

Archaeological Monitoring of The Forks Riverwalk
Geotechnical Drilling Program Final Report; Winnipeg, MB
Parks Canada Permit Number: FRK-2016-21320



Submitted to:

KGS Group

Kelly Fordyce, EIT Geotechnical Engineer-in-Training

3rd Floor - 865 Waverley Street Winnipeg, MB R3T 5P4

Tel: (204) 896-1209 Ext. 281 Fax: (204) 896-0754

Email: kfordyce@ksgroup.com

Prepared by:

Bison

Ed Fread, MA, RPA

Bison Historical Services Ltd.

6-1555 Dublin Ave, Winnipeg, MB, R3E 3M

Tel: (204) 202-3808; Cell: (204) 805-6841

Email: ed@bisonhistorical.com

April 27, 2016

Executive Summary

Bison Historical Services Ltd. (Bison) was contracted by KGS Group to conduct archaeological monitoring of geotechnical drilling tests at three locations along The Forks Riverwalk in order to determine soil consistency for proposed installation of lampposts. The Forks Riverwalk is located at the confluence between the Red and Assiniboine Rivers in Winnipeg, MB. Bison staff conducted the monitoring of the geotechnical drilling on April 8, 2016 under Parks Canada Agency Research and Collection Permit FRK-2016-21320.

The geotechnical drilling was conducted at three select locations along either the uppermost terrace or (one location) the secondary terrace above the existing Riverwalk. Due to the paucity of heritage resources within the footprint of the proposed well site and access road, Bison can confidently recommend that there are no further heritage concerns at these locations and that the construction of the well sites and access road can proceed as planned.

The archaeological recommendations are based on the background historic research, examination of maps and aerial photos, registered site database and indicators of archaeological potential as well as the HRIA.

Table of Contents

Executive Summary	i
Table of Contents	ii
Table of Figures	iii
Project Personnel	iv
1.0 Introduction	1
2.0 Background Setting	2
2.1 KGS Test 01 (14-634492E / 5528006N - 236m asl)	3
2.2 KGS Test 02 (14-634536E / 5527825N - 232m asl)	3
2.3 KGS Test 03 (14-634494E / 5527717N - 236m asl)	4
3.0 Objectives 6	
4.0 Archaeological Methods	7
5.0 Results of Archaeological Investigations	8
5.1 Results of KGS Test 01 (14-634492E / 5528006N - 236m asl)	8
5.2 Results of KGS Test 02 (14-634536E / 5527825N - 232m asl)	10
5.3 Results of KGS Test 03 (14-634494E / 5527717N - 236m asl)	11
6.0 Summary and Recommendations	12
7.0 References 14	
8.0 Appendix 1: Parks Canada Agency Research and Collection Permit (FRK-2016-21310) 15	

Table of Figures

Figure 1. Map of southern Manitoba with Winnipeg in square and The Forks (inset) with study area in red oval.....	2
Figure 2. Geotechnical drilling at KGS Test 01 with Canadian Museum for Human Rights (left) and Provencher Bridge (right) in background.....	3
Figure 3. KGS Test 02 location on second terrace in forest.....	4
Figure 4. Locations of the three drill sites (green stars) along The Forks Riverwalk.	5
Figure 5. Monitoring soil disruption during geotechnical drilling operations.	6
Figure 6. Examining soils from drill at 30cm increments for top 2m+.....	7
Figure 7. Wood fibres and sand identified in drill KGS Test 01 at approximately 2.5m – 3m depth.	9
Figure 8. Artifacts recovered from KGS Test 1. Top row (L – R) machine cut nail, two wire nails and brick fragment. Second row – coal fragment and slag. Bottom – cut leather fragment.....	10

Project Personnel

Project Manager:

Ed Fread, M.A., RPA

Project Fieldwork:

Ed Fread, M.A., RPA

GIS:

Sean Pickering, M.A.

Report Research and Preparation:

Ed Fread, M.A., RPA

Archaeological Monitoring of The Forks Riverwalk
Geotechnical Drilling Program Final Report; Winnipeg, MB
Parks Canada Permit Number: FRK-2016-21320

1.0 Introduction

Bison Historical Services Ltd. (Bison) was contracted by KGS Group to conduct archaeological monitoring of geotechnical drilling tests at three locations along The Forks Riverwalk. The proponent is intending to conduct geotechnical drilling adjacent to the Riverwalk at The Forks to determine soil characteristics for foundation design of the proposed above-ground lighting structures located on the riverbank. The drill rig is a B20L power rig (pulled by a quad ATV) capable of reaching limited access locations. The drill size is a 5-inch diameter solid stem auger. Three test holes (each to a 12m (40ft) depth or auger refusal) will be drilled. The Forks Riverwalk is located at the confluence between the Red and Assiniboine Rivers in Winnipeg, MB.

The proposed geotechnical drill sites were located within Parks Canada land and were identified as having the potential to impact heritage resources. Therefore under National Parks General Regulations: Sections 7(5); 11(1); and 14(2) as well as National Historic Parks General Regulations: Sections 3(2); 4(2); and 12(3) the developer is required to have a qualified archaeologist monitoring soil removal activities.

Bison staff conducted the monitoring of the geotechnical drilling on April 8, 2016 under Parks Canada Agency Research and Collection Permit FRK-2016-21320.

2.0 Background Setting

The Forks is located at the confluence of the Red and Assiniboine Rivers in Winnipeg, MB (Figure 1). Over the last 6000 years, the two rivers were utilized as highways for First Nation and European populations. Where these rivers merged at The Forks had been long used by First Nations as campsites, trade centre, meeting sites and subsistence procurement locations. More recently, Europeans settled the area and utilized The Forks as a series of Forts and encampments, an experimental farm, rail yard and meeting area (Kroker et al. 1991).

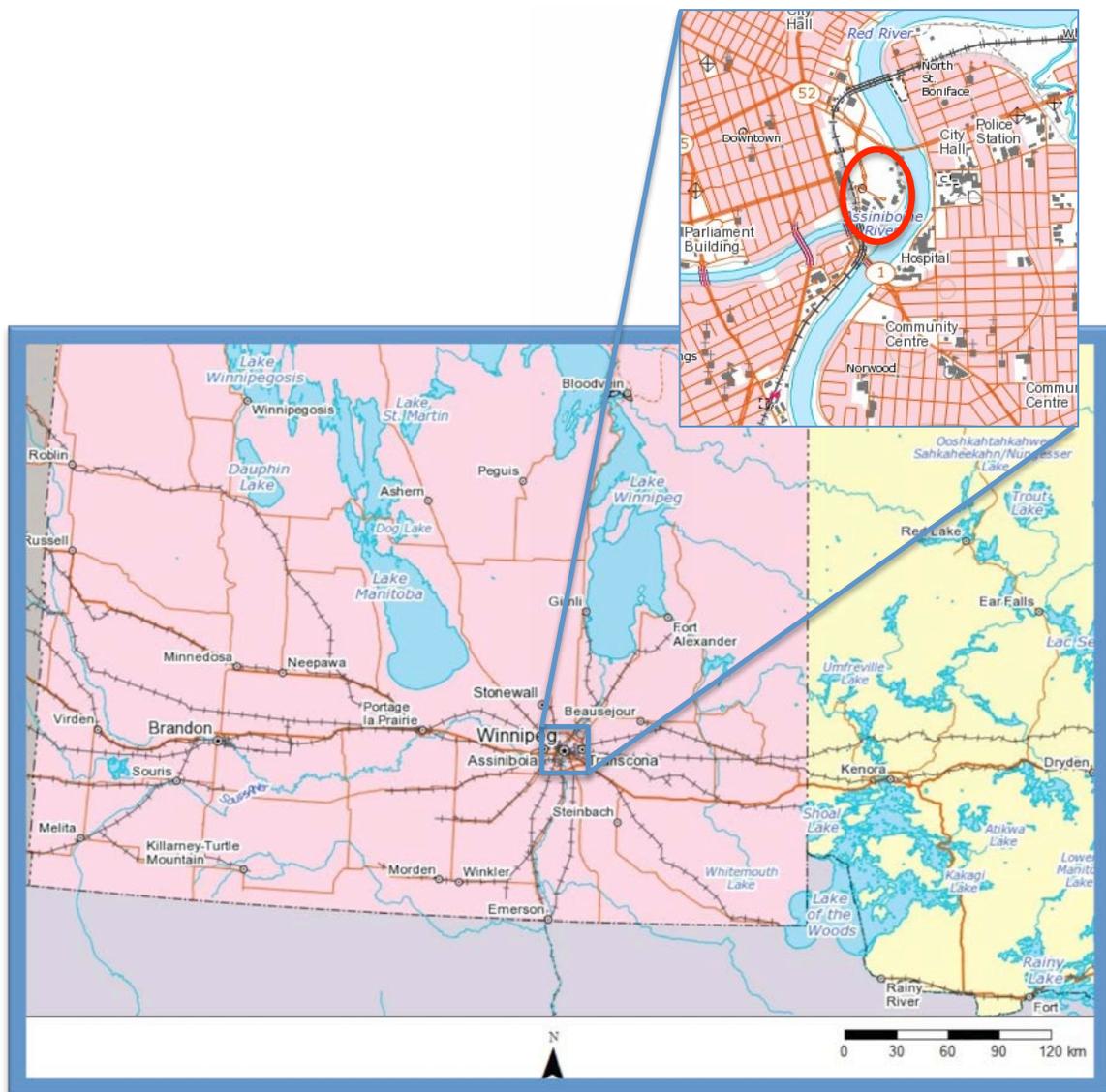


Figure 1. Map of southern Manitoba with Winnipeg in square and The Forks (inset) with study area in red oval.



2.1 KGS Test 01 (14-634492E / 5528006N – 236m asl)

KGS Test 01 is the northern-most drill site situated approximately 350m south of the Provencher Bridge and 400m southeast of the Canadian Museum for Human Rights (Figures 2 and 4). The test location was on the upper terrace from the river on a flat short grass field (Figure 2) west of the gravel-walking path.



Figure 2. Geotechnical drilling at KGS Test 01 with Canadian Museum for Human Rights (left) and Provencher Bridge (right) in background.

2.2 KGS Test 02 (14-634536E / 5527825N – 232m asl)

KGS Test 02 was located on the middle (of three) terrace within a dense copse of trees (Figures 3 and 4), and east of The Children’s Museum. The drill site Test 02 was nearest of the tests to the river and adjacent as well as east of a clay walking/cycling path that followed along the terrace bisecting the narrow forest (Figure 3).



Figure 3. KGS Test 02 location on second terrace in forest.

2.3 KGS Test 03 (14-634494E / 5527717N – 236m asl)

KGS Test 03 was located on the top terrace along the northern bend of the river, in flat short grassed landscape, on the edge of a treeline (Figure 4). The site is immediately east of a gravel-walking path and south of the Children’s Museum.



Figure 4. Locations of the three drill sites (green stars) along The Forks Riverwalk.

3.0 Objectives

The objectives for Bison were to closely monitor the geotechnical drilling (Figure 5) at three locations to: (1) determine the presence or absence of heritage resources at the drill sites; and (2) reduce impact to heritage resources that may be exposed during drilling. If heritage resources are identified, the objects will be examined to determine significance; then further mitigation strategies (ranging from halting drilling and selection of new location to further intensive testing and recovery of artifacts, to full excavation of test location) would be implemented.



Figure 5. Monitoring soil disruption during geotechnical drilling operations.

4.0 Archaeological Methods

The archaeological methods for monitoring the geotechnical drilling consisted of (1) brief pedestrian survey around drill site to identify any heritage resources located on the ground surface; and (2) monitoring of drilling process with halts and drill removal every 30cm for top 2m to examine back dirt and drill bit for evidence of heritage resources (Figure 6).

If heritage resources were identified, the drilling would be halted, the artifacts would then be examined to establish type, age and significance and decision to proceed at that location would be determined. Intensive visual inspection of the surrounding area would also be conducted. Prior to recovery of any surface heritage resources, all flagged artifacts would be waypointed with GPS in UTM NAD 83, all provenience would be recorded and the artifacts bagged separately or in concentrated groups.



Figure 6. Examining soils from drill at 30cm increments for top 2m+.

5.0 Results of Archaeological Investigations

Each drill site was examined by pedestrian survey prior to drilling. All soil attached to the drill bit was examined in 30cm increments within the top 2m of soil for presence and absence of heritage resources. Close inspection of the lower soils was also conducted at 5m increments.

The average stratigraphic type and depths consisted of the thin root mat/ sod of 8cm. The following level entailed a clean gravel fill for an average depth of 1m to 1.2m above a .5m lens of older fill containing Late Historic to Modern architectural debris (brick fragments, window glass, gravel, etc). Alluvial clays were identified approximately 2m+ in depth that ranged in colour from brown, to green to blue/gray near the 8m depths. Glacial til consisting of large gravels and rock was encountered at or near the termination depths of 12m. The water table was encountered between 8 – 12m dbs.

5.1 Results of KGS Test 01 (14-634492E / 5528006N – 236m asl)

As the ground surface was covered in short grass, visibility of pedestrian survey was greatly reduced. No evidence of heritage resources were noted during the pedestrian survey.

During the drilling process, it was noted that the clean fill was deeper than anticipated and terminated at approximately 2m depth, followed by wet dark silt to 2.5m. Wood fibres and sand (Figure 7) was identified between 2.5 to 3m; likely due to railroad activities a century ago (Kroker et al. 1991; The Forks Public Archaeological Association Inc. 1993; The Forks Renewal Corporation 1993).



Figure 7. Wood fibres and sand identified in drill KGS Test 01 at approximately 2.5m – 3m depth.

A thin lens of black organic (original top soil) was noted below 3m with a small mix of Late Historic architectural debris including two wire nails (ca.1900- present), one machine cut nail (ca.1860-1900) and brick fragments. Also recovered were a thin strip of cut leather, a fragment of slag (from metal working) and a fragment of coal (Figure 8).



Figure 8. Artifacts recovered from KGS Test 1. Top row (L – R) machine cut nail, two wire nails and brick fragment. Second row – coal fragment and slag. Bottom – cut leather fragment.

The artifacts reflect Late Historic architectural and possible blacksmithing activities. The heritage resources may have been recovered from a disturbed lens due to rail construction activities or modification of the area for newer development. The artifacts did not represent a significant site and geotechnical drilling at activities at KGS Test 1 continued without any further finds.

5.2 Results of KGS Test 02 (14-634536E / 5527825N – 232m asl)

KGS Test 2 located on the lower terrace within an old stand of trees contained a more natural soil matrix (no fill) below the series of flood plain clays deposited for centuries (Figures 3 and 5).

The ground surface was covered with dry, frozen clays with little to no vegetation cover. No evidence of heritage resources was noted during the pedestrian survey.

Monitoring of the drilling activities at test 2 identified a single layer of interest. Some charcoal flecks and thin white ashy soil was identified at 1.2m depth. The lens was thin with no heritage resources present. The charcoal and possible ash may represent a natural fire or associated with past human presence. No other concerns were noted and the drilling continued to termination at glacial till near the 10 - 12m depth.

5.3 Results of KGS Test 03 (14-634494E / 5527717N – 236m asl)

KGS Test 3 was located on the river edge of the upper terrace. The area was covered in manicured grass on the edge of pristine forest (west of the river). Pedestrian survey was limited due to lack of visual access to the ground surface. No evidence of heritage resources was noted during the pedestrian survey.

The top portion of the stratigraphy of KGS Test 3 consisted of 1.25m of clean fill above a .5m lens of fill containing Late Historic to Modern architectural debris. The debris included brick fragments, window glass shards, wire, round nails and metal fragments. It appeared that the debris represented a secondary deposition (brought in from another location and deposited as fill at that site). There was no heritage concerns with the debris brought to the surface by the drilling activities at site 3, the geotechnical testing continued without any other recoveries.

6.0 Summary and Recommendations

On April 8, 2016, Bison staff conducted the monitoring of geotechnical drilling to determine soil characteristics for foundation design of the proposed above-ground lighting structures located on the riverbank. The archaeological monitoring was conducted under Parks Canada Agency Research and Collection Permit FRK-2016-21320.

The geotechnical drilling was conducted at three test sites along the riverwalk. Each location was first examined by pedestrian survey prior to drilling. During the monitoring process, the soils attached to the drill bit were inspected at 30cm intervals for the first 2m, then approximately 2m intervals for the remainder of the test.

No heritage resources were identified during the pedestrian survey of all three sites. Late Historic artifacts were recovered at 2.5m to 3m depth at Test 1 (nails, leather, brick, coal and slag). The finds were immediately below wood fibres and sand that were affiliated with historic railway activities. The artifacts were recovered and determined to be of little heritage concern and the drilling continued.

Due to the paucity of heritage resources within the proposed drill site locations, Bison can confidently recommend that there are no further heritage concerns at these three test sites.

It is recommended that a qualified archaeologist be on site to closely monitor during lamp post installations as the locations are within an exceptionally high potential area for the presence of heritage resources.

In the event that heritage resources or human remains become unearthed during any subsurface activities, any work in that area should stop and an archaeologist be contacted.

Should burials or bones thought to be human remains be encountered during any subsurface activity under National Parks General Regulations: Sections 7(5); 11(1); and 14(2) as well as National Historic Parks General Regulations: Sections 3(2); 4(2); and 12(3) will take effect. Therefore, Parks Canada representatives be contacted to assess and discuss mitigation.

7.0 References

Kroker, S.; Greco, B. and Thomson, S.

1991 *1990 Investigations at Fort Gibraltar I: The Forks Public Archaeology Project.*
The Forks Renewal Corporation.

The Forks Renewal Corporation.

1993 *Archaeological Monitoring and Mitigation of the Assiniboine Riverfront Quay.*
Sid Kroker & Pamela Goundry. The Forks Renewal Corporation.

The Forks Public Archaeological Association, Inc.

1993 *A 3000 Year Old Native Campsite and Trade Centre at the Forks.*
Sid Kroker & Pamela Goundry. The Forks Renewal Corporation.

8.0 Appendix 1: Parks Canada Agency Research and Collection Permit (FRK-2016-21310)



**PARKS CANADA AGENCY
RESEARCH AND COLLECTION PERMIT
(NOT TRANSFERABLE)**

PERMIT No.: FRK-2016-21320

START DATE: 2016-04-04

EXPIRY DATE 2016-04-05

New end date 2016-04-09

Project Title: Forks Riverwalk Geotech Drilling Program

Principal Investigator Name: Ed Fread, Regional Manager and Senior Project Archaeologist

Address: 268 Lynbrook Drive Winnipeg, Manitoba R3R 0S7

Telephone: 204 805 6841

Email: ed@bisonhistorical.com

Affiliation: Ed Fread is the Regional Manager and Senior Project Archaeologist for Bison Historical Services Ltd (an archaeological consulting company). He has created and managed the Winnipeg, MB office since 2012.

Is hereby authorized to conduct the research project entitled "Forks Riverwalk Geotech Drilling Program" , Research and Collection Permit Application Number 26140, In The Forks National Historic Site of Canada, subject to the terms and conditions set out below and/or attached to and forming part of this Research and Collection Permit.

Members of Research Team:

Ed Fread is the sole investigator and supervisor of this project. Chris Whaley - a Bison Historical employee is the assistant and may be on site. Chris Whaley 43 Pilgrim Avenue, Winnipeg, Manitoba, Canada R2M 0L3 (204) 783 - 5319 cwhaley07@gmail.com

Additional PHA's involved

Parks Canada

Issuing Authorities and Terms and Conditions:

Permit issued pursuant to:

National Parks General Regulations: Section(s) __7(5),__11(1); __14(2)

National Historic Parks General Regulations: Section(s) __3(2); __4(2); __12(3)

National Parks Wildlife Regulations: Section __15(1)(a)

National Historic Parks Wildlife and Domestic Animals Regulations: Section __5(1)

Federal Real Property Regulations: __Section 4(2)

Historic Canals Regulations: __Section 11(3)





Saguenay-St. Lawrence Marine Park Act: __ Section 10

(Other applicable Act(s) or Regulations)

National General Conditions:

Failure to comply with applicable Heritage Area regulations or the conditions of the permit may constitute grounds to cancel or suspend the permit, refuse to issue future permits, and may be considered as grounds for prosecution under the applicable Act(s) or Regulation(s).

All permit holders must be in possession of a valid permit before the fieldwork commences and at other periods as stated on the permit.

Permits are not transferable and each member of the field work team must have a copy of the valid permit in their possession.

The permit is valid only for the geographic location, the time period, the activities, and under the terms and conditions described on the permit, unless amended and revalidated by the Superintendent.

Restrictions:

The Superintendent may suspend, cancel, or restrict the scope of the permit.

The permit shall cease to be valid if the fieldwork is not started within six months of the date of issue.

Other Acts and Regulations:

The Principal Investigator must abide by applicable regulations and all other federal, provincial, territorial or municipal regulations applying to the Heritage Area.

If requested by the Superintendent, an authorized Heritage Area staff member, or police constable, the Principal Investigator or any team member will identify themselves and show the permit.

Principal Investigator Responsibilities :

A site, or site component(s) that has been excavated or disturbed shall be restored or conserved by the Principal Investigator to the satisfaction of the Superintendent.

The Principal Investigator must advise the Research Coordinator of any adjustments in work location, research plan and methodology, implementation schedule, or main personnel, etc., during the course of the research.

Unless otherwise negotiated, Researchers working in a Heritage Area are required, as a condition of their permit, to submit:

- a) A report of progress sixty (60) days following the completion of the field season, unless otherwise agreed with the Research Coordinator;
- b) A final report, one (1) electronic copy and three (3) hard copies, no later than eight (8) months following the completion of the field season, unless otherwise agreed with the Research Coordinator;
- c) Submission of an online Investigator's Annual Report (IAR) within one year of signing the permit. In the case of a multi-year permits, the principal investigator will submit an IAR for each year of the research.

The reporting requirements above do not replace any reporting requirements set out in any contract between Parks Canada and the Principal Investigator.





The Principal Investigator will be responsible for all members of their party. All field assistants must observe any general or specific conditions of the permit.

The Principal Investigator shall at all times indemnify and save harmless the Crown from and against all claims, demands, loss, costs, damages, actions, suits, or other proceedings, by whosoever made, sustained, brought or prosecuted, in any manner based upon, occasioned by, or attributable to, anything done or omitted by the Principal Investigator or the project personnel in the fulfilment or purported fulfilment of any of the conditions of the Permit.

General Conditions Governing Archaeological Research:

The Principal Investigator must participate in or directly supervise a minimum of 75% of the archaeological research project's field operations.

The Principal Investigator must ensure that the latest Parks Canada archaeological site and object numbers are used for recording purposes, as specified in the Parks Canada Archaeological Recording Manual: Excavations and Surveys.

The Principal Investigator shall use archival quality recording materials (e.g., paper, ink, pencil, film) for all field recording.

Following completion of the archaeological research project, the Principal Investigator must submit to the Superintendent:

a) The originals of all Archaeological Records: Any written, graphic, visual and electronic record that is prepared and assembled that relates to the identification, evaluation, documentation, study, preservation, or excavation of an archaeological site or resource.

Moreover, all data submitted must comply with Parks Canada's archaeological data and metadata requirements.

The Principal Investigator and his or her crew shall use the Parks Canada Archaeological Recording Manual: Excavations and Surveys in the conducting of archaeological research activities.

Archaeological Objects:

All Archaeological Objects:

Remain the custodial responsibility of the of the Crown unless specified otherwise within a final comprehensive land claim agreement;

Are considered to be on loan to the Principal Investigator until the research on the site assemblage and final archaeological research report(s) are completed in accordance with the allotted time period specified on the approved Archaeological Research Permit Application and on the Archaeological Research Permit;

While in the possession of the Principal Investigator, the archaeological objects will be made available to Parks Canada for research and display purposes; and,

All excavation units, archaeological objects and records will be recorded and identified using the Parks Canada archaeological provenience system, and according to Parks Canada standards and procedures.

Where an Archaeological Resource requires special treatment (e.g., unique, sacred, fragile, requiring immediate conservation assistance), the Superintendent shall be immediately informed for direction on how to proceed.

Conditions regarding the management, conservation, and the disposition of the collections(s) into a mutually agreed upon Parks Canada repository may be changed as circumstances warrant by the applicable Superintendent, on the advice of the appropriate Service Centre Director.





Human Remains:

Where human remains and/or funerary objects are accidentally encountered, the activities in progress at the site must be suspended immediately and the Superintendent notified. The Principal Investigator will await further direction from the Superintendent.

Human remains and funerary objects recovered from an archaeological context should be treated separately from archaeological objects. Human remains cannot be the subject of property. When human remains are found on federal Crown land administered by Parks Canada, the Agency has a custodial responsibility. The human remains are in the care and custody of the Crown.

Special Conditions:

Principal Investigator Signature

I, Ed Fread, Regional Manager and Senior Project Archaeologist, the Project Principal Investigator, accept all the stated Research and Collection Permit terms and conditions.

Ed Fread Parks Canada
145 McDermot Avenue
Winnipeg, Manitoba R3B 0R9
204-983-2918

Signature
2016/04/05

Date (yyyy/mm/dd)

Approval:

Permit issued/approved by:

Marilyn K Packett
Superintendent, Manitoba Field Unit

Marilyn K Packett
Superintendent Signature

2016/04/05
Date (yyyy/mm/dd)

Parks Canada Contact

Sandra Hollender
Manitoba Field Unit Office
145 McDermot Avenue
Winnipeg, Manitoba, R3B 0R9
204-983-2918 Sandra.Hollender@pc.gc.ca

