# **APPENDIX B**

Exploration Programme, Summer 2008 Archaeological Survey

# NEW MILLENNIUM CAPITAL CORP.

# **DIRECT-SHIPPING ORE PROJECT**



Exploration Programme, Summer 2008 Archaeological Survey

BY: Arkéos inc.

November 2008

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#### 1 INTRODUCTION

#### 1.1 Mandate

Within the framework of the Direct-Shipping Ore Project (DSOP), New Millennium Capital Corp. (NML) plans to drill within the limits of its properties located in the vicinity of Schefferville (Figure 1). NML has mandated Paul F. Wilkinson & Associates Inc. (PFWA) to act as Coordinator of Environmental and Social Affairs for the DSOP. Scheduled for the summer of 2008, the exploration project foresaw the drilling of 149 boreholes and 353 of trenching within the limits of three sectors. The sectors were located on either side of an existing road of approximately 45 km in length, which extends from the Town of Schefferville in the south to the vicinity of Harris Lake in the north. Within these three sectors, 14 areas in which drilling was planned were to be surveyed for archaeological remains (Table 1). NML assigned this mandate to Arkéos Inc. in June 2008.

Sectors	Areas / Provinces	Approximate dimensions of the area (m)
DSO-2	Star Creek / Quebec	950 x 75
	Ferriman 4 / Quebec	750 x 175
DSO-3	Fleming 7N / Newfoundland &Labrador	750 x 100
	Timmins 7 / Newfoundland & Labrador	400 x 100
	Timmins 3N / Newfoundland & Labrador	750 x 100
	Timmins 8 / Newfoundland & Labrador	180 x 75
	Timmins 4 / Newfoundland & Labrador	800 x 175
	Barney 2 / Quebec	260 x 100
DSO-4	Sunny 1 / Quebec	1100 x 100
	Kivivik 3N / Newfoundland & Labrador Kivivik 3S / Quebec	900 x 150
	Kivivik 4 / Newfoundland & Labrador	1050 x 175
	Kivivik 5 / Newfoundland & Labrador	350 x 300
	Kivivik 2 / Newfoundland & Labrador	1050 x 175
	Goodwood / Quebec	700 x 350

Table 1 -	DSO sectors surveyed	for archaeological remains

The mandate was to conduct a visual inspection and an archaeological survey in priority at the location of each of the boreholes and trenches and secondarily within the limits of each of the contemplated drilling areas. Following the fieldwork, recommendations for additional archaeological work, if needed, were to be developed in accordance with the *Cultural Property Act* of Québec and the *Historic Resources Act* 1990 (H-4) of the Government of Newfoundland and Labrador (GNL).

It is important to mention that no archaeological potential study had been conducted prior to fieldwork. The surveyed areas were selected solely based on the fact that their integrity would be disrupted in the near future rather than on the quality of their archaeological potential.

#### 1.2 Results

The archaeological survey of the 14 iron ore deposits (areas) to be drilled and/or trenched mechanically was conducted from June 20 to June 27, 2008. No archaeological remains were observed in any of the surveyed deposits. The remains of an old mining camp were, however, found immediately next to the western limit of the Sunny 1 area, on the west bank of Foggy Lake. They consisted of a grouping of about twenty dwelling or storage structures (all with earth bunds<sup>1</sup> and some with wooden floors) likely dating from the forties or the fifties. While each of these structures was photographed, no precise plan was drawn up. It is recommended that these structures not be affected by mining operations in this area. Moreover, it would be interesting to compile a picture file in order to add to the history of local mining operations.

#### 1.3 Report Contents

The next section gives a brief overview of the methods used to conduct the archaeological survey. Section 3 presents the results of the survey, while Section 4 presents recommendations.

<sup>&</sup>lt;sup>1</sup> Earth piled around the outer perimeter to exclude draughts.

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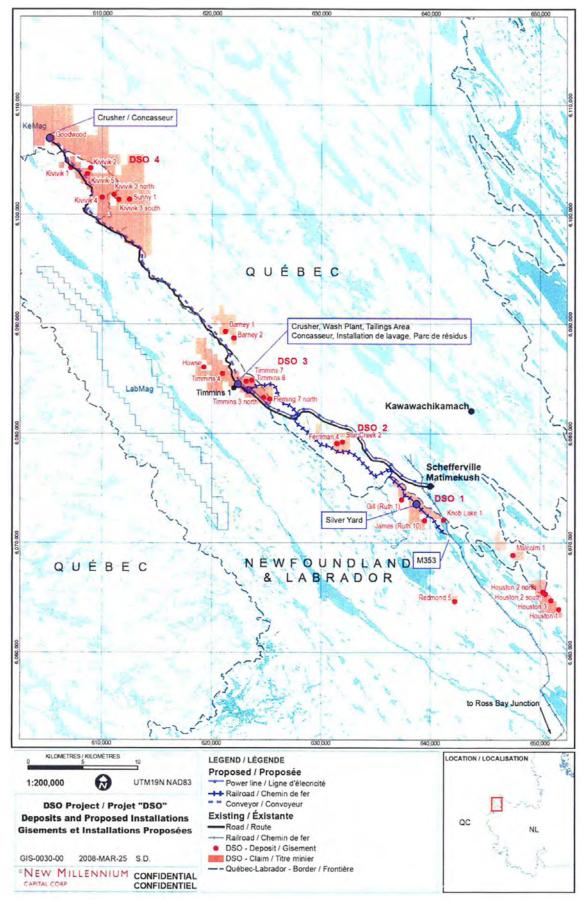


Figure 1 - General Location of the Study Area

### 2 METHODOLOGY

Prior to the fieldwork, an application for an archaeological research permit was submitted to the *ministère de la Culture, des Communications et de la Condition féminine du Québec* (MCCCF) for the portion of the study area located in Quebec. A similar request was addressed to the *Provincial Archaeology Office* of the *Department of Tourism, Culture and Recreation* of the Government of Newfoundland and Labrador for the portion of the study area located in Newfoundland. Pursuant to the opinion issued by the *Commission des biens culturels*, the MCCCF authorised the issue of Permit No. 08-ARKE-06, effective June 18, 2008. Permit No. 08.22 was obtained from the concerned Newfoundland department having jurisdiction.

Travel in the field was done by truck, as all areas were accessible by secondary roads or trails. The archaeologists conducted their visual inspections on foot.

The limits of each deposit had previously been surveyed, which greatly facilitated our work. In some instances, including Star Creek 2 and Ferriman 4, the use of a GPS was essential since the area was heavily wooded. In all the other instances, the areas to be surveyed were identified visually. Star Creek 2, Ferriman 4, Fleming 7N, Timmins 3N, Timmins 4, 7 and 8 and Barney 2 were all surveyed from Schefferville. Goodwood, Kivivik 2, 3N, 4 and 5 and Sunny 1 were surveyed from the NML exploration camp located close to Harris Lake.

Each area subjected to a thorough visual inspection, but very little test-pitting was carried out, mainly because the sparse vegetation rendered the surface deposits visible to the naked eye. All of the areas were disturbed relatively recently by activities (drilling, test pits, trenching as deep as several meters) associated with mining operations. Each area was photographed repeatedly, and a brief environmental description was compiled.

The few test pits that were dug generally measured 50 cm on each side and were excavated with a shovel and a trowel. They were rather shallow, with a maximum of 20 cm, and the stratigraphy was mostly made up of a very pebbly brown soil. The test pits were 10 m to 15 m apart. Overview photographs were systematically taken, and general notes were recorded in the field book by the Project Manager.

#### 3 RESULTS

#### 3.1 DSO-2: Star Creek 2

The total area considered for the archaeological survey and the visual inspection of the sites was approximately 950 m (on a north-west/south-east axis) by roughly 100 m (on a north-south axis). This irregularly shaped area is located approximately 100 m south of Star Lake (Figure 2). It is to be noted that the eastern part of this area is crossed by secondary roads that connect with the main road to Schefferville.



Photo 1 - Overview of the Star Creek 2 area illustrating a trench - View towards the northeast (SCHEFF-08-N1-96)



Photo 2 - Overview of the Star Creek 2 area with Star Lake in the center of the photo - View towards the north-east (SCHEFF-08-N1-99)

The overall area shows obvious signs of major humanly-induced disturbances that have significantly altered the integrity of the surface deposits. Long scars (trenches) as deep as 2 m (Photo 1) were observed. These trenches seem to have been dug several decades ago, most likely in the context of a mining operation. Overall, Star Creek 2 presents an irregular microtopography that generally slopes steeply towards the shore of Star Lake (Photo 2). Generally thick, the vegetation is composed mainly of spruce and alder. The drainage is deficient in some places, especially in the southeast part of the area.

Given the scope of the anthropogenic disturbance, no test-pitting was deemed necessary. Therefore only a systematic visual inspection was performed. No remains associated with former human occupation were observed within the limits of this area.

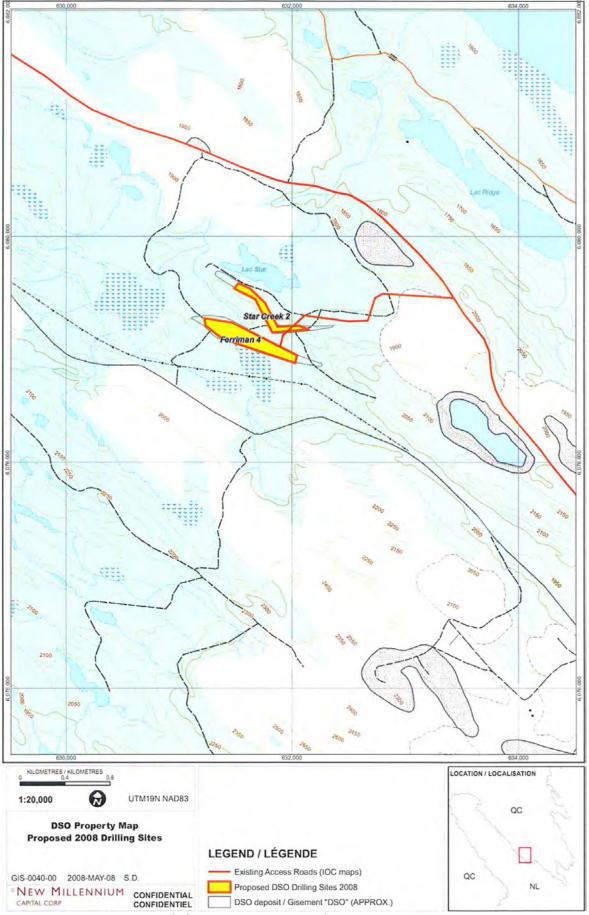


Figure 2 - Location of the Star Creek 2 and Ferriman 4 Areas

#### 3.2 DSO-2: Ferriman 4

The Ferriman 4 area shows broadly the same environmental characteristics as the Star Creek 2 area, except that most of its surface is badly drained, causing numerous marshy areas. The total area considered (Figure 2) for the fieldwork was approximately 750 m (on a north-west/south-east axis) by 175 m (on a north-south axis). The surface deposits of Ferriman 4 also show numerous scars left by previous mining activities (Photos 3 and 4). A small creek that connects to Star Lake was observed. The topography is very irregular, and the surface is mostly covered by a thick layer of sphagnum.



Photo 3 - Overview of the Ferriman 4 area illustrating trenches associated with mining operations - View towards the south-east (SCHEFF-08-N1-93)

Like Star Creek 2, the Ferriman 4 area is by secondary roads. The crossed vegetation is dense and is composed mainly of spruce and alder. The site does not seem conducive to any human activity, and the visual inspection revealed no trace of the passage of human at an earlier era (other than the evidence associated mining with operations). Test-pitting was deemed unnecessary.



Photo 4 - Overview of the Ferriman 4 area with evidence of old trenching associated with mining operations - View towards the south-west (SCHEFF-08-N1-95)

The Fleming 7N area (Figure 3) runs alongside the southwest side of a hill that shows signs of disturbance from former mining operations (Photo 5). In fact, the entire Fleming 7N area seems to have been seriously disturbed by such activities. The underdeveloped plant cover consists exclusively of moss, sphagnum and some small shrubs. No mature trees were observed. The topography is generally flat while the microtopography is hummocky as a result of previous mining operations. The bedrock is exposed throughout the area. Blocks measuring approximately one metre can also be seen in some places.



Photo 5 - Overview of the Fleming 7N area with hill on top right - View towards the north (SCHEFF-08-N1-24)



Photo 6 - Overview of the Fleming 7N area with a trench in the foreground - View towards the south (SCHEFF-08-N1-28)

The area that was surveyed measured approximately 750 m (on a north-west/southeast axis) by 100 m (on a north-east/south-west axis). Numerous trenches, generally shallow (less than one meter), criss-cross the surface (Photo 6). Test-pitting was deemed unnecessary, but the entire area was subjected to a systematic visual inspection. No evidence associated with former human occupation was noted.

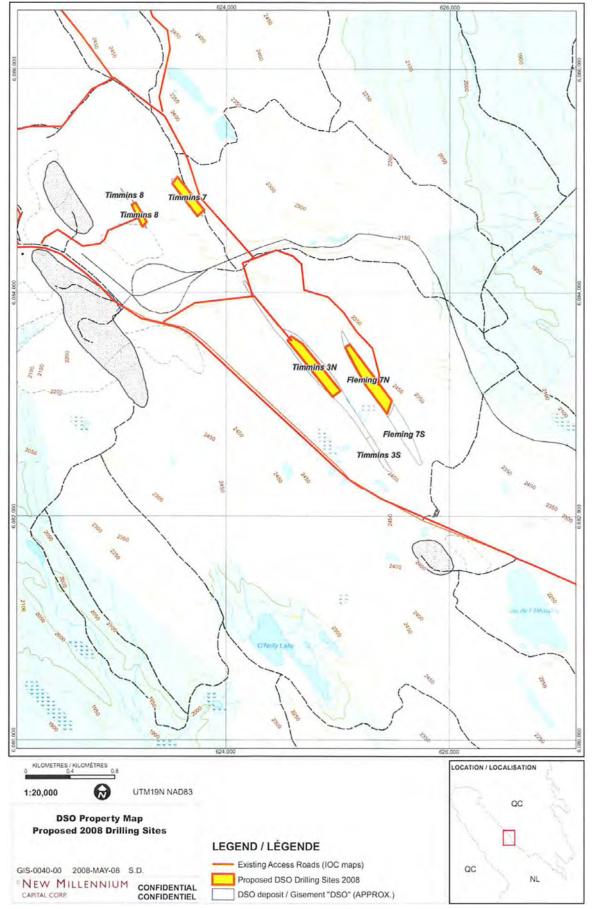


Figure 3 - Location of the Fleming 7N, Timmins 3N, Timmins 7 and Timmins 8 Areas

#### 3.4 DSO-3: Timmins 3N

The Timmins 3N area (Figure 3) corresponds to a mine pit that is filled with water and bordered on each side by piles of waste rock originating from the pit (Photos 7 and 8). No vegetation was observed on the surface, and a quick visual inspection was deemed sufficient. No evidence of former human activities was observed within the limits of this area, which measured approximately 750 m x 100 m.



Photo 7 - Overview of the Timmins 3N area - View towards the south (SCHEFF-08-N1-29)



Photo 8 - Overview of the Timmins 3N area - View towards the south (SCHEFF-08-N1-32)

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#### 3.5 DSO-3: Timmins 7

The Timmins 7 area extends approximately 400 m (on a north-west/south-east axis) by 100 m (on an east-west axis) (Figure 3). A visual inspection clearly showed that the entire surface was completely disturbed by previous activity related to mining operations. Indeed, the surface is free of vegetation, and the exposed deposits are made up of pebbles of various sizes (Photo 9). During the visual inspection, trenches were being dug by a mechanical shovel (Photo 10) to collect soil samples. Based on discussions with NML's Field Manager, it appears that this site was in production in the early 1980s and that more than 3 m of overburden were removed over its entire area. Given the situation, no test-pitting was deemed necessary, and only a visual inspection was undertaken. No evidence of former human occupation was identified.



Photo 9 - Overview of the Timmins 7 area - View towards the south-east (SCHEFF-08-N1-10)



Photo 10 - Overview of the Timmins 7 area with a shovel taking a sample - View towards the south (SCHEFF-08-N1-11)

#### 3.6 DSO-3: Timmins 8

The Timmins 8 area is small, measuring about 180 m (on a north-west/south-east axis) by 75 m (on an east-west axis) (Figure 3). Once again, the environment was completely disturbed by mining activities that took place in the early 1980s (Photo 11). A thin layer of vegetation has grown back (sphagnum and small shrubs) on a soil consisting almost entirely of small stones and blocks measuring roughly 10 cm. The area is adjacent to a huge pile of waste rock (Photo 11). Numerous wide trenches, generally oriented northwest/south-east, were observed (Photo 12).



Photo 11 - Overview of the Timmins 8 area with a huge pile of fill - View towards the south-west (SCHEFF-08-N1-19)



Photo 12 - Overview of the Timmins 8 area with a trench (old operation and stake) - View towards the east (SCHEFF-08-N1-16)

The archaeological field intervention within the limits of the Timmins 8 area took the form of a systematic visual inspection, and no test-pitting was considered necessary. Finally, no evidence of former human occupation was observed within the limits of this area.

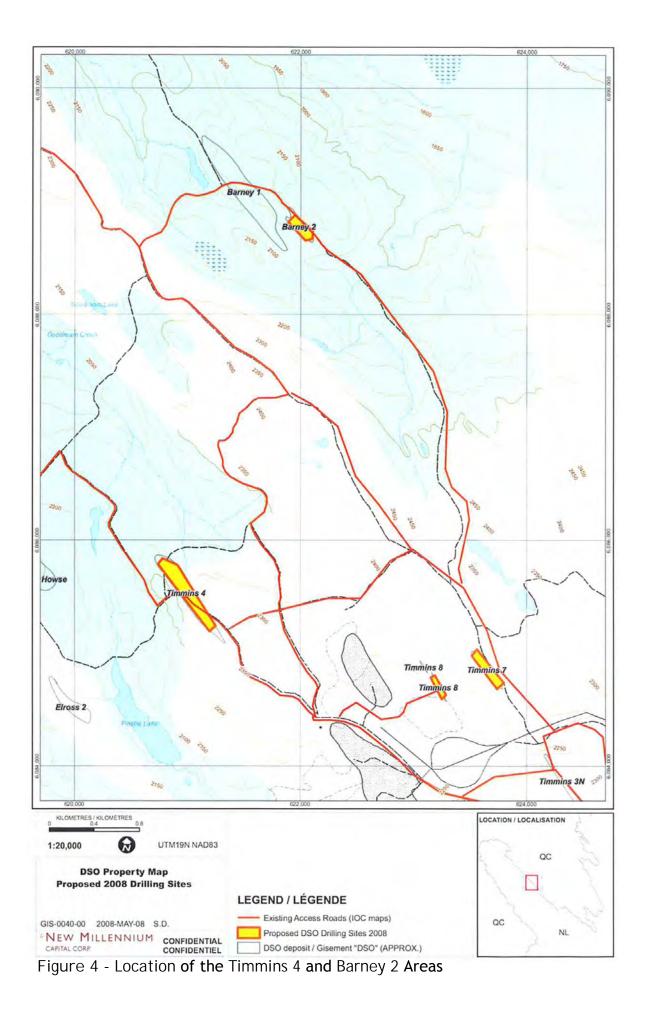
#### 3.7 DSO-3: Timmins 4

The Timmins 4 area is rather large, covering 800 m (on a north-west/south-east axis) by 175 m (on an east/west axis) (Figure 4). As in the case of Timmins 8, this large area presents an environment completely disturbed by mining activities that most likely took place in the 1980s (Photo 13). These activities are still underway, since machinery was observed close to the access road. The underdeveloped vegetation consists of a thin layer of sphagnum with scattered shrubs. The soil is almost entirely gravel, and practically no humus layer has developed on the rock surfaces exposed by mining. Clearly influenced by mining operations, the topography observed is flat, and the microtopography is hummocky.

A visual inspection of the site revealed the generalized extent of the disturbance, which made it unnecessary to undertake test-pitting. No evidence of the former use of this area by humans was observed as a result of the visual inspection.



Photo 13 - Overview of the Timmins 4 area - View towards the south-west (SCHEFF-08-N1-92)



#### 3.8 DSO-3: Barney 2

The Barney 2 area measures approximately 260 m (on a north-west/south-east axis) by 100 m (on an east-west axis) (Figure 4). Generally, the vegetation has re-grown very little on a surface that was obviously completely disturbed by mining operations in the 1980s (Photo 14). Large areas free of vegetation showed that the soil consists of pebbles mixed with red sand. Many long, mechanically excavated trenches were also observed (Photo 15). It is to be noted that the area is located on the eastern slope of a densely wooded small valley where, according to the geologist of New Millennium, chert outcrops are visible on the surface.



Photo 14 - Overview of the Barney 2 area, exposed part - View towards the west (SCHEFF-08-N1-03)



Photo 15 - Overview of the Barney 2 area, end of the area with a trench and stakes H and I - View towards the west (SCHEFF-08-N1-04)

Test pits (N = 8) measuring 50 cm x 50 cmwere dug in certain areas that appeared less disturbed. The stratigraphy observed revealed a sequence of a surface layer of peat 5 to 8 cm thick, followed by a very poorly developed layer of Ah humus (1 to 2 cm), which rested upon an orange sand mixed with pebbles. Generally, the depth reached was about thirty centimetres. The results of these test pits, combined with a systematic visual inspection (Photo 16), showed no evidence associated with former human occupation.



Photo 16 - Overview of the Barney 2 area - View towards the north (SCHEFF-08-N1-06)

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The Sunny 1 area survey covered two adjacent sites in the southeast portion of Foggy Lake (Figure 5). These two sites cover a combined area of approximately 1 km (on a north-west/southeast axis) by approximately 100 m (on an east-west axis). Overall, the Sunny 1 area corresponds to a wide desert plateau swept by steady winds (Photos 17 and 18). Shrub vegetation is absent, and only a sparse cover of sphagnum and caribou moss covers the surface in places. A secondary road on the west side of Foggy Lake leads to the southern part of the area. The surface was disturbed in places by former mining operations. The rest of the area seems to be undisturbed.



Photo 17 - Overview of the Sunny 1 area - View towards the south-west (SCHEFF-08-N1-68)



Photo 18 - Overview of the Sunny 1 area - View towards the north-east (SCHEFF-08-N1-71)

The topography is hilly, and a small dry creek that feeds Foggy Lake was found in a small valley between the site and the lake. The drainage is excellent everywhere, except for the southeast part of Sunny Lake, where there is a large marshy area.

No test-pitting was deemed necessary, since the accumulation of soil is practically nil. The visual inspection revealed a small inuksuk made of three flat stones. No other traces of former anthropogenic activities were observed within the limits of this zone. However, the presence of a former mining camp must be mentioned; it consisted approximately of twenty tent structures spread out along either side of the secondary access road (Figure 5). Since it was located outside the limits of Sunny 1, no plan was drawn. The remains are what is left of a camp probably dating from the 1940s or 1950s (Photos 19 to 22). Generally, it shows evidence of the foundations of tent structures with

wooden floors resting on logs. The walls were probably made of white canvas. In most cases, earth bunds of approximately 7 m x 5 m delineated the shape of the tents. Many construction items were observed, including spiral nails, fragments of stove pipes, fragments of various metals, etc.





Photo 19

Photo 20

Photos 19, 20, 21 and 22 – Sunny 1 area – Old drilling camp, Foggy Lake (SCHEFF-08-N1-83, SCHEFF-08-N1-77, SCHEFF-08-N1-85 and SCHEFF-08-N1-75)







Photo 22

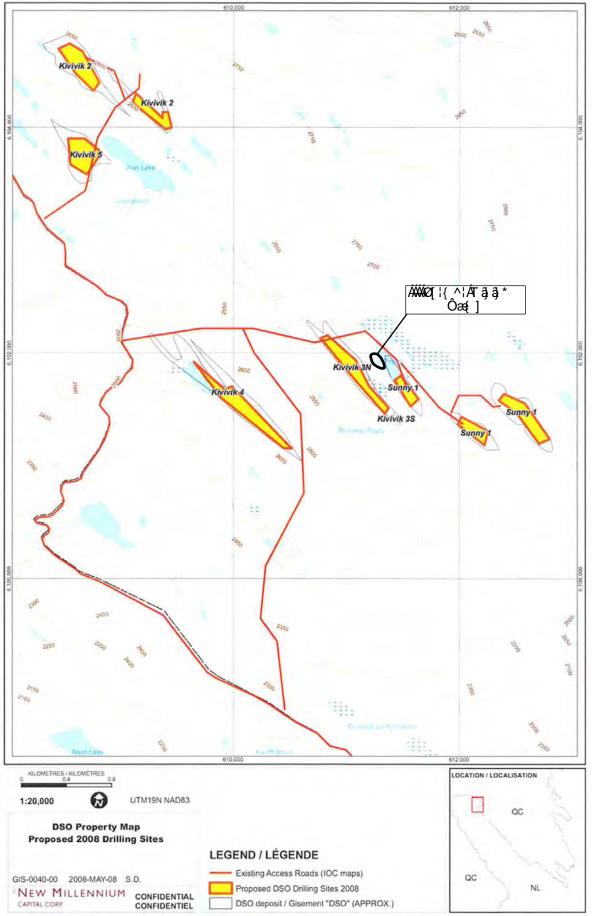


Figure 5 - Location of the Sunny 1, Kivivik 3N/3S and Kivivik 4 Areas

#### 3.10 DSO-4: Kivivik 3N/3S

The Kivivik 3N/3S area measures approximately 900 m (on its north-west/south-east axis) by approximately 150 m (on its east-west axis) (Figure 5). Characterised by a topography varying from flat to hummocky (Photo 23), this area does not appear to have been disturbed in the past. It is bordered to the west by a valley, and to the east by a secondary access road (Photo 24). The southern half of the area is badly drained, which creates a rather marshy zone. The northern part is well drained. Shrub vegetation is completely absent, while the sparse plant cover is made of sphagnum and caribou moss.



Photo 23 - Overview of the Kivivik 3N/3S area with survey stake - View towards the south-west (SCHEFF-08-N1-62)

No former anthropogenic remains were detected upon a visual inspection of the entire area. No test-pitting was deemed necessary given the shallow soil accumulation.



Photo 24 - Overview of the Kivivik 3N/3S area with a truck and access road - View towards the south (SCHEFF-08-N1-64)

#### 3.11 DSO-4: Kivivik 4

The limits of the Kivivik 4 area extend a little over one kilometre (on a north-west/south-east axis) by approximately 175 m (on an east/west axis) (Figure 5). The area is characterised by the presence of an unnamed lake in its northern part and a small pond in its southern part (Photo 25). The remaining of the area is rather poorly drained. Overall, the topography observed slopes gently towards the lake shore. The microtopography is hummocky with a few benches. Erratic blocks are visible everywhere, and some fields of boulders were also observed. The surface plant cover is very sparse, and a few small shrubs are present. No evidence of anthropogenic disturbance related to mining operations was observed. Some caribou bones as well as a trail that these animals have used for generations were noted.

Test-pitting was deemed unnecessary due to the scarcity of soil. A systematic visual inspection revealed no evidence of former human occupation of this site.



Photo 25 - Overview of the Kivivik 4 area - View towards the north-east (SCHEFF-08-N1-88)

#### 3.12 DSO-4: Kivivik 5

The Kivivik 5 area, which measures approximately 350 m x 300 m, is located in the immediate vicinity of Joan Lake (Figure 6). The general topography corresponds to a small valley the slopes of which are steep in places. The microtopography is very uneven and hummocky. Everywhere, the surface is covered with small fields of boulders while bedrock is exposed in many places. A small pond occupies the bottom of the valley (Photo 26) and the periphery of this natural feature is a badly drained soil. Sporadic evidence of former mining activities (disturbed surface soil) was observed.

No test-pitting was deemed necessary, and the visual inspection of the site revealed no evidence of a former human presence.



Photo 26 - Overview of the Kivivik 5 area - View towards the south-west (SCHEFF-08-N1-58)

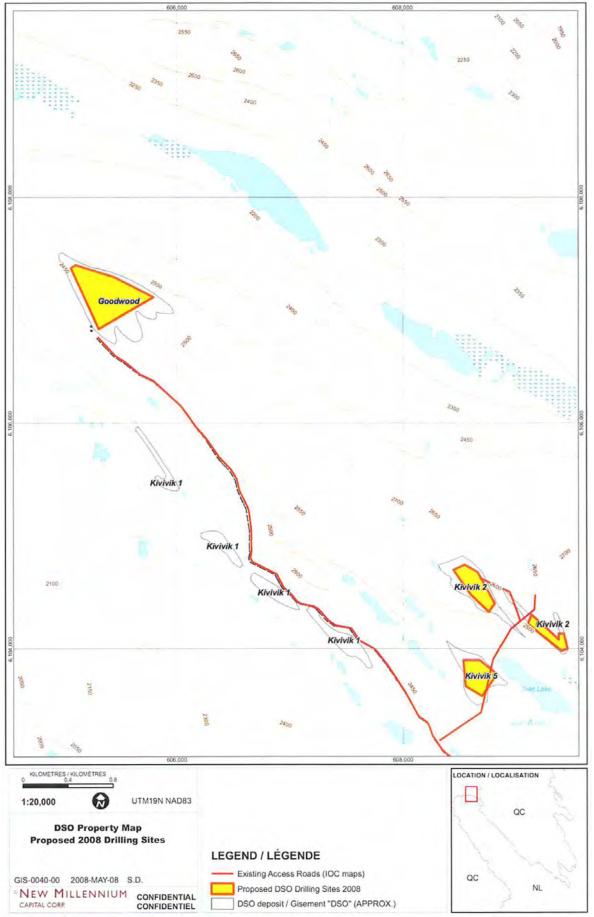


Figure 6 - Location of the Kivivik 5, Kivivik 2 and Goodwood Areas

#### 3.13 DSO-4: Kivivik 2

The Kivivik 2 area is divided in two separate sections by a secondary access road. It measures a little over one kilometre (on a north-west/south-east axis) by about 175 m in width (on an approximate east-west axis) (Figure 6). As in the case of Kivivik 5, this area is located in the vicinity (approximately 400 m north-east) of Joan Lake. Generally, the topography observed is very uneven, with numerous southwesterly slopes. Everywhere, blocks ranging in size from about 10 cm to 1 m can be seen (Photo 27). These blocks are sometimes aggregated into fields. Erratic blocks were also observed in some places. The microtopography is very uneven, and there are flat surfaces. The vegetation is poorly developed, consisting exclusively of sphagnum and caribou moss. The soil layer is very poorly developed, being totally absent in most places.

Borehole trenches and piles of waste rock were the main evidence of humanly-induced disturbance, which probably occurred in the early 1980s (Photo 28). No test-pitting was deemed necessary in such an environment, and the systematic visual inspection revealed no evidence of former human occupation.



Photo 27 - Overview of the Kivivik 2 area, northern part - View towards the north-west (SCHEFF-08-N1-49)



Photo 28 - Overview of the Kivivik 2 area, northern part - View towards the south-west (SCHEFF-08-N1-51)

#### 3.14 DSO-4: Goodwood

The Goodwood area is triangular in shape. Each side measures approximately 600 m (Figure 6). The vegetation is essentially made up of sphagnum and caribou moss. Very few trees can resist the continuous winds characteristic of this environment. The topography observed is very uneven; the northern part corresponds to a ravine (Photo 29) covered with blocks ranging in size from approximately 10 cm to 1 m that could be the bed of an intermittent stream (melting of snow, for example). The drainage is generally good, but some areas show signs of surface water retention creating marshy zones. The microtopography is hummocky, with small fields of boulders and erratic blocks visible everywhere. The bedrock is exposed in some places. The east side of the area is adjacent to a hill, which parallels this part of the area.

Numerous traces of anthropogenic disturbance related to mining activities were noted (Photo 30). Indeed, trenches, test pits and piles of waste rock were visible almost everywhere. No test-pitting was deemed necessary. The visual inspection showed no indications of the former occupation of this area. Many chert nodules of various colours (black, grey, red, green) were observed. None of them showed traces of human use.



Photo 29 - Overview of the Goodwood area, northern part, west side of the road - View towards the south-west (SCHEFF-08-N1-33)



Photo 30 - Overview of the Goodwood area, northern part, west side of the road with trench and stake H - View towards the south-west (SCHEFF-08-N1-40)

#### 4 RECOMMENDATIONS

The archaeological survey carried out within the limits of the 14 areas to be affected by trenching or drilling did not allow us to identify any ancient archaeological sites. Generally, a systematic visual inspection was deemed sufficient, since the degree of anthropogenic disturbance associated with former mining activities had, in most cases, heavily damaged the surface of the areas.

An abandoned former mining camp dating from the 1940s or the 1950s was found near the Sunny 1 area. While it is located outside of the limits of this area, it is desirable that its integrity not be disturbed by future field work. In addition, we recommend that an historical and photographic study be undertaken to record the history of this site for future generations.

Other than the recommendation stated above, no additional recommendation applies.