GEOLOGICAL AND GEOCHEMICAL ASSESSMENT REPORT

on the

COREY PROPERTY

Skeena Mining Division

Unuk River Area, Northwestern British Columbia

Latitude 56° 15' N
Longitude 130° 27' W

NTS 104B 9 & 10

Claims worked: Corey 1-8; Corey 21-22; Corey 24-37; Jojo M; Carl J; Dwayne 1; Ginger 1-2; Del-1

For:

KENRICH-ESKAY MINING CORP.

#410-750 W. Pender St.
Vancouver BC. V6C-2T7

Prepared By:

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September 21, 2004

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF MAPS

SUMMARY

In October 2003 Kenrich-Eskay Mining Corp. retained Cambria Geosciences to conduct an assessment of their Corey Property located south of the Eskay Creek mine in northwestern British Columbia. The goal of this work was to obtain some high quality lithogeochemical data from the major rock units on the property in an effort to test the applicability of current chemostratigraphic techniques to volcanic rocks on the Corey Property. This would allow more rigourous interpretation of the volcanic stratigraphy and also provide a framework for the evaluation and possible reinterpretation of datasets from previous exploration programs. This work was carried out simultaneously with rehabilitation of the Corey camp site which is located at the confluence of Sulphurets Creek and the Unuk River.

Drillcore from past exploration as well as outcrops were examined. A total of 19 drillcore samples were taken and analysed using ICP-MS for major and trace elements. This data and its interpretation are presented herein.

PROPERTY DESCRIPTION AND LOCATION

The subject properties are located in northwestern British Columbia, 70 km northwest of Stewart and 900 kilometres northwest of Vancouver (Figure 1). Reference maps are NTS Sheets 104B 9W and 10E. The subject properties are centered at approximately 56 degrees 35 minutes north and 130 degrees 29 minutes west.

The properties lie 10 km south of the Eskay Creek gold mine, owned and operated by Barrick Gold Corporation. The main property of Kenrich is the Corey. The simplified mineral tenure map is shown in Figure 2.

Appendix I is a schedule of the mineral tenures included in the current Corey property. The name, record number, tag number, description, and status of all tenures with the Mining Recorder are given in the schedule. There are no disputes filed, nor known to the authors or to Kenrich, on any of the subject properties with respect to the ground held by the claims under the Mineral Tenure Act.

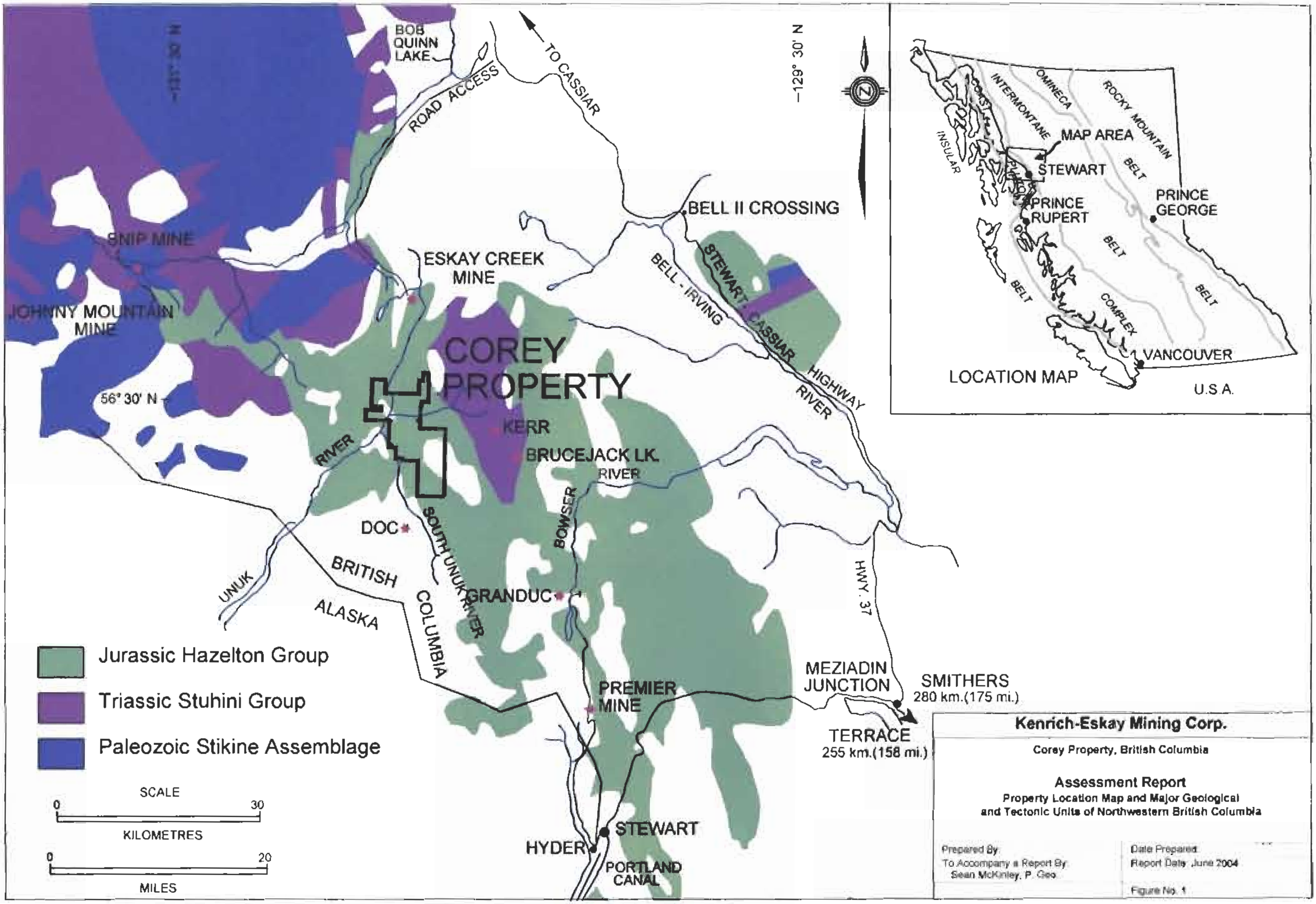
The Corey property is covered by an existing Reclamation Bond, sufficient to pay for the reclamation of the existing campsite on Sulphurets creek.

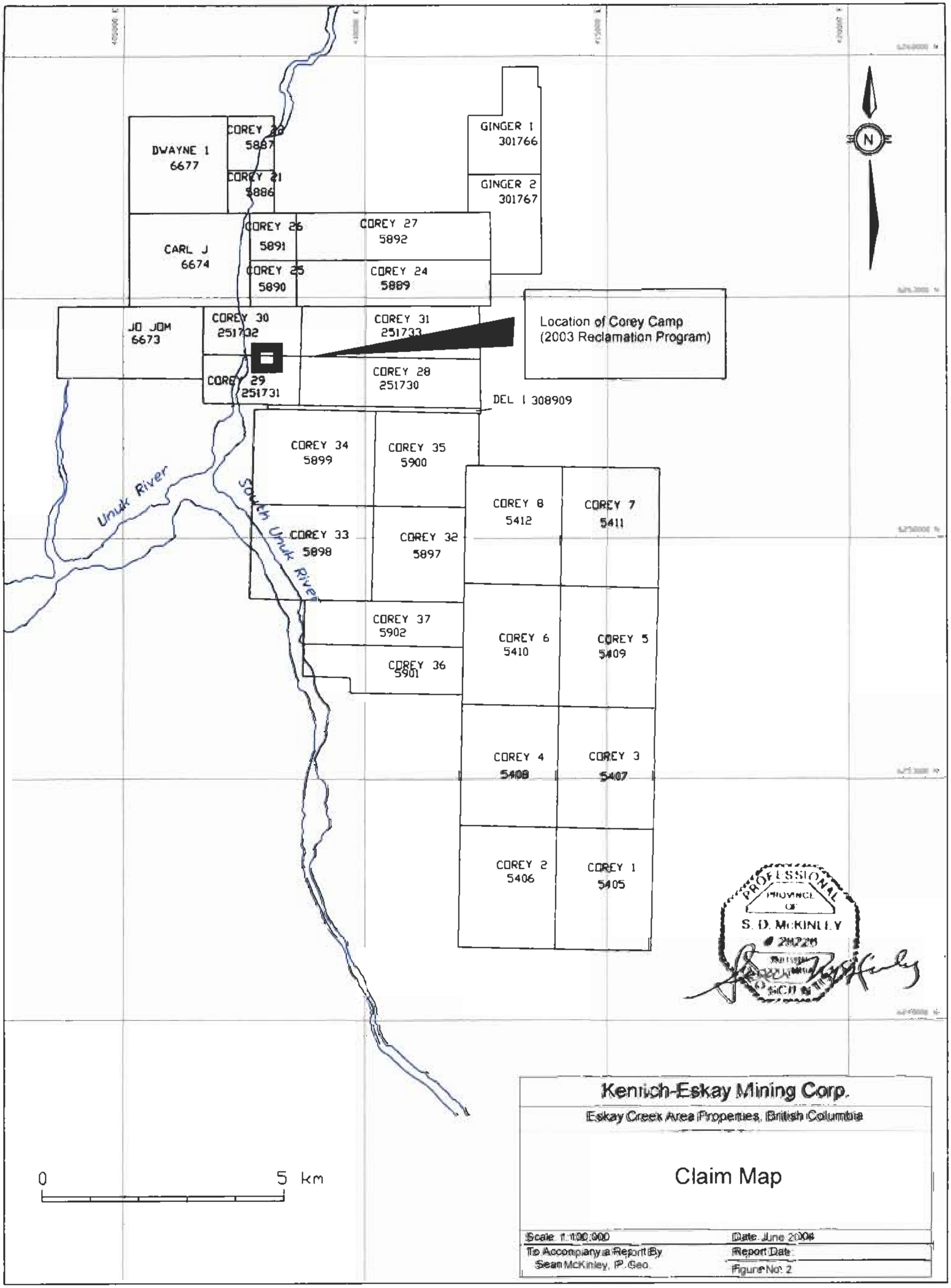
ACCESSIBILITY, CLIMATE, PHYSIOGRAPHY

The mining properties of Kenrich are accessed by helicopter from the Eskay Mine access road that extends from Highway 37 to the Eskay Mine. Staging areas for helicopter operations are located at a fuel cache located along the Eskay Creek Mine road, about five kilometres west from the mine. Additionally, well serviced helicopter pads and a fueling station are located at the nearby Bell II Lodge located on Highway 37 east of the Kenrich properties.

Valley bottoms are densely forested with mature stands of fir, Sitka spruce, cedar, hemlock, aspen, alder, and maple. Thick undergrowth of ferns, salmonberry, huckleberry and devil's club is usually present.

The Corey property area is located within the Unuk River watershed. Major tributaries include the South Unuk River and Sulphurets Creek. All rivers and creeks originate from glacial meltwaters, and reach peak flow conditions in the summer months. The region is mountainous with elevations ranging from 250 metres on the Unuk River to approximately 2,150 metres at John Peaks. Mountain slopes are moderate to very steep. The tree line occurs at about 1,200 metres and at higher elevations, valleys are generally filled with glaciers. Semi-permanent ice and snow may be encountered on north facing slopes. Snow conditions are extreme in alpine areas while river bottom areas receive snow seasonally. However, precipitation in the form of rain occurs all year round.


BOB QUINN LAKE
ROAD ACCESS
TO CASSIAR
129° 30' N
130° 30' N
SNIP MINE
JOHNNY MOUNTAIN MINE
ESKAY CREEK MINE
BELL II CROSSING
BELL - IRVING RIVER
STEWART - CASSIAR HIGHWAY
COREY PROPERTY
KERR
BRUCEJACK LK.
56° 30' N
RIVER
UNUK
DOC
SOUTH UNUK RIVER
BOWSER RIVER
BRITISH COLUMBIA
ALASKA
GRANDUC
HWY. 37
MEZIADIN JUNCTION
SMITHERS
280 km.(175 mi.)
TERRACE
255 km.(158 mi.)
PREMIER MINE
STEWART
HYDER
PORTLAND CANAL
Jurassic Hazelton Group
Triassic Stuhini Group
Paleozoic Stikine Assemblage
SCALE
0
30
KILOMETRES
0
20
MILES
INSULAR
COAST
INTERMONTANE
OMINECA
ROCKY MOUNTAIN
BELT
MAP AREA
STEWART
PRINCE RUPERT
PRINCE GEORGE
COMPLEX
VANCOUVER
LOCATION MAP
U.S.A.
Kenrich-Eskay Mining Corp.
Corey Property, British Columbia
Assessment Report
Property Location Map and Major Geological and Tectonic Units of Northwestern British Columbia
Prepared By:
To Accompany a Report By:
Sean McKinley, P. Geo.
Date Prepared:
Report Date: June 2004
Figure No. 1


DWAYNE 1
6677
COREY 20
5887
COREY 21
5886
GINGER 1
301766
GINGER 2
301767
CAREL J
6674
COREY 26
5891
COREY 27
5892
COREY 25
5890
COREY 24
5889
JO JOM
6673
COREY 30
251732
COREY 31
251733
Location of Corey Camp
(2003 Reclamation Program)
COREY 29
251731
COREY 28
251730
DEL 1 308909
COREY 34
5899
COREY 35
5900
Unuk River
South Unuk River
COREY 8
5412
COREY 7
5411
COREY 33
5898
COREY 32
5897
COREY 37
5902
COREY 6
5410
COREY 5
5409
COREY 36
5901
COREY 4
5408
COREY 3
5407
COREY 2
5406
COREY 1
5405
PROFESSIONAL
PROVINCE
OF
S. D. McKINLEY
0
5 km
Kenrich-Eskay Mining Corp.
Eskay Creek Area Properties, British Columbia
Claim Map
Scale: 1:100,000
Date: June 2004
To Accompany a Report By
Sean McKinley, P. Geo.
Report Date:
Figure No: 2

PROPERTY TENURE

The Corey Property consists of 30 contiguous claims totaling 466 units as follows:

Tenure Number	Claim Name	Map Number	Good Standing Until	Mining Division	Tag Number	Recorded Owner Number	Recorded Percent Ownership	Units
251446	COREY 1	104B049	6/25/04	Skeena	93700	113925	100	20
251447	COREY 2	104B049	6/25/04	Skeena	93701	113925	100	20
251448	COREY 3	104B049	6/25/04	Skeena	93702	113925	100	20
251449	COREY 4	104B049	6/25/04	Skeena	93703	113925	100	20
251450	COREY 5	104B049	6/25/04	Skeena	93704	113925	100	20
251451	COREY 6	104B049	6/25/04	Skeena	93705	113925	100	20
251452	COREY 7	104B049	6/25/04	Skeena	93706	113925	100	20
251453	COREY 8	104B049	6/25/04	Skeena	93707	113925	100	20
251723	COREY 21	104B058	2/11/07	Skeena	93898	113925	100	4
251724	COREY 22	104B058	2/11/07	Skeena	93899	113925	100	4
251726	COREY 24	104B058	2/11/07	Skeena	108602	113925	100	16
251727	COREY 25	104B058	2/11/07	Skeena	108603	113925	100	4
251728	COREY 26	104B058	2/11/07	Skeena	108604	113925	100	4
251729	COREY 27	104B058	2/11/07	Skeena	108605	113925	100	16
251730	COREY 28	104B048	2/11/08	Skeena	108606	113925	100	16
251731	COREY 29	104B048	2/11/08	Skeena	108607	113925	100	8
251732	COREY 30	104B048	2/11/08	Skeena	108608	113925	100	8
251733	COREY 31	104B048	2/11/08	Skeena	108609	113925	100	16
251734	COREY 32	104B048	2/11/08	Skeena	108610	113925	100	20
251735	COREY 33	104B048	2/11/08	Skeena	108611	113925	100	20
251736	COREY 34	104B048	2/11/08	Skeena	108612	113925	100	20
251737	COREY 35	104B048	2/11/08	Skeena	108613	113925	100	20
251738	COREY 36	104B048	2/11/08	Skeena	108614	113925	100	14
251739	COREY 37	104B048	2/11/08	Skeena	108615	113925	100	14
252107	JOJO M	104B048	5/13/08	Skeena	97758	113925	100	18
252108	CARL J	104B058	5/13/07	Skeena	97757	113925	100	20
252111	DWAYNE 1	104B058	5/13/07	Skeena	97756	113925	100	16
301766	GINGER 1	104B058	6/26/04	Skeena	112578	113925	100	20
301767	GINGER 2	104B058	6/26/04	Skeena	207509	113925	100	20
308909	DEL-1	104B048	4/16/08	Skeena	227619	113925	100	8
					SUB-TOTAL - 100% KENRICH			466

HISTORY

The Kenrich claims lie within a historically active mining and exploration area that extends from Stewart in the south to near Telegraph Creek in the north. Within this area, which has been referred to as the Stikine Arch, active mining goes back to the turn of the century. Due to the size of the region, it has historically been referred to by more specific area names (i.e. the Alice Arm, Kitsault, Anyox, Stewart, Sulphurets, Eskay Creek, Iskut River and Galore Creek camps). The entire area can be considered as one large mineralized province with attendant sub-areas.

In 1898, F.E. Gingras, H.W. Ketchum and C.W. Mitchell established alluvial gold workings on the mouth of Mitchell Creek at Sulphurets Creek. In 1898, the first mineral claims, the Cumberland (now part of the Corey Property) and Globe (now the Doc Property) groups were staked by H.W. Ketchum and L. Brant. These claims were subsequently purchased by the Unuk River Mining and Dredging Company in 1901.

In 1905, F.E. Wright of the U.S. Geological Survey visited the Unuk River as an extension of his work on the Alaskan side of the nearby International border and submitted his findings to the Canadian Government. This was the first of a series of government-sponsored surveys in the area. Between 1903 and 1929 activity essentially ceased until reconnaissance prospecting by T.J. McQuillan and T. Terwilligen resumed in the area at large.

A prospecting expedition representing a Premier-backed syndicate in 1932 led by T.S. Mackay, A.H. Melville and W.A. Prout conducted exploration efforts in the Ketchum Creek area and Eskay Creek areas. From 1935 to 1938, Premier Gold Mining Corporation optioned the Eskay property and defined 30 mineralized showings, one of which was the 21 zone. Exploration continued under numerous options but ownership the ground always reverted back to Mackay or his associates. At Eskay Creek, in the 1980's, Kerrisdale Resources drilled four holes near the 21 zone, one of which intersected the stratiform mineralization of the 21A zone. In 1988, drilling by Stikine Resources and Calpine Resource Inc. confirmed the presence of a major Au-Ag rich massive sulfide body in the 21A. zone. Subsequent geophysical surveys outlined a chargeability anomaly that was drill tested by hole 109, that intersected 61m of 99 g/t Au, and 29 g/t Ag (109 Zone). The 21B zone was drill defined in 1990 and production commenced in the fall of 1994.

In the adjoining Sulphurets areas, according to personal communication with T.S. Mackay (1980), MacKay, T.J. McQuillan and their associates prospected the lower mountain slopes and river valleys but had few opportunities to examine the ridges and higher plateaus, as they were heavily snow-covered almost year-round. Prospecting did not extend to higher elevations until the snowfields and glaciers began to recede during the late 1950's. In some locations, in excess of 100 meters of snow and ice thickness have been lost during the period 1960 to 2000. As a result, Sulphurets had little exploration activity until the 1960's when interest in copper deposits led Newmont to extend work beyond the Granduc discovery into the higher, more remote snow-bound ridges as part of a broad regional evaluation. This work led to the identification of the Kerr, Sulphurets, Snowfield and West Zones. Discovery rates remain high, as progressively more land is exposed below retreating ice and snow.

Battlement Zone

The first description of the Battlement zone was by Van Damme and Mosher (1994), based on work carried out for Kenrich in 1993. Exploration work on the Battlement zone in 1993 included establishment of a rough-flagged grid with lines spaced 200m apart, mapping, soil geochemistry and excavation of two small hand-dug trenches. Additional soil sampling was carried out in 1995 (Bridge et al., 1996). A total of 368 samples have been collected on the Battlement grid.

In 1997, **Homestake** added 16 km of grid lines at 500m spacing to the west of the 1993 and 1995 grid (Moors et al., 1998). No soil sampling was carried out on this grid but 139 whole rock samples were collected over the entire grid.

Bench Zone

The first recorded work on the Bench zone was a stream sediment sampling program carried out by **Placer Dome** in 1991 (Brownlee, 1992). Bulk stream sediment samples in the area returned Au analyses up to 215 ppb Au and 2.4 ppm Ag. Pegg (1993) noted that previous work by Placer and Kenrich showed scattered anomalous Au, Ag, As, Mo, Pb, Zn and Cd in stream sediments from creeks draining the Bench zone.

Follow up work was carried out by Kenrich and Ambergate in 1993 when 10,575m of rough-flagged grid was established in the general area (Pegg, 1993). The grid was mapped at 1:5,000 and soil samples were collected at 25m intervals, with some infill at 12.5m intervals where anomalies were encountered. Five hand-dug and blasted trenches were excavated and a limited VLF-EM and ground magnetic survey was carried out. In 1994, Kenrich established an additional 1,200m of grid for an IP, VLF-EM and ground magnetic survey (Chapman, 1995). Work on the Bench zone in 1995 consisted of collecting 376 soil samples at 25m intervals on chain and compass lines spaced 100m apart, in addition to reconnaissance geologic mapping (Bridge et al., 1996). In 1996, Kenrich carried out detailed mapping, collected 105 rock samples, and drilled nine diamond drill holes totaling 1,383.64m (Kowalchuk et al., 1997).

During 1997, **Homestake** carried out check mapping of surface exposures and re-logging of drill core for the Bench zone (Moors and Taylor, 1998). Analytical work was carried out on 54 rock samples from the Bench zone as well as 20 samples from existing drill core. Homestake also drilled one diamond drill hole to a depth of 780.18m. No further work has been done on the Bench zone since 1997.

Cumberland

The Cumberland area was first staked in 1898 and limited work was carried out by the Unuk River Mining and Dredging Company between 1900 and 1903 (Horne, 1988). During that time, minor underground development was carried out on the Cumberland (Star) and Daly prospects (Pegg, 1993). Little subsequent work was carried out on the prospect until 1987 when **Bighorn Development Cord** included the Cumberland prospect within a large claim block. Work in 1987 by Bighorn included mapping, 49m of trenching and six diamond drill holes totaling 590m in the area of the original Cumberland prospect (drill holes BH-1 through BH-6).

By 1990, **Kenrich Mining Corporation** and **Ambergate Explorations Ltd.** acquired the current claim block. During 1991 and 1992, **Placer Dome** carried out some detailed mapping, soil sampling and ground geophysics over the Cumberland prospect as part of a broader evaluation of the Kenrich/Ambergate holdings (Bridge et al., 1996; Bridge, 1996; Kowalchuk, 2003). Kenrich and Ambergate carried out limited soil sampling and mapping in 1993 (Van Damme and Mosher, 1994). In 1994, Canamera Geological Ltd. carried out a brief field examination and sampling program on behalf of Kenrich (Bridge, 1996).

In 1996, Kenrich expanded on the Placer Dome work by establishing 5,915m of cut grid and carrying out detailed mapping. Additionally, three trenches totaling 23m were excavated. Five diamond drill holes totaling 634m were completed, and drill holes CBL96-1, -2 and -3 tested trench anomalies near the Daly prospect, located about 0.5 km south of the Cumberland prospect. Drill holes CBL96-4 and -5 tested continuity of the mineralization at the Cumberland prospect (Kowalchuk et al., 1997).

During the 1997 field season, **Homestake Canada** cut 15.6 km of grid at the Cumberland prospect (Moors and Taylor, 1998). Mapping, rock and soil sampling and whole rock geochemistry were carried out over the grid. In 1998, **Corona** tested soil sample anomalies in the southern portion of the Cumberland grid with four diamond drill holes (PRU-98-1 through PRU-98-4) totaling 1,262m.

C10 Zone

The first recorded work done on the C10 showing was carried out by **Bighorn Development** in 1987 (Kruchkowski, 1987), when six rock samples and one silt sample were collected from the area. The best values recorded in this work were 0.278 ounces per ton Au and 3.38 ounces per ton Ag. Further work by Bighorn in 1988 consisted of construction of a grid and collection of 40 additional rock samples (Kruchkowski and Sinden, 1988). Limited silt sampling was also carried out at this time and further served to highlight the anomalous character of the C10 area. Later in the 1988 field season, Bighorn drilled six short diamond drill holes at the C10 prospect (Konkin, 1989). Minor additional rock sampling was carried out by Kenrich in 1994 (Van Damme and Mosher, 1994). No recorded work has been carried out since that time.

HSOV Showing

The first recorded work on the HSOV showing was grid establishment, mapping, rock chip and whole rock sampling, and soil sampling carried out by Kenrich between 1996 and 1998 (Kowalchuk and Sigurgeirson, 1999). A VLF-EM and ground magnetic survey was also carried out on the HSOV grid in 1998. The HSOV showing is located on the Corey 8 claim, which is valid until 6-25-2004. The northern portion of the HSOV grid extends to the north onto ground not controlled by Kenrich.

GFJ Showing

The first recorded work on the GFJ showing was in 1993 when Van Damme and Mosher (1994) described the results of a reconnaissance sampling program. More extensive work was carried out in 1993 when a grid was established and the showing was mapped and sampled (Bridge et al., 1996). Bridge et al. noted that Placer Dome previously discovered that high-grade float in the area, presumably in 1992. No work has been carried out on the GFJ showing since 1996.

GEOLOGICAL SETTING

Regional Geological Setting

The Corey project area lies along the western margin of Stikinia, adjacent to its boundary with the Coast Plutonic Complex to the west. The region has experienced repetitive pulses of magmatism and sedimentation since the late Paleozoic, and is composed of complexly intermixed volcanic, sedimentary, and intrusive rocks that formed within and adjacent to several distinct volcanic arcs. Four major tectono-stratigraphic assemblages are present in the region (Anderson, 1989; see Figure 3):

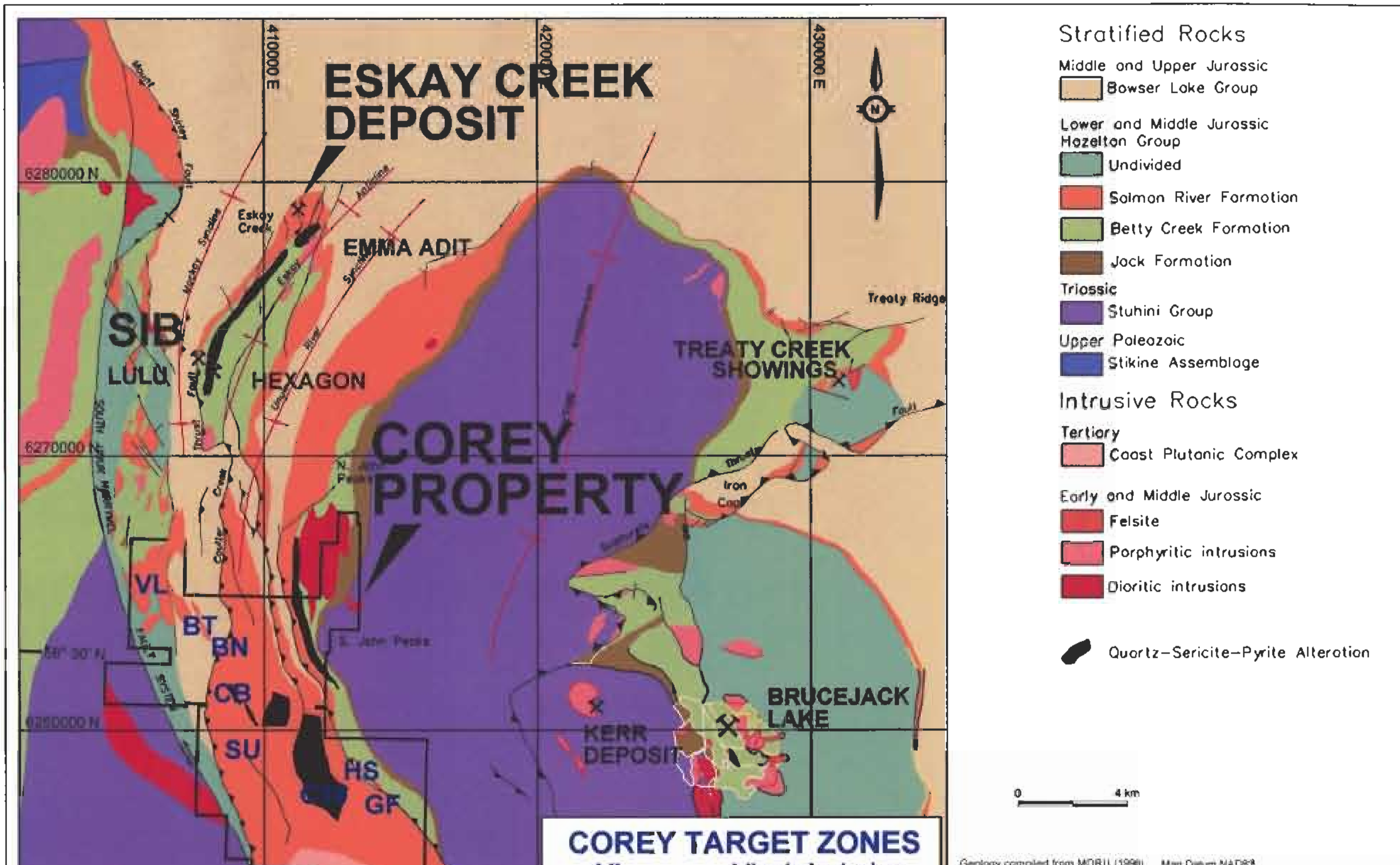
1. Upper Paleozoic metamorphosed limestone, clastic rocks, and volcanic rocks of the Stikine Assemblage;

2. Upper Triassic volcanic and sedimentary rocks of the Stuhini Group;

3. Lower and Middle Jurassic subaerial and submarine volcanic and sedimentary rocks of the Hazelton Group; and

4. Middle and Upper Jurassic sedimentary overlap assemblages of the Bowser Lake Group.

The Stikine Assemblage rocks do not crop out in the Eskay Creek area, but they are exposed nearby and presumably underlie the project area. Several suites of intrusive rocks are coeval and roughly co-spatial with parts of these assemblages.



Kenrich-Eskay Mining Corp.

Corey Property, British Columbia

Assessment Report

Simplified Regional Geology

Prepared By:
To Accompany a Report By:
Sean McKinley, P. Geo.

Date Prepared:
Report Date: June 2004

Figure No. 3

Dominant structures in the project area are major northerly-trending folds formed during Cretaceous, Cordillera-wide shortening [e.g., (Evenchick, 1991; Rubin et al., 1990)]. These structures overprint and obscure evidence for older periods of deformation, including a Triassic-Jurassic boundary event manifested as an angular unconformity at the base of the Hazelton Group, and faulting synchronous with Hazelton Group volcanism.

Stratified Rocks

Triassic Stuhini Group (TrS)

The oldest Mesozoic strata in the region are sedimentary and volcaniclastic rocks of the Triassic Stuhini Group. The Stuhini Group consists of a dominantly sedimentary lower division and a dominantly volcanic and volcaniclastic upper division. Most of the sedimentary division comprises undifferentiated fine-grained, well-bedded rocks, but coarser conglomerate layers serve as local stratigraphic markers. The volcanic division is locally subdivided into mafic to intermediate tuff and volcanic breccia, mafic porphyritic flows, and felsic flows and flow breccia.

Stuhini Group strata located in the area of the subject properties consist mostly of intercalated mafic volcanic rocks (TrSm) and sediments (TrSs).

Lower and Middle Jurassic Hazelton Group (JrH)

The Hazelton Group in northwestern British Columbia records long-lived arc volcanism and volcanogenic sedimentation in a Lower and Middle Jurassic arc of the Stikine Terrane (Alldrick and Britton, 1991; Anderson, 1993; Marsden and Thorkelson, 1992; Tipper and Richards, 1976). The numerous precious and base metal deposits that occur within the Hazelton Group (e.g., Eskay Creek, Sulphurets, Silbak-Premier) have focused considerable attention on this unit over the last decade, and as a result, its internal stratigraphy is well constrained by a wealth of new lithologic, biostratigraphic, geochronologic, and geochemical data. The following descriptions synthesize these new data and integrate them with published descriptions of the unit, to define a stratigraphic framework for the Hazelton Group in the Eskay Creek project area. Figure 3 illustrates the distribution of Hazelton Group units in the project area.

The Hazelton Group was originally defined to encompass Jurassic and Cretaceous volcanic and sedimentary strata of the Skeena River region of central British Columbia. The present usage is restricted to Lower and Middle Jurassic volcanogenic and sedimentary strata in this region (Tipper and Richards, 1976). Grove (1986) established a formational nomenclature for the Iskut River-Salmon River-Anyox region, separate from the existing regional definitions of the Hazelton Group. This nomenclature, with subsequent modifications by Anderson (1989), Alldrick (1991), and Henderson et al. (1992), outlines a five-fold division within the Hazelton Group in the Iskut River camp, comprising the Jack, Unuk River, Betty Creek, Mount Dilworth, and Salmon River Formations. These units define a section with a coarse clastic, fossiliferous basal unit (Jack Formation), succeeded by andesitic volcanic and epiclastic rocks (Unuk River and Betty Creek Formations) and an overlying felsic pyroclastic and flow sequence (Mount Dilworth Formation) and culminating in marine fine-grained, locally tuffaceous sedimentary rocks with interstratified mafic volcanic rocks (Salmon River Formation). Difficulties in correlating these units regionally, ambiguous stratigraphic relations at type sections, and apparently contradictory age assignments (Lewis, 1993; Lewis et al., 1993) have led to inconsistent application of these formational divisions in the Iskut River area. Examples of inconsistencies include the following:

1. The Mount Dilworth Formation has been applied to felsic volcanic rocks that are now known to range in age from about 191 Ma to 176 Ma and to occur at different stratigraphic levels.

2. The Unuk River Formation, originally defined as an andesitic volcanic sequence in the lower Hazelton Group, has a type area that is now known to represent uppermost Hazelton Group strata.

Many of these inconsistencies arose because units were defined using type sections lacking age control, and regional mapping had not established the continuity of units from their type sections.

Following McGuigan (2002), we adopt the slightly simpler, three-fold division of the Hazelton Group utilized by MDRU (Lewis, 1996) in their regional mapping program. This stratigraphic scheme incorporates the extensive work completed in the 1990's in the Hazelton Group in the Iskut River area, including extensive new geological mapping [e.g., (Alldrick and Britton, 1988; Alldrick et al., 1989; Lewis, 1992, 1993)], a U-Pb geochronological data base comprising several dozen well-constrained stratigraphic and intrusive ages (Macdonald et al., 1991); structural studies documenting the extent and geometry of structural disruption of map units (Lewis, 1992, 1993); and a biostratigraphic database of over fifty paleontological age determinations (Nadaraju, 1993). The three major stratigraphic divisions of the Hazelton Group comprise, from lowest to highest

1. basal, coarse to fine grained, locally fossiliferous siliciclastic rocks,

2. porphyritic andesitic composition flows, breccias, and related epiclastic rocks; dacitic to rhyolitic flows and tuffs; and locally fossiliferous marine sandstone, mudstone, and conglomerate, and

3. bimodal subaerial to submarine volcanic rocks and intercalated mudstone.

Lewis (1996) assigned three of the existing Hazelton Group units, including the Jack Formation, Betty Creek formation, and Salmon River Formation, to these units.

The following descriptions review the major lithologic characteristics, distribution, and age constraints of each of the three main Hazelton Group units. Typical of volcanic arc sequences, each of these units displays significant lateral variation in lithofacies and unit thickness.

Jack Formation: Lower Hazelton Group sedimentary strata (JrH1)

Basal Hazelton Group strata typically consist of locally fossiliferous conglomerate, sandstone, and siltstone of the Jack Formation. These rocks are well exposed in the upper Unuk River/Sulphurets area along both limbs of the McTagg anticlinorium (Fig. 2, Map 1) and have been traced at least as far south as the Frank Mackie icefield. The most complete and best exposed sections are located in alpine areas north and south of John Peaks and along the west side of the Jack Glacier, where the unit overlies Stuhini Group strata along an angular unconformity. At Bruce and Jack glaciers, the formation consists of a conglomerate containing clasts of subjacent Stuhini Group turbiditic mudstones and siltstone. Trough cross-stratification and channelized sandstone and conglomerate layers are common. Overlying the basal sequence is fossiliferous limy sandstone and siltstone, and thinly to medium bedded, locally phyllitic, turbiditic siltstones anrointerbedded sandstones, up to several hundred metres thick. There is a general transition southward towards John Peaks towards a thicker basal conglomerate and sandstone, and a thinner calcareous and turbiditic component. At the reference section south of John Peaks and on the ridge extending east from Unuk Finger, the Jack Formation consists entirely of conglomerate and sandstone. Well-rounded granitoid cobbles are diagnostic, typically comprising up to 50% of the clasts. West of the Unuk River in the Eskay Creek area, Jack Formation rocks consist of several hundred metres of thickly bedded to massive wackes with local conglomeratic lenses and cross-stratified intervals.

Fossil assemblages collected from the Jack Formation in the Unuk River indicate a Lower Jurassic age. Well-preserved ammonites in the Eskay Creek reference section and also near Treaty Glacier are diagnostic of an Upper Hettangian to Lower Sinemurian age. Isotopic age constraints from bounding units corroborate an Early Jurassic age. Dacitic crystal tuff in the underlying Stuhini Group at John Peaks yields a U-Pb zircon date of 215-220 Ma [V. McNicoll *in* (Anderson, 1993)], and a granitoid clast from the Jack Formation in this same section is dated at about 225 Ma. U-Pb zircon dates from overlying volcanic rocks of Unit 2 are as old as 193 $\pm$ 1 Ma (Bevier, 1994).

Betty Creek Formation: Intermediate composition volcanic and volcaniclastic strata (JrH2, JrH3, JrH4)

Lower Jurassic volcanic and volcaniclastic strata have been problematic for workers in the Iskut River area, and stratigraphic nomenclature has been unevenly applied. Most studies in the area assign intermediate composition rocks in this interval to either the Betty Creek Formation or the Unuk River Formation as defined by Grove (1986), and felsic rocks to the Mount Dilworth Formation (Alldrick and Britton, 1988). Much of the difficulty in working with this part of the section stems from the lack of stratigraphic continuity of lithofacies, and the lack of regional definitions of the formations. For example, the age of the Mount Dilworth Formation in its type area is largely unconstrained, and the type "area" for the Unuk River Formation is now known to contain a wide variety of rock types representing several formations.

We assign the entire volcanic and volcaniclastic package from the Jack Formation, to a distinct shift to bimodal volcanism in the lower Middle Jurassic, to the Betty Creek Formation intermediate composition volcanic/volcaniclastic sequence. This unit encompasses most of the rocks previously assigned to the Betty Creek and Unuk

River Formations, as well as some rocks previously assigned to the Mount Dilworth Formation. Within the Betty Creek Formation, three members are defined:

1. the Unuk River member comprises andesitic composition volcanic and volcaniclastic strata;

2. the Brucejack Lake member consists of andesitic to dacitic pyroclastic, epiclastic, and flow rocks which stratigraphically succeed and may be in part laterally equivalent to parts of the Unuk River member; and

3. the Treaty Ridge member consists of marine sedimentary rocks overlying the Unuk River and Brucejack Lake members.

Unuk River member (JrH2): Andesitic composition flows, volcanic breccias, and related epiclastic rocks of the Unuk River member are well exposed throughout the eastern Iskut River area, with thickest, best exposed sections at Eskay Creek and Treaty Creek. The thickness of the Unuk River member varies substantially: coarse volcanic breccias locally form accumulations up to two kilometres thick; these localized deposits may pinch out completely in distances of less than five kilometers. The thickest and best preserved sections of the Unuk River member consist of hornblende + plagioclase-phyric andesitic to dacitic flows and dark green volcanic breccias, intercalated with lapilli to block tuff, and lesser amounts of epiclastic sandstone and wacke. Volcanic breccias are monolithologic to slightly polylithic, commonly contain vesicular clasts, and have a plagioclase-rich volcanic matrix. The Unuk River member conformably overlies the Jack Formation, and its upper contact is defined as a transition to either epiclastic dacitic rocks of the Brucejack Lake member, or to marine sedimentary rocks of the Treaty Ridge member. The age of the Unuk River member is constrained by fossil collections from bounding units, and by correlation with isotopically-dated volcanic flows interpreted to be stratigraphically equivalent to the west of the project area at Johnny Mountain. An older limit of Upper Hettangian to Lower Sinemurian is provided by fossil collections from underlying Jack Formation strata. Treaty Ridge member strata overlying the Unuk River member at Eskay Creek and near John Peaks contain Upper Pliensbachian ammonites, bracketing the age of the former to Sinemurian or Pliensbachian. U-Pb zircon dates at Johnny Mountain corroborate this timing: plagioclase-phyric dykes cutting dacite to andesite Unuk River member flows have a U-Pb zircon age of 192 $\pm$ 3 Ma, while samples from the unit itself yield U-Pb zircon ages of 193 $\pm$ 1 Ma. Overlying felsic tuffs, correlated with the Brucejack Lake member, provide a further bracketing constraint of 194 $\pm$ 3 Ma (Bevier, 1994).

Brucejack Lake member (JrH3): Dacitic to rhyolitic pyroclastic rocks, epiclastic rocks, and volcanic flows within the Betty Creek Formation are assigned to the Brucejack Lake member. These rocks are well exposed in sections at Brucejack Lake and John Peaks, but are not recognized at Eskay Creek. The Brucejack Lake member consists of water-lain crystal and ash tuffs at John Peaks, and multiple thin cooling units of crystal-rich welded lapilli tuff at Treaty Creek are likely equivalents. Possible vent areas at Brucejack Lake comprise massive, flow banded dacite domes which grade outward into autobreccia and massive, hematitic mud-matrix volcanic breccia and potassium-feldspar megacrystic flow-banded flows. U-Pb radiometric dates for felsic volcanic rocks of the Brucejack Lake member range from 190 $\pm$ 1 Ma for bedded ash tuffs at John Peaks, to 185.6 $\pm$ 1.0 Ma and 185.8 $\pm$ 1 Ma for vent-related dacite at Brucejack Lake.

Treaty Ridge member (JrH4): Upper strata of the Betty Creek Formation consist of heterogeneous sedimentary strata including sandstone, conglomerate, turbiditic siltstone, and limestone, assigned to the Treaty Ridge member. Although parts of the Treaty Ridge member are similar to the Jack Formation sedimentary strata at the base of the Hazelton Group, the absence of the distinctive granitoid clast conglomerate in the Treaty Ridge member serves to differentiate the two units. In areas lacking the Unuk River and Brucejack Lake member such as near the Bruce Glacier, Treaty Ridge member strata are in diacct contact with the Jack Formation, and the contact is difficult to define. The Treaty Ridge member varies from a few metres to several hundreds of metres thick. Thickest measured sections are present at Treaty Creek and at Eskay Creek, while at Johnny Mountain the unit is nonexistent. The most distinctive rock type in the Treaty Ridge member consists of rusty brown to tan weathering, bioclastic sandstone and intercalated siltstone or argillite. To the north at Treaty Ridge, the bioclastic unit is succeeded by a several hundred meter thick turbiditic mudstone to sandstone section. Bioclastic sandstones are also present in the unit at Eskay Creek and John Peaks, where they are interstratified with siltstone, arenitic sandstone, and heterolithic rounded cobble conglomerate. Abundant and diverse fauna within the Treaty Ridge member span Late Pliensbachian to Late Aalenian stages (Nadaraju, 1993), suggesting that the unit records a long period of volcanic quiescence. Late Pliensbachian ammonites are present at both Eskay Creek and John Peaks. At Treaty Creek the base of the Treaty Ridge member is slightly younger, and consists of bioclastic sandstone containing Toarcian belemnites. Higher in this same section, ammonites constrain an Upper Aalenian age for turbiditic mudstone and siltstone. Together, these fossil occurrences suggest that the Treaty Ridge member spans the Upper Pliensbachian, the Toarcian, and most of the Aalenian stages, although no single section includes fauna diagnostic of all three stages.

Salmon River Formation (JrH5): Bimodal volcanic unit

The upper part of the Hazelton Group in the Eskay Creek area comprises dacitic to rhyolitic flows and tuffs, localized interlayered basaltic flows, and intercalated volcaniclastic intervals. This part of the Hazelton Group has attracted the attention of explorationists due to its association with mineralization at Eskay Creek, but at the same time its distribution, internal stratigraphy, and age has often been misunderstood. Previous workers have mapped felsic volcanic components as the Mount Dilworth Formation, and mafic volcanic components as a distinct facies of the Salmon River Formation. However, recent work demonstrates that more than one felsic interval exists in the unit, and that mafic volcanic rocks occur both above and below these felsic intervals.

Bruce Glacier member (JrH5F): Felsic volcanic rocks are ubiquitous in the Salmon River Formation in the Eskay Creek area. Two felsic members are recognized. Most widespread in its distribution is the Bruce Glacier member, which ranges from a few tens of metres to a few hundred metres in thickness. Lithofacies within the Bruce Glacier member are highly variable both regionally and vertically in a given section. Rocks located proximal to extrusive centres include banded flows, massive domes with carapace breccias, autoclastic megabreccias, and block tuffs. Slightly to densely welded lapilli to ash tuffs characterize more distal equivalents. Reworked tuffs locally form thick epiclastic accumulations and may infill paleobasins adjacent to extrusive centres.

Eskay Rhyolite (JrH5R) Within and adjacent to the Eskay Creek deposit, a rhyolite with anomalously low titanium content has been separated as a distinct member of the Salmon River Formation, termed the **Eskay Rhyolite**. Early work concluded the member was distinct from the Bruce Glacier member; however, the whole rock lithogeochemistry is similar to those parts of Bruce Glacier member that are proximal to the deposit.

Troy Ridge member (JrH5S): Sedimentary strata are relatively minor in the Salmon River Formation near Eskay Creek, and where they form a mappable unit, are assigned to the Troy Ridge member. Lithotypes present in this member include thinly-bedded carbonaceous mudstone, and interbedded turbiditic siltstone/argillite and tuff forming distinctive black and white striped strata ("pajama beds").

John Peaks member (JrH5M): Mafic components of the Salmon River Formation are assigned to the John Peaks member. They generally occur above the felsic volcanic rocks, but at Treaty Creek thick sections of mafic flows and breccias lie below felsic welded tuffs correlated with the Bruce Glacier member. In the Eskay Creek area, the John Peaks member is thickest at Mount Shirley and near the mouth of Sulphurets Creek, and forms intermediate thicknesses at Eskay Creek. Textures present include massive flows, pillowed flows, broken pillow breccias, and volcanic breccias. At Treaty Glacier the mafic component grades upward from pillowed and massive flows into broken pillow breccia, and finally, hyaloclastite matrix supporting abundant irregular globular volcanic fragments. At the Corey property, similar to Treaty Creek, Bruce Glacier member felsic units and John Peaks member basalts occur at a several horizons.

Two localities in the Eskay Creek area provide new radiometric age constraints for felsic rocks of the Salmon River Formation. Flows along strike from Eskay Creek yield a concordant age of 173.6 + 5.6/-0.5 Ma, while across the Unuk River near the Bruce Glacier, similar rock types yield an age of 176.2 +/- 2.2 Ma. Faunal assemblages from strata underlying the Salmon River Formation are as young as Late Aalenian (Treaty Creek). At Eskay Creek fossil control is available within the formation itself: radiolarians removed from the mineralized "contact" argillite, which occurs between the felsic and mafic volcanic intervals constrain an Aalenian age. Numerous Bajocian fossil collections from sedimentary successions overlying the Salmon River Formation define a youngest biostratigraphic age limit for the unit.

Middle Jurassic Bowser Lake Group (JrB)

The cessation of Hazelton Group volcanism in the early Middle Jurassic marks an abrupt shift to *siliciclastic sedimentation of the Bowser Lake Group. Bowser Lake* Group rocks are widely exposed over a broad region of the northern Cordillera, and concordantly overlap Hazelton Group strata along the northeastern edge of the Eskay Creek project area. They consist primarily of monotonous interstratified thin- to thick-bedded shale, siltstone, wacke, and conglomerate, with the notable absence of a volcanic component. Lowest parts of the sequence contain fossils indicating a Bajocian age, implying little or no gap in deposition from the uppermost Hazelton Group.

Intrusions

Mesozoic intrusive activity in the Stewart-Iskut region occurred in two major intervals: a Late Triassic pulse and an extended Early to Middle Jurassic plutonism. Anderson (Anderson, 1989, 1993) suggests that Triassic and Jurassic intrusive active in the Iskut River area can be divided into 5 temporal cycles. However, additional geochronology (MacDonald et al., 1996) indicates the temporal suites are as follows:

1. Late Triassic (228-221 Ma) Stikine Plutonic Suite related to the building of a Late Triassic volcanic arc.

2. Early Jurassic (195 –180 Ma) Texas Creek Plutonic Suite related to an Early Jurassic volcanic arc that was coeval to Betty Creek Formation volcanic rocks.

3. Early to Middle Jurassic (180-170 Ma) intrusions that are related to the upper division of the Hazelton Group, the Salmon River Formation. Further west and north, intrusions of the Three Sisters plutonic suite are possibly correlative.

In the area of the Eskay mine, and parts of the Kenrich claims, mafic dykes and felsic intrusions (JrF) that are controlled by syn-mineralization faulting such as at Eskay Creek are classified with the latest pulse of magmatism. Other intrusions, such as alkali feldspar-plagioclase-hornblende porphyry (JrP) that are hosted by Betty Creek, are likely related to the either latest pulses of Betty Creek volcanism or to Salmon River volcanism, on the basis of intrusive relationships and composition.

The Eskay Porphyry (JrP2), which is located proximal to the footwall of the 21 Zone, is a grey-green, plagioclase ± K-feldspar ± hornblende ± biotite porphyry with up to 50% coarse to fine-grained phenocrysts in an aphanitic groundmass. It is a hypabyssal stock of dacitic or granitic composition; 186 ± 2 Ma U/Pb (zircon) age (Macdonald, 1992a) and is correlative with the Early Jurassic pulse of magmatism.

Structural Geology

The present distribution of rocks in the Eskay Creek area is influenced by at least three Mesozoic to Cenozoic deformation events. Two early events occur during formation of the Mesozoic arc sequences, and in part control the original distribution of volcanic facies. Regionally extensive crustal shortening beginning in the Cretaceous imparted both thin-skinned and thick-skinned structural styles on the Mesozoic section, and overprints structures formed during the earlier deformation events.

Triassic-Jurassic Deformation

An angular unconformity between the upper part of the Stuhini Group and the base of the Hazelton Group in the project area provides evidence of a period of deformation, constrained approximately to the Triassic-Jurassic boundary. Stuhini Group rocks near Eskay Creek contain no structures that can be unequivocally assigned to a pre-Hazelton Group event; here the deformational event may be little more than a regional tilting associated with movement on intra-arc fault systems.

To the west of the Eskay Creek area, near Johnny Mountain, the Triassic-Jurassic deformation event is more strongly developed. Here, Stuhini Group rocks contain tight, megascopic southwest verging folds with axial planar penetrative cleavage, which are truncated by a non-folded angular unconformity at the base of the Hazelton Group (Rhys, 1993).

Early to Middle Jurassic Deformation

Several lines of evidence in and adjacent to the Eskay Creek project area support a deformation event synchronous with deposition of the Hazelton Group.

Syn-volcanic (growth) Faults:

Faults mapped within the Hazelton Group near the Eskay Creek deposit commonly separate blocks containing differing volcanic successions, suggesting that they were active during volcanism. The most significant of these is the north-northeast-striking East Break Fault, which passes just east of the Eskay Creek ore body. On the northwest (deposit) side of the East Break Fault, Hazelton Group strata include all of the major stratigraphic components of the Hazelton Group described above. In contrast, the southeast fault block contains an abbreviated section lacking most of unit 2, and lacking mafic volcanic rocks in unit 3. Several felsic dykes interpreted as feeders to the Eskay Rhyolite member of unit 3 (Bartsch, 1993a, b) occur parallel to and just west of the East Break Fault.

Secondary, north- to northwest-striking faults cut Upper Hazelton Group rocks to the west and southwest of the Eskay Creek deposit. These faults juxtapose successions with significantly different thicknesses of the individual members of unit 3, but do not significantly offset re, acts in either the Bowser Lake Group or in lower parts of the Hazelton Group. These relationships suggest that movement on the faults was parallel to stratigraphic contacts, and that the variation in thickness of uppermost Hazelton Group strata reflect juxtaposition of sections with different original thicknesses. The lack of mapped faults of this orientation in the Bowser Lake Group suggests that the fault movement terminated prior to Bowser Lake Group deposition.

Northwest-striking faults on the western edge of the Prout Plateau, approximately 10 km southwest of the Eskay Creek Deposit, similarly juxtapose differing Hazelton Group successions, and may therefore have been active during Hazelton Group deposition.

Major Shear Zones/Fault Zones:

The Harrymel Fault is a major brittle structure exposed along the western edge of the project area, and is interpreted to grade southward into a broad ductile shear zone, referred to as the South Unuk Shear Zone. Kinematic indicators are well exposed in both the brittle and ductile portions of this structure, and consistently show dominantly strike-slip movement with a sinistral sense. U-Pb dating of syn-tectonic intrusions in the ductile portion of the shear zone indicates that the structure was active in the Middle Jurassic (Lewis, 1996), roughly coincident with or just following cessation of Hazelton Group volcanism.

Mineralized structures:

The Snip-Johnny Mountain camp, located in the Iskut River approximately 50 km west of Eskay Creek, contains gold mineralization in dilatent veins and shear zones. Geological relationships indicate that mineralization and shear zone movement was broadly synchronous with intrusion of nearby Early Jurassic porphyry bodies (Rhys, 1996), including the Red Bluff porphyry [U-Pb zircon = 195 +/- 1 Ma, (Macdonald, 1992a)].

Epithermal veins in the West Zone at Brucejack Lake, to the southeast of the Eskay Creek Project area, form arrays within a north-northwest-striking zone interpreted to have formed through sinistral strike-slip brittle-ductile shearing (Roach and Macdonald, 1992). Although the absolute age of mineralization is uncertain, the veins occur within andesitic rocks of the Hazelton Group, and nearby Bowser Lake Group strata exposed nearby lack significant alteration and mineralization.

Cretaceous Contractional Deformation

The Eskay Creek project area lies between two regional contractional orogens that were active in Cretaceous time: an extensive westerly directed system of thrust faults along the western side of the Coast Belt [e.g., (Rubin et al., 1990; Rusmore and Woodsworth, 1991)], and the east-northeasterly directed Skeena Fold and Thrust Belt (SFTB) of the Bowser Basin (Evenchick, 1991). The dominant structures in the project area are major folds and thrusts that formed during this period of regional contractional deformation. The structures show a combination of the thin-skinned styles that characterize the well-stratified rocks of the Bowser Lake Group in the Skeena Fold and thrust belt, and thick-skinned styles more typical of thick, less regularly stratified rocks, such as those comprising the Mesozoic arc successions.

The project area is dominated by the north-trending McTagg anticlinorium, a broad regional structure that exposes Stuhini Group rocks in its core and is flanked by Hazelton Group and Bowser Lake Group rocks (Figure 3). Contractional structures show a transition from broad open folds in the northern part of the project area, to tight folds and thrust faults in the south. In the north, at the latitude of the Eskay

Creek deposit, thrust faults are rare to non-existent. The distribution of stratigraphic units outlines four major folds; from east to west these are the McTagg anticlinorium, the Unuk River syncline, the Eskay anticline, and the Prout Plateau syncline. Fold scale and geometry varies with stratigraphic level, reflecting the different scale of stratification in the Mesozoic sequence. The well-stratified rocks of the Bowser Lake Group contain abundant open to tight upright folds that are parasitic to the four major folds, while the thicker Hazelton Group rock packages mainly lack these second-order folds.

In the area lying north of the Corey property, the Mesozoic section has accommodated significantly greater amounts of shortening than rocks further to the north. The axial traces of the major folds described above bend to more northerly trends, and with the exception of the McTagg anticlinorium, pass southward into a series of westerly-vergent imbricate thrusts exposed along the Unuk River Valley. Thrust slices contain locally inverted stratigraphic sections of Hazelton Group rocks. To the east, the well-stratified Stuhini Group rocks in the core of the McTagg anticlinorium contain abundant upright folds and strong axial planar cleavage fabrics. On the eastern flank of the McTagg anticlinorium, east-vergent folds and thrust faults mirror the geometry of those to the west, together defining an overall fan structure.

The widespread development and intensity of the Cretaceous contractional deformation event overprints and obscures earlier formed structures, and likely reactivated any favorably-oriented pre-existing faults. Both the orientations and relative positions of faults that were active synchronous with Hazelton Group volcanism were strongly modified.

Post-Folding Deformation:

Youngest deformation in the Iskut River project area is limited to minor faulting that either cuts or re-activates earlier structures. Post-folding fault-displacements are minor, and previous workers have documented no systematic fault pattern in the area.

Geology of the Corey Property

General Geology

The geology of the Corey Property is dominated by Lower and Middle Jurassic volcanic and sedimentary rocks. The property contains a complete section of Hazelton Group rocks as well as smaller portions of the older Stuhini Group and younger Bowser Group sedimentary rocks (Map 1). The stratigraphy of the claim block, and in particular the northern portion thereof, most closely resembles the "South of Johns Peak" section of Lewis (1996) and described in McGuigan (2002); in fact, the type locality for that section is immediately adjacent to the northeastern part of the Kenrich claims and the along-strike equivalents of these rocks pass through Kenrich-held ground. The gross stratigraphy varies somewhat from north to south and is discussed below.

The Corey Property occupies the overturned eastern limb of the Unuk River syncline, a roughly north-south striking Cretaceous fold structure whose axis follows the Unuk River valley (alternatively, this could be considered the western limb of the McTagg anticlinorium). In a general sense, the volcano-sedimentary strata at Corey strike in a north-south to northeasterly direction, dip towards the east and young towards the west. With the exception of some complications due to east-dipping thrust faulting, there are no major repetitions of the principal stratigraphic units as described by Lewis and MDRU (Lewis, 1996); these observations are consistent with the overturned eastern limb of a syncline. The Corey geology is dominated by a thick, north-tapering, thrust fault-bounded "wedge" of Hazelton Group volcanic and sedimentary rocks. In the western portion of the property, the Hazelton rocks are thrust against Bowser Group sedimentary rocks that, in turn, are in fault contact with the much older Stuhini Group rocks along the major sinistral, strike-slip South Unuk-Harrymel fault system.

In the eastern parts of the Kenrich claims, the lowermost Hazelton Group unit, the Jack Formation conglomerates and sandstones (JrH1), unconformably overlie the Triassic Stuhini Group rocks. Further west, volcano-sedimentary strata of the Betty Creek Formation (JrH2,3,4) conformably(?) overlie the Jack Formation. South of Sulphurets Creek, the Jack Formation is overlain by andesitic volcanic breccias and epiclastic rocks of the Unuk River member (JrH2) which are particularly prevalent in the Mandy Creek area on the eastern flanks of Mount Madge as indicated by MDRU and Kenrich mapping. Interestingly, these rocks are apparently absent north of Sulphurets Creek where the same stratigraphic position is occupied by fine grained felsic tuffs and epiclastic rocks of the Brucejack Lake member (JrH3). In turn, these felsic rocks appear to be absent south of Sulphurets Creek according to the MDRU mapping. However, geological mapping by Kenrich geologists in the vicinity of the HSOV showing east of Mt. Madge identified a thin sequence of felsic/rhyolitic rocks in contact with Betty Creek Formation andesitic rocks; these felsic rocks may well be part of the Brucejack Lake member. It is not entirely clear if the felsic and andesitic rocks are stratigraphically distinct units or if they represent simultaneous bimodal volcanic activity resulting in interfingered andesitic and felsic fragmental and epiclastic rocks. These rocks are overlain in all areas by the sedimentary strata (argillite and sandstone) of the Treaty Ridge member (JrH4).

Overlying the Betty Creek formation, and occupying the core of the Kenrich claims, is an anomalously thick sequence of Salmon River Formation rocks (JrH5): the most prospective host for Eskay Creek deposit analogues. On the Corey Property, the Salmon River Formation is comprised of a mixture of thick basaltic to andesitic flows, rhyolitic to dacitic flows and epiclastic rocks with intercalated mudstones. These rocks have been best studied by MDRU, Kenrich and Homestake/Prime geologists in the Bench Zone and the Cumberland area that lie to the north and south of Sulphurets Creek, respectively. Mapping by Kenrich and MDRU in the Bench Zone and the southern slopes of John Peaks has shown that the lower Salmon River Formation comprises felsic tuffs and epiclastic rocks of the Bruce Glacier member (JrH5F). MDRU maps show these rocks are overlain by a thick package of mafic volcanic flows and breccias and intercalated mudstones of the John Peaks member (JrH5M). Regional map patterns suggest that this package of rocks thickens to the south, perhaps suggesting a prolonged period of Salmon River volcanic activity. More detailed mapping and drill core logging by Kenrich geologists in the Bench area has shown that a second rhyolitic horizon occurs within the basaltic rocks. This unit comprises massive, flow banded and brecciated siliceous rhyolites and intercalated mudstones. Kenrich geologists have interpreted these rocks to be part of a north-plunging synform comprising an arcuate rhyolitic layer overlain and underlain by mafic volcanic rocks. The validity of this stratigraphic sequence was confirmed in 2003 by the authors of this report by examination of Bench Zone drill core stored at the Kenrich camp at Sulphurets Creek and by whole rock lithogeochemical sampling. Sedimentary structures observed in the drill core were consistent with previous interpretations of the stratigraphic younging direction. The nature of the felsic lithologies and their stratigraphic position is similar to the Eskay Rhyolite member as seen elsewhere in the region; further work will be required to confirm that these rocks are "Eskay-equivalent". To the south in the Cumberland area, Homestake geologists (Moors and Taylor, 1998) described the Salmon River Formation as part of the inferred western limb of a north-plunging syncline (similar to the Bench area). Homestake mapping describes a sequence of lowermost argillite and sandstone overlain by andesitic and dacitic rocks; these are overlain by felsic flows and epiclastic rocks (Bruce Glacier member?), intercalated mudstones and basaltic flows and breccias. Earlier MDRU mapping did not indicate the presence of intermediate to felsic rocks west of Mount Madge; however, this is easily understandable given the relative inaccessibility, steep terrain and dense undergrowth in this area that was only partially overcome by later workers utilizing cut gridlines. Moors and Taylor (1998) also inferred east-west faults that appear to limit the distributions of various lithologies on the Cumberland grid; these inferred structures are marked by abrupt changes in lithology and unit thicknesses and may represent syn-volcanic, basin-bounding growth faults.

Battlement Zone

Van Damme and Mosher (1994) describe the Battlement zone as a homoclinal sequence of steeply-east dipping Salmon River Formation mudstone, rhyolite breccias and tuffs, and basalt. Facings are unknown. Mapping at 1:5,000 over the area shows a band of Mount Dilworth Formation felsic rocks (currently described as the Bruce Glacier member of the Salmon River Formation). Homestake (Moors et al., 1998) generally described the geology of the Battlement zone as Hazelton Group mafic and intermediate volcanic and sedimentary rocks, including rhyolite in the eastern portion of the grid. All units show only weak alteration.

Bench Zone

Van Damme and Mosher (1994) presented a synthesis of mapping over the Bench zone. A north-plunging syncline was mapped through the center of the Bench zone. Mafic pillow lavas of the Salmon River Formation are exposed in the core of the syncline, followed outward by a band of undivided Salmon River Formation rocks, a band of Mount Dilworth Formation rocks (currently described as the Bruce Glacier member of the Salmon River Formation) and ultimately a broad exposure of undivided Salmon River Formation rocks. Limited mapping by Chapman (1995) confirmed the previous work. Units observed by Chapman include rhyolite flows, breccias, and tuffs in contact with argillites. Detailed mapping was carried out over the Bench zone in 1996 (Kowalchuk et al., 1997). This mapping also shows a well-defined north-plunging syncline. The syncline is cut off to the north by a northwest-trending fault, with fine-grained sediments of the Troy Ridge member of the Salmon River Formation exposed north of the fault. Troy Ridge rocks are also mapped in the core of the syncline and are followed outward (stratigraphically downward) by mafic to intermediate volcanic rocks of the John Peaks member, then by a thin band of Troy Ridge sediments, then by felsic volcanics of the Bruce Glacier member, then by pyroclastic and epiclastic rocks of the transitional unit, and ultimately by a broad expanse of John Peaks rocks. Contact relationships are complex and are frequently faulted.

Cumberland Zone

Limited in part by steep slopes, heavy undergrowth, sparse outcrop and poor access, the geologic setting of the Cumberland prospect has not been well described. In 1987, Bighorn Development mapped a small area in the immediate vicinity of the Cumberland workings, assigning mapped volcanics (dacite and andesitic dacite pyroclastic rocks) and sediments (black argillites, carbonate stockwork) to the Lower Jurassic Unuk River Formation (Horne, 1988). Placer Dome (Brownlee, 1992) concluded that the Cumberland prospect area was underlain by Betty Creek Formation andesitic lavas with minor greywacke, shale and conglomerate interbeds. Van Damme and Mosher (1994) concluded that the immediate Cumberland area was primarily underlain by basaltic volcanics, with minor interbeds of argillite and siltstone and rare felsic volcanic rocks of the Mt. Dilworth Formation or the Salmon River Formation. They noted that rocks previously identified as conglomerates were likely rhyolite breccias and previously mapped sandstones were ash tuffs. Other more distal units found in the area represent a thick sequence of pillowed basalts with lesser interbedded andesites and sediments belonging to the Salmon River Formation. Bridge (1996) determined that the immediate area of the Cumberland workings was dominated by mafic volcanics, with lesser rhyolite and sediments. Sparse bedding attitudes show units dipping gently westward and striking nearly north. Kowalchuk et al. (1997) concluded that mafic volcanics in the Cumberland area, together with lesser felsic volcanics and associated volcaniclastics, belonged to the John Peaks member of the Salmon River Formation. Mapping by Homestake (Moors and Taylor, 1998) showed a sequence of interbedded volcanics and sediments, with fine-grained tuffaceous dacites exposed at the bottom of the section. A unit comprised of rhyolite tuffs and tuff breccias, with local interbedded mudstone, overlies dacites. This rhyolite-dominant unit is overlain by and possibly interbedded with a sequence of mudstone and siltstone and rhyolite-bearing epiclastic rocks. Fine-grained mudstone and mudstone debris flow conglomerates cap this unit and are in turn overlain by a thick sequence of massive to pillowed basalts. Moors and Taylor also showed that structure in the Cumberland area is dominated by north-south and east-west trending faults. Within the various fault-defined blocks, units in western blocks dip towards the southeast while units in eastern blocks dip towards the northeast.

C10 Showing

Kruchkowski (1987) described alteration of a tuffaceous volcanic to sericite schist containing up to 30% quartz veinlets and lenses. This zone was reported to contain up to 10% pyrite with minor fine-grained sphalerite. Kruchowski and Sinden (1988) described the C10 area as part of a northwest-trending pyrite-sericite schist alteration zone extending as much as 6.5 km and 0.8 to 1.6 km in width. Silicification in this zone increases with depth, as well as towards the east.

Silicification in the C10 zone comprises quartz veinlets and stockworks. Kruchowski and Sinden also describe a sulfide stringer zone up to 800m in width along the east margin of the pyrite-sericite schist band, consisting of numerous sub-horizontal stringers, pods and lenses containing siderite, chalcopyrite, pyrite, sphalerite, galena and arsenopyrite. Van Damme and Mosher (1994) described the C10 showing as a large argillic alteration and shear zone in Stuhini Group intermediate composition feldspar-phyric volcanic rocks cut by numerous monzonite dikes. Rock chip samples were collected from rocks described as ankeritic quartz-rich lenses containing tetrahedrite, pyrite, pyrrhotite and scorodite, as well as from phyllitic andesitic tuff. Property-scale mapping shows the east flank of Mt. Madge, including the area of the C10 showing, as either undivided Unuk River Fm (Figure 3). (Van Damme and Mosher, 1994) or unit JrH2c (andesite breccias and tuffs) of the Salmon River Formation(?) (Kowalchuk et al., 1997).

HSOV Zone

Kowalchuk and Sigurgeirson (1999) mapped four units. These include (from east to west) andesitic to rhyolitic volcaniclastics and minor flows, massive rhyolites with minor interbedded volcaniclastics, mudstones and basalts and are interpreted as an overturned sequence. Contact relationships between the various units are complex, in particular between the mudstones and basalts. The intermediate to felsic units to the east are interpreted to belong to the Betty Creek Formation. No unit assignments have been given for the other three units. Property scale mapping (Kowalchuk et al., 1997) shows four units on the HSOV grid. From east to west, these include sediments of the Stuhini Group and three members of the Salmon River Formation. The Salmon River Formation members include (from east to west) undifferentiated andesite volcanics and epiclastic rocks, pillow lavas and minor interbedded mudstones, and andesite block breccias and tuffs. A thrust fault separates undifferentiated andesites from underlying mafic pillow lavas.

GFJ Showing

Property-scale mapping (Kowalchuk et al., 1997) shows that mineralization at the GFJ showing is largely hosted by andesite block breccias and tuffs of unit JrH2c of the Salmon River Formation (Figure 3). Unit JrH2c is in thrust contact with overlying undifferentiated andesite and epiclastic rocks of unit JrH2. In general, mineralization trends west-southwest from the thrust contact for about 1.5 km.

Deposit Targets on the Corey Property

The exceptional gold and silver grades of the Eskay Creek deposit support a strong emphasis on Eskay style massive sulphide, replacement and footwall stockwork orebodies, All data from the Corey has been reviewed and new work recommended on the basis of the setting and deposit characteristics of the Eskay deposits. Special emphasis is warranted on the following target types:

1. Eskay volcanogenic massive sulphides in mudstones and felsic Salmon River formation.

2. Footwall style quartz-sericite-pyrite-base metal sulphide stockwork zones with gold and silver, as a target in itself, and as a pathfinder to Eskay-style stratabound mineralization.

3. High sulphidation VMS, as they are transitional to Eskay style deposits.

4. Intrusion-related (Snip) style mineralization is not targeted, lacking the geological environment.

5. Low suphidation veins and stockworks are not targeted, lacking evidence on the property.

MINERALIZATION ON THE KENRICH BLOCK

Battlement Zone

Previous rock sampling at the Battlement zone consists of 12 samples, mostly collected in the eastern portion of the grid near the Unuk River. None of these samples exceed 25 ppb Au. Soil sampling consists of 368 samples. Only three samples exceed 100 ppb Au. Analyses for Ag in soils do not exceed 13 ppm. Base metal anomalies on the grid include Cu analyses up to about 80 ppm and Pb anomalies up to about 60 ppm. Spotty As anomalies range up to about 250 ppm while more continuous Sb anomalies range up to about 20 ppm. Neither of the two small trenches excavated in 1993 contained anomalous precious metals although trench TR93-13 contained up to 1,040 ppm Zn in one sample.

Bench Zone

Little outcrop mineralization has been encountered at the Bench zone. Disseminated sphalerite, galena and pyrite was found in one location in sediments of the Troy Ridge member (Kowalchuk et al., 1997). Elsewhere, discontinuous disseminated to semi-massive lenses of pyrite and pyrrhotite have been locally observed along contacts between sediments (Troy Ridge member) and mafic volcanics (John Peaks member) in the eastern portion of the Bench zone. Up to 10% disseminated pyrite and pyrrhotite are locally encountered within tuffaceous sediments throughout the area. No significant assays have been returned from any of these sulfide occurrences.

Cumberland Zone

At the historic Cumberland prospect (also known as the Star prospect), mineralization consists of at least one lens of volcanogenic massive sulfide, with significant polymetallic assays up to 9.8% Zn, 2.7% Pb, 0.45% Cu, 9.33 g/t Au and 91.5 g/t Ag (Van Damme and Mosher, 1994). Mineralization is contained within a strongly sheared and silicified (or rhyolitic?) zone within mafic volcanics and consists of massive sphalerite, barite, galena and pyrite. Mineralization has a strong mylonitic fabric. Brownlee (1992) suggested that mineralization at the Cumberland prospect was a faulted segment of a larger mineralized body located to the north and west. Kowalchuk et al. (1997) noted that alteration consists of silica, chlorite and sericite.

The Daly showing is reported to consist of a carbonate breccia stockwork with 10 to 20 cm-wide sulfide veins containing pyrite and sphalerite. Gold assays are reported to be low with higher silver assays (Horne, 1988). Groome (1991) notes that silver mineralization is associated with a quartz and carbonate (siderite?) stockwork zone up to 0.75m in width that contains coarse-grained pyrite and sphalerite.

C10 Showing

Kruchkowski (1987) described the east flank of Mt. Madge as underlain by green clastic volcanics locally altered to sericite and chlorite schists. In the C10 area, Kruchkowski described alteration of a tuffaceous volcanic to sericite schist containing up to 30% quartz veinlets and lenses. This zone was reported to contain up to 10% pyrite with minor fine-grained sphalerite. Kruchowski and Sinden (1988) described the C10 area as part of a northwest-trending pyrite-sericite schist alteration zone extending as much as 6.5 km and 0.8 to 1.6 km in width. Silicification in this zone increases with depth, as well as towards the east. Silicification in the C10 zone comprises quartz veinlets and stockworks. Kruchowski and Sinden also describe a sulfide stringer zone up to 800m in width along the east margin of the pyrite-sericite schist band, consisting of numerous sub-horizontal stringers, pods and lenses containing siderite, chalcopyrite, pyrite, sphalerite, galena and arsenopyrite. Van Damme and Mosher (1994) described the C10 showing as a large argillic alteration and shear zone in Stuhini Group intermediate composition feldspar-phyric volcanic rocks cut by numerous monzonite dikes. Rock chip samples were collected from rocks described as ankeritic quartz-rich lenses containing tetrahedrite, pyrite, pyrrhotite and scorodite, as well as from phyllitic andesitic tuff.

HSOV Showing

Mineralization at the HSOV showing consists of a massive pyrite and marcasite lens at the contact between the rhyolite and mudstone units (Kowalchuk and Sigurgeirson, 1999). The sulfide body is exposed over a length of 35m and is up to 3.5m thick. A left-lateral fault offsets sulfide mineralization 110m to the east, where another 30m of mineralization up to 1m thick is exposed. Andesites in the HSOV area are pervasively chloritized. Near the sulfide lens, rhyolites have strong phyllic alteration. Numerous small shears throughout the area also display quartz-sericite-pyrite phyllic alteration.

GFJ Showing

Van Damme and Mosher (1994) described the GFJ showing as a lode gold vein occurrence up to 750m in length and from 0.5 to 1.0m in width. Mineralization was found within a shallowly-dipping shear-controlled pyritic quartz vein, consisting of banded quartz, chlorite, pyrite, arsenopyrite and possibly tetrahedrite. Wall rocks were described as andesite tuff.

Bridge et al. (1996) mapped several separate veins or zones of veins. One zone consists of a series of 20 to 40cm flat-lying veins and 2 to 4m wide silicified zones of sub-horizontal vein stockworks. This zone is exposed over a length of 195m. Sulfides and alteration in this zone are weak. Another vein extends 110m with widths ranging from 15 to 80cm, dipping about 30° to the east. This vein consists of banded quartz, siderite and sulfides, and contains up to 33.7 grams per tonne Au. Weak silicification extends up to 5m in the hanging wall while the footwall is moderately silicified for 1m. Another poorly exposed vein is sub-horizontal, 12 to possibly 50cm thick, and extends for about 90m. This vein consists of quartz, pyrite, arsenopyrite and chalcopyrite. Au assays from this vein range up to 46.4 grams per tonne. Several other veins were described but do not carry significant Au.

For the GFJ showing, the database does not report analyses for elements other than Au and Ag. However, previously published reports (Van Damme and Mosher, 1994) show analyses up to >10,000 ppm Cu, up to 6,641 ppm Pb, up to 757 ppm Zn, up to more than 10,000 ppm As, and up to 68 ppm Sb.

2003 EXPLORATION

2003 Whole Rock Lithogeochemical Orientation Survey

A program of whole rock lithogeochemical sampling was undertaken on the Corey Property in October 2003. The goals of this sampling program were to assess the chemical characteristics of the major lithologies on the property, to provide a comparison with and quality control of historical data sets and to provide a framework for future chemostratigraphic interpretation. A total of 19 samples of drill core from previous programs were submitted to Acme Analytical Labs of Vancouver, B.C. for ICP-MS analysis of major and trace elements including rare earth elements (REEs) using their 4A and 4B ICP-MS packages. This data is included in Appendix 1. Drill core samples were taken from cores stored at the Kenrich camp on Sulphuretes Creek. The core samples generally comprised 15-30 cm lengths of whole NQ drill core; a smaller piece of core that was representative of the sample was retained for later reference. Sampling, sample preparation and analyses for the 2003 geochemical orientation survey remained under the direct custody and supervision of the authors.

Lithogeochemical samples were taken from four drillholes on different parts of the Corey property that were drilled during previous programs in the 1990s (see Map 1 for drillhole locations). The detailed drill logs for the holes sampled are included in

Assessment Reports 24965 and 25384. These logs were referenced by the authors against the actual drillcores in the field. The samples taken are summarized as follows:

Drillhole No.	Zone	Date drilled	No. of samples	Assessment Report
CBE-04	Bench	1996	12	24965
CBL-96-04	Cumberland	1996	3	24965
BCH-97-01	Bench	1997	2	25384
PRU-98-03	Cumberland/S. Unuk	1998	2	

A variety of samples were taken that were deemed to represent the major lithologies reported in past exploration programs, namely basalt and rhyolite flows, andesite and black mudstones. However, the numbers of respective samples do not necessarily reflect the relative abundances of the various units. Drillhole CBE-04 was sampled more heavily to test for any obvious stratigraphic variations in lithogeochemical characteristics within the volcanic sequence. Field rock names and additional brief comments for these samples are included in Appendix I, but the sample set largely comprised the following:

- **Mafic volcanics** - dark green, massive, pillowed and/or brecciated dark green basalt/mafic flows and flow breccias +/- volcaniclastics
- **Felsic volcanics** - light to medium grey, siliceous and/or sericitic, massive to flow-banded rhyolite flows and associated hyaloclastite
- **Mudstone** - dark grey to black, carbonaceous and often siliceous, fine-grained sediment/volcaniclastic

The authors agree with interpretations by previous workers placing these rocks within the Salmon River Formation of the Upper Hazelton Group. As such, the sampled mafic and felsic volcanics likely belong to the John Peaks and Bruce Glacier Members (JrH5M and JrH5F) respectively. The mudstones likely belong to the Troy Ridge Member (JrH5S).

Methodology

The whole rock lithogeochemistry of volcanic terranes is inherently complex and requires a systematic and scientific approach to extract useful exploration information. This being said, careful analysis of quality whole rock lithogeochemical data can yield important results which can be critical to the overall interpretation of volcanic stratigraphy, the correlation of volcanic units, the targeting of suites of rocks favourable for mineralization and the identification of zones of alteration.

The use of major and trace element geochemistry, and in particular immobile elements and their ratios, is a very important tool in exploring volcanic rocks suites such as the Hazelton Group rocks of the Corey Property. The methods of whole rock lithogeochemical analysis and chemostratigraphic interpretation such as those of MacLean and Barrett (1993) and Barrett and MacLean (1994) are used in this study.

A common difficulty in working with volcanic rocks can be correctly identifying rocks in the field; this becomes even more challenging when dealing with rocks that have been hydrothermally altered. For example, basalt that has been silicified may be quite hard and light in colour and could easily be misidentified in the field as felsic in composition; obviously, this could lead to mis-correlation of units and possibly the lack of identification of important zones of hydrothermal alteration. The use of immobile element ratios is a very powerful and straightforward way of avoiding this potential problem. Since elements such as Ti, Al, Zr and Y are essentially immobile during hydrothermal processes, their ratios remain constant after alteration of the volcanic rocks while contents of mobile elements such as Si, Na, K and Ca can vary quite strongly. As such, rocks can be effectively classified, compared and correlated using immobile element ratios such as Zr/Y, Zr/TiO_2 and Al_2O_3/TiO_2 even if they have been strongly altered e.g. a strongly altered basalt will have essentially the same immobile element ratio as its unaltered precursor basalt. The immobile element ratios provide a method of "seeing through" the alteration.

Immobile elements are also powerful indicators of the source of magma that fed volcanic activity in a particular terrane. This can be very important since some mineral deposits are associated with particular magmatic or tectonic affinities. Zr/Y ratios are good initial indicators of tectonic affinity. Volcanic rocks of tholeiitic affinity have a Zr/Y ratio of <4.5; transitional affinities have Zr/Y ratios of 4.5-7.0 while rocks of calc-alkaline affinity have Zr/Y ratios of >7.0 (Barrett and MacLean, 1994). Rare earth element (REE) data can also be used to interpret magmatic affinity. On a plot of normalized REE data, rocks of tholeiitic affinity generally display flat patterns while calc-alkaline rocks often have negatively-sloping patterns, especially in the light REEs (La to Gd).

In order to rigorously apply immobile element analyses of volcanic suites, it is of paramount importance to acquire high quality data using the most precise analytical techniques. As discussed above, it is also extremely important to analyze a full suite of major and trace element data in order to extract the most information from a sample set. Another critical step in the process is the reconciliation of original field names with the classifications interpreted from whole rock lithogeochemical data (i.e. samples should be 'renamed' if their field name is not consistent with their geochemical characteristics).

Discussion of Corey Property Data

The 2003 Corey lithogeochemical data is presented in Figures 4 to 10. It should be noted that the lithology symbols on these figures reflect the results of the interpretations of the data and they do not necessarily reflect the original field rock names, although in most cases field names were the same or similar to those assigned using the geochemical characteristics. These 'new' lithological names are based on the subdivision of the original data into groups that have similar immobile element ratios and overall chemistry as discussed below.

Figure 4 is an immobile element ratio plot of the 2003 Corey data displaying Zr/ TiO_2 vs. Al_2O_3/TiO_2. This diagram is effective at subdividing and classifying the various volcanic rock units because the effects of alteration on where the samples plot will be relatively minor since ratios of immobile elements with the same denominator (TiO_2) are used. The major lithologies are clearly separated into tightly constrained clusters with little or no overlap between the groupings.

Figure 5 shows the Zr vs. Y relations for the Corey data. As discussed above, Zr/Y ratios are a good indicator of magmatic affinity. The Zr/Y thresholds distinguishing tholeiitic versus transitional and calc-alkaline affinities as established by Barrett and MacLean (1994) are indicated on the plots. All of the mafic/basalt samples show a strong tholeiitic affinity. The high-Ti subgroup shows a distinct separation from the mafic/basalt group due to its higher Y contents. The rhyolite and dacite samples are all transitional to calc-alkaline in composition. Interestingly, all of the four mudstone samples have tholeiitic affinities and plot close to the mafic samples, possibly indicating that they had a tholeiitic mafic provenance.

Figure 6 shows the TiO_2 vs. Al_2O_3 relations for the Corey data and shows similar, albeit less tightly-constrained, sample groupings as in Figure 6. On such an immobile vs. immobile element plot, hydrothermal alteration shifts sample compositions away from their precursor compositions on the igneous fractionation trend along straight lines which extend through the origin as shown. Figure 6 shows the fractionation trend within this volcanic sequence from the high-Ti basalts through andesitic to rhyolitic compositions. This plot suggests that the mafic rocks are relatively unaltered i.e. they do not diverge a great deal from the inferred fractionation trend. The mafic rocks do, however, appear to have a wide range of precursor compositions. The rhyolite samples show weak to moderate divergence possibly due to mass gains associated with the silicification observed in these rocks. The mudstone samples show a greater divergence from the fractionation trend likely reflecting a greater degree of mass gain, likely silica addition. They do, however, show fairly consistent precursor compositions lying in the andesitic to basaltic andesite range, again suggesting a possible strong contribution from the mafic rocks in the area.

Figure 7 shows the Zr vs. TiO_2 relations for the Corey data and provides a further basis for the geochemical subdivision and interpretation of the major lithological subgroups: basalt, andesite, dacite and rhyolite. Similar groupings and interpreted alteration effects as in Figure 6 are shown here with the notable exception of the high-Ti mafic subgroup which show a strong divergence from the other samples. This is obviously due to their considerably higher TiO_2 contents and could initially be attributed to alteration (net mass loss). However, the visual and overall geochemical characteristics of these rocks suggests that they are largely unaltered. As such, an alternative explanation is that the high-Ti mafic rocks, while part of the same overall volcanic sequence, represent a different eruptive or magmatic event and are not directly related to the other volcanic rocks, or at least cannot be directly linked to them by fractionation alone.

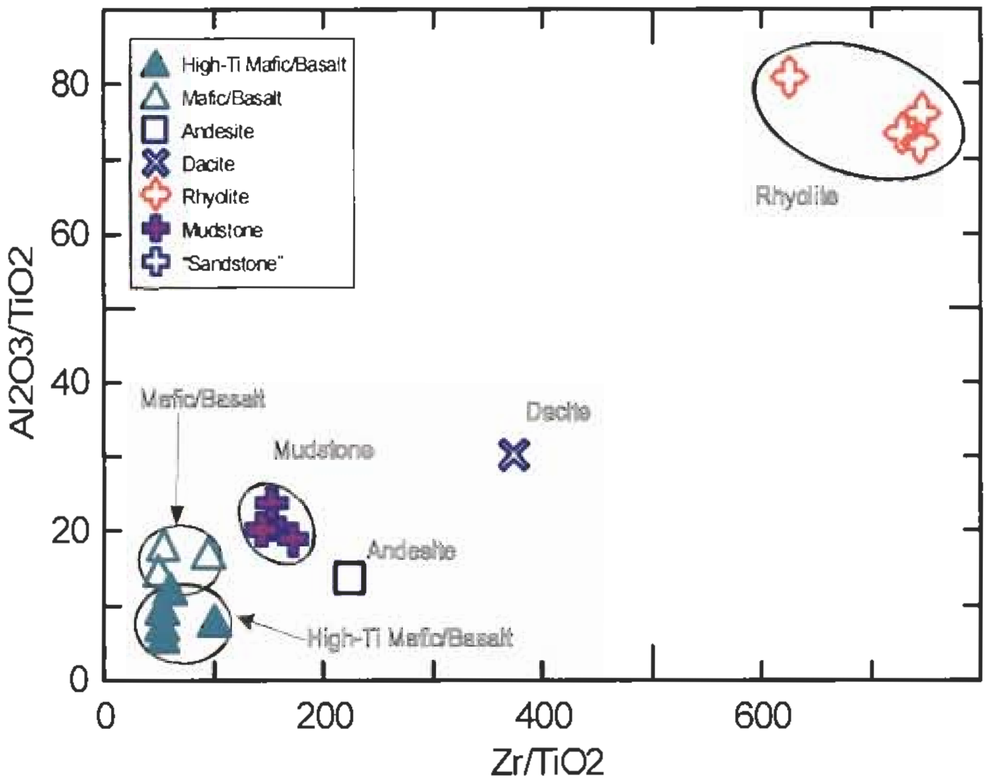


Figure 4: Immobile-immobile element ratio plot for 2003 Corey data

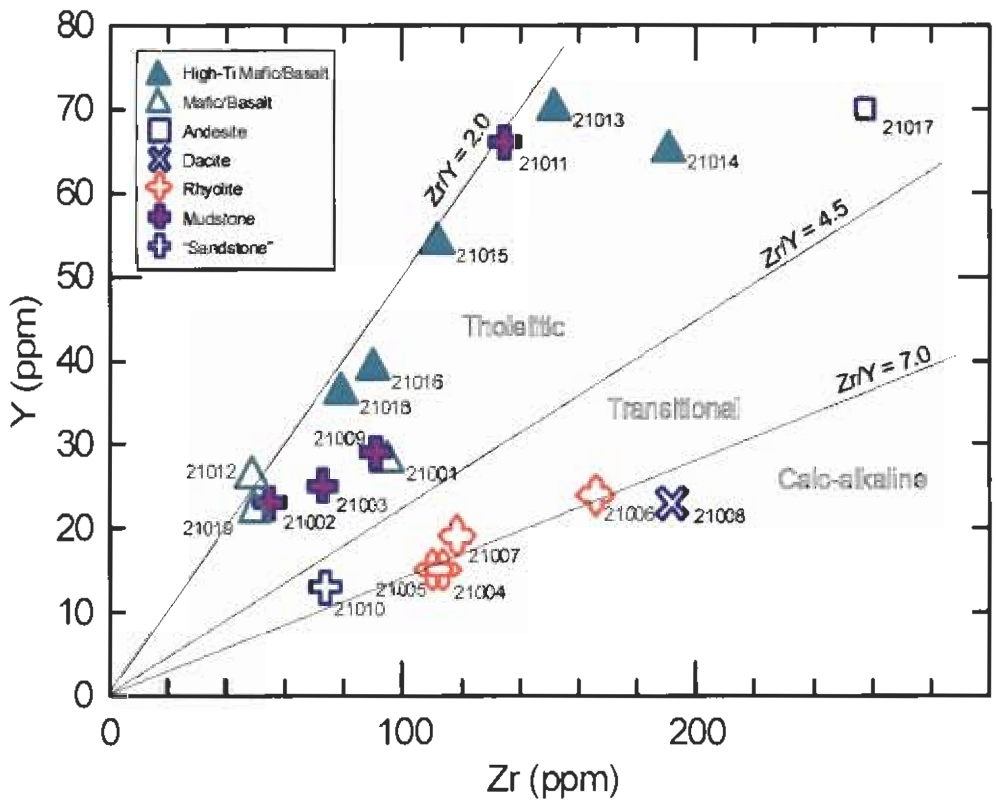


Figure 5: Zr vs. Y relations for 2003 Corey data

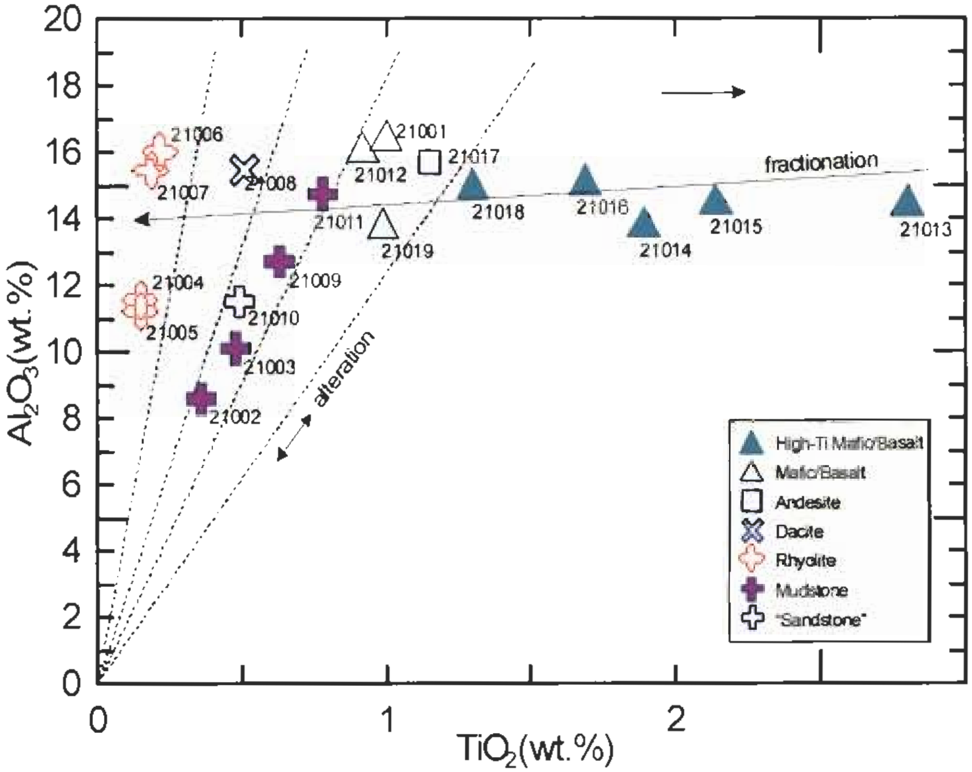


Figure 6: TiO2 vs. Al2O3 relations for the 2003 Corey data

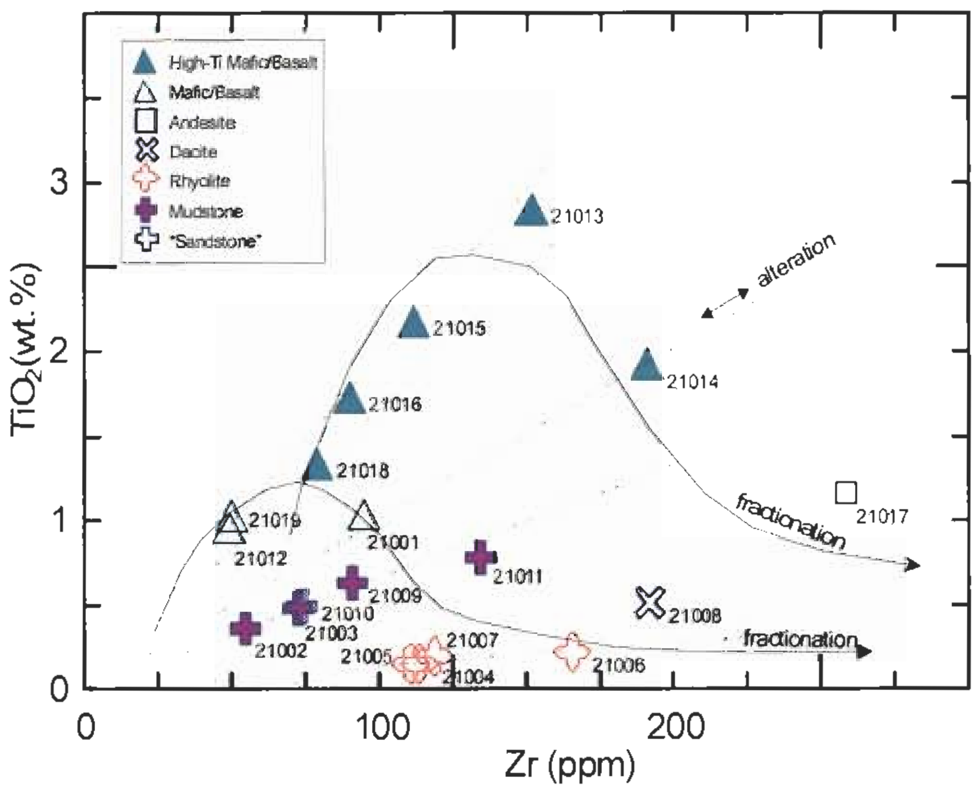


Figure 7: Zr vs. TiO2 relations for the 2003 Corey data

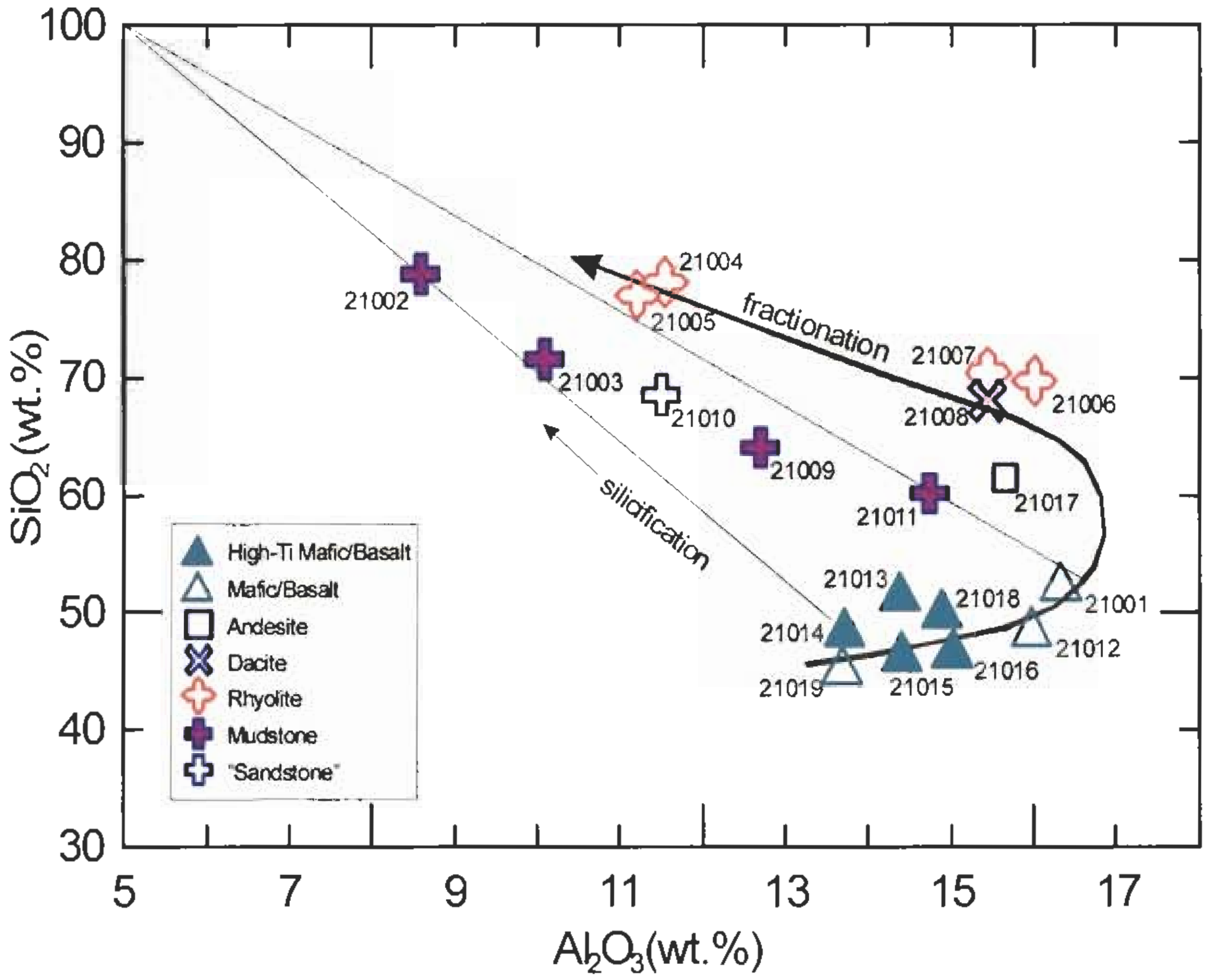


Figure 8: Al2O3 vs. SiO2 relations of 2003 Corey data

Figure 8, an immobile (Al2O3) vs. mobile (SiO2) element plot, displays an interesting possible relationship between the mudstone samples and the mafic/basalt samples. On this plot, rocks that have undergone a net gain or net loss of SiO2 will shift from their "unaltered" position on the inferred fractionation trend towards or away from 100% SiO2. As such, according to this plot, it is possible that the mudstone samples represent fine-grained volcaniclastic equivalents of the mafic/basaltic rocks that have undergone varying degrees of silicification. This inferred silicification is borne out to a certain extent macroscopically by the hard and siliceous character of these samples.

Figure 9 displays the rare earth data [normalized to chondrite data of Sun and McDonough, (1989)] for the 2003 sample set from the Corey Property. REE patterns are also effective indicators of magmatic affinity; in general, flat patterns are indicative of more tholeiitic affinities whereas negative sloping patterns, particularly in the light REEs (LREEs; La to Gd) are indicative of more calc-alkaline affinities. The mafic/basaltic samples plotted in Figure 9 a) show some variation from slightly LREE depleted to slightly LREE enriched indicative of a tholeiitic to transitional island arc setting (Wilson, 1989). However, the flatter patterns are also permissive for interpretation as being from a back-arc setting (Wilson, 1989). There is no discernible difference between the patterns of the low-Ti and high-Ti mafic rocks, but

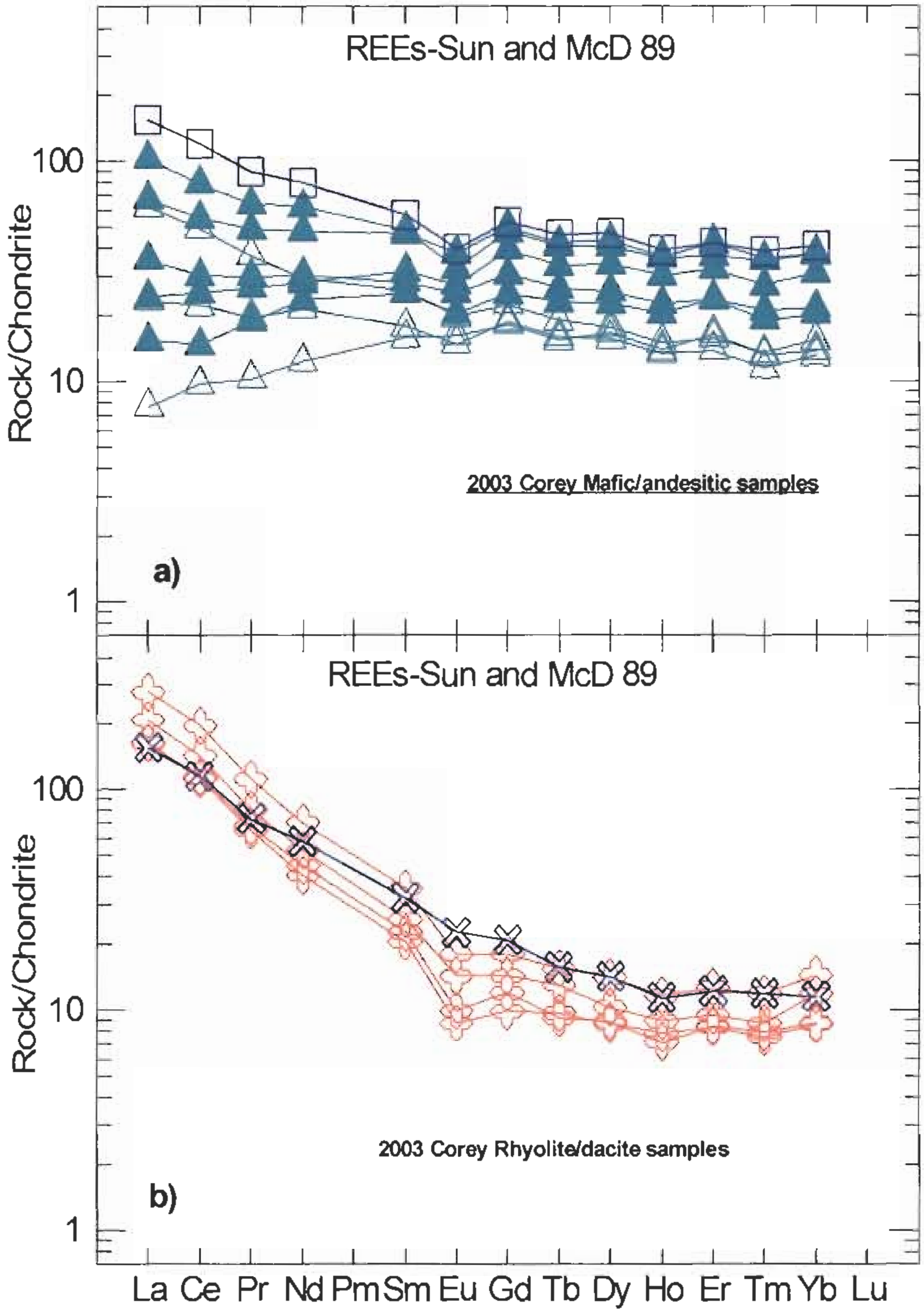


Figure 9: Chondrite-normalized rare earth element plots for the 2003 Corey data; a) mafic and andesite samples, b) rhyolite and dacite samples (Symbol legend as in Figs. 5-9)

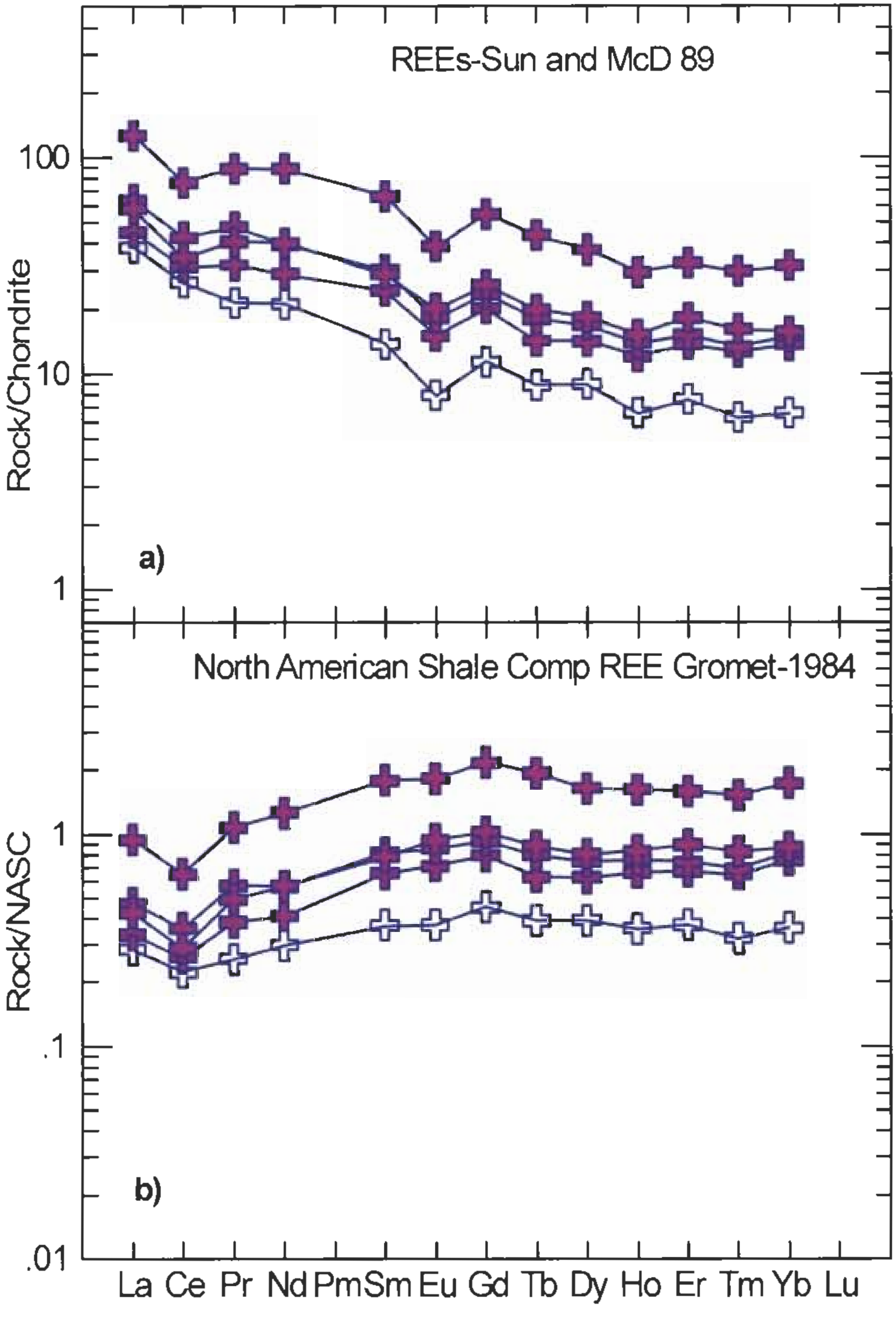


Figure 10: Chondrite-normalized rare earth element plots for the mudstones/"sandstone" from the 2003 Corey data; a) chondrite-normailzed plot b) normalized to North American Shale Composite (NASC) (Symbol legend as in Figs. 4-8)

the REEs are perhaps a more useful tool for further subdividing these groupings (e.g. tholeiitic vs. transitional high-Ti basalts). The rhyolitic to dacitic samples are plotted on Figure 9 b). In contrast to the mafic samples, this diagram shows a distinctly LREE-enriched pattern indicative of a calc-alkaline island arc affinity. These rare earth plots largely agree with the tectonic affinities suggested by the Zr vs. Y plot discussed above.

Rare earth data for the four mudstone and lone "sandstone" sample are plotted in Figure 10. The data are normalized to chondrite of Sun and McDonough (1989) in Figure 10 a) and to the North American Shale Composite (NASC) data of Gromet (1984) in Figure 10 b). The chondrite-normalized data show similar patterns to those of the mafic/basalt samples discussed above i.e. flat to slightly LREE-enriched trends. Chondrite-normalized shale data generally has a much stronger enrichment of the LREEs (Rollinson, 1993) suggesting that these mudstones may contain a significant component of more locally derived mafic to andesitic material. The NASC-normalized plot in Figure 10 b) for the same samples shows slight depletions in the LREEs and a flat pattern for the HREEs as opposed to an overall flat pattern that might be expected for a more "typical" shale again possibly suggesting a mafic volcanic component within these samples.

Interpretation and Conclusions

The Corey property has been very lightly explored. Work has closely clustered around showings identified as early as 1898. Rugged terrane and poor outcropping of the target volcanic and sedimentary rocks has hampered the extension of the work into new areas. The exploration challenge in the Eskay area is to locate a new Eskay-style deposit that is likely to be hosted in recessive weathering sediments and/or altered volcanics. Careful interpretation and correlation of the volcanic stratigraphy is of utmost importance in exploring for Eskay-type deposits. Most of the exploration work on the Corey Property was conducted prior to the completion of major government, academic and industry efforts to resolve the geological setting and genesis of the Eskay Creek deposit and the surrounding mineralization. As such, the use of all available geological "tools" is of paramount importance. Careful interpretation of major and trace element lithogeochemical data is an underutilized tool that can provide a powerful complement to good field observations in the overall interpretation of a volcanic sequence. Rock units that are visually similar in the field can be systematically subdivided using a variety of immobile element and discrimination plots to yield a more detailed "chemostratigraphy". Lithogeochemical data will also help to identify the preferred tectonic regime and rock compositions that host Eskay-type deposits thus better focusing exploration efforts.

The recent sampling program at the Corey property, while relatively small in extent, has shown that lithogeochemical sampling and chemostratigraphic interpretation is potentially a very useful tool in this area. The following conclusions have been made from the results of the 2003 program:

- Lithogeochemical data interpretation allows for detailed subdivision of volcanic units that are visually indiscernible in the field e.g. high- versus low-Ti basalts, calc-alkaline versus tholeiitic rhyolites.

- This further subdivision of units and development of a detailed chemostratigraphy, when coupled with careful field observations, will help immensely in the overall interpretation of the volcanic sequence at Corey especially given the often poor geological exposures in the field where the subtleties of the relationships between the units are often obscured.

- Lithogeochemical techniques appear to have useful applications to the interpretation of the mudstone units as well.

RECOMMENDATIONS

Considering the results of the 2003 exploration, combined with recent advances in the interpretation of the regional geology and metallogenesis, we make the following recommendations:

1. Conduct a comprehensive geological mapping program covering all the volcanic rocks within the Corey property volcanic belt. A series of transects oriented roughly east to west across the Hazelton Group stratigraphy should be completed. Initial focus should be on the Cumberland and South Unuk portions of the property where the known stratigraphy appears to be the most favourable for an Eskay-type target and where known showings and wide alteration zones already exist. Additional line-cutting would be required in these area. The program can be expanded later if necessary to include the Bench, Battlement and Victoria Lakes areas.

2. Continue with whole rock lithogeochemistry work and increase the sample density to allow tracing of volcanic units by chemostratigraphic methods. This will improve the chances of identifying a favourable Eskay-type tectonic environment. Sampling should include units that appear to be macroscopically easily identified since this study has shown that important correlatable lithogeochemical characteristics can be acquired from samples that look visually similar. Sampling should be done on units that are as monolithic as possible as mixed volcanic rocks will yield potentially confusing results. Sampling of the mudstone units should be expanded to continue to test the applicability of these methods to sedimentary rocks.

3. High precision analytical techniques, such as those used in this study, should be used to acquire complete suite of major, trace and rare earth element data.

4. *Continue with compilation and reinterpretation of lithogeochemical data from* past programs at Corey, as well as surrounding areas, and incorporate this information into a comprehensive lithologic and chemostratigraphic interpretation for the entire property. However, care should be taken when dealing with old datasets given uncertainties in sampling techniques, analytical precision, etc.

Respectfully submitted,

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APPENDIX I

2003 sample information and lithogeochemical data

sample	drillhole	depth	zone	field rock name	comment
21001	CBE-04	28.3	Bench	- massive basalt flow	
21002	CBE-04	40.6	Bench	- black mudstone	- carbonaceous, siliceous
21003	CBE-04	58.4	Bench	- black mudstone	- carbonaceous, siliceous
21004	CBE-04	73.7	Bench	- rhyolite flow breccia/hyaloclastite	
21005	CBE-04	103.2	Bench	- rhyolite flow breccia	- flow banded, siliceous and sericitic
21006	CBE-04	135.5	Bench	- rhyolite (QFP) flow breccia	- ~2% mud matrix in bx
21007	CBE-04	166.5	Bench	- rhyolite breccia	- sericitic, aphyric (ash??)
21008	CBE-04	200.8	Bench	- green mafic? in-situ breccia	
21009	CBE-04	216.2	Bench	- black mudstone	
21010	CBE-04	241.7	Bench	- "sandstone"	- coarse sandy volcaniclastic
21011	CBE-04	270.2	Bench	- black mudstone	
21012	CBE-04	291.4	Bench	- massive basalt flow	
21013	CBL-96-04	10.5	Cumberland	- mafic (basalt?) flow	- massive/insitu bx'd; weak epid-chl alteration
21014	CBL-96-04	45	Cumberland	- basalt breccia	- weak qz-epid-chl alteration (within Au-enriched zone)
21015	CBL-96-04	91	Cumberland	- massive basalt	- dark green, siliceous? (hard)
21016	BCH 97-01	250.1	Bench	- massive basalt flow	
21017	BCH 97-01	700.1	Bench	- basalt/andesite breccia	- weak-mod. epidote alteration/veining
21018	PRU 98-03	6.4	S. Cumberland	- maroon mafic breccia	- weak hematite alteration
21019	PRU 98-03	231.5	S. Cumberland	- andesite? fragmental rock	

sample no.	21001	21002	21003	21004	21005	21006	21007	21008	21009	21010	21011
drillhole	CBE-04	CBE-04	CBE-04	CBE-04	CBE-04	CBE-04	CBE-04	CBE-04	CBE-04	CBE-04	CBE-04
depth	28.3	40.6	58.4	73.7	103.2	135.5	166.5	200.8	216.2	241.7	270.2
zone	Bench	Bench	Bench	Bench	Bench	Bench	Bench	Bench	Bench	Bench	Bench
Litho type	Mafic	Mudst.	Mudst.	Rhy.	Rhy.	Rhy.	Rhy.	Dac. (hi-Zr)	Mudst.	Andesite	Mudst.
(wt. %)											
SiO_2	52.00	78.77	71.51	78.03	76.95	69.63	70.33	67.95	64.00	68.43	60.09
TiO_2	1.00	0.36	0.48	0.15	0.15	0.22	0.19	0.51	0.63	0.49	0.78
Al_2O_3	16.33	8.59	10.09	11.55	11.21	16.01	15.45	15.44	12.69	11.49	14.74
Fe_2O_3	9.16	2.01	5.21	1.07	0.86	1.37	1.12	3.15	6.44	3.47	7.94
MnO	0.14	0.02	0.11	0.05	0.04	0.08	0.05	0.08	0.10	0.09	0.10
MgO	5.89	1.20	0.96	0.28	0.47	0.87	0.78	1.76	1.52	1.00	2.25
CaO	9.57	0.90	1.23	0.49	1.21	2.58	1.72	3.24	3.59	4.84	2.01
Na_2O	2.58	0.63	0.58	4.15	0.72	1.32	3.58	3.69	1.57	3.91	1.89
K_2O	0.27	2.87	4.21	2.65	5.79	5.78	3.61	1.56	2.85	1.34	3.58
P_2O_5	0.21	0.14	0.09	0.00	0.00	0.00	0.01	0.10	0.17	0.20	0.75
LOI	2.50	3.80	5.30	1.10	2.30	1.80	2.80	2.10	6.10	4.40	5.50
Cr_2O_3	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Total	99.73	99.38	99.85	99.76	99.89	99.88	99.78	99.74	99.79	99.76	99.82
(ppm)											
Nb	6.7	2.8	3.9	18.2	19.6	30.5	23.3	16.1	5.4	4.4	5.4
Y	28.0	23.4	24.9	14.5	15.3	23.6	18.8	23.1	28.9	13.3	65.6
Zr	95.3	55.0	73.2	113.6	111.4	165.5	119.3	191.5	90.7	74.1	134.6
Ba	559	733	623	2142	1676	1953	1252	1373	1137	869	1586
Sr	388.3	46.9	75	190.3	248.6	240.7	176.5	397.3	230.7	245	146
Rb	5.3	76.9	106.1	63.2	183.6	209	112.2	40.6	88.4	39.2	109.4
Sc	30	14	17	2	2	3	2	6	17	9	21
Co	37.5	6.4	12.0	0.6	0.0	0.7	0.5	2.1	11.0	9.1	10.4
Cs	1.1	1.5	2.1	0.4	1.8	3.0	1.1	0.8	4.2	0.7	2.6
Ga	17.3	13.3	12.7	9.8	12.7	22.9	19.5	15.7	15.4	9.9	18.7
Hf	2.9	1.8	2.3	3.8	3.6	5.8	4.3	5.6	3.1	2.0	5.1
Sn	0	0	1	0	4	1	0	2	0	0	0
Ta	0.4	0.2	0.3	0.0	1.4	2.2	1.6	1.1	0.3	0.3	0.3
Th	3.0	2.0	2.7	16.7	15.8	25.4	21.0	10.3	3.5	1.7	2.8
U	1.1	8.6	1.9	4.9	5.4	8.0	7.3	3.8	1.8	2.0	3.8
V	200	680	205	5	5	5	0	13	253	113	166
W	0.3	0.6	0.8	2.5	0.4	2.0	0.8	1.6	1.1	3.4	2.4
La	14.6	10.7	15.0	38.1	38.4	64.9	48.6	36.5	13.6	9.1	29.8
Ce	29.9	19.0	26.1	67.8	69.1	117.8	86.4	69.6	21.0	16.2	46.8
Pr	3.53	3.02	4.51	6.11	6.4	10.48	7.63	6.91	3.87	2.03	8.41
Nd	13.6	13.5	18.5	18.8	20.8	32.6	24.5	26.8	18.7	9.8	41.1
Sm	3.9	3.7	4.6	3.1	3.4	5.4	3.9	4.9	4.4	2.1	10.1
Eu	1.13	0.87	1.05	0.5	0.57	1.03	0.82	1.29	1.16	0.46	2.25
Gd	4.55	4.1	4.79	2.01	2.44	3.65	2.9	4.22	5.26	2.33	11.2
Tb	0.7	0.53	0.67	0.36	0.34	0.57	0.48	0.58	0.74	0.33	1.63
Dy	4.47	3.59	4.26	2.18	2.24	3.53	2.59	3.56	4.62	2.26	9.5
Ho	0.84	0.68	0.78	0.44	0.4	0.65	0.5	0.64	0.86	0.37	1.67
Er	2.57	2.26	2.5	1.37	1.39	2.07	1.55	2	3	1.26	5.37
Tm	0.34	0.32	0.34	0.19	0.2	0.3	0.22	0.3	0.41	0.16	0.76
Yb	2.59	2.31	2.52	1.45	1.47	2.42	1.98	1.94	2.66	1.11	5.35
Lu	0.41	0.36	0.39	0.24	0.23	0.38	0.29	0.33	0.44	0.2	0.77
Mo	1.3	10.9	3.6	1.1	0.4	1	0.6	1.2	1.1	3.2	3.3
Cu	47.0	101.4	76.9	2.9	1.8	1.9	1.3	1.2	81.3	51.8	59.0
Pb	3.2	3.5	9.9	16.7	22.1	24.8	24.4	17.2	12.4	8.9	12.6
Zn	66	3468	276	29	42	42	24	61	156	85	143
Ni	69.0	76.8	58.0	1.7	0.6	1.1	0.3	0.9	44.2	10.9	27.6
As	1.8	18.7	51.8	2.0	1.8	1.8	2.7	1.4	21.2	25.0	22.4
Cd	0.2	64.8	0.8	0.1	0.4	0.1	0.2	0.2	0.2	0.6	0.4
Sb	0.1	28.6	6.8	0.2	0.3	0.1	0.2	0.2	0.9	3.8	2.8
Bi	0.0	0.1	0.2	0.1	0.3	0.2	0.2	0.1	0.2	0.2	0.2
Ag	0.1	1.1	1.5	0.1	0.1	0.1	0.1	0.1	0.5	0.3	0.6
Au	2.0	0.5	0.6	1.1	1.1	1.3	0.0	1.0	0.0	4.6	0.0
Hg	0.01	0.15	0.14	0.02	0	0	0.01	0.01	0.2	0.09	0.09
Tl	0.0	1.4	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.9	0.1
Se	0.8	22.1	5.8	0.0	0.0	0.0	0.0	0.0	5.3	1.5	7.8

sample no.	21012	21013	21014	21015	21016	21017	21018	21019
drillhole	CBE-04	CBL-96-04	CBL-96-04	CBL-96-04	BCH 97-01	BCH 97-01	PRU 98-03	PRU 98-03
depth	291.4	10.5	45	91	250.1	700.1	6.4	231.5
zone	Bench	Cumb'd	Cumb'd	Cumb'd	Bench	Bench	S. Cumb'd	S. Cumb'd
Litho type	Mafic	Hi-Ti mafic	Hi-Ti mafic	Hi-Ti mafic	Hi-Ti mafic	Andes. (hi-Zr)	Hi-Ti mafic	Mafic
(wt. %)								
SiO2	48.23	51.21	48.11	46.09	46.35	61.25	49.79	44.86
TiO2	0.92	2.80	1.89	2.14	1.69	1.15	1.30	0.99
Al2O3	15.98	14.38	13.71	14.41	15.02	15.64	14.89	13.68
Fe2O3	8.76	15.08	8.04	15.75	11.94	7.84	8.44	8.76
MnO	0.16	0.10	0.12	0.22	0.17	0.16	0.13	0.17
MgO	5.85	2.38	2.23	5.17	5.60	2.29	5.89	4.80
CaO	13.48	5.31	10.06	10.30	12.66	3.01	11.04	11.79
Na2O	2.37	4.65	3.29	2.61	2.25	6.01	4.29	4.75
K2O	0.07	1.27	3.54	0.45	0.14	0.18	0.09	0.58
P2O5	0.07	0.49	0.54	0.24	0.22	0.48	0.15	0.19
LOI	3.80	1.90	7.20	2.30	3.60	1.60	3.60	9.00
Cr2O3	0.06	0.01	0.00	0.01	0.03	0.00	0.06	0.04
Total	99.75	99.62	99.58	99.70	99.68	99.63	99.65	99.63
(ppm)								
Nb	1.1	8.8	12.9	4.1	4.9	19.7	1.0	3.1
Y	25.8	69.7	64.5	54.1	38.8	70.0	35.6	22.2
Zr	49.3	151.6	190.6	112.4	90.1	258.4	78.7	50.0
Ba	194	322	7551	105	152	96	17	410
Sr	223.9	159.2	143.5	317.6	155.9	179.3	90.8	155.1
Rb	2	35.1	61.2	16.7	4	5.6	1.9	14.4
Sc	38	45	25	49	40	18	37	33
Co	47.7	23.6	46.6	49.1	45.7	8.7	46.4	37.3
Cs	0.5	0.4	0.5	0.4	0.4	0.0	0.2	1.0
Ga	13.7	19.8	19.2	21.5	18.5	17.0	14.1	12.6
Hf	1.7	5.3	5.6	3.9	3.0	7.6	2.8	1.5
Sn	0	1	1	1	1	2	1	0
Ta	0.0	0.5	0.8	0.3	0.3	1.2	0.0	0.2
Th	0.3	2.4	4.7	0.6	0.7	7.9	0.4	0.7
U	0.0	0.5	5.9	0.2	0.4	2.6	1.3	0.6
V	219	583	175	408	312	37	241	243
W	0.5	0.8	0.8	0.2	0.5	1.0	0.2	0.6
La	1.8	15.8	24.2	5.7	8.4	36.5	3.6	5.5
Ce	5.9	33.3	48.1	15.4	18.3	72.8	8.9	13.5
Pr	0.97	4.6	6	2.51	2.82	8.4	1.77	1.85
Nd	5.7	22.2	28.7	13.0	14.1	37.1	10.9	9.9
Sm	2.4	7.1	7.4	4.8	4.3	8.6	3.8	2.7
Eu	0.93	2.19	1.87	1.58	1.45	2.31	1.17	0.85
Gd	3.72	10.24	9.68	8.07	6.24	10.8	5.09	3.82
Tb	0.57	1.57	1.52	1.24	0.98	1.73	0.85	0.59
Dy	4.19	10.94	10.29	8.52	6.44	11.81	5.69	3.92
Ho	0.78	2.07	2.04	1.69	1.26	2.21	1.14	0.75
Er	2.69	6.96	6.09	5.29	3.88	7.02	3.85	2.26
Tm	0.33	0.91	0.89	0.69	0.53	0.98	0.48	0.29
Yb	2.33	6.37	6.33	5.24	3.63	6.9	3.41	2.21
Lu	0.34	0.92	0.89	0.73	0.56	0.96	0.52	0.33
Mo	0.6	0.8	4.6	0.5	0.3	0.4	0.3	0.3
Cu	75.0	44.3	12.0	71.6	54.8	1.2	73.3	103.6
Pb	0.4	1	19.7	0.8	0.6	0.9	1.2	20.3
Zn	38	125	214	112	66	125	81	105
Ni	184.2	17.1	54.8	30.5	92.2	2.1	225.5	90.0
As	1.3	1.4	139.5	0.9	0.0	0.5	4.3	5.8
Cd	0.1	0.1	2.6	0.2	0.1	0.1	0.5	0.2
Sb	0.0	0.2	2.3	0.0	0.0	0.1	0.0	0.2
Bi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ag	0.0	0.0	1.5	0.0	0.0	0.0	0.1	0.3
Au	0.6	0.6	77.4	1.7	0.0	0.0	0.9	1.3
Hg	0	0.01	0.17	0.01	0	0.01	0.01	0.01
Tl	0.0	0.0	3.2	0.1	0.0	0.0	0.0	0.1
Se	0.0	0.0	1.8	0.5	0.0	0.0	0.8	0.9

APPENDIX II

Statements of Qualification

Sean D. McKinley, M.Sc., P.Geo.

407-6833 Station Hill Drive,

Burnaby, B.C.

V3N5E1

I, Sean D. McKinley, M.Sc., P.Geo. am a Consulting Geologist residing in Vancouver, British Columbia, and do hereby certify that:

- I graduated from Queen's University, Kingston, Ontario in 1992 with a B. Sc. (Honours) degree in Geology.
- I graduated from the University of British Columbia, Vancouver, B.C. in 1996 with an M. Sc. degree in Geology.
- I am a Professional Geoscientist (P. Geo.) registered in the Association of Professional Engineers and Geoscientists of British Columbia, member# 28226, and have been a member in good standing since May 2003.
- From 1993 to the present, I have been actively engaged as a geologist in mineral exploration and geological research in British Columbia and Europe.

- *I visited the Corey Property of Kenrich-Eskay Mining Corp. in October 2003.*

Dated September 21, 2004.

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Sean D. McKinley, M.Sc., P. Geo.

Paul J. McGuigan, P. Geo.

2081 West 37th Avenue,

Vancouver, BC

V6M 1N7

I, Paul J. McGuigan, P. Geo., do hereby certify that:

- I am a consulting geoscientist and principal of both Tecucomp Geological Inc. and Cambria Geological Ltd. of Vancouver, BC.
- I am a graduate of the University of British Columbia, with a Bachelor of Science degree in Geology (Honours) in 1975.
- I am a Professional Geoscientist in good standing with the Association of Professional Engineers and Geoscientists of British Columbia and a Member of the Consulting Practice Committee and the Geoscience Committee of that association.
- I have been practicing my profession continuously for 27 years since graduation in 1975, as a geologist and geochemist in North and South America and Africa.

- I visited the Corey Property of Kenrich-Eskay Mining Corp. in October 2003.

Dated September 21, 2004.

Paul J. McGuigan, P. Geo.

PROFESSIONAL
PROVINCE OF BRITISH COLUMBIA
P. J. McGUIGAN
GEOSCIENTIST

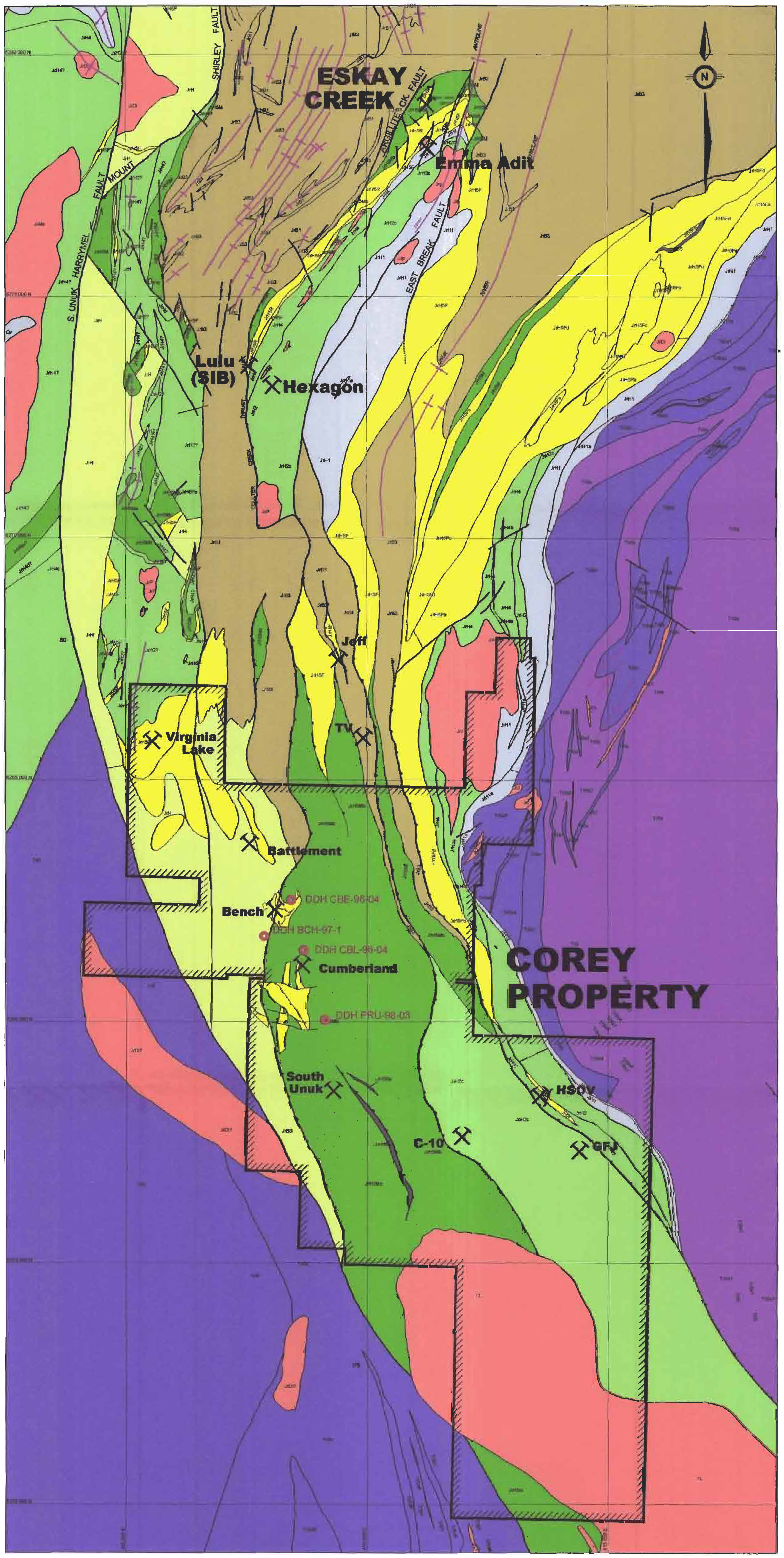
APPENDIX III

Statement of Costs

Item	Units	Amount	Unit cost	Total
Supervising Geologist (P. McGuigan)*	1 man	10 days @	$500 per day	$5,000.00
Geologist (S. McKinley)*	1 man	20 days @	$500 per day	$10,000.00
Geologist (M. Caron)*	1 man	15 days @	$500 per day	$7,500.00
Camp cook (shared)**	1 man	15 days @	$300 per day	$1,125.00
Field support	2 men	2 days @	$350 per day	$1,400.00
Helicopter				$7,658.72
Field Equipment				$3,000.00
Fuel (diesel, propane)				$1,155.82
Food				$1,271.37
Expediting				$2,092.48
Equipment rental				$191.40
Communications rentals				$689.48
Geochemical analyses (Acme Labs)		19 samples		$931.97
			Total cost of technical work:	**$42,016.24**

* time includes fieldwork, data interpretation, report writing

** camp cook shared with camp rehab crew, 25% of cost assigned to technical work



LEGEND

STRATIFIED ROCKS

TERTIARY AND QUATERNARY

PLIOCENE TO RECENT

- **Qv** Stikine volcanic suite: olivine and plagioclase-phyric basaltic flows, tephra, and scoria deposits

JURASSIC

BOWSER LAKE GROUP BIOSTRATIGRAPHIC LIMITS: POST- MIDDLE BAJOCIAN
KNOWN BIOSTRATIGRAPHIC RANGE: MIDDLE BAJOCIAN TO KIMMERIDGIAN

- **JrB** undifferentiated sedimentary rocks
  - JrB1 chert pebble to cobble conglomerate, interstratified sandstone
  - JrB2 fine- to coarse-grained sandstone, minor interstratified conglomerate or mudstone
  - JrB3 thinly-bedded mudstone and siltstone

HAZELTON GROUP BIOSTRATIGRAPHIC LIMITS: POST-RHAETIAN, PRE-MIDDLE BAJOCIAN
KNOWN BIOSTRATIGRAPHIC RANGE: HETTANGIAN-SINEMURIAN TO MIDDLE BAJOCIAN

- **JrH** sedimentary and volcanic rocks, undifferentiated

Salmon River Fm. BIOSTRATIGRAPHIC LIMITS: POST-UPPER AALENIAN, PRE-MIDDLE BAJOCIAN
KNOWN BIOSTRATIGRAPHIC RANGE: BAJOCIAN

- **JrH5** bimodal volcanic rocks and interstratified sedimentary rocks

Bruce Glacier Member

- **JrH5F** felsic volcanic rocks, undifferentiated
  - JrH5Fa massive, aphyric flow-banded flows, minor flow breccia
  - JrH5Fb ash, lapilli tuff, non-welded to densely welded; aphyric to qtz+kspar phyric
  - JrH5Fc volcanic breccia, monolithic to slightly heterolithic
  - JrH5Fd epiclastic breccia to subangular volcanic conglomerate

Eskay Rhyolite Member

- **JrH5R** rhyolite flows, autoclastic breccias

John Peaks Member

- **JrH5M** mafic volcanic rocks
  - JrH5Ma massive andesitic to basaltic flows; plag ± cpx phyric
  - JrH5Mb pillowed flows, broken pillow breccia, interbedded mudstone
  - JrH5Mc volcanic breccia, hyaloclastite, interbedded mudstone

Troy Ridge Member

- **JrH5S** intercalated sedimentary rocks
  - JrH5Sa thinly-bedded carbonaceous mudstone, turbiditic mudstone to siltstone, locally chert
  - JrH5Sb "pyjama beds": thinly-interbedded white tuffaceous mudstone and dark gray to black argillite
  - JrH5Sc calcareous, fossiliferous buff-coloured sandstone

Betty Creek Fm. BIOSTRATIGRAPHIC LIMITS: POST-HETTANGIAN/SINEMURIAN, PRE-MIDDLE BAJOCIAN
KNOWN BIOSTRATIGRAPHIC RANGE: UPPER PLIENSBACHIAN TO UPPER AALENIAN

Treaty Ridge Member

- **JrH4** sedimentary unit
  - JrH4 undifferentiated sedimentary rocks
  - JrH4a calcareous brown to tan fossiliferous sandstone/wacke
  - JrH4b volcanic sandstone, conglomerate, local bioclastic sandy limestone intervals
  - JrH4c turbiditic mudstone to siltstone
  - JrH4d thinly-bedded to massive limestone
  - JrH4e thinly to medium bedded red to green chert

Brucejack Lake Member

- **JrH3** felsic volcanic rocks
  - JrH3 undifferentiated felsic volcanic and epiclastic rocks
  - JrH3a fine-grained crystal tuff; epiclastic rocks; well-bedded
  - JrH3b flow-banded dacite to rhyolite flows
  - JrH3c lapilli tuff, variably welded
  - JrH3d interbedded tuff and epiclastic rocks

Unuk River Member

- **JrH2** andesitic volcanic and epiclastic rocks
  - JrH2 undifferentiated andesitic volcanic and epiclastic rocks
  - JrH2a massive hb+pl phyric andesite flows
  - JrH2b epiclastic rocks: red to green coarse-grained sandstone to conglomerate; medium to thickly bedded, cross stratification common
  - JrH2c andesitic volcanic breccia/block tuff; hb+pl-phyric clasts, some interstratified epiclastic rocks

Jack Formation BIOSTRATIGRAPHIC LIMITS: POST-RHAETIAN, PRE-UPPER PLIENSBACHIAN
KNOWN BIOSTRATIGRAPHIC RANGE: HETTANGIAN/SINEMURIAN BOUNDARY

- **JrH1** basal sedimentary unit
  - JrH1 undifferentiated sedimentary rocks
  - JrH1a clast-supported granitoid pebble to boulder conglomerate
  - JrH1b sandstone, siltstone, turbiditic mudstone

TRIASSIC

STUHINI GROUP BIOSTRATIGRAPHIC LIMITS: POST-PERMIAN, PRE-HETTANGIAN/SINEMURIAN
KNOWN BIOSTRATIGRAPHIC RANGE: CARNIAN-RHAETIAN

- **TrS** volcanic and sedimentary rocks, undifferentiated

CARNIAN TO NORIAN

- **TrSv** undifferentiated volcanic rocks
- **TrSm** mafic volcanic rocks
  - TrSm undifferentiated basaltic volcanic flows, tuffs and volcanic breccia
  - TrSm1 basaltic cpx+plag-phyric lapilli to block tuff
- **TrSi** intermediate volcanic rocks
  - TrSi undifferentiated andesitic volcanic flows, tuffs and volcanic breccia
  - TrSi1 andesitic cpx/hb+plag-phyric block tuff, volcanic breccia
  - TrSi2 heterolithic conglomerate, mainly andesitic cpx/hb+plag-phyric clasts
- **TrSs** sedimentary rocks
  - TrSs undifferentiated sandstone, mudstone, conglomerate, limestone
  - TrSs1 thinly- to medium-bedded argillite, siltstone turbidites; interstratified sandstone and wacke
  - TrSs2 pale green thinly-bedded siliceous siltstone, mudstone
  - TrSs3 thinly- to medium-bedded feldspathic fine-grained sandstone/wacke; interstratified siltstone and mudstone
  - TrSs4 medium to thickly bedded coarse-grained feldspathic sandstone and tuffaceous heterolithic conglomerate
  - TrSs5 massive dark green sandstone/wacke
  - TrSs6 limestone
  - TrSs7 green andesitic boulder conglomerate
  - TrSs8 orange weathering, medium to coarse fossiliferous wacke
  - TrSs9 chert pebble conglomerate

INTRUSIVE ROCKS

COAST PLUTONIC SUITE

- **TC** biotite + hornblende granite, minor quartz diorite; associated dykes
- **TL** Lee Brant stock: hornblende-biotite quartz monzonite

THREE SISTERS PLUTONIC SUITE (172 - 180(?) MA)

- **JrP** alkali feldspar-plagioclase-hornblende porphyry (may include some older intrusions)
- **JrF** felsic dykes and stocks, unnamed
- **JrMe** Melville Pluton: light to dark grey, locally pink, medium-grained equigranular, biotite-hornblende diorite, monzodiorite, and monzonite. 178.4 ± 0.5 Ma
- **JrHd** Harrymel Ridge Diorite
- **JrJ** John Peaks Pluton hornblende diorite
- **JrGd** unnamed granodiorite to syenite plutons and stocks
- **JrDi** unnamed dioritic plutons and stocks

TEXAS CREEK PLUTONIC SUITE (185 - 205 MA)

- **JrP2** akali feldspar-plagioclase-hornblende porphyry (includes Eskay Porphyry: grey-green, plagioclase ± K-feldspar ± hornblende ± biotite porphyry with up to 50% coarse to fine-grained phenocrysts in an aphanitic groundmass; hypabyssal stock of dacitic to granitic composition, U-Pb (zircon) = 186 ± 2 Ma)
- **JrL** Lehto Pluton: coarse alkali-feldspar ± hornblende porphyritic monzonite and quartz diorite; U-Pb (zircon) = 192.7 +0.9 / -1.8 Ma
- **JrK** Brucejack Lake potassium feldspar megacrystic porphyry; U-Pb (zircon) = 194.0 +3.7 / -0.6 Ma
- **JrMi** Mitchell/Sulphurets suite: granite, monzonite, quartz monzonite, monzodiorite
- **JrQd** quartz diorite, unnamed

ALTERATION

Sericite - Quartz - Pyrite

- **SQPY** Broad sericite-quartz-pyrite mineralized zones, locally with silicification and sph - gn - py - gold - silver in disseminations and stockwork veins

GEOLOGICAL SYMBOLS

stratigraphic or intrusive contact: defined; approximate; inferred

faults: defined, with dip of fault plane and slickenside orientation; approximate; inferred; reverse motion, teeth on upper plate; normal motion, D = downthrown side; strike-slip motion

bedding, facing determined: inclined; vertical; overturned

bedding, facing unknown: inclined; vertical

flow banding: inclined; vertical

eutaxitic foliation: inclined; vertical

slaty cleavage or schistosity: inclined; vertical

gneissic layering: inclined; vertical

crenulation fabric: crenulation lineation, showing asymmetry; crenulation cleavage, inclined; crenulation cleavage, vertical

mesoscopic fold: fold axis, showing asymmetry; axial surface, inclined; axial surface, vertical

kink band: kink axis, showing asymmetry; kink band boundary, inclined; kink band boundary, vertical

en-echelon extension vein systems: enveloping surface, inclined, with shear sense indicators; enveloping surface, vertical; displacement direction and sense

mineral orientation lineation

intersection lineation

megascopic fold axial surface trace: synform, upright, overturned; antiform, upright, overturned

fossil locality, with reference number

U-Pb radiometric age, sample number

B.C. minfile location

0 1 km

Geology compiled from MDRU (1996) modified by McGuigan (2004)

Kenrich-Eskay Mining Corp.

Corey Property, British Columbia

Assessment Report

Showing Geology and Drill Hole Locations

Scale: 1:50,000	Map Datum NAD83
To Accompany a Report By: Sean McKinley, P. Geo.	Report Date: June 2004
	Map No. 1