

BC Geological Survey  
Assessment Report  
30726f

# KENRICH-ESKAY MINING CORPORATION

*(Operator)*

St. ANDREWS GOLDFIELDS LTD.

*(Owner)*

## **GEOLOGICAL ASSESSMENT REPORT**

*(Event Number 4251315)*

*on*

## **TENURES 566739 & 566752**

Skeena Mining Division  
NTS 104B.060

Centre of Work  
6267000N, 427200E

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**Kenrich-Eskay Mining Corp.**

Geological Assessment Report

Tenures 566739 & 566752

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**SUMMARY**

Tenures 566739 & 566752 of the Kenrich-Eskay Corey property (“Property”) covers an area of 267.614 hectares some 22 kilometres southeast of the formerly productive Eskay Creek mine and 68 kilometres north of Stewart, British Columbia. Access to the property is by fixed-wing aircraft from Terrace, Stewart, or Smithers to various airstrips in the area and then via helicopter to the Property.

The Property is shows about a 10% bedrock exposure in the northwest; the remainder covered by glaciers. Two Formations of the Jurassic Hazelton Group are indicated with the Middle to Upper Jurassic Mount Dilworth Formation (muJHM) of calc-alkaline volcanic rocks exposed in the south with the Middle to Upper Jurassic Salmon River Formation adjoining in the north; the Salmon River Formation, host to most of the mineralization in the 21 zone (21A and 21B deposits) at Eskay Creek, is a late to post volcanic episode comprised of banded, predominately dark coloured, siltstone, greywacke, sandstone, intercalated calcarenite, minor limestone, argillite, conglomerate, littoral deposits, volcanic sediments and minor flows.

The area has an exploration history dating back to the turn of the century when prospectors passed through the region on their way to the interior. In the 1970's, the porphyry copper boom again brought prospectors and companies into the area.

The Eskay Creek prospect was discovered and staked in 1932 and after a significant amount of exploration, a shipment of ore was made in 1979 when 8.75 tonnes of hand-cobbed ore was mined and produced from trenches. In 1995 direct shipping ore was made; the ore was crushed and blended at the mine and then moved by rail from Kitwanga to Noranda's Horne smelter in Quebec, and by sea from Stewart to Dowa Mining's smelter in Japan.

In 1999 mineral reserves at Eskay Creek were reported as 1,355,965 tonnes grading 57.7 grams per tonne gold and 2492.57 grams per tonne silver. Additional mineralized material was 453,600 tonnes grading 15.36 grams per tonne gold and 401.14 grams per tonne silver. Mining and on-site milling of ore from the Eskay mineral deposits was initiated by Barrick Resources in 2003 and was completed in March, 2008. Since start-up in 1995 Eskay Creek has produced more than 100 tonnes of gold and 5000 tonnes of silver.

At Eskay Creek mineralization is reported in rocks from the Lower Jurassic Betty Creek Formation to rocks of the Middle to Upper Jurassic Salmon River Formation; the lower unit hosting most of the mineralization in the 21 zone. The mineralizing event is reported as Lower Jurassic.

The major structure is interpreted to be an asymmetric anticline which plunges gently to the northeast. The anticline is broken by a series of high-angle faults. Major faults strike north-northeast; minor ones north-northwest. Several northerly to northeasterly trending lineaments also traverse the property

There is no reported mineralization on Tenures 566739 & 566752 of the Kenrich Property.

The 2008 Lineament Array Analysis on the Property indicated two dominant trends of east-west and northerly structures with en-echelon or complementary northeasterly and northwesterly trending structures within the Lower to Upper Jurassic Formations of the Hazelton Group.

As a general comparison to Eskay Creek for subaqueous hot spring silver-gold mineralization, the major directional structural trends on the Property are indicated as comparable major structural trends to Eskay Creek where major faults strike north-northeast and minor ones north-northwest.

The Property contains the favourable host rocks for massive sulphide mineralization as that which occur at Eskay Creek where mineralization is primarily hosted in rocks from the Lower Jurassic Betty Creek Formation to rocks of the Middle to Upper Jurassic Salmon River Formation.

**Kenrich-Eskay Mining Corp.**

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**INTRODUCTION**

In October, 2008 a Lineament Array Analysis was completed on Tenures 566739 & 566752 (“Property”). The purpose of the program was to delineate potential structures which may be integral in geological controls to potentially economic mineral zones that may occur thereon. These two Tenures are claims comprising the Corey property of Kenrich-Eskay Mining Corp.

Information for this report was obtained from sources as cited under Selected References. The author has not performed a personal examination of the Property.

**PROPERTY DESCRIPTION & LOCATION**

The property consists of two Tenures covering an area of 267.614 hectares. Particulars are as follows:

<u>Tenure Number</u>	<u>Type</u>	<u>Claim Name</u>	<u>Good Until*</u>	<u>Area (ha)</u>
<a href="#">566739</a>	Mineral	ST ANDREW 2	20130131	249.777
<a href="#">566752</a>	Mineral	ST ANDREW 4	20140131	17.837

Total Area: 267.614 ha

\*Upon the approval of this assessment report.

The Tenures are registered in the name of St. Andrews Goldfields Ltd., and are optioned to Kenrich-Eskay Mining Corp. the “operator”.

**LOCATION AND ACCESS**

The Property is located within BCGS. Map-sheet 104B.060 in northwestern British Columbia, approximately 68 kilometres north of Stewart and 22 kilometres southeast of the formerly productive Eskay Creek mine.

Access to the Property is either by helicopter from Stewart or by fixed-wing aircraft from Terrace, Stewart, or Smithers to various airstrips in the area and then via helicopter.

**PHYSIOGRAPHY AND CLIMATE**

The Property is situated within the Physiographic Division designated as the Coast Range and is covered in part by glaciers with glacial debris and alpine vegetation in the glacial enclosed lowlands where elevations range, in the exposed portions of the Property between glaciers, from 1,950 metres in the northwest to 2,150 metres in the southeast.

Water for all phases of the exploration program could be available from minor watercourses within the confines of the Property. Water would be scarce to nonexistent from the during the long winter season.

Short mild summers and cool to cold wet spring and fall periods are the norm. Thick accumulations of snow are common during the winter hence a short surface exploration season averaging three months of the year.

# KENRICH-ESKAY MINING CORP.

Tenures 566739 & 566752

Event 4251315



**Figure 1. LOCATION MAP**

## **HISTORY: COREY PROPERTY**

In a 1994 assessment report by Van Damme & Mosher (AR 23,805) the Corey property, which by 2008 was increased by additional Tenures, was described as follows:

The earliest work conducted on what is now the Corey Property the staking and excavation of two adits on the Cumberland group of claims between 1898 and 1903. A shipment of hand-cobbled ore is reported to have been made during the 1930's.

Only limited exploration was carried out within the area until 1960's when a regional survey was conducted by Newmont during which time the Ox and Fox Claim Groups were staked, surrounding the earlier Cumberland crown grants. Up to 1983, the area south of Sulphurets Ck. saw a series of small exploration programs conducted by E and B Explorations, Nor-Con Explorations and Dupont Canada. In 1986 Catear Resources Ltd. staked the Corey 1-8 claims and conducted a program of rock and silt geochemistry and prospecting. At the same time Skelly Resources Ltd. staked Sul-2 and Unuk 20 claims.

Bighorn Development Corp. optioned the Corey property in 1987 and subsequently staked an additional 516 claim units, Corey 10-45. A property wide program of silt, soil and rock geochemistry, prospecting and detailed evaluation was completed. Detailed work consisted of geological mapping, 49 meters of trenching and 590 meters of diamond drilling in six holes at the Cumberland prospect. During this period Bel Pac Industries Ltd. acquired the Sul 1-2 and Unuk 20 claims.

In 1988 Bighorn carried out a follow up program and completed 647 meters of diamond drilling in six holes on the C-10 prospect. At this time Kenrich Mining Corp., formerly Farquest Energy Corp, optioned the Sul 1-2 and Unuk 20 claims. Also Ambergate Explorations Inc., formerly Nica Ventures Inc., acquired the Nica 1 claim.

1989 saw Kenrich and Ambergate conduct geological and geophysical surveys on the combined claims.

During 1990 Ambergate drilled two holes totalling 86 meters on the Nica 1 and Kenrich drilled seven diamond drill holes totalling 486.4 meters on the Unuk 20 claim. The latter part of '90 saw Kenrich-Ambergate augment their property holdings with the acquisition of the Corey 1-8 and Corey 10-45 claims.

In 1991 Placer Dome optioned the Sul 1-2, Nica 1 and Unuk 20 claims from Kenrich-Ambergate. An exploration program of geological mapping, geochemical sampling and ground geophysics was completed. Placer also evaluated the Cumberland and C-10 prospects at this time.

In 1992 Placer Dome carried out an extended program of geochemical, geophysical, and diamond drilling on the option. The rest of the property underwent varying degrees of exploration or review by Kennecott Canada Inc., Inco Exploration and Technical Services Inc., and Homestake Canada Ltd. This work consisted primarily of reconnaissance geochemical and geological surveys.

In 1993, with the completion of an extensive geological, geochemical, and limited geophysical and trenching program Kenrich and Ambergate further expanded the property's limits by purchasing the Dwayne 1, Carl, and Jo Jo Claims. (AR 23,805).

Kenrich continued exploration on the Corey property from 1994 to, and including 2008.

## **HISTORY: PROPERTY AREA**

**ESKAY CREEK** past producer (subaqueous hot spring Ag-Au)

(Noranda/Kuroko massive sulphide Cu-Pb-Zn)

MINFILE 104B 008

22 kilometres northwest

The Eskay Creek property has a long history of intermittent exploration since its discovery and staking in 1932 by T.S. Mackay. Early work identified more than 30 distinct mineralized zones in upper Coulter and Eskay creeks along a line of gossanous bluffs that extends more than 7 kilometres. Earliest exploration focused on the southern part of this area where the Mackay adit was driven for 110 metres. The Mackay adit lies 9 kilometres southwest of the 21 zone. In the northern part, underground development at the Emma adit totalled 180 metres of drifting and crosscuts. The Emma adit lies 3 kilometres southwest of the 21 zone. Surface work included several thousand metres of diamond drilling, numerous trenches, pits and opencuts. In 1971, a 1.5-tonne sample of high-grade ore was extracted from trenches on the 22 zone, which lies 2 kilometres southwest of the 21 zone. In 1979, these trenches were mined to produce 8.75 tonnes of hand-cobbed ore (Exploration in British Columbia 1989). In 1996, surface and underground exploration diamond drilling totalled 36,576 metres.

In 1999, Eskay Creek was 100 per cent owned and operated by Homestake Canada Inc. following an amalgamation between Homestake and Prime Resources Group Inc. Reserves on January 1, 1999 were 1,355,965 tonnes grading 57.7 grams per tonne gold and 2492.57 grams per tonne silver. Additional mineralized material was 453,600 tonnes grading 15.36 grams per tonne gold and 401.14 grams per tonne silver (Exploration in BC 1998, page 23 and [www.homestake.com](http://www.homestake.com)).

Drill targets in 1998 included 21C, a rod-shaped pyritic zone within footwall rhyolite. It reaches the surface at the original 21 zone trenches excavated in the 1930s (near the 21A deposit) and plunges gently northward for 900 metres, passing below and 200 metres down dip of the 21B deposit to its truncation by the Argillite Creek fault. Based on 1998 drilling the 21C zone is estimated to contain 303,000 tonnes of milling ore at a grade of 16.4 grams per tonne gold and 72 grams per tonne silver, with very low levels of deleterious elements (Exploration in BC 1998, page 23). Barrick Gold Corporation acquired 100 per cent interest in the mine through the December 2001 merger with Homestake.

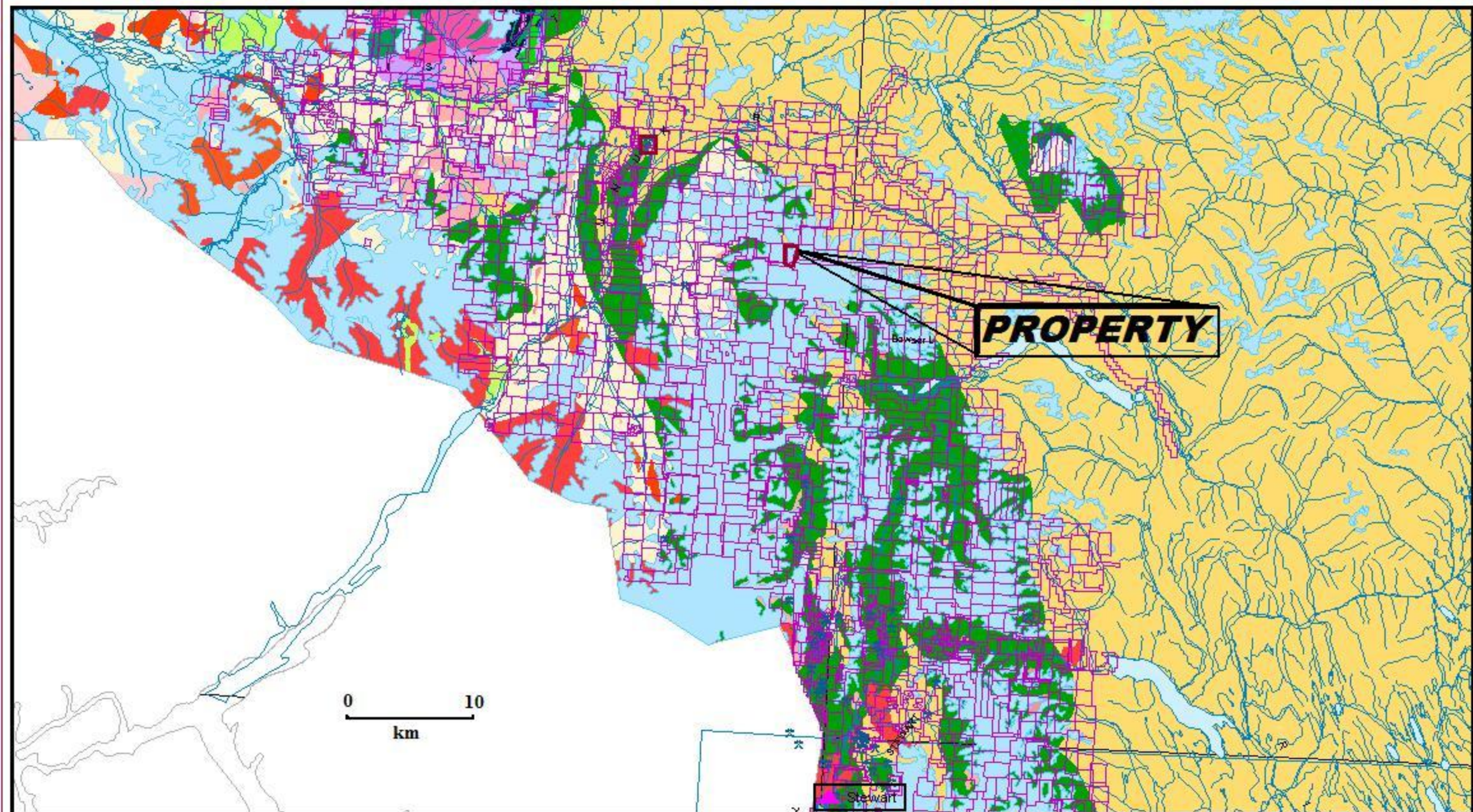
For the year ended December 31, 2002 the proven and probable reserve was 1,229,995 tonnes ore grading 34.22 grams per tonne gold and the resource was 435,448 tonnes ore grading 15.15 grams per tonne gold (WWW <http://www.barrick.com/>, December 29, 2003). In 2003, Barrick continued to develop new ore zones at the mine. A spiral ramp system was advanced to access ore at the deepest levels in the NEX trend, which plunges north at about 55 degrees.

Production began late in the year from a new stope in the 44 zone, some 300 metres below surface. Fill-in drilling of the Water Tower zone, a footwall zone similar to 21C, found erratic gold grades and assessment of the zone continues. Exploration at Eskay Creek made use of 35,500 metres of surface and underground diamond drilling.

The main focus of the 71-hole surface program was the 22 zone, situated 2 km south of the mine site. Drilling also expanded known resources in the 21C, 21A and 21E zones. At the northern end of the deposit, deeper holes tested the area down plunge from the NEX and Hangingwall zones.

# ***KENRICH-ESKAY MINING CORP.***

**Tenures 566739 & 566752 Event 4251315**



**Figure 2. CLAIM LOCATION & REGIONAL GEOLOGY**



## **HISTORY: PROPERTY AREA** (cont'd)

### **Eskay Creek** (cont'd)

In 2004, Barrick Gold Corporation completed 18,055 meters of drilling in 54 holes in exploration around the mine. Exploration was carried out mainly on the Deep Adrian and 22 zone areas, to the north and south of the existing mine workings, respectively. Before the end of 2005, the mine was forecast to produce 5,500 kilograms of gold and 290,000 kilograms of silver for the year. Since start-up in 1995 ore grade has diminished and at the beginning of 2005 the average reserve grade was 36 grams per tonne gold and 1600 grams per tonne silver (Exploration and Mining in BC 2005, page 22). In 2005, a comprehensive geologic review identified targets that were tested by approximately 16,000 metres of drilling from mine workings.

Mining was completed at Eskay Creek in March 2008, with processing of stockpiled ore expected to continue for a short time, at which point the mine will be closed and reclaimed. Since start-up in 1995 Eskay Creek has produced more than 100 tonnes of gold and 5000 tonnes of silver.

### **DAWSON (SULPHURETS) showing (Porphyry Mo Low F type)**

MINFILE 104B 104

Six kilometres east-southeast

Two holes were drilled in 1980 by Esso Minerals Canada Ltd., with overall results considered negative. Diamond-drill hole 13 contained a 3 metre section of 0.037 per cent molybdenite and diamond-drill hole 9 contained 3 metres of 0.92 grams per tonne gold. Most assays were significantly less. Silver is also anomalous (Assessment Report 8420).

### **IRON CAP GOLD (SULPHURETS) prospect (Subaqueous hot spring Ag Au) (Intrusion related Au pyrrhotite veins)**

MINFILE 104B 173

Four kilometres east

The 2004 Noranda/Falconbridge work on the Iron Cap consisted five holes spaced 200-300 metres apart and 250 metres deep. These penetrated quartz-sericite-pyrite altered monzonite and andesite. Very fine-grained chalcopyrite occurs throughout four of the holes; over their entire assay lengths of 243 to 249 metres, the four holes returned an average grade of 0.20% to 0.22% copper with 0.27 to 0.52 g/t gold (Exploration and Mining in BC 2005, page 32).

During 2003 and 2004 Noranda Exploration Inc. conducted field programs designed to explore outside the known Kerr and Sulphurets deposits to expand the known resources. The programs consisted of mapping, rock and soil sampling and IP surveys. In 2004, Noranda's geological mapping IP survey focused on the North Mitchell (104B 180) and Iron Cap (104B 173) areas. The size of mineralized zones at Iron Cap, Mitchell and Main Copper were expanded into areas or recent glacier retreat which were not accessible by Placer Dome. For 2005, Noranda is planning to conduct a \$1,000,000 helicopter supported drill program targeting untested mineralized zones and geophysical anomalies.

In 2005, Falconbridge Limited completed 4092 metres of drilling in 16 holes, distributed over six zones: Iron Cap (104B 173); West Mitchell zone (104B 176); Icefield zone (104B 203); Main Copper (104B 182; 3 holes); North Mitchell (MINFILE 104B 180; 3 holes) and MacQuillan (104B 285; 1 hole).

# KENRICH-ESKAY MINING CORP.

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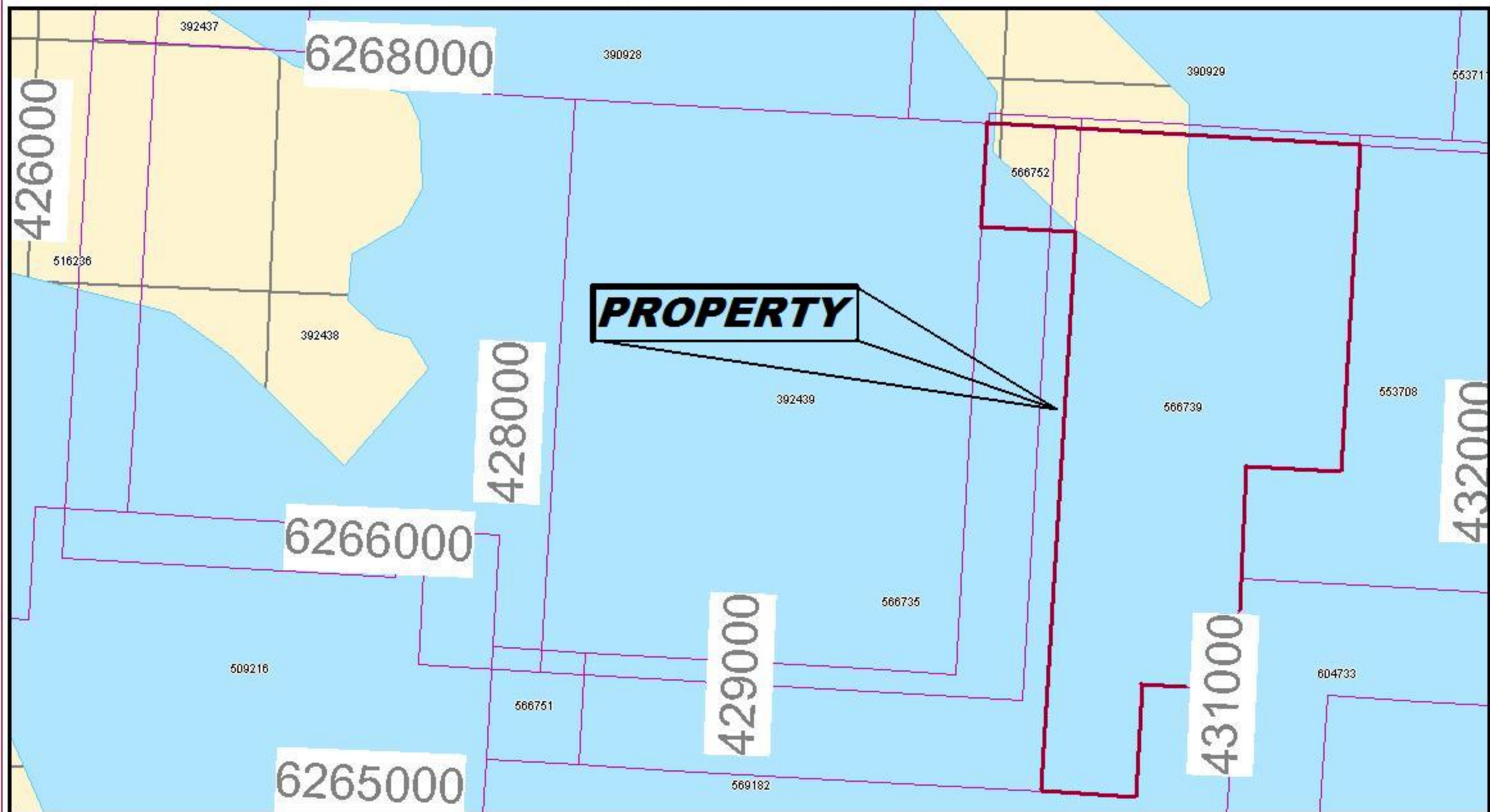


Figure 3. CLAIM MAP

## **GEOLOGY: PROPERTY AREA**

### **ESKAY CREEK** past producer (subaqueous hot spring Ag-Au)

(Noranda/Kuroko massive sulphide Cu-Pb-Zn)

MINFILE 104B 008

22 kilometres northwest

The Eskay Creek deposits lie in the centre of the Iskut-Sulphurets gold camp in the Unuk River valley. Bedrock in the Unuk map area consists of a thick (more than 5000 metres) succession of Upper Triassic to Middle Jurassic volcano-sedimentary arc-complex lithologies (Stuhini and Hazelton groups) underlain by Permian and older arc and shelf sequences (Stikine Assemblage) and overlain by Middle and Upper Jurassic marine-basin sediments (Bowser Lake Group). Rocks have been folded, faulted and weakly metamorphosed, mainly during Cretaceous time. Dioritic to granitic rocks that crop out east and west of the Prout Plateau represent at least four intrusive episodes spanning Triassic to Tertiary time. Remnants of Pleistocene to Recent basaltic eruptions are preserved locally (Exploration in British Columbia 1989).

The Eskay Creek deposits area is underlain by a northwest-facing sequence of interbedded volcanoclastic rocks, flows and sediments of the Lower-Middle Jurassic Hazelton Group. Strata strike north- northeasterly and dip moderately to the northwest. The presence of fossils, pillow lavas and hyaloclastites suggests that many of the rocks were deposited in a subaqueous environment.

An 1100-metre section straddling Eskay Creek is divided into 6 lithostratigraphic sequences, from oldest to youngest: (1) lower volcano-sedimentary unit: inferred basement to the footwall dacite unit including the oldest rocks on the property; (2) footwall dacite unit: dacite lapilli, crystal and lithic tuffs interbedded with black mudstone and water lain tuff (includes the "datum dacite" member); (3) rhyolite unit: rhyolite breccia and tuff; minor mudstone; (4) contact unit: basal rhyolite-mudstone breccia ("transition zone") grading upwards into carbonaceous mudstone; (5) hanging wall andesite unit: pillowed andesite flows and breccias with thin carbonaceous mudstone interbeds; and (6) upper sedimentary unit: thin-bedded siltstone and fine sandstone with minor arenite-conglomerate beds.

The lower volcano-sedimentary unit is of unknown thickness and consists of mixed andesitic to dacitic volcanoclastic rocks and immature fine to medium grained sedimentary rocks. This unit is correlated with the Lower Jurassic Betty Creek Formation (Hazelton Group)

The footwall dacite unit comprises in excess of 100 metres of drab grey to white dacite tuff, tuffaceous wacke and mudstone. Dacitic volcanics are predominantly tuff and ash-flow tuff, with lesser volumes of lithic tuff and breccia. An important marker, the datum dacite member, comprises pink to green, fine grained, feldspar phyric tuff and lapilli breccia; it occurs near the top of the unit. The footwall dacite unit was assigned to the Lower Jurassic Mount Dilworth Formation (Hazelton Group) but recent interpretations suggest that it is a member of the Lower Jurassic Betty Creek Formation (Hazelton Group).

The rhyolite unit ranges from 30 to 110 metres thick and consists of grey to white aphyric breccia, tuff breccia, lapilli tuff, tuff and subordinate massive rhyolite. Thin intercalations of mudstone and water lain tuff occur locally and provide markers. This unit is correlated with the Lower Jurassic Mount Dilworth Formation (Hazelton Group). The contact unit consists of an areally restricted basal member of rhyolite-mudstone breccia (the "transition zone") that grades into a widespread upper member of carbonaceous mudstone.

## **GEOLOGY: PROPERTY AREA (cont'd)**

### **Eskay Creek (cont'd)**

The entire contact unit ranges from less than 1 to more than 60 metres thick. The upper member is carbonaceous, pyritic and locally tuffaceous, laminated black mudstone. The contact unit can be correlated with the unnamed lower member of the Lower-Middle Jurassic Salmon River Formation (Hazelton Group). It is the host to most of the mineralization in the 21 zone (21A and 21B deposits) (Exploration in British Columbia 1989).

The hangingwall andesite unit is a flow and sill complex in excess of 150 metres thick. It consists of rusty brown weathering, light grey to dark green pillow breccias with subordinate massive flows, dikes or sills, and hyaloclastite horizons. Thin mudstone units occur as interflow sediments. The upper sedimentary unit consists of a thick sequence of thin-bedded (turbiditic) siltstone, shale and fine sandstone. It includes strata of the lithologically similar Salmon River Formation (Hazelton Group) and Middle-Upper Jurassic Ashman Formation (Bowser Lake Group). The Salmon River Formation sediments are distinguished by the presence of volcanic material. The major structure on the property is interpreted to be an asymmetric anticline which plunges gently to the northeast. The anticline is broken by a series of high-angle faults. Major faults strike north-northeast; minor ones north-northwest. Several northerly to northeasterly trending lineaments also traverse the property.

### **IRON CAP COPPER (SULPHURETS) showing (Porphyry Cu +/- Mo +/- Au)**

MINFILE 104B 174

Four kilometres east

The Iron Cap occurrence is situated above the north side of Mitchell Glacier and west of Brucejack Fault. The area consists of a steep, strongly iron-stained slope surmounted by ice and permanent snow. The gossan covers over a 3 kilometre length of the mountain slope above the glacier. The area is underlain by intermediate to mafic pyroclastics and flows with minor interbeds of siltstone and wacke. These rocks are assigned to the Lower Jurassic Unuk River Formation, Hazelton Group. Stocks of Jurassic alkali-feldspar granite and monzonite intrude the country rock within 2 kilometres of the occurrence

### **DAWSON showing (Porphyry Mo Low F type)**

MINFILE 104B 104

Six kilometres east-southeast

The Dawson/Moly zone is underlain by interbedded volcanics and lesser sedimentary rock of the Lower Jurassic Unuk River Formation, Hazelton Group. A stock of Jurassic monzonite to quartz monzonite intrudes the country rock within 0.5 kilometres to the southwest of the prospect.

Pervasive silica-pyrite-sericite-chlorite-feldspar alteration has obliterated primary texture and structures. Extensive shearing and faulting and related alteration has resulted in discrete foliation. Altered rocks within the zone are now essentially quartz-sericitic-schists. The rocks typically contain between 3 to 5 per cent pyrite and as much as 10 per cent locally.

## **GEOLOGY: PROPERTY AREA (cont'd)**

### **IRON CAP GOLD (SULPHURETS) prospect (Subaqueous hot spring Ag Au) (Intrusion related Au pyrrhotite veins)**

MINFILE 104B 173

Four kilometres east

The Iron Cap Gold prospect is located above the north side of Mitchell Glacier just west of the northern extension of the north trending Brucejack fault system. Mineralization occurs in an altered sequence of volcanic, volcanoclastic and clastic sediments of the Lower Jurassic Unuk River Formation, Hazelton Group. Feldspar and hornblende porphyry intrusives of Jurassic age are reported in the area.

Alteration consists of pervasive silicification, pyritization and lesser sericitization and chloritization. The host rocks are commonly reported as quartz sericite schist or chlorite schist. The rocks typically contain from 3 to 5 per cent pyrite.

Three major parallel sets of quartz-pyrite veins and stockwork occur over a total length of 700 metres and a vertical extent of 400 metres. These vein zones range in width from 0.5 to 6 metres. The Iron Cap West vein is the westernmost of the veins. It is exposed for 300 metres horizontally along length and 140 metres vertically. The vein strikes from 10 to 25 degrees and dips vertically to steeply east. The lower half of the vein averages 5 metres in width; the upper half averages 3 metres. The vein is controlled by a prominent fault set; the south end terminates abruptly and the north end may split into two or three veins and is offset by numerous cross-faults.

The following is taken from a July 2005 press release issued by Seabridge Gold on the Iron Cap zone and is reported (Exploration and Mining in BC ) to be associated with this MINFILE occurrence although no map location is available for verification. It is not clear if the Iron Cap West vein described above, and documented from much earlier work, has any association with the new Iron Cap West zone mentioned in the following paragraph.

The 500 by 1500-metre Iron Cap zone is a large area of well-exposed, intensely and pervasively quartz-sericite-pyrite altered intrusive and volcanic rock located in the northeast corner of the claim block. Alteration is controlled by northeast-trending, near-vertical structures with associated stockwork fractures and veins. Pyrite content varies from 10 per cent to 70 per cent and averages about 25 per cent. To the west, the intense quartz-sericite-pyrite alteration of the Iron Cap zone gradually weakens and primary intrusive textures can be observed. Mapping by Noranda has delineated a northeast trending intrusion intermittently exposed over 200 by 800 metres now referred to as the Iron Cap West zone. This zone is a strongly altered granodiorite, laced with a fine- to medium-grained quartz stockwork of varying intensity.

### **QUARTZ STOCKWORK (SULPHURETS) showing (Porphyry Mo Low F type)**

MINFILE 104B 178

Seven kilometres southwest

The Quartz Stockwork Zone is hosted in rock of the Lower Jurassic Unuk River Formation, Hazelton Group, located immediately west of the Brucejack Fault. The rocks consist of volcanic and sediments that have undergone pervasive pyritization, sericitization and silicification. Rocks within the zone are described as quartz sericite schists.

## **GEOLOGY: PROPERTY AREA (cont'd)**

### **SULPHURETS GOLD developed prospect (Subaqueous hot spring Ag Au) (Intrusion related Au pyrrhotite veins)**

MINFILE 104B 182

Seven kilometres southwest

The Sulphurets Gold Zone is a northeast trending zone, over 1.5 kilometres in length, that forms a broad halo around the west, south, and east sides of the Main Copper deposit; a zone discovered by Granduc Mines Limited in the early 1960's. The Main Copper deposit is described in Assessment Report 8420 as "an extensive area of quartz-albite-pyrite-chalcopyrite rock; both apparently hydrothermal alteration products of intermediate volcanics intruded by syenite and granite." Bornite is also reported to occur.

The eastern section of the Sulphurets Gold Zone was previously called the Breccia Zone. In this zone the best gold values were derived from andesitic breccias, having quartz-pyrite-K-feldspar and minor sericite-chlorite alteration with the addition of quartz veins.

## **GEOLOGY: PROPERTY**

MapPlace internet downloads on the geology of the Property (Figure 4) shows about a 10% bedrock exposure in the northwest; the remainder covered by glaciers. Two Formations of the Jurassic Hazelton Group are indicated with the Middle to Upper Jurassic Mount Dilworth Formation (muJHM) of calc-alkaline volcanic rocks exposed in the south with the Middle to Upper Jurassic Salmon River Formation adjoining in the north.

The Hazelton Group is divided into the Lower Jurassic Unuk River Formation of non marine volcanic rocks, the Middle Jurassic Betty Creek Formation of volcanic rocks, and the Middle to Upper Jurassic Salmon River Formation of non marine and marine sediments

The Salmon River Formation, host to most of the mineralization in the 21 zone (21A and 21B deposits) at Eskay Creek, is a late to post volcanic episode comprised of banded, predominately dark coloured, siltstone, greywacke, sandstone, intercalated calcarenite, minor limestone, argillite, conglomerate, littoral deposits, volcanic sediments and minor flows.

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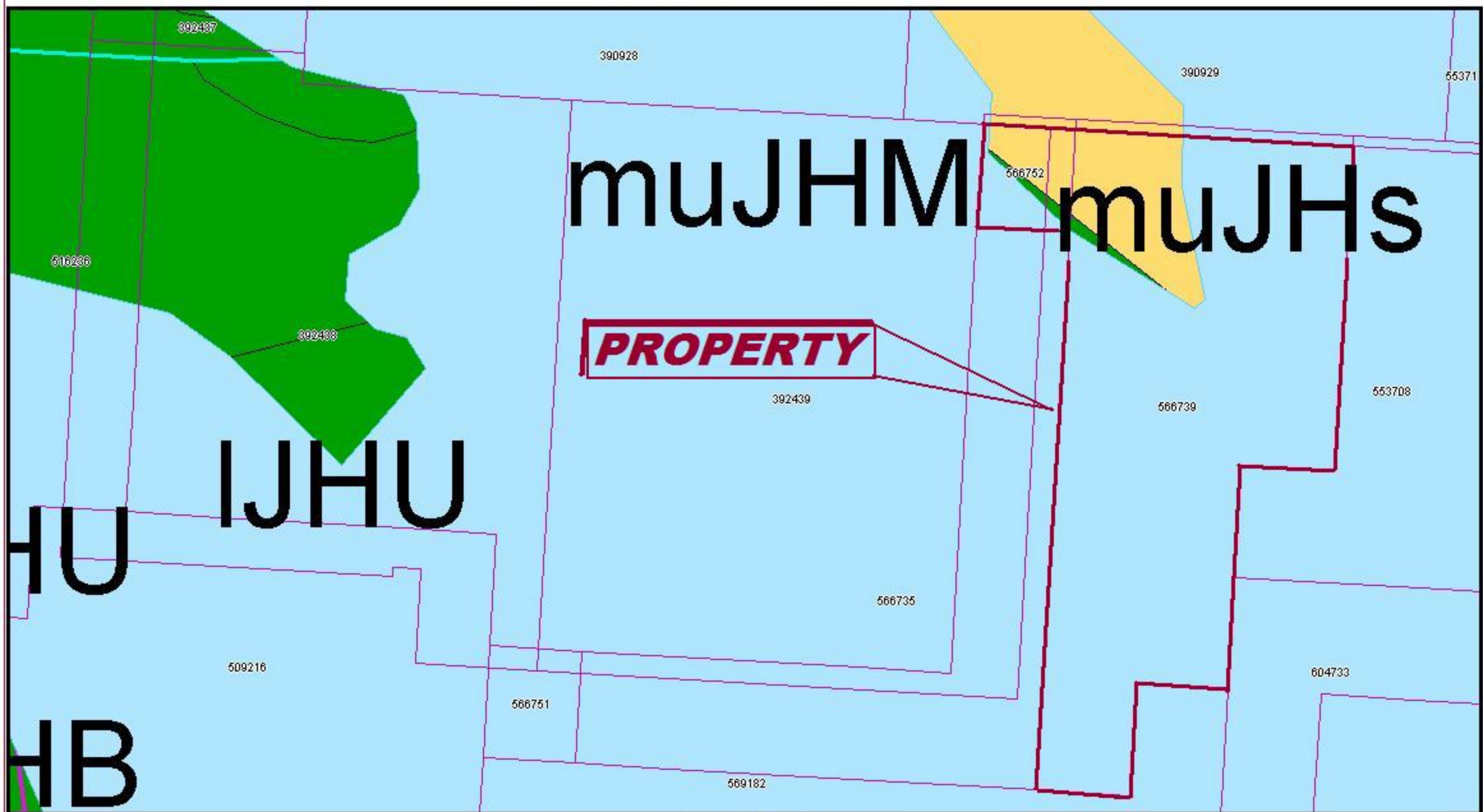


Figure 4. GEOLOGY

## **MINERALIZATION: PROPERTY AREA**

### **ESKAY CREEK** past producer (subaqueous hot spring Ag-Au)

(Noranda/Kuroko massive sulphide Cu-Pb-Zn)

MINFILE 104B 008

22 kilometres northwest

Many zones of mineralization have been recognized at Eskay Creek. These include the 5, 6, 10, 22, 23, 28 and Porphyry zones; Mackay and Emma adit areas; and the #1 to #5 bluffs. The 21 zone has undergone extensive exploration and underground development and represents a major portion of reserves at Eskay Creek. Two new zones, NEX and Hangingwall, were discovered in 1995.

The bulk of mineralization in the 21 zone occurs as a stratabound sheet within carbonaceous mudstones of the contact unit and underlying rhyolite breccia, beneath mostly barren andesite flows. In the north, sulphide layers also occur in the hangingwall andesite unit.

As traced by diamond drilling the entire zone extends 1400 metres along strike, 250 metres downdip and is from 5 to 45 metres thick. It is open to the northeast and downdip. Mineralization displays both lateral and vertical zoning.

Antimony, arsenic and mercury-rich mineral assemblages in the south change to zinc, lead and copper-rich assemblages in the north.

Vertical zoning is expressed as a systematic increase in gold, silver and base metal content up-section.

Based on mineral associations and continuity of grade, the 21 zone has been divided into two deposits: the 21A (formerly called the South zone) and the 21B (which includes the former Central and North zones, now linked by drilling). The deposits are separated by 140 metres of weak mineralization. Two new mineral zones, the 21C and Pumphouse, have recently been discovered. The 21C is centred about 450 metres due north of the 21A deposit. It is a discrete mineral zone 100 metres downdip from the 21B deposit and subparallel to it. The Pumphouse zone is located immediately northeast of Pumphouse Lake, east of the southern end of the 21B deposit.

Drilling in the 21A deposit area has outlined a mineralized zone approximately 280 metres long and up to 100 metres wide. Thickness is variable, averaging about 10 metres. The deposit is contained within the contact unit and underlying rhyolite unit.

The deposit can be subdivided into an upper, stratabound zone of disseminated to near-massive stibnite and realgar within the contact unit, and a lower, stockwork zone of disseminated sphalerite, tetrahedrite and pyrite within the rhyolite unit. High-grade (> 15 grams per tonne) gold and silver mineralization occurs in variably sheared carbonaceous mudstone and mudstone-rhyolite breccia. A diverse suite of metallic minerals has been identified.

Zones of nearly massive stibnite, realgar and orpiment pass along strike and downdip into disseminated domains where sulphides occur in veinlets, as feathery masses, or as heavy impregnations along shears or in the mudstone matrix. The breccia matrix is variably pyritic. Both breccia matrix and clasts contain needles of stibnite and arsenopyrite. Gold occurs as native gold, amalgam and possibly in mercurian wurtzite. Silver occurs as native silver, amalgam, tetrahedrite and unnamed silver-lead-arsenic-sulphur minerals. Mineralization is associated with areas of intense alteration. Both members of the contact unit are overprinted with varying amounts of magnesian chlorite, muscovite, chalcedonic silica, calcite and dolomite; pyrobitumen is ubiquitous.



## **MINERALIZATION: PROPERTY AREA (cont'd)**

### **Eskay Creek (cont'd)**

Disseminated to microfracture-filling mineralization in the rhyolite unit is characterized by low to moderate tenor gold (1-15 grams per tonne) and locally high silver, associated with base metal sulphides and minor to trace antimony, arsenic and mercury minerals. Tetrahedrite, pyrite, sphalerite and galena predominate, with minor aktashite and chalcopyrite. Realgar and orpiment are rare to nonexistent. Carbon and graphite are absent.

Beneath stratabound mineralization of the contact unit, the rhyolite unit is highly fractured and intensely altered. Fracturing, alteration intensity and metal tenor appear to increase toward the upper contact. Within 3 to 4 metres of the upper contact, rhyolite-hosted mineralization is characterized either by massive chlorite-gypsum-barite rock or by quartz-muscovite-sulphide breccia.

Mineralization in the footwall dacite unit commonly occurs in the datum dacite member. It consists of semi massive to disseminated, crystalline pyrite, sphalerite, tetrahedrite, galena and chalcopyrite.

The 21B deposit is approximately 900 metres long, from 60 to 200 metres wide and locally in excess of 40 metres thick. It is displaced on the east by the northeast trending Pumphouse Creek fault and related north trending splays. The deposit is open to the northeast along strike, to the immediate east on fault-offset segments, and is partially open to the west at depth. It displays varied styles of mineralization and alteration. The southernmost 600 metres of the 21B deposit (the former Central zone) is characterized by stratabound and stratiform high-grade gold and silver-bearing base metal sulphide layers. Banded sulphide mineralization occurs in carbonaceous and tuffaceous mudstones of the contact unit. Sulphides form disseminated, semi massive and massive laminae and bands, up to 12 metres thick, that appear to parallel bedding in the mudstones. In approximate order of abundance sulphide minerals include amber sphalerite, tetrahedrite, boulangerite and bournonite with minor pyrite and galena.

Gold and silver occur as 5 to 80-micron grains of electrum within fractured sphalerite, commonly in contact with galena. Realgar and stibnite are absent. Gangue minerals include magnesian chlorite, muscovite and quartz with lesser amounts of dolomite and calcite

Peripheral to and beneath banded sulphide mineralization are areas of micro fracture veinlets and disseminations of tetrahedrite, pyrite and minor boulangerite. Gangue minerals include magnesian chlorite, muscovite, potassium feldspar and calcite. Footwall, rhyolite-hosted stockwork mineralization is volumetrically insignificant in comparison with either the 21A deposit or the northern 21B deposit.

In contrast, the northern 300 metres of the 21B deposit (the former North zone) exhibits considerable geological and structural complexity. Although host rock stratigraphy is similar to that found to the south, mineralization occurs at several different stratigraphic levels. Gold, silver and base metal-rich lenses occur in hangingwall unit interflow mudstones as well as in the contact unit mudstone and underlying rhyolite unit breccias. Very high grade mineralization occurs deeper in the rhyolite unit in association with crosscutting zones of fracture-related alteration. The mineralized zone is thick and cut by zones of strong shearing. Hangingwall mineralization is hosted by two mudstone beds near the base of the hangingwall andesite unit and is associated with pervasive chlorite alteration and locally heavy barite. Near-massive dark sphalerite, galena and tetrahedrite with lesser amounts of pyrite and chalcopyrite occur as two partially stacked lenses.

## **MINERALIZATION: PROPERTY AREA (cont'd)**

### **Eskay Creek (cont'd)**

Mineralization in the contact unit is dominantly comprised of sphalerite, tetrahedrite and possibly boulangerite with varying amounts of galena and chalcopyrite. Alteration minerals are again chlorite, muscovite, quartz and calcite. Mineralized textures vary from crudely banded massive sulphides to thick and thin sulphide bands intercalated with mudstone.

Crosscutting mineralization in the contact and rhyolite units occurs as siliceous (quartz-healed) and carbonate-rich breccias with anastomosing, crustiform veinlets and disseminations of coarse-grained iron-rich sphalerite, fine-grained pyrite, with minor galena, chalcopyrite and tetrahedrite group minerals. Gold occurs as spectacular films, wires or blebs associated with fractured sphalerite.

Lead isotope analyses of galena samples collected from Eskay Creek veins and massive sulphide lenses coincide with early Jurassic lead ratios from the Kitsault, Stewart, Sulphurets and Iskut mining camps. Isotopic data are taken to indicate a widespread, early Jurassic mineralizing event. The Eskay Creek deposits are also products of this event (Exploration in British Columbia 1989).

The 21 zone mineralization is unusual. There is a close spatial and apparently temporal relationship between what conventional models describe as low-temperature epithermal and volcanogenic massive sulphide deposit types.

Epithermal mineralization, characterized by gold, silver, arsenic, antimony and mercury mineral suites, forms massive and stratabound lodes as well as more usual crosscutting veins and disseminations. Massive sulphide mineralization show typical "syngenetic" ore textures but atypical mineralogy and precious metal enrichment. 1995 and 1996, drilling and underground exploration on the 21B zone have outlined proven and probable reserves of 1,090,000 tonnes grading 65.14 grams per tonne gold, 2949.0 grams per tonne silver, 5.6 per cent zinc and 0.77 per cent copper (Information Circular 1996-1, page 5). During 1994 the access road to the mine area was completed and construction of minesite facilities was completed by fall. The first shipment of ore started January 1995, two years after application to the provincial government for a Mine Development Certificate. The direct shipping ore was crushed and blended at the mine and then moved by rail from Kitwanga to Noranda's Horne smelter in Quebec, and by sea from Stewart to Dowa Mining's smelter in Japan. At a daily mining rate of 245 tonnes, annual production is estimated at 6,220 kilograms of gold and 83,000 kilograms of silver, together with copper and zinc. The operating cost is forecast to be US\$187 per ounce gold equivalent. Eskay Creek will become the fourth largest silver producer in the world. Zinc will be recovered using the solvent extraction - electrowinning method (Information Circular 1995-1, pages 9-10).

In 1996, reserves were 1.08 million tonnes at 65.5 grams per tonne gold, 2930 grams per tonne silver, 0.77 per cent copper and 5.6 per cent zinc (Exploration in BC 1996, page B5).

As of January 1, 1997, proven and probable reserves at Eskay Creek were estimated at 1,267,340 tonnes grading 59.38 grams per tonne gold and 2718.86 grams per tonne silver. Geological resources at January 1, 1997 were 252,200 tonnes grading 18.55 grams per tonne gold and 1083.43 grams per tonne silver (George Cross News Letter No. 25 (February 5), 1997). As of January 1, 1998, proven and probable reserves were 1,356,240 tonnes grading 58.05 grams per tonne gold and 2684.57 grams per tonne silver. Geological resources (mineralized material) were 336,565 tonnes grading 20.13 grams per tonne gold and 411.43 grams per tonne silver (Prime Resources Group Inc., Press Release, January 22, 1998).

**MINERALIZATION: PROPERTY AREA** (cont'd)

**IRON CAP COPPER (SULPHURETS)** showing (Porphyry Cu +/- Mo +/- Au)

MINFILE 104B 174

Four kilometres east

Extreme alteration within the gossan area consists of pyrite quartz and sericite. Large areas of low-grade disseminated porphyry copper and copper-molybdenum-gold-silver mineralization have been outlined in the area. Heavy malachite staining is also reported. One drill hole intersected 296.36 metres containing 0.202 per cent copper, 0.019 per cent molybdenite, 0.24 grams per tonne gold, and 9.60 grams per tonne silver (Bridge et al, 1981).

**DAWSON (SULPHURETS)** showing (Porphyry Mo Low F type)

MINFILE 104B 104

Six kilometres east-southeast

Light grey quartz veins containing up to 5 per cent pyrite, generally intrude parallel to subparallel foliation and are less than 1.5 centimetres thick. Molybdenite mineralization occurs primarily within very thin quartz stringers, associated with the grey quartz veins, and as localized less significant remobilized fractions along shear planes. Finely disseminated molybdenite is also common within highly silicified granitic rocks. Minor chalcopyrite with malachite occurs locally within volcanic rocks.

**IRON CAP GOLD (SULPHURETS)** prospect (Subaqueous hot spring Ag Au)  
(Intrusion related Au pyrrhotite veins)

MINFILE 104B 173

Four kilometres east

The Iron Cap Gold prospect is located above the north side of Mitchell Glacier just west of the northern extension of the north trending Brucejack fault system. Mineralization occurs in an altered sequence of volcanic, volcanoclastic and clastic sediments of the Lower Jurassic Unuk River Formation, Hazelton Group. Feldspar and hornblende porphyry intrusives of Jurassic age are reported in the area.

Fracture coating and disseminated chalcopyrite and malachite, with minor pyrite, occurs throughout the intrusion. Forty partially leached rock chip samples collected by Noranda over an area of 1200 by 300 metres from the Iron Cap West and adjacent Iron Cap zone averaged 1.0 gram per tonne gold and 0.32 per cent copper (Press Release, Seabridge Gold Inc., July 25, 2005).

**QUARTZ STOCKWORK (SULPHURETS)** showing (Porphyry Mo Low F type)

MINFILE 104B 178

Seven kilometres southwest

The schists are intensely quartz veined with most veins occurring in the plane of foliation of the rock. Molybdenite is exposed on a canyon wall along the east edge of the zone. Two holes just over 305 metres long, gave assays of 0.017 to 0.018 per cent molybdenum (Bridge et al, 1981).

## **MINERALIZATION: PROPERTY AREA (cont'd)**

### **SULPHURETS GOLD** developed prospect (Subaqueous hot spring Ag Au) (Intrusion related Au pyrrhotite veins)

MINFILE 104B 182

Seven kilometres southwest

Sulphurets Gold Zone rock samples assayed as high as 5.28 grams per tonne gold (grab) and 2.95 and 3.33 grams per tonne gold over three metres (Northern Miner October 17, 1988). In the Main Copper Zone about 0.69 grams per tonne gold accompanies 0.55 per cent copper (Bridge et al, 1981). From 5 drill holes completed on the Breccia Zone an ore reserve of 20,000,000 tonnes grading 1.71 grams per tonne gold was inferred (Property File-Esso Minerals Canada (Unpublished Report, Bridge and Melnyk, 1982. At Sulphurets, Placer Dome has estimated a total measured, indicated, and inferred gold resource of 1.8 million ounces of gold contained in 54.8 million tonnes grading 1.02 grams per tonne, at a 0.50 gram per tonne cut-off (Press Release, Seabridge Resources Inc, June 6, 2000; Northern Miner, June 26, 2000). Approximately 72 per cent of the total gold resource (1.3 million ounces) is within 50 metres of a drill intercept and has been classified by Placer Dome as drill indicated. The Sulphurets gold zone is the collective name for at least four intrusive centred gold-rich zones spanning approximately three kilometres of strike length. The resource calculations made by Placer Dome were confined to 1,000metres of the three-kilometre strike length.

## **MINERALIZATION: PROPERTY**

There is no reported mineralization on the Property.

### **2008 LINEAMENT ARRAY ANALYSIS**

A lineament array analysis was completed on the Property to determine potential controlling structures to volcanogenic massive sulphide copper/lead/zinc mineralization hosted by the Hazelton Group and more specifically the Salmon River Formation; the predominant host to mineralization at Eskay Creek.

Hill shade maps obtained from MaPlace were utilized as the base map for the lineament array analysis. The analysis was accomplished using a stereographic projection viewing of the maps and marking the lineaments on an overlay. A total of 25 lineaments were marked as indicated on Figure 5, compiled into a 10 degree class interval, and plotted on a rose diagram as indicated on Figure 6.

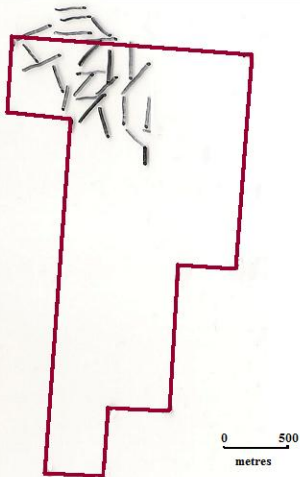
## **INTERPRETATION**

The 2008 Lineament Array Analysis on the Property indicated two dominant trends of east-west and northerly structures with en-echelon or complementary northeasterly and northwesterly trending structures within the Lower to Upper Jurassic Formations of the Hazelton Group.

As a general comparison to Eskay Creek for subaqueous hot spring silver-gold mineralization, the major directional structural trends on the Property are indicated as comparable major structural trends to Eskay Creek where major faults strike north-northeast and minor ones north-northwest. However, with limited information on the Property geology, there is no indication of a major structure such as an asymmetric anticline which could prepare the ground for structural controlling mineralization.

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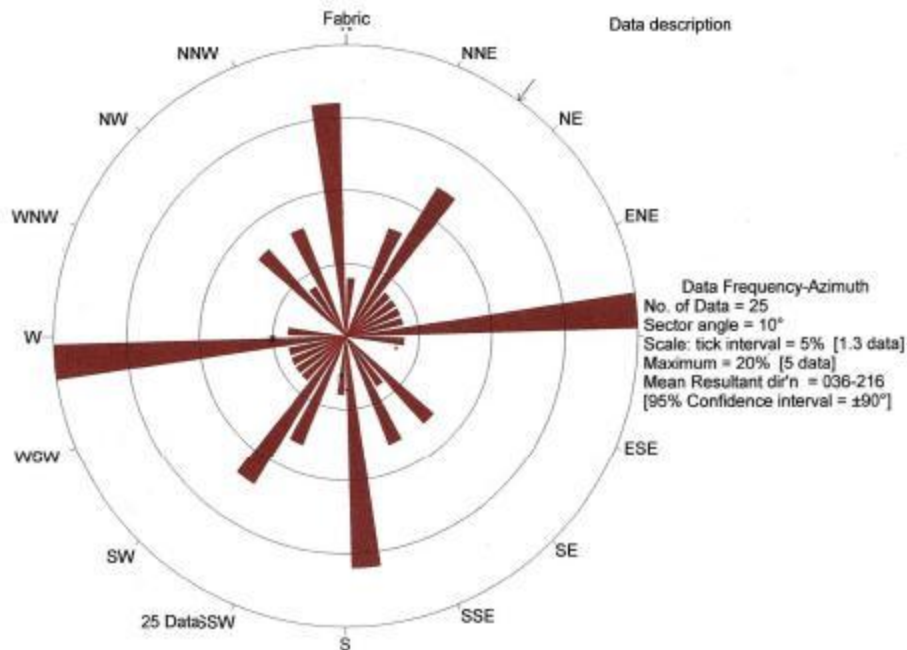
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*Figure 5. LINEAMENTS*

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**Figure 6. ROSE DIAGRAM**

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**INTERPRETATION** (cont'd)

The Property contains the favourable host rocks for massive sulphide mineralization as that which occur at Eskay Creek where mineralization is primarily hosted in rocks from the Lower Jurassic Betty Creek Formation to rocks of the Middle to Upper Jurassic Salmon River Formation.

Intrusive rocks for hosting porphyry related mineralization are not surficially indicated on the Property as on properties in the immediate area; however, this does not preclude their sub-surface presence, which may be indicated surficially by alteration, indicator minerals, or other related geological features.

Respectfully submitted

Sookochoff Consultants Inc.



Laurence Sookochoff, PEng.

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**STATEMENT OF COSTS**

Lineament Array Analysis -----	1,550.00
Maps -----	2,000.00
Report -----	<u>3,000.00</u>
	\$6,550.00
	=====



**Kenrich-Eskay Mining Corp.**

*Geological Assessment Report*

*Tenures 566739 & 566752*

*Event No.4251315*

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**MINFILE:** Eskay; 104B 008  
Iron Cap Copper (Sulphurets); 104B.174  
Iron Cap Gold (Sulphurets); 104B.173  
Quartz Stockwork (Sulphurets); 104B.178  
Sulphurets Gold; 104B.182  
Dawson; 104B.104

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*Event No.4251315*

**CERTIFICATE**

I, Laurence Sookochoff, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geologist and principal of Sookochoff Consultants Inc. and state that:

- 1) I am a graduate of the University of British Columbia (1966) and hold a B.Sc. degree in Geology.
- 2) I have been practicing my profession for the past forty-two years.
- 3) I am registered and in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.
- 4) This report is based on information as itemized in the Selected Reference section of this report and from the Lineament Array Analysis completed by the author.
- 5) I have no interest in the securities of Kenrich-Eskay Mining Corp or in the Property as described in this report.



Laurence Sookochoff, P. Eng.

Vancouver, BC