

# Appendix G

## Heritage Resources Impact Assessment Report



**Western  
Heritage**

INNOVATIVE SOLUTIONS TO AGE-OLD QUESTIONS

## **HRIA REPORT**

Heritage Resources Impact Assessment of the CanWhite  
Sands Corp. Vivian Sand Facility Project  
in Part E ½ 32-10-8 EPM, R.M. Springfield

HRB File #AAS-19-15647  
HRIA Permit #A25-20

Prepared By:  
Lisa C. Bobbie, M.A.  
Western Heritage

Prepared For:  
AECOM

May 25, 2020

WH Project 20-009-01





**Western  
Heritage**

322 Duchess Street, Saskatoon SK S7K 0R1 Canada  
Phone: (306) 975-3860 • Fax: (888) 849-9130  
info@westernheritage.ca • www.westernheritage.ca

Kristiina Cusitar  
B.A., C.E.T., EP(SAR)  
Environmental Planner, Impact Assessment and Permitting  
AECOM  
99 Commerce Drive  
Winnipeg, Manitoba, Canada R3P 0Y7

May 25, 2020

**Attention: Ms. Cusitar**

**Reference: Heritage Resources Impact Assessment of the Proposed  
CanWhite Sands Corp. Vivian Sand Facility Project**

Dear Kristiina,

Please find enclosed the requested copy of the final report regarding the above referenced project. Heritage resources were recovered from a single test unit in the SE corner of the Project Site Area (PSA). Bison bone fragments were collected 5-10 cm below surface and are expected to pre-date 1870 A.D. Despite additional testing around the find, no other bones were noted, therefore it is an isolated occurrence. The site is registered with the HRB as DILc-6 “Vivian Bison” and based on the measures taken during the HRIA, the site is considered mitigated.

The results of the HRIA indicate that project impacts are limited given the previously disturbed nature of the property including extensive geo-technical and borrow extraction. Generally, the majority of the landscape is low-lying marsh and peatland with saturated soils, the exception being slightly elevated gravel ridges in some areas. Therefore, Western Heritage has recommended that archaeological clearance be granted for the project with the recommendation that a 5 metre buffer around the location of the bison bones be noted and that a Heritage Resource Protection Plan (HRPP) be created to provide awareness and guide contractors during construction and operation activities.

The Historic Resources Branch has the authority to issue heritage clearance or make recommendations based on the findings in this report.

Sincerely,

Jim Finnigan, M.A.  
Project Archaeologist

**Distribution List:**

Manitoba Historic Resources Branch; 1 hard copy; 1 .pdf copy  
AECOM; 1 .pdf copy  
Western Heritage; 1 .pdf copy

## EXECUTIVE SUMMARY

CanWhite Sands Corp. (hereafter referred to as CanWhite) is proposing to construct and operate a silica sand processing facility south of the hamlet of Vivian and approximately 35 km east of the City of Winnipeg. This proposed sand processing facility and associated infrastructure, i.e., the Vivian Sand Facility Project (hereafter referred to as the Project) is being developed for the purpose of supplying high-quality silica sand for use in variety of markets. The project is located in part of E ½ 32-10-8 EPM on NTS 1:50,000 topographic map sheet 62 H/16, in the Municipality of Springfield, within the Steinbach (726) Ecodistrict.

The proposed development was submitted to the Historic Resources Branch (HRB) for review. The HRB examined the location in conjunction with their records for areas of potential concern (HRB File Number #AAS-19-15647). The proposed development is in close proximity to a network of historic trails and sandy ridgeline which could have served as an ancient travel corridor and resource extraction area. These factors suggest that any excavation of ground materials within the proposed project footprint has the potential to impact heritage resources. Therefore, the HRB identified concerns with the project area and required that a Heritage Resource Impact Assessment (HRIA) be completed as per Section 12(2) of *The Heritage Resources Act*. These findings were outlined in a memo dated 2019-03-25 (Appendix A).

In accordance with the HRB requirements, Ms. Kristiina Cusitar of AECOM requested that Western Heritage undertake the required HRIA of the proposed development. The HRIA was completed on May 12 and 13, 2020 and included a pedestrian survey and judgemental shovel testing within the proposed development area.

A single shovel test was positive for processed bison bones which, based on the near extinction of bison in the late 19<sup>th</sup> century, predates 1870s A.D. No associated artifacts or intact paleosols were identified during subsurface shovel testing around the original test; however some bones demonstrate human modification such as cut marks. The site located at 14U 682653E 5527393N has been registered with the Province as DILc-6 “Vivian Bison”. No other cultural resources were found during the HRIA. Therefore the find is considered an isolated occurrence and has been mitigated. A 5 m (radius) avoidance buffer around the location of the find is recommended for heavy machinery, as there is more probability of disturbance to ground surfaces, thereby increasing the chance of additional finds. If the area does require the use of heavy machinery within the buffer, then it is recommended that Heritage Resources Protection Plan (HRPP) be developed. The HRPP will guide project workers on key actions in the case of accidental discoveries of heritage resources and therefore an archaeologist would not be required to monitor ground disturbing activities within the buffer.

The overall nature of the area is low-lying, saturated marsh and peatlands with substantial previous disturbances of the landscape present such as geo-technical exploration and quarrying. Therefore, Western Heritage has no further heritage concerns regarding the proposed development and recommends that the development be allowed to proceed as outlined with the above recommendations.

Despite a thorough investigation, fortuitous discovery of additional heritage resources may occur during the construction phase of the proposed development. In these cases, the discovery of heritage resources should be reported immediately to the HRB and Western Heritage to determine on-site assessment. In the event that human remains or suspected human remains are encountered, both the local RCMP detachment and Manitoba HRB (204-945-2118) must be contacted.

This report has been reviewed and approved by the senior archaeologist whose signature is below:

A handwritten signature in blue ink, appearing to read 'Jim Finnigan', with a large, sweeping flourish underneath.

Jim Finnigan  
May 25, 2020

## CREDITS

<b>Project Manager</b>	Jim Finnigan, M.A.
<b>Permit Holders</b>	Lisa Bobbie, M.A.
<b>Field Inspection</b>	Lisa Bobbie Derek Bobbie, B.Sc, BaCE
<b>Report Graphics</b>	Lisa Bobbie
<b>Report Author</b>	Lisa Bobbie
<b>Errors &amp; Omissions (E&amp;O) Review</b>	Jim Finnigan Peggy McKeand, M.A.

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## 1.0 PROJECT DESCRIPTION

### 1.1 Introduction

CanWhite Sands Corp. (hereafter referred to as CanWhite) is proposing to construct and operate a silica sand processing facility south of the hamlet of Vivian and approximately 35 km east of the City of Winnipeg. This proposed sand processing facility and associated infrastructure, i.e., the Vivian Sand Facility Project (hereafter referred to as the Project) is being developed for the purpose of supplying high-quality silica sand for use in variety of markets such as the renewable energy industry (e.g., solar panel production), electronics (e.g. cellphones, computer chips), oil and gas operations, telecommunications (e.g., fibre optics), sports field applications (e.g., golf courses) and the glass and ceramics production industry. Sand will be processed on-site (washed and dried) and stored in enclosed silos prior to being directly loaded onto railcars for shipping to markets in Canada and the United States. The anticipated life of the Project will be 24 years.

Key components of the Project are:

- A sand wash and dry facility that will include a ‘Wet Plant’, a ‘Dry Plant’ and the following associated components:
  - Two outdoor stockpiles of wet sand ready to be processed;
  - One overs/fines sand reject pile (outdoor) associated with the Wet Plant
  - One overs/fines sand reject pile (outdoor) associated with the Dry Plant;
  - Four dry sand product fully enclosed storage silos;
  - Ancillary structures, including permanent office, staff kitchen, washrooms, operator control centre, maintenance building and storage buildings;
- Rail loop track (approximately 3.5 km length) connecting with a Rail Load Out for direct sand product loading to enclosed railcars, and for railcar storage; and
- A 5 m wide single-lane gravel access road approximately 1 km in length to the Project site, with 1 m wide shoulders on either side for passing.

The above-listed components, excluding an existing access road for Project construction purposes and the above-listed proposed permanent access road, are collectively referred to as the Processing Facility.

The project is located in part of the east half of 32-10-8 EPM on NTS 1:50,000 topographic map sheet 62 H/16, in the Municipality of Springfield, within the Steinbach (726) Ecodistrict.

In accordance with the Historic Resources Branch (HRB) requirements, Ms. Kristiina Cusitar of AECOM requested that Western Heritage undertake the required HRIA of the proposed development. The field assessment was completed on May 12 and 13, 2020 by Lisa Bobbie (permit holder) and Derek Bobbie under Heritage Permit No. A25-20 (Appendix A). The Heritage Resource Impact Assessment (HRIA) included a pedestrian survey and judgemental shovel testing within the proposed development area.

The following final report describes the results of the Heritage Resource Impact Assessment (HRIA) completed by Western Heritage for the proposed development.

## 1.2 Screening Criteria

Acting on behalf of the developer, AECOM submitted the proposed development to the HRB for review. The HRB examined the location in conjunction with their records for areas of potential concern (HRB File Number #AAS-19-15947). An HRIA was recommended due to the Project's proximity to a network of historic trails and a sandy ridgeline which could have served as an ancient travel corridor and resource extraction area. These factors suggest that any excavation or disturbance of ground materials within the proposed PSA have the potential to impact heritage resources. Therefore, an HRIA was required to be completed as per Section 12(2) of *The Heritage Resources Act*.

## 2.0 ENVIRONMENTAL OVERVIEW

### 2.1 General Environment

The proposed development is located within the Steinbach (726) Ecodistrict of the Interlake Plain (155) Ecoregion of the Boreal Plains Ecozone (Figure 1). The Boreal Plains Ecozone extends as a wide band from the Peace River area of British Columbia to the southeastern corner of Manitoba. Smith et al. (1998:139) notes that “unlike the neighbouring Boreal Shield, this ecozone is not strongly bedrock controlled, has few bedrock outcrops and considerably fewer lakes”. The Interlake Plain Ecoregion is described by Smith et al. (1998:190) as “a broad arc from the USA-Canada border at the southern edge of the Manitoba Plain, northwest across the southern Interlake/Westlake region to the Saskatchewan border at Red Deer Lake. It is a mosaic of farmland and forest marking the southern limit of closed, mixed boreal forest and northern and eastern extend of commercial agriculture”.

### 2.2 Steinbach (726) Ecodistrict

The Steinbach Ecodistrict is a north-south elongated area extending from the USA border to east of Winnipeg (Smith et al. 1998:202). The physiography of the Steinbach (726) Ecodistrict is described by Smith et al. (1998:202) as having “landforms ranging from smooth, level glaciolacustrine plain to a gently undulating, water-worked glacial till and glaciofluvial, terraced plain. Extensive areas consist of sandy glaciolacustrine veneers overlying extremely calcareous, cobbly and gravelly loamy till. The mean elevation of the district is about 297 masl.” Some change in relief, approximately 1.0 to 3.0 m, occurs along the leading edge of a series of sandy and gravelly ridged terraces throughout the area. Peatlands are common, especially along its eastern border, and consist mostly of fens and transitional bogs (Smith et al. 1998:202).

The soils in the Steinbach Ecodistrict are listed by Smith et al. (1998:203) as “well to imperfectly drained Dark grey Chernozems that have developed on thin, variably calcareous, discontinuous, sandy to loamy glaciolacustrine veneers overlying extremely calcareous, loamy to clayey textured, water-worked glacial till. In the eastern sector, imperfectly and well drained Luvisols are found on sandy deposits and till ridges respectively”. There are several communities in the ecodistrict, of which the towns of Steinbach and Ste. Anne are the major service centres. Vegetation is dominated by trembling aspen with some balsam poplar. The understory is normally willow and red-osier dogwood with a ground cover of grasses and herbs. Poorly drained areas are predominantly willow and sedge vegetation, while well drained sandy areas in the eastern sector have a jack pine cover. The peatlands have generally fen vegetation dominated by sedges and reed grasses, and also varying willow shrub. Transitional bogs have generally clumped tamarack and black spruce, increasing moss ground cover interspersed with fen vegetation components (Smith et al. 1998:203).

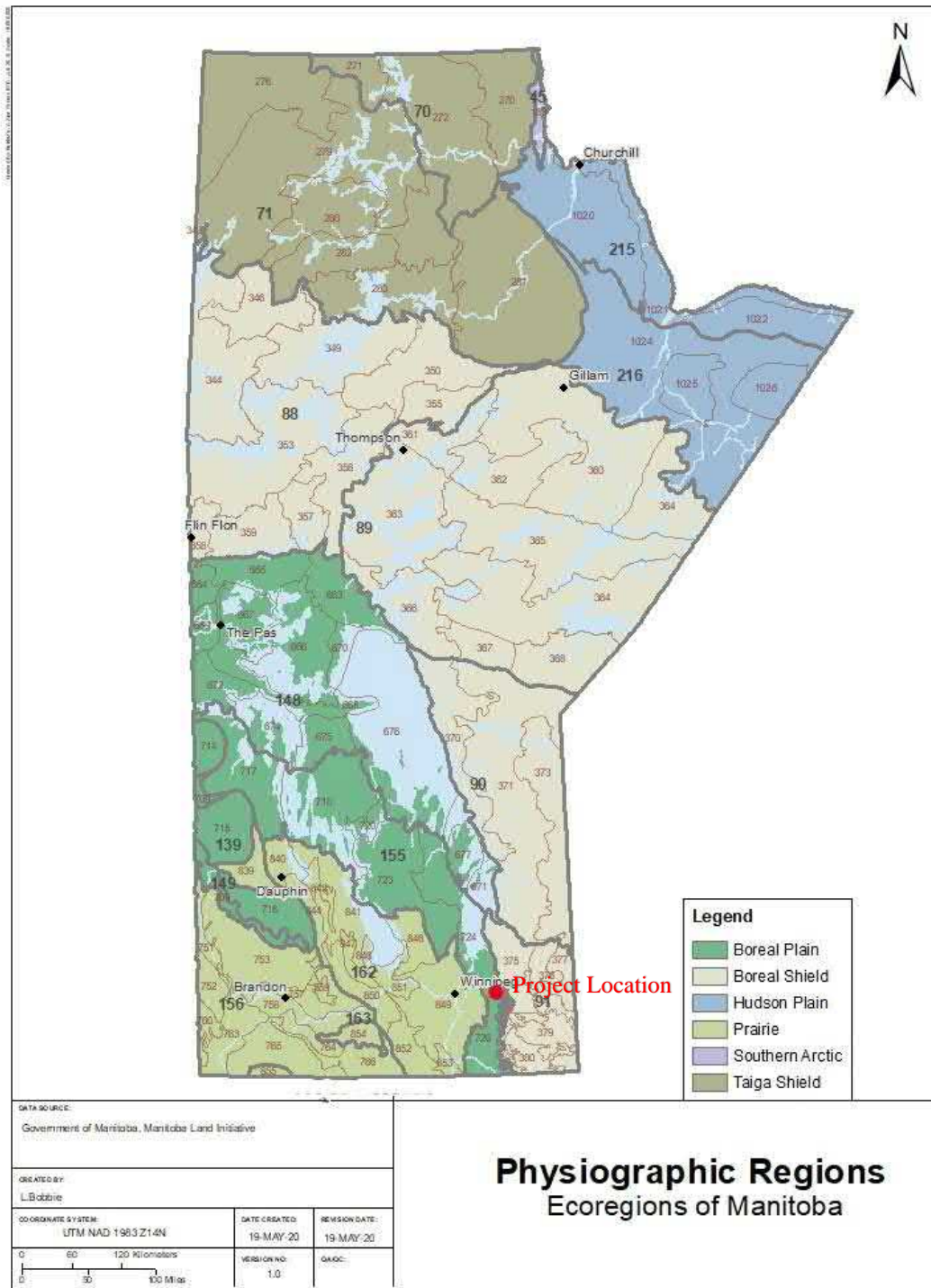


Figure 1. Project location within the Steinbach (726) Ecodistrict, Interlake Plain (155) Ecoregion, Boreal Plains Ecozone (modified from Smith et al, 1998).

## 3.0 HISTORICAL OVERVIEW

### 3.1 Culture History of Manitoba

The culture history for Manitoba is complex and covers a period of approximately 12,000 years, from the receding of the glaciers to present day. The complexity of the human occupation is mirrored by the geography of the province, which simultaneously invites and prohibits the flow of culture knowledge across the landscape. Manitoba can be divided into four geographical regions (prairies, boreal forest, subarctic, and arctic). Although these regions share many of the same cultural characteristics, regional differences necessitate the need for distinct cultural histories (Hlady 1970). The following is a brief summary of cultural history in southern Manitoba. This includes a description of the heritage sites with a known cultural affiliation found in the vicinity of the proposed development. A timeline illustrating the cultural sequence in Manitoba is presented in Figure 2.

The earliest period, known as the Palaeo (or Early) Period, begins around ca. 12,000 years ago and ranges to ca. 8,000 years ago. Before this time, glaciers covered Manitoba and prevented the spread of people into the province. This is a time when the Wisconsin Ice Sheet had begun its retreat north, opening up an environment capable of supporting plants and megafauna. This time period has been subdivided into three successive traditions based on projectile point typologies: Clovis, Folsom, and Plano. These large lanceolate projectile points were hafted at the ends of thrusting or throwing spears. People subsisted by hunting now-extinct giant mammals, such as mammoth. Palaeo peoples, Clovis and Folsom traditions especially, are only represented archaeologically in the southwest portion of the province.

The Archaic (or Middle) Period (8,000 to 2000 B.P.) represents a time of technological shift reflected by atlatl darts and side-notched projectile points, and a shift of subsistence strategies from megafauna to small-scale hunting. As the glaciers receded people were exposed to changing environmental conditions and adapted their subsistence strategies to better take advantage of local resources. The first direct evidence of mortuary practices and burials appear during this time.

The Archaic Period was followed in the south portion of the province by the Woodland (or Late) Period (2,000 to 300 B.P.), which is characterized by pottery manufacture, maize cultivation, elaborate burial mound construction, and the use of the bow and arrow. Rock art, in the form of petroforms, pictographs, and petroglyphs, also become prominent throughout the landscape.

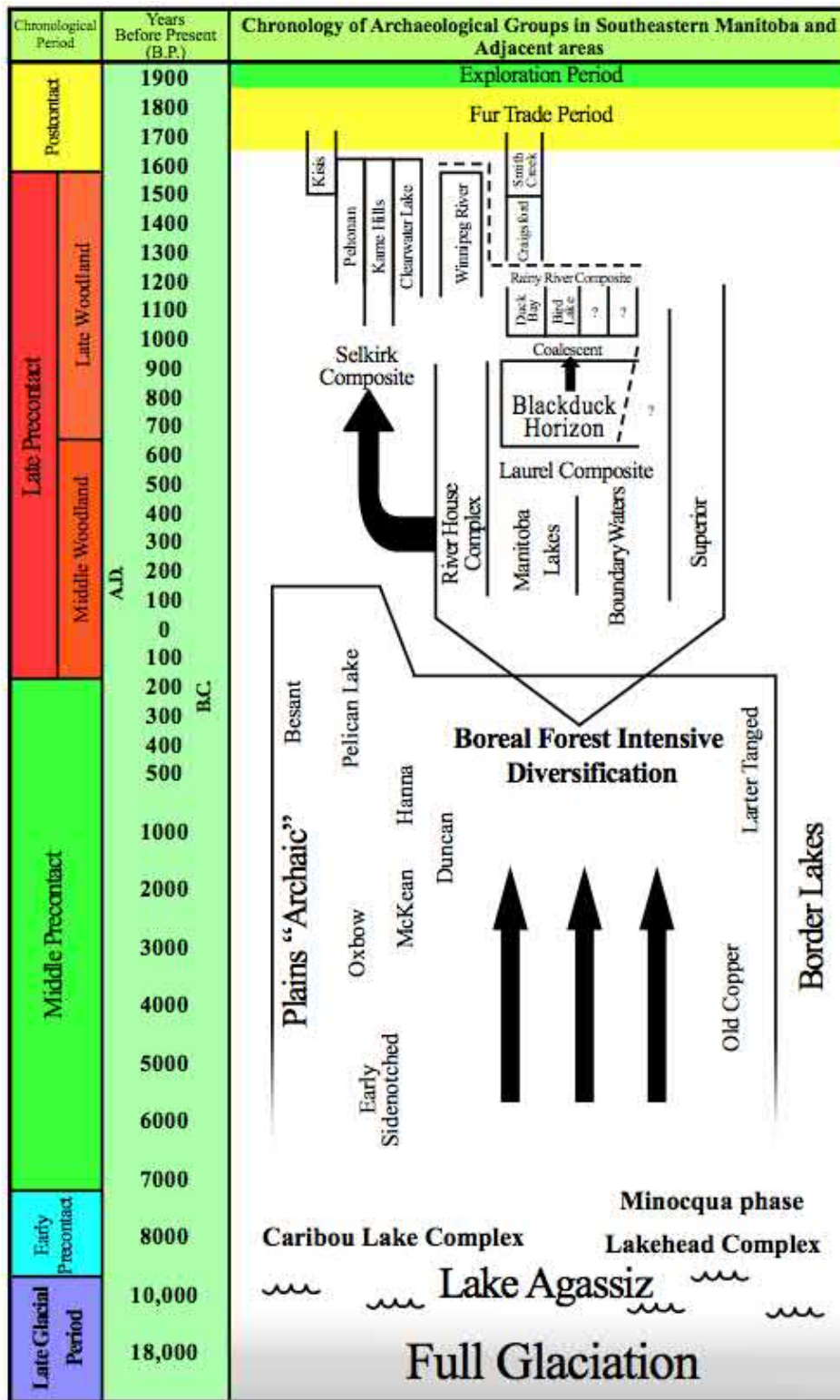


Figure 2. Culture History of southern Manitoba (adapted from Manitoba Archaeological Society 1998)

### 3.2 First Nations and Métis

There are seven treaties with First Nations in the province of Manitoba, though five Manitoba First Nations are not signatory to any treaty with Canada (Birdtail Sioux, Sioux Valley, Canupawakpa, Dakota Tipi, and Dakota Plains). The Project is within Treaty 1 (1871) lands, who signatories included the Brokenhead Ojibway Nation, Sagkeeng First Nation, Long Plain First Nation, Peguis First Nation, Roseau River Anishinabe First Nation, Sandy Bay Ojibway First Nation, and Swan Lake First Nation. The area is within the traditional territory of the Plains cultural area that was historically occupied by Plains Ojibway groups. The region is also homeland to the Metis Nation. The closest First Nation reserve lands to the Project Site area is the Brokenhead Ojibway Nation's Na-Sha-Ke-Penais Indian Reserve (3 ha) surrounded by East St. Paul and located 40 km northwest of the Project Site area.

### 3.3 History of the Project Area

The history of the Vivian area can be traced back to 1907 when the railroad was being built eastward, establishing pre-arranged stations every number of miles apart. One such station, just eight miles east of Anola was named Vivian. The town contained a general store, a Sunday School Mission and post office. The area around Vivian was well-forested and a pulpwood industry sprang up with lumber camps loading wood on flat cars at the station to be shipped to pulp and papers mills (Dugald Women's Institute 1974:425-426). The station house, watertank and platform were removed from Vivian and now the community is purely residential.

The original 1874 Dominion Land Survey township plan for the area was obtained from the Manitoba Archives (AM 1874) (Figure 3). The registered owner of the SE quarter of the section was a Thomas Lord. The first registered owner of the NE section was Michael Schmidt. The notations on the township plan indicate a series of ridges running in a north-south linear extent through the eastern part of the section. Historic trails are noted on the township plan immediately north of section 32 but do not appear to extend into the subject property.

There are no registered archaeological sites located within 10 km of the proposed development.



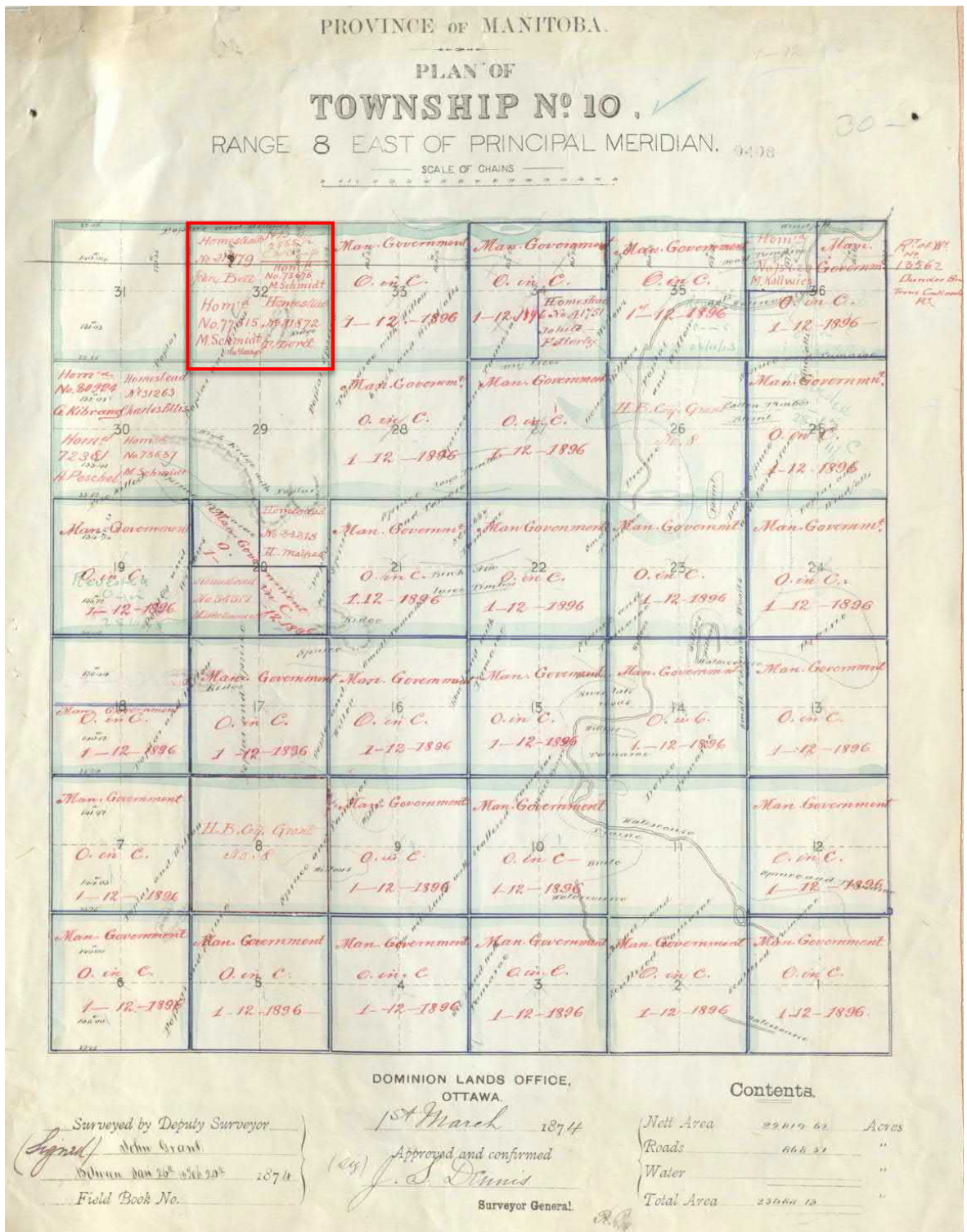


Figure 3. Dominion Land Survey Township Map 1874 (Archives of Manitoba); Section 32 is highlighted in red.

## 4.0 METHODS

### 4.1 Introduction

HRIAs are an important component of archaeological research in Manitoba. HRIAs serve four functions:

- 1) to locate and document the presence of heritage resources within the project area;
- 2) to determine the content, structure, and integrity of the heritage resource;
- 3) to establish significance of the heritage resource, and;
- 4) to facilitate heritage resource avoidance when necessary.

Developments are assessed using one of three methods: pre-construction testing, on-site monitoring, and post-impact assessments. Sometimes it is necessary to combine one or more methods, particularly in areas deemed highly sensitive for heritage sites. The HRIA also serves as a means to find suitable measures to avoid sites, including the relocation of the proposed development. If it is not possible to avoid impacting a site then mitigation, including archaeological salvage excavation, would be implemented.

### 4.2 Field Methods

The HRIA for the proposed development was accomplished using standard archaeological methods consisting of a combination of a pedestrian survey and judgmental shovel testing. The field inspection was conducted under Heritage Permit A25-20 issued by the HRB. The pedestrian survey covered broad sweeps within the proposed Project Site Area boundaries to examining surface exposure and the micro-topography for evidence of cultural modifications to the landscape. The spacing of transects depended on surface visibility and heritage potential. The survey focused on high visibility areas, such as well-defined landforms and along exposed road and trails. Tracklogs and waypoints were recorded using a handheld GPS (Global Positioning System) unit. The inspected areas were also photographed and the GPS locations plotted and mapped.

Judgmental shovel testing serves to identify the presence of sub-surface artifact scatters as well as assess the soil stratigraphy. Shovel tests measured 50 cm x 50 cm and were excavated to subsoil, typically 50 cm depth below surface (DBS) and are then backfilled. Testing was conducted in locations of high archaeological potential for buried cultural materials, or cultural soil horizons. Low wet areas and areas of significant slope were not tested as these are considered to be of low heritage potential. Areas of significant, obvious disturbance were not systematically tested, but are sample tested to examine stratigraphy and the potential for intact deposits below the disturbed zone (if present). Locational, stratigraphic, and descriptive information for each shovel test was recorded.

If archaeological resources are encountered, information regarding the site area is recorded including dimensions, landscape, site description, and details. Site areas are also photographed and GPS data recorded. Subsurface sites were systematically tested in order to determine the extent and concentration of artifact distribution. This typically includes expanding the radius of testing around the original positive shovel test. This type of testing is modified depending on the ongoing testing results and adapted for the site terrain.

Cultural materials recovered during the project were cleaned, examined, described, and catalogued according to provenience and type of artifact. Artifact analysis involves the counting, sizing, weighing, and classification of cultural materials.

Information regarding new archaeological sites was recorded on Manitoba Archaeology Site Inventory Forms. Forms are then submitted to the HRB for processing prior to report submission and Borden designations are issued for any new archaeological sites.

## 5.0 RESULTS

### 5.1 Project Location

The proposed Vivian Sand Processing Facility includes an approximately 1200 m x 1000 m (103 hectare) rectangle-shaped impact area. The Project Site Area (PSA) is located immediately south of the hamlet of Vivian and the Canadian National Railway line and north of Manitoba Hydro's M602F 500 kV transmission line immediately to the south, within part of the east half of 32-10-8 EPM, RM of Springfield. The terrain is mostly flat, with slightly elevated glacial till ridges. Peatland and intermittent marsh cover the NE and NW corners, as well as the majority of the south half of the PSA (Figures 4 and 5).

### 5.2 Fieldwork Summary

The HRIA was completed on May 12 and 13, 2020 by Lisa Bobbie (permit holder) and Derek Bobbie under Manitoba Heritage Permit No. A25-20 (Appendix A). The HRIA included a combination of a pedestrian survey and judgemental shovel testing within the proposed development area. The access road had already been significantly impacted through the development of a built-up roadway and transmission line corridor and is surrounded on both sides by marshlands (Figure 6). Therefore, it was not included in the field assessment.

A broad pedestrian survey was conducted across the proposed PSA to identify surface artifacts or features. The surface visibility within the PSA was fair along the various cut roadways and trails and small pockets of open meadow. However, the majority of the area was forested with trembling aspen, oak, jack pine and black spruce and less commonly fir, tamarack in the lower lying areas. The understory consisted of willow, chokecherry, and hawthorn with a ground cover of grasses, sedges, peat moss, rushes, bearberry, Labrador tea and leaf litter.

During the pedestrian survey, numerous pit features were noted dispersed throughout the area (Figures 7 and 8). They ranged in size from small, slight backfilled depressions to large open pits with the largest measuring 10 metres across and 4 metres in depth. With over 38 pits and associated spoil piles recorded, it is believed that the pits are related to geo-technical exploration/borrow extraction. Other notable surface features were two large gravel quarries located along the northern boundary of the PSA. Also within the northern portion of the study area, there were two open clearings both of which contain a hummocky ground surface (Figure 9). It is believed that these are indications of past ground disturbances. Exposed soils from rodent burrows were examined and, in some areas, the thin organic veneer was absent exposing gravel/sand subsoils. Recent land use was noted with ATV trails and three hunting tree stands. Modern debris was scattered throughout the study area including tin cans, vehicle parts and plastic containers. The dates from pop cans indicate a 1970s to 1980s manufacture, whereas the majority of debris was of a more recent deposition.



*Figure 4. Marshland in NE corner of PSA.*



*Figure 5. Peatland in the southern half of PSA.*



*Figure 6. Existing Access Road leading to PSA. Note transmission line and marshland.*



*Figure 7. An example of a medium-sized pit and soil pile found within the PSA.*



*Figure 8. Large quarry pit along north boundary of PSA.*



*Figure 9. Hummocky terrain in open field.*

Along cutlines and clearings, there were a number of large tree throws that provided the opportunity to visually examine the exposed subsoils (Figure 10). All were sterile for cultural materials. Subsurface testing was conducted across the study area and where possible, in areas with visible elevation rises. In total, 18 shovel tests were excavated during the HRIA field investigation. Five shovel tests were placed within the sand wash and dry facility. The remainder were focused along the rail loop and placed across the interior of the PSA. The observed soil stratigraphy is described in Appendix C. Typical stratigraphy observed in the project area included a black silty topsoil to approximately 20 cm DBS, followed by brown beige sand and gravel subsoils (Figure 11). Limestone and granite cobbles were also found in numerous test pits.

In the SE corner of the PSA along a former trail and amongst numerous cut trees, one shovel test was positive for cultural materials at 14U 682653E 5527393N. Bison bones and processed bone fragments were recovered at depths between 5-10 cm below surface. Diagnostic bones included an astragalus and scapula. The positive test was expanded to a larger 1 m x 1m test unit resulting in a few additional bone recoveries being collected (Figure 13). As per best field practices, testing was expanded around the positive unit in each cardinal direction to determine if the find was localized or expanded outwards. The additional four shovel tests within 5 metres of the find were negative for cultural materials and no paleosols were observed. Therefore, the bison bone finds are considered an isolated occurrence and are localized in the 1 metre unit. Since bison herds were practically decimated by the early 1870s, an assumption can be made that the bones must have been deposited prior to that date (Overby 2020).



*Figure 10. Examining a tree throw.*





*Figure 11. Example of typical shovel test.*



*Figure 12. Bison astragalus.*



*Figure 13. Test Unit where bison bones were recovered (DILc-6).*

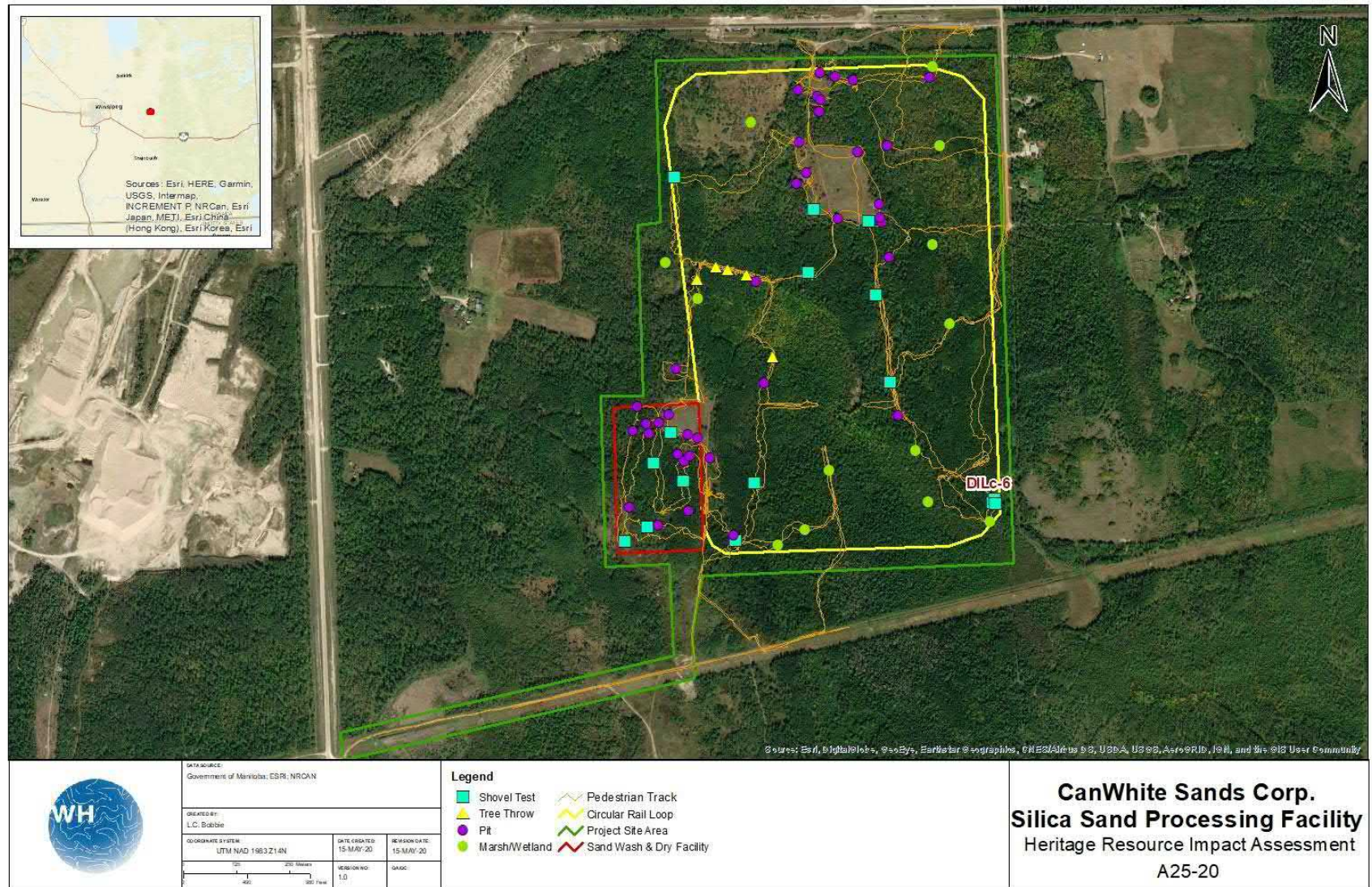


Figure 14. Map showing Project Study Area, shovel tests, tree throw and pit locations and pedestrian survey tracks.

## 6.0 CONCLUSIONS

CanWhite Sands Corp. is proposing to construct a silica sand processing facility, the Vivian Sand Facility Project (the 'Project') in the eastern half of 32-10-8EPM, RM of Springfield. The Project was submitted to the Historic Resources Branch (HRB) for review. They examined the location in conjunction with their records for areas of potential concern (HRB File Number #AAS-19-15647). An HRIA was recommended due to the Project's proximity to a network of historic trails and a sandy ridgeline which could have served as an ancient travel corridor and resource extraction area (Appendix A). These factors suggest that any excavation of ground materials within the footprint of the proposed project has the potential to impact heritage resources. Therefore, the HRB required that a HRIA be completed as per Section 12(2) of *The Heritage Resources Act*.

In accordance with the HRB requirements, Ms. Kristiina Cusitar of AECOM requested that Western Heritage undertake the required HRIA of the proposed development. The HRIA was completed on May 12 and 13, 2020 under Heritage Permit No. A25-20 (Appendix A). The HRIA included a pedestrian survey and judgemental shovel testing across the entire proposed development area.

The results of the HRIA field investigation noted that the area has undergone substantial previous disturbances. Geo-technical drilling and quarrying have disturbed large tracts of the PSA. Recent land use consisting of ATV trails, refuse dumping and cut trails have also resulted in some impacts. The low-lying nature of the study area resulted in numerous intermittent marsh and peatlands limiting the potential for heritage resources. Subsurface testing was focused on those areas that were slightly elevated along gravel and sand ridges.

A single shovel test resulted in the discovery of processed bison bone at depths between 5-10 cms below surface. Some of the bones demonstrated signs of human modification (cut marks and fracturing related to bone marrow extraction). This area is situated off of a cut trail alongside a marshland. Expanded testing around the positive find did not result in the recovery of additional bones or any associative artifacts which might provide information on when the bones were original deposited. By applying best field practices to determine the extent of the site, the site was determined to be an isolated occurrence. The site has been registered with the HRB as DILc-6 "Vivian Bison" and is considered adequately mitigated (see Section 7.0 Recommendations).

The nature of the study area having undergone previous impacts, along with large sections of the property being saturated marshlands, Western Heritage concludes that the property has reduced heritage potential. The bison bones that were recovered should serve as a reminder to project workers that accidental discoveries may still occur when conducting ground disturbing activities for the Project.

## 7.0 RECOMMENDATIONS

The HRIA concluded the PSA consists of previously disturbed land and that mostly low heritage potential areas will be impacted by the development. As a precaution, the location of the newly registered archaeological site DILc-6 should have a 5 m (radius) avoidance buffer around the location of the find at 14U 682653E 5527393N for heavy machinery, as there is more probability of increased ground disturbance, thereby increasing the chance of additional finds. If the area does require the use of heavy machinery within the buffer, then it is recommended that Heritage Resources Protection Plan (HRPP) be developed. The HRPP will guide project workers on key actions in the case of accidental discoveries of heritage resources and therefore an archaeologist would not be required to monitor ground disturbing activities within the buffer. An example of a Heritage Resource Protection Plan (HRPP) is included as Appendix D. An HRPP can assist contractors who are working in the area to identify key steps in the case of chance finds.

Following these recommendations, Western Heritage has no further heritage concerns regarding the proposed development and recommends that the development be allowed to proceed as outlined. These recommendations and comments are those of the author and are subject to evaluation by the HRB.

Despite a thorough investigation, new discoveries of heritage resources may occur during the construction phase of the proposed development. In these cases, the accidental discovery of heritage resources should be reported immediately to the Manitoba HRB and Western Heritage to determine on-site assessment. In the event that human remains or suspected human remains are encountered, both the local RCMP detachment and HRB (1-204-945-2118) must be contacted.

## 8.0 REFERENCES

### Archives of Manitoba (AM)

1874 “Range 8 East” Township Plans, Department of Mines and Natural Resources Lands Branch. Digital Image Number GR13-002686; Location Code G10652. Online document Retrieved May 12, 2020  
[http://pam.minisisinc.com/SCRIPTS/MWIMAIN.DLL/121952145/1/2/239598?RECORD&DATABASE=LISTINGS\\_WEB\\_INT](http://pam.minisisinc.com/SCRIPTS/MWIMAIN.DLL/121952145/1/2/239598?RECORD&DATABASE=LISTINGS_WEB_INT)

### Dugald Women’s Institute

1974 *Springfield 1<sup>st</sup> Rural Municipality in Manitoba 1873-1973*. D.W. Friesen & Sons Ltd. Altona, Manitoba.

### Government of Manitoba

1985 *The Heritage Resources Act*. Electronic document accessed from the Government of Manitoba website at <http://web2.gov.mb.ca/laws/statutes/ccsm/h039-1e.php?ccsm=h39.1>, accessed on Feb. 2, 2019

### Hlady, W.M. (editor)

1970 *Ten Thousand Years: Archaeology in Manitoba*. Manitoba Archaeological Society, Winnipeg.

Smith, R.E., H. Veldhuis, G.F. Mills, R.G. Eilers, W.R. Fraser, and G.W. Lelyk.

1998 *Terrestrial Ecozones, Ecoregions, and Ecodistricts of Manitoba, An Ecological Stratification of Manitoba's Natural Landscapes*. Technical Bulletin 1998-9E. Land Resource Unit, Brandon Research Centre, Research Branch, Agriculture and Agri-Food Canada, Winnipeg, Manitoba. Report and map at 1:1 500 000 scale.

[http://sis.agr.gc.ca/cansis/publications/ecostrat/provDescriptions/mbteee/mbteee\\_report.pdf](http://sis.agr.gc.ca/cansis/publications/ecostrat/provDescriptions/mbteee/mbteee_report.pdf)

### Manitoba Archaeological Society

1998 *Manitoba Culture History Overview*. Electronic document, <http://www.umanitoba.ca/faculties/arts/anthropology/manarchnet/toc.html> , accessed July 8, 2013.

### Overby, Jillian

2020 *History of Bison from a Manitoba Perspective*. Manitoba Bison Association. Electronic document <https://www.manitobabison.ca/about-the-bison/history-of-bison/>

## **APPENDIX A: REGULATOR DOCUMENTS**

Figure A-1. Heritage Screening Memo, HRB File# AAS-19-15647



# Memorandum

**DATE:** 2020-03-25

**TO:** **Marlene Gifford**  
Biologist, Environmental  
Assessor  
AECOM  
99 Commerce Drive  
Winnipeg, MB

**FROM:** **Suyoko Anne TSUKAMOTO**  
Senior Impact Assessment Archaeologist  
Historic Resources Branch  
Main Floor – 213 Notre Dame Avenue  
Winnipeg, Manitoba, R3B 1N3

**T:** (2014)928-9210  
**F:**  
**e:** Marlen.gifford@aecom.com

**T:** (204) 945-2118  
**F:** (204) 948-2384  
**e:** Suyoko.Tsukamoto@gov.mb.ca

**SUBJECT:** **CanWhite Sand Facility – Heritage Screening Request**  
**HRB File #: AAS-19-15647**

**HRIA requested.**

Section	Comments
NE 32-10-8 E	Historic cart trails lead to quarter section
SE 32-10-8 E	Possible paleo-corridor/route along ridge west of Broken River marsh area

Further to your e-mail regarding the above-noted proposed sand extraction facilities, the Historic Resources Branch has examined the location in conjunction with Branch records for areas of potential concern. The proposed structures are situated in the vicinity of a network of historic cart trails leading to/from the area. In addition, the developments are situated on a sandy ridgeline skirting marshland which would have served as a resource extraction area and travel corridor for Past Peoples. These factors suggest that any future planned development within the area has the potential to impact heritage resources, therefore, the Historic Resources Branch has concerns.

Under Section 12(2) of The Heritage Resources Act, if the Minister of Sport, Culture and Heritage has reason to believe that heritage resources or human remains are known, or thought likely to be present, on lands that are to be developed, then the owner/developer is required to conduct at his/her own expense, a heritage resource impact assessment (HRIA) and mitigation, if necessary, prior to the project's start.

The developer must contract a qualified archaeological consultant to conduct a Heritage Resources Impact assessment (HRIA) of the proposed development location, in order to identify and assess any heritage resources that may be negatively impacted by development. If desirable, the Branch will work with the developer/land owners and its consultant to draw up terms of reference for this project.

If you have any further questions or comments, please feel free to contact the Branch as above.

Manitoba Historic Resources Branch  
Archaeological Assessment Services



Figure A-2. Heritage Permit No. A25-20

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

**Heritage Permit No. A25-20**



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

**Name:** Jim Finnigan  
Western Heritage

**Address:** 22 Duchess Street  
Saskatoon SK S7K 0R1

**Attention:** Jim Finnigan  
(Alternate: Lisa C. Bobbie)

(hereinafter referred to as "the Permittee"),

is hereby granted permission to:

Conduct a heritage resource impact assessment (HRIA) for a proposed CanWhite Sands Corporation extraction development in the east half of section 32 of township 10, range 8, east of the principal meridian (E1/2 32-10-8 EPM), in the Rural Municipality of Springfield.

during the period:

**May 4th to July 1st, 2020 (window)**

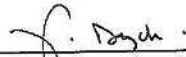
This permit is issued subject to the following conditions:

- (1) That the information provided in the application for this permit dated the **April 30, 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 written report or reports with respect to the Permittee's activities pursuant to this permit, the form and content of which shall be satisfactory to the Minister and which shall be provided on the following dates:  
**March 31, 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. Western Heritage (Winnipeg Unit) is to notify the Archaeological Assessment Services Unit in advance of the respective site visit.

Dated at the City of Winnipeg, in Manitoba, this 4th day of May, 2020



Minister of Sport, Culture and Heritage

**Manitoba Sport, Culture and Heritage  
Historic Resources Branch**

## **APPENDIX B: SHOVEL TESTS**

Table B-1. Shovel Test Summary

ST	UTM (NAD83; Zone 14U)		Alt. (m)	Stratigraphy	DBS (cm)	Results	Comments
	Easting	Northing					
CS-01	681889	5527554	282	Black organic sandy topsoil 0-29 Light brown sand and gravel 29-50+	50	N	W side of property in disturbed area
CS-02	682214	5527931	284	Redish brown peat 0-10 Blk organic silt, wet 10-19 Beige brown sand loam, wet mottled 19-26 Beige gravelly sand 26-48	48	N	Off of cut line in treed area
CS-03	682226	5528079	285	Black organic sandy topsoil 0-22 Brown granular sand 22-46 Light brown fine sand 46-73	73	N	Open area, N side study area
CS-04	681898	5528157	281	Black organic loam wet 0-12 Light grey silty clay, wet 12-35 Beige sand, water seepage 35-44	44	N	NW corner of study area next to marsh
CS-05	682087	5527435	282	Black organic loam, moist 0-26 Beige fine grained sand, wet 26-54 Frozen ground 54+	54	N	S side of study area
CS-06	682043	5527300	287	Black organic topsoil 0-16 Brown granular sand w gravel 16-61+	61	N	Slight elevated ridge, S side Study area
CS-07	681835	5527333	286	Black organic topsoil 0-9 Brown sand w gravel and cobbles 9-36 Brown sand very gravelly w cobbles 36-43	43	N	Processing Plant area
CS-08	681782	5527299	286	Black organic sandy topsoil 0-20 Brown sand w gravel and cobbles 20-47 Light brown sand w gravel 47-70	70	N	Processing Plant area
CS-09	681850	5527483	284	Black organic soil w sand 0-12 Brown sand w limestone gravel 12-46	46	N	Processing Plant area
CS-10	681920	5527441	288	Black organic soil w sand 0-10 Light beige sand w gravel 10-39 Orange beige sand w gravel and cobbles 39-56	56	N	Processing Plant area

ST	UTM (NAD83; Zone 14U)		Alt. (m)	Stratigraphy	DBS (cm)	Results	Comments
	Easting	Northing					
CS-11	682356	5528052	280	Black organic soil 0-23 Brown sandy gravel 23-39 Beige sand 39-57	57	N	NE side of study area
CS-12	682407	5527673	284	Black organic soil w gravel 0-13 Orange brown sand w lots of gravel 13-28 Dark brown sand w lots of gravel 28-42	42	N	SE side of study area
CS-13	682374	5527878	287	Black organic soil 0-11 Brown sand w gravel and cobbles 11-28	28	N	SE side of study area
CS-14	682653	5527391	287	Black organic soil 0-9 Brown sand w gravel 9-28	28	Pos	TEST UNIT bone frags found 5-10 cm; SE side of study area
CS-15	682648	5527389	287	Black organic soil 0-10 Black brown sand 10-25 Light brown grey sand 25-44	44	N	SE side of study area
CS-16	682654	5527391	285	Black organic soil 0- Dark brown sand 6-17 Brown sand 17-29	29	N	SE side of study area
CS-17	682653	5527399	289	Black organic soil 0-9 Grey black silty loam san 9-29	29	N	SE side of study area
CS-18	682654	5527388	286	Black organic soil 0-8 Brown sand 8-30	30	N	SE side of study area

Table B-2. Tree Throw Examined

ST	UTM (NAD83; Zone 14U)		Alt. (m)	# of Throws Examined	Results	Comments
	Easting	Northing				
TT01	681952	5527915	281	1	Sterile	Black organic sandy topsoil Light brown sand and gravel
TT02	681997	5527944	282	1	Sterile	Black organic sandy topsoil Light brown sand and gravel
TT03	682024	5527939	282	3	Sterile	Black organic topsoil; Grey silt and sand
TT04	682067	5527926	284	2	Sterile	Black organic topsoil; grey brown silt w gravel and cobbles
TT05	682130	5527732	283	1	Sterile	Black organic topsoil; light brown loamy sand

## **APPENDIX C: ARTIFACT CATALOGUE**

Site	SiteName	CatNo	Zone	UTMX_83	UTMY_83	Unit	DBS	Category	Subcat	Object Name	Object Portion	Material	Colour	Marks	#	Wgt_g
DIIILc-6	Vivian Bison	H001	14	682653	5527393	TPCS14	5-10cm	Faunal	Bison	Astragalus	Complete	Bone	Brown	Shovel marks	1	106
DIIILc-6	Vivian Bison	H002	14	682653	5527393	TPCS15	5-10cm	Faunal	Bison	Rib	Fragment	Bone	Brown		1	7.37
DIIILc-6	Vivian Bison	H003	14	682653	5527393	TPCS16	5-10cm	Faunal	Bison	Scapula	Glenoid Fossa	Bone	Brown		1	66.38
DIIILc-6	Vivian Bison	H004	14	682653	5527393	TPCS17	5-10cm	Faunal	Bison	Long bone	Fragment	Bone	Brown	cut marks	1	24.01
DIIILc-6	Vivian Bison	H005	14	682653	5527393	TPCS18	5-10cm	Faunal	Bison	Undetermined	Fragment	Bone	Brown		1	20
DIIILc-6	Vivian Bison	H006	14	682653	5527393	TPCS19	5-10cm	Faunal	Bison	Undetermined	Fragment	Bone	Brown		26	104

## **APPENDIX D: EXAMPLE OF HERITAGE RESOURCES PROTECTION PLAN (HRB 2020)**



# Heritage Resources Protection Plan (HRPP) Guidelines

## Purpose of HRPP – Preventative Action:

To assist [insert company name] with informing managers, employees, contractors on what to do and whom to call should heritage resources accidentally be encountered when testing and development is underway on site. The HRPP consists of operational procedures to limit damage or destruction of heritage resources accidentally found during site work.

## Key Steps:

1. All workers on-site should be informed of the HRPP in advance of work proceeding and who to contact should there be a chance encounter during on-site activity.
2. If heritage objects or human remains are discovered on site, activities are to stop at that location immediately and the Historic Resources Branch be notified. ([HRB.archaeology@gov.mb.ca](mailto:HRB.archaeology@gov.mb.ca), (204) 945-2118)
3. In the case of human remains, the nearest law enforcement agency (i.e., RCMP or local police department) must be contacted to first rule out any forensic issues.

## Why Report? :

Many people find heritage objects accidentally. If these items are reported to the Historic Resources Branch, their significance can be assessed and the resulting information can generally shared with the public. Some heritage objects can be several thousand years old.

## Legislation and Policy:

*The Heritage Resources Act (The Act) and the Province of Manitoba Policy Concerning the Reporting, Exhumation and Reburial of Found Human Remains (Burials Policy) apply to protecting heritage resources.*

## Preparing the HRPP

*These are basic guidelines to help developers draft an HRPP.*

*This is a non-exhaustive guideline involving a single stakeholder. Projects involving multiple stakeholders/ community partners will require more detail.*

*Provide purpose/intent of HRPP to general user.*

*Explicitly state key message/ takeaway for user*

*All on-site workers should be aware of or briefed about the protocol.*

*Introduce the need to report findings.*

*Identify the relevant legislation pertaining to heritage resource protection.*

## What are Heritage Resources? :

Heritage resources and heritage objects are defined under the *Heritage Resources Act*:

**"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 archaeological, palaeontological, pre-historic, historic, cultural, natural, scientific or aesthetic features, and may be in the form of sites or objects or a combination thereof

**"heritage object"** includes

- (a) an archaeological object,
- (b) a palaeontological object,
- (c) a natural heritage object, and
- (d) an object designated as a heritage object by the Lieutenant Governor in Council under subsection (2);

**"archaeological object"** means an object

- (a) that is the product of human art, workmanship or use, including plant and animal remains that have been modified by or deposited due to human activities,
- (b) that is of value for its historic or archaeological significance, and
- (c) that is or has been discovered on or beneath land in Manitoba, or submerged or partially submerged beneath the surface of any watercourse or permanent body of water in Manitoba;

**"palaeontological object"** means the remains or fossil or other object indicating the existence of extinct or prehistoric animals, but does not include human remains.

**"natural heritage object"** means a work of nature consisting of or containing evidence of flora or fauna or geological processes;

**"human remains"** means remains of human bodies that in the opinion of the minister have heritage significance and that are situated or discovered outside a recognized cemetery or burial ground in respect of which there is some manner of identifying the persons buried therein;

## Notes/Comments

*Provide verbatim definitions of heritage language as presented within The Heritage Resources Act.*

Examples of heritage resource objects (below)



Examples of Archaeological Objects (above)



Example of a Palaeontological Object

**Discovery and notification structure:**

*Better safe than sorry: do not hesitate to report potential or suspected finds. The Historic Resources Branch is here to provide advice and expertise **at no cost to the developer.***

1. If heritage resources, including human remains are encountered, stop work immediately.
  
2. Notify the on-site manager about the discovery.  
[Insert contact information here, including names, position, and phone numbers]
  
3. Mark-off area with “flagging tape” to identify and restrict the area.
  
4. The on-site manager will contact the Historic Resources Branch at (204) 945-2118
  
5. In the case of possible found human remains, the on-site manager will contact
  - a. Historic Resources Branch at (204) 945-2118
  
  - b. [Insert local police authority name and contact information here.]

Notes/Comments

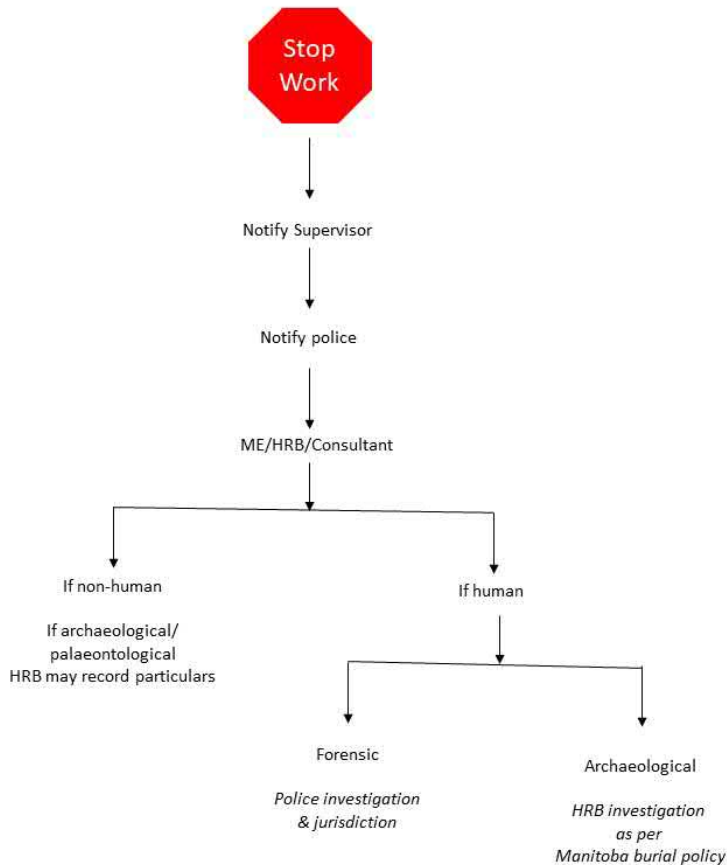
*Provide step-by-step instruction on what to do and who to contact should heritage resources be accidentally encountered.*

- *Who is the site supervisor?*
- *Who do you contact if supervisor is unavailable?*
- *What are the phone numbers for these individuals?*
  
- *What is the name of the local police authority?*
- *What is the phone number during the day and after hours?*



**What to expect after notification for possible found human remains:**

1. The local police authority will immediately attend the site and further secure the site.
2. The local police authority may notify the Medical Examiner's (M.E.) Office of a potential case of founding human remains as per *The Fatalities Inquiries Act*.
3. The local police authority and/or the ME's office may contact the Historic Resources Branch (HRB) or their own forensic anthropology consultant.
4. The police and their consultant will determine if the remains are:
  - a. Human or animal
  - b. Forensic or archaeological in nature.
5. If the remains are forensic in nature or cannot be immediately assessed, the police authority and ME will have jurisdiction over the area.
6. If remains are determined to be non-forensic (i.e., archaeological) in nature and their removal is required, HRB will be responsible for their exhumation and reburial as per Manitoba Burial Policy



Notes/Comments

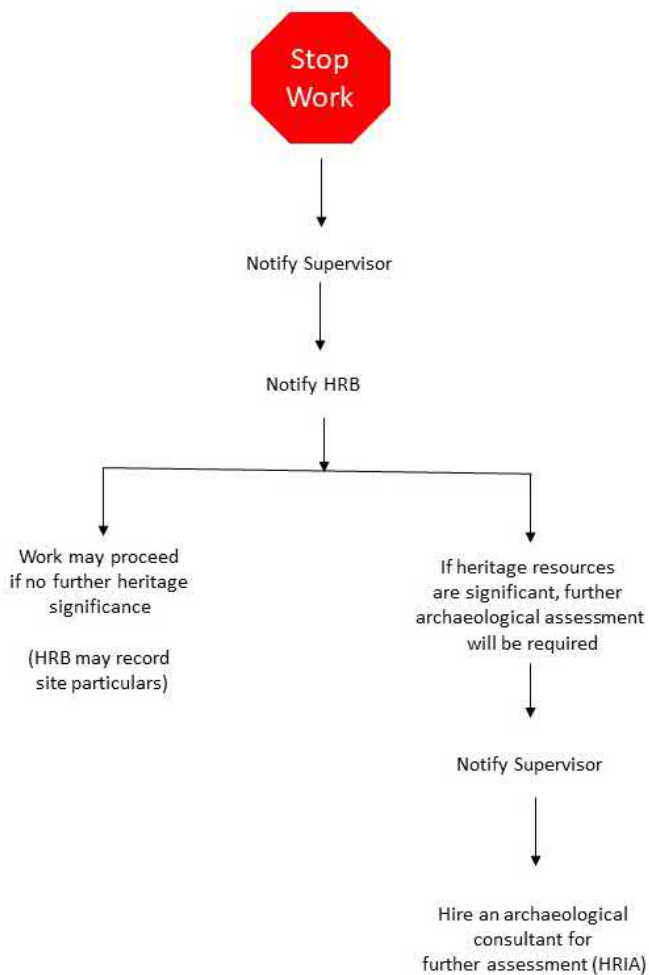
*Under no circumstances should site information be shared with the media or the public. Site locations are protected by the Freedom of Information and Protection of Privacy Act (FIPPA).*

*Communication should be limited to the local police authority or the Historic Resources Branch.*

**What to expect after notification for heritage objects other than human remains:**

1. The Historic Resources Branch (HRB) will visit the site
2. The HRB will determine if additional heritage mitigation work will be required.
3. If further mitigation work is required, the developer may need to contract a qualified archaeological consultant to conduct a Heritage Resources Impact assessment (HRIA) of the proposed development location, in order to identify and assess any heritage resources that may be negatively impacted by development. If desirable, the Branch will work with the developer/land owners and its consultant to draw up terms of reference for this project.

*The HRB will determine if a heritage resource management strategy needs to be implemented by the developer to mitigate the effects of the development on the heritage resources.*



### **Potential penalties**

Under the *Manitoba Heritage Resources Act* 69(1), any person who contravenes or fails to observe a provision of this Act or a regulation, order, by-law, direction or requirement made or imposed thereunder is guilty of an offence and liable, on summary conviction, where the person is an individual, to a fine of not more than \$5,000 for each day that the offence continues and, where the person is a corporation, to a fine of not more than \$50,000 for each day that the offence continues.

### **Useful Resources:**

Government of Manitoba

Heritage Objects: A Precious Resource for all Manitobans.  
Winnipeg, Manitoba: Manitoba Culture, Heritage and Citizenship,  
1996. Accessible online at:  
[www.gov.mb.ca/chc/hrb/pdf/heritage\\_objects.pdf](http://www.gov.mb.ca/chc/hrb/pdf/heritage_objects.pdf)

Managing Our Heritage Resources: Impact Assessment. Winnipeg,  
Manitoba: Manitoba Culture, Heritage and Citizenship, 1993.  
Accessible online at:  
[www.gov.mb.ca/chc/hrb/pdf/impact\\_assessment\\_booklet.pdf](http://www.gov.mb.ca/chc/hrb/pdf/impact_assessment_booklet.pdf)

## Notes/Comments

*Identifying potential penalties serves to emphasize the importance of this legislation*

*Additional information about heritage objects or the heritage resource impact assessment process can be found online*