

APPENDIX A: HERITAGE SCREENING

From: "Khalidi, Hani (SCH)" <Hani.Khalidi@gov.mb.ca>
To: "Cusitar, Kristiina" <Kristiina.Cusitar@aecom.com>
Cc: "Tsukamoto, Suyoko (SCH)" <Suyoko.Tsukamoto@gov.mb.ca>
Sent: 10/17/2018 2:36 PM
Subject: RE: Heritage Screening Request - Silica Sand Extraction Project (HRB File Number: AAS-18-13794)

Good afternoon Kristiina,

With regards to your heritage screening request for the Silica Sand Extraction Project, the Historic Resources Branch has examined the geographic areas you provided in conjunction with Branch records for areas of potential concern.

The proposed project area is situated in a region with high potential for heritage resources. The entire project area lies on a peninsula with pre-contact and historic significance. Lake Winnipeg, which is directly adjacent to the west, is an ancient waterbody and waterway well travelled and visited by Past Peoples as well as the Wanipigow and Manigotagan Rivers. The quarry areas indicated on the map you provided are situated on an area of elevated topography which would have been ideal for a vista of the surrounding region.

Known archaeological sites surround the proposed project area from north of Wanipigow along the shoreline south to Manigotagan, east of Clangula Lake south to English Brook and all along the Manigotagan River to the south. In addition the proposed development is also in the region of historic fur trade posts – Manigotagan Post (aka Bad Throat Post) and Winnipeg Lake Post.

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.

Hani Khalidi
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APPENDIX B: SURVEY PLANS

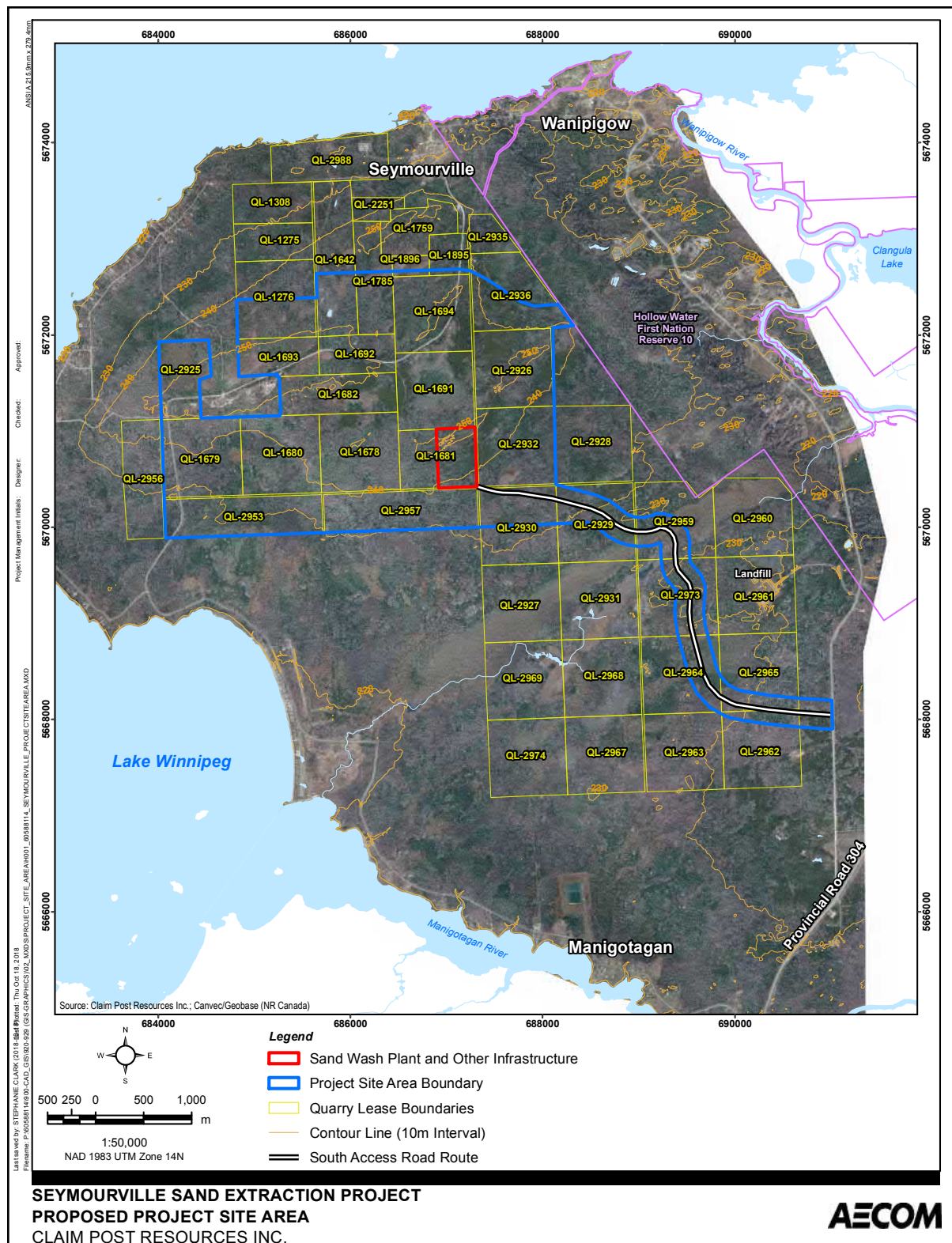


Figure B-1. Proposed project area showing quarry leases.

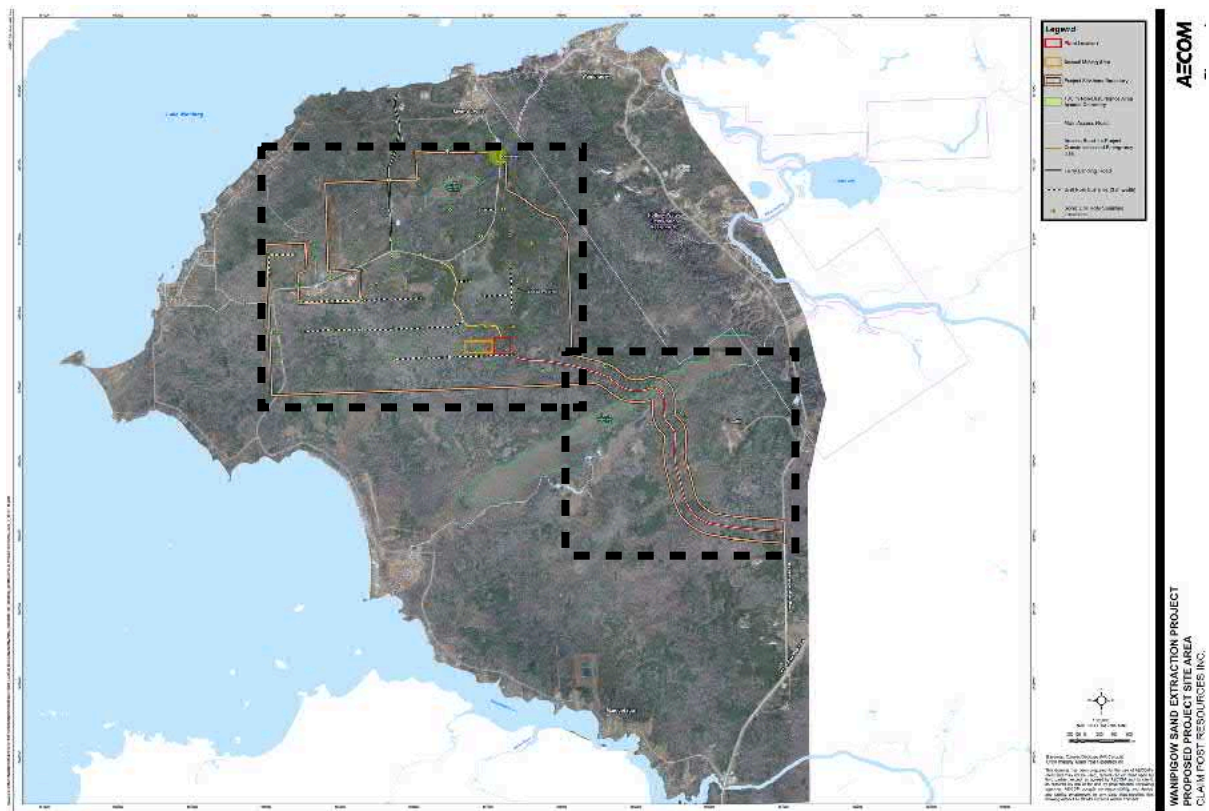


Figure B-2a. Proposed Wanipigow Sand Extraction area (revised)



Figure B-2b. Detail of Proposed Wanipigow Sand Extraction Area from Figure B-2a. Shows proposed test drilling locations.



Figure B-2c. Detail of Proposed Wanipigow Sand Extraction Area access road from Figure B-2a.

APPENDIX C: WAYPOINTS

Table C-1. Shovel Tests Excavated

Shovel Test	UTM (NAD 83; Zone 14U)		Alt. (m)	Results	Stratigraphy	DBS (cm)	Comments
	Easting	Northing					
ST001	685021	5671646	223.9	Sterile	-Surface moss/veg. above thin pockets of sand (natural) and buried rocks	0-10	on ATV trail in area w/ lots boulders visible & exposed surface rocks. Test in small mossy/rocky depression.
ST002	685545	5671809	259.9	Sterile	-Root mat -Orange brown sand -Rock	0-9 9-35 35+	elevated area off of access road
ST003	685534	5671810	271.8	Sterile	-Root mat -Orange brown sand -Rock	0-7 7-30 30+	elevated area off of access road
ST101	685528	5671808	261.2	Sterile	-Duff -Black (org. rich) sand -Light brown coarse sand w/ cobbles -Med. brown coarse sand	0-3 3-10 10-18 18-25	On small elevated landform adj. to main road
ST102	685848	5672791	253.2	Sterile	-Dark brown sod/loam -Light greyish brown sand -Orangish brown sand -Large rocks	0-4 4-16 16-20 20+	on rocky rise

Table C-2. Tree Throws Examined

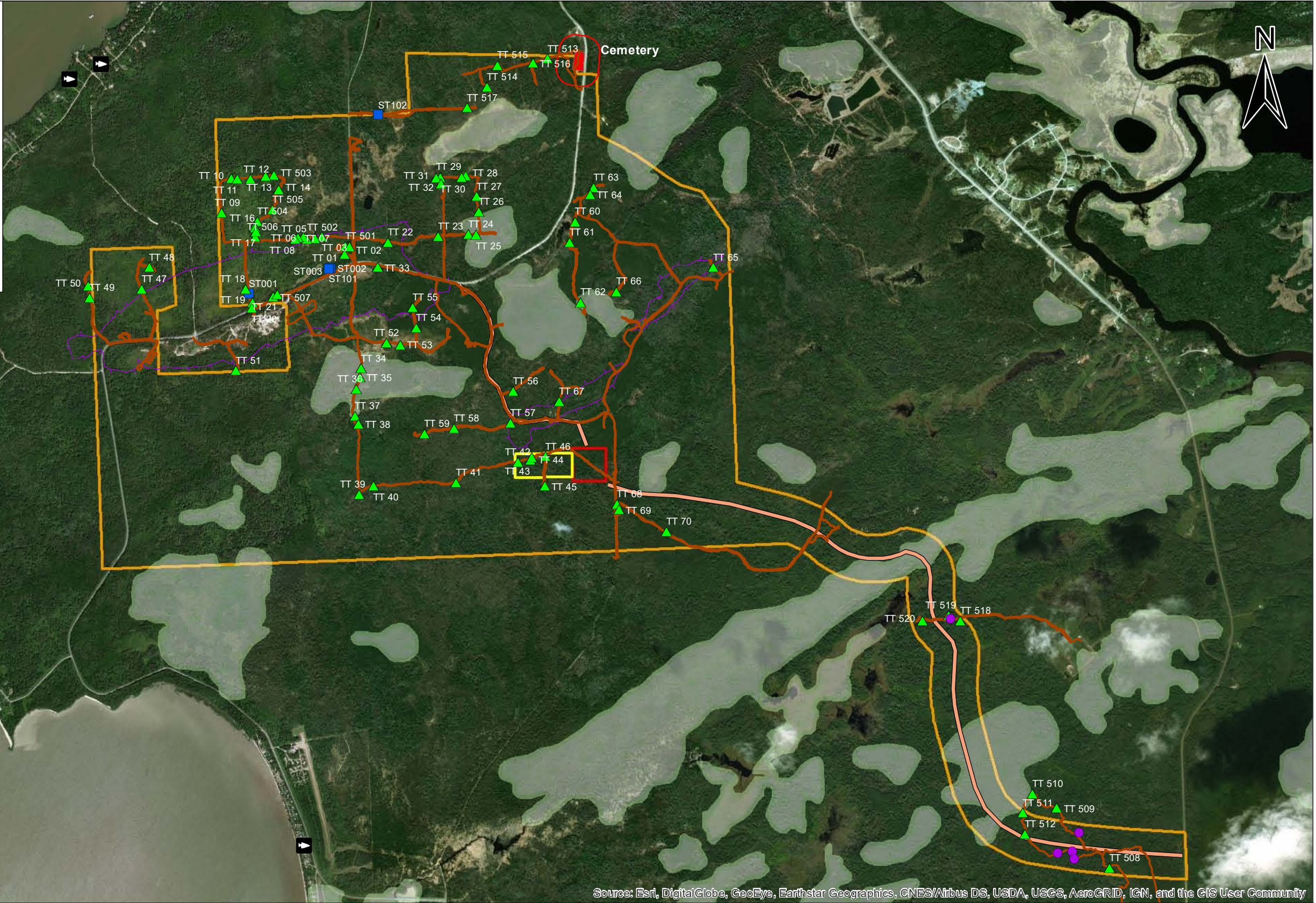
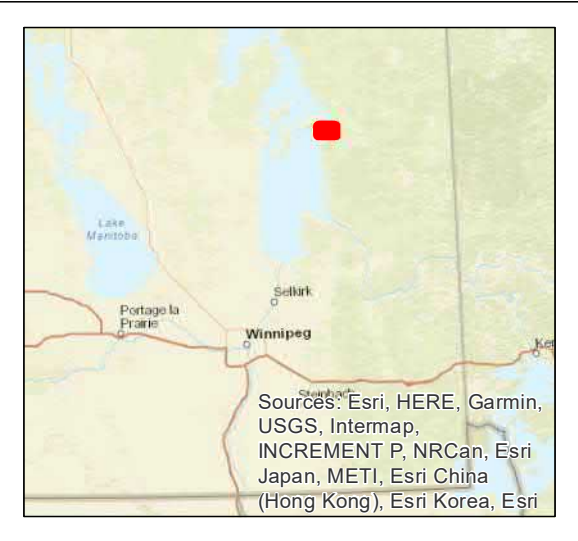
Tree Throw	UTM (NAD 83; Zone 14U)		Alt. (m)	# of Throws Examined	Results	Description
	Easting	Northing				
TT 501	685634	5671952	256.4	1	Sterile	same as TT 01
TT 502	685440	5672003	255.8	3	Sterile	Orangish brown sand w/ gravel & large rocks
TT 503	685179	5672404	248.5	1	Sterile	
TT 504	685070	5672112	252.7	1	Sterile	
TT 505	685168	5672184	251.3	1	Sterile	
TT 506	685059	5672009	252.3	2	Sterile	same as TT 01
TT 507	685174	5671625	259.2	1	Sterile	
TT 508	690525	5667974	236.4	1	Sterile	Low, featureless forest. Light grey silt to ~20 cm DBS.
TT 509	690189	5668355	234.4	1	Sterile	Large throw examined. Light grey silty clay.
TT 510	690033	5668447	233.6	2	Sterile	low, wet area N of ROW. Mostly loam/sod present.
TT 511	689969	5668325	233.0	1	Sterile	Low, wet area. Mostly loam/sod present.
TT 512	689985	5668188	232.5	1	Sterile	
TT 513	686930	5673147	248.1	1	Sterile	
TT 514	686542	5672970	248.8	1	Sterile	
TT 515	686609	5673107	251.5	1	Sterile	

Tree Throw	UTM (NAD 83; Zone 14U)		Alt. (m)	# of Throws Examined	Results	Description
	Easting	Northing				
TT 516	686838	5673123	250.3	1	Sterile	
TT 517	686416	5672836	243.9	1	Sterile	
TT 518	689569	5669554	233.1	1	Sterile	
TT 519	689494	5669589	238.6	1	Sterile	
TT 520	689330	5669555	233.2	1	Sterile	
TT 01	685633	5671900	327.7	1	Sterile	Grey fine silty sand (~0–20 cm DBS)
TT 02	685663	5671947	256.8	1	Sterile	same as TT 01
TT 03	685484	5672013	251.6	1	Sterile	same as TT 01
TT 04	685443	5672000	251.9	1	Sterile	same as TT 01
TT 05	685389	5671996	253.3	1	Sterile	same as TT 01
TT 06	685368	5672009	252.5	1	Sterile	same as TT 502
TT 07	685331	5672003	251.6	1	Sterile	
TT 08	685313	5671998	250.3	1	Sterile	
TT 09	684845	5672161	235.8	1	Sterile	
TT 10	684905	5672385	229.2	1	Sterile	
TT 11	684945	5672379	216.3	1	Sterile	
TT 12	685030	5672379	217.6	1	Sterile	
TT 13	685123	5672397	244.3	1	Sterile	
TT 14	685209	5672311	247.2	2	Sterile	
TT 15	685054	5672076	247.9	1	Sterile	
TT 16	685058	5672065	247.6		Sterile	
TT 17	685063	5672045	253.0	1	Sterile	
TT 18	684998	5671675	227.9	1	Sterile	next to ATV trail
TT 19	685040	5671593	238.0	1	Sterile	
TT 20	685037	5671555	247.8	1	Sterile	
TT 21	685200	5671638	255.8	1	Sterile	
TT 22	685907	5671974	248.3	1	Sterile	
TT 23	686230	5672014	248.1	1	Sterile	
TT 24	686422	5672027	246.3	1	Sterile	Mostly moss w/ some brown sand examined. In wet area; slopes down to N & E.
TT 25	686471	5672023	249.0	1	Sterile	
TT 26	686489	5672173	248.8	1	Sterile	Muskeg area on cutline
TT 27	686475	5672269	248.7	1	Sterile	Mostly moss w/ some sand examined
TT 28	686407	5672402	247.4	2	Sterile	One throw showed light grey silt/sand; second throw showed med. brown case sand w/ gravel
TT 29	686378	5672394	247.2	2	Sterile	Light grey sand
TT 30	686245	5672390	248.0	2	Sterile	coarse med. brown sand w/ gravel to ~30 cm DBS
TT 31	686216	5672387	245.8	1	Sterile	coarse med. brown sand w/ gravel to ~30 cm DBS
TT 32	686248	5672349	249.2	4	Sterile	large area w/ downed trees at junction of cutlines
TT 33	685844	5671814	258.3	1	Sterile	

Tree Throw	UTM (NAD 83; Zone 14U)		Alt. (m)	# of Throws Examined	Results	Description
	Easting	Northing				
TT 34	685735	5671169	246.4	1	Sterile	coarse brown sand in tree throw & adjacent surface exposure examined. Located near wet area.
TT 35	685729	5671113	247.8	2	Sterile	Light brown/beige/orange silty sand (compact). Adjacent exposures all examined
TT 36	685704	5671036	250.4	1	Sterile	
TT 37	685698	5670865	248.8	1	Sterile	Med. gray silty clay (compact/frozen)
TT 38	685717	5670813	249.9	1	Sterile	Med. gray silty clay (compact/frozen)
TT 39	685722	5670364	238.6	1	Sterile	Med. gray silty clay (compact/frozen)
TT 40	685815	5670417	243.8	1	Sterile	Mostly muskeg/veg. material w/ some brown soil
TT 41	686343	5670439	243.8	1	Sterile	Brown clay
TT 42	686742	5670569	246.7	1	Sterile	Light greyish brown sand
TT 43	686819	5670585	249.0	1	Sterile	Light greyish brown sand
TT 44	686828	5670602	246.3	1	Sterile	Light greyish brown sand
TT 45	686913	5670415	241.7	1	Sterile	Fine light grey sand
TT 46	686916	5670605	246.7	1	Sterile	Fine light grey sand
TT 47	684333	5671674	254.9	1	Sterile	beige fine sand w/few gravel; 0–30cm DBS
TT 48	684379	5671816	253.3	1	Sterile	
TT 49	684000	5671620	253.9	1	Sterile	
TT 50	683989	5671698	254.7	1	Sterile	
TT 51	684937	5671156	255.4	1	Sterile	
TT 52	685899	5671331	253.6	2	Sterile	light greyish brown/tan sand
TT 53	685988	5671319	252.1	6	Sterile	large tree throws S of trail in open area with stacked cut logs. Mostly organic material but w/ some brown sand topsoil also examined.
TT 54	686087	5671427	252.4	1	Sterile	Adj. to cut trail through treed area. Deep throw (~40cm DBS) w/ beige & orange sand
TT 55	686066	5671558	253.7	1	Sterile	
TT 56	686711	5671022	257.5	3	Sterile	Adj. to trail. Light grey sand
TT 57	686693	5670819	258.7	1	Sterile	Med. brown clay & light beige clay (hard/compact)
TT 58	686333	5670786	254.6	1	Sterile	Med. brown clay & light beige clay (hard/compact)
TT 59	686142	5670750	252.1	2	Sterile	Large tree throws. Brown sand & grey clay.
TT 60	687104	5672108	252.9	2	Sterile	large tree throws adj. to trail. Orangish brown coarse sand.
TT 61	687070	5671972	250.6	1	Sterile	
TT 62	687140	5671593	253.1	1	Sterile	same as TT 60
TT 63	687226	5672324	244.1	1	Sterile	Light grey silty clay
TT 64	687203	5672282	245.6	1	Sterile	Light grey sand
TT 65	687989	5671816	256.1	1	Sterile	

Tree Throw	UTM (NAD 83; Zone 14U)		Alt. (m)	# of Throws Examined	Results	Description
	Easting	Northing				
TT 66	687370	5671659	251.6	1	Sterile	Light brown sand and gravel
TT 67	687004	5670955	248.4	1	Sterile	Med. grey/brown silt (frozen)
TT 68	687372	5670302	240.0	1	Sterile	Light brown coarse sand and gravel
TT 69	687388	5670264	239.1	1	Sterile	
TT 70	687689	5670125	241.7	1	Sterile	Coarse orange sand. Adj. to ATV trail.
Total Number of TT examined				111	-	-

APPENDIX D: HRIA MAPS



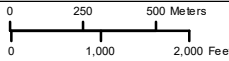
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



DATA SOURCE:
Government of Manitoba, Manitoba Infrastructure; ESRI; NRCAN; AECOM;
Claim Post Resources Inc.

CREATED BY:
Lisa C. Bobbie

COORDINATE SYSTEM:
UTM NAD 1983 Z14N



DATE CREATED:
16-NOV-18

VERSION NO:
1.0

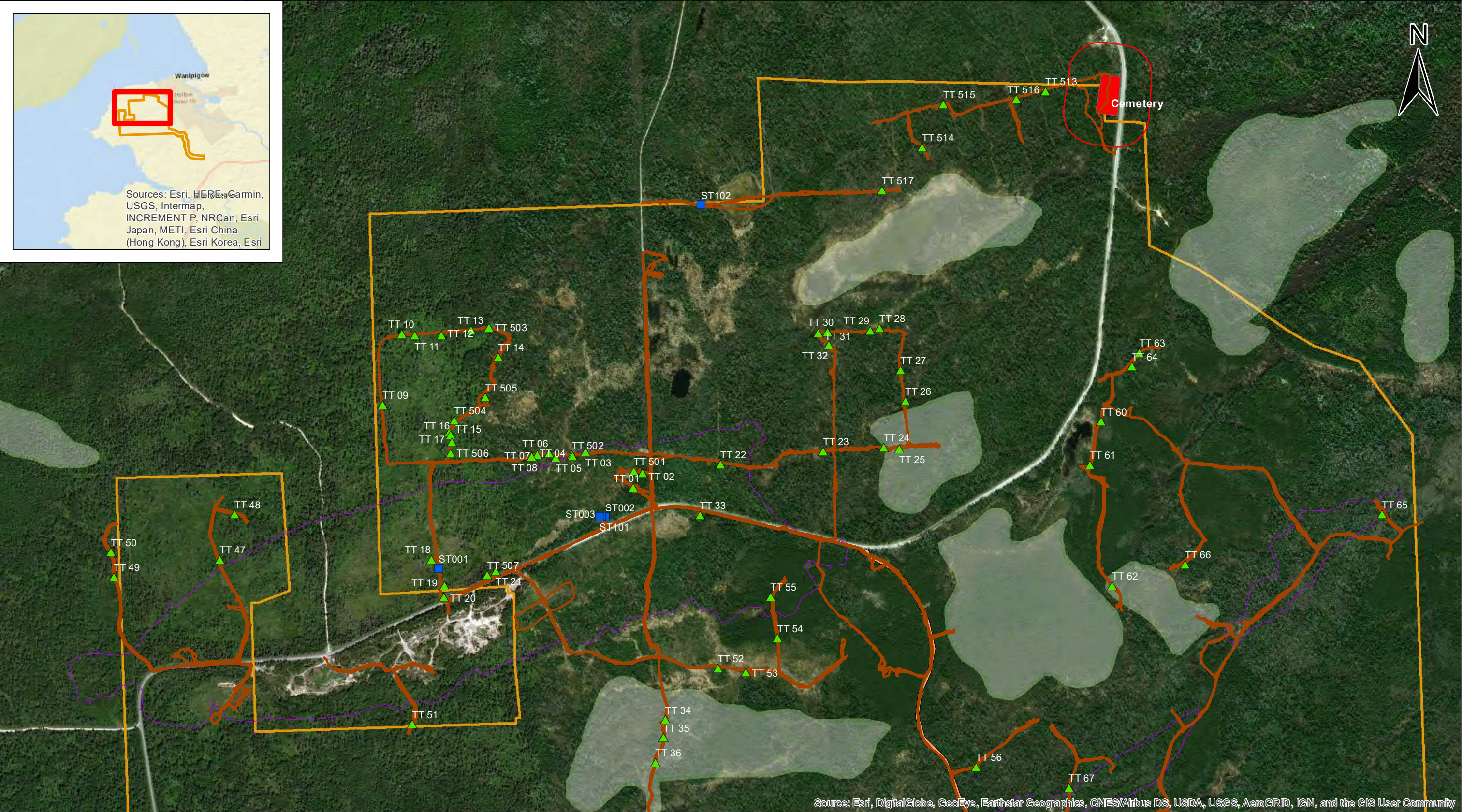
REVISION DATE:
24-NOV-18

QA/QC:

Legend

- Shovel Test
- Tree Throw
- Rock Outcrop
- Pedestrian Survey Track
- Upland Area (250m asl)
- Cemetery (100m buffer)
- Registered Archaeological Site
- Proposed Main Access Road
- Proposed Project Site Area Boundary
- Proposed Plant Location
- Proposed Annual Mining Area
- Wetland

Wanipigow Sand Extraction Project Heritage Resource Impact Assessment November 1 to 8, 2018



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



DATA SOURCE:
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CREATED BY:
Lisa C. Bobbie

COORDINATE SYSTEM:
UTM NAD 1983 Z14N

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0 500 1,000 Feet

DATE CREATED:
16-NOV-18

VERSION NO:
1.0

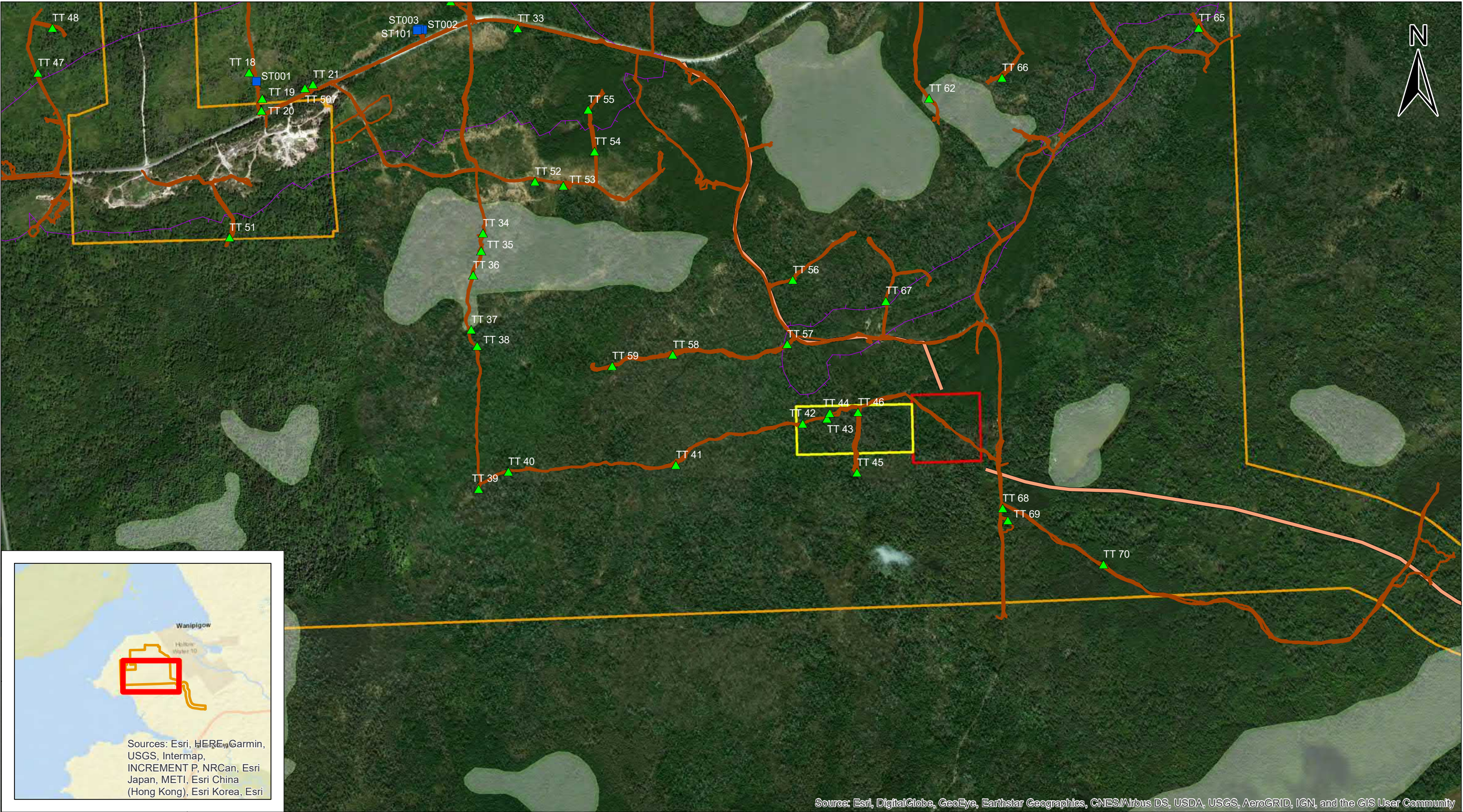
REVISION DATE:
24-NOV-18

QA/QC:

Legend

- Shovel Test
- Tree Throw
- Pedestrian Survey Track
- Upland Area (250m asl)
- Cemetery (100m buffer)
- Main Access Road
- Proposed Project Site Area Boundary
- Proposed Plant Location
- Proposed Annual Mining Area
- Wetland

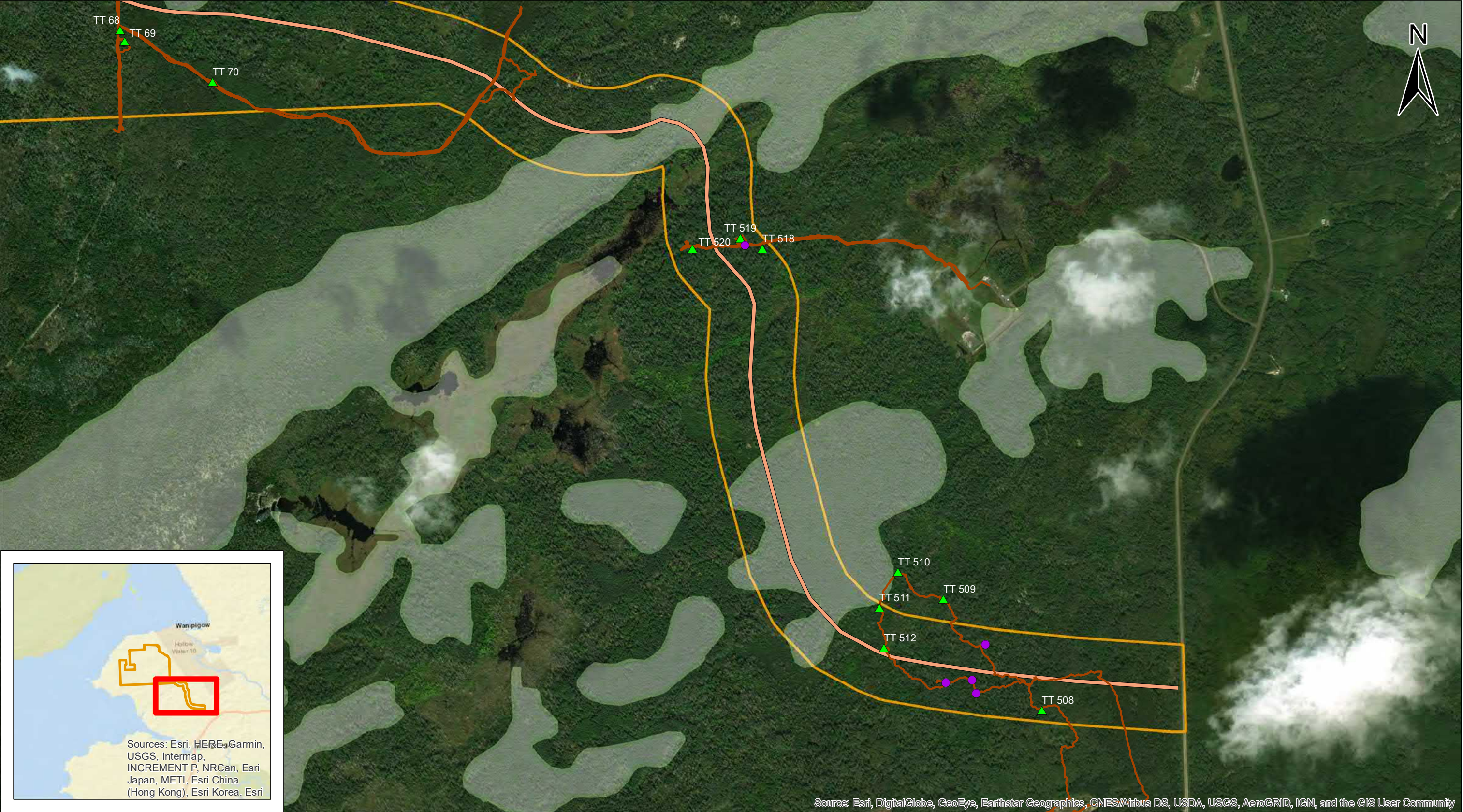
Wanipigow Sand Extraction Project Heritage Resource Impact Assessment Northern Study Area



DATA SOURCE: Government of Manitoba, Manitoba Infrastructure; ESRI; NRCAN; AECOM; Claim Post Resources Inc.		
CREATED BY: Lisa C. Bobbie		
COORDINATE SYSTEM: UTM NAD 1983 Z14N	DATE CREATED: 16-NOV-18	REVISION DATE: 24-NOV-18
0 150 300 Meters 0 500 1,000 Feet	VERSION NO: 1.0	QA/QC:

Legend	
Shovel Test	Proposed Main Access Road
Tree Throw	Proposed Project Site Area Boundary
Pedestrian Survey Track	Proposed Plant Location
Upland Area (250m asl)	Proposed Annual Mining Area
Wetland	

Wanipigow Sand Extraction Project Heritage Resource Impact Assessment Southern Study Area



Wanipigow
Hollow
Water 10

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri



DATA SOURCE: Government of Manitoba, Manitoba Infrastructure; ESRI; NRCAN; AECOM; Claim Post Resources Inc.		
CREATED BY: Lisa C. Bobbie		
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0 200 400 Meters 0 500 1,000 Feet	VERSION NO: 1.0	QA/QC:

Legend

- Shovel Test
- Tree Throw
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Wanipigow Sand Extraction Project
Heritage Resource Impact Assessment
Main Access Road Study Area