GEOLOGICAL ASSESSMENT REPORT

ON THE

KUTCHO PROJECT:
NORTH CENTRAL BRITISH COLUMBIA

LIARD MINING DISTRICT
104I018, 019, 028, 029
58°12'N : 128°22'W

Mother 1 (585957), Mother 2 (585958), Mother 3 (585959))

May 20, 2009 to May 23, 2009

KUTCHO COPPER CORPORATION
OWNER AND OPERATOR

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EXECUTIVE SUMMARY

Kutcho Project is situated within the Cassiar Mountains of northern British Columbia, 100 km east of the town of Dease Lake. Claim holdings total 12,048 hectares (120 km^2) and cover the thickest part of the Lower Triassic Kutcho Formation which hosts volcanogenic massive sulphide (VMS) mineralization. Three elongate VMS sulphide deposits have been delineated. These form a linear, shallowly-plunging, west-northwesterly mineralized trend that is 3.6 kilometres long.

Re-logging of historic core from the southern area of the claims was carried out in the spring of 2009 in preparation for a surface prospecting and mapping program over the same ground later in the season. Drillholes 90K-15 and 90K-19 were selected because they intersect major felsic volcanic units, minor pyritic horizons and reported chert (exhalite) units. These two holes also make up the northern part of a line of five drillholes that comprise the only linear fence of drillholes across the southern limb of the main anticline in the Kutcho district – the Imperial anticline. In the area of these five drillholes, 5 kilometres southwest of the three Kutcho VMS deposits, the southern limb of this anticline exposes the same favourable stratigraphy that hosts the VMS deposits on the north limb of the anticline.

The decision to re-log these and other historic drillholes on the southern limb of the Imperial anticline was based on substantial advances in the understanding of:

- volcanic rock textures
- characteristic features of VMS sulphide deposits
- local and regional alteration haloes associated with VMS deposits
- key structural controls to the localization of the Kutcho VMS deposits
- pathfinder elements and minerals in the Kutcho VMS camp

since these holes were drilled and logged 20 years ago.

The two 1990 exploration drillholes examined in this study intersect thick successions of rhyolite tuffs intercalated with lesser mafic volcanic flow and tuff units. Relogging these two holes:

- Reveals clear evidence of proximal and distal facies
- Indicates that the geologic setting was an accumulation of tuffaceous debris in a marine basin
- Suggests that DDH 90K-15 was the more distal of the two drillsites with respect to the felsic volcanic vent.

For the two drillholes examined in this study, follow-up exploration work should focus around drillhole 90K-19.

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1.0 INTRODUCTION

Kutcho Copper Corporation (KCC) owns 100% of the Kutcho project in north central British Columbia. Exploration of the Kutcho property through the late 1970's and early 1980's defined three volcanogenic massive sulphide (VMS) deposits or lenses that form a gently plunging, east-west oriented, linear trend.

The largest of the deposits, the Main lens, is a near-surface sulphide deposit. The adjacent sulphide lens to the west is the Sumac. The Esso deposit is furthest to the west and lies at a depth of 400m to 500m below surface.

Beyond the immediate area of the known deposits, a regional exploration program was conducted in 1985, consisting of airborne and ground geophysical surveys, regional mapping and prospecting, and geochemical surveys. Targets delineated in this wide-ranging program were drilled in the 1990 field season (B.C. Ministry of Energy, Mines and Petroleum Resources Assessment Report 20,636). Since the completion of the 1990 drill program, no further exploration work has been conducted on the southern part of the property, despite some encouraging results.

Renewed exploration in the southern part of the KCC Kutcho Creek property is planned for the 2009 field season. In preparation for this fieldwork campaign, it was decided to spend the early spring re-logging historic drillcore from this area, with special emphasis on a fence of five drillholes that provides a cross-section through the south limb of the Imperial anticline and through the same stratigraphy that hosts the three VMS deposits on the north limb of the anticline.

The results of the drillcore re-logging of two 1990 drillholes are the subject of this report. Drillholes 90K-15 and 90K-19 are collared within the Mother 2 and Mother 1 claim blocks, respectively.

1.1 PROPERTY DESCRIPTION AND LOCATION

The Kutcho Project area is situated 100 km east of the town of Dease Lake, and 330 km north of Smithers in northern B.C. (Fig 1.1). The property lies within the NTS map sheet 104I/1. Geographic coordinates for the center of the claim area are 58°12'N and 128°22'W. The KCC claims cover an area of 12,048 hectares. Claims are shown in Figure 1.2 and are listed in Appendix 1.

Capstone, through its wholly-owned subsidiary Kutcho Copper Corporation, owns the claims through two separate purchase agreements and through claim staking. One agreement is with Barrick Gold Inc. (a subsidiary of Barrick Gold Corporation) and AMI Resources Inc., who had 80% and 20% ownership, respectively, in all of the claims except the 16 SMRB claims and the 30KC claims. Ownership of the SMRB and KC claims are covered in an agreement with Sumac Mines Inc., a subsidiary of Sumitomo Metal Mining Co. Ltd. In 2008, Capstone staked 11 additional claims.

Following notice by Capstone that it has completed a feasibility study on the Kutcho Project, Barrick will have 120 days to elect to 'back-in' for a 50% interest by spending, within two years, three times Capstone's expenditures on the property. This applies only to that portion of the property on which Barrick previously held an interest.

Pursuant to the Sumac Agreement, Sumac is entitled to a royalty of 2% of net smelter returns, on the portion of the Kutcho Project it sold to the Company, between the third anniversary and the sixth anniversary of the date of commencement of commercial production, and a royalty of 3% of net smelter returns after the sixth anniversary of the date of commencement of commercial production.

Barrick and AMI are collectively entitled to royalty of 2% of net smelter returns on the portion of the Kutcho Project they sold to the Company, which royalty is shared between Barrick and AMI on an 80/20 basis, respectively.

Kutcho Copper Corporation has formally entered the Kutcho project into the British Columbia Environmental Assessment process as a step toward obtain permitting for a mining operation. Initial consultations with all appropriate government agencies, both provincial and federal, have been held along with First Nations consultations and open houses. Water balance, weather, fish, archeological and wildlife baseline studies have been completed.

Figure 1.1 Property Location Plan

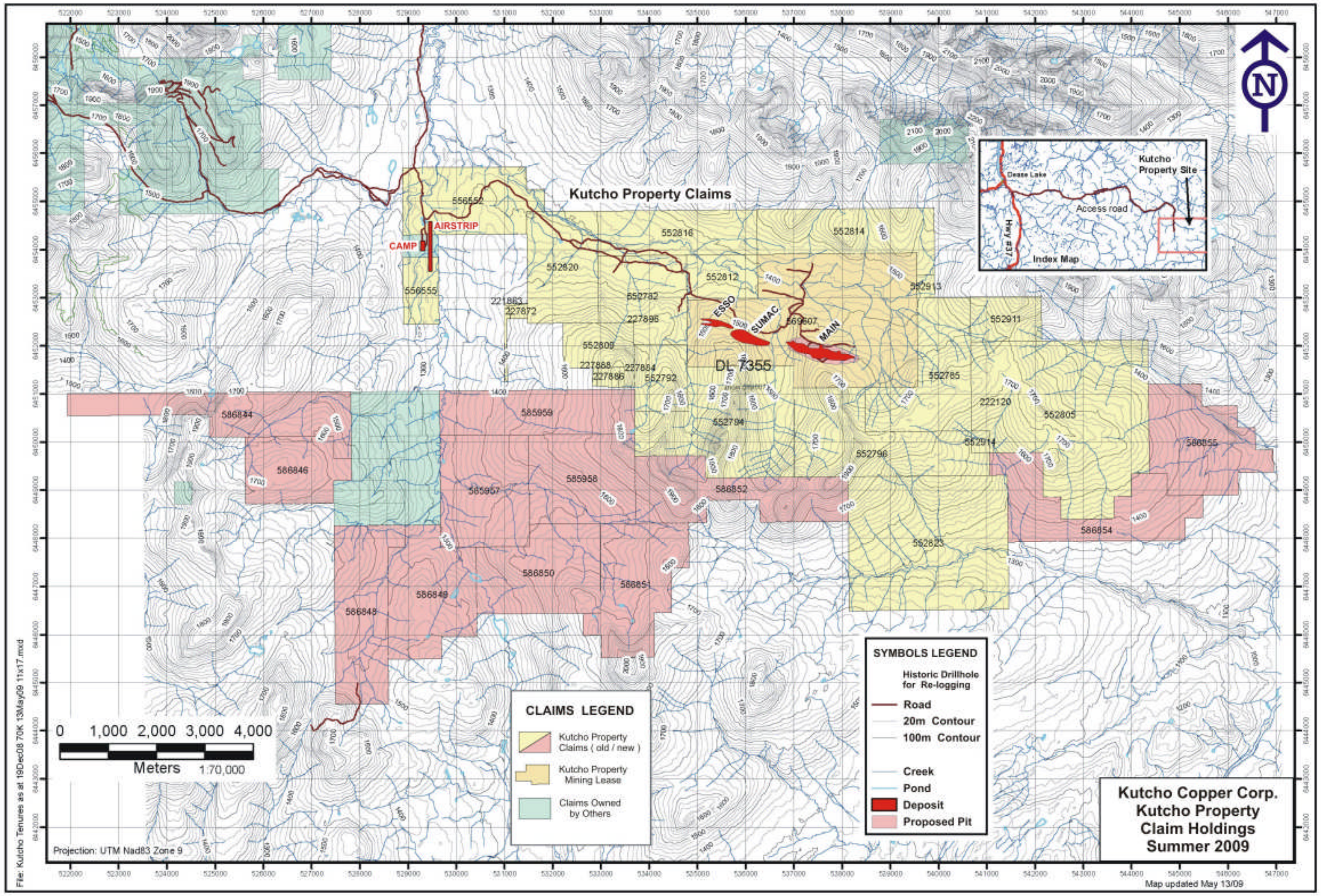

Figure 1.2 Kutcho Creek Claim Map

1.2 ACCESS, PHYSIOGRAPHY AND CLIMATE

Access to the property is by fixed-wing aircraft and helicopter from Smithers or Dease Lake to the 900 metre long gravel airstrip located at the junction of Kutcho and Andrea Creeks. The deposit area of the property is connected to the airstrip by an 8 km road; currently this road has had culverts removed and is only passable to four wheel drive vehicles with good clearance. Land access via the 125 km tote road to Dease Lake is available to four wheel drive vehicles during late summer and early fall but passage is somewhat dependant upon weather due to extensive muddy sections.

The property is located within the Cassiar Mountains, just to the north of the continental divide between the Arctic and Pacific watersheds. The area is moderately rugged with elevations ranging from 1,400 to 2,200 metres. Most of the area is alpine with treeline at approximately 1,500 metres. Structural fabric and two periods of glaciation have produced an intersecting pattern of east-west and north-south ridges and valleys. The major valleys are commonly filled with a deep layer of glacial till and outwash gravels.

Winters are cold and dry, while the summers are cool and moist. Average annual temperature is $-1^{o}C$ with average annual precipitation of 50 cm, approximately half of which occurs as snow. Snow cover can persist for nine months of the year, particularly on north-facing, shaded slopes.

1.3 EXPLORATION HISTORY

Mineralization was first discovered on the Kutcho property in 1968 by an exploration joint venture operated by Imperial Oil Ltd. The discovery was made by prospecting follow-up of stream sediment geochemistry anomalies from samples collected during a regional drainage survey. Twenty claims were staked by W. Melnyk directly over the undiscovered Kutcho Main Lens sulphide deposit. These claims were allowed to lapse when the other partners in the joint venture declined to fund further exploration. Imperial Oil returned to the area in 1972, after the statutes of the joint venture agreement expired, in order to re-stake the area. However, Sumac Mines Ltd. (the Canadian exploration subsidiary of Sumitomo) had conducted their own regional stream sediment sampling program earlier that season and in response to anomalous samples, R. Britten staked 8 ‘two-post’ claims along the anomalous stream, and an additional 8 claims (SMRB claims) along the geological strike direction resulting in the cruciform claim outline overlying the western part of the Kutcho Main Lens sulphide deposit and the whole of the Sumac deposit. Imperial Oil (later Esso Minerals Canada Ltd.) then staked a much larger area surrounding Sumac’s claims.

Beginning in 1973, exploration work was carried out by both Sumac and Esso and early success prompted additional staking. Diamond drilling commenced in 1974 and by 1982 approximately 60,000 metres had been drilled by both companies, defining three sulphide lenses. Additionally, Esso had drilled a number of exploration targets in other areas of the property with moderate success. Environmental, metallurgical and engineering studies were begun by both groups in 1980. A partnership agreement on engineering and development work was signed by Esso and Sumac in 1983 but was retroactive to 1981; the year Sumac began work driving the adit in order to collect a 100-tonne bulk sample. The agreement was a 50:50 joint venture for development work, and culminated in a pre-feasibility study by Wright Engineers Limited in 1985. The pre-feasibility study indicated an 11.3% internal rate of return (IRR) when using a copper price of US$0.95. Given the risk factors involved and long-term price projections for copper below the 95 cent level, the companies put the project on hold pending further exploration results. Limited exploration on Esso's claims south of the main mineralized trend between 1985 and 1988 and the numerous earlier geophysical surveys suggested limited potential for additional shallow open-pit mineralization.

In 1989, Esso sold most of its mining assets to Homestake Canada Ltd. In 1990, Homestake optioned the Kutcho property to American Reserve Mining Corporation who funded a $1.1M exploration program (Homestake remained the operator) which included 7,031m of drilling in 28 holes (Holbek *et al*, 1991) mostly in outlying target areas and thereby earned a 20% interest. Exploration was successful in confirming the presence of extensive areas of favourable geology and alteration indicative of hydrothermal activity, but failed to discover zones of potentially economic mineralization. For example, 10 km southwest of the Kutcho deposit, a narrow zone of cryptocrystalline massive pyrite with a strike length in excess of five kilometres was intersected in four widely spaced drill holes but was barren of base or precious metals. American Reserve carried out engineering studies but did no further exploration work and relinquished the option in 1993 but retained a 20% interest in Homestake's property.

The property was optioned to Teck-Cominco Metals Ltd. in 1992. Teck-Cominco carried out deep penetration EM geophysical surveys (UTEM) over the Esso zone with the goal of defining additional conductors along the Kutcho trend. Due to extensive cover of conductive argillaceous units in the hanging wall, the UTEM system was unable to detect the Esso deposit or other conductors at depth, consequently Teck-Cominco dropped the option. Homestake was purchased by Barrick Gold Corp in 2003.

Extensions of the favourable Kutcho stratigraphy to the west have been staked and explored by various companies in the past. Shortly after the discovery of the Kutcho deposits, Noranda staked the Kutcho formation to the west of Kutcho Creek. Noranda conducted geophysical surveys, and completed a small drill program of three drill holes in 1990. The claims were allowed to lapse and were re-staked in 1995 by Gary Belik. Mr. Belik carried out a detailed mapping program and optioned the claims to Atna Resources in 1997. Atna conducted a UTEM geophysical survey and an extensive drill program of nine holes. Results of Atna's work were mixed, and although no deposits were discovered, significant weak to moderately mineralized alteration zones were intersected. Structural complexity and lack of clear geophysical targets prevented additional work and the option was terminated.

Negotiations by Western Keltic Mines Inc. to purchase the property from Barrick and Sumitomo were initiated in 2003 and concluded in early 2004. Western Keltic carried out diamond drilling within the Kutcho and Esso deposits during 2004 to confirm historical results and to obtain material for metallurgical studies (Holbek and Wilson, 2005).

From July to September, 2005, a 31-hole infill diamond drill program totaled 6342m. In the deposits area, sixteen holes extended and delineated the up- and down-dip limits of the Kutcho deposit and the underlying Footwall Zone. Four holes plus four branch holes located the western edge of the Esso deposit, and four holes discovered a higher grade core and the western limit to the Sumac Deposit. Regional exploration holes included one hole at the Jack Target which confirmed a weakly mineralized horizon 5km east of the Kutcho deposit, and one hole at the North Graben Target that aided in the geological understanding of the rhyolite flow-dome complex.

In 2006, Western Keltic Mines Limited completed an in-fill diamond drilling program on the Kutcho property from mid-September to the end of October. A total of 1,870 metres were drilled in 23 BTW diameter diamond drillholes at a total cost of approximately $1 million.

In 2007, Western Keltic Mines focused on several aspects of pre-mine development, most of which had a field component. Logistical work involved expansion to a 45 man camp. Baseline environmental studies encompassed acid rock drainage, air quality, archaeology, fisheries, groundwater hydrology and hydrogeology, meteorological data collection, terrain mapping, traditional use characterization, plus vegetation and wildlife inventories. Technical surveys concentrated on road design, layout and survey; geotechnical foundation studies including seismic plus drill and test pit examination of soil and rock depths, composition and stability; surveying of claims, mining lease and drill collar locations; and geological mapping of potential limestone horizons in Andrea Creek. Engineering studies focussed on mine and mill layout, pit stability and design, database verification and resource calculation, geohazards identification, metallurgical studies, and water balance calculations. Non-engineering work included development of safety, environmental and First Nations policies, operational protocols and project scheduling. Local area consultations included discussions toward impact benefits agreements and well as the signing of MOU's regarding ports, and with First Nations regarding project review participation and funding.

In 2008, Sherwood Copper Corporation purchased Western Keltic Mines Inc. and all assets and amalgamated these with Sherwood's wholly-owned subsidiary which was renamed Kutcho Copper Corporation.

Between May and August of 2008, Kutcho Copper Corporation completed a major diamond drill program entirely within the perimeter of the Main lens. 9,905 metres of drilling in 78 holes (plus three abandoned holes) provided core for assay and metallurgical processing. Based on these drill results, a new resource calculation was prepared (Appendix II).

In late 2008 Sherwood Copper Corporation merged with Capstone Gold Corporation, forming Capstone Mining Corporation.

1.4 2009 Exploration Program

Re-logging historic drillcore from the southern area of the claims was carried out in the spring of 2009 in preparation for a surface prospecting and mapping program over the same ground later in the season. Drillholes 90K-15 and 90K-19 were selected because they intersect major felsic volcanic units, minor pyritic horizons and reported chert (exhalite) units. These two holes also make up the northern part of a line of four drillholes that comprise the only linear fence of drillholes across the southern limb of the main anticline in the Kutcho district – the Imperial anticline. In the area of these drillholes, 7 kilometres southwest of the three Kutcho VMS deposits, the southern limb of this anticline exposes the same favourable stratigraphy that hosts the VMS deposits on the north limb of the anticline.

2.0 GEOLOGY

2.1 REGIONAL GEOLOGY

The Kutcho property lies within the King Salmon Allochthon (KSA), a narrow belt of Permo-Triassic island-arc volcanic rocks (Kutcho Formation) and Jurassic sedimentary rocks. These strata are sandwiched between two northerly-dipping thrust faults, the Nahlin fault to the north, and the King Salmon fault to the south (Fig. 2.1).

Kutcho Formation is thickest in the area where it hosts the volcanogenic massive sulphide deposits due in part to primary deposition, but also to stratigraphic repetition by folding and, possibly, thrusting. KSA is terminated to the east, near the eastern edge of the property, by the strike-slip Kutcho fault (Gabrielse, 1978) but KSA extends to the west for hundreds of kilometers. However, Kutcho Formation volcanic rocks thin to the west and are poorly exposed from a point 10 km west of Kutcho Creek all the way to Dease Lake.

KSA stratigraphy consists primarily of the Kutcho Formation, overlain by the limestone of the Upper Triassic Sinwa Formation, which in turn is overlain by sediments, predominately argillite, of the Lower Jurassic Inklin Formation. Major folds are clearly delineated by the outcrop trace of the Sinwa limestone or by the contact between the Kutcho and Inklin Formations where Sinwa Formation is absent (Fig. 2.2).

2.2 PROPERTY GEOLOGY

2.2.1 Stratigraphy

Stratigraphy of the Kutcho property has been described by Thorstad (1983), Bridge (1984) and Holbek (1985) and is only be briefly reviewed here. Figure 2.3 shows the property geology map, and a generalized stratigraphic section is presented in Figure 2.4. Stratigraphy is best understood in the upper part of the Kutcho Formation where detailed drill information is available. The footwall stratigraphy, particularly away from the deposit area, is known only from surface mapping.

The lowest rocks in the section include interlayered basalt, basaltic tuff and wacke, rhyolitic lapilli tuff and trondhjemite intrusive. The mafic rocks are fine to very fine grained, chloritic, and equigranular to weakly porphyritic. The lapilli tuffs are pale grey, siliceous and commonly contain very fine quartz phenocrysts and lenticular fragments from 0.5 to 3 cm in length. Textures can only be seen on weathered, lichen-free, surfaces. The trondhjemite is described by Pearson and Panteleyev (1975) and Bridge *et al.* (1983) as fine-grained, equigranular and plagioclase-rich. A weak but pervasive carbonate-chlorite-pyrite alteration of this unit is discernable.

Rocks overlying the basalt-lapilli tuff package have been termed the “ore-sequence” and consist of lapilli tuffs, crystal-lithic tuffs, quartz and quartz-feldspar crystal tuffs. Away from the deposit area, these units tend to be thin, interbedded, and variably but weakly altered. Fine quartz-crystal ash tuff with silica-rich laminations and rare thin zones of ferroan dolomite typically mark the distal exhalative zone. The sulphide zones occur at, or near to, the contact between footwall lapilli tuff and hangingwall quartz crystal tuff. In general both lapilli fragments and phenocrysts are much coarser grained in the vicinity of the deposits, and become progressively finer grained to the south and west. The quartz-feldspar crystal tuff is quartz-rich near the deposits and to the south becomes more feldspar-rich.

A large zone of feldspar crystal tuff with almost no free quartz occurs a few hundred metres south of the sulphide zones and it is indeterminate whether this unit is footwall, hangingwall, or a facies equivalent to the quartz-feldspar crystal tuff.

Another interesting feature is the occurrence of a coarse breccia texture within the quartz-feldspar crystal tuff immediately above the sulphide lens. Clast textures are identical to the enveloping crystal tuff matrix except for an increase in the amount of epidote to 10 percent. This feature has been interpreted to be a debris flow of semi-consolidated crystal tuff shed from a flow-dome complex, and trapped in a graben or half-graben structure which hosts the sulphide lenses.

Rocks between the ore sequence and the overlying conglomerate unit are referred to as the Tuff-Argillite Unit (TAU) and consist of gabbroic to basaltic intrusive sills and dikes, greywacke and argillite. In the area of the deposit the gabbroic units are coarse-grained and are commonly referred to as metagabbro. Higher in the section and both to the east and west from the Kutcho deposit this mafic unit becomes much finer grained and an intrusive origin is not so clearly identified. The amount of argillite increases in a westerly direction supporting the concept that this direction is towards the marine basin. The base of the TAU is interpreted to be a thrust fault and there are numerous other fault zones within the unit as noted in drill core and the adit.

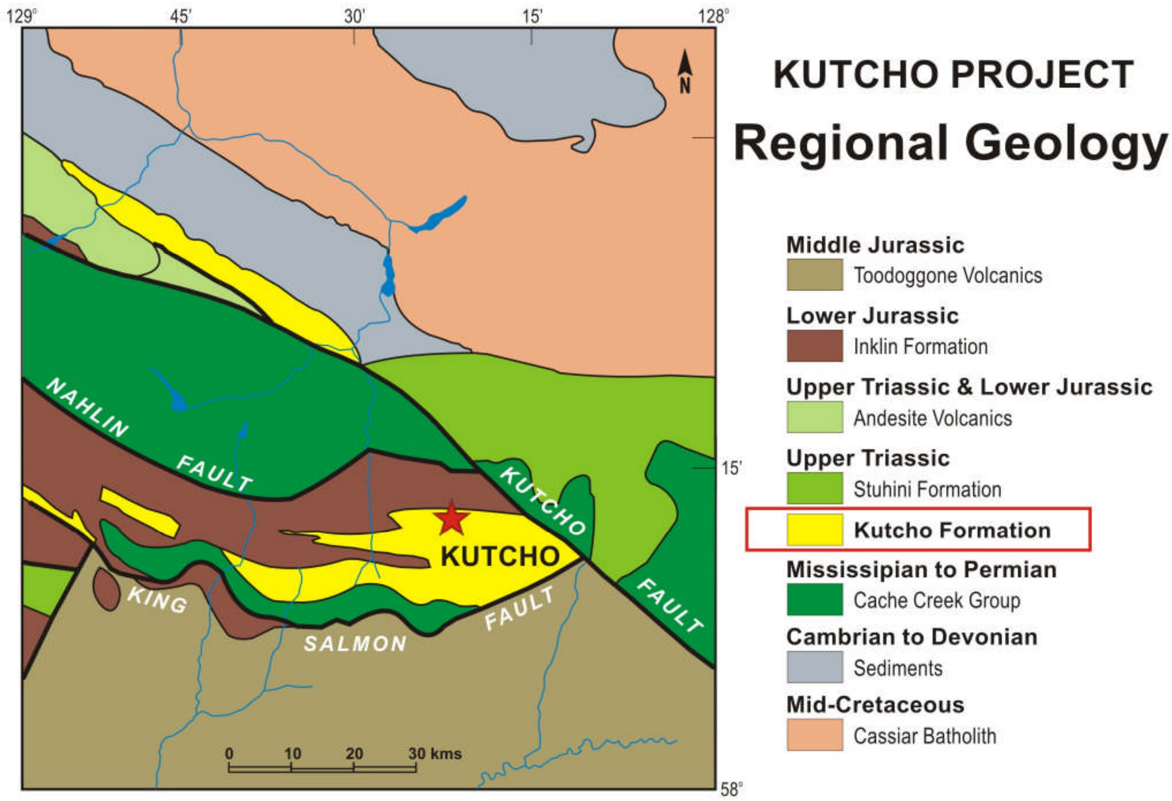

Figure 2.1 Regional Geologic Setting of the Kutcho Project

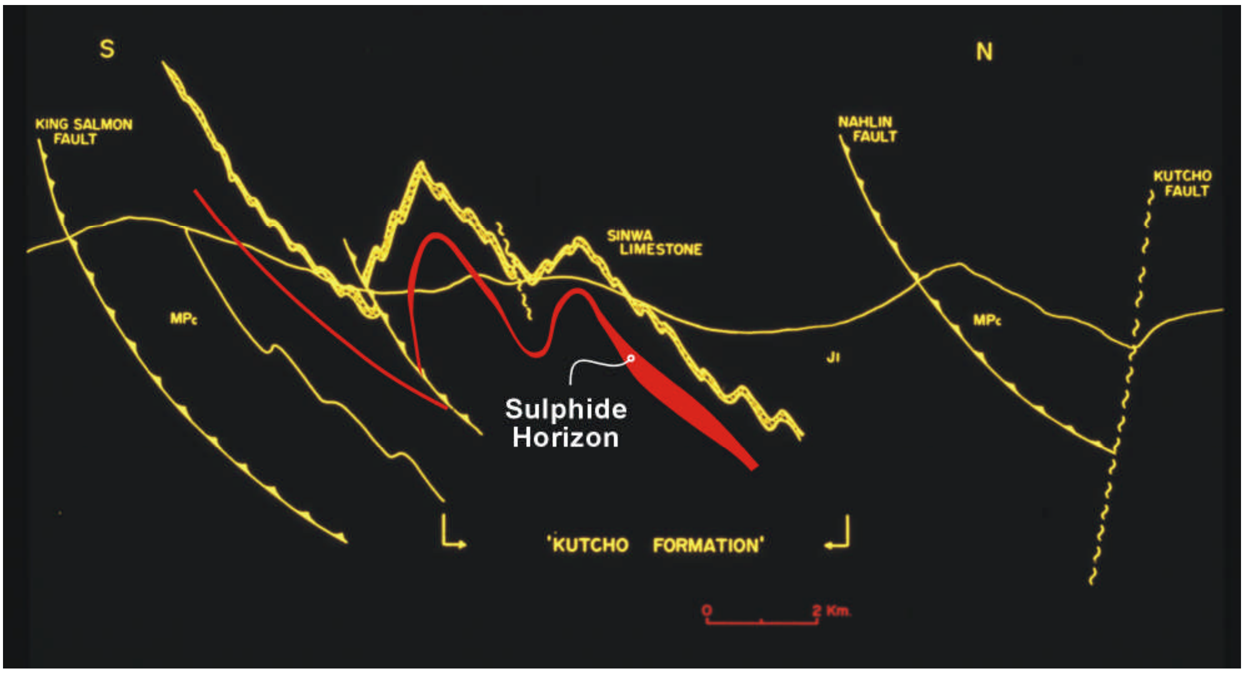

Figure 2.2 Schematic cross-section of the King Salmon Allochthon in the Kutcho deposit area

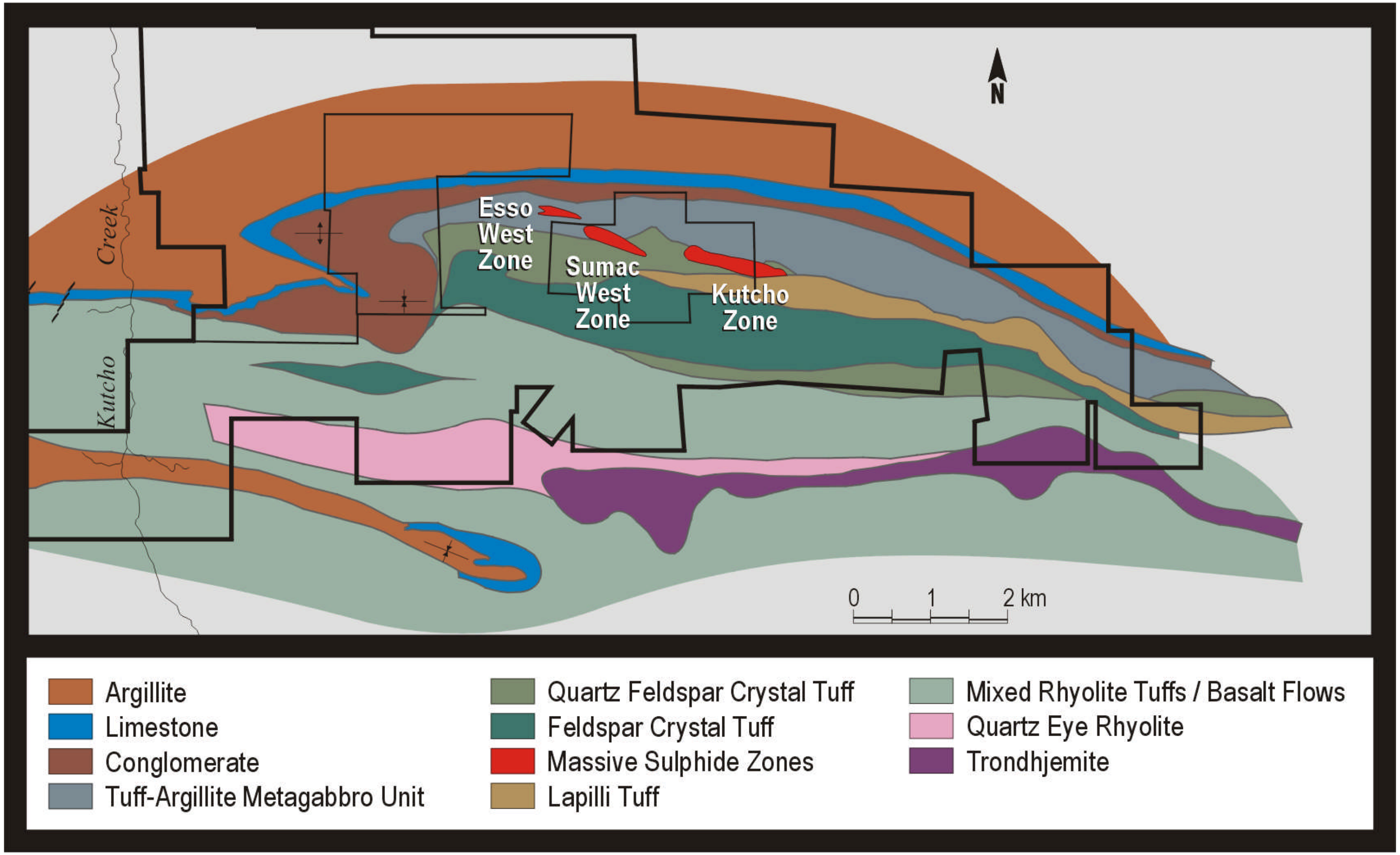

Figure 2.3 Kutcho Property Geological Plan (with historical claim outline and surface projection of sulphide deposits).

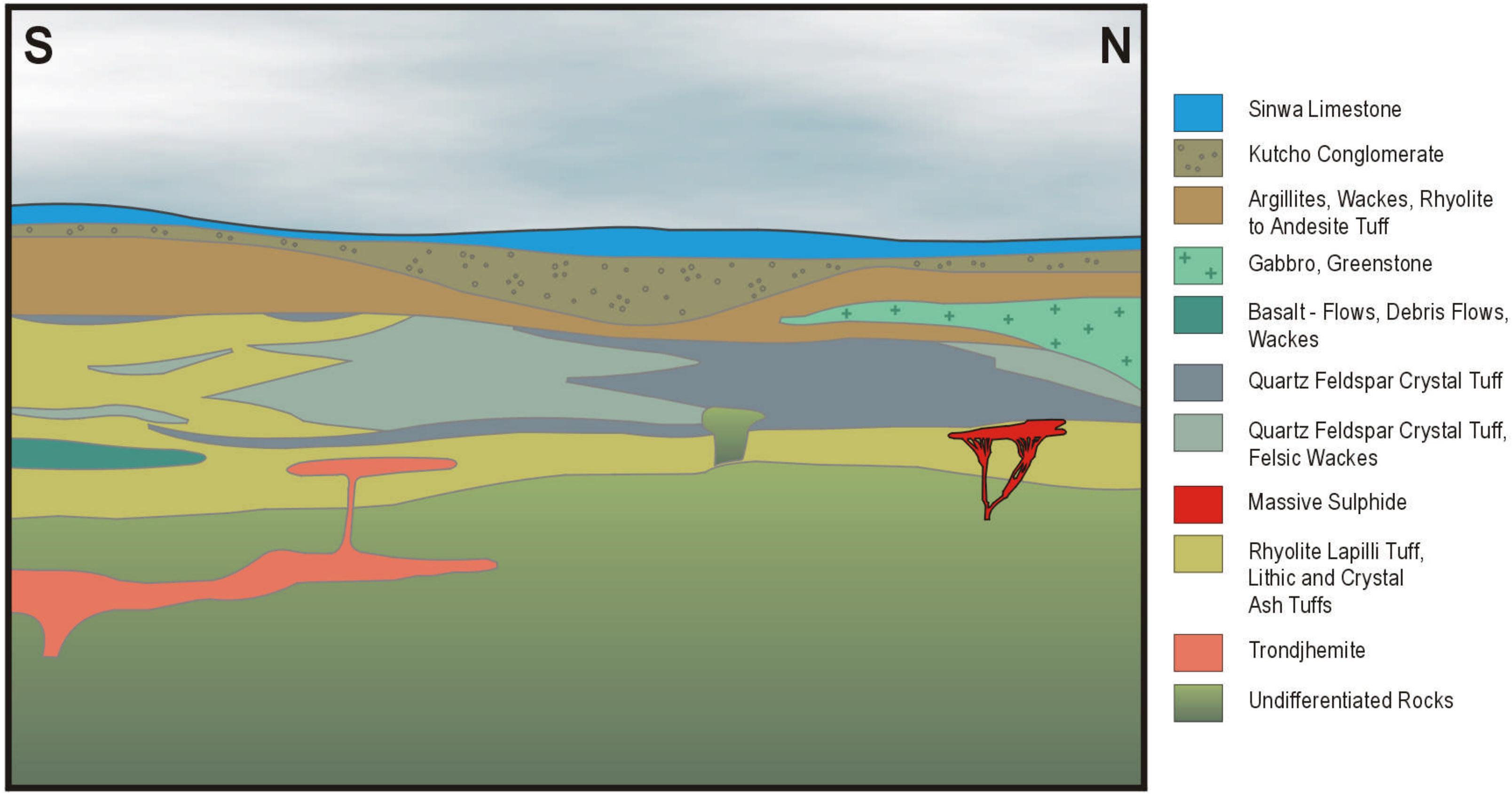

Figure 2.4 Reconstructed Stratigraphic Section (Vertical exaggeration approximately 10x)

Overlying the TAU, and truncating it to the west is the Kutcho Conglomerate. This unit is a heterolithic, fragment-supported conglomerate composed of sub-rounded clasts, ranging in size from 1 to 38 cm (long axis) and derived from all of the underlying lithologies. The conglomerate is conformably overlain and transitional into the Sinwa limestone, which in turn appears to be conformably overlain by Jurassic Inklin Formation argillite.

Kutcho Formation is Permo-Triassic. Thorstad (1983) determined an Upper Triassic age on the basis of Rb-Sr dating of volcanic rocks and regional stratigraphic constraints. Subsequent work by F. Childe at the Mineral Deposit Research Unit of The University of B.C. in 1996 indicates that ages range from uppermost Permian to Lower Triassic.

2.2.2 Structure

Rocks of the Kutcho Formation are characterized by planar foliation that has a relatively constant strike direction of 270 to 290 degrees with northerly dips from 45 to 65 degrees. The dip of foliation decreases with structural depth. This foliation is part of the stress envelope associated with the regional thrusting event that created the King Salmon Allocthon.

Folds are open to tight, asymmetrical, inclined and verging to the south. Folds plunge from 0 to 30 degrees west. Folds are most evident in well-bedded, competent units; fold data is heavily biased to the western property area, where these units predominate.

Structures that critically affect stratigraphic interpretation is the foliation-parallel thrust faults. These are difficult to detect in outcrop but can be inferred from foliation intensity, missing stratigraphy, contact geometry and topographic evidence. Faults of this type are considered to be present over the entire property.

3.0 MINERALIZATION AND ALTERATION

Three deposits comprise the Kutcho project. These form a west-plunging linear trend (Figure 2.3). From east to west the deposits are the Main, Sumac and Esso deposits (these deposits were previously termed Kutcho, Sumac West and Esso West respectively). The Main deposit crops out at its eastern end. Esso is blind and lies more than 400m below surface. A combined mineral resources for the three deposits is summarized in Table 3.1

CLASSIFICATION	M Tonnes	% Cu	% Zn	g/T Au	g/T Ag
Measured	5.421	2.15	2.86	0.34	31.4
Indicated	4.994	2.14	2.83	0.39	33.5
MEASURED and INDICATED	10.415	2.14	2.85	0.36	32.4
Inferred	1.893	2.09	2.93	0.46	33.6

Table 3.1 Measured, Indicated and Inferred Mineral Resources for the Kutcho Property (Resource updated by KCC on February 9, 2009. Tabulated at a 1.5% copper cut-off for all three deposits.) A detailed resource tabulation is included as Appendix I.

3.1 DEPOSIT TYPE

Mineralization at the Kutcho project is part of the volcanogenic massive sulphide (VMS) family of deposits. These deposits are a major source of copper, zinc, lead, silver and gold around the world. Speculation about the origin of these deposits goes back to mid 1850's when various French and English scientists postulated chemical precipitation from seafloor volcanic activity (Stanton, 1991). In the early 19^{th} century, Japanese workers documented the sulphide textures preserved in the Kuroko deposits of Japan and the association of these deposits with rhyolite domes, developing the "submarine sinter theory". However, this work did not attract much attention and genetic theories or models of ore formation of this deposit type did not really gain international acceptance until similar observations were published by other workers in the 1950's and 1960's. Discovery of the Red Sea brine deposits in 1965 provided substantial impetus for the proponents of the "submarine exhalative" model. A certain amount of controversy between syngenetic and epigenetic theories continued through the 1970's, but with the advent of deep-sea submersibles and the filming of black and white "smokers" or hydrothermal vents in volcanic rift zones on the sea-floor, scientific models could go to a new level of detail.

VMS deposits have been classified into various subtypes depending upon the composition of the host rocks and the mineralization, and the tectonic setting. The Kutcho deposits are VMS deposits of the Kuroko type or Felsic volcanic-Siliciclastic depending upon the classification scheme. In this model, mineralization is related to felsic volcanism in island-arc or back-arc tectonic settings. A significant feature of VMS deposits from an exploration perspective is their tendency to occur in clusters. Larger VMS camps have up to 25 discrete deposits, and extensive mineralized districts are common.

Features of Kutcho deposits suggest that they formed at or near the seafloor in a structurally controlled depression, such as a half-graben. The VMS deposits at Kutcho have some features that are not common to this class of deposits: the absence of lead and barite is likely due to the low potassium content of the volcanic hostrocks (and presumably the associated rhyolite dome) and the presence of abundant carbonate of probable exhalative origin.

Alteration associated with VMS deposits is well documented and provides a valuable exploration tool, since the volume of altered rock is much larger (10 to 100 times greater) than the actual sulphide deposit, providing a larger exploration target. Extensive studies of the alteration around the Main (Kutcho) deposit have been completed and the alteration is chemically well-zoned about the hydrothermal vent area. Applying this known zonation, geochemical analysis of drill core within the alteration zone provides vectors towards a hydrothermal vent area and, hopefully, new sulphide deposits.

Geophysical techniques such as electro-magnetic (EM) and gravity surveys are useful for locating conductors or possible sulphide concentrations. EM methods can be used in airborne and ground surveys but can also be used within drillholes to locate "off-hole" conductors, thereby effectively increasing the search area of a drillhole. Many airborne and ground geophysical surveys have been completed on the Kutcho property and most high-priority targets have been investigated.

3.2.1 Main (Kutcho) Deposit

The Main deposit has an elliptical, lenticular shape with approximate dimensions of 1,500 m length, 260 m width (down-dip) and 20 m thickness (34 m maximum thickness). The long axis of the deposit plunges to the west-northwest at 12 degrees. The deposit is approximately conformable with stratigraphy. There is a gentle warping of the deposit such that the dip of the deposit changes from east to west and north to south. The shallowest dip, about 38^o, occurs at the southeastern edge and becomes progressively steeper, to about 63^o, at the northwestern edge. In general, the up-dip edge of the sulphide lens is narrow and pinches out, whereas the down-dip edge is thick and interlayered with tuffaceous rock (Fig. 3.1).

Sulphide mineralogy of the deposit is relatively simple and consists of pyrite, chalcopyrite, sphalerite and bornite, with minor chalcocite, tetrahedrite, diginite, galena, idiaite, hessite and electrum. Gangue minerals include quartz, dolomite, ankerite, sericite, gypsum and anhydrite. Fluorite and barite have been observed but do not occur in significant amounts.

Interpretation of the shape of the sulphide zone, taken together with the observed volcanic and depositional textures of the enclosing rocks, suggest that the sulphide mineralization was deposited in a structural depression, likely a half-graben. The internal stratigraphy of the Main deposit was determined by detailed drillcore logging along a single longitudinal section of drill holes (Figure 3.2; Holbek and Heberlein, 1986). The deposit appears to have formed from three hydrothermal-depositional cycles that begin with barren pyrite which grades into a copper-rich middle and zinc-rich top. Depositional cycles are commonly separated by layers of exhalative quartz and/or carbonate and minor volcanic ash. However, post-depositional hydrothermal activity resulted in sulphide replacement mineralization which tends to blur grade and cycle boundaries in some areas. Additional features such as an irregular depositional surface and localized slumping of sulphide mineralization or chimney collapse, and late-stage (post depositional) hydrothermal activity also cause complexity to the internal sulphide stratigraphy. Areas of late overprinting by oxidized copper species, and enrichment in precious metals, are interpreted as indicators of vent areas and occur along a linear trend on the down-dip side of the deposit with two "hot-spots" near each end of the deposit. However, no areas of 'classical' copper-rich footwall stringer mineralization have been encountered by drilling.

The upper contact of the sulphide mineralization is sharp with almost no sulphide minerals occurring in hangingwall rocks with the exception of scattered coarse crystals of porphyroblastic pyrite. However, sericite alteration of feldspar in the hangingwall strata is gradational from very weak at distances of up to 50m above the sulphide contact to intense from 1m to 10m above the sulphide lens. It is common for a shear zone to occur at the sulphide-schist contact which varies from 20cm to a maximum of 200cm in thickness and in many drillholes this hangingwall fault carries some grade. The base of the deposit consists of nearly barren massive pyrite with interstitial quartz. The contact between 'ore' and the footwall pyrite zone can be either gradational or sharp. Below the footwall pyrite zone is quartz-sericite schist with bands of generally barren, massive to semi-massive pyrite. The footwall pyrite content diminishes with depth away from the deposit, but extends to a maximum depth of 200m below the central part of the deposit.

Although the footwall material appears to be of low competence in drillcore, it holds up very well in the underground adit.

3.2.2 Sumac Deposit

Sumac deposit has not previously received much attention due to its relatively low grades. It has been intersected in just 14 drillholes. A resource estimate is presented in Section 5.2.

Sumac mineralization is massive to banded pyrite with varying amounts of chalcopyrite and sphalerite, but lacking bornite. The deposit is oval, 300m long, 200m wide and from 20m to 32m thick. Hangingwall alteration is similar to the Main lens, but the footwall contains less pyritic banding, progressing much sooner into chlorite-altered lapilli-ash tuff.

The shape of the deposit is based on contours generated by a Mise à la Masse or downhole chargeability geophysical survey carried out during the early days of exploration. This survey was conducted by putting a transmitter electrode down the drillhole and grounding it against the sulphide zone. Then chargeability is measured from surface by a receiver array run along a grid of stations.

3.2.3 Esso Deposit

Esso deposit was discovered by following the trend in mineralization westward beyond the Main and Sumac areas. The deposit lies between 400m and 520m below surface. Like the others, Esso is an elongate lens with dimensions 680m long, 110m wide and up to 24m thick. The deposit consists of two discrete lenses; a larger lower lens and a smaller upper lens. Drilling results suggest that the two lenses may be connected at some location, rather than displaced by faulting. There is a zonation in thickness and grades from the central area of the larger lens. Mineralization in Esso lens is higher grade than either the Main or Sumac deposits, but displays similar mineral zonation with either copper-rich or zinc-rich layers or zones. Hangingwall and footwall alteration is similar to the Main lens and three-dimensional modeling indicates that these two deposits lie along the same stratigraphic horizon.

Drillholes were spaced approximately 10m to 30m along sections and sections are variably spaced, between 60m and 120m. Mineralization which was located within 30m of a drill hole was classified as indicated, with the remainder classified as inferred. Approximately 50% of the mineralization was within 30m of a drillhole. The resource estimate is based on 43 drill intersections.

3.2.4 Other Mineralization

Other zones of mineralization on the Kutcho Property include the Footwall zone, and the Jenn area. The Footwall zone occurs approximately 100m stratigraphically below the footwall of the Main lens, and extends up-dip to surface in two locations. Footwall zone is 2m to 5m thick, and relatively zinc-rich compared to Main lens. Didur (1979) calculated an inferred resource estimate using a polygonal method, of 230,000 tonnes grading 1.47% Cu, 5.52% Zn, 43.7 g/t Ag and 0.4 g/t Au.

The Jenn claims at the eastern end of the property received a fair amount of exploration attention by Esso. Although significant alteration and some local mineralization were intersected, no resources have been defined in the Jenn area. Folding appears to limit the down-dip potential in this area but revisions to the structural interpretation are likely and detailed geophysical surveys may enhance the area's potential.

** Although the resource estimates described above pre-date the Standards on Mineral Resources and Reserves Definitions and Guidelines adopted by CIM council on August 20th, 2000, the use of the terms: Indicated and Inferred have been used and have the same meanings as the CIM definitions.*

4.0 2009 DRILLCORE RE-LOGGING

4.1 INTRODUCTION

Re-logging of historic core from the southern area of the claims was carried out in the spring of 2009 in preparation for a surface prospecting and mapping program over the same ground later in the season (Figure 4.1). Drillholes 90K-15 and 90K-19 were selected because they intersect major felsic volcanic units, minor pyritic horizons and reported chert (exhalite) units. These two holes also make up the northern part of a line of five drillholes that comprise the only linear fence of drillholes across the southern limb of the main anticline in the Kutcho district – the Imperial anticline. In the area of these five drillholes, 5 kilometres southwest of the three Kutcho VMS deposits, the southern limb of this anticline exposes the same favourable stratigraphy that hosts the VMS deposits on the north limb of the anticline.

The decision to re-log these and other historic drillholes on the southern limb of the Imperial anticline was based on substantial advances in the understanding of:

- volcanic rock textures
- characteristic features of VMS sulphide deposits
- local and regional alteration haloes associated with VMS deposits
- key structural controls to the localization of the Kutcho VMS deposits
- pathfinder elements and minerals in the Kutcho VMS camp

since these holes were drilled and logged 20 years ago.

Our logging technique incorporates the lithological subdivisions developed and refined at the Kutcho Property through the exploration campaigns of the past 35 years. In addition, during 2008, Kutcho Copper Corporation developed a logging system incorporating geometallurgical best practices for description and classification of sulphide mineralisation. This technique is now applied in all core new and historic core studies on the property.

4.2 GEOLOGY OF DDH 90K-15

This drillhole was sited in 1990 to test the "Kris" zone. Kris zone is the name for a thick package of felsic volcanic rocks exposed in a nearby tributary of Kris Creek. The outcrops are just southeast of the drillhole collar. There are no coincident geophysical or geochemical anomalies associated with this geological target. The complete detailed corelog for this drillhole is included in this report as Appendix II; the graphic log is displayed as Figure 4.2.

Mineralization intersected consists of four intervals of trace chalcopyrite associated with 4% to 8% laminated pyrite from: 9.80m to 17.00m; 32.31m to 64.10m; 85.5m to 90.0m; and 156.4m to 156.8m. The hole also intersected three major rhyolite units from: 17.60m to 54.50m; 79.05m to 89.63m; and 106.20m to EOH at 252.37m.

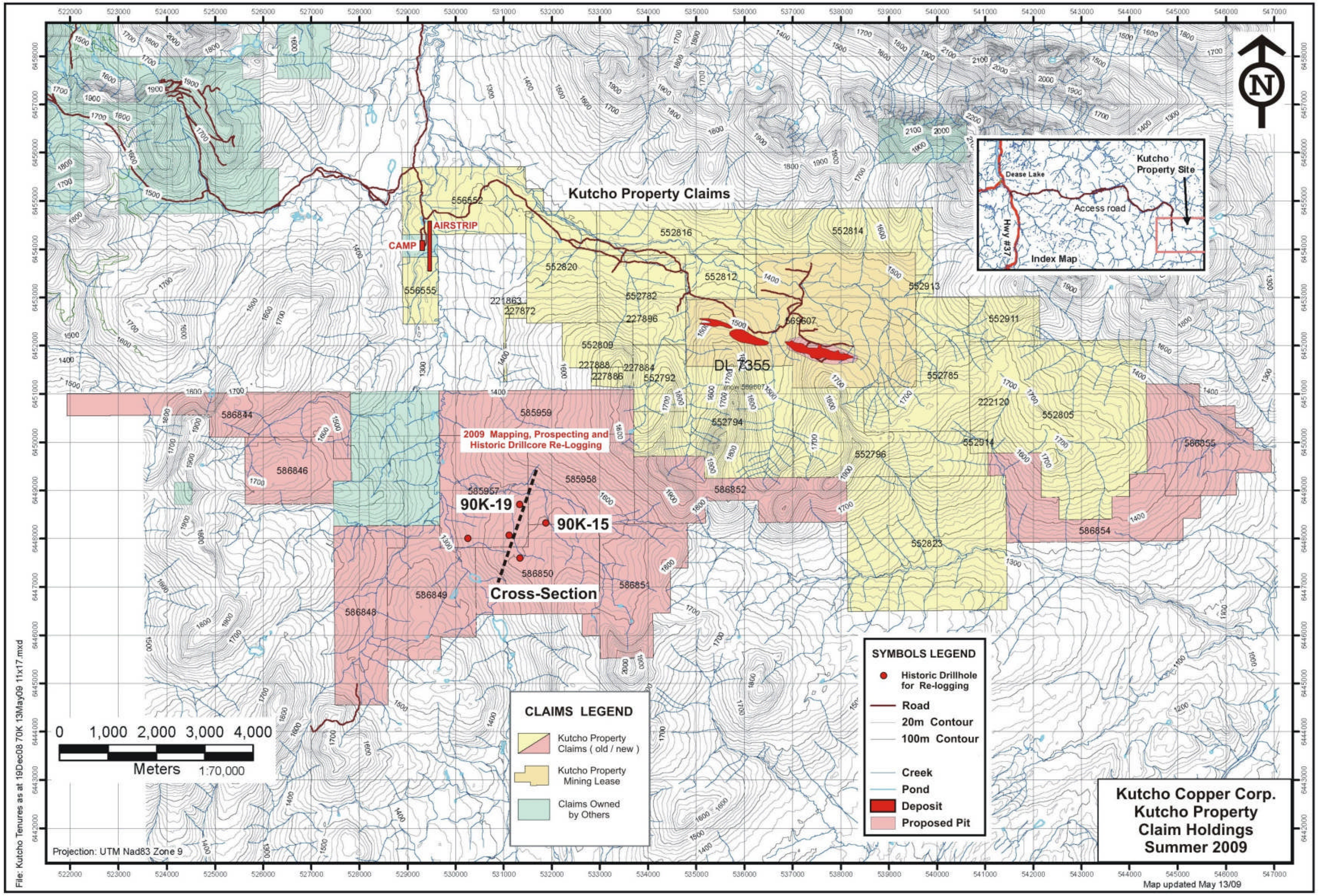

Figure 4.1 Drillhole location map

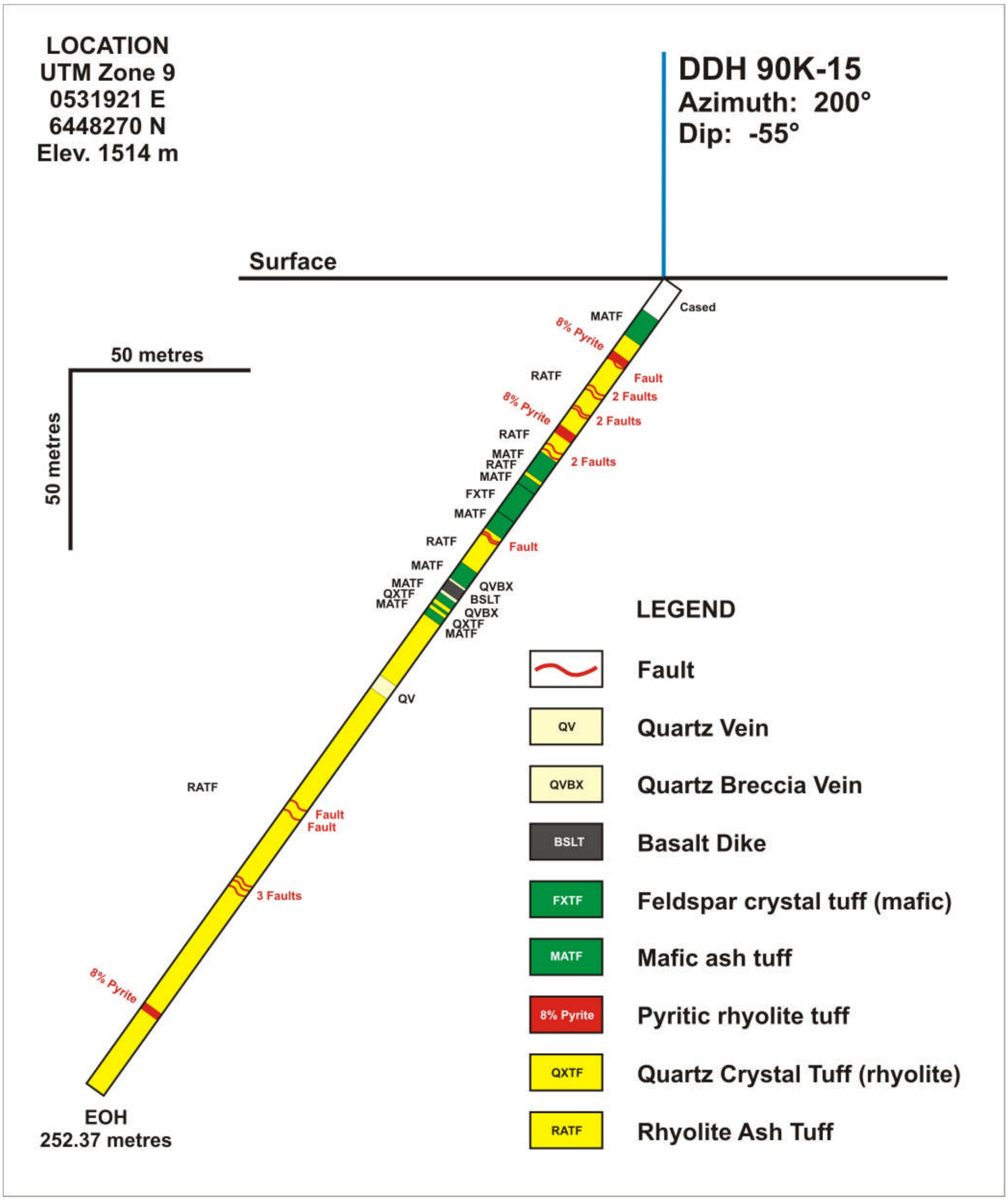

Figure 4.2 Graphic Log for DDH 90K -15

In Assessment Report 20,636 the corelog for drillhole 90K-15, in Appendix IV (PDF page 148), reports "15% chalcopyrite blebs" from 9.8m to 17.0m. This is a transcription error and should read "0.5% chalcopyrite blebs". The presence of fine disseminated chalcopyrite throughout this interval was confirmed in this 2009 re-logging; the estimated concentration over this 7.20m interval is 0.1% to 0.2%.

There are three important geological features present in this drillhole;

- As confirmed by the drill results, this hole intersects a major accumulation of felsic (rhyolite) volcanic rocks. Rhyolite is the hostrock to the three adjacent VMS deposits 5 km to the northeast on the Kutcho Property, and the hostrock rhyolite unit is sandwiched between overlying and underlying rhyolite tuffs as well. The accumulations of a large volume of felsic volcanics is thought to be a key part of the lithostratigraphic controls on the formation and accumulation of the VMS deposits. There are alternate interpretations about whether a thick accumulation of rhyolite flows as a dome or a thick accumulation of rhyolite tuff as a basin fill is more prospective.
- The mafic ash tuff intersected in this drillhole contains a substantial amount of white carbonate as patches and as intact laminae. This does not suggest carbonate alteration, so much as deposition of mafic ash in a basin quiescently accumulating sedimentary carbonate, i.e. limestone. This is an important distinction because a quiescent basinal setting is optimum for the deposition and preservation of exhalative sulphides. It is possible that mafic tuff units could be as prospective for exhalative sulphide accumulation as the felsic units that are the current exploration focus.
- Silica exhalite, or chert, described in the earlier core log is more likely as strongly siliceous, weakly pyritic rhyolite tuff unit.

4.3 GEOLOGY OF DDH 90K-19

This drillhole was planned after DDH 90K-15 returned its thick intersections of felsic volcanics, which were interpreted as a rhyolite dome. The intent was to drill sufficiently far away to test the flanks of the dome, an optimum location for the formation of exhalative sulphides. The detailed corelog for this drillhole is included in this report as Appendix III; the graphic log is displayed as Figure 4.3.

This drillhole intersects felsic and mafic ash and crystal ash tuff. The strata is dominantly felsic tuff (60% to 65% felsic volcanics). However, this hole also intersects a distinctive 30-metre-thick mafic flow with a thin intraflow felsic tuff unit and a basal flow-breccia.

No base metals were identified in drillcore, but significant thick pyritic felsic ash tuffs were intersected as noted below:

- 64.87m to 86.75m: Felsic ash tuff with 1.5% to 8% pyrite as laminations.
- 227.52m to 281.86m: Variably altered felsic ash tuff with 0.5% to 7% pyrite.

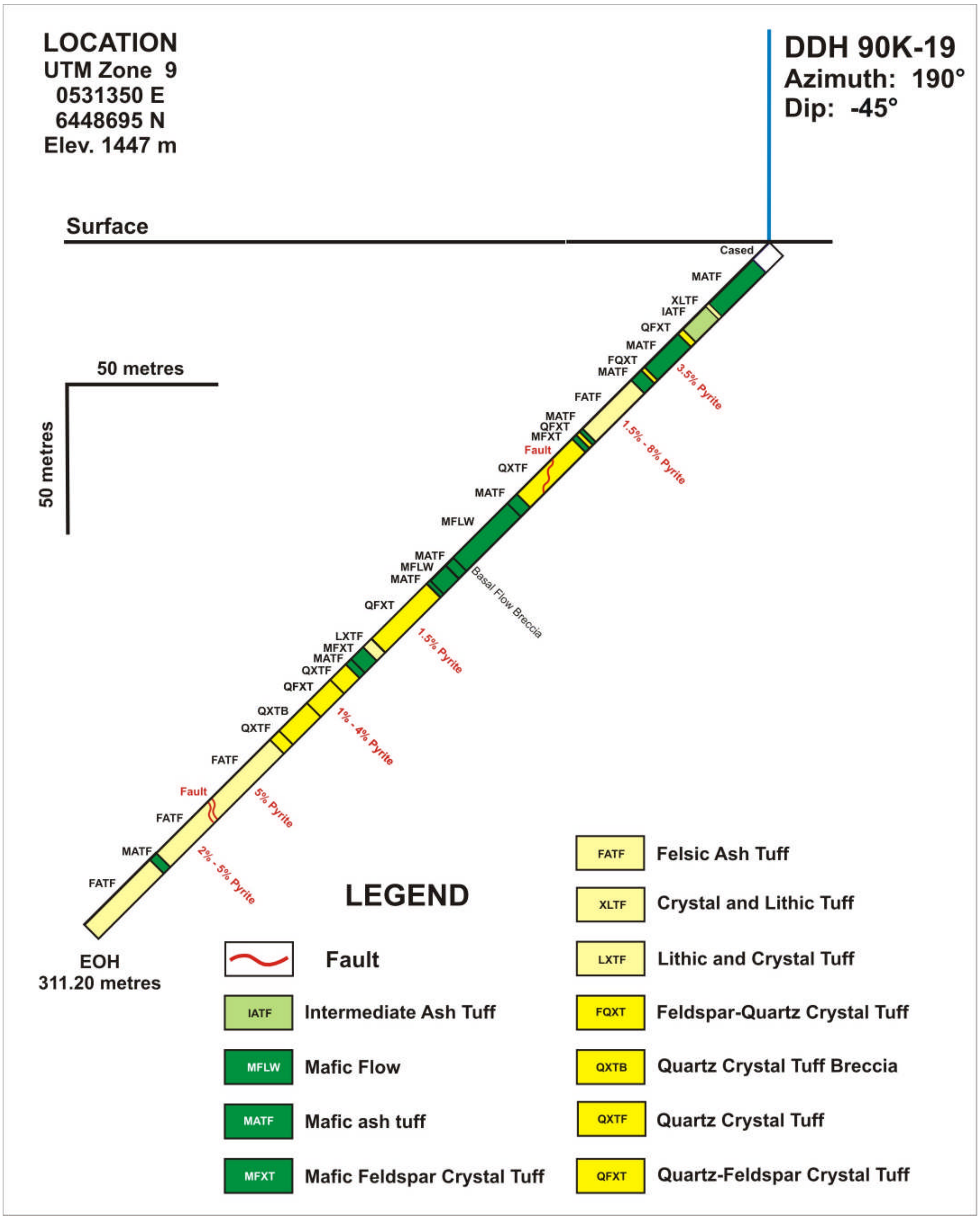

Figure 4.3 Graphic log for DDH 90K-19

4.4 CROSS-SECTION THROUGH DRILLHOLES 90K-15 AND 90K-19

A north-south cross-section through these two drillholes is presented in Figure 4.4. The prominent northward dip of strata is consistent with the orientation deduced from regional mapping campaigns. Although individual volcanic units may be expected to record thickness changes and textural facies changes over the 710 metre distance between the drillhole collars, the chemical composition of individual units will be constant and the general relationships within the thicker lithostratigraphic `packages' delineated on the cross-section will also be more consistent over distance.

The cross-section shows that the major stratigraphic packages can be reliably traced between these widely-spaced drillholes. However, the interpretation also suggests the felsic volcanic packages of interest may have relatively consistent thickness over the 710-metre separation of these two drillholes. This does not support an earlier interpretation of a local rhyolite dome at the location of DDH 90K-15. An interpretation of a basinal accumulation of rhyolite tuffs is a better fit with the textures described in the corelogs and with the stratigraphic pattern revealed on the cross-section. This latter interpretation is also more consistent with the setting of a carbonate-saturated marine depositional basin envisaged for the accumulation of the mafic ash tuff units.

The earlier interpretation that drillhole 90K-15 intersects a rhyolite dome is not supported by textural evidence. Rhyolite facies intersected in hole 15 are dominantly fine-grained, indicating more distal ash tuffs, whereas rhyolite facies intersected in drillhole 90K-19 include a complex array of crystal and lithic lapilli tuff facies. This suggests that the felsic strata in hole 19 are more proximal to a felsic volcanic vent.

Both drillholes host significant quantities of pyrite distributed through the felsic volcanic units, but drillhole 15 hosts more chalcopyrite. The finer grained, more distal and more quiescent depositional setting indicated by the felsic volcanic textures displayed in hole 90K-15, combined with the ubiquitous distribution of pyrite and trace to minor concentrations of chalcopyrite, indicate that follow-up exploration should be focused around this area.

5.0 CONCLUSIONS

Two exploration drillholes completed in 1990 in the area covered by the Mother 1-2-3 claimblocks intersect thick successions of rhyolite tuffs intercalated with lesser mafic volcanic flow and tuff units. Re-logging these two holes:

- Reveals clear evidence of proximal and distal facies
- Indicates that the geologic setting was an accumulation of tuffaceous debris in a marine basin
- Suggests that DDH 90K-15 was the more distal of the two drillsites with respect to the felsic volcanic vent.

These patterns, combined with the elevated content of chalcopyrite in hole 15, support the conclusion that follow-up exploration work should focus around drillhole 90K-19.

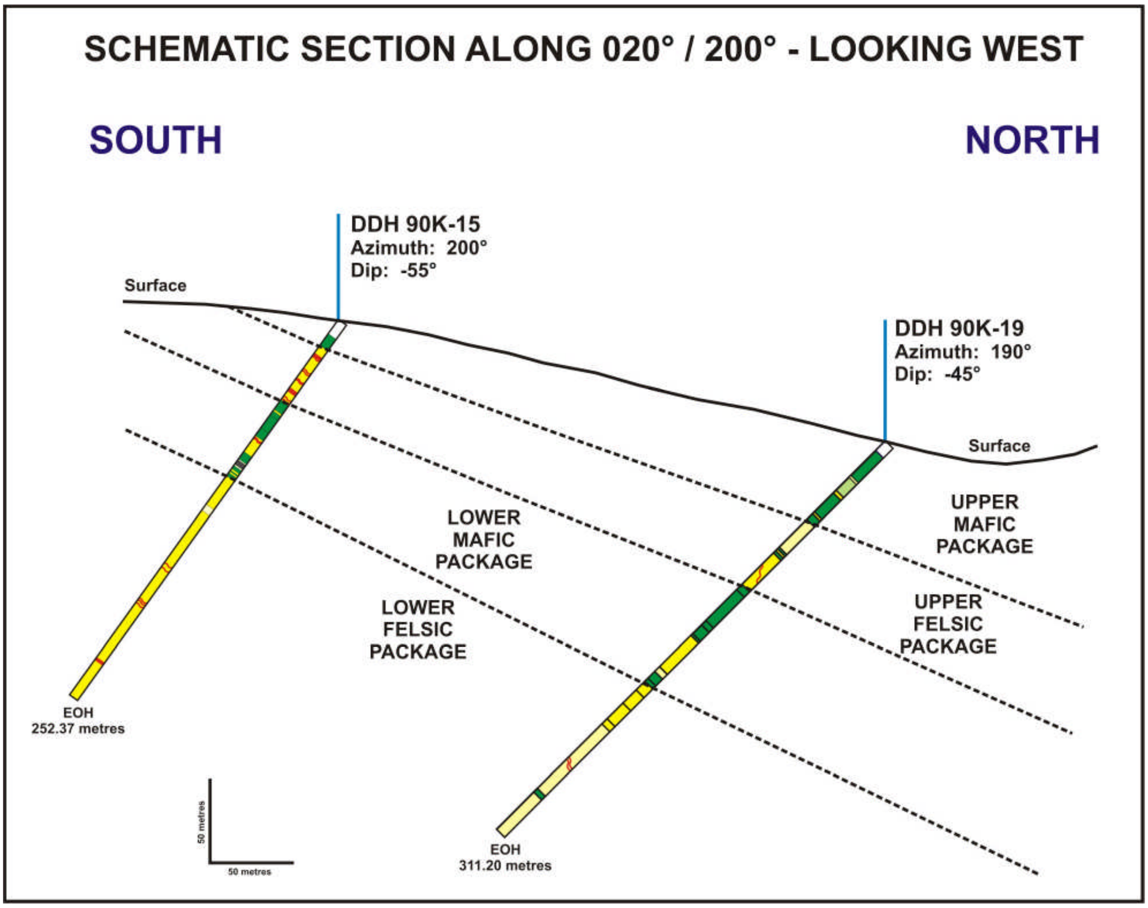

Figure 4.4 Cross-section through DDH 90K-15 and DDH 90K-19

6.0 RECOMMENDATIONS

Relogging of all available historic drillcore should be an essential first step before embarking on renewed mineral exploration work in any part of this property. Relogging historic drillcore provides an opportunity to apply insights gained from substantial advances in the understanding of:

- Volcanic rock textures
- Characteristic features of VMS sulphide deposits
- Local and regional alteration haloes associated with VMS deposits
- Key structural controls to the localization of the Kutcho VMS deposits

since the holes were first drilled and logged.

Results from re-logging historic drillcore can be expected to:

- Shift exploration priorities within local areas of this property
- Shift exploration between different areas of this large property
- Enhance the overall geologic database.

Results will also help support and justify exploration beyond the drilled areas.

For the two drillholes examined in this study, follow-up exploration work should focus around drillhole 90K-19.

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APPENDIX I

LIST OF CLAIMS

FOR

KUTCHO PROPERTY

TABLE 1.1 KUTCHO PROPERTY CLAIMS (100% OWNED BY 218234)

Tenure Number	Tenure Claim	Claim Name	Map Number	Good to Date	Status	Mining Division	Area (ha)	Tag Number
221863	Mineral	LIN NO 1 FR	104I028	2017/Jan/31	GOOD	LIARD	25.0	38345
222120	Mineral	JEFF 114 FR	104I019	2011/Jan/31	GOOD	LIARD	25.0	72858
227872	Mineral	LIN #11	104I028	2017/Jan/31	GOOD	LIARD	25.0	459823M
227884	Mineral	KC 3	104I028	2017/Jan/31	GOOD	LIARD	25.0	248603M
227886	Mineral	KC 5	104I028	2017/Jan/31	GOOD	LIARD	25.0	248605M
227888	Mineral	KC 7	104I028	2017/Jan/31	GOOD	LIARD	25.0	248607M
227896	Mineral	KC 18	104I028	2010/Jan/31	GOOD	LIARD	25.0	248618M
552782	Mineral		104I	2017/Jan/31	GOOD		306.9	
552785	Mineral		104I	2017/Jan/31	GOOD		409.3	
552792	Mineral		104I	2017/Jan/31	GOOD		153.5	
552794	Mineral		104I	2017/Jan/31	GOOD		597.1	
552796	Mineral		104I	2017/Jan/31	GOOD		494.8	
552805	Mineral		104I	2017/Jan/31	GOOD		1074.7	
552809	Mineral		104I	2017/Jan/31	GOOD		136.4	
552812	Mineral		104I	2017/Jan/31	GOOD		136.4	
552814	Mineral		104I	2017/Jan/31	GOOD		357.9	
552816	Mineral		104I	2017/Jan/31	GOOD		306.8	
552820	Mineral		104I	2017/Jan/31	GOOD		340.9	
552823	Mineral		104I	2017/Jan/31	GOOD		921.8	
552911	Mineral	PASS1	104I	2017/Jan/31	GOOD		136.4	
552913	Mineral	ADD1	104I	2017/Jan/31	GOOD		17.0	
552914	Mineral	ADD2	104I	2017/Jan/31	GOOD		17.1	
556552	Mineral	ADD3	104I	2017/Jan/31	GOOD		374.9	
556555	Mineral	ADD4	104I	2017/Jan/31	GOOD		102.3	
569607	Mineral		104I	2009/Nov/07	GOOD		1090.0	
585957	Mineral	MOTHER 1	104I	2010/Jun/07	GOOD		426.6	
585958	Mineral	MOTHER 2	104I	2010/Jun/07	GOOD		409.6	
585959	Mineral	MOTHER 3	104I	2010/Jun/07	GOOD		375.3	
586844	Mineral	ACCENT 1	104I	2009/Oct/31	GOOD		426.5	
586846	Mineral	ACCENT 2	104I	2009/Oct/31	GOOD		273.0	
586848	Mineral	SOUTH FORK 1	104I	2010/Jun/25	GOOD		426.9	
586849	Mineral	SOUTH FORK 2	104I	2010/Jun/25	GOOD		426.9	
586850	Mineral	SOUTH FORK 3	104I	2010/Jun/25	GOOD		426.8	
586851	Mineral	SOUTH FORK 4	104I	2010/Jun/25	GOOD		426.9	
586852	Mineral	TRONDHJEMITE 1	104I	2010/Jun/25	GOOD		426.7	
586854	Mineral	TRONDHJEMITE 2	104I	2010/Jun/25	GOOD		426.7	
586855	Mineral	TRONDHJEMITE 3	104I	2010/Jun/25	GOOD		426.6	
						Total	**12,047.6**	

APPENDIX II

KUTCHO PROJECT RESOURCE TABLE

Summary – Main, Esso and Sumac Deposits[1]

CLASSIFICATION	M Tonnes	% Cu	% Zn	g/T Au	g/T Ag
Measured	5.421	2.15	2.86	0.34	31.4
Indicated	4.994	2.14	2.83	0.39	33.5
MEASURED and INDICATED	10.415	2.14	2.85	0.36	32.4
Inferred	1.893	2.09	2.93	0.46	33.6

[1] *Numbers may not total due to rounding*

Main Deposit - Mineral Resource Estimate at a 1.5% Copper Cut-Off [1]

CLASSIFICATION	M Tonnes	% Cu	% Zn	g/T Au	g/T Ag
Measured	5.421	2.15	2.86	0.34	31.4
Indicated	4.043	2.04	2.54	0.35	31.2
MEASURED and INDICATED	9.464	2.10	2.72	0.34	31.3
Inferred	0.464	1.84	2.83	0.43	31.6

[1] *Numbers may not total due to rounding*

Esso Deposit - Mineral Resource Estimate at a 1.5% Copper Cut-Off [1]

CLASSIFICATION	T Tonnes	% Cu	% Zn	g/T Au	g/T Ag
Measured	-	-	-	-	-
Indicated	951	2.60	4.10	0.56	43.4
MEASURED and INDICATED	951	2.60	4.10	0.56	43.4
Inferred	803	2.57	4.15	0.61	37.6

[1] *Numbers may not total due to rounding*

Sumac Deposit - NI43-101 Mineral Resource Estimate at a 1.5% Copper Cut-Off [1]

CLASSIFICATION	T Tonnes	% Cu	% Zn	g/T Au	g/T Ag
Measured	-	-	-	-	-
Indicated	-	-	-	-	-
MEASURED and INDICATED	-	-	-	-	-
Inferred	626	1.67	1.46	0.29	30.1

[1] *Numbers may not total due to rounding*

Source: Capstone Mining Corp., Press Release 09-04, February 10, 2009; *Capstone Announces Robust Mineral Resource Update for High Grade Kutcho Copper Project.*

APPENDIX III

DIAMOND DRILL LOG for DDH 90K-15

From	To	Litho	Simple Geo
0.00	**9.76**	**CASE**	**CASE**

Cased

STRUCTURES

From	To	Struct	CA	Strain
0.00	9.76	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
0.00	9.76	-	-	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
0.00	9.76	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
9.76	**17.60**	**ASHT**	**TUFF**

Mafic ash tuff. Strongly pyritic. Moderate to dark grey-green overall.

Well-bedded at 42 TCA.

Minor pyrite laminations throughout this unit, and scattered pyrite blebs; but sulphide content increases below 14.8m to end of unit. Pyrite content is 25% of this lower interval with trace chalcopyrite. Above 14.8m, pyrite content is 6%.

Alteration - strong chlorite (primary mafic tuff). Moderate pale buff carbonate patches only in mineralized interval. No epidote.

Lower contact is 45 TCA.

STRUCTURES

From	To	Struct	CA	Strain
9.76	17.59	BD	42	
17.59	17.60	CT	52	

Sharp

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
9.76	17.60	M	-	M	-	-	-	-

Strong chlorite (primary mafic tuff); no epidote.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
9.76	14.80	5	LB						
14.80	17.60	20	LB	CP	0.1				

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
17.60	54.50	RHYL	RHYL

Sharp upper contact marked by foliation planes and a 1 cm thick white quartz vein parallel to bedding.

Upper contact at 52 TCA; bedding at 48 TCA.

Rock is pale grey to bone-coloured, nodular textured, crudely bedded rhyolite ash tuff. Common flolation planes marked by thin selvages of ankerite.

Three narrow white bull quartz seams noted in first 3 m of this unit - veining is parallel to foliation/beddinjg.

Pyrite occurs as peppered crystals along laminations and as scattered euhedral crystals throughout upper part of this unit - averaging 4%.pyrite.

Foliation at 48 TCA; bedding at 44 TCA.

Local thin bands of stronger silicification - looks like cherty laminae/beds, but this is silcified rhyolite tuff.

From 22.70m to 24.30m, there is a 1.6m (5 ft) interval of core that has been sawn & sampled for assay - results reported in Appendix IV of Assessment Report 20,636, PDF pages 70 and 72. No base metal sulphides noted. Pyrite 8% over this interval as scattered, thin, massive, crystalline pyrite laminations.

Foliation in this interval undulates, and ranges from 45 to 52 TCA. Foliation marked by ferro-dolomite. But partings are also marked by strong, bright sericite along the planes.

Pyrite concentration drops down to 2% - 3% below 24.30m

5cm of bone-coloured fault gouge is centred on 24.65m.

Below 27.00m rock continues as colour-mottled crudely-bedded rhyolite tuff with 4% pyrite as laminae and lesser disseminated crystals with sericite-rich partings and with lesser ferro-dolomite/ankerite on the same foliation partings. Fine pyrite is incorporated within the sericitic partings. Foliation ranges between 40 and 50 TCA, showing significant undulations.

Fault from 32.50m to 33.23m. Filled with recemented rhyolite sand and gravel. Below this fault, core is strongly crackled, foliated and ankeritized for 4m. Another smaller (30cm) fault break is centred on 34.75m. Throughout this sheared zone, core is strongly foliated at 55 to 70 TCA.

At 39.00m core is cut by an ankerite-cemented breccia vein.

Major fault from 40.00m to 40.60m filled with bone-coloured sandy gouge.

White bull quartz vein from 41.30m to 41.60m - no pyrite or ankerite within.

Country rock is still intensely ankeritized, strongly foliated, rhyolite tuff. Foliation intensity starts to drop below 42.20m and foliation is at 52 TCA. Pyrite content is about 2% in this interval, but some pyrite may have been oxidised during the shearing/ankeritization/hematization events.

Shearing/foliation/ankeritization/hematization abruptly ends at 42.90m where an interval of core has been removed by a sampler.

Below 42.90m, rock is pale green-grey rhyolite tuff with ankeritized/hematized foliation planes, and 3% - 4% pyrite as laminations and disseminated crystals. Foliation/bedding is 40 TCA.

At 45.88m, rock is abruptly bleached to white; with hematization increasing along foliation planes. Pyrite content increases to 8% to at least 48.50m. Pyrite occurs as crystalline laminations, disseminations and thin hairline crackles or irregular fractures that trend through the core at random intervals and directions.

This general appearance of the core continues until the abrupt lower contact of this unit at 54.50m. Foliation over this lower interval is 33 TCA; bedding is 51

TCA. Lower contact is sharp at 82 TCA. Last 2m of the unit is distinctly very thin-bedded until fault. Pyrite content is 2% (some may have been oxidised away).

Fault zone from 52.15m to 53.50m. Below fault, final 1.0m of core in this unit is wholly silcified, white, massive, and pyrite-free. (almost looks like bull quartz - but it is silicified tuff due to ghost/relict bedding observed in core).

STRUCTURES

From	To	Struct	CA	Strain
17.60	17.61	CT	52	
17.61	19.00	BD	48	
19.00	22.70	BD	44	
Foliation at 48 TCA				
22.70	24.62	FOL	48	
Foliation ranges from 45 to 52 TCA				
24.62	24.67	FLT		VS
Narrow fault				
24.67	32.50	FOL	47	
Foliation ranges between 40 to 50 TCA. Undulates.				
32.50	33.23	FLT		VS
Rhyolite sand and gravel chips in fault zone.				
33.23	34.60	NA		
34.60	34.90	FLT		VS
34.90	39.00	FOL	65	VS
Foliation is intense and ranges from 55 to 70 TCA.				
39.00	39.05	BX		VS
Narrow ankerite-cemented breccia vein.				
39.05	40.00	NA		
40.00	40.60	FLT		VS
Bone-coloured sandy gouge.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
17.60	22.70	W	-	-	-	-	W	W
Patchy silicification; ankerite along foliation planes.								
22.70	24.30	W	-	W	-	-	-	-
Ferro-dolomite along foliation planes.								
24.30	32.50	W	-	W	W	-	-	-
32.50	33.23	-	-	-	-	-	-	-
33.23	42.20	S	-	-	-	-	-	S

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
17.60	22.70	4	LB						
22.70	24.30	8	LB						
24.30	27.00	2	DIS						
27.00	42.20	4	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo	
17.60	54.50	RHYL	RHYL	(Continued from previous page)

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
40.60	41.30	NA																								
41.30	41.60	QV																								
White bull quartz vein - no pyrite.																										
41.60	42.20	NA																								
42.20	42.90	FOL	52		42.20	42.90	M	-	-	-	-	-	M	42.20	42.90	2	DIS									
														Core is strongly oxidised; some pyrite may have been leached.												
42.90	45.88	FOL	40		42.90	45.88	W	-	-	-	-	-	W	42.90	45.88	4	LB									
														45.88	48.50	8	LB									
45.88	52.15	FOL	33																							
Bedding is 51 TCA.																										
					45.88	54.50	M	-	-	-	-	S	-													
					Silicification and hematization to end of unit.																					
														48.50	54.50	2	DIS									
														Core is strongly oxidised; some pyrite may have been leached.												
52.15	53.50	FLT		VS																						
53.50	54.49	BD	51																							
Foliation is at 33 TCA.																										
54.49	54.50	CT	82																							
Sharp lower contact.																										

From	To	Litho	Simple Geo
54.50	**64.50**	**ASHT**	**TUFF**

Well-bedded mafic ash tuff. Rock is medium grey-green (paler than mafic ash tuff elsewhere), so it might be andesite, but is more likely a leached variant of the mafic ash tuff in this area.

Gradational upper contact between rhyolite tuff to mafic tuff.

Incorporates one 30cm white, siliceous, ankeritized intercalation of rhyolite tuff, centred on 61.60m.

Bedding at 38 to 48 TCA. Lighter-coloured zones/patches resemble large lapilli or clasts within an agglomerate / agglutinate.

Alteration - no carbonate, no epidote, moderate chlorite (primary mafic tuff).

Pyrite as 0.1% fine disseminations only.

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
54.50	54.51	CT																								
Gradational upper contact																										
					54.50	64.50	M	-	-	-	-	-	-	54.50	64.50	0.1	DIS									
					No carbonate; no epidote; moderate chlorite (but this rock is a mafic ash tuff).																					
54.51	64.50	BD	43																							
Bedding ranges from 38 to 48 TCA.																										

From	To	Litho	Simple Geo
64.50	**73.47**	**FXTF**	**TUFF**

Dark, mafic, feldspar crystal tuff. Either a crystal-rich mafic ash or a weakly prophyritic flow. Weak laminations suggest it is waterlain tuff.

Very dark green. Presence of crystal-free intervals, and rare large crystals, also supports crystal tuff origin.

Weak to moderate epidote alteration - evenly distributed through groundmass; plus there are large, dense overprinted patches. Carbonate in groundmass, and carbonate-rich seams/interlaminations.

0.5% fine disseminated pyrite throughout.

Rock resembles some phases of intrusive gabbro.

Faint bedding at 47 to 53 TCA.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
64.50	73.46	BD	50																						
Bedding ranges from 47 to 53 TCA.																									

From	To	Litho	Simple Geo
64.50	**73.47**	**FXTF**	**TUFF**

Dark, mafic, feldspar crystal tuff. Either a crystal-rich mafic ash or a weakly prophyritic flow. Weak laminations suggest it is waterlain tuff.

Very dark green. Presence of crystal-free intervals, and rare large crystals, also supports crystal tuff origin.

Weak to moderate epidote alteration - evenly distributed through groundmass; plus there are large, dense overprinted patches. Carbonate in groundmass, and carbonate-rich seams/interlaminations.

0.5% fine disseminated pyrite throughout.

Rock resembles some phases of intrusive gabbro.

Faint bedding at 47 to 53 TCA.

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
					64.50	73.47	M	M	-	-	-	-	-	64.50	73.47	0.5	DIS									
					Moderate, patchy epidote alteration. Moderate carbonated flooding. Chlorite (but this rock is mafic ash tuff).																					
73.46	73.47	CT	50																							
Gradational over 1cm																										

From	To	Litho	Simple Geo
73.47	**79.05**	**ASHT**	**TUFF**

Mafic ash tuff, well-bedded. Sharp upper contact. Foliation within unit at 50 TCA. Dark grey-green overall. Strong chlorite (primary mafic tuff) and medium epidote alteration.

Local crystal-rich bands, local coarse-ash-rich bands; but overall this rock is a fine ash tuff.

Trace to rare, very fine dust-size pyrite disseminations only.

Thin beds of pale grey fine-grained rhyoltie ash record periods of quiescence. These closely resemble bone-coloured carbonate beds.

Lower contact is sharp at 45 TCA. Foliation over lower 2m is at 45 TCA. Rock here is a thin bedded, well-bedded, mafic, coarse ash tuff. Final 15 cm of core shows intercalated thin bands of pale grey fine-grained rhyolite tuff.

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
73.47	79.04	BD	45																							
Foliation at 50 TCA.																										
					73.47	79.05	M	-	-	-	-	-	-	73.47	79.05	0.01	DIS									
					Chlorite strong (primary mafic ash tuff); medium epidote alteration.									*Rare fine pyrite dust.*												
79.04	79.05	CT	45																							
Sharp, but intercalated.																										

From	To	Litho	Simple Geo
79.05	**89.63**	**RHYL**	**RHYL**

Crudely-bedded rhyolite ash tuff. Pale green to bone-white, with some grey patches.

Grades down into bleached white rock with ankerite along sparse foliation planes. Bedding at 55 TCA; foliation at 40 TCA - foliation planes have seams of bright sericite.

Low, but variable, pyrite content as fine disseminations and rare pyritic laminae - 0.5% overall. One pyritic layer hosts trace fine chalcopyrite blebs..

Core has been sawn for assay from 79.30m to 80.80m (5 ft) and from 86.00m to 87.50m (5 ft).

Fault zone from 80.00m to 80.50m; filled with crushed and crackled rhyolite.

Lower part of unit is virtually pyrite-free.

Alteration - ankeritic in upper part; moderately sericitic throughout.

Lower contact is sharp at 52 TCA.

There is a 10cm-thick white bull quartz vein just above this basal contact.

STRUCTURES

From	*To*	*Struct*	*CA*	*Strain*
79.05	80.00	BD	45	
80.00	80.50	FLT		
80.50	89.62	BD	45	
89.62	89.63	CT	52	

Sharp lower contact.

ALTERATION

From	*To*	*INT*	*CC*	*DO*	*SR*	*AK*	*SC*	
79.05	89.63	M	-	-	M	-	-	W

MINERALIZATION

From	*To*	*PY%*	*Style*	*Min*	*Min%*	*Min2*	*M2%*	*Min3*	*M3%*
79.05	89.63	0.5	LB						

SAMPLES

From	*To*	*Sample*

From	To	Litho	Simple Geo
89.63	**94.70**	**ASHT**	**TUFF**

Mafic ash tuff.

Bedding at 48 to 55 TCA; average 45 TCA.

Deep grey-green rock. Strong chlorite; abundant white carbonate patches and laminae.

0.5% fine disseminated pyrite.

Lower contact is an irregular, strongly ankeritic breccia.

STRUCTURES

From	*To*	*Struct*	*CA*	*Strain*

ALTERATION

From	*To*	*INT*	*CC*	*DO*	*SR*	*AK*	*SC*

MINERALIZATION

From	*To*	*PY%*	*Style*	*Min*	*Min%*	*Min2*	*M2%*	*Min3*	*M3%*

SAMPLES

From	*To*	*Sample*

From	To	Litho	Simple Geo
89.63	**94.70**	**ASHT**	**TUFF**

Mafic ash tuff.

Bedding at 48 to 55 TCA; average 45 TCA.

Deep grey-green rock. Strong chlorite; abundant white carbonate patches and laminae.

0.5% fine disseminated pyrite.

Lower contact is an irregular, strongly ankeritic breccia.

STRUCTURES

From	To	Struct	CA	Strain
89.63	94.69	BD	45	
Bedding ranges from 48 to 55 TCA.				
94.69	94.70	CT		VS
Contact with intrusion breccia or hydrothermal breccia.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
89.63	94.70	M	M	-	M	-	-	-
Strong chlorite (primary mafic tuff)								

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
89.63	94.70	0.5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
94.70	**94.90**	**QXBX**	**BX**

Hydrothermal breccia dominated by angular white quartz crystals, angular clasts of bone-coloured fine rhyolite ash tuff, and abundant small angular clasts of adjacent basalt dike. Dike must pre-date breccia, since breccia hosts dike clasts. Unless they are synchronous units.

Lower contact with massive dike rock - about 50 TCA - is sharp, but irregular.

Pyrite - 0.5% fine disseminated pyrite in breccia groundmass.

STRUCTURES

From	To	Struct	CA	Strain
94.70	94.89	BX		
94.89	94.90	CT	50	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
94.70	94.90	M	-	-	M	-	S	-
Silica- and carbonate-cemented breccia								

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
94.70	94.90	0.5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
94.90	98.17	DYKE	DYKE

Massive, altered basalt dike. Finely porphyritic and amydaloidal. Acicular hornlende crystals up to 8mm long are now altered to chlorite. Ghost-like small euhedral plagioclasse phenocysts are visible under lens. Dike groundmass is buff-grey colour due to bleaching. Large amydales are rimmed by quartz, and amygdale cores are calcite. Final 20cm of dike margin is bleached to bone white. Pyrite - none.

Dike is bordered by narrow, symmetric, hyrothermal breccia zones. Sharp lower contact with breccia margin at 55 TCA.

STRUCTURES

From	To	Struct	CA	Strain
94.90	98.16	NA		
98.16	98.17	CT	55	
Sharp lower contact against hydrothermal breccia.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
94.90	98.17	M	-	-	M	-	-	-
Bleaching; no carbonate, no silicification								

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
94.90	98.17	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
98.17	98.37	QXBX	BX

Hydrothermal breccia (diatreme/pebble dike). Breccia with angular `quartz' clasts; but these sharply angular clasts more closely resemble the bone-coloured fine-grained rhyolite intercalations we saw in the overlying mafic ash tuff unit.

Groundmass is a buff-coloured accumulation of fine, sharply angular lithic chips. This breccia is symmetric with the similar breccia on the other side of the dike - they are similar in content and texture.

Pyrite - 0.5% scattered disseminated euhedral pyrite crystals.

Lower contact sharp at 55 TCA.

Alteration - suspect moderate carbonate cement from the pitting evident in the groundmass.

STRUCTURES

From	To	Struct	CA	Strain
98.17	98.36	BX		
Crushed (hydrothermal breccia/pebble dike).				
98.36	98.37	CT	55	
Sharp lower contact.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
98.17	98.37	M	M	-	M	-	-	-
Carbonate cemented breccia.								

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
98.17	98.37	0.5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
98.37	**101.58**	**ASHT**	**TUFF**

Mafic ash tuff. Well-bedded. Dark grey-green. Bedding at 47 TCA. Thin white carbonate/calcite partings/laminae.

There is a 0.5m-thick interval just below the upper contact where carbonate-rich intercalations dominate - creating interbedded ash and limestone.

One thin hydrothermal breccia vein cuts core at 99.54m. It is just 3 cm thick, but similar in character to the breccia veins that flank the basalt dyke. So this narrow breccia vein is likely an offshoot.

Contacts are 50 TCA. Breccia is dominated by tiny angular fragments of bone-coloured fine rhyolite tuff in a groundmass of gouge.

Sharp lower contact at 47 TCA.

Trace fine pyrite dust only.

STRUCTURES

From	To	Struct	CA	Strain
98.37	99.54	BD	47	
99.54	99.57	BX		
Thin hydrothermal breccia dike (or thin fault zone).				
99.57	101.57	BD	47	
101.57	101.58	CT	47	
Sharp lower contact.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
98.37	101.58	M	M	-	-	-	-
Strong chlorite (primary mafic ash tuff); moderate carbonate intercalations / limy beds.							

The SC cell of this row holds a dash; it is shown here because the table has no column for it: -

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
98.37	101.58	0.01	DIS						
Trace very fine pyrite dust.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
101.58	**102.40**	**RHYL**	**RHYL**

Rhyolite. Coarse quartz-crystal tuff. This lithology is well broken up within a groundmass of mafic ash tuff - but this was once an intact rhyolite unit. Over most of its length, unit is a crackle to mosaic breccia. `Ghosts' of quartz crystals up to 0.5cm diam. Fine disseminated euhedral pyrite averages 0.5%.

Lower 20cm of this unit is intercalations (thin rafts) of quartz-crystal rhyolite tuff `floating' within mafic ash tuff.

STRUCTURES

From	To	Struct	CA	Strain
101.58	102.39	BX		
Crackled massive crystal tuff.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
101.58	102.40	W	-	-	-	-	W
Looks moderately re-silicified (some silica remobilization).							

The SC cell of this row holds a dash; it is shown here because the table has no column for it: -

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
101.58	102.40	0.5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo	
101.58	102.40	RHYL	RHYL	(Continued from previous page)

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
102.39	102.40	CT	49																							

Intercalated with mafic ash tuff.

From	To	Litho	Simple Geo
102.40	103.16	ASHT	TUFF

Mafic ash tuff. Strongly chloritic. Bedding at 48 TCA. Minor white carbonate intercalations.
Lower contact obscured by a narrow zone of intense foliation and ankeritic alteration.

Trace fine disseminated euhedral pyrite.

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
102.40	103.15	BD	48																							
					102.40	103.16	W	-	-	-	-	-	-	102.40	103.16	0.1	DIS									

Strong chlorite (primary mafic tuff).

From	To	Struct	CA	Strain
103.15	103.16	CT		S

Narrow shear with ankeritic alteration.

From	To	Litho	Simple Geo
103.16	104.00	RHYL	RHYL

Massive, white, silicified rhyolite quartz crystal tuff. Only `ghosts' of the quartz crystals are preserved.

No obvious bedding. Possible faint bedding at ~ 45 TCA.

Pyrite 0.5% as euhedral disseminations and as trains along late fractures.

Moderately silicified.

Lower contact is intercalated with mafic ash tuff over 20 cm. Bedding here ranges from 40 to 48 TCA.

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
103.16	103.99	NA																								
					103.16	104.00	M	-	-	-	-	M	-	103.16	104.00	0.5	DIS									

Silicified rhyolite quartz crystal tuff.

From	To	Litho	Simple Geo	
103.16	104.00	RHYL	RHYL	(Continued from previous page)

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
103.99	104.00	CT	45																						

Intercalated lower contact over 20cm.

From	To	Litho	Simple Geo
104.00	106.20	ASHT	TUFF

Mafic ash tuff. Well-bedded at 52 TCA. Bleached in places. Calcite interbeds. And a 20cm interval of chert or cherty tuff centred on 105.10m

Pyrite - trace overall, but one lamination of 10% euhedral pyrite crystals.

Lower contact sharp at 58 TCA. Just above lower contact there is a 10cm thick bull quartz vein parallel to bedding.

Unit is thin-bedded ash tuff throughout, but the upper and lower 30cm have strong orange-buff ankeritic alteration overprinted, and scattered foliation planes are marked by ankerite or ferro-dolomite.

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
104.00	106.19	BD	52																						
					104.00	106.20	M	M	-	-	-	-	M	104.00	106.20	0.1	DIS								
					Strong chlorite (primary mafic tuff).																				
106.19	106.20	CT	58																						

From	To	Litho	Simple Geo
106.20	252.37	RHYL	RHYL

Major bedded rhyolite tuff unit, variably coloured, variably pyritic. Cut by a major quartz vein from 125.75m to 129.30m

Bedding at 59 TCA at upper contact; but at 42 degrees 3.0m below upper contact.

Upper part of unit is snow-white rock, with well-spaced sericitic partings. Rock is strongly silcified and hosts 2% fine euhedral disseminated pyrite and pyrite seams, and pyrite blebs locallized along late `wandering' hairline fractures.

From 114.50m to 116.50m, core has a pale green tint (weak chlorite or moderate sericite) and is less silicified. Bedding becomes more apparent. Pyrite increases to 4%, mostly as thin laminations of semi-massive pyrite. No other sulphides noted. Bedding here is 45 TCA.

Pale green tint continues to 121.95m where rock is bleached again, and sparse foliation planes are marked by ankerite.

Bedding at 56; foliation at 42 TCA.

Pyrite up to 5% as sparse euhedral disseminated grains and as pyrite-rich siliceous laminae from 1cm to 3cm thick.

Pale grey to mottled light grey colour develops between 124.00m to 125.75m.

Abrupt contact with massive white bull quartz vein which extends from 125.75m to 129.30m. From 127.80m to 128.40m, this quartz vein hosts a buckled slab of well-bedded grey, color-mottled rhyolite tuff. Both the quartz vein and the rhyolite xenolith host trace to minor disseminated pyrite only.

Below the quartz vein, the core goes back into crudely-bedded, silicified, pale-grey mottled rhyolite tuff with minor bedding-parallel bull quartz seams.

Pyrite is trace to minor to 138.40m, then picks up to 4% disseminated euhedral crystals and blebs.

Rhyolite is colour-mottled but mostly white. Bedding is 44 TCA with strong sericitic partings.

Local zones of ankeritized foliation planes.

At 145.00m bedding ranges between 45 to 50 TCA. Euhedral pyrite grains are up to 4mm diam.

From 156.75m to 157.40m, another massive white bull quartz vein is parallel to bedding - this one has been sawn and sampled (lithogeochem?). No pyrite noted.

Back into white rhyolite tuff. Fine pyrite dust, plus occasional pyrite aggregates up to 1cm diam. Overall pyrite content is 4%.

At 159.00m there are sparse, but regular, foliation planes marked by ankeritic or hematitic alteration.

There are thin waxy-textured siliceous intervals within this larger rhyolite tuff that may be chert interbeds - however, these are not rhythmically bedded.

By 162.50m foliation is at 34 TCA - marked by bright sericitic partings +/- ankerite alteration.

Major fault break from 165.00m to 167.50m. Fault filled by gouge, sand, grit, chips and disks and chunks of rhyolite tuff.

Then back into colour-mottled, light grey and white, well-bedded weakly pyritic rhyolite tuff. Pyrite content varies between 0.5% to 5.0%; averaging 2.5% as euhedral disseminations. As pyrite content increases, we see more thin pyritic seams and laminations.

Bedding at 41 TCA with bright sericitic partings; foliation at 35 TCA

Three narrow, dry fault breaks between 187.50m and 190.50m, with adjacent broken core.

Colour-mottling varies throughout, and includes narrow zones of light green colour (perhaps this was the original rock colour, before bleaching and silicification).

There are also zones where this core is wholly silicified and bleached white.

Pyrite content to 196.20m varies from trace to 2% only. Local zones of weak to moderate foliation marked by ankerite.

Bedding varies from 43 to 49 TCA, and averages 46 TCA.

Core is abruptly pyrite-free below 196.20m. Rock looks almost like white chert to 204.70m, but is more likely wholly siliciifed, bedded, rhyolite tuff to 204.70m. Bedding at 52 TCA with weakly sericitic partings and no late foliation overprint.

At 204.70m, core grades down into light to medium teal-green rhyolite tuff over 2cm. This may be the original appearance of this unit. Narrow cream-coloured patchy carbonate blebs and seams. And tiny cream-coloured crystals. Sparse scattered altered feldspars, but not really a crystal tuff.

Bedding variable but averages 55 TCA.

Pyrite - trace only.

Partings on bedding planes are chlorite.

Below 205.00m rock is medium green, softer (not silicified), thin-bedded ash (intermediate composition?). This is a gradational change, that only lasts for one metre from 205.00m to 206.00m then rock is silcified and pale green coloured again. Perhaps this is a metre of intermediate to mafic ash tuff mixed in, with gradational boundaries.

Bedding at 206.00m is 55 TCA.

Light green, siliceous, well-bedded, rhyolite tuff continues to 221.80m. Very thin-bedded and ashy in places. Two narrow discrete zones are wholly silicified and bleached white. Trace pyrite only. Bedding still at 55 TCA.

At 221.90m, core is abruptly bleached white and wholly silicified. Pyrite content below this transition varies from trace to locally 5%. Bedding still at 55 TCA, with bright sericite along partings. Minor ankerite development along sparse foliation planes.

From 227.50m to 229.00m, pyrite content increases to 8% as irregular seams. Not previously sampled. Immediately below this there is a 40cm interval of bleached, bone-coloured, wholly silicified core, with abundant (10%) fine white ghost crystals of feldspar and rare light grey quartz.

Then back into grey-and-white mottled rhyolite tuff with 2% fine disseminated pyrite crystals and minor ankerite developed along late foliation planes.

Some pale blue-grey cherty-looking bands are more likely strongly silcified rhyolite tuff.

Bedding at 62 TCA at 233.50m.

To 251.50m, variably colour-mottled, thin-bedded, strongly silcified, rhyolite tuff with trace pyrite.

Bedding at 250.00m is 62 TCA. Some sections look cherty, but are probably silicified.

Core grades down to pale to light green colour at 251.60m

Final interval of greenish core has bedding at 50 to 55 TCA. Partings are chloritic, with lesser sericite.

No pyrite noted in final metre of drillcore.

EOH at 252.37m (828 ft).

STRUCTURES

From	To	Struct	CA	Strain
106.20	106.21	CT	59	
106.21	109.20	BD	42	
109.20	114.50	NA		
114.50	116.50	BD	45	
116.50	125.75	BD	56	
Foliation at 42 TCA.				
125.75	129.30	QV		
129.30	140.00	BD	44	
140.00	156.75	BD	47	
Bedding ranges from 45 to 50 TCA.				
156.75	157.40	QV		
157.40	165.00	FOL	34	
165.00	167.50	FLT		VS
Fault filled by gouge, sand, grit, chips, and disks/chunks of rhyolite tuff.				
167.50	187.50	BD	41	
Foliation at 35 TCA.				
187.50	190.50	FLT		M
Three thin fault breaks over this interval.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
106.20	114.60	M	VW	-	W	-	M	-
114.60	116.50	M	VW	-	M	-	-	-
116.50	125.75	M	VW	-	M	-	-	W
125.75	162.50	M	VW	-	M	-	M	M
162.50	199.00	M	VW	-	M	-	M	M

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
106.20	114.50	2	DIS						
114.50	121.95	4	LB						
121.95	125.75	5	LB						
125.75	138.40	1	DIS						
138.40	165.00	4	DIS						
165.00	167.50	0	DIS						
167.50	168.00	1	DIS						
168.00	190.50	2.5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
106.20	252.37	RHYL	RHYL

(Continued from previous page)

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
190.50	196.20	BD	46																							
Bedding ranges from 43 to 49 TCA.																										
														190.50	196.50	1	DIS									
196.20	204.70	BD	52																							
														196.50	221.90	0.01	DIS									
					199.00	204.70	M	VW	-	VW	-	S	VW													
204.70	205.00	BD	55																							
Bedding variable; averages 55 TCA.																										
					204.70	229.00	M	VW	-	VW	-	VS	-													
205.00	229.00	BD	55																							
														221.90	227.50	2.5	DIS									
														227.50	229.00	8	LB									
														229.00	233.50	2	DIS									
229.00	251.60	BD	62																							
					229.00	252.37	M	VW	-	VW	-	S	VW													
														233.50	251.50	0.01	DIS									
														251.50	252.37	0	DIS									
251.60	252.37	BD	55																							
Bedding ranges from 50 to 55 TCA.																										

APPENDIX IV

DIAMOND DRILL LOG for DDH 90K-19

From	To	Litho	Simple Geo
0.00	12.00	OVBD	

Casing/overburden

STRUCTURES

From	To	Struct	CA	Strain
0.00	12.00	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
0.00	12.00	-	-	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
0.00	12.00	0	-						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
12.00	34.53	ASHT	

Medium to dark green , moderately to well bedded and rythmically bedded mafic ash tuff with interbedded mafic feldspar crystal and crystal-lapilli tuff. Bedding at 45 to 55 TCA. Weakly calcite and ankerite altered along bedding planes. Locally the ash tuff grades into lapilli-ash tuff. Crystal tuff interbeds are fine grained and feldsar crystal rich. Crystal lapilli tuff contain mafic pumice(?). Overall trace pyrite and 0.25% magnetite. Lower contact sharp at 50 TCA.
23.90m: center of volcanic "bomb" within bedded tuff.
24.70m to 25.70m: hairline calcite filled fractures developed in crystal tuff interbeds that terminate at the contact with adjacent ash tuff interbeds-possibly reflects variance in competence between two beds (coarser beds are harder and more brittle). Unknown hard crystalline black band/mineral observed.

STRUCTURES

From	To	Struct	CA	Strain
12.00	34.52	BD	50	
34.52	34.53	CT	50	

12.00–34.52: *Bedding at 45 to 55 TCA.*

34.52–34.53: *lower contact sharp at 50 TCA.*

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
12.00	34.53	W	W	-	-	-	-	W

Weakly calcite and ankerite altered along bedding planes; local chlorite along fractures

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
12.00	34.53	0.05	DIS	MG	0.25				

Lower contact sharp at 50 TCA.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
34.53	35.49	XLTF	

Light grey to light grey-brown felsic quartz-feldspar crystal lithic tuff with 15-20% combined blue grey quartz and off white feldsapr crystals and dark grey lithic fragments. Bedding well developed at 45 to 65 TCA, steepening toward the lower contact. Cut by milky white quartz veins and conformable anketritc partings. 0.25% coarse blebby pyrite. Lower contact sharp at 65 TCA.

STRUCTURES

From	To	Struct	CA	Strain
34.53	34.75	BD	45	

bedding at 45 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
34.53	35.49	W	W	-	-	-	-	W

weak ankerite and carbonate veining/alteration

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
34.53	35.49	0.25	BLB						

0.25% coarse blebby pyrite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
34.53	35.49	XLTF	

(Continued from previous page)

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample

34.75 35.48 BD 65

bedding at 65 TCA

35.48 35.49 CT 65

Lower contact sharp at 65 TCA

From	To	Litho	Simple Geo
35.49	39.55	ASHT	

Medium grey-green massive to moderately bedded intermediate ash tuff. Bedding at 65 TCA. Cut by regularly space low angle 1-3 mm thick calcite veins. Strongly ankerite altered from 36.70m to 38.40m. 2-3% pyrite primarily along fractures and rarely as laminations. Lower contact gradational.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample

Alteration: 35.49 36.70 W W - - - - W

weak carbonate and ankerite alteration

Structures: 35.49 39.54 BD 65

bedding at 65 TCA

Mineralization: 35.49 39.55 2.5 FF

2-3% pyrite primarily along fractures and rarely as laminations

Alteration: 36.70 38.40 W W - - - - S

weak carbonate and strong ankerite alteration

Alteration: 38.40 39.55 W W - - - - VW

weak carbonate and ankerite alteration

Structures: 39.54 39.55 CT

Lower contact gradational.

From	To	Litho	Simple Geo
39.55	42.08	QFXT	

Medium grey to grey-green thin bedded felsic to intermediate quartz-feldspar crystal tuff. Bedding at 50 TCA. Composed of 10% blue grey quartz crystals and less than 5% cloudy off white plag crystals. Cut by numerous bull quartz veins, and intensely ankerite altered from 39.80m to 40.80m and from 41.50m to 41.80m. Weak chlorite alteration and weak ankerite-sericite as partings. Crystal fading toward lower contact. 1% disseminated medium grained pyrite. Lower contact gradational.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample

From	To	Litho	Simple Geo
39.55	42.08	QFXT	

Medium grey to grey-green thin bedded felsic to intermediate quartz-feldspar crystal tuff. Bedding at 50 TCA. Composed of 10% blue grey quartz crystals and less than 5% cloudy off white plag crystals. Cut by numerous bull quartz veins, and intensely ankerite altered from 39.80m to 40.80m and from 41.50m to 41.80m. Weak chlorite alteration and weak ankerite-sericite as partings. Crystal fading toward lower contact. 1% disseminated medium grained pyrite. Lower contact gradational.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
					39.55	39.80	W	-	-	W	-	-	W												

Weak chlorite alteration and weak ankerite-sericite as partings.

From	To	Struct	CA	Strain
39.55	42.07	BD	50	

bedding at 50 TCA

From	To	PY%	Style
39.55	42.08	1	DIS

1% disseminated medium grained pyrite.

From	To	INT	CC	DO	SR	AK	SC
39.80	40.80	VS	-	-	W	-	-	VS

intensely ankerite altered; Weak chlorite alteration and weak sericite as partings.

From	To	INT	CC	DO	SR	AK	SC
40.80	41.50	W	-	-	W	-	-	W

Weak chlorite alteration and weak ankerite-sericite as partings.

From	To	INT	CC	DO	SR	AK	SC
41.50	41.80	VS	-	-	W	-	-	VS

intensely ankerite altered; Weak chlorite alteration and weak sericite as partings.

From	To	INT	CC	DO	SR	AK	SC
41.80	42.08	W	-	-	W	-	-	W

Weak chlorite alteration and weak ankerite-sericite as partings.

From	To	Struct	CA	Strain
42.07	42.08	CT		

gradational lower contact.

From	To	Litho	Simple Geo
42.08	57.76	ASHT	

Medium green-grey moderately bedded mafic ash tuff with rythmically interbedded sany tuff and mafic feldsapr crystal ash tuff. Very similar to the unit from 12.00m to 34.53m. Bedding at 55 TCA. Generally a homogeneous unit, with atypical intensely ankeritized intervals as noted. Very rare millimeter thick ankerite filled fractures oriented orthogonal to bedding occur sporadically. Weak chlorite and weak epidote alteration, very minor carbonate laminations. Conformable bull quartz veining common throughout. 3-4% pyrite as coarse blebs and as infrequent laminations. Lower contact sharp at 55 TCA.
44.50m to 45.00m: intensely ankerite altered ash tuff.
51.04m to 52.15m: intensely ankerite altered ash tuff; variably brecciated.
53.53m to 53.70m: intensely ankerite altered ash tuff.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample

From	To	Litho	Simple Geo
42.08	57.76	ASHT	

Medium green-grey moderately bedded mafic ash tuff with rythmically interbedded sany tuff and mafic feldsapr crystal ash tuff. Very similar to the unit from 12.00m to 34.53m. Bedding at 55 TCA. Generally a homogeneous unit, with atypical intensely ankeritized intervals as noted. Very rare millimeter thick ankerite filled fractures oriented orthogonal to bedding occur sporadically. Weak chlorite and weak epidote alteration, very minor carbonate laminations. Conformable bull quartz veining common throughout. 3-4% pyrite as coarse blebs and as infrequent laminations. Lower contact sharp at 55 TCA.
44.50m to 45.00m: intensely ankerite altered ash tuff.
51.04m to 52.15m: intensely ankerite altered ash tuff; variably brecciated.
53.53m to 53.70m: intensely ankerite altered ash tuff.

STRUCTURES

From	To	Struct	CA	Strain
42.08	57.75	BD	55	
bedding at 55 TCA.				
57.75	57.76	CT	55	
lower contact at 55 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
42.08	44.50	W	W	-	-	-	-	W
Very rare millimeter thick ankerite filled fractures oriented orthogonal to bedding occur sporadically. Weak chlorite and weak epidote alteration, very minor carbonate laminations.								
44.50	45.00	VS	-	-	-	-	-	VS
intensely ankerite altered								
45.00	51.04	W	W	-	-	-	-	W
Very rare millimeter thick ankerite filled fractures oriented orthogonal to bedding occur sporadically. Weak chlorite and weak epidote alteration, very minor carbonate laminations.								
51.04	52.15	VS	-	-	-	-	-	VS
intensely ankerite altered								
52.15	53.53	W	W	-	-	-	-	W
Very rare millimeter thick ankerite filled fractures oriented orthogonal to bedding occur sporadically. Weak chlorite and weak epidote alteration, very minor carbonate laminations.								
53.53	53.70	VS	VS	-	VS	-	-	VS
intensely ankerite altered								
53.70	57.76	W	W	-	VS	-	-	W
Very rare millimeter thick ankerite filled fractures oriented orthogonal to bedding occur sporadically. Weak chlorite and weak epidote alteration, very minor carbonate laminations.								

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
42.08	57.76	3.5	LB						
3-4% pyrite as coarse blebs and as infrequent laminations									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
57.76	59.47	FQXT	

Medium grey, moderately bedded felsic feldspar-quarz crystal tuff. Bedding at 55 TCA. Overall 10% feldspar and 3% quartz in a siliceous matrix. Very minor calcite and chlorite as partings. Mafic ash tuff interbed from 58.81m to 59.00m. 1% pyrite along late quartz carbonate filled fractures. Lower contact sharp at 60 TCA.

STRUCTURES

From	To	Struct	CA	Strain
57.76	59.46	BD	55	
bedding at 55 TCA.				
59.46	59.47	CT		
sharp lower contact at 60 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
57.76	59.47	W	W	-	-	-	-
Very minor calcite and chlorite as partings							

Note: one more "-" is printed after the SC column in the row above.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
57.76	59.47	1	FF						
1% pyrite along late quartz carbonate filled fractures									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
59.47	64.87	ASHT	

medium green moderatety bedded mafic ash tuff with rythmically interbedded sandy mafic tuff. Bedding at 60 TCA. Moderately chloritic, minor conformable quartz-carbonate veins throughout with associated 1% pyrite. Lower contact bleached, ankeritized and sharp at 60 TCA.

STRUCTURES

From	To	Struct	CA	Strain
59.47	64.86	BD	60	
bedding at 60 TCA.				
64.86	64.87	CT	60	
lower contact at 60 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
59.47	64.67	VW	VW	-	-	-	-
Moderately chloritic, minor conformable quartz-carbonate veins throughout							
64.67	64.87	S	VW	-	-	-	S
Lower contact bleached, ankeritized							

Note: one more "-" is printed after the SC column in the 59.47–64.67 row.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
59.47	64.87	1	LB						
minor conformable quartz-carbonate veins throughout with associated 1% pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
64.87	86.75	ASHT	

Pale grey to pale green very fine grained to siliceous/silicified, nearly cryptocrysralline moderately to well bedded felsic ash tuff. Bedding at 60 TCA to 85.00m and at 65 TCA from 85.00m to 86.75m. Variably silicified (pale grey) to weakly chloritized (pale green). Rare intervals are quartz-feldspar crystal ash tuffs, and even more rare are scattered, generally exotic, lithic fragments indicating that this is a tuff rather than a flow. The tuff is moderately ankeritized throughout with local intense ankeritization occuring over more than a meter of thickness as noted. Weak to moderate sericite occurs along partings. Overall, 4-5% pyrite as laminations and disseminations throughout. Lower contact broken in fault.
65.75m to 67.00m: intensely ankeritized felsic ash tuff. 8% coarse and fine grained pyrite along laminations.
67.04m to 67.14m: fault gouge.
73.30m to 78.60m: felsic ash tuff is pale green, due to weak chloritization.
75.20m to 76.25m: interbedded felsic feldspar-quartz crystal tuff and felsic ash tuff.
75.94m to 75.96m: 2 cm band of mafic ash tuff.

SAMPLE THIS UNIT!!

STRUCTURES

From	To	Struct	CA	Strain
64.87	67.14	BD	60	
bedding at 60 TCA				
67.14	67.14	FLT	60	S
fault gouge at 60 TCA				
67.14	85.00	BD	60	
bedding at 60 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
64.87	65.75	M	-	-	W	-	W	M
moderately ankeritized, weaksericite along partings, weak silicification							
65.75	67.00	VS	-	-	W	-	-	VS
intense ankeritization; weak sericite along partings							
67.00	73.30	M	-	-	W	-	-	M
moderately ankeritized, weaksericite along partings							
73.30	78.60	M	-	-	-	-	M	M
weak chlorite throughout, moderate ankerite as laminations, moderate silicification.							
78.60	85.00	M	-	-	W	-	-	M
moderately ankerite, weaksericite along partings							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
64.87	65.75	4.5	LB						
4-5% pyrite as laminations and disseminations									
65.75	67.00	8	LB						
8% coarse and fine grained pyrite along laminations.									
67.00	69.00	4.5	LB						
4-5% pyrite as laminations and disseminations									
69.00	73.00	1.5	LB						
1-2% pyrite as laminations and disseminations									
73.00	86.75	5	LB						
4-6% pyrite as laminations and disseminations									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
64.87	86.75	ASHT	

(Continued from previous page)

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
85.00	86.74	BD	65																							
bedding at 65 TCA																										
					85.00	86.75	S	-	-	W	-	-	S													
					strong ankerite and weak sericite alteratoin.																					
86.74	86.75	CT																								
lower contact in broken core.																										

From	To	Litho	Simple Geo
86.75	88.81	ASHT	

Dark green chloritic, weakly bedded mafic ash tuff. Bedding at 60 TCA. From 86.75m to 87.50m, chloritized and sericitized fault zone. Weak carbonate as laminations. 2-3% disseminated and blebby pyrite. Lower contact sharp at 60 TCA.

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
86.75	87.50	FLT		M	86.75	87.50	S	W	-	M	-	-	-													
chloritized and sericitized fault zone					*moderate sericite and strong chlorite alteration, weak carbonate alteration*																					
														86.75	88.81	2.5	BLB									
														2-3% disseminated and blebby pyrite												
87.50	88.80	BD	60																							
bedding at 60 TCA																										
					87.50	88.81	W	W	-	-	-	-	-													
					weak carbonate alteration																					
88.80	88.81	CT	60																							
sharp lower contact at 60 TCA																										

From	To	Litho	Simple Geo
88.81	90.13	QFAT	

Medium grey, massive intermediate to felsic quartz-feldspar crystal ash tuff. 6-8% combined 1-2mm quartz and feldspar crystals. Very weakly chloritic. 1-2% disseminated and fracture controlled pyrite. Lower contact sharp at 60 TCA.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample

From	To	Litho	Simple Geo
88.81	**90.13**	**QFAT**	

Medium grey, massive intermediate to felsic quartz-feldspar crystal ash tuff. 6-8% combined 1-2mm quartz and feldspar crystals. Very weakly chloritic. 1-2% disseminated and fracture controlled pyrite. Lower contact sharp at 60 TCA.

STRUCTURES

From	To	Struct	CA	Strain
88.81	90.12	NA		
massive				
90.12	90.13	CT	60	
Lower contact sharp at 60 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
88.81	90.13	VW	-	-	-	-	-	-
Very weakly chloritic.								

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
88.81	90.13	1.5	DIS						
1-2% disseminated and fracture controlled pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
90.13	**92.33**	**FXAT**	

Medium to dark green, moderately chloritic, thin bedded, mafic feldspar crystal ash tuff. Bedding at 50 TCA. Weak ankerite as partings. Trace pyrite. Lower contact sharp at 60 TCA.

STRUCTURES

From	To	Struct	CA	Strain
90.13	92.32	BD	50	
Bedding at 50 TCA.				
92.32	92.33	CT	60	
Lower contact sharp at 60 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
90.13	92.33	M	-	-	-	-	-	W
eak ankerite as partings, moderately chloritic.								

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
90.13	92.33	0.05	DIS						
trace disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
92.33	**112.12**	**QXAT**	

Very light beige-yellow, massive, bleached and altered felsic quartz crystal ash tuff. Weak to moderate sericite as partings. Moderately ankeritized (hence the colour) throughout, with very rare and scattered "islands" of unaltered, pale green and weakly chloritic (original texture) preserved. Quartz crystals are glassy grey, euhedral to anhedral, 2-3 mm in size, and vary from 5% to 20% of the rock. From 100.00 to 101.40m, fault zone with crushed core, fault gouge zones and bull quartz developed. 1-2% associated blebby disseminated pyrite. Fault appears to be low angle, at 20 to 30 TCA. Overall trace disseminated pyrite throughout. Lower contact sharp but irregular.

107.88m: 2 cm intermediate ash tuff interbed. Bedding at 60 TCA.
109.20m: ankerite partings define foliation(?) at 40 TCA.

STRUCTURES

From	To	Struct	CA	Strain

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
92.33	**112.12**	**QXAT**	

Very light beige-yellow, massive, bleached and altered felsic quartz crystal ash tuff. Weak to moderate sericite as partings. Moderately ankeritized (hence the colour) throughout, with very rare and scattered "islands" of unaltered, pale green and weakly chloritic (original texture) preserved. Quartz crystals are glassy grey, euhedral to anhedral, 2-3 mm in size, and vary from 5% to 20% of the rock. From 100.00 to 101.40m, fault zone with crushed core, fault gouge zones and bull quartz developed. 1-2% associated blebby disseminated pyrite. Fault appears to be low angle, at 20 to 30 TCA. Overall trace disseminated pyrite throughout. Lower contact sharp but irregular.

107.88m: 2 cm intermediate ash tuff interbed. Bedding at 60 TCA.
109.20m: ankerite partings define foliation(?) at 40 TCA.

STRUCTURES

From	To	Struct	CA	Strain
92.33	100.00	NA		
massive				
100.00	101.40	FLT	25	
fault zone with crushed core, fault gouge zones and bull quartz developed. Fault appears to be low angle, at 20 to 30 TCA.				
101.40	107.87	NA		
massive				
107.87	107.89	BD	60	
ash tuff interbed; bedding at 60 TCA				
107.89	112.11	NA		
massive				
112.11	112.12	CT	50	
Lower contact sharp but irregular.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
92.33	112.12	M	-	-	W	-	-	M
Weak to moderate sericite as partings. Moderately ankeritized							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
92.33	100.00	0.05	DIS						
trace disseminated pyrite									
100.00	101.40	1	DIS						
1% disseminated pyrite associated with fault.									
101.40	112.12	0.05	DIS						
trace disseminated pyrite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
112.12	**120.46**	**ASHT**	

Medium to dark green chloritic, massive to very faintly bedded mafic ash tuff with minor feldspar crystal ash tuff interbeds. Bedding at 55 TCA.Moderate carbonate as laminations that have been overprinted by diffuse epidote bands which obscure primary textures. Weak ankerite partings. Also flecked throughout with an orange-peach coloured unknown carbonate(?). Overall 1-2% pyrite as anhedral to euhedral medium sized disseminated grains, and as rare laminations and fracture fills. Lower contact gradational.

117.27m to 117.34: bed of disrupted felsic crytal ash tuff bed.
118.10m to 121.00m: highly broken core with apparent interbedded mafic ash tuff and felsic crystal ash tuff interbeds.

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
112.12	120.45	BD	55																							
bbedding at 55 TCA.																										
					112.12	120.46	M	M	-	W	-	-	W	112.12	120.46	1.5	DIS									
					TCA.Moderate carbonate as laminations that have been overprinted by diffuse epodote. Weak ankerite partings. Also flecked throughout with an orange-peach coloured unknown carbonate(?)									*Overall 1-2% pyrite as anhedral to euhedral medium sized disseminated grains, and as rare laminations and fracture fills*												
120.45	120.46	CT																								
gradational lower contact																										

From	To	Litho	Simple Geo
120.46	**143.55**	**MFLW**	

Medium to dark green massive crystalline plagioclase phyric mafic flow. Moderately chloritized groundmass, moderate epidote alteration, particularly of plagioclase crystals. Moderately magnetic to 127.20m, where epidote alteration is relatively weak. Lithology relatively rapidlly changes from a fine grained plagioclase porphyritic mafic flow to a more evenly crystalline medium grained mafic flow below 133.00m. Considerd this unit to be a tuff because of what appears to be occasional epidotized "lithics", as well as possibly epidotized laminated carbonate "beds". However other textures clearly indicate that this is a flow such as:
124.60m to 124.88m: interval of felted plagioclase laths consistent with either an intrusive or deeper portion of a flow, and
143.15m to 143.55m: basal flow breccia.
Overall, trace disseminated pyrite. Lower contact brecciated and irregular.

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
120.46	143.10	NA																								
massive																										
					120.46	143.55	M	-	-	W	-	-	-	120.46	143.55	0.05	DIS									
					moderate epidote alteration									*trace disseminated pyrite.*												
143.10	143.54	BX																								
basal blow breccia																										
143.54	143.55	CT																								
Lower contact brecciated and irregular.																										

From	To	Litho	Simple Geo
143.55	**145.78**	**ASHT**	

Mixed sequence of green chloritic mafic ash tuff and mafic flows at the base of the above mafic flow. Bedding, where discernible, is well developed at 55 TCA. The mafic flow consists of clots and intervals intercalated with ash tuff; these are moderately epidotized, with strongly epidotized plag crystals. Very weak carbonate alteration. Lower contact at 55 TCA. Sulphides are as follows:
143.55m to 145.18m: 0.25% disseminated pyrite.
145.18m to 145.78m: 12-14% pyriyte as laminations and as coarse late cubes and knots.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
													143.55	145.18	0.25	DIS									
													0.25% disseminated pyrite.												
143.55	145.77	BD	55																						
bedding at 55 TCA.																									
					143.55	145.78	M	VW	-	W	-	-													
					moderately epidotized, with strongly epidotized plag crystals. Very weak carbonate alteration.																				
													145.18	145.78	13	LB									
													12-14% pyriyte as laminations and as coarse late cubes and knots.												
145.77	145.78	CT	55																						
lower contact at 55 TCA																									

From	To	Litho	Simple Geo
145.78	**153.71**	**MFLW**	

Medium to dark green massive, plagioclase porphyritic mafic flow, similar to the mafic flow from 120.46m to 143.55m: Moderate to strong epidote alteration. 0.5% pyrite overall as coarse knots concentrated within 1.5 meters of the upper contact, and as very rare coarse knots elsewhere. Lower contact sharp at 60 TCA.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
													145.78	147.30	1.5	SEUH									
													1.5% pyrite as coarse subhedral crystals												
145.78	153.70	NA																							
massive																									
					145.78	153.71	M	-	-	-	-	-													
					Modererate to strong epidote alteration.																				
													147.30	153.71	0.25	SEUH									
													0.25% pyrite as rare coarse subhedral crystals												
153.70	153.71	CT	60																						
sharp lower contact at 60 TCA.																									

From	To	Litho	Simple Geo
153.71	155.20	ASHT	

Mixed sequence of mafic ash tuff and mafic flows as per 145.78m to 153.71m. Bedding, where discernible at 65 TCA. Weak too moderate epidote alteration. 3-4% pyrite as medium to coarse grained disseminated subhedral to euhedral (late crystals) that concentrate towards lower contact. Lower contact sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
153.71	155.19	BD	65	
bedding at 65 TCA				
155.19	155.20	CT	70	
sharp lower contact at 70 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
153.71	155.20	M	-	-	-	-	-
weak to moderate epidote alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
153.71	155.20	3.5	DIS						
3-4% pyrite as medium to coarse grained disseminated subhedral to euhedral (late crystals) that concentrate towards lower contact.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
155.20	179.60	QFAT	

Pale green to beige, very faintly bedded and very weakly foliated felsic quartz-feldspar crystal ash tuff. Similar to the QXAT unit from 92.33m to 112.12m, but with 2-4% white plagioclase crystals that are 1-2 mm in size. Very rare lensoidal lithic fragments indicate that this is a tuff rather than a flow. Protolith was l;ikely a pale green weakly chloritized felsic tuff that has been subsequently bleached to a pale beige colour. Bedding very faint at 70 TCA. Weak sericite partings suggest weak foliation parallel to beddiing. Variably silicified.Weak ankerite alteration on partings. Overall, 2% pyrite as infrequent laminations and disseminations. Lower contact gradational.
155.20m to 155.42m: 8-10% laminated pyrite at upper contact. .
155.20m to 160.00m: patchy silicification, with "islands" of unaltered pale green weakly chloritic felsic tuff within silicified felsic tuff.
160.00m to 170.20m: pale green felsic quartz-feldspar crystal ash tuff. This weakly chloritized interval is likely the unaltered protolith
170.20m to179.60m: very pale grey to beige silicified quartz-feldsparcrystal ash tuff. Distinctly harder than the pale green weakly chloritic variant. Strongly anlketritic from 170.20 m to 170.40m, mostly along fractures.
171.24m to 171.34m: 10 cm interval of well bedded ash tuff with 10% sulphides; possibly trace to 1% cpy and remainder pyrite (difficult to distinguish wheteher this is cpy or tarnished py).

STRUCTURES

From	To	Struct	CA	Strain
155.20	179.59	BD	70	
bedding at 70 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
155.20	160.00	M	-	-	W	-	M	W
moderate silicification, weak ankerite and sericite as partings.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
155.20	155.42	9	LB						
8-10% laminated pyrite at upper contact									
155.42	179.60	1.5	LB	-					
- 2% pyrite as infrequent laminations and disseminations.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
155.20	179.60	QFAT	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
179.59	179.60	CT		

gradational lower contact

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
160.00	170.20	W	-	-	W	-	-	W
170.20	179.60	M	-	-	W	-	M	W

- 160.00–170.20: *weak ankerite and sericite as partings.*
- 170.20–179.60: *moderate silicification, weak ankerite and sericite as partings.*

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
179.60	183.12	LXTF	

Very light grey-green, faintly bedded, felsic quartz-feldspar crystal-lithic tuff. Bedding at 60 TCA. Very weakly chloritic. Weak ankerite and sericite partings noted locally. Lithic fragments are very similar to upper qtz-feldspar crystal ash tuff, and range from less than 1 cm to up to 3 cm in length. Trace pyrite. Lower contact sharp at 65 TCA

STRUCTURES

From	To	Struct	CA	Strain
179.60	183.11	BD	60	
183.11	183.12	CT	65	

- 179.60–183.11: *bedding at 60 TCA.*
- 183.11–183.12: *sharp lower contact at 65 TCA*

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
179.60	183.12	W	-	-	W	-	-	W

weak ankerite and sericite alteration, weak silicification

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
179.60	183.12	0.05	DIS						

trace disseminated pyrite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
183.12	183.32	ASHT	

Medium to dark green moderately chloritic mafic ash tuff. Bedding at 65 TCA. 1% laminated pyrite. Lower contact at 65 TCA and sharp.

STRUCTURES

From	To	Struct	CA	Strain
183.12	183.31	BD	65	
183.31	183.32	CT	65	

- 183.12–183.31: *bedding at 65 TCA.*
- 183.31–183.32: *lower contact at 65 TCA*

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
183.12	183.32	W	VW	-	-	-	-	-

very weak carbonate as laminations.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
183.12	183.32	1	LB						

1% laminated pyrite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
183.32	184.71	LATF	

Very pale grey, faintly bedded felsic lithic crystal tuff. Bedding at 60 TCA. Lithics are felsic tuff, crystals are quartz. Very weak sericite as partings 1% pyrite as laminations. Sharp lower contact at 60 TCA.

STRUCTURES

From	To	Struct	CA	Strain
183.32	184.70	BD	60	
bedding at 60 TCA.				
184.70	184.71	CT	60	
sharp lower contact at 60 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
183.32	184.71	VW	-	-	VW	-	-	-
Very weak sericite as partings								

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
183.32	184.71	1	LB						
1% pyrite as laminations									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
184.71	190.35	FXAT	

Medium to dark green moderately to strongly chloritic, moderately bedded mafic feldspar crystal ash tuff. Bedding at 55 TCA. Feldspar crystals are generally anhedral, 1-2 mm in size, and moderate epidote altered. Weak to moderate carbonate as partings and laminations. 0.25% pyrite as rare thin laminations. Lower contact sharp at 55 TCA.

STRUCTURES

From	To	Struct	CA	Strain
184.71	190.34	BD	55	
bedding at 55 TCA				
190.34	190.35	CT	55	
sharp lower contact at 55 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC	
184.71	190.35	M	W	-	VW	-	-	-
moderately epidote altered, weak to moderate carbonate as partings and laminations								

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
184.71	190.35	0.25	LB						
.25% pyrite as rare thin laminations.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
190.35	190.80	QXAT	

Light grey, brecciated, felsic quartz crystal ash tuff. Litholgy is in situ brecciated, with chlorite and carbonate filled hairline fractutres. Trace sulphides. Lower contact sharp at 65 TCA.

STRUCTURES

From	To	Struct	CA	Strain
190.35	190.79	BX		
breccia				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
190.35	190.80	QXAT	

Light grey, brecciated, felsic quartz crystal ash tuff. Litholgy is in situ brecciated, with chlorite and carbonate filled hairline fractutres. Trace sulphides. Lower contact sharp at 65 TCA.

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
					190.35	190.80	VW	VW	-	-	-	-	-	190.35	190.80	0.05	-									
					chlorite and carbonate filled hairline fractutres								*trace pyrite*												
190.79	190.80	CT	65																						
sharp lower contact at 65 TCA.																									

From	To	Litho	Simple Geo
190.80	192.67	ASHT	

Medium to dark green fine chloritic, well bedded mafic ash tuff. Bedding at 60 TCA. Minor carbonate lamellae. Brecciated and carbonate annealed from 192.00m to 192.50m. Trace dissemianted pyrite. Lower contact sharp at 80 TCA.

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
190.80	192.00	BD	60																						
bedding at 60 TCA.																									
					190.80	192.67	W	W	-	-	-	-	-	190.80	192.67	0.05	DIS									
					weak to moderate carbonate aslamellae and breccia/fracture fills.								*trace disseminated pyrite.*												
192.00	192.50	BX																							
brecciated																									
192.50	192.66	BD	60																						
bedding at 60 TCA.																									
192.66	192.67	CT	80																						
lower contact at 80 TCA.																									

From	To	Litho	Simple Geo
192.67	199.74	QXAT	

Very light grey to grey-green, highly brecciated and silicified felsic quartz crystal ash tuff. Moderaely silicified throughout, and bull quartz vein flooded form upper contact to 197.40m. Quartz crystals only vaguely evident through silicification overprint. Esssentially an in situ breccia, with moderate, pervasive chlorite annealing breccia, and minor ankerite filling fractures. Trace pyrite. Lower contact sharp at 70 TCA

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
192.67	199.73	BX																							
brecciated																									

From	To	Litho	Simple Geo
192.67	199.74	QXAT	

Very light grey to grey-green, highly brecciated and silicified felsic quartz crystal ash tuff. Moderaely silicified throughout, and bull quartz vein flooded form upper contact to 197.40m. Quartz crystals only vaguely evident through silicification overprint. Esssentially an in situ breccia, with moderate, pervasive chlorite annealing breccia, and minor ankerite filling fractures. Trace pyrite. Lower contact sharp at 70 TCA

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
					192.67	199.74	M	-	-	-	-	M	W	192.67	199.74	0.05	DIS									
					moderate, pervasive chlorite annealing breccia, and minor ankerite filling fractures; moderately silicified									*trace disseminated pyrite.*												
199.73	199.74	CT	70																							
lower contact sharp at 70 TCA.																										

From	To	Litho	Simple Geo
199.74	200.21	ASHT	

Dark grey thin bedded/foliated mafic ash tuff. Bedding parallel to foliation at 70 TCA. Moderate carbonate alteration. 1-2% coarse blebby pyrite. Lower contact sharp at 70 TCA.

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
199.74	200.20	BD	70																							
Bedding parallel to foliation at 70 TCA.																										
					199.74	200.21	M	M	-	-	-	-	-	199.74	200.21	1.5	BLB									
					Moderate carbonate alteration									*1-2% coarse blebby pyrite.*												
200.20	200.21	CT	70																							
Lower contact sharp at 70 TCA.																										

From	To	Litho	Simple Geo
200.21	**210.10**	**QFXT**	

Waxy medium green, felsic to intermediate, faintly foliated quartz-feldsapr crystal ash tuff-essentially the unbrecciated near equivalent of the QXAT unit from 192.67m to 199.74m, except with the addition of plagioclase crystals. Weakly foliated at 60 to locally 65 TCA. Sericite common on partings. Very sporadic ankerite as partings. Quartz crystals become noticeably larger and more abundant downhole. This is the first unit in this hole that clearly has a foliation rather than a bedding fabric. Sharp lower contact at 70 TCA. Sulphide mineralization as follows:
200.21m to 203.60m: 3-4% pyrite as elongate, conformable discontinuous flecks throughout interval.
203.6-m to 210.10m: 1% disseminated pyrite.

203.60m to 210.10m: 1% disseminated pyrite.

STRUCTURES					ALTERATION									MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
														200.21	203.60	3.5	LB									
														-4% pyrite as elongate, conformable discontinuous flecks throughout interval.												
200.21	210.09	FOL	60																							
Weakly foliated at 60 to locally 65 TCA																										
					200.21	210.10	M	-	-	M	-	-	VW													
					Sericite common on partings. Very sporadic ankerite as partings																					
														203.60	210.10	1	DIS									
														1% disseminated pyrite.												
210.09	210.10	CT	70																							
Sharp lower contact at 70 TCA																										

From	To	Litho	Simple Geo
210.10	**223.28**	**QXTB**	

Medium green coarse crystal tuff breccia. The lithogy is composed of blocks of greenish felsic blue quartz eye crystal tuff ranging from a few centimeters to over a meter in size, set in a dark green chloritic mafic ash tuff to mafic quartz crystal ash tuff matrix. Spectacular unit; irregularly oriented contacts between the mafics and felsics are evidence that the felsic are in fact blocks rather than regularly oriented beds. The mafic ash tuff is moderately carbonate altered (limey ash). Felsic crystal tuff blocks are variably fractured, and fractures are either chlorite or ankerite filled. Fairly intensely sheared, pyritic and ankeritic from 222.03m to the lower contact. Overall, approximately 0.5% to 1% pyrite as disseminations. Lower contact sharp at 60 TCA.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
													210.10	222.03	0.75	DIS									
													approximately 0.5% to 1% pyrite as disseminations												
210.10	223.27	BX																							
breccia																									

From	To	Litho	Simple Geo
210.10	223.28	QXTB	

Medium green coarse crystal tuff breccia. The lithogy is composed of blocks of greenish felsic blue quartz eye crystal tuff ranging from a few centimeters to over a meter in size, set in a dark green chloritic mafic ash tuff to mafic quartz crystal ash tuff matrix. Spectacular unit; irregularly oriented contacts between the mafics and felsics are evidence that the felsic are in fact blocks rather than regularly oriented beds. The mafic ash tuff is moderately carbonate altered (limey ash). Felsic crystal tuff blocks are variably fractured, and fractures are either chlorite or ankerite filled. Fairly intensely sheared, pyritic and ankeritic from 222.03m to the lower contact. Overall, approximately 0.5% to 1% pyrite as disseminations. Lower contact sharp at 60 TCA.

STRUCTURES

From	To	Struct	CA	Strain
223.27	223.28	CT	60	

Lower contact sharp at 60 TCA.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
210.10	223.28	M	M	-	M	-	- W

moderately carbonate altered ash tuff matrix; weak ankerite and moderate chlorite filling felsic tuff block fractures

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
222.03	223.28	4	LB						

4% pyrite along laminations.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
223.28	227.52	QXAT	

Waxy medium green, felsic to intermediate, variably silicified quartz crystal ash tuff. Very similar to the quartz crystal ash tuff (QXAT) from 192.67m to 199.74m. Very faint bedding evident at 70 TCA. Protolith is likely the pale green weakly chloritic crystal ash tuff. Minor chlorite and very minor sericite along partings. Ankerite fills late hairline to millimeter thick fractures that are orthogonaal to bedding/sericite partinngs. These fractures often exhibit minor offsets (less than 1 cm). Two less than 10 cm thick conformable bull quartz veins noted ceneterd at 225.00m and 225.47m. Trace dissemianted pyrite. Gradational lower contact.

STRUCTURES

From	To	Struct	CA	Strain
223.28	227.51	BD	70	
227.51	227.52	CT		

very faint bedding at 70 TCA

Gradational lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
223.28	227.52	M	-	-	VW	-	M VW

moderately silicified, weak chlkorite and very weak sericite along partings. ,Ankerite fills late hairline to millimeter thick fractures that are orthogonaal to bedding

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
223.28	227.52	0.05	DIS						

Trace dissemianted pyrite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
227.52	281.86	ASHT	

Thick sequence of very pale grey to very pale green, thin bedded felsic ash tuff. The pale green variant probably represents the weakly chloritized protolith which has subsequently been bleached and silicified. Bedding moderately to well developed at 60 TCA to 244.0m, 70 TCA from 244.0m to 255.30m, 45 TCA from 255.30m to 255.90m, and at 70 to 80 TCA from 255.90m to 264.15m This is indicative of a fold axis; whether related to tectonics or a slump feature is unclear. From 264.15m to 271.20m, bedding is virtually absent, likely obscured by silicification. From 271.20m to 281.86m, bedding at 70 TCA. Lower contact sharp at 75 TCA.
The lithology is moderately sericitic throughout, with sericite along partings. Ankerite alteration is generally minor, rarely along partings and as late fracture fills. Silicification is variable, but overall weak to moderate. From 255.30m to 255.62m, "burnt" yellow-brown intense pyrite-ankerite alteration. From 264.90m to 266.24m, crushed, intensely sericitized fault zone. From 279.50m to 281.86m, weakly sheared and strongly ankeritized to lower contact.
Pyrite content is variable, as follows.
227.52m to 241.8m: 5 to 7% pyrite as fine laminations and as heavy fine grained disseminations.
241.8m to 245.00m: 3-4% pyrite as heavy fine grained disseminations along laminations.
245.00m to 254.50m: 1-2% fine disseminated pyrite.
254.50m to 264.00m: 4% pyrite as heavy disseminations, occasional laminations and rare coarse clots.
264.00m to 269.90m: 1-2% disseminated pyrite.
269.90m to 278.97m: 2-3% disseminated pyrite.
278.97m to 281.86m: 0.5% disseminated pyrite.

SAMPLE THIS UNIT!!

STRUCTURES

From	To	Struct	CA	Strain
227.52	244.00	BD	60	
bedding and foliation parallel at 60 TCA				
244.00	255.30	BD	70	
bedding and foliation parallel at 70 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
227.52	279.50	M	VW	-	M	-	M	W
moderately sericitic.erite alteration is generally minor, rarely along partings and as late fracture fills. Silicification is variable, but overall weak to moderate.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
227.52	241.80	6	LB						
5 to 7% pyrite as fine laminations and as heavy fine grained disseminations									
241.80	245.00	3.5	LB						
3-4% pyrite as heavy fine grained disseminations along laminations.									
245.00	254.50	1.5	LB						
1-2% fine disseminated pyrite									
254.50	264.00	4	LB						
4% pyrite as heavy disseminations, occasional laminations and rare coarse clots.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
227.52	281.86	ASHT	

(Continued from previous page)

STRUCTURES (From | To | Struct | CA | Strain) — **ALTERATION** (From | To | INT | CC | DO | SR | AK | SC) — **MINERALIZATION** (From | To | PY% | Style | Min | Min% | Min2 | M2% | Min3 | M3%) — **SAMPLES** (From | To | Sample)

Structure: 255.30 255.90 BD 45
bedding and foliation parallel at 45 TCA

Structure: 255.90 264.15 BD 75
bedding at 70 to 80 TCA

Mineralization: 264.00 269.90 1.5 DIS
1-2% disseminated pyrite.

Structure: 264.15 264.90 NA
massive

Structure: 264.90 266.24 FLT
crushed, intensely sericitized fault zone.

Structure: 266.24 271.20 NA
massive

Mineralization: 269.90 278.97 2.5 DIS
1-2% disseminated pyrite.

Structure: 271.20 281.85 BD 70
bedding at 70 TCA

Mineralization: 278.97 281.86 0.5 DIS
0.5% disseminated pyrite

Alteration: 279.50 281.86 S - - - - - S
weakly sheared and strongly ankeritized to lower contact.

Structure: 281.85 281.86 CT 75
Sharp lower contact at 75 TCA

From	To	Litho	Simple Geo
281.86	283.01	ASHT	

Medium green, well bedded, variably silicified and moderately chloritic mafic ash tuff. Bedding at 70 TCA. Variably silicified ad intercalated with upper and lower felsic tuff units. Moderately ankeritized along a network of hairline randomly oriented fractures. Ankerite also occurs as laminations. 0.25% disseminated pyrite. Basal 20 cm to lower contact characterized by interbeds and lensoidal " casts" of mafic ash tuff within lower felsic ash tuff. Lower contact gradational.

STRUCTURES (From | To | Struct | CA | Strain) — **ALTERATION** (From | To | INT | CC | DO | SR | AK | SC) — **MINERALIZATION** (From | To | PY% | Style | Min | Min% | Min2 | M2% | Min3 | M3%) — **SAMPLES** (From | To | Sample)

Structure: 281.86 283.00 BD 70
bedding at 70 TCA.

From	To	Litho	Simple Geo
281.86	**283.01**	**ASHT**	

Medium green, well bedded, variably silicified and moderately chloritic mafic ash tuff. Bedding at 70 TCA. Variably silicified ad intercalated with upper and lower felsic tuff units. Moderately ankeritized along a network of hairline randomly oriented fractures. Ankerite also occurs as laminations. 0.25% disseminated pyrite. Basal 20 cm to lower contact characterized by interbeds and lensoidal " casts" of mafic ash tuff within lower felsic ash tuff. Lower contact gradational.

STRUCTURES					ALTERATION									MINERALIZATION									SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
					281.86	283.01	M	-		-	-	M	M	281.86	283.01	0.25	DIS									
					moderately ankeritized and silicified.									*0.25% disseminated pyrite.*												
283.00	283.01	CT																								
Lower contact gradational.																										

From	To	Litho	Simple Geo
283.01	**311.20**	**ASHT**	

Variable light and medium green to beige grey (silicified-ankerite altered) well bedded felsic ash tuff. Bedding at 70 to 75 TCA. Protolith is again the light to medium green weakly chloritized felsic ash tuff, and from 283.01m to 296.00m, chlorite is dominant on partings. From 296.00m to 311.20m, moderately silicified and ankeritized, with sericite+/-ankerite along partings and hairline fractures. Trace pyrite to 296.00m. From 296.00m to 311.20m, 2% pyrite as infrequent laminations and disseminations.
303.83m to 304.26m: fault breccia zone consisting of very fine sucrosis silica, carbonate and pyrite as matrix to felsic ash tuff fragments.
308.10m to 308.43m: Fault zone consisting of rock flour, carbonate and rock fragments.
310.13m to 310.83m: interbedded felsic and mafic ash tuff.
End of Hole.

STRUCTURES					ALTERATION									MINERALIZATION									SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC		From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
					283.01	296.00	W	-	-	-	-	-	-	283.01	296.00	0.05	DIS									
					weakly chloritic; chlorite along partings									*trace disseminated pyrite*												
283.01	303.83	BD	73																							
bedding at 70 to 75 TCA																										
					296.00	311.20	M	-	-	M	-	M	M	296.00	311.20	2	LB									
					moderately silicified and ankeritized, with sericite+/-ankerite along partings and hairline fractures.									*2% pyrite as infrequent laminations and disseminations.*												
303.83	304.26	FLT		M																						
fault breccia zone consisting of very fine sucrosis silica, carbonate and pyrite as matrix to felsic ash tuff fragments.																										
304.26	308.10	BD	73																							
bedding at 70 to 75 TCA																										

From	To	Litho	Simple Geo
283.01	311.20	ASHT	

(Continued from previous page)

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
308.10	308.43	FLT																							
Fault zone consisting of rock flour, carbonate and rock fragments.																									
308.43	311.20	BD	73																						
bedding at 70 to 75 TCA																									

APPENDIX V

ITEMIZED COST STATEMENT

(May 20 to May 24, 2009)

Wages:

D.J. Alldrick	May 21 to 23: 3 days at $400/day	$ 1,200.00
B.J. Willett	May 21 to 23: 3 days at $400/day	$ 1,200.00

Travel (one-way) and Accommodation enroute:

Air Canada	DJA & BJW	$ 848.00
Room & Meals	DJA & BJW	$ 330.00

Meals and Camp Accommodation:

Meals	6 days at $30 per man/day	$ 180.00
Camp Operation	6 days at $30 per man/day	$ 180.00

Report Preparation:

Text & map production (DJA)	2 days at $400/day	$ 800.00

Total costs: **$ 4,738.00**

APPENDIX VI

CERTIFICATES OF QUALIFICATION

Certificate of Qualifications

I, Dani Alldrick, of 1661 Hovey Road, Saanichton, in the Province of British Columbia, DO HEREBY CERTIFY:

1. THAT, I am a geologist residing in the District of Central Saanich, B.C, currently employed by Kutcho Copper Corporation, a wholly-owned subsidiary of Capstone Mining Corporation, 900-999 West Hastings St., Vancouver BC V6C 2W2.

2. THAT, I obtained a Bachelor of Science degree in Geophysics in 1971 and a Bachelor of Science degree in Geology in 1974 from The University of Western Ontario, London, Canada; a Master of Science degree in Mineral Exploration in 1978 from The Royal School of Mines, London, England; and a Ph.D in Economic Geology in 1991 from The University of British Columbia, Vancouver, Canada.

3. THAT, I have been continuously practicing my profession as a geologist since 1974 for Kutcho Copper Corporation, the Province of British Columbia, and Cominco Exploration Ltd.

4. THAT, I am Registered Professional Geoscientist (License # 109351) in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.

5. THAT, this report is based upon my knowledge of the project gained from working on the project seasonally in 2008 and work conducted on the property from May 21st through June 18^{th}, 2009.

Dated at Kutcho Creek camp, British Columbia this 3^{rd} of August, 2009.

Signed By:

Dani James Alldrick, Ph.D., P.Geo.
Registered Professional Geoscientist

Certificate of Qualifications

I, Brian J. Willett, of the town of Kippens, Province of Newfoundland, do hereby certify that:

(1) I am Senior Project Geologist employed by Minto Explorations Ltd., a subsidiary of Capstone Mining Corporation, of P.O. Box 33174, Whitehorse, Yukon.

(2) I reside at 15 Fir Avenue, Kippens, NL, A2N 0A6.

(3) I am a graduate of Memorial University of Newfoundland with a Bachelor of Science degree in Earth Sciences (1985).

(4) I have been practicing my profession since 1985.

(5) That this report is based in part on property work I personally completed and/or directly supervised between May 21, 2009 and June 4, 2009.

Signed in the town of Kippens, this 7th day of July, 2009.

Brian J. Willett

Certificate of Qualifications

I, Robert G. Wilson, of 20216 8th Ave. Langley, in the Province of British Columbia, DO HEREBY CERTIFY:

1. THAT I am employed by Capstone Mining Corp. of 900 - 999 West Hastings Street., Vancouver B.C. V6C 2W2

2. THAT I am a graduate of the University of British Columbia with a Bachelor of Science degree in Geology.

3. THAT I am a Professional Geoscientist registered in good standing with the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

4. THAT historical sections of this report are based in part on property work I personally completed and/or directly supervised between March 2004 and October 2008.

DATED at Vancouver, British Columbia, this 20th day of August, 2009.

Robert G. Wilson, P.Geo.