

084265

**OPUS MINERALS INC.**

**EVALUATION REPORT  
1999 EXPLORATION PROGRAM**

**BAFFIN ISLAND PROJECT  
Territory of Nunavut**

**Prospecting Permits**

2265 - 48A/4 NW  
2266 - 48A/5 SW  
2267 - 48B/1 NW  
2268 - 48B/8 SE

72° 7.5'N - 72° 22.5'N  
83° 30'W - 85° 00'W



**Work Period**  
July 16, 1999 to September 12, 1999

DEPARTMENT OF INDIAN AND  
NORTHERN AFFAIRS  
  
FEB 17 2000  
  
MINING RECORDER  
YELLOWKNIFE, N.W.T.

December 30, 1999  
*Shadowood Exploration Services*  
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This report has been examined and approved as to technical worth under Section 31 and Section 6 & 7 of schedule II of the Canada Mining Regulations and filed in the amount of \$ 156,938.82  
Date Mar 29 2000 Chief *[Signature]*

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**Cover Photograph:** K1 Kimberlite in outcrop on the north side of Kim Lake, looking east. Other kimberlite outcrops occur in the background near the location of the helicopter at the east end of the lake.

## SUMMARY

In February 1999, **Opus Minerals Inc.** acquired four Prospecting Permits, covering about 235,000 acres on the Borden and Steensby Peninsulas of Baffin Island, an area where kimberlitic indicator minerals were known to occur in stream sediments. During July, August and September 1999, **Opus** carried out a program of prospecting, stream sediment sampling and till sampling to evaluate the area and delineate sources of the kimberlitic indicators. A total of 100 till samples, 194 stream sediment samples and over a dozen bedrock samples were collected during the program.

Prospecting, assisted by microscopy of concentrates from panned stream sediments, proved to be a very effective exploration technique. Kimberlitic indicators were traced upstream from the head of Bartlett Inlet, in Permit 2267, for a distance of more than sixteen kilometres. Kimberlite boulders were found at the termination of this dispersion train. These boulders were followed up-ice for 500 metres to their source in Permit 2268 - outcrops of kimberlite around the margins of a small lake (Kim Lake).

Two separate kimberlites were found in outcrops. The main diatreme (K1) lay partly beneath Kim Lake but was exposed along the east, north and west sides of the lake. Outcrops of altered and shattered gneiss extended along the southern shore of the lake. This shoreline probably coincided with the southern margin of the diatreme. The diatreme was oval-shaped with estimated dimensions of 250 metres by 120 metres and an area of 2.5 hectares. The second kimberlite lay about 75 metres south of the southern shore of Kim Lake and was exposed in outcrop as an east-west trending zone about 5 metres wide and 20 metres long. A thin veneer of boulders covered the kimberlite to the east and south and its full dimensions were unknown; it potentially could be up to 50 metres in diameter and sub-circular in outline. This has been termed the K5 kimberlite.

Prospecting to the east of the kimberlite outcrops led to the delineation of two additional areas with kimberlite boulders; in both cases the boulders were found on the down-ice side of an 800 metre long lake (K2 Lake). One cluster of boulders (the K2 area) was situated near the western end of the lake and the other (the K3 area) was located south of the lake's southeastern end. The probable bedrock sources for these boulders were beneath the lake.

Another boulder of kimberlite (the K4 boulder) was found in the northwestern corner of Permit 2265, about six kilometres southeast of the Kim Lake diatreme. Its location was across the direction of glacial flow and this boulder was almost certainly from a separate source. Additional prospecting did not turn up any new boulders but outcrops of shattered gneiss were present in this boulder-strewn area and the boulder veneer, which blanketed most of the bedrock, probably masked the source.

All of the kimberlites were massive, hypabyssal kimberlites with very few garnets or chrome diopsides. Some phases of the K1 diatreme contained abundant fragments of country rock (up to 30%) but the K2, K3 and K4 boulders and some other phases of the K1 pipe had less than 5% country rock fragments. Some of the K2 boulders contained a few orange pyropes and several mantle nodules of altered garnet peridotites were found in the K2 boulder area. The K5 outcrop was fine grained, dense, massive, hypabyssal kimberlite similar to marginal phases of the K1 diatreme. The subtle differences between the K1 and K5 kimberlites and the K2, K3 and K4 boulders, along with the different geographic locations, confirmed that the K2, K3 and K4 boulders were not eroded from the K1 or K5 diatremes. The sources of the K2 and K3 boulders were almost certainly beneath K2 Lake. The source of the K4 boulder has not yet been located.

Given these highly encouraging results, a decision was made to significantly increase the land holdings in the area of Bartlett Inlet. During the summer program, 218 claims comprising 531,000 acres were staked to bring the total area covered by Prospecting Permits and mineral claims to 766,000 acres.

In the Fall of 1999, petrographic analysis of the kimberlites showed that they were hypabyssal, poorly to moderately macrocrystic, altered monticellite kimberlites that contained few typical indicator minerals such as pyropes, chromites and chrome diopsides. Based on this petrographic work, the kimberlites were deemed to have moderate diamond potential. However, the petrographic work also determined that the kimberlites were derived from a fertile source within a zone of depleted mantle. One 24 kilogram sample of the K-1 pipe returned two microdiamonds, an encouraging result given the generally moderate diamond potential predicted by the petrographic studies.

By early December, results from the processing of the till and stream sediment samples were available. As expected, several till and sediment samples from within the down-ice glacial dispersion halo of the Kim Lake cluster contained enhanced levels of kimberlitic indicator minerals with values ranging from one to eleven pyrope grains per sample; these were surprisingly low levels considering the prevalence of kimberlitic boulders in the area. In comparison, samples from several other areas within the claim blocks and Prospecting Permits had much higher levels of indicators; ranging between 20 and 80 pyrope grains per sample, with one sample containing 210 grains. These very anomalous values confirmed the presence of at least seven and possibly as many as ten other kimberlites. The indicators from some of these other kimberlites were of markedly different mineralogy than those from the kimberlites near Kim Lake, as evidenced by pyrope-magnetite and high-pyrope mineral assemblages, and appeared not to be related to the Kim Lake cluster. These indicators were derived from kimberlites that were a product of separate intrusive processes than the Kim Lake pipes and they probably had separate parental magmas. It is expected that some of these other kimberlites will have better diamond carrying capacities than the Kim Lake pipes and will have a greater likelihood of higher diamond grades.

With the discovery of a new kimberlite province on Baffin Island, containing some diamond-bearing kimberlites, a follow-up work program should be carried out to evaluate the new targets outlined by the 1999 sampling program. This work should comprise:

- (1) Microprobe analysis of mineral grains to determine which kimberlites have the greatest diamond potential and thus have the highest priority for follow-up work.
- (2) Airborne magnetic surveys over the areas of anomalous indicator minerals to outline geophysical targets for ground evaluation.
- (3) Prospecting and ground magnetic surveys to evaluate the airborne geophysical targets and to check areas of prospective indicator mineral anomalies.
- (4) Drill evaluation of priority targets.

The work carried out by **Opus Minerals Inc.** in 1999 was highly encouraging - two kimberlites were found in outcrops and boulders were found that confirmed the presence of three other kimberlites. This field of kimberlites proves that a new kimberlite Province exists on Baffin Island. Pyrope-bearing peridotite nodules indicated a deep, mantle origin for the kimberlites and tests for microdiamonds on relatively small samples established that at least one of the kimberlites was diamondiferous. The occurrence of other fields within the area of **Opus Minerals'** current land holdings was confirmed by the stream sediment and till sampling programs. The proposed work program should delineate the kimberlites within these new fields and evaluate their diamond potential.

The 1999 work confirmed a structural and lithologic framework on Baffin Island that constitutes a classic environment for diamondiferous kimberlites; within this setting there is excellent potential for the discovery of economically viable diamond deposits.

## 1.0 INTRODUCTION

In July, August and September 1999, **Opus Minerals Inc.** carried out an exploration program for diamonds on the Borden and Steensby Peninsulas, northern Baffin Island. This report describes the work carried out during the program and is based on field observations, results from laboratory processing of samples and on a review of technical data available from files of the Geological Survey of Canada, the Department of Indian and Northern Affairs, the Vancouver Stock Exchange and from public accounts of work done by other companies.

Most of the field work was done between July 18 and August 14 by a five person crew based out of Arctic Bay, a small community near the northern end of Baffin Island. Some additional work was done between August 29 and September 4. A Bell 206B helicopter, under charter from Nunasi Helicopters Ltd. of Yellowknife, was used for support and to transport crews to and from the field. Fuel for the helicopter was purchased from Nanisivik Mines Ltd.

### 1.1 Location, Physiography and Access

Baffin Island is the largest of the Canadian Arctic Islands and is one of the largest islands in the world. The southern tip of the Island lies 500 kilometres south of the Arctic Circle; its northern end is 800 kilometres north of the Circle (Figure 1). The Island covers an area of about 500,000 square kilometres. Scheduled airline access is available from Yellowknife, Ottawa and Montreal to Iqaluit, the largest Baffin Island community, with a population of about 3,000, located on the southern end of the Island. From Iqaluit there is scheduled regional air service to the Arctic Bay/Nanisivik communities which served as a base for the field work.

Infrastructure within much of the island is limited. A total of only 50 kilometres of road presently exists on the island. Light aircraft (Twin Otters) are available for charter out of Iqaluit and Resolute and provide access to a few landing strips at DEW line locations or to unprepared sites along gravel bars, beaches or eskers.

Topography along the northeastern coast of the Island is rugged with maximum relief, in places, over 1000 metres; the coast is indented with steep-walled fiords and glacier-filled inlets. Elevations gradually decrease towards the southeast and the terrain in the central and southwestern parts of the Island is more typical of the Canadian Shield with low to moderate relief, ice-scoured outcrops and extensive boulder fields.

This is an area of high Arctic tundra with little vegetation and poorly developed soils. Arctic willows are scarce and stunted, and caribou moss and grasses are abundant only in protected areas. Winter, from a southern Canadian perspective, lasts from mid-September through to June. Snow cover is usually gone by early July. Summer weather is cool with clear skies and generally moderate to strong winds. Freeze-up begins in mid-September.

### 1.2 Properties and Ownership

Four Prospecting Permits were acquired in February, 1999, and sixteen claims (the BI Claim Blocks) were staked in July, 1999. Details on these land holdings are provided in Tables 1 and 2. Another two hundred and two claims (the AB Claim Blocks) comprising 491,621.82 acres were staked in late August and September. Details on these claims are shown in Table 3 enclosed as Appendix B. Total land holdings, including the AB claims, are 765,563.82 acres (claim and permit sizes are given in acres, rather than hectares, because mineral properties in Nunavut are still measured in Imperial units, not in metric units). The locations of the BI and AB Claim Blocks and the Prospecting Permits are shown on Maps 1, 2, 5 and 6 enclosed in Appendix H.



**Table 1  
Prospecting Permits**

Permit No.	Date Issued	N.T.S. Location	Area (acres)
2265	Feb. 1/99	48A/4NW	59,072
2266	Feb. 1/99	48A/5SW	58,272
2267	Feb. 1/99	48B/1NW	59,072
2268	Feb. 1/99	48B/8SE	58,272
<b>TOTAL ACREAGE</b> .....			<b>234,688</b>

The Prospecting Permits are located north of the 68th parallel and are good for a maximum period of five years provided that during the first two-year work period ten cents per acre are spent in exploration, twenty cents per acre are spent during the second two-year work period and forty cents per acre are spent during the third one-year work period.

**Table 2  
BI Claim Holdings**

Claim Name	Claim No.	Date Recorded	N.T.S.	Area (Acres)
BI-1	F67557	Sept. 20/99	48B/1	2,582.5
BI-2	F67542	Sept. 20/99	48B/1	2,582.5
BI-3	F67543	Sept. 20/99	48B/1	2,582.5
BI-4	F67544	Sept. 20/99	48B/1	2,582.5
BI-5	F67545	Sept. 20/99	48B/1	2,582.5
BI-6	F67546	Sept. 20/99	48B/1	2,582.5
BI-7	F67547	Sept. 20/99	48B/1	2,582.5
BI-8	F67548	Sept. 20/99	48B/1	2,582.5
BI-9	f67549	Sept. 20/99	48B/1	2,582.5
BI-10	F67550	Sept. 20/99	48B/1	2,582.5
BI-11	F67551	Sept. 20/99	48B/1	2,582.5
BI-12	F67552	Sept. 20/99	48B/1	2,582.5
BI-13	F67553	Sept. 20/99	48B/1	2,582.5
BI-14	F67554	Sept. 20/99	48B/1	2,582.5
BI-15	F67555	Sept. 20/99	48B/1	1,549.5
BI-16	F67556	Sept. 20/99	48B/1	1,549.5
<b>TOTAL ACREAGE</b> .....				<b>39,254.0</b>

The holder of a recorded claim is entitled to hold it for a period of ten years from the date the claim is recorded provided that during the two-year period immediately following the date the claim was recorded, \$4.00 per acre are expended on exploration of the claim and for each subsequent one-year period \$2.00 per acre are expended on exploration of the claim.

### 1.3 History

Mineral exploration on northern Baffin Island commenced as a result of the discovery of zinc-rich sulphide deposits in 1957 at Nanisivik by Texas Gulf Sulphur Company. Texas Gulf's work in the Borden Rift was prompted by knowledge of gossan zones along the shore of Strathcona Sound that

were first noticed by early explorers around the turn of the century (Clayton and Thorpe, 1982). The work by Texas Gulf resulted in the development of Nanisivik Mines Ltd., a small but long-lived and rich producer of zinc concentrates (to date over 15 million tonnes of ore have been mined). Most of the base metal exploration was focused on geologic settings similar to that at Nanisivik. Carbonates, overlying shales and sandstones in the Neohelikian Borden Basin, were considered prospective for Mississippi Valley type deposits. Elsewhere on the Island, the Archean and Aphebian rocks received little attention.

Early exploration on Baffin Island was limited to the fiords and narrow glacial valleys close to the coast where access was easiest. Recent exploration has been more extensive and has been supported by reconnaissance geological and geochronological studies carried out by the Geological Survey of Canada.

The following list provides a summary of the relevant exploration history in this part of Arctic Canada:

- 1700s - Martin Frobisher, on one of his voyages of exploration, discovered gold on Kodlunarn Island in what is now Frobisher Bay, southern Baffin Island. He carried a boat load of "ore" back to England to learn that his discovery was pyrite (Hogarth, et. al., 1994).
- 1910 - The Dominion Government Expedition of 1910-11, under Captain Bernier, was accompanied by a prospector who discovered deposits of pyrite with minor sphalerite and galena in a gossan zone along the shore of Strathcona Sound on northern Baffin Island (Clayton and Thorpe, 1982).
- 1954 - Lemon and Blackadar, of the Geological Survey of Canada, worked on northwestern Baffin Island and described the gossans and base metal mineralization at Strathcona Sound in a brief summary in GSC Paper 55-6.
- 1957 - As a follow-up to the GSC report, Texas Gulf Sulphur carried out a program of exploration which led to the delineation of potentially economic zinc/lead deposits.
- 1962 - The Mary River iron deposits were found by Murray Watts as a follow-up to the release of GSC airborne magnetic maps which showed strong magnetic anomalies in the Mary River area, about 100 kilometres southeast of the head of Milne Inlet (250 kilometres east of Nanisivik).
- 1969 - The GSC found kimberlites on Somerset Island during a regional mapping program. These were sampled by Cominco and Diapros in the early 1970s but diamond contents were negligible (Gibbons and Atkinson, 1992).
- 1970 - Patino Mining Corp. conducted mapping, magnetometer and scintillometer surveys over Mary River Group metavolcanic and metasedimentary rocks east of Ege Bay. Exploration was primarily for iron deposits, similar to those at Mary River, with some work for uranium.
- 1972 - Mineral Resources International Limited conducted a feasibility study on the Nanisivik zinc/lead deposits.
- 1976 - The Nanisivik mine was brought into production by a consortium comprising Mineral Resources, Metallgesellschaft, Billiton and the Government of Canada (Clayton and Thorpe, 1982).
- 1993 - Lumina Resources discovered the Zulu kimberlite on the northwestern part of the Brodeur Peninsula. This was a small diatreme (less than 50 metres in diameter) that

was reported to contain abundant pyropes and chrome diopsides but did not contain diamonds (Goff, 1993).

- 1993 - Baffin Island Resources, a private company, staked 41 claim groups comprising 2.95 million acres, scattered across all of Baffin Island, to cover structural features and magnetic anomalies, selected from GSC airborne magnetic maps, that were deemed to have diamond potential.
- 1994 - Continental Precious Minerals Inc. earned a 41 per cent interest in Baffin Island Resources by expending \$1.05 million in exploration, primarily for diamonds. This work consisted of stream sediment and till sampling and prospecting. 1034 samples were collected but only 385 samples were processed for diamond indicator minerals (Pitman and Craigie, 1995). Figure 2 shows diamond exploration areas of the Canadian Arctic.
- 1995 - Continental's interest in Baffin Island Resources was sold to International Capri Resources Ltd. Capri's focus, following the discovery of the Voisey's Bay deposit, shifted to the base metal potential of southern Baffin Island and no further work was carried out for diamonds.
- 1996 - Cominco acquired Prospecting Permits over rocks favourable for lead/zinc deposits southeast of Nanisivik. and, since that time, has been exploring the area. A modest program of ground geophysics and drilling was conducted during the 1998 field season (DIAND, 1998) and it is believed that some drilling was done in 1999.

#### 1.4 Recent Activity

In 1998, **Opus Minerals Inc.** bought the data from International Capri's diamond exploration programs as well as the unprocessed samples from the 1994 exploration program. In February 1999, **Opus** acquired four Prospecting Permits, covering about 235,000 acres on the Borden Peninsula, an area where previous work had identified kimberlitic indicator minerals in stream sediment samples. During July, August and September 1999, **Opus** carried out a program of prospecting, stream sediment sampling and till sampling to locate the kimberlitic sources of these indicators.

## 2.0 GEOLOGIC SETTING

### 2.1 Regional Geology

Baffin Island is the largest island within the Arctic Archipelago and forms the dominant land mass of the eastern third of this region. The Archipelago measures about 3,000 kilometres from east to west and 2,000 kilometres from the southern islands to the northern tip of Ellesmere Island. This is a geologically diverse region and comprises five major districts - the Inuitan Orogen, the Arctic Platform, the Precambrian Shields (Rae and Bear Provinces) and the Arctic Coastal Plain. These are illustrated in Figure 3.

Baffin Island is underlain by the Arctic Platform and Rae Province rocks. These rocks range from Archean gneisses, through Paleoproterozoic sediments and volcanics to Paleozoic dolostone and sandstone, and all are present within the Exploration Area (see Figure 4) on the central part of the Borden Peninsula.

### 2.2 Geology of the Exploration Area

The Exploration Area is outlined in Figure 4. It comprises the northern tip of the Steensby Peninsula and the part of west-central Borden Peninsula lying between Adams Sound and Moffat Inlet. It is the area over which the 1999 exploration program was conducted. Prospecting Permits 2265 to 2268 are located in the center of the Exploration Area. The following discussion on the

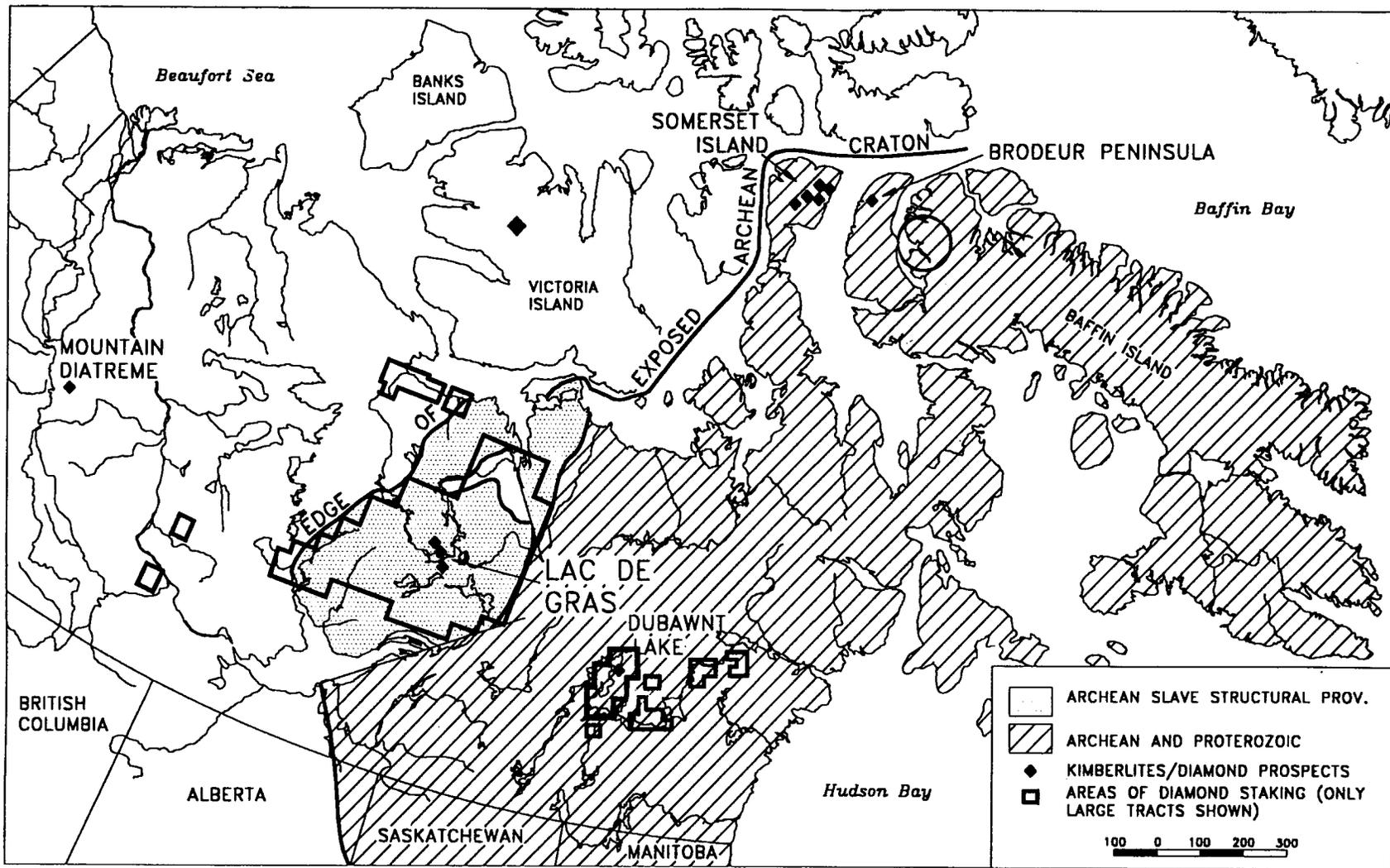


Figure 2 Diamond exploration in the Northwest Territories, Canada.

Exploration Area ○

geology of the Exploration Area is based primarily on the data of Scott and de Kemp (1998) but is supplemented by a few field observations. Where contributions by other GSC workers are discussed they are appropriately referenced.

A wide spectrum of rocks is present within the Exploration Area, representing a range of diverse geologic environments. Among the oldest units are 2.90 Ga polyphase orthogneisses that range in composition from monzogranite to tonalite. Metamorphosed volcanic and sedimentary rocks, comprising typical greenstone sequences of the 2.75 Ga Mary River Group, outcrop extensively in the southeastern part of the Borden Peninsula but are relatively restricted in extent within the Exploration Area. Monzogranitic to granodioritic plutonic rocks intrude both the greenstone and older orthogneiss. A phase of high-grade metamorphism is locally recorded at 2.5 Ga. Mesoproterozoic extension is represented along the northern part of the Borden Peninsula and resulted in deposition of the little-metamorphosed siliclastic, carbonate and volcanic rocks of the Bylot Supergroup. Much of the Exploration Area is transected by the unmetamorphosed Franklin swarm of diabase dykes, emplaced at 0.72 Ga. In the southeastern part of the Exploration Area, Cambrian to Silurian platformal limestone, dolostone and siliclastic rocks unconformably overlie the Precambrian units. Throughout the Exploration Area, bedrock exposures are locally obscured by unconsolidated clastic deposits of Quaternary age but this cover is relatively thin and not extensive. The geology of northern Baffin Island is illustrated in Figure 4. The major lithologic units are described in the following section:

#### Archean and Paleoproterozoic Units

Archean and Paleoproterozoic rocks outcrop along the bottoms and sides of some of the deeper river valleys between Adams Sound and Fabricius Fiord. The area south of Fabricius Fiord is underlain exclusively by Archean rocks. This area of Archean bedrock has been informally called the "lunar landscape". It consists predominantly of gneissic bedrock and a boulder veneer and is almost devoid of vegetation or overburden material finer than cobble size. Only a few, small frost boils of gravel are scattered throughout the boulders. Larger gravel deposits are present only along the river valleys. The landscape is irregular but with moderate relief (except in areas along the coastline); it is very rocky and composed of a monotonous sequence of boulders and outcrops of uniformly grey gneiss.

The Archean/Paleoproterozoic is described as a mixed unit, it has not been subdivided. It consists predominantly of medium grey coloured, massive gneisses of quartz monzonite to granodiorite composition, but granitic and peridotitic bodies were observed during the 1999 field work.

#### Fabricius Fiord Formation

The Fabricius Fiord Formation outcrops along the southern margin of the Borden Basin, east of Fabricius Fiord and Fleming Inlet. It varies widely in thickness up to a maximum of 1100 metres. The lower part of the Formation comprises massive, resistive subarkosic rocks interbedded with pebble conglomerates. The upper part comprises thick alternating beds of subarkose and arkose, gritty to stromatolitic dolostone, and granule to cobble breccia/conglomerate. The lower part of the Formation may be the time equivalent of the upper Arctic Bay Formation, whereas the upper part may be equivalent to the lowermost Society Cliffs Formation.

#### Adams Sound Formation

This formation consists of up to 600 metres of light orange to reddish brown quartzite, made up of subangular to subrounded grains of quartz with minor chlorite and sericite interbedded with minor feldspathic sandstone, argillite, black shale and conglomerate (Blackadar, 1970). The coloration is the result of fine-grained iron oxides. Some intercalations of shale occur in some parts of the Formation. The Adams Sound Formation underlies about two-thirds of the Exploration Area between Adams Sound and Fleming Inlet.

# NWT STRUCTURAL PROVINCES

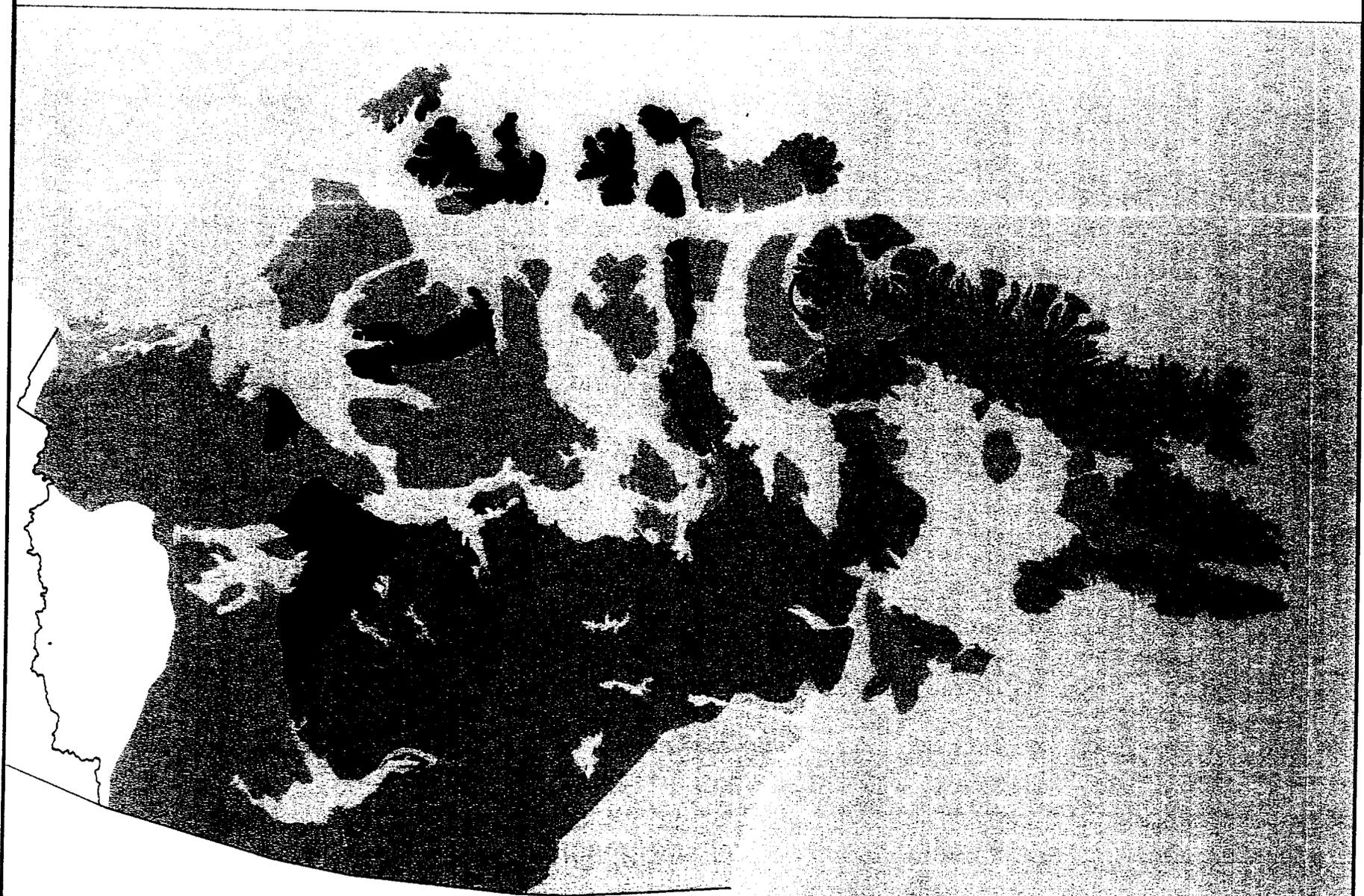


Figure 3

Source: Mines and Important Mineral Deposits of the Yukon and the Northwest Territories 1985, D.A.N.D



Exploration Area ○

ARCTIC COASTAL PLAIN

BEAR PROVINCE

RAE (CHURCHILL) PROVINCE

CORDILLERAN PROVINCE

ARCTIC, INTERIOR & HUDSON PLATFORMS

SLAVE PROVINCE

HEARNE (CHURCHILL) PROVINCE

INNUITIAN PROVINCE

## Arctic Bay Formation

The Arctic Bay Formation consists of up to 700 metres of black, fissile, finely laminated medium to fine-grained shale and siltstone with minor quartz arenite. The thickness of the Formation varies considerably, ranging from about 120 metres in the Arctic Bay area to over 700 metres in the eastern part of the Borden Peninsula. Disseminated pyrite is common within the formation and minor galena is present in some areas.

The Arctic Bay Formation underlies much of the western part of the Milne Inlet Map-sheet (NTS 48 A) but forms only a minor part of the bedrock in the Moffat Inlet area, being restricted to a few outcrops near the eastern end of Adams Sound and east of Fleming Lake.

## Society Cliffs Formation

All the significant zinc/lead mineralization in the Nanisivik region occurs within the Society Cliffs Formation (Clayton and Thorpe, 1982) and, in this area, the formation has a maximum thickness in excess of 500 metres. However, within the Exploration Area it does not comprise a significant outcrop unit and only a few small exposures occur; all of these are in the southwestern quadrant of the Milne Inlet map-sheet (NTS 48A). The Formation consists of light grey to almost black dolomite but weathered surfaces are generally a medium brown colour. Laminated (one millimetre thick) and argillaceous dolomites predominate. Some well-defined algal bioherms are present and it is believed that most, if not all, of the laminated dolomite is of algal origin (Clayton and Thorpe, 1982).

## Diabase Dykes

Diabase dykes are widespread on the Borden Peninsula. They are generally medium grained and holocrystalline. The feldspar is andesine and the principal ferromagnesian mineral is augite (Blackadar, 1956). Pyrite is a common accessory mineral and chalcopyrite occurs sporadically in minor amounts. There are two principle dyke directions, northwest-southeast and north, northwest-south, southeast. The northwest trending dykes often weather in relief and form prominent topographic ridges. They range from 10 to over 50 metres in width and can extend for tens of kilometres. The northerly trending dykes tend to be relatively thin, on the order of a few metres or less, are generally less than ten kilometres long and do not form prominent ridges. The dykes cut the Archean and Proterozoic formations but not the Paleozoic rocks and are Upper Proterozoic in age.

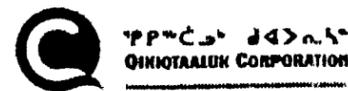
## Paleozoic Units

The Paleozoic rocks outcrop in the southeastern part of the Exploration Area. The Gallery Formation (Cambrian-Ordovician) comprises up to 350 metres of medium to coarse grained quartz sandstone with minor intercalations of siltstone, conglomerate and shale. It unconformably overlies older units on a highly irregular sub-Gallery topography. It is overlain by the Turner Cliffs Formation, a sequence of up to 300 metres of shaley to pure dolostone. This is in turn overlain by the Ship Point Formation, of Ordovician age. It comprises up to 275 metres of cliff-forming, finely crystalline dolostone, commonly silty or sandy. This Formation produces the escarpment-type features that are found in the southeastern part of the Exploration Area.

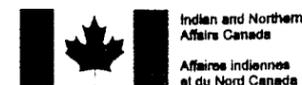
### 2.3 Stratigraphy of the Exploration Area

The Table of Formations (Table 4) is modified from Blackadar (1956). The formations of the Uluksan Group appear to be a conformable sequence and are shown as such in the Table. However, angular disconformities can be seen between the formations at a number of places on the Borden Peninsula and Geldsetzer (1973) considered that there were significant hiatal periods separating the principal units.

# North Baffin/Melville Peninsula Partnership Project: Generalized Geology and Mineral Occurrences Map



Resources, Wildlife and Economic Development



Geological Survey of Canada  
Earth Sciences Sector  
Natural Resources Canada

Commission géologique du Canada  
Secteur des Sciences de la Terre  
Ressources naturelles Canada

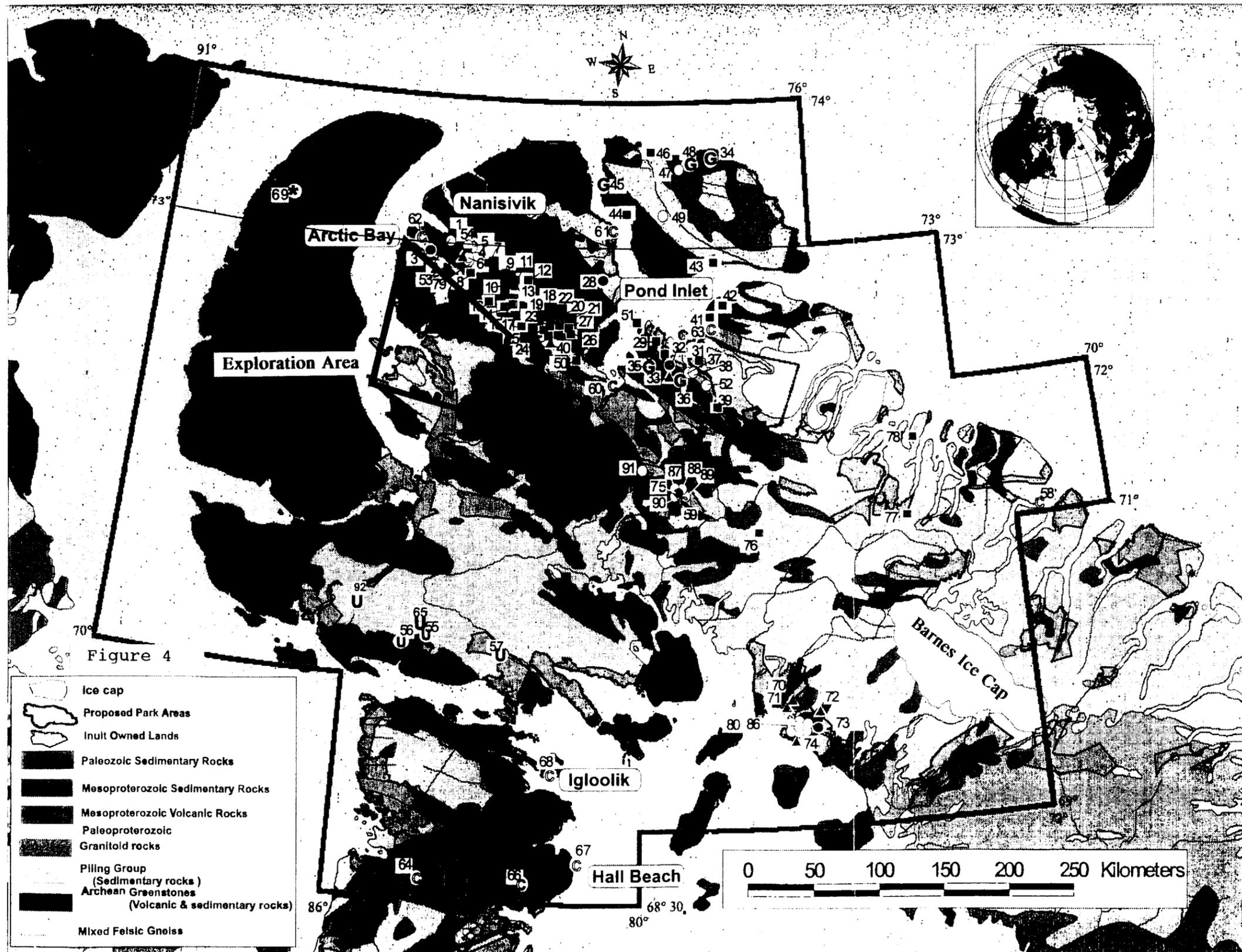


Figure 4

KEY TO NUMBERED MINERAL OCCURRENCES

Number	NTS	Description
1	48C	Nanisivik Mine
4	48B	ZnS, PbS in Society Cliffs dolomite
7	48A	ZnS, PbS occurrences in Society Cliffs dolomite
8	48A	ZnS, PbS occurrences in Society Cliffs dolomite
9	48A	ZnS, PbS in fractures, Society Cliffs dolomite
10	48A	PbS, ZnS, CuS in Society Cliffs dolomite
11	48A	PbS, ZnS, fluorite Society Cliffs dolomite
12	48A	PbS, ZnS, fluorite Society Cliffs dolomite
13	48A	PbS in Society Cliffs dolomite
14	48A	PbS, disseminated fluorite in Society Cliffs dolomite
15	48A	PbS (ZnS) in Society Cliffs dolomite
16	48A	PbS (ZnS) in Society Cliffs dolomite
17	48A	Disseminated PbS in Society Cliffs dolomite
18	48A	PbS in Society Cliffs dolomite
19	48A	PbS in Society Cliffs dolomite
20	48A	Society Cliffs dolomite near Victoria fault
21	48A	Society Cliffs dolomite, near faults
22	48A	PbS in calcite fractures, Society Cliffs dolomite
23	48A	PbS in Society Cliffs dolomite
24	48A	PbS in Society Cliffs dolomite
25	48A	PbS in Society Cliffs dolomite
26	48A	Two zones in Society Cliffs dolomite
27	48A	Disseminated, in Society Cliffs dolomite
29	38B	PbS, ZnS in White Bay fault; breccia of Victor Bay dolomite
30	38B	PbS, ZnS in Society Cliffs dolomite near White Bay fault
31	38B	PbS in Society Cliffs dolomite near White Bay fault
39	37G	PbS, ZnS in Society Cliffs dolomite
50	48A	PbS, ZnS, chalcocite, bornite in Arctic Bay Fm. dolomite
51	48A	Fluorite in fractures, upper Victor Bay Fm.
2	48C	Massive hematite in Society Cliffs dolomite
5	48B	Massive hematite in Society Cliffs dolomite
6	48B	Massive hematite in Society Cliffs dolomite
37	38B	Disseminated magnetite-ilmenite
38	38B	Disseminated magnetite-ilmenite
47	38C	Siderite, thin beds in Arctic Bay Fm.
49	38C	Disseminated and veinlike iron formation, Central Border Fault
52	38B	Disseminated magnetite-ilmenite
54	48A	Massive hematite after pyrite
70	48B	Hematite in Society Cliffs
80	37C	Eqe Bay Iron Zone #1
81	37C	Eqe Bay Iron Zone #2
82	37C	Eqe Bay Iron Zone #3
83	37C	Eqe Bay Iron Zone #4
84	37C	Eqe Bay Iron Zone #6
85	37C	Eqe Bay Iron Zone #6
86	37C	Eqe Bay Iron Zone #7
87	37G	Baffinland Iron Mines Zone #1
88	37G	Baffinland Iron Mines Zone #2
89	37G	Baffinland Iron Mines Zone #3
90	37G	Baffinland Iron Mines Zone #3A
91	37G	Baffinland Iron Mines Zone #4
3	48B	Malachite in Adams Sound Fm. sandstone
28	48A	Disseminated ZnS in Arctic Bay sandstone
32	38B	PbS (ZnS) in sandstone and dolomite, Arctic Bay Fm., White Bay Fault
73	37C	Minor occurrences associated with sulphide facies iron formation
74	37C	Associated with sulphide facies iron formation, Central Border Fault
13	38B	0.15% Cu in red shale, Society Cliffs Fm.
40	48A	Chalcopyrite, malachite in granite gneiss near fault
53	48B	Minor Cu-Au in quartz-carbonate veins
70	37C	Minor occurrences associated with sulphide facies iron formation
71	37C	Minor occurrences associated with sulphide facies iron formation
72	37C	Minor occurrences associated with sulphide facies iron formation
74	37C	Minor occurrences associated with sulphide facies iron formation
34	38C	Gypsum beds in Society Cliffs Fm. at two stratigraphic levels
35	38B	Gypsum beds in Society Cliffs Fm. at two stratigraphic levels
36	38B	Gypsum beds in Society Cliffs Fm. at two stratigraphic levels
45	48D	60 gypsum beds, 0.1 to 3m thick
46	38C	Thin gypsum beds
41	38B	Coal seams up to 2m thick
42	38B	Coal seams up to 2m thick
43	38B	Coal seams up to 2m thick
44	48D	Coal seams, very thin
46	38C	Coal seams, very thin
55	47F	U and specular hematite in quartz veins associated with faults
56	47F	Minor U in fault cutting Mesoproterozoic sandstone
67	47F	Th in Mesoproterozoic conglomerate
65	47F	U in altered granite
92	47E	U, Th in granitic pegmatites
78	37G	Undivided Mary River Group
77	37H	Malachite, faulted Mary River Group
78	37H	Malachite in undivided Mary River Group
58	27G	Reported Site 27G-CS1
59	37G	Major Site 37G-CS1; serpentine
60	48A	Reported Site 48A-CS1
61	48D	Minor Site 48D-CS1; 3 tons soapstone mined 1964.
62	48C	Minor Site 48C-CS1; talc-tremolite schist
63	38B	Reported Site 38B-CS1; serpentine
64	47B	Major Site 47B-CS1; serpentinized peridotite dyke
66	47A	Minor Site 47A-CS2; altered peridotite dyke
67	47A	Reported Site 47A-CS1
68	47D	Reported Site 47D-CS1
69	58D	Zuku Kimberlite

Contacts: Advisory Committee

- |  |   |  |
|--|---|--|
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**TABLE 4**  
**Table of Formations**

Age	Group	Formation	Thickness	Lithology
Ordovician	Admiralty	Ship Point	200	dolostone
Cambrian- Ordovician		Turner Cliffs	300	sandstone
		Gallery	340	quartz sandstone
		----- Slight angular unconformity -----		
		----- Intrusive contact -----		
Middle Proterozoic	Uluksan	Society Cliffs	500	dolomite
	Eqaluik	Fabricius Fiord	1000	subarkose
		Arctic Bay	700+	dolomitic shale
		Adams Sound	600	quartz arenite
		Nauyat	430	basalt
		Quartzite	20	quartzite
		----- Angular Unconformity -----		
Archean and Lower Proterozoic				gneiss, granite

#### 2.4 Geology of the Prospecting Permit Area

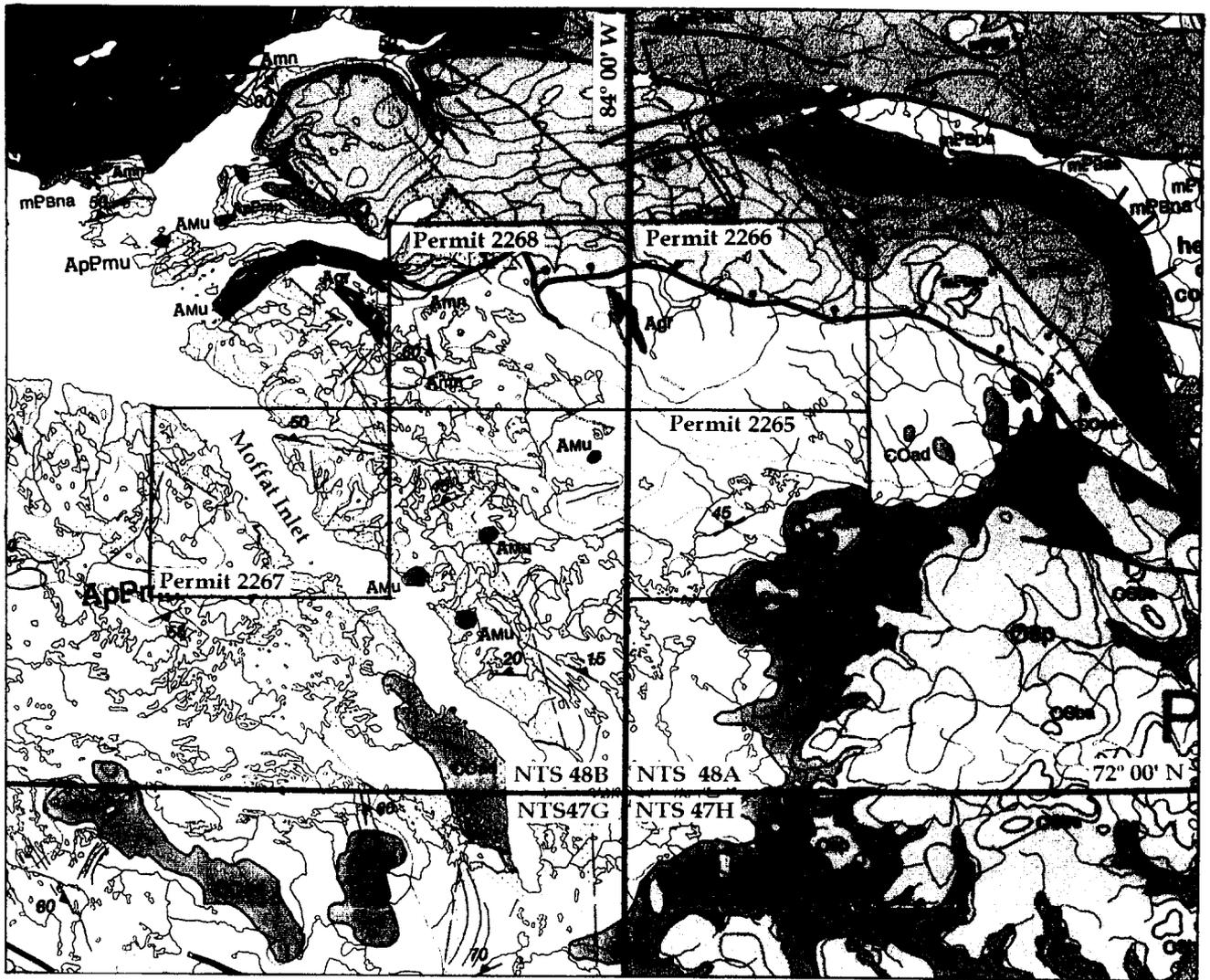
The geology of the Permit area is illustrated in Figure 5. As discussed previously, no systematic mapping was undertaken during the 1999 program and the geology of the Permit area is based on work done by the Geological Survey of Canada (Scott and de Kemp, 1998).

The two eastern Permits, 2265 and 2266, lie within the southwestern quadrant of NTS map sheet 48A. They are underlain predominantly by Archean migmatitic gneiss ranging in composition from granodiorite to quartz diorite but middle Proterozoic subarkose to arkose of the Fabricius Fiord Formation covers the northern one-third of Permit 2266 while Paleozoic dolostones and sandstones of the Gallery, Turner Cliffs and Ship Point Formations, extend over all of the southeastern quarter of Permit 2265.

Permits 2267 and 2268 lie within NTS map-sheet 48B. The northern one-third of Permit 2268 is underlain by arkosic sediments of the Fabricius Fiord Formation while the southern two-thirds of this Permit and all of Permit 2267 fall within Archean terrain.

#### 2.5 Quaternary Geology and Glaciation

The eastern Arctic islands lie within the Baffin Sector of the northeastern corner of the Laurentide Ice Sheet, known locally as the Foxe ice sheet. The glacial regime of this area was dominated by an ice dome centered on the Foxe Basin. Major ice divides extended northerly and southerly from



**Geologic Legend**

**Paleozoic**

-  Osp - Admiralty Group, Ship Point dolostone
-  COad - Admiralty Group, sandstone

**Middle Proterozoic**

-  mPBff - Fabricius Fiord Formation, arkose
-  mPBab - Arctic Bay Formation, dolomitic shale
-  mPBas - Adams Sound Formation, quartz arenite
-  mPBna - Nauyat Formation, basalt

**Paleoproterozoic and/or Archean**

-  ApPmu - Archean and/or paleoproterozoic gneisses
-  Agr - Archean, granitoids
-  Amu/mn - Archean, mixed unit, volcanic/clastic rocks



**Figure 5.** General geology of the Prospecting Permit area (Geology after Scott and de Kemp, 1998).

this dome and separated Baffin Island from the Melville Peninsula and Ungava. Early Foxe glaciation commenced prior to 54 ka. There is evidence for several glaciations, which occurred prior to Foxe, in the weathered lateral moraines and tills on Cumberland Peninsula, southern Baffin Island. Elsewhere, clues to the earlier events were destroyed by the Foxe glaciation and details of ice movement before 54 ka are not known. The eastern margin of the Foxe ice did not fluctuate significantly between 54 ka and 10 ka. Deglaciation commenced about 10 ka. From an exploration aspect, the late phases of deglaciation were critical; with retreat of the Foxe ice dome, the ice divide shifted easterly to lie along almost the entire length of Baffin Island, about 100 kilometres inland from the coast. Ice flow west of the divide was westerly, at 180 degrees to the earlier direction. On the western third of the Island, earlier glacial deposits have been reworked by the late ice movement and tracing of dispersion trains in this area is difficult because of this complex glacial history. Two small, existing ice caps, the Barnes and Penny Ice Fields are remnants of the Foxe Sheet.

Reconnaissance mapping of the surficial geology on Baffin Island indicates that the till cover is relatively featureless, discontinuous and thin (on the order of 2 metres or less), except for areas at the heads of fiords where thick (20 to 100 metre) sections of deltaic and outwash sediments are present (Dredge et. al., 1998). Most of Baffin Island, with the exception of the eastern coastal region, is an area of glacial scouring, thus the till cover is discontinuous and outcrop is abundant.

In the Exploration Area, deglaciation commenced prior to 10 ka and by 10 ka a small ice dome centered on northern Borden Peninsula had separated from the main Foxe ice sheet (Andrews, 1989). This small dome impacted ice directions with the last flow directions in the Exploration Area being southwesterly (Figure 6). However, topography had a significant impact on ice flow, especially along the fiords, inlets and deeper valleys, where ice flowed down the topographic depressions towards the coast. Near Bartlett Inlet, where much of our work was focused, ice flow near the coast was westerly down the Inlet, whereas the dispersion train from the K-1 kimberlite, about 15 kilometres northeast of the Inlet, trends southerly at 205°.

There is field evidence that deglaciation occurred rapidly with intense run-off. Boulder lag deposits and boulder veneers are ubiquitous and are as well developed on hilltops and hillsides as in valleys. In most areas, clay-rich tills are rare and the finer surficial deposits consist of gravels which contain little or no material below sand size. These gravels and tills usually occur as frost heave areas among boulders. Sand deposits are restricted to a few lake basins and along some of the river valleys.

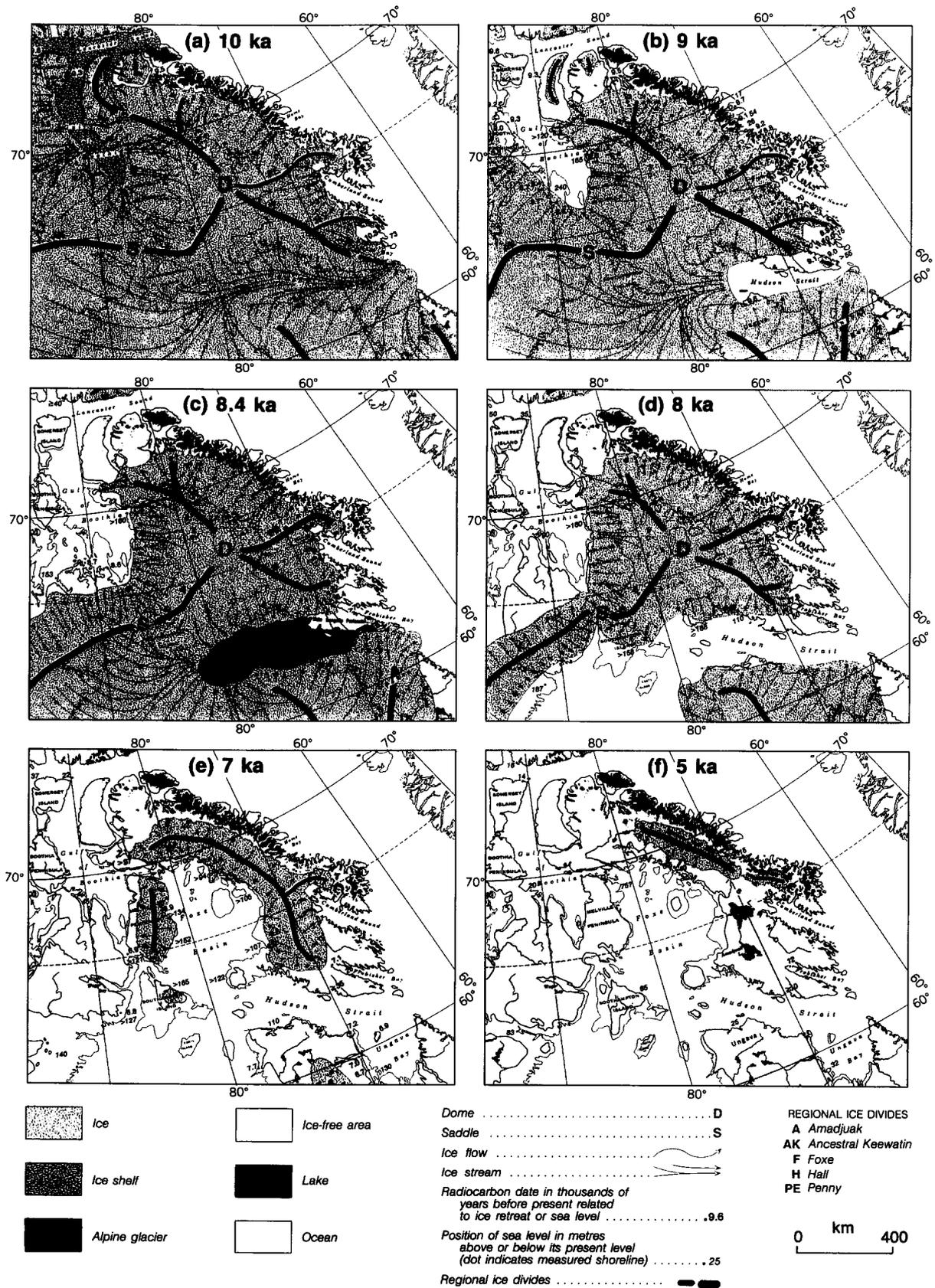
### **3.0 ECONOMIC POTENTIAL**

#### **3.1 Base and Precious Metals**

The Canadian Arctic archipelago hosts two highly profitable mines - Polaris on Little Cornwallis Island and Nanisivik on the northern tip of Baffin Island. The mine sites are accessible by sea which contributes to their economics, allowing for relatively cheap transport by ship of fuel, supplies and equipment to the mines and of mineral concentrates from the mines to smelters in the south.

Nanisivik has produced over 15 million tonnes of ore. Existing reserves are about 3 million tonnes at 8.5% zinc, 0.2% lead and 40 g/t silver. Over 10 million tonnes of ore has been produced at Polaris and present reserves are on the order of 5 million tonnes at 13.4% zinc and 3.7% lead. The deposits are Mississippi Valley type, hosted by carbonates. Favourable geologic horizons extend easterly from the Nanisivik area to east of Milne Inlet, a distance of over 250 kilometres. However, most of the prospective part of this belt, outside of the Nanisivik area, is being actively explored by Cominco and the ground is held by them in the form of Prospecting Permits.

Other mineral deposits of note on Baffin Island occur in the Mary River area (Figure 4), on the north central part of Baffin Island. These have been described as the richest deposits of iron "ore"



**Figure 6** Paleogeographic maps of deglaciation of the eastern Arctic for (a) 10 ka, (b) 9 ka, (c) 8.4 ka, (d) 8 ka, (e) 7 ka, and (f) 5 ka. **Figure from Andrews (1989) p. 296**

ever found in Canada (Gross, 1965). The iron mineralization consists of practically pure magnetite ( $\text{Fe}_3\text{O}_4$ ) and hematite ( $\text{Fe}_2\text{O}_3$ ). Average grade is 68% soluble iron, which is richer than any commercial high grade concentrate produced in North America. Reserves in three deposits are estimated to be in excess of 300 million tonnes. These are Algoma-type deposits hosted by metavolcanics and metasediments of the Mary River greenstone belt. The isolated location and depressed iron ore markets have precluded their development. Until the known deposits become economic, which is unlikely to happen in the foreseeable future, there is little justification to explore for additional iron resources.

Within the Exploration Area (Figure 4) the potential for base metals or gold is, at best modest. The area lies south of the belt of rocks which hosts the Nanisivik Mine, thus Mississippi Valley-style deposits are unlikely. The area is not overly prospective for other styles of mineralization. Bedrock across the area is relatively well-exposed, either as outcrops or as a thin veneer of locally derived boulders, and any base metal deposits should have a visible surface expression. There is no evidence for these. The Archean terrain, in the Moffat Inlet area, consists predominantly of orthogneiss of relatively high metamorphic grade and has little potential for gold.

### 3.2 Diamonds

The Zulu Kimberlite, on the northern part of the Brodeur Peninsula (Figure 4), was discovered by Lumina Resources in 1993. Although small (less than one hectare), and apparently not diamondiferous, it is of significance because it suggests that this area constitutes a new and relatively unexplored kimberlite province. Other, as yet, undiscovered kimberlite pipes could contain commercially exploitable deposits of diamonds. Lumina was reported to have recovered two diamonds from stream sediments collected during their sampling program on the Brodeur Peninsula. It is believed that these were not from the Zulu Pipe and their source remains unknown.

Studies of shear wave velocity perturbations from seismic tomography show that a high-velocity zone underlies the central and southern part of the Archean Slave Province (Grand, 1987). This high-velocity zone marks the presence of an area with a thick, cool mantle root and is prospective for diamonds. It is not surprising that Lac de Gras, with its diamond-rich kimberlites, occurs within this high-velocity seismic zone of the Slave Province. A similar high-velocity mantle root zone extends beneath Hudson's Bay and most of Baffin Island (Grand, 1987), indicating that this area also has excellent diamond potential.

The western and northern parts of Baffin Island, around the margins of the Foxe Basin and on the Brodeur Peninsula, are covered by Ordovician and Silurian carbonates that sit unconformably upon the Archean/Proterozoic basement (Figure 4). The edges of the Paleozoic cover coincide with the hinge lines or flexure zones between the Foxe Basin and the structural uplands of Archean/Proterozoic basement which underlie most of the Island. The basement rocks are cut by an extensive northwesterly trending swarm of diabase dykes (Fahrig and West, 1986). This is a classic structural setting for diamondiferous kimberlites. Little diamond exploration has been carried out on the island and the environment remains virtually unexplored.

## 4.0 WORK PROGRAMS

### 4.1 Previous Work in 1994

In 1994, Continental Precious Minerals Inc. carried out a regional prospecting and stream sediment sampling program for kimberlites, base metals and gold. A total of 1034 stream sediments and till samples were collected but only 385 samples were processed. Significant concentrations of kimberlitic indicator minerals were found in samples from two widely separate areas, one area on the Borden Peninsula on northern Baffin Island and the other east of the Foxe Basin on central Baffin. Microprobe analysis of garnets confirmed the presence of mantle-derived pyropes but the grains from the samples on central Baffin did not have particularly interesting

chemistry. However, thirty-nine pyropes were found in one sample from the Borden Peninsula (sample 1097 - the location of this sample is shown on Map 1, Appendix H). The CaO/Cr<sub>2</sub>O<sub>3</sub> plot of the chemistry of these grains showed a strong eclogitic signature and one pyrope had "marginal" G10 chemistry (Pitman and Craigie, 1995). Several other samples on the Borden Peninsula contained between one and four pyropes. The distribution of these anomalous samples suggested that there were at least three separate kimberlitic source areas for the pyropes. Although results from the 1994 work were considered promising (Pitman and Craigie, 1995), Continental sold its interest in the Baffin Island Project to International Capri Resources. As a result of the discovery of the Voisey's Bay copper/nickel deposit in northern Labrador, Capri's focus shifted from diamonds to the massive sulphide potential of southern Baffin Island and no follow-up work was conducted in the area of the anomalous samples on the Borden Peninsula.

#### 4.2 1999 Work Program

In 1998, **Opus Minerals Inc.**, while researching the potential of Baffin Island for diamonds, recognized the significance of the 1994 sampling results. **Opus** concluded an agreement with International Capri to acquire their data from the 1994 diamond exploration programs on Baffin Island. After appraisal of this data, **Opus** applied for Prospecting Permits on the Borden Peninsula, in the area of anomalous stream sediment samples. Four permits were issued on February 1st, 1999 and a work program was planned for the summer to evaluate the diamond potential of the Permits and surrounding area.

The area selected for exploration extended from Adams Sound to the Steensby Peninsula and from the eastern shore of Admiralty Inlet to the Magda Plateau. This Exploration Area comprised about 10,000 km<sup>2</sup> and covered all of the potential source areas for the kimberlitic indicators found on the Borden Peninsula in 1994. The objectives of the 1999 program were:

(1) to increase the density of the stream sediment sampling within the Exploration Area from about one sample per 200 km<sup>2</sup> to about one sample per 50 km<sup>2</sup>. This coverage was deemed to be adequate to delineate potential source areas for the kimberlite indicators.

(2) to extend the stream sediment sampling southerly onto the Steensby Peninsula and into the northern parts of Map Sheets 47G and 47H, areas that were considered to be geologically prospective for kimberlites.

(3) to attempt to define the potential source of 39 pyropes in sample 1097 by tracing the dispersion train up-stream and up-ice. Prospecting, panning of stream sediments to produce heavy mineral concentrates, and in-field microscopy of the concentrates were to be utilized in this process.

(4) stake additional ground over areas deemed prospective for kimberlites.

#### Personnel

Most of the 1999 field work was completed between July 18 and August 14 by a five person crew based out of Arctic Bay, a small community at the northern end of Baffin Island. A list of personnel involved in the 1999 program is provided in Appendix C. The list gives names and addresses of the field crew.

Table 5, enclosed in the Appendix, gives a detailed breakdown of the field time. The time has been allocated, for assessment purposes, to days spent specifically on the Prospecting Permits or to days spent on regional evaluations. The Table shows only field time and is exclusive of travel to and from home bases to Arctic Bay/Nanisivik. It also does not include project planning, preparation and reporting conducted prior to or following the field work. Time spent in Arctic Bay and Nanisivik on logistics, project supervision, project planning, data compilation, microscopy of panned concentrates, sample shipping, etc. are shown in the table as unallocated time.

Leni Keough and Paul Pitman did most of the stream sediment sampling, Vic Waugh and Eric Craigie conducted the till sampling and prospecting. Microscopy of panned concentrates was done by Leni Keough and Eric Craigie. Staking was done by Vic Waugh and Paul Pitman. Ron Noble handled all of the logistics. Between August 27 and September 12, follow-up staking was done by Vic Waugh and Verne Emary, based out of Nanisivik. Additional sampling of the kimberlites was done on August 29 by Eric Craigie, Bill Jarvis and Carl Verley

A Bell 206B helicopter, under charter from Nunasi Helicopters Ltd of Yellowknife, was used for support and to transport crews to and from the field on a daily basis. Fuel for the helicopter was purchased from Nanisivik Mines Ltd.

### Prospecting Surveys

Prospecting was carried out along stream beds in the vicinity of the anomalous stream sediment sample on the Borden Peninsula and up-drainage and up-ice of this site. Panned concentrates were collected at suitable traps along the drainages. The concentrates were checked under binocular microscope for kimberlitic indicators, principally olivines, pyropes and chrome diopsides. Prospecting was also conducted as part of all the till sampling traverses. Additionally, ground checks and a few specific traverses were conducted to evaluate magnetic "bull's-eyes" indicated on the GSC airborne magnetic maps; to check gossan zones, small dyke-like features and areas of "intrusive-looking" rocks observed from the air and to evaluate small bodies shown as ultramafic plugs on GSC geologic maps. Magnetic anomalies were either caused by amphibolite pods in granite-granodiorite-tonalite gneiss or by disseminated magnetite in various rock types. Bodies mapped as ultramafic rocks were peridotites, actinolites or serpentinites. The gossans were usually pyritic schists, pyritic horizons in mafic gneisses, pyritic zones along the margins of diabase dikes or highly weathered biotite-rich schists. Dark brownish grey and greenish grey rocks that were noted from the air were mafic intrusions (diabase), basalts or shales. None of the anomalous features that were seen from the air or selected from the GSC maps were kimberlites. Table 6 lists specific targets that were ground checked.

**Table 6**  
**Prospecting Survey - Check of Visual Anomalies**

Anomaly Number	Description	Location (UTM co-ordinates)	Remarks
1.	Rusty area	568,000E 8,095,200N	Lichen staining.
2.	Dark greenish area	565,500E 8,090,500N	Green tectonic breccia at contact of diabase.
3.	Dark grey rocks	570,000E 8,080,000N	Diabase intruding dark brown shales.
4.	Greenish brown area	573,600E 8,068,000N	Greenish brown shales overlying light brown
5.	Dark brown peak	580,000E 8,075,000N	Five metres of sst. overlying 2 metres of shale above dark brown vesicular basalt.
6.	Dark green area	582,600E 8,083,200N	Shales and basalts over sandstone.
7.	Dark intrusion	595,600E 8,072,000N	Diabase intruding light buff-coloured sandstone.
8.	Dark intrusion	596,800E 8,068,800N	Diabase intruding light buff-coloured sandstone.
9.	Dark intrusion	595,800E 8,066,000N	Diabase intruding light buff-coloured sandstone.

Table 6 (Cont'd)

Anomaly	Description	Location	Remarks
10.	Dark intrusion	597,000N 8,064,600N	Diabase intruding light buff-coloured sandstone.
11.	Dark brown peak	580,000E 8,065,600N	Volcanic vent - diabase/gabbro surrounded by basalt.
12.	Dark coloured area	575,400E 8,073,000N	Nothing of interest noted.
13.	Greenish area	566,200E 8,060,000N	Light greenish shale in dark brown shale.
14.	Crater area	569,000E 8,063,600N	Extensive area of vesicular basalts, shales and diabase.
15.	Green area	571,200E 8,060,800N	Brownish rock formations with hint of greenish colour (shales and basalt).
16.	Brown area	579,000E 8,060,200N	Dark massive basalt below light buff sandstone.
17.	Dark intrusion	584,000E 8,057,600N	Diabase intruding Archean gneiss below contact of shales/volcanics.
18.	Dark intrusion	577,500E 8,054,500N	Small brown knoll, diabase intruding sandstone.
19.	Gossan	582,700E 8,052,000N	Small rusty zone in Archean gneiss.
20.	Rusty linear feature	575,000E 8,050,000N	Thin dyke intruding reddish to buff sandstone, minimal rust.
21.	Black area	593,000E 8,043,800N	Dark grey weathered sandstone.
22.	Rusty area	581,600E 8,042,000N	Anomalies 22 to 25 were all linear zones reflecting mafic dykes intruding buff-coloured sandstone. Dykes were one to three metres wide with patchy, rusty zones along margins dykes strongly altered with limonite and hematite the main iron minerals.
23.	Rusty linear zone	580,000E 8,042,500N	
24.	Rusty linear zone	582,600E 8,035,000N	
25.	Rusty fault/dyke	586,000E 8,037,000N	
26.	Rusty area	588,800E 8,031,600N	Weak rusty brown horizon in middle Proterozoic light brown sandstone.
27.	Rusty area	582,500E 8,025,000N	Zone consists of light reddish brown gneiss in area of predominantly grey gneiss - no rust.
28.	Brown area	583,000E 8,025,000N	Very weakly coloured dark brown patch in gneiss.
29.	Brownish rocks	588,400E 8,025,500N	Slightly reddish coloured (brick) gneiss.
30.	Brownish outcrops	594,000E 8,025,400N	Brick red-coloured foliated granites in Archean basement.
31.	Rusty zone	593,600E 8,018,000N	Patchy gossans comprising siliceous pyritic zones in granitic gneiss.
32.	Yellowish zone	422,000E 8,048,000	Zone 17, NTS 48A/12. Yellowish area on satellite image, outcrop of yellow-weathered shale, 500 metres across, over grey shale.

## **Stream Sediment Sampling**

Sediments samples were collected from heavy mineral trap sites along the streams which drain the Exploration Area. The sample material was screened at the sites to minus 2.0 mm. Approximately 15 kilograms of screened material were collected at each locality. Information on the samples was recorded on sample data sheets which are enclosed as Appendix D. Sample sites were rated on the basis of their trap characteristics following a system set up by Muggeridge (1989). The rating criteria for this system are provided in the Appendix.

Within most of the Exploration Area a density of one sample per 50 square kilometres was deemed optimum but was often not achieved because of poor drainage and the absence of suitable sediments. On the part of the Borden Peninsula near Bartlett Inlet, where the potential source for the kimberlitic indicators in the highly anomalous 1994 sample was believed to occur, the sampling density was increased to about one sample per ten square kilometres. 194 stream sediment samples were collected during the survey. Sample coverage extended from Adams Sound to Moffat Inlet and from the Steensby Peninsula to the Magda Plateau. Sample locations are shown on the 1 to 250,000 scale maps (Maps 1 to 4) enclosed in Appendix H.

## **Till Sampling**

Till sampling was carried out along four traverse lines oriented northwesterly-southeasterly to provide good sections across the trend of glaciation. The lines were located east of anomalous sample 1097, to test for kimberlites up-ice of the sample. Samples were taken at approximately 400 metre intervals along the traverse lines from depths between 5 and 30 cm below the till surface. The tills were screened at the site to -3 mm and about 10 kilograms of screened material were taken at each site. Information on the samples was recorded on sample data sheets using the same format as for the stream sediment samples. These sheets are also enclosed in Appendix D. 100 sites were sampled during the survey. Locations are shown on Maps 1 and 2 in Appendix H.

Tills were not extensively developed on most of the island. They generally occurred as intermittent patches and small pockets between boulders or bedrock outcrops. Most of the material at these sites was not true till but was gravel, almost devoid of silt or clay-sized particles. It is believed that deglaciation occurred rapidly with abundant meltwaters and the tills were washed and reworked; most of the finer fraction was removed by the meltwaters leaving a gravel "lag" deposit. These gravels, however, were relatively locally derived and were considered to be a good sample medium. Sample coverage was generally excellent and in almost all areas sample spacings along the traverse lines were consistently maintained at about 400 metres. Control along the lines was by pace and compass supported by GPS measurements along the lines and at all the sample sites.

## **Claim Staking**

Sixteen claims (BI-1 to BI-16), comprising 39,254.0 acres, were staked in July near the head of Bartlett Inlet to cover the area of open ground south of Prospecting Permit 2268. This was deemed to be the potential source area for the kimberlitic indicator minerals in the 1994 sample. Following the discovery of the Kim Lake area kimberlites on August 1st, a decision was made to significantly increase the land holdings in the Bartlett Inlet area and another two hundred and two claims comprising 491,621.82 acres were staked between late August and mid-September.

## **Sample Processing**

Samples were moved from the field sites by helicopter to Arctic Bay, then sent by air cargo to Thunder Bay for processing by Diamond Indicator Processing Inc.

The following system was used to process both stream sediment and till samples:

In the laboratory, samples were weighed, deslimed in mixers and dried. The samples were then dry screened to  $-1 \text{ mm} + 0.425 \text{ mm}$  (coarse) and  $-0.425 \text{ mm}$  to  $0.25 \text{ mm}$  (fine) fractions, removing the oversize and the undersize material which was stored for possible future reference. The coarse and fine fractions were run through Readings magnetic separators to produce magnetic, paramagnetic and non-magnetic splits. The magnetic split, which contained mostly magnetite, and the non-magnetic split were saved. The paramagnetic fractions underwent heavy liquid separation in methyl iodide solution (S.G. was controlled at 3.3) to produce heavy mineral concentrates. The concentrates were cleaned in a sonic bath and then screened to remove any remaining  $-0.25 \text{ mm}$  material, then passed under hand magnets to remove any remaining magnetic minerals. For each sample, the final heavy mineral concentrate products that were produced were the coarse ( $-1.0 \text{ mm} + 0.425 \text{ mm}$ ) fraction and the fine ( $-0.425 \text{ mm} + 0.250 \text{ mm}$ ) fractions. The coarse fraction was sent for microscopy and the fine fraction was set aside for possible future reference.

Microscopy of concentrates was done by I. and M. Morrison Geological Services of Delta, B.C. Minerals of economic interest were visually identified by binocular microscope examination of the concentrates and catalogued with specific interest placed on potentially kimberlitic indicators such as pyrope, eclogitic garnets, picroilmenite, chromite, chrome diopside and olivine. Results of microscopy of the coarse fraction are listed in Appendix E.

## 5.0 DISCUSSION OF RESULTS

### 5.1 Indicator Minerals

During microscopy by I. and M. Morrison, all the mineral grains that were considered to be kimberlitic or potentially kimberlitic were selected from the concentrates. These are listed in the data sheets enclosed in Appendix E. The grains were then sent to Bill Jarvis of **Opus Minerals** for more rigorous microscope evaluation. Based on this follow-up work, most of the chromites, ilmenites and eclogitic garnets were deemed to be non-kimberlitic. The ilmenites were predominantly crustal in origin and the chromites tended to be either Fe-ilmenites or crustal. Many of the eclogitic garnets were staurolites and most of the others were crustal. In general, the high number of crustal minerals that were selected during the initial microscope examination was not considered unusual because, with the exception of pyropes, it is extremely difficult to visually differentiate between crustal and kimberlitic grains and workers tend to 'overpick'. However, all of the pyrope garnets were kimberlitic. The discussions in Sections 5.4 and 5.5 about the sample results are based predominantly on the pyrope grains.

The general absence of olivines was surprising considering the relatively high levels of kimberlitic garnets in some of the samples. It is probable that olivine was either weathered or altered and did not survive as separate grains in the surficial environment. Additionally, in the laboratory procedure, many of the olivines as well as most of the chrome diopsides report to the non-magnetic fraction of the sample splits. This material was not processed for microscope examination.

### 5.2 Prospecting

Prospecting, assisted by microscopy of panned concentrates, proved to be a very effective exploration technique; kimberlitic indicators were traced upstream from the site of sample 1097, the anomalous 1994 sample at the head of Bartlett Inlet, for a distance of over sixteen kilometres. A sample of panned concentrates from a beach sand along a lake shore ten kilometres east of sample 1097 (the site of samples 2055 and 2056 on Map 1) contained two pyropes and one chrome diopside; panned concentrates of river gravels eight kilometres northeast of this location (the sites of samples 2064 and 2065) contained several pyrope grains. Prospecting up-ice of these samples resulted in the discovery of kimberlite boulders about 1.5 kilometres northeast of sample 2065. These boulders were traced up-ice for 500 metres to their source area - outcrops of kimberlite

around the edge of a small lake (Kim Lake - see Figure 7). Prospecting east of the kimberlite outcrops led to the delineation of two additional areas of kimberlite boulders on the southern (down-ice) side of an 800 metre long, linear lake (K2 Lake - Figure 7). One cluster of boulders (the K2 area) occurred near the western end of the lake and the other boulders (K3 area) were located south of the lake's eastern end. The probable sources for these boulders are beneath the lake.

Another boulder of kimberlite was found during a prospecting/till sampling traverse about six kilometres southeast of the K1 diatreme, across the glacial flow direction, and almost certainly from a separate source than the Kim Lake boulders. Additional prospecting in this area (K4 area - location of till sample 2287 shown on Map 2) did not turn up any other boulders but outcrops of shattered gneiss were observed in this extensively boulder strewn region and the boulder veneer, which blankets most of the bedrock, could hide the source.

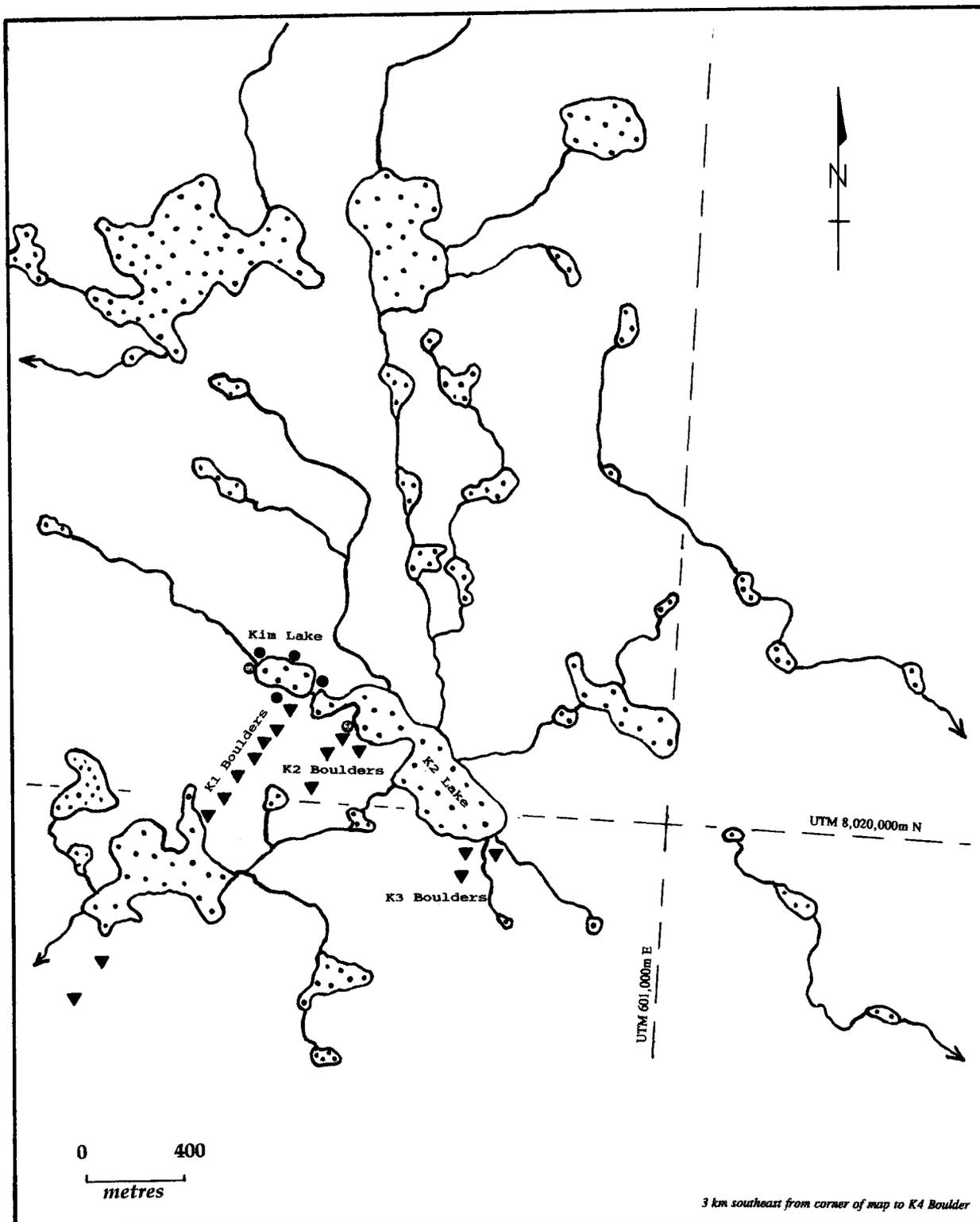
None of the anomalous features observed from the air and subsequently ground checked proved to have exploration significance (Table 6) and none of the kimberlites found in outcrop had a distinct visual signature that was obvious from the air. There is little visual contrast between the K1 and K5 kimberlites and the surrounding Archean gneisses. This is in sharp contrast to the Somerset Island kimberlites and the Zulu Pipe on the Brodeur Peninsula where there was a pronounced visual contrast between the dark kimberlites and the light-coloured Paleozoic carbonate rocks that they intruded. It is reasonable to conclude that kimberlite exposures in the area of darker-hued Precambrian rocks will not be visually distinct whereas those intruding relatively light-coloured Paleozoic or Precambrian units will be more obvious.

### 5.3 Kimberlites

Kimberlites were found in outcrops in two separate areas. The main diatreme (K1) lies partly beneath Kim Lake but is exposed in outcrops along the east, north and west sides of the lake (See Figure 7, also Photo 8 in Appendix A. The location of Figure 7 is shown on Map 1 in Appendix H). Outcrops of altered and shattered gneiss extend along the southern shore of the lake and it is believed that this shoreline coincides with the southern margin of the diatreme. The diatreme is oval-shaped with estimated dimensions of 250 metres by 120 metres and an area of 2.5 hectares. A second kimberlite is exposed in outcrop about 75 metres south of the southern shore of Kim Lake (Photo 8). The outcrop occurs as an east-west trending zone about 5 metres wide and 20 metres long. A thin veneer of boulders covers the kimberlite to the east and south and its dimensions are unknown; it potentially could be up to 50 metres in diameter and subcircular in outline. This has been termed the K5 kimberlite, although it was the first bedrock exposure of kimberlite found during the summer program. It lies just west of the glacial dispersion train from the K1 pipe.

All of the kimberlites found to date were similar, although there were a few subtle differences. They were massive, hypabyssal kimberlites with very few garnets or chrome diopsides. Some phases of the K1 diatreme contained abundant fragments of intensely altered country rock (up to 30%) but the K2, K3 and K4 boulders and some other phases of the K1 pipe contained less than 5% country rock fragments. All of these fragments were Archean gneiss, none were 'exotic'. Alteration consisted of almost complete replacement of the fragments by calcite and clay minerals. Some of the K2 boulders contained a few orange pyropes and several mantle nodules of altered garnet peridotites were found in the K2 boulder area. The K5 outcrop was fine grained, dense, massive, hypabyssal kimberlite similar to marginal phases of the K1 diatreme. The subtle differences between the K1 diatreme and the K2 and K3 boulders, along with their different geographic locations, confirm that the K2 and K3 boulders were not eroded from the K1 diatreme. The sources of the K2 and K3 boulders almost certainly lie beneath K2 Lake (Figure 7). The source of the K4 boulder has not yet been delineated.

Three samples from outcrops of the K-1 diatreme (KIM-01-F1, F2 and F3), two samples of the K-2 boulders (KIM-02-F1 and F2) and one sample of the K-3 boulders (KIM-03-F1) were sent for



- Kimberlite outcrop
- ▼ Kimberlite boulders
- Shattered/altered gneiss outcrop

**Figure 7.** Kim Lake Area. Prospecting Permit 2268. Distribution of kimberlite outcrops, kimberlite boulders and shattered/altered gneiss outcrops. Scale - 1:20,000.

petrographic examination. Results of this work are enclosed in Appendix F. Additionally, four samples of the K-1 diatreme and one sample each of the K-3 boulders and the K-5 outcrop were sent to Lakefield Research Limited for microdiamond tests. Two microdiamonds were recovered from 24.29 kg of the K-1 diatreme; all of the other samples were barren. Certificates of Analysis are enclosed as Appendix G.

The discovery of this cluster of kimberlites is encouraging. Janse (1993) has noted that fewer than one in ten kimberlites in a prospective field are significantly diamondiferous and, of these, only about one in ten is economic. Thus, in prospective fields, only about one in one hundred kimberlites are economic. Exploration in the Lac de Gras area has turned up a similar ratio. In the context of Baffin Island, the work program was successful in discovering two kimberlites in outcrop (K1 and K5) and identifying the probable source area of two others (K2 and K3). In another area, the K4 boulder, a source has not been delineated but probably lies within a few kilometres, or less, of the boulder location.

The size of the K1 diatreme compares favourably with pipes in the Lac de Gras area where few of the diatremes are larger than a couple of hectares, even with the crater facies preserved. Since all of the K1 outcrops were hypabyssal facies, a relatively large part of the pipe has been eroded. While it is wildly speculative to hypothesize as to the original size of the diatreme, prior to erosion, it was certainly much larger than at present. This would place it into the middle size range of known kimberlites. The K1 diatreme lies within the area of deeply exhumed Archean terrain centred on Moffat Inlet. In other parts of the Exploration Area, erosion has not been as extensive and Middle Proterozoic and Paleozoic bedrock has been preserved. In these less eroded areas, kimberlites, if present, should be much larger and would have a greater chance of being economic, assuming reasonable diamond grades.

The age of the kimberlites in the Bartlett Inlet area is unknown. Since they intrude Archean basement and contain xenoliths of Archean gneiss (no xenoliths of younger rocks have been found in them to date), their age, although unlikely, could be Precambrian. However, the Somerset Island kimberlites are Mesozoic (Mitchell, 1986) and the Zulu Pipe on the Brodeur Peninsula, which intrudes Silurian limestone, is Silurian or younger. It is probable that the Kim Lake area kimberlites fit into a similar age range of Middle Paleozoic or younger.

#### 5.4 Till Sampling

The K1 boulder dispersion train was traced southwesterly at 206° from the K1 diatreme for a distance of 1,600 metres. The main part of the train, where kimberlite boulders could be found with relative ease, had a width of 30 metres at a distance of 100 metres down-ice from the diatreme. This width remained relatively constant throughout the length of the train. Beyond 1,200 metres it became progressively more difficult to find kimberlite boulders and at about 1,600 metres they essentially disappeared. Till samples were collected at two sites along the dispersion train - sample OP 2208 was 1,200 metres down-ice of the K1 diatreme and sample OP 2209 was collected at the site of the discovery boulder, 500 metres down-ice of K1. Sample 2208 had 1 pyrope and sample 2209 had 6 pyropes. These were relatively low numbers considering the prevalence of kimberlitic boulders around the sample sites.

The western till line, comprising samples OP 2126 to OP 2139, was put in about 10 kilometres east of anomalous sample 1097 at the head of Bartlett Inlet. It extended northerly for about five kilometres from the east end of one of the lakes making up part of the drainage system that flows into Bartlett Inlet. A panned concentrate of beach sediments along the shore of this lake, near the location of sample OP 2139 at the south end of the till line, contained two pyropes and one chrome diopside. However, none of the till samples along this line contained kimberlitic pyropes. This suggests that the indicators in the panned concentrate may have been transported by streams to their present location from a source lying to the east. Alternatively, the indicators could have been locally derived from a source beneath the lake.

The west, central till line was established parallel to and about 4 kilometres up-ice of the western line. It was 11 kilometres long and consisted of 30 samples numbered OP 2210 to OP 2239. The two samples at the southern end of the line were strongly anomalous - sample OP 2210 contained 83 pyropes and sample OP 2211 had 14. Sediment samples OP 2075 (40 pyropes) and OP 2076 (28 pyropes) were collected from streams 5 kilometres and 7 kilometres down-ice of the till samples. The very high number of pyropes in sample 2210 suggests that a source lies close to the sample site; probably beneath a small pond lying just to the south of the sample site but possibly under a larger lake located about 1500 metres to the east. These values confirm that a new kimberlite or cluster of kimberlites occurs in this area. Further north, about mid-way along the line, samples OP 2216 to OP 2220 contained between 1 and 8 pyropes. These lie down-ice of the Kim Lake cluster and the indicators may be part of the glacial dispersion from this source, although the relatively high number of pyropes (8 grains) in OP 2216 suggests that a more proximal source could be present.

The east, central till line was oriented in a northwesterly-southeasterly direction and passed through the Kim Lake area. Twenty-six samples, OP 2141 to OP 2159 and OP 2201 to OP 2207, were collected along this line. Samples OP 2146 to OP 2151 were 1200 metres or less south of K2 Lake. They contained between 1 and 8 pyropes, probably reflecting a down-ice dispersion from the Kim Lake cluster. Sample OP 2145, 500 metres northwest of the K1 diatreme, contained 210 pyropes, the highest value from the 1999 program. This very high number suggests that the sample must have been collected essentially from on top of a kimberlite; thus, a separate kimberlite must occur here, 500 metres northwest of K1. A second series of samples on this line, numbers OP 2154 to OP 2158, located five kilometres south, southeast of Kim Lake, contained pyropes; most between 1 to 5 grains, but sample 2158 had 25 grains, indicating another source is present, probably less than 500 metres from the sample site. The other anomalous samples, 2154 to 2157, could be reflecting glacial dispersion from this source.

The eastern till line, which passed about four kilometres east of Kim Lake, consisted of 26 samples numbered OP 2240 to OP 2249 and OP 2272 to OP 2287. It had a southeasterly-northwesterly orientation across the glacial trend. Sample OP 2282 was the only anomalous sample along this line. It contained 10 pyropes. A sediment sample, OP 2168, located 500 metres down-ice of 2282, was strongly anomalous with 50 pyropes. These two anomalous samples, located about 4 kilometres east of Kim Lake, show that a kimberlite lies up-ice, probably within 1000 metres of the till site. This kimberlite could be part of the Kim Lake cluster or could be an unrelated pipe, possibly part of another cluster. The other area of interest along this line was the site of the K4 Boulder. Sample OP 2287 was collected here but contained no pyropes. This could mean that the source of the K4 boulder is relatively distal, perhaps 2 kilometres or more up-ice.

In summary, till sampling proved to be a very effective exploration tool, delineating at least four new areas and one possible area with kimberlites that are separate from the known pipes that make up the Kim Lake cluster. These areas are:

- area of sample OP 2210, eight kilometres south, southwest of Kim Lake,
- area of sample OP 2145, five hundred metres northwest of the K1 diatreme,
- area of sample OP 2158, five kilometres south, southeast of Kim Lake,
- area of sample OP 2282, five kilometres east of Kim Lake.
- area of sample OP 2216, six kilometres south, southwest of Kim Lake. Although down-ice of the Kim Lake cluster, the number of pyropes in this sample (8 grains) suggests that there could be a more proximal source than Kim Lake.

The number of pyropes in the tills down-ice of the Kim Lake cluster was surprisingly low considering the prevalence of kimberlite boulders in the vicinity of the samples. The low indicator counts were, in large part, a reflection of the mineralogy of the kimberlites, which generally had few garnets and chrome diopsides, but the low counts could also be a result of glacial processes that occurred in this area - dispersion trains appear to be relatively subtle and are not extensive. In view of these data, the high indicator counts in other areas have important exploration

implications. The high counts may be a reflection of proximity to source; they may also be an indication that the other kimberlites have different mineralogy (more garnets, etc.) than the Kim Lake cluster. Different mineralogy suggests a different parental magma and potentially better Diamond Carrying Capacity than the Kim Lake kimberlites.

### 5.5 Stream Sediment Sampling

Not surprisingly, most of the stream sediment samples that contained kimberlitic garnets were collected from the general area of the Kim Lake cluster and few of the samples away from this area were anomalous. Of these, samples OP 2023 and OP 2025, along the eastern side of Admiralty Inlet near Levasseur Inlet, contained one pyrope each. The source for these grains is up-stream and up-ice to the east and is probably distal - between 5 and 20 kilometres away. Several sediment samples to the east, which were barren, provide a maximum limit to the dispersion. The anomalous samples were 20 kilometres apart so it would appear that there are two separate sources rather than a single source. About 60 kilometres east of Levasseur Inlet, sample OP 2270 contained one pyrope. The sample site lies about 40 kilometres northeast of Kim Lake and about 7 kilometres down-drainage of sample 1127, collected in 1994, that contained 4 pyropes. The source for these grains lies to the east, probably within 10 kilometres of the 1127 site. Barren samples about 10 kilometres east of 1127 provide an upper limit to the dispersion. On the northern tip of the Steensby Peninsula, about three kilometres west of Prospecting Permit 2267, a single pyrope grain was present in sample OP 2266. The source probably lies within the northwestern quadrant of the Permit.

A large number of sediments in the area around Kim Lake contained anomalous concentrations of kimberlitic garnets. Values ranged from 1 to 53 grains. Although most of these samples were down-ice of the Kim Lake cluster several were not and they point to the presence of other kimberlites. Samples 2075 and 2076, with 40 pyropes and 28 pyropes respectively, were down-ice of till sample 2210 (83 pyropes) and were discussed in the section on till sampling. Sediment sample OP 2168 with 50 pyropes, collected about 500 metres down-ice of till sample 2282 (10 pyropes), was also discussed in that section. A single anomalous sample, OP 2081, containing 20 pyropes, came from a stream 13 kilometres west of Kim Lake. This location is across the glacial trend which precludes the possibility that the pyropes could have been derived from the known kimberlites. The source probably lies to the northeast of sample 2081, within 5 kilometres of the sample site.

Sediment samples in two other areas were anomalous. One area lay along the southern shore of Fabricius Fiord, 20 kilometres northwest of Kim Lake, where samples OP 2052 and OP 2053 contained 13 and 64 pyropes respectively. A large number of grains in 2053 were tentatively selected as kimberlitic chromites; more rigorous checks showed that none of the grains were chromites but some were confirmed as kimberlitic ilmenites. Also, several pyrope grains in 2053 had kelyphitic rims; these rims are diagnostic of grains that have been transported a limited distance in the surficial environment. The kimberlite source of these grains probably lies within a few kilometres up-ice and up-drainage (southeast) of the sample sites. The other anomalous area was along the east side of Moffat Inlet, about 35 kilometres southwest of Kim Lake and about 15 kilometres down-ice of till sample OP 2210. Seven samples in this area contained between 2 and 15 pyropes. Some of the grains in these samples also had kelyphitic rims. While it is possible that all of these grains could have been transported from the potential source near till sample 2210, it is unlikely. A local source appears probable, near the southwestern corner of the BI Claim Group.

The abundant garnets and a few chrome diopsides in the stream sediments near Bartlett Inlet (1994 sample number 1097, samples OP 2055 and OP 2056 and 1999 panned concentrates) suggest that the source area for these indicator minerals might not be the K1 to K5 kimberlites or the other potential sources outlined by the 1999 sampling programs. Studies of indicators (Afanasev et. al., 1984), suggest that for high levels of indicators (and the presence of chrome diopsides), transport distances in excess of 10 kilometres are improbable. It is reasonable to conclude that the sources

for the Bartlett Inlet area indicators have not been delineated. These sources could lie beneath Bartlett Inlet or the lakes which form the main drainage system flowing into the Inlet.

In summary, the sediment sampling outlined probable source areas at:

- the south shore of Fabricius Fiord, southeast of samples OP 2052 and 2053,
- the eastern side of Moffat Inlet near the southwestern corner of The BI claim block,
- the area of sample OP 2081, 6 kilometres northeast of Bartlett Inlet.

Additionally, the sampling indicated that kimberlites could possibly be present in the area east of sample 1127, east of samples OP 2023 and OP 2025 near Levasseur Inlet, and beneath Bartlett Inlet or the lakes forming part of the main drainage entering the Inlet.

## 5.6 General Discussion

The kimberlite cluster at Kim Lake consisted of hypabyssal, moderately to poorly macrocrystic, altered, monticellite kimberlites that were poor in typical indicator minerals such as pyropes and chrome diopsides and were deemed to have generally low to moderate diamond potential (see petrographic report in Appendix F). In spite of this relatively discouraging finding, one 24.29 kg sample of the K-1 diatreme returned two microdiamonds. The finding of microdiamonds in kimberlites that were deemed to have relatively low potential suggested that within the Exploration Area other kimberlites with better mineralogy could have markedly better diamond contents. The stream sediment and till sampling confirmed that a number of other kimberlites are present. Several of these are not part of the Kim Lake cluster. They are related to separate intrusive processes and probably had separate parental magmas. Some of these have markedly different mineralogy than those at Kim Lake, as evidenced by the pyrope - ilmenite mineral assemblage near Fabricius Fiord and by the high pyrope assemblage in sample OP 2145, 500 metres northwest of Kim Lake. These other kimberlites could have good Diamond Carrying Capacities and therefore they could have the potential for much higher diamond contents.

## 6.0 RECOMMENDATIONS

Results from the field program were very encouraging, two kimberlites were found in outcrops and kimberlite boulders were found that delineated the location of three other kimberlites. Additionally, stream sediment and till sampling outlined the potential source areas for as many as ten other kimberlites or kimberlite clusters. Follow-up work is warranted to locate and evaluate these new target areas.

### 6.1 Proposed Work

The following work program is recommended:

- (1) Mineral grains (pyropes and as well as eclogitic garnets, ilmenites and chromites, if they are present) from the area around the known kimberlites and from all of the other anomalous areas should be microprobed to determine their chemistry. This would involve selection of fifty to one hundred grains of each mineral type from each of the following areas: Kim Lake kimberlite cluster, the Fabricius Fiord stream sediment anomaly, the Moffat Inlet stream sediment anomaly, till sample anomalies OP 2145, OP 2210, OP 2158 and OP 2282, and stream sediment OP 2081. If 50 grains are not available, then the fine fraction of the concentrates should be picked to obtain additional indicators. The mineral chemistry from the microprobe results would be used to determine the diamond potential of the kimberlites, thus prioritizing targets for follow-up work. Also, since the mineral grains in a kimberlite tend to have a chemical signature that is unique to that kimberlite or kimberlite cluster, the chemistry could be used to determine if separate sources are present (i.e. chemistry could be used to determine if the

Moffat Inlet stream sediment anomaly has a local source or if the grains have come from the same source as those in till sample OP 2210).

- (2) The 1994 sample concentrates should be re-examined because the microscopy was done by inexperienced personnel and many kimberlitic minerals could have been missed. All the kimberlitic grains from the 1994 work should be microprobed to determine their chemistry. It is probable that these old samples could have information that could point to other kimberlitic sources.
- (3) Fixed wing, airborne magnetic surveys should be flown over the area of the Prospecting Permits (30 km by 40km), the Levasseur Inlet area (20 km by 25 km) and the area east of sample 1127 (20 km by 20 km). Line spacing should be 200 metres. Relief in some parts of the survey areas might restrict coverage by fixed-wing aircraft but in general it should not constitute a major problem.
- (4) Targets outlined by the airborne survey should be delineated by ground magnetics. Anomalous areas beneath lakes or ponds should be surveyed prior to break-up in late June, other areas could be covered during a summer program.
- (5) Prospecting and sampling surveys should be carried out over all of the magnetic targets as well as over any indicator anomalies where the airborne magnetics did not delineate anomalies.
- (6) Any priority magnetic targets, where kimberlitic material was not found in outcrops or boulders during the prospecting and sampling work, should be evaluated by drill testing.

## 6.2 Estimated Costs

Cost estimates and schedule for the recommended program of work are listed below. As indicated, this work should be carried out in a staged program:

- (1) Phase 1 - Mineral Grain Chemistry - January to March, 2000
 

Probe 1,000 grains from the 1999 sampling, at \$15.00/sample . . .	\$15,000.00
Microscopy of 1994 samples . . . . .	15,000.00
Probe 200 grains from the 1994 sampling, at \$15.00/sample . . . . .	3,000.00
Compilation and interpretation of results . . . . .	5,000.00
 Total Phase 1 work . . . . .	 \$38,000.00
- (2) Phase 2 - Airborne Geophysics - April and May, 2000
 

Prospecting Permit Area - 6,000 line-kilometres at \$25.00/km . .	\$150,000.00
Levasseur Inlet Area - 2,500 line-kilometres at \$25.00/km . . . . .	62,500.00
Sample 1127 Area - 2,000 line-kilometres at \$25.00/km . . . . .	50,000.00
Supervision, data compilation and project planning . . . . .	10,000.00
 Total Phase 2 Work . . . . .	 \$272,500.00
- (3) Phase 3 - Ground Geophysics, Prospecting and Sampling - May to August, 2000
 

Ground magnetics - 25 days to test 10 targets at \$8,000.00/day .	\$200,000.00
Prospecting and sampling - 20 days at \$8,000.00/day . . . . .	160,000.00
Sample analysis . . . . .	20,000.00
Data compilation and reporting . . . . .	5,000.00

Total Phase 3 Work . . . . . \$385,000.00

(4) Phase 4 - Drill Testing of Priority Targets - April and May, 2001

Drilling, 5 targets at \$75,000/target . . . . . \$375,000.00

Drill core analysis . . . . . 30,000.00

Project supervision, reporting . . . . . 20,000.00

Total Phase 4 Work . . . . . \$425,000.00

## 7.0 CONCLUSIONS

Work carried out by **Opus Minerals Inc.** in 1999 was highly encouraging - two kimberlites were found in outcrops, and boulders were found that indicate three other kimberlites are present. These kimberlites confirm the discovery of a new kimberlite Province on Baffin Island. Tests for microdiamonds showed that one of the kimberlites was diamond-bearing. Additionally, data from the stream sediment and till sampling show that at least seven and potentially ten other kimberlites or kimberlite clusters are present. Some of these appear to be mineralogically different than the Kim Lake pipes and have the potential for better diamond carrying capacities.

The 1999 work has confirmed a structural and lithologic environment on Baffin Island comprising:

- An ancient Precambrian craton,
- Diabase dyke swarms,
- Hinge line zones around regional structural basins,
- Deep, cool mantle root zone,
- Major, regional fault structures,
- Known, diamond-bearing kimberlites.

In this classic setting for diamondiferous kimberlites, there is good potential for the discovery of an economically viable diamond deposit.

Respectfully submitted,

**SHADOWOOD EXPLORATION SERVICES**

Eric R. Craigie

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**APPENDIX A**

**Photographs**



*Photo 1. Bartlett Inlet, looking east. Anomalous sample 1097 was collected from stream sediments at head of Inlet.*



*Photo 2. Paul Pitman collecting a stream sediment sample.*



*Photo 3. Leni Keough, screening a stream sediment sample. Fleming Lake area.*



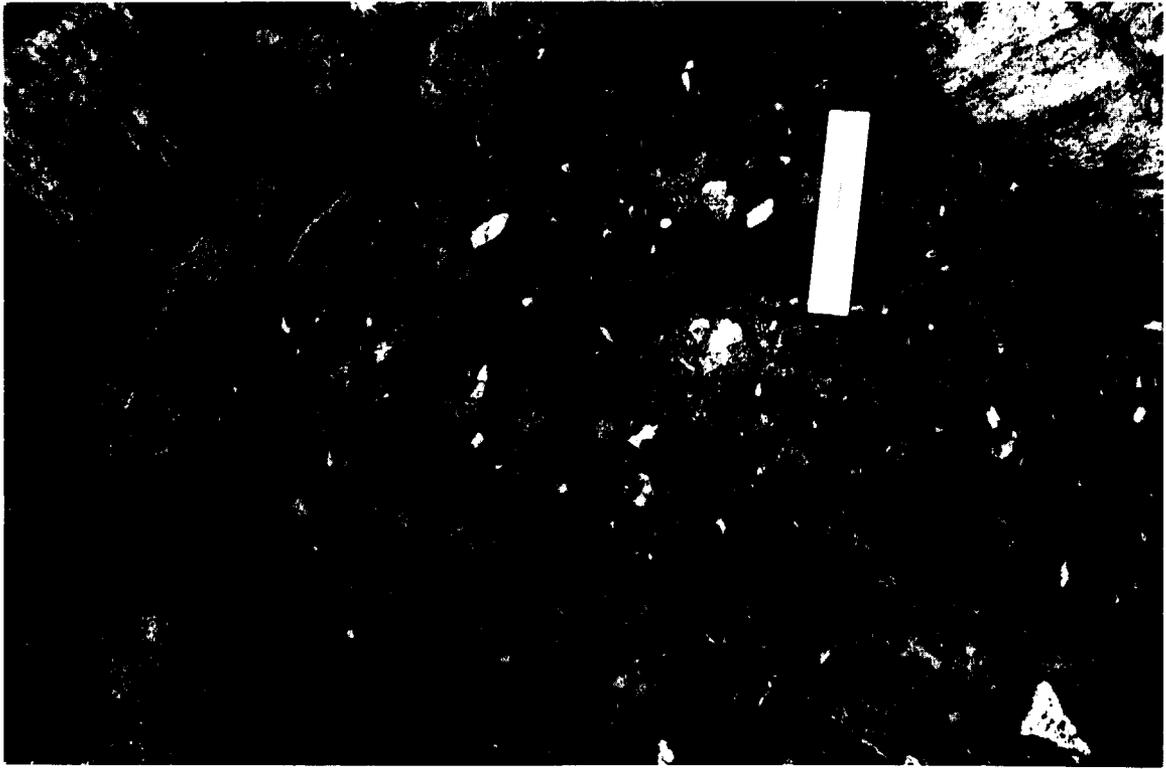
*Photo 4. Leni Keough, compiling notes at a stream sediment sample site. Mt. Podolsky area.*



*Photo 5. Eric Craigie, panning a stream sediment sample for heavy mineral concentrate. Head of Bartlett Inlet.*



*Photo 6. Field crew. From right to left - Paul Pitman, Leni Keough, Vic Waugh and Eric Craigie, missing - Ron Noble. Kim Lake in background, outcrop of kimberlite at arrow on north shore of lake.*



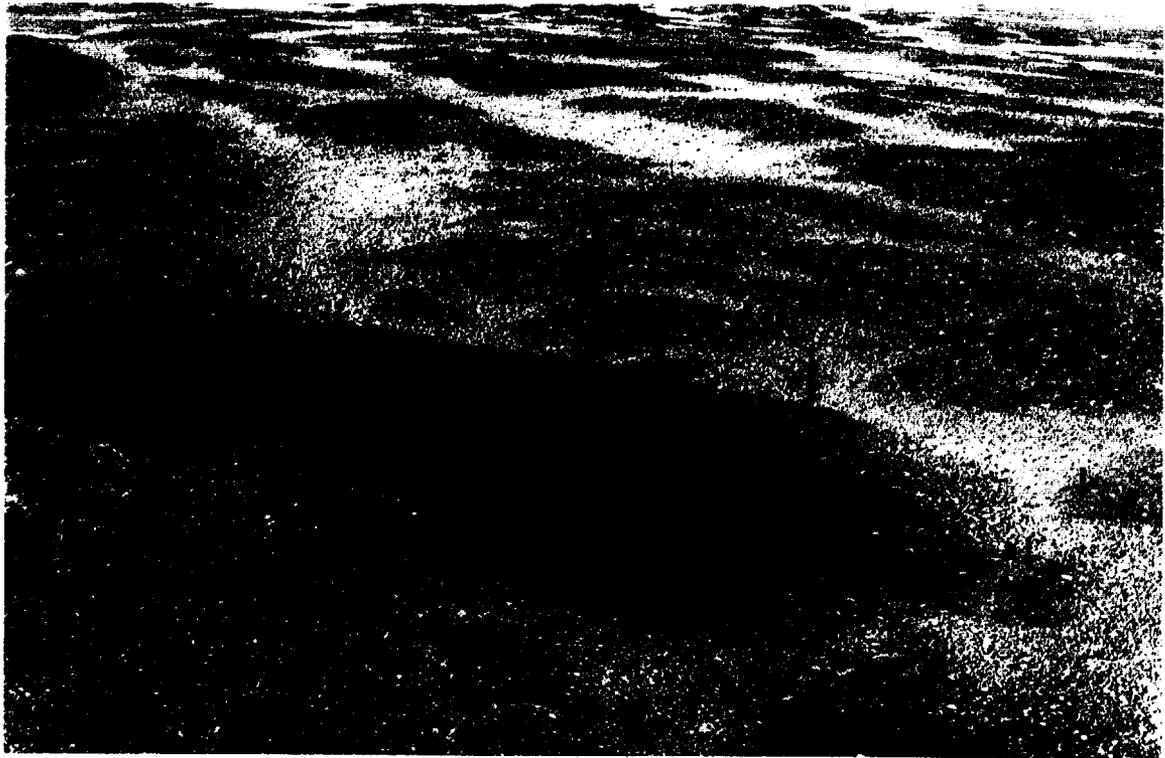
**Photo 7.** *Boulder of kimberlite, part of glacial dispersion train from K1 kimberlite. Boulder lies 520 metres south of bedrock source at the east end of Kim Lake. Scale is 15 cm long.*



**Photo 8.** *K1 kimberlite in outcrop at the east end of Kim Lake, looking northwest. Other outcrops of kimberlite occur at arrows on the north side of lake.*



*Photo 9. Vic Waugh standing on outcrops of K1 Kimberlite on the eastern shore of Kim Lake, photo is oriented looking west.*



*Photo 10. Aerial view of Kim Lake, looking northwest. Arrows indicate outcrops of kimberlite. Arrow at lower left of photo shows the location of the K5 kimberlite. All other outcrops are part of the K1 diatreme.*



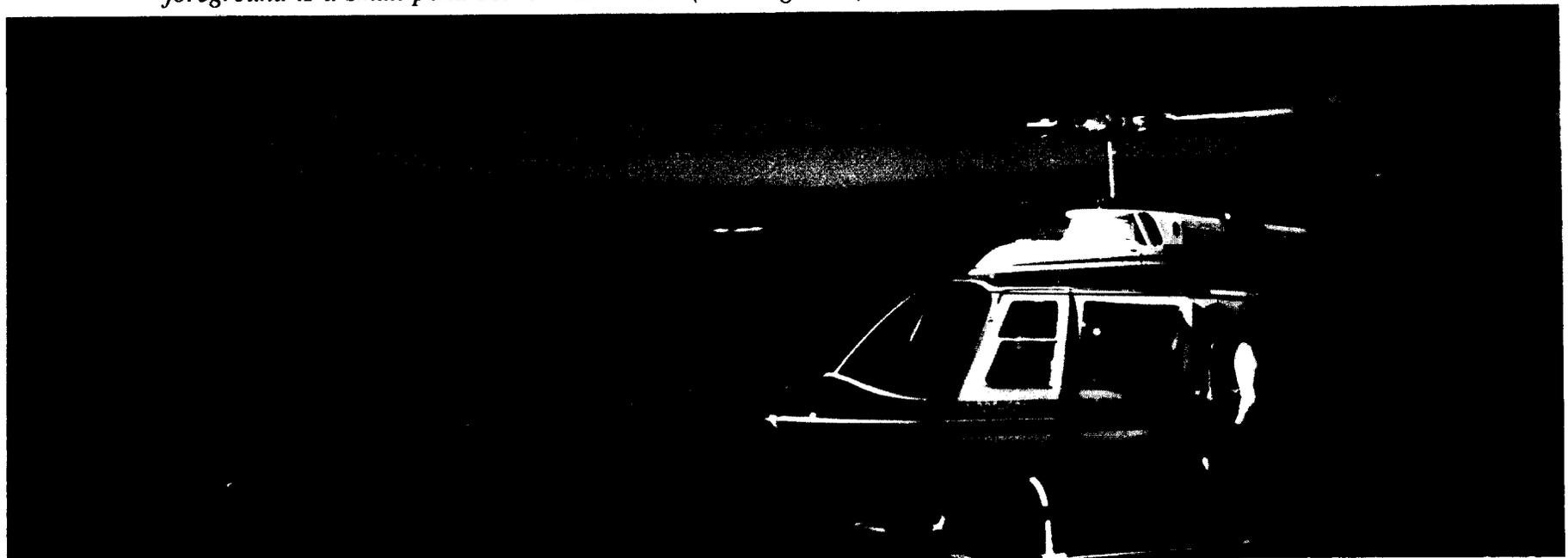
**Photo 11.** Vic Waugh standing on outcrops of shattered gneiss, south shore of the western lobe of K2 Lake (see Figure 7 for location). Similar outcrops occur at the margin of the K1 Diatreme along the west end of Kim Lake.



**Photo 12.** Close-up view of shattered gneiss, same location as Photo 11. Knife is 5 cm long. Small cobble of kimberlite (dark green colour) lies at lower left of knife.



*Photo 13. Panoramic view of the Kim Lake area, looking west. Body of water in the foreground is a small pond between Kim Lake (in background) and K2 Lake.*



*Photo 14. Panoramic view of the K4 Boulder area, looking north. K4 boulder lies in middle foreground to the left of the helicopter.*

**APPENDIX B**  
**AB Claim Blocks**

**Table 3  
AB Claim Holdings**

<b>Claim Name</b>	<b>Claim No.</b>	<b>Date Recorded</b>	<b>N. T. S.</b>	<b>Area (Acres)</b>
AB-3	F67703	Oct. 20/99	48B/8	2,582.5
AB-4	F67704	Oct. 20/99	48B/8	1,033.0
AB-5	F67705	Oct. 20/99	48B/8	1,807.75
AB-6	F67706	Oct. 20/99	48B/8	2,582.5
AB-8	F67708	Oct. 20/99	48B/8	1,807.75
AB-9	F67709	Oct. 20/99	48B/8	2,582.5
AB-10	F67710	Oct. 20/99	48B/8	2,582.5
AB-11	F67711	Oct. 20/99	48B/8	2,582.5
AB-12	F67712	Oct. 20/99	48B/8	2,582.5
AB-13	F67713	Oct. 20/99	48B/8	1,807.75
AB-14	F67714	Oct. 20/99	48B/8	1,807.75
AB-15	F67715	Oct. 20/99	48B/8	2,582.5
AB-16	F67716	Oct. 20/99	48B/8	2,582.5
AB-17	F67717	Oct. 20/99	48B/8	2,582.5
AB-18	F67718	Oct. 20/99	48B/8	2,582.5
AB-19	F67719	Oct. 20/99	48B/8	1,807.75
AB-20	F67720	Oct. 20/99	48B/8	813.5
AB-21	F67721	Oct. 20/99	48B/8	1,203.45
AB-22	F67722	Oct. 20/99	48B/8	1,203.45
AB-29	F67729	Oct. 20/99	48B/8	2,582.5
AB-30	F67730	Oct. 20/99	48B/8	2,582.5
AB-31	F67731	Oct. 20/99	48B/8	2,582.5
AB-32	F67732	Oct. 20/99	48B/8	2,582.5
AB-33	F67733	Oct. 20/99	48B/8	1,807.75
AB-34	F67734	Oct. 20/99	48B/8	2,582.5
AB-35	F67735	Oct. 20/99	48B/8	2,582.5
AB-36	F67736	Oct. 20/99	48B/8	2,582.5
AB-37	F67737	Oct. 20/99	48B/8	2,582.5
AB-38	F67738	Oct. 20/99	48B/8	1,807.75
AB-39	F67739	Oct. 20/99	48B/8	1,807.75
AB-40	F67740	Oct. 20/99	48B/8	2,582.5
AB-41	F67741	Oct. 20/99	48B/8	2,582.5
AB-42	F67742	Oct. 20/99	48B/8	1,119.26
AB-43	F67743	Oct. 20/99	48B/8	2,582.5
AB-44	F67744	Oct. 20/99	48B/8	2,582.5
AB-45	F67745	Oct. 20/99	48B/8	2,582.5
AB-46	F67746	Oct. 20/99	48B/8	2,582.5
AB-47	F67747	Oct. 20/99	48B/8	2,582.5
AB-48	F67748	Oct. 20/99	48B/8	2,582.5
AB-49	F67749	Oct. 20/99	48B/8	2,582.5
AB-50	F67750	Oct. 20/99	48B/8	2,582.5
AB-51	F67751	Oct. 20/99	48B/8	2,582.5
AB-52	F67752	Oct. 20/99	48B/8	2,582.5
AB-53	F67753	Oct. 20/99	48B/8	2,582.5
AB-54	F67754	Oct. 20/99	48B/8	2,582.5
AB-55	F67755	Oct. 20/99	48B/8	2,582.5
AB-56	F67756	Oct. 20/99	48B/8	2,582.5
AB-57	F67757	Oct. 20/99	48B/8	2,582.5
AB-58	F67758	Oct. 20/99	48B/8	2,582.5
AB-59	F67759	Oct. 20/99	48B/8	2,582.5
AB-60	F67760	Oct. 20/99	48B/8	2,582.5
AB-61	F67761	Oct. 20/99	48B/8	2,582.5
AB-62	F67762	Oct. 20/99	48B/8	2,582.5
AB-63	F67763	Oct. 20/99	48B/8	2,066.0

Claim Name	Claim No.	Date Recorded	N.T.S.	Area (Acres)
AB-64	F67764	Oct. 20/99	48B/8	1,790.71
AB-65	F67765	Oct. 20/99	48B/8	2,238.0
AB-66	F67766	Oct. 20/99	48B/8	2,238.0
AB-67	F67767	Oct. 20/99	48A/5	2,582.5
AB-68	F67768	Oct. 20/99	48A/5	2,582.5
AB-69	F67769	Oct. 20/99	48A/5	2,582.5
AB-70	F67770	Oct. 20/99	48A/5	2,582.5
AB-71	F67771	Oct. 20/99	48A/5	2,582.5
AB-72	F67772	Oct. 20/99	48A/5	2,582.5
AB-73	F67773	Oct. 20/99	48A/5	2,582.5
AB-74	F67774	Oct. 20/99	48A/5	2,582.5
AB-75	F67775	Oct. 20/99	48A/5	2,582.5
AB-76	F67776	Oct. 20/99	48A/5	2,582.5
AB-77	F67777	Oct. 20/99	48A/5	2,582.5
AB-78	F67778	Oct. 20/99	48A/5	2,582.5
AB-79	F67779	Oct. 20/99	48A/5	2,582.5
AB-80	F67780	Oct. 20/99	48A/5	2,582.5
AB-81	F67781	Oct. 20/99	48A/5	2,582.5
AB-82	F67782	Oct. 20/99	48A/5	2,582.5
AB-83	F67783	Oct. 20/99	48A/5	2,582.5
AB-84	F67784	Oct. 20/99	48A/5	2,582.5
AB-85	F67785	Oct. 20/99	48A/5	2,582.5
AB-86	F67786	Oct. 20/99	48A/5	2,582.5
AB-87	F67787	Oct. 20/99	48A/5	2,582.5
AB-88	F67788	Oct. 20/99	48A/5	2,410.0
AB-89	F67789	Oct. 20/99	48A/5	2,410.0
AB-90	F67790	Oct. 20/99	48A/5	2,410.0
AB-91	F67791	Oct. 20/99	48A/5	2,582.5
AB-92	F67792	Oct. 20/99	48A/5	2,582.5
AB-93	F67793	Oct. 20/99	48A/5	2,582.5
AB-94	F67794	Oct. 20/99	48A/5	2,582.5
AB-95	F67795	Oct. 20/99	48A/5	2,582.5
AB-96	F67796	Oct. 20/99	48A/5	2,582.5
AB-97	F67797	Oct. 20/99	48A/5	2,582.5
AB-98	F67798	Oct. 20/99	48A/5	2,582.5
AB-99	F67799	Oct. 20/99	48A/5	2,582.5
AB-100	F67800	Oct. 20/99	48A/5	2,582.5
AB-101	F67801	Oct. 20/99	48A/5	2,582.5
AB-102	F67802	Oct. 20/99	48A/5	2,582.5
AB-103	F67803	Oct. 20/99	48A/5	2,582.5
AB-104	F67804	Oct. 20/99	48A/5	2,582.5
AB-105	F67805	Oct. 20/99	48A/5	2,582.5
AB-106	F67806	Oct. 20/99	48A/5	1,652.8
AB-107	F67807	Oct. 20/99	48A/5	2,582.5
AB-108	F67808	Oct. 20/99	48A/5	2,582.5
AB-109	F67809	Oct. 20/99	48A/5	2,582.5
AB-110	F67810	Oct. 20/99	48A/5	2,375.9
AB-111	F67811	Oct. 20/99	48A/5	2,582.5
AB-112	F67812	Oct. 20/99	48A/5	2,582.5
AB-113	F67813	Oct. 20/99	48A/5	2,582.5
AB-114	F67814	Oct. 20/99	48A/5	2,582.5
AB-115	F67815	Oct. 20/99	48A/5	2,582.5
AB-116	F67816	Oct. 20/99	48A/5	2,582.5
AB-117	F67817	Oct. 20/99	48A/5	2,582.5
AB-118	F67818	Oct. 20/99	48A/5	2,582.5
AB-119	F67819	Oct. 20/99	48A/5	2,582.5

Claim Name	Claim No.	Date Recorded	N. T. S.	Area (Acres)
AB-120	F67820	Oct. 20/99	48A/5	2,582.5
AB-121	F67821	Oct. 20/99	48A/5	2,582.5
AB-122	F67822	Oct. 20/99	48A/5	2,582.5
AB-123	F67823	Oct. 20/99	48A/5	2,582.5
AB-124	F67824	Oct. 20/99	48A/5	2,582.5
AB-125	F67825	Oct. 20/99	48A/5	2,582.5
AB-126	F67826	Oct. 20/99	48A/5	2,582.5
AB-127	F67827	Oct. 20/99	48A/5	2,582.5
AB-128	F67828	Oct. 20/99	48A/5	2,582.5
AB-129	F67829	Oct. 20/99	48A/5	2,582.5
AB-130	F67830	Oct. 20/99	48A/5	2,582.5
AB-131	F67831	Oct. 20/99	48A/5	2,582.5
AB-132	F67832	Oct. 20/99	48A/5	1,291.25
AB-133	F67833	Oct. 20/99	48A/5	1,291.25
AB-134	F67834	Oct. 20/99	48A/5	1,291.25
AB-135	F67835	Oct. 20/99	48A/4	2,582.5
AB-136	F67836	Oct. 20/99	48A/4	2,582.5
AB-137	F67837	Oct. 20/99	48A/4	2,582.5
AB-138	F67838	Oct. 20/99	48A/4	2,582.5
AB-139	F67839	Oct. 20/99	48A/4	2,582.5
AB-140	F67840	Oct. 20/99	48A/4	2,582.5
AB-141	F67841	Oct. 20/99	48A/4	2,582.5
AB-142	F67842	Oct. 20/99	48A/4	2,582.5
AB-143	F67843	Oct. 20/99	48A/4	2,582.5
AB-144	F67844	Oct. 20/99	48A/4	2,582.5
AB-145	F67845	Oct. 20/99	48A/4	2,582.5
AB-146	F67846	Oct. 20/99	48A/4	2,582.5
AB-147	F67847	Oct. 20/99	48A/4	2,582.5
AB-148	F67848	Oct. 20/99	48A/4	2,582.5
AB-149	F67849	Oct. 20/99	48A/4	2,582.5
AB-150	F67850	Oct. 20/99	48A/4	2,582.5
AB-151	F67851	Oct. 20/99	48A/4	2,582.5
AB-152	F67852	Oct. 20/99	48A/4	2,582.5
AB-153	F67853	Oct. 20/99	48A/4	2,582.5
AB-154	F67854	Oct. 20/99	48A/4	2,582.5
AB-155	F67855	Oct. 20/99	48A/4	2,582.5
AB-156	F67856	Oct. 20/99	48A/4	1,291.25
AB-157	F67857	Oct. 20/99	48A/4	1,291.25
AB-158	F67858	Oct. 20/99	48A/4	1,291.25
AB-159	F67859	Oct. 20/99	48A/4	2,582.5
AB-160	F67860	Oct. 20/99	48A/4	2,582.5
AB-161	F67861	Oct. 20/99	48A/4	2,582.5
AB-162	F67862	Oct. 20/99	48A/4	2,582.5
AB-163	F67863	Oct. 20/99	48A/4	2,582.5
AB-164	F67864	Oct. 20/99	48A/4	2,582.5
AB-165	F67865	Oct. 20/99	48A/4	2,582.5
AB-166	F67866	Oct. 20/99	48A/4	2,582.5
AB-167	F67867	Oct. 20/99	48A/4	2,582.5
AB-168	F67868	Oct. 20/99	48A/4	2,582.5
AB-169	F67869	Oct. 20/99	48A/4	2,582.5
AB-170	F67870	Oct. 20/99	48A/4	2,582.5
AB-171	F67871	Oct. 20/99	48A/4	2,582.5
AB-172	F67872	Oct. 20/99	48A/4	2,582.5
AB-173	F67873	Oct. 20/99	48A/4	2,582.5
AB-174	F67874	Oct. 20/99	48A/4	2,582.5
AB-175	F67875	Oct. 20/99	48A/4	2,582.5

Claim Name	Claim No.	Date Recorded	N. T. S.	Area (Acres)
AB-176	F67876	Oct. 20/99	48A/4	2,582.5
AB-177	F67877	Oct. 20/99	48A/4	2,582.5
AB-178	F67878	Oct. 20/99	48A/4	2,582.5
AB-179	F67879	Oct. 20/99	48A/4	2,582.5
AB-180	F67880	Oct. 20/99	48A/4	2,582.5
AB-181	F67881	Oct. 20/99	48A/4	2,582.5
AB-182	F67882	Oct. 20/99	48A/4	2,324.25
AB-183	F67883	Oct. 20/99	48A/4	2,066.0
AB-184	F67884	Oct. 20/99	48A/4	2,582.5
AB-185	F67885	Oct. 20/99	48A/4	2,582.5
AB-186	F67886	Oct. 20/99	48A/4	2,582.5
AB-187	F67887	Oct. 20/99	48A/4	2,582.5
AB-188	F67888	Oct. 20/99	48A/4	2,066.0
AB-189	F67889	Oct. 20/99	48A/4	2,066.0
AB-190	F67890	Oct. 20/99	48A/4	2,582.5
AB-191	F67891	Oct. 20/99	48A/4	2,582.5
AB-192	F67892	Oct. 20/99	48A/4	2,582.5
AB-193	F67893	Oct. 20/99	48A/4	2,582.5
AB-194	F67894	Oct. 20/99	48A/4	2,066.0
AB-195	F67895	Oct. 20/99	48A/4	2,066.0
AB-196	F67896	Oct. 20/99	48A/4	2,582.5
AB-197	F67897	Oct. 20/99	48A/4	2,582.5
AB-198	F67898	Oct. 20/99	48A/4	2,582.5
AB-199	F67899	Oct. 20/99	48A/4	2,582.5
AB-200	F67900	Oct. 20/99	48A/4	2,066.0
AB-201	F67901	Oct. 20/99	48A/4	2,066.0
AB-202	F67562	Oct. 20/99	48A/4	2,582.5
AB-203	F67563	Oct. 20/99	48A/4	2,582.5
AB-204	F67564	Oct. 20/99	48B/1	2,582.5
AB-205	F67565	Oct. 20/99	48B/1	2,582.5
AB-206	F67566	Oct. 20/99	48B/1	2,582.5
AB-207	F67567	Oct. 20/99	48B/1	2,582.5
AB-208	F67568	Oct. 20/99	48B/1	2,582.5
AB-209	F67569	Oct. 20/99	48B/1	2,582.5
AB-210	F67570	Oct. 20/99	48B/1	2,582.5
AB-211	F67571	Oct. 20/99	48B/1	1,549.5
TOTAL ACREAGE (202 mineral claims)				491,621.82

**APPENDIX C**  
**List of Personnel**

**TABLE 5**  
**Allocation of Field Time**

Field Crew	Unallocated Days	Regional Work	Permits				Staking	Total Time
			2265	2266	2267	2268		
E. Craigie	9.0	13.0	2.5	0.5	1.0	6.0	-	32.0
V. Emary	-	-	-	-	-	-	19.0	19.0
W. Jarvis	5.0	4.0	-	-	-	1.0	-	10.0
L. Keough	3.0	13.0	0.5	0.5	1.0	1.0	-	19.0
R. Noble	26.0	-	-	-	-	-	-	26.0
P. Pitman	-	15.0	0.5	0.5	1.0	1.0	1.0	19.0
C. Verley	5.0	4.0	-	-	-	1.0	-	10.0
V. Waugh	-	9.5	2.5	0.5	-	6.5	20.0	39.0
	48.0	58.5	6.0	2.0	3.0	16.5	40.0	174.0

**LIST OF PERSONNEL**

Eric Craigie  
947 Old Lillooet Road  
North Vancouver, BC  
V7J 2H7

Verne Emary  
c/o P.O. Box 284  
Yellowknife, NT  
X1A 2N2

Bill Jarvis  
Opus Minerals Inc.  
Suite 745 - 1 First Canadian Place  
100 King Street West  
Toronto, ON  
M5X 1E2

Leni Keough  
P.O. Box 6690  
Hinton, AB  
T7V 1X8

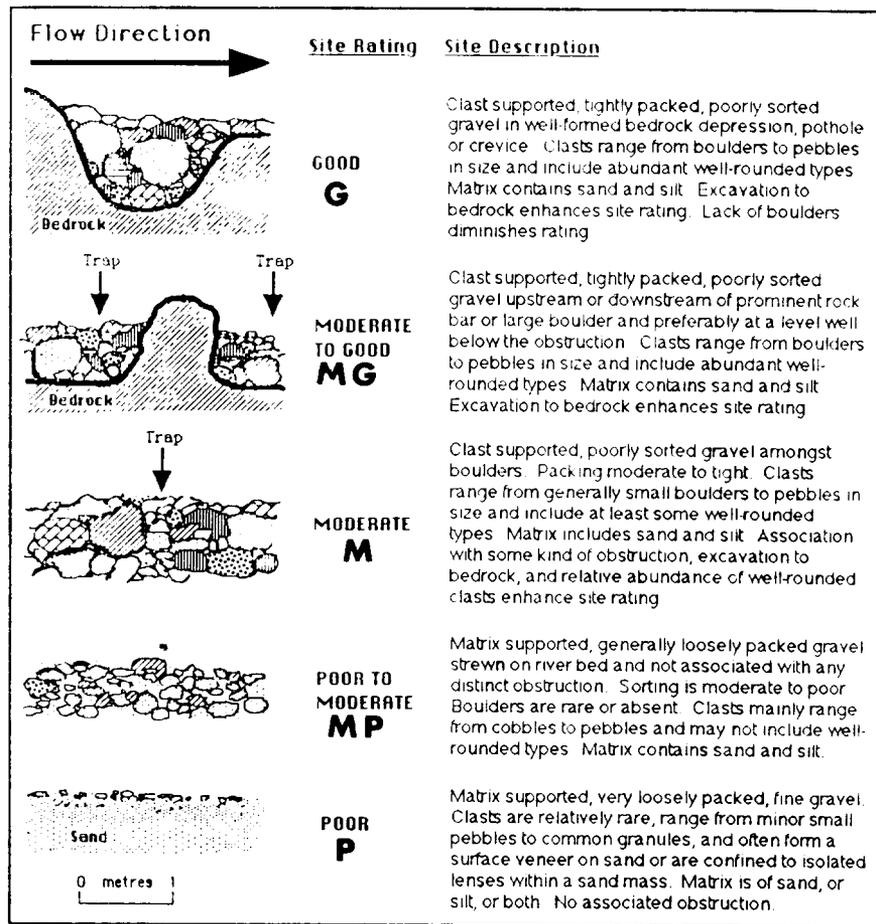
Ron Noble  
c/o International Capri Resources  
16-6350 48A Avenue  
Delta, BC  
V4K 4W3

Paul Pitman  
51 Isabella Street  
Brampton, ON  
L6X 1P8

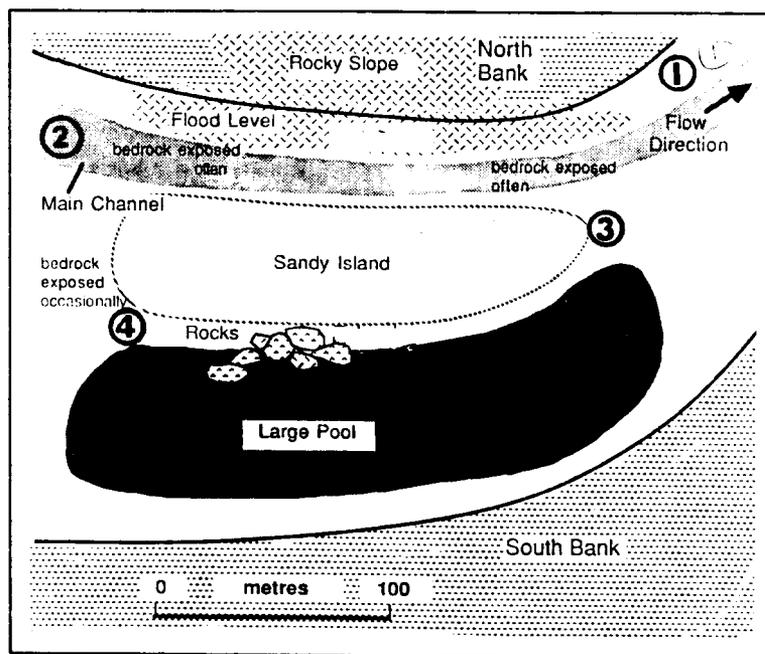
Carl Verley  
Suite 1205 - 789 West Pender Street  
Vancouver, BC  
V6C 1H2

Vic Waugh  
4307 Schoolhouse Draw  
Yellowknife, NT  
X1A 2N2

**APPENDIX D**  
**Sediments and Tills - Sample Data Sheets**



**Diagram 1:** Broad field classification of heavy mineral trap sites for stream sediment samples. Diagram shows river bed cross sections parallel to the main water flow direction (Diagram after Muggeridge, 1989).



**Diagram 2:** Diagram shows stream sediment sample sites in river channel. Potential site locations are shown as circled numbers (after Muggeridge, 1989).

Opus Minerals - Baffin Project

SAMPLE NO. 2001 Project BAFFIN ISLAND Date: 19/7/99

Sample Location NTS: 48 B / 1

UTM: 583000 E 3016350 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  M MP P Channel Location: 1  3

Notes: \_\_\_\_\_

SAMPLE NO. 2002 Project BAFFIN ISLAND Date: 20/7/99

Sample Location NTS: 48 B / 15

UTM: 564500 E 8088000 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  M MP P Channel Location: 1  3

Notes: \_\_\_\_\_

SAMPLE NO. 2003 Project BAFFIN ISLAND Date: 20/7/99

Sample Location NTS: 48 B / 15

UTM: 564700 E 8087800 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  M MP P Channel Location: 1  3

Notes: \_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2004 Project BAFFIN ISLAND Date: 2017/99

Sample Location NTS: 48B/16

UTM: 577750 E 5087150 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2005 Project BAFFIN ISLAND Date: 2017/99

Sample Location NTS: 48B/9

UTM: 586045 E 8073111 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating:  G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2006 Project BAFFIN ISLAND Date: 2017/99

Sample Location NTS: 48B/9

UTM: 586542 E 8058088 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Gravel bar - no big bldrs  
\_\_\_\_\_  
\_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2007 Project BAFFIN ISLAND Date: 20/7/99

Sample Location NTS: 48 B/8

UTM: 569648 E 8044285 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2008 Project BAFFIN ISLAND Date: 20/7/99

Sample Location NTS: 48 B/15

UTM: 562852 E 8083331 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2009 Project BAFFIN ISLAND Date: 21/7/99

Sample Location NTS: 48 B/16

UTM: 582323 E 8085293 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  M MP P Channel Location: 1 2 3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2010 Project BAFFIN ISLAND Date: 21/7/99

Sample Location NTS: 48 B/16

Sampler: LFK UTM: 572842 E 8088948 N

Sample Type: Stream Sed.  Till  HMC

Site Rating:  G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2011 Project BAFFIN ISLAND Date: 21/7/99

Sample Location NTS: 48 B/9

Sampler: LFK UTM: 576700 E 8070181 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2012 Project BAFFIN ISLAND Date: 21/7/99

Sample Location NTS: 48 B/9

Sampler: LFK UTM: 577613 E 8065464 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G   MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2013 Project BAFFIN ISLAND Date: 22/7/99

Sample Location NTS: 48 B/15

UTM: 546130 E 8095393 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 (2) 3 (4)

Notes: \_\_\_\_\_

SAMPLE NO. 2014 Project BAFFIN ISLAND Date: 22/7/99

Sample Location NTS: 48 B/15

UTM: 557466 E 8091136 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G (MG) M MP P Channel Location: 1 (2) 3 4

Notes: Sed frost heaved in centre of stream area

SAMPLE NO. 2015 Project BAFFIN ISLAND Date: 22/7/99

Sample Location NTS: 48 B/15

UTM: 554005 E 8083075 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G (MG) (M) MP P Channel Location: 1 (2) 3 (4)

Notes: \_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2016 Project BAFFIN ISLAND Date: 22/7/99

Sample Location NTS: 48 B/15

UTM: 554647 E 8081924 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2017 Project BAFFIN ISLAND Date: 22/7/99

Sample Location NTS: 48 B/15

UTM: 563818 E 8079234 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating:  G  MG M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2018 Project BAFFIN ISLAND Date: 22/7/99

Sample Location NTS: 48 B/15

UTM: 565873 E 8081986 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating:  G  MG M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2019 Project BAFFIN ISLAND Date: 22/7/99

Sample Location NTS: 48 B/10

UTM: 558513 E 8067792 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: \_\_\_\_\_

SAMPLE NO. 2020 Project BAFFIN ISLAND Date: 22/7/99

Sample Location NTS: 48 B/10

UTM: 557804 E 8062428 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: \_\_\_\_\_

SAMPLE NO. 2021 Project BAFFIN ISLAND Date: 22/7/99

Sample Location NTS: 48 B/10

UTM: 557764 E 8067534 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: \_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2022 Project BAFFIN ISLAND Date: 23/7/99

Sample Location NTS: 48 B/15

UTM: 544514 E 8088884 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 (2) 3 (4)

Notes: \_\_\_\_\_

SAMPLE NO. 2023 Project BAFFIN ISLAND Date: 23/7/99

Sample Location NTS: 48 B/10

UTM: 543824 E 8068009 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 (2) 3 (4)

Notes: \_\_\_\_\_

SAMPLE NO. 2024 Project BAFFIN ISLAND Date: 23/7/99

Sample Location NTS: 48 B/10

UTM: 545123 E 8057481 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G M MG MP P Channel Location: 1 (2) 3 4

Notes: \_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2025 Project BAFFIN ISLAND Date: 23/7/99

Sample Location NTS: 48 B / 10

UTM: 547821 E 8047714 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2026 Project BAFFIN ISLAND Date: 23/7/99

Sample Location NTS: 48 B / 10

UTM: 555345 E 8066957 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2027 Project BAFFIN ISLAND Date: 23/7/99

Sample Location NTS: 48 B / 10

UTM: 558804 E 8057916 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating:  G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Big trap @ bend in river as deep, fast flowing rapids change direction Flat lying ss provide shelter. Good example of V-bedding.

Opus Minerals - Baffin Project

SAMPLE NO. 2028 Project BAFFIN ISLAND Date: 23/7/99

Sample Location NTS: 48 B / 10

UTM: 560438 E 2054411 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2029 Project BAFFIN ISLAND Date: 23/7/99

Sample Location NTS: 48 B / 10

UTM: 563681 E 8043251 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2030 Project BAFFIN ISLAND Date: 23/7/99

Sample Location NTS: 48 B / 8

UTM: 569519 E 8037995

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2031 Project BAFFIN ISLAND Date: 23/7/99

Sample Location NTS: 48 B/8

UTM: 574202 E 8044659 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating:  G  MG  M  MP  P Channel Location: 1 2 3  4

Notes: At start of alluvial fan. Seds trapped by bedrock o/c 13m high.

SAMPLE NO. 2032 Project BAFFIN ISLAND Date: 24/7/99

Sample Location NTS: 48 B/9

UTM: 586339 E 8072850 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating:  G  MG  M  MP  P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2033 Project BAFFIN ISLAND Date: 24/7/99

Sample Location NTS: 48 B/9

UTM: 585866 E 8073327 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2034 Project BAFFIN ISLAND Date: 24/7/99

Sample Location NTS: 48 B / 9

Sampler: LFK UTM: 583945 E 8064322 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  (MG) M MP P Channel Location: 1  (2) 3  (4)

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2035 Project BAFFIN ISLAND Date: 24/7/99

Sample Location NTS: 48 B / 9

Sampler: LFK UTM: 568797 E 8063702 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  (MG) M MP P Channel Location: 1  (2) 3  (4)

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2036 Project BAFFIN ISLAND Date: 24/7/99

Sample Location NTS: 48 B / 9

Sampler: LFK UTM: 567658 E 8062357 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  (MG) M MP P Channel Location: 1  (2) 3  (4)

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2037 Project BAFFIN ISLAND Date: 24/7/99

Sample Location NTS: 48 B/9

UTM: 571996 E 8053670 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2038 Project BAFFIN ISLAND Date: 24/7/99

Sample Location NTS: 48 B/9

UTM: 574963 E 8053842 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating:  G  MG M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2039 Project BAFFIN ISLAND Date: 24/7/99

Sample Location NTS: 48 B/9

UTM: 591242 E 8051632 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating:  G  MG M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2040 Project BAFFIN ISLAND Date: 24/7/99

Sample Location NTS: 48 B/9

Sampler: LFK UTM: 598516 E 8049549 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 (2) 3 (4)

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2041 Project BAFFIN ISLAND Date: 24/7/99

Sample Location NTS: 48 B/9

Sampler: LFK UTM: 594279 E 8060805 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G (MG) M MP P Channel Location: 1 (2) 3 (4)

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2042 Project BAFFIN ISLAND Date: 24/7/99

Sample Location NTS: 48 B/9

Sampler: LFK UTM: 597852 E 8065340 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G (MG) M MP P Channel Location: 1 (2) 3 (4)

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2043 Project B1 Date: 26/7/99

Sample Location NTS: 48 B/8

Sampler: LFK UTM: 599380 E 8037457 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2044 Project B1 Date: 26/7/99

Sample Location NTS: 48 B/8

Sampler: LFK UTM: 594556 E 8036952 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2045 Project B1 Date: 26/7/99

Sample Location NTS: 48 B/8

Sampler: LFK UTM: 595029 E 8036023 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2046 Project B1 Date: 26/7/99  
Sample Location NTS: 48 B/8  
UTM: 592341 E 8034948 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  M MP P Channel Location: 1  3   
Notes: \_\_\_\_\_

SAMPLE NO. 2047 Project B1 Date: 26/7/99  
Sample Location NTS: 48 B/8  
UTM: 593870 E 8032469 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  M MP P Channel Location: 1  3   
Notes: \_\_\_\_\_

SAMPLE NO. 2048 Project B1 Date: 26/7/99  
Sample Location NTS: 48 B/8  
UTM: 592008 E 8031411 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  M MP P Channel Location: 1  3   
Notes: \_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2049 Project B.1 Date: 26/7/99  
Sample Location NTS: 48 B/8  
UTM: 591644 E 8033278 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4  
Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2050 Project B.1 Date: 26/7/99  
Sample Location NTS: 48 B/8  
UTM: 587581 E 8030181 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4  
Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2051 Project B.1 Date: 26/7/99  
Sample Location NTS: 48 B/8  
UTM: 589687 E 8029911  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4  
Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2052 Project B1 Date: 26/7/99  
Sample Location NTS: 48 B/8  
UTM: 584439E 8029510N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2053 Project B1 Date: 26/7/99  
Sample Location NTS: 48 B/8  
UTM: 583789E 8029621N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Seds from bldr dump just before the ocean.  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2054 Project B1 Date: 26/7/99  
Sample Location NTS: 48 B/8  
UTM: 578558E 8028625N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Sed in frost heaves in mid stream.  
\_\_\_\_\_  
\_\_\_\_\_

Opus Minerals - Baffin Project

SAMPLE NO. 2055 Project B1 Date: 26/7/99

Sample Location NTS: 48 B/1

Sampler: EC UTM: 592,650 E; 8,015,300 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Beach sands along small spit at north side of lake. Fair to good black sand concentration along beach.

SAMPLE NO. 2056 Project B1 Date: 28/7/99

Sample Location NTS: 48 B/1

Sampler: LFK UTM: 592693 E 8015452 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: HMC from beach with little spit. Pick up Eric's sample # OP 2055 from here

SAMPLE NO. 2057 Project B1 Date: 28/7/99

Sample Location NTS: 48 B/1

Sampler:                      UTM: 596499 E 8014879 N

Sample Type: Stream Sed.  Till  HMC  Beach Sed.

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: No obs. HMC

Opus Minerals - Baffin Project

SAMPLE NO. 2058 Project B1 Date: 28/7/99  
Sample Location NTS: 48 B/1  
UTM: 595900 E 8016882 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG M MP P Channel Location: 1  2 3  4  
Notes: \_\_\_\_\_

SAMPLE NO. 2059 Project B1 Date: 28/7/99  
Sample Location NTS: 48 B/1  
UTM: 595081 E 8018627 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG M MP P Channel Location: 1 2 3  4  
Notes: \_\_\_\_\_

SAMPLE NO. 2060 Project B1 Date: 28/7/99  
Sample Location NTS: 48 B/8  
UTM: 595 138 E 8021042 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG M MP P Channel Location: 1  2 3  4  
Notes: loads of small ponds & lakes. Sample from frost heave area in  
middle of running water.

Opus Minerals - Baffin Project

SAMPLE NO. 2061 Project B.1. Date: 28/7/99

Sample Location NTS: 48 B/8

UTM: 594 306 E 8022510 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1 2 3  4

Notes: East end of lake. Taken from frost heaves between big bldrs at edge of lake. Lg cobbles + gravel in sediment.

SAMPLE NO. 2062 Project B.1. Date: 28/7/99

Sample Location NTS: 48 B/8

UTM: 598601 E 8020578 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2 3  4

Notes: Midstream.

SAMPLE NO. 2063 Project B.1 Date: 28/7/99

Sample Location NTS: 48 B/8

UTM: 600036 E 8021770  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1 2 3 4

Notes: Frost heaved sed @ edge of active stream

Opus Minerals - Baffin Project

SAMPLE NO. 2064 Project B.I Date: 28/7/99

Sample Location NTS: 48 B/1

UTM: 596548 E 8017209

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Frost heaved area at side of stream. Steady flow, shallow rapids

SAMPLE NO. 2065 Project B.I Date: 28/7/99

Sample Location NTS: 49 B/1

UTM: 598091 E 8019095N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Frost heaved sed in middle of stream in active flowing water. Coarse sed in lg bldr

SAMPLE NO. 2066 Project B.I. Date: 28/7/99

Sample Location NTS: 48 B/1

UTM: 590294 E 8015274 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: At beach; no obvs HMC

Opus Minerals - Baffin Project

SAMPLE NO. 2067 Project B.1 Date: 28/7/99

Sample Location NTS: 48 B/1

Sampler: LFK UTM: 593200E 8015200N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2068 Project B.1 Date: 28/7/99

Sample Location NTS: 48 B/1

Sampler: LFK UTM: 592900E 8014600N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2069 Project B.1 Date: 29/7/99

Sample Location NTS: 48 B/1

Sampler: LFK UTM: 581113E 8017740N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Taken from W stream.

Opus Minerals - Baffin Project

SAMPLE NO. 2070 Project B.1 Date: 29/7/99

Sample Location NTS: 48 B/1

UTM: 581553 E 8018072 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Coarse sed. Shallow rapids with bldrs + cobbles; rapids almost flat in this area relative to downstream. No very lg bldrs

SAMPLE NO. 2071 Project B.1 Date: 29/7/99

Sample Location NTS: 48 B/1

UTM: 588535 E 8014925 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: From beach.

SAMPLE NO. 2072 Project B.1 Date: 29/7/99

Sample Location NTS: 48 B/1

UTM: 587709 E 8015196 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Taken where stream empties in - beach sediment; no obs HMC.

Opus Minerals - Baffin Project

SAMPLE NO. 2073 Project B.1. Date: 29/7/99

Sample Location NTS: 48B/1

Sampler: L7K UTM: 591816 E 2014515 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Good sed trap in rapids above small lake downstream  
of the big lake which empties down the cliff.

SAMPLE NO. 2074 Project B.1 Date: 29/7/99

Sample Location NTS: 48B/1

Sampler: LFK UTM: 593565 E 8013661 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Frost heave in drainage from 1 small lake (not on map)  
into small lake to N. Good gravelly sed with fg material behind  
big rocks + bldrs.

SAMPLE NO. 2075 Project B.1. Date: 29/7/99

Sample Location NTS: 48B/1

Sampler: LFK UTM: 594811 E 8012464 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Taken before stream goes over waterfall into big  
lake. Behind rock (lg. bldr).

Opus Minerals - Baffin Project

SAMPLE NO. 2076 Project B.1 Date: 29/7/99

Sample Location NTS: 48 B/1

UTM: 593369 E 8012038 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Frost heaved sediment; big bldrs

SAMPLE NO. 2077 Project B.1 Date: 30/7/99

Sample Location NTS: 48 B/1

UTM: 583046 E 8016821 N

Sampler: PWP

Sample Type: Stream Sed.  Till  HMC

Site Rating:  G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Excellent sand/gravel sediments from fast-flowing stream  
No obvious boulder traps however

SAMPLE NO. 2078 Project B.1 Date: 30/7/99

Sample Location NTS: 48 B/1

UTM: 585277 E 8018555 N

Sampler: PWP

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: We heard flowing stream into large lake. Sample taken  
from center of stream from a pocket of sandy gravel.

## Opus Minerals - Baffin Project

SAMPLE NO. 2079 Project B.1 Date: 30/7/99Sample Location NTS: 48 B/8Sampler: PSP UTM: 585549 E 8019388 NSample Type: Stream Sed.  Till  HMC Site Rating: G  MG  M  MP  P Channel Location: 1 2 3 4Notes: Small stream draining westward into same lake as 2078.  
Sample from stream sediments at side of stream.SAMPLE NO. 2080 Project B.1 Date: 30/7/99Sample Location NTS: 43 B/3Sampler: PWP UTM: 587911 E 8021195 NSample Type: Stream Sed.  Till  HMC Site Rating: G  MG  M  MP  P Channel Location: 1 2 3 4Notes: Stream draining eastward into big lake. Stream is huge  
boulder field with pockets of bouldery-gravel, some sand.SAMPLE NO. 2081 Project B.1 Date: 30/7/99Sample Location NTS: 43 B/8Sampler: PWP UTM: 587386 E 8021485 NSample Type: Stream Sed.  Till  HMC Site Rating:  G  MG  M  MP  P Channel Location: 1 2 3 4Notes: Outlet from small pond draining eastward. Good  
stream sample from gravel + sand.

## Opus Minerals - Baffin Project

SAMPLE NO. 2082 Project B.1 Date: 30/7/99Sample Location NTS: 483/8Sampler: PWP UTM: 589780 E 8021733 NSample Type: Stream Sed.  Till  HMC Site Rating: G  MG  M  MP  P Channel Location: 1 2 3 4Notes: Stream draining west. Magnificent boulder field. Sample taken from bank of dry river gravel above active stream. Substratum = vertical cliff faces.SAMPLE NO. 2083 Project B.1 Date: 30/7/99Sample Location NTS: 483/8Sampler: PWP UTM: 591878 E 8023284 NSample Type: Stream Sed.  Till  HMC Site Rating: G  MG  M  MP  P Channel Location: 1 2 3 4Notes: Stream sediment at entrance to lake. Typical gravel/sand sample.SAMPLE NO. 2084 Project B.1 Date: 30/7/99Sample Location NTS: 483/8Sampler: PWP UTM: 590860 E 8023935 NSample Type: Stream Sed.  Till  HMC Site Rating: G  MG  M  MP  P Channel Location: 1 2 3 4Notes: Sample taken from first soil at edge of stream filled with large boulders

## Opus Minerals - Baffin Project

SAMPLE NO. 2085 Project B.I. Date: 30/7/99Sample Location NTS: 48B/8Sampler: PWP UTM: 593417 E 8024305 NSample Type: Stream Sed.  Till  HMC Site Rating: G MG  MP P Channel Location: 1 2 3 4Notes: NW draining stream. Sample taken from small pocket of sand in boulder field. Gravel looking; very fine brown sand.SAMPLE NO. 2086 Project B.I. Date: 30/7/99Sample Location NTS: 48B/8Sampler: PWP UTM: 588603 E 8024985 NSample Type: Stream Sed.  Till  HMC Site Rating: G MG M  MP P Channel Location: 1 2 3 4Notes: N to S draining stream. Gravel/sand sample at edge of bank in boulder field. Primarily gravel, some sand.SAMPLE NO. 2087 Project B.I. Date: 31/7/99Sample Location NTS: 48B/1Sampler: PWP UTM: 584912 E, 8014518 NSample Type: Stream Sed.  Till  HMC Site Rating: G MG M  MP P Channel Location: 1 2 3 4Notes: Stream bed not well marked and dry. Sample taken from sandy gravel in valley.

## Opus Minerals - Baffin Project

SAMPLE NO. 2088 Project B.I Date: 31/7/99Sample Location NTS: 48 B/1Sampler: PWP UTM: 584774 E, 8014397 NSample Type: Stream Sed.  Till  HMC Site Rating: G MG M  MP P Channel Location: 1 2 3 4Notes: Dry stream channel leading into lake.SAMPLE NO. 2089 Project B.I Date: 31/7/99Sample Location NTS: 48 B/1Sampler: PWP UTM: 584290 E, 8012392 NSample Type: Stream Sed.  Till  HMC Site Rating: G MG  M MP P Channel Location: 1 2 3 4Notes: Active stream. Sample taken at exit from pond.  
Sample of gravel/sands in stream bed; dominantly fine well-washed  
sandy material.SAMPLE NO. 2090 Project B.I. Date: 28/7/99Sample Location NTS: 16x 058 3713 8022536 48 B/1Sampler: PWP UTM: 583713 E 8022536 NSample Type: Stream Sed.  Till  HMC Site Rating: G MG  M MP P Channel Location: 1 2 3 4Notes: Active stream with sediment taken from gravel along bank. Some  
material also taken from

Opus Minerals - Baffin Project

SAMPLE NO. 2091 Project B.I. Date: 27/7/99

Sample Location NTS: 48B/8

Sampler: PWP UTM: 582872 E 8021600 N

Sample Type: Stream Sed.  Till  HMC

Site Rating:  MG M MP P Channel Location: 1 2 3 4

Notes: Stream draining pond. Sample taken in river gravels behind boulders

SAMPLE NO. 2092 Project B.I. Date: 27/7/99

Sample Location NTS: 48B/8

Sampler: PWP UTM: 582549 E 8020134 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG M MP P Channel Location: 1 2 3 4

Notes: Dry material along bank of stream. Sample composed of excellent sand + gravel (Refer to detail map for location)

SAMPLE NO. 2093 Project B.I. Date: 28/7/99

Sample Location NTS: 48B/8

Sampler: PWP UTM: 582601 E 8020022 N

Sample Type: Stream Sed.  Till  HMC

Site Rating:  G MG M MP P Channel Location: 1 2 3 4

Notes: Pockets of fine to coarse sand within massive boulder fan. (Refer to detail map for location)

Opus Minerals - Baffin Project

SAMPLE NO. 2094 Project B.1 Date: 28/7/99

Sample Location NTS: 48 B/8

Sampler: PWP UTM: 582310 E 2020065 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  MP P Channel Location: 1 2 3 4

Notes: Boulder field adjacent from main stream. Sample taken from pockets of sand + gravel. No sorting of sediments (See detail map for location)

SAMPLE NO. 2095 Project B.1 Date: 28/7/99

Sample Location NTS: 48 B/8

Sampler: PWP UTM: 580454 E 2019122 N

Sample Type: Stream Sed.  Till  HMC

Site Rating:  MG M MP P Channel Location: 1 2 3 4

Notes: Excellent stream sample, includes some silt with gravel and sand.

SAMPLE NO. 2096 Project B.1 Date: 28/7/99

Sample Location NTS: 48 B/8

Sampler: PWP UTM: 580166 2019336 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  MP P Channel Location: 1 2 3 4

Notes: Main stream below waterfall. Boulder field with pockets of gravel. Till?

## Opus Minerals - Baffin Project

SAMPLE NO. 2097 Project B.1 Date: 29/7/99Sample Location NTS: 48B/1Sampler: PWP/BJ UTM: 17X 398266E 8014507NSample Type: Stream Sed.  Till  HMC Site Rating:  G MG M MP P Channel Location: 1 2 3 4Notes: Dry stream bed. Excellent trap from center of stream.  
Sample taken from exit of "Star hole"SAMPLE NO. 2098 Project B.1 Date: 29/7/99Sample Location NTS: 48B/1Sampler: PWP/BJ UTM: 600168E 8014220NSample Type: Stream Sed.  Till  HMC Site Rating: G MG  M MP P Channel Location: 1 2 3 4Notes: N/S stream leading into main drainage. Dry.  
Major boulder field.SAMPLE NO. 2099 Project B.1 Date: 29/7/99Sample Location NTS: 48B/1Sampler: PWP/BJ UTM: 598888E 8013766NSample Type: Stream Sed.  Till  HMC Site Rating:  G MG M MP P Channel Location: 1 2 3 4Notes: Excellent sand trap from middle of stream. Found  
large/broad boulder field. Black concentrate visible  
in sand.

## Opus Minerals - Baffin Project

SAMPLE NO. 2100 Project B.1 Date: 29/7/99Sample Location NTS: 48 B/1UTM: 5971622 E 8012402 N  
Sampler: PWP/BJSample Type: Stream Sed.  Till  HMC Site Rating: G  MG  M  MP  P Channel Location: 1 2 3 4Notes: Sample taken @ exit from lobe from side of active stream  
Good gravel + sand but no trapSAMPLE NO. 2101 Project B.1 Date: 29/7/99Sample Location NTS: 48 B/1UTM: 597163 E 8012053 N  
Sampler: PWP/BJSample Type: Stream Sed.  Till  HMC Site Rating: G  MG  M  MP  P Channel Location: 1 2 3 4Notes: Panned concentrate taken from beach sands developed from  
outlet of stream. Stream sample also taken from sands in  
streamSAMPLE NO. 2102 Project B.1 Date: 29/7/99Sample Location NTS: 48 B/1UTM: 596506 E 8011227 N  
Sampler: PWP/BJSample Type: Stream Sed.  Till  HMC Site Rating: G  MG  M  MP  P Channel Location: 1 2 3 4Notes: Gravel/sand sample taken from edge of lobe at area where  
stream enters into lobe. Poor sample, unsorted, not within  
active stream bed which is solid boulder field.

Opus Minerals - Baffin Project

SAMPLE NO. 2103 Project B.I Date: 31/7/99

Sample Location NTS: 48B/1

Sampler: PWP UTM: 580917 E, 8010044

Sample Type: Stream Sed.  Till  HMC

Site Rating:  MG M MP P Channel Location: 1 2 3 4

Notes: Excellent gravel/sand stream sediment at base of stream.

SAMPLE NO. 2104 Project B.I Date: 31/7/99

Sample Location NTS: 48B/1

Sampler: PWP UTM: 581687 E, 8009639 N

Sample Type: Stream Sed.  Till  HMC

Site Rating:  MG M MP P Channel Location: 1 2 3 4

Notes: Good stream sediment at end of stream exiting into ocean.

SAMPLE NO. 2105 Project B.I Date: 31/7/99

Sample Location NTS: 48B/1

Sampler: PWP UTM: 584992 E, 8008837 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG M MP P Channel Location: 1 2 3 4

Notes: Active stream channel. Sample taken at lake exit.

Dominantly silty/sand composition. No gravel.

SAMPLE NO. 2106 Project B.I Date: 3/7/99

Sample Location NTS: 48B/1

UTM: 584001 E, 9010236 N

Sampler: PWP

Sample Type: Stream Sed.  Till  HMC

Site Rating:  MG M MP P Channel Location: 1 2 3 4

Notes: Composite sample site from 2 small ponds. Excellent gravel from behind boulder

SAMPLE NO. 2107 Project B.I Date: 3/7/99

Sample Location NTS: 48B/1

UTM: 585050 E, 9010084 N

Sampler: PWP

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG M MP  P Channel Location: 1 2 3 4

Notes: Poor stream sample at edge of lake. Poor drainage.

SAMPLE NO. 2108 Project B.I Date: 3/7/99

Sample Location NTS: 48B/1

UTM: 590082 E, 9013575 N

Sampler: PWP

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG M MP P Channel Location: 1 2 3 4

Notes: Sample taken from first birds within stream channel. Stream flowing over stepped outcrop, no obvious soil or gravel traps.

SAMPLE NO. 2109 Project B.I Date: 31/7/99

Sample Location NTS: 483/1

Sampler: PWP UTM: 588279 E, 8012269 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Swampy area at entrance to lower lake. First kind material (?)  
in flowing stream. Layer of block sands at sample site.

SAMPLE NO. 2110 Project B.I Date: 31/7/99

Sample Location NTS: 483/1

Sampler: PWP UTM: 588905 E, 8010115 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Sample taken at edge of lake where 2 streams meet.  
Excellent stream sand/gravel bar with boulder trap.

SAMPLE NO. 2111 Project B.I Date: 31/7/99

Sample Location NTS: 483/1

Sampler: PWP UTM: 588176 E, 8010092 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Fast flowing bouldery stream. Excellent traps with fine  
gravel and sandy material.

SAMPLE NO. 2112 Project B.I Date: 31/7/99

Sample Location NTS: 48 B/1

Sampler: PWP UTM: 587599 E, 8010962 N

Sample Type: Stream Sed.  Till  HMC

Site Rating:  MG M MP P Channel Location: 1 2 3 4

Notes: Dry stream bed, abundant boulders. Good trap of sand along edge of stream bed.

SAMPLE NO. 2113 Project B.I Date: 31/7/99

Sample Location NTS: 48 B/1

Sampler: PWP UTM: 587494 E, 8010825 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG M MP P Channel Location: 1 2 3 4

Notes: Stream sediment from edge of lake. No trap but good gravel and material.

SAMPLE NO. 2114 Project B.I Date: 31/7/99

Sample Location NTS: 48 B/1

Sampler: PWP UTM: 585561 E, 8012947 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG M MP P Channel Location: 1 2 3 4

Notes: Good stream gravel with coarse sand. Active stream

SAMPLE NO. 2115 Project B.I Date: 3/7/99

Sample Location NTS: 48B/1

Sampler: PWP UTM: 587174 E, 8012934 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  M MP P Channel Location: 1 2 3 4

Notes: Active stream, excellent boulder trap with sand and gravel.

SAMPLE NO. 2116 Project B.I Date: 1/8/99

Sample Location NTS: 48A/4

Sampler: LFK UTM: 399153 E 8014332 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: HMC on "Star lake" - a lot of strand lines. On NE corner of lake.

SAMPLE NO. 2117 Project B.I Date: 1/8/99

Sample Location NTS: 48A/4

Sampler: LFK UTM: 400419 E 8012869 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Frost heave in semi dry stream mid channel; lg bldrs.

SAMPLE NO. 2118 Project B1 Date: 1/8/99

Sample Location NTS: 48A/4

Sampler: LFK UTM: 399153 E 2014332 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: beach

SAMPLE NO. 2119 Project B1 Date: 1/8/99

Sample Location NTS: 48A/4

Sampler: LFK UTM: 400191 E 8009643 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: HMC not as obvs as others such as #2118; beach

SAMPLE NO. 2120 Project B1 Date: July 29/99

Sample Location NTS: 48B/8

Sampler: ERC UTM: 16X 0590914 E; 8,019,226 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G (MG) M MP P Channel Location: 1 2 3 4

Notes: \_\_\_\_\_

SAMPLE NO. 2121 Project BI Date: July 29/99

Sample Location NTS: 48 B/1

Sampler: ERC UTM: 16X 0589, 812 E; 8, 018, 443

Sample Type: Stream Sed.  Till  HMC

Site Rating:  G MG  MP P Channel Location: 1 2 3 4

Notes: \_\_\_\_\_

SAMPLE NO. 2122 Project \_\_\_\_\_ Date: July 29/99

Sample Location NTS: 48 B/1

Sampler: ERC UTM: 16X 0, 589, 993 E; 8, 018, 144 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  MP P Channel Location: 1 2 3 4

Notes: \_\_\_\_\_

SAMPLE NO. 2123 Project BI Date: July 29/99

Sample Location NTS: 48 B/1

Sampler: ERC UTM: 16X 0, 589, 895; 8, 017, 458

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M  MP P Channel Location: 1 2 3 4

Notes: \_\_\_\_\_

SAMPLE NO. 2124 Project BI Date: July 29/99

Sample Location NTS: 48B/1

Sampler: ERC UTM: 16X 0,589,002E, 8,015,451 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M (MP) P Channel Location: 1 2 3 4

Notes: \_\_\_\_\_

SAMPLE NO. 2125 Project BI Date: July 29/99

Sample Location NTS: 48B/1

Sampler: ERC UTM: 16X 0,589,408E, 8,015,552 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M (P) Channel Location: 1 2 3 4

Notes: \_\_\_\_\_

SAMPLE NO. 2126 Project BI Date: July 30/99

Sample Location NTS: 48B/8

Sampler: ERC UTM: 16X 0,593,332 F; 8,020,393 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel/Till - till site but no clay or silt, screened to - 3mm

SAMPLE NO. 2127 Project BT Date: July 30/99

Sample Location NTS: 48B/8

Sampler: ERC UTM: 16x 0,593,285 E; 8,019,999 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel/till - till site but reworked, no clay or silt, screened to -3mm

SAMPLE NO. 2128 Project BT Date: July 30/99

Sample Location NTS: 48B/8

Sampler: ERC UTM: 16x 0,593,273 E; 8,019,675 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel/till - till site but reworked, no clay or silt, screened to -3mm

SAMPLE NO. 2129 Project BT Date: July 30, 99

Sample Location NTS: 48B/8

Sampler: ERC UTM: 16x 0,593,283 E; 8,019,351 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel/till - till site but reworked, no clay or silt, screened to -3mm

SAMPLE NO. 2130 Project BI Date: July 30/99

Sample Location NTS: 48B/8

Sampler: ERC UTM: 16X 0,593,263 E; 8,018,963 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel/till - till site but reworked, no silt or clay. screened to -3mm.

SAMPLE NO. 2131 Project BI Date: July 30/99

Sample Location NTS: 48B/1

Sampler: ERC UTM: 16X 0,593,246 E; 8,018,561 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel/till - till site but reworked. No clay or silt. Screened to -3mm

SAMPLE NO. 2132 Project BI Date: July 30/99

Sample Location NTS: 48B/1

Sampler: ERC UTM: 16X 0,593,274; 8,018,253 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel/till - till site but reworked no silt or clay. screened to -3mm.

SAMPLE NO. 2133 Project BI Date: July 30/99

Sample Location NTS: 48 B/1

Sampler: ERC UTM: 16x 0,593, 337 E; 8,017, 822 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel/till. Reworked till, no silt or clay. Screened to -3mm

SAMPLE NO. 2134 Project BI Date: July 30/99

Sample Location NTS: 48 B/1

Sampler: ERC UTM: 16x 0,593, 268 E; 8,017, 433 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel/till. Till site but reworked, no silt or clay. Screened to -3mm.

SAMPLE NO. 2135 Project BI Date: July 30/99

Sample Location NTS: 48 B/1

Sampler: ERC UTM: 16x 0593, 358 E; 8,017, 070 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel/till. Till site but reworked, no clay or silt. Screened to -3mm

SAMPLE NO. 2136 Project BT Date: July 30/99

Sample Location NTS: 48 B/1

Sampler: ERC UTM: 16x 0,593,334; 8,016,701 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel/till. Till site but reworked, no silt or clay. Screened to -3 mm.

SAMPLE NO. 2137 Project BT Date: July 30/99

Sample Location NTS: 48 B/1

Sampler: ERC UTM: 16x 0,593,334 E; 8,016,312 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel/till. Till site but reworked, no silt or clay. Screened to -3 mm

SAMPLE NO. 2138 Project BT Date: July 30/99

Sample Location NTS: 48 B/1

Sampler: ERC UTM: 16x 0,593,337; 8,015,938 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel/till, Till site but reworked, no silt or clay. Screened to -3 mm.

SAMPLE NO. 2139 Project BI Date: July 30/99  
Sample Location NTS: 48 B/1  
UTM: 16X 0,593,266 E; 8,015,573 N  
Sampler: ERC  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G MG M MP P Channel Location: 1 2 3 4  
Notes: Gravel/till. Till site but reworked - no  
clay or silt. Screened to -3 mm.

SAMPLE NO. 2140 Project BI Date: July 30/99  
Sample Location NTS: 48 B/1  
UTM: 16X 0,593,450 E; 8,015,200 N  
Sampler: ERC  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: (G) MG M MP P Channel Location: 1 2 3 4  
Notes: \_\_\_\_\_

SAMPLE NO. 2141 Project BI Date: Aug. 1/99  
Sample Location NTS: 48 B/3  
UTM: 599,303 E; 8,022,447 N  
Sampler: ERC  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G MG M (MP) P Channel Location: 1 2 3 4  
Notes: Sandy outwash at north side of small lake  
in area of boulder rubble

SAMPLE NO. 2142 Project BI Date: Aug. 1/99

Sample Location NTS: 48B/B

Sampler: ERC UTM: 599,361E; 8,021,912N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3 mm

SAMPLE NO. 2143 Project BI Date: Aug. 1/99

Sample Location NTS: 48B/B

Sampler: ERC UTM: 599,340E; 8,021,536N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3 mm

SAMPLE NO. 2144 Project B Date: Aug. 1/99

Sample Location NTS: 48B/B

Sampler: ERC UTM: 599,344E; 8,021,134N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3 mm

SAMPLE NO. 2145 Project B1 Date: Aug. 1/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 599,333 E; 8,020,771 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till, less than 5% clay/silt. -3mm

SAMPLE NO. 2146 Project BT Date: Aug. 1/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 599,401 E; 8,020,338 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - till site, till reworked, no silt/clay. -3mm

SAMPLE NO. 2147 Project BI Date: Aug. 2/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 599,772 E; 8,020,471 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. -3mm

SAMPLE NO. 2148 Project BI Date: Aug. 2/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 599,895 E; 8,020,156 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravelly till - about 10% silt and clay.  
- 3mm

SAMPLE NO. 2149 Project BI Date: Aug. 2/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 600,198 E; 8,019,745 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till with no silt / clay.  
- 3mm

SAMPLE NO. 2150 Project BI Date: Aug. 2/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 600,370 E; 8,019,439 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel, about 10% silt / clay.  
- 3mm.

SAMPLE NO. 2151 Project BI Date: Aug. 2/99

Sample Location NTS: 48 B/1

Sampler: ERL UTM: 600,549 E ; 8,019,047 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3mm

SAMPLE NO. 2152 Project BT Date: Aug. 2/99

Sample Location NTS: 48 B/1

Sampler: ERL UTM: 600,726 E ; 8,018,741 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel, reworked till. - 3mm.

SAMPLE NO. 2153 Project BI Date: Aug. 2/99

Sample Location NTS: 48 B/1

Sampler: ERL UTM: 600,845 E ; 8,018,458 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3mm.

SAMPLE NO. 2154 Project BI Date: Aug. 2/99

Sample Location NTS: 48 B/1

Sampler: ERC UTM: 601,115E; 8,018,000N (16x)

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till, -3mm

SAMPLE NO. 2155 Project BI Date: Aug. 2/99

Sample Location NTS: 48 B/1

Sampler: ERC UTM: 16x 601,314E; 8,017,602N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel. Reworked till, -3mm

SAMPLE NO. 2156 Project BI Date: Aug. 2/99

Sample Location NTS: 48 B/1

Sampler: ERC UTM: 16x 601,465E; 8,017,342N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. Screened to -3mm.

SAMPLE NO. 2157 Project 4BB/1 Date: Aug. 2/99

Sample Location NTS: \_\_\_\_\_

Sampler: ERC UTM: 16X 601,630 E; 8,016,902 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3mm.

SAMPLE NO. 2158 Project BI Date: Aug. 2/99

Sample Location NTS: 4BB/1

Sampler: ERC UTM: 601,852 E; 8,016,545 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3mm.

SAMPLE NO. 2159 Project B.T. Date: Aug. 2/99

Sample Location NTS: 4BB/1

Sampler: ERC UTM: 16X 602,020 E; 8,016,234 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3mm

SAMPLE NO. 2160 Project B.1 Date: 1/8/99

Sample Location NTS: 48 B/1

UTM: 397928 E 8011052 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Beach Sand

SAMPLE NO. 2161 Project B.1 Date: 1/8/99

Sample Location NTS: 48 B/1

UTM: 600327 E 8012504 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Beach Sand

SAMPLE NO. 2162 Project B.1 Date: 1/8/99

Sample Location NTS: 48 B/1

UTM: 598815 E 8010079 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  M  MP  P Channel Location: 1  2  3  4

Notes: Sed from main drainage from east + north

SAMPLE NO. 2163 Project B.1 Date: 1/8/99

Sample Location NTS: 48 B/1

UTM: 595988 E 7009495 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2164 Project B.1 Date: 1/8/99

Sample Location NTS: 48 B/1

UTM: 594041 E 8009808 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2165 Project B.1 Date: 1/8/99

Sample Location NTS: 48 B/1

UTM: 599859 E 8017828  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Frost heaved sed sample in drainage area Lg. cobbles - gravel  
in with sediment between big bldrs  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2166 Project B.1 Date: 1/8/99

Sample Location NTS: 48A/4

UTM: 399533 E 8016291 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: No sieving done. Frost heave of sed in drainage (dry now)  
Very sandy with cobbles, no clay.

SAMPLE NO. 2167 Project B.1. Date: 1/8/99

Sample Location NTS: 48A/4

UTM: 399299 E 8017957 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Beach sample taken to test upstream of sample which had  
indicators

SAMPLE NO. 2168 Project B.1. Date: 1/8/99

Sample Location NTS: 48A/5

UTM: 399397 E 8019915 N

Sampler: LFK.

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Frost heaved sample @ edge of small pond in extremely  
desolate bldr strewn valley. Gritty sed ± cobbles + lg. clasts in  
stream drainage.

SAMPLE NO. 2169 Project B.1 Date: 2/8/99

Sample Location NTS: 48 A/5

Sampler: LFK UTM: 401419 E 7026239 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2170 Project B.1 Date: 2/8/99

Sample Location NTS: 48 A/5

Sampler: LFK UTM: 405781 E 8029470 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: At mouth of river dumping in.

SAMPLE NO. 2171 Project B.1 Date: 2/8/99

Sample Location NTS: 48 A/5

Sampler: LFK UTM: 412213 E 8026653 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Downstream of confluence 1 Big red trap behind bldrs  
on inside bend of curve in rapids.

SAMPLE NO. 2172 Project B.1. Date: 2/8/99

Sample Location NTS: 48 A/5

UTM: 414666 E 8026439 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  M MP P Channel Location: 1  2 3 4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2173 Project B.1. Date: 2/8/99

Sample Location NTS: 48 A/5

UTM: 412490 E 8020412 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M MP P Channel Location: 1  2 3  4

Notes: Dug deeply for sed. Sample taken closer to lake since many more streams  
flowing in upstream than are shown on topo + wanted to catch  
anything that might be dumped in

SAMPLE NO. 2174 Project B.1 Date: 2/8/99

Sample Location NTS: 48 A/5

UTM: 417500 E 8020700 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2175 Project B.1 Date: 2/8/99

Sample Location NTS: 48A/5

UTM: 414054E 2020253N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: N end of lake

SAMPLE NO. 2176 Project B.1 Date: 2/8/99

Sample Location NTS: 48A/4

UTM: 414718E 2012914N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2177 Project B.1 Date: 2/8/99

Sample Location NTS: 48A/4

UTM: 409721E 2015810N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG M MP P Channel Location: 1  2 3  4

Notes: Sed sample behind very lg bldrs reflects drainage of east stream upstream of confluence. Couldn't get one further downstream.

SAMPLE NO. 2178 Project B.1. Date: 2/2/99

Sample Location NTS: 48 A/4

Sampler: LFK UTM: 416267 E 8009428 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2179 Project B.1 Date: 2/2/99

Sample Location NTS: 48 A/4

Sampler: LFK UTM: 419559 E 8012982 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2180 Project B.1 Date: 2/8/99

Sample Location NTS: 48 A/5

Sampler: LFK UTM: 421125 E 8024881

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2181 Project B.1 Date: 2/8/99

Sample Location NTS: 48 A/S

Sampler: LFK UTM: 422717 E 8032058 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  MP P Channel Location: 1  3 4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2182 Project B.1 Date: 2/8/99

Sample Location NTS: 48 A/S

Sampler: LFK UTM: 430567 E 8028927 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  MP P Channel Location: 1   4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2183 Project B.1 Date: 2/8/99

Sample Location NTS: 48 A/S

Sampler: LFK UTM: 431927 E 8027528 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  M MP P Channel Location: 1  3

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2184 Project B.1. Date: 2/2/99

Sample Location NTS: 48 A/5

UTM: 428608 E 7022390 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M MP P Channel Location: 1  3 4

Notes: Sed trap @ edge. Inside curve downstream from fast flowing bldr rapids

SAMPLE NO. 2185 Project B.1 Date: 2/2/99

Sample Location NTS: 48 A/4

UTM: 428074 E 8014748 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  M MP P Channel Location: 1  3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2186 Project B.1 Date: 2/8/99

Sample Location NTS: 48 A/3

UTM: 433025 E 7014179 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG M MP P Channel Location: 1  3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2187 Project B.1 Date: 3/8/99  
Sample Location NTS: 48 A/3  
Sampler: LFK UTM: 437785 E 7009692 N  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G MG  MP P Channel Location: 1  3 4  
Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2188 Project B.1 Date: 3/8/99  
Sample Location NTS: 48 A/3  
Sampler: LFK UTM: 433820 E 7001056 N  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G MG  MP P Channel Location: 1  3 4  
Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2189 Project B.1 Date: 3/8/99  
Sample Location NTS: 48 A/3  
Sampler: LFK UTM: 428401 E 8001570 N  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G MG M MP P Channel Location: 1 2 3 4  
Notes: No sieve. Frost leaved sediment taken from main stream  
bed in rock stream valley. Very little H<sub>2</sub>O @ present. Gravel  
clasts contained

SAMPLE NO. 2190 Project B.1 Date: 3/2/99

Sample Location NTS: 48 A/4

UTM: 424392 E 7998544 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  M MP P Channel Location: 1  2 3 4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2191 Project B.1 Date: 3/2/99

Sample Location NTS: 48 A/4

UTM: 430888 E 8005560 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  M MP P Channel Location: 1  2 3 4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2192 Project B.1 Date: 3/8/99

Sample Location NTS: 47 H/13

UTM: 417922 E 7980571 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2193 Project B.1 Date: 3/8/99  
Sample Location NTS: 47H/13  
UTM: 410611 E 7982563 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4  
Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2194 Project B1 Date: 3/8/99  
Sample Location NTS: 47H/13  
UTM: 408612 E 7981323 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4  
Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2195 Project B1 Date: 3/8/99  
Sample Location NTS: 47H/13  
UTM: 401052 E 7986586 N  
Sampler: \_\_\_\_\_  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4  
Notes: No sieve Slight HMC on beach.  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2196 Project B.1 Date: 3/8/99

Sample Location NTS: 47H/13

Sampler: LFK UTM: 400021 E 7992437 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2197 Project B.1 Date: 3/8/99

Sample Location NTS: 48A/4

Sampler: LFK UTM: 406090 E 7992397

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2198 Project B.1 Date: 3/8/99

Sample Location NTS: 48A/4

Sampler: LFK UTM: 408125 E 7994008 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2199 Project 31 Date: 4/8/99  
Sample Location NTS: 48 B/8  
UTM: 577160 E 2024607 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG  M MP P Channel Location: 1  3   
Notes: Frost heaved sed in main channel

SAMPLE NO. 2200 Project B.1. Date: 4/8/99  
Sample Location NTS: 48 B/8  
UTM: 575774 E 8019561 N  
Sampler: \_\_\_\_\_  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG  M MP P Channel Location: 1  3   
Notes: low tide

SAMPLE NO. 2201 Project B.1. Date: Aug. 2/99  
Sample Location NTS: 48 B/1  
UTM: 16X 602,218 E; 8,015,778 N  
Sampler: ER  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G MG  M MP P Channel Location: 1 2 3 4  
Notes: Gravel - raw packed till with 10 to 15% silt/clay content. - 3mm.

SAMPLE NO. 2202 Project BI Date: Aug. 2/99

Sample Location NTS: 48 B / 1

Sampler: ERC UTM: 17X 397,969 E ; 8,015,479 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3 mm

SAMPLE NO. 2203 Project BI Date: Aug. 2/99

Sample Location NTS: 48 B / 1

Sampler: ERC UTM: 17X 398,084 E ; 8,015,082 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till with 10% silt/clay.

SAMPLE NO. 2204 Project BI Date: Aug. 2/99

Sample Location NTS: 48 A / 4

Sampler: ERC UTM: 17X 398,250 E ; 8,014,747 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3 mm.

SAMPLE NO. 2205 Project BI Date: Aug. 2/99

Sample Location NTS: 48 A/4

UTM: 17x 398,420 E; 8,014,395 N  
Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel, reworked till, about 10% silt/  
clay. - 3mm

SAMPLE NO. 2206 Project BT Date: Aug. 2/99

Sample Location NTS: 48 A/1

UTM: 17x 398,576 E; 8,014,012 N  
Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3mm.

SAMPLE NO. 2207 Project BT Date: Aug. 2/99

Sample Location NTS: 48 A/1

UTM: 17x 398,751 E; 8,013,682 N  
Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3mm. Site is  
near SW corner of Star Lake.

SAMPLE NO. 2208 Project BI Date: Aug. 3/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 16x 599,014 E; 8,019,622 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till with about 10% silt/clay, -3mm. Sample of frost boil material in centre of dispersion train, <sup>1.17 km to</sup> KIM-01.

SAMPLE NO. 2209 Project B.I Date: Aug. 3/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 16x 599,463 E; 8,020,141 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till, -3mm. Site of "Discovery" boulder from KIM-01, centre of boulder train, 520m at 026° to KIM-01

SAMPLE NO. 2210 Project BI Date: Aug. 5/99

Sample Location NTS: 48 B/1

Sampler: ERC UTM: 16x 596,845 E; 8,013,483 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Coarse sand, outwash material, north side of small lake, -3mm.

SAMPLE NO. 2211 Project BT Date: Aug. 5/99

Sample Location NTS: 48 B/1

UTM: 16X 596,840 E; 8,013,929 N

Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravelly till, about 15% silt/clay. -3mm

SAMPLE NO. 2212 Project BI Date: Aug. 5/99

Sample Location NTS: 48 B/1

UTM: 596,839 E; 8,014,262 N

Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravelly till, about 20% clay/silt. -3mm

SAMPLE NO. 2213 Project BI Date: Aug. 5/99

Sample Location NTS: 48 B/1

UTM: 16X 596,804 E; 8,014,678 N

Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. -3mm.

SAMPLE NO. 2214 Project BI Date: Aug. 5/99

Sample Location NTS: 48 B/1

UTM: 16x 596,748 E; 8,015,166 N  
Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. -3mm.

SAMPLE NO. 2215 Project BI Date: Aug. 5/99

Sample Location NTS: 48 B/1

UTM: 16x 596,740 E; 8,015,486 N  
Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Sandy gravel. -3mm

SAMPLE NO. 2216 Project BI Date: Aug. 5/99

Sample Location NTS: 48 B/1

UTM: 16x 596,775 E; 8,015,876 N  
Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. -3mm

SAMPLE NO. 2217 Project BT Date: Aug. 5/99

Sample Location NTS: 48 B/1

UTM: 16x 596,731E; 8,016,251N

Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. -3mm.

SAMPLE NO. 2218 Project BT Date: Aug. 5/99

Sample Location NTS: 48 B/1

UTM: 16x 596,674E; 8,016,672N

Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. -3mm

SAMPLE NO. 2219 Project BT Date: Aug 5/99

Sample Location NTS: 48 B/1

UTM: 596,669E; 8,017,023N

Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. -3mm.

SAMPLE NO. 2220 Project BT Date: Aug. 5/99

Sample Location NTS: 48 B/1

UTM: 596,646 E; 8,017,540 N

Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till, -3mm.

SAMPLE NO. 2221 Project BT Date: Aug. 5/99

Sample Location NTS: 48 B/1

UTM: 16x 596,639 E; 8,017,924 N

Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Sand, some coarser material. -3mm.

SAMPLE NO. 2222 Project BT Date: Aug. 5/99

Sample Location NTS: 48 B/1

UTM: 8,018,317 N; 596,649 E

Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel with about 10% silt/clay -  
reworked till. -3mm

SAMPLE NO. 2223 Project BT Date: Aug. 5/99

Sample Location NTS: 4B B/1

UTM: 16X 596,564 E ; 8,018,677 N  
Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel-reworked till. -3mm

SAMPLE NO. 2224 Project BI Date: Aug. 5/99

Sample Location NTS: 4B B/8

UTM: 16X 596,550 E ; 8,019,018 N  
Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: \_\_\_\_\_

SAMPLE NO. 2225 Project BI Date: Aug. 5/99

Sample Location NTS: 4B B/8

UTM: 16X 596,570 E ; 8,019,543 N  
Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel-reworked till -3mm

SAMPLE NO. 2226 Project BI Date: Aug. 5/99

Sample Location NTS: 48 B/B

Sampler: ERC UTM: 16x 596, 514E; 8,019, 895N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till with about 10% silt,  
clay

SAMPLE NO. 2227 Project BI Date: Aug. 5/99

Sample Location NTS: 48 B/B

Sampler: ERC UTM: 16x 596, 507E; 8,020, 290N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till, - 3 mm

SAMPLE NO. 2228 Project BI Date: Aug. 5/99

Sample Location NTS: 48 B/B

Sampler: ERC UTM: 16x 596, 514E; 8,020, 694N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till, many angular  
fragments, - 3mm

SAMPLE NO. 2229 Project B1 Date: Aug. 5/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 16X 596,422 E; 8,021,075 N

Sample Type: Stream Sed.      Till ✓ HMC     

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. -3mm

SAMPLE NO. 2230 Project B1 Date: Aug. 5/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 16X 596,428 E; 8,021,546 N

Sample Type: Stream Sed.      Till ✓ HMC     

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. -3mm

SAMPLE NO. 2231 Project BT Date: Aug. 6/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 596,047 E; 8,021,421 N

Sample Type: Stream Sed.      Till ✓ HMC     

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till, about 10% silt/clay.  
-3mm.

SAMPLE NO. 2232 Project BT Date: Aug. 6/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 16x 595,956 E; 8,021,844 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3mm.

SAMPLE NO. 2233 Project BT Date: Aug. 6/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 595,908 E; 8,022,254 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3mm

SAMPLE NO. 2234 Project BT Date: Aug. 9/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 16x 595,945 E; 8,022,638 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3mm.

SAMPLE NO. 2235 Project BT Date: Aug. 6/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 16x 595,979 E; 8,023,075 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. -3mm

SAMPLE NO. 2236 Project BT Date: Aug. 6/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 16x 595,871 E; 8,023,415 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel, reworked till. -3mm.

SAMPLE NO. 2237 Project BT Date: Aug. 6/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 16x 595,831 E; 8,023,841 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. -3mm

SAMPLE NO. 2238 Project BI Date: Aug. 6 / 99

Sample Location NTS: 48 B / 8

Sampler: ERL UTM: 16x 595,882E; 8,024,257N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till, 10% silt/clay.  
- 3mm.

SAMPLE NO. 2239 Project BI Date: Aug. 6 / 99

Sample Location NTS: 48 B / 8

Sampler: ERL UTM: 16x 595,802E; 8,024,626N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. - 3mm.

SAMPLE NO. 2240 Project BI Date: Aug. 10 / 99

Sample Location NTS: 48 B / 8

Sampler: ERL UTM: 16x 599,189E; 8,026,893N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel at till site - reworked till, screened  
to -3mm.

SAMPLE NO. 2241 Project BT Date: Aug. 10/99

Sample Location NTS: 48 B/8

UTM: 16x 599,422 E; 8,026,497 N  
Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till, - 3 mm.

SAMPLE NO. 2242 Project BT Date: Aug. 10/99

Sample Location NTS: 48 B/8

UTM: 16x 599,598 E; 8,026,157 N  
Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Till, about 20% silt/clay. Not screened.  
Good sand content.

SAMPLE NO. 2243 Project BT Date: Aug. 10/99

Sample Location NTS: 48 B/8

UTM: 16x 599,886 E 8,025,868 N  
Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Till, about 20% silt/clay. Good sand  
content, screened to - 3mm.

SAMPLE NO. 2244 Project BI Date: Aug. 10/99

Sample Location NTS: 16X 600,012 E 48B/8

UTM: 16X 600,012 E; 8,025,504 N  
Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Sandy till, about 15% clay/silt. Not screened

SAMPLE NO. 2245 Project BI Date: Aug. 10/99

Sample Location NTS: 48B/8

UTM: 16X 600,255 E; 8,025,224 N  
Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Fine gravel, mostly sand. Frost boil in area of boulders, about 10% silt/clay. Not screened.

SAMPLE NO. 2246 Project BI Date: Aug. 10/99

Sample Location NTS: 48B/8

UTM: 16X 600,496 E; 8,024,823 N  
Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. Good sand content. Screened to -3mm About 10% silt/clay. Not screened.

SAMPLE NO. 2247 Project BI Date: Aug. 10/99

Sample Location NTS: 48 B/8

UTM: 16x 600,699E; 8,024,428N

Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Good sand content, reworked till. Screened to -3 mm.

SAMPLE NO. 2248 Project BI Date: Aug. 10/99

Sample Location NTS: 48 B/8

UTM: 16x 600,915E; 8,024,178N

Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Wet gravel - reworked till. Not screened

SAMPLE NO. 2249 Project BI Date: Aug. 10/99

Sample Location NTS: 48 B/8

UTM: 16x 601,154E; 8,023,832N

Sampler: ERC

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Mainly sand, from frost bail in boulder area, reworked till. Not screened.

SAMPLE NO. 2250 Project B.1. Date: 4/8/99

Sample Location NTS: 48 B/2

Sampler: LFK UTM: 580330 E 8012792 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2251 Project B.1. Date: 4/8/99

Sample Location NTS: 48 B/1

Sampler: LFK UTM: 590470 E 8004417 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2252 Project B.1. Date: 4/8/99

Sample Location NTS: 48 B/1

Sampler: LFK UTM: 597125 E 8003217 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2253 Project B.1. Date: 4/8/99

Sample Location NTS: 48 B/1

UTM: 591832 E 7999031

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating:  G  MG M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2254 Project B.1. Date: 4/8/99

Sample Location NTS: 48 B/1

UTM: 596610 E 7995026 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating:  G  MG M MP P Channel Location: 1  2 3  4

Notes: Low tide Good traps  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2255 Project B.1. Date: 4/8/99

Sample Location NTS: 47 G/16

UTM: 599937 E 7985884 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2256 Project B.1 Date: 4/8/99  
Sample Location NTS: 47G/16  
UTM: 600457 E 7980136 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4  
Notes: No sieve.

SAMPLE NO. 2257 Project B.1. Date: 4/8/99  
Sample Location NTS: \_\_\_\_\_  
UTM: 404976 E 7998245 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4  
Notes: No sieve. Red sands downstream of bldrs in rapids

SAMPLE NO. 2258 Project B.1. Date: 4/8/99  
Sample Location NTS: \_\_\_\_\_  
UTM: 400430 E 7999670 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4  
Notes: No sieve. Sandy bar in curve downstream of rapids. Some concentrated layers.

SAMPLE NO. 2259 Project B1 Date: 5/8/99  
Sample Location NTS: 48 B/2  
UTM: 555648 E 8004907 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  M MP P Channel Location: 1  3   
Notes: Low tide

SAMPLE NO. 2260 Project B1 Date: 5/8/99  
Sample Location NTS: 48 B/2  
UTM: 554818 E 8007162 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  M MP P Channel Location: 1  3   
Notes: Low tide

SAMPLE NO. 2261 Project B1 Date: 5/8/99  
Sample Location NTS: 48 B/2  
UTM: 555207 E 8014624 N  
Sampler: LFK  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G  M MP P Channel Location: 1  3   
Notes: \_\_\_\_\_

SAMPLE NO. 2262 Project B.1 Date: 5/8/99

Sample Location NTS: 48 B/2

UTM: 559625 E 8010387 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  M MP P Channel Location: 1 2 3 4

Notes: Not sieved Beach sediment. Some HMC evident.

SAMPLE NO. 2263 Project B.1 Date: 5/8/99

Sample Location NTS: 48 B/2

UTM: 560235 E 8015578 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG M MP P Channel Location: 1  2 3  4

Notes: Great traps. low tide

SAMPLE NO. 2264 Project B.1 Date: 5/8/99

Sample Location NTS: 48 B/2

UTM: 561865 E 8016264 N

Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG M MP P Channel Location: 1  2 3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2265 Project B 1 Date: 5/8/99

Sample Location NTS: 48 B/2

Sampler: LFK UTM: 564681 3015074

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2266 Project B.1. Date: 5/8/99

Sample Location NTS: 48 B/2

Sampler: LFK UTM: 566171 E 8015730 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Low tide  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2267 Project B 1 Date: 5/8/99

Sample Location NTS: 48 B/1

Sampler: LFK UTM: 574051 E 8011156 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Ebenezer Harbour Good sample - low tide  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE NO. 2263 Project B.1 Date: 5/8/99

Sample Location NTS: 48B/1

UTM: 576208 E 8009618 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: Tide rising Dry - no sieving Black sand downstream of lg. bldr  
bar

SAMPLE NO. 2269 Project B.1 Date: 5/8/99

Sample Location NTS: 48B/1

UTM: 581320 E 8005894 N  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G  MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2270 Project B.1 Date: 6/3/99

Sample Location NTS: 48A/12

UTM: 417056 E 8053573  
Sampler: LFK

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  M  MP  P Channel Location: 1  2  3  4

Notes: \_\_\_\_\_

SAMPLE NO. 2271 Project BI Date: 8/18/99

Sample Location NTS: 48 A/12

Sampler: LFK UTM: 413091 E 8056308 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  M MP P Channel Location: 1  2 3 4

Notes: \_\_\_\_\_

SAMPLE NO. 2272 Project BI Date: Aug. 10/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 16x 601,314 E; 8,023,554 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel, high sand content, area of boulders - reworked fill. Screened to -3mm

SAMPLE NO. 2273 Project BI Date: Aug. 10/99

Sample Location NTS: 48 B/8

Sampler: ERC UTM: 16x 601,525 E; 8,023,112 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel in boulder field. Not screened.

SAMPLE NO. 2274 Project BI Date: Aug. 10/99

Sample Location NTS: 48 B / 8

Sampler: ERL UTM: 16 X 601,676 E; 8,022,791 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel in boulder field - reworked till.  
screened to - 3mm

SAMPLE NO. 2275 Project BI Date: Aug. 10/99

Sample Location NTS: 48 A / 4

Sampler: ERL UTM: 17 X 398,160 E; 8,022,380 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel. No silt / clay, good sand - reworked  
till. Screened to - 3mm.

SAMPLE NO. 2276 Project BI Date: Aug. 10/99

Sample Location NTS: 48 A / 4

Sampler: ERL UTM: 17 X 398,385 E; 8,022,126 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel, 10% silt / clay. Reworked till.  
Screened to - 3mm.

SAMPLE NO. 2277 Project BT Date: Aug 10/99

Sample Location NTS: 48 A/4

Sampler: ERC UTM: 17x 398,601E; 8,021,765N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel, good sand. Reworked till. Screened to -3mm.

SAMPLE NO. 2278 Project BT Date: Aug. 10/99

Sample Location NTS: 48 A/4

Sampler: ERC UTM: 17x 398,841E; 8,021,389N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel, from small frost boil in boulder field. Reworked till, -3mm.

SAMPLE NO. 2279 Project BI Date: Aug. 10/99

Sample Location NTS: 48 A/4

Sampler: ERC UTM: 17x 399,023; 8,021,035N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel, along boulder covered hillside. 10% silt/clay. Screened to -3mm.

SAMPLE NO. 2280 Project BI Date: Aug. 10/99  
Sample Location NTS: 48 A / 4  
UTM: 17X 399,081E; 8,020,731N  
Sampler: ERC  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G MG M MP P Channel Location: 1 2 3 4  
Notes: Gravel, about 5% silt/clay, screened to  
-3mm.

SAMPLE NO. 2281 Project BI Date: Aug. 10/99  
Sample Location NTS: 48 A / 4  
UTM: 17X 399,249E; 8,020,338N  
Sampler: ERC  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G MG M MP P Channel Location: 1 2 3 4  
Notes: Gravel, 10% silt/clay. Reworked till.  
screened to -3mm.

SAMPLE NO. 2282 Project BI Date: Aug. 10/99  
Sample Location NTS: 48 A / 4  
UTM: 17X 399,483E; 8,019,970N  
Sampler: ERC  
Sample Type: Stream Sed.  Till  HMC   
Site Rating: G MG M MP P Channel Location: 1 2 3 4  
Notes: Gravel - reworked till, north side of small  
lake.

SAMPLE NO. 2283 Project BI Date: Aug. 10/99

Sample Location NTS: 48 A / 4

Sampler: ERC UTM: 17x 399,610E; 8,019,568N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel. Reworked till. Good sand content.  
Not screened.

SAMPLE NO. 2284 Project BI Date: Aug. 10/99

Sample Location NTS: 48 A / 4

Sampler: ERC UTM: 17x 399,760E; 8,019,244N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel, reworked till. Good sand content,  
about 5% clay/silt. Not screened.

SAMPLE NO. 2285 Project BI Date: Aug. 10/99

Sample Location NTS: 48 A / 4

Sampler: ERC UTM: 17x 400,013E; 8,018,930N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel. 10% silt/clay. Reworked till.  
Not screened.

SAMPLE NO. 2286 Project BI Date: Aug. 10/99

Sample Location NTS: 48 A / 4

Sampler: ERC UTM: 17x 400,184 E; 8,018,520 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. Good sand content.  
Screened to -3mm.

SAMPLE NO. 2287 Project BI Date: Aug. 10/99

Sample Location NTS: 48 A / 4

Sampler: ERC UTM: 17x 400,465 E; 8,018,186 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Gravel - reworked till. Good sand content,  
no silt/clay. Screened to -3mm. Boulder of  
Kimberlite found in frost boil 10m from sample site.  
K-4 boulder.

SAMPLE NO. 2288 Project BI Date: Aug. 10<sup>11</sup>/99

Sample Location NTS: 48 A / 5

Sampler: ERC UTM: 17x 400,213 E; 8,023,353 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP P Channel Location: 1 2 3 4

Notes: Beach sample, good HMC. South end of small  
lake on hill NE of K-4 boulder.

SAMPLE NO. 2289 Project BI Date: Aug. 11/99

Sample Location NTS: 48 A/5

Sampler: ERC UTM: 420,374 E; 8,041,102 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M  MP P Channel Location: 1  2 3 4

Notes: Stream sediment from 1127 stream, about 6 km upstream of 1127. Sandy grit from among boulders in active stream. Boulders are lag veneer over till.

SAMPLE NO. 2290 Project BI Date: Aug. 11/99

Sample Location NTS: 48 A/5

Sampler: ERC UTM: 424,439 E; 8,039,875 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M MP  P Channel Location: 1 2 3 4

Notes: Sandy beach, southeast of sample 1127. South shore of small lake, abundant black shale grains in sand.

SAMPLE NO. 2291 Project BI Date: Aug. 13/99

Sample Location NTS: 48 A/12

Sampler: ERC UTM: 17x 403,863 E; 8,050,377 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG  M MP P Channel Location: 1  2 3 4

Notes: Sediment sample from active drainage, bend in stream, outcrop of black shale on west side of stream, grassy tundra on east side.

SAMPLE NO. 2292 Project BT Date: Aug. 13/99

Sample Location NTS: 48 A/5

Sampler: ERC UTM: 419,693 E; 8,042,068 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M  P Channel Location: 1 2 3 4

Notes: Tributary stream draining into 1127 Creek. Fairly clay-rich sediment. Sandy grit in boulder/cobble veneer over till, from active stream.

SAMPLE NO. 2293 Project BT Date: Aug. 13/99

Sample Location NTS: 48 A/5

Sampler: ERC UTM: 17X 429,512 E; 8,045,026 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M  P Channel Location: 1 2 3 4

Notes: sample from stream in flat area, active stream, lots of shale fragments.

SAMPLE NO. 2294 Project BT Date: Aug. 13/99

Sample Location NTS: 48 A/12

Sampler: ERC UTM: 17X 427,625 E; 8,050,172 N

Sample Type: Stream Sed.  Till  HMC

Site Rating: G MG M  P Channel Location:  2 3 4

Notes: Sample of sand and a few pebbles - sand bars along active active drainage.

**APPENDIX E**  
**Microscopy Results**

OPUS RESOURCES

SAMPLE	NO.	SIZE	PYR	ECL	ILM	CHR	CD	OL	COMMENTS	NS 1 (g)	NS 2 (g)	ND (g)	MAG (g)	TOTAL (g)	DATE	PICK BATCH#	P/PY	E/CP	LN	P/CH	P/CI	P/ZR	P/OL	P/OT	P/SU
OP	2001	C	0	0	2	1	0	0	ILM: 1 likely crustal	15.9				15.9	Aug/30/99	99 OPS 01									
OP	2002	C	0	1	3	0	0	0		13.9				13.9	Nov/2/99	99 OPS 10									
OP	2003	C	0	0	1	0	0	0	ILM: likely crustal	1.6				1.6	Sep/7/99	99 OPS 01	1	3							4
OP	2004	C	0	3	0	0	8	0		37.7				37.7	Oct/1/99	99 OPS 05									
OP	2005	C	0	0	32	0	1	0	ILM: most are likely crustal	68.4				68.4	Sep/7/99	99 OPS 01									
OP	2006	C	0	0	0	0	0	0		60.3				60.3	Oct/6/99	99 OPS 06									
OP	2007	C	0	0	0	0	0	0		13.3				13.3	Aug/30/99	99 OPS 01									
OP	2008	C	0	0	17	0	0	0	ILM: most are likely crustal	100.6				100.6	Sep/8/99	99 OPS 01									
OP	2009	C	0	0	2	0	0	0	ILM: likely crustal	54.1		27.8		54.1	Oct/5/99	99 OPS 06									
OP	2010	C	0	0	1	0	0	0	ILM: likely crustal	4.7				4.7	Sep/8/99	99 OPS 01									
OP	2011	C	0	0	2	1	0	0		65.4				65.4	Oct/5/99	99 OPS 06									
OP	2012	C	0	0	0	0	0	0	sulphides	27.6				27.6	Oct/6/99	99 OPS 06									
OP	2013	C	0	0	2	6	0	0		64.9				64.9	Oct/7/99	99 OPS 06									
OP	2014	C	0	0	0	0	0	0		5.7				5.7	Oct/6/99	99 OPS 06									
OP	2015	C	0	0	0	0	0	0		3.3				3.3	Sep/8/99	99 OPS 01									
OP	2016	C	0	0	0	0	0	0		1.2				1.2	Aug/30/99	99 OPS 01									
OP	2017	C	0	0	0	0	0	0		9.3				9.3	Nov/2/99	99 OPS 10									
OP	2018	C	0	6	0	0	0	0	sulphide noted	23.0				23.0	Oct/19/99	99 OPS 08									
OP	2019	C	0	0	0	0	0	0		41.1				41.1	Sep/8/99	99 OPS 01									
OP	2020	C	0	0	0	0	0	0		20.6				20.6	Aug/30/99	99 OPS 01									
OP	2021	C	0	0	2	0	0	0		68.5				68.5	Sep/8/99	99 OPS 01									
OP	2022	C	0	0	6	0	0	0	ILM: likely crustal	18.3				18.3	Sep/8/99	99 OPS 01									
OP	2023	C	1	15	0	15	0	0		71.5				71.5	Oct/12/99	99 OPS 07									
OP	2024	C	0	0	10	0	0	0	ILM: likely crustal	22.8				22.8	Aug/31/99	99 OPS 01									
OP	2025	C	1	2	20	2	0	0	ILM: possibly crustal	31.5				31.5	Oct/19/99	99 OPS 08									
OP	2026	C	0	0	0	0	0	0		30.0				30.0	Sep/10/99	99 OPS 01									
OP	2027	C	0	0	0	0	0	0		9.1				9.1	Oct/7/99	99 OPS 06									
OP	2028	C	0	0	0	0	0	0		2.4				2.4	Oct/20/99	99 OPS 08									
OP	2029	C	0	0	0	0	0	0		<0.1				<0.1	Nov/3/99	99 OPS 10									
OP	2030	C	0	0	0	0	0	0		0.4				0.4	Nov/2/99	99 OPS 10									
OP	2031	C	0	0	0	0	0	0		0.4				0.4	Aug/31/99	99 OPS 01									
OP	2032	C	0	1	0	9	0	0		54.7				54.7	Oct/12/99	99 OPS 07									
OP	2033	C	0	0	0	0	0	0		6.7				6.7	Oct/20/99	99 OPS 08									
OP	2034	C	0	2	24	2	0	0	ILM: some possibly crustal?	126.8				126.8	Nov/3/99	99 OPS 10	2	24	2						28
OP	2035	C	0	0	0	0	0	0		23.3				23.3	Oct/6/99	99 OPS 06									
OP	2036	C	0	0	0	0	0	0		14.0				14.0	Oct/13/99	99 OPS 07									
OP	2037	C	0	0	1	1	0	0		5.5				5.5	Oct/7/99	99 OPS 06									
OP	2038	C	0	0	0	1	0	1		25.7				25.7	Oct/26/99	99 OPS 09				1			1		2
OP	2039	C	0	0	0	0	0	0		214.9				214.9	Nov/3/99	99 OPS 10									
OP	2040	C	0	0	0	0	0	0		6.4				6.4	Oct/12/99	99 OPS 07									
OP	2041	C	0	3	2	0	0	0		12.9				12.9	Oct/13/99	99 OPS 07									
OP	2042	C	0	0	6	1	0	0	ILM: possibly crustal?	18.9				18.9	Nov/3/99	99 OPS 10			6	1					7
OP	2043	C	0	0	0	0	0	0	sulphide noted	6.2				6.2	Oct/19/99	99 OPS 08									
OP	2044	C	0	0	0	0	0	0	sulphides	1.8				1.8	Oct/8/99	99 OPS 06									
OP	2045	C	0	0	0	4	0	0	sulphide noted	19.1				19.1	Oct/12/99	99 OPS 07									
OP	2046	C	0	0	4	0	0	0		16.0				16.0	Nov/3/99	99 OPS 10									
OP	2047	C	0	0	3	0	0	0	ILM: crustal?	2.9				2.9	Oct/20/99	99 OPS 08									4
OP	2048	C	0	0	6	0	0	0		7.9				7.9	Nov/3/99	99 OPS 10									6
OP	2049	C	0	0	2	0	0	0		5.9				5.9	Nov/3/99	99 OPS 10				6					2
OP	2050	C	0	0	0	0	0	0		1.8				1.8	Nov/3/99	99 OPS 10				2					
OP	2051	C	0	0	0	0	0	0		0.1				0.1	Oct/13/99	99 OPS 07									
OP	2052	C	13	18	0	36	1	0	PYR: 2 excellent, ECL: 1 lost	4.7				4.7	Oct/12/99	99 OPS 07									
OP	2053	C	64	140	0	425	0	0	SEE "INSERT NOTE"	19.1				19.1	Oct/13/99	99 OPS 07									

OPUS RESOURCES

SAMPLE	NO.	SIZE	PYR	ECL	ILM	CHR	CD	OL	COMMENTS	NS 1 (g)	NS 2 (g)	ND (g)	MAG (g)	TOTAL (g)	DATE	PICK BATCH#	P/PY	P/ECP	ALN	P/CH	P/CC	P/ZRP	OU	P/OT	P/SU	
OP	2054	C	0	1	4	0	0	0		58.7				58.7	Nov/4/99	99 OPS 10		1	4						5	
OP	2055	C	11	21	0	0	0	2		11.8				11.8	Oct/7/99	99 OPS 06										
OP	2056	C	53	96	1	4	1	8	ECL. some milky, CD: excellent	39.7				39.7	Oct/21/99	99 OPS 08										
OP	2057	C	0	0	1	0	0	0		12.9				12.9	Nov/2/99	99 OPS 10			1						1	
OP	2058	C	0	0	0	0	0	0		12.8				12.8	Oct/13/99	99 OPS 07										
OP	2059	C	0	0	0	0	0	0		10.5				10.5	Oct/13/99	99 OPS 07										
OP	2060	C	0	0	0	0	0	0		7.2				7.2	Oct/12/99	99 OPS 07										
OP	2061	C	0	0	0	0	0	0		12.2				12.2	Oct/27/99	99 OPS 09										
OP	2062	C	1	0	0	0	0	0		18.2				18.2	Nov/3/99	99 OPS 10	1								1	
OP	2063	C	0	0	0	0	0	0		5.0				5.0	Nov/3/99	99 OPS 10										
OP	2064	C	3	11	0	0	0	0		13.1				13.1	Oct/20/99	99 OPS 08										
OP	2065	C	6	16	0	0	0	0		11.9				11.9	Oct/7/99	99 OPS 06										
OP	2066	C	4	5	0	0	0	0		9.9				9.9	Nov/3/99	99 OPS 10	4	5							9	
OP	2067	C	4	3	3	0	0	0		8.3	9.3			17.6	Oct/7/99	99 OPS 06										
OP	2068	C	1	2	0	0	0	0	PYR: ?, with alteration along shear planes	5.1				5.1	Oct/18/99	99 OPS 06										
OP	2069	C	0	4	0	14	0	0		38.2				38.2	Oct/2/99	99 OPS 05										
OP	2070	C	2	20	8	12	0	0	ECL: several with alteration along shear planes; ILM & CHR:	41.2				41.2	Oct/7/99	99 OPS 06										
OP	2071	C	5	7	0	0	0	3	ECL: 1 milky orange grain	29.4				29.4	Nov/4/99	99 OPS 10	5	7					3		15	
OP	2072	C	1	0	0	0	0	0		7.0				7.0	Oct/7/99	99 OPS 06										
OP	2073	C	6	8	0	0	1	0		22.0				22.0	Oct/19/99	99 OPS 08										
OP	2074	C	5	7	0	3	0	0		15.4				15.4	Oct/21/99	99 OPS 08										
OP	2075	C	40	62	0	35	1	0	SEE "INSERT NOTE"	37.1				37.1	Oct/13/99	99 OPS 07										
OP	2076	C	28	45	14	0	0	2	ECL: 50% milky orange grains	20.5				20.5	Nov/4/99	99 OPS 10	28	45	14							87
OP	2077	C	2	2	0	0	0	1		14.0				14.0	Nov/4/99	99 OPS 10	2	2					1		5	
OP	2078	C	0	0	0	0	1	0	CD pale, low Cr	6.9				6.9	Oct/20/99	99 OPS 08										
OP	2079	C	0	0	0	0	0	1		173.6		70.8		244.4	Oct/20/99	99 OPS 08										
OP	2080	C	0	0	2	4	0	0		7.3				7.3	Oct/8/99	99 OPS 06										
OP	2081	C	20	39	38	0	0	1	PYR: 5 possibly ECL. ECL: 13 milky orange grains or altered	12.3				12.3	Nov/4/99	99 OPS 10	20	39	38				1		98	
OP	2082	C	0	0	0	0	0	0		9.6				9.6	Oct/13/99	99 OPS 07										
OP	2083	C	0	0	0	0	0	0		11.8				11.8	Oct/20/99	99 OPS 08										
OP	2084	C	0	2	10	0	0	0	ILM: possibly crustal?	8.6				8.6	Nov/4/99	99 OPS 10			2	10					12	
OP	2085	C	0	0	6	0	0	0	ILM: possibly crustal?	2.4				2.4	Nov/3/99	99 OPS 10				6					6	
OP	2086	C	0	0	1	0	0	0		26.5				26.5	Oct/21/99	99 OPS 08										
OP	2087	C	0	1	0	0	0	0		12.4				12.4	Oct/8/99	99 OPS 06										
OP	2088	C	0	0	1	0	0	0	ILM: possibly crustal?	16.4				16.4	Nov/4/99	99 OPS 10				1					1	
OP	2089	C	0	1	2	0	0	0		6.9				6.9	Nov/4/99	99 OPS 10				2					3	
OP	2090	C	0	0	0	0	0	0		88.9		25.3		114.2	Oct/13/99	99 OPS 07										
OP	2091	C	0	6	129	0	2	0	ILM - some granular, brittle	8.8	73.6			82.4	Oct/29/99	99 OPS 09			6	129		2			137	
OP	2092	C	0	1	6	10	0	0		61.8				61.8	Oct/21/99	99 OPS 08										
OP	2093	C	1	0	4	0	0	0		78.2				78.2	Oct/7/99	99 OPS 06										
OP	2094	C	0	4	135	0	0	0	ILM: most are possibly crustal?	42.5				42.5	Nov/4/99	99 OPS 10				4	135				139	
OP	2095	C	0	0	7	0	0	0		26.1				26.1	Oct/7/99	99 OPS 06										
OP	2096	C	0	28	26	0	0	0	ILM: possibly crustal?; ECL: some questionable	37.1				37.1	Nov/5/99	99 OPS 10				28	26				54	
OP	2097	C	0	0	0	0	0	0		4.9				4.9	Oct/8/99	99 OPS 06										
OP	2098	C	0	0	0	0	0	0		11.2				11.2	Oct/12/99	99 OPS 06										
OP	2099	C	1	0	0	0	0	0	PYR: reddish, possibly ECL	9.7				9.7	Oct/7/99	99 OPS 06										
OP	2100	C	1	1	0	1	0	2	PYR tr kelyphitic rim	13.2				13.2	Oct/1/99	99 OPS 05										
OP	2101	C	0	0	0	0	0	0		6.4				6.4	Sep/15/99	99 OPS 03										
OP	2102	C	0	0	0	0	0	0		17.9				17.9	Sep/16/99	99 OPS 03										
OP	2103	C	10	19	8	6	0	1	ILM: possibly zoned	36.2				36.2	Oct/4/99	99 OPS 05										
OP	2104	C	2	0	3	3	0	0	PYR: 1 excellent, ILM: likely crustal	16.8				16.8	Sep/16/99	99 OPS 03										
OP	2105	C	14	8	13	6	0	2	ECL: 1 ASP; OTH: 2 milky orange, possibly ECL?	22.6				22.6	Sep/22/99	99 OPS 04										
OP	2106	C	6	11	6	8	0	4	OTH: 1 milky orange - ECL?	16.2				16.2	Sep/22/99	99 OPS 04										

OPUS RESOURCES

SAMPLE	NO.	SIZE	PYR	ECL	ILM	CHR	CD	OL	COMMENTS	NS 1 (g)	NS 2 (g)	ND (g)	MAG (g)	TOTAL (g)	DATE	PICK BATCH#	P/PY	P/E	Q/P	L/N	P/CH	P/CL	P/ZR	P/OL	P/OT	P/SU
OP	2107	C	3	9	7	0	0	2	SEE "INSERT NOTE"	21.5				21.5	Sep/17/99	99 OPS 03										
OP	2108	C	2	1	2	5	0	0		15.0				15.0	Sep/22/99	99 OPS 04										
OP	2109	C	3	1	4	0	1	0		9.7				9.7	Sep/16/99	99 OPS 03										
OP	2110	C	15	34	0	3	0	0	PYR: 1 lost, several with tr kelyphitic rim and/or orange peel	17.1				17.1	Oct/2/99	99 OPS 05										
OP	2111	C	0	3	0	0	0	1		1.7				1.7	Sep/17/99	99 OPS 03										
OP	2112	C	0	0	2	4	13	0		10.2				10.2	Sep/28/99	99 OPS 05										
OP	2113	C	6	3	1	4	0	3	ILM: 1 zoned; OTH: 1 milky orange	22.7				22.7	Oct/4/99	99 OPS 05										
OP	2114	C	1	6	0	15	0	0		29.5				29.5	Sep/28/99	99 OPS 05										
OP	2115	C	2	3	0	1	0	0	CORUNDUM 14	12.2				12.2	Oct/8/99	99 OPS 06										
OP	2116	C	0	0	0	0	0	0		1.2				1.2	Sep/16/99	99 OPS 03										
OP	2117	C	0	0	0	0	0	0		6.3				6.3	Oct/4/99	99 OPS 05										
OP	2118	C	0	0	0	0	0	0		2.5				2.5	Oct/8/99	99 OPS 06										
OP	2119	C	0	0	0	0	0	0		11.1				11.1	Sep/29/99	99 OPS 05										
OP	2120	C	0	0	0	0	0	0		33.1				33.1	Oct/4/99	99 OPS 05										
OP	2121	C	0	0	0	0	0	0		9.2				9.2	Oct/4/99	99 OPS 05										
OP	2122	C	0	0	0	0	0	0		10.4				10.4	Sep/17/99	99 OPS 03										
OP	2123	C	0	0	0	0	0	0		4.8				4.8	Oct/4/99	99 OPS 05										
OP	2124	C	1	2	0	1	0	1		7.3				7.3	Sep/20/99	99 OPS 04										
OP	2125	C	0	1	0	0	0	0	OTH: 1 milky orange - ECL?	8.2				8.2	Sep/16/99	99 OPS 03										
OP	2126	C	0	0	0	0	0	10		6.2				6.2	Oct/4/99	99 OPS 05										
OP	2127	C	0	0	0	0	0	0		5.7				5.7	Oct/4/99	99 OPS 05										
OP	2128	C	0	0	0	0	0	0		8.4				8.4	Oct/4/99	99 OPS 05										
OP	2129	C	0	0	0	0	0	0		11.7				11.7	Oct/4/99	99 OPS 05										
OP	2130	C	0	0	0	0	0	0		6.1				6.1	Oct/4/99	99 OPS 05										
OP	2131	C	0	0	0	0	0	0		8.9				8.9	Oct/4/99	99 OPS 05										
OP	2132	C	0	0	0	1	0	0	CHR: broken grain - both pieces enclosed	17.1				17.1	Oct/12/99	99 OPS 06										
OP	2133	C	0	0	0	0	0	0	sulphide: noted	5.6				5.6	Oct/6/99	99 OPS 06										
OP	2134	C	0	0	0	0	0	0		4.0				4.0	Sep/21/99	99 OPS 04										
OP	2135	C	0	5	1	0	0	2		8.5				8.5	Sep/21/99	99 OPS 04										
OP	2136	C	0	0	0	0	0	3		5.7				5.7	Sep/17/99	99 OPS 03										
OP	2137	C	0	0	0	0	0	1		4.7				4.7	Sep/16/99	99 OPS 03										
OP	2138	C	0	0	0	0	0	0		4.7				4.7	Sep/17/99	99 OPS 03										
OP	2139	C	0	0	0	0	0	0		10.8				10.8	Oct/4/99	99 OPS 05										
OP	2140	C	8	3	2	0	0	2		11.6				11.6	Sep/17/99	99 OPS 03										
OP	2141	C	0	0	0	0	0	0		1.3				1.3	Sep/17/99	99 OPS 03										
OP	2142	C	0	0	0	0	0	0		2.0				2.0	Sep/17/99	99 OPS 03										
OP	2143	C	0	0	0	0	0	0		4.7				4.7	Oct/4/99	99 OPS 05										
OP	2144	C	0	0	0	0	0	0		2.2				2.2	Sep/22/99	99 OPS 04										
OP	2145	C	210	299	7	57	0	0	OTH: 20; SEE "INSERT NOTE"	10.6				10.6	Sep/20/99	99 OPS 03										
OP	2146	C	6	2	0	9	0	0	PYR: with orange peel texture; CHR: several resorbed &/or	5.1				5.1	Oct/1/99	99 OPS 05										
OP	2147	C	10	4	1	4	0	0	OTH: 1 milky grain - PYR? ECL?	4.0				4.0	Oct/4/99	99 OPS 05										
OP	2148	C	1	1	1	1	0	0		1.5				1.5	Sep/21/99	99 OPS 04										
OP	2149	C	2	3	0	3	0	0		4.7				4.7	Sep/17/99	99 OPS 03										
OP	2150	C	3	0	0	4	0	0		2.4				2.4	Oct/1/99	99 OPS 05										
OP	2151	C	1	0	0	2	0	0		1.4				1.4	Sep/20/99	99 OPS 03										
OP	2152	C	0	0	9	0	0	0	ILM: possibly crustal?	2.7				2.7	Nov/4/99	99 OPS 10				9						9
OP	2153	C	0	0	3	0	0	0		2.0				2.0	Sep/17/99	99 OPS 03										
OP	2154	C	2	0	3	0	0	0	ILM: possibly crustal?	3.6				3.6	Nov/4/99	99 OPS 10				9						5
OP	2155	C	5	3	1	0	0	0		4.9				4.9	Sep/20/99	99 OPS 03										
OP	2156	C	1	1	1	0	0	0	SEE "INSERT NOTE"	4.1				4.1	Oct/13/99	99 OPS 07										
OP	2157	C	15	20	1	0	0	0	OTH: 3 milky orange/pink grains - ECL?	5.8				5.8	Sep/21/99	99 OPS 04										
OP	2158	C	25	12	5	6	0	0	OTH: 13 milky orange/pink - PYR? ECL?	6.5				6.5	Oct/1/99	99 OPS 05										
OP	2159	C	0	0	0	0	0	0		2.6				2.6	Sep/21/99	99 OPS 04										

OPUS RESOURCES

SAMPLE	NO.	SIZE	PYR	ECL	ILM	CHR	CD	OL	COMMENTS	NS 1 (g)	NS 2 (g)	ND (g)	MAG (g)	TOTAL (g)	DATE	PICK BATCH#	P	PP	Y	EC	P/L	N/P	CH	P/CD	P/ZR	P/OL	P/OT	P/SU	
OP	2160	C	0	0	0	0	0	0		1.8				1.8	Sep/17/99	99 OPS 03													
OP	2161	C	1	0	0	0	0	0		3.7				3.7	Sep/20/99	99 OPS 03													
OP	2162	C	0	0	0	0	0	1		6.5				6.5	Sep/20/99	99 OPS 03													
OP	2163	C	0	0	0	0	0	0		6.9				6.9	Sep/20/99	99 OPS 03													
OP	2164	C	1	1	0	7	0	5	PYR: reddish	23.2				23.2	Oct/13/99	99 OPS 07													
OP	2165	C	2	1	0	0	0	0	OTH: 2 milky grains-altered ECL?	5.2				5.2	Sep/20/99	99 OPS 03													
OP	2166	C	0	0	0	0	0	0		6.9				6.9	Oct/4/99	99 OPS 05													
OP	2167	C	0	0	0	0	0	0		0.4				0.4	Nov/4/99	99 OPS 10													
OP	2168	C	50	34	2	10	2	0	SEE "INSERT NOTE"	2.7				2.7	Sep/20/99	99 OPS 03													
OP	2169	C	0	8	66	0	0	0	ILM: possibly crustal?	87.6		63.3		150.9	Nov/5/99	99 OPS 10			8		66								74
OP	2170	C	0	0	0	0	0	0		0.6				0.6	Sep/20/99	99 OPS 03													
OP	2171	C	0	0	0	0	0	0		4.0				4.0	Sep/21/99	99 OPS 03													
OP	2172	C	0	0	0	0	0	0		2.5				2.5	Sep/20/99	99 OPS 03													
OP	2173	C	0	0	1	0	0	0		10.2				10.2	Nov/4/99	99 OPS 10													1
OP	2174	C	0	0	0	2	0	0		68.0				68.0	Sep/21/99	99 OPS 03													
OP	2175	C	0	0	0	0	0	0		0.3				0.3	Sep/22/99	99 OPS 04													
OP	2176	C	0	0	0	0	0	0		4.1				4.1	Oct/13/99	99 OPS 07													
OP	2177	C	0	0	0	0	0	0		3.0				3.0	Oct/4/99	99 OPS 05													
OP	2178	C	0	0	0	0	0	0		0.4				0.4	Sep/20/99	99 OPS 03													
OP	2179	C	0	0	0	0	0	0		2.6				2.6	Sep/21/99	99 OPS 03													
OP	2180	C	0	6	0	0	0	0	ECL: questionable	13.3				13.3	Nov/5/99	99 OPS 10				6									6
OP	2181	C	0	0	0	0	0	0		0.3				0.3	Sep/22/99	99 OPS 04													
OP	2182	C	0	0	0	0	0	0		0.6				0.6	Oct/1/99	99 OPS 05													
OP	2183	C	0	0	0	0	0	0		2.2				2.2	Sep/21/99	99 OPS 04													
OP	2184	C	0	0	0	0	0	0		0.3				0.3	Sep/22/99	99 OPS 04													
OP	2185	C	0	0	0	0	0	0		0.1				0.1	Oct/4/99	99 OPS 05													
OP	2186	C	0	0	0	0	0	0		2.6				2.6	Sep/22/99	99 OPS 04													
OP	2187	C	0	0	0	0	0	0		0.7				0.7	Sep/21/99	99 OPS 04													
OP	2188	C	0	0	0	0	0	0		<0.1				<0.1	Sep/22/99	99 OPS 04													
OP	2189	C	0	0	0	0	0	0		3.2				3.2	Oct/1/99	99 OPS 05													
OP	2190	C	0	0	0	0	0	0		11.0				11.0	Sep/20/99	99 OPS 03													
OP	2191	C	0	0	0	0	0	0		0.7				0.7	Sep/22/99	99 OPS 04													
OP	2192	C	0	0	0	0	0	0		0.9				0.9	Oct/1/99	99 OPS 05													
OP	2193	C	0	0	0	0	0	0		2.5				2.5	Sep/22/99	99 OPS 04													
OP	2194	C	0	0	0	0	0	0		6.8				6.8	Oct/4/99	99 OPS 05													
OP	2195	C	0	0	0	0	0	0		<0.1				<0.1	Oct/1/99	99 OPS 05													
OP	2196	C	0	0	0	0	0	0		0.2				0.2	Oct/1/99	99 OPS 05													
OP	2197	C	0	2	1	1	0	0	sulphide: noted	16.4				16.4	Oct/8/99	99 OPS 06													
OP	2198	C	0	0	0	0	0	0		4.2				4.2	Sep/21/99	99 OPS 03													
OP	2199	C	0	0	2	1	0	0		3.8				3.8	Sep/23/99	99 OPS 04													
OP	2200	C	0	1	0	13	1	0		35.8				35.8	Oct/13/99	99 OPS 07													
OP	2201	C	0	0	0	0	0	0		6.1				6.1	Oct/13/99	99 OPS 07													
OP	2202	C	0	0	0	0	0	0		9.6		3.2		12.8	Oct/8/99	99 OPS 06													
OP	2203	C	0	0	0	0	0	0		4.6				4.6	Oct/12/99	99 OPS 06													
OP	2204	C	3	1	3	1	0	0		3.1				3.1	Nov/5/99	99 OPS 10			3		1		3		1				8
OP	2205	C	0	0	0	0	0	0		3.4				3.4	Oct/8/99	99 OPS 06													
OP	2206	C	0	0	0	0	0	0		6.1				6.1	Oct/8/99	99 OPS 06													
OP	2207	C	0	0	0	0	0	3		0.8				0.8	Oct/8/99	99 OPS 06													
OP	2208	C	1	2	0	51	1	4	CHR: excellent, resorbed. 1 broken grain - both pieces	4.3				4.3	Oct/12/99	99 OPS 06													
OP	2209	C	6	1	1	42	0	15	SEE "INSERT NOTES"	3.6				3.6	Oct/14/99	99 OPS 07													
OP	2210	C	83	128	32	6	0	0	ECL: several milky altered orange grains	14.1				14.1	Oct/27/99	99 OPS 09			83		128		32		6				249
OP	2211	C	14	12	3	0	0	0		7.7				7.7	Oct/27/99	99 OPS 09			14		12		3						29
OP	2212	C	0	2	0	0	0	0		7.9				7.9	Oct/8/99	99 OPS 06													

OPUS RESOURCES

SAMPLE	NO.	SIZE	PYR	ECL	ILM	CHR	CD	OL	COMMENTS	NS 1 (g)	NS 2 (g)	ND (g)	MAG (g)	TOTAL (g)	DATE	PICK BATCH#	P/PY	P/E	P/LN	P/CH	P/CL	P/ZR	P/OL	P/OT	P/SU
OP	2213	C	1	1	0	0	0	0	PYR: reddish	2.7				2.7	Oct/8/99	99 OPS 06									
OP	2214	C	2	1	0	0	0	1		5.6				5.6	Nov/4/99	99 OPS 10	2	1					1		4
OP	2215	C	0	0	0	0	0	0		3.9				3.9	Oct/29/99	99 OPS 09									
OP	2216	C	8	8	0	0	0	1	PYR 2 red, 1 altered shear plane	4.5				4.5	Oct/13/99	99 OPS 07									
OP	2217	C	1	3	1	1	0	4	UVA	3.5				3.5	Oct/27/99	99 OPS 09	1	3	1	1			4	1	11
OP	2218	C	1	4	0	1	0	0		8.3				8.3	Oct/27/99	99 OPS 09	1	4		1					6
OP	2219	C	2	0	0	0	0	1	SEE "INSERT NOTE"	7.2				7.2	Oct/13/99	99 OPS 07									
OP	2220	C	3	1	0	0	0	0		18.3				18.3	Oct/12/99	99 OPS 06									
OP	2221	C	0	10	0	0	0	2		17.1				17.1	Oct/29/99	99 OPS 09		10					2		12
OP	2222	C	0	12	0	3	0	0		5.3				5.3	Oct/28/99	99 OPS 09		12		3					15
OP	2223	C	0	0	0	0	0	0		2.3				2.3	Oct/12/99	99 OPS 06									
OP	2224	C	0	0	0	0	0	0		15.5				15.5	Oct/8/99	99 OPS 06									
OP	2225	C	0	0	0	0	0	9		10.9				10.9	Oct/28/99	99 OPS 09							9		9
OP	2226	C	0	0	0	0	0	0		3.0				3.0	Nov/1/99	99 OPS 09									
OP	2227	C	0	0	0	0	0	0		3.8				3.8	Nov/2/99	99 OPS 09									
OP	2228	C	0	0	0	0	0	0		4.9				4.9	Nov/2/99	99 OPS 09									
OP	2229	C	0	0	0	0	0	0		3.2				3.2	Nov/1/99	99 OPS 09									
OP	2230	C	0	0	0	0	0	0		8.4				8.4	Nov/3/99	99 OPS 09									
OP	2231	C	0	1	0	0	0	0		2.7				2.7	Oct/12/99	99 OPS 06									
OP	2232	C	0	0	0	0	0	0		1.4				1.4	Oct/13/99	99 OPS 07									
OP	2233	C	0	0	1	0	0	0		2.5				2.5	Nov/1/99	99 OPS 09			1						1
OP	2234	C	0	0	0	0	0	1		1.9				1.9	Oct/28/99	99 OPS 09							1		1
OP	2235	C	0	0	0	2	0	0		4.6				4.6	Oct/28/99	99 OPS 09				2					2
OP	2236	C	0	2	2	0	0	0		8.2				8.2	Nov/5/99	99 OPS 10		2	2						4
OP	2237	C	0	0	0	0	0	0		2.2				2.2	Nov/5/99	99 OPS 10									
OP	2238	C	0	0	0	0	0	0		1.5				1.5	Oct/12/99	99 OPS 06									
OP	2240	C	0	1	2	0	0	0	ECL: milky orange grains	2.7				2.7	Nov/1/99	99 OPS 09	1	2							3
OP	2241	C	0	0	0	0	0	0		1.1				1.1	Oct/28/99	99 OPS 09									
OP	2242	C	0	0	0	0	0	0		0.4				0.4	Oct/12/99	99 OPS 06									
OP	2243	C	0	0	0	0	0	0		2.2				2.2	Oct/13/99	99 OPS 07									
OP	2244	C	0	0	0	0	0	0		2.2				2.2	Oct/28/99	99 OPS 09									
OP	2245	C	0	0	0	0	0	0		2.7				2.7	Nov/4/99	99 OPS 10									
OP	2246	C	0	0	0	0	0	0		1.6				1.6	Oct/13/99	99 OPS 07									
OP	2247	C	0	0	0	0	0	0		2.5				2.5	Jan/1/99	99 OPS 09									
OP	2248	C	0	0	0	0	0	0		0.8				0.8	Oct/28/99	99 OPS 09									
OP	2249	C	0	0	2	0	0	0		1.5				1.5	Oct/28/99	99 OPS 09									
OP	2250	C	0	0	0	7	1	2	CORUNDUM: 7	58.8				58.8	Oct/14/99	99 OPS 07			2						2
OP	2251	C	0	1	28	0	2	0	ILM: possibly crustal?	11.1				11.1	Nov/1/99	99 OPS 09	1	28		2					31
OP	2252	C	0	0	7	0	0	0	ILM: possibly crustal?	2.4				2.4	Oct/28/99	99 OPS 09									7
OP	2253	C	0	0	0	2	2	0	CD: ?	19.3				19.3	Oct/14/99	99 OPS 07									
OP	2254	C	0	2	39	0	0	0	ILM: possibly crustal?	33.1				33.1	Oct/29/99	99 OPS 09	2	39							41
OP	2255	C	0	0	3	0	0	0	ILM: possibly crustal?	6.6				6.6	Nov/1/99	99 OPS 09				3					3
OP	2256	C	0	0	0	0	0	0		2.8				2.8	Nov/5/99	99 OPS 10									
OP	2257	C	0	0	0	0	0	0		0.1				0.1	Oct/14/99	99 OPS 07									
OP	2258	C	0	0	0	0	0	0		0.1				0.1	Oct/13/99	99 OPS 07									
OP	2259	C	0	0	4	0	0	0	ILM: possibly crustal?	8.4				8.4	Oct/28/99	99 OPS 09			4						4
OP	2260	C	0	0	13	0	0	1	ILM: possibly crustal?	58.4				58.4	Oct/29/99	99 OPS 09			13				1		14
OP	2261	C	0	1	18	0	10	1	ILM: possibly crustal? CD, low Cr	94.2		51.5		145.7	Nov/2/99	99 OPS 09	1	18		10		1		30	
OP	2262	C	0	0	2	0	0	0	ILM: possibly crustal? granular, brittle	74.3				74.3	Oct/29/99	99 OPS 09			2						2
OP	2263	C	0	7	7	0	4	0	ILM: possibly crustal?	65.9				65.9	Nov/5/99	99 OPS 10		7	7		4				18
OP	2264	C	0	0	6	0	0	0	ILM: possibly crustal?	66.3				66.3	Nov/1/99	99 OPS 09				6					6
OP	2265	C	0	0	11	0	4	0	ILM: possibly crustal? 2 granular, brittle	33.8				33.8	Nov/2/99	99 OPS 09			11		4				15
OP	2266	C	1	0	2	0	0	0	ILM: possibly crustal? OTH: unknown, possibly garnet?	27.6				27.6	Nov/1/99	99 OPS 09	1		2					1	4

OPUS RESOURCES

SAMPLE	NO.	SIZE	PYR	ECL	ILM	CHR	CD	OL	COMMENTS	NS 1 (g)	NS 2 (g)	ND (g)	MAG (g)	TOTAL (g)	DATE	PICK BATCH#	P/PY	P/EC	P/LN	P/CH	P/CI	P/ZR	P/OL	P/OT	P/SU
OP	2267	C	0	0	16	0	0	0	ILM: possibly crustal?	17.9				17.9	Nov/1/99	99 OPS 09			16						16
OP	2268	C	0	25	56	0	16	10	ILM: some are possibly crustal?	106.9				106.9	Nov/8/99	99 OPS 10		25	56		16			10	107
OP	2269	C	0	0	2	0	0	0	ILM: possibly crustal?	17.1				17.1	Nov/2/99	99 OPS 09			2						2
OP	2270	C	1	2	2	0	0	0		19.3				19.3	Oct/21/99	99 OPS 08									
OP	2271	C	0	0	7	0	0	0		4.3				4.3	Nov/5/99	99 OPS 10			7						7
OP	2272	C	0	0	0	0	0	0		0.3	0.7			1.0	Nov/1/99	99 OPS 09									
OP	2273	C	0	0	2	0	0	0		1.0				1.0	Nov/1/99	99 OPS 09			2						2
OP	2274	C	0	0	0	0	0	0		1.7				1.7	Nov/2/99	99 OPS 09									
OP	2278	C	0	0	1	0	0	0		2.2				2.2	Nov/4/99	99 OPS 10									1
OP	2279	C	0	0	3	0	0	0	ILM: possibly crustal?	2.5				2.5	Nov/1/99	99 OPS 09			3						3
OP	2280	C	0	0	1	0	0	0	ILM: possibly crustal?	2.4				2.4	Nov/1/99	99 OPS 09			1						1
OP	2281	C	0	0	2	1	0	0	ILM: possibly crustal?	6.3				6.3	Nov/2/99	99 OPS 09			2	1					3
OP	2282	C	10	18	9	0	0	0	PYR: 1 lost, ECL several milky orange grains	3.7				3.7	Nov/1/99	99 OPS 09	9	18							
OP	2283	C	0	1	1	0	0	0		4.2				4.2	Nov/2/99	99 OPS 09		1	1						
OP	2284	C	0	0	0	0	0	0		2.6				2.6	Oct/20/99	99 OPS 08									
OP	2285	C	0	0	0	0	0	0		2.1				2.1	Oct/8/99	99 OPS 06									
OP	2286	C	0	0	0	0	0	0		2.1				2.1	Oct/14/99	99 OPS 07									
OP	2287	C	0	0	0	0	0	0		5.5				5.5	Nov/2/99	99 OPS 09									
OP	2288	C	0	1	6	1	0	0		7.5				7.5	Nov/5/99	99 OPS 10		1	6	1					8
OP	2289	C	0	0	1	2	0	0		2.7				2.7	Nov/1/99	99 OPS 09			1	2					
OP	2290	C	0	0	0	0	0	0		1.1				1.1	Nov/2/99	99 OPS 09									
OP	2291	C	0	0	0	0	0	0		2.4				2.4	Oct/14/99	99 OPS 07									
OP	2292	C	0	0	1	0	0	0		2.1				2.1	Oct/21/99	99 OPS 08									
OP	2293	C	0	0	0	0	0	0		9.5				9.5	Nov/2/99	99 OPS 09									
OP	2294	C	0	0	0	0	0	0		1.5				1.5	Nov/5/99	99 OPS 10									

OPUS RESOURCES

**Note:** OP2053  
PYR: kelyphitic rim, orange peel texture,  
altered shear planes, 5 reddish  
ECL: many altered shear planes, some  
fresh  
CHR: many likely zoned, some resorbed  
some possibly ILM

**Note:** OP 2075  
PYR: 6 reddish, kelyphitic rim, orange  
peel texture, altered shear planes  
ECL: altered shear planes, many milky  
orange grains  
CHR: several resorbed

**Note:** ECL: several orpeel +/- ASP OP 2107  
ILM: 2 ZONED? several likely crustal  
OTH: 3 milky grains - altered PYR? ECL?

**Note:** PYR: some with kely, orpeel texture and some ASP, various colours - red to dark purple OP 2145  
ECL: a few kely, many ASP, various shades orange  
OTH: milky purplish, pink and orange, some ASP -- PYR? ECL?

**Note:** OP 2156  
PYR: reddish, altered shear planes  
ECL: altered shear planes

**Note:** ECL: excellent, several w/ orpeel, ASP OP 2168  
CHR: 2 partially resorbed  
OTH: 23 milky grains - altered ECL? &/or  
PYR?

**Note:** OP 2209  
CHR: most round - sub round, resorbed  
sulphide, noted

**Note:** OP 2219  
PYR: reddish-orange, altered shear  
planes, possibly ECL?

**APPENDIX F**  
**Petrographic Results**

Eric,  
These are reports on K-01, discovery pipe  
and Kim 02 & K-03 the two boulder trains  
for which Paul Pitman was able to bring back in  
August.

**THE PETROGRAPHY OF SAMPLES  
FROM THREE KIMBERLITES**

Prepared for

**OPUS MINERALS**  
Suite 745  
1 First Canadian Place  
Toronto, Ont.  
M5X 1E2  
CANADA

8 December, 1999

## 1.0 INTRODUCTION

Seven samples, from kimberlites KIM-01 to KIM-03, were submitted by Bill Jarvis in late August. The samples were dispatched for urgent thin section production upon receipt and a summary of results communicated by e-mail at the end of August. Photomicrographs are appended.

The classifications are *based* on papers by Skinner & Clement (1979) and Clement & Skinner (1985). The "Diamond Carrying Capacity Rating" given for each sample is a guide to the degree of success that the kimberlite magma had in bringing diamonds to the surface and is not meant as a direct guide to the grade of the kimberlite, but will indicate that the grade will be similar to, or less than that suggested by indicator mineral chemistry or microdiamond recoveries. Note that a barren kimberlite can have a good Diamond Carrying Capacity, but is barren due to the probability that it did not successfully sample the Diamond Stability Field!

## 2.0 SUMMARY

The petrographic features of each sample are summarised in Table 1, below.

Table 1: Summary of Salient Petrographic Features						
Sample	Texture	% Olivine Macrocrysts	% Country Rock	Mineralogica I Classifctn.	Facies	Diamond potential
KIM-01 F1	W. segr, poorly Macrocrystic	5	0	Chloritised monticellite	Hypabyssal	Poor
KIM-01 F2	Moderately Macrocrystic Breccia	15	30%	Chloritised monticellite	Hypabyssal	Moderate
KIM-01 F3	Poorly-Mod. Macrocrystic	10	<2	Chloritised monticellite	Hypabyssal	Poor- moderate
KIM-02 F1	Granular	Altered Garnet Peridotite (mantle nodule)				
KIM-02 F2	Segregationary mod macrox.	15-20	1	Chloritised monticellite	Hypabyssal	Moderate
KIM-02 F3	W. Segr. Mod macrocrystic	15	0	Chloritised monticellite	Hypabyssal	Moderate
KIM-03 F1	Segregationary mod macrox.	15-20	1	Chloritised monticellite	Hypabyssal	Moderate

All of the samples are of hypabyssal facies. Textures vary from poorly macrocrystic to moderately macrocrystic, with some having weakly to relatively well developed segregation's. All are probable altered monticellite kimberlites of Group-I variety and ilmenite can thus be expected in the concentrates unless they are ilmenite-free Group-I kimberlites. The samples from KIM-02 and KIM-03 show a broad alignment of the coarser components, suggestive of flow alignment within a pipe, or alternatively indicating that the samples from these kimberlites may represent fissures or sills. Sample KIM-03 F1 is identical to KIM-02 F2 suggesting that they derive from the same intrusive.

### 3.0 PETROGRAPHY

#### 3.1 KIM01

##### 3.1.1 Sample F1

The hand specimen is greenish-grey in colour and poorly macrocrystic. The olivine macrocrysts account for <10% and occur as oval, dark green grains up to 4mm in size. A single larger specimen, 11mm in size is present. A single large (25mm), pale green, totally altered CRX is present. These are set in a fine-grained grey-green matrix containing white carbonate. The sample resembles a poorly macrocrystic kimberlite of hypabyssal facies.

Microscopically, the sample is weakly segregationary and poorly macrocrystic, with olivine macrocrysts accounting for 5%. They are unevenly distributed, occurring as yellow, serpentinised, anhedral to oval grains, generally 1.5-3mm in size, with a maximum of 5mm. Minor replacement by calcite has occurred in some cases. Some of the macrocrysts show slightly complex or embayed margins, indicative of reaction with the kimberlite magma. No country rock fragments (hereafter referred to as "CRX") are present.

The matrix consists of serpentinised olivine phenocrysts up to 1mm in size, and microphenocrysts (<0.5mm). These are generally subhedral in shape, with occasional aggregates of two grains present. The olivine's are surrounded by green chlorite. This occasionally has a granular texture, suggestive of monticellite. Calcite, minor colourless sub-poikilitic phlogopite, opaque spinels ( $\leq 0.02$ mm) and lesser sphene ( $\leq 0.05$ mm) after probable perovskite are also present. Portions of the matrix are segregationary, with irregular "pools" of calcite and chlorite present.

Texturally, the sample is a weakly segregationary and poorly macrocrystic kimberlite of hypabyssal facies. Mineralogically, it is classified as an altered, possible monticellite kimberlite. The Diamond Carrying Capacity is considered to be poor, based primarily on the paucity of olivine macrocrysts and to a lesser degree on the presence of embayed margins on some of the latter.

##### 3.1.2 Sample F2

The hand specimen is moderately macrocrystic and contains numerous (30%) white and pale patches of what appear to be altered CRX. The olivine macrocrysts are greenish-brown, oval in outline and reach 7mm in size. These, together with the CRX, are set in a fine-grained matrix. The sample resembles a kimberlite breccia of hypabyssal facies.

Microscopically, the sample has been severely contaminated by abundant CRX. These are totally altered, having been replaced by carbonate and clays, and partially "kimberlitised", as evidenced by their partial replacement by phlogopite. In addition, clinopyroxene is scattered throughout, having formed as a result of the contamination. Several lesser altered patches are present, providing clues as to the original mineralogy.

Overall, it is moderately macrocrystic, with olivine macrocrysts accounting for 15%. These have been replaced by yellow serpentine and have anhedral to oval outlines. Minor embayment of the margins is evident. They are generally 1-3mm in size, reaching 7mm. The CRX account for 30% and reach 14mm in size. The larger ones are altered, with the smaller ones showing evidence of more complete "kimberlitisisation".

The matrix is dominated by both fine and coarse-grained cpx. as a result of reaction between the CRX and the magma for up to 14mm from the CRX fragments. The lesser contaminated portions consist of serpentised, subhedral and lesser euhedral olivine phenocrysts and microphenocrysts, some occurring as multiple grain aggregates, predominant chlorite granules after monticellite, typically 0.02mm in size, scattered phlogopite, relatively abundant partially altered (to sphene) and fresh perovskite (generally <0.02mm, but up to 0.1mm being common) and minor opaques <0.02mm in size.

Texturally, the sample is classified as a moderately macrocrystic kimberlite breccia of hypabyssal facies. Mineralogically, it is an altered and contaminated, probable monticellite kimberlite. The Diamond Carrying Capacity is considered to be moderate.

### **3.1.3 Sample F3**

The sample is green-blue in colour, with pale greenish and black, probable altered olivine macrocrysts set in a fine-grained greenish matrix. The olivine macrocrysts are oval in shape and account for around 12%. Most are <4mm in size, with a few larger black ones being in excess of 8mm. The sample resembles a poorly to moderately macrocrystic kimberlite of hypabyssal facies.

Texturally, the sample is poorly-to-moderately macrocrystic with olivine macrocrysts making-up 10% of the sample. These occur as anhedral to oval grains, up to 4mm in size, generally being 1.5-3mm. They are serpentised, and partially replaced by secondary opaques and carbonate. No evidence of embayed margins is present. A few (<2%) altered CRX are present.

The matrix consists of altered olivine phenocrysts and chloritised microphenocrysts with chlorite and clay, and relatively abundant secondary opaques up to 0.08mm. Primary opaques with euhedral outlines are  $\leq 0.04$ mm in size. Occasional scattered perovskite up to 0.04mm is present as are cubic, colourless, high relief granules up to 0.03mm.

Texturally, the sample is a poorly-to-moderately macrocrystic kimberlite of hypabyssal facies. Mineralogically, it is an altered, possible monticellite kimberlite. The Diamond Carrying Capacity is considered to be poor-to-moderate.

## **3.2 KIM-02**

### **3.2.1 Sample F1**

Macroscopically, the sample is grey-green in colour and contains several large (up to 10mm) vugh-like cavities. Close observation shows that mantle-derived garnet is present within these cavities. The cut surface shows a broad alignment of the long axes of components, with rounded or oval brown relicts present. The sample resembles a possible sheared nodule, possible a garnet peridotite.

Microscopically, the sample has mosaic porphyroclastic texture (Harte 1977), with pseudomorphs of highly strained grains 3-9mm in size of probable olivine and occasional (5-10%) altered garnets, surrounded by a mosaic of altered, smaller (<1mm) neoblasts of olivine. Secondary phases that have replaced olivine include talc, serpentine and an unidentified phase.

Based on textural and mineralogical characteristics, the sample is classified as a possible sheared garnet peridotite of mantle derivation.

### 3.2.2 Sample F2

Macroscopically, the sample is dark grey and hard. It is too small to be adequately described. Reddish-brown and greyish olivine macrocrysts up to 4mm in size, are set in a fine-grained, mottled matrix containing relatively abundant white carbonate, possibly as segregation's. The macrocrysts are relatively abundant, accounting for around 15%. The sample resembles a possibly segregatory, moderately macrocrystic kimberlite of hypabyssal facies.

Microscopically, it is segregatory, with relatively abundant olivine macrocrysts present. The latter account for 15-20%, are oval in outline, but commonly show embayed margins with occasional "dog-tooth" textures. Sizes range between 1-5mm. They are serpentinised with secondary opaques and iron hydroxides replacing them in addition to minor replacement by calcite. A single, totally altered CRX, 3.5mm in size is present. The long axes of the olivine macrocrysts show a broad alignment.

The matrix is segregatory, with irregular segregation's of calcite throughout. Serpentinised olivine phenocrysts ( $\leq 1$ mm, with scattered aggregates of two or more grains) and microphenocrysts are surrounded by chlorite, the latter being distinctly granular in some portions, typically  $< 0.02$ mm in size. The granular nature of the chlorite and the size of the granules are suggestive of replacement after monticellite. Scattered opaques ( $< 0.02$ mm) and relatively abundant perovskite up to 0.05mm in size are also present in addition to secondary opaques.

Texturally, the sample is classified as a segregatory, macrocrystic kimberlite of hypabyssal facies. Mineralogically, it is a serpentinised and chloritised, probable monticellite kimberlite. The Diamond Carrying Capacity is considered to be moderate, having been downgraded from moderate-to-good due to evidence of reaction (embayed olivine macrocrysts). The alignment of the olivine macrocrysts suggests flow alignment within a pipe, or alternatively suggesting that the samples from this kimberlite may represent fissures or sills where flow alignment is commonly observed.

### 3.2.3 Sample F3

Macroscopically, the sample is hard, dark blue-grey and appears to be poorly to moderately macrocrystic. Two large ( $> 4$ mm) reddish probable olivine macrocrysts are set in a fine-grained, blue-grey matrix. The sample appears to be a poorly-to-moderately macrocrystic kimberlite of hypabyssal facies.

Microscopically, the sample is moderately macrocrystic, and weakly segregatory, with segregation's present in patches rather than being distributed throughout. The olivine macrocrysts (15%) occur as oval to somewhat anhedral grains, 2-6mm in size, most being around 3mm. They are serpentinised, with partial replacement by secondary opaques and iron hydroxides. No embayments were observed. Their long axes show a distinct alignment.

The matrix consists of serpentinised and chloritised olivine phenocrysts and predominant microphenocrysts with subhedral shapes. Occasional aggregates are present. These are surrounded by predominant chlorite, with relatively coarse-grained (up to 0.07mm) opaques (secondary??) and lesser similarly sized perovskite. Interstitial, late-stage fine-grained phlogopite is present throughout. The chlorite sometimes exhibits relic granular textures possibly after monticellite. Isolated irregular patches of chlorite present probably represent early-stage segregation's.

Texturally, the sample is weakly segregationary and moderately macrocrystic. Mineralogically, it is a chloritised, probable monticellite kimberlite. The Diamond Carrying Capacity is considered to be moderate. The alignment of the olivine macrocrysts suggests flow alignment within a pipe, or alternatively suggesting that the samples from these kimberlites may represent fissures or sills where flow alignment is commonly observed. This sample differs sufficiently from KIM-02 F2 to suggest that it may represent a different intrusion.

### 3.3 KIM-03

#### 3.3.1 Sample F1

Macroscopically, the sample is hard, with a greenish-grey weathered surface and a dark grey to black fresh surface. Olivine macrocrysts are relatively abundant (12%), occurring as dark oval to irregular grains up to 9mm in size. An indistinct alignment of their long axes is present. They are set in a fine-grained, dark matrix containing small white carbonate patches, generally <1mm in size. A single garnet xenocryst, 2.5mm in size, with a kelyphite is present. The sample is a moderately macrocrystic kimberlite of hypabyssal facies and may be weakly segregationary.

Microscopically, this sample is identical to KIM-02 F2 and no additional description is required.

## 4.0 DISCUSSION & CONCLUSIONS

4.1 All of the samples are of hypabyssal facies. None are highly macrocrystic, although those from KIM-02 and KIM-03 are more encouraging (the Diamond Carrying Capacity is higher) than the KIM-01 samples.

4.2 The majority of the samples contain olivine macrocrysts with some degree of embayed margins. This is indicative of "extended" reaction between the macrocrysts and the magma and thus a negative feature with respect to the magma's Diamond Carrying Capacity. However, in the case of these samples, this is not severe and should not be regarded as a "large" negative..

4.3 Alignment of the coarser components, such as that in the samples from KIM-02 & 03 is normally indicative of fissures or sills. However, flow-alignment is present within pipes.

4.4 All of the samples, excepting KIM-02 F1 which is a mantle-derived nodule, have broad textural and mineralogical similarities, suggesting that they are part of the same kimberlite "event" (cluster). The similarity between KIM-02 F2 and KIM-03 F1 suggests that they are part of the same intrusive.

4.5 If indicator mineral geochemistry has not yet been undertaken, it is recommended that this be done. Should this be relatively encouraging, Ni-thermometry on the garnets and possibly microdiamond analyses should also be undertaken.

### 5.0 REFERENCES

- Harte B. (1977). Rock nomenclature with particular relation to deformation and recrystallisation textures in olivine-bearing xenoliths. *J. Geol.* **85**. 279-288.
- Clement C.R. & Skinner E.M.W. (1985). A textural genetic classification of kimberlites. *Trans. Geol. Soc. Afr.* **88**(2) 403-409.
- Skinner E.M.W. & Clement C.R. (1979). Mineralogical classification of southern African kimberlites. In Boyd F.R. and Meyer H.O.A., eds, *Kimberlites, Diatremes and Diamonds: Their geology, petrology and geochemistry*, pp. 129-139. A.G.U., Washington.

P. Zweistra  
8 December, 1999

**APPENDIX G**  
**Certificates of Analysis**

002/014 P.02

# LAKEFIELD RESEARCH LIMITED

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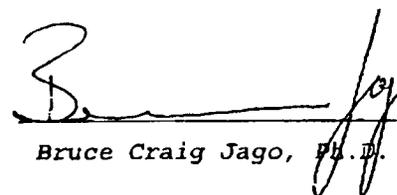
Attn : Bill Jarvis  
Fax : (416) 364-0618

Lakefield, September 10, 1999

Date Rec. : August 25, 1999  
LR. Ref. : AUG0010.R99  
Reference : LR9902280  
Project : 8901-217

## CERTIFICATE OF ANALYSIS

No.	Sample ID	Wt # Pours kg	Dia #	Dia ct
1	Sample #1(K-1) 24.29	3	2	0.000
2	Sample #2(K-1) 24.24	3	0	0.000
3	Sample #3(K-2) 21.78	3	0	0.000



Bruce Craig Jago, Ph.D.

Accredited by the Standards Council of Canada to the ISO/IEC Guide 25 Standard for specific registered tests.

This report refers to the samples as-received. Lakefield Research Limited is not responsible for the determination of origin, quality, or value of any diamonds recovered.

12/08/99 19:41 FAX  
09-13-99 15:04 MINEROLOGY

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Fax : (416) 364-0618

Lakefield, October 6, 1999

Date Rec. : September 27, 1999  
LR. Ref. : SEP0015.R99  
Reference : LR9902589  
Project : 8901-217

## CERTIFICATE OF ANALYSIS

No.	Sample ID	Wt # Pours kg	Dia #	Dia ct
1	K-05 OTC-1	23.64	4	0 0.000
2	8 K-01 (N)	23.10	4	0 0.000
3	9 K-01 (E)	22.42	4	0 0.000

  
Bruce Craig Jago, Ph.D.

Accredited by the Standards Council of Canada to the ISO/IEC Guide 25 Standard for specific registered tests.

This report refers to the samples as-received. Lakefield Research Limited is not responsible for the determination of origin, quality, or value of any diamonds recovered.

DEC 08 '99 17:03

PAGE: 03

10-07-99 12:03 MINEROLOGY 12/08/99 19:48 FAX

ID=7056523123 +++ ERIC CRAIG JAGO

0003/013 P.03

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September 13, 1998

## DIAMOND RECOVERY BY CAUSTIC DISSOLUTION

Project: 8901-217

Client: Opus Minerals Inc.

Selection

LIMS No. Aug0010.R99

Sample No. Sample # 1

Sample Weight: 24.29 kg.

QC

No.	Stone Dimension, mm			Weight		Colour	Clarity	Percent Preservation	Stone Description Morphology
	X	Y	Z	mg	Carats				
<b>-350 / + 600 µm fraction</b>									
0					0.000000				
0				0.000	0.000000	Sub-Total			
<b>-800 / + 425 µm fraction</b>									
0					0.000000				
0				0.000	0.000000	Sub-Total			
<b>-425 / + 300 µm fraction</b>									
1	0.34	0.31	0.37		0.000000	Off White	Translucent	82.5%	Fragment with Crystal Faces, significant cleavages
1				0.067	0.000335	Sub-Total			
<b>-300 / + 212 µm fraction</b>									
1	0.28	0.26	0.25		0.000000	Off White	Translucent	62.5%	Fragment with Crystal Faces, significant cleavages
1				0.032	0.000160	Sub-Total			
<b>-212 / + 150 µm fraction</b>									
0					0.000000				
0				0.000	0.000000	Sub-Total			
<b>-150 / + 100 µm fraction</b>									
0					0.000000				
0				0.000	0.000000	Sub-Total			
2					0.000485	TOTAL			