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ASSESSMENT REPORT, HEAVY MINERAL SAMPLING, PERMIT 1619

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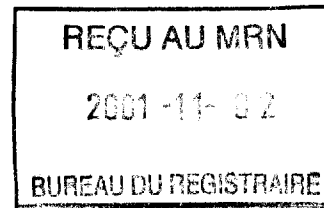
Québec 

ASSESSMENT REPORT

**HEAVY MINERAL SAMPLING
Permit 1619**

**Northern Quebec
NTS 33A/01 and 33A/02**

Ashton Mining of Canada Inc.



MRN-GÉOINFORMATION 2002

GM 59230

By: Alan O'Connor
Ashton Mining of Canada Inc.
October 2001

01306 - 024

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INTRODUCTION

The following report describes work completed within Permit 1619 located in northern Quebec. The joint venture permit is held 100% by SOQUEM whose head office is at 2600 boulevard Laurier, Suite 2500, Ste-Foy, Quebec. Ashton Mining of Canada Incorporated at Unit 123-930 West 1st Street, North Vancouver, British Columbia possesses a 50% interest in the permit.

Eight heavy mineral samples were collected from within Permit 1619 during three separate field programs. One sample was collected on July 13, 1999, two samples on July 1, 2000 and five samples were gathered on July 6, 2001. All samples were processed and observed at Ashton's laboratory in North Vancouver. Total costs incurred to collect, process, observe and document the eight heavy mineral samples were \$12,755.18.

LOCATION AND ACCESS

Permit 1619 is located approximately 260 kilometres north-northeast of the town of Chibougamau, Quebec and 110 kilometres north-northeast of the village of Temiscamie. This village is located at the northern terminus of an all-weather gravel road that joins the town to Chibougamau. A winter road between Temiscamie and MSV Exploration Limitée's Eastmain Mine passes approximately 20 kilometres to the east of the permit. NTS map sheets 33A/01 and 33A/02 cover the work area described below (Figure 1).

Access to the property is by helicopter. The nearest helicopter base is located in Chibougamau and is operated by Canadian Helicopters Limitée.

PROPERTY

The permit relevant to this assessment report is described in Table 1 below. Corner UTM coordinates are based on the NAD27 datum and all points are in zone 18U.

Table 1: Property Description

| | |
|-------------------|------------------|
| Permit | PEM0001619 |
| Reference 1 | 671227E/5774252N |
| Reference 2 | 674683E/5770858N |
| Reference 3 | 668834E/5765812N |
| Reference 4 | 676439E/5765812N |
| Reference 5 | 676439E/5765000N |
| Reference 6 | 674000E/5765000N |
| Reference 7 | 674000E/5763944N |
| Reference 8 | 666121E/5763591N |
| Reference 9 | 666121E/5766511N |
| Permit Size (ha) | 5,040 |
| Registration Date | 2000/11/27 |
| Expiration Date | 2005/11/26 |



Ashton Mining of Canada Inc.



 Oct. 12, 2001
 Author: SS
 Office: Van
 Proj: UTM18
 NAD27

Figure 1
 Property Location
 Map



GENERAL GEOLOGY

The project area lies on the southeastern portion of the Superior Structural Province bordered by Proterozoic rocks of the Labrador Trough in the east and the Grenville Province in the south (Figure 2).

The project area is comprised predominantly of schists and gneisses of sedimentary origin along with minor volcanic assemblages. Linear belts of supracrustal metavolcanic rocks occur throughout the area, generally trending east-west or west-northwest. The Otish Mountain and Mistassini Groups of Proterozoic clastic metasedimentary rocks overlie the Archean lithologies, marginal to the Grenville Province. In this region, the Grenville Province is believed to be thrust over the Superior Province an unknown distance. Mafic and ultramafic intrusive rocks of variable affinities are more common in the southeast than in the southwest.

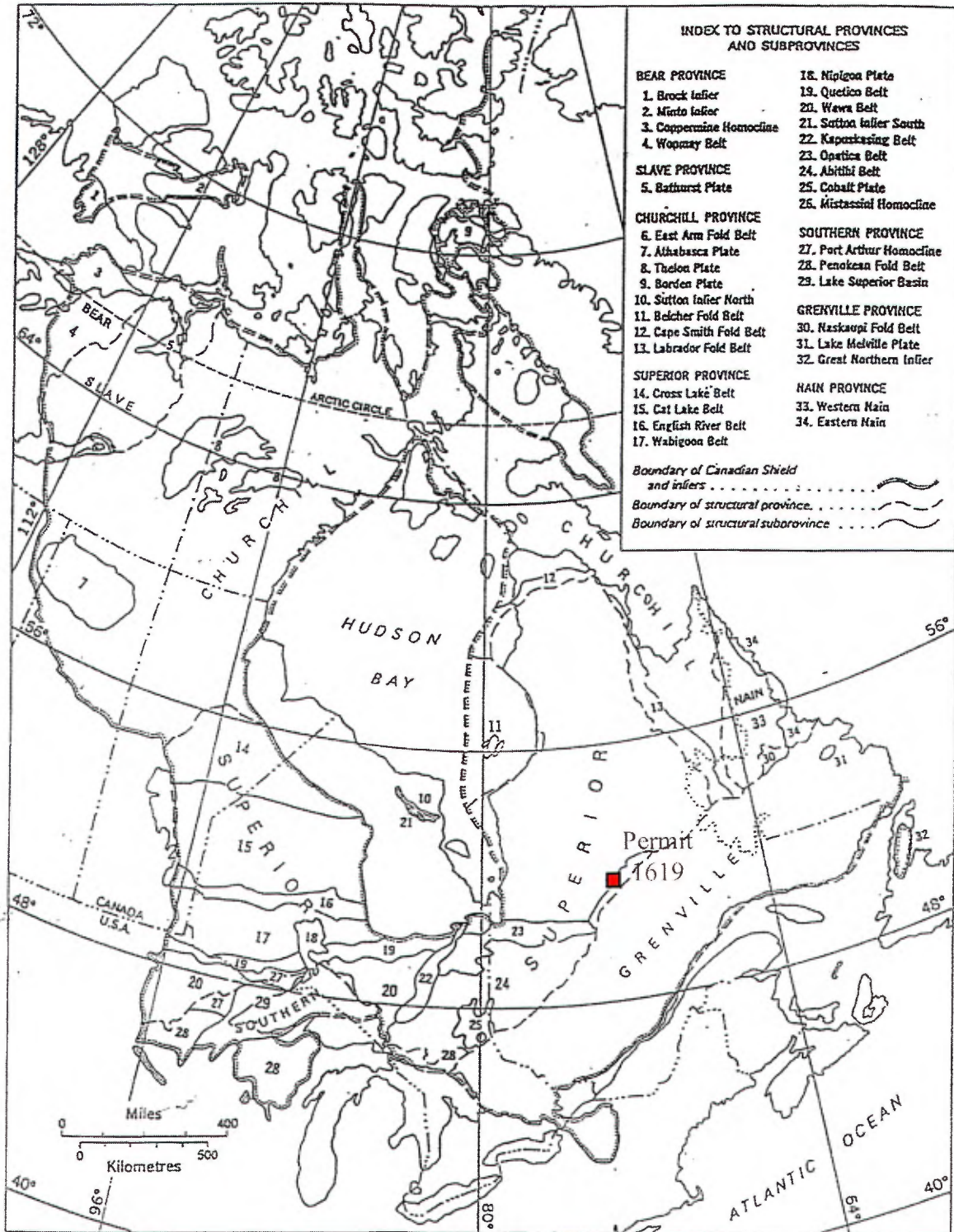
Metamorphic grade within the joint venture area is primarily amphibolite facies with local granulite (retrograde?) facies being reported proximal to Lac Minto (Percival, 1994). Higher grade lithologies in the north are interpreted as supracrustal relicts dating to 3.1 Ga. Granite and granite gneiss are dated at 2.7 Ga and local felsic and intermediate intrusive rocks are dated at 2.5 Ga.

Gravimetric studies conducted on the Ungava Peninsula suggest a crustal thickness of about 34-40 kilometres and a mantle root depth of up to 235 kilometres.

GLACIAL HISTORY AND QUATERNARY GEOLOGY

Little detailed Quaternary geological mapping has occurred within the project area, however the New Quebec Ice Divide appears to be responsible for all present day Quaternary morphology. This divide passes in a northwesterly direction approximately 350 kilometres north of the property area centred on the Goudalie geological subprovince (Figure 3). From this divide, ice flowed to the north and northeast toward Ungava Bay and west to southwest toward Hudson Bay and the Otish Mountains. The Caniapiscou spreading center, active between 6,000 to 8,000 years before present, affected the area covered by permit 1619. Ice flowed north and northeast toward Ungava Bay and southwest and south toward James Bay and Lac Mistassini respectively. During and subsequent to ice retreat to the northeast, glacial lakes developed at the ice margin and eventually the Tyrell Sea formed, the transgression limit of which lies approximately 250 kilometres to the west of the permit. Glacial landforms are common and well developed throughout the region. In the extreme west and southwest, DeGeer moraines are common within the transgression limit of the Tyrell Sea. East of this, substantial areas are moulded into drumlins and ribbed or fluted moraine. Drumlins are typically 200-2000 metres long, 100-400 metres wide and 3-25 metres high. Ribbed moraine can be 1600 metres long, 200 metres wide and up to 25 metres high. Eskers have been traced for over 100 kilometres and generally parallel ice flow direction. In the central part of the region,

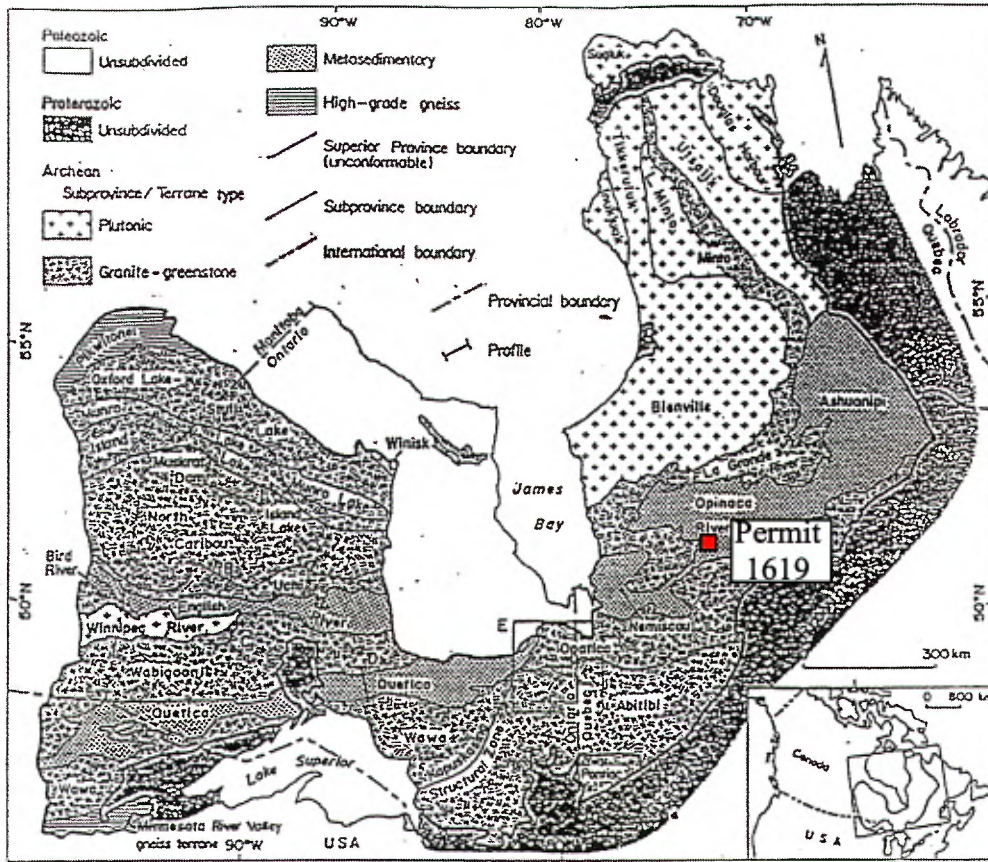
Figure 2: Structural Map



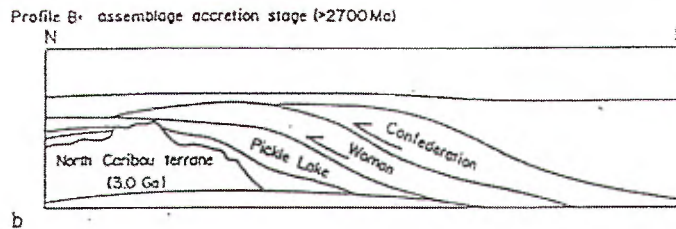
Structural provinces and subprovinces of the Canadian Shield

Figure 2

Figure 3: Generalized Geology



G



b

Figure 25.10. a) New map of major tectonic subdivisions of the Superior Province within Ontario, based on data in this volume; data for adjacent areas of Quebec was supplied by J. Percival, Geological Survey of Canada. The tectonic subdivisions are subprovinces, some of which have been tentatively subdivided into terranes. Profiles B through D and inset E are highlighted in successive figures. b) Diagram showing the assemblage accretion stage (profile B). Autochthonous supracrustal rocks developed on older sialic crust and allochthonous assemblages were then juxtaposed against the North Caribou terrane, for example, the Woman autochthonous assemblage and the South Uchi parautochthonous assemblage. c) Greenstone belt stage (profile C) involving large-scale growth of accreted assemblages through volcanism, tectonism, and varied thickening by the emplacement of tonalitic sheets and discordant granitoid plutons. d) Subprovince convergence stage (profile D) involving the juxtaposition of accretionary prisms against the collage of greenstone belt assemblages. e) Superior Province transpressive deformation stage (inset E) involving late transpressive deformation resulting from province-wide shortening with regional-scale wrench and thrust faulting along subprovince boundaries.

1290

Figure 3
Generalized Geology

hummocky and discontinuous ground moraine is more prevalent. Abundant meltwater channels also characterize this area.

Till studies on the Ungava Peninsula, conducted by the GSC in 1986, determined that the average thickness of glacial cover in the region was 1-2 metres, being slightly thicker near the area of final ice retreat (Bouchard et al., 1986). Clasts recovered from fluted and ribbed moraine are primarily locally derived and clasts found in hummocky moraine are believed to have originated from more distal areas. Dispersion patterns, determined by mineralogy and geochemistry, indicated various distances of glacial transport. Westward transport of material located 80 kilometres out from the spreading centre averaged 6-10 kilometres. Eastward, at a distance of 88 kilometres out from the ice divide, glacial transport was 10-15 kilometres with 70 kilometres being noted at one location. Multiple striae and several northward dispersion trains of 3-4 kilometres indicate that the region east of the Payne Centre may have been subject to a later, second ice event originating from the Caniapiscou centre in the south (Lucas, 1999).

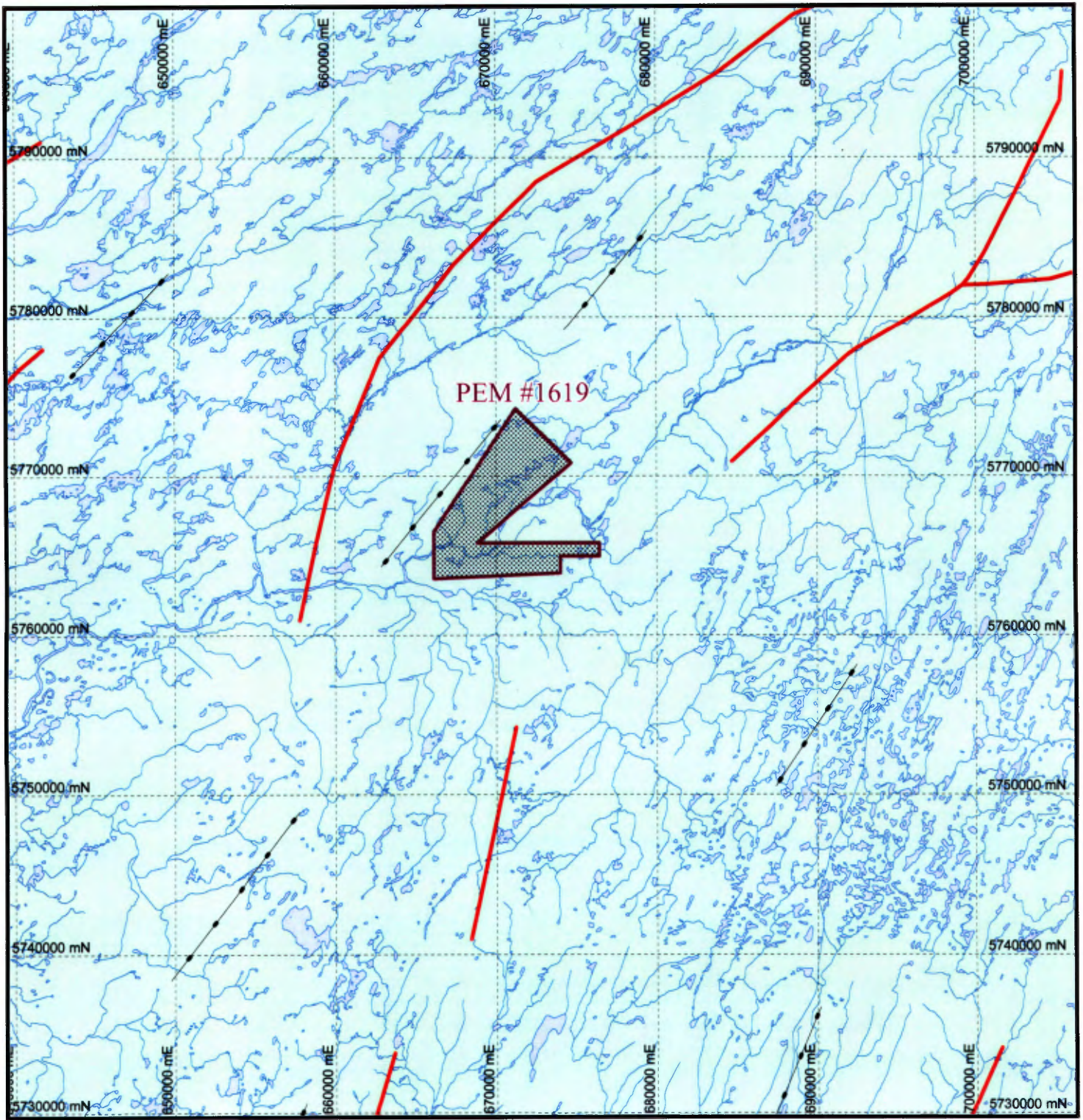
A paper discussing the results of till studies to the east of the Lac à l'Eau Claire astrobleme was published in the Canadian Journal of Earth Sciences in 1995 (Parent et al, 1995). Impactite dispersion patterns delineated through this research suggest a westerly ice flow direction in this area.

The generalized pattern of glacial landforms in the area of the permits is illustrated in Figure 4.

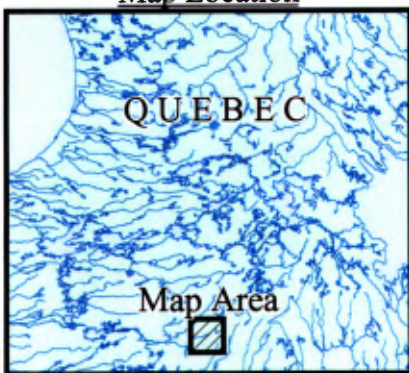
EXPLORATION PROGRAM

PERSONNEL, EQUIPMENT AND LOGISTICS

During the 2001 sampling program, two Soquem contract geologists (Yves Caron and Didier Oceau) collected five heavy mineral samples from within permit 1619. An A-Star 350BA helicopter provided by Canadian Helicopters of Chibougamau and flown by pilot/engineer Gabriel Leveille was used to reach the sample sites. Operations were conducted from a field camp based at Lac Emmanuel, located approximately 100 kilometres north of Permit 1619. The two samples collected during the year 2000 field program (NQ00-0065-NQ00-0066) were taken by three Soquem geologists (Yves Caron, Didier Oceau and Laury Schmitt) and by Andrew Harke, a geological technician employed by Ashton Mining. The 2000 program was staged from a camp owned and operated by Soquem. Sample NQ99-0088 was taken by Soquem contract geologists Yves Caron and Didier Oceau. Canadian Helicopters based in Chibougamau, Quebec provided an A-Star 350D for access to site areas. The helicopter was flown by Richard Bernard and maintained by engineer Gabriel Leveille. Work was completed from a base at Temiscamie.



Map Location



- Eskers
- General Ice Flow (Unknown)

Ashton Mining of Canada Inc.



Oct. 12, 2001

Author: SS

Office: Van

Proj: UTM18
NAD27

Figure 4

Glacial Map of
Project Area



Kilometers

Scale: 1:350,000

HEAVY MINERAL SAMPLING PROGRAM

Five samples were collected on July 6, 2001, two samples were gathered on July 1, 2000, and one sample was taken on July 13, 1999 from Permit 1619. Sample description cards are included in Appendix I and sample locations are illustrated in Figure 5. All samples were shipped to Ashton Mining's laboratory in North Vancouver for processing.

Samples were collected as part of a regional sampling program to evaluate the up-ice regional geology. Site locations were chosen based on availability of glaciofluvial material. Where no glaciofluvial material was available, till samples were taken. Approximately 25 kilograms of sieved material (-1.25mm) was taken at each site along with a one-kilogram reference sample. At the laboratory, heavy minerals are first separated by density using heavy liquids and then observed and identified under a binocular microscope.

SAMPLE RESULTS

The results of the heavy mineral analysis for all samples collected from within Permit 1619 during this program are attached in Appendix II.

DISCUSSION AND CONCLUSIONS

Of the eight heavy mineral samples collected, two contained indicator minerals. For a detailed list of the indicator minerals encountered, please refer to Appendix II of this report.



Alan J. O'Connor, BSc.

Supervised by



Brooke Clements, MSc., PGeol.
October 11, 2001

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Microfilm

PAGE DE DIMENSION HORS STANDARD

MICROFILMÉE SUR 35 MM ET

POSITIONNÉE À LA SUITE DES

PRÉSENTES PAGES STANDARDS

Numérique

PAGE DE DIMENSION HORS STANDARD

NUMÉRISÉE ET POSITIONNÉE À LA

SUITE DES PRÉSENTES PAGES STANDARDS

APPENDICES

Appendix 1: Heavy Mineral Sample Data Cards

DATE: 07-01-2000
 SAMPLE NO.: NG00-0065
 TYPE: Hill
 QUALITY: 3
 WEIGHT: 19
 GLACIAL STRIA: N/A
 NTS MAP: 33 A/2
 SAMPLE UTM: ZONE
 E 667 075
 N 5 707 650
 GPS: ZONE 18u
 E 0667051
 N 5767691
 TOPOGRAPHY: Lake shore, on a
 plateau low topo
 REMARKS: sub angular pebbles to
 bldrs (up to 80cm) in a sandy
 to silty matrix. All igneous
 (85% granitoids, 15% green
 stones)
 ASHTON CREW: JC, AH

DATE: 1999-07-13
 SAMPLE NO.: NG99-0088
 TYPE: Esker
 QUALITY: 3
 WEIGHT: 28
 GLACIAL STRIA: N/A
 NTS MAP: 33 A/1
 SAMPLE UTM: ZONE 18u
 E 671400
 N 5770940
 HELI UTM: ZONE 18u
 E 0671400
 N 5770940
 TOPOGRAPHY: Esker in peneplain
 REMARKS: rounded to subrounded
 granitoids to 15cm, coarse
 gravel, gravel & coarse sand,
 sand matrix, green stones
 ASHTON CREW: CARON/OCTEAU

DATE: 2007-07-06
 SAMPLE NO.: NQ07-0292
 TYPE: stream
 QUALITY: 2
 WEIGHT: 22
 GLACIAL STRIA: N/A
 NTS MAP: 33A/1
 SAMPLE UTM: ZONE
 E
 N
 GPS UTM: ZONE 18a
 E 0673860
 N 5771303
 TOPOGRAPHY: river in a penneplaine
 low to moderate topo
 REMARKS: sub angular bldrs up
 to 50cm in cobbles & pebbles
 in a sand matrix, Mostly
 granitoids in meta sed str &
 greenstones str.
 ASHTON CREW: VC-DO

DATE: 07/01/2008
 SAMPLE NO.: NQ00-0066
 TYPE: Till
 QUALITY: 1
 WEIGHT: 21 - 2mm
 GLACIAL STRIA: N/A
 NTS MAP: 33A/2
 SAMPLE UTM: ZONE
 E 668 060
 N 5765 900
 GPS: ZONE 18u
 E 668 209
 N 5 765 640
 TOPOGRAPHY: Low Topo
 Small hill 10 feet high.
 REMARKS: few pebbles and cobbles
 (sub-angular to sub-rounded) in fine
 sand matrix with little silt.
 cobbles: 100% Gneiss
 Big tree on top.
 ASHTON CREW: LS, D.O

DATE: 2007-07-06
 SAMPLE NO.: N601-0304
 TYPE: Esker
 QUALITY: 2
 WEIGHT: 20
 GLACIAL STRIA: N/A
 NTS MAP: 33A/2
 SAMPLE UTM: ZONE
 E
 N
 UTM: ZONE 18m
 E 0669160
 N 5769178
 TOPOGRAPHY: Esker on a lake shore
 same field, moderate topog.
 REMARKS: rounded bldrs up to
 20cm w cobbles & pebbles in
 a sand matrix, quartzoids &
 gneissies in greenstone str.
 ASHTON CREW: VC-D0

DATE: 2007-07-06
 SAMPLE NO.: N601-0293
 TYPE: till
 QUALITY: 1
 WEIGHT: 16 kg.
 GLACIAL STRIA: N/A
 NTS MAP: 33A/1
 SAMPLE UTM: ZONE
 E
 N
 UTM: ZONE 18m
 E 0671563
 N 5772549
 TOPOGRAPHY: Esker looking o/c
 hills, karres?, moderate to
 strong topog.
 REMARKS: sub rounded bldrs up to
 50cm w cobbles & pebbles in
 a sand to silt matrix,
 quartzoids & gneissies.
 ASHTON CREW: VC-D0

DATE: 2001-07-04
 SAMPLE NO.: NG01-0306
 TYPE: Esker
 QUALITY: 3
 WEIGHT: 25
 GLACIAL STRIA: N/A
 NTS MAP: 33A/1
 SAMPLE UTM: ZONE
 E
 N
 GPS UTM: ZONE 18m
 E 0671686
 N 5771000
 TOPOGRAPHY: small esker on
 hilly ground, moderate topo
 REMARKS: competitor's samples:
 2 holes 20m apart. Rounded
 bldrs up to 20cm in clables of
 pebbles in a sand matrix.
 granitoids of gneisses in greenstone
 fr. lenschete
 ASHTON CREW: YC-D0

DATE: 2001-07-04
 SAMPLE NO.: NG01-0305
 TYPE: gravel bar
 QUALITY: 3
 WEIGHT: 25
 GLACIAL STRIA: N/A
 NTS MAP: 33A/1
 SAMPLE UTM: ZONE
 E
 N
 GPS UTM: ZONE 18m
 E 0669929
 N 5765505
 TOPOGRAPHY: big river, rapids,
 moderate to strong topo
 REMARKS: gravel bar, pebbles
 matrix in coarse sand.
 ASHTON CREW: YC-D0

Appendix 2: Heavy Mineral Sample Descriptions and Results

Permit 1619, Quebec Sample Locations

| Sample No | Type | Easting | Northing | Zone | Date | Topography |
|---------------------------|-----------------|---------|----------|------|-----------|--|
| NQ99-0088 | Esker | 671400 | 5770940 | 18 | | peneplain |
| NQ00-0065 | Till | 667051 | 5767691 | 18 | 01-Jul-00 | Lake shore on a plateau, low topo. |
| NQ00-0066 | Till | 668209 | 5765640 | 18 | 01-Jul-00 | Low topo small hill 10 feet high. river in peneplain; low to moderate topography |
| NQ01-0292 | Stream | 673860 | 5771303 | 18 | 06-Jul-01 | appears to be esker; outcrop; hills; kames? moderate to strong topography |
| NQ01-0293 | Till | 671563 | 5772549 | 18 | 06-Jul-01 | small esker in hilly ground; moderate topography |
| NQ01-0306 | Esker | 671686 | 5771000 | 18 | 06-Jul-01 | esker on a lake shore; kame field; moderate topography |
| NQ01-0304 | Esker | 669160 | 5769178 | 18 | 06-Jul-01 | big river; rapids; moderate to strong topography |
| NQ01-0305 | Gravel bar | 669929 | 5765505 | 18 | 06-Jul-01 | topography |
| Total # of Samples | <u>8</u> | | | | | |
| NAD 27 Datum | | | | | | |

Permit 1619, Quebec Sample Results

| Sample Number | Total Diamonds | Total Peridotitic Pyrope | Total Eclogitic Pyrope | Total Chrome Diopside | Total Chromite | Total Picro-ilmenite | Total Kimberlitic Olivine | Total Indicator Minerals |
|---------------|----------------|--------------------------|------------------------|-----------------------|----------------|----------------------|---------------------------|--------------------------|
| NQ99-0088 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NQ00-0065 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| NQ00-0066 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NQ01-0292 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NQ01-0293 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NQ01-0304 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NQ01-0305 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| NQ01-0306 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Total # of Samples **8**

NAD 27 Datum