



Figure 12. An example of a shovel test in AOC 1, note gravel and cobble subsoils.



Figure 13. Shovel testing part of AOC 5 – east aspect.

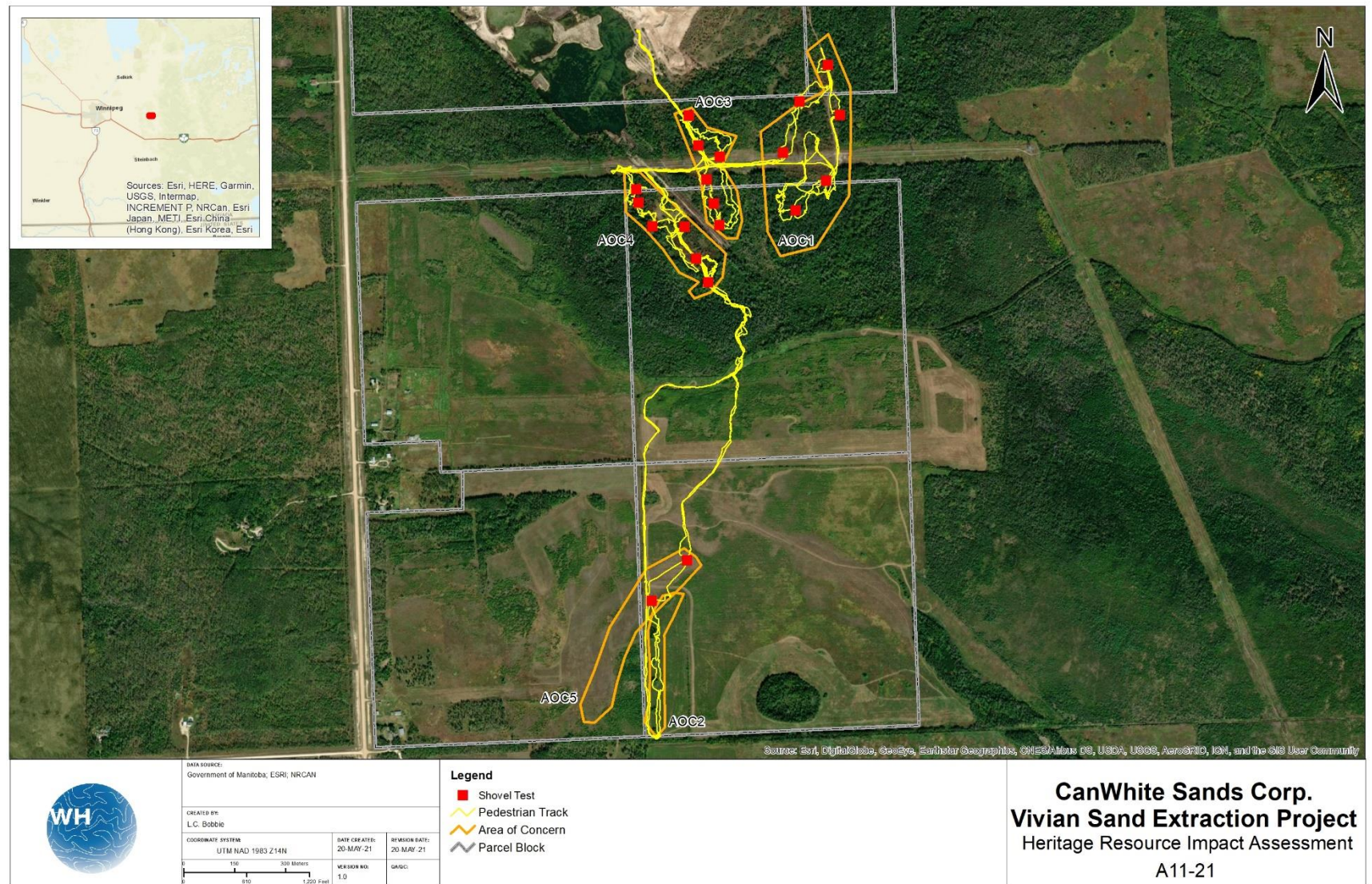


Figure 14. Marshland w piles of pushed up rocks and trees in AOC 2 – south aspect.



Figure 15. Dugout and dirt pile

Figure 14. Map showing Project Study Area - AOCs, shovel tests and pedestrian survey tracks.



6.0 CONCLUSIONS AND RECOMMENDATIONS

CanWhite Sands Corp. is proposing to extract silica sand from the deep aquifer within the sandstone geological formation southwest of the hamlet of Vivian, MB. The Vivian Sand Extraction Project is located in 20-10-8EPM, the SE-29-10-8 EPM and Plan 15154, in the RM of Springfield, Manitoba.

The Project was submitted to the HRB for heritage screening. Based on LiDAR coverage, the HRB identified several elevated landforms that include well-defined ridges, points, and topographic anomalies. These elevated areas could have served as an ancient travel corridors and resource extraction areas. The HRB identified five specific AOCs within the development footprint that any future planned development within these areas have 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*.

AECOM requested that Western Heritage undertake the required HRIA of the proposed development which was completed on May 7 and 8, 2021 under Heritage Permit No. A11-21 (Appendix A). The HRIA included pedestrian surveys and judgemental shovel testing across the five AOC.

The results of the HRIA field investigation noted that the area has undergone substantial previous disturbances. Quarrying have disturbed large tracts near the existing transmission line. Recent land use consisting of ATV trails, drainage channels, and road works have also resulted in impacts. No heritage resources or features were discovered during the assessment. Western Heritage has no further heritage concerns regarding the proposed development and recommends that the development granted heritage clearance. 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.

7.0 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.

http://pam.minisisinc.com/SCRIPTS/MWIMAIN.DLL/121952145/1/2/239598?RECORD&DATABASE=LISTINGS_WEB_INT

Dugald Women’s Institute

1974 *Springfield 1st 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

Manitoba Archaeological Society

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

APPENDIX A: REGULATOR DOCUMENTS

Figure A-1. Heritage Screening Memo, HRB File# AAS-20-16736



Memorandum

DATE: 2021-03-11

TO: **Marlene Gifford**
Biologist, Environmental Assessor
Impact Assessment & Permitting, Canada
AECOM
99 Commerce Drive
Winnipeg, MB

FROM: **Brittany Romano**
Impact Assessment Archaeologist
Archaeological Assessment Services Unit
Historic Resources Branch
Main Floor – 213 Notre Dame Avenue
Winnipeg, MB R3B 1N3
T: (204) 945-2118
F: (204) 948-2384
e: Brittany.Romano@gov.mb.ca

SUBJECT: **Screening request - CanWhite-Sands-Update**
HRB File AAS-20-16736

Concerns re: 20-10-8 EPM / BRU 83?

Further to your e-mail regarding the above noted heritage screening, the Manitoba Historic Resources Branch (HRB) has examined the location in conjunction with Branch records for areas of potential concern. LiDAR coverage shows the development footprint located in section 20 township 10 range 8, east of the principal meridian (20-10-8 EPM) is located on several elevated landforms that include well-defined ridges, points, and topographic anomalies. Similar elevations in the area have previously heritage resources. These factors, to name a few, 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 there is 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. Attached Figure 1 shows the areas identified for heritage resource impact assessment.

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

Historic Resources Branch
Archaeological Assessment Services Unit

Memorandum

AAS-20-16736
Areas of Concern - Lidar

Archaeological Assessment Services Unit
Historic Resource Branch
Manitoba Sport, Culture, and Heritage

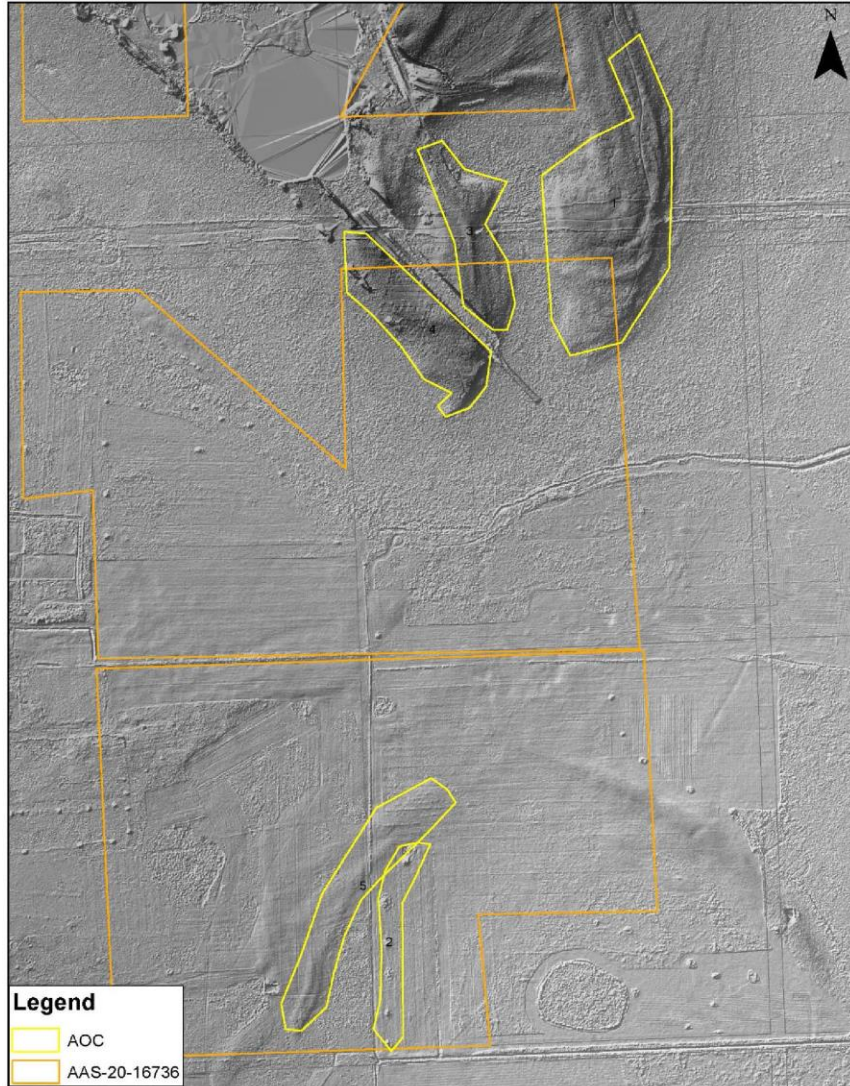


Figure 1 Areas of Concern (AOC)

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

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

Heritage Permit No. A11-21



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

Name: Lisa Bobbie & Jim Finnigan
Western Heritage

Address: 22 Duchess Street
Saskatoon SK S7K 0R1

Attention: Lisa Bobbie & Jim Finnigan

(hereinafter referred to as "the Permittee"),

is hereby granted permission to:

Conduct a heritage resource impact assessment on behalf of CanWhite Sands Corp. in sections 20 and 29 of township 10, range 8, east of the Principal Meridian (20- & 29-10-8 EPM) in the Rural Municipality of Springfield.

during the period:

April 8 to May 30, 2021 (window)


This permit is issued subject to the following conditions:

- (1) That the information provided in the application for this permit dated the **March 22, 2021** 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, 2022**
- (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 TEST DATA

Table B-1. Shovel Test Summary

Shovel Test ID	Result (Neg / Pos)	Zone	Easting	Ning	Date	Elev (m)	Extent (cm)	Extent (cm)	Depth (cm)	Ground cover	Dominant Tree Cover	Secondary Tree Cover	Disturbance	Soil OH	Depth (cm)	Soil A	Depth (cm)	Soil B	Depth (cm)	Soil C	Depth (cm)	Comments
TP01	N	14	682164	5525708	07-May-21	283	45	43	35	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Black organic soil w gravel	0-15	Black organic soil with pea gravel	15-30	Brown silty soil with large gravel	30-35	Brown silty soil with large gravel	30-35+	AOC 3 along trail
TP02	N	14	682229	5525674	07-May-21	278	50	43	45	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Dark grey organic soil w gravel	0-11	Brown sand w pea gravel	11-17	Grey brown sand w gravel	17-31	Lt beige sand w gravel	31-45+	AOC 3 along trail
TP03	P	14	682138	5525793	07-May-21	288	44	45	38	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Black org sandy soil w pea gravel	0-29	Black organic soil with large gravel	29-38					AOC 3 top of ridge
TP04	N	14	682189	5525608	07-May-21	280	46	50	30	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Black organic soil w gravel	0-10	Dark brown sand w gravel	10-30+					AOC 3
TP05	N	14	682211	5525537	07-May-21	285	43	43	38	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Black organic soil w gravel	0-15	Brown sand w gravel	15-25	Lt brown sand w lots of gravel	25-38			AOC 3
TP06	N	14	682227	5525472	07-May-21	284	40	40	38	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Black organic soil w gravel	0-11	Dark brown sand w gravel & cobbles	11-22	Lt brown sand w lots of gravel	22-38			AOC 3
TP07	N	14	681982	5525578	07-May-21	281	44	44	37	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Blk organic soil	0-12	Orange brown sand	12-29	Dark grey sand w gravel	29-37			AOC 4
TP08	N	14	681988	5525539	07-May-21	279	47	41	41	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Grey organic soil	0-11	Black organic soil	11-26	Brown sand w lots of gravel	26-41			AOC 4
TP09	N	14	682029	5525469	07-May-21	281	40	43	22	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Dark grey organic soil w gravel	0-13	Brown sand with lots of gravel & cobbles	13-22					AOC 4
TP10	N	14	682124	5525467	07-May-21	284	41	40	38	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Black organic soil w gravel	0-19	Brown sand with lots of gravel & cobbles	19-38					AOC 4
TP11	N	14	682158	5525373	07-May-21	282	37	46	41	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Black organic soil w gravel	0-23	Orange brown sand w gravel	23-35	Dark grey sand w gravel	35-41			AOC 4

Shovel Test ID	Result (Neg / Pos)	Zone	Easting	Ning	Date	Elev (m)	Extent (cm)	Extent (cm)	Depth (cm)	Ground cover	Dominant Tree Cover	Secondary Tree Cover	Disturbance	Soil OH	Depth (cm)	Soil A	Depth (cm)	Soil B	Depth (cm)	Soil C	Depth (cm)	Comments
TP12	N	14	682194	5525304	07-May-21	280	40	40	22	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Blk organic soil	0-10	Brown sand w gravel	10-19	Grey sand with gravel & cobbles	19-22			AOC 4
TP13	N	14	682414	5525686	08-May-21	277	47	47	37	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Blk organic soil	0-10	Orange brown sand w gravel	10-29	Dark brown sand w gravel	29-37			AOC 1
TP14	N	14	682464	5525837	08-May-21	277	40	45	45	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Blk organic soil	0-13	Brown sand w gravel	13-36	Dark brown sand with lots of gravel	36-45			AOC 1
TP15	N	14	682547	5525945	08-May-21	280	44	45	50	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Blk organic soil	0-17	Brown-grey sand w gravel	17-33	Light brown sand w gravel	33-50			AOC 1 along trail
TP16	N	14	682583	5525798	08-May-21	280	45	47	52	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Blk organic soil	0-15	Orange brown sand	15-30	Brown sand w gravel	30-52			AOC 1 top of ridge
TP17	N	14	682542	5525604	08-May-21	282	45	45	34	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Blk organic soil	0-11	Brown sand with lots of gravel & cobbles	11-28	Beige sand w gravel & cobbles	28-34			AOC 1 - open area
TP18	N	14	682452	5525516	08-May-21	282	46	41	49	grasses, wild rose, poison ivy, bearberry, sage, hazel, chokecherry, hawthorn	Wht poplar	Bur Oak	ATV trails, transmission line, gravel extraction	Blk organic soil	0-12	Dark brown sand	12-39	Brown sand w gravel	39-49			AOC 1
TP19	N	14	682132	5524483	08-May-21	269	41	46	67	Agricultural field fallow, marsh grasses, willow, dogwood, chokecherry	Wht poplar	Spruce, oak	Cultivation, tree clearing, dug-out	Blk organic soil	0-20	Light beige sand	20-35	Dark grey sand	35-61	Light beige sand	61-67	AOC 5
TP20	N	14	682027	5524364	08-May-21	273	46	50	47	Agricultural field fallow, marsh grasses, willow, dogwood, chokecherry	Wht poplar	Spruce, oak	Cultivation, tree clearing, dug-out	Dark grey organic soil	0-17	Brown gravelly sand	17-31	Light beige sand w gravel	31-47			AOC 5