

ENVIRONMENTAL ASSESSMENT FOR THE MARATHON PGM-Cu PROJECT AT MARATHON, ONTARIO

STILLWATER CANADA INC. MARATHON PGM-Cu PROJECT

SUPPORTING INFORMATION DOCUMENT No. 28 - STAGE 1 AND STAGE 2 ARCHAEO- LOGICAL ASSESSMENT OF THE MARATHON PGM PROPERTY, NORTH OF MARATHON, ONTARIO

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**Stage I and II Archaeological Assessment
of the Marathon PGM property,
north of Marathon Ontario.**

Prepared for

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**Licence to
Conduct Archaeological Exploration or
Field Work No. P065 CIF-P065-066-2007
(Woodland Heritage Services Limited)**

March 28, 2008

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ABSTRACT

TITLE: Stage I and II Archaeological Assessment of the Marathon PGM property, north of Marathon Ontario.

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LICENCE NUMBER: P065

TYPE OF LICENCE: Consulting, Northern Ontario

C.I.F. #: P065-066-2007

LOCATION OF ACTIVITY: north of Marathon, Ontario

DATE OF ACTIVITY: October 11-13, 2007

METHODOLOGY: A review of site records, onsite Stage II surveys at the proposed development location.

RESULTS: No new archaeological sites were identified.

MITIGATIVE MEASURES: There are no additional cultural heritage concerns at this locality.

Introduction:

Woodland Heritage Services Limited was contracted by Golder Associates Ltd. of Sudbury, Ontario to conduct a Stage I and II archaeological assessment of a proposed mining development north of Marathon, Ontario (Figures 1-4).

The cultural heritage assessment work described in this report follows the requirements under the Planning Act (Section 2d, Policy 2.5.2), the Environmental Assessment Act (Section 5(3)(c)) and the Ontario Heritage Act for Stage II archaeological assessment. The Stage II work was undertaken under our Ontario consulting licence (Luke Dalla Bona, Archaeological Licence P065-066-2007) and provides the project proponents and the Ministry of Culture (MoC) report reviewers with information about the known and potential cultural heritage resources within the study area.

1.1 Archaeological Licence Regulations

Recommendations: Any recommendations made in this report are subject to approval by the Minister responsible for the Ontario Heritage Act, R.S.O. 1990. Pursuant to Section 65(1) of the Act, it is required that the licensee will include in any report the following: a statement of impacts that the proposed undertaking may reasonably be expected to have upon archaeological heritage, any recommendations made to the proponent regarding the protection, preservation or conservation of archaeological heritage in the area of the undertaking, and a statement of the reasons for those recommendations.

Site Record Form: Every newly discovered site must be recorded on an Archaeological Site Record Form. Each site revisited or previously recorded must be documented on a Site Update Sheet.

Prior Notice: The licensee must, before initiating field work on a particular undertaking, provide the MoC with notice concerning the identity of the proponent and/or contractor, the identity of the Project Director, the nature, purpose, location, duration and extent of the planned field work, the anticipated staffing of the project, and the details of special arrangements or conditions of the contract. Before commencing field work, the licensee must receive confirmation of receipt of this notice from MoC.

Human Remains: An archaeological licence does not authorize disinterment of human remains. Disinterment must be conducted in compliance with the Cemeteries Act, R.S.O. 1990, C. C.4 and the Ministry of Consumer and Commercial Relations.

Archaeological licences are issued pursuant to the Ontario Heritage Act, R.S.O. 1990, C. 0.18, and are subject to the provisions of this Act. Licences are not transferable. Under archaeological licence

regulations, three copies of this report must be submitted to the MoC.

1.2 Introduction and Record Review

Site files at the offices of the Archaeological Data Coordinator (MoC) and Woodland Heritage Services Limited site files were checked to determine if any prehistoric sites had been previously recorded and registered either in or near the study area.

1.3 Known/Registered Archaeological Sites

Before initiation of fieldwork, the site files and catalogued reports at Woodland Heritage Services Limited and/or the offices of the Archaeological Data Coordinator, Ministry of Culture were checked to determine if any prehistoric sites had been previously recorded either in or near the study area. Several sites have been previously recorded in the general study area but none are located within the boundaries proposed development. These sites are listed in Table 1.

1.4 Brief History of the Study Area

Cultural Prehistory

People have been living in the study area since the time glaciers receded and the land could support plants and animals. Archaeologists have divided the precontact era (that is, before the time of European arrival) into time periods, described briefly below.

Paleo-Indian Period (ca. 9500 BP - 7000 BP)

These precontact peoples were the first inhabitants of the area. Most likely, they arrived by following herds of caribou across the tundra/parkland environment of newly opened lands left by the retreating glaciers. Within a few hundred years, the Boreal forest moved in, causing an adaptation to a forest environment and settlement concentrations along lakes and river systems. Several types of early spear points indicate that different groups of these early hunters moved in at various times.

However, because of the later retreat of the glaciers in the northern part of the province and subsequent flooding of the glacially-compressed landscape by pre- and post glacial lakes, there was a time delay in the settlement of northern regions by colonizing vegetation, animals and humans. It appears that people may have entered the eastern Lake Superior/northern Lake Huron area about 9,000 years ago, while archaeological work farther north in the Hudson's Bay Lowlands suggests that human occupation there may be limited to about the last 6,000 years.

Archaic Period (ca. 7000 BP - 2500 BP)

An environmental transition brought about warmer, drier conditions resulting in a change in the plant and animal communities, which consequently impacted the subsistence patterns of humans living

Table 1. Registered archaeological sites in the vicinity of the study area.

Borden Number	Site Name	Description
Delo-3	Angler Creek	WWII prisoner of war camp
Delp-10	Kuskog	Puckasaw pit, E of south end of Coldwell Peninsula.
Delp-8	Thunderhead	Puckasaw pit, E of south end of Coldwell Peninsula
Delp-9	Billings	Puckasaw pit, E of south end of Coldwell Peninsula.

in the region now represented by north-central Ontario. These alterations of subsistence patterns are reflected in the artifact assemblages. For instance, in response to the hunting of smaller game, large spear points were replaced by smaller, notched projectile points and stone knives generally became smaller. A new technology involving the production of stone tools by grinding rather than chipping was also utilized.

About 3,000 B.C., people started to make use of copper, which was cold-hammered to form spear points, knives, gaff hooks and elaborate jewellery. One of the most complete copper assemblages for northwestern Ontario comes from a burial south of Lake Nipigon, dating to about 1,500 B.C.

Initial Woodland Period (ca. 2500 BP - 1100BP)

The Early Woodland Period marks the first appearance of ceramics in the archaeological record, a technological development which becomes increasingly important to the archaeologist as a means of determining the age and occupation of a site. Just as projectile points in the preceding Archaic and Paleo stages underwent stylistic alterations through time, which permitted the determination of the age of a site, ceramics also reflect changes: in vessel form, method of construction, decorative motif (design) and mode of decoration (method). The evolution of ceramic construction was gradual and subtle enough to allow archaeologists to determine the placement of a site within a cultural chronology on the basis of the ceramics recovered from it.

Archaeologists refer to the first pottery-using period in northern Ontario as the Laurel Tradition. Laurel peoples sites are marked by the introduction of fired clay pottery vessels. These vessels were made by the coil method, had conical bases and were smooth, with the exception of the neck and

rim which were decorated with distinctive toothed or sinuous-edged tools. The Laurel peoples also practised a way of life similar to the Archaic peoples who lived in the region before them: fishing, hunting and collecting wild plants on the major waterways.

There are two major theories concerning the origin of the Laurel culture. One is that it arose out of an Archaic base, differing only by the adoption of pottery. The other is that the people moved into the region following the expansion of wild rice habitats about 500 B.C.

Terminal Woodland (ca. 1100 BP - 400 BP)

Two distinctive cultures, both of which appear to have developed from a Laurel cultural base, are present in the Terminal Woodland Period. One of these cultures is referred to as the Blackduck tradition; the other distinct culture is the Selkirk tradition.

The Blackduck culture is characterized by unique globular pottery vessels. The body of these vessels is textured by cord-wrapped paddles and the rim is decorated with cord-wrapped object impression. Some archaeologists believe the Blackduck tradition was ancestral to the modern Ojibway (Anishnabek) Aboriginal Peoples and First Nations.

The other Late Woodland culture, the Selkirk tradition, is distinguished by their fabric-impressed globular vessels. They are found farther north. According to many archaeologists, the Selkirk peoples are ancestral to the Cree Aboriginal Peoples and First Nations.

PART II - CULTURAL HERITAGE ASSESSMENT

2.0 Introduction:

Stage II field assessments are intended to provide an inventory of all archaeological sites present on the subject property. As such, the following general provisions will govern the extent and nature of field assessments:

- techniques used should be appropriate for finding both precontact and post contact remains and sites of all sizes
- except in areas of low potential or lands subject to previous, extensive disturbance or where MoC has agreed to exempt portions of the landbase from assessment, the entire development property must be surveyed
- Assessments shall be conducted in weather conditions that will allow for the identification of sites or will not result in the loss of data or damage to cultural material. For example, no surface surveys shall be conducted on lands covered by snow and no test pit surveys shall be conducted on ground frozen more than 3m below the surface.

2.1 Stage II - Archaeological Field Assessment

A Stage II field assessment provides the consulting archaeologist (must be licensed under the *Ontario Heritage Act*) and the MoC report reviewer with an inventory of all archaeological sites present on the subject property. As part of the Stage II background study, the consulting archaeologist shall:

- conduct pedestrian surveys at transects of 10 metres depending upon the landscape
- conduct subsurface test pit excavations at intervals of 10 metres depending upon the landscape and the degree of potential for encountering cultural heritage remains.

When encountering archaeological remains during the Stage II assessment, the survey must be intensified around the area of the find to determine if it is isolated or is a part of a larger artifact scatter. If artifacts found during Stage II are isolated finds or part of a site that obviously will not require further investigations, artifact locations shall be mapped and all diagnostics shall be retained. However, if the artifact is part of a larger surface scatter, or associated with multiple artifact yielding pits, then additional (Stage III) documentation of this location is required.

2.2 Description of the Study Area

The study area is located immediately north of the Marathon airport and west of the Pic River (Figure 1-4). It is best characterized as a steeply and wildly undulating bedrock controlled terrain. It is roughly bounded on the east side by the Pic River; a major waterway that extends far north

and is a viable means of crossing the height of land to waterways that lead north: on the north, Bamoo's Lake; on the west by a north south line that cuts through Hare Lake and; on the south by a line about a kilometre north of Highway 17.

Along the Pic River, the landscape is steeply sloped and, even with the high water levels experienced in October 2007 during the survey, the banks are high and not easily accessible. There are few level, accessible localities to be found along the river. The vegetation is typical boreal forest landscape found elsewhere on the north shore of Lake Superior. Pines, spruce and aspen predominate. It is important to note that Pic River does not fall entirely within the study area (Figure 2) but for the sake of ease and completeness, the entire Pic River (from the southern boundary of the study area to the northern boundary of the study area) was included in this survey.

The balance of the study area is located in an area of steeply sloped, bedrock hills with swampy, poorly drained valleys and few (if any) areas of relatively flat, well drained areas. The waterways in this area are all first order waterbodies draining wetlands. Only Bamoo's Lake, on the northern edge of the study area can be considered a significant waterbody (with respect finding archaeological sites).

2.3 Field Methodology

A site visit was conducted between October 10 and 13, 2007 by the author and Mr. Tyler Nabigon of the Pic River First Nation. October 11 and 12 were spent examining the study area around the Pic River and October 13 was spent examining the interior - specifically the area where mine operations are proposed. Golder Associated kindly provided detailed mapping and LIDAR imagery which provided invaluable detail about the project area and greatly facilitated identifying those area which should be surveyed.

2.4 Archaeological Findings

2.4.1 Pic River Locality

The Pic River, in the late fall of most average years, is best characterized as a rock strewn waterway that is difficult to navigate. We were extremely fortunate that this year, water levels were extremely high - comparable to periods of spring runoff and as a result, it was easy to navigate the entire stretch of the river, from the mouth of the Pic to the north end of the study area, without hitting a single boulder. Even with the very high water levels, it was evident that there are few places along the Pic River (within the study area) that can be considered suitable for locating archaeological sites. The vast majority of the river is high banked and steeply sloped. However, those few localities

that did show potential for finding archaeological sites were examined - all with negative results. Those localities are shown in Figures 5 - 6).

The only finding of any interest was a diesel winching station - likely associated either with the construction of the transmission line or with logging activities on the river. In either event, the winch and motor are clearly recent in origin (within 40 or 50 years) and as a result, fall outside of the scope of this work.

2.4.2 The Interior

The interior area of the project area is so rugged that it necessitated using a helicopter to access it. There were three goals to using the helicopter:

- the first was to conduct an aerial survey of the property to determine if there were any areas that deserved to be surveyed - apart from those already selected from maps and aerial photography;
- the second was to survey an area at the west end of Bamoo's lake, and;
- the third was to follow a rough access road cut through the centre of the proposed mine operations area.

The aerial helicopter survey confirmed that the vast majority (if not all) of the interior of the study area (away from the Pic River) should not be considered high archaeological potential. The sheer difficulty of accessing the area on foot, coupled with the extensive wetlands and the steep terrain all combine to suggest that the area is not high archaeological potential.

After circling Bamoo's Lake and confirming (from the air) that there are no other high potential locations on the lake, we were dropped off at the west end of the lake where a small sand beach can be found. A survey of the beach coupled with subsurface test pitting resulted in negative findings. We proceeded to walk to the outlet of the lake and discovered a portage trail on the west side of the lake. The trail is currently maintained and a boat cache is found on the north end of the trail. Whether this is a modern version of a historic trail is unknown. Test pits excavated on both sides of the mouth of the creek were negative.

The helicopter returned to pick us up from Bamoo's Lake and drop us off at the southern end of an access trail into the mining property. We walked approximately 3.5 to 4 kilometres from south to north through the approximate centre of the proposed mining operations. This on-the-ground

traverse confirmed the ruggedness of the area and the complete lack of terrain characteristics that would be considered to be high archaeological potential.

2.5 Fieldwork Summary

A thorough survey of the Pic River and the interior portion of the study area did not result in the discovery of any significant cultural resources. It also confirmed that the likelihood is low that additional significant cultural resources will be encountered in this area.

3.0 Recommendations

3.1 It is recommended that there be no further concerns with regards to cultural heritage resources in this study area.

3.2. As required by the Ministry of Culture regulations under the Ontario Heritage Act, all archaeological reports must state that should human remains be identified during operations, all work in the vicinity of the discovery will be suspended immediately. Notification will be made to the Ontario Provincial Police, or local police, who will conduct a site investigation and contact the district coroner. Notification should also be made to the Development Plans Review Office, Ministry of Culture, Heritage and Libraries Branch, Heritage Operations Unit, 400 University Avenue, 4th Floor, TORONTO, ON M7A 2R9, and the Registrar of Cemeteries, Ministry of Consumer and Commercial Relations. Other government staff may be contacted as appropriate, however media contact should not be made in regards to this discovery.

Should other cultural heritage values (e.g., archaeological or historical materials) be identified during operations, all activity in the vicinity of the recovery will be suspended and the Ministry of Culture archaeologist contacted. This condition provides for the potential for deeply buried or enigmatic local site areas not typically identified in evaluations of potential.

Table 2. GPS coordinates taken during the survey.

150	17 T 482969 5137574	188	16 U 551754 5406492
151	17 T 482969 5137574	189	16 U 551748 5406515
152	16 U 551973 5402345	190	16 U 551745 5406562
153	16 U 551974 5402351	191	16 U 551753 5406553
154	16 U 551986 5402352	192	16 U 551756 5406607
155	16 U 551994 5402355	193	16 U 551847 5406593
156	16 U 552007 5402357	194	16 U 551848 5406570
157	16 U 552008 5402342	195	16 U 551849 5406528
158	16 U 551999 5402347	196	16 U 551811 5403261
159	16 U 551993 5402348	197	16 U 553893 5386760
160	16 U 551983 5402337	198	16 U 553893 5386760
161	16 U 551973 5402338	199	16 U 545737 5405796
162	16 U 551947 5402331	200	16 U 553893 5386760
163	16 U 551939 5402324	201	16 U 553893 5386760
164	16 U 552237 5405333	202	16 U 545458 5405836
165	16 U 552243 5405345	203	16 U 545766 5405767
166	16 U 552242 5405353	204	16 U 545752 5405789
167	16 U 552253 5405365	205	16 U 545751 5405804
168	16 U 552262 5405391	206	16 U 545871 5405609
169	16 U 552262 5405398	207	16 U 545872 5405571
170	16 U 552272 5405425	208	16 U 545875 5405570
171	16 U 552274 5405441	209	16 U 545769 5405798
172	16 U 552266 5405476	210	16 U 545780 5405800
173	16 U 552237 5405383	211	16 U 545464 5405841
174	16 U 552230 5405363	212	16 U 549767 5402423
175	16 U 552223 5405323	213	16 U 549696 5402799
176	16 U 552215 5405302	214	16 U 549616 5403031
177	16 U 551160 5408014	215	16 U 549673 5403241
178	16 U 551173 5407542	216	16 U 550272 5403743
179	16 U 551851 5406506	217	16 U 550072 5404145
180	16 U 551812 5406512	218	16 U 550071 5404363
181	16 U 551765 5406490	219	16 U 550348 5404636
182	16 U 551756 5406516	220	16 U 550286 5405033
183	16 U 551755 5406518	221	16 U 550512 5405510
184	16 U 551753 5406515	222	16 U 550462 5405689
185	16 U 551750 5406516	223	16 U 550526 5405956
186	16 U 551759 5406526	224	16 U 550599 5406257
187	16 U 551763 5406502		

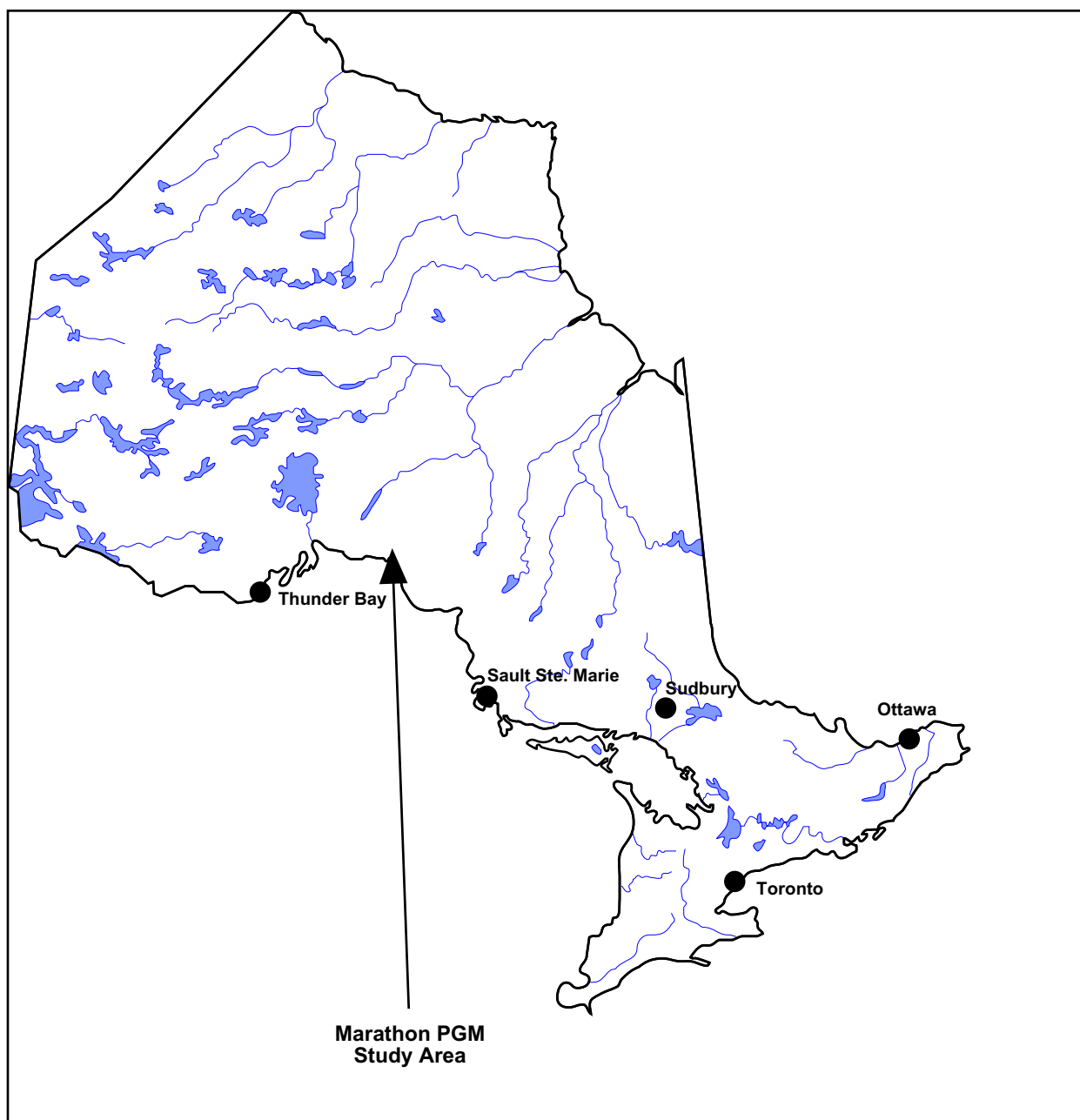


Figure 1. Location of the study area at north of Marathon.

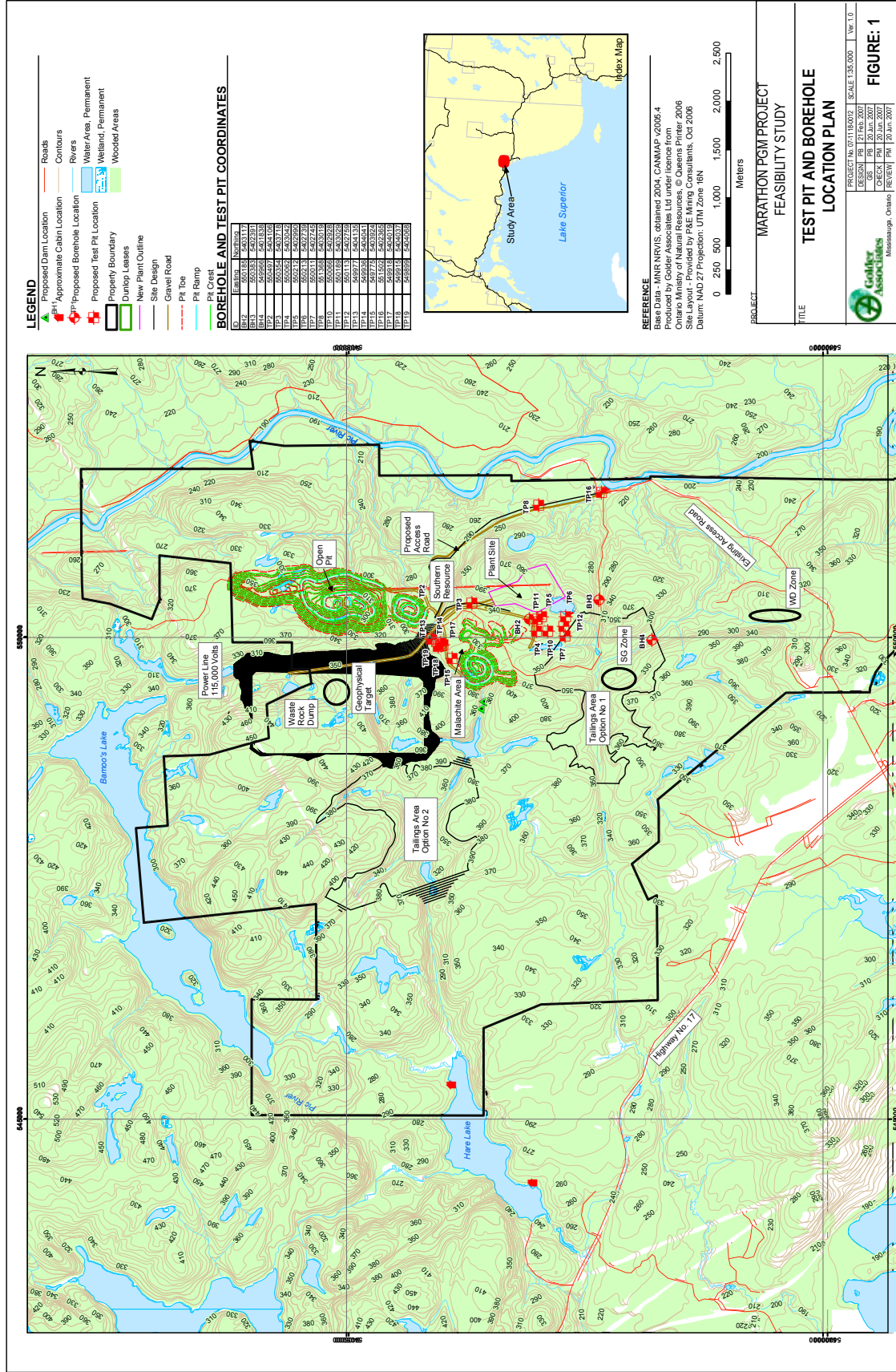


Figure 2. A map showing the boundaries of the study area, north of Marathon, Ontario.

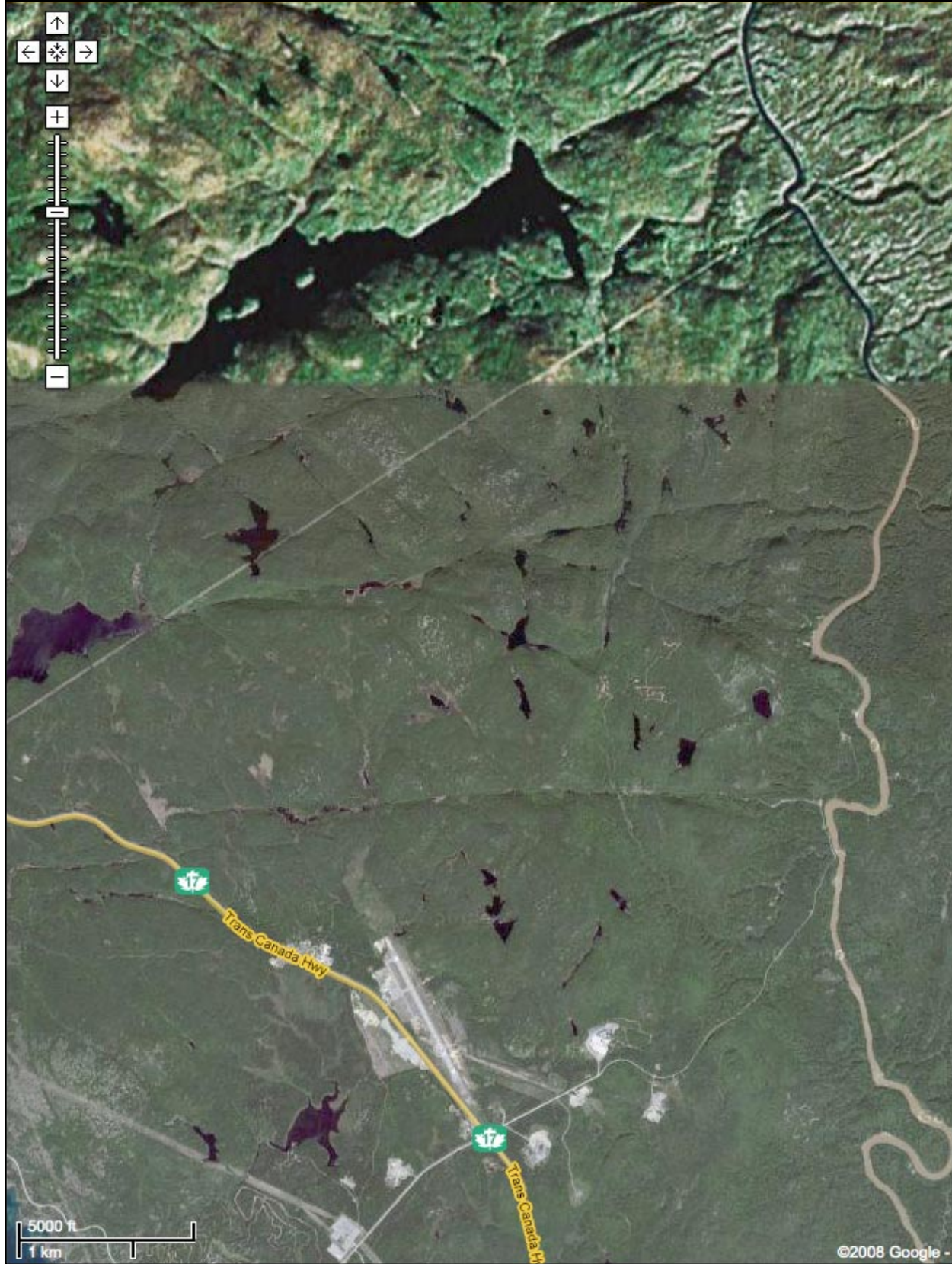


Figure 3. Google satellite imagery of the study area.

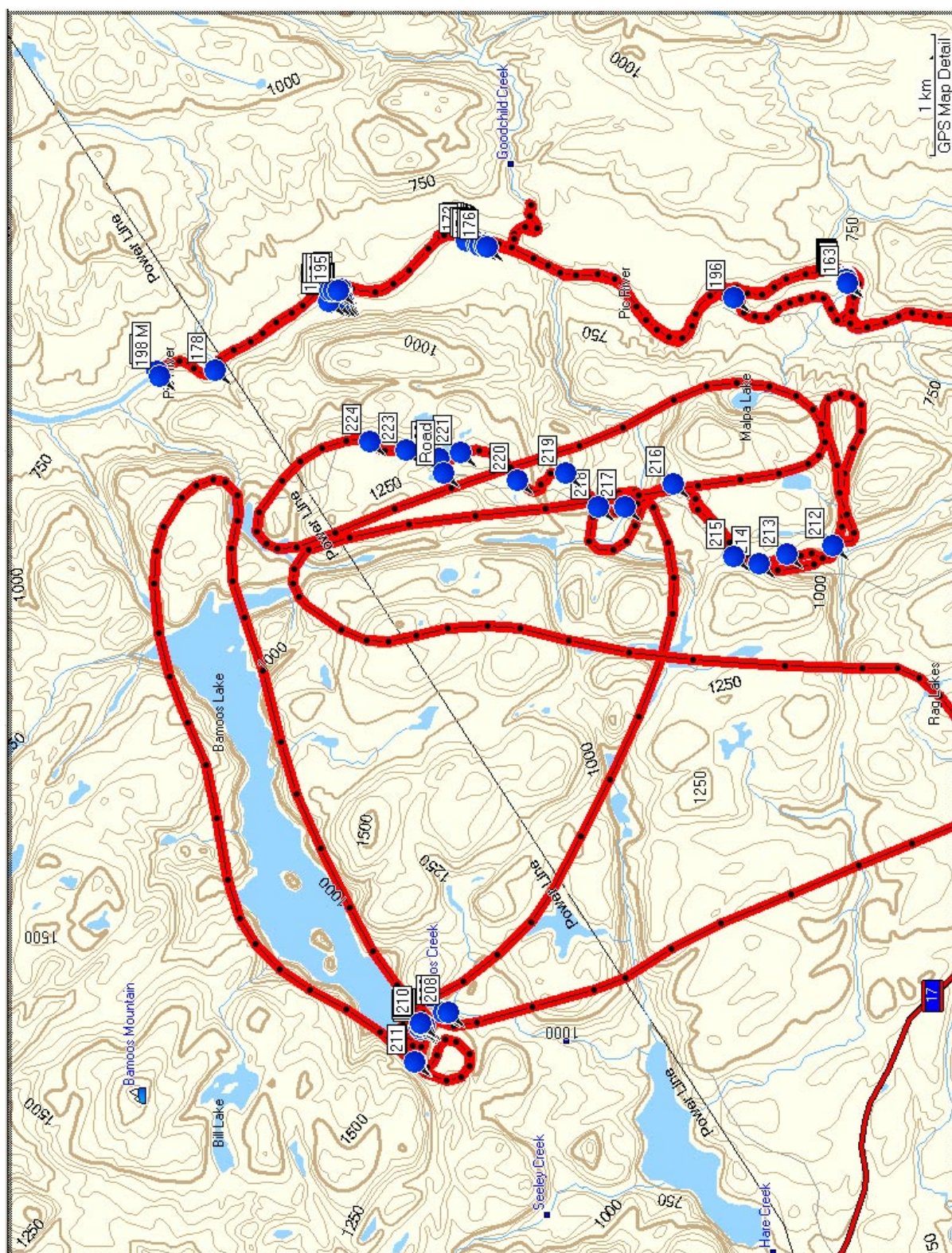


Figure 4. Map illustrating the location of GPS points taken.

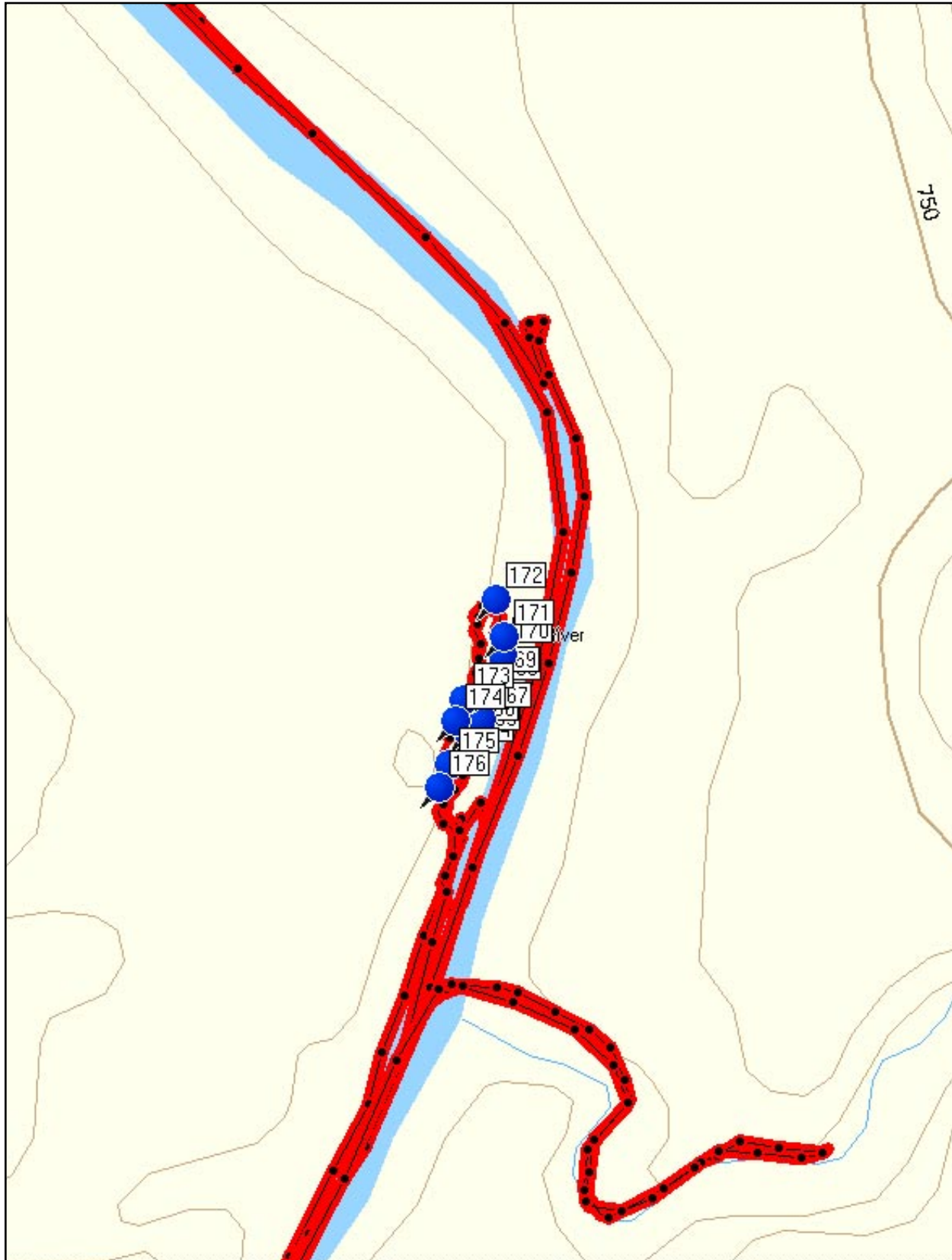


Figure 5. Locality 1 along the Pic River, subjected to test pit survey.

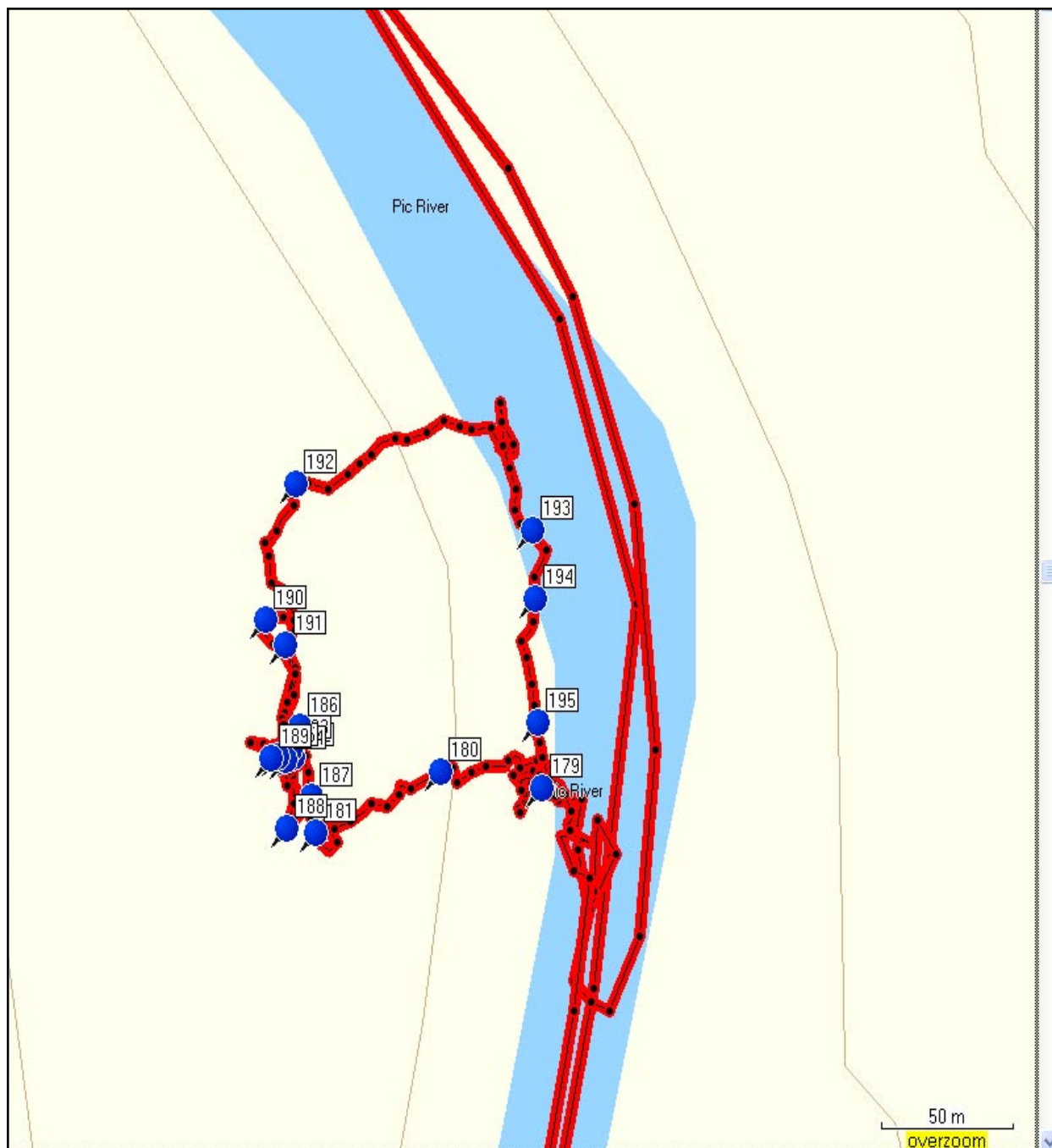


Figure 6. Locality 2, along the Pic River, subjected to test pit survey.

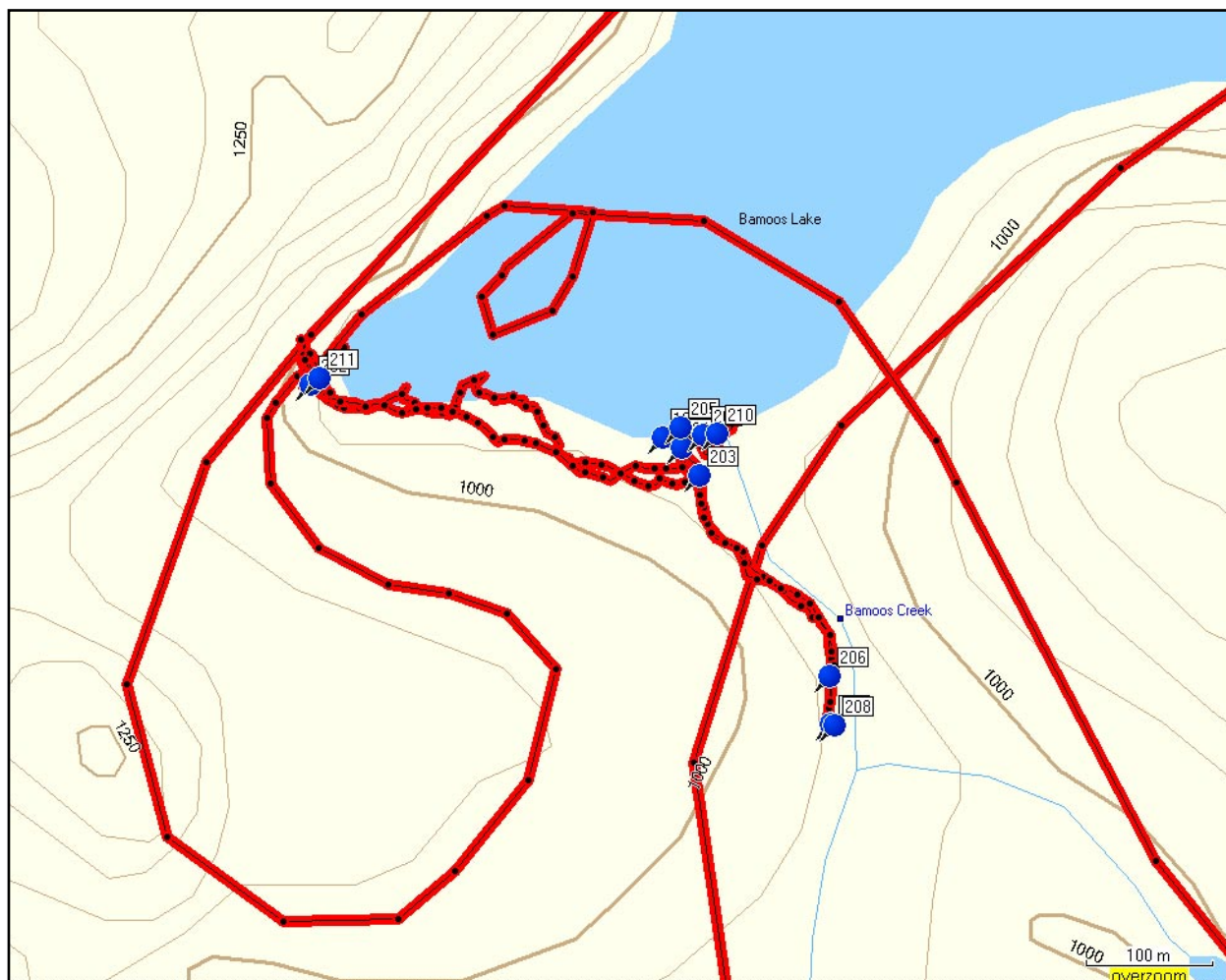


Figure 7. GPS points and survey tracks at the west end of Bamoo's Lake

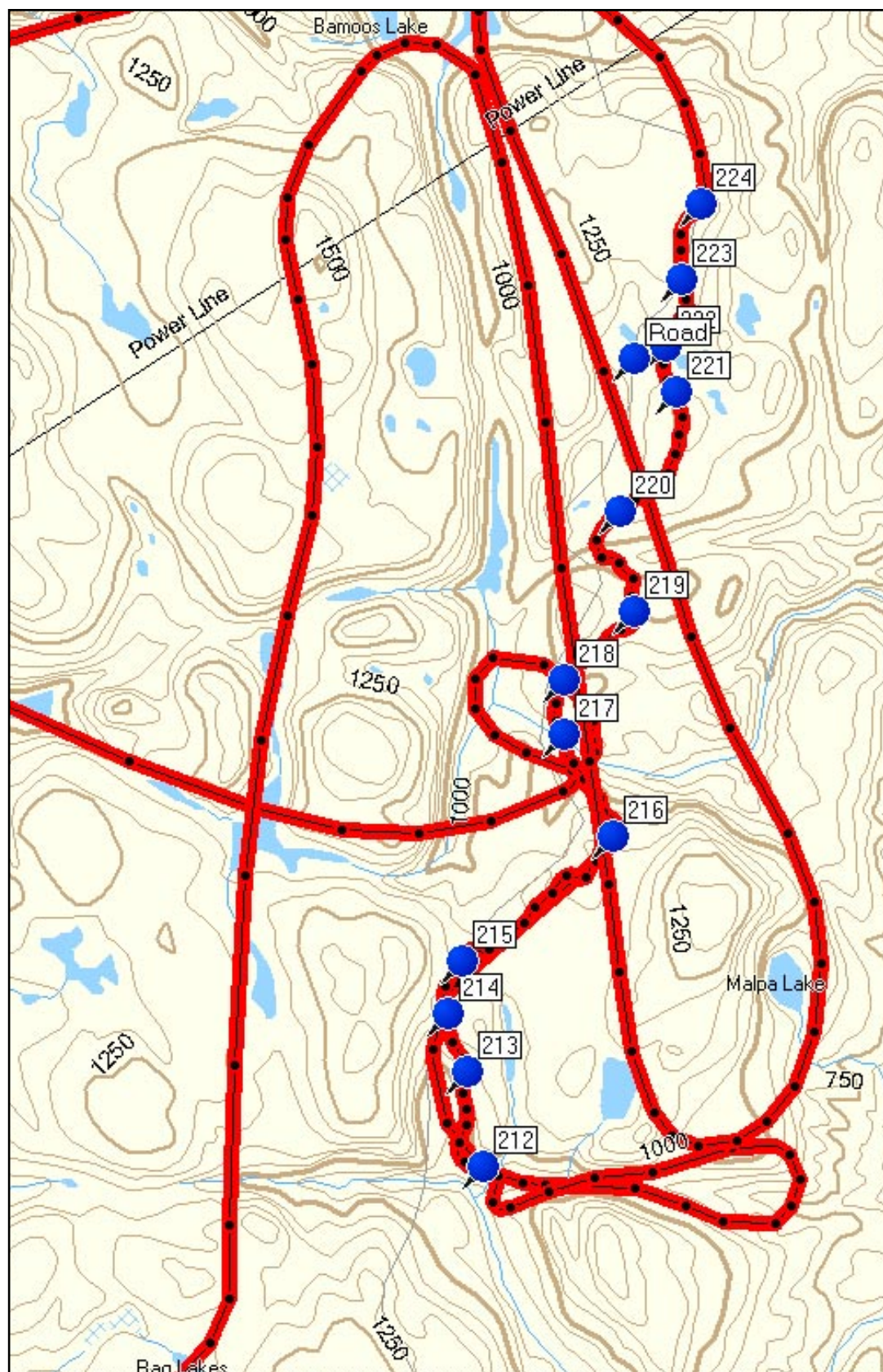


Figure 8. Areas surveyed and test pits excavated in the interior of the study area.



Figure 9. Looking upstream the Pic River.



Figure 10. Tyler Nabigon, as we make our way up the Pic River.



Figure 11. View of the steep shores found along the Pic River.



Figure 12. Another view of the steep shores along the Pic River.



Figure 13. Tyler Nabigon assisting with test pit excavations along the Pic River.



Figure 14. Tyler Nabigon examining the recent diesel winch found at the north end of the study area, along the Pic River.



Figure 15. Tyler Nabigon, excavating a test pit along the Pic River.



Figure 16. View of the beach area at the west end of Bamoo's Lake.



Figure 17. View of the outflow of Bamoo's Lake. The portage trail is to the right of the creek.



Figure 18. View of the mouth of the creek at Bamoo's Lake.



Figure 19. Typical rugged, rocky terrain encountered in the interior of the study area.



Figure 20. Aerial view of terrain typical to the interior of the study area.



Figure 21. Aerial view of terrain typical to the interior of the study area.



Figure 22. Aerial view of terrain typical to the interior of the study area.

Ministry of Culture

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December 31, 2008

Luke Dalla Bona
Woodland Heritage Services, Ltd.
248 Queen St., East
Sault Ste. Marie, ON P6A 1Y7

Dear Luke,

Re: Project Stage 1 and 2 Archaeological Assessment of the Marathon PGM Property, North of
Marathon Ontario for PIF: P065-066-2007



This office has reviewed the above-mentioned report, which has been submitted to this Ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. This review is to ensure that the licensed professional consultant archaeologist has met the terms and conditions of their archaeological licence, that archaeological sites have been identified and documented according to the 1993 technical guidelines set by the Ministry and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario.

As the result of our review, this Ministry accepts the above titled report into the Provincial register of archaeological reports. The archaeological assessment examined areas along the Pic River and in the proposed mine site, and recommends that there are no further concerns for alterations to archaeological sites for the area that has undergone archaeological assessment. This Ministry concurs with this recommendation. In light of the level of intensity of the assessment, this recommendation extends only to the mine area, the shores of Bamooos Lake and the bank of the Pic River. If development activities are recommended for other parts of the property, additional Stage 2 field work may be required.

Please note that concurrences and evaluations of low potential made by this Ministry do not remove the proponent's obligations under the Ontario Heritage Act (R.S.O. 1990, c. O. 18) or the Cemeteries Act (R.S.O. 1990, c. C. 4). For this reason, two standard conditions will continue to apply to the approval of this application.

1. Should human remains be identified during operations, all work in the vicinity of the discovery will be suspended immediately. Notification will be made to the Ontario Provincial Police, or local police, who will conduct a site investigation and contact the district coroner. Notification must also be made to this office and the Registrar of Cemeteries, Ministry of Government Services.
2. Should other cultural heritage values (archaeological or historical materials or features) be identified during operations, all activity in the vicinity of the recovery will be suspended and the Ministry of Culture archaeologist contacted. This condition provides for the potential for deeply buried or enigmatic local site areas not typically identified in evaluations of potential.

Please feel free to contact me regarding this project should you have any questions.

Yours,

for Andrew Hinshelwood
Archaeology Review Officer

cc Golder Associates, 1010 Lorne St., Sudbury, ON P3C 4R9