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Assessment Report

Goalie Stick Project

2019 Airborne Survey

Garrison-Rand Property

Rand, Garrison, and Harker Townships

Northwestern Ontario

Prepared By:

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December 10, 2020

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Contents

1 Summary

1.1 Property Description and Ownership

The Garrison-Rand property is wholly owned by Red Pine Exploration Inc. (“Red Pine”). The property is located approximately 46 kilometers west of Matheson and 50 kilometers north of Kirkland Lake. The Goalie Stick Project comprises 21 contiguous claim units covering 276.3 hectares in the Rand, Garrison, and Harker townships. Gold was first discovered on the Garrison-Rand property in 2010, although the property has been explored by junior companies since 1964, mainly through geophysical surveys.

1.2 2019 Program Summary

An airborne geophysical survey was conducted by Expert Geophysics Limited (EGL) on the Goalie Stick Project, performed for Red Pine. EGL conducted a helicopter-borne high-resolution near surface time-domain electromagnetic (mTEM) survey. The purpose of the survey was detailed electromagnetic near surface mapping of geological structures and lithology, including possible alteration and mineralization zones, using electrical properties of rocks. The total line kilometers flown was 159 km, of which 62.5 km was completed on Red Pine claims and 96.5 km was flown over claims not held by Red Pine.

The survey was flown in 3 separate flights between December 1st to 2nd, 2019 to complete 159 line-kilometers of the survey over a 7 km^2 area. The crew for this survey mobilized and conducted a flight test between November 28th to 30th, and demobilized December 3rd to 4th.

Five mTEM maps were provided by EGL based on their survey data. The results are represented as dB/dt response on very early, middle and late channels and the high frequency component of the EM field was extracted.

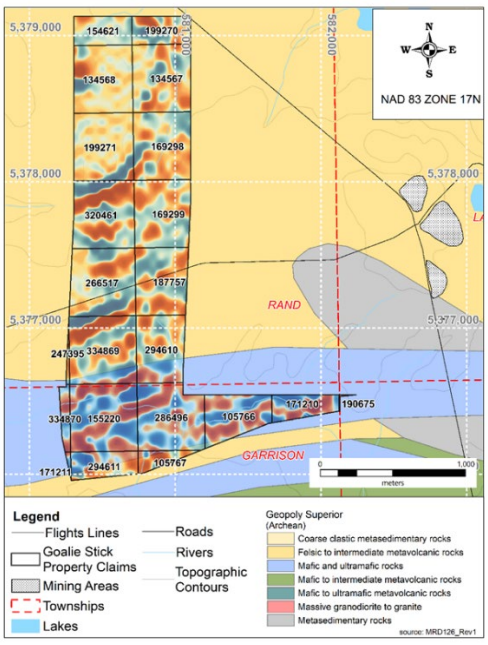

Figure 1-2: The survey blocks position (high frequency component of channel 30) over the Geological Map by Ontario Geological Survey.

1.3 Geology and Mineralization

The Garrison-Rand claim group lies within the Abitibi Greenstone Belt in the Abitibi Subprovince of the Archean Canadian Shield. It comprises a sequence of Archean sedimentary, felsic and mafic volcanic, ultramafic, and plutonic rocks. The Abitibi Greenstone Belt hosts the Kirkland Lake gold deposit to the southwest of the Garrison-Rand property, and the Timmins gold camp to the west. It is possible that similar greenstone host rocks and mineralization are present at the Goalie Stick Project which is the dominant exploration target. Gold has previously been encountered on this property through grab sample and channel sample analysis.

1.4 Status of Exploration, Development and Operations, Mineral Resource and Reserve Estimates

There have been no mineral resource or reserve estimates for any portion of the consolidated claims comprising the Goalie Stick Project, both currently and historically, to the knowledge of the author. There has been no mine development nor operations on any portion of the property. Both current and historic exploration activities across the property have been greenfield. This Assessment Report expounds the airborne geophysical survey conducted in December 2019.

1.5 Units of Measure and Abbreviations

The Metric System is the primary system of measure and length used in this report and is generally expressed in kilometres, metres and centimetres; volume is expressed as cubic metres, mass expressed as metric tonnes, and area as hectares. Precious metal grades (such as gold) are generally expressed as grams per tonne (gpt) but may also be in parts per billion (ppb) or parts per million (ppm).

Dollars are expressed in Canadian currency (CAD$) unless otherwise noted. Base and certain industrial metal and mineral prices are stated as US$ per tonne (US$/t), and precious metal prices are stated in US$ per troy ounce (US$/oz).

Unless otherwise noted, Universal Transverse Mercator (“UTM”) coordinates are provided in the datum of NAD83 Zone 17 North.

Table 1-5: List of Abbreviations.

Term	**Definition**
Au	Gold
E	East
EM	Electromagnetic
Inc.	Incorporated
Km2	Square kilometers
N	North
NAD	North American Datum
QP	Qualified Person
UTM	Universal Transverse Mercator
W	West

1.6 Conclusions and Recommendations

Field mapping and prospecting is recommended to develop a working structural and geological model of the property, particularly in the area where promising assays were received. Understanding the extent and associations of gold in that area is needed prior to further trenching or any test drilling. This work would also be helpful in determining the reason and significance of E-W structures observed through numerous geophysical surveys and the significance of porphyry dykes on gold mineralization. Secondly, it is recommended to make inversions of the electromagnetic data received in 2019 to plot the true resistivity of the near surface geology. Complex analysis of the electromagnetic data paired with known geological and geochemical information is recommended prior to planning test drilling or trenching. Thirdly, once phases one and two have been completed, mechanized stripping and channel sampling may be completed.

Table 1-6: Summary of Recommended Work.

Recommended Activity	Phase	Estimated Cost ($CAD)
Surface Exploration	1	$25,000
Geophysical Data Inversion	2	$15,000
Mechanized Stripping	3	$75,000

2 Property Description and Location

2.1 Property Location and Area

The Garrison-Rand Property is located south of Abitibi Lake, within the Abitibi Subprovince in Ontario, Canada. The property is situated approximately 46 km east of the town of Matheson, Ontario, and the town of Kirkland Lake is roughly 50 km south-southwest of the property. The property is accessible via old logging roads from Highway 101, approximately 46.6km east of Matheson. The centre of the property lies at UTM (NAD83 Zone 17) 580720 mE and 5377650 mN. The project area is currently bounded by the geographic coordinates, 48º53 N. and 48º56 N. and 79º88 W. and 79º91 W. It is located mainly in the Rand and Garrison Townships and crosses into the Harker Township in the southeast corner.

The town of Matheson is approximately 68 km east of Timmins, Ontario along King's Highway 101. Timmins is serviced by several airlines, with daily flights to major cities in Canada such as Toronto and Winnipeg, allowing easy connections to other Canadian cities and international destinations. Timmins is host to numerous gold mines, including world-class deposits at Dome, Pamour, and Hollinger-McIntyre mines. Kirkland Lake is a mining town that lies on a large fault system which hosts significant gold mineralization and is also host to a world-class gold deposit. It has been a notable site for gold exploration and mining projects since the 1920's.

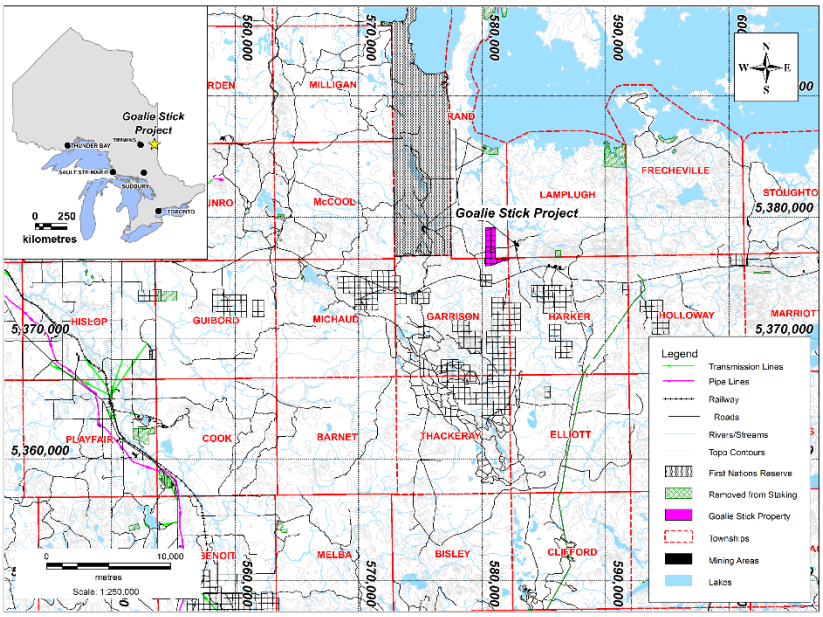

Figure 2-1: Location of the Goalie Stick Project.

2.2 Exploration Plans and Permits

The Ontario Ministry of Energy, Northern Development and Mines has issued Exploration Plan Number PL-19-000066 for the Garrison-Rand Property.

3 History

3.1 Exploration Prior to 2019

Exploration reports for the property have been acquired from 1964 to 2017.

In June 1964, Keevil Mining Group conducted an airborne electromagnetic survey on their claims at the time. Ninety-three N-S flight lines were flown for a total of 652.2-line miles. The flight line interval was 1/8th mile and a mean terrain clearance of 150 feet was maintained except in areas of sharp topographic relief. No conductors were located by the survey and no additional work was recommended as a result of said survey. The lack of a conductor was interpreted to indicate that there are no near surface bodies of massive sulphides on the property.

Additional geophysical surveys were completed in early winter of 1964 on Canadian Johns-Manville Company Limited claims. Magnetic surveying had indicated the occurrence of ultrabasic intrusive rocks. Electromagnetic surveying had not indicated the occurrence of any major conductors on the claims group.

A magnetometer survey was completed during the early spring of 1974 for Canadian Johns-Manville Company Limited. Readings were recorded using two Scintrex Fluxgate Magnetometers. High magnetic readings were assumed to be due to magnetite mineralization

within porphyry units, diorite dykes, or seams of magnetite. Disseminated pyrite mineralization was noted in outcrops of porphyritic rock in south-central Rand Township.

A program of line cutting, magnetometer survey, and VLF-EM survey was carried out on a 22-claim property in Rand and Lamplugh Township for Kidd Creek Mines Limited in February, 1987. A total of 34.8 km of lines were surveyed using a proton magnetometer and a total of 31.5 km of VLF survey was conducted on the property, covering the entire claim group. The purpose of the survey was to test the property for any magnetic and/or electromagnetic responses which could be important in delineating any gold bearing structures. The magnetometer survey outlined a rather vague, generally E-W geological strike with no significant anomalies. The VLF-EM survey outlined several conductors of which three were recommended for follow-up work. There were two high magnetic anomalies discovered, running north to northeast. These were assumed to be related to diabase dykes. The VLF-EM survey outlined several E-W trending anomalies of varying conductivities. The peak VLF response was coincidental with a magnetic low and was interpreted as a mineralized, carbonate alteration zone.

Prospecting was carried out intermittently between July 2010 and November 2011 by Garry Windsor and Garry Edwards (Windsor & Edwards). Significant gold assays were received in September 2010 in two samples which were 60 feet apart. The samples were taken in weakly altered and mineralized felsic metavolcanics. They carried approximately 1 gpt Au and 34 gpt Au. This was cause for more work on the property and follow-up prospecting occurred in October 2010 and October 2014. Two additional assays in close proximity to the high-grade sample returned with approximately 1 gpt Au each.

Gary Windsor and Gary Edwards used a Beep Mat in April 2012 to find and trace massive sulphides. They used this equipment at the gold bearing zone which returned 34 gpt Au and the sericite schist unit. The Beep Mat did not provide a response and so no massive sulphides are thought to be there. In June 2012 they used a plugger drill to drill 6 small holes in the gold bearing area and several bags of drill dust were sent for analysis. In October 2012 they drilled several holes on the cliff hosting gold mineralization and loaded 4 of them for blasting. A large section of the cliff broke off and exposed a vein with significant pyrite mineralization. This vein was selected for assay but no results were listed in the report.

In October 2014, Windsor & Edwards prospected along the mineralized cliff where the initial assay of 34 gpt Au was discovered. The purpose of further prospecting was to determine if they could repeat this assay. Several areas were investigated along this mineralized cliff face and grab samples were sent for assay. The assay results were negligible but the fact that several assays ran anomalous gold up to 34 grams per ton remains a puzzle and will require further exploration efforts.

Windsor & Edwards completed a mechanized stripping program in November 2015. Three trenches were exposed and they planned to wash and map them at a later date. These were revisited in June 2016 to be cleaned out, and again in September 2016 to be channel sampled.

In December 2015, they conducted a ground survey using a Geonics E-M 16 Magnetometer to try to locate a conductor on the ground. This conductor was described by a geophysicist in 1964

as definitely sulphides and was also picked up by a Discover Abitibi Airborne survey. This conductor is located at a contact between ultramafics and either metavolcanics or sediments on a fault emanating from the nearby Destor-Porcupine Fault. Readings were taken every 25 paces in search of a crossover which would indicate the target. The exact location of the target was to be pinpointed with G.P.S. A 1/2-inch diameter by 10 feet long length of rebar was carried in and to be used to try to determine the depth of overburden if the target was located and the best means of access to this difficult location was also determined. The conductor was not located.

Soil samples were also taken of the area surveyed in general and a control taken from several hundred meters to the north. The conductor being sought was first discovered in 1964 when R. Kaltwasser was surveying the area for Johns- Manville using a Jalander Type Magnetometer. Kaltwasser states in his report that he found a moderate strength conductor that is described as being definitely caused by sulphides. Since this target is near the Destor-Porcupine Fault, and on strike with the Garcon Deposit of 1 million ounces of gold, it was viewed as a prime gold target that should be located.

Additional mechanized stripping was attempted in November 2016 but was abandoned after discovering the large depth of overburden. Grab samples were still gathered here with a chisel and hammer to determine whether or not additional stripping and then channel sampling at a later date would be necessary.

4 Geology and Mineralization

4.1 Regional Geology

The following description of the regional geology is adapted from Beakhouse (2011) and Gibson & Jørgensen (2017).

The Garrison-Rand property is situated within the Abitibi sub-province of the Superior Structural Province. The Abitibi Subprovince extends from the Greenville Front in Chibougamou westward to the Kapuskasing structural zone. It comprises a sequence of Archean sedimentary, felsic and mafic volcanic, ultramafic, and plutonic rocks which have been divided into seven assemblages (Figure 4-1). These include: an unnamed assemblage (>2750 Ma), the Pacaud assemblage (2750–2735 Ma), the Deloro assemblage (2734–2724 Ma), the Stroughton–Roquemaure assemblage (2723–2720 Ma), the Kidd–Munro assemblage (2719–2711 Ma), the Tisdale assemblage (2710–2704 Ma) and the Blake River assemblage (2704–2695 Ma). There are two sedimentary dominated assemblages which overly the volcanics; the Porcupine assemblage (2690–2685 Ma) and the Timiskaming assemblage (2677–2670 Ma). The Garrison-Rand property is located within the Blake River assemblage.

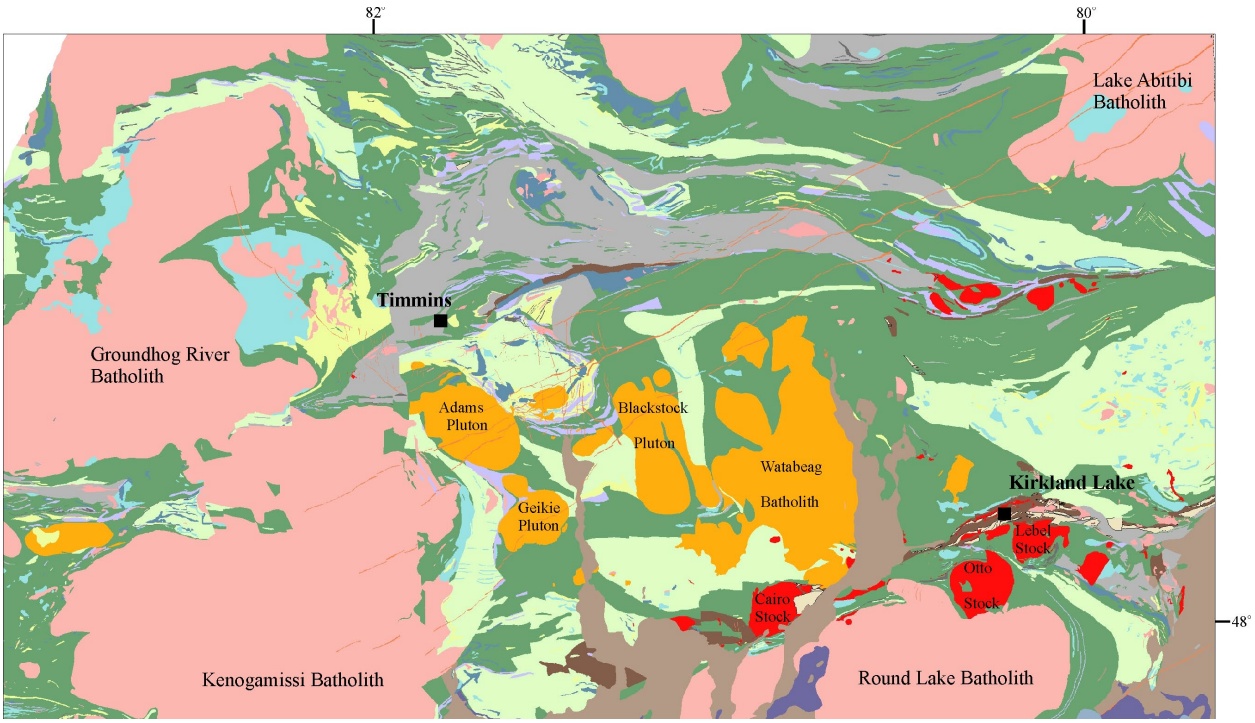

Figure 4-1: Generalized map of the main geological units of the Abitibi Subprovince in Ontario, from Beakhouse, 2011.

Many of the large batholiths in this belt are complex intrusive systems that structurally underlie the Abitibi greenstone belt. The main components of these complexes are foliated to gneissic tonalitic to granodioritic phases which are characteristically the oldest plutonic component. These units are intruded by massive granodioritic to granitic and dioritic to quartz monzodioritic plutons as well as by numerous minor intrusions.

The Abitibi greenstone belt is home to several gold deposits, including world-class deposits, and is one of the most enriched greenstone belts in the Superior Province and the world. Gold mineralization in these deposits originated from hydrothermal activity, which has a spatial association to regional east-trending faults and late-tectonic or early syn-tectonic magmatism. Unfortunately, the ore mineralogy of these deposits is not well defined. One characteristic of mineralization at Kirkland Lake is the presence of gold, base metal, and bismuth tellurides in addition to native gold. This may be an indication of gold mineralization being related to alkaline magmatism in certain portions of the Abitibi Subprovince. However, many gold deposits in the area, including those proximal to Timmins, do not have an abundance of tellurides and this association is not clear.

4.2 Local and Property Geology

The following description of local geology has been interpreted from historical reports written on the property and adapted from Bedeaux et al (2016).

The property sits within the Blake River Group, which consists of mafic to felsic volcanics which display low metamorphic facies. Felsic metavolcanics intruded by quartz-feldspar porphyry dykes have been commonly described on the property. These metavolcanic units can be weakly

altered and variably mineralized to locally sheared and folded. Diabase dykes also occur on the property and are likely magnetic as observed in historic geophysical surveys.

Windsor & Edwards described a strongly sheared sericite schist running E-W through the property. It was described as at least 200 feet wide with sulphides throughout. They also encountered dark altered porphyry with significant magnetite mineralization, which had been observed in 1974 as well. It is unclear whether these porphyritic units have been assayed and their significance on fluid pathways and gold mineralization.

The property is located in close proximity to the Destor-Porcupine Fault which is thought to have significant impact on gold mineralization. In general, the area is underlain by mafic volcanics just north of the assumed intersection of the Pipestone and Porcupine-Destor Fault zones.

A large portion of the rocks described by Windsor & Edwards contained traces up to 15% pyrite, mostly as fine-grained dissemination. Gold mineralization appears to be sporadic thus far and information is lacking in the area of significant Au assays. The lack of assay, structural, and geological data on the property makes any assumptions of gold mineralization difficult.

5 Exploration- 2019 Airborne Geophysical Survey

The following information has been provided by Expert Geophysics in the report provided to Red Pine in January, 2020. The report in full and all instrument specifications can be viewed in Appendix C.

The survey lines were oriented 0-180 degrees at 50m spacing, while tie lines were oriented perpendicular to the survey lines and spaced at 500m. The average survey speed was 20m/sec, average helicopter terrain clearance was 70m, and average EM sensor clearance was 40m. The total line kilometers flown was 159 km, of which 60.79 km was completed on Red Pine claims and 96.5 km was flown over claims not held by Red Pine.

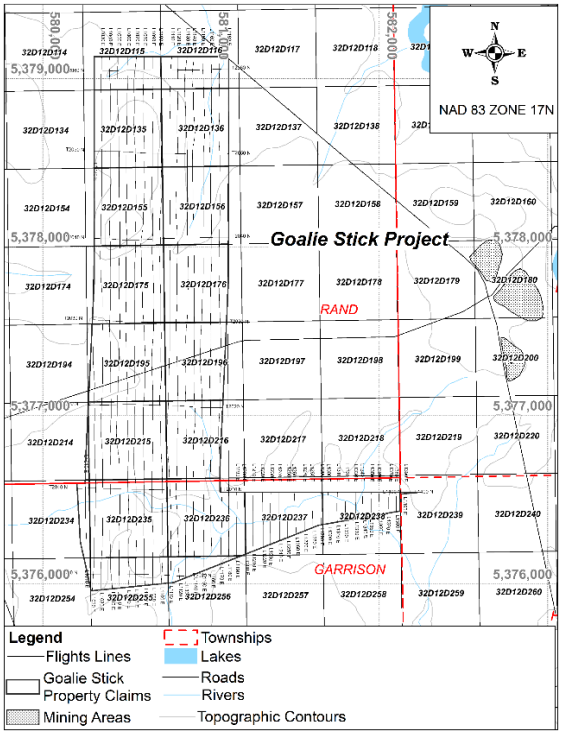

Figure 5-1: Flight lines flown within the claim block.

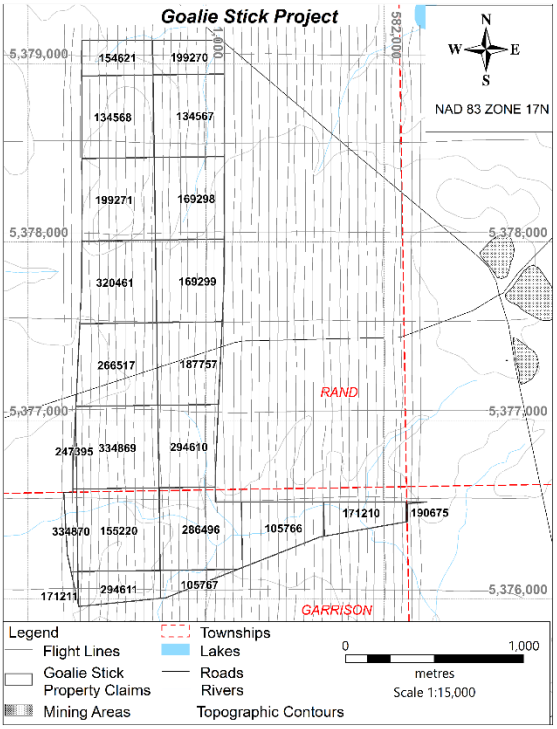

Figure 5-2: Total flight lines flown.

The program was successful in confirming the location and orientation of generally E-W trending structures, as observed in *Figure 1-2*. These structures may be related to east trending faults associated with gold mineralization known to exist within the Abitibi Greenstone Belt. Phase 1 and 3 exploration is required to confirm the relationship between these structures and mineralization.

Maps provided by EGL show magnetic high and low anomalies locally, as seen in *Figure 5-3*. The true resistivity of the surface geology should be plotted and analyzed alongside known geological units in order to determine the reasoning and significance of these anomalies, as recommended for Phase 2.

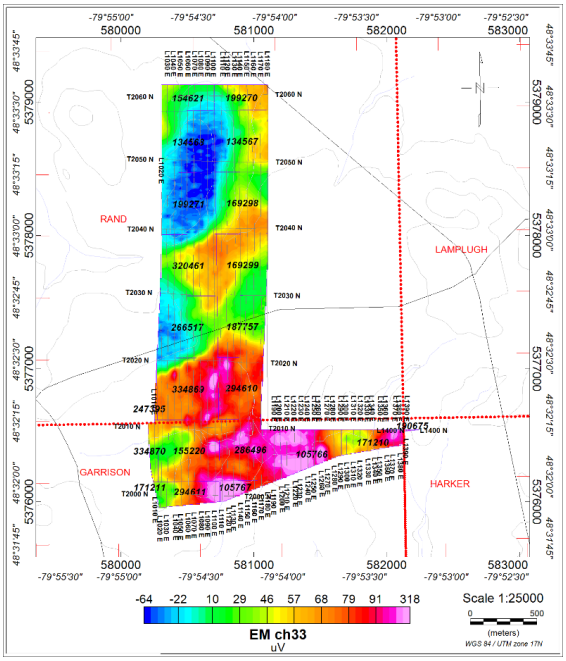

Figure 5-3: Plot of dB/dt EM channel 33.

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Appendices

Appendix A- Authors' Certificate of Qualification

Eric Steffler

I, Eric John Steffler, of 184 Combe Ave., Toronto, Ontario, M3H 4K5, do hereby certify that:

- I am a member of the Canadian Institute of Geomatics (#42659499) since 2017 and the Canadian Association of Geographers since 2012.
- I have practiced my profession in excess of 14 years
- I certify that by reason of my education and past relevant work experience, I fulfill with the requirements to be a "Qualified Person" for the purpose of this Assessment Report. My relevant work experience for the purpose of my activities identified in this report are:
- Experience with junior resource companies as the Geomatics Manager of Red Pine Resources (CNDX) MacDonald Mines Exploration (CNDX) and Honey Badger Exploration (CNDX).
- Continuous work in the mineral exploration and mining industry since 2006. I worked for Aeroquest International and Geotech Ltd. which are both Airborne Geophysical companies from 2006 to 2010. Since 2010 my work has included QA/QC of grassroots to advanced stage exploration program data which have included airborne and ground geophysics, mapping, geochemical sampling, trenching and drilling. I have reviewed numerous gold, silver, and base metals projects and databases. As well as creating figures, tables and images for reporting purposes.
- I have reviewed and created the maps and figures for numerous assessment reports.

Dated at Toronto, Ontario, this 10th day of December 2020

Statement of Qualifications

I, Dominique van der Byl, residing at 21155 Country Road 21 RR1 Alexandria Ontario, do hereby certify that I:

1. am employed by Red Pine Exploration Inc.,
2. graduated with an Honours Bachelor of Science degree in Earth Sciences from Carleton University in 2014,
3. am a G.I.T., Registered in the Province of Ontario (PGO No. 10729),
4. have been practicing geology continuously for 3.5 years since obtaining my degree,
5. am a co-author for the preparation of this report titled "Assessment Report, Goalie Stick Project, Garrison-Rand Property, Northwestern Ontario",
6. have been involved with the mineral property that forms the subject of this report since December 2020.

Dated December 11th, 2020

Dominique
van der Byl

Appendix B- Table of claims worked and line kilometers flown 2019

Line	Claim	Length (m)	Cell ID	Township
L1030	154621	199.27	32D12D115	RAND
L1040	154621	198.67	32D12D115	RAND
L1050	154621	198.04	32D12D115	RAND
L1060	154621	197.13	32D12D115	RAND
L1070	154621	197.11	32D12D115	RAND
L1080	154621	195.72	32D12D115	RAND
L1090	154621	194.90	32D12D115	RAND
L1100	154621	194.25	32D12D115	RAND
T2060	154621	396.11	32D12D115	RAND
L1110	199270	193.67	32D12D116	RAND
L1120	199270	192.79	32D12D116	RAND
L1130	199270	192.83	32D12D116	RAND
L1140	199270	192.12	32D12D116	RAND
L1150	199270	190.72	32D12D116	RAND
L1160	199270	189.96	32D12D116	RAND
L1170	199270	189.23	32D12D116	RAND
L1180	199270	188.42	32D12D116	RAND
T2060	199270	401.96	32D12D116	RAND
L1030	134568	463.37	32D12D135	RAND
L1040	134568	463.41	32D12D135	RAND
L1050	134568	463.44	32D12D135	RAND
L1060	134568	463.59	32D12D135	RAND
L1070	134568	463.76	32D12D135	RAND
L1080	134568	463.46	32D12D135	RAND
L1090	134568	463.56	32D12D135	RAND
L1100	134568	463.37	32D12D135	RAND
T2050	134568	403.41	32D12D135	RAND
L1110	134567	463.49	32D12D136	RAND
L1120	134567	463.90	32D12D136	RAND
L1130	134567	463.47	32D12D136	RAND
L1140	134567	464.91	32D12D136	RAND
L1150	134567	463.75	32D12D136	RAND
L1160	134567	464.50	32D12D136	RAND
L1170	134567	463.65	32D12D136	RAND
L1180	134567	323.03	32D12D136	RAND
T2050	134567	394.88	32D12D136	RAND

L1020	199271	215.29	32D12D155	RAND
L1030	199271	463.61	32D12D155	RAND
L1040	199271	463.73	32D12D155	RAND
L1050	199271	463.38	32D12D155	RAND
L1060	199271	463.69	32D12D155	RAND
L1070	199271	463.45	32D12D155	RAND
L1080	199271	464.68	32D12D155	RAND
L1090	199271	463.53	32D12D155	RAND
L1100	199271	464.15	32D12D155	RAND
T2040	199271	410.84	32D12D155	RAND
L1110	169298	463.46	32D12D156	RAND
L1120	169298	463.77	32D12D156	RAND
L1130	169298	463.38	32D12D156	RAND
L1140	169298	463.45	32D12D156	RAND
L1150	169298	463.42	32D12D156	RAND
L1160	169298	463.43	32D12D156	RAND
L1170	169298	463.51	32D12D156	RAND
L1180	169298	463.45	32D12D156	RAND
T2040	169298	387.67	32D12D156	RAND
L1020	320461	116.27	32D12D175	RAND
L1030	320461	463.62	32D12D175	RAND
L1040	320461	463.54	32D12D175	RAND
L1050	320461	463.59	32D12D175	RAND
L1060	320461	463.57	32D12D175	RAND
L1070	320461	463.59	32D12D175	RAND
L1080	320461	463.53	32D12D175	RAND
L1090	320461	463.45	32D12D175	RAND
L1100	320461	463.46	32D12D175	RAND
T2030	320461	428.47	32D12D175	RAND
L1110	169299	463.45	32D12D176	RAND
L1120	169299	463.76	32D12D176	RAND
L1130	169299	463.79	32D12D176	RAND
L1140	169299	463.37	32D12D176	RAND
L1150	169299	463.71	32D12D176	RAND
L1160	169299	463.66	32D12D176	RAND
L1170	169299	463.44	32D12D176	RAND
L1180	169299	324.93	32D12D176	RAND

T2030	169299	265.67	32D12D176	RAND
L1020	266517	463.52	32D12D195	RAND
L1030	266517	463.60	32D12D195	RAND
L1040	266517	463.44	32D12D195	RAND
L1050	266517	463.88	32D12D195	RAND
L1060	266517	463.57	32D12D195	RAND
L1070	266517	463.45	32D12D195	RAND
L1080	266517	463.82	32D12D195	RAND
L1090	266517	463.88	32D12D195	RAND
L1100	266517	464.07	32D12D195	RAND
L1110	187757	463.58	32D12D196	RAND
L1120	187757	463.44	32D12D196	RAND
L1130	187757	463.83	32D12D196	RAND
L1140	187757	463.42	32D12D196	RAND
L1150	187757	463.76	32D12D196	RAND
L1160	187757	463.69	32D12D196	RAND
L1170	187757	463.95	32D12D196	RAND
T2030	187757	101.11	32D12D196	RAND
L1020	334869	463.45	32D12D215	RAND
L1030	334869	463.73	32D12D215	RAND
L1040	334869	463.71	32D12D215	RAND
L1050	334869	464.27	32D12D215	RAND
L1060	334869	463.60	32D12D215	RAND
L1070	334869	464.15	32D12D215	RAND
L1080	334869	463.57	32D12D215	RAND
L1090	334869	463.49	32D12D215	RAND
L1100	334869	463.49	32D12D215	RAND
T2020	334869	459.39	32D12D215	RAND
L1110	294610	464.13	32D12D216	RAND
L1120	294610	463.70	32D12D216	RAND
L1130	294610	463.42	32D12D216	RAND
L1140	294610	464.21	32D12D216	RAND
L1150	294610	463.40	32D12D216	RAND
L1160	294610	463.53	32D12D216	RAND
L1170	294610	435.58	32D12D216	RAND
T2020	294610	337.45	32D12D216	RAND
L1010	334870	444.85	32D12D234	GARRISON

T2010	334870	71.49	32D12D234	GARRISON
L1020	155220	463.69	32D12D235	GARRISON
L1030	155220	463.69	32D12D235	GARRISON
L1040	155220	463.51	32D12D235	GARRISON
L1050	155220	463.69	32D12D235	GARRISON
L1060	155220	463.72	32D12D235	GARRISON
L1070	155220	463.73	32D12D235	GARRISON
L1080	155220	463.54	32D12D235	GARRISON
L1090	155220	463.47	32D12D235	GARRISON
L1100	155220	463.42	32D12D235	GARRISON
T2010	155220	460.47	32D12D235	GARRISON
L1110	286496	463.68	32D12D236	GARRISON
L1120	286496	463.90	32D12D236	GARRISON
L1130	286496	463.47	32D12D236	GARRISON
L1140	286496	463.60	32D12D236	GARRISON
L1150	286496	463.53	32D12D236	GARRISON
L1160	286496	463.42	32D12D236	GARRISON
L1170	286496	380.71	32D12D236	GARRISON
L1180	286496	379.64	32D12D236	GARRISON
L1190	286496	378.95	32D12D236	GARRISON
L1200	286496	138.16	32D12D236	GARRISON
T2010	286496	314.11	32D12D236	GARRISON
L1200	105766	229.82	32D12D237	GARRISON
L1210	105766	350.53	32D12D237	GARRISON
L1220	105766	326.79	32D12D237	GARRISON
L1230	105766	311.35	32D12D237	GARRISON
L1240	105766	289.09	32D12D237	GARRISON
L1250	105766	270.14	32D12D237	GARRISON
L1260	105766	250.08	32D12D237	GARRISON
L1270	105766	230.06	32D12D237	GARRISON
L1280	105766	210.69	32D12D237	GARRISON
L1290	105766	194.37	32D12D237	GARRISON
L1300	171210	186.68	32D12D238	GARRISON
L1310	171210	177.73	32D12D238	GARRISON
L1320	171210	169.13	32D12D238	GARRISON
L1330	171210	158.57	32D12D238	GARRISON
L1340	171210	150.58	32D12D238	GARRISON

L1350	171210	142.92	32D12D238	GARRISON
L1360	171210	133.96	32D12D238	GARRISON
L1370	171210	124.97	32D12D238	GARRISON
L1380	171210	116.20	32D12D238	GARRISON
L1390	190675	9.06	32D12D239	HARKER
L1400	190675	4.82	32D12D239	HARKER
L1010	171211	51.00	32D12D254	GARRISON
T2000	171211	18.40	32D12D254	GARRISON
L1020	294611	195.14	32D12D255	GARRISON
L1030	294611	190.72	32D12D255	GARRISON
L1040	294611	185.11	32D12D255	GARRISON
L1050	294611	181.47	32D12D255	GARRISON
L1060	294611	177.19	32D12D255	GARRISON
L1070	294611	172.88	32D12D255	GARRISON
L1080	294611	168.08	32D12D255	GARRISON
L1090	294611	164.00	32D12D255	GARRISON
L1100	294611	160.13	32D12D255	GARRISON
T2000	294611	460.55	32D12D255	GARRISON
L1110	105767	155.25	32D12D256	GARRISON
L1120	105767	139.95	32D12D256	GARRISON
L1130	105767	125.77	32D12D256	GARRISON
L1140	105767	105.44	32D12D256	GARRISON
L1150	105767	86.09	32D12D256	GARRISON
L1160	105767	66.36	32D12D256	GARRISON
L1170	105767	46.85	32D12D256	GARRISON
L1180	105767	28.22	32D12D256	GARRISON
L1190	105767	10.53	32D12D256	GARRISON
T2000	105767	128.61	32D12D256	GARRISON
Total		60786.61		

Appendix C- List of Illustrations

LIST OF ILLUSTRATIONS

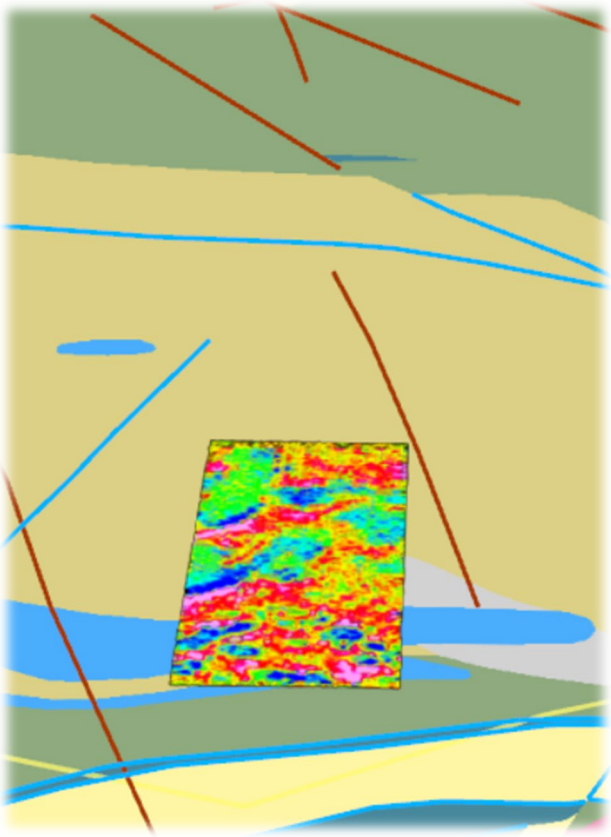
Figures

Tables

Appendix D- Expert Geophysics Data acquisition and processing report, helicopter-borne mTEM electromagnetic survey

Data Acquisition and Processing Report

Helicopter-borne **mTEM** Electromagnetic survey



Goalie Stick Property

in northeastern Ontario
for Red Pine Exploration Ltd.,
by Expert Geophysics Limited

Address:
19 Lionel Heights Crescent, Toronto, Ontario, M3A 1L8
Tel: (+1)-647-402-8437
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www.expertgeophysics.com

'Expert Geophysics' Job #19129m

January, 2020

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Tables

Figures

Executive Summary

In December 2019 **Expert Geophysics Limited (EGL)** conducted a helicopter-borne **mTEM** electromagnetic survey in northeastern Ontario, Canada, over a block (**Goalie Stick Property**) for **Red Pine Exploration Ltd.** (EGL survey job 19129m). Electromagnetic geophysical data were acquired using EGL's airborne **mTEM** time-domain system. Please refer to Appendix I for the Company Profile and Appendix II for the **mTEM** technology description.

The purpose of the survey was near surface detail electromagnetic mapping of geological structures/fractures, and possible alteration and mineralization zones, using very early times of the transient electromagnetic response. A total of 3 production flights were flown to complete 159 line-kilometers of the survey over 7 sq.km area.

The survey was flown using helicopter Bell 206 Long Ranger, registration C-GKRS, of the aviation company Expedition Helicopters. The survey production flights started on December 1, 2019 and data acquisition was completed on December 2, 2019. The survey operations were conducted from Cochrane ON, Canada.

The survey lines are oriented 0^0- 180^0 at 50 m spacing, while tie lines are oriented in perpendicular direction to the survey lines and spaced at 500 m.

The geophysical survey results are presented in the form of digital database, maps and grids. The report describes the data acquisition and processing procedures, equipment and digital data specifications, basic data analysis.

1 Introduction

The report describes the **mTEM** airborne electromagnetic survey that **Expert Geophysics Limited** (**EGL**, Appendix I) performed for **Red Pine Exploration Limited** (EGL survey job 19129m) in the period of December 1, 2019 - December 2, 2019 over one block (**Goalie Stick Property**) in northeastern Ontario, Canada. Electromagnetic time-domain data were gathered along 159 line-km of the survey lines over 7 sq.km area using **mTEM** helicopter-borne system (Appendix II).

The Survey Area section of the report contains description of the survey area and flight paths. The Field Operation section includes information about the operation flow, the airport and flights dates. The Survey Equipment section describes the main and ancillary equipment used for the data acquisition. The Data Processing and Deliverables Specifications section consists of main data processing procedures and final products description. The Survey results discussion section includes basic data analysis and recommendations for further data analysis.

The following table includes a brief reference of the survey specifications (

Table 1).

Table 1 - Summary Project Information

Client:	Red Pine Exploration Limited
Client representative:	Quentin Yarie, e-mail: qyarie@redpineexp.com
EGL Job Number	#19129m
Survey area location:	Northeastern Ontario, Canada
Crew and aircraft location:	Cochrane, Ontario
Block:	Goalie Stick Property
Total line kms:	159 line-kilometers
Total Survey Area:	7 sq.km
Traverse line direction/spacing:	0°E at 50 m spacing
Tie lines direction/spacing:	90°E at 500 m spacing
Dates flown:	12/1/2019 – 12/2/2019
Helicopter:	Bell 206 Long Ranger, C-GKRS, Expedition Helicopters
Average survey speed:	20 m/sec
Average helicopter terrain	70 m
Average EM sensor clearance:	40 m
Coordinates Datum:	WGS84
Coordinates Projection:	UTM, Zone 17N, Central Meridian 1110 W

2 Survey Area and Flight Specifications

The **mTEM** survey area lie 40 km east from Black River-Matheson township, Ontario, along highway 101. (Figure 1).

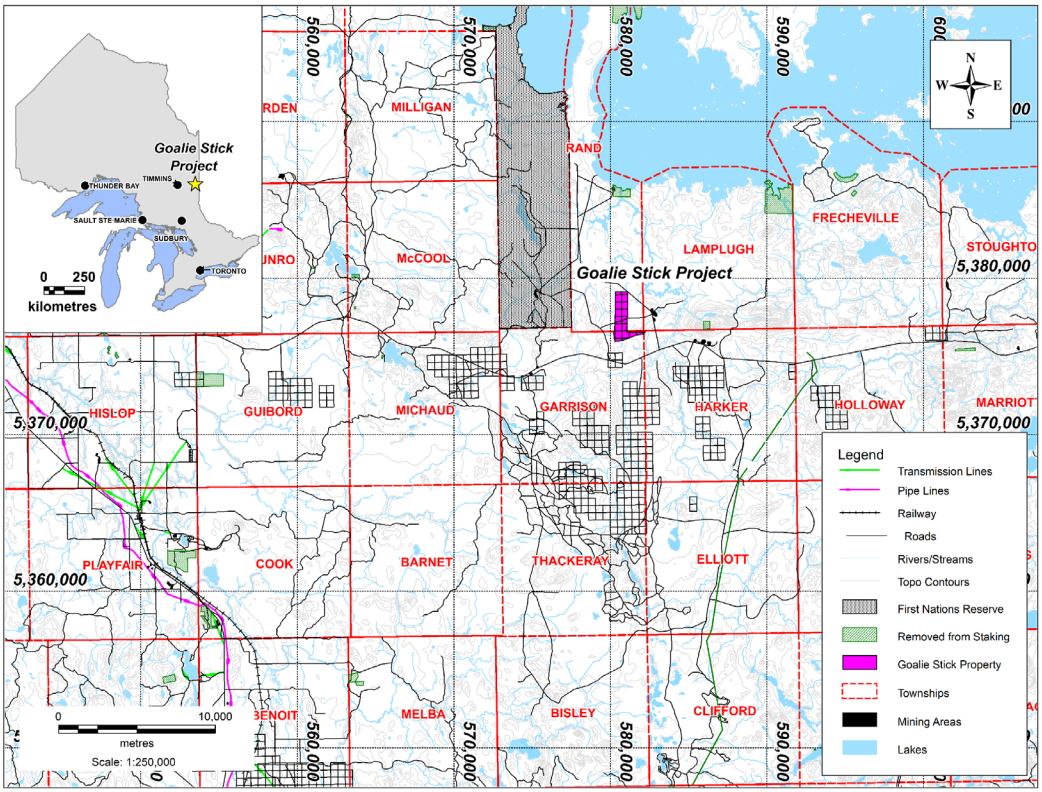


Figure 1 Survey blocks location

Table 2 in the WGS-84 datum, UTM zone 17N. Flight paths over the survey blocks are presented in Figure 2.

Table 2 - Coordinates of the survey blocks (WGS84, UTM zone 17N)

Survey block	
coordinates	
X	Y
582240	5379131.2
580202.9	5379131.2
580202.9	5375956.4
582240	5375956.4
499627	5120613

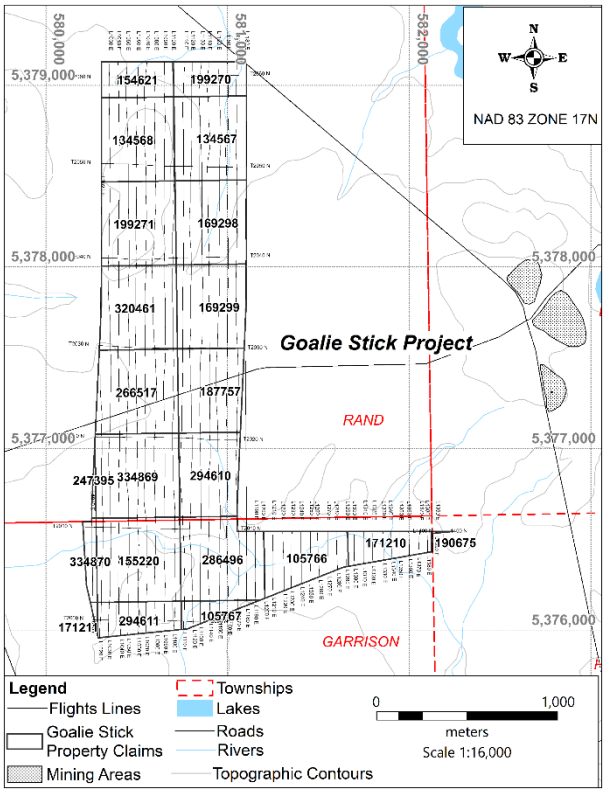


Figure 2 – Survey Goalie Stick Property block flight path

The survey flight lines specifications are in Table 3.

Table 3 - Flight lines specifications

Block	Line spacing, m	Lines direction	Line numbers	# of lines	Line kms
Goalie Stick Property	50 m (traverse)	0^0	1000-1400	41	143.2
	500 (tie)	90^0	2000, 2060	7	15.8
	Total			**48**	**159**

The survey flown with an Bell 206 Long Ranger, registration C-GKRS, helicopter operated by the aviation company Expedition Helicopters.

- Average terrain clearance of the helicopter during the survey was 70 m at average speed 20 m/sec.
- Average terrain clearance of the electromagnetic bird during the survey was 40 m.

3 Field Operations

3.1 Operation schedule

The survey operations were conducted from Cochrane, ON. The survey executed in 3 production flights started on December, 1, 2019 and data acquisition was completed on December, 2, 2019.

Table 4 - Operation schedule

Date	Crew Location	Activity	Flight Num	Km Flown	Stand-by day, Yes/No
28-Nov-19	Toronto – Cochrane	Travel	N/A	0.0	No
29-Nov-19	Cochrane	Bird Setup	N/A	6.9	No
30-Nov-19	Cochrane	Crew Induction, Test Flight	1	20	No
1-Dec-19	Cochrane	Survey	2	60	No
2-Dec-19	Cochrane	Survey	3, 4	99	No
3-Dec-19	Cochrane	Equipment packing	N/A	0.0	No
4-Dec-19	Cochrane-Sudbury	deMob to Sudbury	N/A	0.0	No

3.2 Office and Field Personnel

The following personnel participated in the project support and field operations:

Project Manager: Andrei Bagrianski (EGL);

Operators: Matthew Johnston (EGL);

DataQC: Andrei Bagrianski (EGL);

Tech.support: Michael Kuzmin (EGL);

helicopter pilot: Don Plattel (Expedition Helicopters);

Final data processing, finals producing, report: Alexander Prikhodko (EGL).

4 Survey Equipment and Specifications

4.1 Equipment composition

The main instrumentation installed on the **mTEM** tow-bird:

- Two coils (5 m diameter each) – transmitter of the primary field and receiver of transient response;
- GPS antenna, installed on the towed-bird;
- Laser-altimeter, installed on the towed-bird

The main instrumentation installed on the helicopter:

- EGL PC-104 based Data Acquisition System
- EGL Navigation system with Pilot Steering Indicator
- Smartmicro model UMRR-0A Radio Altimeter, 0 – 500 m range

Ground Support instrumentation comprises:

- A Field Data Processing Workstation and a full suite of software for the quality control and preliminary processing of the airborne geophysical data.

mTEM EM system specifications are described in the Appendix II.

4.2 The Airborne GPS Navigation System

EGL uses a proprietary GPS navigation system utilizing the GPS Receiver with Linx RXM-GNSS-TM GPS Engines. The key features of the GPS Receiver are:

• L1 1575.42MHz, C/A code

• 33-channel satellite tracking

• Position accuracy: 2.5m

• 10 Hz update rate

• Constellation System Support:

- GPS
- GLONASS
- GALILEO
- QZSS

• DGPS support:

- (SBAS) Satellite-Based Augmentation System

- (RTCM) Radio Technical Commission for Maritime Services
- (WAAS) Wide-Area Augmentation System
- (EGNOS) European Geo-Stationary Navigation System
- (MSAS) MTSAT Satellite-Based Augmentation System
- (GAGAN) GPS-Aided Geo-Augmented Navigation

An EGL Computer/Pilot Steering Indicator is used to compute the flight path grids in real-time onboard the helicopter (Figure 3, Figure 4).

Figure 3. Pilot Steering Indicator and Radio Altimeter Indicator

Figure 4. EGL Navigation Computer, Moving-map Display

4.3 Data Acquisition System

The data acquisition system features an EGL PC-104-based data acquisition system. The EGL data acquisition system is an instrument developed by EGL for airborne geophysical data acquisition tasks. It features EGL proprietary technology and software. The EGL data acquisition system simultaneously records data on internal flash disk and displays it on a color LCD display, at a repetition rate of 0.33 sec, for post-flight computer processing. The five main functions fulfilled by the data acquisition system are: 1) system control and monitoring, 2) data acquisition, 3) real-time data processing, 4) navigation, and 5) data playback and analysis.

4.4 Radar-Altimeter

A Smartmicro model UMRR-0A radar altimeter system records the ground clearance to an accuracy of 3% over a range of 0 ft to 1,640 ft (0 to 500 m). The altimeter is interfaced to the navigation system and the data acquisition system with an output repetition rate of 10 Hz and digitally recorded.

4.5 Field Computer Workstation

The Field Data Processing Workstation (FWS) is a dedicated computer system for use at the technical base in the field. The workstation to be used on this project is designed for use with Geosoft OASIS Data Processing Software. It is also capable of processing and imaging all the geophysical and navigation data acquired during the survey, producing preliminary maps.

The main features of the FWS are:

- Portability;
- Digital Data Verification - flight data quality and completeness were assured by both statistical and graphical means;
- Flight Path Plots - flight path plots quickly generated from the GPS satellite data to verify the completeness and accuracy of a day's flying;
- Versatility - the FWS used in both the field and the office. Data pre-processed in the field up-loaded to the computers at the Data Processing Centre to speed up data turnaround;
- Preliminary Maps - the FWS software permitted creation preliminary maps of the electromagnetic data during the survey;
- Quality Control – acquired data quickly and efficiently checked for quality in the field on daily basis.

5 Data Processing

Data compilation and processing were carried out by tools of Geosoft OASIS Montaj and software proprietary to Expert Geophysics Limited.

5.1 Flight Paths

The flight path, recorded by the acquisition program as WGS 84 latitude/longitude, was converted into the WGS84 Datum, UTM Zone 17 North coordinate projection in Oasis Montaj.

The flight path was drawn using linear interpolation between x, y positions from the navigation system. Positions are updated every second and expressed as UTM easting's (x) and UTM northing's (y). Since the GPS antenna is mounted at the EM bird, no positioning or lag corrections are required.

5.2 EM Data Processing

The data recorded by the towed bird receiver (dB/dt component of the EM field) is processed for primary field effect removal using measured signal on high altitude calibration (background) executed during each survey flight. High base frequency (5 kHz) of the system measurements makes the transient response free of industrial noise if exists. The signal stacking at the high base frequency eliminates possible system noise. The signal to noise ratio was further improved by the application of a short length low pass linear digital filter.

The results are presented as stacked profiles of EM voltages for the time gates, in linear (Figure 5) or logarithmic scale for the dB/dt responses of the Z component.

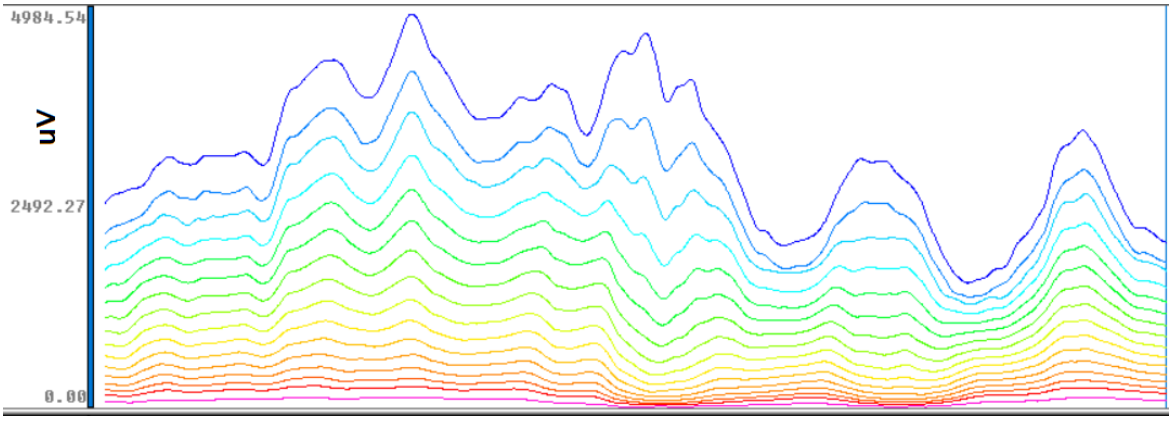


Figure 5 – dB/dt Z mTEM profiles example

5.3 Ancillary data processing

Positions and altitudes of the EM system are derived from data of a GPS antenna and the laser-altimeter mounted on the EM bird (Appendix II), and radar-altimeter positioned on the helicopter. A digital elevation model (DEM) channel has been calculated by subtracting the filtered laser-altimeter data from the GPS-elevation.

6 Data Deliverables

The following products are available from the survey data.

Database:

Electromagnetic data is presented in the database in Geosoft DGB format:

19129m_mTEM_goalie_RedPine.gdb with EM data
The databases channels description is in the Table 5.

Table 5 - Geosoft .gdb Data Format

Channel Name	Units	Description
X:	metres	EM bird UTM Easting WGS84 Zone 17 North
Y:	metres	EM bird UTM Northing WGS84 Zone 17 North
Lzr:	meters	EM bird terrain clearance from laser altimeter
RdAlt:	metres	helicopter terrain clearance from radar altimeter
bAlt:	Metres	EM bird elevation above geoid
DTM:	metres	Digital Elevation Model
bLat:	dega	EM bird Latitude WGS84
bLon:	dega	EM bird Longitude WGS84
bTim:	Sec of the day	GPS time
dBdt:	microT/sec	dB/dt, voltage/receiver loop area ch15-ch35
HF15:	uV	High frequency component of ch15
HF20:	uV	High frequency component of ch20
HF25:	uV	High frequency component of ch25
HF28:	uV	High frequency component of ch28
HF30:	uV	High frequency component of ch30
HF33:	uV	High frequency component of ch33

Grids and Maps:

Refer to Table 6 for summary of the grids and maps (Appendix III) which accompany this report.

Table 6 – Lists of grids and maps (in Geosoft format).

Grids	Maps	Description
DTM.grd	Goalie_Stick_DTM10k.map	Digital Terrain Model
uVc15.grd	Goalie_Stick_uV15_10k.map	dB/dt EM early ch15
uVc24.grd	Goalie_Stick_uV24_10k.map	dB/dt EM middle ch24
uVc33.grd	Goalie_Stick_uV33_10k.map	dB/dt EM middle ch33
HF15.grd		High frequency component of dB/dt EM ch15
HF20.grd		High frequency component of dB/dt EM ch20
HF25.grd		High frequency component of dB/dt EM ch25
HF28.grd		High frequency component of dB/dt EM ch28
HF30.grd	Goalie_Stick_HF30_10k.map	High frequency component of dB/dt EM ch30
HF33.grd		High frequency component of dB/dt EM ch33

7 Conclusion

A helicopter-borne high-resolution near surface time-domain electromagnetic (mTEM) geophysical survey has been completed over the **Goalie Stick Property** in northeastern Ontario. The total area coverage is 7 sq km. Total survey line coverage is 159 line km. Results are presented as a database of processed data, grids, and color maps at a scale of 1:10,000.

The purpose of the survey was detail electromagnetic near surface mapping to reveal bedrock structures and lithology, including possible alteration and mineralization zones, using electrical properties of rocks. The results are represented as dB/dt response on very early, middle and late channels and high frequency component of the EM field is extracted.

Geological position of the surveyed block is in Figure 6.

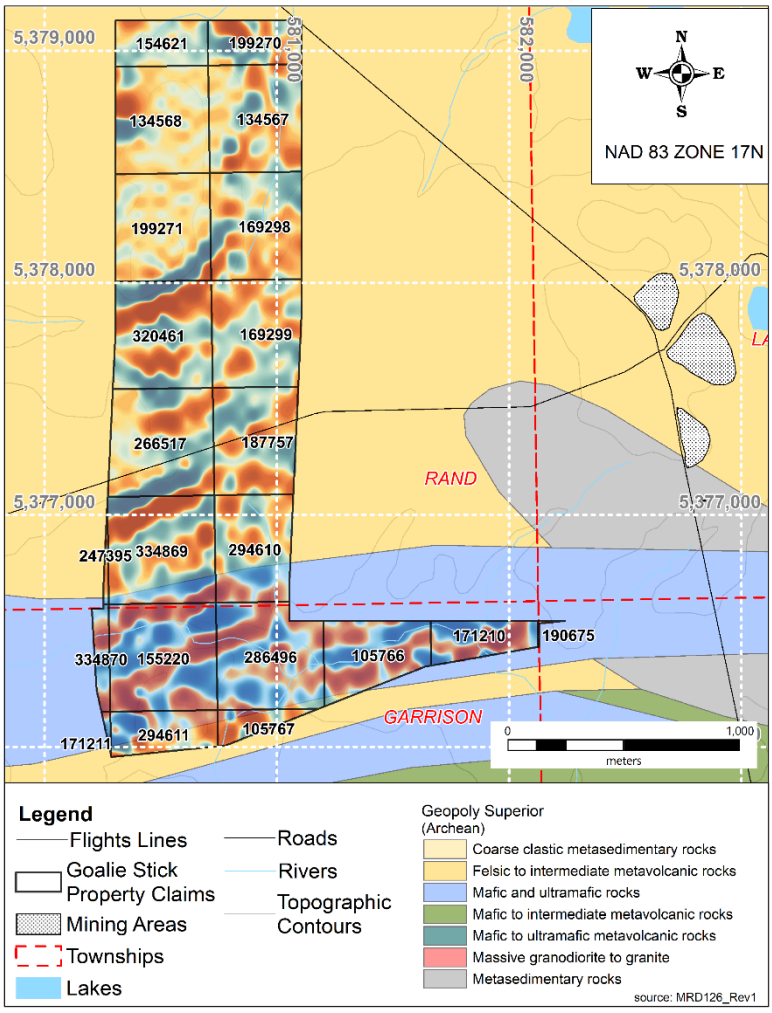
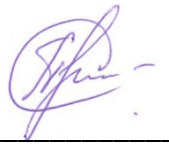


Figure 6 - The survey blocks position (HF30 ch) over the Geological Map (Ontario Geological Survey). The Legend only for rocks inside of the blocks.

If true resistivity of the near surface geology is required it is recommended to make inversions of the electromagnetic data. Complex analysis of the electromagnetic data with known geological and geochemical information before test drilling planning is recommended.

Alexander Prikhodko, Ph.D., P.Geo



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January, 30, 2020

mTEM Job#19129m for Red Pine Exploration Limited.

Appendix I Company Profile

About us

Expert Geophysics Limited is based in Toronto, Canada and offer airborne EM surveys worldwide.

President and founder, **Andrei Bagrianski**, Ph.D., P.Geo., has over 35 years of professional experience in the acquisition, processing, and interpretation of airborne and ground geophysical data for a wide range of applications. From 2002 to 2016, he was Chief Operating Officer and General Manager at Geotech Ltd. Andrei has been directly involved in contracting, organizing, and supervising hundreds of airborne geophysical surveys on all continents except Antarctica. Andrei has extensive international field work experience that includes projects in Australia, Brazil, Bolivia, Colombia, Ecuador, Peru, Botswana, Malawi, South Africa, Libya, USA, Canada, Russia, Kazakhstan, and India.

Petr Kuzmin, Ph.D., the designer of the **mTEM** and **MobileMT** systems, has over 40 years of experience in the development of ground and airborne TDEM, MT, and IP methods, equipment, and software. Working for Geotech Ltd., Canada, from 2000 until 2009, Dr. Kuzmin was the principal designer of the award winning systems VTEM, ZTEM, and AirMt. Since 2009, Dr. Kuzmin has completed a number of successful developments: ground AFMAG, ultra-fast airborne TD (HiRes), airborne VLF system, an airborne navigation system, a high accuracy magnetometer counter, and the MobileMT and mTEM. Dr. Kuzmin holds a doctorate in Geophysics, has authored nearly 20 patents, and published over 40 technical papers.

Vice President and Chief Geophysicist, **Alexander Prikhodko**, Ph.D. in geoscience, P.Geo., Executive MBA, has previously held Chief Geophysicist position, for 11 years, in a gold-platinum mining company extensively used in its mineral exploration programs borehole, ground and airborne geophysics. He has been associated with the airborne geophysics industry since 2005 (Aeroquest Limited and Geotech Ltd.) holding management positions as Regional General Manager, Data Interpretation Manager, Director of Geophysics and working on exploration projects for diverse commodities in regions over the world. He is an author and co-author of many publications dedicated to airborne EM. In 2019 he was awarded Barlow Medal for Best Geological Paper published in CIM publications (Canadian Institute of Mining, Metallurgy and Petroleum).

Services

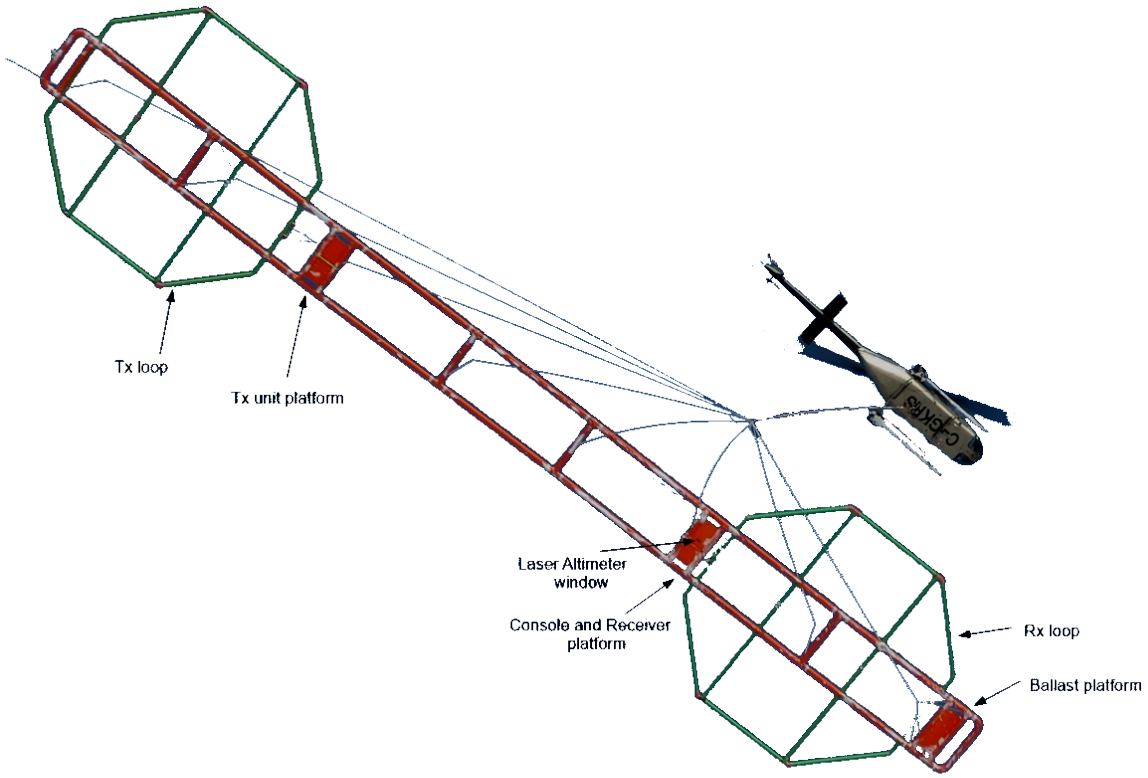
Expert Geophysics Limited specializes in airborne geophysical surveys worldwide with advanced electromagnetic systems. **EGL** offers surveying with **Mobile MagnetoTellurics** (**MobileMT**), the most advanced generation of airborne AFMAG technology and time-domain near surface high resolution **mTEM**. The **MobileMT** technology utilizes naturally occurring electromagnetic fields in the frequency range of 25 Hz – 20 000 Hz. **mTEM** measures very early, 3-40 microsec, transient response with high resolution. mTEM is only one system in the industry able to measure transient signal in the presence of industrial noise (powerlines). Both systems combine the latest advances in electronics, airborne system design, and sophisticated signal processing techniques.

Appendix II mTEM electromagnetic system description and technical specifications

mTEM system is a time-domain system designed for high resolution near surface electromagnetic investigations. Applicable for near surface sedimentology, hydrogeology, engineering geology, in mineral exploration for near surface fractures/structures mapping and for identifying weathered parts of kimberlites.

mTEM system advantages:

- Small footprint and high base frequency enable very high spatial resolution;
- Detail subsurface geoelectric characterization;
- Designed to work in areas with industrial electromagnetic noise (powerlines);
- Its light weight allows the mTEM system to deploy utilizing cost-effective light utility aircraft.



22 m long bird
Rx and Tx loop diameter:
5 m each
System weight is about 300 kg

mTEM airborne EM system

mTEM general specifications

Parameter	Value
System weight	300 kg
Receiver loop diameter	5 meters – 1 turn
Transmitter loop diameter	5 meters – 1 turn
Receiver – Transmitter coils separation	15 meters
Tow cable length	35 meters
Current	10 A
Base pulse repetition rate	5 kHz optimal for RF noise rejection
Waveform Digitising Frequency	40 Mhz
Pulse shape	Rectangular
Pulse length	50 microsec
Receiver (Rx)	Z, vertical component
Sample rate	10 Hz with up to 30 time gates
Time gates range	1 – 40 microsec
Spheric and radio noise rejection	Digital
Industrial noise	Not sensitive
Flight Height	30-35m AGL
Operational temperature	-30°C to +45°C

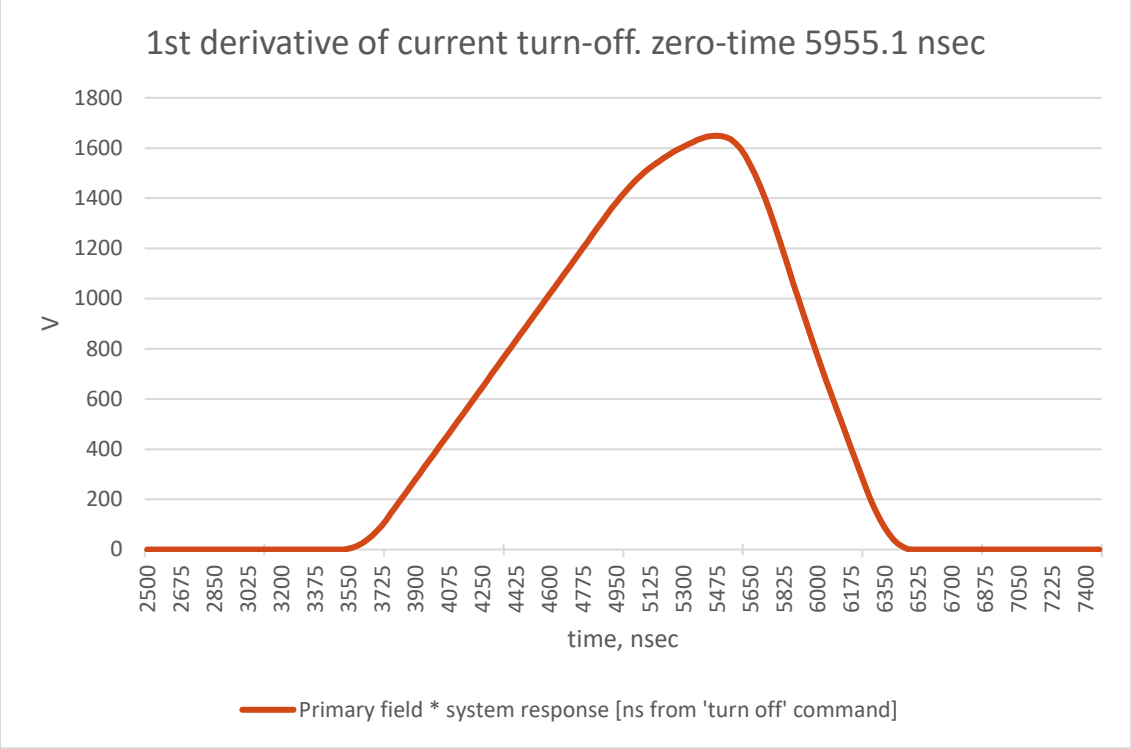
mTEM time gates

mTEM has a series of gates from 1 microsecond to 40 microseconds. These small gates allow to register with a high resolution the shallowest lithologies.

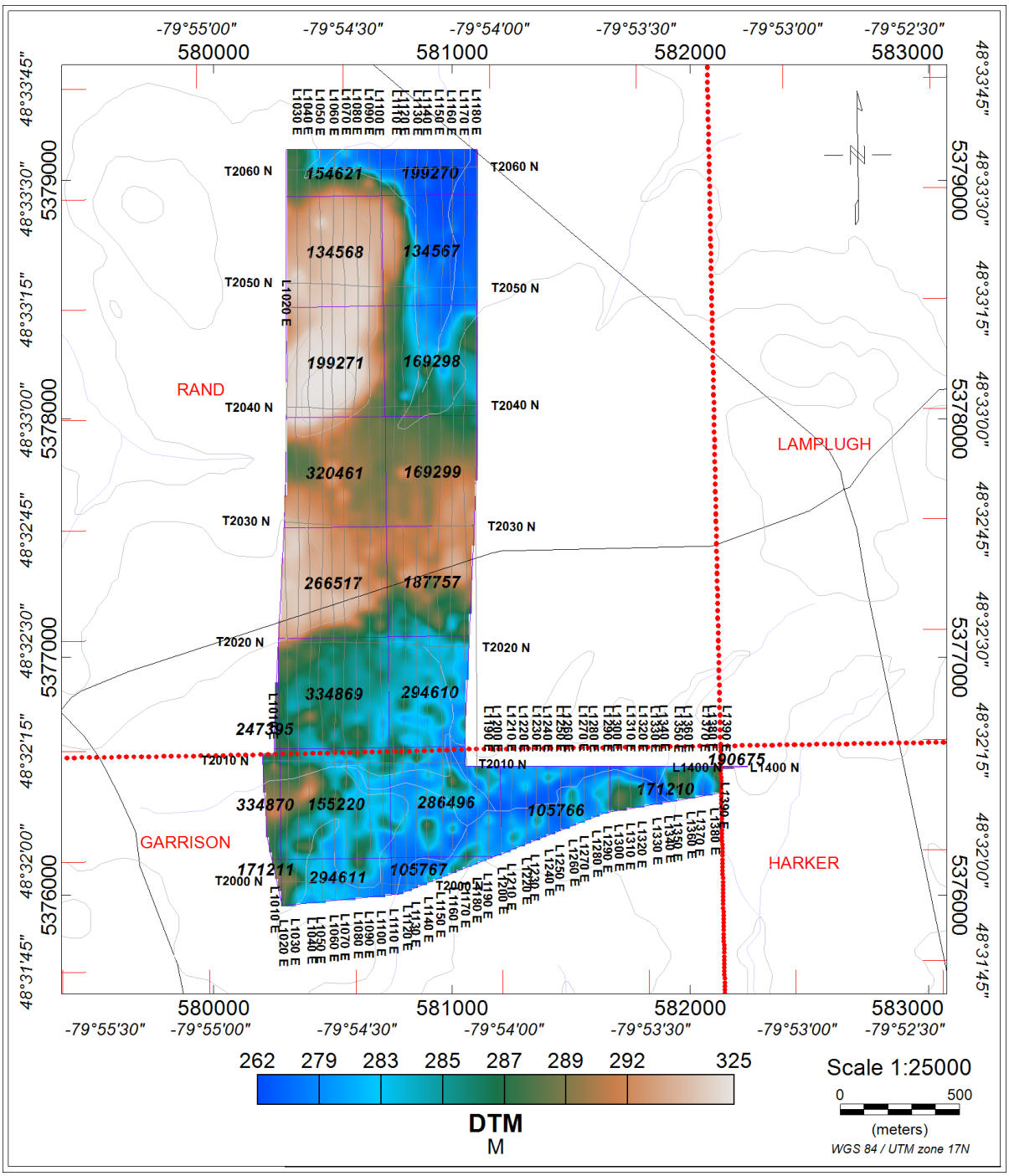
Off/time gates (nanosec from zero time)

Gate	Start	End	Center	Gate	Start	End	Center
15	1022	1271	1146.5	26	7732	9329	8530.5
16	1246	1545	1395.5	27	9179	11075	10127.0
17	1520	1870	1695.0	28	10900	13146	12023.0
18	1832	2256	2044.0	29	12946	15590	14268.0
19	2219	2718	2468.5	30	15353	18472	16912.5
20	2681	3254	2967.5	31	18185	21877	20031.0
21	3192	3890	3541.0	32	21540	25906	23723.0
22	3828	4651	4239.5	33	25507	30671	28089.0
23	4576	5549	5062.5	34	30209	36296	33252.5
24	5462	6610	6036.0	35	35566	43114	39340.0
25	6510	7857	7183.5				

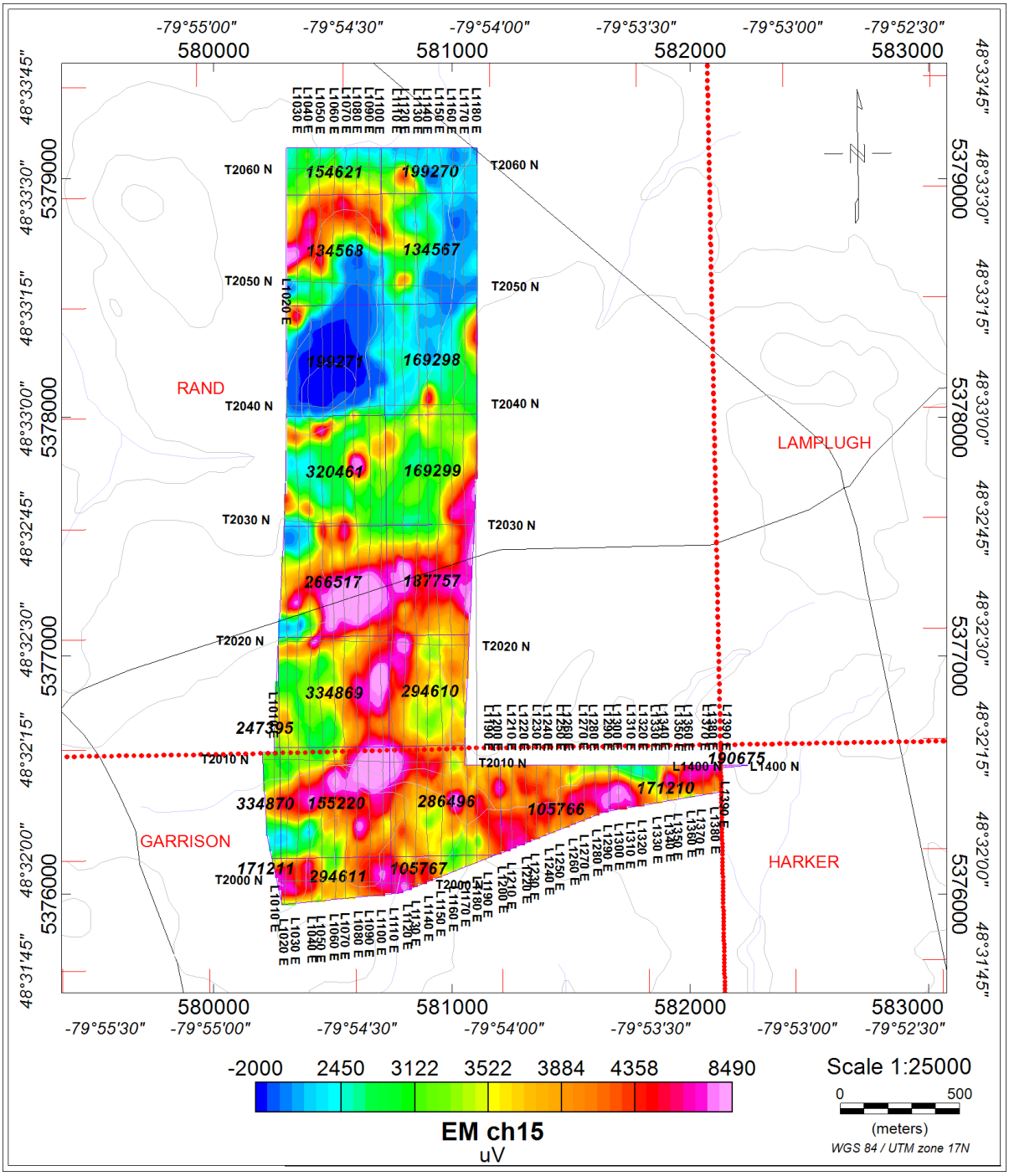
mTEM primary field system response



Appendix III mTEM maps images



Digital terrain model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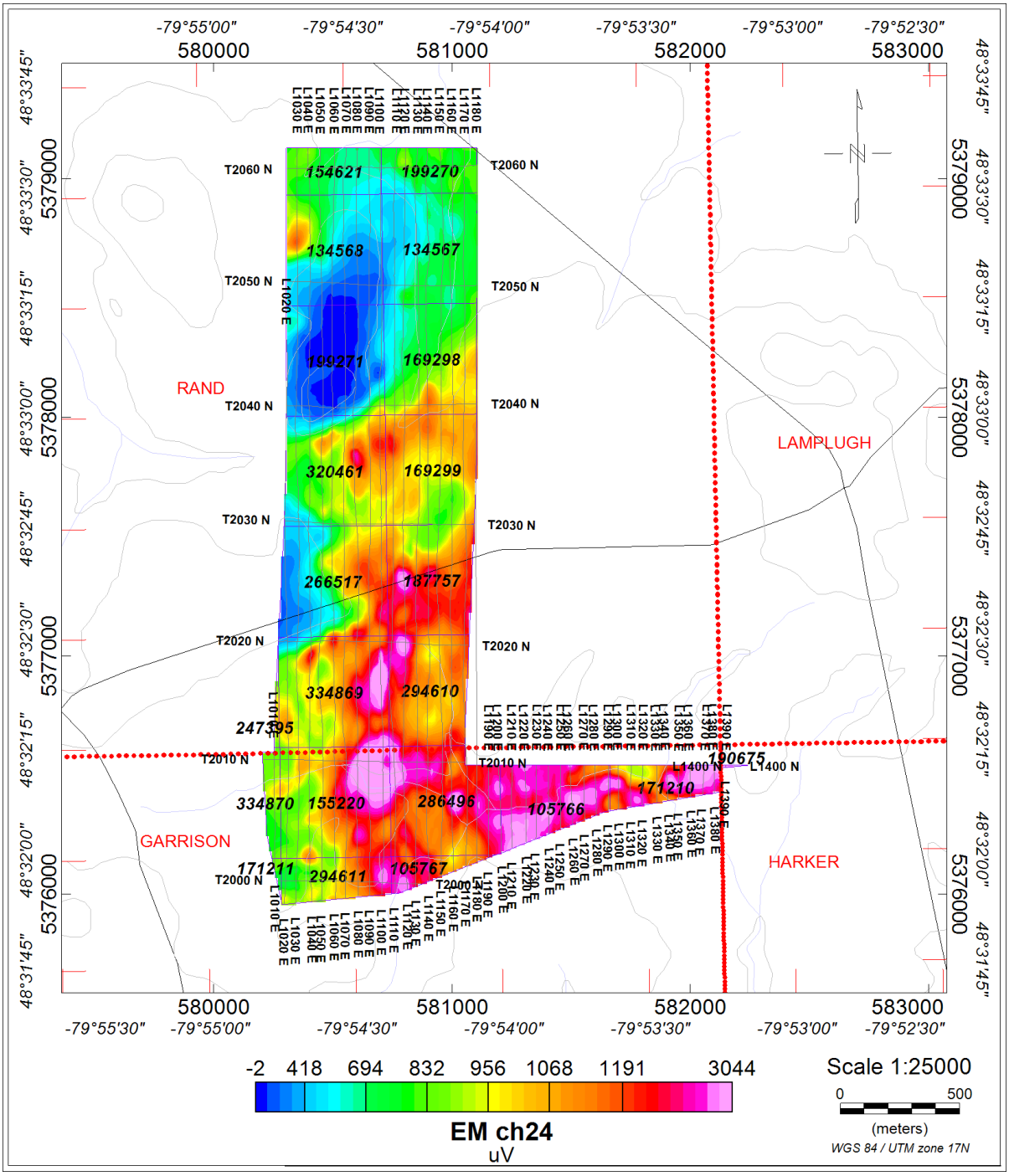
-79°54'30"
-79°54'00"
-79°53'30"
-79°53'00"
-79°52'30"
580000
581000
582000
583000
48°33'45"
48°33'30"
48°33'15"
48°33'00"
48°32'45"
48°32'30"
48°32'15"
48°32'00"
48°31'45"
5379000
5378000
5377000
5376000
T2060 N
T2050 N
T2040 N
T2030 N
T2020 N
T2010 N
T2000 N
L1400 N
154621
199270
134568
134567
199271
169298
320461
169299
266517
187757
334869
294610
247395
190675
171210
334870
155220
286496
105766
171211
294611
105767
RAND
LAMPLUGH
GARRISON
HARKER
-2000
2450
3122
3522
3884
4358
8490
EM ch15
uV
Scale 1:25000
0
500
(meters)
WGS 84 / UTM zone 17N

dB/dt EM ch15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48°32'15"
48°32'00"
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5379000
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T2060 N
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T2040 N
T2030 N
T2020 N
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T2000 N
L1400 N
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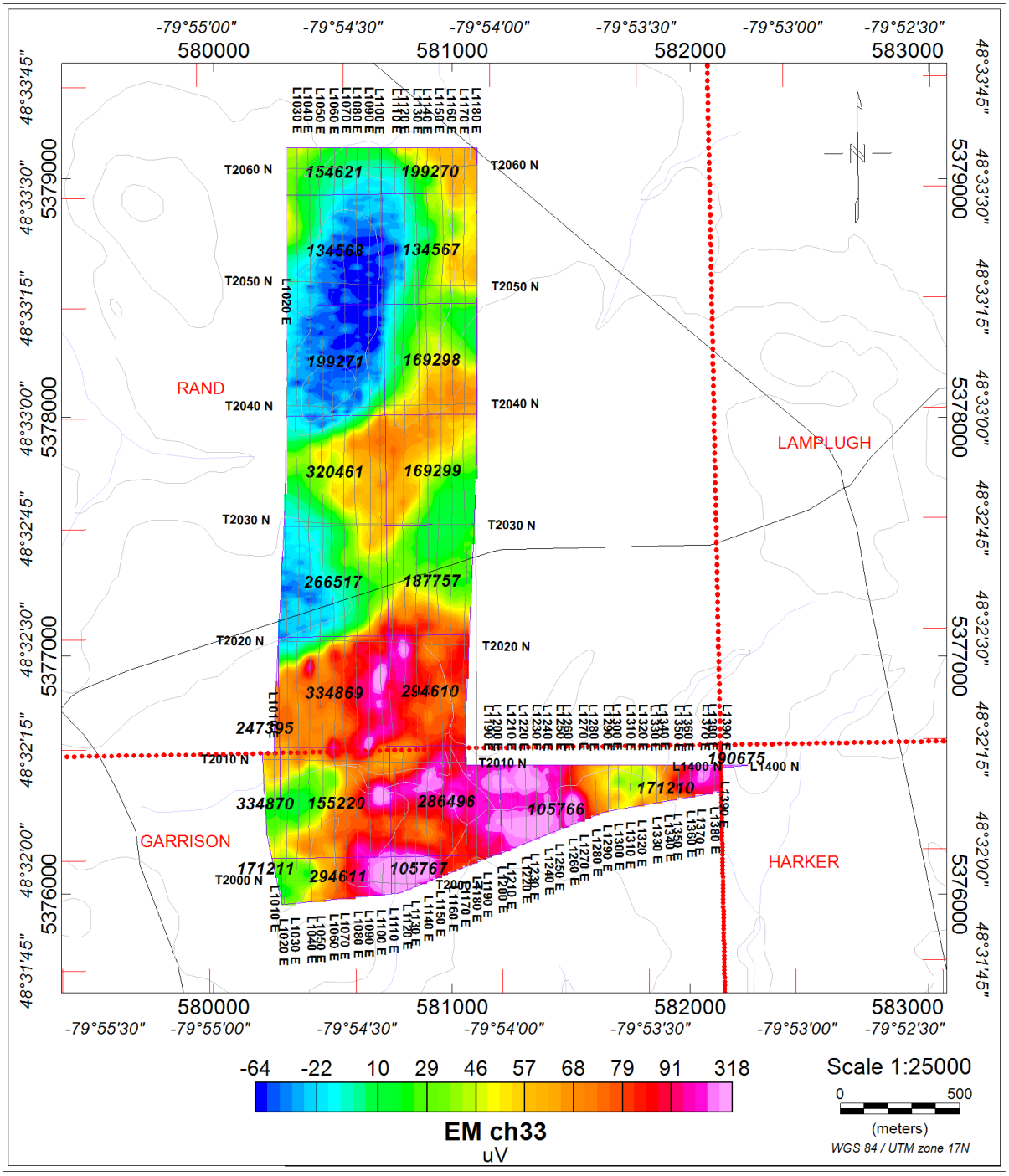
266517
187757
334869
294610
247395
190675
171210
334870
155220
286496
105766
171211
294611
105767
RAND
LAMPLUGH
GARRISON
HARKER
-2
418
694
832
956
1068
1191
3044
EM ch24
uV
Scale 1:25000
0
500
(meters)
WGS 84 / UTM zone 17N

dB/dt EM ch24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-79°54'30"
-79°54'00"
-79°53'30"
-79°53'00"
-79°52'30"
580000
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582000
583000
48°33'45"
48°33'30"
48°33'15"
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5379000
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T2060 N
T2050 N
T2040 N
T2030 N
T2020 N
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T2000 N
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247395
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171210
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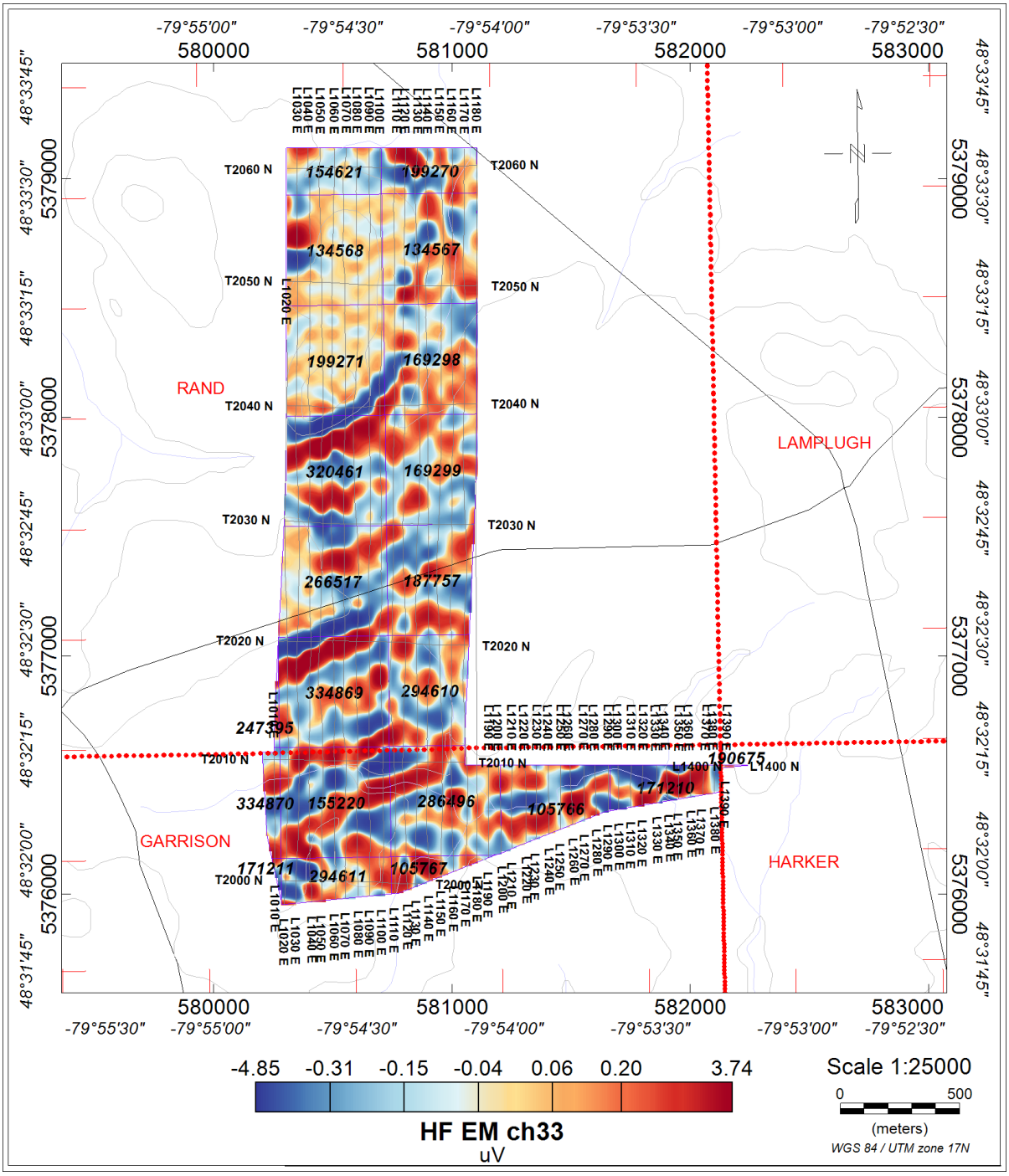
155220
286496
105766
171211
294611
105767
RAND
LAMPLUGH
GARRISON
HARKER
-64
-22
10
29
46
57
68
79
91
318
EM ch33
uV
Scale 1:25000
0
500
(meters)
WGS 84 / UTM zone 17N

dB/dt EM ch33



High Frequency Component of dB/dT response, ch 30