A) 30.7 50.6 50.4 71.0 71.6
129 W of sample C 55.6 45.6 45.8
129 at sample C 1.48 1.73 1.43

"130, 706062,5578877, 130 at A (avoiding large qtz) 28.9 29.2 12.4 42.8 15.5
130 1m below A (still in A type) 4.49 2.77 3.35
130 at B 42.2 37.3 36.1 36.8 37.1

"132, 706194,5578516, 132 rock with malachite 0.69 0.31 0.75

"133, 706111,5578178, 133 S of qtz/ankerite vein 45.0 41.2 37.8
133 N of qtz/ankerite vein 59.7 49.8 45.0
133 on qtz/ankeriterite vein 52.0 85.2 77.8
133 S of non-ankerite vein 38.6 28.9 38.5
133 N of non-ankerite vein 79.3 74.5 60.8
133 on non-ankerite vein 4m N 11.7 9.05 22.1 14.1 16.3

"134, 706011,5578206, 134 no description 97.9 98.8 98.7

"135, 706096,5578288, 135 near samples B&C- 1m E of green 0.93 8.06 1.32 1.30 1.25
135 near samples B&C- 1m W of green 0.27 1.39 2.05
135 near samples B&C- on green 5.54 7.19 8.28

"136, 706233,5579792, 136 on dike 19.6 18.8 25.8
136 on host 54.9 115.0 73.9 63.1 48.4
136 on vein (sample C) 0.45 0.78 0.54

"137, 705736,5578183, 137 on formerly pink surface 39.1 25.5 16.2 33.6 31.6
137 at point 2 - see diagram 32.9 22.5 67.0 71.1 34.2

"138, 705788,5578097, 138 2m S of main vertical qtz vein 8.1 6.69 8.46
138 1m N of main vertical qtz vein - 16.0 18.9 18.8
138 on vertical qtz vein 1.95 0.86 2.03

"139, 705782,5578115, 139 between qtz veins A and B/C 60.8 61.5 63.4
139 on qtz vein B/C 33.5 41.1 35.3

"140, 705786,5578301, 140 near small qtz streak 25.9 19.6 18.5
140 on qtz streak 3.50 2.86 6.41

"142, 705874,5578239, 142 along fault surface A 3.84 5.72 3.70
142 1m S of vein B 37.7 28.4 37.3 46.6 23.1
142 1m N of vein B 47.2 61.6 39.9 57.2 93.7
142 on vein B 8.37 8.70 7.54

"144, 704113,5581126, 144 massive basalt 56.5 62.4 47.6
"145, 703934,5581452, 145 at sample A 9.37 9.51 6.20 16.5 16.6
145 1m L of pink samples 51.7 55.4 50.9
145 on Pink 3.76 2.24 2.41
145 on Qtz 7.55 14.4 7.24

"146, 703933,5581650, 146 1m L of sample A 94.2 17.9 11.2 36.8 100.0
146 at sample A 1.78 3.48 2.86
146 at sample C 2.86 2.67 2.64

"147, 703916,5581706, 147 site 1 (see diagram) 20.7 18.2 21.6
147 site 2 (see diagram) 85.0 62.9 101.0

"148, 704471,5580282, 148 near sample site 108 75.9 104 131 77.9

"149, 704491,5580372, 149 rip up with pink blebs 1.61 5.30 2.41

"150, 705179,5579987, 150 on white sample 21.6 18.7 19.9
150 on black sample 27.6 82.2 34.2 49.6 66.4

"151, 705194,5579879, 151 blow up with malachite 55.5 59.8 55.9

"152, 705247,5580019, 152 on shear surface 130deg 0.59 0.66 0.64

152 on other surface (approx 200deg) 0.87 0.60 0.49

"153, 705319,5579986, 153 porphyry dike in road 6.12 4.24 1.69
153 on black 1.98 0.82 2.06

"154, 705457,5579549, 154 basalt 38.9 26.5 41.2 40.5 40.5

"155, 705355,5579564, 155 - R face of quarry 47.4 59.8 41.5
155 - R of epidote vein 55.9 50.3 49.5
155 - epidote vein (48deg) 1.30 0.90 0.91
155 - L of quarry 39.6 37.3 47.4
155 - surface with pink (340deg) 12.4 15.1 24.9

"156, 705390,5579384, 156 no description 53.0 40.5 44.9

"157, 703849,5579523, 157 no description 77.7 76.3 66.8

"158, 704692,5578262, 158 fine-grained with slight red 22.4 24.6 18.9

"159, 704853,5578266, 159 at A near epidote (10m W of UTM) 20.2 22.6 18.6
159 at B fault surface (epidote) 4.93 4.17 4.03
159 at B non-epidote 41.6 43.8 42.4

"160, 704916,5578275, 160 black altered 0.86 0.71 0.69
160 black with pink 0.42 0.32 0.39
160 white surface on black rock 45.9 58.5 59.9

"161, 704630,5579210, 161 no description 67.6 55.8 69.7

"162, 704839,5578557, 162 near fault 13.8 7.56 11.0
162 on epidote 1.14 0.54 1.02
162 on pink 1.57 1.74 1.83
162 fault surface at C 7.90 1.52 10.1 11.1 2.68

"163, 704770,5579132, 163 at base of rock wall 46.2 42.9 48.4

"164, 704725,5579131, 164 sample 105 103 107

"165, 704501,5579291, 165 host for pink 64.0 54.8 71.9

"166, 704314,5579357, 166 at sample A/B (black) 0.93 1.02 1.09
166 epidote 2.13 1.91 2.10
166 dike 6.94 6.03 6.74

"167, 702563,5582007, 167 zeolite sample C 14.7 17.4 17.7
167 black rock 60.7 41.5 51.3

"168, 701931,5581038, 168 fault surface - epidote 38.7 48.3 45.3
168 rock near sampled vein 40.6 38.8 38.3

"169, 707548,5578967, 169 limestone 0.16 0.12 0.14
169 marble 0.14 0.15 0.13
169 dike 12.2 24.6 25.1 25.3 26.2

"170, 707433,5579038, 170 dike 0.94 1.27 1.41
170 limestone 0.13 0.16 0.15

"173",709403,5576449,295.5,"LIMESTONE","LIMESTONE",-0.24,-0.15,-0.24,,

"174",708474,5576705,402.7,"OUTCROP","BLACK",45.9,64.6,14.3,45.9,65.4
"174",708474,5576705,402.7,"OUTCROP","EPIDOTE",10.3,25.8,32.9,36.5,23.6

"177",709132,5576165,453.1,"OUTCROP/FAULT","FAULT SURFACE",0.46,0.57,0.55,,
"177",709132,5576165,453.1,"OUTCROP/FAULT","E SIDE OF FAULT",0.68,0.45,0.28,,
"177",709132,5576165,453.1,"OUTCROP/FAULT","W SIDE OF FAULT",1.27,-0.41,"

"178",708801,5575252,693.7,"VEIN; PINK WITH SULF,"1m S OF VEIN SAMPLE",62.9,47.1,44.9,,
"178",708801,5575252,693.7,"VEIN; PINK WITH SULF","1m N OF VEIN SAMPLE",42.1,48.3,52.4,,
"178",708801,5575252,693.7,"VEIN; PINK WITH SULF,"ON WHITE AT SAMPLE SITE",7.53,1.62,8.11,1.22,1.22
"178",708801,5575252,693.7,"VEIN; PINK WITH SULFIDES ON EITHER SIDE","SULFIDE AREA JUST OFF VEIN",64,78.5,85.7,,

"179",708554,5575389,684.6,"OUTCROP WITH COPPER","1/2m ABOVE SAMPLE A",44.6,53.6,16.3,52.1,68.4
"179",708554,5575389,684.6,"OUTCROP WITH COPPER","1/2m BELOW SAMPLE A",36.8,36.6,67.5,30.9,65

"179",708554,5575389,684.6,"OUTCROP WITH COPPER","ON SAMPLE A",28.1,8.1,5.89,7.01,7.32
"179",708554,5575389,684.6,"OUTCROP WITH COPPER","ON DIKE AT SAMPLE B & C",26.4,35.8,34,30,39.7
"179",708554,5575389,684.6,"OUTCROP WITH COPPER","ON HOST AT SAMPLE B & C",55.8,46,40.6,49.1,51.1

"180",708443,5575182,659.1,"LAYERING & DIKE","HORIZ LAYERING; 5m N (LEFT) OF SAMPLE A",19.5,10.7,16.6,23.1,11.8
"180",708443,5575182,659.1," LAYERING & DIKE","VERTICAL LAYERS; SAMPLE B DIKE",23.7,34.5,25.3,22.8,38.3
"180",708443,5575182,659.1,"OUTCROP WITH LAYERING & DIKE","JUST L OF DIKE",48.6,63.4,50.9,,
"180",708443,5575182,659.1,"OUTCROP WITH LAYERING & DIKE","NEAR PINK ALTERED; SAMPLE C",5.91,12.4,12.5,8.44,7.55

"182",708865,5575379,673.5,"BASALT ROCK FACE","BASALT",25,30.7,14.9,26.6,31.2

"185",709017,5575547,703.1,"LIMESTONE","LIMESTONE",-0.19,-0.12,-0.15,,

"189",708969,5575539,708.9,"OUTCROP ON WAY OUT FROM DDH","OUTCROP",26,26.2,29.7,,

"190",709140,5574976,749,"OUTCROP","SAMPLE",62.1,47.7,50.9,,

"191",709070,5575050,737.5,"OUTCROP","ON SOLID",45,59.5,49.9,,

"191",709070,5575050,737.5,"OUTCROP","ON MORE SCoriaceous",49.8,56.2,43,,

10. 5 Appendix E Specific Gravity (Density) Determinations

The specific gravity (or density) of samples provide a crude measurement of the influx of materials. For instance, epidosites (altered rocks now consisting largely of epidote) are much denser than the rocks they formed from (in this case basalts).

In the tables below, density of cutoffs from thin sections are tabled below. The accuracy of the determination depends on careful measurement of size of the cutoff. The numbers reported are believed to precise within +/- .1 units. The accuracy is believed to be similar since samples of pure calcite reurn values of 2.6, 2.7 and 2.8. Previous workers have determined the SG of the metabasalts to be 2.95. Values in this report are about 3.0

Specimen	UTME, UTMN	S.G.
KL007	,707545,5578962.	3.3,
KL008B-3	,709260,5577796.	2.6,
KL009	.709457.5577824.	3.5,
KL012	,710596.5571833,	2.8,
KL013B	,711438,5572460,	3.4,
KL015C	,710965,5573031,	2.8,
KL017A	,711037,5576117,	3.3,
KL017Ab	,711037,5576117,	2.9.
KL017B	,711037,5576117,	2.9,
KL019	,710866,5576526,	2.7.
KL020	,710555,5577287,	2.9,
KL021A	,710473,5577289,	3.6,
KL029	,710139,5572433,	2.7,
KL023	,710404,5572477,	3.6,
KL025	,710344,5572678,	2.5.
KL034RED	.710110.5573003.	3.2,
KL034GREEN	,710110.5573003,	3.0.
KL035	,710152,5573163,	3.4,
KL033	,710043,5572906	3.4,
KL044	.708691,5577608.	2.4,
KL045	,708355,5577888,	2.9,
KL046CR	,708453,5575263,	3.5,
KL047M	,708346,5574968,	4.0,
KL047V	,708346,5574968,	3.3.
KL049	,707780,5574189,	2.6,
KL051	.707480.5575759.	3.3,
KL051-2	,707479,5575764,	3.5,
KL052-1	,707379,5575761,	3.1,
KL057	,707918,5575401,	2.9,
KL058	.707942,5575339.	3.0,
KL059	.708161.5576274.	3.6,
KL060	.708550.5575382.	3.0,
KL064	,709416,5574619,	2.5,
KL067	,709252,5574834,	2.9,
KL068	.709171.5575098.	3.0,
KL069	.708809,5575230,	3.2,
KL070	,708616,5575355,	2.9,
KL071	,708114,5576497,	3.0,
KL072A	,708106,5576747,	2.9,
KL072B	,708106,5576747,	2.9,
KL073B	.708082,5577139.	3.2,
KL080	.708316,5577558,	3.1.
KL088	.709941.5575481,	3.3.
KL089	.709885.5575534,	3.0.
KL090A	,709707.5575590,	2.5,
KL096*	,708491,5576865,	2.6,
KL061	,709127,5574996,	2.7,
KL033GEO4	,710043,5572906,	3.0,
KL049GEO4	.707780,5574189.	2.8,
KL086	,709741,5575891,	3.2,
KL004	,709841,5577938,	2.6,
KL006A3	.709358.5578265,	2.9.

KL006D ,709356,5578265, 3.2,
KL007F ,707545,5578962, 2.6,
KL010A ,709501,5577658, 2.6,
KL010B ,709501,5577658, 2.5,
KL011B ,711187,5575792, 2.7,
KL012 ,710596,5571833, 2.6,
KL017 ,711037,5576117, 2.5,
KL021Bcr ,710473,5577289, 2.7,
KL035G ,710152,5573163, 3.2,
KL035H ,710152,5573163, 3.1,
KL037 ,710210,5573304, 3.2,
KL038 ,710257,5573507, 3.3,
KL069A ,708809,5575230, 2.8,
KL073 ,708062,5577139, 2.6,
KL007B ,707545,5578962, 3.1,
KL090 ,709707,5575590, 2.9,
KL092A ,709550,5575986, 2.5,
KL093A ,709404,5576435, 3.1,
KL095 ,708511,5576883, 3.0,
KL096A ,708491,5576865, 3.6,
KL098 ,709054,5576725, 2.7,
KL099B ,709165,5576604, 3.3,
KL024 ,710396,5572563, 2.6,
KL035B ,710152,5573163, 2.8,
KL035T ,710152,5573163, 2.7,
118A ,700920,5582331, 2.7,
122 ,700978,5582315, 2.5,
124A--L ,700750,5581792, 2.6,
124C2-L ,700750,5581792, 2.7,
124D ,700750,5581792, 3.9,
125 ,700550,5582029, 3.1,
128--ST ,700593,5581782, 3.4,
129B ,700919,5582151, 3.0,
129C ,700919,5582151, 2.9,
167B ,702563,5582007, 3.0,
K056I ,709053,5576731, 3.4,
K063A? ,705381,5577128, 2.9,
K056M ,709053,5576731, 3.2,
K057 ,707267,5568438, 3.5,
K056G ,709053,5576731, 3.4,
K056O ,709053,5576731, 2.6,
K079 ,700923,5582154, 3.0,
K067 ,706934,5578348, 3.2,
K075B ,706045,5578208, 3.1,
K072B ,706076,5578293, 2.7,
K075A ,706045,5578208, 3.8,
K072C ,706076,5578293, 3.0,
K070D ,706165,5579402, 3.3,
K070E ,706165,5579402, 3.6,
C-3 ,709014,5575547, 2.7,
190 ,709140,5574976, 3.0,
117 ,705643,5581063, 2.9,
130A ,706062,5578877, 3.9,
131A ,706225,5578500, 2.8,
134A ,706011,5578206, 2.9,
131E ,706225,5578500, 2.8,
133B ,706111,5578178, 2.6,
134C ,706011,5578206, 3.2,
135A ,706086,5578288, 2.9,
135B ,706086,5578288, 3.7,
136A ,706233,5579792, 2.8,
136B ,706233,5579792, 3.6,
138A ,705788,5578097, 2.6,
140 ,705786,5578301, 3.1,
142D ,705874,5578239, 2.8,
145B ,703934,5581452, 3.0,
145C ,703934,5581452, 4.0,
145D ,703934,5581452, 3.8,
146D ,703933,5581650, 3.6,
146F ,703933,5581650, 4.0,
148 ,704471,5580282, 2.9,
148B ,704471,5580282, 3.2,
151A ,705194,5579879, 3.2,

151E	,705194,5579879,	3.6,	
152	,705247,5580019,	3.1,	
155	,704916,5578275,	3.2,	
160A7	,704916,5578275,	3.0,	
162B	,704839,5578557,	3.4,	
162C	,704839,5578557,	2.9,	
164	,704725,5579131,	2.9,	
165T	,704501,5579291,	3.4,	
170A	,707433,5579038,	3.6,	
170B	,707433,5579038,	3.3,	
116	,706461,5580552,	2.9,	

10.6 Appendix F Alteration Study

10.

The alteration of the Karmutsen Basalts is complex and shows effects of normal low temperature effects of a buried basalt mass described by (Kunyoshi and Liou, 1977a) as well as local contact alteration associated with the intrusion of the Island Intrusives. (This is well described in Kunyoshi and Liou, 1976b). The presence of a large mineralized system implies that large volumes of country rock reacted to the fluids, and that evidence of this interaction remains to be seen in the rocks.

Part of the history as noted below is revealed in these thin sections.

Sequence of events

Event	Unit/unit affected	Consequence
Complex Tertiary history	All	Transverse faulting
Several stages of Late Faulting	Jurassic intrusives, dykes and older	Protomylonite/ complex mineralized shear zones (post some porphyry dykes)
Intrusions	Fp Porphyrydykes	Suite of barren feldspar porphyry dykes
		Cooling, mineralization
	Jurassic Intrusions	Suite of plutonic rocks emplaced along fault/ local contact effects/ hornfels, reaction skarn and ore skarn.
	Early porphyry dykes	Locally mineralized
Early faulting	Vancouver Group	Break country rock, NS strike
		Burial metamorphism/ local mineralization- redbed copper type?
Deposition of siliciclastic rocks/ carbonaceous limestone	Parsons Bay Formation	Deposited on top of Quatsino,
Deposition of Limestone	Quatsino Formation	Deposited on top of Karmutsen/ said to be shallow water
Deposition of Volcanics	Karmutsen Formation	Deposits near top are shallow water.

The thin sections are presented in concorfance with the above schema.

Jurassic Intrusions

Granodiorite is typically hypidiomorphic. Biotite and hornblende (together about 20%) are sometimes. and the sodalime feldspars (50%) are nearly always idiomorphic; these minerals are usually cemented by a later cosolidated mass of quartz (15%)and microcrocline(15%). Small areas of graphic granite are locally found. The plagioclase is usually twinned and has a composition of andesine. The biotite is a dark brown variety, the hornblende is green or brownish green and pyroxene may appear as kernels in the hornblende. Titanite is present as an accessory as are small grains of magnetite. Thin sections K094A and B are examples.

KL009 shows a small cm xenolith probably of cognate xenolith. The fresh part is very similar to above but differs in hat chlorite alteration has affected the mafics much more. Biotite is altered or rimmed by chlorite whereas hornblende and pyroxene cores are more affected by chlorit.. The zoning is accentuated by clay alteration picking out certain zones. The xenolith is marked by .1 mm grains of same minerals in the main rock.

K098 contains a xenolith of basalt described elsewhere. The felsic portion is finer grained (½ mm or so) and contains somewhat more quartz than the coarser version. The feldspars show dusty (clay altered) cores but rims are fresh. The mafic minerals are variably chloritized, small whisps of green brown biotite are sometimes only rimmed by chlorite while other mafics (Hb?) have been converted to chlorite and opague minerals

KL020 is a Z folded sliver in a faulted cataclastic granodiorite. This shows that some faulting postdated the intrusive event.

117 is a more mafic version. Plagioclase laths are most abundant. Hornblende forms the matrix, the texture is more gabbroic and biotite and orthoclase and quartz are relegared to minor constiturents, The plagioclase feldspars are zoned and are rimmed by a rim of fresh albite. The feldspar cores are locally altered to minute whisps of phengite and chlorite. Locally hornblende is cored by partially altered pyroxene. An apatite grain was seen. Zircon halos are seen in the hornblende. It is also locally altered to a chlorite and local blebs of white mica.

Feldspar porphyries

Feldspar porphyries are locally fresh and elsewhere overprinted indicating that several generations of dykes occur.

The porphyries usually feature well developed phenocrysts of plagioclase feldspar set in a very fine grained matrix of quartz and feldspar.

116 is a dyke in the granodiorite and hence probably the youngest. It in emplaced granodiorite. It is the only one with quartz phenocrysts observed so. The rock is altered, specked with sericite and scarce mafic phenocrysts are augite relic partially replaced by hornblennde and rimmed by chlorite.

K069 and 169, both hosted in limestones are more mafic dykes with scarce plagioclase and fresh augite microphenocrysts,set in clay rich altered matrix. They are similar to basalts in the Karmutsen.150 is an altered plagioclase porphyry set in a felsic matrix. A speckle of sericite has overgrown all the minerals. K096A is similarly a hornfelsed feldspar porphyry with a felsic matrix largely recrystallized and overprinted by irregularly oriented small lathes of chlorite and clinozoisite

Parsons Bay Formation

Rocks assigned to the Parsons Bay are largely silicic clastic rocks that have been recrystallized into hornfelses. Several thin sections of very fine grained to progressively coarser fragmental rocks all show the overlay of fine grained recrystallization.

Rocks very from graphite bearing illite /sericite siltstones to sericite schists with hornblende and locally, dioside, mm sized prophyroblasts. Feldspars and other tabular minerals have a faint oriented fabric. Coarser fragmental rocks carry basalt fragments? In epidote rich matrix.

Future work should focus on the distribution of illite/sericite in these rock.

Limestones

Limestones mainly from the Quatsino formation, but include limestone within the upper Karmutsen (from which they is indistinguishable), show recrystallized and oriented fabric in the mm sized calcite crystals. These limestones were collected in the hopes they would have metamorphic minerals indicating their grade. Instead they are remarkably pure and monomineralic. They may in fact be suitable for industrial use. A typical thin section is

KL012 shows .1 mm grain size and cross veins with microclastic textures.also shows

KL044 is fine grained pure limestone with a well developed tectonic fabric, as the cleavages are aligned with the long axes of the 1 mm by 1/3 mm sized grains.

K095 is also a fine grained pure limestone with a well developed tectonic fabric, as the cleavages are aligned with the long axes of the mm sized grains.

KL073A is similar and differes in that several .1 mm sized quartz grains were also located among the .1 mm calcite crystals.

KL 093 shows shows ½ mm grain size. It too is very pure. Of significance are the stylolites developed across the grain of the rock. Perhaps calcite dissolved here could be part of the metamorphic fluids.

K096b is porphyroblastic with calcite porphyroblast (up to a.7 mm are set in a matrix of clacite with a grainsize of .1 or lww mm.. Only a few pyrite grains and a chlorite grain were noted as accessories.

K097b is taken very near a contact with intrusives and Parsons Bay rocks. In this ssample the calcite, which forms a preponderance of the rock is host for incipient potash feldspar and tremolite porphyroblasts.(up to ½ cm.)

Karmutsen Basalts

Karmutsen Formation underlies the majority of the area and local lithological variations are noted. Limy layers are noted, as are local pillowas and hyalaclastites, but the majority of the rocks are various types of cof\herent basalt flows. They vary from each other in the nature of their matrix, their phenocryst content and amygdular abundance and composition.. Each of these types are generally subtly altered by a form of burial metamorphism which is recognized by the persistence of original subtly altered by a form of burial metamorphism which is recognized by the persistence of original augite. Other samples are better called propylites and are characterized by pervasive alteration of all minerals of the rock although the texture largely remains recognizably basaltic. In some locations the basaltic texture is destroyed by recrystallization due to contact metamorphism (hornfels) or by metasomatic replacement.

The descriptions below have benefitted from a textbook on "Altered Volcanic Rocks" (Gifkins et al, 2005).

Regional Metamorphism

The rocks of the Karmutsen Formation are Triassic in age and the host to Jurassic intrusives. Hence it is to be expected that the rocks have been regionally altered.

Subtly altered basalt (pumpellyite zone of the prehnite-pumpellyite facies)

Textural varieties of basaltic flows from the Karmutsen Formation are noted below.

MatrixTexture	Phenocrysts	Amygdales	TS#
microlitic	sparse	sparse	KL060*
-do-	-do-	abundant	KL061
-do-	abundant	sparse	130B, 130A,KL069, K038, KL072A
-do-	-do-	abundant	143A, KL071A
Main type: Fine grained basaltic	sparse	sparse	158, K035G, KL076
-do-	-do-	abundant	K037
-do-	abundant	sparse	KL042-2
-do-	-do-	abundant	136A
Fine to medium grained gabbroic textures	sparse	sparse	136B, KL045

A typical subtly altered massive basalt consists of eighty to ninety percent composed of plagioclase (50-60%), augite (15-25%) and "ore"(5-10%) with rest being interstital groundmass and amygdales. The flows are generally fine grained with diabasic or porphyritic with with an intergranular diabasic texture. Primary augite is relatively fresh with edges or cleavages now ch;orite and or epidote. The feldspars are generally mainly albite with pumpellyite along cleavage surfaces. The "ore" is often replaced by a dusty black spotted mixture of leucoxen and small magnetite grains. Intrstyial glass is largely replaced by a variety of products detailed below in the table, In porphyritic phases the plagioclase are up to 2 cm in size, and are now mainly albite, but locally, fresh, normal to oscillatorily zoned glomeroporphyritic feldspars are noted. Mafic minerlas are not common as phenocrysts. Augite is largely attached to the complex phenocrysts of feldspar. In one thin section, altered mafic phenocryst with relic iddingsite may indicate the presence of olivine bearing lava flows. Fine to medium grained gabbroes are locally present. Some show white glomeroporpyritic feldspars against a black background. They are fine to mediourn grained and presumably represents sills or centers of thick flows. On the other hand, the groundmass may contain more interstitial materials and in these rocks the feldspars form little microlites set in the altered glass. The alteration can include chlorite, epidote or pumpellyite, or as locally, to brown, very fine grained chlorite/smectite mixture that obsure much of the detailed textures og the rock.

Amygdales are locally small and sparse, or they may be cm sized, of irregular shape, and locally connected to each other. They are filled by a variety of metamorphic minerals. A selection of common minerals in the amygdales are noted below.Two textural features are noteworthy, amygdales are locally lined with chlorite followed by a thin layer of quartxz which rims the quartz. "Clinozoisite pseudomorphing prehnite", and chlorite which fills the rest of the vesicle space. The clinozoisite pseudomorphing prehnite is endowed with a high refractive index and optics of clinozoisite, but mimics the habit of prehnite. It may be a pseudomorh. In the interior of the vesicle, small grains of chalcopyrite, bomite or chalcocite locally occur.

Minerals noted in thin section

primary				matrix						amygdales									
TS #	Aug	Plg	Opg	plg	c/s	chl	pum	epi	clc	qz	cz/pr	chl	pum	alk/fp	clc	sul	epid	other	notes
KL060	F	Alt	p	ab	p	p		p	p										Fresh augite, altered feldspar
KL061	small F	Alt	p	Ab	p	p	p	p	p	p	p	p			p			+	Zoned amygdale prehnite?
130A	F	F	p	ab	p	p	p												Sparse aug
130B	F	F	p	ab	p	p	p												Small aug
KL069	F	Alt	p	ab	p	p	p	p	p									+	Other mafic,chl
K038	F	Alt	p	ab	p	p	p	p											
KL072A	F	F	p	ab	p	9		p											Very fresh
143A.	F	Alt	p	ab	(p)	p	p			p	p	p	?						Albite fill amygdale
KL071A	F	Alt	p	ab	(p)	p	p	p				p							Complex chlorites
158	F	Alt	p	ab	p	p	p												
K035G	(F)	Alt	p	ab	(p)	(p)	p												
KL076	F	Alt	p	ab		p	p	p	p										Chlorite abundant
K037	F	Alt	p	ab	(p)	p	p			p	p	p	p						
KL042-2	(F)	Alt	p	ab	p	(p)	p											+	actinolite
136A	F	(F)	p	ab		p	p											+	2 mafics, one altered, the other augite
136B	F	(F)	p	ab		p	p											+	uralite
KL045	F	F	p	ab		(p)	p											+	uralite/actnolite

F fresh, (Alt) relic core, edges altered, Alt altered, Ab albite, p present,

Propylitically altered basalts (distal to a mineralizing source or a form of in situ hydrothermal reworking).

Pervasively altered basalt are transformed into epidote-chlorite-albite-+/- pumpellyite +/- actinolite rocks.

Textural varieties of basaltic flows from the pervasively altered Karmutsen Formation are noted below.

MatrixTexture	Phenocrysts	Amygdales	TS#
microlitic	sparse	sparse	NOT SEEN
-do-	-do-	abundant	176
-do-	abundant	sparse	NOT SEEN
-do-	-do-	abundant	KL073, 129C, KL088, KL067,
Main type: Fine grained basaltic	sparse	sparse	KL075
-do-	-do-	abundant	K078
-do-	abundant	sparse	K006A3
-do-	-do-	abundant	K009A
Fine to medium grained gabbroic textures	sparse	sparse	K006C, KL096, KL086

A typical pervasively altered massive basalt consists of eighty to ninety percent composed of relic albite-pumpellyite replacing plagioclase (50-60%), uralite actinolite or chlorite-epidote replacing augite (15-25%) and "ore"(5-10%) with rest being chlorite and pumpellyite replacing the interstial groundmass and amygdales. The flows are generally fine grained with diabasic or porphyritic with with an intergranular diabasic texture. Primary phenocrysts are uralite with edges or cleavages now chlorite and or epidote. The feldspars are generally mainly albite with pumpellyite along cleavage surfaces. The "ore" is often replaced by a dusty black spotted mixture of leucoxen and small magnetite grains. Interstitial glass is largely replaced by a variety of products detailed below in the table, In porphyritic phases the plagioclase are up to 2 cm in size, and are now mainly albite, Some show white glomeroporpyritic feldspars against a grey background. They are fine to medium grained and presumably represents sills or centers of thick flows. On the other hand, the groundmass may contain more interstitial materials and in these rocks the feldspars form little microlites set in the altered glass. The alteration can include chlorite, epidote or pumpellyite, or as locally, to brown, very fine grained chlorite/smectite mixture that obsure much of the detailed textures of the rock.

Amygdales are locally small and sparse, or they may be cm sized, of irregular shape, and locally connected to each other. They are filled by a variety of metamorphic minerals. A selection of common minerals in the amygdales are noted below.Two textural features are noteworthy, amygdales are locally lined with chlorite followed by a thin layer of quartxz which rims the quartz "clinozoisite pseudomorphing prehnite", and chlorite which fills the space. The clinozoisite pseudomorphing prennite is endowed with a high refractive index and optics of clinozoisite, but in the interior, it can be chalcopyrite. bornnite or chalcocite

Minerals noted in thin section

	primary			matrix						amygdales									
TS #	Aug	Plg	Opq	plg	c/s	chl	pum	epi	clc	qz	cz/pr	chl	pum	alk/fr	clc	sul	epid	othe	notes
176	alt	alt	p	alt		p	p	p		p	p								Radial spherulites
KL073,	alt	alt	p	ab		p		p	p			p							Bladed calcite
129c		alt		ab	(p)	p		p		p	p	p							
KL088	alt	alt	p	ab		p	p	p				p					p		Actinolite/ scarce prehnite
KL067	?	alt	p	ab		p		p		p	p	p	(p)		(p)				Ab in amygdale
KL075	alt	alt	p	ab		p	?	p		p		p			p		p		
K078	?	alt		alt		p	p	p		p	p	p		p					
KL006a3	?	alt	p	alt	(p)	p	(p)	p											Mostly albite
KL099	alt	alt	p			p		p										+	act/hb
KL006c	(F)t	(F)	p	ab		p		p										+	Mainly uralite
KL096	alt	(F)	p	ab		p	p	p										+	uralite
KL086	alt	(F)		ab		p	(p)	p										+	actinolite

COMPREHENSIVELY ALTERED BASALTS

Basalts nearer plurons or active systems can be reconstituted and the textures essentially obliterated. Previously, epidosites have been documented from this reading.

A suite of basaltic xenolith samples from near the edge of the Jurassic Intrusive are now amphibolite hornfels. The rocks predominantly shows a granulite texture. K093A and K097A shows relic microlitic texture with relic amygdales and recrystallized feldspar phenocrysts. fine grained granulitic texture. K094 shows relic texture of a coarser holocrystalline variety, but also with relic feldspar phenocrysts. K099B shows a more mafic phase with relic augite phenocrysts partially recrystallized and overgrown by uralite.

The signicance of these hornfelses indicate that the Karmutsen was near the pluton on its intusion, and that faulting, thogh important, was not a terran border or anything as grand as that.

10.7 Appendix G Veins and Breccias

Material can be shown to have been added to local sites most clearly where veins are observed. The location of feldspar bearing veins is shown. At least some of the feldspar is potash feldspar as shown by chemical analysis , staining and optical properties.

Table below details some of the veins with the conspicuous salmon pink feldspars.(n=_21)

KL017B	Qtz, alk fp, calcite (possibly small crystals of prehnite)
KL064	Qtz, alk fp, calcite
KL073	Bladed calcite, alk fp, qtz, chl
KL098	alk fp, chlorite prehnite?
K071B	Calcite qtz cz/pr alk fp, (chl)
K071C	Qtz, cz/pr, albite
K071E	Qtz, cz/pr, kspar and albite
K075B	Qtz, cz/pr, chlorite, alk fp, later epidote
K079	Qtz, cz/pr, kspar and albite
124D	Qtz, cz/pr, kspar and albite
124c2	Qtz, cz/pr, kspar and albite, pumpellyiteite
124A	Qtz, cz/pr, kspar and albitepumpellyite
128	Qtz, cz/pr, kspar and albite, chlorite
129B	Qtz, cz/pr, alk fp, calcite
131	Qtz, cz/pr, alk fp, chlorite
133A	Sulphide selvage, and Qtz, cz/pr, alk fp, chlorite
140	Complex, several generations of Qtz, cz/pr, kspar and albite
162A	Qtz, epidote, kspar and albite
176	Qtz, cz/pr, kspar and albite
178B	Qtz, cz/pr, kspar and albite – kspar is bladed
181C-1	Bladed qtz crystals in matrix of Qtz, cz/pr, kspar and albite

* cz/pr represents the clinozoisite with a radial habit which may have pseudomorphed prehnite.

Veins with alkalic feldspars are often accomapanied by local sulphide concentratios, especially in the selvage which is largely chloritic. Of particular interest are the veins with bladed crystals that intersect at low angles. They approach textures thought to have been formed by boiling in the vein. This implies relatively near surface formation of the veins, either on the way down or the way up.

. large suite of other veins which seem to be mainly some combination of calcite, quartz and clinozoisite/epidote have also been collected. The paucity of chlorite and sericite/illite is noted.

Not pink veins (N=44)

136B	Qtz, epidosite
136C	Qtz. chlorite
138A	qtz, cut by qtz calcite
138C	Shz w/ qtz chlorite
138D	calcite
139D	qtz
142B	Multiple generation qtz, some show bladed qtz
142D	Multiple generation qtz, sparse epidote
152	Wall paper w/ chacopyrite, malachite stains adjacent minerals
159A	Zoned, epidote to calcite to qtz (center) cut by qtz epidote
167B	Feathered epidote veins
168B	Calcite qtz, calcite
174A	Qtz, calcite, epidote, multiple generations
175	Calcite qtz
K035A	Epidote and unid clay gouge
K035H	Qtz, calcite epidote
K035G	Calcite wall paper
K056D	Sericite, epidote, pumoellyite and qtz cut by later epidote vein
K056 O	Epidote qtz
K056G	Anastomosing pyrite and epidote
K063B	Epidote w. core of qtz
K70D	Epidote calcite
K092A	Epidote qtz
K096A	Chlorite qtz pyrite
K098	epidote
K067	Sheared calcite with qtz augen
KL007b	Epidote cut by later qtz wallpaper
KL0012	Calcite
KL0013B	Qtz w/ core of pyrite
KL019	Illite and clay gouge, several generations
KL021A	Illite qtz chlorite

KL035	Qtz epidote chlorite
KL040T	Qtz calcite w/ bornite
KL042-1	Deformed calcite
KL043A	Qtz cut by qtz
KL044	calcite
KL052-1	Qtz epidote
KL057	Calcite qtz stylolites
KL058	Epidote qtz chlorite
KL059	Wall paper epidote
KL070	Prehnite, qtz chlorite
KL071	Calcite, prehnite, pumpellyite, cut by later calcite
KL073b	Qtz sericite chlorite
KL086	Pyrite wall paper
KL088	Epidote prehnite?

In future field work the location of sulphide bearing wall paper joints need to be actively sought and recorded.

10. 7 Appendix H **Whole Rock Analyses**

A number of fresh and altered rocks were analysed for major and minor components Their locations are given below. The chemical data is tabulated in the following appendx.

Locations of analysed samples.

135A	331608	0706087, 5578288	copper bearing
146B	331644	703933,5581650,	min basalt
164	331654, ,	704725,5579131,516.9	black basalt
136A	331609,	706233, 5578792	dyke
150	331624	705179, 5579988	dyke
170B	331648	707433,5579038,	dyke in lst
170A	331649	707433,5579038,	rusty dyke in lst
169	331656	0707549, 5578968	dyke
116	331657	0706462, 5580552	dyke
117	331658	0706462, 5580552	dyke
175",	331663,	708851,5576536,	propylite
178A1a	331665	708801,5575252,	mineralized material
1178A3",	331664	708801,5575252,	min vein
"178 A4-1	116447,	,708801,5575252,	chlorite selvage
178 A4-2",	116446 ,	,708801,5575252,	pink vein
178B1".	116448,	,708801,5575252,	pink vein
178Bb",	116449	,708801,5575252,	total vein w/sulp
178B3",	116450	,708801,5575252,	copper min in basalt
179A",	331660,	,708554,5575389,	copper min in altered materialand pink patch
179B",	331661,	,708554,5575389,	fresh basalt
179C",	331662,	,708554,5575389,	vein
"180A",	116441,	,708443,5575182,	basalt amygdaler
180c2c	116442	,708443,5575182	vein material
180c1	116443	,708443,5575182	vein material
180b	116444	,708443,5575182	dyke
185	116445	,709017,5575547,	limestonet
191b		,709070,5575050,	scoria

The analyses are found in attached data sheets.

10.7 Appendix I Certificates of Analyses

Data is drawn from the following certificates.from ACME
The following certificates contain some samples claimed in previous assessment reports. The samples claimed in this report have not been previously claimed.

A605453, 11 samples

Certificate # reports on new samples
A607951 17 samples
A607952 10 samples
a607854 1 sample

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716
Schau, Mikkel
Acme file # A605453 Received: AUG 22 2006 * 11 samples in this disk file.
Analysis: GROUP 4A - 0.100 GM SAMPLE BY LIBO2/LI2B4O7 FUSION, ANALYSIS BY ICP-ES. (LIBO2/LI2B4O7 FUSION MAY NOT BE SUITABLE FOR MASSIVE SULFIDE OR HIGH

ELEMENT	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	TOT/C	TOT/S	SUM
SAMPLES	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	%	%
331608	39.78	11.25	13.6	5.23	12.14	1.06	0.35	1.76	0.16	0.18	0.01	53	35	13	2.68	0.16	98.53
331609	58.83	16.42	7.34	2.81	5.86	3.53	1.56	0.72	0.17	0.13	0	6	19	2.5	0.06 <.01		99.87
331624	63.72	15.61	5.77	2.17	3.59	3.41	2.57	0.6	0.13	0.1 <.001	<5		16	2.2	0.08 <.01		99.87
331643	32.25	14.59	25.35	4.67	13.06	0.54 <.04		1.23	0.09	0.15	0.03	70	24	7.7	0.02	6.66	99.7
331648	46.5	13.77	8.56	6.9	20.96	0.59	0.19	0.63	0.11	0.22	0.05	67	27	1.4	0.02	0.4	99.9
331649	41.93	11.59	16.05	5.46	19.04	0.56	0.16	0.54	0.1	0.25	0.04	98	22	4.1	0.03	2.13	99.83
331654	48.94	12.72	15.66	6.09	7.13	4.21	0.08	1.98	0.18	0.21	0.01	65	40	2.7	0.11	0.01	99.92
331656	49.55	18.2	9.86	4.68	9.87	2.94	0.62	0.98	0.2	0.16	0.01	19	33	2.8	0.05	0.01	99.88
331657	66.21	15.14	4.42	1.52	3.8	3.33	2.67	0.43	0.1	0.07 <.001		6	11	2	0.02 <.01		99.69
331658	46.51	19.88	10.88	4.87	11.21	2.24	0.73	0.93	0.13	0.15	0 <5		30	2.3	0.02	0.03	99.84
STANDARI	58.2	14.12	7.62	3.33	6.38	3.7	2.13	0.69	0.83	0.39	0.55	36	25	1.9	3.18	4.21	99.84

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)2
Schau, Mikkel
Acme file # A605453 Received: AUG 22 2006 * 11 samples in this disk file.
Analysis: GROUP 4B - REE - 0.100 GM BY LiBO2/LI2B4O7 FUSION, ICP/MS FINISHED.

ELEMENT	Ba	Be	Co	Cs	Ga	Hf	Nb	Rb	Sn
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
331608	64.1	1	35.2	0.2	25.9	3.1	7.8	6.9	1
331609	580	1	14.4	0.1	15	2.9	5.5	27.6	1
331624	895.9	1	13.9	0.5	13.1	3.7	6.7	47.3	1
331643	<4.0	<1	73.9	0.2	20.4	2.3	6.1	0.7	1
331648	63.6	2	35.1	0.4	11.1	3	3.6	4	<1
331649	55.4	<1	72	0.3	12	2.5	3.1	3.7	2
331654	14.2	<1	54.9	0.1	17.6	3.7	10.5	1.8	2
331656	320.4	2	30	0.7	18.3	2.3	4.6	12.4	1
331657	1248.5	<1	9.4	0.3	14.7	3.4	6.3	57.8	1
331658	327.5	1	33.7	0.4	20.4	2	2.8	16.6	1
STANDARI	547.3	1	27.9	7.1	18.5	10.8	21.4	29	18

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Sr ppm	Ta ppm	Th ppm	U ppm	V ppm	W ppm	Zr ppm	Y ppm	La ppm	Ce ppm
90.4	0.5	0.7	0.2	312	1.5	88.5	23.9	7	17.4
343.8	0.4	2.2	0.9	165	0.4	86.9	21.2	11.5	26.3
301.2	0.5	4.7	1.6	132	2.3	113.4	19.5	14.6	30
406	0.2	0.3	0.1	334	27.6	61.4	15.1	5	12.6
433.2	0.2	1.3	0.7	171	0.8	73.2	14.1	3.5	8.1
342.5	0.2	1.9	1.2	159	1.2	71.7	16.7	6.2	12.9
115	0.6	0.6	0.2	405	0.6	108.5	29.8	7.2	21.9
551	0.5	0.3	0.4	303	0.5	63.3	21.1	8.9	21
324.4	0.6	5.7	2.2	88	0.7	111.5	15.9	15.5	30.5
519.6	0.4	3	0.7	427	0.8	57.5	13.8	7	14.8
405.4	7.4	9.6	16.6	209	15.4	285.2	32.9	12	27.9

Pr ppm	Nd ppm	Sm ppm	Eu ppm	Gd ppm	Tb ppm	Dy ppm	Ho ppm	Er ppm	Tm ppm
2.56	13.8	3.7	0.98	3.89	0.85	3.96	0.82	2.64	0.31
3.35	14.8	3.4	0.91	3.37	0.67	3.05	0.7	2.34	0.33
3.52	16.6	2.9	0.77	2.98	0.6	3.15	0.65	2.1	0.33
1.8	9.7	2.5	0.83	2.68	0.54	2.62	0.56	1.72	0.27
1.19	6.2	1.8	0.33	2	0.36	2.34	0.45	1.48	0.18
1.78	9.4	2.3	0.61	2.52	0.45	2.65	0.5	1.73	0.25
3.09	16.2	4.4	1.35	5.46	1.04	5.14	0.98	3.14	0.41
2.81	15.1	3.4	1.03	3.45	0.71	3.46	0.72	2.29	0.3
3.57	14.4	2.7	0.68	2.36	0.46	2.42	0.5	1.75	0.23
1.96	9.5	2	0.82	2.27	0.49	2.34	0.48	1.61	0.2
3.39	13.9	3	0.89	2.91	0.51	3.01	0.56	1.82	0.25

Yb ppm	Lu ppm
2.16	0.33
2.33	0.35
2.26	0.34
1.63	0.21
1.38	0.19
1.75	0.27
2.76	0.41
2.25	0.36
1.8	0.29
1.42	0.22
1.79	0.27

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)2
Schau, Mikkel
Acme file # A607951 Received: OCT 23 2006 * 17 samples in this disk file.
Analysis: GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR OI

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
C116441	1	425	7	77	4.4	52	25	488	4.33
C116442	1	568	13	43	4.1	25	14	346	2.05
C116443	1	597	<3	39	1.1	45	19	359	2.96
C116444	<1	42	6	93	0.7	62	32	557	4.13
C116445	<1	7	<3	1	<.3	4	<1	983	0.14
C116446	1	471	8	3	1	1	1	90	0.46
C116447	1	832	5	100	0.8	75	63	1074	15.53
C116448	1	272	<3	8	0.5	12	6	146	1.46
C116449	1	167	3	10	<.3	12	6	154	1.74
C116450	1	281	3	11	0.5	12	6	192	1.89
RE C1164!	<1	273	<3	10	0.6	12	6	184	1.82
331659	<1	82	4	59	<.3	86	47	1160	8.25
331660	<1	1420	<3	39	1.3	42	22	294	3.62
331661	<1	91	<3	49	<.3	155	33	779	4.8
331662	<1	57	<3	60	<.3	109	30	726	4.19
331663	1	60	<3	12	<.3	69	17	450	1.28
331664	1	494	3	100	0.6	61	56	909	13.56
STANDARI	21	102	66	429	1.1	55	9	627	2.45

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)2
Schau, Mikkel
Acme file # A605453 Received: AUG 22 2006 * 11 samples in this disk file.
Analysis: GROUP 1DX - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR (

ELEMENT Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	
SAMPLES ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
331608	2.4	9004.9	7.9	95	46.5	3.7	8.6	0.1	0.1
331609	0.6	97.5	1.4	62	2.6	0.7	0.1 <.1	<.1	
331624	0.6	33.2	2.8	32	6.2	0.7	0.1	0.1 <.1	
331643	0.2	597.4	43.2	62	46.6 <.5		0.3	0.2	0.2
331648	0.7	243.1	5.1	22	32.4	16.3	0.3	0.1	0.1
331649	0.5	888.1	2.8	28	87	9.2	0.2	0.1 <.1	
331654	0.4	156.4	0.3	117	38.1	0.7	0.1 <.1	<.1	
331656	0.5	90.9	0.9	57	10	1	0.1 <.1	<.1	
331657	0.2	7.6	1.4	50	2.8	0.6	0.1 <.1	<.1	
331658	0.8	141.1	1.5	35	3.8 <.5		0.1 <.1	<.1	
STANDARI	20.2	108.6	70.8	406	55.2	47.1	6.1	5.8	4.4

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)NE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-MS.

Ag	Au	Hg	Tl	Se	
ppm	ppb	ppm	ppm	ppm	
	4.9	2.1	0.03 <.1	<.5	
<.1		1.1 <.01	<.1	<.5	
<.1		0.7 <.01	<.1	<.5	
	0.3	2.4 <.01	<.1		8.2
	0.1 <.5	<.01	<.1		0.6
	0.2	0.6 <.01		0.1 <.5	
<.1		2.3 <.01	<.1	<.5	
<.1		6.5 <.01		0.2 <.5	
<.1		1.3 <.01		0.1 <.5	
<.1		1.7 <.01	<.1	<.5	
	0.9	76.4	0.2	4.1	3.2

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)2
Schau, Mikkel
Acme file # A607951 Received: OCT 23 2006 * 17 samples in this disk file.
Analysis: GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR O

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
C116441	1	425	7	77	4.4	52	25	488	4.33
C116442	1	568	13	43	4.1	25	14	346	2.05
C116443	1	597 <3		39	1.1	45	19	359	2.96
C116444	<1	42	6	93	0.7	62	32	557	4.13
C116445	<1	7 <3		1 <.3		4 <1		963	0.14
C116446	1	471	8	3	1	1	1	90	0.48
C116447	1	832	5	100	0.8	75	63	1074	15.53
C116448	1	272 <3		8	0.5	12	6	146	1.48
C116449	1	167	3	10 <.3		12	6	154	1.74
C116450	1	281	3	11	0.5	12	6	192	1.89
RE C1164!	<1	273 <3		10	0.6	12	6	184	1.82
331659	<1	82	4	59 <.3		86	47	1160	8.25
331660	<1	1420 <3		39	1.3	42	22	294	3.62
331661	<1	91 <3		49 <.3		155	33	779	4.8
331662	<1	57 <3		60 <.3		109	30	726	4.19
331663	1	60 <3		12 <.3		69	17	450	1.28
331664	1	494	3	100	0.6	61	56	909	13.56
STANDARI	21	102	66	429	1.1	55	9	627	2.45

53-3158 FAX(604)253-1716

NE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.

As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	
<2	<8	<2		3	29 <.5		6 <3		129	1.48
<2	<8	<2	<2		46 <.5		5 <3		58	1.42
<2	<8	<2		2	64	0.5 <3	<3		94	1.7
<2	<8	<2		2	36 <.5	<3		3	104	1.27
	3	11 <2	<2		341 <.5	<3		3	4	34.38
<2	<8	<2	<2		23	0.9 <3	<3		11	1.54
	9 <8	<2		5	8	0.5 <3	<3		343	1.13
<2	<8	<2		2	49 <.5	<3	<3		80	1.69
<2	<8	<2	<2		47 <.5	<3	<3		76	1.72
<2	<8	<2		2	65 <.5	<3	<3		104	2.01
<2	<8	<2		2	62	0.5 <3	<3		97	1.92
<2	<8	<2		3	49	0.7 <3	<3		226	1.26
<2	<8	<2	<2		37	1.7 <3	<3		106	1.3
<2	<8	<2		2	529	0.6 <3	<3		111	1.94
<2	<8	<2		2	56	0.8 <3		4	123	4.72
	4 <8	<2	<2		74 <.5	<3		3	55	5.77
	3 <8	<2		4	7	1.1 <3	<3		312	1.1
	48 <8	<2		5	73	6.8	5	6	86	0.98

P	La	Cr	Mg	Ba	Ti	B	Al	Na	K
%	ppm	ppm	%	ppm	%	ppm	%	%	%
0.06	4	35	1.56	135	0.6	4	2.14	0.04	0.01
0.03	2	41	0.83	36	0.33	<3	1.74	0.07	0.05
0.06	4	24	0.72	24	0.49	3	1.37	0.01	0.01
0.06	4	44	1.9	8	0.5	<3	2.27	0.01	<.01
0.01	<1	4	0.11	5	0.01	<3	0.03	<.01	<.01
0	<1	3	0.04	31	0.01	<3	0.59	0.06	0.08
0.16	12	11	3.84	6	0.55	<3	3.73	0.02	0.04
0.04	3	10	0.23	13	0.43	<3	0.91	0.01	0.01
0.04	3	10	0.32	8	0.36	<3	0.91	0.01	0.01
0.06	3	12	0.32	17	0.5	<3	1.21	<.01	<.01
0.05	3	11	0.31	16	0.46	<3	1.15	<.01	<.01
0.04	5	156	1.76	10	0.6	<3	2.22	0.03	0.01
0.04	3	29	1.08	4	0.42	<3	1.57	0.01	<.01
0.1	9	121	3.69	92	0.21	<3	4.18	0.16	0.06
0.06	5	100	2.2	8	0.35	<3	2.26	0.03	0.02
0.04	2	54	0.46	5	0.29	<3	0.61	0.02	0.01
0.13	10	11	3.66	4	0.59	<3	3.42	0.02	0.03
0.08	13	190	1.07	411	0.12	37	1.05	0.08	0.49

W
ppm
<2
<2
<2
<2
<2
<2
<2
<2
<2
<2
<2
<2
<2
3
<2
<2
2
8

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)2
Schau, Mikkel
Acme file # A607951 Received: OCT 23 2006 * 18 samples in this disk file.
Analysis: GROUP 3B - FIRE GEOCHEM AU, PT, PD - 30 GM SAMPLE FUSION, DORE DISSOLVED IN AQUA
GR(>5PPM FOR 50 GM.

ELEMENT	Au**	Pt**	Pd**
SAMPLES	ppb	ppb	ppb
G-1	5	<3	<2
C116441	20	8	17
C116442	9	3	7
C116443	11	10	10
C116444	2	7	14
C116445	<2	<3	<2
C116446	3	<3	5
C116447	7	5	51
C116448	4	3	13
C116449	2	3	11
C116450	4	<3	15
RE C1164!	2	<3	16
331659	4	3	14
331660	33	9	28
331661	2	<3	3
331662	2	4	7
331663	2	6	17
331664	7	4	38
STANDARI	482	467	472

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

Schau, Mikkel

Acme file # A607952 Received: OCT 23 2006 * 10 samples in this disk file.

Analysis: GROUP 4A - 0.200 GM SAMPLE BY LIBO2/LI2B4O7 FUSION, ANALYSIS BY ICP-ES. (LIBO2/LI2B4O7 FUSION MAY NOT BE SUITABLE FOR MASSIVE SULFIDE OR HIGH

ELEMENT	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	TOT/C	TOT/S	SUM
SAMPLES	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	%	%
C116441	48.55	15.39	11.57	5.1	11.22	3.14	0.11	2.02	0.2	0.17	0.03	71	34	2.3	0.02	0.01	99.8
C116444	47	13.83	12.65	6.14	13.76	0.85	0.05	2.15	0.2	0.22	0.03	84	36	3.1	0.01	<.01	99.98
C116445	0.97	0.31	0.18	0.25	56.64	0.03	<.04	0.02	0.05	0.13	0	<5	1	41.3	11.82	0.01	99.91
C116446	61.62	18.49	2.25	0.1	7.27	4.6	3.29	0.04	0.02	0.03	<.001	<5	1	1.1	0.34	0.05	99.81
C116447	36.17	13	23.96	7.49	6.58	2.44	0.12	4.82	0.46	0.18	0	89	56	4.5	0.04	1.75	99.74
331660	51.8	13.15	12.32	4.47	13.66	0.71	<.04	1.39	0.14	0.14	0.02	68	31	2	0.01	0.01	99.84
331661	44.27	14.05	10.84	10.87	11.71	1.13	0.81	1.03	0.28	0.18	0.07	161	35	4.6	0.07	<.01	99.87
331663	47.36	11.73	11.04	3.96	19.35	1.18	0.21	1.13	0.11	0.2	0.05	122	30	3.5	1.52	0.37	99.84
331664	39.45	13.67	20.95	7.76	5.86	3.35	0.08	3.91	0.36	0.17	0	70	52	4.2	0.05	0.91	99.78
STANDARD	58.2	14.12	7.63	3.34	6.41	3.69	2.15	0.69	0.83	0.39	0.55	37	25	1.9	3.09	4.26	99.91

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)2
Schau, Mikkel
Acme file # A607952 Received: OCT 23 2006 * 10 samples in this disk file.
Analysis: GROUP 1DX - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR (

ELEMENT	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
C116441	1	444.7	3.5	85	52.4	1.7	0.2	4.3	0.4
C116444	0.4	48.8	4.1	96	66.4	0.6	<.1	0.4	0.1
C116445	0.4	8.3	1.3	2	3.8	4.4	<.1	0.6	<.1
C116446	0.8	504.4	7.1	3	1.1	1	0.8	1.1	0.2
C116447	3.2	917.6	1.4	102	77.9	9.1	2.3	0.1	0.1
331660	0.4	1476.5	0.7	37	42.3	0.5	1	0.1	0.1
331661	0.3	96.7	1.7	50	157.7	1.1	<.1	0.1	<.1
331663	0.6	66.9	1.5	12	78.3	5.4	<.1	0.2	0.1
331664	2.4	526.1	1	114	64.6	6.5	1.6	0.1	0.1
STANDAR	21.2	106.2	72.6	406	54.8	49.9	6.3	5.7	4.6

Pr ppm	Nd ppm	Sm ppm	Eu ppm	Gd ppm	Tb ppm	Dy ppm	Ho ppm	Er ppm	Tm ppm	
3.24	16.2	4.6	1.37	4.82	0.83	4.52	0.89	2.64	0.38	
3.31	18.4	4.5	1.47	4.96	0.84	4.99	0.91	2.69	0.4	
0.06	0.5	0.1	<.05	0.1	0.03	<.05	<.05	0.07	<.05	
0.06	0.4	0.1	<.05	0.06	0.03	0.11	<.05	0.08	<.05	
7.33	38	10.1	3.05	11.25	2.04	11.48	2.16	6.3	0.9	
2.39	12.5	3.2	1.05	3.57	0.65	3.5	0.72	2	0.32	
3.48	18.6	3.8	1.23	3.76	0.56	2.96	0.54	1.55	0.23	
1.67	8.4	2.5	0.83	2.97	0.52	3.05	0.56	1.53	0.25	
6	30.9	8	2.41	9.25	1.69	9.11	1.79	5.29	0.75	
3.39	14	2.9	0.83	2.92	0.54	3.06	0.58	1.85	0.26	

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Sr ppm	Ta ppm	Th ppm	U ppm	V ppm	W ppm	Zr ppm	Y ppm	La ppm	Ce ppm
186.8	0.6	0.9	0.5	357	0.2	111.1	25.8	9.5	22.[illegible]
253.8	0.7	0.9	0.3	393	0.1	115.4	27.6	9.1	21.5
411.8	<.1	<.1	0.5	7	<.1	2	0.8	0.6	0.5
363.2	<.1	<.1	0.1	44	<.1	2.8	0.7	<.5	0.5
53.4	1.5	1.7	0.5	717	0.4	283.6	65.1	18.2	48.2
201.1	0.4	0.6	0.2	370	0.1	81	20.7	6.2	15.4
812.6	0.6	1.4	0.6	294	0.2	55.1	16.5	12	27.1
417.4	0.3	0.2	0.1	275	0.1	59.2	16.3	3.8	10.7
48.9	1.4	2	0.5	631	0.3	216.4	52.4	14.7	40.4
415.7	7.2	9.9	16.4	206	15.4	295.6	31.3	11.9	27.2

Yb ppm	Lu ppm
2.3	0.35
2.59	0.37
0.08	0.02
0.09	0.02
6.09	0.9
1.96	0.29
1.4	0.21
1.51	0.26
4.93	0.7
1.72	0.26

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)2
Schau, Mikkel
Acme file # A607952 Received: OCT 23 2006 * 10 samples in this disk file.
Analysis: GROUP 4B - REE - 0.200 GM BY LiBO2/LI2B4O7 FUSION, ICP/MS FINISHED.

ELEMENT	Ba	Be	Co	Cs	Ga	Hf	Nb	Rb	Sr.
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
C116441	169.1	1	36.9	0.1	20.5	3.5	10.4	2.2	1
C116444	16.2	<1	46.3	<.1	18.8	3.4	10.8	1.3	1
C116445	15.6	<1	<.5	<.1	<.5	<.5	<.5	0.8	<1
C116446	1326.5	<1	2.1	0.3	18.2	<.5	<.5	39	<1
C116447	38.8	<1	72.3	0.5	25.3	8.7	25.8	3.4	3
331660	9.2	<1	34.5	<.1	30.9	2.3	7.6	0.5	1
331661	480.1	<1	46.6	0.3	13.8	1.6	8.5	7.6	1
331663	47.9	<1	30	<.1	13.6	1.6	5.1	2.5	1
331664	24.2	<1	66.6	0.5	20.9	6.4	18.4	2.3	2
STANDARI	507.5	1	27.8	7.1	18.1	10.8	21.4	28.8	14

53-3158 FAX(604)253-1716

)NE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-MS.

Ag	Au		Hg	Tl		Se	
ppm	ppb		ppm	ppm		ppm	
	3.8	16.2	0.01	<.1		<.5	
	0.6	1.4	<.01	<.1		<.5	
	0.3	1.4	0.02	<.1		<.5	
	0.9	3.1	0.02	<.1		<.5	
	0.5	7.2	<.01		0.1		0.7
	1.3	17.5	<.01	<.1		<.5	
	0.1	2.5	0.01		0.1	<.5	
<.1		1.7	0.01	<.1			0.7
	0.3	6.6	<.01	<.1			0.5
	0.9	123.9	0.2		4.3		3.8

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716
Schau, Mikkel
Acme file # A607954 Received: OCT 23 2006 * 2 samples in this disk file.
Analysis: GROUP 4A - 0.200 GM SAMPLE BY LIBO2/LI2B4O7 FUSION, ANALYSIS BY ICP-ES. (LIBO2/LI2B4O7 FUSION MAY NOT BE SUITABLE FOR MASSIVE SULFIDE OR HIGH

ELEMENT	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	TOT/C	TOT/S	SUM
SAMPLES	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	%	%
331665	48.93	15.16	11.19	2.03	11.49	3.07	0.93	1.18	0.14	0.1	0.01	14	20	5.4	0.74	2.21	99.63
STANDARI	58.19	14.14	7.64	3.33	6.39	3.68	2.15	0.69	0.83	0.39	0.55	44	25	1.9	3.15	4.18	99.89

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)2
Schau, Mikkel
Acme file # A607953 Received: OCT 23 2006 * 2 samples in this disk file.
Analysis: -AU : -150 AU BY FIRE ASSAY FROM 1 A.T. SAMPLE. DUPAU: AU DUPLICATED FROM -150 MESH

ELEMENT	S.Wt	NAu	#NAME?	TotAu
SAMPLES	gm	mg	gm/mt	gm/mt
331665	446	<.01	0.1	0.1
STANDARI	-	-	6.02	6.02

53-3158 FAX(604)253-1716

t. NAU - NATIVE GOLD, TOTAL SAMPLE FIRE ASSAY.

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)2
Schau, Mikkel
Acme file # A607954 Received: OCT 23 2006 * 2 samples in this disk file.
Analysis: GROUP 4B - REE - 0.200 GM BY LiBO2/LI2B4O7 FUSION, ICP/MS FINISHED.

ELEMENT	Ba	Be	Co	Cs	Ga	Hf	Nb	Rb	Sn
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
331665	518	<1	20.4	0.1	22	2.2	7	12	1
STANDAR	512.2	1	26.8	7	17.5	9.5	20.9	28	15

53-3158 FAX(604)253-1716

Sr	Ta	Th	U	V	W	Zr	Y	La	Ce
ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
304.5	0.4	0.5	0.2	300	<.1	78.5	22.8	11.6	24.7
413.7	7.2	10.3	16.3	204	15.1	286.6	32.4	12	27.4

Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
3.2	14.2	3.5	1.31	3.92	0.73	4.23	0.73	2.19	0.29
3.43	14.3	3	0.81	2.88	0.54	2.93	0.58	1.78	0.28

Yb	Lu
ppm	ppm
1.96	0.3
1.83	0.27

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)2
Schau, Mikkel
Acme file # A607954 Received: OCT 23 2006 * 2 samples in this disk file.
Analysis: GROUP 1DX - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR (

ELEMENT	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi
SAMPLES	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
331665	9.3	3735.4	2.4	35	18.7	22.7	5.5	0.2	0.3
STANDARI	22.7	106.4	69.9	389	53.6	46.9	6.4	5.7	4.5

53-3158 FAX(604)253-1716

)NE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-MS.

Ag	Au	Hg	Tl	Se
ppm	ppb	ppm	ppm	ppm
2	101.7	0.02	0.2	1.3
0.9	51.9	0.2	4.2	3.7