MANITOBA INFRASTRUCTURE - WATER MANAGEMENT AND STRUCTURES

LAKE MANITOBA AND LAKE ST. MARTIN OUTLET CHANNEL PROJECT

HERITAGE RESOURCE IMPACT ASSESSMENT (PERMIT A49-20) - CONFIDENTIAL

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EXECUTIVE SUMMARY

The Lake Manitoba and Lake St. Martin Outlet Channels Project (Project) is a proposed permanent flood control mitigation project to alleviate flooding in the Lake St. Martin area of Manitoba. The Project involves the construction of two new water diversion channels. The Lake Manitoba Outlet Channel (LMOC) is approximately 24.1 km long with a channel inlet positioned at Watchorn Bay on Lake Manitoba and an outlet positioned at Birch Bay on Lake St. Martin. The Lake St. Martin Outlet Channel (LSMOC) is approximately 23.8 km long with a channel inlet positioned at the east end of Lake St. Martin and an outlet positioned south of Willow Point in Sturgeon Bay on Lake Winnipeg. The Project Development Area (PDA) for both channels is approximately 400 m wide. The Project also includes a Manitoba Hydro 24 kV distribution line and a re-alignment of 11 km of Highway 239. Associated works and activities for the Project include temporary construction camps and staging areas, temporary access routes, realignment of existing drainage infrastructure, measures to divert surface water and groundwater, and erosion and sediment control.

WSP Canada Group Limited (WSP) was contracted to carry out pre-construction environmental assessments of the Project. The contract included the completion of a Heritage Resource Impact Assessment (HRIA) of the Project. The WSP Heritage Team, in tandem with Bison Historical Services Ltd. (Bison), was tasked with managing and conducting the heritage component of the Project.

The WSP/Bison Heritage Team (WSP/Bison) conducted a desktop screening of the PDAs to determine areas of high potential for heritage resources as a focus for field investigations. Additionally, the Historic Resources Branch (HRB) specifically requested that the HRIA focus on trails, shorelines, elevations, water crossings, potential burial sites, and cemeteries. HRB indicated that they did not have any heritage concerns for the Highway 239 re-alignment, and thus it did not require a field assessment for its PDA.

WSP/Bison conducted the HRIA fieldwork under Heritage Permit A49-20 on July 14-24, August 28 – September 5, September 15-17, and October 5, 2020. The HRIA consisted of visual assessment, pedestrian survey, and both systematic and judgemental shovel test programs.

The desktop screening for LSMOC identified 13 areas of high heritage potential. The LSMOC PDA was visually assessed from the air by helicopter fly-over. The assessment found that the PDA was mostly situated [redacted] with a low likelihood for heritage resources. The PDA contained a small number of [redacted] with a high likelihood for heritage resources. [redacted] locations also demonstrated a high potential for heritage resources. The field crew conducted spot ground truthing assessments at eight survey locations in the PDA to verify the potential presence of artifacts. Spot ground truthing assessments involved pedestrian survey and six locations were subject to shovel testing. A total of 93 shovel tests were dug in the LSMOC PDA. Two heritage resources were recorded within the LSMOC PDA: EkLm-001 (Site 1) and EkLn-001 (Site 2).

The desktop screening for Manitoba Hydro Distribution Line identified nine areas of moderate to high heritage potential. The PDA was visually assessed from the air by a helicopter fly-over. The assessment found that the Distribution Line was situated in wet, low-lying areas with a low likelihood for heritage resources. No suitable areas for subsurface testing was noted. No Cultural Use areas were identified. Therefore, WSP/Bison has no further heritage concerns for the Manitoba Hydro Distribution Line.

The desktop screening for LMOC identified 19 areas of high heritage potential. The LMOC PDA was then visually assessed by the heritage team on the ground. The assessment found that the LMOC PDA contained a moderate

to high potential for heritage resources. Terrain of high heritage potential within the PDA included [redacted]. Several locations also contained high potential for historic heritage resources within the PDA, such as [redacted]ns. Additionally, [redacted] locations had high potential for archaeological resources.

In LMOC the field crew visually assessed 19 survey locations. The field crew conducted pedestrian surveys in 12 of those survey locations within 22 quarter-sections. The field crew conducted shovel testing within nine of those 12 survey locations. A total of 250 shovel tests were dug in the LMOC PDA. Eight heritage resources were recorded within the LMOC PDA. These included: EiLp-002 (Site 3), EiLp-003 (Site 4), EiLp-004 (Site 5), EiLp-005 (Site 6), EhLp-003 (Site 7), EhLp-004 (Site 8), EhLp-005 [redacted] and EhLp-006 (Site 10).

A total of 10 heritage sites were documented under this HRIA. WSP/Bison has issued the following recommendations for the Project:

Heritage Resource	Description	Recommendation
EkLm-001 (Site 1)	Lithic scatter with surface and subsurface components. Disturbed site with low artifact density and a localized concentration	**No further recommendations for pre-construction heritage work for EkLm-001 (Site 1).** During construction, the Environmental Monitor[1] should be aware of the site location and watch for additional Chance Finds within the site area
EkLn-001 (Site 2)	Lithic scatter with surface and subsurface components. Low artifact density and did not exhibit evidence for significant intact subsurface cultural deposits.	**No further recommendations for pre-construction heritage work for EkLn-001 (Site 2).** During construction, the Environmental Monitor[1] should be aware of the site location and watch for additional Chance Finds within the site area
EiLp-002 (Site 3)	Lithic scatter with a surface component. A disturbed site with low artifact density, localized concentration, and lack of identified buried components.	**No further recommendations for pre-construction heritage work for EiLp-002.** **During construction, WSP/Bison recommends that a Heritage Monitor[2] be present during construction activities within 50 m of the site area.**
EiLp-003 (Site 4)	[redacted] Under the current construction methodology, the site will not be impacted by the development itself but	**WSP/Bison recommends that a 30 m temporary physical protective barrier be erected around the feature at EiLp-003 to minimize potential impacts during construction.**

	may be impacted by associated construction activities**.**	It may also be reasonable to make this protective barrier permanent for the Operations phase of the Project
EiLp-004 (Site 5)	Lithic scatter in [redacted] A disturbed site with low artifact density and a localized concentration.	**No further recommendations for pre-construction heritage work for EiLp-004 (Site 5).** During construction, the Environmental Monitor[1] should be aware of the site location and watch for additional Chance Finds within the site area.
EiLp-005 (Site 6)	[redacted] Has a low artifact density and did not exhibit evidence for intact pre-1940s cultural deposits.	**No further recommendations for pre-construction heritage work for EiLp-005**
EhLp-003 (Site 7)	[redacted] [redacted] did not exhibit evidence for intact pre-1940s cultural deposits.	**No further recommendations for pre-construction heritage work for EhLp-003.**
EhLp-004 (Site 8)	Lithic scatter with surface and subsurface components. The shovel test program resulted in the documentation of a complex site with multiple intact cultural components that included lithic debitage and tools, faunal remains, and pottery. The site is dated as old as the Middle Archaic Period (3,500 to 2,800 years Before Present) with the potential for an Early Period component.	**WSP/Bison recommends pre-construction mitigative excavation at EhLp-004 (Site 8).** **No construction activity can occur within 50 m of the site boundaries of EhLp-004 until such time that they are excavated, inspected, and approved by HRB to proceed with construction.** ***HRB was made aware of this site during the HRIA and has agreed with the recommendation for excavation.**
EhLp-005 (Site 9).	[redacted]	**No further recommendations for pre-construction heritage work for EhLp-005.** During construction, WSP/Bison recommends that a Heritage Monitor[2] be present during construction activities within 50 m of the site area.
EhLp-006 (Site 10)	Subsurface lithic scatter [redacted]	**WSP/Bison recommends pre-construction mitigative excavation at EhLp-006.** **No construction activity can occur within 50 m of the site boundaries of EhLp-006**

	The shovel test program resulted in the documentation of a complex site that included lithic debitage and tools, faunal remains, and pottery. The site is dated as old as Early Woodland Period (1,900 to 1,300 years Before Present). [redacted]	**until such time that they are excavated, inspected, and approved by HRB to proceed with construction.** ***HRB was made aware of this site during the HRIA and has agreed with the recommendation for excavation.** **No mitigation specific to [redacted] is recommended.**

[1]An Environmental Monitor is an environmental inspector or officer that will take extra measures to inspect soil layers in areas that have been identified as having high potential for archaeological materials to be found.
[2]A Heritage Monitor is an archaeologist that will observe work and ensure that extra measures have been applied prior to the start of construction and/or are being applied during construction to protect an identified heritage site/resource.

No heritage concerns were documented for the remaining identified study areas of the PDA and further pre-construction heritage assessment is not recommended for the remainder of the PDA. **WSP/Bison recommends that the Project proceed as planned, provided that the pre-construction site specific recommendations are implemented before construction in the affected areas commences, and that the construction and operating monitoring recommendations are integrated into the Heritage Resource Protection Plan (HRPP) and implemented.** Construction can commence in other areas of the PDA outside of the specific areas of heritage concern affected by the recommendations. Construction in other areas may commence without the need to wait for the recommendations to be implemented, as long as no construction occurs within 50 m of the area affected by the recommendation. If additional heritage resources are identified during construction, a Chance Find Procedure (as outlined in the HRPP) will be enacted.

Changes to the location of the PDA or increase in size of the PDA would need to be reviewed by HRB and/or a qualified archaeologist and may result in a requirement to conduct additional heritage assessment. Project work areas located outside of the PDA were not evaluated under this HRIA. Project-related developments outside the PDA, including new borrow pits, are subject to the Heritage Resources Act and require evaluation for heritage potential prior to development. Heritage resources for the Project will be managed during Construction and Operations Phases via the HRPP (still in draft form and subject to approval by HRB).

Recommendations are subject to approval by HRB. HRB is responsible for final decisions on heritage clearance.

The statements made in this Executive Summary are subject to WSP Canada Group Limited's Standard Limitations found in the HRIA report and should be read in its entirety with the remainder of the HRIA report.

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ACRONYMS

%	Percent
B.P.	Before Present
cm	centimetre
DBS	Depth Below Surface
DEM	Digital Elevation Model
EIS	Environmental Impact Statement
EMGC	Electromagnetic Ground Conductivity
EOC	Emergency Outlet Channel
GPS	Global Positioning System
ha	Hectare
HBC	Hudson Bay Company
HRB	Historic Resources Branch
HRIA	Heritage Resources Impact Assessment
HRPP	Heritage Resources Protection Plan
HRWP	Heritage Resources Work Plan
IRTC	Interlake Reserves Tribal Council
km	Kilometre
km^2	Square kilometre
LAA	Local Assessment Area
LMOC	Lake Manitoba Outlet Channel's
LSMOC	Lake St. Martin Outlet Channel's
m	Metre
MI	Manitoba Infrastructure
n	Number
NWC	North West Company
PDA	Project Development Area
PR	Provincial Road
PTH	Provincial Trunk Highway
RAA	Regional Assessment Area
RCMP	Royal Canadian Mounted Police

RM	Rural Municipality
ROW	Right of Way
sp.	Species
TK	Traditional knowledge
VC	Valued Components
WSP	WSP Canada Inc.

GLOSSARY OF TERMS

Archaeological Record: sum of all physical evidence concerning past events and peoples.

Archaeological Site (or Site): the specific location in which a cluster of heritage resources in a direct temporal and spatial relationship are documented.

Artifact: any object manufactures, used, moved, or modified by human beings.

Biface: stone tool that has had flakes removed from both faces.

Cairn: a cluster or pile of stones, often built to mark trails, burial sites, or food or tool caches.

Chance Find: a heritage resource (including human remains) that is unearthed or discovered during the construction and operating phases of a project.

Cultural Use Area: an area that exhibits evidence of past cultural activities, such as culturally modified trees or ceremonial sites.

Debitage: see Lithic Debitage

Ecozone: biogeographical division of land surface, based on distribution patterns of terrestrial organisms.

Endscraper: stone tool unifacially worked on one end.

Feature: a non-portable object or alteration to the landscape that has cultural significance.

Faunal Remains: hard tissues of animals which survive the archaeological record.

Flake: see Lithic Debitage

Hearth: the physical remains of a firepit.

Heritage Resource: the physical remains of past cultural groups.

Heritage Resource Impact Assessment (HRIA): investigation of the heritage inventory that may be impacted by a proposed development, as regulated by the Manitoba government.

Heritage Resources Act: document that legislates the management and protection of heritage resources within Manitoba.

Heritage Resources Protection Plan: the managing document plan detailing the methods and procedures of heritage resource protection for the project.

Heritage Site: an area or place, parcel of land, building or structure, or an exterior or interior portion or segment of a building or structure, formally designated at the municipal, provincial, and/or federal levels, as per The *Heritage Resources Act*..

Historic artifact: an artifact identified as belonging to the time period after European contact, ranging from the early Fur Trade Period (late 17th Century) to the mid-20th Century.

Historic feature: a building or structure identified as belonging to the time period after European contact, ranging from the early Fur Trade Period (late 17th Century) to the mid-20th Century.

Human remains: the remains of human bodies, often recovered in skeletal form.

Lithic debitage: stone debris created and left over from the manufacture of stone tools.

Lithic scatter: collection of stone debitage within a specific space.

Locus (plural Loci): a specific point in space within an archaeological site.

Midden: a heap or stratum of refuse within a specific space.

Paleosol: a soil formed under earlier environmental conditions, subsequently buried by cultural or environmental processes.

Pedestrian survey: inspections by foot of ground surfaces and exposures for evidence of archaeological sites.

Pottery: storage vessels fashioned from fired clay.

Pre-Contact Period: the period of time in Canadian human history before the arrival of Europeans. In Manitoba this is generally considered to range from 13,000 years before present to the late 17th Century.

Projectile Point: detachable tip of an arrow, spear, harpoon, or dart.

Retouched flake: informal stone tool developed from a flake in which a portion of the flake has been worked to form a cutting edge.

Scraper: stone tool unifacially worked along one or more edges.

Stratigraphy: the arrangement of geological deposits in a series of layers.

Survey Location: an area of heritage potential designated for investigation during an HRIA.

Thumb scraper: a small, often domed, stone tool unifacially worked on one end.

Utilized flake: informal stone tool developed from a flake that exhibits flake scars resulting from use.

Workshop: activity area at an archaeological site where tool production had occurred.

1 INTRODUCTION

WSP Canada Group Limited (WSP) was retained by Manitoba Infrastructure (MI) to complete a pre-construction Heritage Resource Impact Assessment (HRIA) in support of the Lake Manitoba and Lake St. Martin Outlet Channel Project (the Project) in the Interlake region of Manitoba (Appendix A, Figure 1.1-1). The pre-construction surveys were completed in 2020 to supplement baseline environmental information previously collected and documented in an Environmental Impact Statement (EIS, Manitoba Infrastructure, 2020) developed in support of the Project. The HRIA was conducted by WSP in conjunction with Bison Historical Services Ltd. (Bison).

This HRIA report provides a summary of the information collected during the pre-construction heritage resources field assessments completed for the Project in July through October of 2020 and includes a summary of the desktop analysis, survey methods used for field data collection, and results of data collected during field surveys. The report also provides lists, figures, and locations of heritage resources (both within and outside the Project footprint), photos of representative terrain and stratigraphy of subsurface testing, and descriptions and interpretations of artifacts and features documented and/or collected in associated with archaeological sites. The report also includes a summary of the heritage resources of the Project, the potential effects of the Project on those heritage resources, and recommendations for mitigation measures.

1.1 Background

The Project includes the construction of two new water diversion ("outlet") channels as a permanent flood control management system for the Lake Manitoba and Lake St. Martin region of Manitoba, as well as associated infrastructure in support of channel construction including re-routing of Provincial Road (PR) 239 and construction of a Manitoba Hydro power distribution line (Appendix A, Figure 1.1-1). The Lake Manitoba Outlet Channel (LMOC) will connect Lake Manitoba with Lake St. Martin, and the Lake St. Martin Outlet Channel (LSMOC) will connect Lake St. Martin to Lake Winnipeg; combined, these two channels will convey water from Lake Manitoba through Lake St. Martin to Lake Winnipeg in a manner that alleviates overland flooding in the Lake St. Martin area of Manitoba, such as occurred in the 2011 and 2014 floods.

MI filed an EIS with Federal and Provincial regulators for the construction of the outlet channels in August 2019 and re-filed in March 2020 following their review. To further support the Project, Heritage Resource Impact Assessment (HRIA) was conducted and a Heritage Resource Protection Plan (HRPP) was developed. The pre-construction heritage resource investigations were undertaken in July through September 2020 and included both a desktop review and supporting field investigations. The HRIA assessed the presence of heritage resources within the PDA of the LMOC, LSMOC, the PR 239 re-route and Manitoba Hydro's planned distribution line. The focus of the investigation was on areas of high potential for heritage and archaeological resources within the PDA.

1.2 Study Area

The EIS examined three study areas: the Project Development Area (PDA), the Local Assessment Area (LAA, 1 km beyond the PDA), and the Regional Assessment Area (RAA, 10 km beyond the PDA). For the purposes of this report, the Project Region includes the areas encompassed by the PDA, LAA, and RAA

The Project PDA includes the physical space or directly affected area where Project components and activities will occur and the immediately adjacent area, generally corresponding to the designated right-of-way (ROW) for each of the Project components. The PDA for the LMOC and LSMOC is 400 m wide (200 m from centerline), and

it is 50 m wide (25 m from centerline) for PR 239 re-route and Manitoba Hydro's distribution line. The total area of the current PDA is 2,023 ha, including:

- 1030 ha for the LMOC
- 56 ha for the PR 239 re-reroute
- 891 ha for the LSMOC
- 46 ha for Manitoba Hydro's distribution line

At this time, it is assumed that access routes, staging areas, and temporary laydown areas will either be contained within the updated PDA, or will fall within developed areas that already exist or are expected to exist at the time the Project goes to construction.

In the EIS, the LAA was the maximum area within which Project environmental effects might be predicted for most resources, including both direct and indirect effects. The LAA included the PDA and adjacent areas where indirect environmental effects might reasonably be expected to occur. Within the EIS, the LAA varied for specific Valued Components (VCs).

The RAA is the area that provides context to the changes occurring in the LAA for each VC. For example, this could include the area occupied by the VC population, so that effects to the VC can be characterized or quantified. The RAA is also the area within which the Project's environmental effects may interact or accumulate with the environmental effects of other projects or activities that have been or will be carried out such that cumulative environmental effects may potentially occur. The RAA for each VC depends on physical and biological conditions and the type and location of other past, present, or reasonably foreseeable projects or activities that have been or will be carried out. The RAA selected for the EIS, for most VCs, included Lake Manitoba, Lake St. Martin and the North Basin of Lake Winnipeg.

The heritage studies conducted under this permit are for the PDA only. Information on heritage resources outside the PDA within both the LAA and RAA study zones was consulted and analysed as part of the historical research and desktop screening for the Project, but no known heritage resources outside the PDA, nor areas of high potential for heritage resources outside the PDA, were included in the pre-construction investigations.

1.3 Environmental Setting

The following section provides a description of the environmental setting of the Project. An understanding of the current environment provides insight into the historical background of the Project (as discussed in Section 1.4). The environment played a pivotal role in shaping and directing past human activity. A strong knowledge of the environmental setting can help archaeologists interpret aspects of the archaeological record, including population distributions and likely archaeological site locations. An understanding of environmental conditions on a macro level can also help pinpoint the potential for heritage resources at a local level (i.e. the Project).

1.3.1 Climate, Terrain, Soils, and Vegetation Communities

The Project lies within the Boreal Plains Ecozone, an area characterized by short, moderately warm summers and long cold winters, with a subhumid, moderately cold Cyroboreal soil climate (Smith et al., 1998). The Boreal Plains Ecozone is an area formed through glaciation, with relatively less bedrock influence than the more northern boreal parts of Manitoba (Smith et al., 1998). It is covered almost entirely with glacial deposits. Terrain is generally flat, with a distinct north to south trending drumlinoid, or ridged and swale, topography formed from subglacial deposition, with slopes of 1 to 3%. Ridges are generally well drained with upland forest vegetation,

while the swales are poorly drained, and support wetland communities. These characteristic physiographic features are evident in aerial imagery of the Project study areas: southeast to northwest trending shallow drumlin ridges are very evident in the area occupied by the south Project components (LMOC and PR 239 re-route), and complex patterns of bog, fens and small streams dominate the northern LSMOC and Manitoba Hydro's distribution line. Luvisolic soil is the predominant soil order present in the Boreal Plains Ecozone, with Dark Gray and Black Chernozems frequently present in the southern portion of the ecozone, while Brunisolic and Organic soils are subdominant to Luvisolic soil in the northern portion (Smith et al., 1998). Jack pine (*Pinus banksiana*), white spruce (*Picea glauca*), trembling aspen (*Populus tremuloides*), and white birch (*Betula papyrifera*), are the dominant upland trees present in the Boreal Plains Ecozone, with balsam poplar (*Populus balsamifera*) occupying transitional and wetland ecosystems. The occurrence of black spruce (*Picea mariana*) and tamarack (*Larix laricina*) increases moving north, as peatland habitats increase in frequency and scope in the landscape (Smith et al., 1998). The Project components traverse two Ecoregions of the Boreal Plains Ecozone: the Interlake Plain and Mid-Boreal Lowland.

The south Project components (LMOC and PR 239 re-route) lie within the Interlake Plain Ecoregion. Consistent with the overarching Ecozone, climate in this Ecoregion is characterized by short, moderately warm summers and long cold winters, with a subhumid, moderately cold Cyroboreal soil climate (Smith et al., 1998). Mean annual temperatures range from 1 °C to 2.4 °C, and annual precipitation is seasonally variable, ranging from 500 mm to 525 mm, with much of it as rain. The regional landform is underlain by low relief Palaezoic limestone bedrock, with a general surface form of a level to ridged, lake terrace complex. Surficial deposits range from loamy glacial till, varying from deep (>30 m) to very shallow (<20 m) deposits to water-worked areas with veneers to blankets of glaciolacustrine sand, gravel and boulder deposits (Smith et al., 1998). In some places, limestone bedrock is at or near surface, particularly near erosional remnants, scarps, and drumlinoid ridges. Flooding issues are linked to the low relief: at times of high seasonal precipitation; surface flows in the south will collect in low-lying swales between drumlins and ridges, or in the lowland floodplains adjacent larger lakes. The resulting landscape includes complexes of large graminoid marsh and shrubby swamp wetlands of temporary to seasonal water duration, with smaller to moderately large kettle ponds supporting permanent to semi-permanent marshes and shallow open water. Two of the three major lakes to be connected by the proposed Project outlet channels (Lake St. Martin to Lake Manitoba). Soils in this Ecoregion are mainly Chernozemic, specifically with Black Chernozem associated with very calcareous, clayey glaciolacustrine overlays in the southern and northwest. Brunisols and shallow Luvisols form on till and some glaciolacustrine deposits, while Organic Mesisols are associated with peatlands and Gleysols with mineral wetlands in large portions of the central and northern parts of the Ecoregion. Trembling aspen is the dominant forest cover, with balsam poplar and white spruce mixedwood stands occurring less frequently (Smith et al., 1998). Depressional lowland areas support sedges (*Carex* spp.), meadow grasses (Poaceae) and willows (*Salix* spp.), and reed and cat-tail (*Typha latifolia*) emergent species in deeper marshes.

The north Project components (LSMOC and Manitoba Hydro's distribution line) fall within the southern part of the Mid-Boreal Lowland Ecoregion. Climate conditions in this Ecoregion are similar to the Interlake Plain Ecoregion, with slightly cooler annual temperatures and more precipitation (Smith et al., 1998). This combination of relatively high precipitation inputs and low levels of annual evapotranspiration contributes to wetland and waterbody development. Specifically, climatic factors combined with the smoothing action of clay, silt and sand glacial deposits from Lake Agassiz have supported the developed of complex patterns of bog, fens and small streams (Smith et al., 1998), and large to very large lakes (Smith et al., 1998), such as Lake Winnipeg. Brunisolic and Organic soil orders co-dominate the Mid-Boreal Lowland Ecoregion, with significant inclusions of Gray Luvisols. In the Mid-Boreal Lowland Ecoregion, predominant tree species in upland communities consist of trembling aspen, Jack pine, white spruce, and occasionally balsam fir (*Abies balsamea*), with black spruce and balsam poplar present on transitional sites (Smith et al., 1998). Peatland vegetation consists of black spruce, ericaceous shrubs

(Ericaceae), and moss (eg. *Sphagnum*) in bog habitats, with tamarack, swamp birch (*Betula pumila*), sedges and brown moss dominating fens (Smith et al., 1998).

1.3.2 Anthropogenic Influences

The majority of the southern portion of the Project (LMOC and PR 239 re-route) lies within an agriculturally developed landscape, which has been cleared of much of its natural vegetation. Native plant communities are limited to within poorly drained areas supporting wetland habitat and isolated remnant tree stands. Most of this development occurred prior to 1984, the earliest publicly available imagery reviewed, and does not appear to have substantially changed since that time. From a vegetation and hydrology perspective, roads, pasture and some cropland development have converted the natural landscape to a more anthropogenic one. Small drainage channels have been created to drain agricultural areas, and while wetlands remain within these areas, water permanence appears to have been reduced to temporary or seasonal duration in many instances. Many of these areas still support wetland characteristics (wetland vegetation, seasonal flooding), while some are hayed during drier seasons and years.

The majority of the northern portion of the Project (LSMOC and Manitoba Hydro's distribution line) will be constructed in poorly drained peatlands that have experienced far less development. Few roads currently exist in the broader region, and none are in close proximity to LSMOC or Manitoba Hydro's distribution line. The closest road to the northern Project components is PR 513 to Dauphin River, just under two km away from the northwestern end of Manitoba Hydro's distribution line. Short sections of the existing Lake St. Martin Emergency Outlet Channel (EOC) falls within the LSMOC PDA, and has separated bog and fen habitat in places. Drying effects are also evident in this area, where surface flows have been intercepted by the EOC.

The PR 239 re-route follows an existing road for much of its length. Corners at the intersections with other roads will be rounded into curves in two locations, crossing over lands currently used for agriculture. Otherwise the road development will occur in lands already highly modified by existing road construction, cropland or pasture uses.

1.4 Historical Background

The Project Region covers a large area with a varied cultural history. For this reason, it is important to outline the cultural histories for both the province and the Interlake Region in which the Project is located.

1.4.1 Manitoba Culture History

Archaeological evidence has demonstrated that past peoples have inhabited the region of Manitoba for at least 12,000 years. Archaeologists categorize this time into two distinct periods: The Pre-contact Period (12,000 to 250 Years Before Present [BP]) and the Historic or Post-contact Period (300 BP to present). These periods are divided by the arrival of Europeans during exploration and the fur trade, which was well established by the 1700s (Saskatchewan Association of Professional Archaeologist, 2005). The overlap between these two periods is identified as the Proto-contact Period, during which European influences were introduced to the Indigenous traditional lifestyles through less direct contact between these populations. Changes in technology and subsistence, as observed in the archaeological record, have been used to subdivide the Pre-Contact Period into three more periods: Early, Middle and Late Pre-Contact.

Material culture of the Early, or Palaeo, Period (ca. 12,000 to 8,000 BP) is characterized by large projectile points used for spear-hunting megafauna such as the mammoth (*Mammuthus sp.*) and large species of bison (*Bison antiquuus* and *Bison occidentalis*) present during this time. This period began near the end of the Pleistocene geological epoch, when most of these large mammals became extinct or began to evolve into their modern-day

equivalents (i.e., *Bison bison*). During this period, Glacial Lake Agassiz was created and expanded with the melting of the ice sheet, and was followed by the northward expansion of habitable lands into southern Manitoba. By the Late Palaeo Period, peoples of the Plano Traditions were adapting to a new and drier environment, demonstrating a wide variety of subsistence methods, including large scale bison hunting in the east and west, and caribou hunting in the north, in addition to fishing and small mammal and bird procurement (Manitoba Archaeological Society, 1998c).

The Middle, or Archaic, Period (8,000 to 2,200 BP) was marked by the Hypsithermal, a climatic warming event that altered the landscape from sub-tropical to a more arid grasslands environment in the south, with boreal forest developing to the north. This drastic change to a drought-ridden environment on the Plains led to a change in subsistence methods, and resulted in an animal and human migration north, where water sources were more readily available (Pletz, 2010). The introduction of atlatl (dart) projectile points differentiates this era in the archaeological record. These smaller dart points were hafted onto a shaft that was propelled using a long, light spear that was thrown via a lever (the atlatl). This technology allowed the skilled hunter to throw farther with more accuracy.

Evidence of the Early Archaic (8,000 – 6,000 BP) in Manitoba is sparse, concentrated on the plains, southeastern edge of the Precambrian Shield, and along the Winnipeg River. Generally, the Early Archaic is represented by the Logan Creek and Mummy Cave complexes, indicating migration of populations into the area from the south and west (Manitoba Archaeological Society, 1998b).

During this time, the Early Shield, or Shield Archaic, began to appear in the northern Boreal Forest. The Early Shield culture was established by archaeologists as a means of organizing the various Early Archaic sites across the Shield terrain into a discussable unit. The Early Shield Culture was always meant to be a theoretical stepping stone as it was acknowledged from its inception how unlikely it was that the Early Shield could present a single, cohesive culture, a fact critiqued for several decades now (Buchner, 1979; Buchner, 1980). The initial theory believed that this culture formed from Paleo populations from the Keewatin District of the Northwest Territories (Wright, 1972). More recent interpretations for northwestern Ontario suggest that the Shield Archaic, at least in Northwestern Ontario, adapted out of existing Paleo populations in the area, who initially resided along the shoreline of Lake Minong. In Manitoba, the Sinnock site represents an Early Archaic site, although there is debate whether the site should be associated with the Agate Basin Complex (Buchner, 1984), or the Early Shield Culture (Wright, 1995).

The Early Shield Culture transitioned into the Middle Shield Culture in the Boreal Forest. In general, archaeological sites attributed to the Middle Shield culture are more abundant, suggesting an increased population. Evidence of the Middle Shield culture generally derives from thin depositional layers on multi-component sites. An example from Manitoba is the Kame Hills site on Southern Indian Lake, situated north of the study area. Other Middle Shield sites are situated along the east side of Lake Winnipeg (Wright, 1995). The Middle Shield Culture persisted throughout the remainder of the Archaic period within the Boreal Forest.

In the Plains environment of Manitoba, the Late Archaic period sees the emergence of more distinct cultural groups belonging to the Middle Plains period (Wright, 1995). These include the Oxbow Complex, the McKean Complex, and the Pelican Lake Complex.

The Oxbow Complex (6,000 – 5,000 BP) was first recognised at the Oxbow Dam site in Saskatchewan. The Complex is primarily found on the Plains, but cultural material has been recovered from some Boreal Forest contexts, such as at the Near Norbert site of the Churchill River in northern Saskatchewan.

The McKean (5,000 – 4,000 BP) Complex either originated in the Great Basin area or developed out of the Oxbow Complex. Populations producing tools from the Hanna, Duncan, and McKean traditions belong to the

McKean Complex. Like the Oxbow Complex, the McKean Complex is primarily found on the plains, but it appears they made greater use of the major River Valleys. The Tailrace Bay site, situated at the north end of the Interlakes Region near Grand Rapids, Manitoba, is a multi-component site with a McKean Complex occupation (Wright, 1995).

The Pelican Lake Complex (4,000 – 2,500 BP) developed out of the McKean complex. Most Pelican Lake sites date to 3,000 – 2,500 BP, although some earlier dates have been presented. As a Middle Plains period culture, Pelican Lake Complex sites are typically found in the Plains environment. Significant Pelican Lake Complex sites in Manitoba include the LM-8 site and the Bjorklund site, situated in the southeast section of the province (Wright, 1995).

The Late or Woodland Period (2,000 to 250 BP) is identified by new technological innovations. Projectile points decreased in size enough for use with bow and arrow weaponry. Pottery was also being made in this time, reflecting influences from peoples practicing a semi-sedentary lifestyle that involved horticulture. Trade and the dissemination of information and ideas between different Indigenous Nations is most apparent during this period, demonstrated by the increasing presence of imported lithic materials and items manufactured from materials such as coastal shell. During this time period, more complex societies are evident from the development of agriculture (accompanied by a change to more sedentary lifestyle), the construction of elaborate burial mounds and structures, and the presence of rock art (Manitoba Archaeological Society, 1998).

The Woodland Period in Manitoba consists of the Initial Woodland (2,200 BP – 1,150 BP) and the Terminal Woodland (1,150 BP – 200 BP). The Laurel Culture were present in the Boreal Forest environment, while on the plains the Besant culture were the first to introduce pottery, followed by the Sonota and Avonlea cultures (Manitoba Archaeological Society, 1998c).

The Besant culture were dependant on bison hunting and were skilled at constructing jumps and pounds. Besant pottery is the earliest ceramic tradition on the Plains, introduced from the Missouri River area in South Dakota (Manitoba Archaeological Society, 1998d).

The earliest evidence of the Laurel Culture comes from the Rainy River area. Evidence of wild rice harvesting at the Wanipigow site, situated to the east of Lake Winnipeg, provides insight into subsistence practices (Manitoba Archaeological Society, 1998e).

The Blackduck Tradition (1,150 BP – 550 BP) began to replace the Laurel Culture at the start of the Terminal Woodland. It began in northern Minnesota and spread north and west. Blackduck sites are located within the Boreal Forest and on the Plains, showing the people were equally adapted to either environment (Hamilton, et al., 2007). Blackduck ceramics mark a significant improvement over Laurel wares, being constructed with thinner walls and larger in size.

Ceramics associated with the Duck Bay complex have been found in association with Blackduck artifacts. The Duck Bay complex is part of the Rainy River Composite, which also includes the Sandy Lake and Winnipeg River complexes (Taylor-Hollings, 2017).

The advancement and success of the fur trade gradually led to the influx of traders and permanent settlers. The birth of the Métis Nation was a product of the permanent establishment of European fur traders in the region, and represents a blending of predominantly French and Indigenous traditions. The decline and near extinction of the Plains Bison by the late 1800s forced a move from a traditional way of life for First Nations and Métis peoples, and marked a period of change that led to the establishment of the Treaties with the British Crown.

The eventual collapse of the fur trade and the Canadian Government's efforts to build a Nation resulted in mass immigration of European settlers and the settlement of the West. Based on the promise of bounty and rich

agricultural yields away from persecution in Europe, people from an array of ethnic backgrounds flocked to the Plains to take out homestead patents and land grants with the hope of a new life. Many of these pioneers endured challenges while adjusting to this new frontier. Building foundations from these humble beginnings dot the landscape, and are a testament to the many successes and failures of early rural settlement. Despite hardships, small communities soon formed and thrived with the establishment of industry and the railway.

1.4.2 Interlakes Region Culture History

Where the previous section provided a general understanding of the cultural history of Manitoba as a whole, the following section focuses on the Interlakes region, specifically around Lake St. Martin. Unfortunately, archaeological research in this area is limited and little specific information is available.

During the Palaeo Period, the Interlakes region was first covered by the Laurentide Ice Sheet, and then inundated by glacial Lake Agassiz. The Campbell Beach, situated at the southwestern end of the province, is a dominating feature of the paleoenvironment and marking the general extent of early Palaeo populations in Manitoba. Palaeo artifacts attributed to Agate Basin and Hell Gap have been recovered from below this strandline, which correlates to the Moorhead phase of Lake Agassiz when the water level dropped below the Campbell beach after the eastern (or northwestern) outlet opened. The Emerson phase followed, which saw lake levels rise again to the Campbell beach (Boyd, 2007). The Interlakes region remained inundated even during these water fluctuations.

Human occupation of the Interlakes region was not possible until ca. 8,500 BP, or until Lake Agassiz had receded and sufficient vegetation and wildlife populated the area (Riddle and Pettipas, 1992). Modern lake levels for Lake Manitoba were only established ca. 3,500 BP following several thousands of years of isostatic rebound and warming/drying climatic conditions. Archaeological sites dating to the Archaic Period have been identified, but material associated with the Early Archaic period has not been confirmed. Sites identified in the municipality of Siglunes included Pre-contact sites of unknown cultural affiliation and one undifferentiated Archaic site (Riddle and Pettipas, 1992). Currently, there are no recorded Shield Archaic sites within the Interlakes region around Lake St. Martin.

Sites dating to the Late Archaic have been identified in the Interlakes Region. The archaeological survey of the municipality of Siglunes identified sites affiliated with the Oxbow Complex (n = 2), the McKean Complex (n = 3) and the Pelican Lake Complex (n = 7) (Riddle and Pettipas, 1992). Additional evidence of Pelican Lake Complex utilization of the Interlakes area comes from the Eriksdale site (EfLl-1), which consists of two burials; one affiliated with the Pelican Lake Complex and dating to 4,370 ± 40 years BP, and the other, an unaffiliated burial dating to 3700 ± 60 years BP. Isotope analysis of the bones indicate that the individual in the first burial consumed a diet with both fish and red meat, suggesting a Parkland/Boreal Forest adaptation, while the individual in the second burial consumed a diet mostly of red meat, suggesting a Plains adaptation (Hoppa, et al., 2005).

For the Woodland Period, sites attributed to the Blackduck tradition, Duck Lake tradition, and even the Besant tradition have been identified within the Interlakes Region (Riddle and Pettipas, 1992).

The Interlake region became important to Euro-Canadian interests early on during the fur trade. The North West Company (NWC) established a fur trade post near present day Fairford, known as the Partridge Crop post. The Hudson Bay Company (HBC) constructed a post at Partridge Crop in 1819. The HBC post manager, Thomas McNab, noted that there were few First Nations people hunting in the area, and they tended to trade with the earlier established NWC post. In 1842, an Anglican mission was established at Partridge Crop, which was renamed Fairford in 1851 (Northern Lights Heritage Services, 2017a; Northern Lights Heritage Services, 2017b).

In 1857/1858, Henry Youle Hind explored the land between Lake Superior and the Red River to identify the best route of travel for migrants from the east. He noted a camp of Swampy Cree along the Dauphin River, who

informed him of the abundance of whitefish and an adjacent cranberry marsh. The land surrounding Fairford was also a popular campsite for the Cree. He noted that the Cree generally spent the winters at Fairford and the summers at Grand Rapid (Northern Lights Heritage Services, 2017a; Northern Lights Heritage Services, 2017b).

In 1871, Indigenous populations in the Interlakes Region signed Treaty 2, signing as Anishinaabeg or Ojibwe, rather than Swampy Cree. In 1876, Icelanders began to migrate to the southern end of the Interlakes Region, establishing a settlement along the west shoreline of southern Lake Winnipeg up to and just north of the Icelandic River (also known as the Whitemud River). The Icelandic settlers encountered few First Nations in the area, but noted that some Swampy Cree lived near the mouth of the Icelandic River near Grassy Narrows. The First Nations in the area then signed Treaty 5 in 1876 (Gerrard, 1985).

European settlement of the Interlakes region continued into the 20th century. By 1911, European homesteads and towns were situated along the north and west side of Lake St. Martin (University of Manitoba, n.d.).

1.4.3 Previous Archaeological Work in Project Regional Assessment Area

Only three previous heritage studies touched upon lands within the Project's RAA. Two such reports were drafted for this Project in 2017: *Heritage Resources Characterization Study: Lake Manitoba Outlet Route Options* (Northern Lights Heritage Services, 2017a) and *Heritage Resources Characterization Study: Lake St. Martin Outlet Channels and Proposed All Season Access Road* (Northern Lights Heritage Services, 2017b). The reports noted the sparseness of the archaeological record within the RAA and suggested that archaeological potential for the Project was low to moderate. Archaeological potential for the LSMOC was identified for ridge areas, but otherwise the land was considered to hold low archaeological potential. The land associated with the LMOC development is generally low and wet and was considered to hold mostly low archaeological potential (low and wet areas would be unattractive for camping and/or settlement; these conditions existed in this region in the distant past as well), based on the authors' understandings of the post-glacial environmental history of the area). Both studies indicated a need for a Heritage Resources Protection Plan to be prepared to provide guidance to the contractors and equipment operators should artifacts or human remains be unearthed.

The third heritage study was an archaeological inventory and survey of the Siglunes Municipality, conducted in 1984 (Riddle and Pettipas, 1992). This study focused on lands south of the Project and only touched on the southern 5 km of the RAA.

1.4.4 Known and Registered Archaeological Sites

[redacted]

[redacted]

2 STUDY OBJECTIVES AND METHODS

2.1 Screening Criteria and Requirements

Section 12(2) of *the Heritage Resources Act* (C.C.S.M. c. H39-1, 1985, revised 2003) stipulates that any activity that could result in the damage, alteration or destruction of a site may be subject to a heritage resource impact assessment (HRIA). Heritage resource includes:

a) A heritage site;

b) A heritage object; and

c) Any work or assembly of works of nature or of human endeavour that is of value for its archeological, palaeontological, pre-historic, historic, cultural, natural, scientific or aesthetic features, and may be in the form of sites or objects or a combination thereof.. It should be noted that heritage objects are Crown owned, however not all heritage sites are Crown property. As such, ground disturbing developments must be referred to the Historic Resources Branch (HRB) of Manitoba Sport, Culture, and Heritage for review and recommendation to determine a project's potential to impact heritage resources and/or human remains that are likely to be damaged or destroyed by reason of any work activity, development or project.

The HRB screens these development projects based on a number of well-documented factors common to locational characteristics of archaeological sites. For example, topographic features such as valleys, ridges, hills or escarpments, and terrestrial features associated with watercourses are generally considered to be areas of high archaeological potential since they provided protection, shelter, sustenance and security to past peoples.

Proximity to previously recorded heritage resources is also taken into consideration when screening a proposed development, to identify potential conflict with these resources. Furthermore, archaeological sites frequently occur in clusters, concentrated on or around the same landform. Previously recorded sites are therefore also used as an indicator of potential for additional cultural materials to be present in an area.

In areas suggested to have heritage sensitivity based on the topography and/or proximity to previously recorded heritage properties, parcels of native prairie/forest are considered a prime candidate for demonstrating high archaeological potential. This is because areas of native vegetation have typically not been disturbed by agricultural practices or development, favouring the preservation of archaeological sites. This is not to say that lands demonstrating previous disturbance do not play host to heritage resources, since many artifacts have been found in such areas. Disturbance can; however, lower our ability to interpret spatial patterning in these sites. It

should be noted that agricultural impacts are typically restricted to the uppermost 30 cm of deposits. In environments with deep, post-glacial sedimentation such as floodplains, sand dunes and colluvial settings, intact archaeological components may still be encountered below the plow zone. Such settings are therefore commonly targeted for assessment, even when cultivated.

2.1.1 Regulatory History of the Project

The Project was submitted to the HRB for regulatory screening in 2019 as part of the preparation for the EIS. HRB indicated that no Project-specific heritage resource inventory was available. Therefore, HRB stated that a pre-construction HRIA was required for the PDA of the Project. The HRIA of the PDA must be conducted under a valid heritage permit using a HRB-approved predictive model to target field survey locations. Any heritage resources documented under this HRIA would be assessed by systematic testing to determine the nature and scope of the heritage resources. Intact resources may be required by HRB to be mitigated through scientific salvage excavation (Manitoba Infrastructure, 2020).

WSP/Bison secured Permit A49-20 to conduct the HRIA (found in Appendix C). The application included a workplan and predictive model on which proposed fieldwork investigations were based. HRB approved the workplan and gave further direction when the heritage permit was issued to WSP for the Project. HRB specifically requested that the HRIA focus on trails, shorelines, elevations, water crossings, potential burial sites, and cemeteries. The HRB also indicated that they did not have any heritage concerns for the PDA for the Highway 239 re-alignment, and thus this portion of the Project did not require a field assessment (Tsukamoto, pers. comm., 2020a).

2.2 Objectives

The objectives of a HRIA are as follows:

1. To establish the presence or absence of heritage resources within the PDA;
2. To establish the content, structure, and significance of those resources, if present;
3. To establish suitable avoidance measures (including re-design of the proposed development) for any heritage resources found within the project footprint; and
4. To either recommend approval to develop without further assessment or to recommend the need for and scope of any further study (including archaeological salvage excavation or other conservation action) if suitable avoidance measures cannot be met.

The HRIA covered under this permit is only concerned with heritage resources within the PDA.

2.3 Methods

WSP and Bison partnered on the preconstruction HRIA of the LMOC and LSMOC Project. WSP and Bison produced a Heritage Resources Work Plan (HRWP) outlining the methodology for fieldwork, the predictive model prior to completing fieldwork, the methodology for the development of the HRPP, and the proposed schedule of activities.

The methods of the HRIA include desktop screening, visual overview, pedestrian survey, subsurface testing, and artifact and site management.

2.3.1 Desktop Screening

The HRWP is a detailed investigations plan that outlines how the HRIA will be completed and includes a description of the planning process, methodologies, rationales, and implementation of field surveys. The HRWP was developed from a desktop review conducted by the archaeologists prior to fieldwork. The purpose of the desktop review was to assess the baseline conditions of the land within the PDA and to determine areas of medium to high archaeological potential to focus field assessments, based on what archaeologists know about past distribution of archaeological sites, traditional land-use, and current settlement patterns. The desktop review included data from previous archaeological assessments and surveys, nearby archaeological sites, and Light Detection and Ranging (LiDAR) files. Two metre resolution LiDAR files obtained from the Manitoba Land Initiative's Core Maps – Data Warehouse were used to create a Digital Elevation Model (DEM). The DEM was used to identify indicators of archaeological potential, including, but not limited to: Hillshade, Slope, Aspect, Distance to Water, and Relative Elevation.

The interpretations from the above information was used to form a predictive model of the archaeological potential for the PDA. The PDA was categorized into areas of low, moderate, and high archaeological potential:

- Areas of low potential: lowland, low-lying wet areas, which would be considered unattractive processing and/or camping site locations and would likely been inundated in the past;
- Areas of moderate potential: low-lying lands interspersed with elevated landforms, the latter which would have been more attractive temporary subsistence locations;
- Areas of high potential: locations that would provide high, dry areas to camp while providing access to nearby freshwater sources and/or larger navigable water bodies, such as beaches and upland terrains near tributaries and/or lakes.

The results of the predictive model were then used to determine areas of high potential for heritage resources to be assessed. The areas of high potential for heritage resources that came from the desktop screening were segmented into Survey Locations, which became the basis for the fieldwork plan. Each Survey Location would undergo a visual overview by helicopter, at minimum.

2.3.2 Visual Overview

Field assessments began with a visual inspection of the areas identified as having a high potential for heritage resources identified through the desktop screening. In-field visual inspection was expected to reduce the Survey Locations needing fieldwork based on the analysis of existing land conditions, including past disturbance and the nature of landforms. Survey Locations that would likely be selected for further investigation are those that contained landforms with high potential for heritage resources and terrain undisturbed by agriculture and/or industry. Survey Locations that would likely not be selected for further investigation are those for which the landforms are not as prominent as previously identified through the desktop screening, or have been greatly disturbed by agriculture and/or industry in a way that intact cultural components are not expected to be encountered. Survey Locations that have been previously impacted by agriculture may still be selected for further investigation if they are situated on landforms that would otherwise hold a high potential for heritage resources and the degree of previous impacts is minimal enough to suggest the possibility of intact cultural components.

For the LSMOC and the Manitoba Hydro Distribution Line, visual overview was accomplished with helicopter. For the LMOC and PR 239 Re-Route, visual overview was accomplished with vehicle or on foot. Land conditions were documented with photos and geographical information was recorded on hand-held Garmin GPS 78s units.

2.3.3 Pedestrian Survey

If the visual overview of a Survey Location resulted in the need for further investigation, a pedestrian survey was then conducted. Pedestrian surveys were conducted at locations [redacted]. Survey intervals were between 5 m and 10 m apart, depending on conditions that reflected the level of visibility of the ground surface. Transects were recorded by GPS as tracks in UTM NAD 83 using the same Garmin GPS 78s. Fieldstones or surface irregularities were inspected for evidence of any cultural modification suggestive of past human activities or patterns indicative of tipi rings, burials, or cairns.

Heritage resources, either individual artifacts or clusters of artifacts, identified during pedestrian survey were flagged and a more intensive visual inspection was completed. Flags were recorded as waypoints and their provenience recorded prior to recovery. Diagnostic artifacts and artifacts of interest were photographed prior to removal, and provenience was controlled through bagging the artifacts according to their waypoint.

2.3.4 Subsurface Testing

Subsurface testing was conducted to assess the potential for intact buried cultural components. Shovel tests were completed for the following conditions:

1. Land within the right-of way consisting of pristine forest or riverine environment, pasture, and fallow ground,
2. Locations in conjunction with archaeological sites identified during pedestrian survey, and
3. Select locations of high archaeological potential.

Shovel tests were dug by hand to a minimum of 40 m x 40 cm and excavated to a minimum of 20 cm depth below surface (DBS). Tests were on average between 30 cm and 50 cm DBS, but some tests were dug as deep as 120 cm. Test pit depth was dependant on the types of soils encountered. In general, shovel test depth (excavated to the depth of the culturally-sterile “C-horizon” deposits, whenever possible) may be affected by glacial till, floodplain sediments, sand dune deposits, and other depositional events. Notes and photographs were taken to document the stratigraphy of the tests and the location of any artifacts found below the surface.

Where heritage resources were documented, shovel test pits were excavated at 5 m to 10 m intervals in a cross or ‘X’ formation from the positive test to inform upon the size, scope, depth, type, and condition of the site. Excavated soils were screened through 6 mm mesh and the contents examined for heritage resources. Test pit stratigraphy was examined for evidence of heritage resources and/or paleosols.

2.3.5 Artifact and Site Management

A collection of artifacts and features documented at one location is a Archaeological Site and each collection as a whole is considered a Heritage Resource. Archaeological sites found during the HRIA were recorded, photographed, and mapped. Site information was documented using the Manitoba Archaeology Site Inventory Form and submitted to the HRB. HRB assigned an identification number (AaBb-XXX) to each archaeological site using the federally recognized Borden Number system. The locations of artifacts found during the HRIA would be recorded on GPS units. Collected artifacts would be brought back to the laboratory for analysis and cleaned, photographed, and catalogued according to HRB standards.

3 STUDY RESULTS

3.1 Desktop Screening

The following sections present the results of the desktop review completed for the Project. The results of the desktop screening were also cross-referenced with information from the Traditional Land and Use Study conducted on behalf of the Interlake Reserves Tribal Council (IRTC). This report identified several locations within the Project PDA that were recognized by the six IRTC member communities as pertaining to site-specific Water, Fishing, Hunting and Trapping, Plant Harvesting, and Cultural Continuity activities (Olson, 2020).

In total, 41 Survey Locations encompassing areas of moderate to high archaeological potential were identified in the Project PDA and selected for field assessment (Appendix B, Table B.2).

3.1.1 Lake St. Martin Outlet Channel

Thirteen areas (Survey Locations 1-13 in Table B.2) were selected for field assessment in the LSMOC PDA (Appendix A, Figure 3.1-1). The LSMOC PDA is situated [redacted] This terrain is generally considered to hold moderate archaeological potential. Areas of high archaeological potential within the LSMOC PDA include [redacted]

3.1.2 Manitoba Hydro Distribution Line

Nine areas (Survey Locations 14-22 in Table B.2) were selected for field assessment in the Manitoba Hydro Distribution Line PDA (Figure 3.1-2). The Distribution Line PDA is situated [redacted] This terrain is generally considered to hold moderate archaeological potential. Areas of moderate to high [redacted] areas closest to Dauphin River and Lake St. Martin.

3.1.3 Lake Manitoba Outlet Channel

Nineteen areas (Survey Locations 23-41 in Table B.2) were selected for field assessment in the LMOC PDA (Figure 3.1-3). The LMOC PDA is situated [redacted] This terrain is generally considered to hold moderate to high archaeological potential. Areas of high archaeological potential within the LMOC PDA include [redacted]

3.1.4 Provincial Road 239 Re-Route

HRB did not identify any heritage concerns for the Provincial Road 239 Re-Route PDA. Thus, this portion of the Project was not subject to a desktop screening (Tsukamoto, 2020).

3.1.5 Cross-Reference with IRTC Study

The IRTC Use Study (Olson, 2020) was made available to WSP during the preparation for the HRIA. MI provided funding to communities for Traditional Knowledge studies and the results of these studies should be considered in conjunction with the findings of this HRIA.

The IRTC Use Study identified several locations within the Project PDA as pertaining to site-specific Water, Fishing, Hunting and Trapping, Plant Harvesting, Cultural Continuity activities (Olson, 2020). WSP/Bison cross-referenced this information with the desktop screening results described above to ensure that the survey locations selected for the HRIA fieldwork encompassed the IRTC site-specific areas that overlapped with the PDA. No detailed geographical or descriptive information was used for this reference; instead, the general locale of the site-specific areas were acknowledged and cross-referenced with the PDA. The intent of this cross-reference was to ensure that those areas noted by the IRTC were also represented within the HRIA. WSP/Bison found that all of the IRTC site-specific areas within the PDA were located within the Survey Locations already selected for fieldwork under this HRIA.

3.2 2020 Field Surveys

WSP/Bison conducted the HRIA fieldwork for the 41 Survey Locations under Heritage Permit A49-20 (Appendix C) on July 14-24, August 28 – September 5, September 15-17, and October 5, 2020. The HRIA consisted of visual assessment, pedestrian survey, and both systematic and judgemental shovel test programs. Sub-Sections 3.2.1 through 3.2.3 describe the results. Figures 3.2-1 through 3.2-30 in Appendix A illustrate these results, showing the track of the helicopter fly-overs, the track of on-ground pedestrian surveys, the locations of the shovel tests, and the position from which photographs were taken as they appear in Appendix B.

3.2.1 Lake St. Martin Outlet Channel

Thirteen survey locations were assessed in the LSMOC PDA (Appendix A, Figure 3.2-1; Appendix B, Table B.3). The LSMOC PDA was visually assessed from the air by helicopter fly-over. The assessment found that the PDA was mostly situated [redacted] with a low likelihood for heritage resources. The PDA contained a [redacted] with a high likelihood for heritage resources [redacted] also demonstrated a high potential for heritage resources. The field crew conducted spot ground truthing assessments at eight survey locations in the PDA to verify the potential presence of artifacts. Spot ground truthing assessments involved pedestrian survey and six locations were subject to shovel testing. A total of 96 shovel tests were dug in the LSMOC PDA. Two heritage resources were recorded within the LSMOC PDA: EkLm-001 (Site 1) within Survey Location 10 and EkLn-001 (Site 2) within Survey Location 13. The heritage resources are described in detail in Sections 3.3.1 and 3.3.2.

SURVEY LOCATION 1

Survey Location 1 is located [redacted] (Figures 3.2-1 and 3.2-2). The helicopter fly-over revealed [redacted] (Appendix D, Photo D.1).

The field crew conducted a pedestrian survey and shovel test program. [redacted] (Photo D.2). [redacted]

[redacted]

No heritage resources or cultural use areas were noted on the surface. Nine shovel tests were dug with a focus on [redacted] (Appendix E, Table E.1). Typical stratigraphy was [redacted] (Photo D.3). All tests were negative for heritage resources.

No heritage resources were recorded in Survey Location 1.

SURVEY LOCATION 2

Survey Location 2 is located [redacted] (Figures 3.2-1 and 3.2-3). The helicopter fly-over revealed [redacted]

The field crew conducted a pedestrian survey and shovel test program. [redacted] (Photo D.4). [redacted] No heritage resources or cultural use areas were noted on the surface. Seven shovel tests were dug at the area of highest elevation (Table E.2). Typical stratigraphy was [redacted] (Photo D.5). All tests were negative for heritage resources.

No heritage resources were recorded in Survey Location 2.

SURVEY LOCATION 3

Survey Location 3 is located [redacted] Figures 3.2-1 and 3.2-3). The helicopter fly-over revealed the PDA to be situated in [redacted] (Photo D.6). It was determined that the survey location held low archaeological potential and thus no pedestrian survey or shovel test program was conducted. No heritage resources or cultural use areas were noted on the surface during the helicopter fly-over.

No heritage resources were recorded in Survey Location 3.

SURVEY LOCATION 4

Survey Location 4 is located [redacted] (Figures 3.2-1 and 3.2-4). This section of the LSMOC PDA [redacted] The helicopter fly-over revealed [redacted]

[redacted] The field crew conducted a pedestrian survey [redacted] (Photo D.7). [redacted] No heritage resources or cultural use areas were noted on the surface. A single shovel test was dug to explore [redacted] (Table E.3). Typical stratigraphy was [redacted] The test was negative for heritage resources.

No heritage resources were recorded in Survey Location 4.

SURVEY LOCATION 5

Survey Location 5 is located [redacted] (Figures 3.2-1 and 3.2-4). This section of the LSMOC PDA [redacted]. The helicopter fly-over revealed [redacted]

A pedestrian survey was conducted [redacted] (Photo D.8) [redacted] No heritage resources or cultural use areas were noted on the surface. No shovel tests were dug.

No heritage resources were recorded in Survey Location 5.

SURVEY LOCATION 6

Survey Location 6 is located [redacted] (Figures 3.2-1 and 3.2-5). This section of the LSMOC PDA [redacted] The helicopter fly-over revealed [redacted]

[redacted] (Photo D.10). All tests were negative for heritage resources.

No heritage resources were recorded in Survey Location 6.

SURVEY LOCATION 7

Survey Location 7 is located [redacted] (Figures 3.2-1 and 3.2-6). The helicopter fly-over revealed the PDA [redacted] (Photo D.11). It was determined that the survey location held low archaeological potential and thus no pedestrian survey or shovel test program was conducted. No heritage resources or cultural use areas were noted on the surface during the helicopter fly-over.

No heritage resources were recorded in Survey Location 7.

SURVEY LOCATION 8

Survey Location 8 is located [redacted] (Figures 3.2-1 and 3.2-7). The helicopter fly-over revealed [redacted].

The field crew conducted a pedestrian survey and shovel test program. [redacted] (Photo D.12). No heritage resources or cultural use areas were noted on the surface. Seven shovel tests were dug [redacted] (Table E.5). Typical stratigraphy was [redacted]. [redacted] (Photo D.13). All tests were negative for heritage resources.

No heritage resources were recorded in Survey Location 8.

SURVEY LOCATION 9

Survey Location 9 is located [redacted] (Figures 3.2-1 and 3.2-8). The helicopter fly-over revealed the PDA to be situated [redacted] (Photo D.14). It was determined that the survey location held low archaeological potential and thus no pedestrian survey or shovel test program was conducted. No heritage resources or cultural use areas were noted on the surface during the helicopter fly-over.

No heritage resources were recorded in Survey Location 9.

SURVEY LOCATION 10

Survey Location 10 is located [redacted] (Figures 3.2-1 and 3.2-9). The helicopter fly-over revealed [redacted] (Photo D.15).

The field crew conducted a pedestrian survey and shovel test program. [redacted] (Photo D.16). [redacted] Several artifacts were recovered from the exposures. Nineteen shovel tests were dug [redacted] (Table E.6). Typical stratigraphy was [redacted] (Photo D.17). One test was positive for cultural materials.

One heritage resource (EkLm-001) was recorded in Survey Location 10. EkLm-001 is a Pre-Contact lithic scatter composed of ten debitage and one tool (an endscraper) recovered from surface exposures and two debitage recovered from one shovel test (see Section 3.3.1 for details).

SURVEY LOCATION 11

Survey Location 11 is located [redacted] (Figures 3.2-1 and 3.2-9). The helicopter fly-over revealed the PDA [redacted] It was determined that the survey location held low archaeological potential and thus no pedestrian survey or shovel test program was conducted[1]. No heritage resources or cultural use areas were noted on the surface during the helicopter fly-over.

No heritage resources were recorded in Survey Location 11.

SURVEY LOCATION 12

Survey Location 12 is located [redacted] (Figures 3.2-1 and 3.2-10). The helicopter fly-over revealed the PDA [redacted]. It was determined that the survey location held low archaeological potential and thus no pedestrian survey or shovel test program was conducted[2]. No heritage resources or cultural use areas were noted on the surface during the helicopter fly-over.

No heritage resources were recorded in Survey Location 12.

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[1] No photograph is available from the helicopter fly-over of Survey Location 11.
[2] No photograph is available from the helicopter fly-over of Survey Location 12.

SURVEY LOCATION 13

Survey Location 13 is located [redacted] (Figures 3.2-1 and 3.2-10). The helicopter fly-over revealed [redacted] (Photo D.18).

The field crew conducted a pedestrian survey and shovel test program [redacted] (Photo D.19). Artifacts were noted and recovered from [redacted] Fifty shovel tests were dug [redacted] focused on the area of the densest concentration of surface artifacts (Table E.7). Typical stratigraphy was [redacted] (Photo D.20). Eleven tests were positive for cultural materials.

One heritage resource (EkLn-001) was recorded in Survey Location 13. EkLn-001 is a Pre-Contact campsite, composed of 46 lithic debitage and 16 lithic tools (six scrapers, seven retouched/utilized flakes, and three projectile points) recovered from the surface and 13 lithic debitage recovered from 11 shovel tests (see Section 3.3.2 for details).

3.2.2 Manitoba Hydro Distribution Line

Nine survey locations were assessed in the Manitoba Hydro Distribution Line (Appendix A, Figure 3.2-11; Table B.4). The PDA was visually assessed from the air by a helicopter fly-over. The assessment found that the Distribution Line was situated in [redacted] with a low likelihood for heritage resources. No suitable areas for subsurface testing was noted. No cultural use areas were identified.

SURVEY LOCATIONS 14, 15, AND 16

Survey Locations 14, 15, and 16 are located [redacted] (Figures 3.2-11 and 3.2-12). The helicopter fly-over revealed the PDA to be situated [redacted] terrain and that no elevated landform existed within the survey locations (Photo D.21). It was determined that the survey location held low archaeological potential and thus no pedestrian survey or shovel test program was conducted. No heritage resources or cultural use areas were noted on the surface during the helicopter fly-over.

No heritage resources were recorded in Survey Locations 14, 15, and 16.

SURVEY LOCATIONS 17, 18, AND 19

Survey Locations 17, 18, and 19 are located [redacted] in (Figures 3.2-11, 3.2-13 and 3.2-14). The helicopter fly-over revealed the PDA to be situated [redacted] terrain and that no elevated landform existed within the survey locations (Photo D.22). Survey Location 17 [redacted]. It was determined that the survey location held low archaeological potential and thus no pedestrian survey or shovel test program was conducted. No heritage resources or cultural use areas were noted on the surface during the helicopter fly-over.

No heritage resources were recorded in Survey Locations 17, 18, and 19.

SURVEY LOCATIONS 20, 21, AND 22

Survey Locations 20, 21, and 22 are located [redacted] River (Figures 3.2-11, 3.2-15 and 3.2-16). The helicopter fly-over revealed the PDA to be situated [redacted] terrain and that no elevated landform existed within the survey locations (Photo D.23). It was determined that the survey location held low archaeological and thus no pedestrian survey or shovel test program was conducted. No heritage resources or cultural use areas were noted on the surface during the helicopter fly-over.

No heritage resources were recorded in Survey Locations 20, 21, and 22.

3.2.3 Lake Manitoba Outlet Channel

Nineteen survey locations were visually assessed in the LSMOC PDA (Appendix A, Figure 3.2-17; Table B.5). The 19 survey locations covered portions of 41 quarter-sections of the PDA. The LMOC PDA was visually assessed by the heritage team on the ground. The assessment found that the LMOC PDA contained a moderate to high potential for heritage resources. Terrain of high heritage potential within the PDA included [redacted] It was also identified that several locations had strong possibility of historic significance sites in the form of [redacted] within the PDA. Additionally, [redacted] locations had high potential for archaeological resources.

The field crew conducted assessments at 12 survey locations within 22 quarter-sections. Assessments involved pedestrian survey and nine survey locations were subject to shovel testing. A total of 262 shovel tests were dug in the LMOC PDA. Eight heritage resources were recorded within the LMOC PDA. These included: EiLp-002 (Site 3), EiLp-003 (Site 4), EiLp-004 (Site 5), EiLp-005 (Site 6), EhLp-003 (Site 7), EhLp-004 (Site 8), EhLp-005 [redacted] and EhLp-006 (Site 10). The heritage resources are described in detail in Sections 3.3.3 through 3.3.10.

SURVEY LOCATION 23

Survey Location 23 is located [redacted] (Figures 3.2-17 and 3.2-18). The visual assessment revealed [redacted]

The field crew conducted a pedestrian survey and shovel test program. [redacted] (Photo D.24). [redacted] (Photo D.25).

Artifacts were noted and recovered [redacted]. Eight shovel tests were dug [redacted] (Table E.8). Typical stratigraphy was [redacted] (Photo D.26). All tests were negative for cultural materials.

Two heritage resources (EiLp-002 and EiLp-003) were recorded in Survey Location 23. EiLp-002 is a Pre-Contact lithic scatter composed of one debitage and two tools (one retouched flake and one scraper) recovered from [redacted] (see Section 3.3.3 for details). EiLp-003 is an unidentified stone feature of indeterminate age, likely the remains of [redacted] (see Section 3.3.4 for details).

SURVEY LOCATION 24

Survey Location 24 is located [redacted] (Figures 3.2-17 and 3.2-18). The visual assessment revealed [redacted] (Photo D.27). It was determined that the survey location held low archaeological potential and thus no pedestrian survey or shovel test program was conducted. No heritage resources or cultural use areas were noted.

No heritage resources were recorded in Survey Location 24.

SURVEY LOCATION 25

Survey Location 25 is located [redacted] (Figures 3.2-17 and 3.2-19). The visual assessment revealed [redacted] The area was determined to be moderate to high for archaeological potential. The surface exposure was ample and allowed for adequate ground inspection.

The field crew conducted a pedestrian survey and shovel test program [redacted] suggested it did not date back far enough to be considered historic (Photo D.28). [redacted] (Photo D.29). [redacted] (Photo D.30). Artifacts were noted and recovered from [redacted] One shovel test was dug [redacted] (Table E.9). Stratigraphy was [redacted] (Photo D.31). The test was negative for cultural materials.

One heritage resource (EiLp-004) was recorded in Survey Location 25. EiLp-004 is a Pre-Contact lithic scatter composed of four debitage and one tool recovered from [redacted] (see Section 3.3.5 for details).

SURVEY LOCATION 26

Survey Location 26 is located [redacted] (Figures 3.2-17 and 3.2-20). The visual assessment [redacted] The area was determined to be moderate to high for archaeological potential. The surface exposure was ample and allowed for adequate ground inspection.

The field crew conducted a pedestrian survey. [redacted] provided ample exposure for ground inspection for cultural materials (Photo D.32). The soils contained [redacted] No heritage resources or cultural use areas were noted on the surface. No shovel tests were dug.

No heritage resources were recorded in Survey Location 26.

SURVEY LOCATION 27

Survey Location 27 is located [redacted] 6 (Figures 3.2-17 and 3.2-20). The visual assessment revealed [redacted] Overall the area was determined to be moderate for archaeological potential.

The field crew conducted a pedestrian survey and shovel test program of a small sample area of the survey location, [redacted] (Photo D.33). No heritage resources or cultural use areas were

noted on the surface. Two shovel tests were excavated (Table E.10). Typical stratigraphy was [redacted] (Photo D.34). All tests were negative for cultural materials. The field crew considered the sample area to be low for archaeological potential. The sample area was compared to the satellite imagery of the rest of the survey location and the field crew concluded that the remainder of the survey location would also be featureless and hold low archaeological potential.

No heritage resources were recorded in Survey Location 27.

SURVEY LOCATION 28

Survey Location 28 is located [redacted] (Figures 3.2-17 and 3.2-21). The visual assessment revealed [redacted] The area was determined to be moderate to high for archaeological potential.

The field crew conducted a pedestrian survey and shovel test program. The cultivated field provided ample exposure for ground inspection for cultural materials (Photo D.35). Five shovel tests were dug [redacted] (Photo D.36; Table E.11). Typical stratigraphy was [redacted] (Photo D.37). All tests were negative for heritage resources.

No heritage resources were recorded in Survey Location 28.

SURVEY LOCATION 29

Survey Location 29 is located [redacted] (Figures 3.2-17 and 3.2-22). The visual assessment revealed [redacted] The area was determined to be moderate for archaeological potential.

The field crew conducted a brief pedestrian survey of the areas [redacted] (Photo D.38). No shovel tests were dug, but visual assessment of the ground revealed sediments of silty clay. The field crew re-assessed the area as low potential for archaeological resources. No heritage resources or cultural use areas were noted.

No heritage resources were recorded in Survey Location 29.

SURVEY LOCATION 30

Survey Location 30 is located [redacted] (Figures 3.2-17 and 3.2-23). The visual assessment revealed [redacted] (Photo D.39). It was determined that the survey location held low archaeological potential and thus no pedestrian survey or shovel test program was conducted. No heritage resources or cultural use areas were noted.

No heritage resources were recorded in Survey Location 30.

SURVEY LOCATION 31

Survey Location 31 is located [redacted] (Figures 3.2-17 and 3.2-24). The visual assessment revealed [redacted]. The area was determined to be high for archaeological potential.

The field crew conducted a pedestrian survey and shovel test program. The terrain was [redacted] (Photo D.40). No heritage resources or cultural use areas were noted on the surface. Thirty-three shovel tests were dug

[redacted] (Table E.12). Typical stratigraphy was [redacted] (Photo D.41). All tests were negative for heritage resources.

No heritage resources were recorded in Survey Location 31.

SURVEY LOCATION 32

Survey Location 32 is located [redacted] (Figures 3.2-17 and 3.2-25). The visual assessment revealed [redacted] (Photo D.42). It was determined that the survey location held low archaeological potential and thus no pedestrian survey or shovel test program was conducted. No heritage resources or cultural use areas were noted.

No heritage resources were recorded in Survey Location 32.

SURVEY LOCATION 33

Survey Location 33 is located [redacted] (Figures 3.2-17 and 3.2-25). The visual assessment revealed [redacted]

The field crew conducted a pedestrian survey and shovel test program. The terrain was flat. [redacted] (Photo D.43). Thirty-eight shovel tests were dug [redacted] (Table E.13). Typical stratigraphy was [redacted] (Photo D.44). One test was positive for cultural materials.

One heritage resource (EiLp-005) was recorded in Survey Location 33. EiLp-005 is [redacted] with a small Pre-Contact component, [redacted] (see Section 3.3.6 for details).

SURVEY LOCATION 34

Survey Location 34 is located [redacted] (Figures 3.2-17 and 3.2-26). The visual assessment revealed [redacted] (Photo D.45). It was determined that the survey location held low archaeological potential and thus no pedestrian survey or shovel test program was conducted. No heritage resources or cultural use areas were noted.

No heritage resources were recorded in Survey Location 34.

SURVEY LOCATION 35

Survey Location 35 is located [redacted] (Figures 3.2-17 and 3.2-26). The visual assessment revealed [redacted]. The area was determined to be high for archaeological potential.

The field crew conducted a pedestrian survey and shovel test program. The area was dry and elevated [redacted] (Photo D.46). No heritage resources or cultural use areas were noted. Eighteen shovel tests were dug (Table E.14). Typical stratigraphy was [redacted] (Photo D.47). All tests were negative for heritage resources.

No heritage resources were recorded in Survey Location 35.

SURVEY LOCATION 36

Survey Location 36 is located [redacted] (Figures 3.2-17 and 3.2-27). The visual assessment revealed [redacted] It was determined that the survey location held low archaeological potential and thus no pedestrian survey or shovel test program was conducted[3]. No heritage resources or cultural use areas were noted.

No heritage resources were recorded in Survey Location 36.

SURVEY LOCATION 37

Survey Location 37 is located [redacted] (Figures 3.2-17 and 3.2-27). [redacted] The area was determined to be moderate to high for archaeological potential.

The field crew conducted a pedestrian survey and shovel test program. [redacted] (Photo D.48). [redacted] (Photo D.49). Thirty-one shovel tests were dug [redacted] (Table E.15). Typical stratigraphy was [redacted] Five tests were positive for cultural materials.

Two heritage resources (EhLp-003 and EhLp-005) were recorded in Survey Location 37. EhLp-003 is a surface debris scatter [redacted] (see Section 3.3.7 for details). EhLp-005 is a surface and subsurface debris scatter adjacent to the [redacted] (see Section 3.3.9 for details).

SURVEY LOCATION 38

Survey Location 38 is located [redacted] (Figure 3.2-28). The visual assessment revealed [redacted] It was determined that the survey location held low archaeological potential and thus no pedestrian survey or shovel test program was conducted[4]. No heritage resources or cultural use areas were noted.

No heritage resources were recorded in Survey Location 38.

SURVEY LOCATION 39

Survey Location 39 is located [redacted] (Figures 3.2-17 and 3.2-29). The visual assessment revealed [redacted] (Photo D.50). It was determined that the survey location held low archaeological and thus no pedestrian survey or shovel test program was conducted. No heritage resources or cultural use areas were noted.

No heritage resources were recorded in Survey Location 39.

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[3] No photograph is available from the visual assessment of Survey Location 36.
[4] No photograph is available from the visual assessment of Survey Location 38.

SURVEY LOCATION 40

Survey Location 40 is located [redacted] (Figure 3.2-30). The visual assessment revealed [redacted] It was determined that the survey location held low archaeological potential and thus no pedestrian survey or shovel test program was conducted[5]. No heritage resources or cultural use areas were noted.

No heritage resources were recorded in Survey Location 40.

SURVEY LOCATION 41

Survey Location 41 is located [redacted] (Figures 3.2-17 and 3.2-30). The visual assessment revealed [redacted] (Photo D.51) [redacted] (Photo D.52). [redacted]

The field crew conducted a pedestrian survey and shovel test program of [redacted]. [redacted] A total of 119 shovel tests were dug in Survey Location 41 (Table E.16). Typical stratigraphy on [redacted] was [redacted] (Photo D.53). Typical stratigraphy on [redacted] was [redacted] (Photo D.20). Of the 119 shovel tests, 77 were positive for cultural materials.

[redacted]

Two heritage resources (EhLp-004 and EhLp-006) were recorded in Survey Location 41. EhLp-004 is a Pre-Contact campsite on [redacted]. The site is composed of seven artifacts (five lithic tools and two faunal specimens) recovered from the surface, and 198 artifacts (102 lithic debitage, seven lithic tools, 80 faunal specimens, and one pottery sherd) recovered from 19 shovel tests (see Section 3.3.8 for details). EhLp-006 is a Pre-Contact campsite on [redacted]. The site is composed of 703 artifacts recovered from 58 shovel tests, and included 78 lithic debitage, nine tools, 558 faunal specimens, and 37 pottery sherds (see Section 3.3.10 for details).

[5] No photograph is available from the visual assessment of Survey Location 40.

3.3 Heritage Resources

Ten heritage resources were recorded under Permit A49-20: EkLm-001 (Site 1), EkLn-001 (Site 2), EiLp-002 (Site 3), EiLp-003 (Site 4), EiLp-004 (Site 5), EiLp-005 (Site 6), EhLp-003 (Site 7), EhLp-004 (Site 8), EhLp-005 [redacted], and EhLp-006 (Site 10). For each heritage resource, the scope of the assessment and the size and composition of the site is described below.

3.3.1 EkLm-001 (Site 1)

SITE DESCRIPTION

EkLm-001 (Site 1) is located [redacted] (Appendix A, Figure 3.2-1). [redacted] (Figure 3.3-1). The upland vegetation is primarily spruce and aspen. At the site location the margin gradually slopes into the muskeg.

The site is a small lithic scatter, identified as a Pre-Contact [redacted] site of undetermined age. Artifacts were recorded in ground exposures caused by vegetation clearing activities related to the Project (Appendix D, Photo D.53). Eleven artifacts were recovered from an exposure within a 2 x 2 m area, including ten lithic debitage and one lithic tool end scraper.

Thirteen shovel tests were dug in a 5 and 10 m interval grid pattern around the surface finds, covering an area of 30 m x 25 m (Appendix E, Table E.6). One test proved positive: EFTP07. Shovel test EFTP07 was dug at the location of the surface finds and contained two secondary chert flakes recovered from the top 18 cm. Stratigraphy at the site was [redacted]ravel. Tests were dug to a depth of 40 cm.

ARTIFACT ASSEMBLAGE

A total of 13 artifacts were recovered from the site (Appendix B, Table B.6; see Appendix F, Table F.1, for the artifact catalogue). All artifacts were lithics fashioned from chert and included 11 debitage and one tool. The lithic tool was an endscraper (Cat#1). The endscraper was complete and measured 23 mm in length, 15 mm in width, and 8 mm thick with a distal unifacially worked edge (Photo D.54).

SITE SUMMARY

EkLm-001 is a Pre-Contact lithic [redacted] site that occupies a small area, has a low artifact density and shallow depth, and has been previously impacted by human activity. Field investigations did not uncover any significant undisturbed subsurface components to the site.

3.3.2 EkLn-001 (Site 2)

SITE DESCRIPTION

EkLn-001 (Site 2) is located [redacted] within Survey Location 13 in the LSMOC PDA within quarter-section NE-36-32-6-W1M (Figure 3.2-1). The site is situated on [redacted]

[6] This legal land description is an extrapolation from the neighbouring grid, as the site is located outside of the official legal land survey grid and is not available.

[redacted] (Figure 3.3-2). [redacted]

The site is a lithic scatter, identified as a Pre-Contact [redacted] dating to at least the Initial Woodland Period (2,200 BP – 1,150 BP). Artifacts were recorded on [redacted]. A total of 62 surface artifacts were collected from 27 locations in an area that covered 190 m x 50 m in the north half of the PDA. Surface artifacts included 46 lithic debitage and 16 tools. Although the finds covered 190 m x 50 m, three-quarters of the finds were located within a 75 m x 40 m area; and almost half the total finds were located within a 15 m x 15 m area within that smaller locale. This cluster is located [redacted] (Photo D.55).

Forty-six shovel tests were dug at the site (Table E.7). Tests were placed through the area of surface finds in 5 m intervals along two parallel transects set 10 m apart (Photo D.56). Eleven tests proved positive and contained a total of 13 artifacts, all lithic debitage. No shovel test contained more than four artifacts. The positive shovel tests were all located in an 80 m x 20 m area that matched the area of the densest concentration of surface finds. Stratigraphy at the site was [redacted]. Test depth ranged from 30-50 cm. Tests within [redacted] but no artifacts. The terrain behind the beach was low-lying and wet.

ARTIFACT ASSEMBLAGE

A total of 75 artifacts were recovered from the site (Table B.7; see Table F.2 for the artifact catalogue). All collected items were lithic artifacts. The lithic assemblage was composed of general debitage (n=59; 79%) and tools (n=16; 21%). The debitage included one multidirectional chert core. The lithic materials recovered from the site were overwhelmingly chert (n=59; 78.7%), most likely of a local variety (Table B.8). One tool fashioned from Knife River Flint could be of a local chalcedony, but could have also originated to the south and been brought in through travel or trade.

Sixteen tools were recovered from the site (Table B.9). The lithic tool assemblage included six scrapers, seven retouched or utilized flakes, and three projectile points. CAT#11 was a partial side-notched dart point that was likely unfinished and has been tentatively identified as Besant, dated to 1900-1100 years B.P. CAT#12 was a complete Eastern Triangle arrow point dated to 1,000-400 years B.P. CAT#13 was the base from a Besant point, dated to 1900-1100 years B.P. (Photo D.57). The number of unique projectile points, tools, and lithic materials suggest the area was used for multiple generations and cultural affiliations.

A small amount of faunal material (<10) was noted on the surface, but due [redacted] none could be conclusively identified as cultural. The faunal material was mainly fish and unidentified mammal.

SITE SUMMARY

EkLn-001 is a Pre-Contact lithic [redacted] site that occupies a large area, but has a low artifact density and shallow depth. The site area is heavily disturbed by [redacted]. Field investigations did not uncover any significant undisturbed subsurface components to the site.

3.3.3 EiLp-002 (Site 3)

SITE DESCRIPTION

EiLp-002 (Site 3) is located [redacted] (Figure 3.2-17). The site is situated on a stretch [redacted] (Figure 3.3-3). [redacted]

The site is identified as a Pre-Contact lithic scatter of undetermined age. Three artifacts were recorded on [redacted] The surface artifacts were collected from an area that covered 50 m x 10 m in the central portion of the PDA (Photo D.58). Surface artifacts included one lithic debitage and two tools. A metal object, later identified as a carbide tooth from a rock trencher, was documented on [redacted] 100 m northwest of the lithic finds but was not collected.

[redacted] No landforms with suitable sediment deposits for shovel testing were identified. No shovel tests were dug at the site. [redacted]

ARTIFACT ASSEMBLAGE

Three artifacts were recovered from the site (Table B.10; see Table F.3 for the artifact catalogue). All artifacts were lithics fashioned from chert and included one debitage, one retouched flake, and one scraper. The scraper (CAT#3) was complete and measured 35 mm in length, 17 mm in width, and 7 mm thick with a worked edge on all four sides (Photo D.59).

SITE SUMMARY

EiLp-002 is a Pre-Contact lithic scatter site that has a low artifact density and shallow depth. The site area is [redacted] Field investigations did not uncover any significant undisturbed subsurface components to the site.

3.3.4 EiLp-003 (Site 4)

SITE DESCRIPTION

EiLp-003 (Site 4) is located [redacted] (Figure 3.2-17). The site is situated [redacted] (Figure 3.3-4). [redacted]

The site is an [redacted] (Photos D.60-D.62). [redacted]

No artifacts were noted on the surface in the surrounding area. A metal detector survey [redacted] and the surrounding area was also negative. As the surrounding ground was saturated [redacted], no shovel tests were dug at the site.

SITE SUMMARY

EiLp-003 is a stone feature of undetermined age. At this time there is no evidence to suggest an age for the feature; therefore, the feature must be assumed to be archaeological. No associated artifacts were documented that could assist in this identification.

3.3.5 EiLp-004 (Site 5)

SITE DESCRIPTION

EiLp-004 (Site 5) is located [redacted] (Figure 3.2-17). The site is situated on [redacted] (Figure 3.3-5).

The site is identified as a Pre-Contact lithic scatter of undetermined age. Five artifacts were recorded on [redacted] The surface artifacts were collected from an area that covered 35 m x 25 m in the central portion of the PDA (Photo D.63). Surface artifacts included four lithic debitage and one lithic tool. Another possible lithic flake was documented [redacted], but was not collected.

One shovel test was dug in the middle of the cluster to test for possible intact cultural layers [redacted] (Table E.9). The test was negative for cultural materials. The test strata revealed [redacted]. This stratigraphy suggested that no intact layers would exist below [redacted] and no other shovel tests were dug for the site.

ARTIFACT ASSEMBLAGE

Five artifacts were recovered from the site (Table B.11; see Table F.4 for the artifact catalogue). All artifacts were lithics and included three chert debitage, one silicified siltstone core, and one silicified siltstone endscraper. The endscraper (CAT#5) was complete and measured 29 mm in length, 15 mm in width, and 5 mm thick. It had working edges on the distal end and both lateral sides (Photo D.64).

SITE SUMMARY

EiLp-004 is a Pre-Contact lithic scatter site that is small in size, has a low artifact density, and shallow depth. The site area is heavily disturbed by cultivation. Field investigations did not uncover any significant undisturbed subsurface components to the site.

3.3.6 EiLp-005 (Site 6)

SITE DESCRIPTION

EiLp-005 (Site 6) is located [redacted] (Figure 3.2-17). [redacted] (Figure 3.3-6).

The site is identified as [redacted]

[redacted] (Photos D.65-D.66). [redacted]
Several historic items were documented [redacted] but none were collected.

[redacted]

Thirty-five shovel tests were dug at the site (Table E.13). Twenty-nine tests were placed through [redacted] in 10 m increments along three parallel north-south transects set 15 m apart. One test proved positive and contained one lithic debitage. Stratigraphy at the site was [redacted] Test depth ranged from 30-50 cm. Tests were also dug in the centre of each of the two depressions. Both tests were negative for cultural materials and revealed both depressions to be shallow with similar stratigraphy to the rest of the site. Another four tests were dug around [redacted] These tests were also negative for cultural materials.

ARTIFACT ASSEMBLAGE

One artifact was collected from the site (see Table F.5 for the artifact catalogue). A single lithic flake of Swan River Chert was recovered from shovel test S6LSTP02, located [redacted]

Several historic items were documented but were not collected. [redacted] (Photo D.68). [redacted]

SITE SUMMARY

EiLp-005 is [redacted] Field investigations did not uncover any significant undisturbed subsurface components to the site, nor any evidence of pre-1940s occupation that would give the site a historical designation. The Pre-Contact lithic component of the site is small in size, low in density, and in a disturbed context.

3.3.7 EhLp-003 (Site 7)

SITE DESCRIPTION

EhLp-003 (Site 7) is located in flat terrain within Survey Location 37 [redacted] (Figure 3.2-17). The site is [redacted] (Figure 3.3-7).

The site is identified as [redacted]

[redacted] (Photo D.69).

[redacted] (Photo D.70). [redacted] None of the items were collected.

Five shovel tests were dug at the site (Table E.15). Shovel test S7KSTP1 was dug through the centre [redacted] to investigate its composition and age. The test contained large metal debris (stove parts and boxsprings) in the top 40 cm DBS, followed by trace amounts of glass, ceramic, and metal from 40-60 cm DBS. Two lithic debitage were also recovered between 30-60 cm DBS. The test was dug to a depth of 90 cm with the bottom 25 cm a sterile light brown clay (Photo D.71). Due to the presence of lithic debitage in the midden test, four more shovel tests were dug along the rise within 15 m of the midden. All four tests were negative for cultural materials.

ARTIFACT ASSEMBLAGE

Seven artifacts were collected from the site (see Table F.6 for the artifact catalogue). All seven were recovered from shovel test S7KSTP1 dug [redacted] Five were later historic items, including a Pyrex serving bowl fragment from the 1950s, a fragment from a Federal ceramic mug from the 1960s (Photo D.72), a glass bottle base with a Dominion Code from 1961, and Mountain Dew bottle fragments from the 1980s. Two lithic debitage, both Swan River Chert, were also recovered at 30-40 cm and 55-60 cm DBS (Photo D.73). Other items noted in shovel test S7KSTP1 were documented but not collected, including wire nails, chicken bone, unidentified vitrified earthenware ceramics, a Red Root weed killer metal can, and machine-made green and brown bottle glass.

Several historic items were documented on the surface but were not collected. These included a “Gurney Foundry Co.” cast iron stove door, glass bottles with Dominion coding that placed their manufacture in the 1960s and 1970s.

SITE SUMMARY

EhLp-003 is a historic midden and refuse scatter from [redacted] Chronological evidence from the refuse suggest the site was occupied from the 1950s to 1980s. Field investigations did not uncover any significant undisturbed subsurface components to the site, nor any evidence of a pre-1940s occupation within the PDA. The Pre-Contact lithic component of the site is small in size, low in density, and in a disturbed context.

3.3.8 EhLp-004 (Site 8)

SITE DESCRIPTION

EhLp-004 (Site 8) is located [redacted] (Figure 3.2-17). [redacted]

[redacted](Figure 3.3-8). [redacted] (Photo D.74) [redacted] (Photo D.75). [redacted]

The site is a lithic scatter, identified as a Pre-Contact [redacted] dating to at least the Archaic Period (3,780 to 2,880 years B.P.) up to the Woodland Period (2,200 years B.P. to European contact). The total site size is 130 m x 10 m, [redacted] Artifacts were recorded on [redacted]. A total of five surface artifacts were collected from three locations in an area that covered 80 m x 10 m. Surface artifacts included three lithic tools and two faunal remains.

A total of 29 shovel tests were dug at the site (Table E.16). Of the 29 total tests, 19 proved positive for cultural materials and contained 198 artifacts. Twenty-five shovel tests were placed in 5 m increments [redacted] (Photo D.76). Sixteen of these tests proved positive. Artifacts were recovered between 20-85 cm DBS. Two more shovel tests were dug [redacted]. These tests were dug past 110 cm DBS and revealed stratigraphy of [redacted] at 14-25 cm DBS and 123-129 cm DBS (Photo D.77). Both tests were positive and contained artifacts throughout. Shovel test S08EFTP02 was widened into a 1 x 1 m unit. Lithic tools and Pre-Contact pottery was recovered from below 80 cm DBS. Bone recovered from 100 cm+ was well preserved. Two more shovel tests were dug [redacted] These tests were situated in a 20 m strip of [redacted] (Photo D.78). The tests revealed peat below the sod to 80 cm DBS (Photo D.79). One test proved positive for cultural materials.

ARTIFACT ASSEMBLAGE

A total of 198 artifacts were recovered from the site (Photo D.80; Table B.12; see Table F.7 for the artifact catalogue). Lithic artifacts comprised 59% (n=117) of the catalogue. The lithic assemblage was composed of general debitage (n=102; 90%) and tools (n=12; 10%). The lithic materials recovered from the site were overwhelmingly chert (n=100; 86%), most likely of a local variety (Table B.13). Two artifacts, including one projectile point, were fashioned from Knife River Flint. This material could be a local chalcedony, but could have also originated from the south and been brought in through travel or trade.

Twelve tools were recovered from the site (Table B.14). The lithic tool assemblage included three bifaces, two scrapers, one chopper, three retouched flakes, and three projectile points. CAT#13 was a mostly complete concave-stem dart point fashioned from Knife River Flint. This point has been identified as Duncan, dated to 3700-2500 years B.P. CAT#80 was a complete triangular dart point fashioned from Swan River Chert. This point has been identified as Hanna, dated to 4500 to 3500 years B.P. CAT#92 was a mostly complete but weathered dart point fashioned from chert. This point was not successfully identified, but may be of similar age to the other two based on similar design and likely function as a dart point.

Faunal remains comprised 40% (n=80) of the catalogue (Table B.15). Half of the assemblage was mammal remains (n=42; 53%). Although 29 specimens could be classified as large mammal, only two specimens could be definitively identified as bison. The first was a tibia fragment (CAT#65) recovered from shovel test S08EFTP03 at a depth of 120-130 cm DBS. The second was a horn core fragment (CAT# 93) recovered from shovel test

S8LSTP05 at a depth of 79 cm DBS. This was also the only faunal specimen that was burnt. Most of the mammal specimens were longbone, rib, and tooth fragments. Fish (n=34) made up 43% of the faunal. Only three specimens could be definitively identified: two Northern Pike and one Walleye. Over 70% (n=24) of the fish remains were recovered from 60 to 130 cm DBS. Bird (n=4) made up the remaining 5% of the faunal. No specimens could be definitively identified. All four specimens were recovered from the tests [redacted]. Overall, the faunal material was mostly recovered between 30 and 80 cm DBS, but was found as deep as 130 cm DBS in the two tests [redacted]. Most of the bone recovered from the site was heavily waterworn.

One piece of Pre-Contact pottery was recovered from the site. Found in shovel test S08EFTP02 at a depth of 79-112 cm DBS, the artifact was a body sherd with no distinct markings for identification.

SITE SUMMARY

EhLp-004 is a Pre-Contact lithic [redacted] site that occupies a large area, has a moderate to high artifact density, and contains multiple deeply stratified cultural components. [redacted] The lower levels, however, appear to contain undisturbed intact components. These undisturbed layers hold the potential to contain earlier components than currently documented.

3.3.9 EhLp-005 (Site 9; [redacted]

SITE DESCRIPTION

EhLp-005 (Site 9) is located [redacted] (Figure 3.2-17). [redacted] ke (Figure 3.3-9).

[redacted]

[redacted]

ARTIFACT ASSEMBLAGE

Seven artifacts were collected from the site (see Table F.8 for the artifact catalogue). All artifacts were historic in nature. Five of the artifacts were recovered from subsurface excavations. These included a window glass sherd strengthened with interior wire, a ferrous latch lock with keyhole, two rectangular iron plates, and a burnt longbone fragment from a large mammal, likely cow/bison. Two surface artifacts were collected: a brass door plate and a heavily used grinding stone (Photos D.89 and D.90).

SITE SUMMARY

EhLp-005 is [redacted]. Although historic artifacts were recovered from the area of investigation, the field investigations did not uncover any significant undisturbed subsurface components to the site, nor any substantial evidence of a pre-1940s occupation within the PDA that would warrant further heritage-related investigation.

3.3.10 EhLp-006 (Site 10)

SITE DESCRIPTION

EhLp-006 (Site 10) is located [redacted]

A total of 90 shovel tests were dug at the site (Table E.16). Of the 90 total tests, 58 proved positive for cultural materials and contained 703 artifacts. The shovel tests were placed in 10 m increments in two transects [redacted] and around positive tests containing artifacts of interest. Typical stratigraphy [redacted] (Photo D.96). Tests were dug [redacted] and were generally discontinued at about 50 cm DBS. Most of the artifacts were recovered from the light brown silt with gravel, generally found between 10-30 cm DBS.

Positive shovel tests were found [redacted], but can be generally grouped into four clusters. The first cluster (Loci 1) was located on [redacted]. Of the 13 shovel tests dug here, nine contained artifacts. The finds were mostly faunal remains and a small amount of lithic debitage. The second cluster (Loci 2) was located [redacted]. Of the 35 shovel tests dug in an 80 m x 60 m area [redacted], 28 contained artifacts. This area was the epicentre of the site: these tests contained 68% of the lithics, 74% of the faunal remains, 97% of the Pre-Contact pottery, and 75% of the entire artifact assemblage for the site. The third cluster (Loci 3) was located [redacted]. Of the 16 shovel tests dug in an 80 m x 60 m area, 12 contained artifacts. The finds were mostly faunal remains and a small amount of lithic debitage. The fourth cluster (Loci 4) was located [redacted]. Of the five tests dug [redacted], four contained artifacts. The finds included Pre-Contact pottery and a projectile point.

[redacted]

ARTIFACT ASSEMBLAGE

A total of 703 artifacts were recovered from the site (Photos D.97 and D.98; Table B.16; see Table F.9 for the artifact catalogue). Lithic artifacts comprised 12% (n=87) of the catalogue. The lithic assemblage was composed of general debitage (n=76; 87%), tools (n=9; 10%), and fire-cracked rock (n=2; 3%). The lithics recovered from the site mainly comprised of three materials: chert (n=32; 37%), Knife River Flint, (n=29; 33%), and Swan River Chert (n=19; 22%) (Table B.17). The chert and Swan River Chert were likely of a local variety. The Knife River Flint could be a local chalcedony, but could have also originated from the south and been brought in through travel or trade. The high quantity of Knife River Flint is unusual. The rest of the material include quartz, silicified siltstone, and granite.

Nine tools were recovered from the site (Table B.18). The lithic tool assemblage included two bifaces, six retouched or utilized flakes, and one projectile point. CAT#208 was a base fragment of a Swan River Chert point with side notching and basal thinning. The point fragment could not be conclusively identified.

Faunal remains comprised 79% (n=558) of the catalogue (Table B.19). The assemblage was dominated by mammal remains (n=476; 85%). Most of the mammal remains was classified as unidentified large mammal (n=402; 84%). Only two large mammal specimens could be definitively identified as bison: a tibia fragment and a complete 3rd phalanx. Most of identified mammal bone were longbone, carpal, and rib fragments. Muskrat and rabbit were also present in the assemblage. Fish (n=69) made up 12% of the faunal. Two-thirds of the specimens could be definitively identified as Northern Pike. Trace amounts of bird, frog, and unidentified shell rounded out the faunal assemblage. A large portion (n=355; 64%) of the recovered faunal was burned or calcined. A single

bone tool was also recovered from the site. CAT#162 is the tip of an unidentified tool that was a recovered from shovel test S10LSTP09 [redacted] of the ridge at a depth of 20-30 cm DBS.

Pre-Contact pottery comprised 5% (n=37) of the catalogue. The 37 sherds were found in eight different shovel tests and all but one sherd was recovered [redacted]. Most of the sherds were plain body sherd with no distinct markings for identification. Two sherds were fabric-impressed. Another two sherds (CAT#130 from shovel test FTKSTP16 and CAT#220 from shovel test FTEFTP08) were decorated with incised parallel lines and punctates. These two sherds have been identified as Laurel (2,000 to 1,000 years B.P.). One tubular piece (CAT#219), likely detritus from the coil manufacturing process, was also recovered.

The artifact catalogue also includes charcoal fragments, collected from shovel test FTKSTP10 [redacted] at a depth of 10-20 cm DBS. Samples of possible ochre was also collected from shovel tests FTDBTP14 and FTEFTP09 [redacted]idge.

SITE SUMMARY

EhLp-006 is a Pre-Contact campsite site that occupies a large area, has a moderate to high artifact density in several loci, and contains a varied artifact assemblage of interest to the archaeological record of the Interlake Region. The site appears to contain undisturbed intact components [redacted].

4 SUMMARY AND RECOMMENDATIONS

The following sections provide an overview of the HRIA field studies. This discussion also includes recommended mitigation measures for the heritage resources within the PDA.

4.1 HRIA Summary

The WSP/Bison Heritage Team conducted the HRIA fieldwork under Heritage Permit A49-20 on July 14-24, August 28 – September 5, September 15-17, and October 5, 2020. The HRIA consisted of visual assessment, pedestrian survey, and both systematic and judgemental shovel test programs.

The desktop screening for LSMOC PDA identified 13 areas of high heritage potential. The field crew conducted spot ground truthing assessments at eight of these locations to verify the potential presence of artifacts. The spot ground truthing assessments involved pedestrian survey and six locations were subject to shovel testing. A total of 93 shovel tests were dug in the LSMOC PDA. Two heritage resources were recorded within the LSMOC PDA: EkLm-001 (Site 1) and EkLn-001 (Site 2), as shown in Figure 3.2-1.

The desktop screening for Manitoba Hydro Distribution Line identified nine areas of moderate to high heritage potential. The PDA was visually assessed from the air by a helicopter fly-over. The assessment found that the Distribution Line was situated in wet, low-lying areas with a low likelihood for heritage resources. No suitable areas for subsurface testing was noted. No Cultural Use areas were identified. No heritage resources were recorded within the Manitoba Hydro Distribution Line.

The desktop screening for LMOC identified 19 areas of high heritage potential within 41 quarter-sections of the PDA. the 19 survey locations were visually assessed and the field crew then conducted assessments at 12 of those survey locations within 22 quarter-sections. The assessments involved pedestrian survey and nine areas covering 13 quarter-sections were subject to shovel testing. A total of 250 shovel tests were dug in the LMOC

PDA. Eight heritage resources were recorded within the LMOC PDA (Figure 3.2-17). These included: EiLp-002 (Site 3; Figure 3.2-18), EiLp-003 (Site 4; Figure 3.2-18), EiLp-004 (Site 5; Figure 3.2-19), EiLp-005 (Site 6; Figure 3.2-25), EhLp-003 (Site 7; Figure 3.2-27), EhLp-004 (Site 8; Figure 3.2-30), EhLp-005 (Site 9; [redacted]; Figure 3.2-18), and EhLp-006 (Site 10; Figure 3.2-30).

A total of 10 archaeological sites were documented under this HRIA. Six sites were identified as Pre-Contact Period. EkLm-001 was a lithic scatter of undetermined age. EkLn-001 was a [redacted]. Based on the chronology of identified lithic tools, the site was dated to the Late or Woodland Period (2,2000 years B.P. to European contact) with specific Besant (1,900 to 1,100 years B.P.) and Eastern Triangle (1,000 to 400 B.P) components. The site did not contain identifiable intact subsurface cultural layers, but more cultural material could be present on the surface. EiLp-002 was a lithic scatter of undetermined age [redacted]. EiLp-004 was a lithic scatter of undetermined age. EhLp-004 was [redacted]. Based on the chronology of identified lithic tools and pottery, the site was dated to the McKean Complex of the Middle Period (with specific Duncan [3,700 to 2,500 years B.P.] and Hanna [4,500 to 3,500 years B.P.] components) and to the Late Period (the presence of unidentified pottery placed the site as early as 2,000 years B.P.). EhLp-006 was [redacted]. Based on the chronology of identified lithics and pottery, the site dated to the Late or Woodland Period (2,2000 years B.P. to European contact) with a specific Laurel component (2,000 to 1,100 years B.P.)

Three sites were identified as Later Historic Period. EiLp-005 was [redacted]. None of the site's components predated the 1940s. EhLp-003 was a midden related [redacted]. None of the site's components predated the 1940s. EhLp-005 was the [redacted]. The component of the site within the PDA may date to the early 1900s.

One site was identified as likely Historic but may predate the Historic Period. EiLp-003 was a stone feature of undetermined age and function. The feature may be [redacted] No artifacts were recovered within or around the feature, nor clues were gleamed from its composition, that could aid in better determining an age or function.

4.2 Recommendations

A total of 10 heritage resources were documented under this HRIA. For each heritage resource, WSP/Bison has created recommendations that address two issues: 1) mitigative measures to be enacted pre-construction; and 2) protective measures to be enacted during construction and/or operation. Pre-construction measures must be enacted before construction can begin within those designated heritage locations. As recommended by the EIS, protective measures during the construction and operation phases of the Project will be outlined within the HRPP, including the Procedures for Specific Chance Find Heritage Resources (Section 5.2 of the HRPP). In addition, the HRPP includes provisions for heritage identification training for Environmental Monitors and other construction personnel to assist with the identification of heritage resources during construction.

WSP/Bison outlines the specific recommendations for each heritage resource in Table 1, found at the end of this section. To summarize:

- At four (4) heritage resources, WSP/Bison recommends no further pre-construction heritage work and recommends no heritage monitoring by an archaeologist during construction. If additional heritage resources are identified during construction in the vicinity of these four heritage resources, the Chance Find Procedure must be enacted.
    - EkLm-001, EiLp-004, EiLp-005, and EhLp-003.

- At one (1) heritage resource, WSP/Bison recommends no further pre-construction heritage work and recommends no heritage monitoring by an archaeologist during construction, but does recommend additional protective measures be enacted prior to construction.
    - EiLp-003
        - WSP/Bison recommends that a 30 m temporary physical protective barrier be erected around the feature at EiLp-003 to minimize potential impacts during construction. The barrier must be erected at the direction of a qualified archaeologist before construction activities begin within 50 m of the feature and must be kept in place until construction has ceased within 50 m of the feature. Signage indicating the presence of a sensitive site (without identifying details) must be posted while the barrier is up. This signage should be posted west and north of the feature, as these are the most likely directions of approach.
        - It may also be reasonable to make this protective barrier (and signage) permanent for the Operations phase of the Project. If HRB considers the feature to be at risk of impact from maintenance or operations activities, then a permanent barrier must be erected. The barrier may consist of fencing or a rock barrier and must be resistant to possible damage from lake ice heaving or other ice movement. Manitoba Infrastructure would be responsible for the erection and maintenance of the barrier. Signage indicating the presence of a sensitive site (without identifying details) must be posted. This signage should be posted west and north of the feature, as these are the most likely directions of approach, and placed beyond the area of ice heaving.
- At three (3) heritage resources, WSP/Bison recommends no further pre-construction heritage work, but does recommend heritage monitoring during construction at two (2) heritage resources.
    - EkLn-001 and EiLp-002: Heritage monitoring would involve the presence of an archaeologist, who must observe construction activities within 50 m of the site boundaries that move, shift, or otherwise disturb currently intact soil layers. These activities include topsoil removal and trench excavation.
    - EhLp-005 [redacted] HRB has directed that an archaeologist must be present for heritage monitoring within 50 m of [redacted]
- At two (2) heritage resources, WSP/Bison recommends further pre-construction heritage work in the form of mitigative excavation. These heritage resources may also need heritage monitoring by an archaeologist during construction, pending the outcome of the excavations.
    - EhLp-004 and EhLp-006.
    - Mitigative excavation of each site must be conducted through standard scientific methods by a qualified archaeological team. The goal of mitigative excavation is to recover archaeological material and detailed scientific information from the heritage resource before it is destroyed by construction activity. The excavation must explore the main activity areas of the site and investigate for other prominent activity areas not yet identified. The excavation must encompass enough of the site to document its overall significance to an extent that is satisfactory to HRB.

- EhLp-004 investigation must include at least two activity areas: [redacted] where excavation unit S08EFTP02 is located, and the area of [redacted] that encompasses shovel tests S8DBTP06, S8KSTP06, and S8LSTP05 where the projectile points were recovered (Figure 3.3-8).
- EhLp-006 investigation must include at least four activity areas: Loci 1, 2, 3, and 4 (Figure 3.3-10).

- Heritage monitoring during construction may also be necessary at either or both sites, pending the outcome of the excavations. Heritage monitoring is likely to be required by HRB if areas of the site were not excavated during mitigation but are still deemed by HRB to yield archaeological material. Heritage monitoring would involve the presence of an archaeologist to observe construction activities within 50 m of the site boundaries that move, shift, or otherwise disturb intact soil layers. These activities include topsoil removal, grubbing and trench excavation. The archaeologist would be responsible for the recovery and recording of artifacts exposed during construction. Soil moving activities may be temporarily halted for the archaeologist to examine, photograph, and document any intact features that may be exposed during the construction phase.

No heritage concerns were documented for the remaining identified study areas of the PDA and further pre-construction heritage assessment is not recommended for the remainder of the PDA. **WSP/Bison recommends that the Project proceed as planned, provided that the pre-construction site-specific recommendations are implemented before construction in the affected areas commences, and that the construction and operating monitoring recommendations are integrated into the Heritage Resource Protection Plan (HRPP) and implemented.** Construction can commence in all areas of the Project outside of the specific areas of heritage concern affected by the recommendations. Construction in other areas may commence without the need to wait for the recommendations to be implemented, as long as no construction occurs within 50 m of the area affected by the recommendation. If additional heritage resources are identified during construction, a Chance Find Procedure (as outlined in Section 5.2 of the HRPP) will be enacted.

Changes to the location of the PDA or increase in size of PDA would need to be reviewed by HRB and/or a qualified archaeologist and may result in a requirement to conduct additional heritage assessment. Project work areas located outside of the PDA were not evaluated under this HRIA. Project-related developments outside the PDA, including borrow pits, are subject to the Heritage Resources Act and require evaluation for heritage potential prior to development. Heritage resources for the Project will be managed during Construction and Operations Phases via the HRPP (still in draft form and subject to approval by HRB).

All recommendations are subject to approval by HRB, who is responsible for all final decisions on heritage clearance.

Table 1. Summary and Recommendations for Heritage Resources covered under Permit A49-20.

Heritage Resource	Description	Recommendation
EkLm-001 (Site 1)	Lithic scatter with surface and subsurface components.	**No further recommendations for pre-construction heritage work for EkLm-001 (Site 1).**

Heritage Resource	Description	Recommendation
	Disturbed site with low artifact density and a localized concentration	During construction, the Environmental Monitor[1] should be aware of the site location and watch for additional Chance Finds within the site area
EkLn-001 (Site 2)	Lithic scatter with surface and subsurface components. Low artifact density and did not exhibit evidence for significant intact subsurface cultural deposits.	**No further recommendations for pre-construction heritage work for EkLn-001 (Site 2).** During construction, the Environmental Monitor[1] should be aware of the site location and watch for additional Chance Finds within the site area
EiLp-002 (Site 3)	Lithic scatter with a surface component. A disturbed site with low artifact density, localized concentration, and lack of identified buried components.	**No further recommendations for pre-construction heritage work for EiLp-002.** **During construction, WSP/Bison recommends that a Heritage Monitor[2] be present during construction activities within 50 m of the site area.**
EiLp-003 (Site 4)	A [redacted] likely archaeological, but its age and function is undetermined. Under the current construction methodology, the site will not be impacted by the development itself but may be impacted by associated construction activities.	**WSP/Bison recommends that a 30 m temporary physical protective barrier and signage be erected around the feature at EiLp-003 to minimize potential impacts during construction.** It may also be reasonable to make this protective barrier permanent for the Operations phase of the Project
EiLp-004 (Site 5)	Lithic scatter in a cultivated field. A disturbed site with low artifact density and a localized concentration.	**No further recommendations for pre-construction heritage work for EiLp-004 (Site 5).** During construction, the Environmental Monitor[1] should be aware of the site location and watch for additional Chance Finds within the site area.
EiLp-005 (Site 6)	[redacted] Has a low artifact density and did not exhibit evidence for intact pre-1940s cultural deposits.	**No further recommendations for pre-construction heritage work for EiLp-005**
EhLp-003 (Site 7)	Historic midden [redacted]	**No further recommendations for pre-construction heritage work for EhLp-003.**

Heritage Resource	Description	Recommendation
	The midden did not exhibit evidence for intact pre-1940s cultural deposits.	
EhLp-004 (Site 8)	Lithic scatter with surface and subsurface components. The shovel test program resulted in the documentation of a complex site with multiple intact cultural components that included lithic debitage and tools, faunal remains, and pottery. The site is dated as old as the Middle Archaic Period (3,500 to 2,800 years Before Present) with the potential for an Early Period component.	**WSP/Bison recommends pre-construction mitigative excavation at EhLp-004 (Site 8).** **No construction activity can occur within 50 m of the site boundaries of EhLp-004 until such time that they are excavated, inspected, and approved by HRB to proceed with construction.** ***HRB was made aware of this site during the HRIA and has agreed with the recommendation for excavation.**
EhLp-005 (Site 9).	[redacted]	**No further recommendations for pre-construction heritage work for EhLp-005.** **During construction, WSP/Bison recommends that a Heritage Monitor[2] be present during construction activities within 50 m of the site area.**
EhLp-006 (Site 10) **Fairford Trail**	Subsurface lithic scatter and Pre-Contact [redacted] The shovel test program resulted in the documentation of a complex site that included lithic debitage and tools, faunal remains, and pottery. The site is dated as old as Early Woodland Period (1,900 to 1,300 years Before Present). [redacted]	**WSP/Bison recommends pre-construction mitigative excavation at EhLp-006.** **No construction activity can occur within 50 m of the site boundaries of EhLp-006 until such time that they are excavated, inspected, and approved by HRB to proceed with construction.** ***HRB was made aware of this site during the HRIA and has agreed with the recommendation for excavation.** **No mitigation specific to [redacted] is recommended.**

[1]An Environmental Monitor is an environmental inspector or officer that will take extra measures to inspect soil layers in areas that have been identified as having high potential for archaeological materials to be found.
[2]A Heritage Monitor is an archaeologist that will observe work and ensure that extra measures have been applied prior to the start of construction and/or are being applied during construction to protect an identified heritage site/resource.

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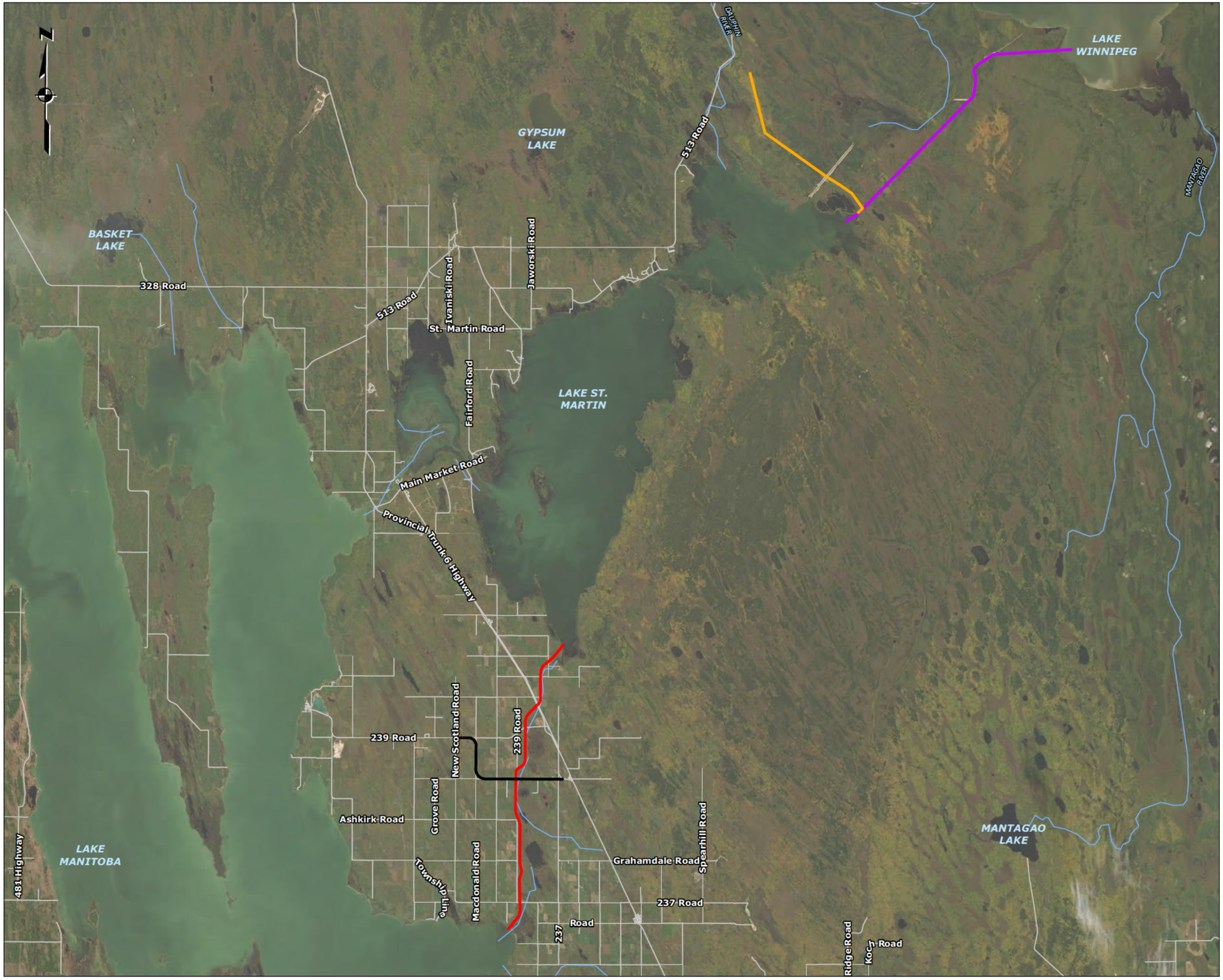
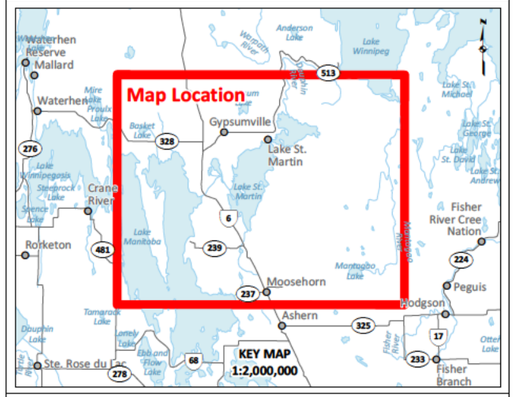
APPENDIX

A FIGURES



Legend

- Lake Manitoba Outlet Channel (LMOC)
- Lake St. Martin Outlet Channel (LSMOC)
- Manitoba Hydro's Distribution Line
- PR 239 Re-Route
- Roads
- Watercourse



Manitoba Infrastructure

Figure 1.1-1: Lake Manitoba and Lake St. Martin Outlet Channels Project Area Overview

Lake Manitoba & Lake St.Martin

Manitoba, Canada

Scale: 1:300,000

0 2.5 5 10 15 Kilometers

Universal Transverse Mercator (Zone 14)

North American Datum (1983)

Report By: KS	WSP Job #: 20M-00910-00
Drawn by: JH	Date: December 9, 2020
Reviewed By: DK	Office: Winnipeg

1

Notes:Data Source: Imagery ESRI, Base Data: Manitiba Infrastructure

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APPENDIX

B TABLES

Table B 1. Registered Archaeological Sites within the RAA and LAA of the Project.[1]

Borden #	Site Class	Affiliation	Site Detail	Proximity to PDA
EgLo-1	[redacted]	Unknown	[redacted]	[redacted]
EgLo-4		Unknown		
EhLp-1		Unknown		
EhLp-2		Unknown		
EiLp-1		Historic		
EiLq-1		Pre-Contact		
EjLp-1		Pre-Contact; Middle and Late Historic		
EjLq-1		Historic		
EjLq-2		Middle and Late Historic		
EjLq-3		Early Historic		
EjLq-4		Middle to Late Historic		
EjLq-5		Historic		
EkLo-Y2		Confidential		
EkLo-Y3		Confidential		
ElLl-1		Pre-Contact		
ElLm-1		Pre-Contact; Late Woodland		

[1] Appendix A: Figure 1.4-1

Table B 2. Results of the HRIA desktop screening of the Project.[2]

PDA	Survey Location	Location	Heritage Potential	Selection Criteria
LSMOC	1	[redacted]	High	[redacted]
LSMOC	2		Moderate	
LSMOC	3		Moderate	
LSMOC	4		Moderate	
LSMOC	5		Moderate to High	
LSMOC	6		Moderate	
LSMOC	7		Moderate	
LSMOC	8		Moderate	
LSMOC	9		Moderate	
LSMOC	10		Moderate	
LSMOC	11		Moderate	
LSMOC	12		Moderate to High	
LSMOC	13		High	
Hydro	14		Moderate to High	
Hydro	15		Moderate to High	
Hydro	16		Moderate to High	
Hydro	17		Moderate	
Hydro	18		Moderate	
Hydro	19		Moderate	
Hydro	20		Moderate	
Hydro	21		Moderate	
Hydro	22		Moderate	
LMOC	23		High	

[2] Appendix A: Figures 3.1-1, 3.1-2, and 3.1-3

PDA	Survey Location	Location	Heritage Potential	Selection Criteria
		[redacted]		[redacted]
LMOC	24		High	
LMOC	25		Moderate to High	
LMOC	26		Moderate to High	
LMOC	27		Moderate to High	
LMOC	28		Moderate to High	
LMOC	29		High	
LMOC	30		Moderate to High	
LMOC	31		High	
LMOC	32		High	
LMOC	33		High	
LMOC	34		High	
LMOC	35		High	
LMOC	36		High	
LMOC	37		High	
LMOC	38		High	
LMOC	39		High	
LMOC	40		High	
LMOC	41		High	

Table B 3. Results of the HRIA field assessment for the LSMOC PDA.[3]

PDA	Survey Location	Helicopter Visual Assessment	Pedestrian Survey	Shovel Testing	Results
LSMOC	1	Yes	Yes	Yes	No heritage concerns
LSMOC	2	Yes	Yes	Yes	No heritage concerns
LSMOC	3	Yes	No	No	No heritage concerns
LSMOC	4	Yes	Yes	No	No heritage concerns
LSMOC	5	Yes	Yes	No	No heritage concerns
LSMOC	6	Yes	Yes	Yes	No heritage concerns
LSMOC	7	Yes	No	No	No heritage concerns
LSMOC	8	Yes	Yes	Yes	No heritage concerns
LSMOC	9	Yes	No	No	No heritage concerns
LSMOC	10	Yes	Yes	Yes	1 new heritage resource (EkLm-001)
LSMOC	11	Yes	No	No	No heritage concerns
LSMOC	12	Yes	No	No	No heritage concerns
LSMOC	13	Yes	Yes	Yes	1 new heritage resource (EkLn-001)

[3] Appendix A: Figure 3.2-1

Table B 4. Results of the HRIA field assessment for the Hydro Distribution Line PDA.[4]

PDA	Survey Location	Helicopter Visual Assessment	Pedestrian Survey	Shovel Testing	Results
Hydro	14	Yes	No	No	No heritage concerns
Hydro	15	Yes	No	No	No heritage concerns
Hydro	16	Yes	No	No	No heritage concerns
Hydro	17	Yes	No	No	No heritage concerns
Hydro	18	Yes	No	No	No heritage concerns
Hydro	19	Yes	No	No	No heritage concerns
Hydro	20	Yes	No	No	No heritage concerns
Hydro	21	Yes	No	No	No heritage concerns
Hydro	22	Yes	No	No	No heritage concerns

[4] Appendix A: Figure 3.2-11

Table B 5. Results of the HRIA field assessment for the LMOC PDA.[5]

PDA	Survey Location	Visual Assessment	Pedestrian Survey	Shovel Testing	Results
LMOC	23	Yes	Yes	Yes	2 new heritage resources (EiLp-002; EiLp-003)
LMOC	24	Yes	No	No	No heritage concerns
LMOC	25	Yes	Yes	Yes	1 new heritage resource (EiLp-004)
LMOC	26	Yes	Yes	No	No heritage concerns
LMOC	27	Yes	Yes	Yes	No heritage concerns
LMOC	28	Yes	Yes	Yes	No heritage concerns
LMOC	29	Yes	Yes	No	No heritage concerns
LMOC	30	Yes	No	No	No heritage concerns
LMOC	31	Yes	Yes	Yes	No heritage concerns
LMOC	32	Yes	No	No	No heritage concerns
LMOC	33	Yes	Yes	Yes	1 new heritage resource (EiLp-005)
LMOC	34	Yes	No	No	No heritage concerns
LMOC	35	Yes	Yes	Yes	No heritage concerns
LMOC	36	Yes	No	No	No heritage concerns
LMOC	37	Yes	Yes	Yes	2 new heritage resources (EhLp-003; EhLp-005)
LMOC	38	Yes	No	No	No heritage concerns
LMOC	39	Yes	No	No	No heritage concerns
LMOC	40	Yes	Yes	No	No heritage concerns
LMOC	41	Yes	Yes	Yes	2 new heritage resources (EhLp-004; EhLp-006)

[5] Appendix A: Figure 3.2-17

Table B 6. Summary of artifacts recovered from EkLm-001.

Artifact Class	Artifact Class Total	Artifact Type	Surface Collected	Sub-surface	Total
Lithic	13	Debitage	10	2	12
		Tools	1		1
Total	13	Total	11	2	13

Table B 7. Summary of artifacts recovered from EkLn-001.

Artifact Class	Artifact Class Total	Artifact Type	Surface Collected	Sub-surface	Total
Lithic	75	Debitage	46	13	59
		Tools	16	0	16
Total	75	Total	62	13	75

Table B 8. Summary of lithic raw materials collected from EkLn-001.

Material	Debitage	Tools	Total	%
Chert	53	6	59	78.7
Swan River Chert	4	8	12	16.0
Quartz	2	1	3	4.0
Knife River Flint	0	1	1	1.3
Total	59	16	75	100

Table B 9. Summary of lithic tools collected from EkLn-001.

Lithic Tool Types	#	Depth DBS (cm)	Comment
Projectile Point	3	Surface Surface Surface	CAT#11: Partial, Besant (1900-1100 BP) CAT#12: Complete, Eastern Triangle (1000-400 BP) CAT#13: Base, Besant (1900-1100 BP)
Scraper	2	Surface	1 chert, 1 quartz
Endscraper	4	Surface	2 Swan River Chert, 2 chert
Retouched Flake	3	Surface	2 Swan River Chert, 1 chert
Utilized Flake	4	Surface	3 Swan River Chert, 1 Knife River Flint
Total	16		

Table B 10. Summary of artifacts recovered from EiLp-002.

Artifact Class	Artifact Class Total	Artifact Type	Surface Collected	Sub-surface	Total
Lithic	3	Debitage	1	0	1
		Tools	2	0	2
Total	3	Total	3	0	3

Table B 11. Summary of artifacts recovered from EiLp-004.

Artifact Class	Artifact Class Total	Artifact Type	Surface Collected	Sub-surface	Total
Lithic		Debitage	4	0	4
		Tools	1	0	1
Total		Total	5	0	5

Table B 12. Summary of artifacts recovered from EhLp-004.

Artifact Class	Artifact Class Total	Artifact Type	Surface Collected	Sub-surface	Total
Lithic	117	Debitage	3	102	105
		Tools	4	8	12
Faunal	80	Bone	2	66	68
		Dentition	0	12	12
Pottery	1	Pottery	0	1	1
Total	198	Total	9	189	198

Table B 13. Summary of lithic raw materials collected from EhLp-004.

Material	Debitage	Tools	Total	%
Chert	95	5	100	85.5
Swan River Chert	6	6	12	10.3
Knife River Flint	1	1	2	1.7
Quartz	2	0	2	1.7
Quartzite	1	0	1	0.8
Total	105	12	117	100

Table B 14. Summary of lithic tools collected from EhLp-004.

Lithic Tool Types	#	Depth DBS (cm)	Comment
Projectile Point	3	33 55-60 38	CAT#13: Mostly complete Duncan (3,700 to 2,500 B.P. CAT#80: Complete, McKean (4,500 to 3,500 B.P.) CAT#92: Partial, Undetermined side notch
Scraper	1		Swan River Chert
Endscraper	1		Chert
Biface	3		3 Swan River Chert
Chopper	1		Chert
Retouched Flake	3		2 Chert, 1 Swan River Chert
Total	12		

Table B 15. Summary of faunal remains collected from EhLp-004.

Faunal Class	Faunal Class Total	Faunal Sub-class	Faunal Sub-class Total
Mammal	42	Bison	2
		Unidentified Large Mammal	27
		Unidentified Medium-Large Mammal	13
Fish	34	Northern Pike	2
		Walleye	1
		Unidentified Fish	31
Bird	4	Unidentified Medium Bird	4
Total	80	Total	80

Table B 16. Summary of artifacts recovered from EhLp-006.

Artifact Class	Artifact Class Total	Artifact Type	Surface Collected	Sub-surface	Total
Lithic	87	Debitage	0	76	76
		Tools	0	9	9
		FCR	0	2	2
Faunal	558	Bone	0	557	557
		Dentition	0	1	1
Pottery	37	Pottery	0	37	37
Floral	18	Charcoal	0	18	18
Mineral	3	Ochre	0	3	3
Total	703	Total	0	703	703

Table B 17. Summary of lithic materials recovered from EhLp-006.

Material	Debitage	Tools	Total	%
Chert	27	5	32	36.8
Knife River Flint	28	1	29	33.3
Swan River Chert	16	3	19	21.8
Quartz	3	0	3	3.5
Silicified Siltstone	2	0	2	2.3
Granite	2	0	2	2.3
Total	78	9	87	100

Table B 18. Summary of lithic tools collected from EhLp-006.

Lithic Tool Types	#	Depth DBS (cm)	Comment
Projectile Point	1	20	CAT#208: Base, Undetermined side notched
Biface	2		2 Chert
Retouched Flake	3		1 Chert, 1 Knife River Flint, 1 Swan River Chert
Utilized Flake	3		2 Chert, 1 Swan River Chert
Total	9		

Table B 19. Summary of faunal remains collected from EhLp-006.

Faunal Class	Faunal Class Total	Faunal Sub-class	Faunal Sub-class Total
Mammal	476	Bison	2
		Unidentified Large Mammal	402
		Unidentified Medium-Large Mammal	63
		Unidentified Small-Medium Mammal	2
		Muskrat	1
		Rabbit	1
		Unidentified Small Mammal	5
Fish	69	Northern Pike	43
		Unidentified Fish	26
Bird	7	Unidentified Medium-Large Bird	2
		Unidentified Medium Bird	4
		Unidentified Bird	1
Amphibian	1	Unidentified Frog	1
Mollusca	2	Unidentified Shell	2
Unidentified	3	Unidentified	3
Total	558	Total	558

APPENDIX

C HERITAGE PERMIT

A49-20

The Heritage Resources Act (Subsection 14(2) and Sections 52 and 53)

Heritage Permit No. A49-20

Manitoba
Sport, Culture and Heritage

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

Name: Kristian Sullivan
WSP

Address: 203 Wellman Crescent
Saskatoon SK S7T 0J1

Attention: Kristian Sullivan
(Alternate: Ed Fread)

(hereinafter referred to as "the Permittee"),

is hereby granted permission to:

Conduct a heritage resource impact assessment (HRIA) of the Lake Manitoba and Lake St. Martin permanent outlet channel project on behalf of Manitoba Infrastructure as part of environmental act proposal 5966.00.

during the period:

July 13 to December 31, 2020 (window)

This permit is issued subject to the following conditions:

(1) That the information provided in the application for this permit dated the July 3, 2020 is true in substance and in fact;

(2) That the permittee shall comply with all of 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 writtern 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, 2021

(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. The permittee must obtain permission from any landowner, lessee or regulatory authority as applicable, concerning access to any property to be examined;

b. Neither the Government of Manitoba nor the party issuing this permit shall 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 actions, liens, demands, loss, liability, cost, damage and expense including, without limitations, reasonable legal fees, which the Government, Minister or any employee or official of the Government may suffer or incur by reasons of any of the activities pursuant to or related to this permit.

c. The permittee has, along with this permit, received enclosure:
Provisions Regarding Found Human Remains Under THE HERITAGE RESOURCES ACT, And Manitoba's Policy Respecting the Reporting, Exhumation and Reburial of Found Human Remains (1987).

d. This heritage permit A49-20 supersedes heritage permit A47-20 originally issued to Bison Environmental Services care of Ed Fread on July 10, 2020.

e. This permit entitles WSP to export to its offices outside of Manitoba any heritage objects collected during HRIA activities for further identification and analysis as part of the heritage permit reporting process.

Dated at the City of Winnipeg, in Manitoba, this 14th day of July, 2020

Minister of Sport, Culture and Heritage

Manitoba Sport, Culture and Heritage
Historic Resources Branch

APPENDIX

D PHOTOS

[redacted] Location 1 in LSMOC PDA [redacted] from helicopter facing west-southwest.

Photo D 2. [redacted] in Survey Location 1 in LSMOC PDA, facing southwest.

[redacted]

Photo D 3. South wall profile of shovel test KSTP018 in Survey Location 1 in LSMOC PDA.

Photo D 4. View west of Survey Location 2 in LSMOC PDA.

Photo D 5. North wall profile of shovel test KSTP001 in Survey Location 2 in LSMOC PDA.

Photo D 6. Survey Location 3 in LSMOC PDA, from helicopter facing east.

Photo D 7. View northeast of Survey Location 4 in LSMOC PDA.

Photo D 8. View north of Survey Location 5 in LSMOC PDA.

Photo D 9. View east of Survey Location 6 in LSMOC PDA.

Photo D 10. North wall profile of shovel test KSTP003 in Survey Location 6 in LSMOC PDA.

Photo D 11. Survey Location 7 in LSMOC PDA, from helicopter facing southwest.

Photo D 12. View southwest of Survey Location 8 in LSMOC PDA.

Photo D 13. North wall profile of shovel test DPTP051 in Survey Location 8 in LSMOC PDA.

Photo D 14. Southwest portion of Survey Location 9 in LSMOC PDA, from helicopter facing south.

Photo D 15. Survey Location 10 in LSMOC PDA, from helicopter facing north.

Photo D 16. View southwest of Survey Location 10 in LSMOC PDA.

Photo D 17. North wall profile of shovel test KSTP008 in Survey Location 10 in LSMOC PDA.

Photo D 18. Survey Location 13 in LSMOC PDA, from helicopter facing northeast.

Photo D 19. View south of Survey Location 13 in LSMOC PDA at [redacted]

Photo D 20. North wall profile of shovel test KSTP016 in Survey Location 13 in LSMOC PDA.

Photo D 21. Survey Location 15 in LSMOC PDA, from helicopter facing west.

Photo D 22. Survey Location 18 (with Survey Location 17 in background [redacted] in LSMOC PDA, from helicopter facing southeast.

Photo D 23. Survey Location 20 in LSMOC PDA, from helicopter facing south.

Photo D 25. View northeast [redacted] Survey Location 23 in LMOC PDA.

Photo D 26. East wall profile of shovel test KSTP021 in Survey Location 23 in LMOC PDA.

Photo D 27. View southeast of Survey Location 24 in LMOC PDA.

Photo D 28. View north of [redacted] in Survey Location 25 in LMOC PDA.

Photo D 29. View southeast [redacted] in Survey Location 25 in LMOC PDA.

Photo D 30. View southeast [redacted] in Survey Location 25 in LMOC PDA.

Photo D 31. North wall profile of shovel test KSTP024 in Survey Location 25 in LMOC PDA.

Photo D 32. View north [redacted] in Survey Location 26 in LMOC PDA.

Photo D 33. View south [redacted] Survey Location 27 in LMOC PDA.

Photo D 34. West wall profile of shovel test KSTP025 in Survey Location 27 in LMOC PDA.

Photo D 35. View north [redacted] in Survey Location 28 in LMOC PDA.

Photo D 36. View east [redacted] in Survey Location 28 in LMOC PDA.

Photo D 37. West wall profile of shovel test KSTP026 in Survey Location 28 in LMOC PDA.

Photo D 38. View south [redacted] Survey Location 29 in LMOC PDA.

Photo D 39. View southeast [redacted] in Survey Location 30 in LMOC PDA.

Photo D 40. View southeast [redacted] in Survey Location 31 in LMOC PDA.

Photo D 41. East wall profile of shovel test KSTP032 [redacted] in Survey Location 31 in LMOC PDA.

Photo D 42. View northeast [redacted] Survey Location 32 in LMOC PDA.

Photo D 43. View north [redacted] in Survey Location 33 in LMOC PDA.

Photo D 44. East wall profile of shovel test S6KSTP1 in Survey Location 33 in LMOC PDA.

Photo D 45. View southeast [redacted] Survey Location 34 in LMOC PDA.

Photo D 46. View north in Survey Location 35 in LMOC PDA.

Photo D 47. South wall profile of shovel test KSTP044 in Survey Location 35 in LMOC PDA.

Photo D 48. View east [redacted] Survey Location 37 in LMOC PDA.

Photo D 49. View south [redacted] in Survey Location 37 in LMOC PDA.

Photo D 50. View south in Survey Location 39 in LMOC PDA.

Photo D 51. View southeast [redacted] in Survey Location 41 in LMOC PDA.

Photo D 52. View southeast [redacted] Survey Location 41 in LMOC PDA.

Photo D 53. View southwest [redacted] at archaeological site EkLm-001.

Photo D 54. Chert endscraper (CAT#1) recovered from machine cut exposure at archaeological site EkLm-001.

Photo D 55. View northeast from helicopter of densest concentration of artifacts at archaeological site EkLn-001.

Photo D 56. View south across densest concentration of artifacts at archaeological site EkLn-001.

a) CAT#4 Swan River Chert retouched flake, surface find Site02SF03

b) CAT#6 Knife River Flint utilized flake, surface find Site02SF04

c) CAT#7 Swan River Chert thumbscraper, surface find Site02SF05

d) CAT#11 Swan River Chert partial side-notched projectile point, probable Besant, surface find Site02SF06

e) CAT#12 chert Eastern Triangular Point, surface find Site02SF07

f) CAT#13 chert projectile point base, Besant, surface find Site02SF08

g) CAT#14 quartz scraper, surface find KSSF01

h) CAT#49 Swan River Chert endscraper, surface find S2LSS01.

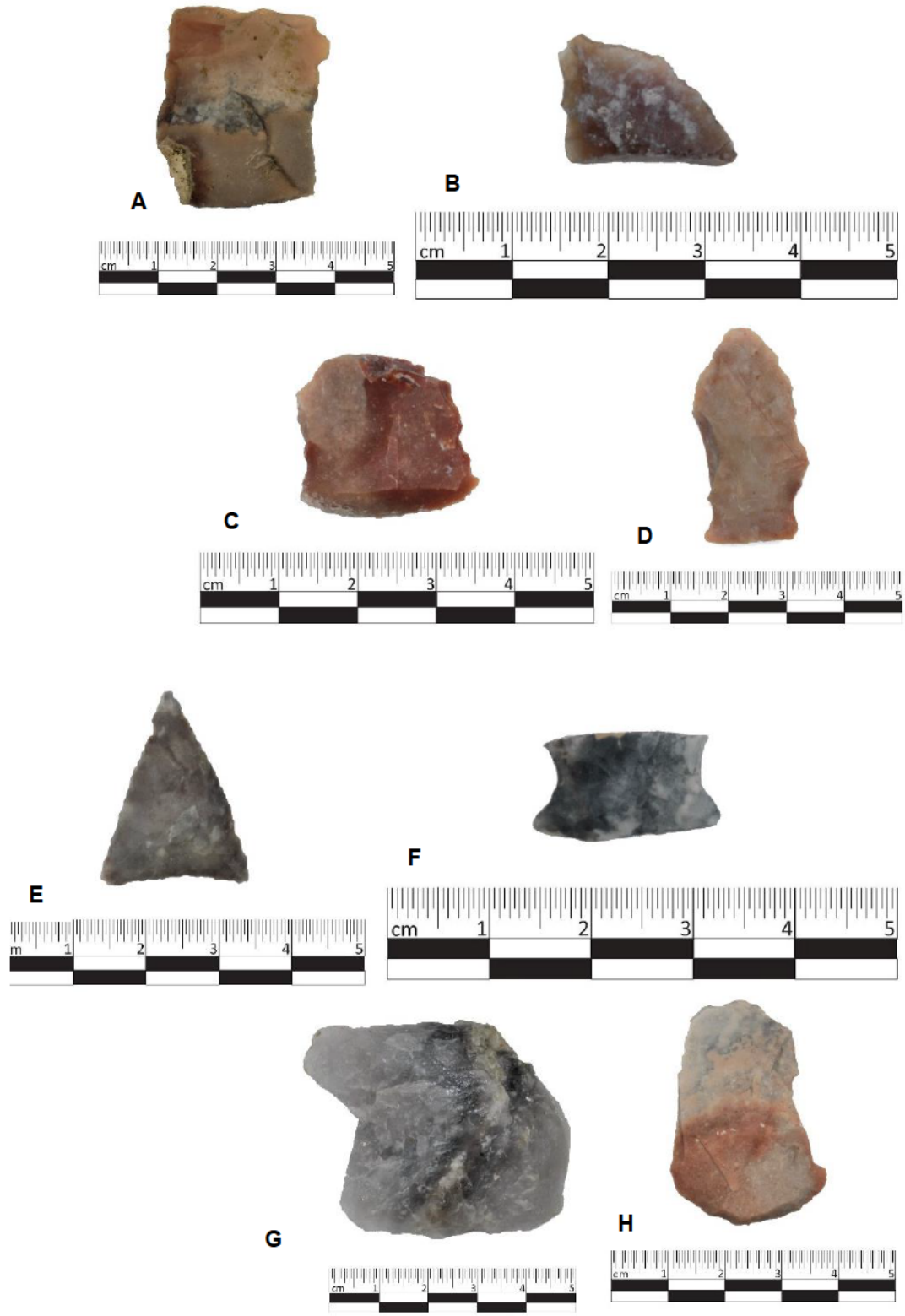

Photo D 57. Selection of artifacts recovered from archaeological site EkLn-001.

Photo D 58. View northeast at location of scraper surface find (WPT SITE03SCRAPER) [redacted] at archaeological site EiLp-002.

Photo D 59. Chert endscraper (CAT#3) recovered from [redacted] at archaeological site EiLp-002.

Photo D 60. View northeast [redacted] at archaeological site EiLp-003.

Photo D 61. View southeast [redacted] at archaeological site EiLp-003.

Photo D 62. View of [redacted] at archaeological site EiLp-003.

Photo D 63. View north [redacted] at archaeological site EiLp-004.

Photo D 64. Silicified siltstone endscraper (CAT#5) recovered from cultivated field at archaeological site EiLp-004.

Photo D 65. View west [redacted] at archaeological site EiLp-005.

Photo D 66. View of southwest [redacted] archaeological site EiLp-005.

Photo D 67. View southwest [redacted], at archaeological site EiLp-005.

Photo D 68. View of [redacted] archaeological site EiLp-005.

Photo D 69. View northwest [redacted] within the PDA at archaeological site EhLp-003; midden in foreground.

Photo D 70. View west [redacted] at archaeological site EhLp-003.

Photo D 71. South wall profile of shovel test S7KSTP1 [redacted] at archaeological site EhLp-003.

Photo D 72. Ceramic sherd from a Federal Company hollowware vessel (CAT#3), recovered from shovel test S7KSTP1 at archaeological site EhLp-003.

Photo D 73. Swan River Chert debitage (CAT#5), recovered from shovel test S7KSTP1 at archaeological site EhLp-003.

Photo D 74. View southeast [redacted] at archaeological site EhLp-004.

Photo D 75. View northwest [redacted] at archaeological site EhLp-004.

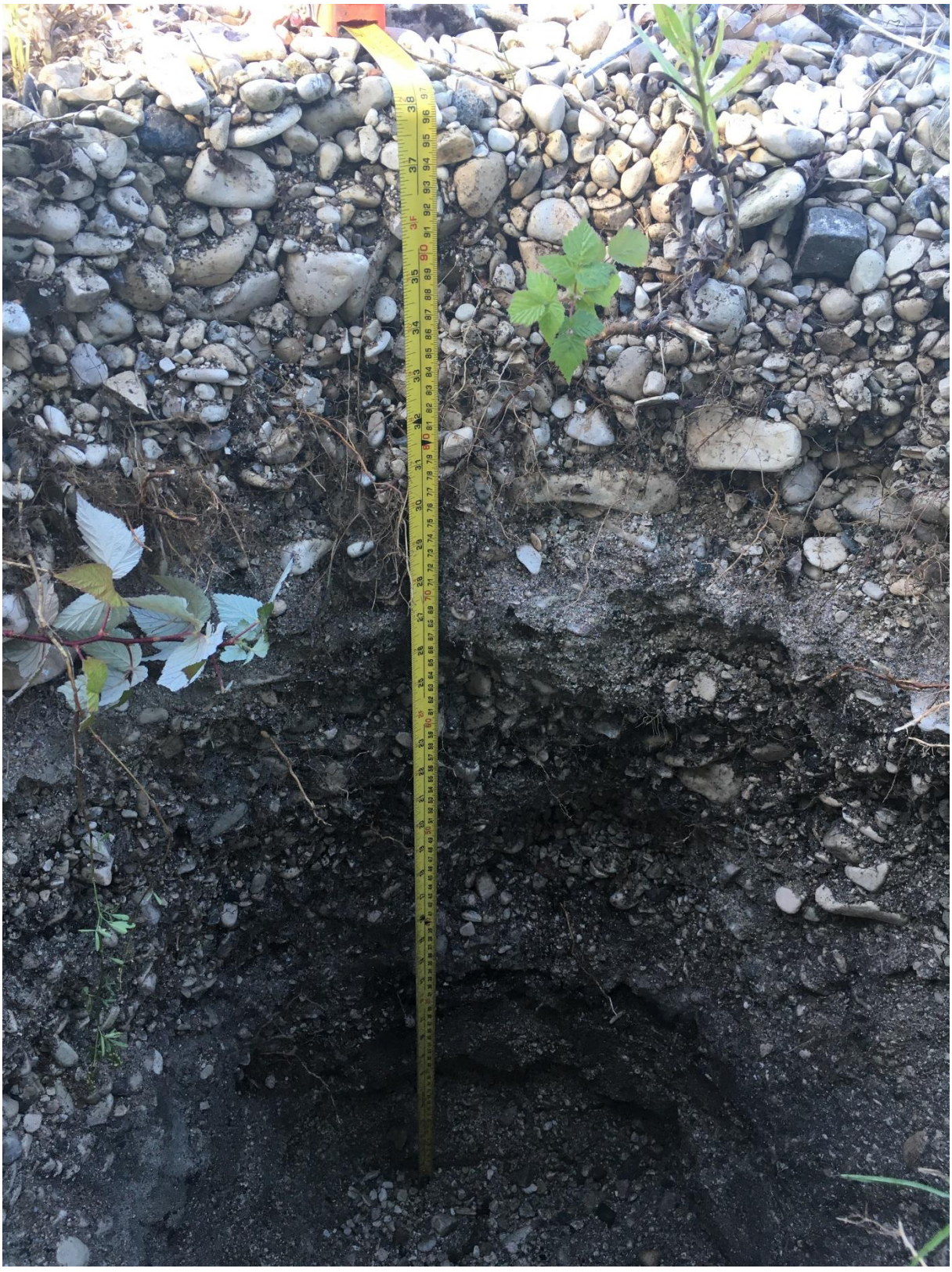

Photo D 76. West wall profile of shovel test S8KSTP6 [redacted] at archaeological site EhLp-004.

Photo D 77. East wall profile of shovel test S08EFTP02 [redacted] at archaeological site EhLp-004.

Photo D 78. View northwest [redacted] at archaeological site EhLp-004.

Photo D 79. West wall profile of shovel test S8KSTP10 [redacted] at archaeological site EhLp-004.

a) CAT#2 Chert endscraper, surface find Site08Scraper

b) CAT#74 Chert retouched flake, shovel test S8KSTP6

c) CAT#13 Knife River Flint Duncan projectile point, shovel test S8DBTP08

d) CAT#80 Swan River Chert McKean projectile point, shovel test S8KSTP6

e) CAT#92 weathered chert projectile point, shovel test S8LSTP05

f) CAT#65 bison tibia fragment, shovel test S08EFTP03

g) CAT#93 bison horn core fragment, shovel test S8LSTP05

h) CAT#34 Unidentified Pre-Contact pottery body sherd, shovel test S08EFTP02

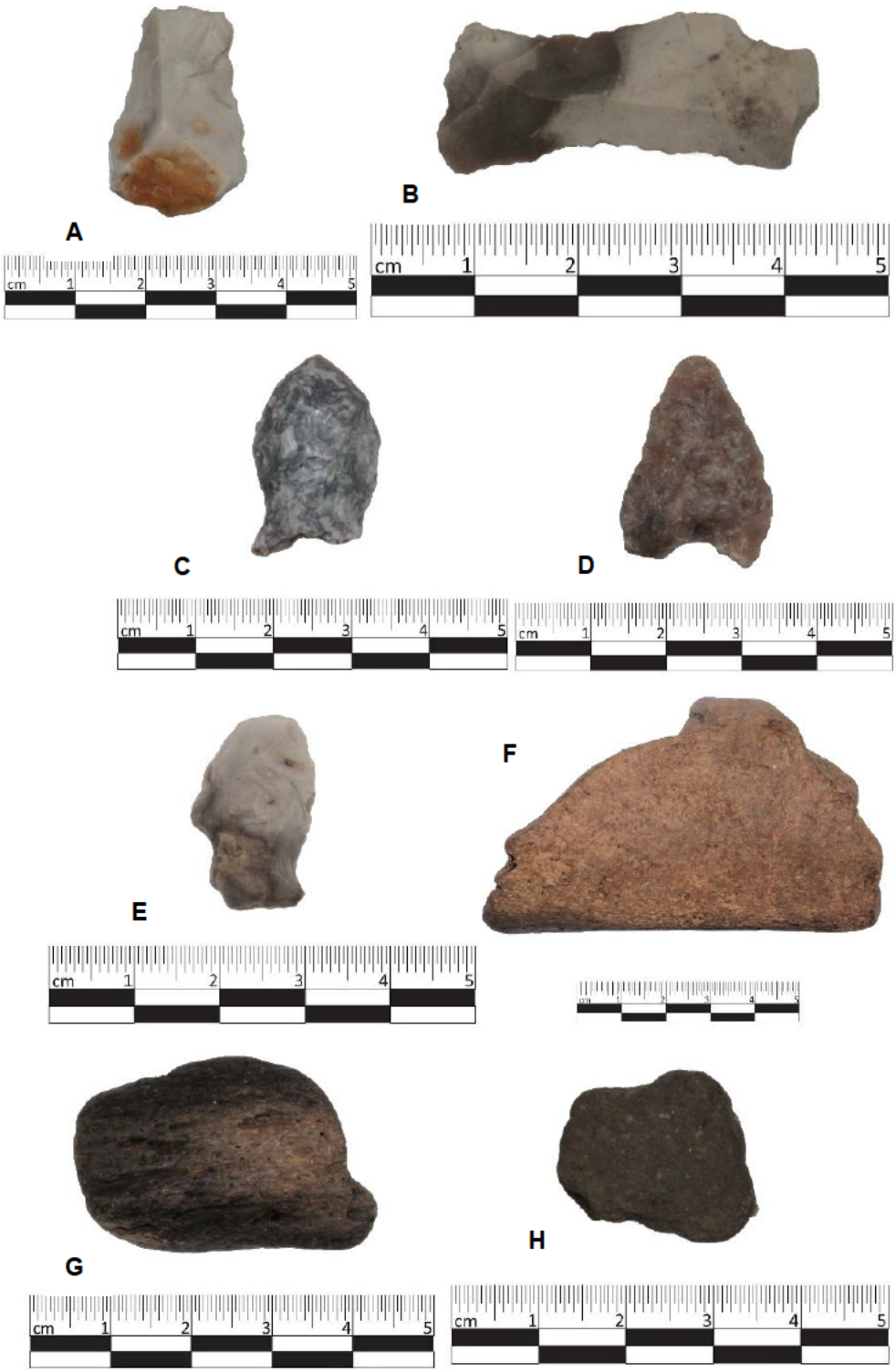

Photo D 80. Selection of artifacts recovered from archaeological site EhLp-004.

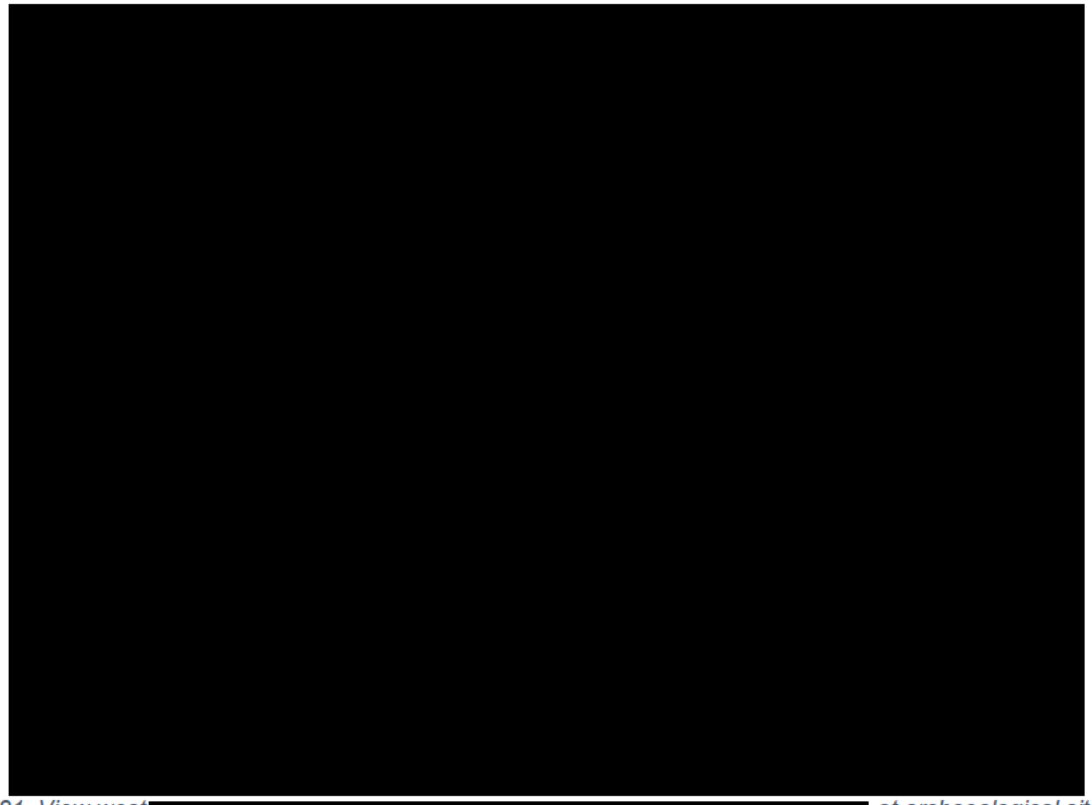

Photo D 81. View west [redacted] at archaeological site EhLp-005.

Photo D 82. View southwest [redacted] at archaeological site EhLp-005.

Photo D 83. [redacted] at archaeological site EhLp-005.

Photo D 84. [redacted] at archaeological site EhLp-005, [redacted].

Photo D 85. View south [redacted] at archaeological site EhLp-005, [redacted]

Photo D 86. View east [redacted] at archaeological site EhLp-005.

Photo D 87. East wall profile of shovel test [redacted] at archaeological site EhLp-005.

Photo D 88. East wall profile of shovel test [redacted] at archaeological site EhLp-005.

Photo D 89. Brass door plate (CAT#2), recovered from surface at archaeological site EhLp-005.

Photo D 90. Grinding stone (CAT#6), recovered from surface at archaeological site EhLp-005.

Photo D 91. View northeast [redacted] *at archaeological site EhLp-006.*

Photo D 92. [redacted] *EhLp-006.*

Photo D 93. View southwest [redacted] archaeological site EhLp-006.

Photo D 94. View northwest [redacted] at archaeological site EhLp-006.

Photo D 95. View northeast [redacted] at archaeological site EhLp-006.

Photo D 96. North wall profile of shovel test FTKSTP8 [redacted] at archaeological site EhLp-006.

a) CAT#128 Knife River Flint tertiary flakes, shovel test FTKSTP14

b) CAT#243 Chert biface fragment, shovel test FTEFTP09

c) CAT#208 Swan River Chert projectile point base, shovel test S10LSTP18

d) CAT#59 Swan River Chert utilized flake, shovel test FTDBTP11

e) CAT#36 Distal large mammal metapodial fragment, shovel test FTEFTP06

f) CAT#142 Bison left lateral/ right medial 3rd phalanx, shovel test FTKSTP22

g) CAT#259 Left muskrat mandible, shovel test FTEFTP12

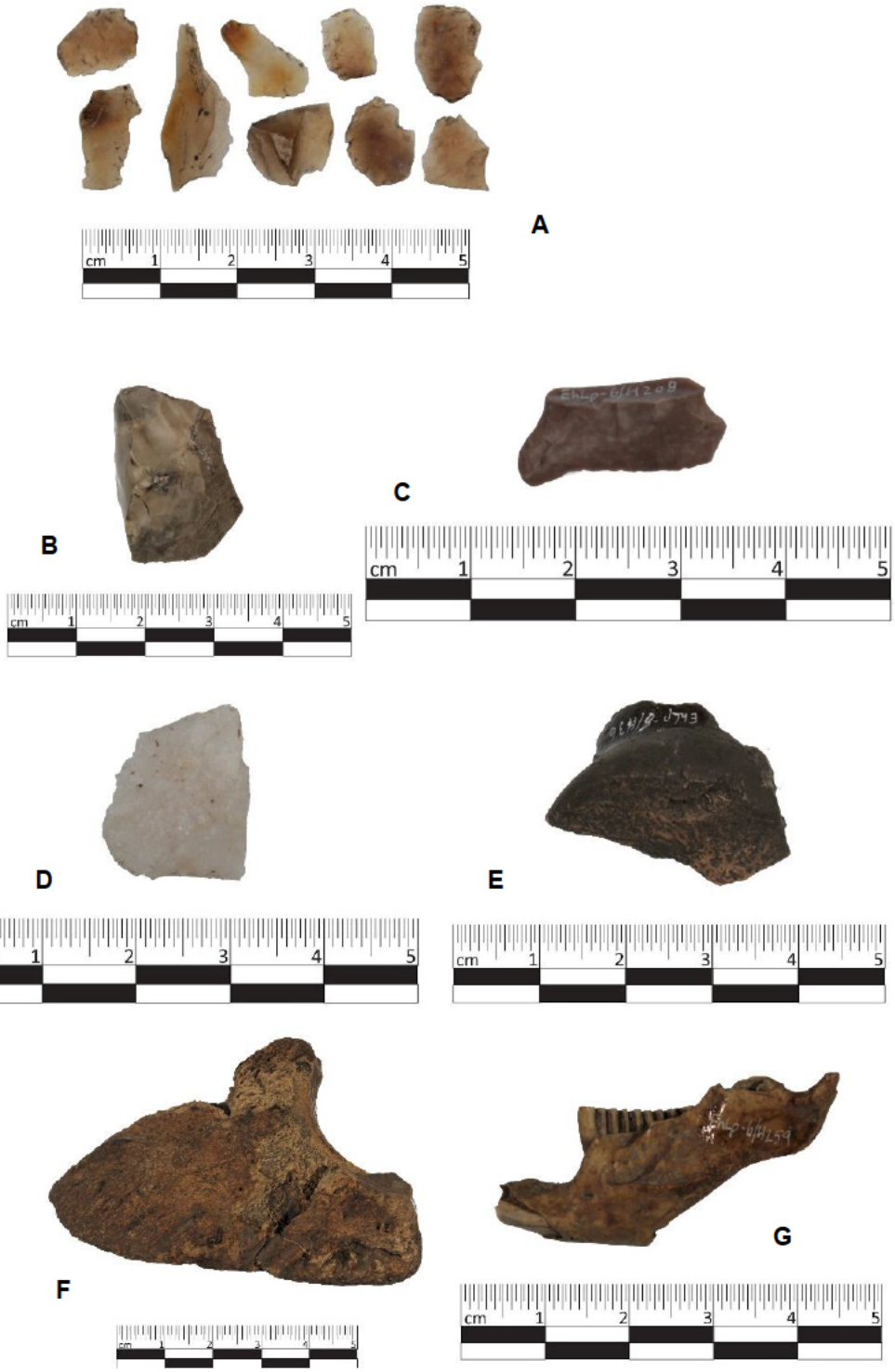

Photo D 97. Selection of lithic artifacts and faunal remains recovered from archaeological site EhLp-006.

a) CAT#167 Right and left Northern Pike dentary, shovel test S10LSTP10

b) CAT#162 Distal bone tool fragment, shovel test S10LSTP09

c) CAT#221 Pre-Contact fabric-impressed pottery body sherd, shovel test FTEFTP08

d) CAT#130 Pre-Contact Laurel pottery incised body sherd, shovel test FTKSTP16

e) CAT#220 Pre-Contact Laurel pottery dentate-stamped body sherd, shovel test FTEFTP08

f) CAT#219 Pre-Contact pottery coil detritus, shovel test FTEFTP08

g) CAT#81 Possible red ochre, shovel test FTDBTP14

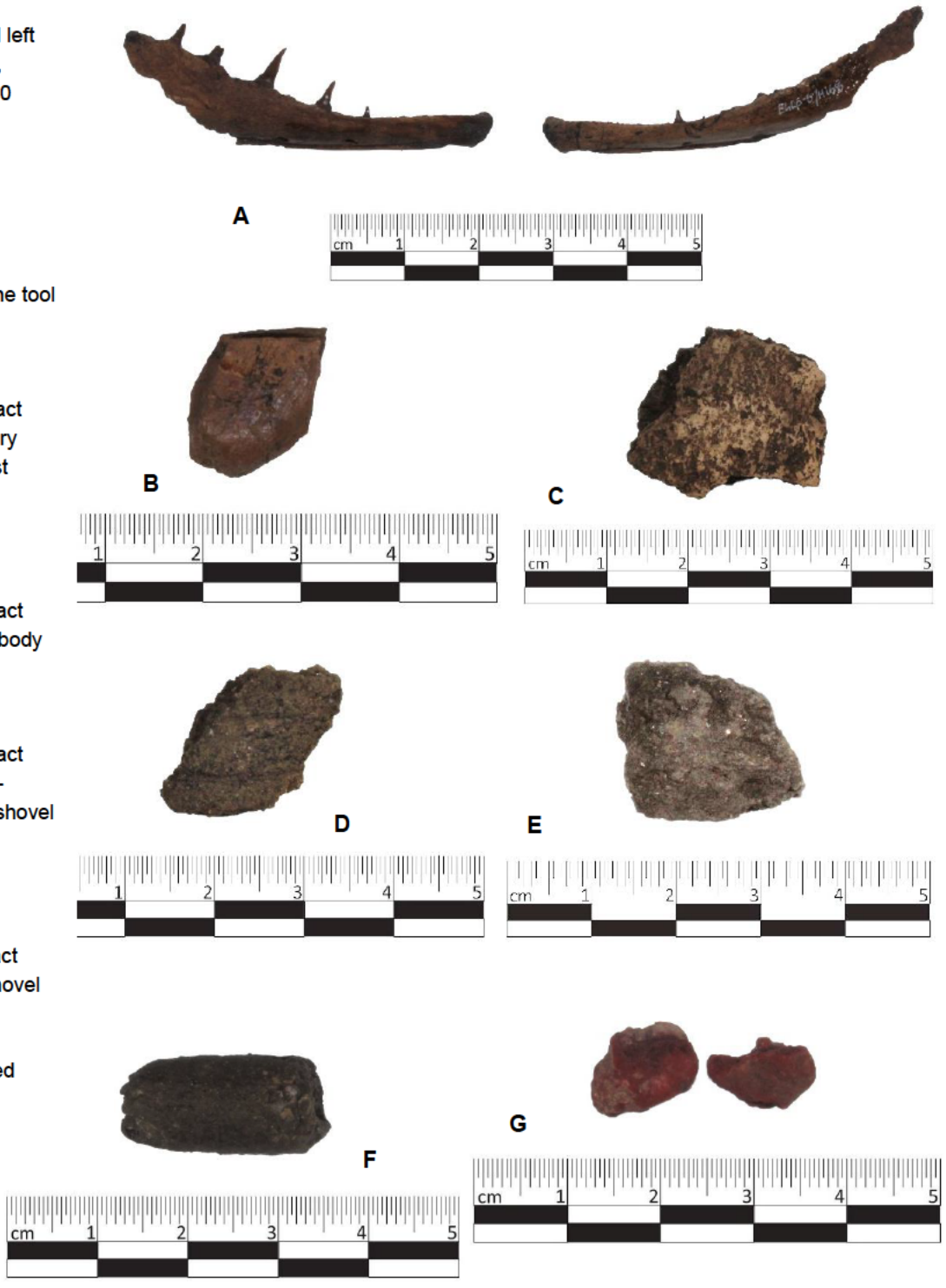

Photo D 98. Selection of faunal remains and pottery recovered from archaeological site EhLp-006.

APPENDIX

E SHOVEL TEST PROGRAM RESULTS

Table E 1. Results of shovel test program in Survey Location 1 in LSMOC PDA.[1]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-6 Sandy root mat 6-8 Dark brown sandy organic 8-19 Light brown sand 19-21 Dark brown sandy organic 21-40 Light brown sand 40-48 Dark brown sandy organic 48-60 Light brown gravely sand 60-62 Dark brown sandy organic 62-85 Light brown silty sand				
DBTP11			80	Negative	N/A	N/A	
DBTP12			80	Negative	N/A	N/A	
DBTP13			80	Negative	N/A	N/A	
EFTP11			80	Negative	N/A	N/A	
EFTP12			80	Negative	N/A	N/A	
EFTP13			80	Negative	N/A	N/A	
KSTP018			80	Negative	N/A	N/A	
KSTP019			80	Negative	N/A	N/A	
KSTP020			80	Negative	N/A	N/A	

[1] Appendix A: Figure 3.2-2

Table E 2. Results of shovel test program in Survey Location 2 in LSMOC PDA.[2]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-32 Moss and peat 32-53 Black organic peat, saturated 53-64 Dense black clay with cobbles				
DBTP011			60	Negative	N/A	N/A	
DBTP021			60	Negative	N/A	N/A	
DBTP031			60	Negative	N/A	N/A	
EFTP012			60	Negative	N/A	N/A	
EFTP022			60	Negative	N/A	N/A	
KSTP001			60	Negative	N/A	N/A	
KSTP002			60	Negative	N/A	N/A	

[2] Appendix A: Figure 3.2-3

Table E 3. Results of shovel test program in Survey Location 4 in LSMOC PDA.[3]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-20 Moss and peat 20-43 Dense brown clay				
EFTP032	[redacted]	[redacted]	43	Negative	N/A	N/A	[redacted]

[3] Appendix A: Figure 3.2-4

Table E 4. Results of shovel test program in Survey Location 6 in LSMOC PDA.[4]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-8 Moss and peat 8-32 Black mottled silt and clay 32-40 Light brown clay				[redacted]
DBTP041	[redacted]		40	Negative	N/A	N/A	
EFTP042			40	Negative	N/A	N/A	
KSTP003			40	Negative	N/A	N/A	

[4] Appendix A: Figure 3.2-5

Table E 5. Results of shovel test program in Survey Location 8 in LSMOC PDA.[5]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-20 Root mat 20-25 Dark brown silty loam 25-40 Light grey clay with gravel				
DBTP051			40	Negative	N/A	N/A	
DBTP061			40	Negative	N/A	N/A	
DBTP071			40	Negative	N/A	N/A	
EFTP052			40	Negative	N/A	N/A	
EFTP062			40	Negative	N/A	N/A	
KSTP004			40	Negative	N/A	N/A	
KSTP005			40	Negative	N/A	N/A	

[5] Appendix A: Figure 3.2-7

Table E 6. Results of shovel test program in Survey Location 10 in LSMOC PDA.[6]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-14 Root mat 14-30 Dark brown silt 30-40 Grey clay with gravel				
DBTP08			40	Negative	N/A	N/A	
DBTP09			40	Negative	N/A	N/A	
DBTP10			40	Negative	N/A	N/A	
EFTP07			40	Positive	0-18	2 lithic debitage	
EFTP08			40	Negative	N/A	N/A	
EFTP09			40	Negative	N/A	N/A	
KSTP006			40	Negative	N/A	N/A	
KSTP007			40	Negative	N/A	N/A	
KSTP008			40	Negative	N/A	N/A	
KSTP009			40	Negative	N/A	N/A	
KSTP010			40	Negative	N/A	N/A	
KSTP011			40	Negative	N/A	N/A	
KSTP012			40	Negative	N/A	N/A	
KSTP013			40	Negative	N/A	N/A	
KSTP014			40	Negative	N/A	N/A	
S01E05			40	Negative	N/A	N/A	
S01S05			40	Negative	N/A	N/A	
S01S13			40	Negative	N/A	N/A	
S01SW01			40	Negative	N/A	N/A	

[6] Appendix A: Figures 3.2-9 and 3.3-1

Table E 7. Results of shovel test program in Survey Location 13 in LSMOC PDA.[7]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-6 Dark grey organic silt 6-30 Green grey clay				
EFTP10			30	Positive	0-6	2 lithic debitage	
KSTP015			30	Positive	5-8	1 lithic debitage	
KSTP016			30	Negative	N/A	N/A	
KSTP017			30	Negative	N/A	N/A	
S02DBTP01			30	Negative	N/A	N/A	
S02DBTP02			30	Negative	N/A	N/A	
S02EFTP001-POS			30	Positive	26-32	1 lithic debitage	
S02EFTP002			30	Negative	N/A	N/A	
S02EFTP003			30	Negative	N/A	N/A	
S02EFTP004			30	Positive	15	1 lithic debitage	
S02EFTP005			30	Negative	N/A	N/A	
S2DBS01			30	Negative	N/A	N/A	
S2DBTP01			50	Positive	5-10	1 lithic debitage	
S2DBTP02			50	Negative	N/A	N/A	
S2DBTP03			30	Negative	N/A	N/A	
S2DBTP04			30	Negative	N/A	N/A	
S2DBTP05			30	Negative	N/A	N/A	
S2DBTP06			30	Negative	N/A	N/A	
S2DBTP07			30	Negative	N/A	N/A	

[7] Appendix A: Figures 3.2-10 and 3.3-2

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
S2DBTP08	[redacted]		30	Negative	N/A	N/A	[redacted]
S2DBTP09			30	Negative	N/A	N/A	
S2DBTP10			30	Negative	N/A	N/A	
S2DBTP11			30	Negative	N/A	N/A	
S2DBTP12			30	Negative	N/A	N/A	
S2DBTP13			30	Negative	N/A	N/A	
S2DBTP14			30	Negative	N/A	N/A	
S2DBTP15			30	Negative	N/A	N/A	
S2KSTP1			50	Negative	N/A	N/A	
S2KSTP10			35	Positive	5	1 lithic debitage	
S2KSTP11			30	Negative	N/A	N/A	
S2KSTP12			30	Negative	N/A	N/A	
S2KSTP13			30	Negative	N/A	N/A	
S2KSTP14			30	Positive	5	2 lithic debitage	
S2KSTP15			30	Positive	1-5	1 lithic debitage	
S2KSTP16			30	Negative	N/A	N/A	
S2KSTP17			30	Positive	8	1 lithic debitage	
S2KSTP2			30	Negative	N/A	N/A	
S2KSTP3			30	Negative	N/A	N/A	
S2KSTP4			40	Negative	N/A	N/A	
S2KSTP5			35	Negative	N/A	N/A	
S2KSTP6			35	Negative	N/A	N/A	
S2KSTP7			35	Negative	N/A	N/A	

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
S2KSTP8	[redacted]		35	Positive	0-5	1 lithic debitage	[redacted]
S2KSTP9			35	Negative	N/A	N/A	
S2LSS01			30	Negative	N/A	N/A	
S2LSTP01			50	Negative	N/A	N/A	
S2LSTP02			30	Positive	20	1 lithic debitage	
S2LSTP03			30	Negative	N/A	N/A	
S2LSTP04			30	Negative	N/A	N/A	
S2KSSHAVE			30	Negative	N/A	N/A	

Table E 8. Results of shovel test program in Survey Location 23 in LMOC PDA.[8]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-9 Sod 9-19 Dark brown silt 19-50 Light brown silty clay				
DBTP14			50	Negative	N/A	N/A	
DBTP15			50	Negative	N/A	N/A	
DBTP16			50	Negative	N/A	N/A	
EFTP14			50	Negative	N/A	N/A	
EFTP15			50	Negative	N/A	N/A	
KSTP021			50	Negative	N/A	N/A	
KSTP022			50	Negative	N/A	N/A	
KSTP023			50	Negative	N/A	N/A	

[8] Appendix A: Figure 3.2-18

Table E 9. Results of shovel test program in Survey Location 25 in LMOC PDA.[9]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-19 Dark brown silt 16-38 Light brown clay				[redacted]
KSTP024	[redacted]	[redacted]	38	Negative	N/A	N/A	

[9] Appendix A: Figures 3.2-19 and 3.3-5

Table E 10. Results of shovel test program in Survey Location 27 in LMOC PDA.[10]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-8 Root mat 8-28 Dark brown silt 28-33 Light brown clayey silt				[redacted]
DBTP17	[redacted]		33	Negative	N/A	N/A	
KSTP025			33	Negative	N/A	N/A	

[10] Appendix A: Figure 3.2-20

Table E 11. Results of shovel test program in Survey Location 28 in LMOC PDA.[11]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-13 Root mat 13-31 Dark brown silt 31-40 Light brown silty clay				
DBTP18			40	Negative	N/A	N/A	
DBTP19			40	Negative	N/A	N/A	
EFTP16			40	Negative	N/A	N/A	
KSTP026			40	Negative	N/A	N/A	
KSTP027			40	Negative	N/A	N/A	

[11] Appendix A: Figure 3.2-21

Table E 12. Results of shovel test program in Survey Location 31 in LMOC PDA.[12]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-7 Sod 7-27 Dark grey loamy silt 27-40 Light grey silty clay				
DBTP20			40	Negative	N/A	N/A	
DBTP21			40	Negative	N/A	N/A	
DBTP22			40	Negative	N/A	N/A	
DBTP23			40	Negative	N/A	N/A	
DBTP24			40	Negative	N/A	N/A	
DBTP25			40	Negative	N/A	N/A	
DBTP26			40	Negative	N/A	N/A	
DBTP27			40	Negative	N/A	N/A	
DBTP28			40	Negative	N/A	N/A	
DBTP29			40	Negative	N/A	N/A	
DBTP30			40	Negative	N/A	N/A	
EFTP17			40	Negative	N/A	N/A	
EFTP18			40	Negative	N/A	N/A	
EFTP19			40	Negative	N/A	N/A	
EFTP21			40	Negative	N/A	N/A	
EFTP22			40	Negative	N/A	N/A	
EFTP23			40	Negative	N/A	N/A	
EFTP24			40	Negative	N/A	N/A	
EFTP25			40	Negative	N/A	N/A	
EFTP26			40	Negative	N/A	N/A	
KSTP028			40	Negative	N/A	N/A	
KSTP029			40	Negative	N/A	N/A	
KSTP030			40	Negative	N/A	N/A	
KSTP031			40	Negative	N/A	N/A	
KSTP032			40	Negative	N/A	N/A	
KSTP033			40	Negative	N/A	N/A	
KSTP034			40	Negative	N/A	N/A	
KSTP035			40	Negative	N/A	N/A	

[12] Appendix A: Figure 3.2-24

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
KSTP036	[redacted]		40	Negative	N/A	N/A	[redacted]
KSTP037			40	Negative	N/A	N/A	
KSTP038			40	Negative	N/A	N/A	
KSTP039			40	Negative	N/A	N/A	
KSTP040			40	Negative	N/A	N/A	

Table E 13. Results of shovel test program in Survey Location 33 in LMOC PDA.[13]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-14 Sod 14-19 Brown silt 19-30 Light brown clay with gravel				
DBTP31			40	Negative	N/A	N/A	
DBTP32			40	Negative	N/A	N/A	
DBTP33			40	Negative	N/A	N/A	
S06EFTP01			30	Negative	N/A	N/A	
S06EFTP02			30	Negative	N/A	N/A	
S06EFTP03			30	Negative	N/A	N/A	
S06EFTP04			30	Negative	N/A	N/A	
S06EFTP05			30	Negative	N/A	N/A	
S06EFTP06			30	Negative	N/A	N/A	
S6DBTP01			30	Negative	N/A	N/A	
S6DBTP02			30	Negative	N/A	N/A	
S6DBTP03			30	Negative	N/A	N/A	
S6DBTP04			30	Negative	N/A	N/A	
S6DBTP05			30	Negative	N/A	N/A	
S6DBTP06			30	Negative	N/A	N/A	
S6DBTP07			30	Negative	N/A	N/A	
S6DBTP08			30	Negative	N/A	N/A	
S6DBTP09			30	Negative	N/A	N/A	

[13] Appendix A: Figures 3.2-25 and 3.3-6

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
S6DBTP10	[redacted]		30	Negative	N/A	N/A	[redacted]
S6DBTP11			30	Negative	N/A	N/A	
S6DBTP12			50	Negative	N/A	N/A	
S6KSTP1			30	Negative	N/A	N/A	
S6KSTP10			30	Negative	N/A	N/A	
S6KSTP11			30	Negative	N/A	N/A	
S6KSTP2			30	Negative	N/A	N/A	
S6KSTP3			30	Negative	N/A	N/A	
S6KSTP4			30	Negative	N/A	N/A	
S6KSTP5			30	Negative	N/A	N/A	
S6KSTP6			30	Negative	N/A	N/A	
S6KSTP7			30	Negative	N/A	N/A	
S6KSTP8			30	Negative	N/A	N/A	
S6KSTP9			30	Negative	N/A	N/A	
S6LSTP01			30	Negative	N/A	N/A	
S6LSTP02			30	Positive	0-24	1 lithic debitage	
S6LSTP03			30	Negative	N/A	N/A	
S6LSTP04			30	Negative	N/A	N/A	
S6LSTP05			30	Negative	N/A	N/A	
S6LSTP06			30	Negative	N/A	N/A	

Table E 14. Results of shovel test program in Survey Location 35 in LMOC PDA.[14]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-6 Sod 6-19 Dark brown silt 19-40 Light brown silty clay				
DBTP34			40	Negative	N/A	N/A	
DBTP35			40	Negative	N/A	N/A	
DBTP36			40	Negative	N/A	N/A	
DBTP37			40	Negative	N/A	N/A	
DBTP38			40	Negative	N/A	N/A	
DBTP39			40	Negative	N/A	N/A	
EFTP27			40	Negative	N/A	N/A	
EFTP28			40	Negative	N/A	N/A	
EFTP29			40	Negative	N/A	N/A	
EFTP30			40	Negative	N/A	N/A	
EFTP31			40	Negative	N/A	N/A	
EFTP32			40	Negative	N/A	N/A	
KSTP041			40	Negative	N/A	N/A	
KSTP042			40	Negative	N/A	N/A	
KSTP043			40	Negative	N/A	N/A	
KSTP044			40	Negative	N/A	N/A	
KSTP045			40	Negative	N/A	N/A	
KSTP046			40	Negative	N/A	N/A	

[14] Appendix A: Figure 3.2-26

Table E 15. Results of shovel test program in Survey Location 37 in LMOC PDA.[15]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-6 Sod/Root mat 6-24 Dark brown mottled silt 24-50 Light brown clay				
BCDBTP01			50	Negative	N/A	N/A	
BCDBTP02			50	Positive	25	1 Faunal	
BCDBTP03			50	Negative	N/A	N/A	
BCDBTP04			50	Positive	0-3	Brass door plate	
BCDBTP05			50	Negative	N/A	N/A	
BCDBTP06			50	Negative	N/A	N/A	
BCEFTP01			50	Positive	8-57	Iron lock; iron door plate, metal plate	
BCEFTP02			50	Negative	N/A	N/A	
BCEFTP03			50	Negative	N/A	N/A	
BCEFTP04			50	Negative	N/A	N/A	
BCKSTP1			50	Negative	N/A	N/A	
BCKSTP2			60	Positive	0-12	Window glass	
BCKSTP3			50	Negative	N/A	N/A	
BCKSTP4			50	Negative	N/A	N/A	
BCKSTP5			50	Negative	N/A	N/A	
BCKSTP6			50	Negative	N/A	N/A	
BCKSTP7			50	Negative	N/A	N/A	

[15] Appendix A: Figures 3.2-27, 3.3-7, and 3.3-9

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
	[redacted]						[redacted]
BCKSTP8			50	Negative	N/A	N/A	
BCLSTP01			50	Negative	N/A	N/A	
DBTP40			50	Negative	N/A	N/A	
DBTP41			50	Negative	N/A	N/A	
EFTP33			50	Negative	N/A	N/A	
EFTP34			50	Negative	N/A	N/A	
KSTP047			50	Negative	N/A	N/A	
KSTP048			50	Negative	N/A	N/A	
KSTP049			50	Negative	N/A	N/A	
S7DBTP01			50	Negative	N/A	N/A	
S7DBTP02			50	Negative	N/A	N/A	
S7KSTP1			70	Positive	0-20 30-60	Historic ceramics, glass, metal 2 lithic debitage	
S7LSTP01			50	Negative	N/A	N/A	
S7LSTP02			50	Negative	N/A	N/A	

Table E 16. Results of shovel test program in Survey Location 41 in LMOC PDA.[16]

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-27 Gravel 27-35 Light brown sandy gravel 35-63 Light brown coarse sandy gravel 63-95 Gray sand with small gravel				
S08EFTP01			90	Negative	N/A	N/A	
S08EFTP02			112	Positive	16-112 79-112	14 lithic debitage, 14 faunal 1 pottery	
S08EFTP03			143	Positive	14-25 25-58 60-130	8 lithic debitage 9 lithic debitage 2 lithic tools, 45 lithic debitage, 26 faunal	
S8DBTP01			95	Negative	N/A	N/A	
S8DBTP02			95	Positive	50-60	3 lithic debitage	
S8DBTP03			95	Positive	38-52	1 lithic debitage, 2 faunal	
S8DBTP04			95	Negative	N/A	N/A	
S8DBTP05			95	Positive	50 70	2 lithic debitage 1 faunal	
S8DBTP06			95	Positive	Surface 33 43 65	1 lithic endscraper 1 Duncan projectile point, 2 faunal 4 faunal 1 lithic debitage	
S8DBTP07			95	Negative	N/A	N/A	
S8DBTP08			95	Positive	21	1 lithic debitage	
S8KSTP1			60	Positive	20-30	1 lithic debitage	
S8KSTP2			85	Positive	20-25 30-35	1 lithic debitage 1 lithic tool	
S8KSTP3			85	Positive	50	1 lithic debitage	

[16] Appendix A: Figures 3.2-30, 3.3-8, and 3.3-10

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
	[redacted]						[redacted]
S8KSTP4			95	Positive	70-75	1 lithic debitage, 15 faunal	
S8KSTP5			85	Positive	20-30	1 lithic debitage	
S8KSTP6			95	Positive	10-20 30-40 55-60	1 lithic tool, 3 lithic debitage 2 lithic debitage 1 McKean projectile point, 2 lithic debitage	
S8KSTP7			100	Positive	20-30	1 lithic debitage	
S8KSTP8			90	Positive	35-40	1 faunal	
S8KSTP9			90	Negative	N/A	N/A	
S8KSTP10			80	Negative	N/A	N/A	
S8LSTP01			95	Negative	N/A	N/A	
S8LSTP02			95	Positive	30	1 lithic debitage	
S8LSTP03			95	Negative	N/A	N/A	
S8LSTP04			95	Positive	20 35-63 75-84	1 lithic debitage, 2 faunal 1 lithic debitage, 7 faunal 1 faunal	
S8LSTP05			95	Positive	38 79	Woodland projectile point 2 faunal	
S8LSTP06			95	Positive	5 40	1 lithic tool, 1 lithic debitage 1 faunal	
S8LSTP07			95	Negative	N/A	N/A	
S8LSTP08			95	Negative	N/A	N/A	

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
Typical Stratigraphy			0-5 Sod 5-10 Dark brown loamy silt with gravel 10-23 Light brown silt with gravel 23-50 Light brown clay with gravel				
FTDBTP01			50	Negative	N/A	N/A	
FTDBTP02			50	Negative	N/A	N/A	
FTDBTP03			50	Positive	20-30	1 lithic debitage	
FTDBTP04			50	Negative	N/A	N/A	
FTDBTP05			50	Negative	N/A	N/A	
FTDBTP06			50	Negative	N/A	N/A	
FTDBTP07			50	Positive	15	1 faunal	
FTDBTP08			50	Positive	12	8 faunal	
FTDBTP09			50	Positive	0-17 17-24	4 faunal 2 faunal	
FTDBTP10			50	Positive	0-16 14	12 faunal 1 pottery	
FTDBTP11			50	Positive	0-16	1 lithic tool, 5 lithic debitage, 15 faunal, 5 pottery	
FTDBTP12			60	Positive	36-50 50-60	1 lithic tool, 6 faunal 1 faunal	
FTDBTP13			50	Positive	0-15	1 lithic tool,17 faunal	
FTDBTP14			50	Positive	0-17	1 faunal, 2 possible ochre	
FTDBTP15			50	Positive	0-15	1 lithic debitage, 14 pottery	
FTDBTP16			50	Positive	9-15	1 lithic debitage, 15 faunal	
FTDBTP17			50	Positive	0-12	1 lithic debitage, 69 faunal	

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
FTDBTP18			50	Positive	0-16	4 lithic debitage, 13 faunal	
FTDBTP19			50	Positive	0-16	4 lithic debitage	
FTDBTP20			50	Positive	0-11	5 faunal	
FTDBTP21			50	Negative	N/A	N/A	
FTDBTP22			50	Positive	1-10	3 faunal	
FTDBTP23			50	Negative	N/A	N/A	
FTDBTP24			50	Positive	0-13	8 faunal	
FTDBTP25			50	Positive	0-11	3 faunal	
FTDBTP26			50	Negative	N/A	N/A	
FTDBTP27			50	Positive	10-15	1 lithic debitage, 1 faunal, 1 pottery	
FTDBTP28			50	Positive	0-12	2 faunal	
FTDBTP29			50	Negative	N/A	N/A	
FTEFTP01			53	Positive	5-15	1 lithic debitage, 1 faunal	
FTEFTP02			50	Positive	5-20	5 faunal	
FTEFTP03			50	Positive	7-25	2 faunal	
FTEFTP04			50	Positive	6-20	8 faunal	
FTEFTP05			50	Negative	N/A	N/A	
FTEFTP06			50	Positive	11-29 21-29	9 lithic debitage, 72 faunal 3 pottery	
FTEFTP07			60	Positive	14-28	2 lithic debitage, 8 faunal	

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
FTEFTP08	[redacted]	[redacted]	50	Positive	17-23 23-28	4 lithic debitage, 52 faunal, 6 pottery (1 Laurel) 2 lithic tools, 10 faunal	[redacted]
FTEFTP09			50	Positive	12-24	1 lithic tool, 3 lithic debitage, 10 faunal, 1 pottery 1 possible ochre	
FTEFTP10			50	Positive	9-19	11 faunal	
FTEFTP11			50	Negative	N/A	N/A	
FTEFTP12			60	Positive	43-45	7 faunal	
FTEFTP13			50	Negative	N/A	N/A	
FTEFTP14			50	Positive	8-21	9 faunal	
FTEFTP15			50	Negative	N/A	N/A	
FTKSTP1			50	Positive	5-20	6 lithic debitage, 21 faunal	
FTKSTP2			50	Negative	N/A	N/A	
FTKSTP3			50	Positive	6-17	4 lithic debitage	
FTKSTP4			50	Negative	N/A	N/A	
FTKSTP5			50	Negative	N/A	N/A	
FTKSTP6			50	Positive	5-10	1 lithic debitage	
FTKSTP7			50	Positive	7-10	1 lithic debitage	
FTKSTP8			50	Negative	N/A	N/A	
FTKSTP9			50	Positive	10	1 lithic debitage	

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
FTKSTP10	[redacted]	[redacted]	40	Positive	10-20 30	9 faunal, 18 charcoal 1 faunal	[redacted]
FTKSTP11			40	Positive	15-20	2 lithic debitage, 1 faunal	
FTKSTP12			50	Positive	10-15	1 lithic debitage	
FTKSTP13			40	Negative	N/A	N/A	
FTKSTP14			40	Positive	5-10	12 lithic debitage	
FTKSTP15			40	Negative	N/A	N/A	
FTKSTP16			40	Positive	5-14	1 lithic tool, 6 pottery	
FTKSTP17			40	Positive	7-14	4 faunal, 2 FCR	
FTKSTP18			40	Positive	6-10	2 lithic debitage	
FTKSTP19			50	Negative	N/A	N/A	
FTKSTP20			50	Negative	N/A	N/A	
FTKSTP21			40	Positive	6-10	1 faunal	
FTKSTP22			50	Positive	5-20	2 lithic debitage, 7 faunal	
FTKSTP23			40	Negative	N/A	N/A	
FTKSTP24			40	Negative	N/A	N/A	
FTKSTP25			45	Negative	N/A	N/A	
FTKSTP26			50	Negative	N/A	N/A	
FTKSTP27			40	Negative	N/A	N/A	
FTKSTP28			40	Negative	N/A	N/A	
FTLSTP01			50	Positive	26	17 faunal	

Test #	Easting	Northing	Total DBS (cm)	Result	Artifact DBS (cm)	Artifacts	Comments
	[redacted]						[redacted]
FTLSTP02			50	Negative	N/A	N/A	
FTLSTP03			50	Negative	N/A	N/A	
FTLSTP04			50	Negative	N/A	N/A	
FTLSTP05			50	Positive	12	1 lithic debitage	
S10LSTP06			60	Positive	47	1 faunal	
S10LSTP07			50	Positive	0-19	1 lithic tool, 4 lithic debitage, 21 faunal	
S10LSTP08			50	Positive	9	2 faunal	
S10LSTP09			50	Positive	20-30	3 lithic debitage, 14 faunal	
S10LSTP10			50	Positive	26	11 faunal	
S10LSTP11			50	Positive	19	43 faunal	
S10LSTP12			50	Positive	17 20	5 faunal 1 lithic debitage	
S10LSTP13			50	Positive	17	15 faunal	
S10LSTP14			50	Positive	21	1 lithic debitage, 1 faunal	
S10LSTP15			50	Positive	15	2 faunal	
S10LSTP16			50	Negative	N/A	N/A	
S10LSTP17			50	Negative	N/A	N/A	
S10LSTP18			50	Positive	12 20	1 faunal 1 projectile point, 1 lithic debitage	
S10LSTP19			50	Negative	N/A	N/A	

APPENDIX

F ARTIFACT CATALOGUES

Table F 1. Artifact Catalogue for EkLm-001 (Site 1).[1]

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
1	1	[redacted]		Surface Finds			Surface	Lithic	Tool	End Scraper; Entire; Chert; 23 mm L; 15 mm W; 8 mm T
2	1			Surface Finds			Surface	Lithic	Debitage	Flake; Tertiary; Chert
3	1			Surface Finds			Surface	Lithic	Debitage	Flake; Tertiary; Chert
4	2			Surface Finds			Surface	Lithic	Debitage	Flake; Shatter; Chert
5	1			Surface Finds			Surface	Lithic	Debitage	Flake; Secondary; Chert
6	5			Surface Finds			Surface	Lithic	Debitage	Flake; Tertiary; Chert
7	2			EFTP07	0-18	I	Screen	Lithic	Debitage	Flake; Secondary; Chert

[1] Appendix A: Figure 3.3-1

Table F 2. Artifact Catalogue for EkLn-001 (Site 2).[2]

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
1	1	[redacted]		Site02SF01			Surface	Lithic	Debitage	Flake; Secondary; Chert
2	1			Site02SF02			Surface	Lithic	Tool	Utilized Flake; Secondary Decortication; Lateral; Swan River Chert; 36.7 mm L; 25 mm W; 7.6 mm T; Heat treated
3	1			Site02SF02			Surface	Lithic	Debitage	Flake; Secondary; Swan River Chert; Heat treated
4	1			Site02SF03			Surface	Lithic	Tool	Retouched Flake; Secondary; Distal; Swan River Chert; 34.3 mm L; 29.1 mm W; 5.3 mm T; Heat treated
5	1			Site02SF03			Surface	Lithic	Tool	Utilized Flake; Secondary; Lateral; Swan River Chert; 17.5 mm L; 18 mm W; 4.9 mm T; Heat treated
6	1			Site02SF04			Surface	Lithic	Tool	Utilized Flake; Secondary; Lateral; Knife River Flint; 19 mm L; 13.8 mm W; 4.1 mm T: Some patination
7	1			Site02SF05			Surface	Lithic	Tool	Scraper; Thumb; Entire; Swan River Chert; 20.6 mm L; 22.4 mm W; 7.9 mm T; Heat treated
8	1			Site02SF05			Surface	Lithic	Tool	Utilized Flake; Secondary; Lateral; Swan River Chert; 23.8 mm L; 20.1 mm W; 4 mm T; Heat treated
9	1			Site02SF05			Surface	Lithic	Debitage	Flake; Primary Decortication; Chert
10	1			Site02SF05			Surface	Lithic	Debitage	Flake; Secondary Decortication; Chert
11	1			Site02SF06			Surface	Lithic	Tool	Projectile Point; Side-notch; Partial; Swan River Chert; 37.1 mm L; 19.3 mm W; 6.1 mm T; Heat treated. Besant? 1900-1100BP
12	1			Site02SF07			Surface	Lithic	Tool	Woodland Projectile Point; Triangular; Entire; Chert; 26.5 mm L; 20.4 mm W; 3.8 mm T; Eastern Triangular 1000-400BP
13	1			Site02SF08			Surface	Lithic	Tool	Projectile Point; Side-notch; Base; Chert; 10.8 mm L; 18.5 mm W; 4 mm T; Besant? 1900-1100BP
14	1			KSSF01			Surface	Lithic	Tool	Scraper; Side; Entire; Quartz; 52 mm L; 44 mm W; 17.4 mm T

[2] Appendix A: Figure 3.3-2

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
15	1	[redacted]		KSTP015	5-8	I	Screen	Lithic	Debitage	Flake; Primary Decortication; Chert
16	1			S02DBTP01	5-10	II	Screen	Lithic	Debitage	Flake; Secondary; Chert
17	2			EFTP10	0-6	I	Screen	Lithic	Debitage	Flake; Shatter; Chert
18	1			SF09			Surface	Lithic	Debitage	Flake; Primary Decortication; Swan River Chert
19	1			SF09			Surface	Lithic	Debitage	Flake; Secondary Chert
20	1			SF10			Surface	Lithic	Debitage	Core; Irregular; Chert
21	1			SF10			Surface	Lithic	Debitage	Flake; Secondary; Chert
22	1			SF10			Surface	Lithic	Debitage	Flake; Tertiary; Chert
23	1			SF11			Surface	Lithic	Debitage	Flake; Primary Decortication; Chert
24	1			SF11			Surface	Lithic	Debitage	Flake; Secondary; Swan River Chert
25	1			SF12			Surface	Lithic	Tool	Retouched Flake; Secondary; Lateral; Chert; 14.8 mm L; 11.1 mm W; 4.1 mm T
26	1			SF12			Surface	Lithic	Debitage	Flake; Secondary; Chert
27	1			SF15			Surface	Lithic	Debitage	Flake; Secondary Decortication; Chert
28	1			SF16			Surface	Lithic	Debitage	Flake; Secondary Decortication; Chert
29	1			SF17			Surface	Lithic	Tool	Scraper; Thumb; Distal; Chert; 25.7 mm L; 18.3 mm W; 4.7 mm T
30	1			SF18			Surface	Lithic	Debitage	Flake; Secondary; Chert
31	1			SF19			Surface	Lithic	Debitage	Flake; Primary Decortication; Quartz
32	1			SF20			Surface	Lithic	Debitage	Flake; Secondary; Chert
33	1			SF21			Surface	Lithic	Debitage	Flake; Secondary Decortication; Chert
34	1			SF22			Surface	Lithic	Debitage	Flake; Secondary; Chert
35	1			SF22			Surface	Lithic	Debitage	Flake; Primary Decortication; Chert
36	1			SF24			Surface	Lithic	Debitage	Flake; Primary Decortication; Chert
37	1			SF24			Surface	Lithic	Debitage	Flake; Secondary; Swan River Chert; Heat treated
38	1			SF25			Surface	Lithic	Debitage	Flake; Secondary; Chert
39	1			SF26			Surface	Lithic	Tool	Retouched Flake; Secondary; Lateral; Swan River Chert; 13.6 mm L; 10.6 mm W; 4.1 mm T; Heat treated
40	3			SF14			Surface	Lithic	Debitage	Flake; Primary Decortication; Chert
41	1			SF14			Surface	Lithic	Debitage	Flake; Secondary; Chert
42	1			SF13			Surface	Lithic	Tool	Scraper; Thumb; Distal; Chert; 30.8 mm L; 23.8 mm W; 10.1 mm T

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
43	1	[redacted]		SF13			Surface	Lithic	Tool	Scraper; Undetermined; Undetermined; Chert; 28.9 mm L; 29.9 mm W; 8.3 mm T
44	2			SurfaceConC			Surface	Lithic	Debitage	Flake; Primary Decortication; Chert
45	2			SurfaceConC			Surface	Lithic	Debitage	Flake; Secondary Decortication; Chert
46	4			SurfaceConC			Surface	Lithic	Debitage	Flake; Secondary; Chert
47	3			SurfaceConC			Surface	Lithic	Debitage	Flake; Tertiary; Chert
48	1			S2DBS01			Surface	Lithic	Debitage	Flake; Secondary; Chert
49	1			S2LSS01			Surface	Lithic	Tool	Scraper; End; Distal; Swan River Chert; 39.4 mm L; 26.9 mm W; 5.8 mm T; Heat treated
50	1			S2LSS01			Surface	Lithic	Debitage	Flake; Primary Decortication; Chert
51	3			S2LSS01			Surface	Lithic	Debitage	Flake; Secondary; Chert
52	1			S2LSS01			Surface	Lithic	Debitage	Flake; Tertiary; Chert
53	1			S2LSS01			Surface	Lithic	Debitage	Flake; Secondary; Quartz
54	1			S2LSTP02	20	II	Screen	Lithic	Debitage	Flake; Shatter; Chert
55	1			S2KSTP8	0-5	I	Screen	Lithic	Debitage	Flake; Secondary Decortication; Chert
56	1			S2KSTP10	5	I	Screen	Lithic	Debitage	Flake; Primary Decortication; Chert
57	1			S2KSTP14	5	I	Screen	Lithic	Debitage	Flake; Shatter; Chert
58	1			S2KSTP14	5	I	Screen	Lithic	Debitage	Flake; Secondary Decortication; Chert
59	1			S2KSTP15	1-5	I	Screen	Lithic	Debitage	Flake; Tertiary; Chert
60	1			S2KSTP17	8	I	Screen	Lithic	Debitage	Flake; Secondary Decortication; Chert
61	1			S02EFTP001	26-32	IV	Screen	Lithic	Debitage	Flake; Secondary; Chert
62	1			S02EFTP004	15	II	Screen	Lithic	Debitage	Flake; Primary Decortication; Chert
63	1			KSSurfaceConC			Surface	Lithic	Debitage	Flake; Tertiary; Chert

Table F 3. Artifact Catalogue for EiLp-002 (Site 3).[3]

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
1	1	[redacted]		Site03SF01			Surface	Lithic	Tool	Retouched Flake; Secondary; Lateral; Chert; 42.2 mm L; 28.6 mm W; 9.3 mm T
2	1			Site03SF02			Surface	Lithic	Debitage	Flake; Secondary; Chert
3	1			Site03Scraper			Surface	Lithic	Tool	Scraper; End; Entire; Chert; 35.2 mm L; 16.9 mm W; 7 mm T; Some patination

[3] Appendix A: Figure 3.3-3

Table F 4. Artifact Catalogue for EiLp-004 (Site 5).[4]

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
1	1	[redacted]		Site05SF01			Surface	Lithic	Debitage	Flake; Secondary; Swan River Chert
2	1			Site05SF02			Surface	Lithic	Debitage	Flake; Secondary; Chert
3	1			Site05SF03			Surface	Lithic	Debitage	Flake; Tertiary; Chert
4	1			Site05SF04			Surface	Lithic	Debitage	Core; Irregular; Silicified Siltstone; Red in colour
5	1			Site05Scraper			Surface	Lithic	Tool	Scraper; End; Entire; Silicified Siltstone; 28.7 mm L; 15.4 mm W; 5.1 mm T; Red with brown stripes

[4] Appendix A: Figure 3.3-5

Table F 5. Artifact Catalogue for EiLp-005 (Site 6).[5]

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
1	1	[redacted]		S6LSTP02	0-24	I	Screen	Lithic	Debitage	Flake; Secondary; Swan River Chert

[5] Appendix A: Figure 3.3-6

Table F 6. Artifact Catalogue for EhLp-003 (Site 7).[6]

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
1	1	[redacted]		S7KSTP1	0-10	I	Screen	Kitchen	Holloware	Serving Bowl; Base; Glass; Pyrex, Model 465. 1950's
2	2			S7KSTP1	0-10	I	Screen	Kitchen	Container	Bottle; Soda; Body; Glass; Green glass Mountain Dew 1980-1996
3	1			S7KSTP1	0-10	I	Screen	Kitchen	Holloware	Mug; Base/Body; Glass; Federal Heat Proof Glass 1960's
4	1			S7KSTP1	10-20	II	Screen	Kitchen	Container	Bottle; Liquor; Base; Glass; Dominion Glass, Mfg May-June, Redcliff, 1961. #4468
5	1			S7KSTP1	30-40	II	Screen	Lithic	Debitage	Flake; Secondary; Swan River Chert; Heat-treated
6	1			S7KSTP1	55-60	III	Screen	Lithic	Debitage	Flake; Primary Decortication; Swan River Chert; Heat-treated

[6] Appendix A: Figure 3.3-7

Table F 7. Artifact Catalogue for EhLp-004 (Site 8).[7]

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
1	1	[redacted]		Site08Scraper			Surface	Lithic	Tool	Biface; Semi-lunate; Entire; Swan River Chert; 36.6 mm L; 16.3 mm W ; 5.6 mm T; Bifacially worked around entire circumference.
2	1			Site08Scraper			Surface	Lithic	Tool	Scraper; End; Entire; Chert; 0.6 mm L; 19.7 mm W; 9.7 mm T; Heavily waterworn.
3	1			Site08Biface			Surface	Lithic	Tool	Biface; Irregular; Partial; Swan River Chert; 41 mm L; 30.9 mm W; 10.6 mm T; Heat-treated.
4	2			Site08Biface			Surface	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Heavily waterworn.
5	3			S8DBTP02	50-60	V	Screen	Lithic	Debitage	Flake; Secondary; Chert; Heavily waterworn.
6	1			S8DBTP03	38	III	Screen	Lithic	Debitage	Flake; Tertiary; Chert
7	1			S8DBTP03	40-52	IV	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Heavily waterworn.
8	1			S8DBTP03	40-52	IV	Screen	Faunal	Lg. Mammal	Carpal; Undetermined; Epiphysis; Bone; Heavily waterworn.
9	1			S8DBTP05	50	IV	Screen	Lithic	Debitage	Flake; Tertiary; Chert; Heavily waterworn.
10	1			S8DBTP05	50	IV	Screen	Lithic	Debitage	Flake; Tertiary; Chert
11	1			S8DBTP05	70	V	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Heavily waterworn.
12	1			S8DBTP06			Surface	Lithic	Tool	Scraper; Lateral; Entire; Swan River Chert; 36.33 mm L; 24.5 mm W; 5.9 mm T; Unifacially worked on one lateral edge. Heavily waterworn.
13	1			S8DBTP06	33	I	Screen	Lithic	Tool	Archaic Projectile Point; Corner-notch; Entire; Knife River Flint; 27 mm L; 16.9 mm W; 6 mm T; Duncan Point. Patinated and heavily waterworn.
14	1			S8DBTP06	33	I	Screen	Faunal	Lg. Mammal	Tooth; Undetermined; Partial; Enamel/Bone
15	1			S8DBTP06	33	I	Screen	Faunal	Lg. Mammal	Undetermined; Undetermined; Undetermined; Bone

[7] Appendix A: Figure 3.3-8

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
16	1	[redacted]		S8DBTP06	43	I	Screen	Faunal	Lg. Mammal	Tooth; Undetermined; Partial; Enamel/Bone
17	1			S8DBTP06	43	I	Screen	Faunal	Md-Lg.Mammal	Undetermined; Undetermined; Undetermined; Bone; Heavily waterworn.
18	1			S8DBTP06	43	I	Screen	Faunal	Lg. Mammal	Undetermined; Undetermined; Undetermined; Bone;
19	1			S8DBTP06	43	I	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Digested. Heavily waterworn.
20	1			S8DBTP06	65	III	Screen	Lithic	Debitage	Flake; Secondary; Chert
21	1			S8DBTP08	21	II	Screen	Lithic	Debitage	Flake; Secondary; Chert
22	3			S08SF01			Surface	Lithic	Debitage	Flake; Secondary; Chert
23	3			S08EFTP02	16-112	II-V	Screen	Faunal	Md.Bird	Longbone; Undetermined; Diaphysis; Bone
24	1			S08EFTP02	16-112	II-V	Screen	Lithic	Debitage	Flake; Secondary; Quartzite
25	2			S08EFTP02	16-112	II-V	Screen	Lithic	Debitage	Flake; Primary Decortication; Chert; Carbonate cortex. Heavily waterworn.
26	1			S08EFTP02	16-112	II-V	Screen	Lithic	Debitage	Flake; Primary Decortication; Chert
27	2			S08EFTP02	16-112	II-V	Screen	Lithic	Debitage	Flake; Secondary Decortication; Chert; Carbonate cortex. Heavily waterworn.
28	5			S08EFTP02	16-112	II-V	Screen	Lithic	Debitage	Flake; Secondary; Chert; Heavily waterworn.
29	3			S08EFTP02	16-112	II-V	Screen	Lithic	Debitage	Flake; Tertiary; Chert; Heavily waterworn.
30	2			S08EFTP02	16-112	II-V	Screen	Faunal	Lg. Mammal	Tooth; Undetermined; Undetermined; Enamel/Bone; Heavily waterworn.
31	1			S08EFTP02	16-112	II-V	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Heavily waterworn.
32	4			S08EFTP02	16-112	II-V	Screen	Faunal	Md-Lg.Mammal	Undetermined; Undetermined; Undetermined; Bone; Heavily waterworn.
33	4			S08EFTP02	16-112	II-V	Screen	Faunal	Fish	Undetermined; Undetermined; Undetermined; Bone
34	1			S08EFTP02	79-112	V	Screen	Ceramic	Woodland	Undetermined; Undetermined; Body; Clay/Granite/Quartz; 21.9 mm L; 20.3 mm W; 5.1 mm T; Heavily waterworn. No distinct markings.

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
35	2	[redacted]		S08EFTP03	14-25	II	Screen	Lithic	Debitage	Flake; Primary Decortication; Chert; Carbonate cortex. Heavily waterworn.
36	1			S08EFTP03	14-25	II	Screen	Lithic	Debitage	Flake; Shatter; Quartz
37	5			S08EFTP03	14-25	II	Screen	Lithic	Debitage	Flake; Secondary; Chert; Heavily waterworn.
38	1			S08EFTP03	25-58	III-IV	Screen	Lithic	Debitage	Flake; Shatter; Knife River Flint
39	1			S08EFTP03	25-58	III-IV	Screen	Lithic	Debitage	Flake; Primary Decortication; Chert; Heavily waterworn.
40	6			S08EFTP03	25-58	III-IV	Screen	Lithic	Debitage	Flake; Secondary; Chert; Heavily waterworn.
41	1			S08EFTP03	25-58	III-IV	Screen	Lithic	Debitage	Flake; Tertiary; Chert
42	1			S08EFTP03	60-130	IV-IX	Screen	Lithic	Tool	Biface; Undetermined; Partial; Swan River Chert; 45.7 mm L; 27.6 mm W; 14.5 mm T; Broken. Heavily waterworn.
43	1			S08EFTP03	60-130	IV-IX	Screen	Lithic	Debitage	Flake; Shatter; Quartz
44	2			S08EFTP03	60-130	IV-IX	Screen	Lithic	Debitage	Flake; Primary Decortication; Chert; Carbonate cortex. Heavily waterworn.
45	5			S08EFTP03	60-130	IV-IX	Screen	Lithic	Debitage	Flake; Secondary Decortication; Chert; Carbonate cortex. Heavily waterworn.
46	2			S08EFTP03	60-130	IV-IX	Screen	Lithic	Debitage	Flake; Secondary; Swan River Chert
47	26			S08EFTP03	60-130	IV-IX	Screen	Lithic	Debitage	Flake; Secondary; Chert; Heavily waterworn.
48	3			S08EFTP03	60-130	IV-IX	Screen	Lithic	Debitage	Flake; Tertiary; Chert; Heavily waterworn.
49	5			S08EFTP03	60-130	IV-IX	Screen	Faunal	Lg. Mammal	Tooth; Undetermined; Undetermined; Enamel/Bone; Heavily waterworn.
50	5			S08EFTP03	60-130	IV-IX	Screen	Faunal	Md-Lg.Mammal	Undetermined; Undetermined; Undetermined; Bone; Heavily waterworn.
51	1			S08EFTP03	60-130	IV-IX	Screen	Lithic	Tool	Retouched Flake; Secondary; Lateral; Swan River Chert; 30.6 mm L; 17.5 mm W; 5.3 mm T; Heavily waterworn.
52	1			S08EFTP03	60-130	IV-IX	Screen	Lithic	Debitage	Flake; Primary Decortication; Chert; Carbonate cortex.
53	1			S08EFTP03	60-130	IV-IX	Screen	Lithic	Debitage	Flake; Secondary; Swan River Chert
54	2			S08EFTP03	60-130	IV-IX	Screen	Lithic	Debitage	Flake; Shatter; Chert; Heavily waterworn.
55	2			S08EFTP03	60-130	IV-IX	Screen	Lithic	Debitage	Flake; Secondary; Chert; Heavily waterworn.

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
56	1	[redacted]		S08EFTP03	60-130	IV-IX	Screen	Faunal	Lg. Mammal	Tooth; Undetermined; Undetermined; Enamel/Bone; Heavily waterworn.
57	1			S08EFTP03	60-130	IV-IX	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Heavily waterworn.
58	3			S08EFTP03	60-130	IV-IX	Screen	Faunal	Md-Lg.Mammal	Undetermined; Undetermined; Undetermined; Bone; Heavily waterworn.
59	1			S08EFTP03	60-130	IV-IX	Screen	Faunal	Md.Bird	Longbone; Undetermined; Epiphysis; Bone
60	1			S08EFTP03	60-130	IV-IX	Screen	Faunal	Walleye	Dentary; Left; Partial; Bone; Well preserved.
61	2			S08EFTP03	60-130	IV-IX	Screen	Faunal	Northern Pike?	Vertebrae; Entire; Bone; Well preserved.
62	2			S08EFTP03	60-130	IV-IX	Screen	Faunal	Fish	Vertebrae; Partial; Bone; Well preserved.
63	1			S08EFTP03	60-130	IV-IX	Screen	Faunal	Fish	Vomer; Partial; Bone; Well preserved.
64	3			S08EFTP03	60-130	IV-IX	Screen	Faunal	Fish	Undetermined; Undetermined; Undetermined; Bone; Well preserved.
65	1			S08EFTP03	120-130	VII-IX	Screen	Faunal	Bison	Tibia; Undetermined; Diaphysis; Bone; Heavily waterworn.
66	1			S8KSTP1	20-30	III	Screen	Lithic	Debitage	Flake; Shatter; Chert; Carbonate cortex.
67	1			S8KSTP2	20-25	III	Screen	Lithic	Debitage	Flake; Tertiary; Chert; Heavily waterworn.
68	1			S8KSTP2	30-35	IV	Screen	Lithic	Tool	Chopper; Biface; Entire; Chert; 91.8 mm L; 63 mm W; 28.5 mm T; Bifacially worked on one lateral edge. Carbonate cortex on majority of tool.
69	1			S8KSTP3	50	IV	Screen	Lithic	Debitage	Flake; Secondary; Swan River Chert; Heat-treated.
70	1			S8KSTP4	70-75	IV	Screen	Lithic	Debitage	Flake; Secondary; Chert
71	1			S8KSTP4	70-75	IV	Screen	Faunal	Fish	Vomer; Partial; Bone
72	14			S8KSTP4	70-75	IV	Screen	Faunal	Fish	Undetermined; Bone
73	1			S8KSTP5	20-30	II	Screen	Lithic	Debitage	Flake; Secondary; Swan River Chert; Fossil imprint visible.
74	1			S8KSTP6	10-20	I	Screen	Lithic	Tool	Retouched Flake; Secondary; Lateral; Chert; 37.3 mm L; 14.8 mm W; 4.4 mm T; Unifacially worked on both lateral edges.

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
75	1	[redacted]		S8KSTP6	10-20	I	Screen	Lithic	Debitage	Flake; Secondary Decortication; Chert; Carbonate cortex.
76	1			S8KSTP6	10-20	I	Screen	Lithic	Debitage	Flake; Secondary Decortication; Chert
77	1			S8KSTP6	10-20	I	Screen	Lithic	Debitage	Flake; Secondary Decortication; Chert
78	1			S8KSTP6	30-40	II-III	Screen	Lithic	Debitage	Flake; Secondary Decortication; Chert; Carbonate cortex.
79	1			S8KSTP6	30-40	II-III	Screen	Lithic	Debitage	Flake; Secondary; Chert; Heavily waterworn.
80	1			S8KSTP6	55-60	III	Screen	Lithic	Tool	Archaic Projectile Point; Basal-notch; Entire; Swan River Chert; 27.7 mm L; 20.6 mm W; 5.8 mm T; McKean point. Heat-treated and waterworn.
81	1			S8KSTP6	55-60	III	Screen	Lithic	Debitage	Flake; Secondary; Swan River Chert
82	2			S8KSTP6	55-60	III	Screen	Lithic	Debitage	Flake; Secondary; Chert; Heavily waterworn.
83	1			S8KSTO7	20-30	II	Screen	Lithic	Debitage	Flake; Secondary; Chert; Heavily waterworn.
84	1			S8KSTP8	35-40	II	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Heavily waterworn.
85	1			S8LSTP02	30	II	Screen	Lithic	Debitage	Flake; Secondary; Chert
86	1			S8LSTP04	20	I	Screen	Lithic	Debitage	Flake; Secondary; Chert; Heavily waterworn.
87	2			S8LSTP04	20	I	Screen	Faunal	Lg. Mammal	Tooth; Undetermined; Enamel/Bone; Heavily waterworn.
88	1			S8LSTP04	35-63	II	Screen	Lithic	Debitage	Flake; Secondary; Chert; Heavily waterworn.
89	1			S8LSTP04	35-63	II	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone
90	6			S8LSTP04	35-63	II	Screen	Faunal	Fish	Undetermined; Bone
91	1			S8LSTP04	75-84	III	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Epiphysis; Bone; Foramen present. Heavily waterworn.
92	1			S8LSTP05	38	V	Screen	Lithic	Tool	Woodland Projectile Point; Side-notch; Partial; Chert; 23.4 mm L; 14.2 mm W; 5.7 mm T; Hard to identify due to the amount of weathering. Made from chert material found at beach.
93	1			S8LSTP05	79	VII	Screen	Faunal	Bison	Cranium; Horn core; Bone; Heavily waterworn. Possibly burnt.

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
94	1	[redacted]		S8LSTP05	79	VII	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Heavily waterworn.
95	1			S8LSTP06	5	I	Screen	Lithic	Tool	Retouched Flake; Secondary; Distal; Chert; 25.8 mm L; 20.4 mm W; 5 mm T; Unifacially worked on at least one edge, possibly more. Heavily waterworn.
96	1			S8LSTP06	5	I	Screen	Lithic	Debitage	Flake; Secondary; Chert; Carbonate cortex. Heavily waterworn.
97	1			S8LSTP06	40	III	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Heavily waterworn.

Table F 8. Artifact Catalogue for EhLp-005 (Site 9).[8]

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
1	1	[redacted]		BCKSTP2	0-12	I	Screen	Architectural	Window	Pane; Single, wire; Fragment; Glass, metal; 7 mm T; Fire retardant glass. "Maze" wire glass. Mississippi Wire Glass Co. 1873-1970's
2	1			BCDBTP04			Surface	Architectural	Hardware	Door; Face Plate; Brass; 175 mm L; 65 mm W; 2 mm T; Oval beaded edge door knob back plate with keyhole. Round holes for screws.
3	1			BCEFTP01	8-57	II	Screen	Architectural	Hardware	Lock; Chest/Trunk; Latch; Ferrous; 75 mm T; 59 mm W; 13.3 mm T; Male latch portion. 3 nails look square – either hand wrought or machine-cut. Mid 1800's to early 1900's.
4	1			BCEFTP01	8-57	II	Screen	Architectural	Hardware	Door; Face Plate; Ferrous; 7.5 mm T; Partial. Rectangular in shape. Round holes for screws.
5	1			BCEFTP01	8-57	II	Screen	Undetermined	Undetermined	Plate; Partial; Non-ferrous; 5.2 mm T; Rectangular in shape. Machine-cut on sides. Possible lead based. 3 wire nails present.
6	1			Grinding Stone			Surface	Activities	Metalworking	Grindstone; Sandstone; 220 mm L; 220 mm W; 49 mm T; Heavily used. Worn on an angle. Centre hole slightly off-centre.
7	1			BCDBTP02	25		Screen	Faunal	Lg.Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt

[8] Appendix A: Figure 3.3-9

Table F 9. Artifact Catalogue for EhLp-006 (Site 10).[9]

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
1	4	[redacted]		FTKSTP3	6-17	II	Screen	Lithic	Debitage	Flake; Tertiary; Swan River Chert
2	1			FTKSTP6	5-10	II	Screen	Lithic	Debitage	Flake; Tertiary; Knife River Flint; Patinated.
3	1			FTKSTP7	7-10	II	Screen	Lithic	Debitage	Flake; Secondary; Silicified Siltstone
4	2			FTKSTP1	5-20	II	Screen	Lithic	Debitage	Flake; Tertiary; Knife River Flint; Cortex patinated.
5	1			FTKSTP1	5-20	II	Screen	Lithic	Debitage	Flake; Primary Decortication; Chert; Carbonate cortex.
6	1			FTKSTP1	5-20	II	Screen	Lithic	Debitage	Flake; Tertiary; Swan River Chert; Heat-treated.
7	2			FTKSTP1	5-20	II	Screen	Lithic	Debitage	Flake; Secondary; Chert
8	15			FTKSTP1	5-20	II	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Burnt
9	5			FTKSTP1	5-20	II	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
10	1			FTKSTP1	5-20	II	Screen	Faunal	Fish	Undetermined; Bone; Burnt
11	1			FTLSTP01	26	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone
12	1			FTLSTP01	26	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Calcined
13	15			FTLSTP01	26	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone
14	1			FTLSTP05	12	II	Screen	Lithic	Debitage	Flake; Tertiary; Knife River Flint
15	1			FTDBTP03	20-30	II	Screen	Lithic	Debitage	Flake; Secondary; Chert
16	1			FTDBTP07	15	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone
17	1			FTDBTP08	12	I	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Epiphysis; Bone; x4 pieces refit
18	2			FTDBTP08	12	I	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone
19	5			FTDBTP08	12	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone

[9] Appendix A: Figure 3.3-10

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
20	2	[redacted]		FTDBTP09	0-17	I	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Burnt
21	1			FTDBTP09	0-17	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
22	1			FTDBTP09	0-17	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone
23	1			FTDBTP09	17-24	II	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; x2 pieces refit
24	1			FTDBTP09	17-24	II	Screen	Faunal	Lg. Mammal	Undetermined; Bone
25	1			FTEFTP01	5-15	II	Screen	Lithic	Debitage	Flake; Secondary; Silicified Siltstone
26	1			FTEFTP01	5-15	II	Screen	Faunal	Fish	Dentary; Undetermined; Partial; Bone
27	5			FTEFTP02	5-20	II	Screen	Faunal	Lg. Mammal	Undetermined; Bone
28	2			FTEFTP03	7-25	II-III	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone
29	7			FTEFTP04	6-20	II-III	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone
30	1			FTEFTP04	6-20	II-III	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
31	1			FTEFTP06	21-29	III	Screen	Ceramic	Woodland	Undetermined; Plain; Body; Clay/Granite/Quartz; 6.5 mm T;
32	5			FTEFTP06	11-29	II-III	Screen	Lithic	Debitage	Flake; Tertiary; Knife River Flint
33	2			FTEFTP06	11-29	II-III	Screen	Lithic	Debitage	Flake; Shatter; Chert; Potlid scars
34	1			FTEFTP06	11-29	II-III	Screen	Lithic	Debitage	Flake; Secondary; Chert; Potlid scars
35	1			FTEFTP06	11-29	II-III	Screen	Lithic	Debitage	Flake; Secondary; Swan River Chert
36	1			FTEFTP06	11-29	II-III	Screen	Faunal	Lg. Mammal	Metapodial; Undetermined; Distal; Bone; Gnaw mark?
37	26			FTEFTP06	11-29	II-III	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
38	1			FTEFTP06	11-29	II-III	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; x2 pieces refit
39	1			FTEFTP06	11-29	II-III	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Calcined
40	5			FTEFTP06	11-29	II-III	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
41	7	[redacted]		FTEFTP06	11-29	II-III	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone; Burnt
42	7			FTEFTP06	11-29	II-III	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
43	17			FTEFTP06	11-29	II-III	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone
44	5			FTEFTP06	11-29	II-III	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
45	1			FTEFTP06	11-29	II-III	Screen	Faunal	Md. Bird	Coracoid; Undetermined; Proximal; Bone; Burnt
46	1			FTEFTP06	11-29	II-III	Screen	Faunal	Fish	Vomer; Partial; Bone; Burnt
47	1			FTDBTP10	14	I	Screen	Ceramic	Woodland	Undetermined; Body; Clay/Granite/Quartz
48	1			FTDBTP10	0-16	I	Screen	Faunal	Fish	Vomer; Partial; Bone
49	1			FTDBTP10	0-16	I	Screen	Faunal	Md. Bird	Longbone; Undetermined; Diaphysis; Bone
50	3			FTDBTP10	0-16	I	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
51	1			FTDBTP10	0-16	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
52	3			FTDBTP10	0-16	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone
53	2			FTDBTP10	0-16	I	Screen	Faunal	Md. Bird	Undetermined; Bone
54	1			FTDBTP10	0-16	I	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone
55	2			FTEFTP06	21-29	III	Screen	Ceramic	Woodland	Undetermined; Body; Clay/Granite/Quartz
56	1			FTDBTP11	0-16	I	Screen	Ceramic	Woodland	Undetermined; Plain; Body; Clay/Granite/Quartz; 6.4 mm T
57	1			FTDBTP11	0-16	I	Screen	Ceramic	Woodland	Undetermined; Plain; Body; Clay/Granite/Quartz; 4.6 mm T
58	3			FTDBTP11	0-16	I	Screen	Ceramic	Woodland	Undetermined; Body; Clay/Granite/Quartz

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
59	1	[redacted]	[redacted]	FTDBTP11	0-16	I	Screen	Lithic	Tool	Utilized Flake; Secondary; Lateral; Swan River Chert; 20 mm L; 15.8 mm W; 4.2 mm T
60	3			FTDBTP11	0-16	I	Screen	Lithic	Debitage	Flake; Shatter; Chert
61	1			FTDBTP11	0-16	I	Screen	Lithic	Debitage	Flake; Secondary; Chert
62	1			FTDBTP11	0-16	I	Screen	Lithic	Debitage	Flake; Secondary Decortication; Swan River Chert; Heat-treated.
63	1			FTDBTP11	0-16	I	Screen	Faunal	Fish	Undetermined; Bone
64	1			FTDBTP11	0-16	I	Screen	Faunal	Fish	Scale; Partial; Bone
65	1			FTDBTP11	0-16	I	Screen	Faunal	Bird	Undetermined; Bone; Burnt
66	1			FTDBTP11	0-16	I	Screen	Faunal	Sm-Md.Mammal	Undetermined; Bone
67	4			FTDBTP11	0-16	I	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Digested?
68	5			FTDBTP11	0-16	I	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
69	1			FTDBTP11	0-16	I	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
70	1			FTDBTP11	0-16	I	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone; Burnt
71	1			FTDBTP12	36-50	II	Screen	Lithic	Tool	Retouched Flake; Secondary; Lateral; Chert; 36.7 mm L; 24.9 mm W; 12.6 mm T; Unifacially worked on one lateral edge.
72	1			FTDBTP12	36-50	II	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
73	4			FTDBTP12	36-50	II	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
74	1			FTDBTP12	36-50	II	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone
75	1			FTDBTP12	50-60	III	Screen	Faunal	Sm-Md.Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt. X2 pieces refit.

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
76	1	[redacted]		FTDBTP13	0-15	I	Screen	Lithic	Tool	Retouched Flake; Secondary; Lateral; Swan River Chert; 35.9 mm L; 13.3 mm W; 5.8 mm T; Unifacially worked on one lateral edge. Heat-treated. X2 pieces refit.
77	5			FTDBTP13	0-15	I	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
78	6			FTDBTP13	0-15	I	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Gnaw marks. Burnt.
79	6			FTDBTP13	0-15	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
80	1			FTDBTP14	0-17	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone
81	2			FTDBTP14	0-17	I	Screen	Soil Sample	Soil Sample	Ochre?; Soil Sample ; Possible ochre
82	1			FTDBTP15	0-15	I	Screen	Ceramic	Woodland	Undetermined; Plain; Body; Clay/Granite/Quartz; 7.3 mm T
83	13			FTDBTP15	0-15	I	Screen	Ceramic	Woodland	Undetermined; Plain; Body; Clay/Granite/Quartz
84	1			FTDBTP15	0-15	I	Screen	Lithic	Debitage	Flake; Secondary; Swan River Chert
85	1			FTDBTP16	9-15	III	Screen	Lithic	Debitage	Flake; Secondary; Quartz
86	3			FTDBTP16	9-15	III	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
87	2			FTDBTP16	9-15	III	Screen	Faunal	Md-Lg.Mammal	Rib; Undetermined; Body; Bone; Burnt
88	10			FTDBTP16	9-15	III	Screen	Faunal	Lg. Mammal	Undetermined; Bone
89	1			FTDBTP17	0-12	I	Screen	Lithic	Debitage	Flake; Secondary Decortication; Swan River Chert; Carbonate cortex.
90	21			FTDBTP17	0-12	I	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Burnt
91	1			FTDBTP17	0-12	I	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
92	18			FTDBTP17	0-12	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
93	29	[redacted]		FTDBTP17	0-12	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
94	5			FTDBTP18	0-16	I	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
95	7			FTDBTP18	0-16	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
96	1			FTDBTP18	0-16	I	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone; Burnt
97	2			FTDBTP19	0-16	I	Screen	Lithic	Debitage	Flake; Tertiary; Knife River Flint
98	1			FTDBTP19	0-16	I	Screen	Lithic	Debitage	Flake; Secondary; Chert
99	1			FTDBTP19	0-16	I	Screen	Lithic	Debitage	Flake; Tertiary; Chert
100	1			FTDBTP20	0-11	I	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
101	4			FTDBTP20	0-11	I	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Burnt
102	1			FTDBTP22	1-10	I	Screen	Faunal	Fish	Ceratohyal; Undetermined; Partial; Bone; Burnt
103	2			FTDBTP22	1-10	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
104	3			FTDBTP24	0-13	I	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Burnt
105	5			FTDBTP24	0-13	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
106	2			FTDBTP25	0-11	I	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone
107	1			FTDBTP25	0-11	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone
108	1			FTDBTP27	10-15	I	Screen	Ceramic	Terminal Woodland	Undetermined; Fabric-impressed; Body; Clay/Granite/Quartz; 6.2 mm T
109	1			FTDBTP27	10-15	I	Screen	Lithic	Debitage	Flake; Tertiary; Chert
110	1			FTDBTP27	10-15	I	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; x2 pieces refit
111	1			FTDBTP28	0-12	I	Screen	Faunal	Lg. Mammal	Carpal; Undetermined; Epiphysis; Bone

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
112	1	[redacted]		FTDBTP28	0-12	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
113	1			FTKSTP9	10	II	Screen	Lithic	Debitage	Flake; Primary Decortication; Chert; Carbonate cortex.
114	18			FTKSTP10	10-20	III	Screen	Floral	Undetermined	Wood; Charcoal; Fragments; Wood/Charcoal; Charcoal samples.
115	1			FTKSTP10	10-20	III	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Calcined
116	1			FTKSTP10	10-20	III	Screen	Faunal	Fish	Vertebrae; Complete; Bone; 12.8 mm L; 10.2 mm W; 6.7 mm T
117	1			FTKSTP10	10-20	III	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt, boiled
118	3			FTKSTP10	10-20	III	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
119	1			FTKSTP10	10-20	III	Screen	Faunal	Fish	Angular; Left; Partial; Bone
120	1			FTKSTP10	10-20	III	Screen	Faunal	Fish	Undetermined; Bone
121	1			FTKSTP10	10-20	III	Screen	Faunal	Rabbit?	Vertebrae; Cervical; Complete; Bone; 10.7 mm L; 10.5 mm W; 8.4 mm T; Small mammal, possibly rabbit.
122	1			FTKSTP10	30	IV	Screen	Faunal	Frog	Longbone; Undetermined; Complete; Bone; 20.7 mm L; 4.8 mm W; 2.4 mm T
123	1			FTKSTP11	15-20	II	Screen	Lithic	Debitage	Flake; Tertiary; Swan River Chert
124	1			FTKSTP11	15-20	II	Screen	Lithic	Debitage	Flake; Shatter; Swan River Chert
125	1			FTKSTP11	15-20	II	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone; Calcined
126	1			FTKSTP12	10-15	II	Screen	Lithic	Debitage	Flake; Secondary; Knife River Flint; Patinated.
127	1			FTKSTP14	5-10	II	Screen	Lithic	Debitage	Flake; Secondary; Knife River Flint
128	9			FTKSTP14	5-10	II	Screen	Lithic	Debitage	Flake; Tertiary; Knife River Flint
129	2			FTKSTP14	5-10	II	Screen	Lithic	Debitage	Flake; Tertiary; Knife River Flint; Patinated.
130	1			FTKSTP16	5-14	II	Screen	Ceramic	Initial Woodland	Laurel; Incised; Body; Clay/Granite/Quartz; 7 mm T; Incised parallel lines 6mm apart.
131	2			FTKSTP16	5-14	II	Screen	Ceramic	Woodland	Undetermined; Body; Clay/Granite/Quartz; 7.5 mm T
132	1			FTKSTP16	5-14	II	Screen	Ceramic	Woodland	Undetermined; Body; Clay/Granite/Quartz; 6.5 mm T

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
133	2	[redacted]		FTKSTP16	5-14	II	Screen	Ceramic	Woodland	Undetermined; Body; Clay/Granite/Quartz
134	1			FTKSTP16	5-14	II	Screen	Lithic	Tool	Biface; Undetermined; Partial; Chert; 31.5 mm L; 29.1 mm W; 12.8 mm T; Crude biface with cortex on one side. One lateral edge bifacially worked.
135	2			FTKSTP17	7-14	II	Screen	Cooking	FCR	FCR; Granite; Fire-cracked rock.
136	4			FTKSTP17	7-14	II	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone
137	1			FTKSTP18	6-10	II	Screen	Lithic	Debitage	Flake; Secondary; Knife River Flint
138	1			FTKSTP18	6-10	II	Screen	Lithic	Debitage	Flake; Primary Decortication; Chert
139	1			FTKSTP21	6-10	II	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
140	1			FTKSTP22	5-20	II	Screen	Lithic	Debitage	Flake; Primary Decortication; Chert; Carbonate cortex.
141	1			FTKSTP22	5-20	II	Screen	Lithic	Debitage	Core; Irregular; Quartz; Poor quality quartz. Maybe used for temper.
142	1			FTKSTP22	5-20	II	Screen	Faunal	Bison	3rd Phalanx; Left Lateral/Right Medial; Complete; Bone; 73 mm L; 45.5 mm W; 27 mm T; x2 pieces refit
143	3			FTKSTP22	5-20	II	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone
144	2			FTKSTP22	5-20	II	Screen	Faunal	Lg. Mammal	Undetermined; Bone
145	1			FTKSTP22	5-20	II	Screen	Faunal	Fish	Undetermined; Bone; Burnt
146	1			S10LSTP06	47	II	Screen	Faunal	Md-Lg.Mammal	Longbone; Undetermined; Complete; Bone; 36.9 mm L; 7 mm W; 5.4 mm T; Unfused. Fetal.
147	3			S10LSTP07	0-19	I	Screen	Faunal	Md-Lg.Mammal	Rib; Undetermined; Body; Bone; Calcined
148	2			S10LSTP07	0-19	I	Screen	Faunal	Fish	Vertebrae; Partial; Bone
149	3			S10LSTP07	0-19	I	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
150	1			S10LSTP07	0-19	I	Screen	Faunal	Md-Lg.Bird	Undetermined; Bone; Burnt
151	10			S10LSTP07	0-19	I	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Burnt

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
152	2	[redacted]		S10LSTP07	0-19	I	Screen	Faunal	Undetermined	Undetermined; Bone
153	1			S10LSTP07	0-19	I	Screen	Lithic	Tool	Retouched Flake; Secondary; Lateral; Knife River Flint; 17.9 mm L; 6.2 mm W; 2.3 mm T; Unifacially worked on one lateral edge. Small piece broken off of larger tool.
154	1			S10LSTP07	0-19	I	Screen	Lithic	Debitage	Flake; Secondary Decortication; Knife River Flint
155	1			S10LSTP07	0-19	I	Screen	Lithic	Debitage	Flake; Shatter; Quartz
156	2			S10LSTP07	0-19	I	Screen	Lithic	Debitage	Flake; Primary Decortication; Chert; Carbonate cortex.
157	1			S10LSTP08	9	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Calcined
158	1			S10LSTP08	9	I	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone; Calcined
159	3			S10LSTP09	20-30	I	Screen	Lithic	Debitage	Flake; Tertiary; Chert
160	1			S10LSTP09	20-30	I	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone
161	11			S10LSTP09	20-30	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone
162	1			S10LSTP09	20-30	I	Screen	Faunal	Tool	Undetermined; Distal; Bone; 17.2 mm L; 12.4 mm W; 4.2 mm T; Worked and polish. Broken, burnt, boiled.
163	1			S10LSTP09	20-30	I	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone; Calcined
164	1			S10LSTP10	26	I	Screen	Faunal	Bison	Tibia; Left; Diaphysis; Bone; Foramen visable
165	1			S10LSTP10	26	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone
166	2			S10LSTP10	26	I	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone
167	1			S10LSTP10	26	I	Screen	Faunal	Northern Pike	Dentary; Right; Complete; Bone; 50.5 mm L; 14.7 mm W; 3.9 mm T

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
168	1	[redacted]		S10LSTP10	26	I	Screen	Faunal	Northern Pike	Dentary; Left; Partial; Bone
169	1			S10LSTP10	26	I	Screen	Faunal	Northern Pike	Branchiostegal Ray; Left; Complete; Bone; 45.6 mm L; 4.5 mm W; 1.7 mm T
170	4			S10LSTP10	26	I	Screen	Faunal	Fish	Undetermined; Bone
171	1			S10LSTP11	19	I	Screen	Faunal	Sm. Mammal	Femur; Left; Distal; Bone
172	2			S10LSTP11	19	I	Screen	Faunal	Sm. Mammal	Vertebrae (caudal); Partial; Bone
173	1			S10LSTP11	19	I	Screen	Faunal	Fish	Undetermined; Bone; Burnt
174	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Parasphenoid; Complete; Bone; 138 mm L; 16 mm W; 7 mm T; Burnt. X2 pieces refit.
175	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Vomer; Partial; Bone; Burnt
176	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Subopercle; Left; Partial; Bone; Burnt
177	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Ectopterygoid; Left; Complete; Bone; 53 mm L; 31 mm W; 4.4 mm T; Burnt
178	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Ectopterygoid; Right; Partial; Bone; Burnt
179	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Palatine; Left; Partial; Bone; Burnt
180	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Hyomandibular; Left; Complete; Bone; 33.9 mm L; 33.3 mm W; 10.8 mm T; Burnt
181	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Quadrate; Right; Partial; Bone; Burnt
182	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Quadrate; Left; Partial; Bone; Burnt
183	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Epihyal; Left; Partial; Bone; Burnt
184	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Epihyal; Right; Partial; Bone; Burnt
185	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Supracleithrum; Left; Complete; Bone; 28.4 mm L; 12.8 mm W; 2.6 mm T; Burnt

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
186	1	[redacted]		S10LSTP11	19	I	Screen	Faunal	Northern Pike	Supracleithrum; Right; Complete; Bone; 28.9 mm L; 12.1 mm W; 3.2 mm T; Burnt
187	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Angular; Right; Partial; Bone; Burnt
188	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Angular; Left; Partial; Bone; Burnt
189	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Preopercle; Left; Partial; Bone; Burnt
190	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Frontal; Left; Partial; Bone; Burnt
191	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Frontal; Right; Partial; Bone; Burnt
192	1			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Parietal; Left; Complete; Bone; 16.9 mm L; 15.7 mm W; 3.5 mm T; Burnt
193	19			S10LSTP11	19	I	Screen	Faunal	Northern Pike	Undetermined; Bone; Burnt
194	1			S10LSTP11	19	I	Screen	Faunal	Sm. Mammal	Scapula; Undetermined; Proximal; Bone
195	1			S10LSTP12	20	I	Screen	Lithic	Debitage	Flake; Primary Decortication; Chert; Heat-treated. X2 pieces refit.
196	1			S10LSTP12	17	I	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone; Calcined
197	3			S10LSTP12	17	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone
198	1			S10LSTP12	17	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
199	1			S10LSTP13	17	I	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Gnaw mark
200	6			S10LSTP13	17	I	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone
201	8			S10LSTP13	17	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone
202	1			S10LSTP14	21	I	Screen	Lithic	Debitage	Flake; Secondary Decortication; Swan River Chert; Heat-treated.

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
203	1	[redacted]		S10LSTP14	21	I	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Gnaw mark
204	1			S10LSTP15	15	I	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Burnt
205	1			S10LSTP15	15	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Digested?
206	1			S10LSTP18	12	I	Screen	Faunal	Lg. Mammal	Undetermined; Bone
207	1			S10LSTP18	20	II	Screen	Lithic	Debitage	Flake; Tertiary; Knife River Flint
208	1			S10LSTP18	20	II	Screen	Lithic	Tool	Projectile Point; Side-notch; Base; Swan River Chert; 8.8 mm T; 20.5 mm W; 4.8 mm T; Basal thinning, base not ground. Side-notched. Not enough of point to determine culture and date.
209	3			FTEFTP07	14-28	II-III	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
210	1			FTEFTP07	14-28	II-III	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone
211	2			FTEFTP07	14-28	II-III	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone
212	1			FTEFTP07	14-28	II-III	Screen	Faunal	Fish	Vertebrae; Complete; Bone; 7.7 mm L; 7.2 mm W; 4.8 mm T
213	1			FTEFTP07	14-28	II-III	Screen	Faunal	Fish	Undetermined; Bone
214	1			FTEFTP07	14-28	II-III	Screen	Lithic	Debitage	Flake; Secondary Decortication; Swan River Chert
215	1			FTEFTP07	14-28	II-III	Screen	Lithic	Debitage	Flake; Tertiary; Swan River Chert
216	1			FTEFTP08	17-23	II	Screen	Lithic	Debitage	Flake; Secondary; Knife River Flint
217	1			FTEFTP08	17-23	II	Screen	Lithic	Debitage	Flake; Secondary; Chert
218	1			FTEFTP08	17-23	II	Screen	Lithic	Debitage	Flake; Shatter; Chert
219	1			FTEFTP08	17-23	II	Screen	Ceramic	Initial Woodland	Undetermined; Coil; Clay/Granite/Quartz; 23.4 mm L; 11.9 mm W; 11.5 mm T; Tubular ceramic piece. Possible detritus from coil manufacturing process.
220	1			FTEFTP08	17-23	II	Screen	Ceramic	Terminal Woodland	Laurel; Dentate Stamped; Body; Clay/Granite/Quartz; 7.9 mm T; Either dentated stamped, or punctated. Burnt

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
221	1	[redacted]		FTEFTP08	17-23	II	Screen	Ceramic	Woodland	Undetermined; Fabric-impressed; Body; Clay/Granite/Quartz; 7.9 mm T;
222	1			FTEFTP08	17-23	II	Screen	Ceramic	Woodland	Undetermined; Plain; Body; Clay/Granite/Quartz; 10.1 mm T
223	1			FTEFTP08	17-23	II	Screen	Ceramic	Woodland	Undetermined; Body; Clay/Granite/Quartz; 9.4 mm T
224	1			FTEFTP08	17-23	II	Screen	Ceramic	Woodland	Undetermined; Body; Clay/Granite/Quartz
225	2			FTEFTP08	17-23	II	Screen	Faunal	Mollusca	Mollusk; Undetermined; Shell
226	2			FTEFTP08	17-23	II	Screen	Faunal	Fish	Vertebrae; Complete; Bone; 6 mm L; 7 mm W; 5 mm T
227	1			FTEFTP08	17-23	II	Screen	Lithic	Debitage	Flake; Shatter; Swan River Chert
228	8			FTEFTP08	17-23	II	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone; Calcined
229	1			FTEFTP08	17-23	II	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Possible butchering mark. Burnt.
230	8			FTEFTP08	17-23	II	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Burnt
231	6			FTEFTP08	17-23	II	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
232	16			FTEFTP08	17-23	II	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
233	8			FTEFTP08	17-23	II	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone; Burnt
234	1			FTEFTP08	17-23	II	Screen	Faunal	Fish	Undetermined; Bone; Burnt
235	1			FTEFTP08	23-28	III	Screen	Lithic	Tool	Utilized Flake; Secondary; Distal; Chert; 26.6 mm L; 18.2 mm W; 5.4 mm T; Utilized on portion of distal edge.
236	1			FTEFTP08	23-28	III	Screen	Lithic	Tool	Utilized Flake; Secondary; Lateral; Chert; 15 mm L; 7.5 mm W; 2.8 mm T; Use wear on one lateral edge. Potlid scar.
237	2			FTEFTP08	23-28	III	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone; Calcined

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
238	2	[redacted]		FTEFTP08	23-28	III	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
239	1			FTEFTP08	23-28	III	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone
240	1			FTEFTP08	23-28	III	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt, boiled
241	3			FTEFTP08	23-28	III	Screen	Faunal	Lg. Mammal	Undetermined; Bone
242	1			FTEFTP08	23-28	III	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone; Burnt
243	1			FTEFTP09	12-24	II-III	Screen	Lithic	Tool	Biface; Undetermined; Partial; Chert; 26.4 mm L; 17.8 mm W; 8.5 mm T; Bifacially worked on one edge. Broken on both sides of worked edge.
244	1			FTEFTP09	12-24	II-III	Screen	Lithic	Debitage	Flake; Secondary; Swan River Chert
245	2			FTEFTP09	12-24	II-III	Screen	Lithic	Debitage	Flake; Tertiary; Chert
246	1			FTEFTP09	12-24	II-III	Screen	Soil Sample	Soil Sample	Ochre?; Soil Sample
247	3			FTEFTP09	12-24	II-III	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Epiphysis; Bone; Burnt
248	2			FTEFTP09	12-24	II-III	Screen	Faunal	Md-Lg.Mammal	Undetermined; Bone; Calcined
249	5			FTEFTP09	12-24	II-III	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
250	1			FTEFTP10	9-19	II-III	Screen	Faunal	Lg. Mammal	Vertebrae; Epiphysis; Bone; Unfused. Juvenile
251	1			FTEFTP10	9-19	II-III	Screen	Faunal	Lg. Mammal	Tooth; Undetermined; Partial; Enamel/Bone
252	1			FTEFTP10	9-19	II-III	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone
253	1			FTEFTP10	9-19	II-III	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Bone; Digested?
254	2			FTEFTP10	9-19	II-III	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt

Cat. #	Freq.	UTMX (83)	UTMY (83)	Unit	DBS (cm)	Level	Provenience	Category	Sub-Category	Description
255	4	[redacted]		FTEFTP10	9-19	II-III	Screen	Faunal	Lg. Mammal	Undetermined; Bone
256	1			FTEFTP10	9-19	II-III	Screen	Faunal	Lg. Mammal	Rib; Undetermined; Body; Bone; Possible gnaw and butchering marks.
257	1			FTEFTP12	43-45	V	Screen	Faunal	Fish	Vertebrae; Complete; Bone; 6.5 mm L; 6.5 mm W; 4.3 mm T
258	1			FTEFTP12	43-45	V	Screen	Faunal	Sm. Mammal	Vertebrae (caudal); Complete; Bone; 8 mm L; 8 mm W; 11 mm T; Unfused. Juvenile
259	1			FTEFTP12	43-45	V	Screen	Faunal	Muskrat	Mandible; Left; Partial; Enamel/Bone; All molars present.
260	1			FTEFTP12	43-45	V	Screen	Faunal	Northern Pike	Dentary; Left; Complete; Bone; 64 mm L; 16.7 mm W; 5.2 mm T
261	1			FTEFTP12	43-45	V	Screen	Faunal	Northern Pike	Dentary; Left; Partial; Bone
262	1			FTEFTP12	43-45	V	Screen	Faunal	Fish	Dentary; Undetermined; Partial; Bone
263	1			FTEFTP12	43-45	V	Screen	Faunal	Fish	Undetermined; Bone
264	1			FTEFTP14	8-21	II	Screen	Faunal	Md-Lg.Bird	Longbone; Undetermined; Diaphysis; Bone
265	1			FTEFTP14	8-21	II	Screen	Faunal	Lg. Mammal	Longbone; Undetermined; Diaphysis; Bone; Burnt
266	1			FTEFTP14	8-21	II	Screen	Faunal	Lg. Mammal	Cranium; Undetermined; Bone
267	3			FTEFTP14	8-21	II	Screen	Faunal	Lg. Mammal	Undetermined; Bone
268	3			FTEFTP14	8-21	II	Screen	Faunal	Lg. Mammal	Undetermined; Bone; Burnt
269	1			FTEFTP09	12-24	II-III	Screen	Ceramic	Woodland	Undetermined; Body; Clay/Granite/Quartz