



## ASSESSMENT REPORT TITLE PAGE AND SUMMARY

**TITLE OF REPORT:** Assays and Lithogeochemistry of Veins and stratabound sulphides in KRINGLE-Consolidated Claim Group

**TOTAL COST:** \$11,000.00

AUTHOR(S): Mikkel Schau; P.Geo.

SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):

STATEMENT OF WORK EVENT NUMBER(S)/DATE(S ): SOW 4795662, 2010/sep/25

YEAR OF WORK: 2010

PROPERTY NAME: Kringle Consolidated

CLAIM NAME(S) (on which work was done): Tenures 515028, 515029, 515930,  
521073, 529780, 797102

COMMODITIES SOUGHT: Copper, precious metals

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 092L 170, 092L 163, 092L 249,  
092L 222

MINING DIVISION: Nanaimo Mining Division

NTS / BCGS: NTS 092L/01, 092L/08

LATITUDE: \_\_\_\_ 50 \_\_\_\_ ° \_\_\_\_ 19 \_\_\_\_ , \_\_\_\_\_ "

LONGITUDE: \_\_\_\_ 126 \_\_\_\_ ° \_\_\_\_ 06 \_\_\_\_ , \_\_\_\_\_ " (at centre of work)

UTM Zone: EASTING: NORTHING:

OWNER(S): Mikkel Schau

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OPERATOR(S) [who paid for the work]:

Mikkel Schau

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REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**)

Karmutsen basalt, limestone, feldspar porphyry, shear zones, veins, disseminations, propylitic, chalcopyrite, bornite, volumes unknown

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:

1859, 1993, 3306, 3795, 14284, 18255, 22409, 23906, 26930, 27070, 27463, 27736, 28327, 28328, 28747, 30121, and 31039

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (in metric units)			ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)					
Ground, mapping	100 ha	At 1:10000	(local sketches)	All six	\$3,000.00
Photo interpretation					
GEOPHYSICAL (line-kilometres)					
Ground					
Magnetic					
Electromagnetic					
Induced Polarization					
Radiometric					
Seismic					
Magnetic Susceptibility	315 at 48 sites			All six	\$500.00
Other					
GEOCHEMICAL (number of samples analysed for ...)					
Soil					
Silt					
Rock	Acme	46	ICP-MS (15 gm)	46 ultratrace	All six
Whole rock	Acme	7	Whole rock		All six
					Total: \$3,000.00
DRILLING (total metres, number of holes, size, storage location)					
Core					
Non-core					
RELATED TECHNICAL					
Sampling / Assaying	18 Cu Ag assay, 3 Cu, 24S, 6 FA Au Pt Pd			All six	\$500.00
Petrographic	4 TS, 1 PTS			515028	\$1,000.00
Mineralographic					
Metallurgic					
PROSPECTING (scale/area)	100 ha	1:10,000		All six	\$3,000.00
PREPATORY / PHYSICAL					
Line/grid (km)					
Topo/Photogrammetric (scale, area)					
Legal Surveys (scale, area)					
Road, local access (km)/trail					
Trench (number/metres)					
Underground development (metres)					
Other					
				<b>TOTAL COST</b>	<b>\$11,000.00</b>

**BC Geological Survey  
Assessment Report  
31856**

Assessment Report

**ASSAYS AND LITHOGEOCHEMISTRY**

of

**Veins and stratabound sulphides**

**Kim Creek, 106D4 region**

in

**KRINGLE-Consolidated Claim Group**

(Tenures 515027, 515028, 515029, 515030, 515032, 515033, 515034, 515386,  
515924, 515925, 515926, 515930, 516017, 521073, 529780, 797082, and  
797102)

**Nanaimo Mining District**

for

**Mikkel Schau, owner**

by

**Mikkel Schau, P.Geo.**

**For September 27, 2010**

**(submitted December 21, 2010)**

## SUMMARY

The Kringle claim group, located in northern Vancouver Island, 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 several km wide, along the edge of the pluton, and are locally exposed in logging road cuts.

Previously, in the sixties, a few samples with 25% copper and 0.78 opt gold found at Boyes Creek (in the Klejne Claim just south of the Kringle claims) excited the prospecting community. Exploration work was carried out in the area over the next 4 decades. This work resulted in several Minfile showings, the most important of which is Adam West (092L-222?) which has been trenched and drilled in a preliminary fashion yielding copper values such as % over m (hole ) at limestone basalt contacts.

The Kringle-Consolidated Claims currently covers about 2909.1 ha. They partly straddle the Island Highway (19) and are near manpower and infrastructure at Sayward/Kelsey Bay and/or Woss.

Recent assessment reports (ARIS: 26930, 27070, 27463, 27736, 28327, 28328, 28747, 30121 and 31039) by this author have noted at least fourteen new locations yielding large (1 kg or larger) grab samples with well over a percent copper, silver values up to 67 ppm and gold values up to 1169 ppb. These previous assays combined with those from this work, including the two new showings (Cruller and Linzer) indicate the abundant presence of locally interesting mineralization (but give no indication of grades or volumes).

The geology consists of

the Vancouver group comprising the shallow north-northeast dipping Triassic Karmutsen Formation, consisting largely of massive feldspar phryic basalt but with local intraformational limestone lenses intercalated near the top; the overlying Quatsino limestone; and siliciclastic and limy sediments of the largely upper Triassic Parsons Bay formation

deformed, dyked, and orogen (NW) parallel faults,

mid Jurassic plutons emplaced along the above deformed regions, which is mainly of the brittle type, facilitating circulation of fluids supplied and energized by the pluton, yielding local altered and mineralized volumes.

A Post Jurassic geologic history which is complex, and not fully understood, but includes later (transverse?) faulting.

This report documents new types of mineralization, located mainly along logging road spurs of Kim Creek 106D west of the Adam River. Two locations merit special mention:

The **Cruller** quarry showing

Local distal skarn contact mineralization near a newly located porphyritic monzodiorite dyke

The **Linzer** area

Bornite disseminations in a “horizon” in altered basalt are seen along a 100 m stretch of road

Bornite veins and breccias cutting basalts at several localities

Veins topographically and stratigraphically above area of disseminations.

Showing	Assay # (kg)	Rock type	Cu, %	Ag, ppm	Au, ppb
unnamed	6635 (1.13)	Vein in basalt	<b>1.715</b>	5	70
Cruller	6503 (0.23)	Contact shear zone	<b>2.83%</b>	6	22.9
Linzer (upper)	6626 (0.45)	Breccia vein	<b>2.816%</b>	12	4.3
Linzer (mid)	6605 (1.05)	Upper breccia/Vein, in basalt	<b>5.767</b>	15	<b>932</b>
Linzer	6606 (1.38)	disseminations basalt	<b>4.290</b>	12	<b>589</b>
Linzer	6609 (0.31)	Basalt, disseminations	<b>4.014</b>	6	70
Linzer	6612 (0.30)	Basalt, disseminations	<b>1.582</b>	4	<b>393</b>

See main body of text for analytical details

Previous studies of the alteration in the claims (AR28927) notes that widespread propylitic alteration was attended by a local influx of mineralizing fluids marked by chlorite and salmon coloured alkalic feldspars in veins and amygdales. This alteration is superposed on a narrow fringe of contact metamorphism (locally up to amphibolite grade) near the pluton and also on very low grade regional metamorphism in the country rock. The variably and metasomatically altered rocks occur within a positive aeromagnetic anomaly caused in part by breakdown of titaniferous ores in basalt in altered rocks and in part due to introduction of magnetite as veins and stringers.

It is concluded that the project has **merit and that exploration work should continue**. It is recommended that the copper mineralization be better characterized, by providing some dimensions to the local high grade grab sample locations.

A prospector based work program could include:

Silt sampling of all creeks (above or away from roads with suspect road metal)

Chip sampling at localities returning high assay values from grab samples.

Re sampling high assay localities

Use a beep mat to locate magnetic and conductive subcrop locations along strike of previously located showing.

A company exploration program should include a detailed airborne survey locating magnetic and electromagnetic anomalies to locate further showings and extensions.

The claim group is available for option or direct sale. The Klejne Claim, just to the south, contains the Boyes Creek prospect and would be a good addition to this claim group.

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## **Introduction**

Kringle-Consolidated Claims, covering some 2909.1 ha, lie mainly west of the Island Highway, east of Rooney Lake, near the 255 km marker and reach southward past Eta Lake at 245 Km marker to near Tlowils Lake. 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.

The work program outlined here includes prospecting, sampling and mapping along recently built and logged road cuts to potentially extend the mineralized area of the claim group.

The program has been conducted by Mikkel Schau, P.Geo and helpers. He is the holder of 100% of the mineral rights on the property, which is located on crown lands.

This report contains much material similar to recent assessment reports written by the author for this area. This latest version is the most up to date and previous interpretations should be evaluated with this report in mind.

## **Property location, access and title**

The Kringle-Consolidated Claims are located on northern Vancouver Island, BC (Figures 1, 2). They straddle 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 traverse. Much of the area has been logged, but sections of old forest remain as OGBA lots.

Some of these claims were staked by location and later converted, other were claimed using MTO. The claims cover some 2909.1 ha and are called the Kringle-Consolidated Claims. They include the claim tenures listed below:

Name	Recorded tenure number	Area in ha.	Good to date
	515027	247.37	Sept 1, 2011
	515028	226.82	Sept 1, 2011
	515029	82.50	Sept 1, 2011
	515030	123.67	Sept 1, 2011
	515032	20.62	Sept 1, 2011
	515033	61.86	Sept 1, 2011
	515034	103.08	Sept 1, 2011
kringle-last	515386	20.61	Sept 1, 2011
	515924	41.23	Sept 1, 2011
	515925	20.61	Sept 1, 2011
	515926	20.62	Sept 1, 2011
	515930	206.21	Sept 1, 2011
	516017	20.62	Sept 1, 2011
kringle-2	521073	495.08	Sept 1, 2011
kringle-mi.	529780	206.30	Sept 1, 2011
klejne-north	797082	516.05	Sept 1, 2011
	797102	515.85	Sept 1, 2011

Total 2909.1 ha

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

All claims are on crown lands and are focused on copper and precious metal mineralization, but include an ancillary interest in other base and industrial metals. The mineral rights 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**. I have introduced myself to the chief, but no further action has been taken. 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.

The Adam River is a salmon river, so extreme care will be needed to avoid contamination of the river with exploration efforts; although most of the mineralized surface areas discussed are some distance from the river.

## **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 or near the Kringle-Consolidated Claims. Newer showings from the claims have been reported in recent ARIS: 26930, 27070, 27463, 27736, 27745, 28327, 28328, 28747, 3012, and 31039.

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 1960'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.

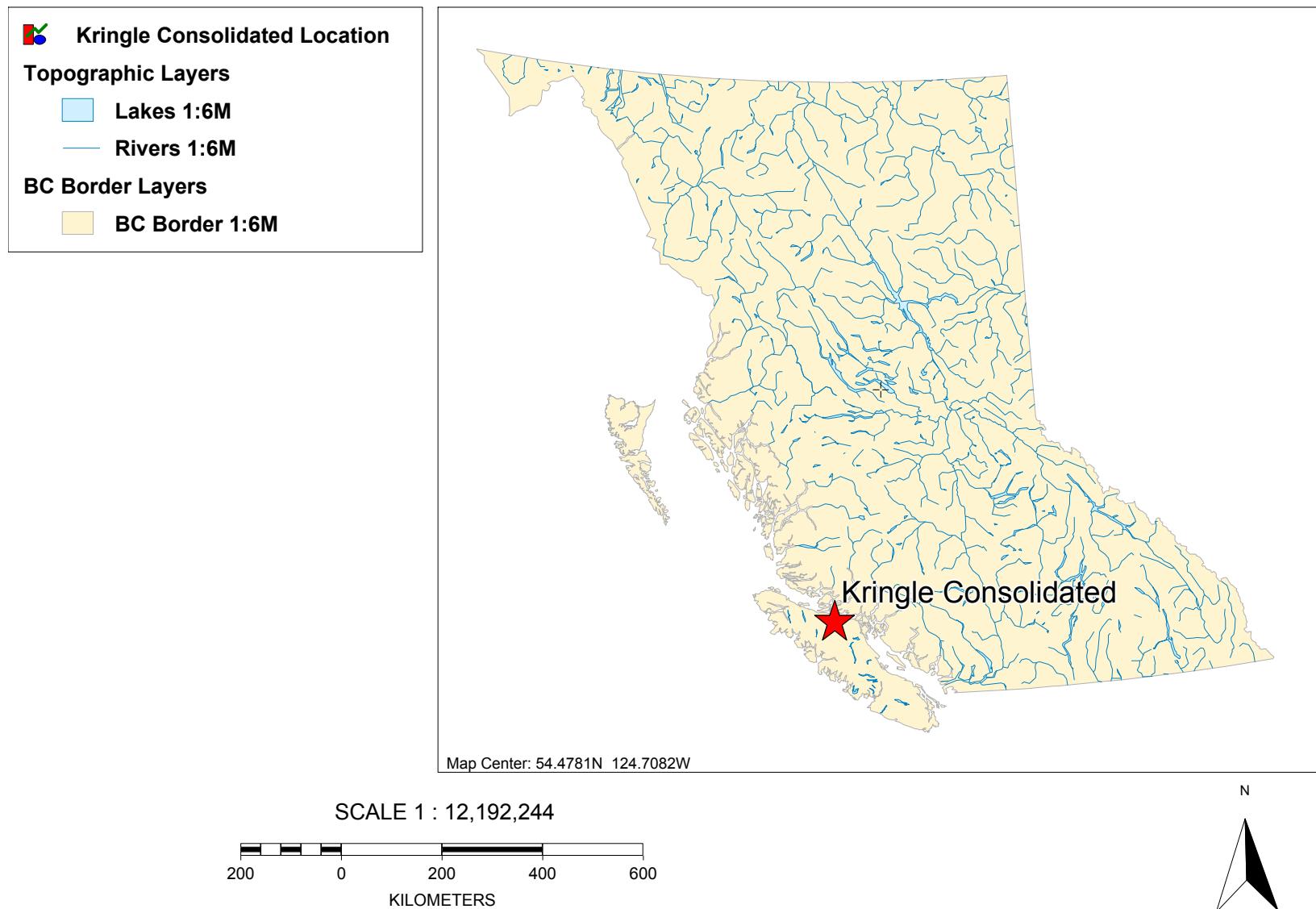
AR 1859, was the first formal report of copper showings near Rooney Lake in 1969.

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 mineralization of the area is mainly in veins. The report focused on showings south of Kringle, and included the Boyes Creek occurrence (Minfile 092L-165) and adjacent showings (092L-166,7,8 ). The first mention of the Billy Claims (now in Kringle) 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. (Unless Parsons Bay Formation is considered to be part of the Bonanza).

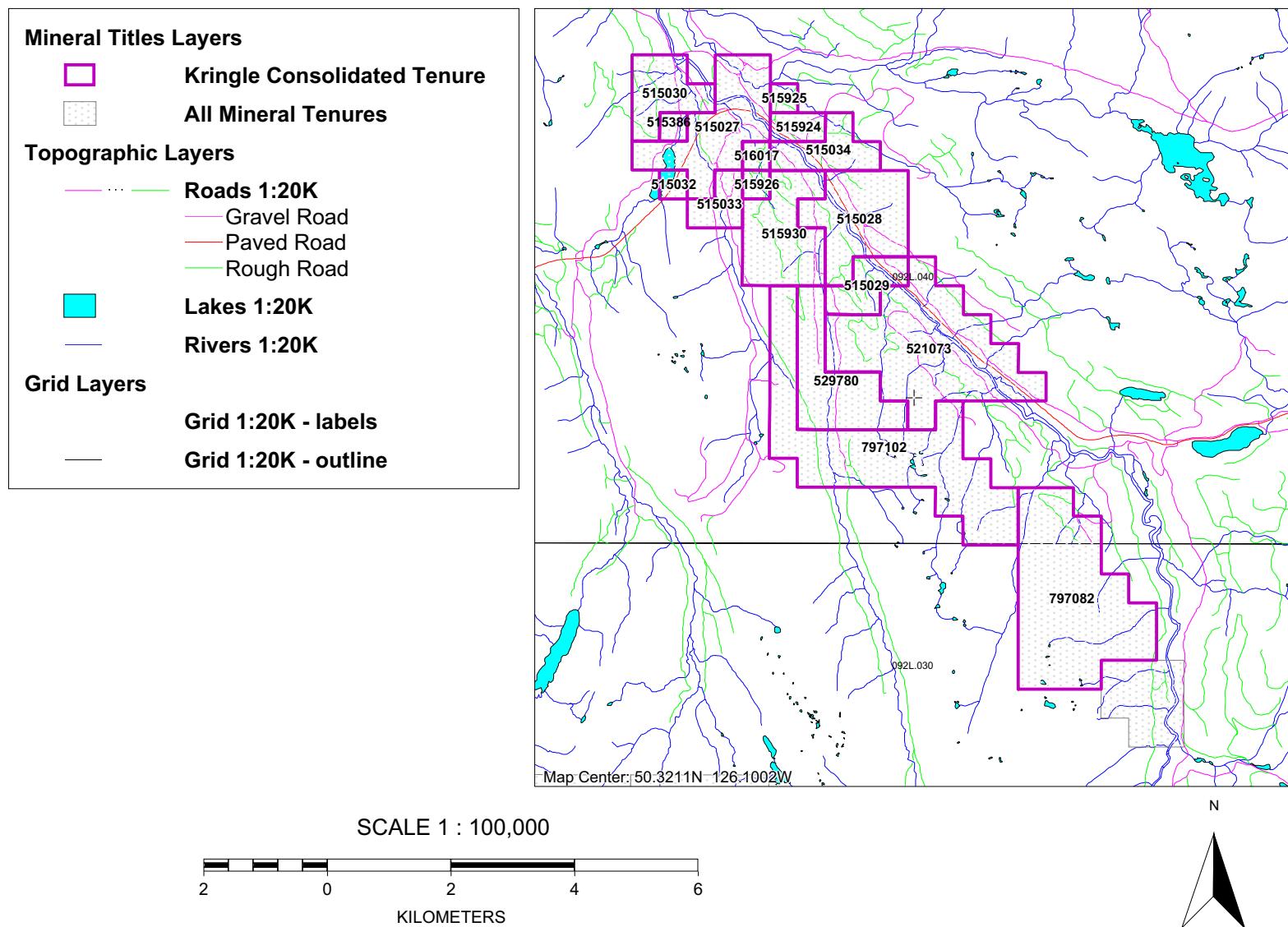
AR3306, by W.M. Sharp, reported on Tammy claims west of Keta Lake and found no noteworthy mineralization

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.

## Figure 1: Location Map



## Figure 2: Claim Map



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 geographically accurate nor useful.

In the early seventies and as late as the nineties, work on 092L-222 (the Adam west prospect) found stratabound copper mineralization below thin limestone beds within the Karmutsen basalts south of the Billy Claims and north of Boyes Creek. The details of exploration on this prospect are discussed in AR 14284, 22409, and 23906. A soil geochemical anomaly was trenched and several drill holes returned favourable results at or near the lower contact of a limestone lens in the Karmutsen:

*Cross trenches across this interface were, on average, 5 m long and extended over a 450 m strike length and graded a weighted average of 0.89% Cu.*

*8 drill holes, probing the lower contact (both along strike and downdip) indicated mineralization was concentrated there and drill hole A6 returned 2.1% Cu over 5 m. as it crossed the contact.*

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 Prospector's 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, 28327, 28328, 28747, 30121 and 31039).

Thus, work to date has shown sporadic and widespread mineralization of copper and silver with occasional gold values that occurs in veins, amygdales and shears in basaltic country rock adjacent to a large granodiorite batholith as well as proximal and distal skarn showings. The country rock is part of the Karmutsen Formation comprising mainly feldsparphyric basalt, as amygdaloidal or massive flows, or as thin sills (+/- dykes) intercalated with minor beds of limestone and associated clastics, overlain by thicker beds of Quatsino limestone and locally by Parsons Bay formation. New logging roads have exposed new subcrops and the area under discussion is mainly underlain by Karmutsen Formation.

## Summary of work done

The area worked in this project is mainly along Kim Creek logging spurs and quarries off 106D in the central part of the claim group. Newly cut areas and roads were prospected and the geology checked and samples collected for assay and petrography. A short visit was made to the area in February while working on the adjacent Klejne claims. Later, in July, 6 days were devoted to prospecting and collecting on the claims.

## Analytical Services

Acme Labs ICP-MS on 46 samples, selected Whole Rock analyses (8), Assays for Cu (21), Ag (18), Fire Assays (6) for Au, Pt, Pd, and Assays for S(24)

February collection

VAN10000952.2 9 samples

July samples 37 samples

VAN10003692

## Petrography

Van Petro generated the 5 slides reported on by Schau

## Petrophysics

Magnetic susceptibility measurements

315 determinations at 48 discrete locations

## Detailed data and interpretation

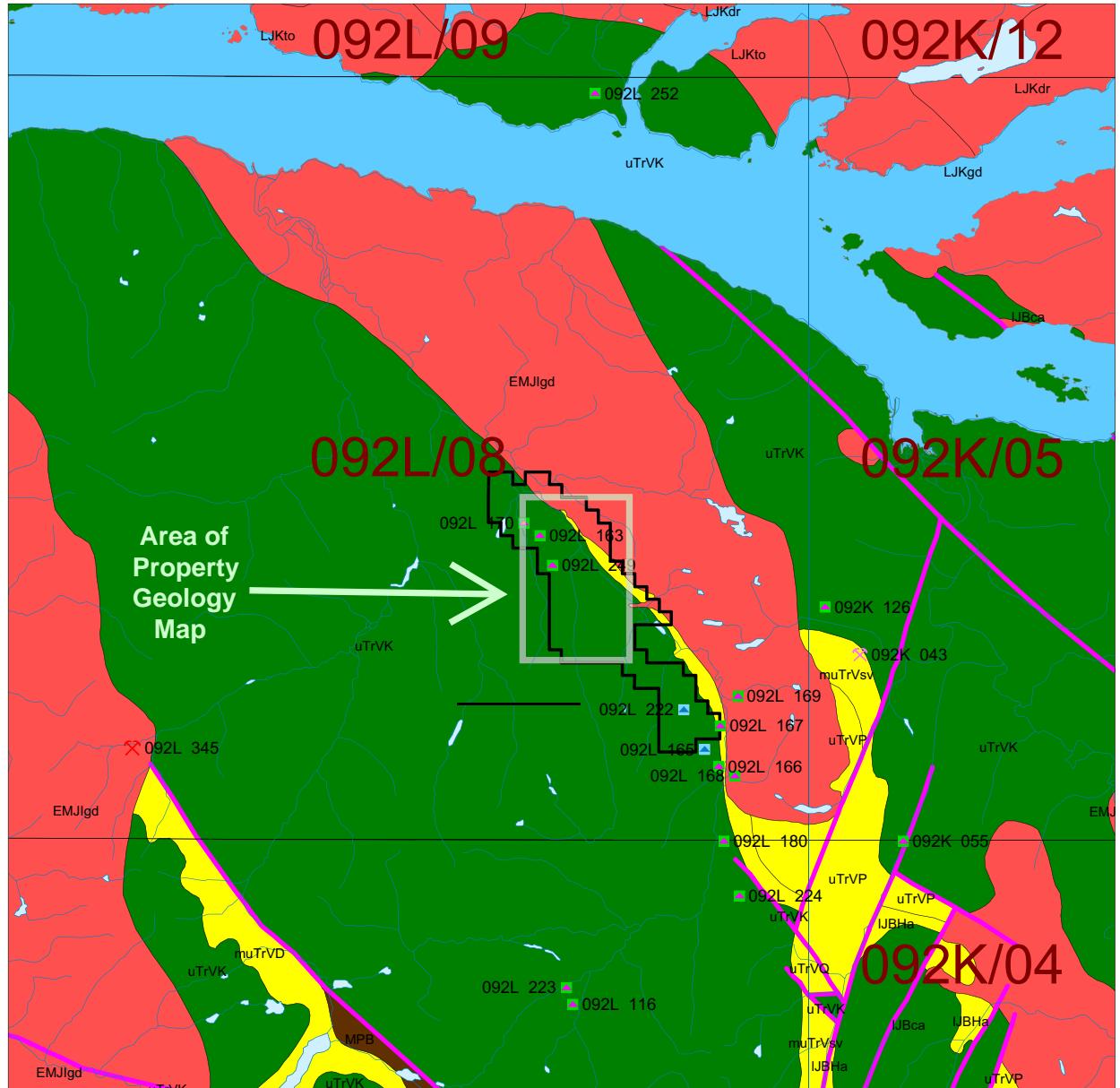
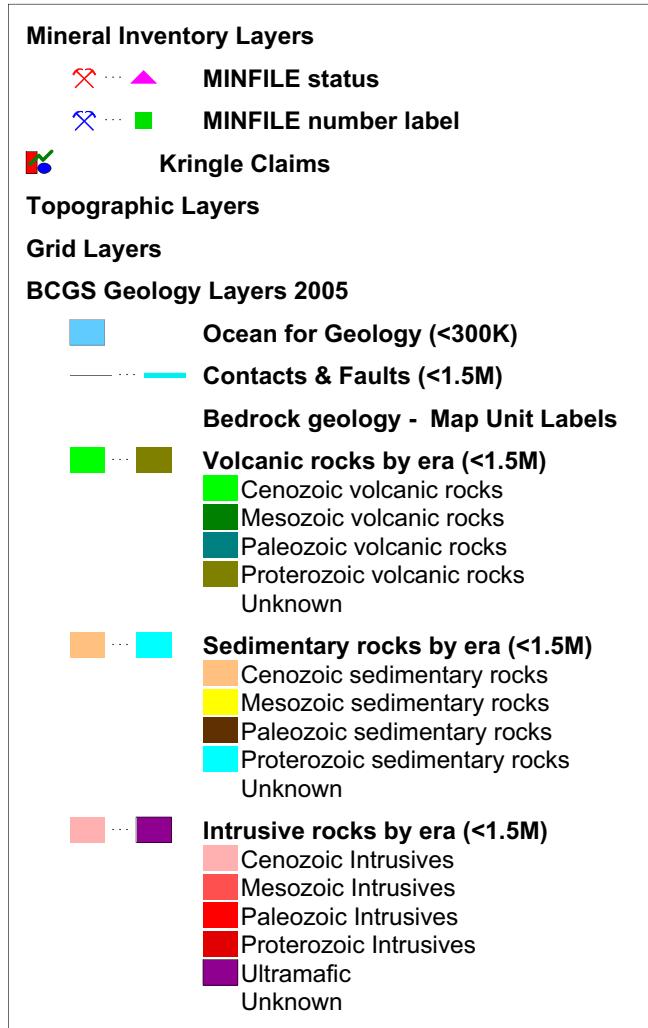
### ***Purpose***

This work is aimed at locating more showings in the claimed area in order to achieve a critical mass which would make it an attractive and optionable property.

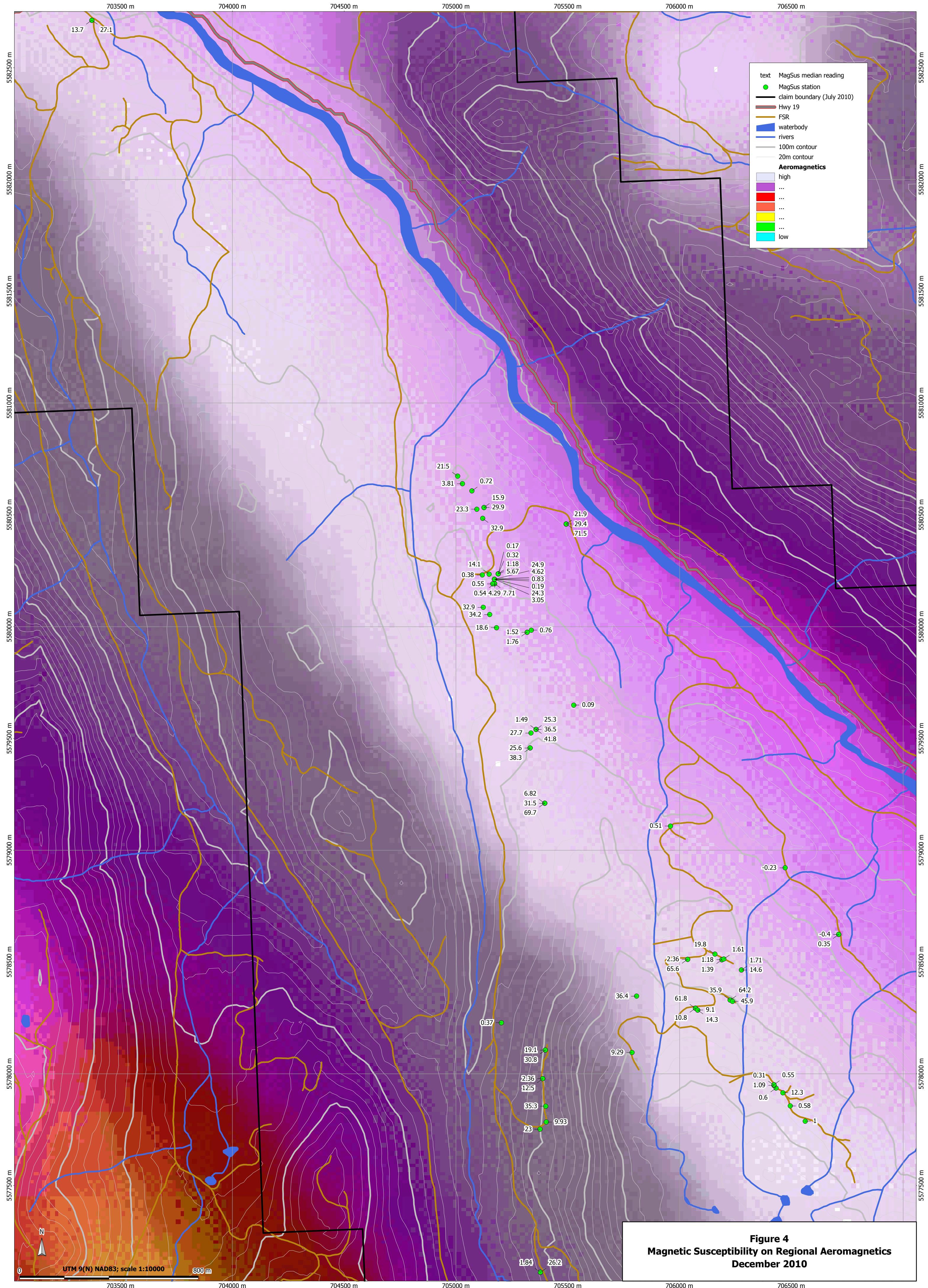
### ***General surficial geology***

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 north-northwesterly direction. Local areas of till have been noted in lower areas where road construction has laid it bare and as a thin veneer in higher locations where it overlies bedrock. At least three different terraces along the shores 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 in this area. Adjacent creeks seem to occupy north or northwest trending zones probably the locus of high strain zones. The hills are variably covered with colluvium which overlie thin till deposits. For example, tills are locally about 1 m thick at elevations of 700 m. Only where logging roads expose subcrops, or in outcrops on cliff faces and/or steep sided valleys is bedrock visible.



**Figure 3: Regional Geology**



## **Figure 4**

### **Magnetic Susceptibility on Regional Aeromagnetics**

#### **December 2010**

## **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 region of the Adam River Batholith (See figure 3).

### 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, 2009) and Nixon has published maps and descriptions of these units to the west (Nixon et al, 2007).

The Vancouver Group (Karmutsen, Quatsino, and Parsons 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 consists of closely packed pillow lava. At the top, magnesian pillow basalts are seen (Keogh Picrites, Greene, 2007).

The next 600 to 1000m consist of pillow breccia and aquagene tuff, typically with unsorted beds  $\frac{1}{2}$  to 2 m thick in the lower half.

The upper 3000m is composed of meter to decimeter thick, both amygdaloidal and massive basalt flows. Local beds are zoned with amygdular tops and massive cores. Some flows locally show possible pahoehoe structures in well exposed locations. Very little interflow material has been located, indicating a lack of deep weathering between the eruption of the flows. In the upper third of the unit, thin, intercalated sporadic and commonly incomplete sequences of 3 to 20 m thick consisting of discontinuous bioclastic, micritic, cherty or tuffaceous limestone which are locally 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 distribution of units also suggest east trending folds of small amplitudes and well developed linears trend north and north westerly directions as well as easterly directions and separate large panels of gently dipping lavas. Slickenlines indicate that the preserved (latest?) directions of slip are largely transverse.

The volcanic rocks have been regionally metamorphosed to upper zeolite facies. Albited feldspars, amygdules and veins of pumpellyite, prehnite, epidote, calcite, and chlorite are widely noted. Adjacent to contacts with later intrusives, higher grade amphibolite bearing assemblages are locally developed.

Considerable regional variation is shown on aeromagnetic map, including a several km wide strip with positive anomalies adjacent to the pluton. Other local positive anomalies, within the area underlain by the Karmutsen, indicate that magnetite concentrations of the volcanic rocks are not uniform and/or that the 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.

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 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 (a consequence of a diamagnetic response of limestone) is poorly defined on large scale geophysical maps shown on MapPlace. More detailed aeromagnetic surveys are necessary to delineate the outcrop pattern in detail.

The *Parsons 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. It is likely that some of the silty reaction skarns intercalated with black limestone noted on the property, north of the 250km marker, represent some thin relict lenses of Parsons Bay Formation recently recognized 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 including magnetite. 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 ten 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 (i.e. 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, 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 Parsons Bay to the east.

K-Ar dates of 160 Ma. on Hornblende and 155 Ma. 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, as they are a km north. Orientations are steep and complex at or 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.

### Dykes

Based on very preliminary field evidence, supported in part by prior observations made by Carlisle (1972) in adjacent areas, there appears to be at least three sets of granitoid dykes in the area. The dykes observed so far are near the intrusive contact of the main pluton.

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 (diabase) cut metamorphosed basalts and are metamorphosed themselves

### Regional structures

The area of interest lies within the shallow east north east dipping homoclinal 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.

Dip directions of 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. The area is more structurally complex than implied by a simple homoclinal, 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, is found near Keta Lake, or far southeast of where it would be expected in a simpler structural milieu.

A fault system along the Adam River post dates the pluton, probably with strike slip motion; but the fault system is probably long lived, since it seems that it also predates the pluton as well with a sense of west side up. West of the pluton, the younging in the Karmutsen is to the east northeast. On the east side of the Adam River pluton the younging is to the south, implying an east west trending syncline. North trending excised valleys probably follow secondary fault structures. One such example might be Kim Creek.

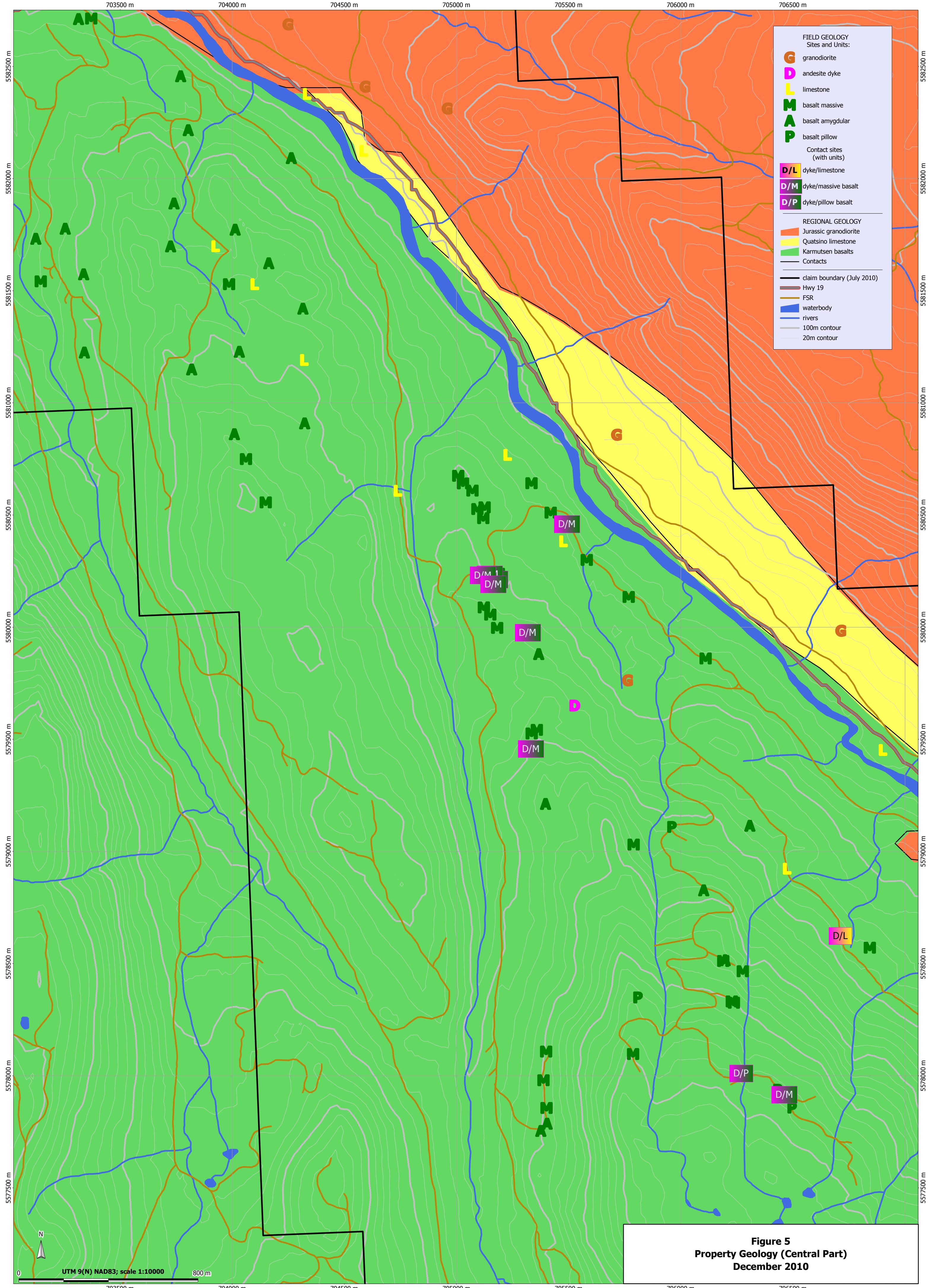
As noted above, the intrusive rocks were probably emplaced along prior faults in the vicinity of the current course of the Adam River. These are faults that are parallel to the length of the Cordillera, hence are called orogen parallel faults. This type of faulting plays a large role in localizing some mineral deposit in other places in the world, notably Chile. It is highly likely that these faults have stayed active during later transverse faulting episodes.

The region is noted for copper bearing veins which have been described as “copper veins in basalts” by Gunning (1931). Muller et al. (1974) repeats this categorization and assigns the showings in the vicinity of the claims to his category C: “veins in basalts”. Minfiles in the general area include 092L-163, 170, 249, 222, 165, 166, 167, and 168.

### 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 Figure 4. 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 roughly parallel the contact of the Adam River pluton. Cu-Ag vein showings and prospects are located within this anomalously magnetic region.



# **Property geology**

## **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; small pockets of Parsons Bay Formation are found near the contact; and the Jurassic Intrusives are found largely on the northeast side of the river. (see Figure 5).

## **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 volcanoclastic and limy sandstones, all cut by thin dolerite/gabbro sills. Several textural types of basalt have been noted in area. Most common are feldspar phryic fine grained basalts. Local variants include those with abundant microlites and altered glass in the ground mass. Others are somewhat coarser of grain. All varieties are locally amygdaloidal, varying from showing small occasional spherical amygdales filled with low temperature 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 has been analyzed and 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 road cuts 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 both host reaction and ore skarns.

The expected negative aeromagnetic signature is scarcely noticeable on a map of aeromagnetic field (Figure 4) although the limestone is not magnetic. More detailed aeromagnetic surveys are necessary to delineate the outcrop pattern.

The *Parsons Bay Formation* is considered to overlie the Quatsino Limestone. Anomalously, it occurs between Karmutsen and Quatsino Formations in the south of the claims. The occurrence is poorly exposed but would favour the idea of fault slices bringing various rock types into contact with each other. 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. Rusty, locally economically interesting mineral concentrations are located in and near the skarns.

## Jurassic Intrusives

In the claims under discussion Jurassic *granodiorite to diorite/gabbro* underlies the area to the east-northeast of the Adam River. Only a very small part underlies the current claims. It consists mainly of mesozonal quartz gabbro/diorite. 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. Highway 19 exposes some wonderful ore skarns near 250 km marker as well as some (to the NW) about a km or so, up the road.

### Dykes

Several episodes of dyke intrusion have affected the area. From the oldest to the youngest they are discussed below:

1/ Karmutsen related steep and shallow dykes (sills) or diabase, few becoming coarse enough to call diabase or very fine grained gabbro. Often shows abundant feldspar phenocrysts and clusters

2/ Early salic/felsic dykes, complexly deformed and transformed into endoskarn, largely with garnet (grandite) and locally well mineralized. The original Kringle Showing is at one of these. They occur mainly in the deformed Quatsino Limestone near the contact with the granodiorite, and would seem to predate it. Across the river, there are few examples known, but a flat white dyke in the wall of the Puff showing, near the mineralized shear, may be an example.

3/ Deformed andesite dykes, also occur mainly in the Quatsino Limestone near the contact, but they are much less deformed, mainly into open folds, and cut by NS and EW faults. Dykes to the west across the Adam River, like the dyke breccia that is mineralized at the Puff showing, may be an example. A new example of a feldspar porphyry dyke trending 150 with mineralized contacts (Cruller dyke) is noted in this report.

4/ Planar, non deformed, relatively unaltered andesite dykes (feldspar porphyries) occupy EW faults and would seem to be the latest. An excellent example is the feldspar

porphyry located at the original Kringle showing. Mineralization is not commonly associated with this generation.

## ***Mineralization***

Mineralization in the form of amygdular fillings, skarns, shear zones, brecciated dykes, and veins filled with quartz, epidote, bornite (+/-local chalcocite) were noted in the earlier prospecting.

Previous work in the general area has located copper mineralization. In the sixties a few selected mineral samples with 25% copper and 0.78 opt gold from Boyes Creek area excited the prospecting community. Exploration work was carried out sporadically in the area over the next 4 decades. The Kringle-Consolidated Claims currently cover about 2909.1ha, a large area of local mineralized showings including Minfiles 092L-163, 170 and 249 in the north. They also include several newly located showings as noted in several recent ARIS Reports. Drilling in the 60's at Minfile 092L-163 included 5 holes; only a small part of the core was analyzed, and the best result included 0.53% over 1.5 m, at hole 1.

At Minfile 092L-249 a partially analyzed hole yielded 0.48% over 3.6 m (AR 3795). Results from Adam west (092L-222) were encouraging. Cross trenches across a basalt-limestone interface were, on average, 5 m long and extended over a 450 m strike length and graded a weighted average of 0.89% Cu. Eight drill holes, probing the lower contact (both along strike and downdip) indicated mineralization was concentrated there and drill hole A6 returned 2.1% Cu over 5 m. as it crossed the contact.

New showings, found by the author, have been detailed in recent assessment reports (ARIS: 26930, 27070, 27463, 27736, 27745, and 30121) 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. A chip sample from Puff locality yielded 0.98% copper over 2.2 m (AR27070).

## ***Detailed sampling results***

### **Prospecting and assay results**

Samples were taken to assess the mineral potential of selected locations . These samples were bagged and transported to home base where they were examined and sent to Acme for analyses.

Annotated assay values are shown in Appendix A, and the original Assay sheets along with QA/QC data are in Appendix D. Samples are located on Figure 6, and new Copper assays are shown on figure 7 and silver and gold on Figure 8.

### **New results include**

Puff distal skarn located just west of chip sampled shear zone in Puff quarry. The sample was to investigate why the host rock was white and it is so because it is a quartz rich skarn.

006509--KR10R Puff Quarry

In place chip samples White skarn with local disseminated mineralization and secondary weathering products in locally purplish Karmutsen basalt bedrock,

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
2.3	7.1%	46721	56.5	n/a	8.91	197	160	0.87

New Cruller quarry

Another area of interest is the Cruller quarry. A feldspar porphyry (monzodiorite) dyke with mineralized borders is exposed in a quarry for logging road metal. The dyke appears to strike 150 and may have been traced by sporadic outcrops in the general strike direction along cross cut logging roads. The full extent of the dyke is not known, but it appears to be the largest dyke cutting the Karmutsen in this area. More investigation of the borders of this dyke are need.

Showing	Assay # (kg)	Rock type	Cu, %	Ag, ppm	Au, ppb
Cruller	6502	Sulphide Vein in Contact zone Pyrite, Chalcopyrite	2.271	6045 ppb	39.0
Cruller	6503	Sulphide Vein in Contact zone Pyrite, Chalcopyrite	2.832	5869 ppb	22.9
Cruller	6504	Gossan developed in pillow basalt at contact area.	4648 ppm	1313 ppb	10.8
Cruller	6507	Fine grained rusty chloritic rock stained by malachite and showing a few sulphide grains.	4513 ppm	1250 ppb	7.2
Cruller	6508	Fine grained layered, folded quartzose and chloritic rock stained by malachite and showing few small sulphide grains.	7304 ppm	1378 ppb	15.8

The dyke trends 150 and is locally mineralized along the contact.

### Un-named vein locality south of Cruller Quarry

Cm thick veins at an intersection of logging roads are examples of veins traversing area.

Showing	Assay # (kg)	Rock type	Cu, %	Ag, ppm	Au, ppb
Unnamed intersection	6634 ( 0.92)		1.001	6	53.8
Unnamed intersection	6635 (1.13)	Vein in Contact zone with feldspar phyric basalt	1.715	5	70
Unnamed intersection	6636 ( 1.25)	Shear zone near contact developed in basalt	1.734	5423 ppb	63.0

### Linzer area (KC106D4)

Bornite veins and bornite disseminations return high copper grades along a road snaking its way up the hill side between two steep north trending creek beds.. This area is named the Linzer area, and its full extent is not yet known. One small logging spur from the road some 100 m long contains abundant areas wherein bornite disseminations and associated alteration occur. Above this area occur two high grade veins.

More investigation is needed in this area.

The higher vein set consists of intersecting veins ; one set vertical (6625 and 6626), the other flat (6627) returned high copper assay values as shown below, but these brecciated and well mineralized veins are only a few cm wide. The spatial density of such veins has not been determined. These veins are set in a ground mass of mineralized calcareous material, probably originally limestone before alteration.

Showing	Assay # (kg)	Rock type	Cu, %	Ag, ppm	Au, ppb
Upper Linzer vein	006625	Vertical vein/breccia	<b>2.507%</b>	11 ppm	5.7
Upper Linzer vein	006626	Vertical vein/breccia	<b>2.816%</b>	12 ppm	4.3
Upper Linzer vein	006627	Flat vein, locally leached	<b>12.55%</b>	<b>42 ppm</b>	8.7
Upper Linzer country rock	006624	Limy country rock	<b>1.269%</b>	9 ppm	7.2

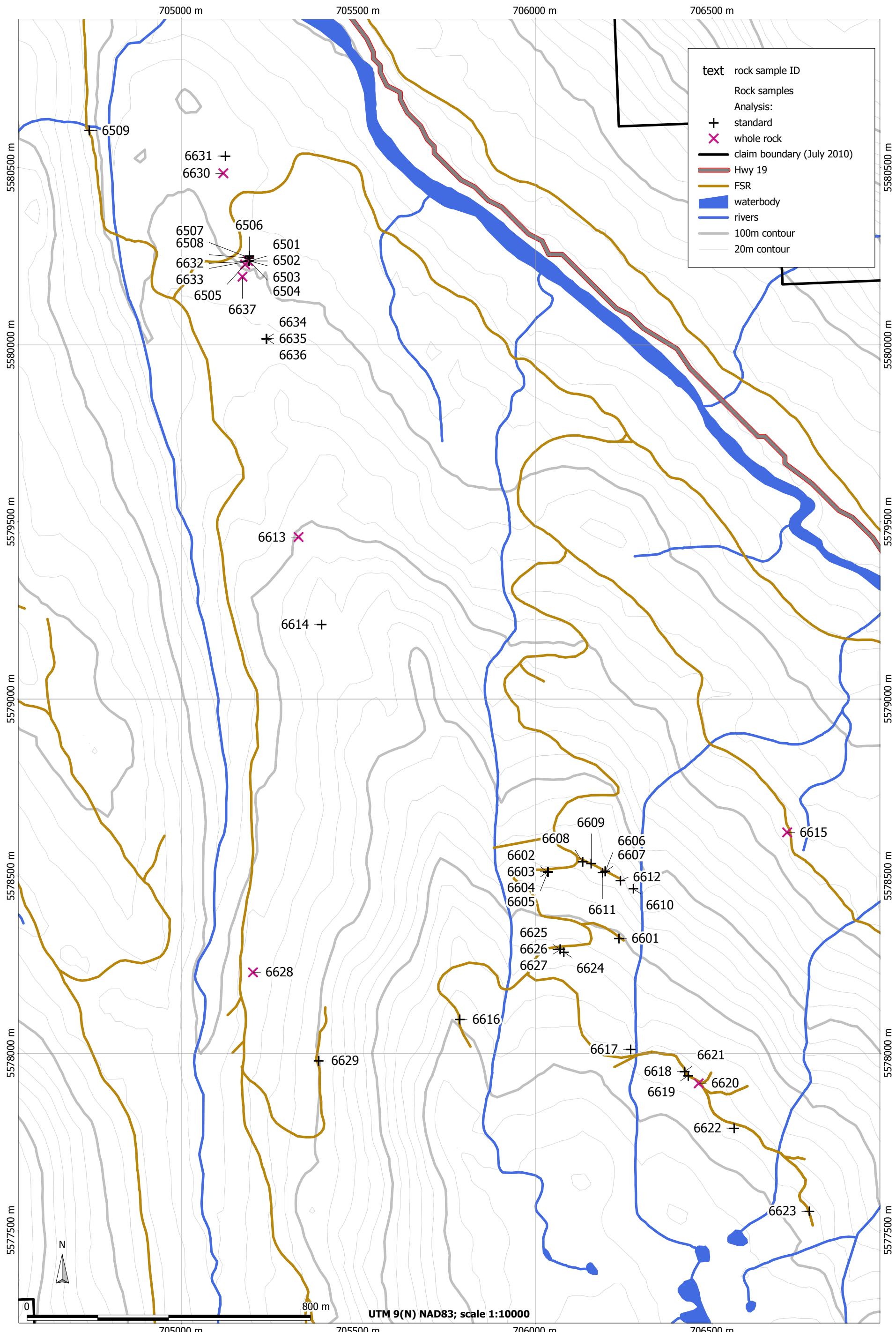
Some 100 m in elevation below this vein set another brecciated shear zone vein is exposed. The fault is marked by a metre thick black contorted phyllonite and local zones of mineralized breccia bound the phyllonite.

Showing	Assay # (kg)	Rock type	Cu, %	Ag, ppm	Au, ppb
Mid Linzer	6605 (1.05)	Upper Vein/breccia, in basalt	<b>5.767</b>	15	<b>932</b>
Mid Linzer	6603 (0.3)	Phyllonite in same shear zone as above	<b>0.695</b>	126 ppb	

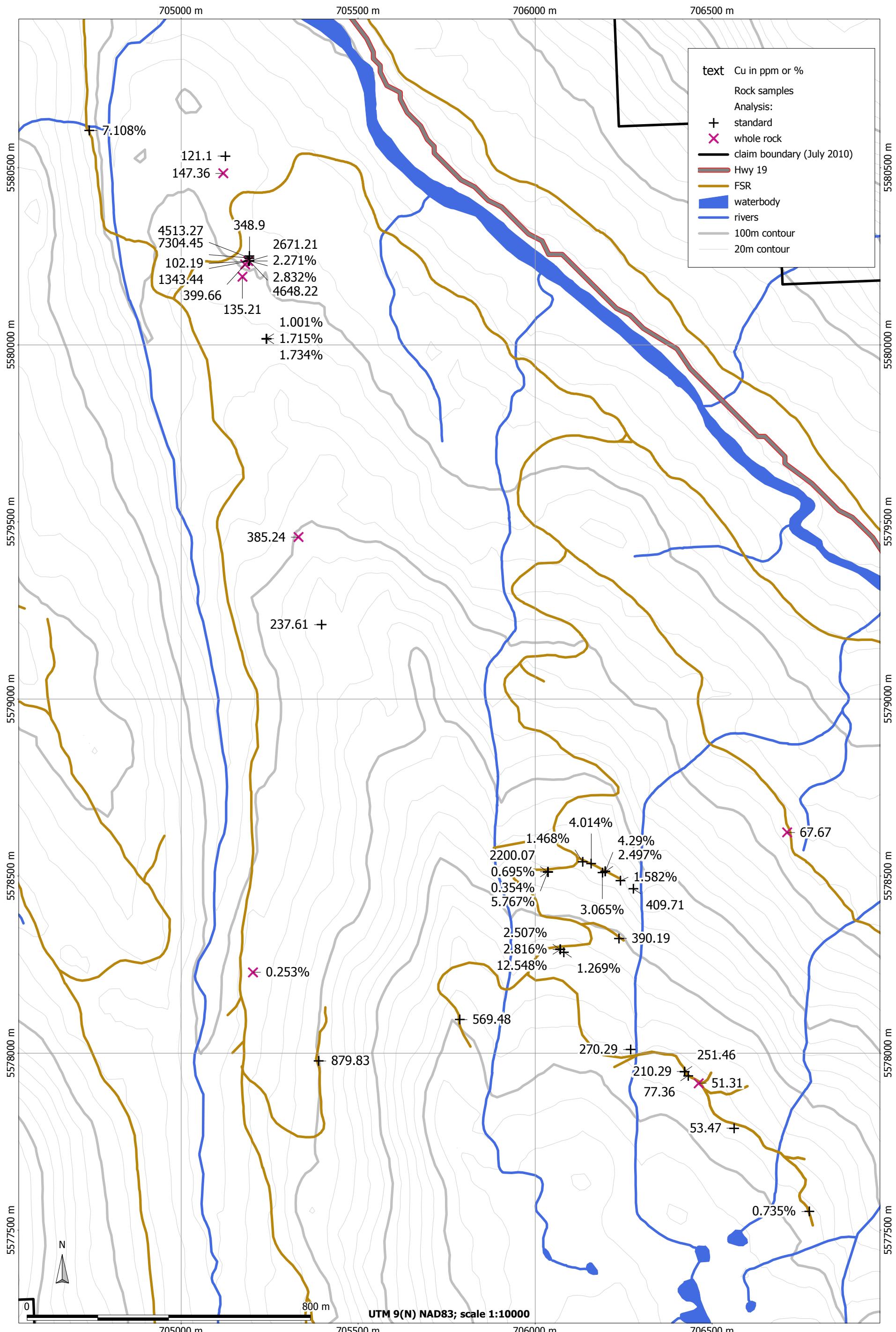
Below the above vein by another 50 m is an area of altered basalt which contains decimeter thick brownish zones just below amygdale layers in the flat lying massive basalts. The brownish zones are also near some of the pink veins in area. The altered zone is seen for about 100 m along a logging road and samples from this basalt are mineralized, apparently by finely disseminated bornite.

Showing	Assay # (kg)	Rock type	Cu, %	Ag, ppm	Au, ppb
Lower Linzer	6606 (1.38)	Basalt	<b>4.290</b>	12	<b>589</b>
Lower Linzer	6607 (0.62)	Basalt zones of disseminations	<b>2.497</b>	4111 ppb	31.7
Lower Linzer	6609 (0.31)	Basalt, zones of disseminations	<b>4.014</b>	6	70
Lower Linzer	6612 (0.30)	Basalt, disseminations	<b>1.582</b>	4	<b>393</b>

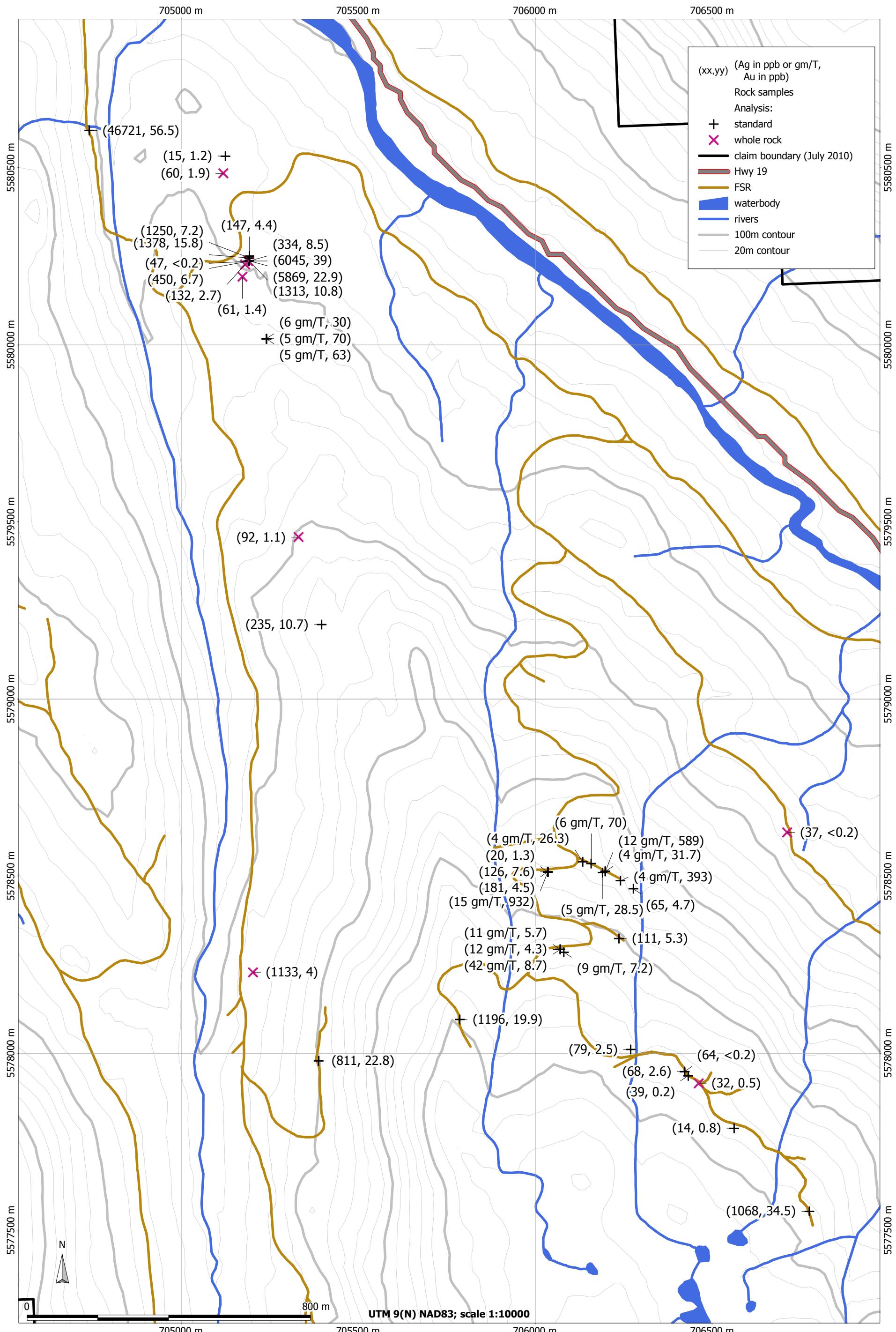
The volume which encompasses these three showings is about 250 m by 250 m by 150 m. Not all of this area is equally well endowed but the area clearly requires more investigation.



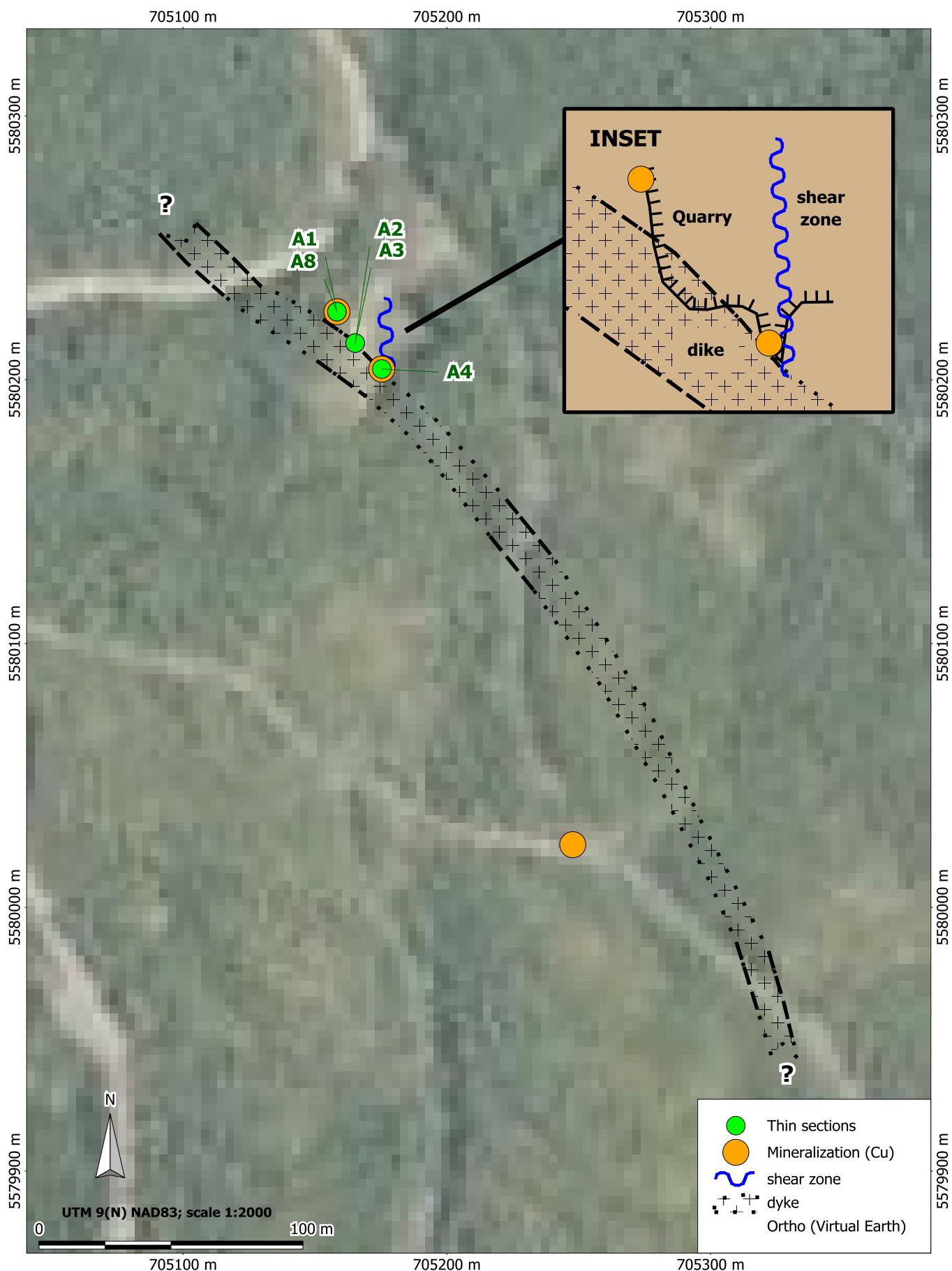
**Figure 6**  
**Location of Rock Samples**  
**December 2010**



**Figure 7**  
**Copper in Rock Samples**  
**December 2010**



**Figure 8**  
**Silver and Gold in Rock Samples**  
**December 2010**



**Figure 9**  
**Geological Sketch map of Cruller Quarry Area**  
**December 2010**

## **Geology**

New observations include

### Karmutsen Formation

Composite flows of massive basalts with thin amygdaloidal layers near top

Minimally magnetic pillow basalts (one of which is demonstrably

Magnesian (Appendix B) and possibly similar to the picrites near Keogh lake to the west of map sheet (Greene, 2007) ).

Alteration styles varying from zeolite rich patches to propylites and very local distal ore skarns, as well as metasomatically altered and mineralized volumes in basalt.

New limestone localities some of which are mineralized

Linzer area with local areas of introduced sulphide (bornite, chalcopyrite) bearing chlorite rich material.

### Dykes

new Cruller quarry with a feldspar porphyry dyke striking 150 (see Figure 9)

other dyke localities. Whole rock analyses of selected dykes show a Sr/Y ratio compatible with either mineralized or barren areas as described in Kelley et al, 2006 (Appendix B).

## **Petrography**

Standard thin sections were prepared by Vancouver Petrographics and were studied by A wild Binocular Stereoscope and by a Nikon Labophot-pol petrographic microscope.

Locations of thin sections are presented on figure 9, and in detail in Appendix C.

Plate 1 at back of manuscript presents photomicrographs of selected textures. Generally the samples were altered, if not by early burial metamorphism, then by skarnification; some were cataastically transformed. Textures of porphyry dykes are illustrated as well. These are the textures spotlighted in the above mentioned plates

## **Interpretations**

Prospecting has again located more copper rich locations in this area. As well as adding to the inventory of veins, a new style of mineralization has been noted. The disseminated bornite in metasomatic replacements in the basalts, especially near amygdales and veins locally filled with pink alkalic feldspars, epidote, quartz and chlorite constitutes an interesting form of mineralization (since replacement masses have a possibility of having a greater volume than veins might show). The mineralized zones are only marked by malachite in protected and overhung locations, hence are not immediately visible after weathering has removed the obvious sulphides. Competent prospecting is required.

In the Linzer area, veins occur topographically and stratigraphically a short distance above the region of dissemination indication the possibility of an interesting volume of mineralized material.

In the region near the Cruller quarry, a feldspar porphyry which is emplaced in the same direction as the contact of the main pluton, underlies the magnetic anomaly, and although not magnetic, in part due to hydrothermal alteration, may signal more plutonic material depth.

The abundance of showings and various mineralization styles within the bounding magnetic anomaly are thought to indicate a large hydrothermal system was at work in this region during mid Jurassic time associated with the Adam River pluton.. Perhaps the dyke mentioned above has a role in the mineralizing events.

## **Conclusions**

The geology of the claim group has been verified from previous sources and new field work. It reveals that a sequence of the Vancouver 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 that was deformed and faulted along orogen parallel transverse faults, along which, felsic dykes and later mid Jurassic plutons were emplaced. 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.

Later geologic history is known to be complex and includes post intrusion (transverse?) faulting and low temperature veining but is not yet understood in detail in this area.

Within the Kringle-Consolidated Claims sulphide accumulations studied over the years, include local iron sulphide rich veins and replacement masses, more common chalcopyrite veins, molybdenite bearing garnet veins, copper rich skarns, 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. This season, bornite enrichment of zones and in veins in basalt were added to the roster. Prospects and showings lie along a three km wide magnetic anomaly developed along the edge of Adam River pluton. Some notable assays are shown below:

<b>Showing</b>	<b>Assay # (kg)</b>	<b>Rock type</b>	<b>Cu, %</b>	<b>Ag, ppm</b>	<b>Au, ppb</b>
	6635 (1.13)	Vein in basalt	<b>1.715</b>	5	70
Cruller	6503 (0.23)	Contact shear zone	<b>2.83%</b>	6	22.9
Linzer (upper)	6626 (0.45)	Breccia vein	<b>2.816%</b>	12	4.3
Linzer (mid)	6605 (1.05)	Upper breccia/Vein, in basalt	<b>5.767</b>	15	<b>932</b>
Linzer	6606 (1.38)	disseminations basalt	<b>4.290</b>	12	<b>589</b>
Linzer	6609 (0.31)	Basalt, disseminations	<b>4.014</b>	6	70
Linzer	6612 (0.30)	Basalt, disseminations	<b>1.582</b>	4	<b>393</b>

See main body of text for analytical details

The Kringle-Consolidated claim group is a grass roots project with many local showings. The location and extent of a postulated hydrothermal system is still being explored. There is a possibility that all new showings and already located Minfile locations in the country rock are part of a single very large mineralizing system, in which case, this region may become a significant prospect. A number of different mineral deposit models may be appropriate to describe mineralization in the region. It is possible that several types of mineralizing mechanisms have been telescoped.

## Recommendations for future work

The new showings, (Cruller and Linzer) , along with a previously known prospects, (Adam West (092L-222,) have **merit** , but finding a sufficient volume to be financially viable remains a challenge. Ongoing **work on these tenures should be continued**. More showings should be tested for their alteration suites and sulphide contents. Hand held methods which penetrate only to shallow depths such as BeepMat surveys can be conducted adjacent to known showings.

It is further recommended that local copper showings be more completely characterized. A work program could include:

- Silt sampling of all creeks (above or away from roads with suspect road metal)
- Chip sampling at localities that previously yielded high assay values
- Soil sampling along subsoil “extensions” of mineralized trends

A magnetic survey is clearly indicated to define the extent of magnetic phases of the ore skarn, local breccias and magnetite veins showing positive anomalies as well as to locate shears and veins showing negative anomalies,. To locate conductive portions (sulphide concentrations) of mineralized zones one of several types of electromagnetic 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. An extensive magnetic susceptibility and density database already collected in several assessment reports could provide local control data.

Interpretations of the geophysical surveys will challenge the explorationist. The presence of many logging roads with their infill of materials trucked in from unknown or mineralized quarries sources will pose a problem for the geochemist. The Adam River valley with deep (glacio)- fluvial fill will shield anomalies located along the (major) fault traces situated in the valley bottom. Nevertheless, the penetration of geophysical methods will allow electromagnetic anomalies currently clothed by west coast vegetation to be more accurately targeted.

The Kringle Consolidated claims are considered to be a high-risk, high yield exploration play. Exploration thus far has provided many high assay values from selected grab samples from enough different locations to be an exploration play with merit.

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## **Author's qualifications**

I, Mikkel Schau

have been a rock hound, prospector and geologist for over 50 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 13 years I have prospected and mapped in Nunavut, Nunavik, Yukon, Ontario and BC.

I reside at 3919 Woodhaven Terrace, Victoria, BC, V8N 1S7

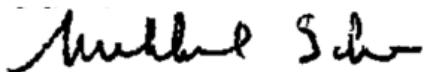
My formal education is that of a geologist, I graduated with an honours B.Sc. in 1964 and Ph.D. in Geology in 1969, both, from UBC.

I am a P.Geo. (25977) in BC . I am currently a BC Free Miner, # 142134.

I have 100% interest in the claims in question.

I am the author of the report entitled "Assessment Report; ASSAYS AND LITHOGEOCHEMISTRY of Veins and stratabound sulphides Kim Creek, 106D4 region in KRINGLE- Consolidated Claim Group (Tenures 515027, 515028, 515029, 515030, 515032, 515033, 515034, 515386, 515924, 515925, 515926, 515930, 516017, 521073, 529780, 797082, and 797102), Nanaimo Mining District" and dated September 27 , 2010.

Signed



Mikkel Schau, P. Geo.  
(25977)

and dated September 27 , 2010,

and submitted December 21, 2010.

## **Itemized cost statement**

(does not include GST before July 1 and does not include HST after July 1)

### Wages

February 17, and July 12-17

7 days	Mikkel Schau @ 600/day	4200.00
	Invoices from Alec Tebbutt	
1 day February 17, 6 days, July 12 - 17	field work Invoices	1815.00

### Room and Board (in Sayward)

February 2 man days (winter season)	120.00
August (12 man days) summer season	675.00

### Analytical Services

#### Acme Labs

February samples (9)	
Invoice VAN104216, and 42692	313.03
July samples (37)	
Invoices VAN10057233 and 60292	1860.77

subtotal 2173.99

### Petrography

Van Petro invoice #100700	197.00
Petrography reports 5 @ 150	750.00

### Petrophysics

Magnetic Susceptibility measurements (315 determinations at 48 stations)	240.00
2 Density measurements	10.00

### Report Writing

GIS Service (6 original maps @ 50)	300.00
Supplies	20.00

**TOTAL 11,000**

## Appendix A Specimen descriptions and table of selected assay values

### ROCKS IN SITU

#### PUFF (Quarry)

006509 UTME 705193 UTMN 5580245 ELEV 341.4

KR10-puff quarry sample from near shear zone

Chip sample from white (QZ?) vein and small amount of gouge in locally purplish Karmutsen basalt bedrock, previously collected bo+cpy from these veins

Mo ppm	Cu	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
2.3	<b>7.1%</b>	<b>46721</b>	56.5	n/a	8.91	197	160	0.87

#### CRULLER (New) Quarry

Andesite/latite dyke cuts basalts and local sediment, contacts well mineralized.

006501 UTME 710193 UTMN 5580237 ELEV 355

KR10-RP01

Gossan from eroding vein several cm across, host rock basalt, possibly pillowled (or brecciated with round frags)

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
1.84	<b>2671</b>	334	8.5	0.07	7.69	403	251	3.94

006502 UTME 710386 UTMN 5573878 ELEV 360

KR10-RP02

Vein with malachite and azurite, as well as several sulphides, calcite gangue, hosted by same basalt as above.

Mo ppm	Cu	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.21	<b>2.27%</b>	6045	39.0	<b>10+%</b>	<b>18.35</b>	563	10	9.11

006503 UTME 710386 UTMN 5573878 ELEV 360

KR10-RP03

Irregular shaped vein up to 10 cm across. Vein with malachite and azurite, as well as several sulphides, calcite gangue, hosted by same basalt as above.

Mo ppm	Cu	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.11	<b>2.83%</b>	5869	22.9	<b>10+%</b>	<b>14.99</b>	452	15	8.83

006504 UTME 710386 UTMN 5573878 ELEV 360

KR10-RP04

Gossan from eroding vein several cm across, host rock basalt, possibly pillowled (or brecciated with round frags)

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.36	<b>4648</b>	1313	10.8	5.35	7.07	441	34	6.54

006505 UTME 705781 UTMN 5580227 ELEV 335 m

KR10-RP05

Andesite dyke, Some 30 m wide reddish, seriate monzodiorite to granodiorite (andesite) dyke with local fp phenocrysts to 1 cm, not much quartz, (stained vugs where sulphide was), portions of dyke are igneous breccia with angular amphibolite fragments (ex basalt?)

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.17	400	132	2.7	0.12	2.76	566	56	0.77

006506 UTME 705179 UTMN 558319 ELEV 312 m

KR10-RP07

Quartz-epidote gossan/skarn along contact

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.26	349	147	4.4	0.36	4.48	511	56	0.47

006507 UTME 705193 UTMN 5580251 ELEV 341 m

KR10-RP08

Fine grained rusty chloritic rock stained by malachite and showing few small sulphide grains.

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.88	<b>4513</b>	1250	7.2	0.53	7.67	780	97	0.46

006508 UTME 705194 UTMN 5580245 ELEV 342 m

KR10-RP09

Fine grained layered, folded quartzose and chloritic rock stained by malachite and showing few small sulphide grains.

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.56	<b>7304</b>	1378	15.8	2.45	4.86	503	66	0.83

## Linzer showing area

006601 UTME 706237 UTMN 5578324 ELEV 592 m

KR10-137R

A basalt, 1/3 pink albite? Qtz epidote bluish green alt scattered blebs of sulphide (Cpy), rare fp phen, matrix vfg, but granular (plag cleavage)

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.34	<b>390.2</b>	111	5.3	0.03	6.48	827	173	0.73

### (middle Linzer vein system)

006602 UTME 706039 UTMN 5578515 ELEV 551 m

KR10-136R1

Blackshale /phyllonite w/ lamellae of qtz and epidote

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.07	<b>2200</b>	20	1.3	<0.02	11.93	1280	65	0.27

006603 UTME 706039 UTMN 5578515 ELEV 551 m

KR10-136R2

Blackshale /phyllonite w/ lamellae of qtz and epidote

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.27	<b>0.697%</b>	126	7.6	<0.02	15.74	1464	71	0.37

006604 UTME 706039 UTMN 5578515 ELEV 551 m

KR10-136R3

Blackshale /phyllonite w/ crs layers of fp and two types of sulphide py and cpy?

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.35	<b>0.354%</b>	181	4.5	0.13	13.47	1121	269	0.66

006605 UTME 706039 UTMN 5578515 ELEV 551 m

KR10-136R4

vein/breccia w/ 30% fragments of bleached fp porph (basalt) in matrix of qtz 30, epid 40 +/- fp?

Malachite cpy about 3 % sulph, local leaching calcite?

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.28	<b>5.767%</b>	<b>15 ppm</b>	<b>932ppb+</b>	1.75	3.34	160	53	1.18

### (Lower disseminated basalt in Linzer area)

006606 UTME 706196 UTMN 5578516 ELEV 538 m

KR10-133R

prop altered basalt w/chl amp? Qtz brownish layer w/ bo hem?? mal stained

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.31	<b>4.290%</b>	<b>12 ppm</b>	<b>589 ppb+</b>	1.17	3.02	236	77	1.18

006607 UTME 706196 UTMN 5578516 ELEV 538 m

KR10-133Rsmall

prop altered basalt w/chl amp? Qtz brownish layer w/ bo hem?? mal stained

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.59	<b>2.497%</b>	<b>4 ppm</b>	31.7	0.79	6.61	911	153	0.82

006608 UTME 706134 UTMN 5578540 ELEV 538 m

KR10-135Rbig

prop altered basalt w/chl amp? Qtz brownish layer w/ bo hem?? mal stained, alteration 1 cm thick

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.19	<b>1.468%</b>	<b>4 ppm</b>	26.3	0.54	4.80	794	124	0.87

006609 UTME 706158 UTMN 5578535 ELEV 538 m

KR10-134RP

bo rich layer, same lithology as above, show piece

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.83	<b>4.014%</b>	<b>6 ppm</b>	70 ppb+	0.82	5.17	1125	143	2.50

006610 UTME 706277 UTMN 5578464 ELEV 547 m

KR10-132R

beige brown altered basalt check for hb?, end of road

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.31	409.7	65	4.7	<0.02	2.70	763	131	1.93

006611 UTME 706191 UTMN 5578511 ELEV 536 m

KR10-131R

bo rich layer in basalt

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.22	<b>3.065%</b>	<b>5 ppm</b>	28.5	0.74	3.95	494	72	1.13

006612 UTME 706241 UTMN 5578487 ELEV 540 m

KR10-130

as above float

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.91	<b>1.282%</b>	<b>4 ppm</b>	494 ppb+	0.44	4.45	487	102	1.00

## General region

006613 UTME 705332 UTMN 5579461 ELEV 415 m

KR10-129R

grey andesite 65% fp hb?

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.28	<b>385.2</b>	92	1.1	<0.02	4.07	658	132	1.79

006614 UTME 705397 UTMN 5579209 ELEV 463 m  
KR10-128R

basalt, prop, bluish alteration pyrite cubes 3% rep amygdales pink fp in am phen 2%

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.19	<b>237.6</b>	235	10.7	2.34	6.08	361	102	0.97

006615 UTME 706714 UTMN 5578611 ELEV 377 m  
KR10-127R

1 m wide greyish blue andesite dyke or weirdly altered basalt (del pips??), andesite

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.69	<b>67.67</b>	37	<0.2	<0.02	3.07	789	47	1.04

006616 UTME 705784 UTMN 5578094 ELEV 688 m  
KR10-126R

bull quartz vein 5 cm wide 95% qtz, mal sulph, local calcite pits, rare epidote in basalt

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.06	<b>569.5</b>	1196	19.9	<0.02	0.67	146	15	0.13

006617 UTME 706273 UTMN 5578011 ELEV 665 m  
KR10-125R

vertical 3 cm wide qtz epidote calcite vein and shzcr

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.14	<b>270.3</b>	79	2.5	0.03	2.50	809	133	6.52

006618 UTME 706425 UTMN 5577449 ELEV 662 m  
KR10-124R

black fg rock w/ a hint of sl/fc, local bo?? oriented pillow basalts?

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.40	<b>210.3</b>	68	2.6	0.29	3.82	458	102	3.

006619 UTME 706436 UTMN 5577932 ELEV 661 m

KR10-123R

chlorite amygdales in prop basalt

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.09	<b>77.36</b>	39	0.2	<0.02	4.43	733	106	1.17

006620 UTME 706463 UTMN 5577915 ELEV 665 m

KR10R-122

grey andesite 10 m wide

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.22	<b>51.31</b>	32	0.5	<0.02	4.68	1047	144	2.01

006621 UTME 706425 UTMN 5577449 ELEV 662 m

KR10R-124R2

dyke strike 300, v, propylite w/ chlorite anyg

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.14	<b>251.5</b>	64	<0.2	<0.02	5.79	1177	140	2.19

006622 UTME 706563 UTMN 5577789 ELEV 673 m

KR10R-120R

ign breccia, diorite and prop fragments in prop matrix, deep lbrown surface stain

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.20	<b>53.47</b>	14	0.8	<0.02	7.37	768	182	0.96

006623 UTME 706774 UTMN 5577553 ELEV 687 m

KR10R118

prop basalt with bo and mal, clay epidote calcite, veins

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.51	<b>0.735%</b>	1068	34.5	0.09	2.90	419	118	1.38

## Upper Linzer Vein system

006624 UTME 706081 UTMN 5578285 ELEV 620 m

KR10R-117R1b

Country rock is lst w/ mal and cu ox fizz

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.93	<b>1.269%</b>	9 ppm	7.2	0.15	6.84	1146	256	5.24

006625 UTME 706071 UTMN 5578293 ELEV 622 m

KR10R 116R2

breccia w/ ign frags, local bo in matrix, local fizz, vertical vein

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
3.90	<b>2.507%</b>	11 ppm	5.7	0.37	8.87	1258	291	4.66

006626 UTME 706071 UTMN 5578293 ELEV 622 m

KR10R-116R2b

same as above, breccia with bornite, vertical vein

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
3.32	<b>2.816%</b>	12 ppm	4.3	0.42	8.46	1196	301	4.69

006627 UTME 706071 UTMN 5578293 ELEV 622 m  
KR10R-116R2c  
flat vein leached, malachite

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
10.34	<b>12.55%</b>	<b>42 ppm</b>	8.7	1.63	6.30	808	79	1.08

## General Region

006628 UTME 705203 UTMN 5578228 ELEV 435 m  
KR10R115R

malachite stained greenish stained fine grained light colored, andesite intrusion w/ hb?

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.26	<b>0.253%</b>	1133	4.0	<0.02	4.25	986	106	1.36

006629 UTME 705391 UTMN 5577986 ELEV 498 m  
KR10R114R

friable, phyllonite/argillic gouge stained w. mal hb?

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.14	<b>879.8</b>	811	22.8	<0.02	1.51	182	64	1.75

006630 UTME 705126 UTMN 5580482 ELEV 293 m

KR10R 113R

fresh basalt, with black flecks

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.09	<b>147.4</b>	60	1.9	<0.02	2.92	197	49	2.25

006631 UTME 7050121 UTMN 5580541 ELEV 299 m

KR10R-111R2

altered clayey and punky basalt hb? From previously sampled quarry some 5 years ago

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.11	<b>121.1</b>	15	1.2	<0.02	6.84	885	266	0.77

## Cruller Quarry region

006632 UTME 705241 UTMN 5580017 ELEV 331 m

KR10R-110R2

feldspar porphyry at contact,

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.11	<b>102.2</b>	47	<0.2	0.02	3.05	436	80	1.17

006633 UTME 705241 UTMN 5580017 ELEV 331 m

KR10R-110R3

LOCAL SKARN?, chloritite

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.27	<b>1343</b>	450	6.7	0.05	5.85	710	75	0.91

006634 UTME 705248 UTMN 5580027 ELEV 336 m

KR10-107R

amyg w/ sulph, basalt w/ mal

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.95	<b>1.001%</b>	<b>6 ppm</b>	30	0.27	3.19	458	95	1.18

006635 UTME 705241 UTMN 5580017 ELEV 334 m

KR10-105R1

shear zone in basalt , 030-330/steep, in mal stained fp phen fg matrix grey dyke?

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.74	<b>1.715%</b>	5 ppm	70 ppb+	0.25	1.93	263	64	1.49

006636 UTME 705241 UTMN 5580017 ELEV 334 m

KR10-105R2

mal stained chl rich shear zone in basalt zeol coats chlorite, flat surface 270/20

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.37	<b>1.734%</b>	5 ppm	63ppb+	0.10	1.58	324	54	2.00

006637 UTME 705173 UTMN 5580192 ELEV 316 m

KR10-103R

seriate dyke, fp stain, argillic alt

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.19	<b>135.2</b>	61	1.4	<0.02	2.96	551	60	0.53

## Appendix B Whole rock analytical data

Oxide	006630	006620	006628	006613	006615	006632	006505	006637
SiO <sub>2</sub>	46.83	55.88	57.25	58.89	62.19	62.42	62.47	63.15
TiO <sub>2</sub>	1.12	0.89	1.07	0.72	0.63	0.60	0.58	0.61
Al <sub>2</sub> O <sub>3</sub>	15.14	16.36	15.56	16.30	16.32	15.65	15.36	15.50
Fe <sub>2</sub> O <sub>3t</sub>	10.55	8.41	8.64	7.29	5.61	5.76	5.90	5.07
MnO	0.16	0.16	0.16	0.14	0.13	0.10	0.11	0.11
MgO	10.96	3.27	2.58	2.91	1.83	2.41	2.18	2.32
CaO	10.62	7.04	6.82	5.77	5.14	4.46	4.99	4.25
Na <sub>2</sub> O	1.41	3.39	2.68	3.32	3.88	2.97	3.32	3.43
K <sub>2</sub> O	0.20	0.87	1.68	1.78	1.72	2.93	2.23	2.31
P <sub>2</sub> O <sub>5</sub>	0.09	0.18	0.26	0.19	0.18	0.12	0.12	0.12
LOI	2.5	3.4	2.7	2.5	2.2	2.3	2.15	2.0
Sum	99.71	99.82	99.43	99.74	99.80	99.76	99.76	99.79
Sr	264.2	322.1	568.7	414.4	465.0	435.1	337.4	306.3
Y	13.7	21.5	29.2	23.5	19.5	18.3	19.7	18.1
Ba	68	297	573	657	704	973	841	755
Sr/Y	19.3	15.0	19.5	17.6	23.8	23.8	17.1	16.9
Zr	55.1	73.2	126.5	104.2	104.8	112.1	124	113.6
Nb	4.4	5.5	5.6	6.4	5.9	5.4	6.1	5.6
Hf	1.7	2.1	4.3	3.2	3.3	3.4	3.6	5.4
Cu	141.2	50.1	2366	372.1	64.1	100.1	402.3	144.2
V	253	246	244	198	118	129	127	149
Ce	10.7	23.3	32.9	32.8	30.3	28.7	30.8	31.2
Eu	0.86	1.02	1.31	1.10	1.00	0.81	0.88	0.86
Yb	1.39	2.27	3.23	2.50	2.14	2.08	2.22	2.16
Ce/Yb	7.7	10.3	10.2	13.12	14.2	13.8	13.9	14.4

## Sample description of whole rock samples

### Fresh Basalt

006630 UTME 705126 UTMN 5580482 ELEV 293 m

KR10R 113R

fresh basalt, with black flecks

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.09	<b>147.4</b>	60	1.9	<0.02	2.92	197	49	2.25

### Grey andesites

006620 UTME 706463 UTMN 5577915 245 ELEV 665 m

KR10R-122

grey andesite 10 m wide

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.22	<b>51.31</b>	32	0.5	<0.02	4.68	1047	144	2.01

006628 UTME 705203 UTMN 558228 ELEV 435 m

KR10R115R

malachite stained greenish stained fine grained light colored, andesite intrusion w/ hb?

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.26	<b>2305</b>	1133	4.0	<0.02	4.25	986	106	1.36

006613 UTME 705332 UTMN 5579461 ELEV 415 m

KR10-129R

grey andesite 65% fp hb?

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.28	<b>385.2</b>	92	1.1	<0.02	4.07	658	132	1.79

### Andesites/latites?

006615 UTME 706714 UTMN 5578611 ELEV 377 m

KR10-127R

1 m wide greyish blue andesite dyke or weirdly altered basalt (del pips??), andesite

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.69	<b>67.67</b>	37	<0.2	<0.02	3.07	789	47	1.04

006632 UTME 705241 UTMN 5580017 ELEV 331 m

KR10R-110R2

feldspar porphyry at contact,

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.11	<b>102.2</b>	47	<0.2	0.02	3.05	436	80	1.17

006505 UTME 705781 UTMN 5580227 ELEV 335 m

KR10-RP05

Andesite dyke, Some 30 m wide reddish, seriate monzodiorite to granodiorite (andesite) dyke with local fp phenocrysts to 1 cm, not much quartz, (stained vugs where sulphide was), portions of dyke are igneous breccia with angular amphibolite fragments (ex basalt?)

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.17	400	132	2.7	0.12	2.76	566	56	0.77

006637 UTME 705173 UTMN 5580192 ELEV 316 m

KR10-103R

seriate dyke, fp stain, argillic alt

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.19	<b>135.2</b>	61	1.4	<0.02	2.96	551	60	0.53

## Appendix C Petrology report

### Index

TS name/ Assay #	Field #	type	rock	Magnetic /5	fizzes	Conductive ohm	Specific gravity
A1 6502	KR10RP02	otc	Vein, qz, sulph	1/2	no	no	
A8 6503	KR10RP03	otc	Vein, qz, sulph	0	yes	3000	
A2 6505	KR10RP05	otc	Seriate Monzonite dyke	1/2	no	no	2.59
A3 no assay	KR10RP06	otc	As above with diorite fragments	1/2	no	no	2.67
A4 6506	KR10RP07	otc	Vein, alk fp, epid, qz, chl, mt	4	no	no	

Note, A8, only conductive within one pyrite crystal, not conductive from one to another, ie sulphide crystals not well connected.

## **Thin Section Descriptions**

### **PETROGRAPHY REPORT**

1/ Sample number KR10-RP02      UTME 705193      UTMN 5580237      ELEV 355

#### Field context

Unit: Vein with malachite and azurite staining, mainly sulphides and quartz gangue, with fragments of quartz, hosted by same basalt as above. Taken within a few metres of contact.

Sample: Sulphide vein shows mainly pyrite and lesser chalcopyrite Vein with malachite and azurite, as well as several sulphides, quartz gangue, hosted by same basalt as above.

#### Assay values

Copper is ore grade

Mo ppm	Cu	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.21	<b>2.27%</b>	6045	39.0	<b>10+%</b>	<b>18.35</b>	563	10	9.11

Thin Section Number      006502 (A1)      Type TS

Name Vein with malachite and azurite, as well as several sulphides, in calcite gangue, hosted by basalt

#### Mineralogy

##### Vein Fragment

Coarse carbonate, with well developed cleavage lines 1 cm across. The carbonate does not fizz. In weak HCl. Maybe an ankerite or dolomite. Contains small (0.1mm) grains of epidote.

##### Matrix

Sulphide are scattered in the matrix as variable sized accumulations, many with pyrite cube outlines. Some grains appear to be chalcopyrite. Mainly associated with epidote and calcite although other small grains are scattered..

Chlorite, intergrown with tremolite, in patches as ground mass.

Epidote and/or clinzoisite grains and masses throughout the slide, some larger crystals many small

Vfg quartz near quartz and is in contact with carbonate.

Calcite is locally abundant in the matrix as well, showing bent cleavage and local disruption.

Tremolite, patch of acicular, radiating, light pleochroic green, high first order to low second order birefringence, small 10 deg extinction angle, length fast

Yellowish brown pyroxene with well developed basal cleavage and locally twinned, moderate extinction angle, occurs as small patches with sulphides.

Scarce Sphene and associated "leucoxene" has been noted.

### Texture

Very varied over short distance, sample is of a vein edge cutting country rock, the vein disrupted and consists mainly of calcite epidote and sulphide. The selvage/country rock has mineral associations associated with a calcic skarn.

### Structure

Vein cutting a highly altered basalt.

### Special notes

See Figure 10, part A.

## PETROGRAPHY REPORT

1/ Sample number KR10-RP03 UTME 705193 UTMN 5580237 ELEV 355

### Field context

Unit: Irregular shaped vein up to 10 cm across. Vein with malachite and azurite, as well as several sulphides, calcite gangue, hosted by same basalt as above. Sample taken a few metres from the contact with a dyke.

Sample: Mainly sulphide, mostly pyrite, with chalcopyrite, local quartz and calcite gangue.

### Assay values

Copper is ore grade, silver anomalous

Mo ppm	Cu	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.11	<b>2.83%</b>	5869	22.9	<b>10+%</b>	<b>14.99</b>	452	15	8.83

Thin Section Number 006503 (A8) Type PTS

Name Irregular shaped vein up to 10 cm across. Vein with malachite and azurite, as well as several sulphides, calcite gangue, hosted by same basalt as above.

### Mineralogy

Zoned vein

Epidote and sulphide rich edge, mm sized epidotes are intergrown with pyrite and chalcopyrite

Sulphide rich 2 cm thick layer is mainly pyrite with textured bluish staining (Chalcocite/covellite family?) and few chalcopyrite grains. Pyrite has crystal faces against calcite.

Calcite sulphide centre vein, abundant calcite with small cubes of pyrite dispersed throughout

### Texture

variably sized crystals, core of vein has the coarsest grain sizes.

## Structure

Vein has complex history, the pyrites have been fractured after crystallization.

## Special notes

Figure 10, part B

## PETROGRAPHY REPORT

1/ Sample number KR10-RP05 UTME 705181      UTMN 5580227      ELEV 335 m

### Field context

Unit: Feldspar porphyry (Monzonite) dyke

Sample: altered beige to pink feldspar (monzonite) dyke with seriate feldspars set in a fine grained matrix.

### Assay values

Copper is anomalous in this type of dyke.

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.17	400	132	2.7	0.12	2.76	566	56	0.77

Thin Section Number      006505, (A2)      Type TS

### Name

### Mineralogy

#### Phenocrysts

Plagioclase to 4 mm clusters, seriate range of well formed laths, now replaced by clay and scattered epidote crystals. Several of the larger crystal clumps have illite/pyrophyllite near their center.

"prismatic mafic" in small 1mm generally prismatic shape replaced by chlorite. From the shape it is likely the mafic was mainly a hornblende, but tabular patches of chlorite suggestive of biotite were also seen

#### Matrix

Very fine grained mixture of quartz and both low relief feldspars (albite and orthoclase). Samples of the unit have been stained for Kspar, and a large proportion is orthoclase. ( $K_2O/Na_2O = 0.6$ ) see appendix B.

Chlorite, both as replacement minerals and as ragged patches in matrix is green, exceedingly fine grained and has grey to brown birefringence

Opagues, small cubes and related shapes are present as accessory minerals. The rock is only mildly magnetic so it is likely that some of these grains are magnetite and the remainder is pyrite as indicated by local rust pits in weathered rock surface.

### Texture

Typical porphyritic texture, a typical feldspar porphyry. The mafics are altered but are

suggestive of hornblende and biotite microphenocrysts.

#### Structure

Massive, but well altered

#### Special notes

The alteration (Chlorite, epidote and clay) is typical propylitic alteration. Given that the dyke has skarn adjacent to it, it is likely that this alteration is post or very late in the emplacement history. The copper content is elevated compared to other dykes of this type, and may be a locus of hydrothermal alteration and possibly mineralization of some magnitude. See note on sample below. More work is needed.

See Figure 10 part C

## PETROGRAPHY REPORT

1/ Sample number KR10-RP06 UTME 705181 UTMN 5580227 ELEV 335 m

#### Field context

Unit: Feldspar Porphyry (Monzonite) dyke, sample collected some 10 m from above specimen in same dyke

Sample: altered beige Feldspar Porphyry (monzonite) dyke with seriate feldspars and cm sized darker inclusions

no assay

Thin Section Number (A3) Type TS

Name Feldspar porphyry dyke, deeply altered

#### Mineralogy Fragment

A darker fragment several cm across is included in this thin section. In thin section the darker area is seen to be an area of greater concentration of chlorite replaced mafic minerals, both prisms and plates have been noted and opaque accessories

#### Phenocrysts

##### Phenocrysts

Plagioclase to 4 mm clusters, seriate range of well formed laths, now replaced by clay and scattered epidote crystals. Several of the larger crystal clumps have pyrophyllite? near center.

small prisms of high refractive index and second order birefringence are associated with the clay. The mineral may be diaspor?

“prismatic mafic” in small 1mm generally prismatic shape replaced by chlorite. From the shape it is likely the mafic was mainly a hornblende, but tabular patches suggestive of biotite are also noted.

### Matrix

Very fine grained mixture of quartz and both low relief feldspars (albite and orthoclase). Samples of the unit have been stained for Kspar, and a large proportion is orthoclase. (K<sub>2</sub>O/Na<sub>2</sub>O= 0.6) see appendix B.

Chlorite, both as replacement minerals and as ragged patches is green, exceedingly fine grained and grey to brown birefringence

Opagues are present in greater abundance than in previous thin section. These accessory minerals are present as small cubes and related shapes. The rock is only mildly magnetic so it is likely that some of these grains are magnetite and the remainder may be pyrite as suggested by local rust pits in weathered rock surface.

### Texture

Typical porphyritic texture, a typical feldspar porphyry. The mafics are altered but are suggestive of hornblende and biotite microphenocrysts.

### Structure

Massive, with igneous inclusion; but well altered

### Special notes

The possibility of pyrophyllite and diasporite present in these rocks need to be checked. Submission of the samples to SWIR analysis is impending. A consequence of the presence of these minerals is that they represent advanced argillic alteration. The presence of abundant potash mineral is not compatible with their presence. More work is certainly needed.

Figure 10, part D

## PETROLOGY REPORT

1/ Sample number KR10-RP07 UTME 705193 UTMN 5580251 ELEV 341 m

### Field context

Unit: Skarn at contact with dyke. A zone with a complex cm sized mixture of white epidote/feldspar and dark chlorite and quartz

Sample: Shows the contact between white and dark domains. Dark material magnetic.

### Assay values

Mo ppm	Cu ppm	Ag ppb,	Au ppb,	S %,	Fe%	Mn ppm	V ppm	Ca%
0.26	349	147	4.4	0.36	4.48	511	56	0.47

Thin Section Number 006506 (A4) Type TS

Name Distal Skarn, showing several different domains

## Mineralogy

### Domain one (White)

Mainly cryptocrystalline quartz cut by fine grained quartz veins and scarce planar magnetite veins

### Domain two (green)

Mainly cryptocrystalline chlorite with acicular tremolite/actinolite sprays centered on magnetite epidote cores

### Domain three (dark)

Epidote pistachio green, vfg green chlorite, acicular (pleochroic in green, second order birefringent, low extinction angle) amphibole matrix crowded with small cube like opagues, mainly magnetic material. The rock is quite magnetic.

## Texture

Varied, but generally very fine grained matrix in which metamorphic micro porphyroblasts are set.

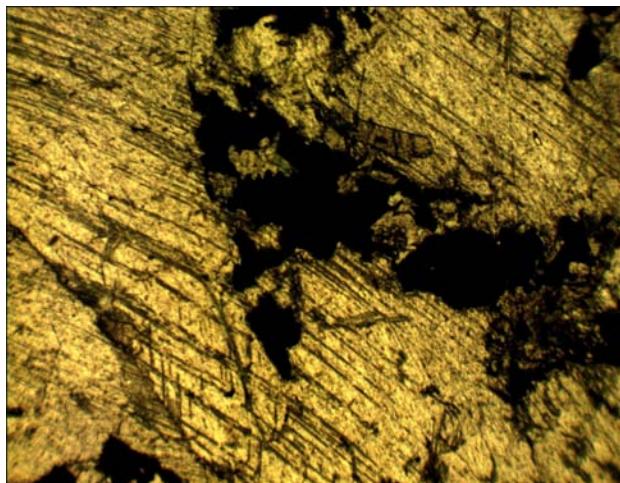
## Structure

Several domains and also veined by the second domain type of minerals.

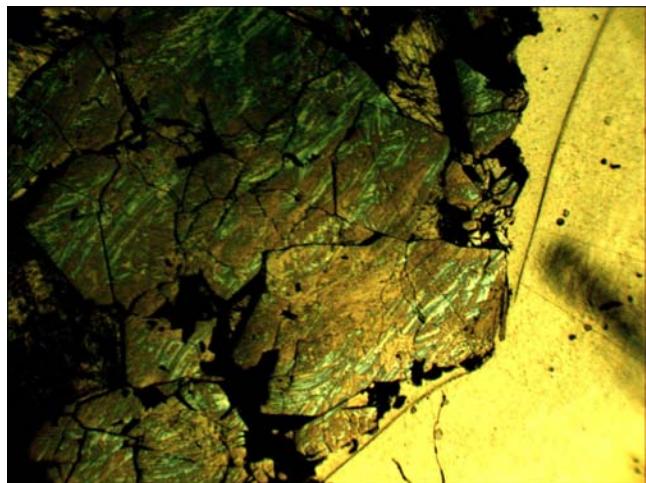
## Special notes

See Figure 10, part E.

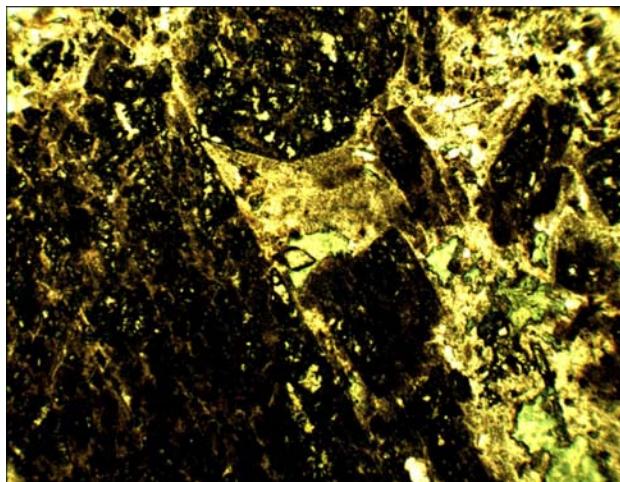
**Figure 10: Plates of photomicrographs**



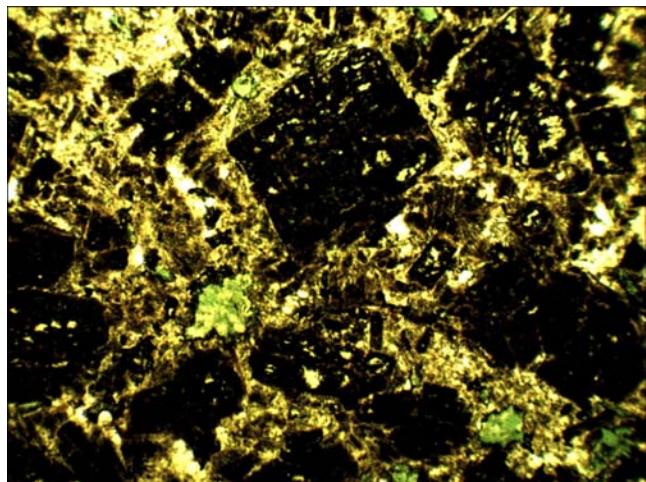
**Part A: A1, 006502, Type TS**



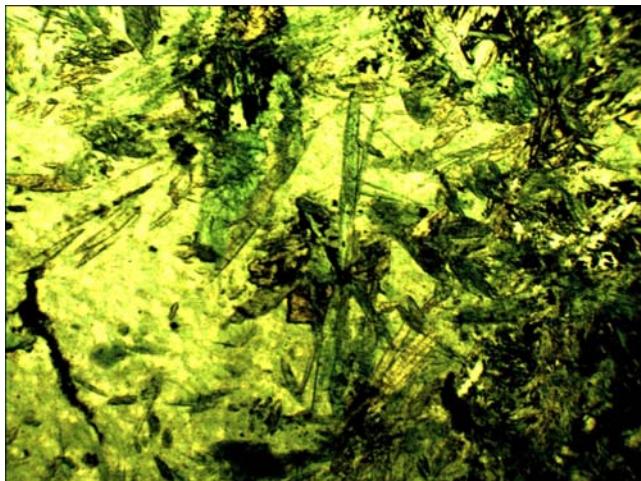
**Part B: A8, 0065023, Type PTS**



**Part C: A2, 006505, Type TS**



**Part D: A3, Type TS**



**Part E: A4, 006506, Type TS**

**NOTES:**

- All samples have a field of view of 2 mm.
- A1, A2, A3 and A4 are standard thin sections (TS)
- A8 (Part B) is a polished thin section (PTS)

## Appendix D Magnetic Susceptibility from selected sites

(315 readings from 48 discrete localities)

NAD83E	NAD83N	Elev_m	MS note	MS Median	MS1	MS2	MS3	MS4	MS5	MS6	MS7
703371	5582712	217.3	at sample M101R 3m up from road	13.7	1.45	22	2.01	22.7	13.7		
703371	5582712	217.3	at road level; less altered	27.1	18.6	27.1	29				
705493	5580459	263.3	quarry on UA106D, location 1 see diagram	29.4	29.4	32.5	27.1				
705493	5580459	263.3	quarry on UA106D, location 2 see diagram	71.5	71.5	25.8	72.2	40.4	91		
705493	5580459	263.3	rock wall on Rd, just N of Qry	21.9	23.6	21.9	14				
705189	5580236	347.8	at M102R	0.32	0.44	0.29	0.32				
705189	5580236	347.8	0.5m R (W) of sample	1.18	0.73	1.18	0.74	1.39	1.26		
705189	5580236	347.8	on dike 15m R (W) of 102R	0.17	0.15	0.17	0.4	0.17	0.18		
705189	5580236	347.8	15m R (NW) of dike	5.67	11.8	1.53	9.47	2.47	5.67		
705173	5580192	316.7	country rock	7.71	7.01	6.48	11.7	8.29	7.71		
705173	5580192	316.7	epidote vein	0.54	0.54	0.53	0.6				
705173	5580192	316.7	white vein	4.29	4.29	5.06	5.61	2.1	2.62		
705164	5580191	312.1	on dike	0.55	0.27	0.55	0.96				
705122	5580086	335.9	basalt	32.9	30.9	37.1	32.9				
705151	5580054	339.2	basalt	34.2	16.5	34.2	4.1	34.8	48.6		
705337	5579984	335.6	basalt but low MS	0.76	0.76	1.22	0.68	1.8	0.4		
705378	5577112	525.5	host rock, basalt	26.2	29.5	26.2	25.9				
705378	5577112	525.5	epidote slickenside, some malachite	1.84	1.84	1.62	1.27	26.7	2.64		
705318	5579975	338.9	basalt	1.76	0.93	2.71	15.1	1.7	1.76		
705318	5579975	338.9	dike	1.52	1.01	3.3	1.52	5.21	1.44		
705181	5579995	340.2	basalt	18.6	13.2	18.9	18.6				
705118	5580231	318.2	large piece of dike off road	0.38	0.79	0.38	0.16				
705148	5580235	306.3	basalt probably in place	14.1	14.1	25.1	4.56	9.66	26.5		
705172	5580212	301.1	dike at contact w basalt E side	4.62	7.48	3.11	4.62				
705172	5580212	301.1	basalt at contact with dike E side	0.83	0.72	0.83	1.25				
705172	5580212	301.1	middle of dike	0.19	0.14	0.4	0.19				
705172	5580212	301.1	basalt at contact W side	24.3	10.5	24.3	40	9.12	41.5		
705172	5580212	301.1	dike at contact W side	3.05	6.94	3.05	0.29	3.08	1.19	0.74	6.35
705172	5580212	301.1	on dike but some veining	24.9	24.9	37.9	12.4				
705125	5580533	310.6	very crumbly, lots of sparkle, possible biotite	29.9	29.9	24.5	30.9				

NAD83E	NAD83N	Elev_m	MS note	MS Median	MS1	MS2	MS3	MS4	MS5	MS6	MS7
705125	5580533	310.6	not so altered, not crumbly	15.9	12.9	15.9	23.4				
705071	5580607	307.2	basalt	0.72	0.72	0.82	0.68				
705008	5580673	322.8	basalt	21.5	26.8	18.1	21.5				
705029	5580639	303.6	basalt	3.81	4.67	2.84	3.81				
705093	5580525	300.5	basalt	23.3	18.7	33.7	9.99	23.3	23.7		
705119	5580484	287.7	basalt	32.9	41.1	22.4	32.9				
705400	5578106	506.0	on country rock	30.8	30.1	31.9	5.03	30.8	31.4		
705400	5578106	506.0	near fault & pale wash of malachite	19.1	13.9	19.1	19.4				
705388	5577978	499.6	on slickenside	2.36	2.06	2.36	2.7				
705388	5577978	499.6	at sample M114R	12.5	12.5	28.9	1.13	3.63	19.6		
705401	5577855	498.0	"fresh" basalt	35.3	35.8	35.3	32.8				
705404	5577784	490.1	shear zone	9.93	9.35	2.64	9.93	17.6	21.3		
705376	5577752	493.8	amygdaloidal basalt	23	20.1	23	23.9				
705203	5578228	435.3	sample w malachite	0.37	0.52	0.37	0.37				
706071	5578293	622.1	on malachite stained	61.8	61.8	47.9	63.9				
706071	5578293	622.1	breccia	10.8	12	6.98	17.1	4.44	10.8		
706081	5578285	620.6	bluish rock just off malachite	14.3	14.3	13.7	15.4				
706081	5578285	620.6	on malachite	9.1	8.96	8.69	9.1	18.9	30.9		
706562	5577788	677.0	at sample M120R	1	1	0.5	0.45	8.68	10.4		
706495	5577856	672.7	on middle of several different pillows	0.58	0.46	0.58	0.42	0.63	0.68	0.62	0.47
706462	5577915	663.9	intrusive	12.3	12.3	14.4	11.3				
706432	5577936	662.0	possible chlorite, black blebs	0.6	0.48	0.6	1.19	0.58	0.61		
706422	5577948	658.1	pyrrotite?, bornite?	1.09	1.09	0.82	1.36				
706422	5577949	658.1	pillow to R (N)	0.31	0.31	0.16	0.36				
706422	5577951	658.1	dike? greyish rock 3m N, sample M124R2	0.55	0.55	0.59	0.31				
705787	5578095	688.5	on host rock, fine grained, black	9.29	6.66	34.7	5.81	33.9	9.29		
705808	5578347	659.6	on host surface, slight epidote	36.4	29.9	19.7	42.3	65.1	36.4		
705959	5579108	430.1	on pillows	0.51	0.68	0.36	0.51				
706472	5578921	369.7	limestone	-0.23	-0.12	-0.23	-0.43				
706712	5578623	380.1	limestone	-0.4	-0.16	-0.4	-0.44				
706712	5578623	380.1	dike in limestone, sample M127R	0.35	0.03	0.35	0.76				
705527	5579649	373.4	dike	0.09	0.12	0.09	0.07				
705358	5579540	395.6	baalt, location 1, W side	25.3	23.8	25.3	30.4				
705358	5579540	395.6	basalt, location 2, SW corner	41.8	43.1	41.8	35.5				
705358	5579540	395.6	location 3; vein, chlorite, calcite, S side at W	1.49	1.49	1.45	1.62				
705358	5579540	395.6	basalt, location 4, SE corner	36.5	32.6	44.5	36.5				

NAD83E	NAD83N	Elev_m	MS note	MS Median	MS1	MS2	MS3	MS4	MS5	MS6	MS7
705397	5579210	463.0	basalt, ~4m L (N) of sample site	31.5	30.5	31.5	32.4				
705397	5579210	463.0	sample M128R; "propyllitic amygdaloidal basalt"	6.82	22.2	0.57	6.82	0.71	9.75		
705397	5579210	463.0	amygdular, small bits of sulphide	69.7	76.9	69.7	58.2				
705332	5579457	414.5	sample site M129R, andesite?	25.6	25.6	17.9	27.3				
705332	5579457	414.5	basalt to L & above sample site	38.3	37.6	43.7	38.3				
705335	5579524	405.7	basalt	27.7	32.2	27.7	26.5				
706277	5578464	547.7	big rock race off end of road	14.6	14.6	13.8	21.9	16.5	12.7		
706277	5578464	547.7	softer altered just at end of road on uphill side, sample M132R	1.71	1.86	1.21	1.71				
706190	5578510	535.8	sample M131R, malachite, bornite	1.18	2.44	1.18	0.62	3.42	1.09		
706190	5578510	535.8	2m R of sample	1.39	1.39	0.98	1.43				
706198	5578513	540.1	sample M133R, diss. chalco, bornite	1.61	1.69	0.81	1.61				
706158	5578535	538.3	at sample site M134R	19.8	19.8	2.5	31.8	20.2	1.87		
706036	5578512	556.6	at sample site M136R	2.36	7.59	1.68	2.36				
706036	5578512	556.6	on smooth black 1m from M136R, breccia slate?	65.6	72.4	42.4	24.7	65.6	72.7		
706228	5578330	589.8	basalt w epidote, qtz	64.2	72.2	64.2	59.4				
706226	5578330	589.8	1m to R, same rock?	35.9	35.9	26	38				
706237	5578324	592.2	fine grained basalt, some chalcopyrite, M137R	45.9	45.9	40.8	64.6				

## **Appendix E Original Assay Sheets**



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Submitted By: Mikkel Schau  
Receiving Lab: Canada-Vancouver  
Received: March 10, 2010  
Report Date: March 24, 2010  
Page: 1 of 2

## CERTIFICATE OF ANALYSIS

VAN10000952.2

### CLIENT JOB INFORMATION

Project: ADAM RIVER  
Shipment ID: KRINGLE PROJECT

P.O. Number

Number of Samples: 9

### SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage  
DISP-RJT Dispose of Reject After 90 days

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200-250	9	Crush, split and pulverize 250 g rock to 200 mesh			VAN
1F02	9	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	15	Completed	VAN
4A&4B	1	Whole Rock Analysis Majors and Trace Elements	0.2	Completed	VAN
7AR	3	1:1:1 Aqua Regia digestion ICP-ES analysis	0.4	Completed	VAN

### ADDITIONAL COMMENTS

Version 2: Group 7AR Cu included

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Schau, Mikkel  
1007 Barkway Terrace  
Brentwood Bay BC V8M 1A4  
Canada

CC:



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.  
All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only.  
\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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## CERTIFICATE OF ANALYSIS

VAN10000952.2

Method	Analyte	WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15		
		Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
		Unit	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	
		MDL	0.01	0.01	0.01	0.01	0.1	2	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	
006501	Rock		0.49	1.84	2671	2.61	19.3	334	33.1	85.1	403	7.69	28.2	1.8	8.5	0.1	93.1	1.13	0.32	0.53	251	3.94
006502	Rock		0.48	0.21	>10000	7.26	10.5	6045	64.1	575.5	563	18.35	19.6	<0.1	39.0	<0.1	53.9	9.00	0.13	1.87	10	9.11
006503	Rock		0.67	0.11	>10000	6.74	9.5	5869	66.0	321.9	452	14.99	16.2	0.1	22.9	<0.1	63.5	10.72	0.14	1.81	15	8.83
006504	Rock		0.31	0.36	4648	3.22	11.5	1313	24.1	129.6	441	7.07	14.0	<0.1	10.8	<0.1	52.2	1.90	0.18	0.88	34	6.54
006505	Rock		1.09	0.17	399.7	1.35	48.1	132	5.0	15.6	566	2.76	0.6	0.4	2.7	1.5	34.8	0.25	0.04	0.05	56	0.77
006506	Rock		0.57	0.26	348.9	1.01	56.5	147	47.7	26.5	511	4.48	1.0	<0.1	4.4	<0.1	87.0	0.20	0.03	<0.02	56	0.47
006507	Rock		0.38	0.88	4513	0.72	105.3	1250	83.9	36.0	780	7.67	0.5	<0.1	7.2	0.2	8.8	1.26	0.03	0.04	97	0.46
006508	Rock		1.04	0.56	7304	0.92	77.7	1378	74.0	28.3	503	4.86	1.5	0.1	15.8	0.1	93.4	1.37	0.04	0.06	66	0.83
006509	Rock		0.23	2.30	>10000	3.27	70.7	46721	88.3	115.5	197	8.91	3.0	<0.1	56.5	0.1	56.6	2.06	0.54	0.11	160	0.87



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## CERTIFICATE OF ANALYSIS

VAN10000952.2

Method	1F15		1F15		1F15		1F15		1F15		1F15		1F15		1F15		1F15		1F15		4A-4B	
	Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	SiO2	Al2O3	
		Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	%	%	
			MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.02	0.02	5	0.1	0.02	0.1	0.01	0.01
006501	Rock		0.023	0.5	53.5	0.59	8.0	0.128	<1	5.84	0.028	0.07	1.0	2.5	<0.02	0.07	21	1.4	0.41	13.9	N.A.	N.A.
006502	Rock		<0.001	<0.5	2.0	0.12	1.3	0.008	<1	0.35	0.003	<0.01	<0.1	1.2	0.05	>10	33	44.4	1.50	1.6	N.A.	N.A.
006503	Rock		0.002	<0.5	2.8	0.10	0.9	0.019	<1	0.51	0.005	<0.01	<0.1	1.7	0.02	>10	35	29.6	0.84	2.3	N.A.	N.A.
006504	Rock		0.005	<0.5	7.1	0.30	1.7	0.079	1	2.13	0.015	0.02	0.1	0.9	0.03	5.35	15	9.2	0.27	6.6	N.A.	N.A.
006505	Rock		0.048	3.9	9.4	1.21	16.1	0.142	<1	1.73	0.038	0.07	0.1	3.6	0.02	0.12	<5	0.1	0.03	5.5	62.47	15.36
006506	Rock		0.006	<0.5	30.0	2.51	9.9	0.118	<1	2.28	0.026	0.01	<0.1	2.0	<0.02	0.15	<5	0.6	<0.02	7.1	N.A.	N.A.
006507	Rock		0.023	<0.5	77.7	4.94	2.1	0.193	<1	4.53	0.020	<0.01	<0.1	2.9	<0.02	0.36	<5	1.3	<0.02	12.8	N.A.	N.A.
006508	Rock		0.026	0.7	61.1	2.61	24.1	0.128	<1	3.17	0.094	0.02	<0.1	3.0	0.02	0.53	<5	1.8	<0.02	6.8	N.A.	N.A.
006509	Rock		0.044	1.2	27.8	0.39	1.0	0.512	<1	1.11	0.002	<0.01	<0.1	7.9	<0.02	2.45	198	23.1	0.07	5.7	N.A.	N.A.



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## CERTIFICATE OF ANALYSIS

VAN10000952.2

Method	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B									
Analyte	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga	Hf	Nb				
Unit	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm											
MDL	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1
006501	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
006502	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
006503	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
006504	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
006505	Rock	5.90	2.18	4.99	3.32	2.23	0.58	0.12	0.11	<0.002	<20	17	2.5	99.76	841	<1	16.5	0.2	14.6	3.6	6.1			
006506	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
006507	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
006508	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
006509	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								



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Page: 2 of 2 Part 4

## CERTIFICATE OF ANALYSIS

VAN10000952.2

Analyte	Method	4A-4B																								
		Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho					
		ppm																								
		0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	0.01	0.05						
006501	Rock	N.A.																								
006502	Rock	N.A.																								
006503	Rock	N.A.																								
006504	Rock	N.A.																								
006505	Rock	47.9	<1	337.4	0.5	5.1	1.7	127	0.8	124.0	19.7	14.6	30.8	3.58	15.3	3.12	0.88	3.12	0.57	3.35	0.68					
006506	Rock	N.A.																								
006507	Rock	N.A.																								
006508	Rock	N.A.																								
006509	Rock	N.A.																								



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## CERTIFICATE OF ANALYSIS

VAN10000952.2

Analyte	Method	4A-4B	4A-4B	4A-4B	4A-4B	2A Leco	2A Leco	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
		Er	Tm	Yb	Lu	TOT/C	TOT/S	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au	Hg	Tl	Se		
		Unit	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
		MDL	0.03	0.01	0.05	0.01	0.02	0.02	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.5	0.01	0.1	0.5	0.01	
006501	Rock		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006502	Rock		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006503	Rock		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006504	Rock		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006505	Rock		2.28	0.33	2.22	0.35	0.04	0.12	0.2	402.3	1.3	47	5.2	0.9	0.2	<0.1	<0.1	0.1	<0.5	<0.01	<0.1	<0.5	
006506	Rock		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006507	Rock		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006508	Rock		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006509	Rock		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	



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**Project:** ADAM RIVER  
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**Page:** 2 of 2      **Part** 6

## CERTIFICATE OF ANALYSIS

VAN10000952.2

Method	7AR
Analyte	Cu
Unit	%
MDL	0.001
006501	Rock
006502	Rock
006503	Rock
006504	Rock
006505	Rock
006506	Rock
006507	Rock
006508	Rock
006509	Rock



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## QUALITY CONTROL REPORT

VAN10000952.2

Method	WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15		
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
Unit	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	
MDL	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	
Pulp Duplicates																					
006503	Rock	0.67	0.11	>10000	6.74	9.5	5869	66.0	321.9	452	14.99	16.2	0.1	22.9	<0.1	63.5	10.72	0.14	1.81	15	8.83
REP 006503	QC																				
006506	Rock	0.57	0.26	348.9	1.01	56.5	147	47.7	26.5	511	4.48	1.0	<0.1	4.4	<0.1	87.0	0.20	0.03	<0.02	56	0.47
REP 006506	QC																				
Reference Materials																					
STD CSC	Standard																				
STD DS7	Standard																				
STD DS7	Standard	20.48	113.0	63.74	384.3	829	53.5	8.7	614	2.29	49.1	4.7	63.7	4.5	71.4	6.16	5.87	4.40	81	0.93	
STD GC-7	Standard																				
STD OREAS45PA	Standard																				
STD OREAS76A	Standard																				
STD R4A	Standard																				
STD SO-18	Standard																				
STD SO-18	Standard																				
STD CSC Expected																					
STD OREAS76A Expected																					
STD SO-18 Expected																					
STD OREAS45PA Expected																					
STD DS7 Expected		20.5	109	70.6	411	890	56	9.7	627	2.39	48.2	4.9	70	4.4	68.7	6.38	4.6	4.51	84	0.93	
STD GC-7 Expected																					
STD R4A Expected																					
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank	<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	
BLK	Blank																				
Prep Wash																					
G1	Prep Blank	<0.01	0.36	10.38	2.86	45.6	11	3.6	4.2	576	1.96	<0.1	2.2	0.9	7.6	48.4	0.02	0.08	0.06	37	0.46

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**Project:** ADAM RIVER  
**Report Date:** March 24, 2010

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**Page:** 1 of 1 **Part:** 2

## QUALITY CONTROL REPORT

VAN10000952.2

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	4A-4B	4A-4B		
Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	SiO2	Al2O3
Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	%	%
MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.01	0.01
Pulp Duplicates																				
006503	Rock	0.002	<0.5	2.8	0.10	0.9	0.019	<1	0.51	0.005	<0.01	<0.1	1.7	0.02	>10	35	29.6	0.84	2.3	N.A. N.A.
REP 006503	QC																			
006506	Rock	0.006	<0.5	30.0	2.51	9.9	0.118	<1	2.28	0.026	0.01	<0.1	2.0	<0.02	0.15	<5	0.6	<0.02	7.1	N.A. N.A.
REP 006506	QC	0.006	<0.5	30.4	2.51	10.4	0.120	<1	2.28	0.028	0.01	<0.1	1.9	<0.02	0.15	<5	0.3	<0.02	6.7	
Reference Materials																				
STD CSC	Standard																			
STD DS7	Standard																			
STD DS7	Standard	0.074	12.9	188.9	1.02	401.5	0.131	38	0.99	0.092	0.44	3.9	3.0	3.97	0.20	190	3.5	1.21	4.4	
STD GC-7	Standard																			
STD OREAS45PA	Standard																			
STD OREAS76A	Standard																			
STD R4A	Standard																			
STD SO-18	Standard																	58.17	14.02	
STD SO-18	Standard																	58.05	14.13	
STD CSC Expected																				
STD OREAS76A Expected																				
STD SO-18 Expected																		58.47	14.23	
STD OREAS45PA Expected																				
STD DS7 Expected		0.08	11.7	179	1.05	370.3	0.124	38.6	0.959	0.089	0.44	3.4	2.5	4.19	0.19	200	3.5	1.08	4.6	
STD GC-7 Expected																				
STD R4A Expected																				
BLK	Blank																			
BLK	Blank																	<0.01	<0.01	
BLK	Blank																			
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1	
BLK	Blank																			
Prep Wash																				
G1	Prep Blank	0.085	12.6	9.2	0.53	153.6	0.127	<1	0.88	0.061	0.46	<0.1	2.2	0.29	<0.02	<5	<0.1	<0.02	4.4	66.95 15.85

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**Project:** ADAM RIVER  
**Report Date:** March 24, 2010

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Page: 1 of 1 Part 3

## QUALITY CONTROL REPORT

VAN10000952.2

Method	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	
Analyte	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga	Hf	Nb				
Unit	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm										
MDL	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5	0.1	0.1	0.1	0.1	0.1	
Pulp Duplicates																								
006503	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.									
REP 006503	QC																							
006506	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.									
REP 006506	QC																							
Reference Materials																								
STD CSC	Standard																							
STD DS7	Standard																							
STD DS7	Standard																							
STD GC-7	Standard																							
STD OREAS45PA	Standard																							
STD OREAS76A	Standard																							
STD R4A	Standard																							
STD SO-18	Standard	7.64	3.36	6.31	3.71	2.16	0.69	0.83	0.40	0.553	51	26	1.9	99.75	508	<1	25.4	6.8	17.5	9.9	20.8			
STD SO-18	Standard	7.60	3.36	6.35	3.72	2.15	0.70	0.83	0.40	0.562	53	26	1.9	99.75	514	1	26.4	6.9	17.9	9.8	21.3			
STD CSC Expected																								
STD OREAS76A Expected																								
STD SO-18 Expected		7.67	3.35	6.42	3.71	2.17	0.69	0.83	0.39	0.55	44	25			514		26.2	7.1	17.6	9.8	21.3			
STD OREAS45PA Expected																								
STD DS7 Expected																								
STD GC-7 Expected																								
STD R4A Expected																								
BLK	Blank																							
BLK	Blank	<0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.002	<20	<1	0.0	<0.01	<1	<1	<0.2	<0.1	<0.5	<0.1	<0.1			
BLK	Blank																							
BLK	Blank																							
BLK	Blank																							
Prep Wash																								
G1	Prep Blank	3.58	1.14	3.56	3.73	3.57	0.41	0.19	0.10	<0.002	<20	6	0.7	99.76	949	3	4.5	4.9	19.1	4.3	25.3			



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**Report Date:** March 24, 2010

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**Page:** 1 of 1 **Part:** 4

## QUALITY CONTROL REPORT

VAN10000952.2

Method	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	
Analyte	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho							
Unit	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	0.02	0.05	0.01	0.05	0.02	0.91	0.61				
Pulp Duplicates																											
006503	Rock	N.A.																									
REP 006503	QC																										
006506	Rock	N.A.																									
REP 006506	QC																										
Reference Materials																											
STD CSC	Standard																										
STD DS7	Standard																										
STD DS7	Standard																										
STD GC-7	Standard																										
STD OREAS45PA	Standard																										
STD OREAS76A	Standard																										
STD R4A	Standard																										
STD SO-18	Standard	28.3	14	404.4	7.1	10.2	16.5	201	14.9	286.0	31.5	12.0	27.4	3.36	13.5	2.89	0.85	2.88	0.50	2.91	0.61						
STD SO-18	Standard	28.3	15	410.2	7.1	10.5	16.8	195	15.0	289.6	31.6	12.5	28.1	3.43	13.9	2.87	0.87	2.97	0.50	2.93	0.62						
STD CSC Expected																											
STD OREAS76A Expected																											
STD SO-18 Expected		28.7	15	407.4	7.4	9.9	16.4	200	14.8	280	31	12.3	27.1	3.45	14	3	0.89	2.93	0.53	3	0.62						
STD OREAS45PA Expected																											
STD DS7 Expected																											
STD GC-7 Expected																											
STD R4A Expected																											
BLK	Blank																										
BLK	Blank	<0.1	<1	<0.5	<0.1	<0.2	<0.1	<8	<0.5	2.1	<0.1	<0.1	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05	<0.01	<0.05	<0.02						
BLK	Blank																										
BLK	Blank																										
Prep Wash																											
G1	Prep Blank	131.4	<1	762.5	1.4	12.0	4.1	47	<0.5	148.0	17.3	34.0	70.6	7.43	27.9	4.43	1.15	3.43	0.53	2.90	0.59						



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Project: ADAM RIVER  
Report Date: March 24, 2010

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Page: 1 of 1 Part 5

## QUALITY CONTROL REPORT

VAN10000952.2

	Method	4A-4B	4A-4B	4A-4B	4A-4B	2A Leco	2A Leco	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX		
Analyte	Er	Tm	Yb	Lu	TOT/C	TOT/S	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au	Hg	Tl	Se								
Unit	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm		
MDL	0.03	0.01	0.05	0.01	0.02	0.02	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.1	0.5	0.01	0.1	0.5	0.01	0.1	0.5	0.01	0.1	0.5		
Pulp Duplicates																												
006503	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
REP 006503	QC																											
006506	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
REP 006506	QC																											
Reference Materials																												
STD CSC	Standard					2.84	4.41																					
STD DS7	Standard							20.3	109.1	68.7	400	55.0	48.0	6.3	4.2	4.5	0.8	60.0	0.17	4.1	3.3							
STD DS7	Standard																											
STD GC-7	Standard																											
STD OREAS45PA	Standard							0.8	591.4	18.5	114	291.7	3.8	<0.1	<0.1	0.2	0.2	42.6	0.02	<0.1	0.8							
STD OREAS76A	Standard							0.15	17.62																			
STD R4A	Standard																											
STD SO-18	Standard	1.86	0.28	1.76	0.27																							
STD SO-18	Standard	1.77	0.27	1.80	0.28																							
STD CSC Expected						2.94	4.25																					
STD OREAS76A Expected						0.16	18																					
STD SO-18 Expected		1.84	0.27	1.79	0.27																							
STD OREAS45PA Expected								0.9	600	19	119	281	4.2	0.09	0.13	0.18	0.3	43	0.03	0.07	0.54							
STD DS7 Expected								20.5	109	70.6	411	56	48.2	6.4	4.6	4.5	0.9	70	0.2	4.2	3.5							
STD GC-7 Expected																												
STD R4A Expected																												
BLK	Blank					<0.02	<0.02																					
BLK	Blank	<0.03	<0.01	<0.05	<0.01																							
BLK	Blank							<0.1	<0.1	<0.1	<1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.01	<0.1							
BLK	Blank																											
BLK	Blank																											
Prep Wash																												
G1	Prep Blank	1.83	0.26	1.92	0.31	<0.02	<0.02	0.3	9.2	2.7	42	3.3	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.01	0.3	<0.5						

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**Project:** ADAM RIVER  
**Report Date:** March 24, 2010

**Page:** 1 of 1      **Part** 6

## QUALITY CONTROL REPORT

VAN10000952.2

Method	7AR	
Analyte	Cu	
Unit	%	
MDL	0.001	
Pulp Duplicates		
006503	Rock	2.832
REP 006503	QC	2.877
006506	Rock	N.A.
REP 006506	QC	
Reference Materials		
STD CSC	Standard	
STD DS7	Standard	
STD DS7	Standard	
STD GC-7	Standard	0.564
STD OREAS45PA	Standard	
STD OREAS76A	Standard	
STD R4A	Standard	0.507
STD SO-18	Standard	
STD SO-18	Standard	
STD CSC Expected		
STD OREAS76A Expected		
STD SO-18 Expected		
STD OREAS45PA Expected		
STD DS7 Expected		
STD GC-7 Expected		0.555
STD R4A Expected		0.502
BLK	Blank	
BLK	Blank	<0.001
Prep Wash		
G1	Prep Blank	N.A.



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**Client:** Schau, Mikkel  
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Submitted By: Mikkel Schau  
Receiving Lab: Canada-Vancouver  
Received: August 04, 2010  
Report Date: October 01, 2010  
Page: 1 of 3

## CERTIFICATE OF ANALYSIS

VAN10003692.2

### CLIENT JOB INFORMATION

Project: KRINGLE

Shipment ID:

P.O. Number

Number of Samples: 37

### SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage

DISP-RJT Dispose of Reject After 90 days

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

	Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
	R200-250	37	Crush, split and pulverize 250 g rock to 200 mesh			VAN
	1F02	37	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	15	Completed	VAN
	4A4B	7	Whole Rock Analysis Majors and Trace Elements	0.2	Completed	VAN
	2A13	24	Analysis by Leco	0.1	Completed	VAN
	3B03	6	Fire assay fusion Au Pt Pd by ICP-MS	30	Completed	VAN
	7TD1	18	4 Acid Digestion ICP-ES analysis	0.5	Completed	VAN

### ADDITIONAL COMMENTS

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Version 2: 3B03, 2A13 & 7TD Cu Ag included

Invoice To: Schau, Mikkel  
1007 Barkway Terrace  
Brentwood Bay BC V8M 1A4  
Canada

CC:



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All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only.  
\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



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Project: KRINGLE  
Report Date: October 01, 2010

Page: 2 of 3 Part 1

VAN10003692.2

## CERTIFICATE OF ANALYSIS

Method	Analyte	Unit	WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	
			Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	
			kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	%	
		MDL	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01
006601	Rock		0.94	0.34	390.2	0.22	106.7	111	44.2	33.1	827	6.48	0.5	<0.1	5.3	0.3	10.3	0.26	0.02	<0.02	173	0.73
006602	Rock		0.59	0.07	2200	0.16	149.3	20	69.5	95.9	1280	11.93	0.7	0.1	1.3	<0.1	17.3	0.20	<0.02	<0.02	65	0.27
006603	Rock		0.22	0.20	6567	0.21	163.8	126	143.3	139.6	1464	15.74	0.5	0.3	7.6	0.3	2.6	0.30	<0.02	<0.02	71	0.37
006604	Rock		0.45	0.35	3541	0.22	132.6	181	96.5	84.5	1121	13.47	0.2	0.1	4.5	0.4	4.7	0.46	<0.02	<0.02	269	0.66
006605	Rock		1.05	0.28	>10000	5.91	19.0	14620	14.1	13.3	160	3.34	<0.1	<0.1	438.4	<0.1	54.7	4.10	0.10	0.10	53	1.18
006606	Rock		1.38	0.31	>10000	5.18	29.7	12714	26.7	18.6	236	3.02	<0.1	<0.1	438.7	0.1	48.5	3.33	0.11	0.08	77	1.18
006607	Rock		0.62	0.59	>10000	4.89	83.5	4111	76.6	46.3	911	6.61	<0.1	0.3	31.7	0.3	15.6	0.87	0.06	0.04	153	0.82
006608	Rock		2.27	0.19	>10000	2.39	72.9	2703	50.2	29.4	794	4.80	0.2	0.1	26.3	0.2	15.2	0.63	0.06	0.02	124	0.87
006609	Rock		0.31	0.83	>10000	0.82	46.8	5499	48.2	28.1	1125	5.17	<0.1	0.1	69.0	0.3	27.4	0.70	0.11	0.03	143	2.50
006610	Rock		0.31	0.31	409.7	0.37	43.0	65	32.4	17.7	763	2.70	0.3	<0.1	4.7	0.2	75.6	0.22	0.06	<0.02	131	1.93
006611	Rock		1.08	0.22	>10000	2.44	55.3	5915	60.4	32.2	494	3.95	1.3	<0.1	28.5	0.1	49.4	1.28	0.10	0.04	72	1.13
006612	Rock		0.30	0.91	>10000	1.63	64.3	4879	44.9	31.6	487	4.45	0.8	0.1	422.5	0.2	21.5	0.55	0.21	0.04	102	1.00
006613	Rock		0.98	0.28	385.2	2.28	35.8	92	3.6	15.3	658	4.07	0.4	0.3	1.1	1.2	95.7	0.08	0.03	0.02	132	1.79
006614	Rock		0.87	0.19	237.6	0.50	60.3	235	60.4	64.3	361	6.08	0.7	<0.1	10.7	0.2	15.0	0.09	0.04	0.02	102	0.97
006615	Rock		0.69	0.29	67.67	2.18	61.8	37	1.2	11.1	789	3.07	1.3	0.4	<0.2	0.8	53.5	0.05	0.05	<0.02	47	1.04
006616	Rock		1.03	0.06	569.5	0.45	6.1	1196	3.9	2.3	146	0.67	<0.1	<0.1	19.9	<0.1	2.4	<0.01	0.08	<0.02	15	0.13
006617	Rock		0.29	0.14	270.3	0.29	15.4	79	19.4	9.2	809	2.50	0.5	<0.1	2.5	<0.1	130.3	0.09	0.06	<0.02	133	6.52
006618	Rock		0.75	0.40	210.3	0.82	52.2	68	52.8	20.7	458	3.82	0.2	0.1	2.6	0.5	124.0	1.06	0.03	<0.02	102	3.27
006619	Rock		0.93	0.09	77.36	0.48	60.1	39	59.0	34.6	733	4.43	<0.1	<0.1	0.2	0.2	25.1	0.10	<0.02	<0.02	106	1.17
006620	Rock		1.18	0.22	51.31	0.99	63.8	32	3.2	19.4	1047	4.68	0.6	0.3	0.5	0.5	42.2	0.07	<0.02	<0.02	144	2.01
006621	Rock		0.63	0.14	251.5	1.08	76.9	64	83.2	34.4	1177	5.79	0.7	0.2	<0.2	0.5	36.3	1.32	<0.02	<0.02	140	2.19
006622	Rock		0.45	0.20	53.47	0.15	126.1	14	69.2	48.4	768	7.37	0.2	<0.1	0.8	0.2	32.6	0.02	<0.02	<0.02	182	0.96
006623	Rock		0.92	0.51	6851	0.75	53.0	1068	37.1	23.8	419	2.90	<0.1	<0.1	34.5	0.2	49.9	0.66	0.02	<0.02	118	1.38
006624	Rock		0.45	0.93	>10000	4.16	61.5	9192	64.6	35.7	1146	6.84	1.2	<0.1	7.2	0.3	58.1	1.70	0.07	0.02	256	5.24
006625	Rock		0.77	3.90	>10000	8.67	61.4	10562	39.2	37.3	1258	8.87	1.5	<0.1	5.7	0.4	41.5	83.85	0.03	0.09	291	4.66
006626	Rock		0.45	3.32	>10000	9.13	62.1	12471	49.8	40.4	1196	8.46	1.7	<0.1	4.3	0.4	50.7	156.7	0.02	0.08	301	4.69
006627	Rock		0.14	10.34	>10000	24.90	44.9	40977	23.7	24.0	808	6.30	1.1	<0.1	8.7	0.2	14.6	40.50	0.03	0.25	79	1.08
006628	Rock		0.55	0.26	2305	2.10	82.6	1133	4.3	18.6	986	4.25	0.2	0.6	4.0	1.0	93.4	3.72	0.04	<0.02	106	1.36
006629	Rock		0.65	0.14	879.8	0.34	7.0	811	10.0	4.7	182	1.51	0.3	<0.1	22.8	0.1	165.7	0.37	0.13	<0.02	64	1.75
006630	Rock		0.68	0.09	147.4	0.11	31.3	60	99.2	22.1	197	2.92	<0.1	<0.1	1.9	0.2	155.0	0.35	<0.02	<0.02	49	2.25

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Project: KRINGLE  
Report Date: October 01, 2010

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VAN10003692.2

## CERTIFICATE OF ANALYSIS

Method	Analyte	1F15																			
		P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	SiO2	Al2O3
		%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	%	%
		MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.01	0.01
006601	Rock	0.063	4.4	18.1	2.00	7.6	0.412	2	2.34	0.038	0.01	<0.1	3.8	<0.02	0.03	11	0.1	<0.02	10.5	N.A.	N.A.
006602	Rock	0.008	<0.5	1.6	6.24	10.7	0.141	1	6.26	0.001	0.03	<0.1	3.5	0.03	<0.02	8	<0.1	<0.02	35.1	N.A.	N.A.
006603	Rock	0.015	0.7	1.0	6.94	16.1	0.280	2	6.63	0.003	0.04	<0.1	11.6	0.08	<0.02	11	<0.1	<0.02	48.7	N.A.	N.A.
006604	Rock	0.061	1.8	71.8	5.08	20.0	0.418	1	5.17	0.020	0.07	<0.1	19.8	0.03	0.13	<5	0.2	<0.02	17.3	N.A.	N.A.
006605	Rock	0.017	0.7	24.8	0.31	3.8	0.283	3	0.96	0.007	<0.01	<0.1	3.0	<0.02	1.75	13	3.1	0.15	5.6	N.A.	N.A.
006606	Rock	0.027	0.8	54.3	0.69	4.4	0.425	2	1.22	0.005	<0.01	<0.1	4.0	<0.02	1.17	5	2.5	0.07	5.5	N.A.	N.A.
006607	Rock	0.051	1.5	43.8	2.42	9.7	0.440	1	3.17	0.036	0.02	<0.1	5.9	0.02	0.79	9	0.8	0.07	10.2	N.A.	N.A.
006608	Rock	0.049	2.4	51.3	2.11	5.5	0.445	1	2.46	0.042	0.01	<0.1	3.0	<0.02	0.54	<5	0.6	<0.02	9.2	N.A.	N.A.
006609	Rock	0.038	1.8	81.5	2.87	28.0	0.309	2	2.92	0.023	0.05	<0.1	8.7	0.62	0.82	25	0.6	0.07	9.4	N.A.	N.A.
006610	Rock	0.047	3.2	37.2	0.69	8.5	0.605	4	1.56	0.005	<0.01	<0.1	16.1	<0.02	<0.02	<5	0.2	0.03	5.8	N.A.	N.A.
006611	Rock	0.019	0.8	28.9	1.57	2.2	0.371	1	2.14	0.012	<0.01	<0.1	2.6	<0.02	0.74	<5	0.7	0.03	8.1	N.A.	N.A.
006612	Rock	0.046	1.3	52.9	1.58	2.7	0.571	1	1.93	0.020	<0.01	<0.1	3.3	<0.02	0.44	8	2.0	0.06	7.3	N.A.	N.A.
006613	Rock	0.079	6.3	5.4	1.22	37.9	0.166	1	2.78	0.238	0.06	<0.1	3.0	<0.02	<0.02	<5	<0.1	0.03	8.4	58.89	16.30
006614	Rock	0.080	2.7	78.9	1.38	2.5	0.658	<1	1.34	0.041	<0.01	<0.1	2.6	<0.02	2.34	20	2.1	<0.02	4.7	N.A.	N.A.
006615	Rock	0.079	6.7	2.6	1.03	22.6	0.246	2	1.87	0.061	0.05	0.2	3.8	<0.02	<0.02	<5	0.1	<0.02	8.1	62.19	16.32
006616	Rock	0.003	<0.5	16.0	0.18	1.7	0.026	1	0.22	0.006	0.03	<0.1	1.0	<0.02	<0.02	11	<0.1	<0.02	0.9	N.A.	N.A.
006617	Rock	0.021	1.5	40.0	1.19	1.7	0.233	<1	1.51	0.002	<0.01	<0.1	5.7	<0.02	0.03	6	0.3	0.04	6.2	N.A.	N.A.
006618	Rock	0.063	5.3	18.5	0.90	17.6	0.433	2	5.38	0.520	0.04	<0.1	1.8	0.04	0.29	<5	0.4	<0.02	11.6	N.A.	N.A.
006619	Rock	0.058	2.8	57.3	2.01	1.7	0.603	1	2.33	0.026	<0.01	<0.1	4.0	<0.02	<0.02	8	0.1	0.03	7.6	N.A.	N.A.
006620	Rock	0.077	4.9	5.8	1.71	10.1	0.252	2	3.05	0.043	0.06	<0.1	6.5	<0.02	<0.02	<5	0.1	<0.02	9.2	55.88	16.36
006621	Rock	0.069	3.2	130.7	2.84	4.8	0.773	3	4.05	0.092	0.01	<0.1	3.5	<0.02	<0.02	<5	0.4	<0.02	13.8	N.A.	N.A.
006622	Rock	0.069	4.0	72.0	3.12	2.8	0.476	2	3.80	0.019	<0.01	<0.1	6.0	<0.02	<0.02	<5	0.1	<0.02	11.9	N.A.	N.A.
006623	Rock	0.053	3.3	37.9	1.33	1.4	0.658	3	1.68	0.011	<0.01	<0.1	6.0	<0.02	0.09	<5	1.3	<0.02	6.1	N.A.	N.A.
006624	Rock	0.055	4.5	94.0	2.89	38.9	0.116	1	3.25	0.031	0.02	<0.1	24.3	<0.02	0.15	16	0.4	0.05	16.0	N.A.	N.A.
006625	Rock	0.085	6.4	6.9	2.76	28.2	0.405	3	3.28	0.031	0.08	<0.1	20.1	0.06	0.37	123	0.8	0.05	21.2	N.A.	N.A.
006626	Rock	0.069	5.8	41.0	2.85	28.2	0.428	2	3.32	0.027	0.05	<0.1	23.7	0.07	0.42	178	0.7	0.04	20.8	N.A.	N.A.
006627	Rock	0.032	2.5	0.6	1.86	74.1	0.217	3	2.67	0.010	0.21	<0.1	4.5	0.29	1.63	148	1.4	0.07	13.3	N.A.	N.A.
006628	Rock	0.111	7.2	2.3	1.49	12.2	0.339	2	2.46	0.030	0.03	<0.1	5.5	<0.02	<0.02	10	0.4	0.03	8.5	57.25	15.56
006629	Rock	0.032	1.3	24.7	0.28	2.0	0.261	3	1.20	0.004	<0.01	<0.1	2.9	<0.02	<0.02	20	0.2	<0.02	3.3	N.A.	N.A.
006630	Rock	0.039	0.8	51.2	2.02	13.3	0.171	<1	5.21	0.386	0.03	<0.1	1.3	<0.02	<0.02	<5	<0.1	0.03	9.5	46.83	15.14

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Project: KRINGLE  
Report Date: October 01, 2010

Page: 2 of 3 Part 3

## CERTIFICATE OF ANALYSIS

VAN10003692.2

Analyte	Method	4A-4B																			
		Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga	Hf	Nb
		%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	
		0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5	0.1	0.1	
MDL	Unit																				
006601	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006602	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006603	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006604	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006605	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006606	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006607	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006608	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006609	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006610	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006611	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006612	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006613	Rock	7.29	2.91	5.77	3.23	1.78	0.72	0.19	0.14	<0.002	<20	21	2.5	99.74	657	<1	18.7	0.6	15.5	3.2	6.4
006614	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006615	Rock	5.61	1.83	5.14	3.88	1.72	0.63	0.18	0.13	<0.002	<20	16	2.2	99.80	704	<1	11.5	0.2	16.6	3.3	5.9
006616	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006617	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006618	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006619	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006620	Rock	8.41	3.27	7.04	3.39	0.87	0.89	0.18	0.16	<0.002	<20	30	3.4	99.82	297	<1	20.1	0.1	17.1	2.1	5.5
006621	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006622	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006623	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006624	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006625	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006626	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006627	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006628	Rock	8.64	2.58	6.82	2.68	1.68	1.07	0.26	0.16	<0.002	<20	27	2.7	99.43	573	<1	17.8	<0.1	17.6	4.3	5.6
006629	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006630	Rock	10.55	10.96	10.62	1.41	0.20	1.12	0.09	0.16	0.057	238	33	2.5	99.71	68	<1	50.9	0.2	16.9	1.7	4.4

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Project: KRINGLE  
Report Date: October 01, 2010

Page: 2 of 3 Part 4

## CERTIFICATE OF ANALYSIS

VAN10003692.2

Method	Analyte	4A-4B																			
		Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	0.01	0.05	0.02
006601	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006602	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006603	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006604	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006605	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006606	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006607	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006608	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006609	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006610	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006611	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006612	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006613	Rock	31.8	1	414.4	0.4	2.9	1.3	198	<0.5	104.2	23.5	14.7	32.8	3.97	17.0	3.87	1.10	4.06	0.67	4.25	0.88
006614	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006615	Rock	35.6	1	465.0	0.6	2.6	1.5	118	<0.5	104.8	19.5	13.6	30.3	3.47	13.1	3.31	1.00	3.30	0.55	3.24	0.70
006616	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006617	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006618	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006619	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006620	Rock	18.7	<1	322.1	0.3	1.9	0.8	246	<0.5	73.2	21.5	9.8	23.3	2.85	12.7	3.22	1.02	3.68	0.62	3.79	0.80
006621	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006622	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006623	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006624	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006625	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006626	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006627	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006628	Rock	22.8	1	568.7	0.3	3.4	1.7	244	1.0	126.5	29.2	13.6	32.9	4.17	17.6	4.68	1.31	5.03	0.86	5.17	1.08
006629	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006630	Rock	3.5	<1	264.2	0.3	0.3	0.1	253	<0.5	55.1	13.7	3.8	10.7	1.46	7.3	2.15	0.86	2.71	0.45	2.76	0.55

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



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Project: KRINGLE

Report Date: October 01, 2010

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## CERTIFICATE OF ANALYSIS

VAN10003692.2

Method	Analyte	4A-4B	4A-4B	4A-4B	4A-4B	2A Leco	2A Leco	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
		Er	Tm	Yb	Lu	TOT/C	TOT/S	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au	Hg	Tl	Se		
		Unit	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm			
	MDL	0.03	0.01	0.05	0.01	0.02	0.02	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.5	0.01	0.1	0.5	0.01		
006601	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006602	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006603	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	<0.02	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006604	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	0.18	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006605	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	2.20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006606	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	1.53	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006607	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	1.00	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006608	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	0.60	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006609	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	1.06	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006610	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006611	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	0.94	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006612	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	0.50	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006613	Rock	2.45	0.37	2.50	0.40	0.14	0.02	0.3	372.1	2.6	35	4.0	0.9	<0.1	<0.1	<0.1	<0.1	1.8	<0.01	<0.1	<0.5		
006614	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006615	Rock	2.11	0.32	2.14	0.35	0.03	<0.02	0.3	64.1	1.7	62	1.4	1.6	<0.1	<0.1	<0.1	<0.1	0.5	<0.01	<0.1	<0.5		
006616	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006617	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006618	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006619	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006620	Rock	2.33	0.34	2.27	0.35	0.03	<0.02	0.2	50.1	1.0	66	3.3	1.2	0.1	<0.1	<0.1	<0.1	1.0	<0.01	<0.1	<0.5		
006621	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006622	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006623	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	0.09	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006624	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	0.24	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006625	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	0.50	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006626	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	0.63	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006627	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	2.56	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006628	Rock	3.18	0.46	3.23	0.48	0.08	0.03	0.3	2366	3.6	84	4.2	1.0	3.9	<0.1	<0.1	1.0	2.9	<0.01	<0.1	<0.5		
006629	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
006630	Rock	1.57	0.21	1.39	0.20	<0.02	<0.02	0.1	141.2	0.3	30	98.9	0.7	0.4	<0.1	<0.1	<0.1	1.1	<0.01	<0.1	<0.5		

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



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Project: KRINGLE  
Report Date: October 01, 2010

Page: 2 of 3 Part 6

## CERTIFICATE OF ANALYSIS

VAN10003692.2

Analyte	Method	3BMS	3BMS	3BMS	7TD	7TD
		Au	Pt	Pd	Cu	Ag
		ppb	ppb	ppb	%	gm/t
		1	0.1	0.5	0.001	2
006601	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006602	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006603	Rock	N.A.	N.A.	N.A.	0.695	<2
006604	Rock	N.A.	N.A.	N.A.	0.354	<2
006605	Rock	932	56.2	199.4	5.767	15
006606	Rock	589	39.2	229.3	4.290	12
006607	Rock	N.A.	N.A.	N.A.	2.497	4
006608	Rock	N.A.	N.A.	N.A.	1.468	4
006609	Rock	70	6.2	100.8	4.014	6
006610	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006611	Rock	N.A.	N.A.	N.A.	3.065	5
006612	Rock	393	9.0	41.6	1.582	4
006613	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006614	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006615	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006616	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006617	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006618	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006619	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006620	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006621	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006622	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006623	Rock	N.A.	N.A.	N.A.	0.735	<2
006624	Rock	N.A.	N.A.	N.A.	1.269	9
006625	Rock	N.A.	N.A.	N.A.	2.507	11
006626	Rock	N.A.	N.A.	N.A.	2.816	12
006627	Rock	N.A.	N.A.	N.A.	12.55	42
006628	Rock	N.A.	N.A.	N.A.	0.253	<2
006629	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006630	Rock	N.A.	N.A.	N.A.	N.A.	N.A.



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Project: KRINGLE  
Report Date: October 01, 2010

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## CERTIFICATE OF ANALYSIS

VAN10003692.2

Method	Analyte	WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
		Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca				
		kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%				
		MDL	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	266	0.77		
006631	Rock	0.31	0.11	121.1	0.77	62.7	15	149.9	44.7	885	6.84	<0.1	<0.1	1.2	<0.1	71.0	0.04	<0.02	<0.02	266	0.77				
006632	Rock	0.54	0.14	102.2	0.79	45.4	47	5.6	12.3	436	3.05	0.5	0.4	<0.2	1.3	171.5	0.28	0.04	0.02	80	1.17				
006633	Rock	0.41	0.27	1343	0.51	69.8	450	71.0	29.2	710	5.85	0.3	<0.1	6.7	0.1	62.8	0.33	0.02	<0.02	75	0.91				
006634	Rock	0.92	0.95	9261	2.60	57.8	5583	27.1	16.3	458	3.19	3.4	<0.1	30.0	0.3	28.9	0.41	0.03	0.04	95	1.18				
006635	Rock	1.13	0.74	>10000	2.75	23.1	5068	17.5	9.7	263	1.93	2.3	<0.1	53.8	0.2	34.3	0.52	0.05	0.10	64	1.49				
006636	Rock	1.25	0.37	>10000	4.07	16.0	5423	6.5	6.7	324	1.58	4.8	0.1	53.0	0.2	70.0	0.55	0.07	0.11	54	2.00				
006637	Rock	0.71	0.19	135.2	1.15	47.7	61	4.8	13.6	551	2.96	1.0	0.4	1.4	1.6	29.3	0.05	0.03	0.04	60	0.53				



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## CERTIFICATE OF ANALYSIS

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	4A-4B	4A-4B			
Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	SiO2	Al2O3	
Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	%	%	
MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.01	0.01	
006631	Rock	0.033	<0.5	290.0	8.06	108.6	0.217	<1	7.46	0.145	0.78	<0.1	23.2	0.10	<0.02	<5	0.3	<0.02	15.2	N.A.	N.A.
006632	Rock	0.051	5.2	8.4	0.92	91.0	0.177	<1	2.32	0.121	0.08	0.1	3.8	<0.02	0.02	<5	0.1	0.02	6.6	62.42	15.65
006633	Rock	0.018	<0.5	65.4	3.66	27.0	0.202	<1	4.28	0.089	0.01	<0.1	2.2	<0.02	0.05	<5	0.3	<0.02	11.0	N.A.	N.A.
006634	Rock	0.054	2.6	22.8	1.19	8.2	0.356	1	1.64	0.096	0.02	<0.1	3.8	<0.02	0.27	<5	0.5	0.03	5.2	N.A.	N.A.
006635	Rock	0.057	2.4	21.9	0.53	2.9	0.335	3	1.26	0.056	0.01	<0.1	3.4	<0.02	0.25	6	1.6	0.04	4.7	N.A.	N.A.
006636	Rock	0.045	2.2	6.5	0.26	3.4	0.326	5	1.85	0.046	0.02	<0.1	3.0	<0.02	0.10	<5	1.2	0.03	6.5	N.A.	N.A.
006637	Rock	0.049	4.0	7.7	1.21	17.8	0.137	<1	1.79	0.040	0.05	<0.1	4.3	<0.02	<0.02	<5	0.2	<0.02	6.1	63.15	15.50



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## CERTIFICATE OF ANALYSIS

VAN10003692.2

Method	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B									
Analyte	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga	Hf	Nb			
Unit	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm									
MDL	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5	0.1	0.1	0.1	0.1	0.1
006631	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
006632	Rock	5.76	2.41	4.46	2.97	2.93	0.60	0.12	0.10	<0.002	<20	17	2.3	99.76	973	<1	14.5	0.7	13.3	3.4	5.4		
006633	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
006634	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
006635	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
006636	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
006637	Rock	5.97	2.32	4.25	3.43	2.31	0.61	0.12	0.11	<0.002	<20	18	2.0	99.79	755	1	14.4	0.3	15.6	3.4	5.6		



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## CERTIFICATE OF ANALYSIS

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Analyte	Method	4A-4B																								
		Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho					
		ppm																								
		0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	0.01	0.05	0.02					
006631	Rock	N.A.																								
006632	Rock	65.5	<1	435.1	0.4	4.8	1.7	129	<0.5	112.1	18.3	12.8	28.7	3.15	12.2	2.95	0.81	3.09	0.51	3.23	0.67					
006633	Rock	N.A.																								
006634	Rock	N.A.																								
006635	Rock	N.A.																								
006636	Rock	N.A.																								
006637	Rock	59.9	1	306.3	0.4	5.0	1.5	149	0.6	113.6	18.1	13.7	31.2	3.39	12.7	3.12	0.86	3.11	0.53	3.13	0.67					



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## CERTIFICATE OF ANALYSIS

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Analyte	Method	4A-4B	4A-4B	4A-4B	4A-4B	2A Leco	2A Leco	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX
		Er	Tm	Yb	Lu	TOT/C	TOT/S	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au	Hg	Tl	Se	
		Unit	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
		MDL	0.03	0.01	0.05	0.01	0.02	0.02	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.5	0.01	0.1	0.5	
006631	Rock		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
006632	Rock		2.03	0.31	2.08	0.32	0.04	0.03	0.1	100.1	0.9	46	5.1	1.1	0.3	<0.1	<0.1	<0.1	<0.5	<0.01	<0.1	<0.5
006633	Rock		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006634	Rock		N.A.	N.A.	N.A.	N.A.	N.A.	0.29	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006635	Rock		N.A.	N.A.	N.A.	N.A.	N.A.	0.27	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006636	Rock		N.A.	N.A.	N.A.	N.A.	N.A.	0.10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
006637	Rock		1.97	0.32	2.16	0.34	<0.02	<0.02	0.2	144.2	1.4	52	5.7	1.5	<0.1	<0.1	<0.1	<0.5	<0.01	<0.1	<0.5	<0.01



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## CERTIFICATE OF ANALYSIS

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	Method	3BMS	3BMS	3BMS	7TD	7TD
Analyte		Au	Pt	Pd	Cu	Ag
Unit		ppb	ppb	ppb	%	gm/t
MDL		1	0.1	0.5	0.001	2
006631	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006632	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006633	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
006634	Rock	N.A.	N.A.	N.A.	1.001	6
006635	Rock	70	6.0	41.2	1.715	5
006636	Rock	63	3.3	37.5	1.734	5
006637	Rock	N.A.	N.A.	N.A.	N.A.	N.A.



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## QUALITY CONTROL REPORT

VAN10003692.2

Method	WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15		
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	
Unit	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	
MDL	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	
006632	Rock	0.54	0.14	102.2	0.79	45.4	47	5.6	12.3	436	3.05	0.5	0.4	<0.2	1.3	171.5	0.28	0.04	0.02	80	1.17
Pulp Duplicates																					
006606	Rock	1.38	0.31	>10000	5.18	29.7	12714	26.7	18.6	236	3.02	<0.1	<0.1	438.7	0.1	48.5	3.33	0.11	0.08	77	1.18
REP 006606	QC																				
006607	Rock	0.62	0.59	>10000	4.89	83.5	4111	76.6	46.3	911	6.61	<0.1	0.3	31.7	0.3	15.6	0.87	0.06	0.04	153	0.82
REP 006607	QC																				
006624	Rock	0.45	0.93	>10000	4.16	61.5	9192	64.6	35.7	1146	6.84	1.2	<0.1	7.2	0.3	58.1	1.70	0.07	0.02	256	5.24
REP 006624	QC																				
006625	Rock	0.77	3.90	>10000	8.67	61.4	10562	39.2	37.3	1258	8.87	1.5	<0.1	5.7	0.4	41.5	83.85	0.03	0.09	291	4.66
REP 006625	QC																				
Reference Materials																					
STD CSC	Standard																				
STD CSC	Standard																				
STD DS7	Standard																				
STD DS7	Standard	21.63	87.21	62.11	412.5	1044	57.3	9.8	664	2.46	54.3	4.8	64.4	4.8	78.4	6.54	6.00	4.29	83	1.02	
STD DS7	Standard	21.00	84.98	72.47	404.6	1077	56.4	9.8	646	2.38	54.4	5.2	91.6	4.9	71.4	6.65	6.10	4.65	81	0.93	
STD OREAS131A	Standard																				
STD OREAS45PA	Standard																				
STD OREAS76A	Standard																				
STD OREAS76A	Standard																				
STD PD1	Standard																				
STD PD1	Standard																				
STD R4T	Standard																				
STD SO-18	Standard																				
STD SO-18	Standard																				
STD OREAS45PA Expected																					
STD SO-18 Expected																					
STD DS7 Expected		20.5	109	70.6	411	890	56	9.7	627	2.39	48.2	4.9	70	4.4	68.7	6.38	4.6	4.51	84	0.93	
STD R4T Expected																					

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



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## QUALITY CONTROL REPORT

VAN10003692.2

Method	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	4A-4B	4A-4B			
Analyte	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga	SiO2	Al2O3	
Unit	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	%	%	
MDL	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.01	0.01	
006632	Rock	0.051	5.2	8.4	0.92	91.0	0.177	<1	2.32	0.121	0.08	0.1	3.8	<0.02	0.02	<5	0.1	0.02	6.6	62.42	15.65
Pulp Duplicates																					
006606	Rock	0.027	0.8	54.3	0.69	4.4	0.425	2	1.22	0.005	<0.01	<0.1	4.0	<0.02	1.17	5	2.5	0.07	5.5	N.A.	N.A.
REP 006606	QC																				
006607	Rock	0.051	1.5	43.8	2.42	9.7	0.440	1	3.17	0.036	0.02	<0.1	5.9	0.02	0.79	9	0.8	0.07	10.2	N.A.	N.A.
REP 006607	QC	0.053	1.7	44.8	2.50	10.4	0.478	2	3.17	0.037	0.02	<0.1	6.4	<0.02	0.81	7	0.7	0.05	10.4		
006624	Rock	0.055	4.5	94.0	2.89	38.9	0.116	1	3.25	0.031	0.02	<0.1	24.3	<0.02	0.15	16	0.4	0.05	16.0	N.A.	N.A.
REP 006624	QC																				
006625	Rock	0.085	6.4	6.9	2.76	28.2	0.405	3	3.28	0.031	0.08	<0.1	20.1	0.06	0.37	123	0.8	0.05	21.2	N.A.	N.A.
REP 006625	QC	0.082	6.4	6.7	2.77	28.6	0.430	2	3.39	0.025	0.09	<0.1	20.1	0.06	0.38	120	0.8	0.08	20.5		
Reference Materials																					
STD CSC	Standard																				
STD CSC	Standard																				
STD DS7	Standard																				
STD DS7	Standard	0.080	14.2	201.8	1.08	396.8	0.145	40	1.11	0.101	0.48	3.6	3.1	3.99	0.20	242	3.4	1.46	5.4		
STD DS7	Standard	0.081	13.0	195.4	1.03	419.0	0.135	43	0.98	0.099	0.46	3.3	2.7	4.17	0.19	229	3.3	1.31	4.8		
STD OREAS131A	Standard																				
STD OREAS45PA	Standard																				
STD OREAS76A	Standard																				
STD OREAS76A	Standard																				
STD PD1	Standard																				
STD PD1	Standard																				
STD R4T	Standard																				
STD SO-18	Standard																		58.26	14.04	
STD SO-18	Standard																		58.17	14.09	
STD OREAS45PA Expected																			58.47	14.23	
STD SO-18 Expected																					
STD DS7 Expected		0.08	11.7	179	1.05	410	0.124	38.6	0.959	0.089	0.44	3.4	2.5	4.19	0.19	200	3.5	1.08	4.6		
STD R4T Expected																					



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## QUALITY CONTROL REPORT

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Method	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B
Analyte	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga	Hf	Nb			
Unit	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm									
MDL	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5	0.1	0.1	0.1	0.1	0.1
006632	Rock	5.76	2.41	4.46	2.97	2.93	0.60	0.12	0.10	<0.002	<20	17	2.3	99.76	973	<1	14.5	0.7	13.3	3.4	5.4		
Pulp Duplicates																							
006606	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
REP 006606	QC																						
006607	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
REP 006607	QC																						
006624	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
REP 006624	QC																						
006625	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.								
REP 006625	QC																						
Reference Materials																							
STD CSC	Standard																						
STD CSC	Standard																						
STD DS7	Standard																						
STD DS7	Standard																						
STD DS7	Standard																						
STD OREAS131A	Standard																						
STD OREAS45PA	Standard																						
STD OREAS76A	Standard																						
STD OREAS76A	Standard																						
STD PD1	Standard																						
STD PD1	Standard																						
STD R4T	Standard																						
STD SO-18	Standard	7.54	3.35	6.33	3.72	2.15	0.69	0.81	0.40	0.557	51	26	1.9	99.74	476	1	26.9	6.8	17.4	9.1	19.2		
STD SO-18	Standard	7.58	3.35	6.29	3.75	2.16	0.70	0.81	0.40	0.559	47	26	1.9	99.75	472	1	26.4	6.7	17.2	8.8	19.2		
STD OREAS45PA Expected																							
STD SO-18 Expected		7.67	3.35	6.42	3.71	2.17	0.69	0.83	0.39	0.55	44	25			514		26.2	7.1	17.6	9.8	21.3		
STD DS7 Expected																							
STD R4T Expected																							



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## QUALITY CONTROL REPORT

VAN10003692.2

Method Analyte Unit MDL	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B
	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho		
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	0.01	0.05	0.02	0.05	0.01
006632	Rock	65.5	<1	435.1	0.4	4.8	1.7	129	<0.5	112.1	18.3	12.8	28.7	3.15	12.2	2.95	0.81	3.09	0.51	3.23	0.67	
Pulp Duplicates																						
006606	Rock	N.A.																				
REP 006606	QC																					
006607	Rock	N.A.																				
REP 006607	QC																					
006624	Rock	N.A.																				
REP 006624	QC																					
006625	Rock	N.A.																				
REP 006625	QC																					
Reference Materials																						
STD CSC	Standard																					
STD CSC	Standard																					
STD DS7	Standard																					
STD DS7	Standard																					
STD DS7	Standard																					
STD OREAS131A	Standard																					
STD OREAS45PA	Standard																					
STD OREAS76A	Standard																					
STD OREAS76A	Standard																					
STD PD1	Standard																					
STD PD1	Standard																					
STD R4T	Standard																					
STD SO-18	Standard	29.3	15	396.6	6.8	9.9	16.0	209	13.6	271.5	30.2	11.4	26.5	3.16	12.6	2.73	0.81	2.76	0.47	2.81	0.57	
STD SO-18	Standard	29.1	14	387.9	6.8	10.1	15.6	204	13.6	267.8	29.8	11.2	26.5	3.11	12.2	2.71	0.81	2.75	0.47	2.73	0.56	
STD OREAS45PA Expected																						
STD SO-18 Expected		28.7	15	407.4	7.4	9.9	16.4	200	14.8	280	31	12.3	27.1	3.45	14	3	0.89	2.93	0.53	3	0.62	
STD DS7 Expected																						
STD R4T Expected																						



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## QUALITY CONTROL REPORT

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Method	Analyte	Concentration (ppm)																				
		4A-4B	4A-4B	4A-4B	4A-4B	2A Leco	2A Leco	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX			
		Er	Tm	Yb	Lu	TOT/C	TOT/S	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au	Hg			
		ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm			
	MDL	0.03	0.01	0.05	0.01	0.02	0.02	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.5	0.01	0.1	0.5		
006632	Rock	2.03	0.31	2.08	0.32	0.04	0.03	0.1	100.1	0.9	46	5.1	1.1	0.3	<0.1	<0.1	<0.5	<0.01	<0.1	<0.5		
Pulp Duplicates																						
006606	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	1.53	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
REP 006606	QC						0.15	1.51														
006607	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	1.00	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
REP 006607	QC																					
006624	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	0.24	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
REP 006624	QC																					
006625	Rock	N.A.	N.A.	N.A.	N.A.	N.A.	0.50	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
REP 006625	QC																					
Reference Materials																						
STD CSC	Standard						3.02	4.28														
STD CSC	Standard						2.86	4.34														
STD DS7	Standard								20.9	106.3	62.7	403	55.0	55.5	6.5	4.5	4.5	1.0	52.4	0.22	3.9	3.3
STD DS7	Standard																					
STD DS7	Standard																					
STD OREAS131A	Standard																					
STD OREAS45PA	Standard								1.0	623.6	18.8	123	309.3	4.6	0.1	0.1	0.2	0.3	46.3	0.03	<0.1	<0.5
STD OREAS76A	Standard								0.15	17.38												
STD OREAS76A	Standard								0.14	18.65												
STD PD1	Standard																					
STD PD1	Standard																					
STD R4T	Standard																					
STD SO-18	Standard	1.70	0.25	1.67	0.25																	
STD SO-18	Standard	1.69	0.26	1.66	0.25																	
STD OREAS45PA Expected									0.9	600	19	119	281	4.2	0.09	0.13	0.18	0.3	43	0.03	0.07	0.54
STD SO-18 Expected		1.84	0.27	1.79	0.27																	
STD DS7 Expected									20.5	109	70.6	411	56	48.2	6.4	4.6	4.5	0.9	70	0.2	4.2	3.5
STD R4T Expected																						

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



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## QUALITY CONTROL REPORT

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	Method	3BMS	3BMS	3BMS	7TD	7TD
Analyte		Au	Pt	Pd	Cu	Ag
Unit		ppb	ppb	ppb	%	gm/t
MDL		1	0.1	0.5	0.001	2
006632	Rock	N.A.	N.A.	N.A.	N.A.	N.A.
Pulp Duplicates						
006606	Rock	589	39.2	229.3	4.290	12
REP 006606	QC					
006607	Rock	N.A.	N.A.	N.A.	2.497	4
REP 006607	QC					
006624	Rock	N.A.	N.A.	N.A.	1.269	9
REP 006624	QC				1.253	9
006625	Rock	N.A.	N.A.	N.A.	2.507	11
REP 006625	QC					
Reference Materials						
STD CSC	Standard					
STD CSC	Standard					
STD DS7	Standard					
STD DS7	Standard					
STD DS7	Standard					
STD OREAS131A	Standard			0.033		31
STD OREAS45PA	Standard					
STD OREAS76A	Standard					
STD OREAS76A	Standard					
STD PD1	Standard	555	456.2	567.9		
STD PD1	Standard	528	431.0	543.4		
STD R4T	Standard			0.519		87
STD SO-18	Standard					
STD SO-18	Standard					
STD OREAS45PA Expected						
STD SO-18 Expected						
STD DS7 Expected						
STD R4T Expected		0.502		86		



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## QUALITY CONTROL REPORT

VAN10003692.2

	WGHT	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15	1F15
	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca						
	kg	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	0.01	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.02	0.02	0.02	0.02	0.02	
STD OREAS131A Expected																										
STD CSC Expected																										
STD OREAS76A Expected																										
STD PD1 Expected																										
BLK	Blank																									
BLK	Blank																									
BLK	Blank																									
BLK	Blank	<0.01	4.88	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<2	<0.01							
BLK	Blank	<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<2	<0.01							
BLK	Blank																									
BLK	Blank																									
BLK	Blank																									
BLK	Blank																									
Prep Wash																										
G1	Prep Blank	<0.01	0.08	2.92	2.88	45.4	6	3.3	4.3	570	2.00	0.6	1.5	2.5	4.7	64.0	0.02	0.03	0.07	38	0.51					
G1	Prep Blank	<0.01	0.07	2.07	2.68	48.2	6	3.3	4.2	552	1.94	<0.1	1.6	0.9	4.9	60.0	<0.01	0.04	0.06	37	0.48					



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## QUALITY CONTROL REPORT

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	1F15 P %	1F15 La ppm	1F15 Cr ppm	1F15 Mg %	1F15 Ba ppm	1F15 Ti %	1F15 B ppm	1F15 Al %	1F15 Na %	1F15 K %	1F15 W ppm	1F15 Sc ppm	1F15 Tl ppm	1F15 S %	1F15 Hg ppb	1F15 Se ppm	1F15 Te ppm	1F15 Ga ppm	1F15 SiO2 %	4A-4B Al2O3 %
STD OREAS131A Expected	0.001	0.5	0.5	0.01	0.5	0.001	1	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1	0.01	0.01
STD CSC Expected																				
STD OREAS76A Expected																				
STD PD1 Expected																				
BLK      Blank																				
BLK      Blank																				
BLK      Blank																		<0.01	<0.01	
BLK      Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1		
BLK      Blank	<0.001	<0.5	<0.5	<0.01	<0.5	<0.001	<1	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1		
BLK      Blank																				
BLK      Blank																				
BLK      Blank																				
Prep Wash																				
G1      Prep Blank	0.074	9.8	8.9	0.58	215.4	0.139	2	1.02	0.079	0.48	<0.1	2.3	0.31	<0.02	5	<0.1	<0.02	5.3	67.29	15.77
G1      Prep Blank	0.075	9.8	9.9	0.57	198.8	0.134	<1	0.94	0.059	0.45	<0.1	2.2	0.29	<0.02	8	<0.1	<0.02	5.0	67.87	15.53



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## QUALITY CONTROL REPORT

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	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	
	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	Ga	Hf	Nb					
	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm											
	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	
STD OREAS131A Expected																									
STD CSC Expected																									
STD OREAS76A Expected																									
STD PD1 Expected																									
BLK	Blank																								
BLK	Blank																								
BLK	Blank	<0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<20	<1	0.0	<0.01	<1	<1	<0.2	<0.1	<0.5	<0.1	<0.1					
BLK	Blank																								
BLK	Blank																								
BLK	Blank																								
BLK	Blank																								
BLK	Blank																								
Prep Wash																									
G1	Prep Blank	3.42	1.16	3.50	3.54	3.57	0.39	0.18	0.10	0.002	<20	6	0.8	99.73	1046	2	4.6	4.5	18.6	4.6	23.3				
G1	Prep Blank	3.22	1.12	3.38	3.49	3.63	0.40	0.18	0.10	<0.002	<20	6	0.8	99.74	1013	2	5.0	4.0	18.3	4.3	24.4				



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## QUALITY CONTROL REPORT

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	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	4A-4B	
	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho										
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	0.01	0.05	0.02	0.01	0.05	0.02	0.05	0.01	0.05	0.02	0.05	0.01	0.05
STD OREAS131A Expected																														
STD CSC Expected																														
STD OREAS76A Expected																														
STD PD1 Expected																														
BLK	Blank																													
BLK	Blank																													
BLK	Blank	<0.1	<1	<0.5	<0.1	<0.2	<0.1	<8	<0.5	<0.1	<0.1	<0.1	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05	<0.01	<0.05	<0.02	<0.05	<0.01	<0.05	<0.02	<0.05	<0.01	<0.05	<0.02	<0.05
BLK	Blank																													
BLK	Blank																													
BLK	Blank																													
BLK	Blank																													
BLK	Blank																													
BLK	Blank																													
Prep Wash																														
G1	Prep Blank	137.1	1	824.2	1.4	8.3	3.7	58	<0.5	154.2	17.2	26.6	57.6	6.22	22.9	4.03	1.11	3.39	0.52	3.02	0.58									
G1	Prep Blank	137.1	1	809.9	1.7	9.8	3.8	58	<0.5	138.1	18.6	33.6	71.5	7.41	27.1	4.67	1.18	3.64	0.55	3.31	0.62									



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## Acme Analytical Laboratories (Vancouver) Ltd.

## **Client:**

Schau, Mikkel

1007 Barkway Terrace  
Brentwood Bay BC V8M 1A4 Canada

Project

KRINGI F

Report Date: October 01, 2010

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## QUALITY CONTROL REPORT

VAN10003692.2



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**Client:** **Schau, Mikkel**  
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## QUALITY CONTROL REPORT

VAN10003692.2

	3BMS	3BMS	3BMS	7TD	7TD
	Au	Pt	Pd	Cu	Ag
	ppb	ppb	ppb	%	gm/t
	1	0.1	0.5	0.001	2
STD OREAS131A Expected				0.0322	30.9
STD CSC Expected					
STD OREAS76A Expected					
STD PD1 Expected	542	456	563		
BLK	Blank				
BLK	Blank				
BLK	Blank				
BLK	Blank				
BLK	Blank				
BLK	Blank	<0.001			<2
BLK	Blank				
BLK	Blank	<1	<0.1	<0.5	
BLK	Blank	<1	<0.1	<0.5	
Prep Wash					
G1	Prep Blank	N.A.	N.A.	N.A.	N.A.
G1	Prep Blank	N.A.	N.A.	N.A.	N.A.

## Mineral Titles Online Viewer

### Exploration and Development Work / Expiry Date Change Event Detail

**Event Number ID**
**4795662**

Recorded Date

2010/sep/25

Work Type

Technical Work (T)

Technical Items

Geological (G), Geochemical (C), Prospecting (PR), PAC Withdrawal  
(up to 30% of technical work performed) (W3)

Work Start Date

2010/jun/25

Work Stop Date

2010/sep/15

Total Value of Work

\$ 11000.00

Mine Permit Number

**Summary of the work value:**
**Tenure Numbers**
**515027**

Claim  
Name/Property

Issue Date

2005/jun/22

Work Performed  
Index

Y

Old Good To Date

2010/sep/27

New Good To Date

2011/sep/01

Numbers of Days  
Forward

339

Area in Ha

247.37

Applied Work Value

\$ 1836.97

Submission Fee

\$ 91.90

**Tenure Numbers**
**515028**

Claim  
Name/Property

Issue Date

2005/jun/22

Work Performed  
Index

Y

Old Good To Date

2010/sep/27

New Good To Date

2011/sep/01

Numbers of Days  
Forward

339

Area in Ha

226.82

Applied Work Value

\$ 1684.36

Submission Fee

\$ 84.27

**Tenure Numbers**
**515029**

Claim  
Name/Property

Issue Date

2005/jun/22

Work Performed	Y
Index	
Old Good To Date	2010/sep/27
New Good To Date	2011/sep/01
Numbers of Days Forward	339
Area in Ha	82.50
Applied Work Value	\$ 612.62
Submission Fee	\$ 30.65
<b>Tenure Numbers</b>	<b>515030</b>
Claim	
Name/Property	
Issue Date	2005/jun/22
Work Performed	
Index	Y
Old Good To Date	2010/sep/27
New Good To Date	2011/sep/01
Numbers of Days Forward	339
Area in Ha	123.67
Applied Work Value	\$ 918.39
Submission Fee	\$ 45.95
<b>Tenure Numbers</b>	<b>515032</b>
Claim	
Name/Property	
Issue Date	2005/jun/22
Work Performed	
Index	N
Old Good To Date	2010/sep/27
New Good To Date	2011/sep/01
Numbers of Days Forward	339
Area in Ha	20.62
Applied Work Value	\$ 153.11
Submission Fee	\$ 7.66
<b>Tenure Numbers</b>	<b>515033</b>
Claim	
Name/Property	
Issue Date	2005/jun/22
Work Performed	
Index	Y
Old Good To Date	2010/sep/27
New Good To Date	2011/sep/01
Numbers of Days Forward	339
Area in Ha	61.86
Applied Work Value	\$ 459.35
Submission Fee	\$ 22.98
<b>Tenure Numbers</b>	<b>515034</b>
Claim	
Name/Property	
Issue Date	2005/jun/22
Work Performed	
Index	Y
Old Good To Date	2010/sep/27
New Good To Date	2011/sep/01
Numbers of Days Forward	339
Area in Ha	103.08
Applied Work Value	\$ 765.46

Submission Fee \$ 38.29  
**Tenure Numbers** **515386**  
Claim Name/Property KRINGLE-LAST  
Issue Date 2005/jun/27  
Work Performed Index N  
Old Good To Date 2010/sep/27  
New Good To Date 2011/sep/01  
Numbers of Days Forward 339  
Area in Ha 20.61  
Applied Work Value \$ 153.08  
Submission Fee \$ 7.66

**Tenure Numbers** **515924**

Claim Name/Property  
Issue Date 2005/jul/04  
Work Performed Index N  
Old Good To Date 2010/sep/27  
New Good To Date 2011/sep/01  
Numbers of Days Forward 339  
Area in Ha 41.23  
Applied Work Value \$ 306.19  
Submission Fee \$ 15.32

**Tenure Numbers** **515925**

Claim Name/Property  
Issue Date 2005/jul/04  
Work Performed Index N  
Old Good To Date 2010/sep/27  
New Good To Date 2011/sep/01  
Numbers of Days Forward 339  
Area in Ha 20.61  
Applied Work Value \$ 153.08  
Submission Fee \$ 7.66

**Tenure Numbers** **515926**

Claim Name/Property  
Issue Date 2005/jul/04  
Work Performed Index Y  
Old Good To Date 2010/sep/27  
New Good To Date 2011/sep/01  
Numbers of Days Forward 339  
Area in Ha 20.62  
Applied Work Value \$ 153.12  
Submission Fee \$ 7.66

**Tenure Numbers** **515930**

Claim Name/Property  
Issue Date 2005/jul/04  
Work Performed Index Y  
Old Good To Date 2010/sep/27

New Good To Date 2011/sep/01  
Numbers of Days Forward 339

Area in Ha 206.21  
Applied Work Value \$ 1531.45  
Submission Fee \$ 76.61

**Tenure Numbers 516017**

Claim Name/Property  
Issue Date 2005/jul/05  
Work Performed Index Y  
Old Good To Date 2010/sep/27  
New Good To Date 2011/sep/01  
Numbers of Days Forward 339  
Area in Ha 20.62  
Applied Work Value \$ 153.11  
Submission Fee \$ 7.66

**Tenure Numbers 521073**

Claim Name/Property KRINGLE-2  
Issue Date 2005/oct/12  
Work Performed Index Y  
Old Good To Date 2010/sep/27  
New Good To Date 2011/sep/01  
Numbers of Days Forward 339  
Area in Ha 495.08  
Applied Work Value \$ 3678.52  
Submission Fee \$ 183.93

**Tenure Numbers 529780**

Claim Name/Property KRINGLE-MIDWEST  
Issue Date 2006/mar/08  
Work Performed Index Y  
Old Good To Date 2010/sep/27  
New Good To Date 2011/sep/01  
Numbers of Days Forward 339  
Area in Ha 206.30  
Applied Work Value \$ 1530.68  
Submission Fee \$ 76.64

**Tenure Numbers 797082**

Claim Name/Property KLEJNE-NORTH  
Issue Date 2010/jun/24  
Work Performed Index Y  
Old Good To Date 2011/jun/24  
New Good To Date 2011/sep/01  
Numbers of Days Forward 69  
Area in Ha 516.05  
Applied Work Value \$ 389.16  
Submission Fee \$ 39.02

**Tenure Numbers 797102**

Claim  
Name/Property  
Issue Date 2010/jun/24  
Work Performed Y  
Index  
Old Good To Date 2011/jun/24  
New Good To Date 2011/sep/01  
Numbers of Days Forward 69  
Area in Ha 515.85  
Applied Work Value \$ 389.00  
Submission Fee \$ 39.01

**Financial Summary:**

Total Applied Work Value: \$ 14867.65

PAC name mikschau  
Debited PAC amount \$ 3867.65  
Credited PAC amount \$

Total Submission Fees \$ 782.87  
Total Paid \$ 782.86

**Related Summary:**

Existing Work Program  
Event Numbers

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