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2023 LIDAR Survey of the Sackville Property

Aldina, Adrian Marks and Sackville Townships, Ontario

NTS Map NTS 52

June 9, 2023

Jared Beebe, P. Geo.

Exploration Manager, Mistango River Resources

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Summary:

In the spring of 2023 Mistango River Resources contracted KBM Resources Group Thunder Bay, Ontario to fly a LIDAR survey of the Sackville Claim Block (figures 1 & 2). The survey was flown on May 17th and 18th of May, 2023, a total of two days. The reason for the survey was to find subtle traces of geologic structure to aid in locating the source of the VMS erratics found on the claim block in 1997. No previous ground or airborne geophysical survey has been successful in locating the source of the mineralized discovered on the southern portion of the property. The survey was flown using UTM, NAD83 datum, zone 16N.

Introduction:

The Sackville Property was discovered in May of 1996 by Steve and Mick Stares when they found three large size VMS type mineralized glacial erratics 60 kilometers west of Thunder Bay, Ontario. The erratic's had grades ranging from 38.6% Zn to 0.29 % Zn and Copper values ranging from 0.00% to .26 Cu. The Boomer boulder weighted 10 tonnes and the Calvert boulder weighted 15 tonnes, the weight of the Stares Boulder hasn't been given in any of the reports. The Calvert boulder is at Lakeview Colege in Thunder Bay. The published direction of the ice flow is $\approx 190^\circ$ and almost all the claims are north of the boulders. All the work done to date aside from three geophysical surveys has been to the north of the boulders. The boulders were in the southernmost claims, so the airborne geophysical surveys covered those claims as well. There has been several trenching, soil sampling and drilling programs on the property since 1997, but with inconclusive results.

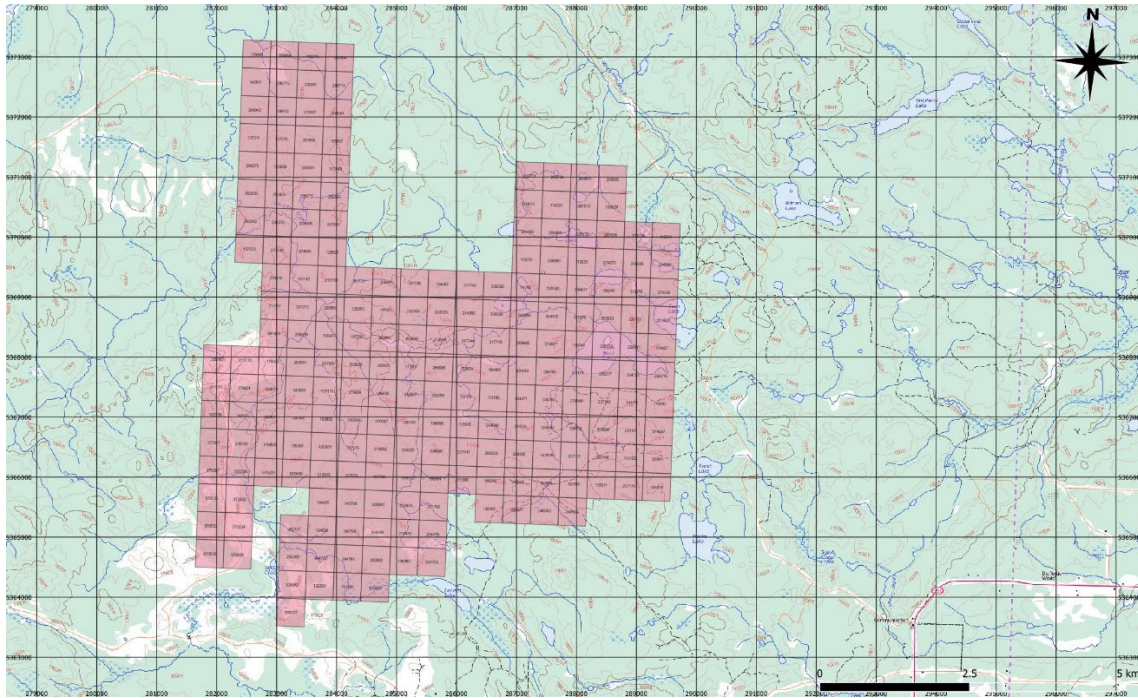


Figure 1. Sackville Claims

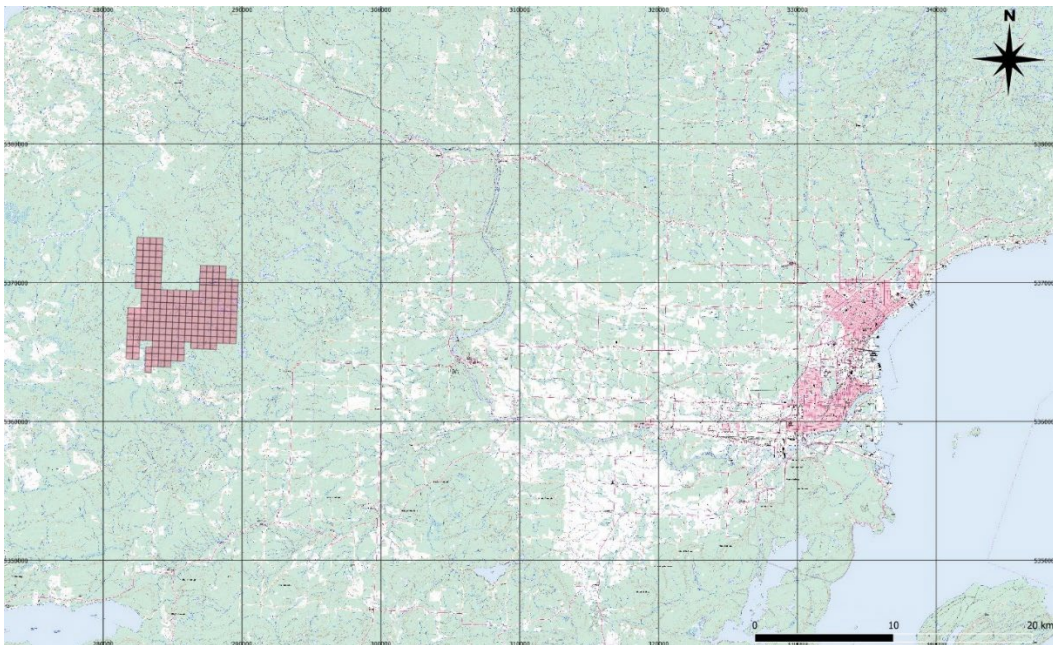


Figure 2. Sackville Claims and Thunder Bay

Location:

The Sackville claims are located 60 kilometers west of the town of Thunder Bay, Ontario in the Aldina, Aldina, Marks and Sackville townships with the approximate center of the claim block being in NTS Map NTS 52 A at UTM coordinates 5367597N and 284556E (Zone 16, NAD 83) or Latitude 48° 25' N Longitude 89° 55' W. All season, gravel road access is available via Boreal Road. This traverses west from secondary highway 590 to Km 10.5, Aldina East Road (63 km from Kakabeka Falls, ON) and beyond. Aldina West Road, a seasonal (winter-plowing required) sandy road which provides generally good vehicle access to a ski-doo trail which provides access to the eastern side of the grid. The Boreal Road- Hwy 590 intersection is 13 km west and(then) south of the Hwy 590-TransCanada Highway 11-17 intersection. Kakabeka Falls, Ontario only 2 km to the south of this turn (on Highway 11-17) is the closest town.

Claims:

Legacy Claim Id	Township / Area	Tenure ID	Tenure Type	Anniversary Date
4219074	SACKVILLE	337270	Single Cell Mining Claim	2022-06-10
4219074	SACKVILLE	328554	Single Cell Mining Claim	2022-06-10
4219074	SACKVILLE	268639	Single Cell Mining Claim	2022-06-10
4219074	SACKVILLE	261849	Single Cell Mining Claim	2022-06-10
4219074	SACKVILLE	231190	Single Cell Mining Claim	2022-06-10
4219074	SACKVILLE	213151	Single Cell Mining Claim	2022-06-10
4219074	SACKVILLE	213150	Single Cell Mining Claim	2022-06-10
4219074	SACKVILLE	201680	Single Cell Mining Claim	2022-06-10
4219074	SACKVILLE	176310	Single Cell Mining Claim	2022-06-10
4219074	SACKVILLE	161142	Single Cell Mining Claim	2022-06-10
4219074	SACKVILLE	137532	Single Cell Mining Claim	2022-06-10
4219074	SACKVILLE	130470	Single Cell Mining Claim	2022-06-10
4219074	SACKVILLE	125527	Single Cell Mining Claim	2022-06-10
4219075	SACKVILLE	332653	Single Cell Mining Claim	2022-06-10
4219075	SACKVILLE	331156	Single Cell Mining Claim	2022-06-10
4219075	SACKVILLE	318441	Single Cell Mining Claim	2022-06-10
4219075	SACKVILLE	301101	Single Cell Mining Claim	2022-06-10
4219075	SACKVILLE	263961	Single Cell Mining Claim	2022-06-10
4219075	SACKVILLE	252438	Single Cell Mining Claim	2022-06-10
4219075	SACKVILLE	204697	Single Cell Mining Claim	2022-06-10
4219075	SACKVILLE	197255	Single Cell Mining Claim	2022-06-10
4219075	SACKVILLE	111147	Single Cell Mining Claim	2022-06-10
4262831	ALDINA	300883	Single Cell Mining Claim	2022-06-22
4262831	ALDINA	299337	Single Cell Mining Claim	2022-06-22
4262831	ALDINA	252137	Single Cell Mining Claim	2022-06-22

4262831	ALDINA	244782	Single Cell Mining Claim	2022-06-22
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4262831	ALDINA	224599	Single Cell Mining Claim	2022-06-22
4262831	ALDINA	184830	Single Cell Mining Claim	2022-06-22
4262831	ALDINA	148769	Single Cell Mining Claim	2022-06-22
4262831	ALDINA	132824	Single Cell Mining Claim	2022-06-22
4262831	ALDINA	132823	Single Cell Mining Claim	2022-06-22
4262831	ALDINA	121334	Single Cell Mining Claim	2022-06-22
4272795	ADRIAN	209328	Single Cell Mining Claim	2022-08-31
4272795	ADRIAN,MARKS	246500	Single Cell Mining Claim	2022-09-07
4281353	MARKS	254477	Single Cell Mining Claim	2022-09-07
4281353	MARKS	246502	Single Cell Mining Claim	2022-09-07
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	ALDINA	570532	Single Cell Mining Claim	2023-01-23
	ALDINA	570531	Single Cell Mining Claim	2023-01-23
	ALDINA,SACKVILLE	570530	Single Cell Mining Claim	2023-01-23
	ALDINA,SACKVILLE	570529	Single Cell Mining Claim	2023-01-23
	ALDINA,SACKVILLE	570528	Single Cell Mining Claim	2023-01-23
	ALDINA,SACKVILLE	570527	Single Cell Mining Claim	2023-01-23

Table 1. Sackville Claims

Geology:

The Sackville claims are in the Shebandowan Greenstone Belt and the property is typical of a bi-modal mafic/felsic suite with basal tholeiitic mafic volcanics and an upper unit of rhyolite to dacitic composition flows. There are local intrusions of mafic sills and gabbros. And there is an unconformable sedimentary sequence on top of the volcanics and igneous lithologies (Iliev, 2015, Perry et al., 2010, McClean, 2000). In general, the Sackville claims are considered prospective for VMS type mineralization.

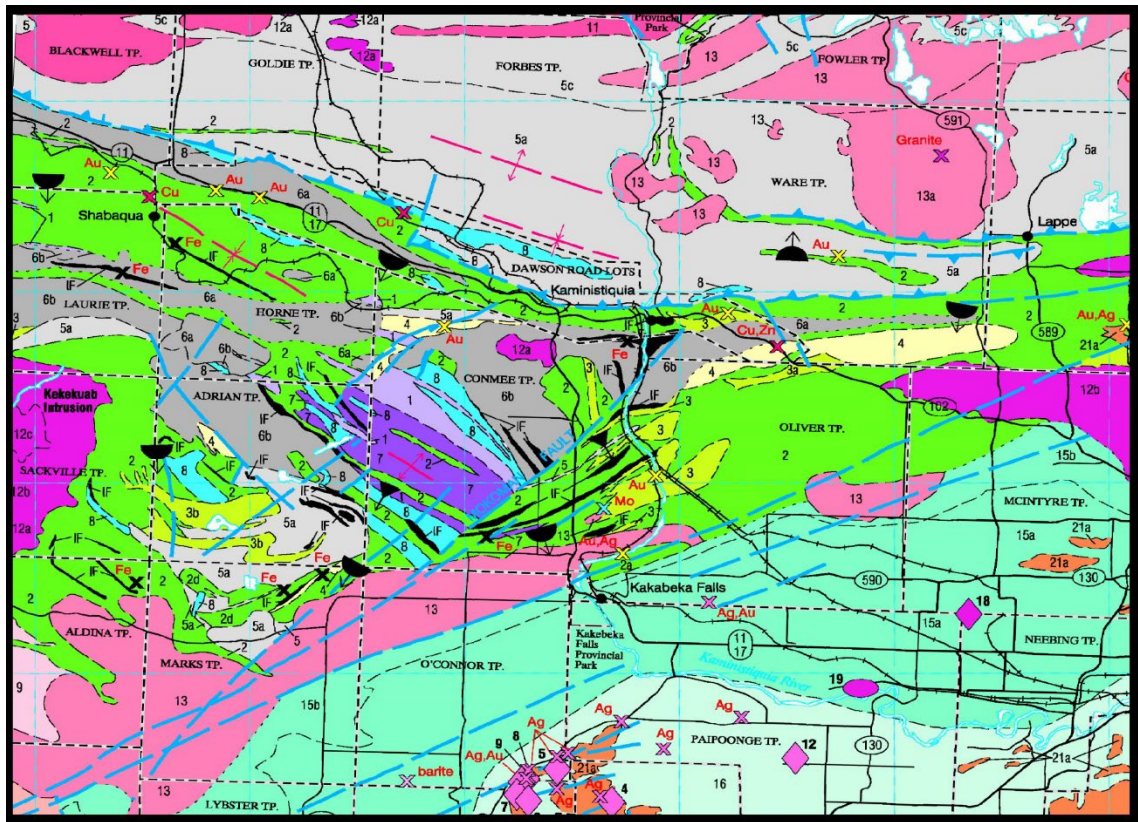


Figure 3, Sackville Geology, Perry and Sharpley, 2010.

LIDAR Survey, 2023:

In May of 2023, Mistango River Resources decided to fly an airborne LIDAR survey over the entire Sackville claim block as well as the current Goldie claim block to help delineate subtle geologic structures. This would be useful to locate geologic structures that focus mineralization. Previous geophysical work on the southern portion of the Sackville claims was unsuccessful in finding the source of these mineralized boulders.

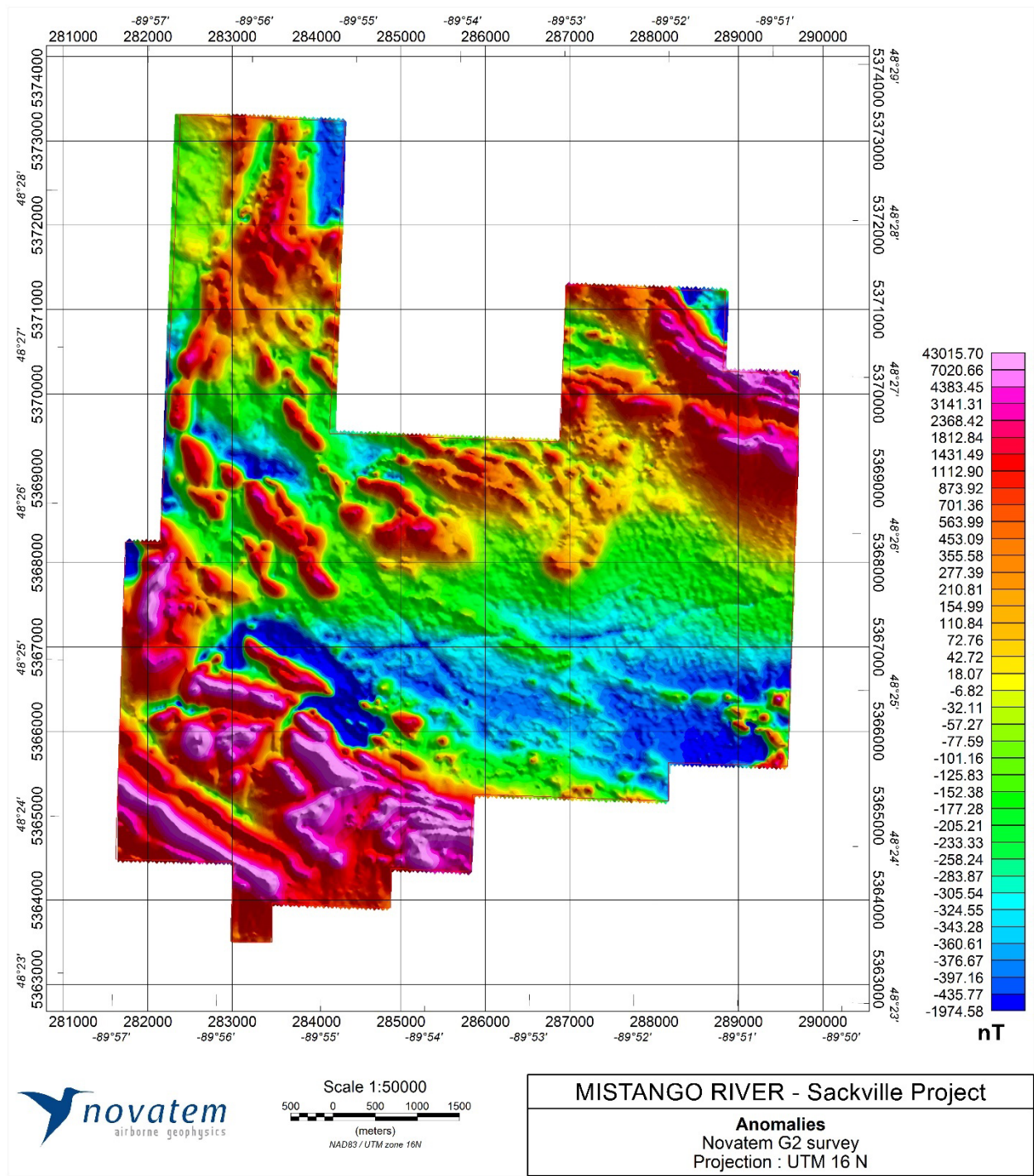


Figure 4, Geophysical Anomalies Sackville Claims

Recommendations:

The new geophysical report is successful in finding prospective new zones to explore for the sources of the VMS type mineralization found in the glacial erratics on the southwest section of the claim block. Therefore, it is recommended to prospect and possibly drill test the magnetic highs found in the northeastern and northwestern portion of the claim block. A first pass survey should be done followed by a systematic geochemical survey, either soils or biogeochemical. If indications are good, this geochemical survey should be followed up by drilling

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Iliev, Ilain, 2015, Drilling Report, Sackville Property, 2014, for Mistango River Resources, 2/18/2015.

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Lewis, Pat, 1997, Geo-Technical Report, IB (Geological Mapping - September, 1996 and Geophysical PEM Survey - January, 1997), private report for Cumberland Resources, LTD.

Maclean, Dave, 2000, Report On a Trenching Program at the Aldina Project (Stares Option Agreement). private report for RJK Explorations.

Perry, Tammy and Sharpley, 2010, Technical Report on Mining Claims, Sackville Project, private report for GLR Resources and RJK Exploration.

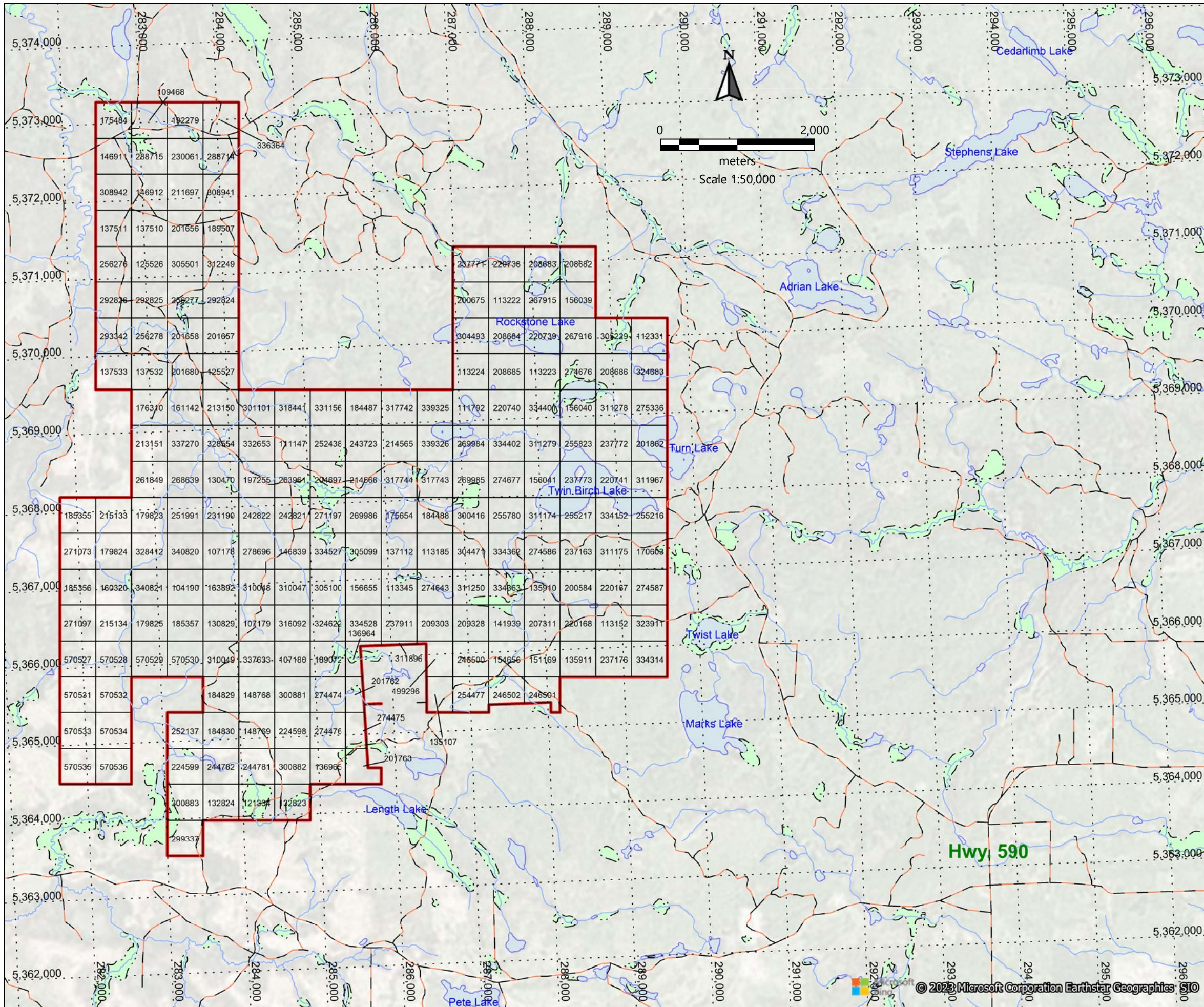
Schnieders, B. R., et al., 2000, Stares (Aldina) property, in B. R. Schnieders, et al., Ontario Geological Survey Report of Activities, 1999, Resident Geologist Program, Thunder Bay South Regional Resident Geologist Report: Thunder Bay South District; Ontario Geological Survey Open File Report 6005, p. 6

Schnieders, B. R., et al., 2001, Calvert Float (Stares/Calvert Property, Aldina Township), in B. R. Schnieders, et al., Ontario Geological Survey Report of Activities, 2000, Resident Geologist Program, Thunder Bay South Regional Resident Geologist Report: Thunder Bay South District; Ontario Geological Survey Open File Report 6049, p. 29-31

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al., Ontario Geological Survey Report of Activities, 2001, Resident Geologist Program, Thunder Bay South Regional Resident Geologist Report: Thunder Bay South District; Ontario Geological Survey Open File Report 6081, p. 22-26

Appendix A
Maps



- Legend**
- NTS 50
 - Mistango
 - Property Outline
 - Marsh
 - Lake
 - Roads
 - Streams
 - Railways
 - Utility Line

Mistango River

MAP 1

Sackville Property Claim Map

Date: 2023-06-08

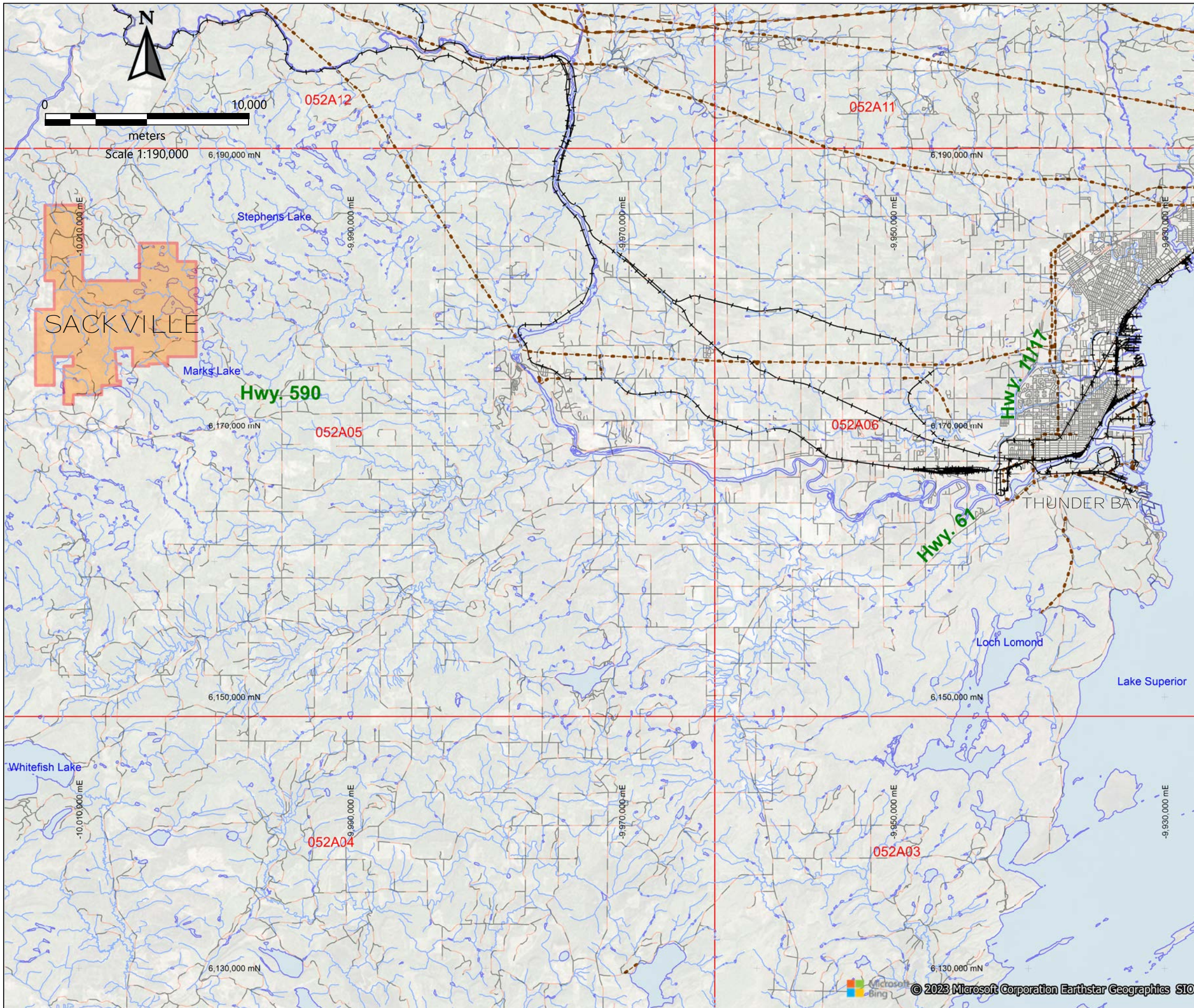
Author: csalo

Office:

Drawing:

Scale: 1:50000

Projection: Nad 83, UTM Zone 16



Legend

- NTS 50
- Mistango
- Property Outline
- Marsh
- Lake
- Roads
- Streams
- Railways
- Utility Line

Mistango River

MAP 2

**Sackville Property
General Location Map**

Date: 2023-06-08

Author: csalo

Office:

Drawing:

Scale: 1:190000

Projection: Nad 83, Utm Zone 16



5,374,000 mN

5,374,000 mN

5,370,000 mN

5,370,000 mN

5,366,000 mN

5,366,000 mN

5,362,000 mN

5,362,000 mN

282,000 mE

286,000 mE

290,000 mE

282,000 mE

286,000 mE

290,000 mE

175484	109468	192279	336364
146911	288715	230061	288714
308942	146912	211697	308941
137511	137510	201656	189507
256276	125526	305501	312249
292826	292825	256277	292824
293342	256278	201658	201657
137533	137532	201680	125527

237771	220738	208683	208682
200675	113222	267915	156039
304493	208684	220739	267916
113224	208685	113223	274676

176310	161142	213150	301101	318441	331156	184487	317742	339325	111792	220740	334401	156040	311278	275336
213151	337270	328554	332653	111147	252438	243723	214565	339326	269984	334402	311279	255823	237772	201862
261849	268639	130470	197255	263961	204697	214566	317744	317743	269985	274677	156041	237773	220741	311967
185355	215133	179823	251991	231190	242822	242821	271197	269986	175654	184488	300416	255780	311174	255217
271073	179824	328412	340820	107178	278696	146839	334527	305099	137112	113185	304471	334362	274586	237163
185356	160320	340821	104190	163892	310048	310047	305100	156655	113345	274643	311250	334363	135910	200584
271097	215134	179825	185357	130829	107179	316092	324622	334528	237911	209303	209328	141939	207311	220168
570527	570528	570529	570530	310049	337633	107180	189072	311896	199296	246500	154656	151169	135911	237176
570531	570532			184829	148768	300881	274474	136964						
570533	570534			252137	184830	148769	224598	201762	185107	254477	246502	246501		
570535	570536			224599	244782	244781	300882	136965	201763					
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				299337										

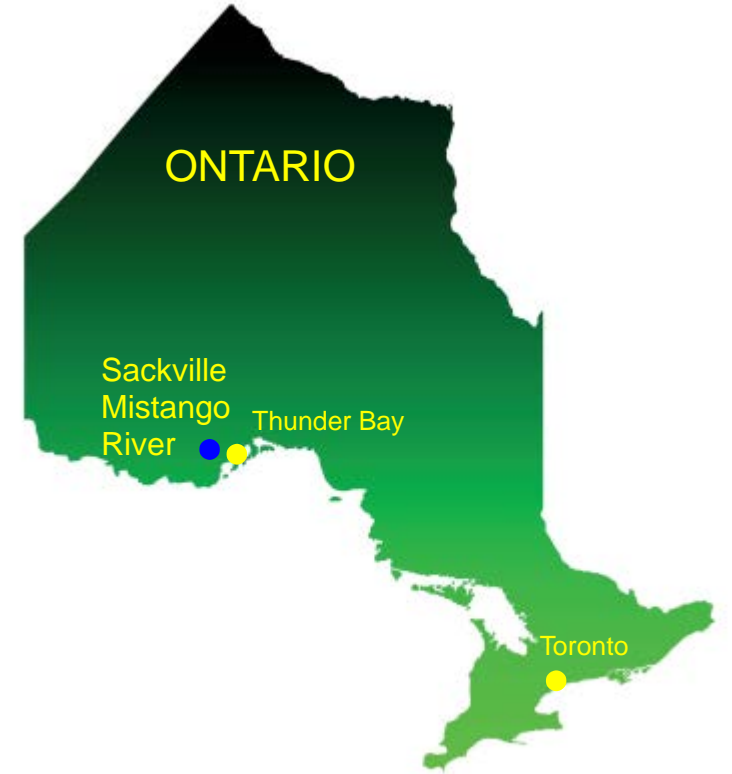
SACKVILLE

052A05

ADRIAN

MARKS

ALDINA



Legend

Features interpreted Lidar

- Trenches
- Cut area
- Roads and Trails

- Mistango River Claims
- gplan
- Flight Lines

MAP 3

Date: 2023-06-08

Author: csalo

Office:

Drawing:

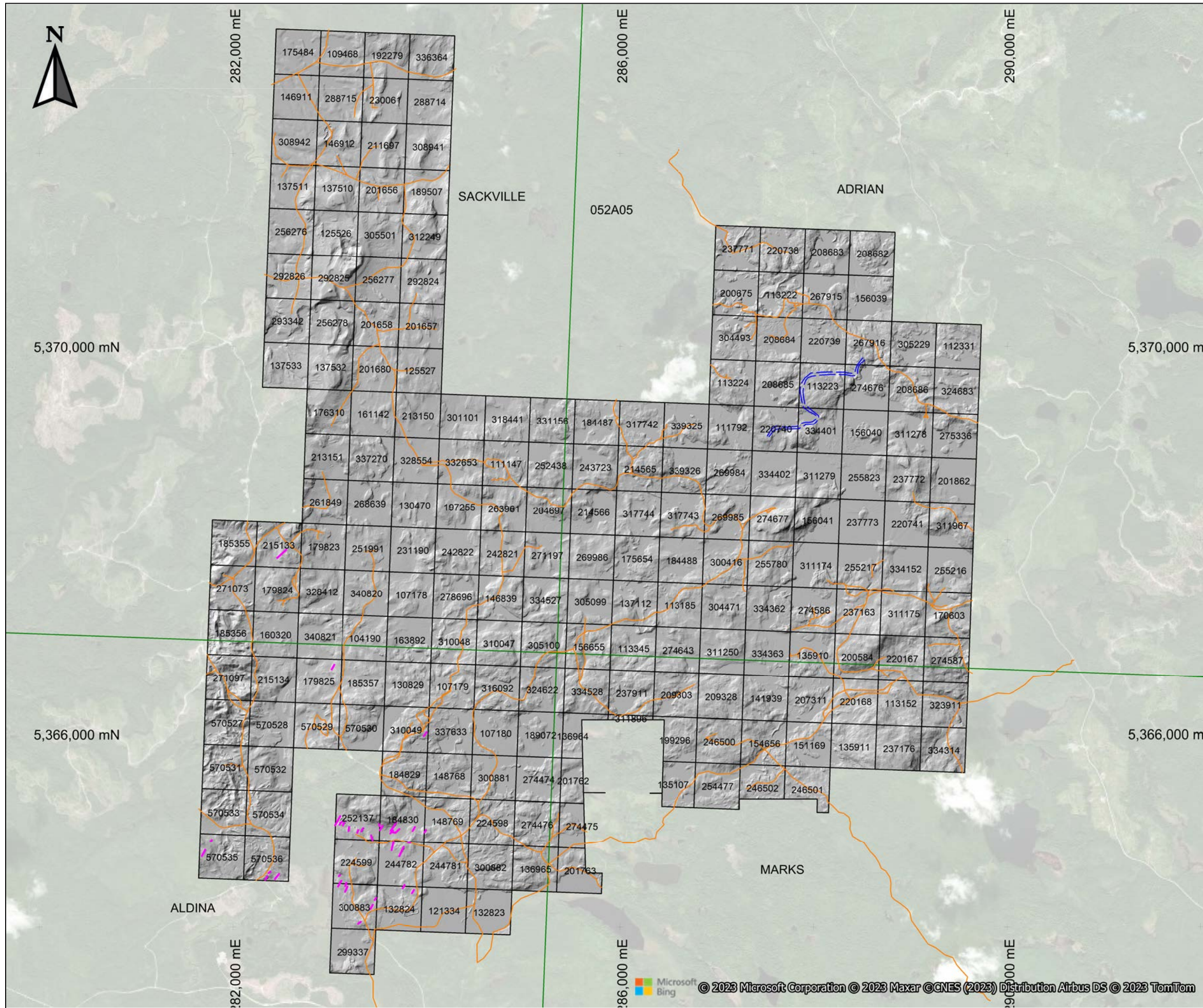
Sackville Property FLIGHT LINES

Mistango River

Projection: UTM Zone 16 (NAD 83)



Scale 1:50,000



ONTARIO

Sackville
Mistango River
Thunder Bay
Toronto

Legend

- Features interpreted Lidar
 - Trenches
 - Cut area
 - Roads and Trails
- Mistango River Claims
- gplan

MAP 4		Sackville Property DEM HILLSHADE Mistango River
Date: 2023-06-08		
Author: csalo		
Office:		
Drawing:		Projection: UTM Zone 16 (NAD 83)

0 2,500
meters
Scale 1:40,000

Microsoft Bing © 2023 Microsoft Corporation © 2023 Maxar © CNES (2023) Distribution Airbus DS © 2023 TomTom

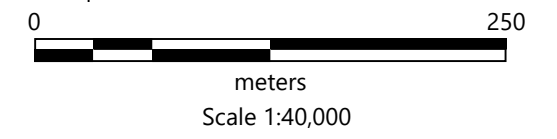


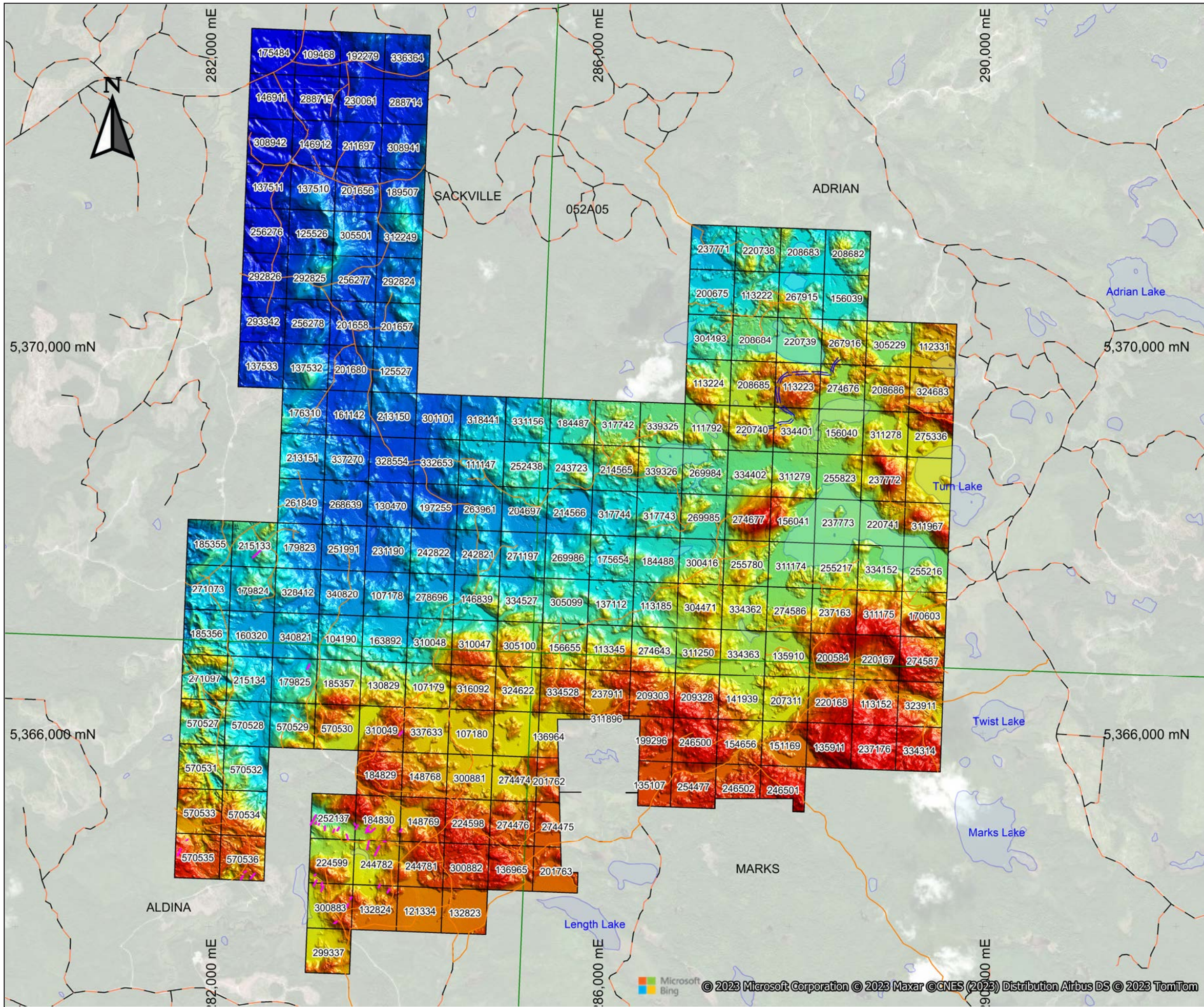
Legend

- Features interpreted Lidar
 - Trenches
 - - - Cut area
 - Roads and Trails
- Mistango River Claims
- gplan

MAP 5
 Date: 2023-06-08
 Author: csalo
 Office:
 Drawing:

Sackville Property
 High Resolution
 Image Mosaic
Mistango River
 Projection: UTM Zone 16 (NAD 83)

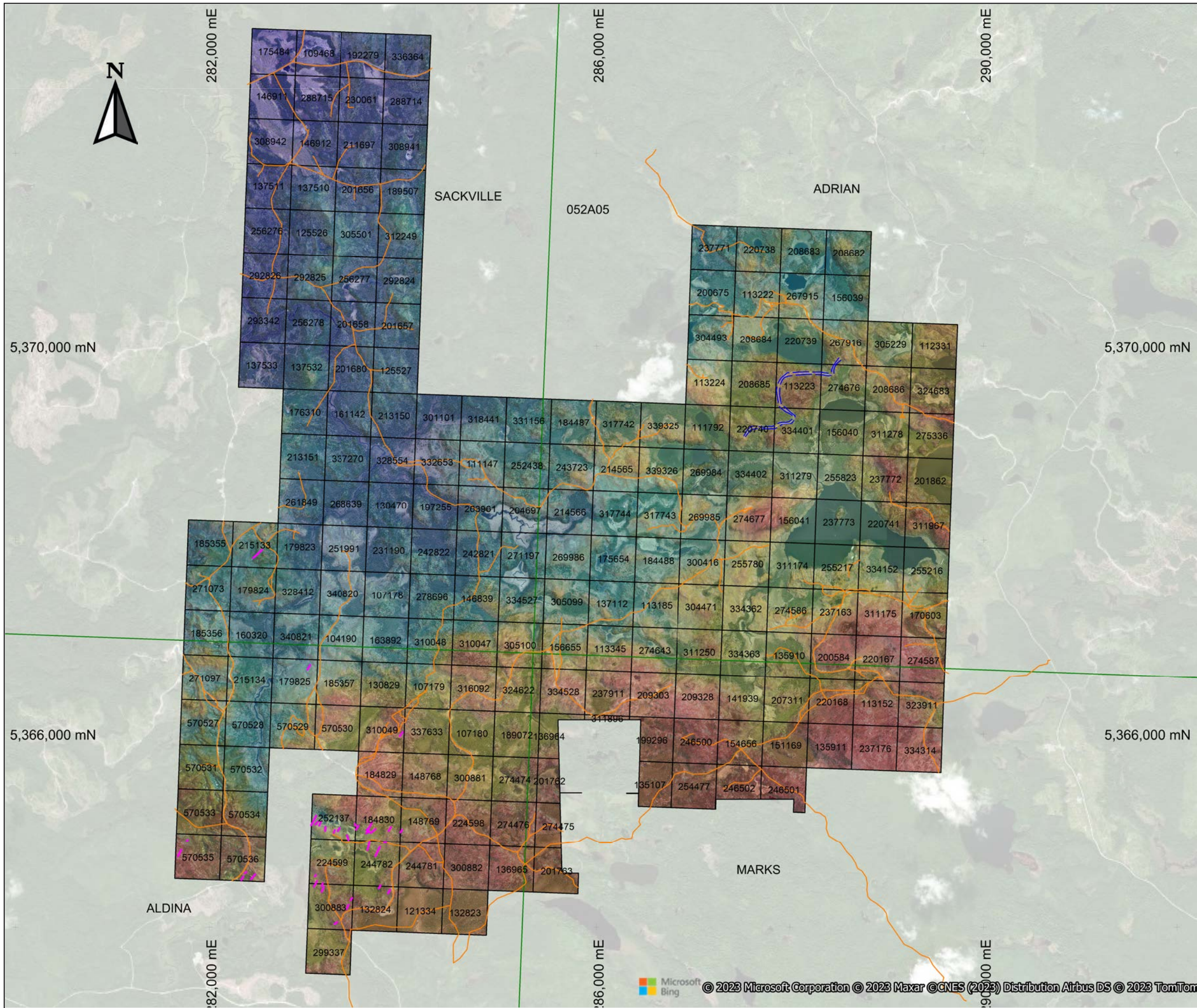




Legend

- Features interpreted Lidar
- Trenches
 - - - Cut area
 - Roads and Trails
- Mistango River Claims gplan

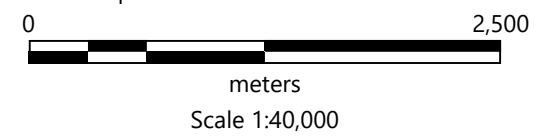
<p>MAP 6</p> <p>Date: 2023-06-08</p> <p>Author: csalo</p> <p>Drawing: L-assessment_dwgs 2023_</p>	<p>Sackville Property 1m DEM NTS 062A05</p> <p>Mistango River</p> <p>Projection: UTM Zone 16 (NAD 83)</p>
<p>0 2,500 meters Scale 1:40,000</p>	



Legend

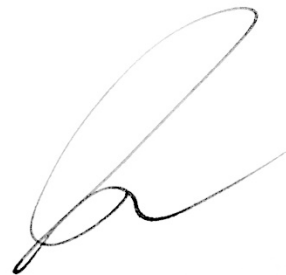
- Features interpreted Lidar
- Trenches
 - - - Cut area
 - Roads and Trails
- Mistango River Claims gplan

MAP 7	
Date: 2023-06-08	Sackville Property 1m DEM Over High Resolution Images
Author: csalo	
Office:	Mistango River
Drawing:	Projection: UTM Zone 16 (NAD 83)



Statement of Qualifications

1. I, Jared Beebe, have been a practicing economic geologist since February of 1987 and have over thirty-five years of minerals exploration experience.
2. I graduated from Metropolitan State College in December of 1981 with a B. S. in Applied Sciences with a geology emphasis.
3. I have been associated with Mistango River Resources in the position of Exploration Manager since September 2021.
4. I am a member in good standing of l' Ordre des Geologues du Quebec since September of 2006, my membership number is 1010.
5. I am a member in good standing of the PGO of Ontario and my APGO membership number is 3783.
6. Dated this day of June 6th, 2023

A handwritten signature in black ink, appearing to read 'Jared Beebe', is written on a white background. The signature is fluid and cursive, with a large loop at the top and a smaller loop at the bottom.

Jared Beebe, P. Geo.

LiDAR and Photo Survey Report

Mistango River Resources

Goldie and Sackville Claims



Introduction

KBM Resources Group was contracted by Mistango River Resources to complete airborne LiDAR and Photo surveys of the Goldie and Sackville properties located approximately 45 km West of Thunder Bay in the Shabaqua Corners area. KBM is an experienced aerial survey service provider established in 1974 and based at Thunder Bay, ON. Table 1. summarizes the overall project data.

Project Info:		Comments
Date of Survey	May 17, 2023	
Time start	13:00 EST	
Time finish	15:00 EST	
Aircraft	C-GJBH	
Crew	Ian Gillies	
Survey system	System 91	
Base Station	CANNET – THU2	

Table 1. Project Overview.

Materials

The equipment used on this survey included aircraft, survey systems, and ground GPS base station.

The aircraft utilized was KBM owned and operated C-GJBH, a 2014 Air Tractor 502B, as shown in Figure 1.



Figure 1. Air Tractor C-GJBH

The survey system utilized was KBM owned and operated System 91. System 91 is comprised of 3 principle components:

1. Positioning System: Applanix AP60 airborne inertial and GNSS positioning system
2. Camera System: Vexcel Ultracam Falcon Prime large format digital mapping camera. Last factory calibration March 17, 2023. See figure 2.
3. LiDAR System: Riegl LMS Q780ii-S long range wide area mapping lidar system. Last factory calibration July 6, 2021. See figure 3.



Figure 2. Ultracam Flacon Prime



Figure 3. Riegl LMS Q780ii-S

The ground reference GPS station used for this survey is part of the CanNET publicly available network of base stations located across Canada. The specific station referenced for the this survey was CANNET-THU2.

Methods

Planning and execution of the survey was completed using TrackAir aerial survey planning and flight management software suite. A flight plan was generated in SnapPlan, and the flight lines were generated based on a desired minimum nominal pulse density of 6 points per metre squared (Figure 4). The planning specifications are described in Table 2.

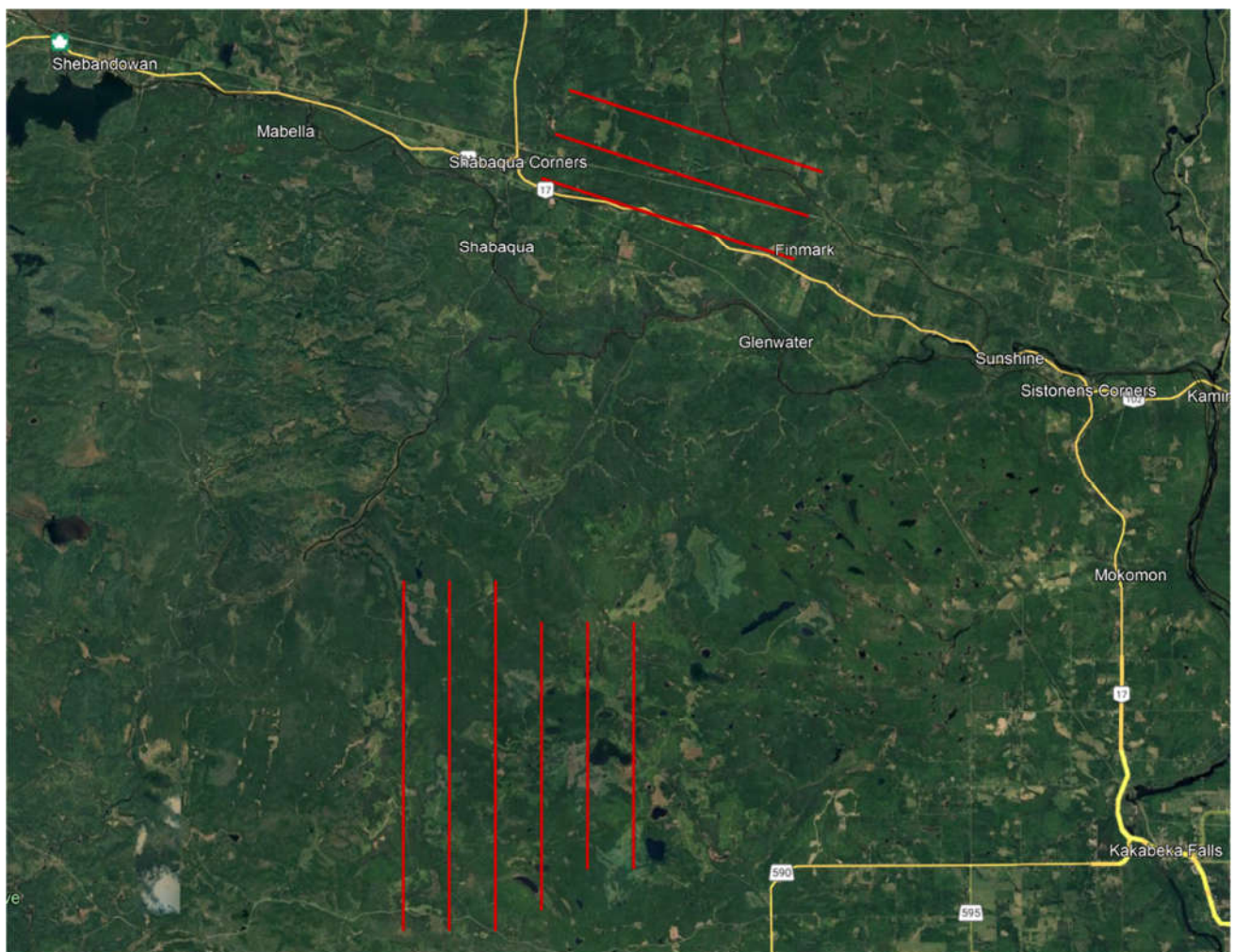


Figure 4. Planned Flight lines.

Table 2. Flight Planning Specifications

Parameter	Planned Specification	Comment
Altitude	1,700 Metres above ground	
Speed	130 knots	
Bank limits	Max 20 degrees roll	To ensure no loss of satellite lock
Field of View	60 degrees	30 degrees either side of NADIR
LiDAR point density	10 points per square metre	Surplus to ensure contract requirements met.
LiDAR spot size	0.29 square metres	
Sun angle	>25 degrees	
Image Ground Sample Dist.	15 cm.	
Flight line overlap	25%	
Image overlap	60% forward	

The flight was completed on May 17, 2023 between 1300 and 1500 local time. Sun angle for the survey was between 55 and 60 degrees above the horizon. All flight lines were flown one time and within the planned altitude and speed parameters. Coverage for LiDAR and photo data was as planned and depicted in Figure 5.

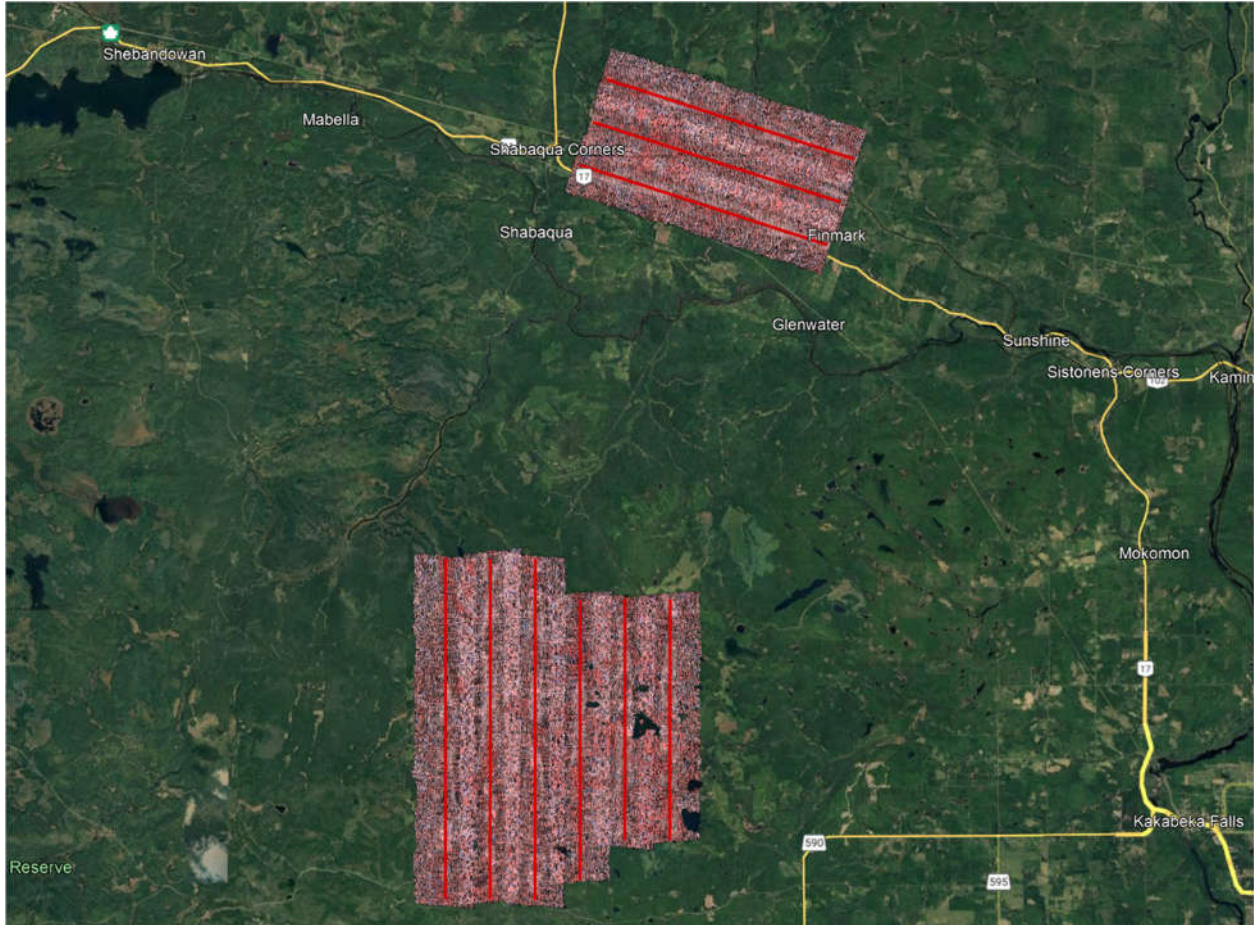


Figure 5. LiDAR and Photo data coverage.

Post Mission

All data from the mission were transferred immediately following the flight to KBM's secure data storage servers, with redundant copies stored on the data transfer computer at KBM's hangar.

Raw data processing is presently underway. Initial data checks indicate a successful mission meeting all target parameters. Final data deliverables due for delivery to Mistango River resources by June 21, 2023.

Report completed by Ian Gillies May 31, 2023