Kennecott Canada Exploration Inc.

GREENLAND CREEK PROJECT: 1999 GEOLOGICAL AND GEOCHEMICAL ASSESSMENT REPORT

CORE 3 to 19, CORE 5W,
FIN 1, 2, and FIN 4 to 13 mineral claims
(Greenland Group)

Statement of Work Event Number:
3142927

NTS: 082F16, 082K01

Golden and Fort Steele Mining Divisions, British Columbia

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- Date of report -
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1.0 INTRODUCTION

The Greenland Creek claims were staked between 1995 and 1998 by Miner River Resources Ltd. and Eagle Plains Resources Ltd. to cover lower and middle Aldridge stratigraphy considered prospective for "Sullivan–type" zinc-lead mineralization. Kennecott Canada Exploration Inc. optioned the claims in January 1999 and conducted a property-wide evaluation of the claim block using geological mapping and soil, rock and stream sediment geochemistry during the 1999 summer field season. The 1999 exploration program was designed to evaluate the property for its potential for hosting an orebody containing 100 million tonnes grading >10% zinc equivalent and identify specific areas for additional work.

This report was prepared according to British Columbia government regulations to document the 1999 work conducted on the Greenland Creek group recorded on Statement of Work 3142927 dated December 7, 1999. For completeness, the report also includes results from the FIN mineral claims previously described in an assessment report to accompany Statement of Work 3139165 filed on September 13, 1999 (Coombes, 1999). The attached statement of expenditures does not include the previously recorded work.

2.0 GENERAL DESCRIPTION

2.1 Location, Access, and Physiography

The project area encompasses 5,225 hectares in southeast British Columbia including the Greenland Creek watershed and the headwaters of Middle Findlay Creek. The project area is centred at geographic coordinates 49° 58' north latitude by 116° 13' west longitude on N.T.S. map sheets 082F16 and 082K01 (Figure 1).

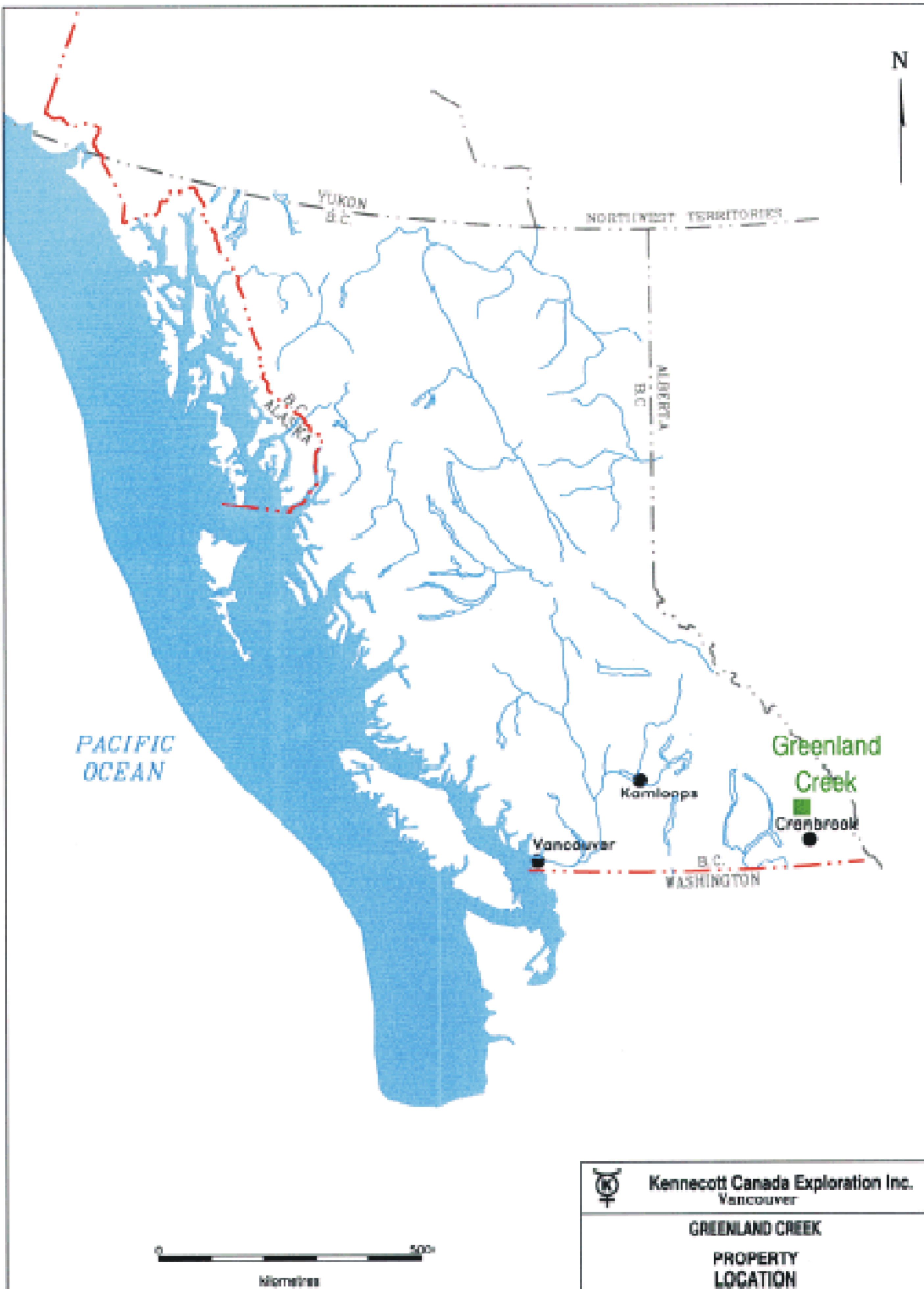
Access to the property is primarily by helicopter. ATV's can traverse an overgrown road up Greenland Creek from active logging roads along Skookumchuck Creek nine kilometres east of the property. The closest helicopters are based in Cranbrook, 61 kilometres to the south-southeast and Invermere, 62 kilometres to the north-northeast. The closest community is Canal Flats, about 35 kilometres northeast of the property. The closest full service centre is Cranbrook, which has a commercial airport and full facilities.

The project area lies within the Purcell Mountains, a sub-range of the Columbia Mountains of British Columbia. Topography is rugged with steep, locally precipitous slopes, serrated ridges, and U-shaped glacial valleys shaped by alpine glaciation. Elevations range from a high of 2,840 metres on the CORE 7 claim (Plate 1) to a low of 1,480 metres at Skookumchuck Creek in the southeast corner of the claims (Plate 2).

The climate is continental and is characterized by low to moderate precipitation and a wide temperature range. Temperatures range from about -30°C in the winter to over 25°C in the summer months. The field season for most of the project area is from June to mid-October although snow cover in the higher regions can last well into July.

2.2 Claim Status

The Greenland Creek property consists of 16 two-post mineral claims and 14 modified grid mineral claims (247 units total) (Figure 2). Kennecott Canada Exploration Inc. owns the claims subject to an underlying option agreement with Eagle Plains Resources Ltd. The claims were grouped as the Greenland Group on December 7, 1999 (Event Number 3142563). A full list of the claims and their expiry dates is attached as Appendix I.



Kennecott Canada Exploration Inc.
Vancouver

GREENLAND CREEK

PROPERTY
LOCATION

BRITISH COLUMBIA, CANADA

Date:		Author:		Figure 1
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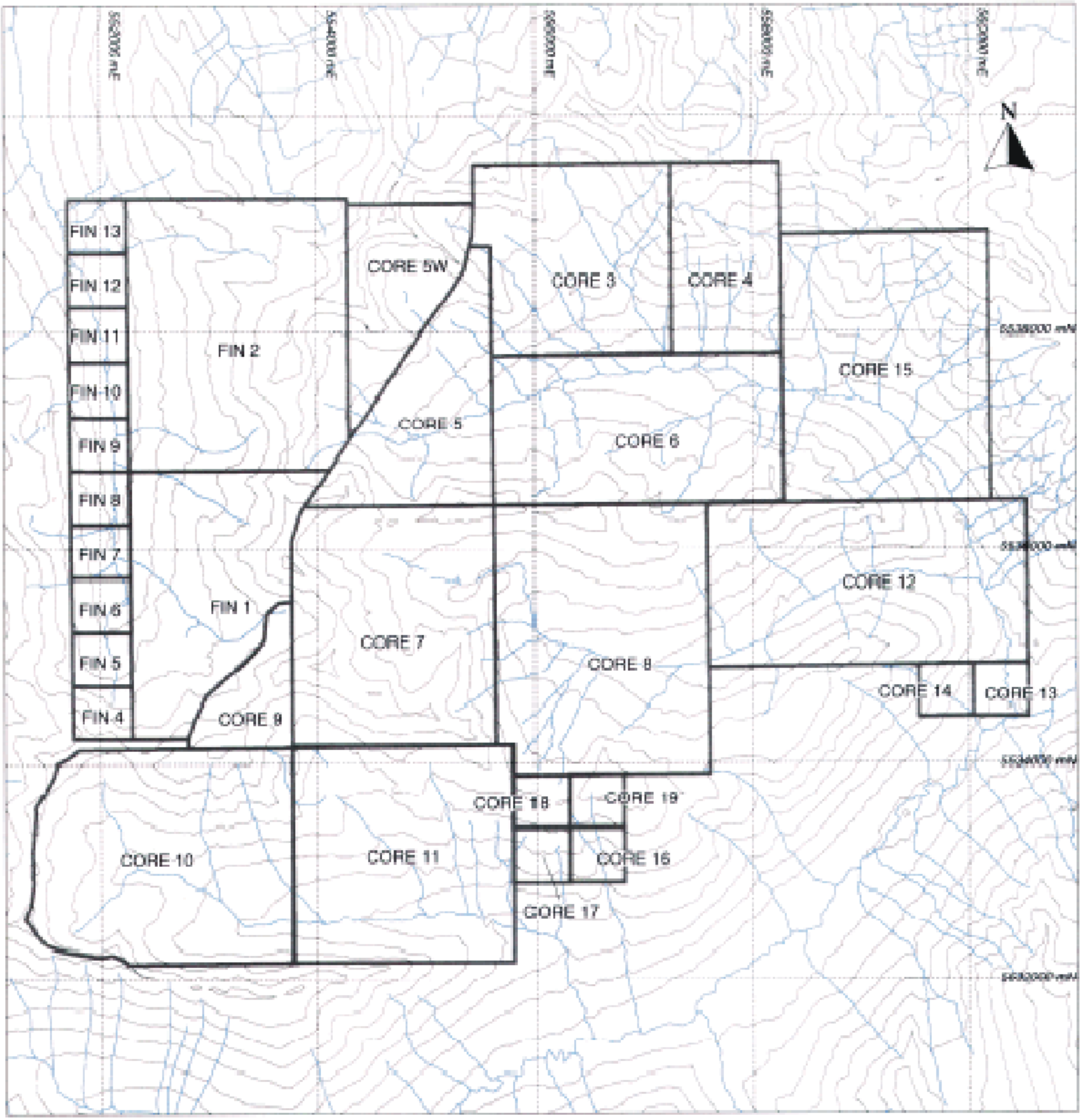

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kilometres

KENNECOTT CANADA EXPLORATION INC.
VANCOUVER

GREENLAND CREEK

CLAIM MAP

BRITISH COLUMBIA, CANADA

Date: 2/02/2000	Author: SC	NTS:
File: greenland claim pagesize.wor		Figure: 2

2.3 Exploration History

Mineral exploration in the region began with placer gold mining on Wildhorse River in the mid-1860's. Activity focused on placer gold deposits until the late 1800's when lead-silver deposits at St. Eugene and Sullivan were discovered. The region has been actively explored, primarily for lead and zinc, ever since.

The project area has been sporadically explored since at least the 1930's. Government assessment reports indicate exploration programs by Cominco (1957-59, 1968, 1977, 1984-1988), Newconex (1966-67), Arrow Inter-America Corp. (1970), Kerr-Addison Mines (1971-1975), Amax (1977-79), Billiton Canada (1983-1984), Teck Corp. (1990), and Eagle Plains Resources-Miner River Resources (1995-1998).

Past exploration targeted lead in veins, tin and tungsten associated with skarn proximal to Cretaceous intrusions, and stratiform zinc and lead. The only recorded diamond drilling was by Kerr Addison Mines in 1975 (1 hole, 155 metres) beside Cadillac Creek, and by Eagle Plains Resources in 1996 and 1997 (12 holes, 1,305 metres total) in the Fish Lake area (1996) and in Mac-Nine Lakes Basin (1997). Cominco probably also drilled several short holes at the original Pico tungsten showing near the confluence of Cadillac and Greenland creeks. Known drill hole locations are plotted on Figure 6.

The Eagle Plains Resources Ltd. work at Mac-Nine Lakes Basin identified several narrow (<1 cm) strata-bound pyrrhotite-quartz±sphalerite±galena±arsenopyrite horizons that show some similarities to sedex-style mineralization at the Sullivan Mine (Downie, 1998).

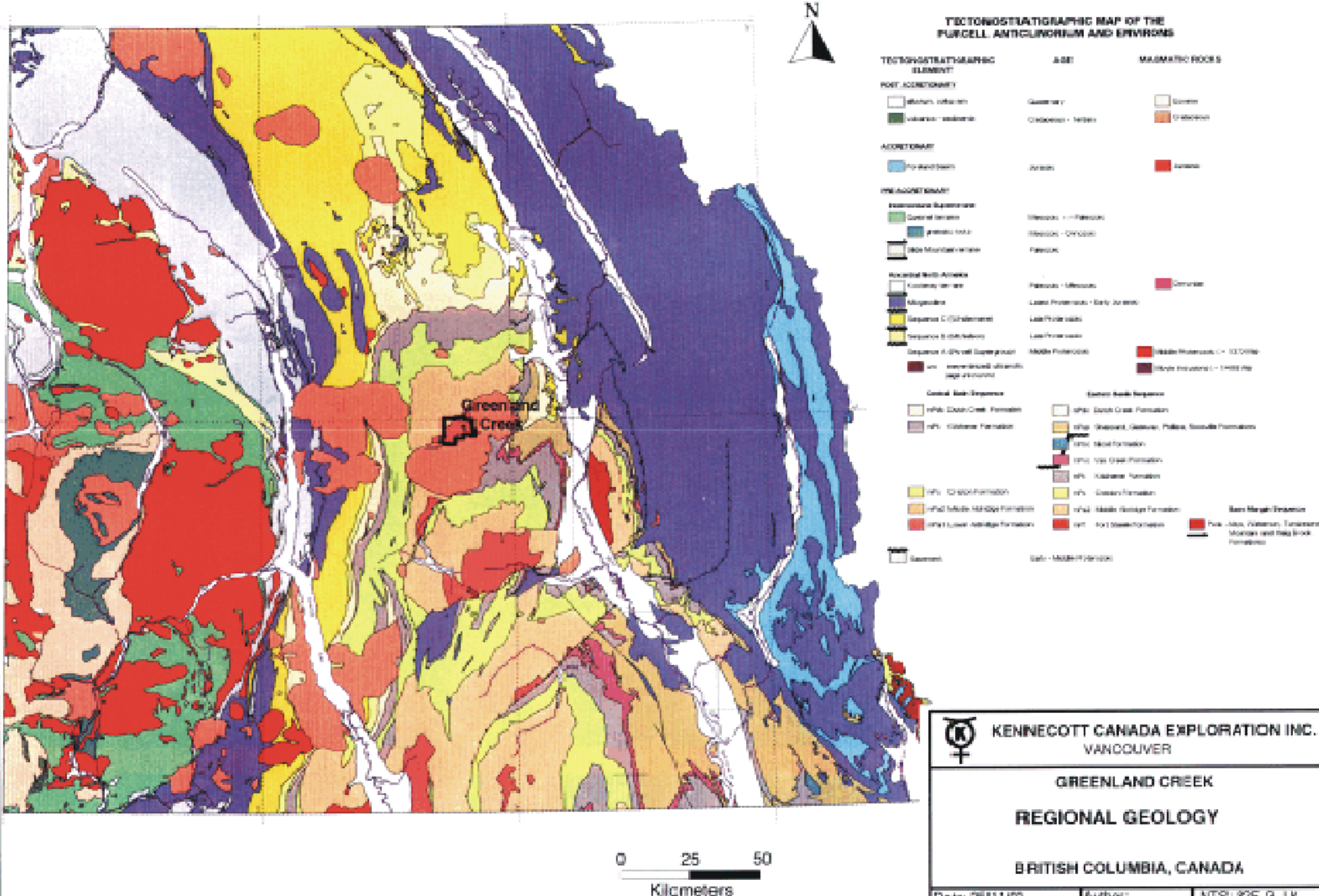
Full descriptions of known mineral occurrences and previous work are available in reports by Downie (1998, 1999).

3.0 GEOLOGICAL SETTING

The Greenland Creek project area is located on the west limb of the Purcell anticlinorium, a broad gently north plunging structure cored by the Proterozoic Purcell Supergroup (Figure 3). The supergroup comprises a thick (12+ kilometre) sequence of siliciclastic and lesser carbonate rocks deposited in an intracratonic rift basin. Hoy (1992) provides a detailed description of the regional geology. Reesor (1958) and Brown and Termuende (1998) describe the Greenland Creek area.

The Aldridge Formation is the lowermost unit of the Purcell Supergroup exposed in the region. The lower Aldridge Formation consists of commonly rusty weathering, thin-bedded to laminated silicic sandstone, siltstone and argillite. Lower Aldridge sediments grade upward into grey weathering, thick-bedded turbidites of the middle Aldridge Formation. The middle Aldridge Formation is about 2,000 to 2,500 metres thick. Lower and middle Aldridge strata are expanded by middle Proterozoic dioritic to gabbroic sills of the Moyie intrusions. The upper Aldridge Formation consists of rusty weathering, thin-bedded siltstone and argillite and is typically 250 to 500 metres thick.

Pale grey, green and mauve argillite, siltstone and arenite of the Creston Formation overly the Aldridge Formation. The Creston Formation ranges in thickness from 1,200 metres to over 2,000 metres and is overlain by carbonate rocks of the Kitchener Formation, siltites and argillites of the Van Creek Formation, and volcanics of the Nicol Creek Formation. The uppermost strata of the Purcell Supergroup, the Dutch Creek Formation and the Mount Nelson Formation are exposed in the northern part of the region. Cretaceous granitic stocks and batholiths intrude all formations of the Purcell Supergroup.



KENNECOTT CANADA EXPLORATION INC.
VANCOUVER

GREENLAND CREEK

REGIONAL GEOLOGY

BRITISH COLUMBIA, CANADA

Date: 25/11/99	Author:	NTS: 82F,G,J,K
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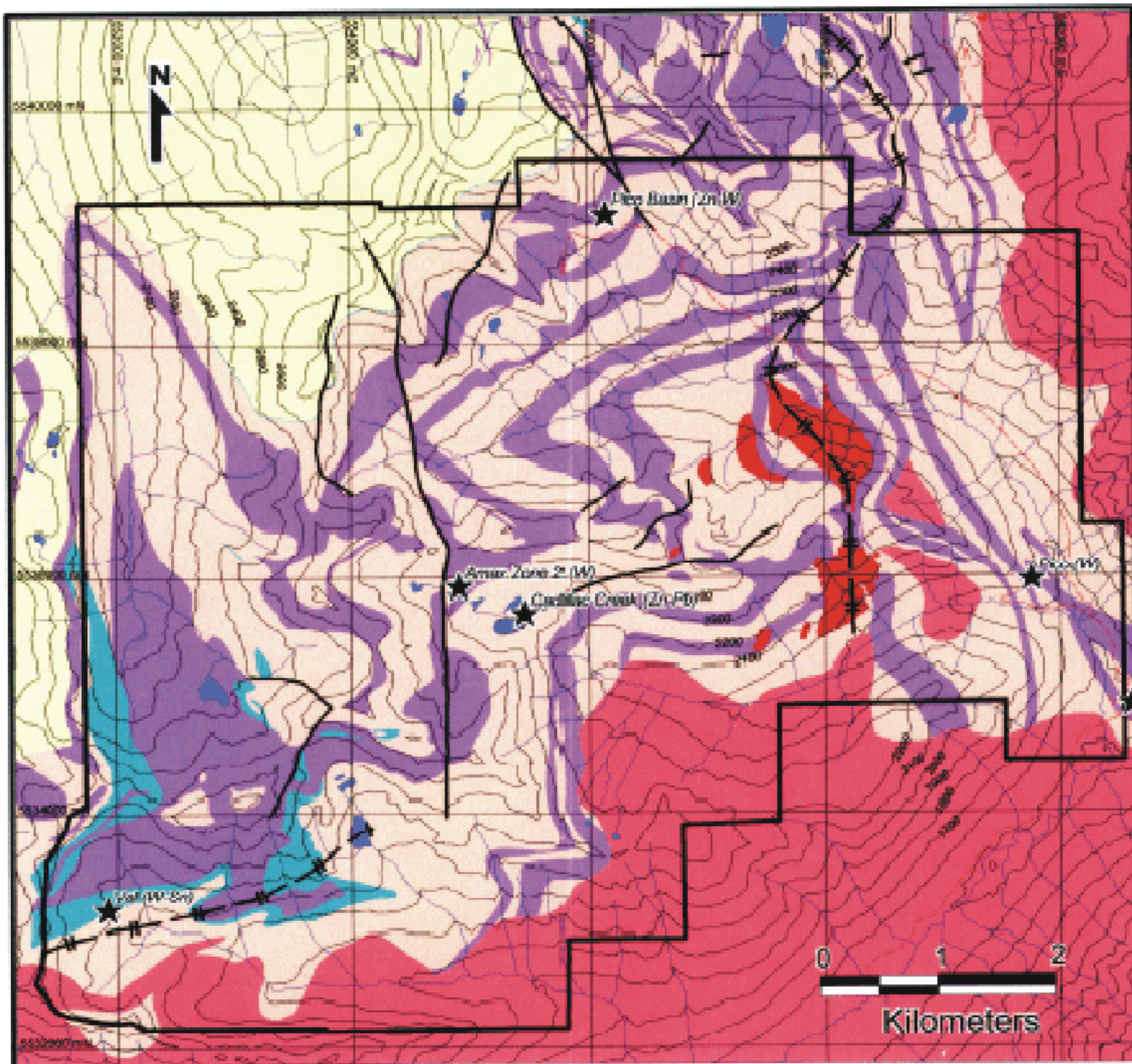


LEGEND

- Cretaceous White Creek Batholith
- Cretaceous (?) Greenland Creek Stock
- Proterozoic Moyie Sills
- Proterozoic Fragmental
- Proterozoic Middle Aldridge Fm.
- Proterozoic Lower Aldridge Fm.
- Anticline axis
- Fault
- Showing

Kennecott Canada Exploration Inc.

GREENLAND CREEK

GENERALIZED PROPERTY GEOLOGY

BRITISH COLUMBIA, CANADA

Date: 09/13/99	Author: SC	NTS: 082F16
Scale: 1:50,000	Proj: NAD83UTM11	**Figure 4**

The most significant mineral deposit in the region is the world class Sullivan mine owned by Cominco Ltd. at Kimberley, B.C., 40 kilometres south-southeast of the subject property. The Sullivan contained an estimated 170 million tonnes grading 5.5% zinc, 5.8% lead and 59 g/T silver. The deposit is hosted by siltstone and argillite of the lower Aldridge Formation immediately below the contact with the middle Aldridge formation. Sullivan is interpreted to be a sedimentary exhalitive (sedex) sulphide deposit formed in a fault-controlled sub-basin. The lower-middle Aldridge contact ("LMC") is commonly anomalous in zinc and lead and has been the focus of most zinc-lead exploration in the region.

The Greenland Creek project area is mostly underlain by lower Aldridge Formation sandstone, siltstone and mudstone (Figure 4). Middle Aldridge Formation siltstone and sandstone is exposed on the northern and eastern edges of the claim group. Numerous Proterozoic Moyie gabbro and diorite sills expand both lower and middle Aldridge strata. The Proterozoic rocks are intruded by several phases of Cretaceous felsic intrusive rocks of the White Creek Batholith. Several distinctive granite pegmatite bodies in the centre of the property (the Greenland Creek intrusions) have been tentatively assigned a Cretaceous age but may in fact be mid-Proterozoic based on similarities to the 1370 Ma Hellroaring Creek Stock near Kimberley (Smith and Brown, 1998). So far, U-Pb dating attempts for the Greenland Creek stock have been unsuccessful.

Bedding is conformable and generally dips gently to the northwest although local tight folding occurs adjacent to the White Creek Batholith. Local normal faults have only minor displacement. The property geology is described in detail in this report under "Discussion of Exploration Results" (section 5.1).

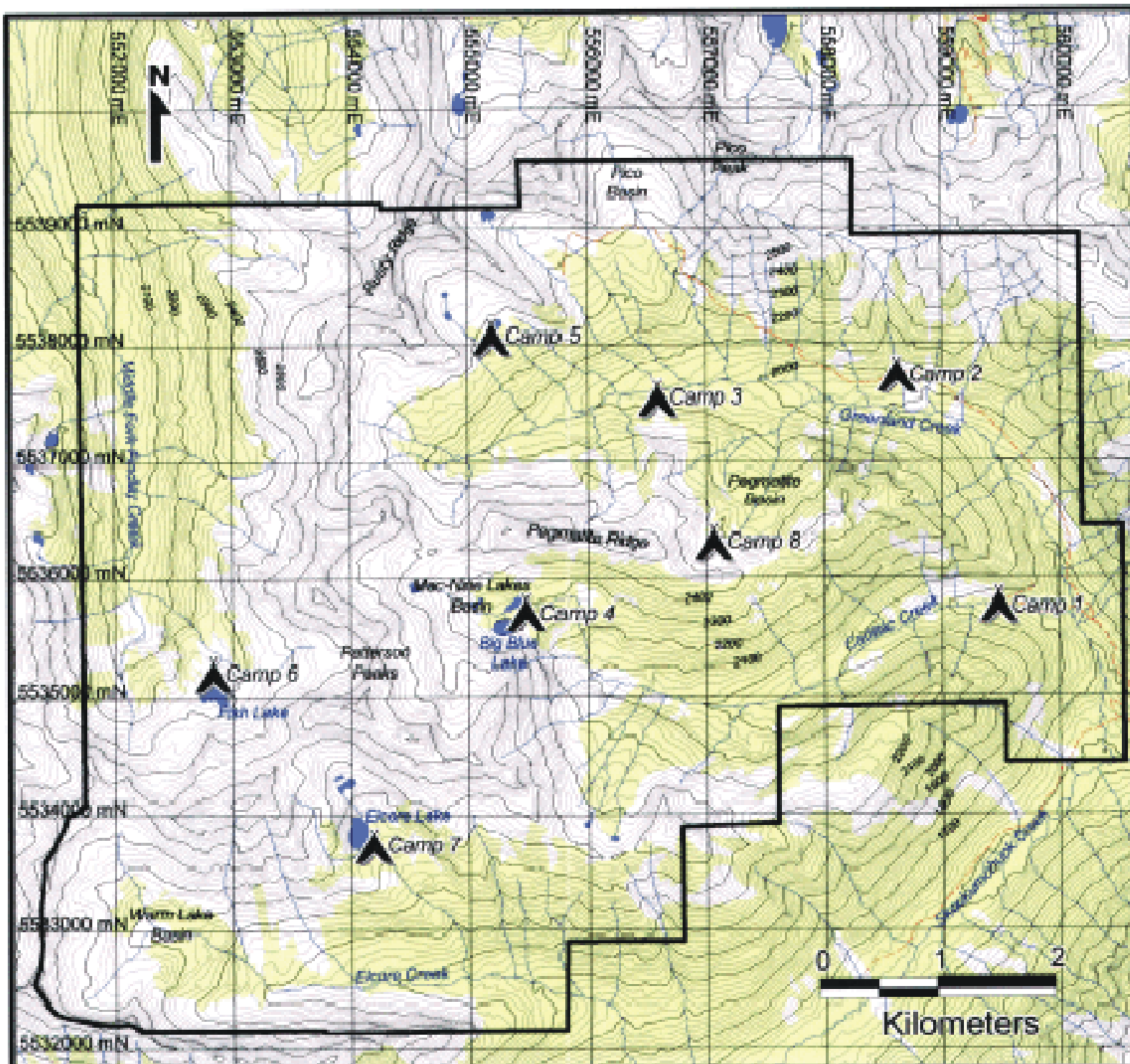
4.0 1999 EXPLORATION PROGRAM

The 1999 exploration program described in this report was conducted between June 15, 1999 and September 30, 1999. Work consisted of helicopter-supported and fly camp based geological mapping and stream sediment, soil and rock geochemical sampling. Fly camp locations are shown on Figure 5. The program was supervised by Steven Coombes, P.Geo., senior geologist for Kennecott Canada Exploration Inc. Greenland Creek fieldwork was by contract geologists Martine Bedard, Rob Duncan, Charlie Greig, Lucas Marshall and Nick Thomas, and contract field assistants Jesse Campbell and Alex Raymont. Bighorn Helicopters Inc. of Cranbrook, B.C. provided helicopter support.

All geochemical sample sites were field surveyed with Garmin GPS-12 GPS receivers using the NAD83 UTM Zone 11 coordinate system. Positional data was then manually corrected against TRIM digital topography maps giving an estimated accuracy within 30 metres.

Following is a schedule of events for the 1999 Greenland Creek program.

June 15 – 25	Helicopter assisted stream sediment sampling.
July 5 – 10	Helicopter assisted soil sampling.
July 11 to 23	Fly camp based soil sampling (camps 1 and 2).
August 3 to 31	Fly camp based soil sampling and geological mapping (camps 3 to 7).
September 13 to 30	Fly camp and helicopter assisted in-fill soil sampling, rock chip sampling and geological mapping (camps 8 and 9).



Kennecott Canada Exploration Inc.

GREENLAND CREEK

1999 CAMP LOCATIONS

BRITISH COLUMBIA, CANADA

Date: 09/12/99	Author: SC	NTS: 082F16
Scale: 1:50,000	Proj: NAD83/UTM11	**Figure 5**

The 1999 exploration program included: geological mapping of the property at 1:10,000 scale (approximately 5,225 hectares), stream sediment geochemical sampling (45 samples), soil geochemical sampling (1,372 samples), and rock geochemical sampling (73 samples). Total 1999 exploration expenditures on the CORE claims were $156,346.75 with an additional $21,859.12 spent on the FIN claims as previously reported (Coombes, 1999). The amount being applied to the CORE claims for assessment purposes in this report is **$70,400.00**. The cost statement supporting expenditures is attached as appendix II.

4.1 Geological Mapping Survey

Twenty-four field days between mid-August and late September were spent mapping the Greenland Creek Option. Charlie Greig supervised the geological mapping with assistance from Rob Duncan, Lucas Marshall and Nick Thomas. Traverses were based mainly from fly-camps scattered throughout the area in conjunction with the soil-sampling program (Figure 5). Several in-fill helicopter supported traverses were conducted toward the end of the program. The object of the mapping was to establish a property scale geological framework largely to aid in evaluating the geochemical results. Detailed information was not collected or, if it was is not presented on the final map (Figure 6).

Mapping was done at 1:5,000 and 1:10,000 scale and compiled at 1:10,000 scale. Positional control was established using a combination of TRIM topographic maps, aerial photographs, GPS, compass and altimeter.

4.2 Stream Sediment Sampling Survey

Stream sediment samples were collected from forty-four (44) sites on all significant drainages. One field duplicate sample was also collected giving a total of forty-five (45) samples. Initial sites were selected so as to sample creeks at roughly one-kilometre intervals and to catch all significant side drainages. A follow-up survey at central Greenland Creek sampled side creeks at 200 metre intervals. Samples were screened to -10 mesh (-2mm) in the field. Average sample weight after screening was about one kilogram. Chemex Labs of North Vancouver analyzed all samples for 36 or 37 elements using an "ultratrace" aqua-regia leach ICP plus ICP-MS technique (G132).

In many cases creeks shown on 1:20,000 TRIM topographic maps did not exist or were flowing under talus limiting access to sediment. Stream sediment sample descriptions are attached as Appendix III. Sample sites are shown on Figure 8.

4.3 Soil Sampling Survey

Soil samples were collected from one thousand three hundred six (1,306) sites at 100 metre intervals along ridges, spurs, selected contour lines, and at breaks in slope within the project area. Sixty-six (66) field duplicate samples were also collected giving a total of one thousand three hundred seventy two (1372) samples. Nineteen of these samples were collected from outside the claim boundary. Samples were collected with a narrow-bladed shovel or mattock from depths ranging from 5 to 45 centimetres. The B-horizon was preferentially sampled where developed. Chemex Labs of North Vancouver analyzed all samples for 36 or 37 elements using an "ultratrace" aqua-regia leach ICP plus ICP-MS technique (G132).

Soil sampling traverses were designed to sample the sedimentary rocks crossing stratigraphy as much as possible within the physical constraints of the project area. Average soil sample density is 25 per square kilometre. Some areas (i.e. central Greenland Creek) were sampled at a higher density because of elevated stream sediment geochemistry and anomalous first pass soil sample results. Two traverse lines in the Cadillac Creek valley are within the White Creek Batholith. These lines were established late in the program to locate the source of anomalous zinc values in stream sediment samples from Cadillac Creek. Soil sample descriptions are attached as Appendix V. Sample sites are shown on Figure 9.

4.4 Rock Sampling Survey

Rock samples were collected at seventy-one (71) sites. Two field duplicates were also collected making a total of 73 rock samples. Most rock samples were preferentially collected across stratigraphy in areas of anomalous soil geochemistry. Other rock samples were collected of mineralized veins and other crosscutting features in an attempt to geochemically discriminate between stratiform and clearly epigenetic mineralization. Chemex Labs of North Vancouver analyzed all samples for 36 or 37 elements using an "ultratrace" aqua-regia leach ICP plus ICP-MS technique (G132). Rock sample descriptions are attached as Appendix VII. Sample sites are shown on Figure 10.

5.0 DISCUSSION OF EXPLORATION RESULTS

5.1 Geological Mapping Survey (from internal report by Greig, 2000)

Six units of clastic rocks were defined within the lower and lowermost middle Aldridge Formations of the Middle Proterozoic Purcell Supergroup (Figure 6). In addition, several sill complexes which intrude the stratified rocks, and which belong to the Middle Proterozoic Moyie Intrusions, were distinguished. In the sections below, the stratified rocks are described, from youngest to oldest, followed by descriptions of intrusive rocks, also from youngest to oldest. This is followed by a discussion of the structural geology.

5.1.1 MAP UNITS

Stratified rocks

All stratified rocks in the Greenland Creek area are part of the Middle Proterozoic Aldridge Formation. Bedforms and locally well preserved sedimentary structures suggest that they are mainly turbidites. Previous mapping (e.g., Brown 1998, Coombes and Zuran 1999) indicates that they are part of a much thicker turbidite succession, a succession that is well exposed in the contiguous mountains to the north. The total thickness of the sequence in the area mapped is approximately 1500 metres. It has been exaggerated by the presence of common Mid-Proterozoic mafic sills of the Moyie Intrusions, which have inflated it by approximately 30 percent (Plate 3, Figure 7).

Stratigraphic subdivision was based mainly on meso-scale observations, such as degree of stratification and bed thickness, primarily because of the scale of the mapping and because the rocks are uniformly fine- to very fine-grained (even the sandstone) and at least partially recrystallized. Individual map units are distinguished on the basis of their overall character rather than on their constituent lithologies. Therefore it should be clear from the following descriptions that constituent lithologies of any map unit also form a proportion of most other map units. The key is that the proportions or the bedforms typical of each unit vary. In a very general sense, the stratigraphic sequence in the Greenland Creek area represents an overall coarsening- and thickening-upward succession. No compositional variations were noted, with the exception of where the rocks were notably albitized or tourmalinized (see below and Figure 6). No marker units were identified in the mapping, and even local markers, such as a two metre thick sandstone turbidite bed in upper Mac-Nine Lakes Basin, were not mappable for more than a few hundred metres.

Middle (?) Aldridge Formation

Medium-bedded, fine-grained and fine- to medium-grained turbiditic siliceous sandstone, laminated siltstone, and silty mudstone of the middle Aldridge Formation are found only along the northern margin of the map area. They were examined only along the crest of Rusty Ridge (Figure 6). Local 0.5 to 1.5 metre thick sandstone beds are also present, and the map unit probably represents the base of classical middle Aldridge sandstone turbidite stratigraphy, which consists of a very thick sequence of well stratified, thick to medium-bedded quartz arenite. Middle Aldridge sandstones are very well exposed immediately north of the map area, on Doctor Peak.

Lower to Middle (?) Aldridge Formation

- *Uppermost siltstone member*

This map unit was defined along the flanks of Rusty Ridge; it is also present to the southwest, across the Middle Fork of Findlay Creek (Figure 6). Thin- to medium-bedded siltstone, very fine-grained sandstone, and silty mudstone, all with a faintly green hue characterize this unit. The silty rocks are commonly amalgamated into thicker-bedded packages of several metres thickness, and from a distance they give the unit the appearance of being sandier than it is upon closer inspection (Plate 4).

- *Rusty Ridge member*

As its name implies, rocks of this unit are commonly rusty weathering. They consist of thin- to medium-bedded siltstone, very fine-grained sandstone, and silty mudstone. The rocks are typically well stratified but the map unit also includes locally continuous yet relatively poorly stratified more muddy members. The rusty weathering character of this member may simply result from proximity to the Patterson Peaks sill complex. The upper contact of the unit is more or less arbitrarily defined, and is shown as corresponding with a continuous (?) fragmental unit mapped by earlier workers (Plate 5, Figure 6).

Lower Aldridge Formation

- *Elcore Lake member*

The Elcore Lake member comprises thin- to medium-bedded, fine-grained turbiditic sandstone, siltstone, silty mudstone, and mudstone (Plate 6). It is well exposed in the slopes above Elcore Lake, in particular near the two smaller lakes upstream of Elcore Lake. The Elcore Lake member is distinguished from the underlying Cadillac Corner member by its greater proportion of sandstone and local 0.5 to 1.0 metre thick fine- to medium-grained sandstone turbidite beds. The lower part of this map unit is somewhat thinner-bedded and finer-grained than the upper part. Elcore Lake member rocks are commonly albitized (see below), most likely because of their position between the thick and extensive Fish Lake and Patterson Peaks sill complexes.

- *Cadillac Corner member*

The Cadillac Corner member is transitional with overlying sandier rocks of the Elcore Lake member. It consists of thin-bedded, turbiditic fine-grained sandstone, siltstone, silty mudstone, and mudstone, as well as local medium-bedded turbidite sandstone (Plate 7). Rocks of the Cadillac Corner member are in turn underlain by finer-grained and thinner-bedded rocks of the Pegmatite Ridge member.

- *Pegmatite Ridge member*

Rocks of the Pegmatite Ridge member include very thin-bedded turbiditic siltstone, silty mudstone, mudstone, and fine-grained sandstone (Plate 8). They are the stratigraphically lowest rocks exposed on the property and have been brought to surface in the core of the antiform that parallels the contact of the White Creek batholith. Their base is not exposed.

- *Muddy member(s)*

Weakly stratified to massive silty mudstone occurs in several places and at different stratigraphic levels. On Pegmatite Ridge, a relatively thick, weakly stratified silty mudstone cropping out on the ridge and occurring near the transition from the Cadillac Corner and Elcore Lake members appears to be traceable southward into Mac-Nine Lakes Basin, where local slump folds were noted. The muddy member appears to pinch out abruptly to the north toward upper Greenland Creek. Massive muddy rocks are also common near the headwaters of the Middle Fork of Findlay Creek, southwest of Fish Lake, where they are associated with fine-grained fragmental rocks, and where they also appear to pinch out abruptly, in this case to the south. The other mappable muddy unit occurs near the base of the Rusty Ridge member, and crops out on two of the main spurs on the southeast side of Rusty Ridge.

Fragmental rocks

There are at least three varieties of fragmental rocks on the property: stratiform fragmentals, which can be traced for up to several kilometres and appear to be mud-rich debris flows or sedimentary breccias; peperites, which were formed by fragmentation along sill contacts; and tourmalinized fragmentals which, like the peperites, are probably fragmentation phenomena related closely to magmatism.

- *Stratiform fragmental rocks*

Stratiform fragmental rocks occur at several stratigraphic levels. They are most common in the southwest, where they occur both above and below the Fish Lake sill, as well as in screens and pendants within it. They also outcrop along Rusty Ridge at the top of the Rusty Ridge member, and they occur beneath the Patterson Peaks sill west of the Middle Fork of Findlay Creek (Figure 6). The rocks are typically massive to weakly stratified, although fragmental rocks beneath the Fish Lake complex in the south are typically well foliated. Fragments in most places are angular to sub-angular and less than 3 centimetres in long dimension (Plate 9), although local fragments may range in length to 20 centimetres. Fragments are typically supported in a matrix of silty to fine sandy mudstone.

The thickest sequence of fragmental rocks is unquestionably that in the southwest, where they may be as much or more than several hundred metres thick. However, the lack of bedding control and relatively complex structural geology, particularly south of the Fish Lake sill, complicates this estimate of thickness. The fragmental outlined along Rusty Ridge by previous workers (the lower-middle Aldridge fragmental of Brown, 1998) appears to be as widespread, although it is considerably thinner, with its thickness shown on Figure 6 probably exaggerating its true thickness.

- *Peperites*

Peperitic rocks are common along the contacts of the Fish Lake sill complex in the southwest, where both host clastic rocks and sills are locally fragmented (Plate 10). Most of the fragmental rocks in that area are probably not peperites, sensu stricto, because most do not have a direct association with sill contacts. In addition, the screens or pendants within the sill complex commonly contain abundant meta-fragmental rocks, yet their contacts do not necessarily appear fragmented, suggesting many of the fragmentals pre-dated emplacement of the magma. Coarse fragmental peperites were not noted elsewhere in the map area, although fragmental rocks, such as those beneath the Patterson Peaks sill complex near the south end of Rusty Ridge, may have a peperitic origin. However, recrystallized rocks of uncertain and possibly mixed parentage, locally referred to as "granophyre," are not uncommon, and may represent mixtures of magma and incompletely consolidated sediment formed in an equivalent environment (Plate 11).

- *Tourmalinized fragmentals*

The third distinct variety of fragmental rocks is tourmalinized breccias. They consist of very resistant, dark grey to black, clast- to matrix-supported muddy fragmental rock. Fragments are commonly angular to sub-angular and typically much larger than those found in the stratiform fragmental rocks discussed above (Plate 12). They occur a short distance above the Fish Lake sill complex; one to the southwest of Fish Lake, near the base of the cliffs above the headwaters of the Middle Fork of Findlay Creek, and the other to the east-southeast of the lake, on the ridge between Elcore Lake and Mac-Nine Lakes basins (Figure 6). Both tourmalinites are at least locally discordant, although the ridge occurrence appears to be stratiform at higher levels and discordant below, where it has a close spatial association with Fish Lake complex gabbro-diorite. The tourmalinite may represent a link between stratiform fragmentals and those of peperitic origin.

Albitization

Albitized metasedimentary rocks (sandstones, for the most part) are common, and their close spatial association with sill contacts is notable (Figure 6). What is also notable is that a strong bias exists toward identification of albitized rocks along ridgelines, because the most readily identifiable albitized rocks are white weathering sandstones that are well exposed and not covered with lichen (Plates 6, 13). A consequence of this "exposure factor" and the association with sill contacts is that the typically sandy Elcore Lake member rocks which are sandwiched between the thick and extensive Fish Lake and Patterson Peaks sill complexes, and which are exposed along well-exposed ridgelines, are the most commonly mapped intensely albitized rocks.

Intrusive rocks

White Creek batholith

Various phases of the mid-Cretaceous White Creek Batholith bound the map area on the south and east. For the most part, contacts were modified from those of Reesor (1958), and internal contacts of the various major phases were taken directly from his work. In this study the batholith was traversed only in a few places and for short distances. Several probable satellite phases were traversed, including prominent white weathering pegmatites along Pegmatite Ridge (Figure 6, Plate 14), several bodies of well foliated mesocratic biotite hornblende granodiorite, and numerous quartz porphyritic dykes.

- *Hornblende biotite quartz feldspar porphyry dykes*

Dykes of hornblende biotite quartz feldspar porphyry are moderately common in the southwest part of the map area, and occur elsewhere. In the southwest they are commonly marked by metre-scale deep reddish-orange gossans developed from weathering of locally abundant pyrite and pyrrhotite. Most dykes appear to be less than several metres in thickness, and are discontinuous and irregular in orientation. They occur locally within steeply south-dipping brittle-ductile shear zones (see symbols on Figure 6).

- *Pegmatite*

Pegmatite occurs mainly in the east-central part of the area mapped, on the flanks of Pegmatite Ridge (Plate 14, Figure 6). The pegmatite bodies in this area have been referred to as the Greenland Creek intrusions by Smith and Brown (1998), who, on the basis of similarities with the Proterozoic Hellroaring Creek stock, which outcrops west of Cranbrook (see "Regional Setting" index map, Figure 6), assigned them a preliminary Proterozoic age. As with Reesor (1958), the Greenland Creek pegmatites are tentatively assigned a mid-Cretaceous age, on the basis of their structural and intrusive relations, and because of their close spatial association with the White Creek batholith.

Although the pegmatitic rocks were not the focus for this study, their composition was noted locally. They are coarse to very coarse-grained, and consist almost solely of potassium and plagioclase feldspar, quartz, and muscovite (i.e., granite pegmatite). Tourmaline-rich varieties (Plate 15) and aplitic phases are common near contacts and fine- to very fine-grained red garnets were also noted in this association.

- *Potassium feldspar megacrystic quartz monzonite*

Potassium feldspar megacrystic quartz monzonite occurs along the eastern margin of the map area and was examined only in the northeast, along the ridge south of Silver Key basin. There, it is locally foliated, and potassium feldspar megacrysts reach at least 5 centimetres in long dimension (Plate 16). In addition, crosscutting fine-grained leucocratic and mesocratic phases were noted.

- *Leucocratic quartz monzonite*

Weakly foliated to nonfoliated, pale grey to white weathering, medium-grained biotite (muscovite) quartz monzonite or monzogranite occurs in the southeast. It was examined only very briefly east of Cadillac Corner.

- *Hornblende biotite granodiorite*

This phase of the White Creek batholith occurs along the southern boundary of the area. It was not examined.

- *Well foliated mesocratic biotite hornblende granodiorite*

Well foliated, fine- to medium-grained, mesocratic biotite hornblende granodiorite occurs along the margin of the White Creek batholith in the southwest corner of the Greenland Creek area and at Cadillac Corner. It also occurs in two discrete (?) bodies on the east end of Pegmatite Ridge. It is possible that some (or all) of these rocks are metamorphosed Moyie intrusions, although they appear distinct because of their somewhat finer grain size, more uniform composition, and relatively abundant quartz.

Moyie Intrusions

The Middle Proterozoic Moyie intrusions consist mainly of voluminous sills of mafic to intermediate composition (e.g., Plate 3); dykes are uncommon and are typically much thinner than the sills. In the initial stages of mapping, little effort was directed toward subdivision of the intrusions, but as the mapping progressed, it became evident that thickness and compositional variations within the sills, as well as transgression of stratigraphy, may help outline possible Proterozoic structures. Consequently, attempts were made to differentiate more leucocratic phases (generally dioritic, and so more truly mesocratic) from more melanocratic phases (generally gabbroic).

Three main sill-like bodies were defined (Figure 6). From south to north, they are the Fish Lake sill complex (stratigraphically lowest), the Patterson Peaks sill complex (medial), and the Pico Peak sill complex (stratigraphically highest). At least two other stratigraphically lower sill complexes also probably exist (see Pegmatite Ridge area on Figure 6), but map control for these bodies is poorer, and so they were not differentiated from the many other smaller sills and dykes assigned to the "Undivided Moyie Intrusions." Within each of the sill complexes, composition, colour index, and texture all may vary significantly. Compositional variations mainly reflect variations in the relative abundance of mafic (mainly amphibole? after pyroxene?) vs. felsic (plagioclase feldspar) minerals. The variation may in part represent gradation within individual intrusions, yet where obvious mesocratic and melanocratic phases abut one another, and where contact relations are unambiguous, the more mafic phases crosscut or contain inclusions of more felsic and therefore somewhat older phases. In addition, the sill complexes commonly contain a more melanocratic variant at the top, with a more leucocratic one at the base. This would seem to argue against differentiation by magmatic settling, and so at this stage, most of the sill complexes are viewed as just that: complexes of more than one intrusive phase.

Among the sill complexes, the Fish Lake complex appears to include the greatest proportion of more mafic lithologies, while the Patterson Peaks complex appears to consist largely of dioritic rocks, commonly containing some quartz (?). Only a small part of the Pico Peak complex was examined. In it, dioritic and gabbroic rocks appear to occur in subequal abundance. The few continuous dykes mapped in the area were typically of gabbroic composition and less than 10 metres thick. Those in the north commonly trend NE and dip to the NW, while those in the south trend roughly E-W and are sub-vertical.

Like the compositional variation common to the sill complexes, textural variation is present as well, particularly in the Fish Lake complex. Most commonly, rocks of the Fish Lake complex are medium-grained, equigranular, and of gabbroic-dioritic composition (Plate 17). Another common variant is rusty weathering dark green gabbro containing disseminated to patchy or blebby pyrite and (or) pyrrhotite. Locally, Fish Lake gabbro-diorite may be heterogeneous on the outcrop scale (Plate 18), and may even be very coarse-grained, with intergrowths of feldspar and amphibole (after pyroxene?) forming what appears to be a 'skeletal', almost dendritic, texture. To the south the Fish Lake complex is commonly foliated, much like the other Moyie sills near the contact with the White Creek Batholith. Farther north, foliation is less predominant and appears restricted to zones of more intense fabric development along contacts. The rocks in these zones are typically very fine-grained chlorite (?) amphibolite (?) and may contain a well-developed mineral elongation lineation.

5.1.2 STRUCTURAL GEOLOGY

Introduction and regional relations

In general, the structural geology appears relatively straightforward, with broadly warped but overall gently westerly dipping stratigraphy cut by several northerly-trending normal faults, typically with down-to-the-west displacement (Figures 6, 7). Such a picture fits the regional setting, for the area lies on the generally gently-dipping west limb of the core of the Purcell Anticlinorium, a large north-plunging feature formed during the Mesozoic (Middle Jurassic to Early Tertiary) development of the Rocky Mountain Thrust and Fold belt. The segment of the anticlinorium on which the property is located is bound on the southeast by the northeast-trending, east-vergent Hall Lake fault, a Mesozoic contractional fault cut by the mid-Cretaceous White Creek Batholith, whose long axis lies parallel with the fault. As may be expected, structures near the White Creek batholith are complex, with tight folds and a strong foliation developed. A number of lines of evidence suggest that the batholith and related satellite intrusive phases played an active role in the structural history of the area. This is discussed below in the section on timing of deformation.

In a fashion similar to the property scale, the Purcell Anticlinorium is also cut by regional-scale normal faults. To the west of the area is the Purcell Trench Fault, with down-to-the-east displacement, and to the east of the area is the Rocky Mountain Trench fault, with down-to-the-west displacement. Both were active in the Tertiary and are listric normal faults.

Structural features on the property

Folds are perhaps the most prominent structural features on the property. Most notable is the tight anticline-syncline pair near the contact of the White Creek batholith between Cadillac Creek and the north boundary of the area. The anticline, in spite of the complexity resulting from the sharp contrast in competency between massive Moyie sills and relatively incompetent well and thinly layered Cadillac Corner and Pegmatite Ridge members, is quite well defined. On Pegmatite Ridge, the larger pegmatite bodies coincide closely with the axial surface of the anticline. The syncline to the east is mainly inferred.

Other folds of note are the broad, northwest to north-northwest trending, gently northerly plunging open folds, such as the anticline along the Middle Fork of Findlay Creek and that mid-way along Rusty Ridge. They are actually somewhat subtle features, and are outlined as much by map patterns as by bedding orientations (e.g., upper contact of Fish Lake sill complex). How these open folds relate to their tighter counterparts along the White Creek contact is not clearly understood, although possible plunge reversals and changes in trends of the complex folds between Elcore Lake and Warm Lake basin (Figure 6) suggest the open folds may constitute a later phase of folding. However, outcrop-scale features suggestive of more than one major deformational event, such as refolded foliation, are generally absent.

Smaller-scale folds on the property may be spatially and genetically related to high angle normal faults (e.g., Pico Basin, Mac-Nine Lakes Basin; Figure 6). They may also be related to detachment along thrust faults within the clastic sequences, or along sediment-sill contacts (e.g., near Fish Lake and about 1 km WSW of Fish Lake, in the lowermost Rusty Ridge member at its contact with the Patterson Peaks sill complex). Locally, such as near Fish Lake, sill contacts are marked by zones of very well foliated, locally lineated, very fine-grained chlorite (?) amphibolite. They probably represent recrystallized ductile-brittle high strain zones that accommodated the shortening seen in overlying folds.

Within the clastic sequences, folds of somewhat smaller scale (common metre-scale wavelengths, locally tens of metres) are also locally common (e.g., Plates 19 to 21). They appear to be detachment-related folds because they are typically bound above and below by planar, relatively uniformly dipping beds. Fold asymmetry in almost all cases suggests up-dip, easterly vergence. In general, the limited continuity of these minor fold trains, together with the modest amplitudes of constituent folds (typically metres, locally tens of metres), suggests that displacement on the related detachments was relatively minor. Locally, however, such as in the Cadillac Corner area, the presence of similar structures, but perhaps with larger displacements, is suggested by the absence of folds, and by the presence in both directions along trend of significant shortening across map-scale folds (i.e., to the west-southwest toward Warm Lake basin and to the northeast, on Pegmatite Ridge and beyond).

As mentioned above, foliation generally becomes well developed toward the contact of the White Creek batholith. Shapes of clasts in fragmental rocks suggest that it is largely a flattening foliation; the foliation may also be expressed in the Moyie sills as a weakly developed compositional layering. Linear fabrics are not obviously strongly developed, but westerly-plunging mineral and clast elongation fabrics were measured in several places in the southwest. Away from the batholith contact, cleavage in metasedimentary rocks is pervasive, although more notable in the muddy rocks than in the sandstones. It is typically westerly dipping.

Brittle faults are common on the property, but are of generally small displacement. Only those with displacement on the order of several tens of metres are shown on Figure 6. They include the northerly trending, west-side-down normal fault through the head of Mac-Nine Lakes Basin and the upper reaches of Greenland Creek, as well as several of similar displacement on Rusty Ridge, its spur-ridges, and the spur-ridge between Patterson Peaks and Fish Lake (Plate 22).

Possible Proterozoic structures

A number of features are suggestive of the presence of roughly east-west trending Proterozoic structures within the Greenland Creek area. Such trends are marked in part by stratigraphic or sedimentologic features, including proximal clastic deposits such as massive mudstones or poorly sorted fragmental rocks containing angular clasts (i.e., interpreted to represent matrix-supported muddy debris flows or sedimentary breccias). The Moyie intrusions may also be indicators of the presence of relatively old structures, with variations in sill/dyke distribution, thickness changes, and changes in stratigraphic level (discordance) of gabbros and diorites related to emplacement along structures. Further highlighting potential Proterozoic structures are alteration zones possibly developed during the release of hydrothermal fluids. The presence of tourmalinized or widespread albitized zones is therefore also considered favourable in terms of proximity to ancient structures.

At the latitude of Pegmatite Ridge, both the Fish Lake and Patterson Peaks complexes at least locally transgress tens of metres of stratigraphy, and the presence there of a locally thick but laterally discontinuous muddy member (containing local evidence for soft-sediment deformation) at the contact of the Cadillac Corner and Elcore Lake members supports the inference of a Proterozoic structure (the "Pegmatite Ridge trend"). In the south, a similar trend, the "Fish Lake trend," is noted between the ridge north of Elcore Lake and Fish Lake itself. There, the common presence of fragmental rocks, as "stratiform fragmentals," as "tourmalinized fragmentals," and as peperite along Fish Lake contacts, together with the compositional variability, relatively great thickness, and common local discordance of the sill complex, argue strongly for the presence nearby of a deep-seated structure. Albitized rocks also appear to be more abundant there than elsewhere. Another possible trend occurs in the Pico Peak area, and although little time was spent examining the rocks there, the Moyie intrusions are certainly abundant and commonly discordant, and albitized rocks are at least locally present.

Timing of Deformation and Age of the Greenland Creek Intrusions

Within the map area, evidence can be found which argues both for and against emplacement of the pegmatitic Greenland Creek intrusions prior to regional deformation. On balance, the structural and intrusive relations suggest the intrusions are late syn-kinematic (i.e., they were emplaced following the bulk of the deformation but prior to it ending). Evidence for pre- to syn-kinematic emplacement includes local boudinaged pegmatite dykes (Plate 23), and pegmatite infilling the mouths of boudinaged clastic layers. A number of lines of evidence suggest the Greenland Creek intrusions were emplaced following a significant proportion of the regional deformation affecting the area. Other Indications of late syn- to post-kinematic emplacement include the lack of a well-developed fabric in most pegmatite bodies, pegmatite cross-cutting folded clastic rocks, pegmatite cross-cutting foliation or compositional layering developed within Moyie sills, and compositional similarities between tourmaline-bearing pegmatitic rocks and post-kinematic tourmaline-quartz-carbonate veins common throughout the Greenland Creek area.

Given conflicting evidence cited above, and the evidence for only one major regional ductile deformational event, the suggestion is that the Greenland Creek intrusions were emplaced following the height of mid-Cretaceous regional deformation. The most likely scenario involves emplacement of the Greenland Creek intrusions prior to emplacement of some of the phases of the White Creek batholith, with ballooning of the pluton and (or) continued deformation resulting in the partial structural overprint. Such a scenario is in accord with the close spatial association among the Greenland Creek intrusions, the axial surface of the anticline in the east-central part of the area, and the northerly-protruding salient of the White Creek Batholith immediately to the south. The probable emplacement of the pegmatites late in the regional deformational event and into a zone of structural weakness is reminiscent of the structural character and environment of the White Creek Batholith itself. It has experienced some deformation, yet is largely post-kinematic. It also lies along the trend of, and intruded (?), the structure it crosscuts.

5.2 Stream Sediment Sampling Results

The highest zinc values from stream sediments are from Greenland Creek and Cadillac Creek on the eastern half of the claims. The highest value in the Greenland Creek drainage (1,150 ppm Zn) is from a small creek immediately west of the main pegmatite body south of Greenland Creek on the CORE 6 claim. Cadillac Creek returned a high value of 844 ppm near its headwaters and 294 ppm at its confluence with Greenland Creek. Creeks draining the Fish Lake area in the south half of the FIN 1 claim are also anomalous but with lower values (232 to 296 ppm Zn). Regional stream sediment zinc results give a mean of 63 ppm with a standard deviation of 128 ppm.

Lead results are spotty with the highest values (114 and 140 ppm) also from the area west of the pegmatite on Greenland Creek. Zinc and lead results are plotted on Figure 8. Sample descriptions and results are attached as appendices III and IV.

5.3 Soil Sampling Results

Soil sampling outlined one significantly anomalous area and several smaller anomalies. The main zinc anomaly is on the CORE 6 claim in the same general area as the elevated zinc in stream sediments. Zinc values range up to a high of 2,980 ppm with +90th percentile values delineating an anomalous area of about 700 metres by 3,000 metres. The sample sites are primarily underlain by siltstone and mudstone of the Pegmatite Ridge member of the lower Aldridge Formation, locally intruded by pegmatite dykes.

Other areas with anomalous zinc values are:

1) on the CORE 5W claim where several samples on and below Rusty Ridge returned elevated (+200 ppm) zinc values with a high of 1,215 ppm;
2) in the Pico Basin area north of Greenland Creek (CORE 3 and 4 claims) where widely spaced sample lines indicate a large (800 m by 1,700 m) +200 ppm zinc anomaly with values up to 948 ppm;
3) on the CORE 12 claim on the south flank of Pegmatite Ridge where there are six +200 ppm zinc values (up to 704 ppm) in a 500 m by 500 m area underlain by pegmatite on the hinge of the Pegmatite Ridge anticline;
4) on Cadillac Creek (CORE 8 claim) where samples along 800 metres of the creek returned +200 ppm Zn (high of 442 ppm) from within the White Creek Batholith in the area of the 1975 Kerr Addison drill hole;
5) on the CORE 7 claim at the head of Mac-Nine Lakes Basin where six near-consecutive samples underlain by the Elcore Lake member returned +170 ppm Zn with a high of 712 ppm; and
6) on the CORE 10 claim south of Fish Lake where two separate samples adjacent to albitized Elcore Lake member sediments returned 584 and 1,925 ppm Zn.

Elevated lead values do not generally correspond with zinc highs except in areas 1 and 6 and locally within the large CORE 6 zinc anomaly.

The soil samples collected in the Greenland Creek project area in 1999 return a mean of 139 ppm Zn and a standard deviation of 216 ppm. Zinc and lead results are plotted on Figure 9. Sample descriptions and results are attached as appendices V and VI.

5.4 Rock Sampling Results

Selected rock samples returned zinc values up to 8,590 ppm. The highest zinc value was from south of "Big Blue Lake" in Mac-Nine Lakes Basin and was a float sample of quartz-muscovite vein material with visible sphalerite. It was not located in outcrop. Zinc values of 4,870 and 2,960 ppm were also obtained from float samples of quartz-muscovite vein material at the CORE 6 soil anomaly. The highest zinc value from non-veined rock was 404 ppm from an eight metre chip sample across Pegmatite Ridge member siltstone at the CORE 6 soil anomaly. A 1.5 metre chip in the same area returned 344 ppm zinc.

Lead values were uniformly low (below or near detection) at most sites. The highest value, 136 ppm, was from a sub-crop grab sample of quartz veining with trace galena upstream of the CORE 6 soil anomaly. All results are plotted on Figure 10. Sample descriptions and results are attached as appendices VII and VIII.

6.0 CONCLUSIONS

The Greenland Creek project area is underlain by a generally coarsening upward sequence of siliciclastics belonging to the mid-Proterozoic lower and middle Aldridge Formation. The sedimentary rocks are expanded by mid-Proterozoic gabbroic to dioritic Moyie sills. The Proterozoic rocks are intruded by the multi-phase Cretaceous White Creek Batholith with related deformation and alteration.

The primary target identified in 1999 is on the CORE 6 claim where anomalous zinc values in stream sediments, soils, and rocks are spatially associated with a prominent north-south trending antiform that is locally cored by Cretaceous (?) granite pegmatite intrusions. The intrusions themselves contain little or no metal but numerous quartz-muscovite±beryl veins, that appear to be spatially associated with the pegmatite, contain anomalous zinc. The presence of possibly re-mobilized zinc combined with zinc anomalous strata in the Pegmatite Ridge member of the lower Aldridge Formation indicates potential exists for significant stratiform mineralization.

The elevated zinc values in the Fish Lake area are also of particular interest because of an association with widespread stratiform fragmental rocks and tourmaline and albite alteration; generally considered to be characteristic of Sullivan-style sedex mineralization in the district. The geochemical anomalies are relatively low order but the geological features are indicative of syn-sedimentary tectonism and fluid movement that have potential for related metal deposition.

Other anomalous areas are of economic interest but in many cases physical constraints limit their potential for hosting an ore body of the targeted tonnage and grade.

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8.0 STATEMENT OF QUALIFICATIONS

I, Steven Coombes, of the village of Invermere, Province of British Columbia, DO HEREBY CERTIFY THAT:

1) I am a senior geologist employed by Kennecott Canada Exploration Inc. with a business office at 354–200 Granville Street, Vancouver, British Columbia, Canada, V6C 1S4.

2) I am a graduate in Geology with a Bachelor of Science degree from the University of British Columbia in 1983.

3) I am a registered member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia (No. 19713).

4) I am a Fellow of the Geological Association of Canada (No. F5457).

5) I have practiced my profession as a geologist for the past eighteen years.

   Four years pre-graduate field experience in geology, geochemistry, and geophysics with Noranda Exploration Co. Ltd. (seasonal, 1979 to 1982).

   Two years as exploration geologist with Rhyolite Resources Inc. (1983 to 1985).

   Five years as exploration geologist with Searchlight Consultants Inc. (1985 to 1990).

   Five years as consulting geologist and proprietor of Summit Geological (1990 to 1995).

   Six years as project and senior geologist for Kennecott Canada Exploration Inc. (1995 to 2000).

6) I supervised the 1999 Greenland Creek exploration program, and wrote this report to document the results of work on the Greenland Creek group of mineral claims.

Dated:

March 1, 2000

Steven Coombes, P.Geo.
Senior Geologist

Plate 1. View southwest across west end of Pegmatite Ridge toward Patterson Peaks, with Middle Proterozoic Patterson Peaks sill complex capping much of ridge on skyline.

Plate 2. View north-northeast across east end of Pegmatite Ridge (middle ground) toward Pico Peak (high point on skyline), with lower reaches of Greenland Creek in right foreground. Note white weathering pegmatite of Greenland Creek intrusions on Pegmatite Ridge.

Plate 3. West flank of Patterson Peaks, viewed from the south. Pale-weathering dioritic rocks of the Patterson Peaks sill complex cap the ridges, and rusty-weathering rocks of the Elcore Lake member of the Lower Aldridge Formation underlie the sill.

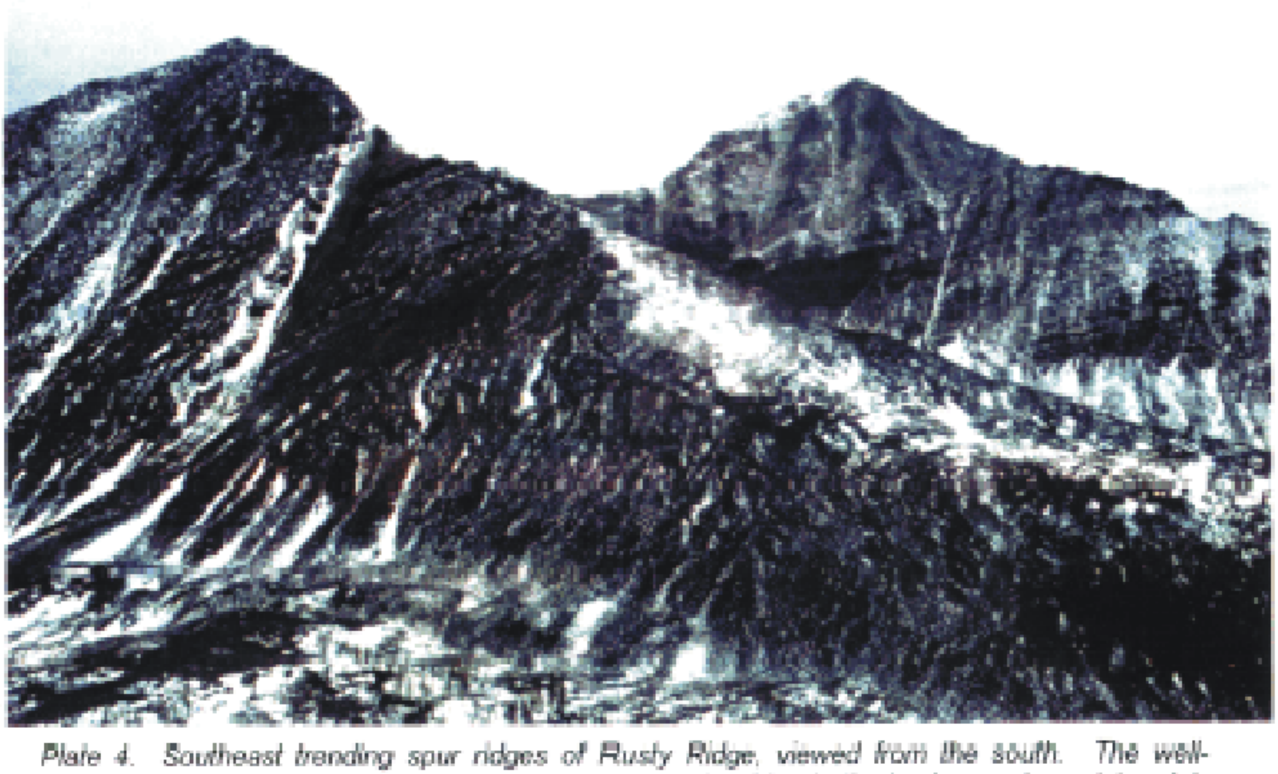


Plate 4. Southeast trending spur ridges of Rusty Ridge, viewed from the south. The well-stratified rocks which are particularly notable on the ridge in the background consist mainly of siltstone of the Upper Siltstone and Rusty Ridge members.

Plate 5. Rusty Ridge and Upper Siltstone members on Rusty Ridge; view is toward the northwest, and shows essentially the same spur ridges as Plate 4. The contact between the members trends northward (to the right) and runs gently upward from the top of the talus slopes in the headwall of the cirque.

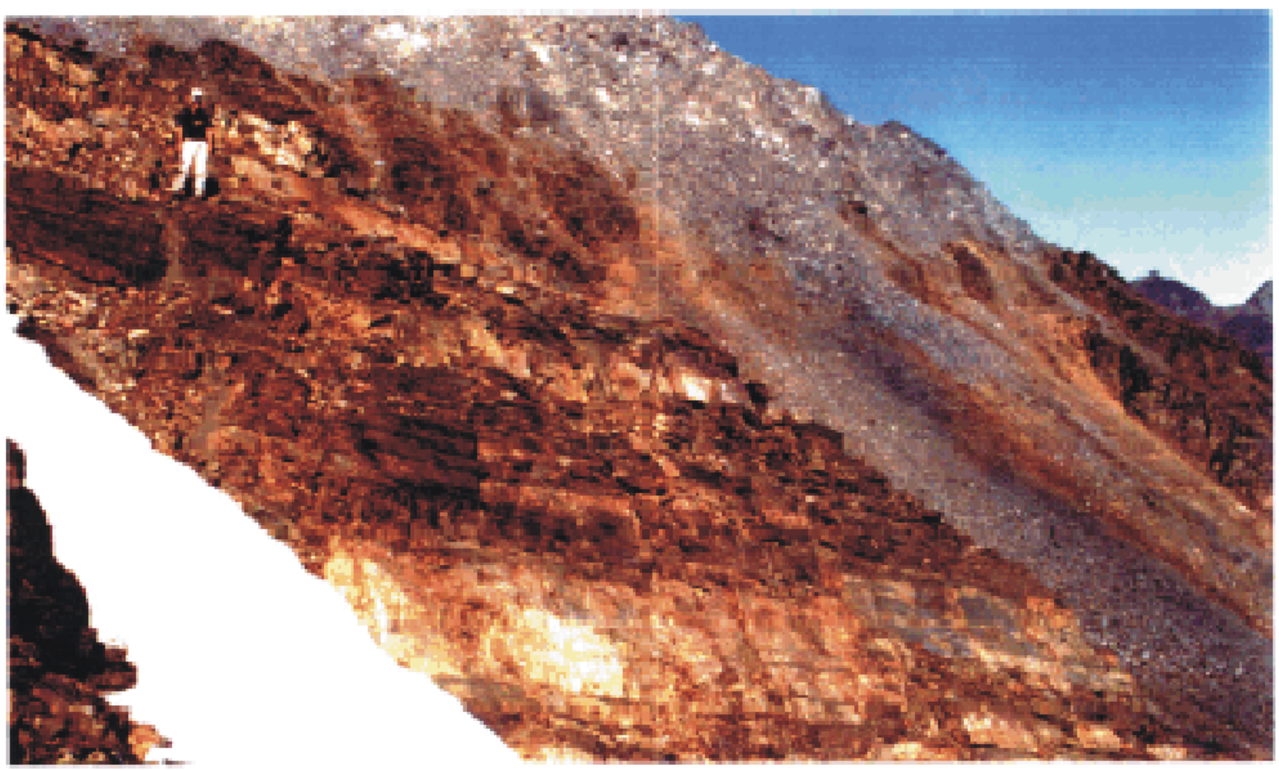


Plate 6. Elcore Lake member sandstones (paler colour, albitized?), with silty and muddy rocks (darker colours); beneath the Patterson Peaks sill.

Plate 7. Cadillac Corner member.

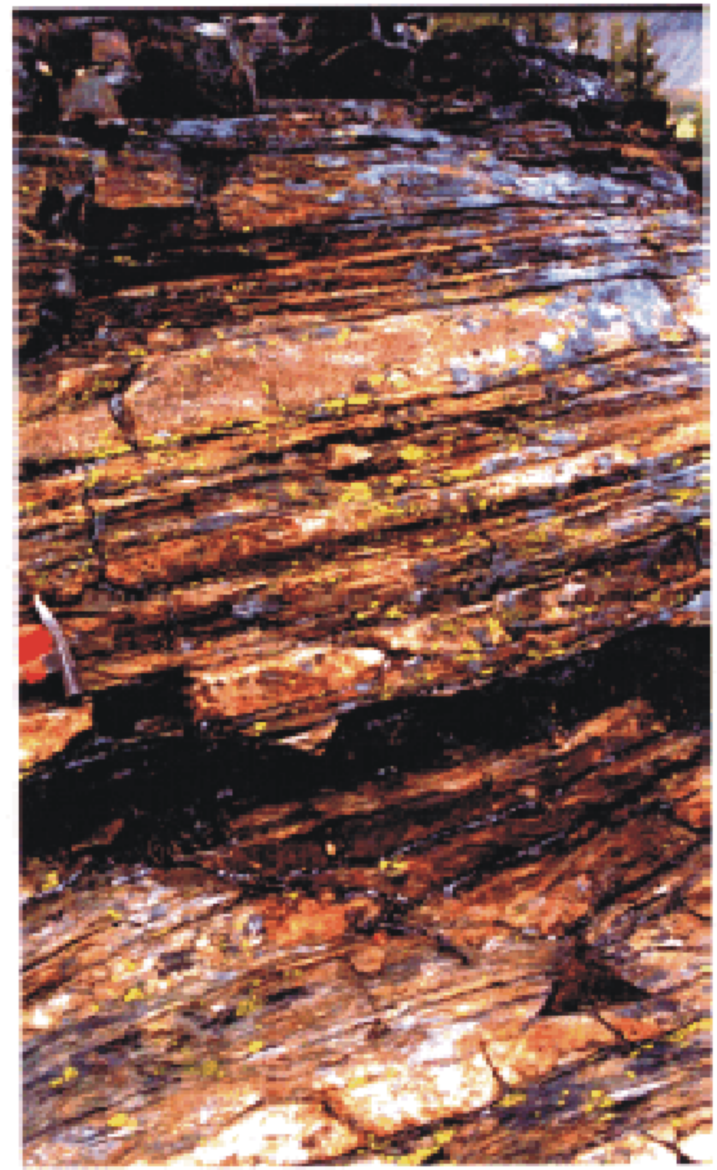


Plate 8 Pegmatite Ridge member.

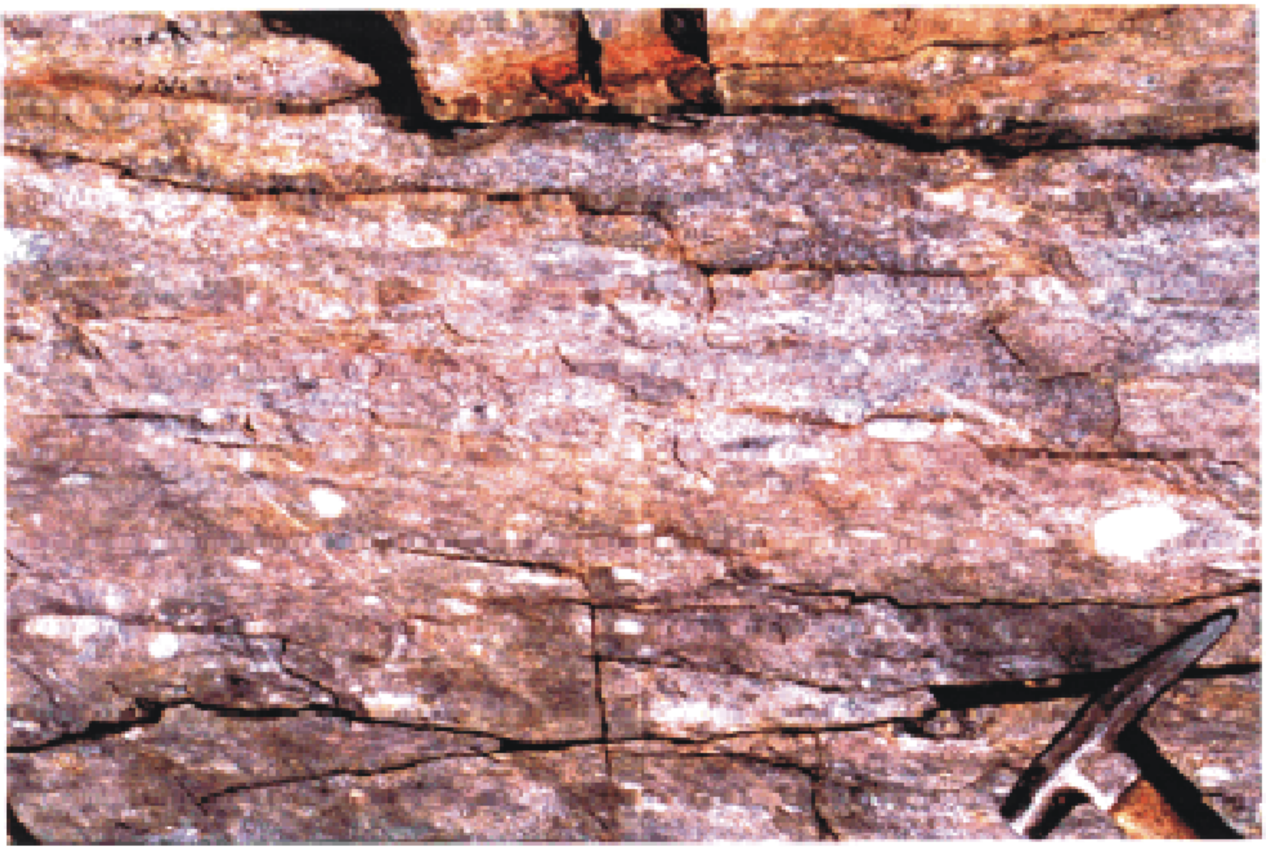


Plate 9. Typical fragmental showing poor sorting and subangular to subround fragments; head of hammer is about 20 centimetres in long dimension.

Plate 10. Peperitic rocks at the contact between the Fish Lake sill complex and the large pendant south-southeast of Fish Lake. Note that both host clastic rocks (pale colours) and sill (dark green) are fragmented.

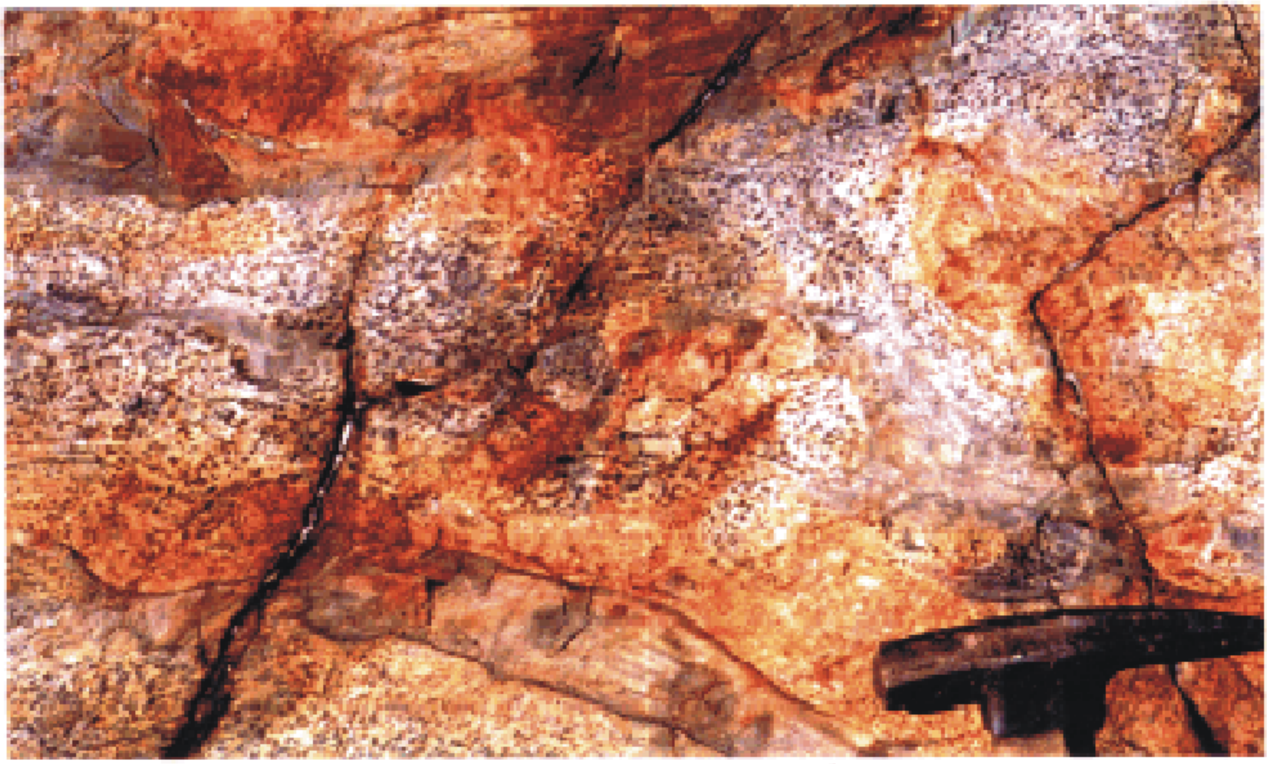


Plate 11. "Granophyre" from beneath the Patterson Peaks sill complex in upper Mac Nine Lakes basin. Recrystallized rocks of possible sedimentary and intrusive (salt and pepper colour) origin.

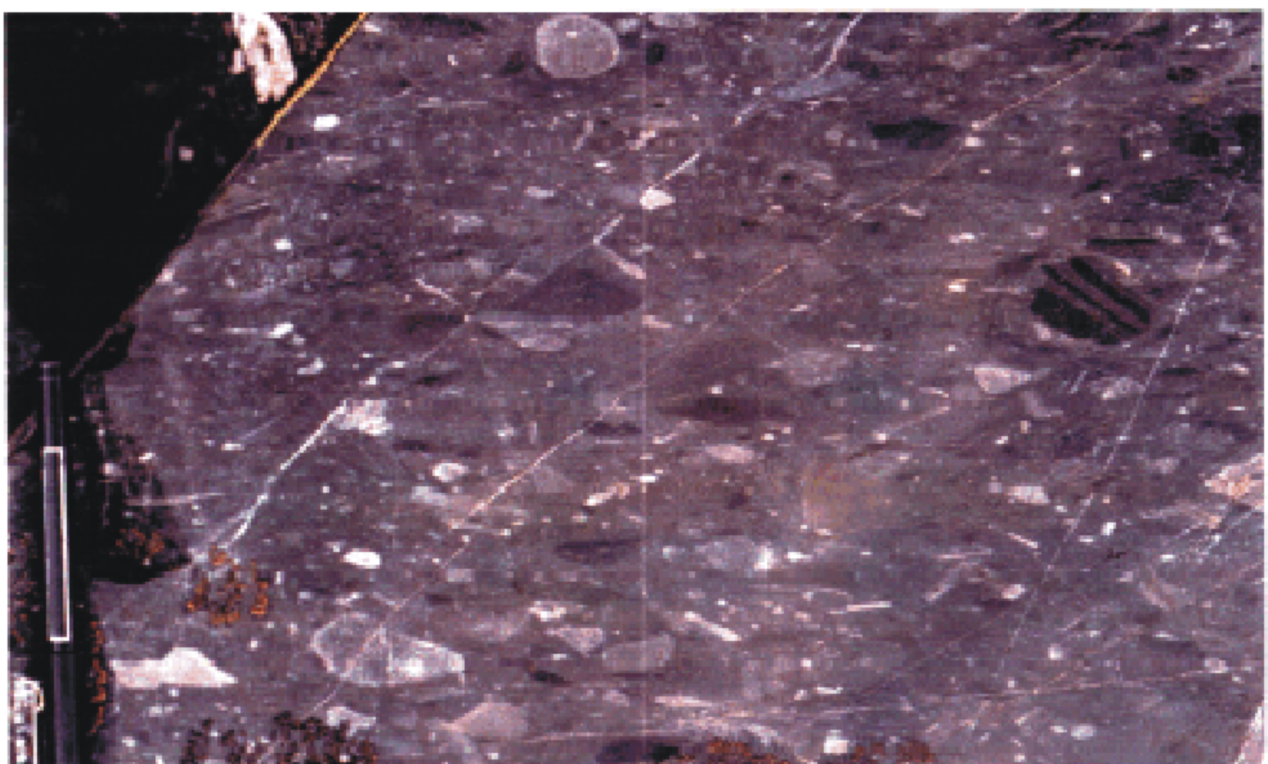


Plate 12. Tourmalinized sedimentary breccia, showing subangular and subround fragments and fine-grained matrix; from above the Fish Lake sill complex, on the ridge between Elcore Lake and Mac Nine Lakes basins.

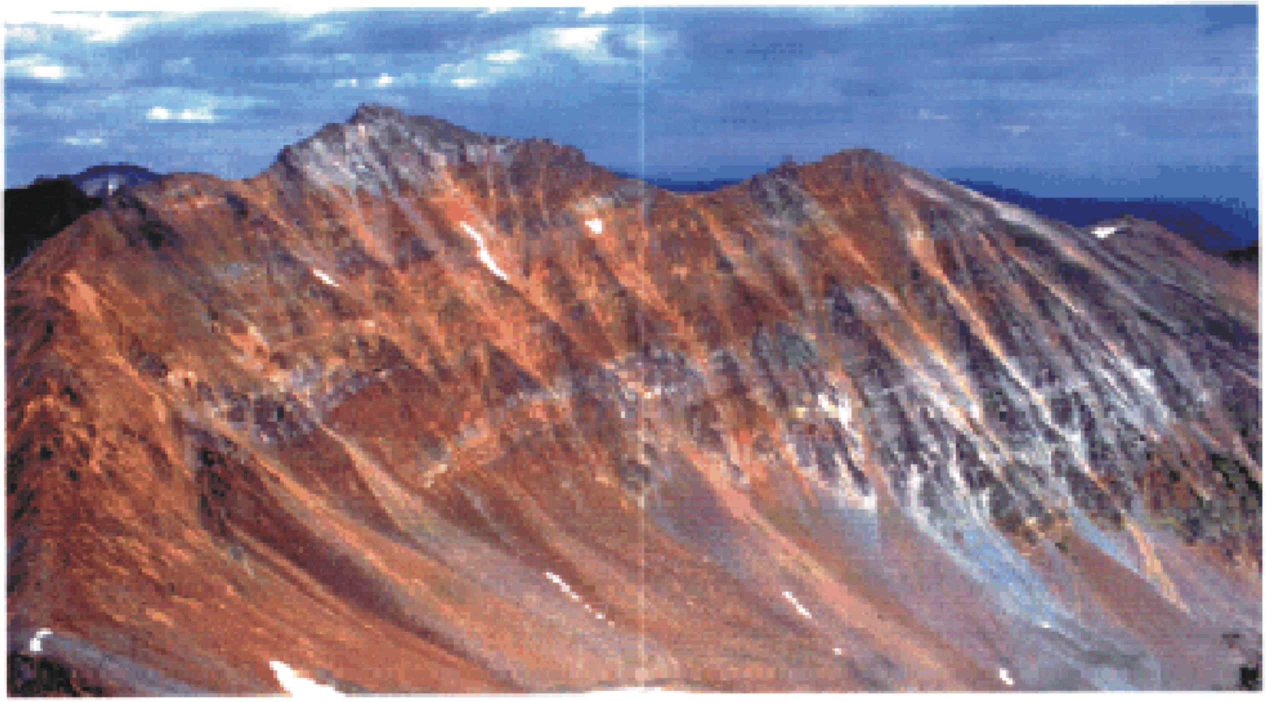


Plate 13. Albitized metasedimentary rocks (sandstones, for the most part) of the Elcore Lake member on the ridge between Elcore Lake and Mac Nine Lakes basin. Albitized rocks are those immediately above and below the deep brown rusty-weathering band running through the central part of the section (pyrite and/or pyrrhotite-bearing gabbroic rocks of the Fish Lake complex). The albitized rocks have similar weathering colours to the dioritic rocks of the Patterson Peaks complex that cap the peak and to the Fish Lake complex near the lower part of the section.

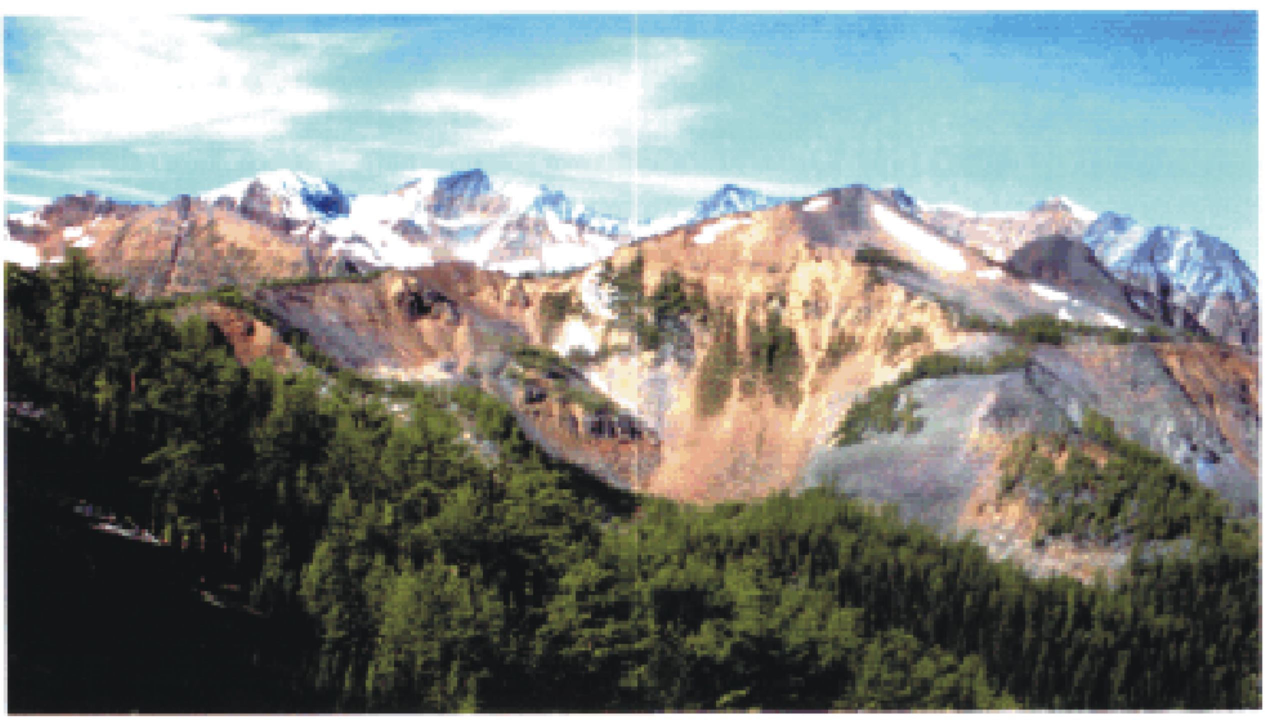


Plate 14. Prominent white weathering pegmatites along Pegmatite Ridge (near saddle in foreground); view west-southwest across Pegmatite Ridge toward Patterson Peaks.

Plate 15. Tourmaline-rich pegmatite of the Greenland Creek intrusions. Tourmaline is coarse-grained and black, quartz is smokey grey, and feldspar(s) are white; muscovite and very fine-grained red garnets also occur at this lo-cality.

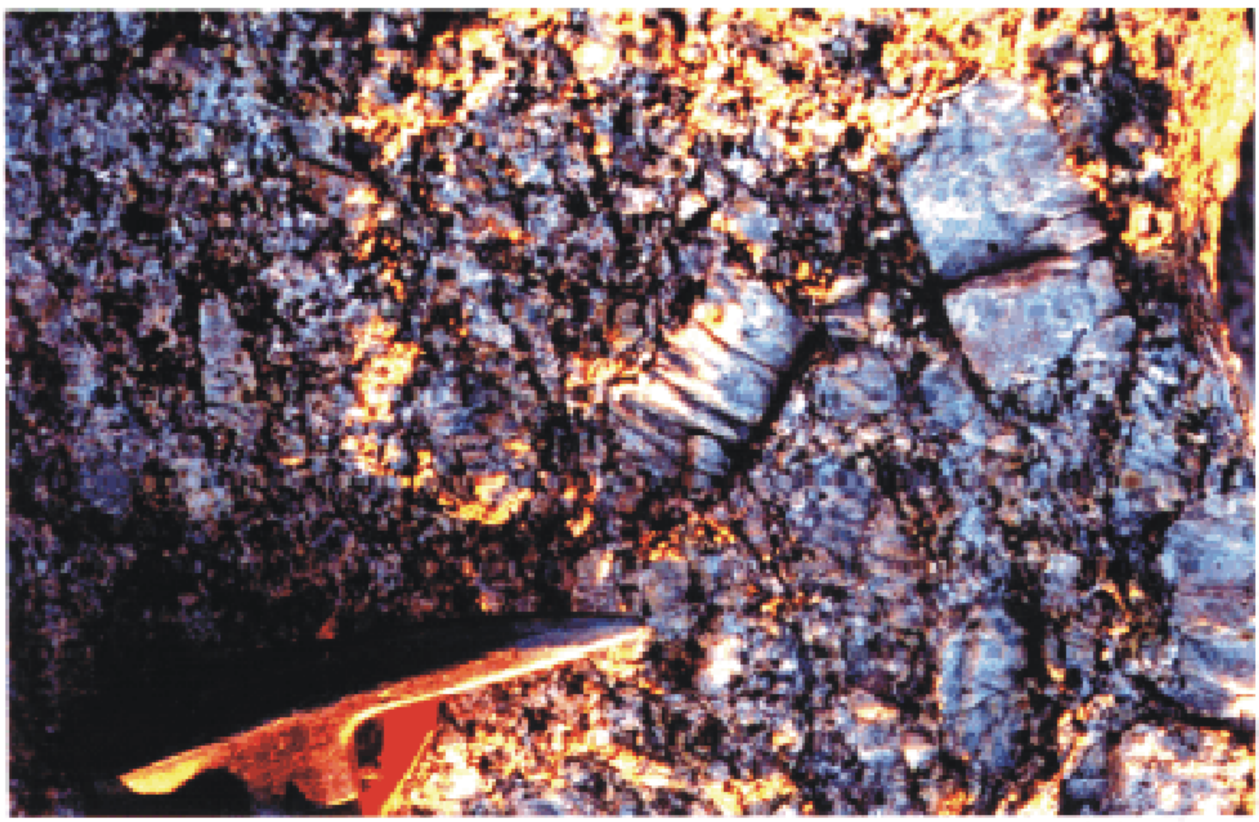


Plate 16. Potassium feldspar megacrystic quartz monzonite in the northeast part of the Greenland Creek area.

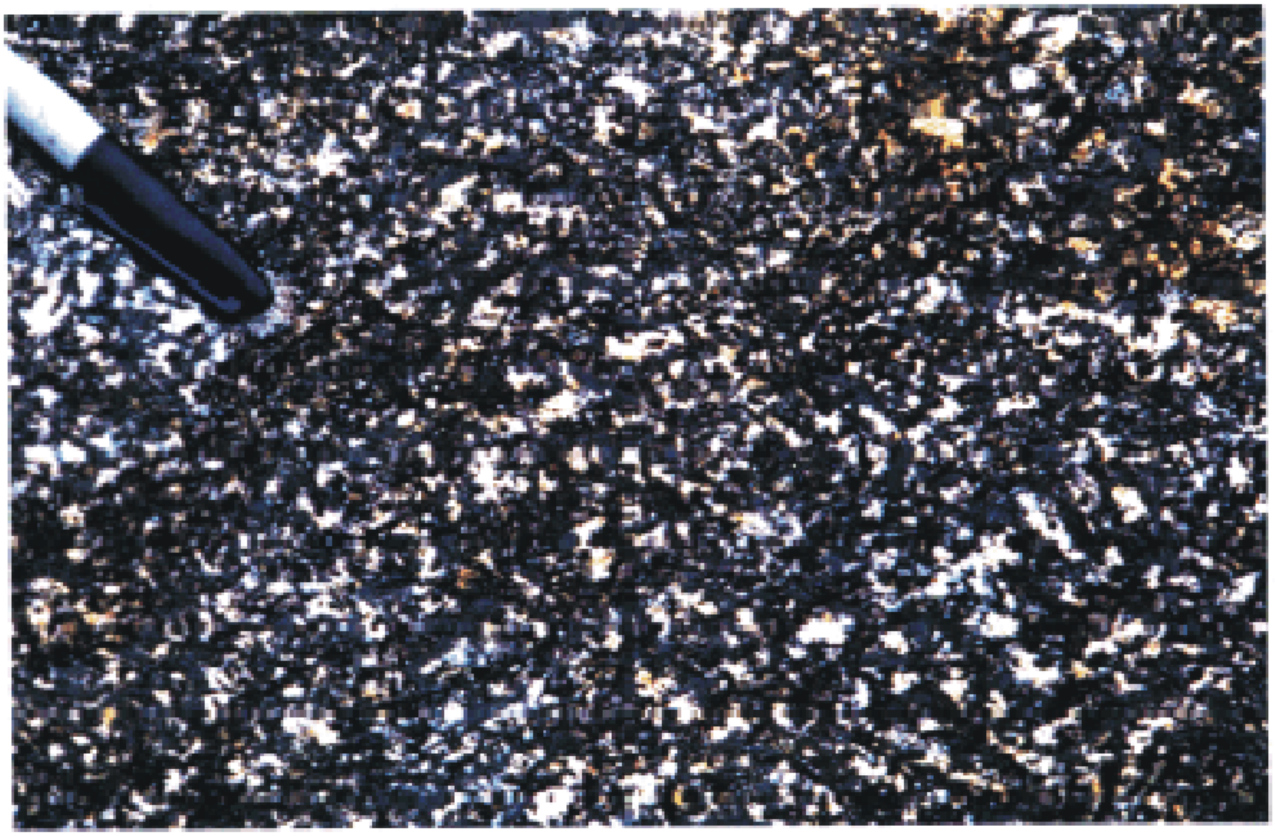


Plate 17. Medium-grained, equigranular, Fish Lake complex gabbro-diorite.

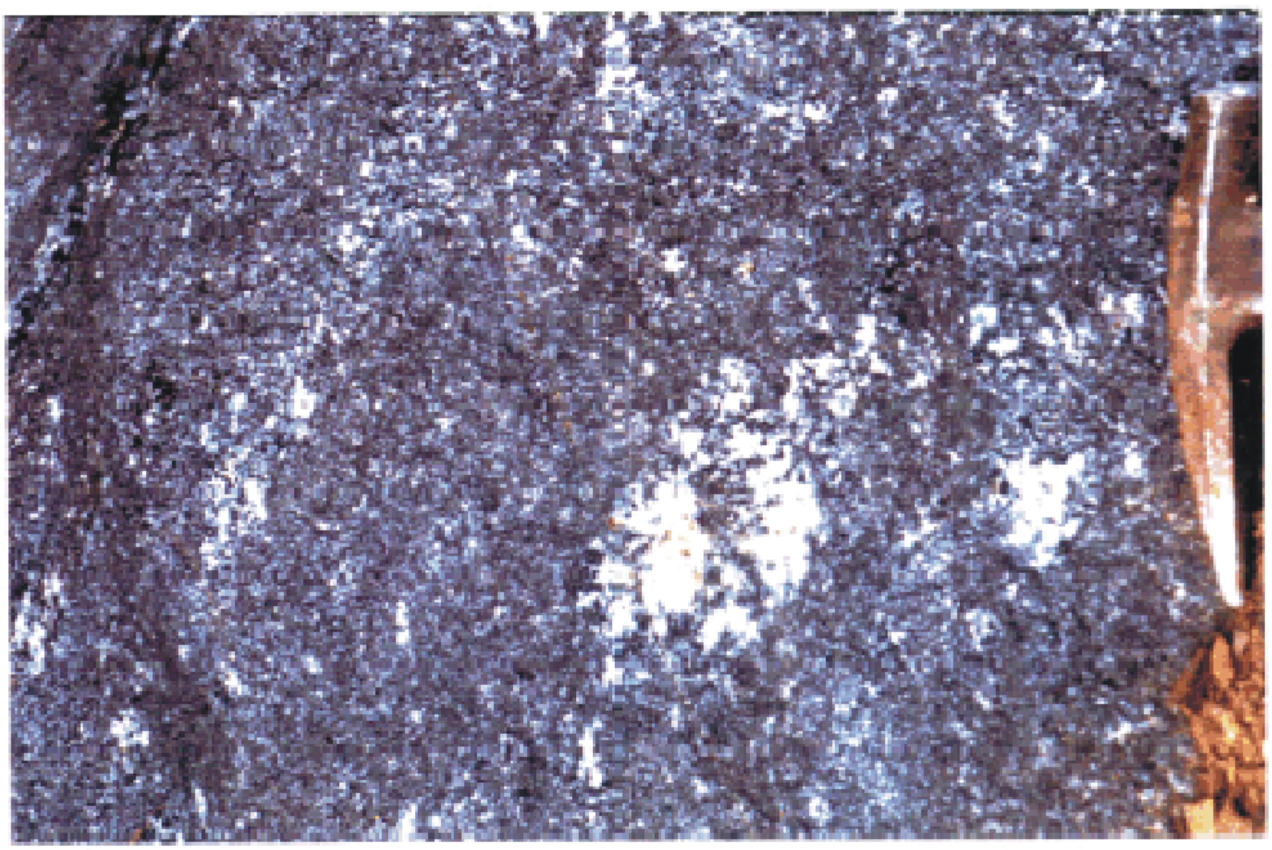


Plate 18. Compositionally heterogeneous Fish Lake gabbro-diorite.

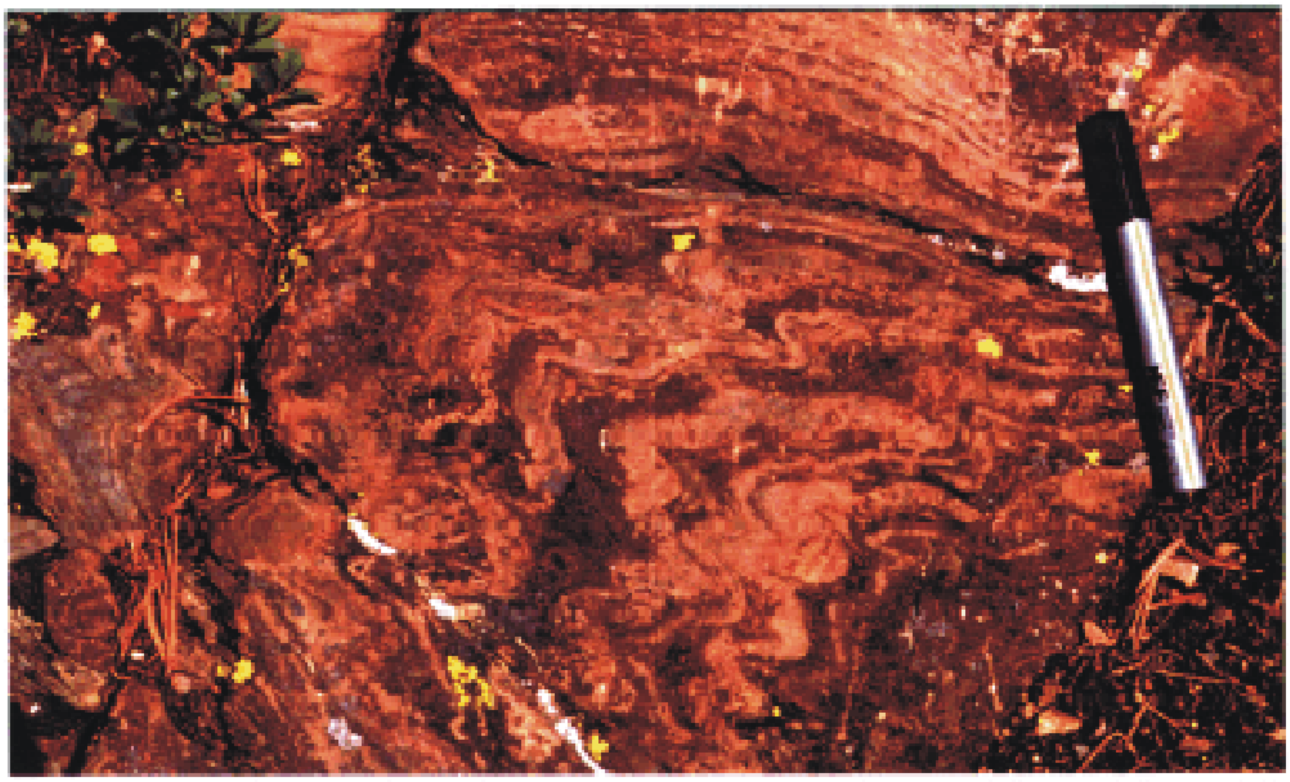


Plate 19. Synthetic minor folds formed on the nose of a slightly larger-scale fold within muddy rocks of the Elcore Lake member above Elcore Lake.

Plate 20. View south to an overturned fold within thin-bedded rocks at the transition between the Elcore Lake and Pegmatite Ridge members. This fold is on the west limb of the Pegmatite Ridge anticline, and the vergence direction is to the east, mirroring that of the major structure.

Plate 21. Minor folds within the Pegmatite Ridge member. View is to the north on the east limb of the Pegmatite Ridge anticline. Limb asymmetry indicates <u>local</u> vergence is up-dip.

Plate 22. View north to west-side-down brittle normal fault offsetting Fish Lake gabbro and albitized rocks in its hanging-wall (ridge in background). Upper Elcore Lake valley.

Plate 23. Boudinaged pegmatite within well-foliated metasedimentary host.

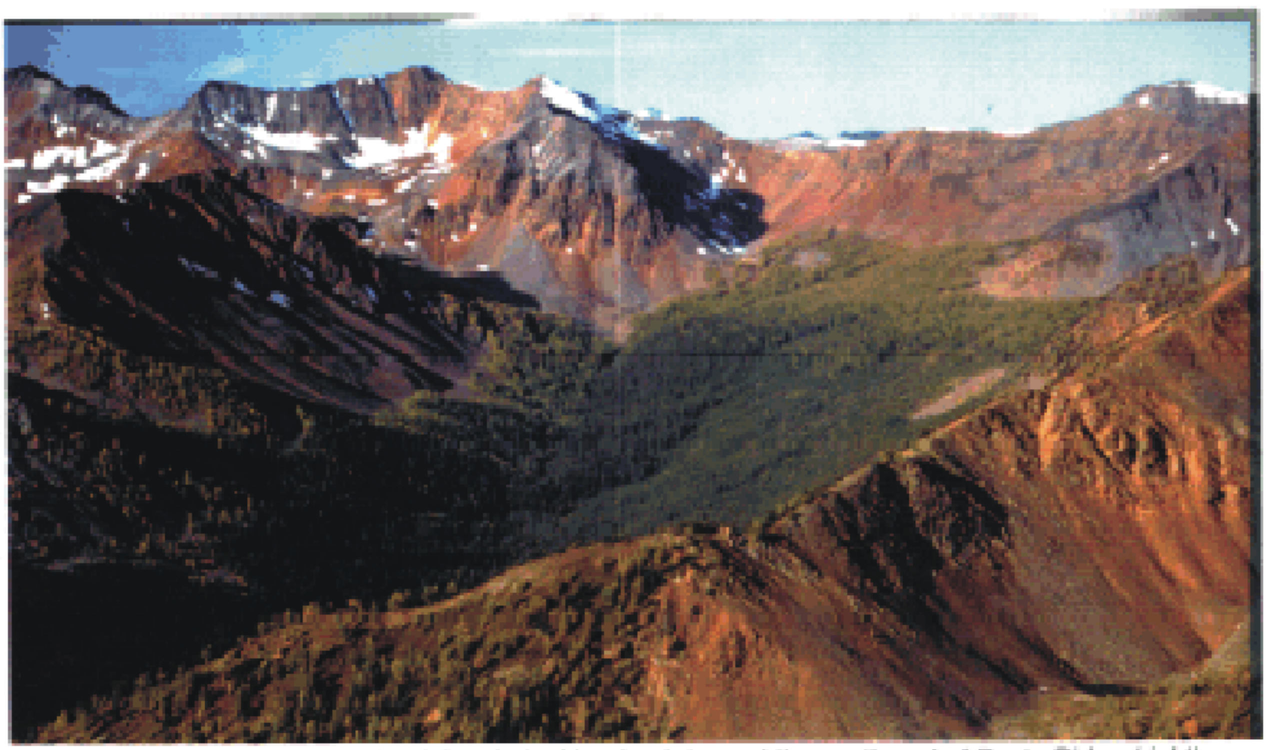
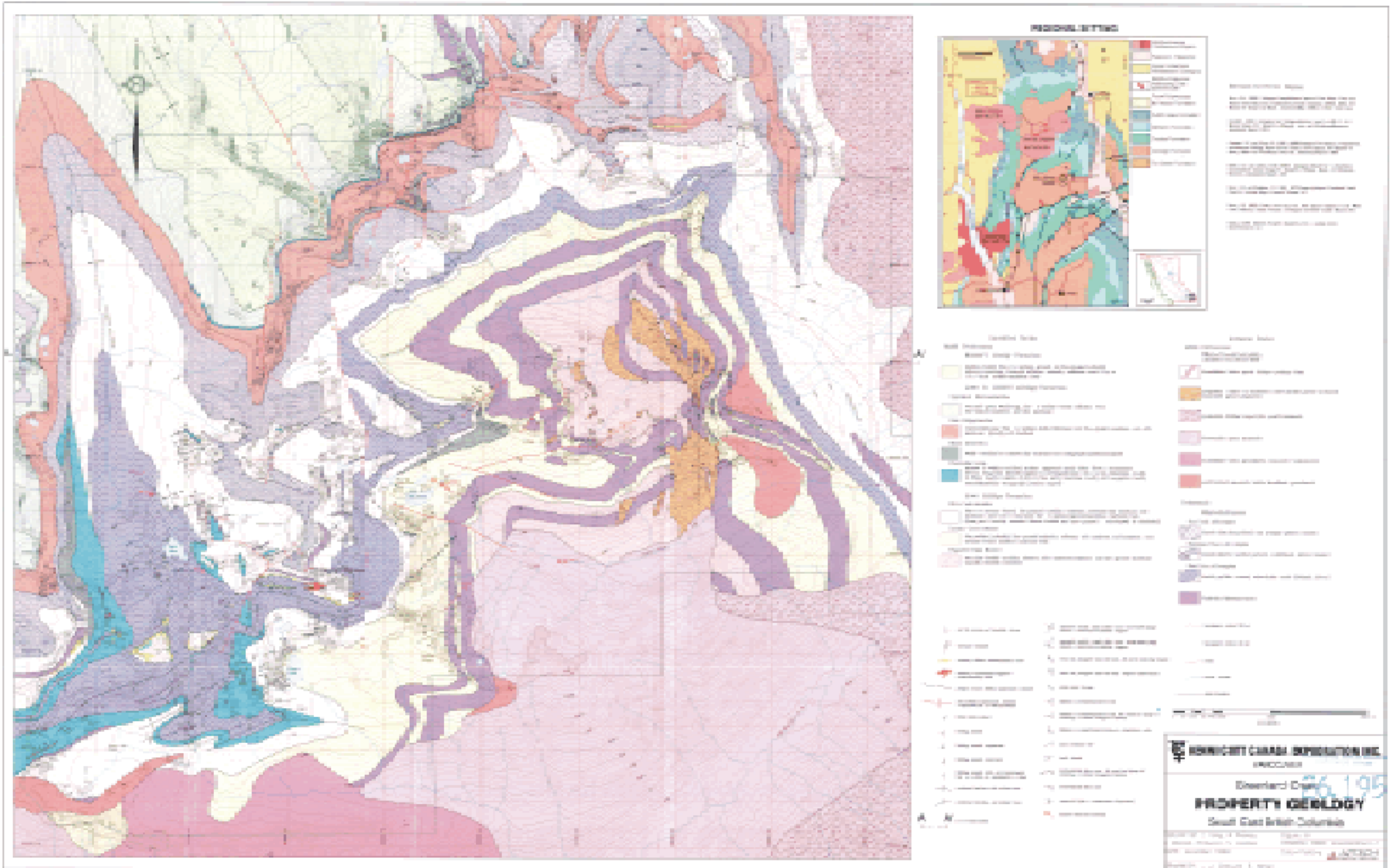
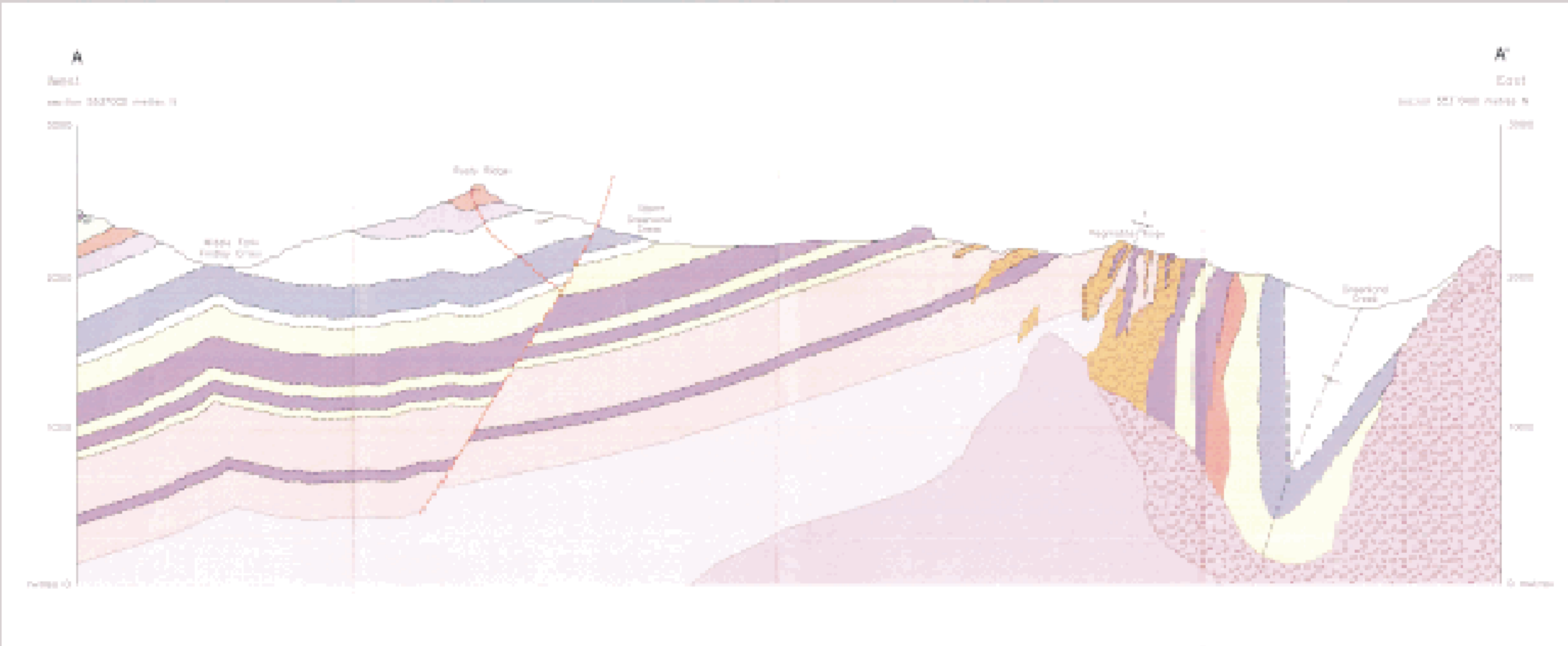
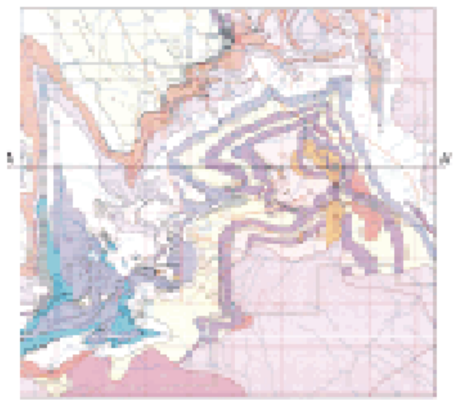


Plate 24. Uppermost Greenland Creek, looking back toward the south end of Rusty Ridge (right) and Patterson Peaks (left).


REGIONAL SETTING
KENNECOTT CANADA EXPLORATION INC.
VANCOUVER
PROPERTY GEOLOGY
South East British Columbia
26,195





KENNECOTT CANADA EXPLORATION INC.
VANCOUVER

Greenland Creek 26,195

Geological Cross Section A-A'

South East British Columbia

● Stream sediment sample: lead (ppm), zinc (ppm)

0°35' W True North

Grid North

18° 34' E Magnetic North

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

26,195

KENNECOTT CANADA EXPLORATION INC.
VANCOUVER

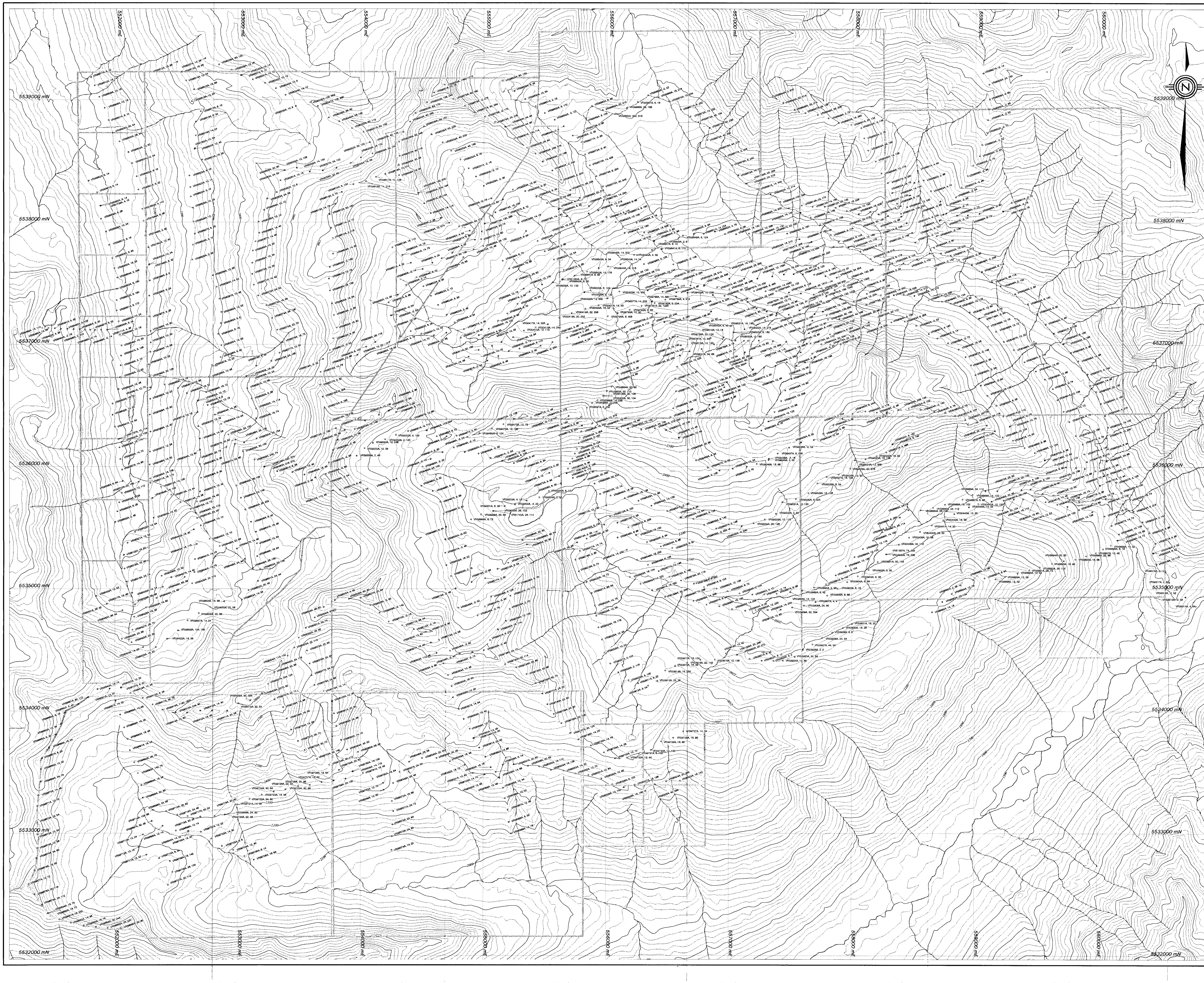
Greenland Creek
Stream Sediment Geochemistry
British Columbia, Canada

Projection: NAD83, UTM11

Author: SC	
Date: 21 February 2000	
NTS: 82F	
Drawn by: HO	
File: GC stream gc rpt Feb2000.wor	
Figure: 8	

Scale: 1:10,000

0 100 200 300 500 1000
metres



KENNECOTT CANADA EXPLORATION INC.
VANCOUVER

Greenland Creek

Soil Geochemistry

British Columbia, Canada

Author: SC
Date: 17 February 2000
NTS: 82F
Drawn by: HO
File: GC soil gc rpt Feb2000.wor
Projection: NAD83, UTM11
Figure: 9

Scale: 1:10,000
0 100 200 300 500 1000
metres

■ VR56472A, 4, 98 Rock sample number, Pb (ppm), Zn (ppm)

KENNECOTT CANADA EXPLORATION INC.
VANCOUVER

Greenland Creek **Rock Geochemistry** British Columbia, Canada	Author: SC Date: 17 February 2000 NTS: 82F Drawn by: HO File: GC rock gc rpt Feb2000.wor
Projection: NAD83, UTM11	Figure: 10

Scale: 1:10,000
0 100 200 300 500 1000
metres