

# ARCHAEOLOGICAL MONITORING OF GEO-TECHNICAL INVESTIGATIONS ON SOUTH POINT

Prepared for

**HBT AGRA LIMITED,  
REID CROWTHER & PARTNERS**

**QUATERNARY  
CONSULTANTS  
LIMITED**

February, 1994

## **1.0 Introduction**

In conjunction with the redevelopment of the Main and Norwood Bridges, realignment of the railroad track is required. For this component, a good understanding of the underlying soil stability is required. Accordingly, a geo-technical examination was undertaken by HBT AGRA Limited. Due to the potential for archaeological resources, Quaternary Consultants Limited was contracted to provide archaeological monitoring of the soil test drill holes. The operation was approved by, and conducted under, Heritage Permit A40-93 (Appendix A) issued by Historic Resources Branch, Department of Culture, Heritage and Citizenship.

Originally, the geo-technical study called for the drilling of eleven holes to various depths. This was later revised to ten holes (Figure 1) with the elimination of one hole west of Main Street. Five were located to the east of Main Street, adjacent to the railroad berm, one was located on the south bank of the Assiniboine River to the west of Main Street in the northeast corner of the Schmeckers Restaurant parking lot, and the remaining four were located to the west of Main Street in the railroad berm.

Three holes east of Main Street and four holes west of Main Street were only extended to the base of the railroad berm. Augering ceased when original soil was encountered. Three holes extended beyond Agassiz clays (Figure 1:1,2,6). Monitoring was not deemed necessary for the holes west of Main Street, inasmuch as equivalent holes east of Main Street showed no evidence of heritage material within the soils composing the railroad berm.

### ***1.1 Study Team***

The soil test monitoring was conducted by Sid Kroker. Documentation and analysis has been undertaken by Sid Kroker and Pam Goundry.

## **2.0 Monitoring of Soil Test Drilling**

The soil test operations were conducted by HBT AGRA Ltd., utilizing the services of Paddock Drilling. A total of ten test holes were drilled within the projected impact area. Test Hole 1 (Figure 1:1) was drilled to a depth of 19.81 meters, the only test to continue into bedrock. Two other holes were drilled beyond original grade (Figure 1:2, 6). Test Hole 2, at the south end of the abutment on the east side of Main Street, extended to a depth of 11.28 meters. Test Hole 6, at the northeast corner of the Schmeckers Restaurant parking lot on the west side of Main Street, extended to 13.56 meters. The other hole were closed off when original soil was encountered. Technical data has been abstracted from drilling logs provided by HBT AGRA Ltd.

Archaeological investigations consisted of visual inspection of the disturbed soil column observed from the auger cuttings and visual inspection of the undisturbed soil column samples retrieved from split-spoon samplers. These are tubular coring devices which are pushed into the undisturbed sediments at the base of the hole and the soil column is retrieved intact and can be examined when

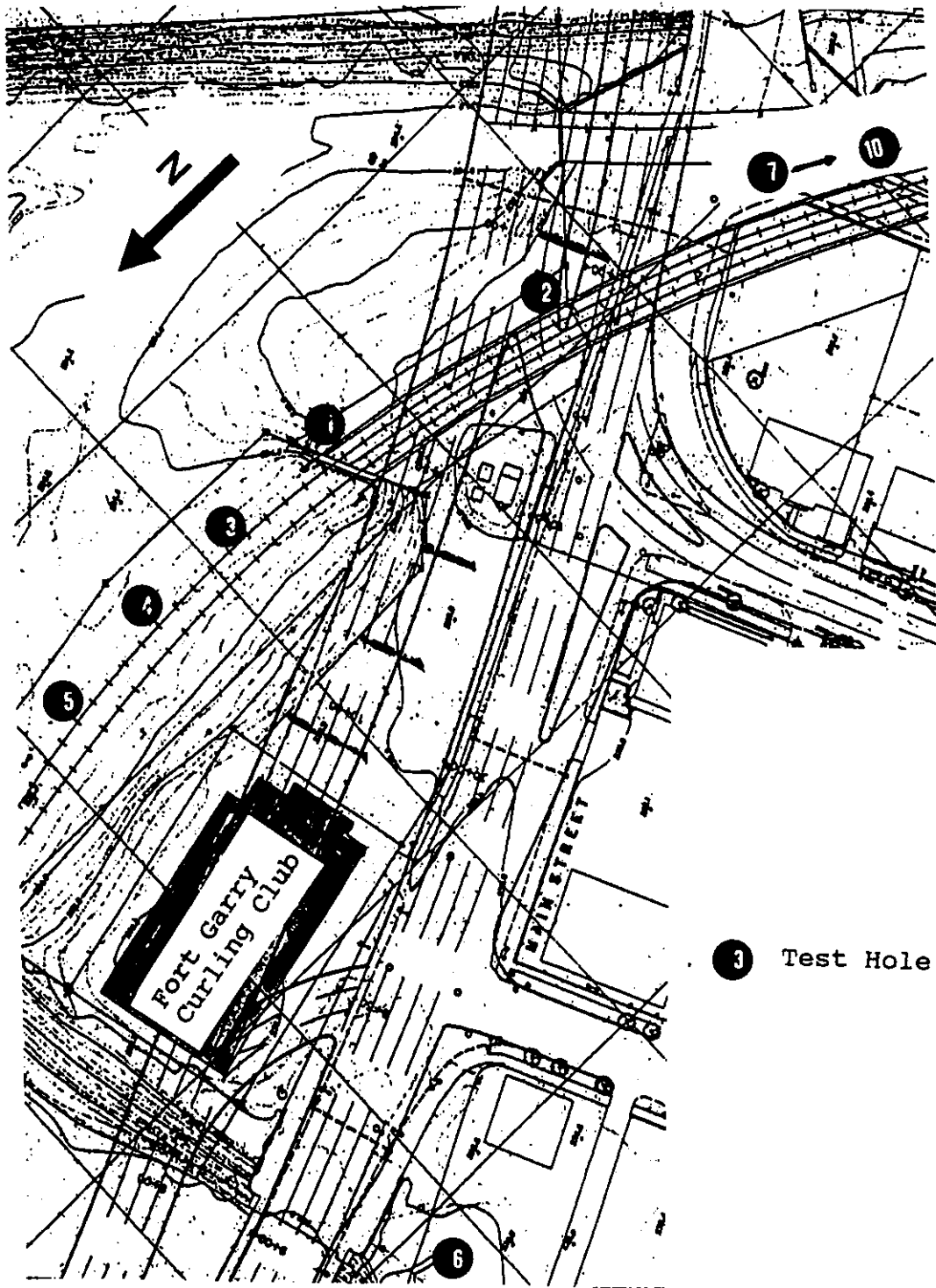


Figure 1: Map of South Point Geo-Technical Drill Sites

the tube is separated into the two vertical halves. Inasmuch as the soil strata at The Forks consist of riverine sediments, there is a considerable variation in thickness and/or presence across short distances. A similar situation can occur with regard to archaeological deposits - occupational evidence may be localized or fairly widespread.

Given the plasticity of the soil and the resultant deformation of the soil column by the 4" auger, only thick (more than 2 cm) cultural layers are readily observable. Thin horizons tend to become 'smeared' and, if observable, cannot be accurately placed in vertical context. The exceptions to this general rule are those which are noted within the split-spoon samples. However, the samples are taken at five foot (1.5 m) intervals and only provide intermittent data.

## 2.1 Observations

Test Hole 1 was sited near the concrete retaining wall at the south end of the berm, slightly above the grade of the curling club parking lot. The beginning elevation was 230.37 meters above sea level. Drilling extended to a depth of 19.81 meters. The upper levels consisted of cinders, clay, brick, and limestone fill to a depth of 2.44 meters. Dark grey clay fill continued until natural soil strata were observed at 3.95 meters. These strata consisted of grey brown layers of sand, silt, and clay. No organic 'smears' were noted within the original soil horizons, although a weathered silty clay horizon was observed at 7.77 m. Lake Agassiz deposits, beginning below the weathered horizon, continued to 10.67 m, at which depth wood fibres were encountered. A small section of wood was recovered from the auger cuttings and has been identified, by D. Deck, as elm (*Fraxinus*). The specimen (DILg-32:93A/1) has been provided to Dr. Jennifer Shay (Botany Department, University of Manitoba) and Dr. Jim Teller (Geology Department, University of Manitoba).

Test Hole 2 was sited near the steel pedestal at the south end of the impact zone, where the track crosses Main Street. The beginning elevation was 229.82 meters above sea level. Drilling extended to a depth of 11.28 meters. The upper portion of the hole consisted of fill to 2.25 meters, containing loam, gravel, brick, and weeping tile. Natural sediments occurred below the fill horizon, with intermittent evidence of laminated clay/silt strata. Hematite staining was noted at 6.2 meters. Lake Agassiz sediments were encountered at 8.08 meters. No relict horizons were recorded.

Test Hole 3 was sited on the railroad berm, slightly north of the concrete retaining wall. The beginning elevation was 235.26 meters above sea level. Drilling extended to a depth of 8.84 meters. Railroad cinders and gravel fill extended to 1.5 meters, overlaying a thick stratum of clay fill. Brick and wood were encountered at 5.8 meters, denoting the original ground level. Sand and gravel was present between 5.8 and 6.1 meters with clay fill extending to 7.92 meters, at which point natural clay horizons were observed. The hole terminated at a depth of 8.84 meters. The layer of fill below 6.1 meters can be interpreted as an in-filled basement of a structure pre-dating the construction of the railroad line in 1911/1912. No artifacts were present, precluding the assignment of a date or association with known structures. The location is slightly north of the site of the Arctic Ice Company buildings, depicted on the 1905 City of Winnipeg Fire Atlas. No structures in this location are depicted on an artist's bird's-eye map of 1884 (Warkentin and Ruggles 1970:388). The

basement may result from a short-term structure built between these dates and/or from an outlying building not marked on either map. Alternatively, there is no flooring - either wood or concrete to the basement. This lack raises the possibility that the feature resulted from a short-term excavation, such as a trench for sub-surface services, which was later in-filled.

Test Hole 4 was sited on the berm, approximately fifty meters north of Hole 3. The beginning elevation was 235.36 meters above sea level. Drilling extended to a depth of 6.1 meters. The upper strata were the same as Hole 3, with the exception that wood, brick, and sand were encountered at a depth of 5.33 meters.

Test Hole 5 was sited on the berm, approximately fifty meters north of Hole 4. The beginning elevation was 235.24 meters above sea level. Drilling extended to a depth of 6.1 meters. The upper portion consisted of gravel fill (2.7 meters) overlying the clay fill core of the berm. Brick fragments were encountered at 5.49 meters and original soil was observed at the base of the hole (6.1 meters).

Test Hole 6 was located in the extreme northeast corner of the parking lot behind Schmeckers Restaurant, adjacent to the south bank of the Assiniboine River. The starting elevation was 230.90 meters and the hole extended to auger refusal at a depth of 13.56 meters. The upper 0.5 meters were sequential layers of asphalt, gravel, and buried top soil. The next 0.75 meters appeared to consist of redeposited natural sediments, with undisturbed natural horizons occurring at a depth of 1.35 meters. A thin, dark organic stratum was observed at 2.4 meters, with a faint organic smear being noted at 2.75 meters. A sand horizon, approximately 20 cm thick, was encountered at 4.6 meters. Some weathering was noted on the upper portions of strata interfaces between 6.0 meters and 8.0 meters. Dark grey Agassiz clays were encountered at 9.30 meters and a sandy horizon containing some shell fragments occurred at the base of the lacustrine deposits (11.0 meters). Gravelly till underlay the lacustrine deposits.

Test Holes 7, 8, 9, and 10 were not archaeologically monitored. As these tests were to be made in the railroad berm, similar to Test Holes 3, 4, and 5, the field engineer did not notify the archaeological consulting firm. The following descriptions are based on the drilling logs provided by HBT AGRA Ltd. Test Holes 7, 8, and 9 extended to a depth of 6.1 meters, while Test Hole 10 terminated due to auger refusal at 4.88 meters. The profiles of the four holes are relatively uniform, with an upper level of gravel overlying sand or sand and clay strata. A disturbed clay/loam stratum overlying a gravel/clay fill horizon was encountered in Test Holes 8 and 9 at depths of 5.3 and 4.9 meters. In Test Hole 10, the auger encountered wood at 4.88 meters and was unable to continue. Other than the wood in Test Hole 10, none of the test holes on the south abutment provided evidence of artifacts relating to activities during, or prior to, the construction of the railroad berm.

### **3.0 Discussion**

No evidence of Precontact occupations was observed during the archaeological monitoring of the geo-technical drilling program. In fact, cultural evidence of the recent period was also lacking except for some fragmented structural artifacts located at the base of the railroad berm. These artifacts would represent the re-located residue of structures which had been demolished for the construction of the elevated rail line.

Minimal evidence, as compared to the north bank of the Assiniboine, of buried soil horizons was noted. This could be explained by more frequent flooding, but with less sediment deposition. In this scenario, the thin silt/clay layer would be incorporated into the active soil zone and only major depositions would result in sufficient burial of the A horizon to produce a relict soil zone. Alternatively, more soil deflation due to flood activity could have resulted in the removal of upper soil horizons by flood and ice activity.

### **4.0 Bibliography**

Warkentin, John & Richard L. Ruggles

1970 *Historical Atlas of Manitoba*. Manitoba Historical Society, Winnipeg.

**APPENDIX A**  
**HERITAGE PERMIT**



**Heritage Permit No.** A40-93

FORM 11

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

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

ATTENTION Mr Sid Kroker

(hereinafter referred to as "the Permittee"),

is hereby granted permission to:

monitor the geotechnical drilling of eleven holes on the south point of The Forks (D1Lg-32), to record the presence or absence of relict soil horizons and the potential for cultural strata

during the period:

December 15 to 24, 1993

This permit is issued subject to the following conditions:

- (1) That the information provided in the application for this permit dated the 13th day of December 1993, 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:  
March 31, 1994
- (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;
- 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 DLg-32;
- c. All heritage objects from The Forks are to be deposited with the Manitoba Museum of Man and Nature by March 31, 1994, 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 14th day of December 1993.

  
Minister of Culture, Heritage and Citizenship