

**ARCHAEOLOGICAL MONITORING OF
STEAM PLANT FOUNDATION INSPECTION
AT THE FORKS**

Prepared for

BOGE & BOGE

**QUATERNARY
CONSULTANTS
LIMITED**

September, 1995

1.0 Introduction

In conjunction with the redevelopment of the Steam Plant at The Forks for new facilities for MTN, it was necessary to inspect the wooden pilings under the foundation. Two 36" (91.5 cm) diameter caissons were drilled adjacent to the north wall of the structure. The holes were located at places where clusters of piles had been driven. The first hole was drilled 17.7 metres west of the northeast corner of the building and the second hole was drilled 0.3 metres east of the northwest corner.

Due to the potential for archaeological resources, Quaternary Consultants Limited was contracted to provide archaeological monitoring of the drilling. The operation was conducted under Heritage Permit A76-95 (Appendix A) issued by Historic Resources Branch, Department of Culture, Heritage and Citizenship.

The project was undertaken by the engineering firm of Boge and Boge, using the services of Subterranean (Manitoba) Ltd. The truck-mounted auger was sited approximately one metre from the building wall, in order to have the hole beside the pile cap, which overlies the pile cluster. During the drilling, the excavated soil was observed by Sid Kroker (Senior Archaeologist) of Quaternary Consultants Ltd. The holes were drilled to a depth of 3.65 metres and were large enough to allow entry for visual inspection of the walls. After the placement of a metal sleeve at the upper section to prevent slumpage, Subterranean personnel hand-excavated around the piles to establish their structural integrity. The archaeologist was able to inspect the vertical walls from within the auger hole.

2.0 Observations

There appears to have been some deposition around the walls of the building since construction in 1947. The construction plans noted that the top of the pile cap was to be 6'6" (1.98 metres) below grade. This was actually encountered 30 cm deeper. The soil profile of the first hole showed upper layers of sandy gravel and black cinder overlaying a second gravel layer. The lower gravel layer may have been the post-construction land surface. The soil profiles for both holes were recorded on the north wall of the auger hole, inasmuch as the upper portion of the south wall showed only re-deposited riverine sediments due to infill after the pile caps and foundations had been constructed. Both profiles are extremely complacent (Table 1).

No relict soil strata were observed in either hole. Occasional flecks of charcoal were noted within the silty clay layers and, as such, would represent deposition during the high water episode which laid down the silty clay layer.

3.0 Discussion

The two profiles are quite similar, with the exception of the additional gravel component in the first hole. The dark brown silty clay horizon probably represents the soil surface after the last recorded flood in the 19th century (1881). The grey brown marly clay horizon in the first hole appears to

correlate with the hematite-stained brown clay horizon in the second hole and may be a different representation of the same flooding episode.

Hole 1 Stratigraphy		Hole 2 Stratigraphy	
Depths (cm)	Component	Depths (cm)	Component
0 - 40	Sandy Gravel	0 - 40	Gravel
40 - 60	Black Cinder	40 - 85	Black Cinder
60 - 80	Gravel		
80 - 90	Dark brown silty clay	85 - 108	Dark brown silty clay
90 - 98	Medium brown silty clay	108 - 128	Medium brown silty clay
98 - 213	Brown silty clay - marl	128 - 223	Brown silty clay - marl
213 - 218	Grey brown clay - marl	223 - 226	Brown clay - hematite
218 - 365	Brown silty clay - marl	226 - 368	Brown silty clay - marl

Table 1: Stratigraphic Profiles of the Inspection Holes

The presence of marl concentrations within the silty clay indicates migration of calcium carbonate particles within the soil layers, best facilitated by a high water content and/or water passing through the strata. The presence of hematite staining suggests oxidation of the ferrous component within the riverine sediments, either through exposure to open air after deposition or as a result of dissolved oxygen within water passing through the strata.

No relict soil zones or buried organic horizons were present in either soil profile. The effects of riverine deposition and erosion are such that specific soil strata rarely extend for considerable linear distances. Thus, the absence of cultural horizons at either of these locations does not preclude the presence of archaeological resources at other locations adjacent to other sides of the building.

During the monitoring of the Stage I Construction Project, three archaeological horizons were recorded along Pioneer Boulevard in the vicinity of the Steam Plant (Kroker and Goundry 1990:29). Two horizons, Long Trench - 391S and Long Trench - 404S, were at relatively shallow depths—190 cm and 230 cm, respectively (Kroker and Goundry 1990:34). The third horizon, Long Water - 418S was considerably deeper at 435 cm (Kroker and Goundry 1990:36). Any or all of these horizons could extend to the eastern edge of the Steam Plant. Another horizon was recorded 50 metres south of the building at Stable Sewer - 487S where a hearth was present at a depth of 260 cm (Kroker and Goundry 1990:43). No diagnostic artifacts, which would enable cultural identification, were recovered from these horizons. A radiocarbon sample from Stable Sewer - 487S provided a date of 380 B.C. \pm 70. Faunal remains were present at all four horizons and lithic material was present at Long Water - 418S.

4.0 Recommendations

No evidence of Pre-Contact Aboriginal occupations was observed during the archaeological monitoring of the foundation inspection drilling program. Nor were any relict soil horizons present.

However, due to the presence of archaeological horizons immediately to the east and more distantly to the south of the Steam Plant, **it is recommended** that all further sub-surface activities in conjunction with the re-development be archaeologically monitored.

5.0 Bibliography

Kroker, Sid and Pamela Goundry

1990 *Archaeological Monitoring of the Stage I Construction Program*. The Forks Renewal Corporation, Winnipeg.

APPENDIX A
HERITAGE PERMIT



Heritage Permit No. A76-95

FORM 11

PURSUANT to Section/~~Subsection~~ 53 of *The Heritage Resources Act*:

Name: Quaternary Consultants
Address: 130 Fort Street
Winnipeg MB R3C 1C7

ATTENTION Mr. Sid Kroker

(hereinafter referred to as "the Permittee"),

is hereby granted permission to:

monitor the drilling of the inspection caissons at the edge of the steam plant at The Forks, D1Lg-33, to record the presence or absence of heritage resources and assess their importance;

during the period:

September 8, 1995

This permit is issued subject to the following conditions:

- (1) That the information provided in the application for this permit dated the 5th day of September 19 95, is true in substance and in fact;
- (2) That the Permittee shall comply with all the provisions of *The Heritage Resources Act* and any regulations or orders thereunder; PLEASE NOTE ATTACHMENT RE CUSTODY AND OWNERSHIP OF HERITAGE OBJECTS
- (3) That the Permittee shall provide to the Minister a written report or reports with respect to the Permittee's activities pursuant to this permit, the form and content of which shall be satisfactory to the Minister and which shall be provided on the following dates:
December 31, 1995
- (4) That this permit is not transferable;
- (5) This permit may be revoked by the Minister where, in the opinion of the Minister, there has been a breach of any of the terms or conditions herein or of any provision of *The Heritage Resources Act* or any regulations thereunder;

(6) Special Conditions:

- a. All surface collections, excavations, etc. are to be carried out using the provenience system established for use at The Forks and this project will be designated 95D;
- b. All heritage objects (artifacts) recovered from The Forks are to be catalogued according to the CHIN system and the relevant Borden designation will be D1Lg-33/95D;
- c. All heritage objects from The Forks are to be deposited with the Manitoba Museum of Man and Nature by March 31, 1996, for permanent curation and storage, unless appropriate loan requirements are arranged with the Curator of Archaeology prior to that date;
- d. A complete set of archaeological field records, catalogue sheets, laboratory analysis records, photographs, reports, etc. are to be deposited with the Manitoba Museum of Man and Nature upon completion of the archaeological research, or sooner if required; and any subsequent revisions or additions to these records are to be filed as soon as possible thereafter;
- e. All computer systems and programs employed in archaeological research should be compatible with the computer system established for The Forks;
- f. Appropriate arrangements and funds should be made available for the conservation of perishable heritage objects collected from The Forks;
- g. In the event that any human remains are encountered during the excavations, all activity in that particular locus will cease immediately, and the Historic Resources Branch notified immediately so that appropriate action can be determined and taken;
- h. The Permittee will be on-site supervising all aspects of the field work, including the removal of the railroad overburden during site preparation, at least 75% of the time, but when the Permittee must be absent, a qualified designate acceptable to Historic Resources Branch (copy of vita to be filed prior to commencement of field work) shall be present;
- i. The Permittee shall be responsible for the conduct of the laboratory analysis of recovered heritage objects and information to be included in the permit report;
- j. The report identified in #3 above shall conform at a minimum to "The Contents and Format of a Heritage Resource Impact Assessment" (copy attached);
- k. Neither the Government of Manitoba nor the party issuing this permit be liable for any damages resulting from any activities carried out pursuant to this permit, and the Permittee specifically agrees, in consideration for receiving this permit, to indemnify and hold harmless the Minister and the Government of Manitoba, the Minister and any employees and officials of the Government, against any and all action, liens, demands, loss, liability, cost, damage and expense including, without limitation, reasonable legal fees, which the Government, Minister or any employee or official of the Government may suffer or incur by reason of any of the activities pursuant to or related to this permit.

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Dated at the City of Winnipeg, in Manitoba, this 6th day of September 1995.


Minister of Culture, Heritage and Citizenship