Assessment Report

On the

Helicopter-Borne VTEM and Horizontal Magnetic Gradiometer

Geophysical Survey

For

San Gold Corporation's

Atikwa Lake Property

Fisher, Atikwa and Rowan Lake Area
NTS Sheets 52 F/05 and 52 F/12

Kenora Mining Division

October 2013

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1.0 Summary

From November 26, 2012 to January 8, 2013 a helicopter-borne geophysical survey was conducted over San Gold Corporation's Atikwa Lake Property in the Kenora Mining Division of Ontario (hereafter simply referred to as "the Property"). The geophysical survey and report was completed by Geotech Ltd. of Aurora, Ontario. Clark Exploration Consulting Inc. of Thunder Bay, Ontario was contracted to complete the assessment report.

A total of 1404 line kilometres of geophysical data were acquired during the survey. Based on the results obtained during the survey, a number of TDEM anomalies were identified across the property. Most of the conductive zones are oriented in either a northeast or northwest direction and are associated with magnetic anomalies and gradients. The survey also indentified many structurally controlled local conductors, the estimated depth of which is 25 to 100 metres. In addition, many near surface anomalous zones are detected across the property.

Further geophysical work including detailed resistivity depth imaging and plate Maxwell modeling is recommended to be able to more accurately delineate drill targets. It is also recommended that attendant inversion/modeling of the magnetic field be completed since most of the conductive zones are associated with magnetic anomalies.

2.0 Property Description, Location and Access

The Atikwa Lake Property consists of 58 mining claims (744 units), 5 lease parcels and 59 patents, all of which are contiguous and cover a total of 13138 hectares (Tables 1, 2, and 3) in Fisher, Atikwa and Rowan Lake Areas, in the Kenora Mining Division of Ontario (Figures 1 and 2). San Gold has optioned the property from three different people/companies (Perry English, Canadian Arrow Mines Limited and Consolidated Maybrun Mines Limited). Please see Appendix A for a detailed claim map of the Property.

The Property is situated in the Kenora Mining Division of Ontario, with the claims, leases and patents being located on NTS sheets 52 F/05 and 52 F/12. The property is located approximately 30 kilometres northwest of the town of Nestor Falls, Ontario, and approximately 340 kilometres northwest of the city of Thunder Bay, Ontario. The city of Thunder Bay has a population of 110,000 and provides support services and skilled labour for both the mineral exploration and mining industry. Rail, national highway, port and international airport services are also available out of Thunder Bay. Support services are also available out of the towns of Kenora, Fort Frances and Dryden.

From Thunder Bay, the Property can be reached by travelling west on highway 11/17 and then Highway 11 continuing past the town of Fort Frances, Ontario until you reach the turn off for Highway 71. The property can then be accessed year round via Highway 71 and a series of “Limited Access” bush roads. The property can be directly accessed by two “limited access” roads from Highway 71. A written permit to use these roads must be obtained in advance and can be acquired from the Ministry of Natural Resources on Roberson Street in Kenora, Ontario. A two way citizen band radio is required and highly recommended when using the roads due to active logging in the area. Cell phone service is available up to 10 kilometres off of Highway 71.

The northernmost access road is the Cameron Lake Road that leaves Highway 71 some 12 kilometres south of the town of Sioux Narrows, Ontario. The southernmost access road leaves Highway 71 from the town of Nestor Falls, Ontario and is known as the Bass Lake Park Road.

The terrain in the area is generally comprised of rock ridges surrounded by till covered lower grounds and lakes. White pine and jack pine trees dominate the higher ground, while poplar, birch and cedar dominate the slopes and lower ground. The climate is typical of mid latitude continental and field operations are possible year round.

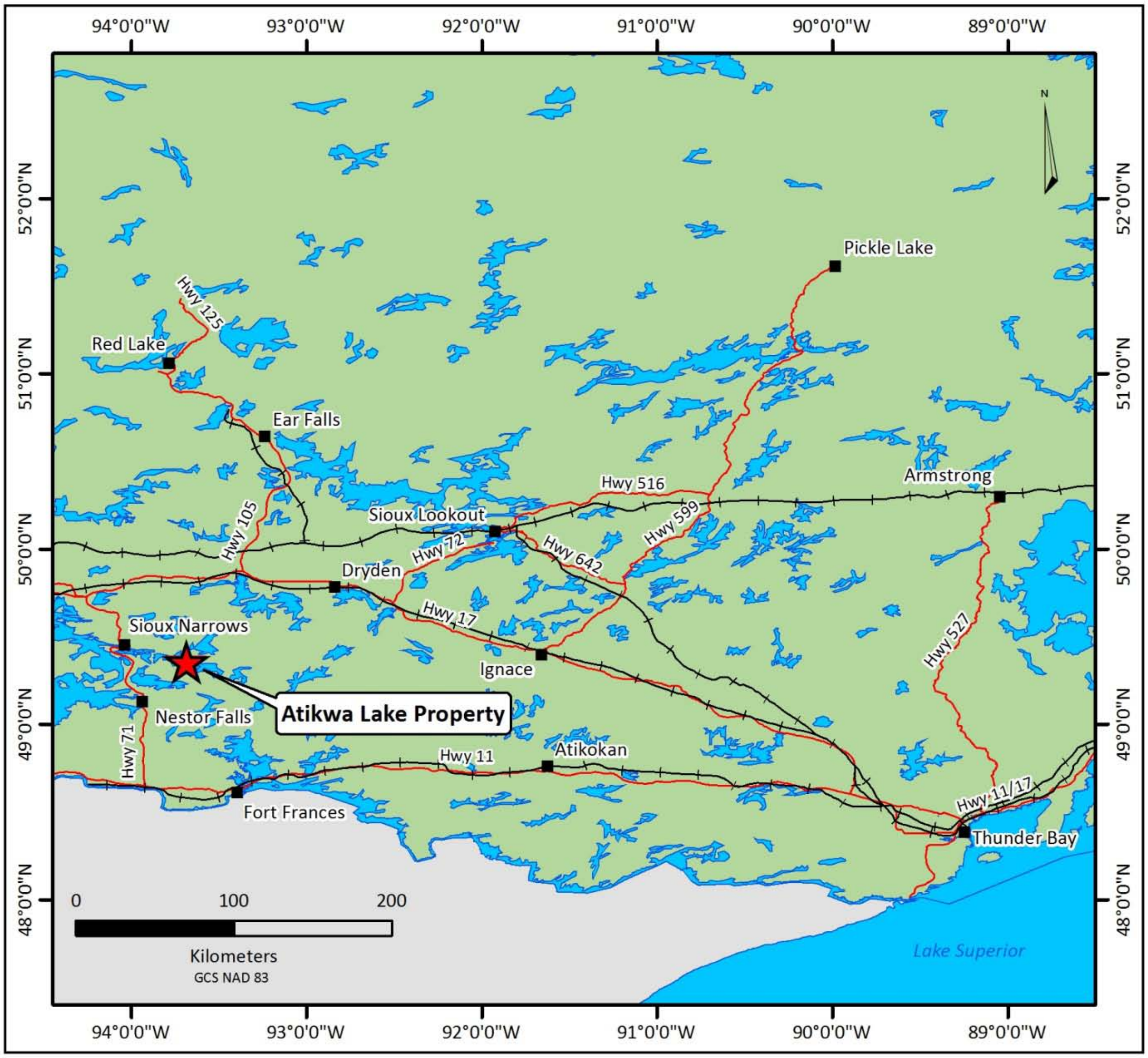

Figure 1: Property Location Map.

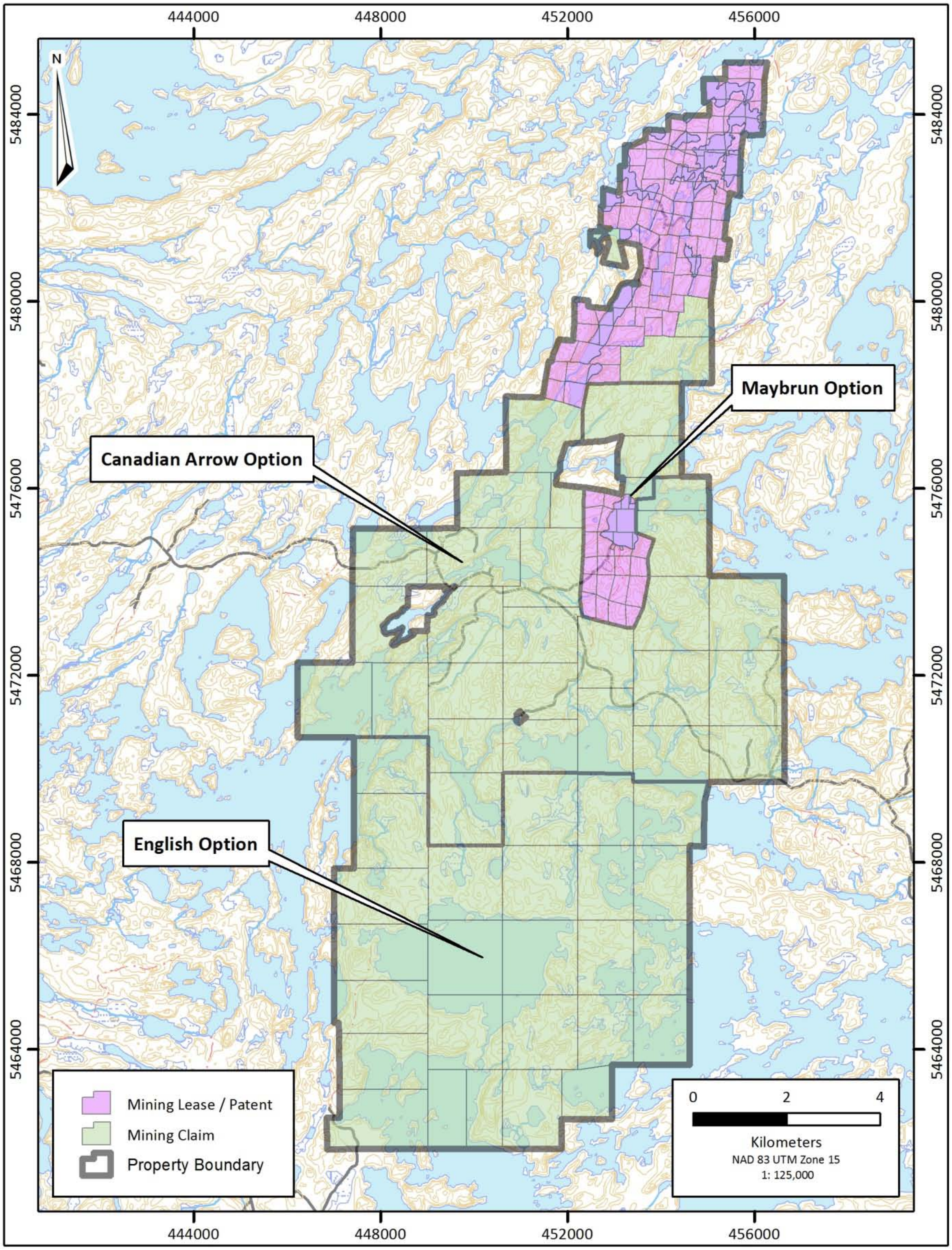

Figure 2: Property Claim Map.

Table 1: Claim Details.

Claim Origin	Township/Area	Claim Number	Recording Date	Claim Due Date	Units	Work Required	Total Applied	Total Reserve
English Option	ATIKWA LAKE AREA	4260161	2010-Dec-02	2013-Dec-03	12	$4,800	$0	$0
English Option	ATIKWA LAKE AREA	4260162	2010-Dec-02	2013-Dec-03	16	$6,400	$0	$0
English Option	ATIKWA LAKE AREA	4260163	2010-Dec-02	2013-Dec-03	16	$6,400	$0	$0
English Option	ATIKWA LAKE AREA	4260164	2010-Dec-02	2013-Dec-03	12	$4,800	$0	$0
English Option	ATIKWA LAKE AREA	4260165	2010-Dec-02	2013-Dec-03	16	$6,400	$0	$0
English Option	ROWAN LAKE AREA	4260166	2010-Dec-02	2013-Dec-03	15	$6,000	$0	$0
English Option	ROWAN LAKE AREA	4260167	2010-Dec-02	2013-Dec-03	16	$6,400	$0	$0
English Option	ROWAN LAKE AREA	4260168	2010-Dec-02	2013-Dec-03	16	$6,400	$0	$0
English Option	ROWAN LAKE AREA	4260169	2010-Dec-02	2013-Dec-03	12	$4,800	$0	$0
English Option	ROWAN LAKE AREA	4260170	2010-Dec-02	2013-Dec-03	12	$4,800	$0	$0
English Option	ROWAN LAKE AREA	4260171	2010-Dec-02	2013-Dec-03	15	$6,000	$0	$0
English Option	ROWAN LAKE AREA	4260172	2010-Dec-02	2013-Dec-03	16	$6,400	$0	$0
English Option	ROWAN LAKE AREA	4260173	2010-Dec-02	2013-Dec-03	16	$6,400	$0	$0
English Option	ROWAN LAKE AREA	4260174	2010-Dec-02	2013-Dec-03	12	$4,800	$0	$0
English Option	ROWAN LAKE AREA	4260175	2010-Dec-02	2013-Dec-03	12	$4,800	$0	$0
English Option	ROWAN LAKE AREA	4260176	2010-Dec-02	2013-Dec-03	15	$6,000	$0	$0
English Option	ROWAN LAKE AREA	4260177	2010-Dec-02	2013-Dec-03	16	$6,400	$0	$0
English Option	ROWAN LAKE AREA	4260178	2010-Dec-02	2013-Dec-03	16	$6,400	$0	$0
English Option	ROWAN LAKE AREA	4260179	2010-Dec-02	2013-Dec-03	12	$4,800	$0	$0
English Option	ROWAN LAKE AREA	4260180	2010-Dec-02	2013-Dec-03	12	$4,800	$0	$0
English Option	ROWAN LAKE AREA	4260181	2010-Dec-02	2013-Dec-03	15	$6,000	$0	$0
English Option	ROWAN LAKE AREA	4260182	2010-Dec-02	2013-Dec-03	15	$6,000	$0	$0
English Option	ROWAN LAKE AREA	4260183	2010-Dec-02	2013-Dec-03	10	$4,000	$0	$0
English Option	ROWAN LAKE AREA	4260184	2010-Dec-02	2013-Dec-03	10	$4,000	$0	$0
English Option	ROWAN LAKE AREA	4260185	2010-Dec-02	2013-Dec-03	15	$6,000	$0	$0
English Option	ROWAN LAKE AREA	4260186	2010-Dec-02	2013-Dec-03	9	$3,600	$0	$0
Maybrun Option	ATIKWA LAKE AREA	4204797	2007-Jan-22	2016-Jan-22	15	$6,000	$42,000	$0
Maybrun Option	ATIKWA LAKE AREA	4204798	2007-Jan-22	2016-Jan-22	6	$2,400	$16,800	$0
Maybrun Option	ATIKWA LAKE AREA	4224417	2008-Jan-25	2016-Jan-25	2	$800	$4,800	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4208700	2006-Feb-07	2015-Feb-07	16	$6,400	$44,800	$614
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4208701	2006-Feb-07	2015-Feb-07	15	$6,000	$42,000	$573
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4208702	2006-Feb-07	2015-Feb-07	15	$6,000	$42,000	$573
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4208703	2006-Feb-07	2014-Feb-07	14	$1,585	$37,615	$535
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4208704	2006-Feb-07	2014-Feb-07	15	$4,510	$37,490	$573
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4208705	2006-Feb-07	2015-Feb-07	12	$4,800	$33,600	$458
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4208706	2006-Feb-07	2014-Feb-07	12	$4,779	$28,821	$458
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4208707	2006-Feb-07	2014-Feb-07	12	$4,800	$28,800	$458

Claim Origin	Township/Area	Claim Number	Recording Date	Claim Due Date	Units	Work Required	Total Applied	Total Reserve
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4208708	2006-Feb-07	2014-Feb-07	12	$4,800	$28,800	$88,105
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4208709	2006-Feb-07	2014-Feb-07	16	$6,400	$38,400	$1,790
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4212129	2006-Aug-24	2014-Aug-24	12	$4,800	$28,800	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4212130	2006-Aug-24	2014-Aug-24	16	$6,400	$38,400	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4212131	2006-Aug-24	2014-Aug-24	12	$4,800	$28,800	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4212132	2006-Aug-24	2014-Aug-24	10	$4,000	$24,000	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4212133	2006-Aug-24	2014-Aug-24	15	$6,000	$36,000	$25,659
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4213420	2007-May-04	2015-May-04	15	$6,000	$36,000	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4213421	2007-May-04	2015-May-04	13	$5,200	$31,200	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4213422	2007-Apr-23	2015-Apr-23	6	$2,400	$14,400	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4213423	2007-Apr-23	2015-Apr-23	13	$5,200	$31,200	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4213424	2007-May-04	2015-May-04	14	$5,600	$33,600	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4213425	2007-May-04	2015-May-04	4	$1,600	$9,600	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4213426	2007-Apr-23	2015-Apr-23	3	$1,200	$7,200	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4214238	2007-Apr-03	2016-Apr-03	6	$2,400	$16,800	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4228981	2008-Apr-02	2014-Apr-02	12	$4,800	$19,200	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4219064	2008-Mar-03	2014-Mar-03	16	$6,400	$25,600	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4219065	2008-Mar-03	2014-Mar-03	16	$6,400	$25,600	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4219066	2008-Mar-03	2014-Mar-03	16	$6,400	$25,600	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4219067	2008-Mar-03	2014-Mar-03	12	$4,800	$19,200	$0
Canadian Arrow - Kenbridge Option	ATIKWA LAKE AREA	4219068	2008-Mar-03	2014-Mar-03	12	$4,800	$19,200	$0

Table 2: Lease Details.

Claim Number	Type	Status	Type	Area (ha)	Lease/Lic#	Township/Area	Claim Origin
K18639 K18640 K18644 K18645 K18647 K18658 K19428	Lease	Active	Licence of Occupation	32.63	12955	ATIKWA LAKE AREA	Canadian Arrow - Kenbridge Option
K18648 K18650 K18651 K18652 K18655 K18656 K18694 K18696 K18699	Lease	Active	Licence of Occupation	42.079	12958	ATIKWA LAKE AREA	Canadian Arrow - Kenbridge Option
K18669 K18684 K18685 K18686 K18687 K18690 K18691 K18703 K18705 K18720 K18723 K18728	Lease	Active	Licence of Occupation	79.48	12957	ATIKWA LAKE AREA	Canadian Arrow - Kenbridge Option
K18679 K18682 K18704 K18711 K18717 K18718 K18719 K18721 K18722 K18725 K18726	Lease	Active	Licence of Occupation	76.651	12956	ATIKWA LAKE AREA	Canadian Arrow - Kenbridge Option
K15364 K15367 K15368 K15369 K15370 K15375 K15376 K15524	Lease	Active	Licence of Occupation	58.117	13132	ATIKWA LAKE AREA	Maybrun Option

Table 3: Patent Details.

Claim Number	Type	Area (Ha)	Claim Origin
K15365	Patent	19	Maybrun Option
K15366	Patent	16	Maybrun Option
K15371	Patent	13	Maybrun Option
K15372	Patent	18	Maybrun Option
K15373	Patent	14	Maybrun Option
K15374	Patent	15	Maybrun Option
K15377	Patent	12	Maybrun Option
K15378	Patent	20	Maybrun Option
K15379	Patent	18	Maybrun Option
K15380	Patent	13	Maybrun Option
K15381	Patent	16	Maybrun Option
K15525	Patent	15	Maybrun Option
K15526	Patent	26	Maybrun Option
K15527	Patent	13	Maybrun Option
FM84	Patent	31	Canadian Arrow - Kenbridge Option
JES110	Patent	22	Canadian Arrow - Kenbridge Option
JES148	Patent	4	Canadian Arrow - Kenbridge Option
JES93	Patent	20	Canadian Arrow - Kenbridge Option
K3661	Patent	7	Canadian Arrow - Kenbridge Option
K18641	Patent	16	Canadian Arrow - Kenbridge Option
K18642	Patent	16	Canadian Arrow - Kenbridge Option
K18643	Patent	11	Canadian Arrow - Kenbridge Option
K18646	Patent	17	Canadian Arrow - Kenbridge Option
K18649	Patent	9	Canadian Arrow - Kenbridge Option
K18653	Patent	13	Canadian Arrow - Kenbridge Option
K18654	Patent	11	Canadian Arrow - Kenbridge Option
K18657	Patent	22	Canadian Arrow - Kenbridge Option
K18675	Patent	12	Canadian Arrow - Kenbridge Option
K18702	Patent	8	Canadian Arrow - Kenbridge Option
K18727	Patent	12	Canadian Arrow - Kenbridge Option
K2876	Patent	20	Canadian Arrow - Kenbridge Option
K2877	Patent	16	Canadian Arrow - Kenbridge Option
K2878	Patent	19	Canadian Arrow - Kenbridge Option
K2879	Patent	23	Canadian Arrow - Kenbridge Option
K2908	Patent	22	Canadian Arrow - Kenbridge Option
K2939	Patent	19	Canadian Arrow - Kenbridge Option
K4732	Patent	13	Canadian Arrow - Kenbridge Option
K4733	Patent	14	Canadian Arrow - Kenbridge Option
K4734	Patent	15.5	Canadian Arrow - Kenbridge Option
K4735	Patent	20	Canadian Arrow - Kenbridge Option
K6634	Patent	16	Canadian Arrow - Kenbridge Option
K6635	Patent	16	Canadian Arrow - Kenbridge Option
K6636	Patent	11	Canadian Arrow - Kenbridge Option
K6637	Patent	13	Canadian Arrow - Kenbridge Option
K6638	Patent	14	Canadian Arrow - Kenbridge Option
K6668	Patent	18	Canadian Arrow - Kenbridge Option
K6669	Patent	10	Canadian Arrow - Kenbridge Option
K6670	Patent	12	Canadian Arrow - Kenbridge Option
K6671	Patent	24	Canadian Arrow - Kenbridge Option
K6672	Patent	16	Canadian Arrow - Kenbridge Option
K6673	Patent	16	Canadian Arrow - Kenbridge Option
K6674	Patent	19	Canadian Arrow - Kenbridge Option
K6675	Patent	13	Canadian Arrow - Kenbridge Option
K6676	Patent	15	Canadian Arrow - Kenbridge Option
K6677	Patent	14	Canadian Arrow - Kenbridge Option
K7502	Patent	13	Canadian Arrow - Kenbridge Option
K8364	Patent	13	Canadian Arrow - Kenbridge Option
K8365	Patent	18	Canadian Arrow - Kenbridge Option

Claim Number	Type	Area (Ha)	Claim Origin
K8366	Patent	19	Canadian Arrow - Kenbridge Option
KFM85	Patent	15	Canadian Arrow - Kenbridge Option

3.0 Regional Geology

The property is within the Kakagi-Rowan Lakes greenstone belt, located in the western end of the Wabigoon sub-province within the Archean Superior Province of the Canadian Shield. The Wabigoon sub-province is a granite-greenstone terrain separating the gneissic terrains of the Quetico sub-province to the south and the Winnipeg River sub-province to the north. The area is dominated by mafic to ultramafic rocks, felsic to intermediate metavolcanic rocks and mafic to intermediate metavolcanic rocks (Figure 3).

Two major fault systems are known in the area. The last active fault is the northwest trending Pipestone-Cameron Lake Shear. A northeast trending system is marked by the Monti Cristo and Chase Bay aults. These two faults may have been a single one that has been cross-cut and deflected into the Pipestone-Cameron Lake shear giving a clear sense of motion on the Pipestone-Cameron Lake Shear.

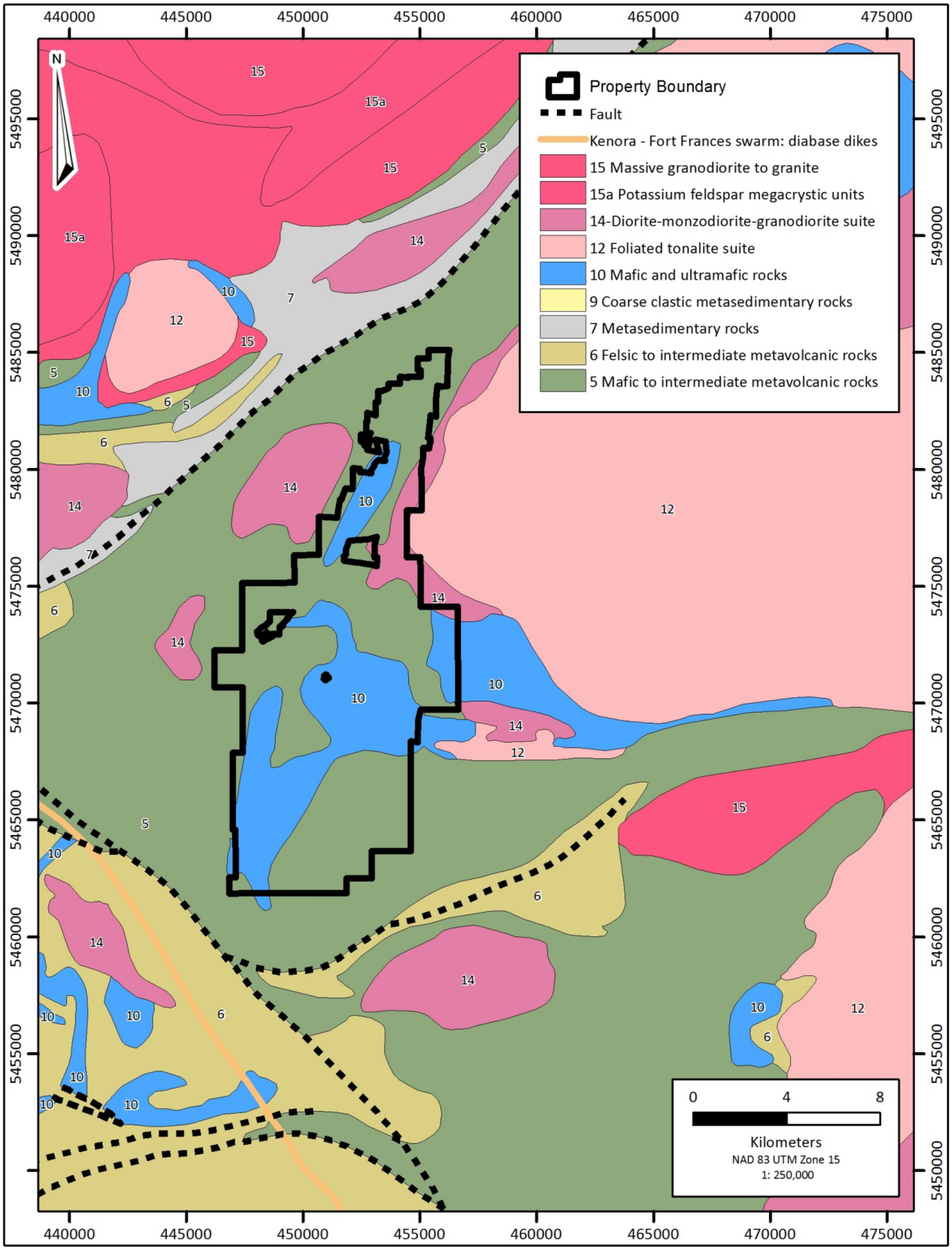

Figure 3: Regional Geology Map.

4.0 Property Geology

The property geology is highly variable and a review of the property geology is beyond the scope of this report. This is shown in a more detailed geological map (although at a regional scale) shown in Figure 4. Should a more detailed overview of the geology be desired, some of the more recent reports listed in Section 5.0 of this report should be reviewed.

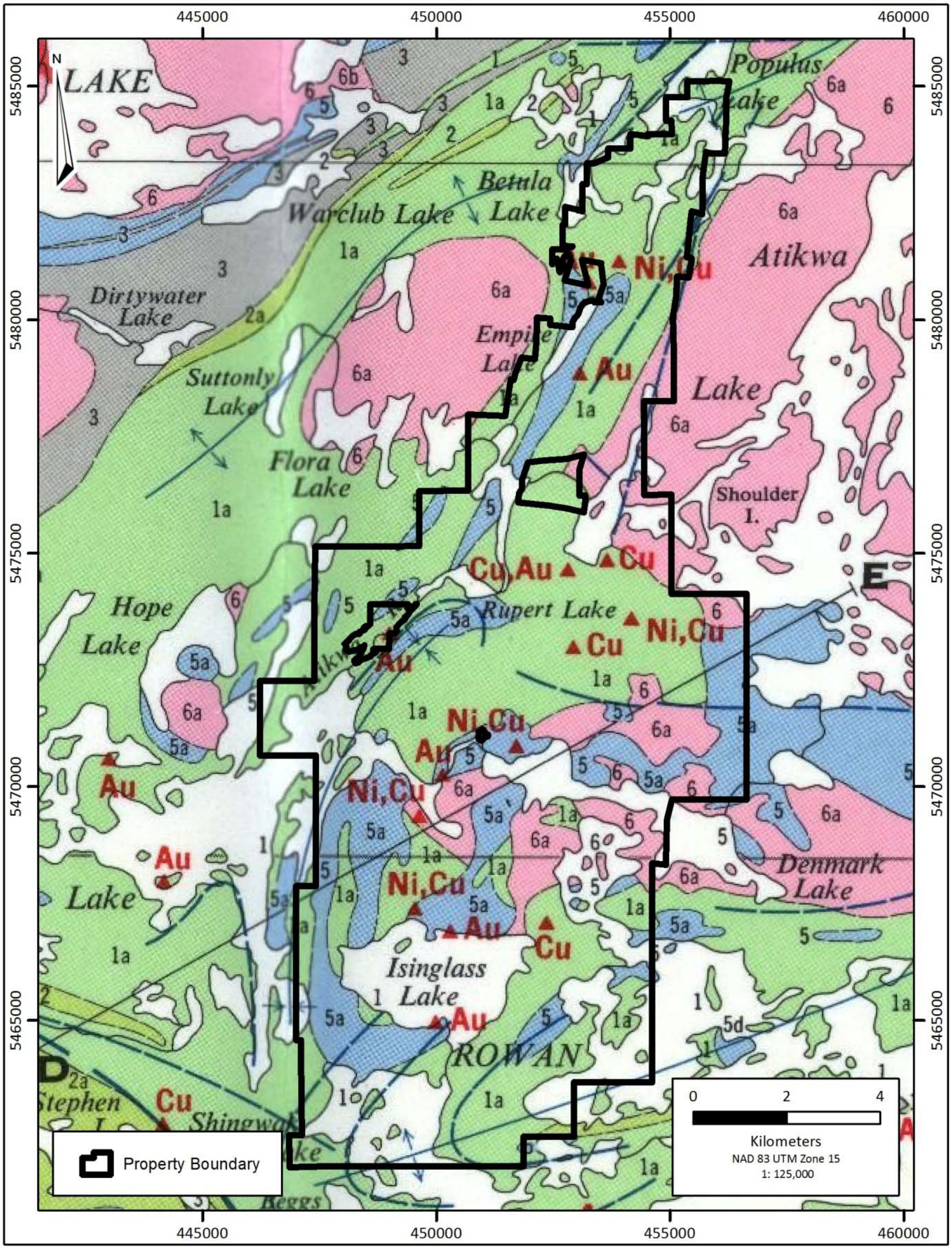

Figure 4: Property Geology Map.

5.0 Exploration History

An Examination of the Ministry of Northern Development and Mines assessment files has indicated that there has been an extensive amount of assessment work performed in the area of the current property. Table 2 below provides a list of assessment work performed in the area. This review of the exploration history was performed using a GIS based assessment work boundary layer, which was intersected with the current property boundary. It should be noted that this is not a complete review and a physical search of the assessment files should be performed to ensure this list is complete (regarding filed assessment work).

Table 4: Exploration History.

AFRI ID	Link to Report	Work Performed by	Type of Work	Year
20000000215	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=20000000215	M. Norris	Trenching	1952
52L07NE0002	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52L07NE0002	Platinum Exploration Canada Inc.	Prospecting and Sampling	1987
52F05NE0045	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0045	The International Nickel Co. of Canada, Ltd.	Geophysical Survey	1949
20000002212	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=20000002212	Unknown	Airborne Geophysics	1952
20000002860	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=20000002860	M. Norris	Geological Mapping and Prospecting	1952
20000003277	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=20000003277	M. Norris	Prospecting and Sampling	1952
20000003529	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=20000003529	M. Norris	Trenching	1952
52F05NE0030	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0030	Hotstone Gold Mines	Diamond Drilling	1952
52F05NE0032	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0032	Noranda Mines LTD.	Diamond Drilling	1952
52F05NE0044	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0044	H. D. B. Wilson	Geological Mapping	1952

AFRI ID	Link to Report	Work Performed by	Type of Work	Year
52F05NE0054	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0054	G. L. Holbrooke	Electromagnetic Survey	1952
52F05NE0056	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0056	Wright Hargreaves Mines Group	Geomagnetic Survey	1952
52F05NE0057	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0057	Falconbridge Nickel Mines Limited	Geophysical Survey	1952
52F05NE0017	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0017	Eldon Mines Limited	Diamond Drilling	1953
52F05NE0059	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0059	Eldon Mines Limited	Diamond Drilling	1953
20000003840	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=20000003840	Canadian Arrow Mines LTD.	Diamond Drilling	1955
20000004040	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=20000004040	Canadian Arrow Mines LTD.	Airborne Geophysics, Geological Mapping, Trenching, and diamond Drilling	1955
52F05NE0028	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0028	Bulldog Yellow Knife	Diamond Drilling	1955
52F05NE0048	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0048	Conwest Exploration Co. Ltd.	Magnetometer Survey	1955
52F12SE0010	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F12SE0010	Falconbridge Nickel Mines Limited	Airborne Magnetic Survey	1955
52F05NE0049	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0049	Taurcanis Mines Limited	Electromagnetic Survey	1955, 1956, 1957
20000004085	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=20000004085	Canadian Arrow Mines LTD.	Prospecting, Rock Sampling and Geological Mapping	1956
20000004123	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=20000004123	Nuinsco Resources Limited	Diamond Drilling	1956
52F05NE0004	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0004	D Martin	Geophysical Surveys	1956
52F05NE0013	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0013	W. Whymark	Airborne Magnetic and VLF-EM Survey	1956

AFRI ID	Link to Report	Work Performed by	Type of Work	Year
52F05NE0018	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0018	Green Bay Mg. & Expl	Diamond Drilling	1956
52F05NE0019	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0019	Falconbridge Nickel Mines Limited	Diamond Drilling	1956
52F05NE0021	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0021	Falconbridge Nickel Mines Limited	Diamond Drilling	1956
52F05NE0026	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0026	Chipman Lake Mines	Diamond Drilling	1956
52F05NE0035	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0035	Apex Consolidated	Diamond Drilling	1956
52F05NE0036	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0036	Shawkey (1945) Mng.	Diamond Drilling	1956
52F05NE0037	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0037	Shawkey (1945) Mng.	Diamond Drilling	1956
52F05NE0038	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0038	Green Bay Mg. & Expl	Diamond Drilling	1956
52F05NE0040	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0040	Green Bay Mg. & Expl	Diamond Drilling	1956
52F05NE0050	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0050	Geo-Explorers Ltd.	Magnetometer Survey	1956
52F05NE0051	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0051	Shawkey (1945) Mines Limited	Geological Survey and Diamond Drilling	1956
52F05NE0055	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0055	Apex Consolidated	Geo-Magnetic Survey	1956
52F12SE0017	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F12SE0017	Falconbridge Nickel Mines Limited	Diamond Drilling	1956
52F12SE8164	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F12SE8164	Falconbridge Nickel Mines Limited	Diamond Drilling	1956
52F05NE0016	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0016	Eldon Mines Limited	Diamond Drilling	1957

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52F05NE0020	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0020	Falconbridge Nickel Mines Limited	Diamond Drilling	1957
52F05NE0023	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0023	Falconbridge Nickel Mines Limited	Diamond Drilling	1957
52F05NE0027	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0027	Falconbridge Nickel Mines Limited	Diamond Drilling	1957
52F05NE0034	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0034	Taurcanis Mines Limited	Diamond Drilling	1957
52F05NE0039	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0039	J. R. Gray and E. Krisko	Diamond Drilling	1957
52F05NE0041	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0041	J. Edwards	Diamond Drilling	1957
52F05NE8190	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE8190	Falconbridge Nickel Mines Limited	Diamond Drilling	1957
52F05NE0029	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0029	Mirado Nickel Mines	Diamond Drilling	1958
52F05NE0046	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0046	Maybrun Mines Limited	Diamond Drilling	1965
52F05NE0047	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0047	B. Wilson	Induced Polarization Survey	1967
52F05NE0043	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0043	Sheridan Geophysics Limited	Geophysical Exploration Program	1969
52F05NE0052	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0052	Denrow Mines Limited	Electromagnetic Survey	1971
52F05NE0058	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0058	International Nickel Company of Canada	Geophysical Survey	1971
52F05NE0015	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0015	Paul Perreault	Diamond Drilling	1975
52F05NE0143	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0143	Noranda Mines LTD.	Magnetometer Survey	1975

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52F05NE0150	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0150	L Murdock	Diamond Drilling	1980
52F05NE8181	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE8181	Green Bay Mining & Exploration Company	Geological Survey	1981
52F05SE0012	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0012	Colby Resources Corp.	Geophysical Survey	1982, 1984
52F05SE0021	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0021	Nuinsco Resources Limited	Diamond Drilling	1983
52F05NE0002	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0002	Consolidated Maybrun Mines Limited	Geological Compilation	1984
52F05NE0010	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0010	Canadian Nickel Co LTD.	Geological Survey	1984
52F05NE0014	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0014	Cominco Ltd	Geophysical Survey	1984
52F05SE0032	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0032	Loydex Resources Inc.	Magnetic Survey	1984
52F05SE0033	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0033	A. Rosenthal	Diamond Drilling	1984
52F05SE0035	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0035	Harbringer Exploration LTD.	VLF-EM Survey	1984
52F05SE0039	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0039	T. Soteroplos	Geological Survey	1984
52F05SE0049	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0049	Great Central Mines LTD.	Airborne Magnetic and VLF-EM Survey	1984
52F05SE0054	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0054	Harbringer Exploration LTD.	Geological Survey	1984
52F05SE0066	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0066	Nuinsco Resources Limited	Airborne Geophysics	1984
52F05SE0075	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0075	Loydex Resources Inc.	Magnetic Survey	1984

AFRI ID	Link to Report	Work Performed by	Type of Work	Year
52F05SE0077	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0077	Lockwood Petroleum Inc.	Prospecting and Sampling	1984
52F05NE0003	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0003	Fort Knox Gold Resources	VLF, Magnetometer, IP and Geological Surveys	1985
52F05NE0006	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0006	Canadian Nickel Co LTD.	Electromagnetic Survey	1985
52F05NE0007	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0007	Diepdaume Mines Ltd.	Diamond Drilling	1985
52F05NE0009	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0009	Canadian Nickel Co LTD.	Magnetometer Survey	1985
52F05NE0011	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0011	Canadian Nickel Co LTD.	Scintellometer Survey	1985
52F05NE0012	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0012	Cominco Ltd	VLF-EL and Magnetic Survey	1985
52F05SE0082	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0082	Cream Silver Mines LTD.	Prospecting and VLF-EM Survey	1985
52F05SE0085	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0085	Loydex Resources Inc.	Geological Mapping	1985
52F05SE0086	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0086	Sault Meadows Energy Corporation	Geophysical Survey	1985
52F05SE0090	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0090	Y Collin, J Grant and D. Korpela	Proton Magnetometer Survey	1985
52F05SE0091	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0091	Atikwa Resources Inc.	Magnetic and EM Survey	1985
52F05SE0093	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0093	Harbringer Exploration LTD.	VLF-EM Survey	1985
52F05SE0094	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0094	Sault Meadows Energy Corporation	VLF-EM Survey	1985
52F05SE0096	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0096	T. Soteroplos	Geophysical Survey	1985

AFRI ID	Link to Report	Work Performed by	Type of Work	Year
52F05NE0005	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0005	Canadian Nickel Co LTD.	Geophysical Survey	1986
52F05SE0103	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0103	Bruneau Mines LTD.	Aeromagnetic Survey	1986
52F05SE0111	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0111	Macanda Resources Limited	Geological Report	1986
52F05SE0112	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0112	Nuinsco Resources Limited	Geological, Magnetic and IP Surveys	1986
52F05SE0117	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0117	Canadian Nickel Co LTD.	Diamond Drilling	1987
52F05SE0121	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0121	Noranda Mines LTD.	Diamond Drilling	1988
52F05SE0122	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0122	Canadian Nickel Co LTD.	Diamond Drilling	1988
52F05NE0001	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05NE0001	Falconbridge Limited	Ground Geophysical Surveys	1989
52F05SE0123	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0123	Green Bay Mining & Exploration Company	Diamond Drilling	1989
52F05SE0124	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0124	Dome Explorations	Diamond Drilling	1989
52F12SE0003	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F12SE0003	Falconbridge Limited	Geological Mapping	1989
52F05SE0125	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0125	Dome Explorations	Diamond Drilling	1990
52F05SE0126	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0126	Selco Exploration	Diamond Drilling	1990
20000001913	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=20000001913	Western Warrior Resources Inc.	Lithogeochemical Survey	2006, 2007
52F05SE0132	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0132	Hudson Bay Exploration and Development Company LTD.	Electromagnetic Survey	2007

AFRI ID	Link to Report	Work Performed by	Type of Work	Year
20000002904	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=20000002904	Canadian Arrow Mines LTD.	Electromagnetic Survey	2008
20000003515	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=20000003515	Opawica Explorations Inc.	Diamond Drilling	2008
52F05SE0142	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0142	Denlake Mining Company LTD.	Geological and Geomagnetic Surveys	2008
52F05SE0501	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0501	Caliban Resources Inc.	Diamond Drilling	2008
52F05SE0502	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0502	Caliban Resources Inc.	Diamond Drilling	2008
20000004101	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=20000004101	Canadian Arrow Mines LTD.	Diamond Drilling	2009
20000004121	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=20000004121	Canadian Arrow Mines LTD.	Diamond Drilling	2009
52F05SE0503	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0503	Caliban Resources Inc.	Geochemical Survey	2009
52F05SE0505	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0505	Falconbridge Limited	Geophysics	2009
52F05SE0506	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE0506	Caliban Resources Inc.	Geological Evaluation	2009
52F05SE8137	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE8137	Cream Silver Mines LTD.	Reconnaissance Prospecting	2009
52F05SE9656	http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=afri&id=52F05SE9656	Loydex Resources Inc.	VLF-EM Survey	2009

6.0 Geophysical Survey

From November 26, 2012 until January 8th, 2013 Geotech Ltd. performed a helicopter-borne geophysical survey over San Gold Corporation's Atikwa Lake Property. The geophysical survey consisted of helicopter-borne EM using the versatile time-domain electromagnetic (VTEM) system with Z and X component measurements and horizontal magnetic gradiometer using two cesium magnetometers. A total of 1404 line kilometres of geophysical data were acquired during this survey.

Please see Appendix B for a map showing the Total Magnetic Intensity of the survey and Appendix C for the complete Geotech Ltd. report on the survey.

7.0 Interpretation and Results

Please see the report in Appendix C for the interpretations and results of the survey.

8.0 Conclusion and Recommendations

Please see the report in Appendix C for conclusions and recommendations based on the results of the geophysical survey.

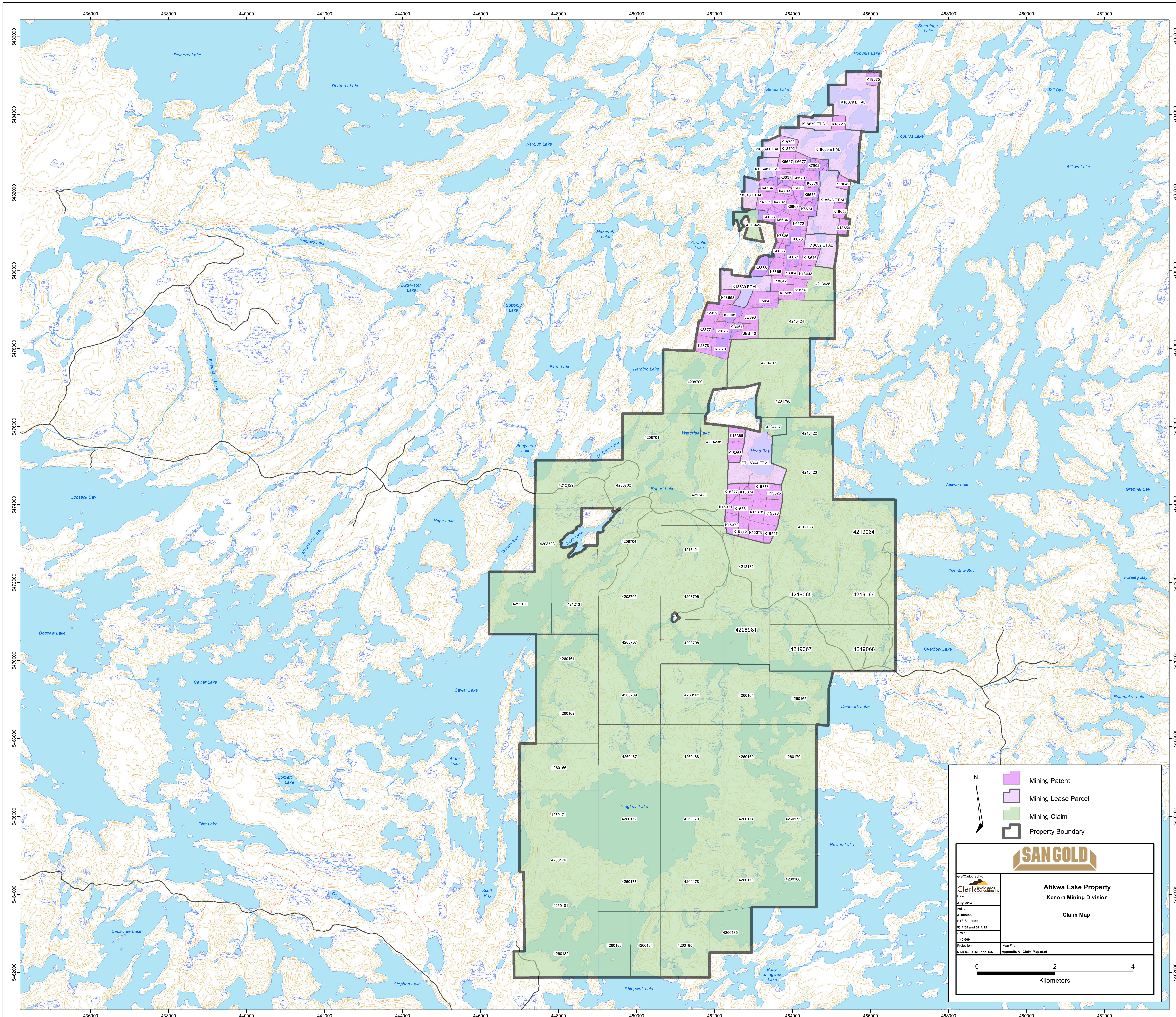
9.0 References

Davies, J. C. (1966) Geological Compilation Series, Kenora – Fort Frances Sheet, Ontario Geological Survey Map 2115, scale 1:253,440.

Appendices

Appendix A

Claim Map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Mining Lease Parcel
Mining Claim
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GIS/Cartography:
Clark Exploration Consulting Inc.
Date:
July 2013
Author:
J Duncan
NTS Sheet(s):
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NAD 83, UTM Zone 15N
Atikwa Lake Property
Kenora Mining Division
Claim Map
Map File:
Appendix A - Claim Map.mxd
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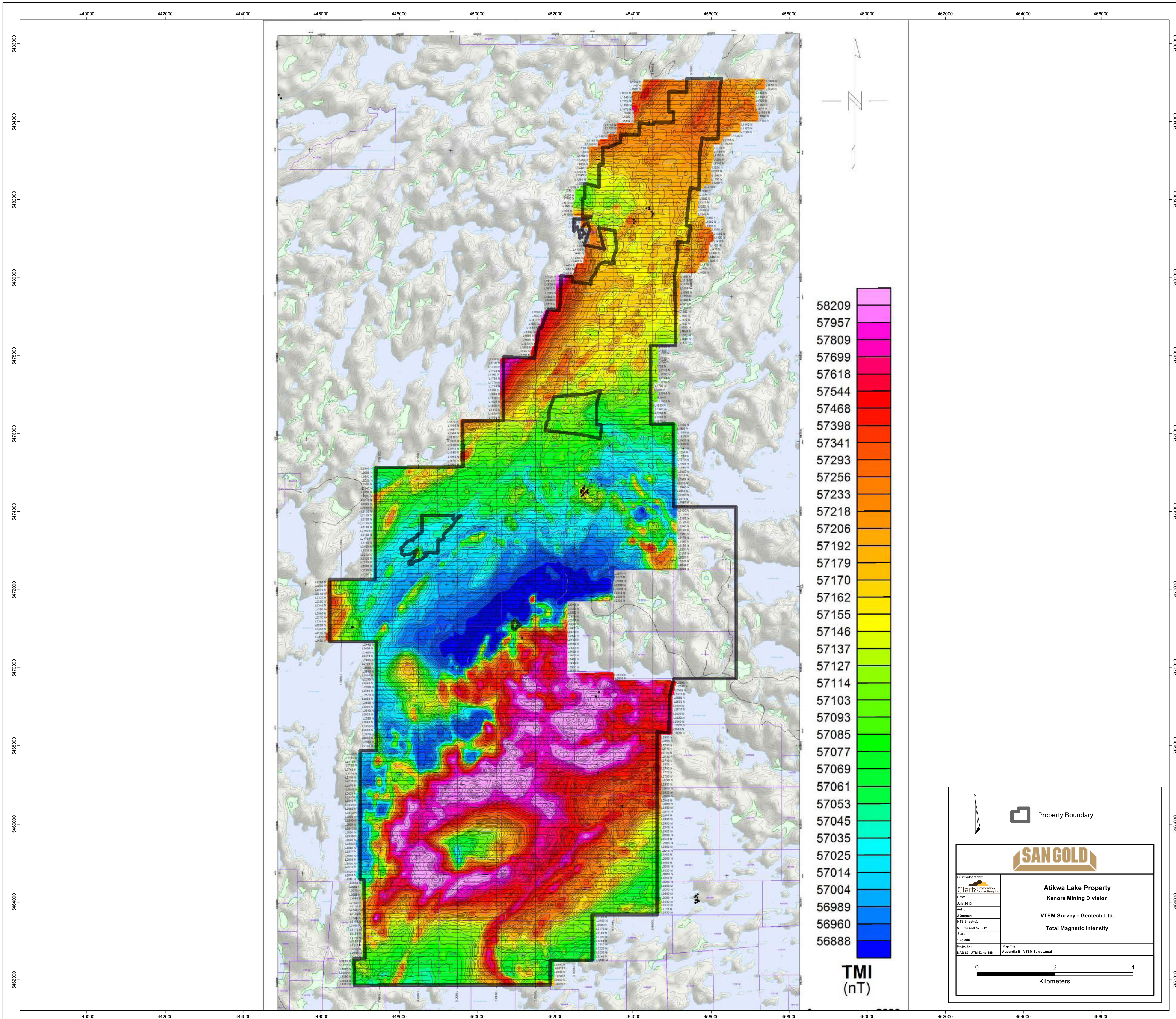
2
4
Kilometers

Appendix B

Geophysical Survey Map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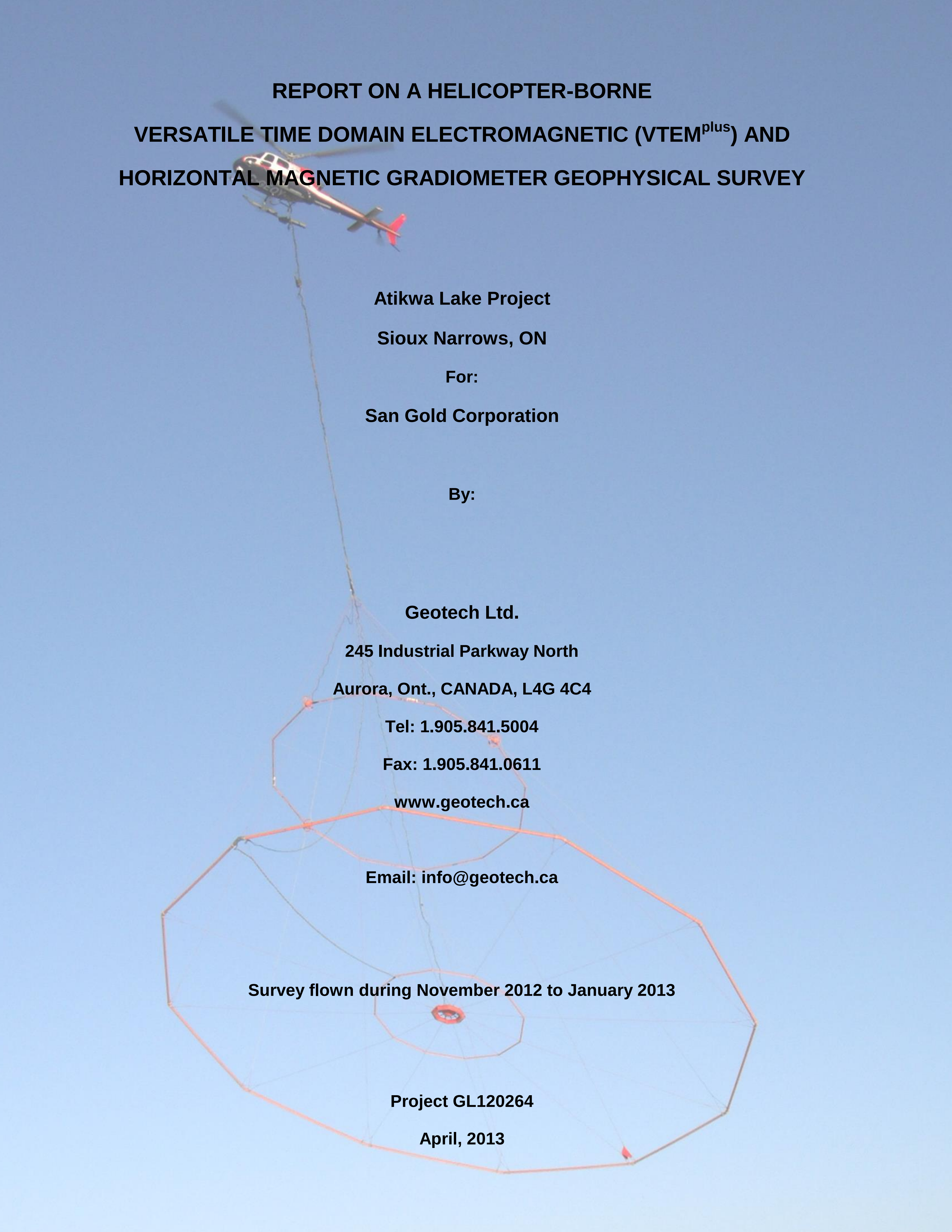
Clark Exploration Consulting Inc.
Date:
July 2013
Author:
J Duncan
NTS Sheet(s):
53 F/05 and 52 F/12
Scale:
1:40,000
Projection:
NAD 83, UTM Zone 15N
Atikwa Lake Property
Kenora Mining Division
VTEM Survey - Geotech Ltd.
Total Magnetic Intensity
Map File:
Appendix B - VTEM Survey.mxd
0
2
4
Kilometers

Appendix C

Geotech Ltd. Report



REPORT ON A HELICOPTER-BORNE VERSATILE TIME DOMAIN ELECTROMAGNETIC (VTEM^{plus}) AND HORIZONTAL MAGNETIC GRADIOMETER GEOPHYSICAL SURVEY

Atikwa Lake Project

Sioux Narrows, ON

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San Gold Corporation

By:

Geotech Ltd.

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Survey flown during November 2012 to January 2013

Project GL120264

April, 2013

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REPORT ON A HELICOPTER-BORNE VERSATILE TIME DOMAIN ELECTROMAGNETIC (VTEM^{plus}) and HORIZONTAL MAGNETIC GRADIOMETER GEOPHYSICAL SURVEY

Atikwa Lake Project
Sioux Narrows, ON, Canada

EXECUTIVE SUMMARY

On November 26th, 2012 to January 8th, 2013 Geotech Ltd. carried out a helicopter-borne geophysical survey over the Atikwa Lake block situated approximately 30km east of Sioux Narrows, Ontario, Canada.

Principal geophysical sensors included a versatile time domain electromagnetic (VTEM^{plus}) system, and horizontal magnetic gradiometer. Ancillary equipment included a GPS navigation system and a radar altimeter. A total of 1404 line-kilometres of geophysical data were acquired during the survey.

In-field data quality assurance and preliminary processing were carried out on a daily basis during the acquisition phase. Preliminary and final data processing, including generation of final digital data and map products were undertaken from the office of Geotech Ltd. in Aurora, Ontario.

The processed survey results are presented as the following maps:

- Electromagnetic stacked profiles of the B-field Z Component,
- Electromagnetic stacked profiles of dB/dt Z Components,
- B-Field Z Component Channel grid
- Total Magnetic Intensity (TMI),
- Magnetic Total Horizontal Gradient
- Magnetic Tilt-Angle Derivative
- Calculated Time Constant (Tau) with contours of anomaly areas of the Calculated Vertical Derivative of TMI
- RDI sections are presented.

Digital data includes all electromagnetic and magnetic products, plus ancillary data including the waveform.

The survey report describes the procedures for data acquisition, processing, final image presentation and the specifications for the digital data set.

1. INTRODUCTION

1.1 General Considerations

Geotech Ltd. performed a helicopter-borne geophysical survey over the Atikwa Lake block located approximately 30km east of Sioux Narrows, Ontario, Canada (Figure 1 & 2).

Michael Michaud represented San Gold Corporation during the data acquisition and data processing phases of this project.

The geophysical surveys consisted of helicopter borne EM using the versatile time-domain electromagnetic (VTEM^{plus}) system with Z and X component measurements and horizontal magnetic gradiometer using two cesium magnetometers. A total of 1404 line-km of geophysical data were acquired during the survey.

The crew was based out of Sioux Narrows (Figure 2) in Ontario for the acquisition phase of the survey. Survey flying started on November 26th, 2012 and was completed on January 8th, 2013.

Data quality control and quality assurance, and preliminary data processing were carried out on a daily basis during the acquisition phase of the project. Final data processing followed immediately after the end of the survey. Final reporting, data presentation and archiving were completed from the Aurora office of Geotech Ltd. in March, 2013.

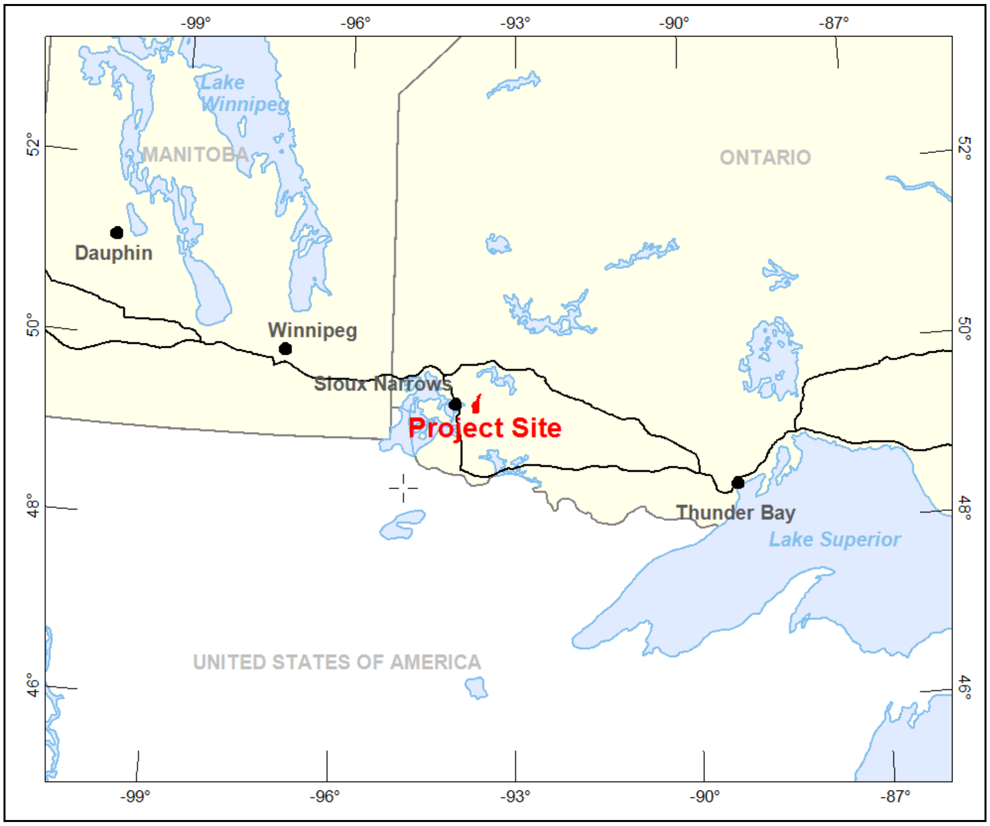

Figure 1: Property Location.

1.2 Survey and System Specifications

The survey area is located approximately 30 kilometres east of Sioux Narrows, ON (Figure 2).

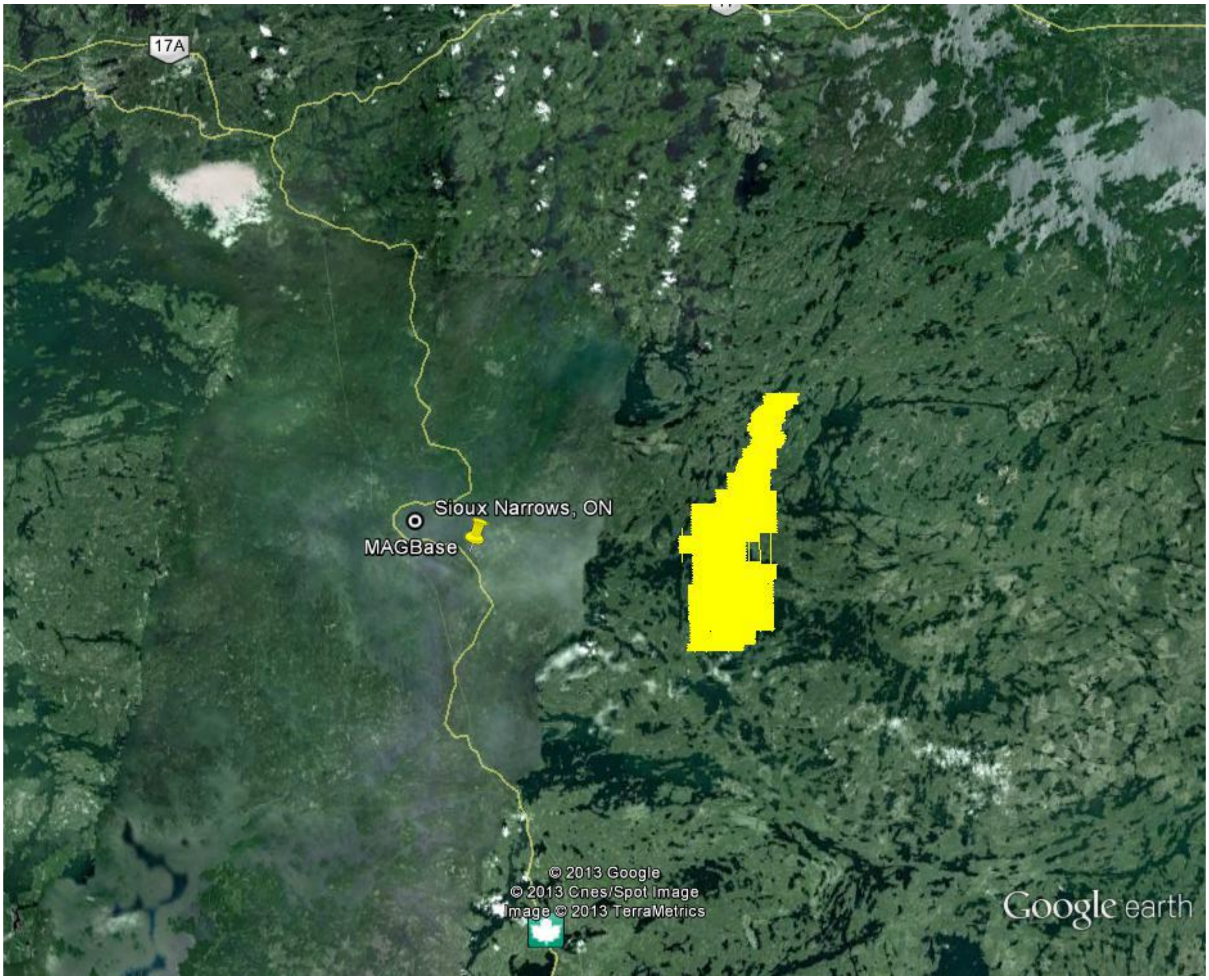

Figure 2: Survey area location on Google Earth.

The block was flown in an east to west (N 90° E azimuth) direction with traverse line spacing of 100 metres as depicted in Figure 3. Tie lines were flown perpendicular to the traverse lines at a spacing of 1000 metres respectively. For more detailed information on the flight spacing and direction see Table 1.

1.3 Topographic Relief and Cultural Features

Topographically, the block exhibits a shallow relief with an elevation ranging from 321 to 438 metres above mean sea level over an area of 136 square kilometres (Figure 3).

There are a large number of rivers and streams running through the survey area which connect various lakes and wetlands. There are visible signs of culture such as roads, trails, and buildings which run throughout the centre of the survey area.

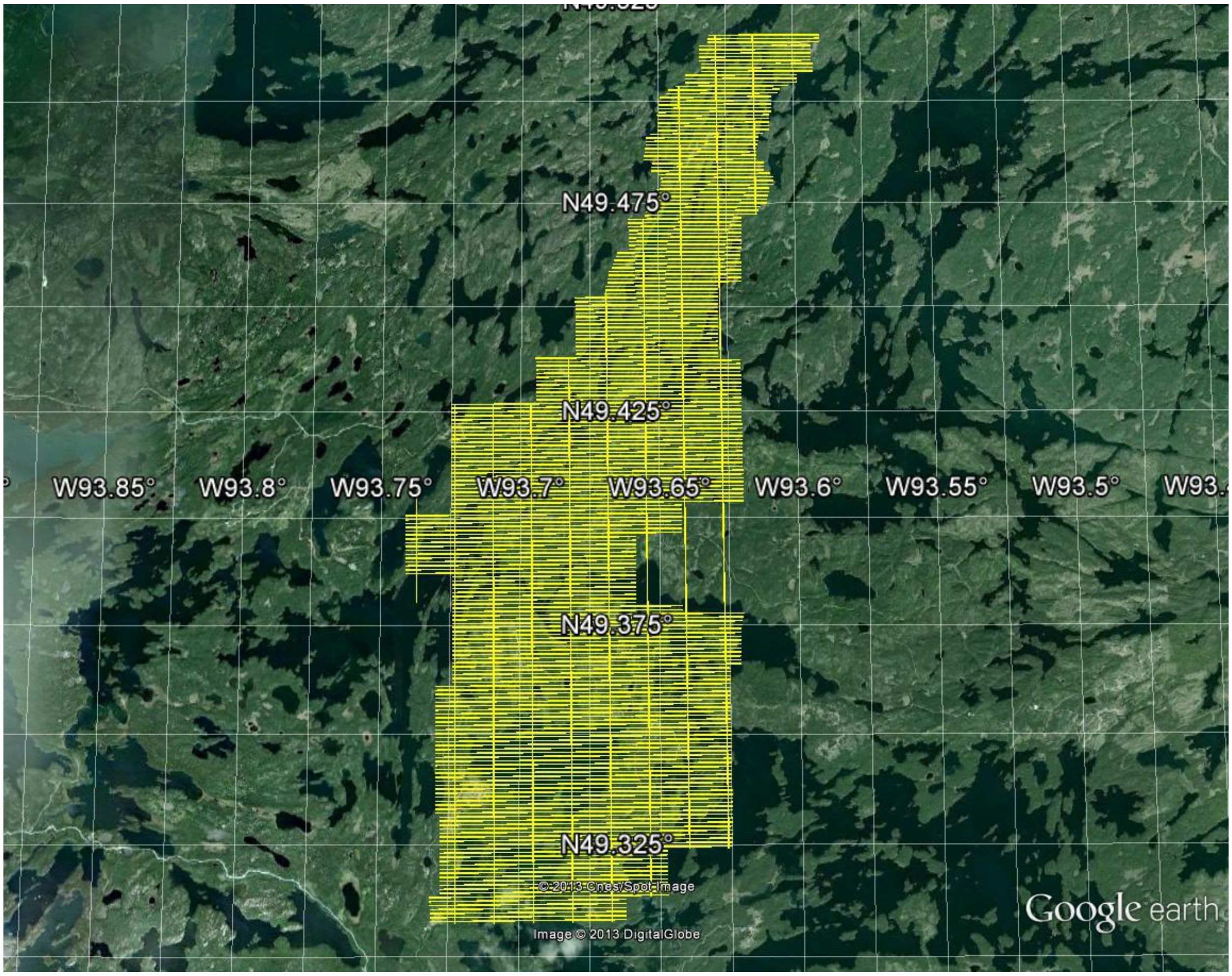

Figure 3: Flight path over a Google Earth Image.

The survey area is covered by numerous mining claims, which are shown in Appendix A, and are plotted on all maps. The survey area is covered by NTS (National Topographic Survey) of Canada sheets 052F05 and 052F12.

2. DATA ACQUISITION

2.1 Survey Area

The survey block (see Figure 3 and Appendix A) and general flight specifications are as follows:

Table 1: Survey Specifications

Survey block	Traverse Line spacing (m)	Area (Km^2)	Planned[1] Line-km	Actual Line-km	Flight direction	Line numbers
Atikwa Lake	Traverse: 100	136	1404	1431	N 90° E / N 270° E	L1000 – L3310
	Tie: 1000				N 0° E / N 180° E	T3800 – T3890
TOTAL		**136**	**1404**	**1431**		

Survey block boundaries co-ordinates are provided in Appendix B.

2.2 Survey Operations

Survey operations were based out of Sioux Narrows, Ontario on November 26th, 2012. The following table shows the timing of the flying.

Table 2: Survey schedule

Date	Flight #	Flown km	Crew location	Comments
26-Nov-2012			Sioux Narrows, ON	Mobilization
27-Nov-2012			Sioux Narrows, ON	Crew mobilization
28-Nov-2012			Sioux Narrows, ON	Crew mobilization
29-Nov-2012			Sioux Narrows, ON	Loop assembly – main loop, bucking, and nose completed
30-Nov-2012			Sioux Narrows, ON	Loop assembly completed, base station setup
01-Dec-2012			Sioux Narrows, ON	System inventory, base station sample data test
02-Dec-2012			Sioux Narrows, ON	Fuel arrived, no helicopter on site
03-Dec-2012			Sioux Narrows, ON	No helicopter on site
04-Dec-2012			Sioux Narrows, ON	Helicopter arrived, permission requested for landing spot
05-Dec-2012			Sioux Narrows, ON	Heli installations, further testing
06-Dec-2012			Sioux Narrows, ON	Light wet snow – standby
07-Dec-2012	F1	147	Sioux Narrows, ON	First production flight
08-Dec-2012	F2	194.5	Sioux Narrows, ON	Production ended early due to heavy snow
09-Dec-2012	F3,F4	321.5	Sioux Narrows, ON	Adjusted suspension on X-coil between flights
10-Dec-2012			Sioux Narrows, ON	Production flight aborted due to low freezing fog
11-Dec-2012	F5	103.7	Sioux Narrows, ON	Z and X signal cables swapped before take off
12-Dec-2012			Sioux Narrows, ON	Snow and low ceiling – standby
13-Dec-2012			Sioux Narrows, ON	Snow and low ceiling – standby
14-Dec-2012	F6	179.4	Sioux Narrows, ON	
15-Dec-2012			Sioux Narrows, ON	Low ceiling, light snow mist - standby
16-Dec-2012			Sioux Narrows, ON	Low ceiling, light snow – standby
17-Dec-2012			Sioux Narrows, ON	Low ceiling, light snow – standby

[1] Note: Actual Line kilometres represent the total line kilometres in the final database. These line-km normally exceed the planned line-km, as indicated in the survey NAV files.

Date	Flight #	Flown km	Crew location	Comments
18-Dec-2012			Sioux Narrows, ON	Low ceiling, light snow – flight attempted but aborted
19-Dec-2012			Sioux Narrows, ON	Low ceiling, light snow – standby
20-Dec-2012	F7	156.3	Sioux Narrows, ON	Production flight
21-Dec-2012			Sioux Narrows, ON	Demobilization – Christmas vacation
05-Jan-2013			Sioux Narrows, ON	Mobilization
06-Jan-2013	F8	78.6	Sioux Narrows, ON	Loop installation, one partial production flight completed
07-Jan-2013			Sioux Narrows, ON	Low ceilings and strong winds – standby
08-Jan-2013	F9,F10	225.6	Sioux Narrows, ON	Survey completed

2.3 Flight Specifications

During the survey the helicopter was maintained at a mean altitude of 78 metres above the ground with an average survey speed of 80 km/hour. This allowed for an actual average EM bird terrain clearance of 44 metres and a magnetic sensor clearance of 54 metres.

The on board operator was responsible for monitoring the system integrity. He also maintained a detailed flight log during the survey, tracking the times of the flight as well as any unusual geophysical or topographic features.

On return of the aircrew to the base camp the survey data was transferred from a compact flash card (PCMCIA) to the data processing computer. The data were then uploaded via ftp to the Geotech office in Aurora for daily quality assurance and quality control by qualified personnel.

2.4 Aircraft and Equipment

2.4.1 Survey Aircraft

The survey was flown using a Eurocopter Aerospatiale (Astar) 350 B3 helicopter, registration C-FKOI. The helicopter is owned and operated by Geotech Aviation. Installation of the geophysical and ancillary equipment was carried out by a Geotech Ltd crew.

2.4.2 Electromagnetic System

The electromagnetic system was a Geotech Time Domain EM (VTEM^{plus}) system. VTEM with the Serial number 8 had been used for the survey. The configuration is as indicated in Figure 5.

The VTEM Receiver and transmitter coils were in concentric-coplanar and Z-direction oriented configuration. The receiver system for the project also included a coincident-coaxial X-direction coil to measure the in-line dB/dt and calculate B-Field responses. The EM bird was towed at a mean distance of 35 metres below the aircraft as shown in Figure 5. The receiver decay recording scheme is shown diagrammatically in Figure 4.

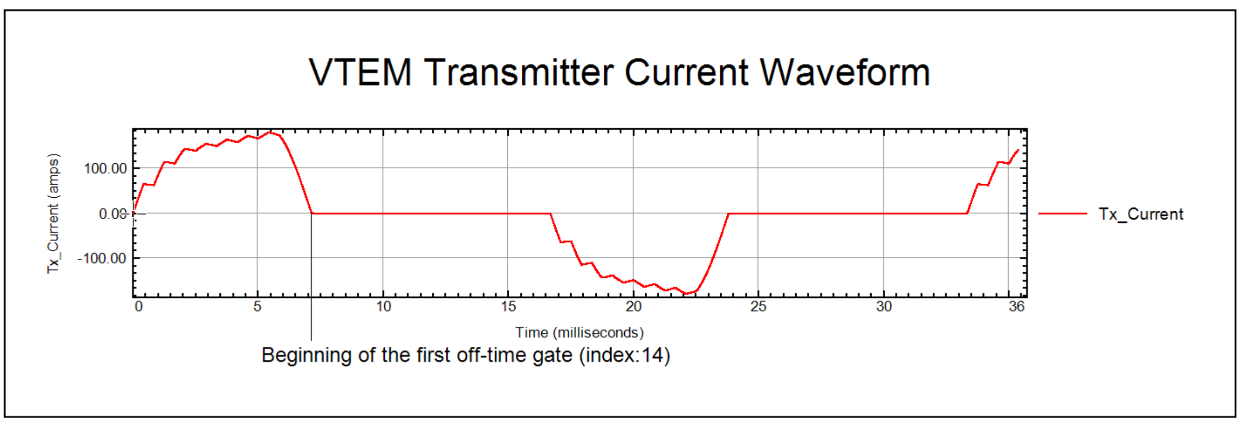

Figure 4: VTEM Waveform & Sample Times.

The VTEM decay sampling scheme is shown in Table 3 below. Thirty-two time measurement gates were used for the final data processing in the range from 0.096 to 7.036 msec.

Table 3: Off-Time Decay Sampling Scheme

VTEM Decay Sampling Scheme			
Index	**Middle**	**Start**	**End**
Milliseconds			
14	0.096	0.090	0.103
15	0.110	0.103	0.118
16	0.126	0.118	0.136
17	0.145	0.136	0.156
18	0.167	0.156	0.179
19	0.192	0.179	0.206
20	0.220	0.206	0.236
21	0.253	0.236	0.271
22	0.290	0.271	0.312
23	0.333	0.312	0.358
24	0.383	0.358	0.411
25	0.440	0.411	0.472
26	0.505	0.472	0.543
27	0.580	0.543	0.623
28	0.667	0.623	0.716
29	0.766	0.716	0.823
30	0.880	0.823	0.945
31	1.010	0.945	1.086
32	1.161	1.086	1.247
33	1.333	1.247	1.432
34	1.531	1.432	1.646
35	1.760	1.646	1.891
36	2.021	1.891	2.172
37	2.323	2.172	2.495
38	2.667	2.495	2.865
39	3.063	2.865	3.292
40	3.521	3.292	3.781
41	4.042	3.781	4.341
42	4.641	4.341	4.987
43	5.333	4.987	5.729
44	6.125	5.729	6.581
45	7.036	6.581	7.560

Z Component: 14-45 time gates
X Component: 20-45 time gates.

VTEM system specifications:

Transmitter

- Transmitter coil diameter: 26 m
- Number of turns: 4
- Effective Transmitter coil area: 2123.7 m^2
- Transmitter base frequency: 30 Hz
- Peak current: 180 A
- Pulse width: 7.15 ms
- Wave form shape: Bi-polar trapezoid
- Peak dipole moment: 382,268 nIA
- Actual average EM Bird terrain clearance: 44 metres above the ground

Receiver

- X Coil diameter: 0.32 m
- Number of turns: 245
- Effective coil area: 19.69 m^2
- Z-Coil coil diameter: 1.2 m
- Number of turns: 100
- Effective coil area: 113.04 m^2

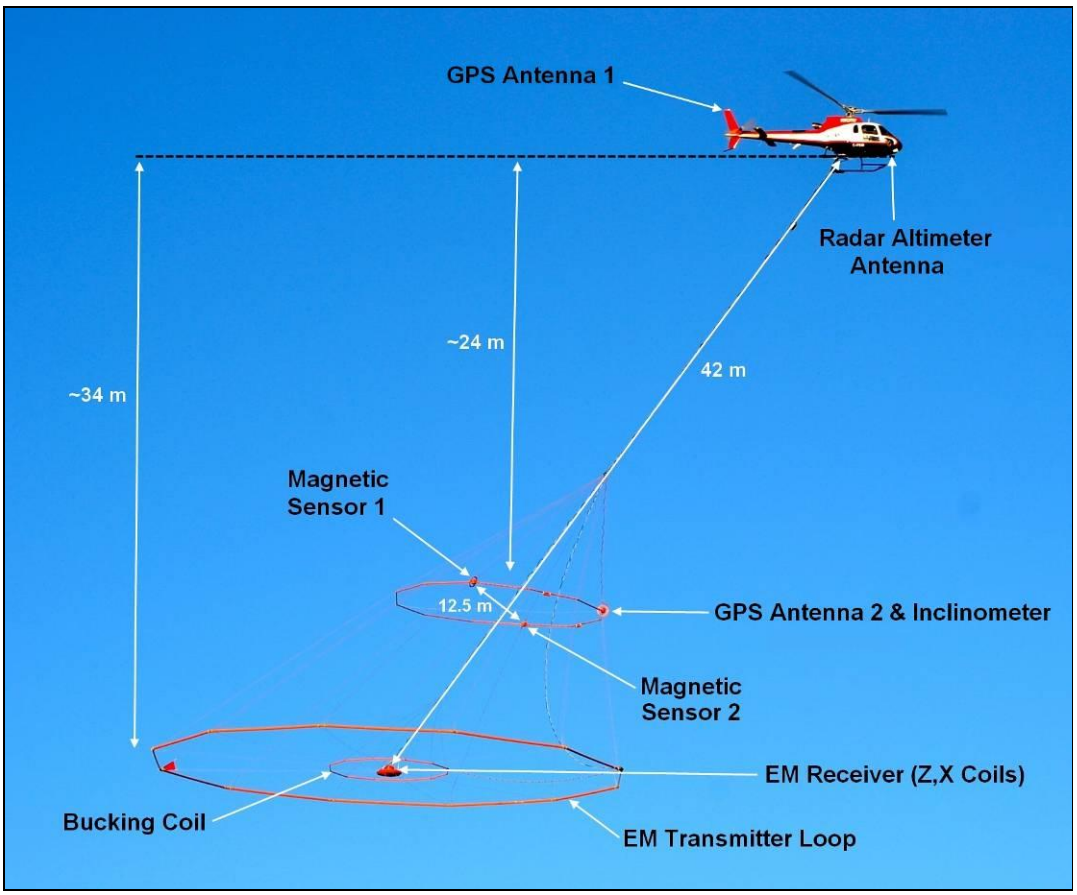

Figure 5: VTEM^{plus} System Configuration.

2.4.3 Horizontal Magnetic Gradiometer

The horizontal magnetic gradiometer consists of two Geometrics split-beam field magnetic sensors with a sampling interval of 0.1 seconds. These sensors are mounted 12.5 metres apart on a separate loop, 10 metres above the EM bird. A GPS antenna and Gyro Inclinometer is installed on the separate loop to accurately record the tilt and position of the magnetic gradiomag bird.

2.4.4 Radar Altimeter

A Terra TRA 3000/TRI 40 radar altimeter was used to record terrain clearance. The antenna was mounted beneath the bubble of the helicopter cockpit (Figure 5).

2.4.5 GPS Navigation System

The navigation system used was a Geotech PC104 based navigation system utilizing a NovAtel's WAAS (Wide Area Augmentation System) enabled GPS receiver, Geotech navigate software, a full screen display with controls in front of the pilot to direct the flight and a NovAtel GPS antenna mounted on the helicopter tail (Figure 5). As many as 11 GPS and two WAAS satellites may be monitored at any one time. The positional accuracy or circular error probability (CEP) is 1.8 m, with WAAS active, it is 1.0 m. The co-ordinates of the block were set-up prior to the survey and the information was fed into the airborne navigation system. The second GPS antenna is installed on the additional magnetic loop together with Gyro Inclinometer.

2.4.6 Digital Acquisition System

A Geotech data acquisition system recorded the digital survey data on an internal compact flash card. Data is displayed on an LCD screen as traces to allow the operator to monitor the integrity of the system. The data type and sampling interval as provided in Table 4.

Table 4: Acquisition Sampling Rates

Data Type	Sampling
TDEM	0.1 sec
Magnetometer	0.1 sec
GPS Position	0.2 sec
Radar Altimeter	0.2 sec
Inclinometer	0.1 sec

2.5 Base Station

A combined magnetometer/GPS base station was utilized on this project. A Geometrics Cesium vapour magnetometer was used as a magnetic sensor with a sensitivity of 0.001 nT. The base station was recording the magnetic field together with the GPS time at 1 Hz on a base station computer.

The base station magnetometer sensor was installed at the end of a dirt road (49º23.2723N, 94º00.1257W); away from electric transmission lines and moving ferrous objects such as motor vehicles. The base station data were backed-up to the data processing computer at the end of each survey day.

3. PERSONNEL

The following Geotech Ltd. personnel were involved in the project.

Field:

Project Manager:	Scott Trew (Office)
Data QC:	Neil Fiset (Office)
Crew chief:	Ioan Serbu Colin Lennox
Operator:	Jonathan Yantho

The survey pilot and the mechanical engineer were employed directly by the helicopter operator – Geotech Aviation.

Pilot:	Claude Noel Greg Heuring Steve McAvoy
Mechanical Engineer:	Trent Tiviotdale

Office:

Preliminary Data Processing:	Thomas Wade
Final Data Processing:	Shaolin Lu
Final Data QA/QC:	Alexander Prikhodko
Reporting/Mapping:	Karl Monje

Data acquisition phase was carried out under the supervision of Andrei Bagrianski, P. Geo, Chief Operating Officer. Processing and Interpretation phases were carried out by Shaolin Lu under the supervision of Alexander Prikhodko, P. Geo, Senior Geophysicist, VTEM Interpretation Supervisor. The customer relations were looked after by Mandy Long.

4. DATA PROCESSING AND PRESENTATION

Data compilation and processing were carried out by the application of Geosoft OASIS Montaj and programs proprietary to Geotech Ltd.

4.1 Flight Path

The flight path, recorded by the acquisition program as WGS 84 latitude/longitude, was converted into the NAD83 Datum, UTM Zone 15 North coordinate system 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).

4.2 Electromagnetic Data

A three stage digital filtering process was used to reject major sferic events and to reduce noise levels. Local sferic activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with geological phenomena. To avoid this possibility, a computer algorithm searches out and rejects the major sferic events.

The signal to noise ratio was further improved by the application of a low pass linear digital filter. This filter has zero phase shift which prevents any lag or peak displacement from occurring, and it suppresses only variations with a wavelength less than about 1 second or 15 metres. This filter is a symmetrical 1 sec linear filter.

The results are presented as stacked profiles of EM voltages for the time gates, in linear - logarithmic scale for the B-field Z component and dB/dt responses in the Z and X components. B-field Z component time channel recorded at 2.021 milliseconds after the termination of the impulse is also presented as a colour image. Calculated Time Constant (TAU) with anomaly contours of Calculated Vertical Derivative of TMI is presented in Appendix C and E. Resistivity Depth Image (RDI) is also presented in Appendix E and F.

VTEM has two receiver coil orientations. Z-axis coil is oriented parallel to the transmitter coil axis and both are horizontal to the ground. The X-axis coil is oriented parallel to the ground and along the line-of-flight. This combined two coil configuration provides information on the position, depth, dip and thickness of a conductor. Generalized modeling results of VTEM data, are shown in Appendix D.

In general X-component data produce cross-over type anomalies: from "+ to – "in flight direction of flight for "thin" sub vertical targets and from "- to +" in direction of flight for "thick" targets. Z component data produce double peak type anomalies for "thin" sub vertical targets and single peak for "thick" targets.

The limits and change-over of "thin-thick" depends on dimensions of a TEM system (Appendix D, Figure D-16).

Because of X component polarity is under line-of-flight, convolution Fraser Filter (Figure 6) is applied to X component data to represent axes of conductors in the form of grid map. In this case positive FF anomalies always correspond to “plus-to-minus” X data crossovers independent of the flight direction.

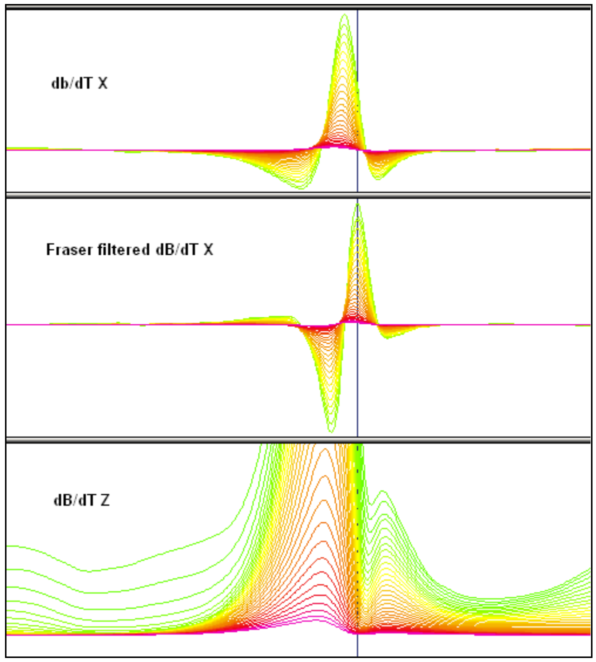

Figure 6: Z, X and Fraser filtered X (FFx) components for “thin” target.

4.3 Horizontal Magnetic Gradiometer Data

The horizontal gradients data from the VTEM^{plus} are measured by two magnetometers 12.5 m apart on an independent bird mounted 10m above the VTEM loop. A GPS and a Gyro Inclinometer help to determine the positions and orientations of the magnetometers. The data from the two magnetometers are corrected for position and orientation variations, as well as for the diurnal variations using the base station data.

The position of the centre of the horizontal magnetic gradiometer bird is calculated form the GPS utilizing in-house processing tool in Geosoft. Following that total magnetic intensity is calculated at the center of the bird by calculating the mean values from both sensors. In addition to the total intensity advanced processing is done to calculate the in-line and cross-line (or lateral) horizontal gradient which enhance the understanding of magnetic targets. The in-line (longitudinal) horizontal gradient is calculated from the difference of two consecutive total magnetic field readings divided by the distance along the flight line direction, while the cross-line (lateral) horizontal magnetic gradient is calculated from the difference in the magnetic readings from both magnetic sensors divided by their horizontal separation.

Two advanced magnetic derivative products, the total horizontal derivative (THDR), and tilt angle derivative and are also created. The total horizontal derivative or gradient is also called the analytic signal, is defined as:

THDR = sqrt(Hx*Hx+Hy*Hy), where Hx and Hy are cross-line and in-line horizontal gradients.

The tilt angle derivative (TDR) is defined as:

TDR = arctan(Vz/THDR), where THDR is the total horizontal derivative, and Vz is the vertical derivative.

Measured cross-line gradients can help to enhance cross-line linear features during gridding.

5. DELIVERABLES

5.1 Survey Report

The survey report describes the data acquisition, processing, and final presentation of the survey results. The survey report is provided in two paper copies and digitally in PDF format.

5.2 Digital Data

Two copies of the data and maps on DVD were prepared to accompany the report. Each DVD contains a digital file of the line data in GDB Geosoft Montaj format as well as the maps in Geosoft Montaj Map and PDF format.

- DVD structure.

Data contains databases, grids and maps, as described below.
Report contains a copy of the report and appendices in PDF format.

Databases in Geosoft GDB format, containing the channels listed in Table 5.

Table 5: Geosoft GDB Data Format

Channel name	Units	Description
X:	metres	UTM Easting NAD83 Zone 15 North
Y:	metres	UTM Northing NAD83 Zone 15 North
Longitude:	Decimal Degrees	WGS 84 Longitude data
Latitude:	Decimal Degrees	WGS 84 Latitude data
Z:	metres	GPS antenna elevation (above Geoid)
Radar:	metres	helicopter terrain clearance from radar altimeter
Radarb:	metres	Calculated EM bird terrain clearance from radar altimeter
DEM:	metres	Digital Elevation Model
Gtime:	Seconds of the day	GPS time
Mag1L:	nT	Measured Total Magnetic field data (left sensor)
Mag1R:	nT	Measured Total Magnetic field data (right sensor)
Basemag:	nT	Magnetic diurnal variation data
Mag2LZ	nT	Z corrected (w.r.t. loop center) and diurnal corrected magnetic field left mag
Mag2RZ	nT	Z corrected (w.r.t. loop center) and diurnal corrected magnetic field right mag
TMI2	nT	Calculated from diurnal corrected total magnetic field intensity of the centre of the loop
TMI3	nT	Microleveled total magnetic field intensity of the centre of the loop
Hgcxline		measured cross-line gradient
Hginline		Calculated in-line gradient
CVG	nT/m	Calculated Magnetic Vertical Gradient
SFz[14]:	$pV/(A*m^4)$	Z dB/dt 0.096 millisecond time channel
SFz[15]:	$pV/(A*m^4)$	Z dB/dt 0.110 millisecond time channel
SFz[16]:	$pV/(A*m^4)$	Z dB/dt 0.126 millisecond time channel
SFz[17]:	$pV/(A*m^4)$	Z dB/dt 0.145 millisecond time channel
SFz[18]:	$pV/(A*m^4)$	Z dB/dt 0.167 millisecond time channel
SFz[19]:	$pV/(A*m^4)$	Z dB/dt 0.192 millisecond time channel
SFz[20]:	$pV/(A*m^4)$	Z dB/dt 0.220 millisecond time channel

Channel name	Units	Description
SFz[21]:	pV/(A*m^4)	Z dB/dt 0.253 millisecond time channel
SFz[22]:	pV/(A*m^4)	Z dB/dt 0.290 millisecond time channel
SFz[23]:	pV/(A*m^4)	Z dB/dt 0.333 millisecond time channel
SFz[24]:	pV/(A*m^4)	Z dB/dt 0.383 millisecond time channel
SFz[25]:	pV/(A*m^4)	Z dB/dt 0.440 millisecond time channel
SFz[26]:	pV/(A*m^4)	Z dB/dt 0.505 millisecond time channel
SFz[27]:	pV/(A*m^4)	Z dB/dt 0.580 millisecond time channel
SFz[28]:	pV/(A*m^4)	Z dB/dt 0.667 millisecond time channel
SFz[29]:	pV/(A*m^4)	Z dB/dt 0.766 millisecond time channel
SFz[30]:	pV/(A*m^4)	Z dB/dt 0.880 millisecond time channel
SFz[31]:	pV/(A*m^4)	Z dB/dt 1.010 millisecond time channel
SFz[32]:	pV/(A*m^4)	Z dB/dt 1.161 millisecond time channel
SFz[33]:	pV/(A*m^4)	Z dB/dt 1.333 millisecond time channel
SFz[34]:	pV/(A*m^4)	Z dB/dt 1.531 millisecond time channel
SFz[35]:	pV/(A*m^4)	Z dB/dt 1.760 millisecond time channel
SFz[36]:	pV/(A*m^4)	Z dB/dt 2.021 millisecond time channel
SFz[37]:	pV/(A*m^4)	Z dB/dt 2.323 millisecond time channel
SFz[38]:	pV/(A*m^4)	Z dB/dt 2.667 millisecond time channel
SFz[39]:	pV/(A*m^4)	Z dB/dt 3.063 millisecond time channel
SFz[40]:	pV/(A*m^4)	Z dB/dt 3.521 millisecond time channel
SFz[41]:	pV/(A*m^4)	Z dB/dt 4.042 millisecond time channel
SFz[42]:	pV/(A*m^4)	Z dB/dt 4.641 millisecond time channel
SFz[43]:	pV/(A*m^4)	Z dB/dt 5.333 millisecond time channel
SFz[44]:	pV/(A*m^4)	Z dB/dt 6.125 millisecond time channel
SFz[45]:	pV/(A*m^4)	Z dB/dt 7.036 millisecond time channel
SFx[20]:	pV/(A*m^4)	X dB/dt 0.220 millisecond time channel
SFx[21]:	pV/(A*m^4)	X dB/dt 0.253 millisecond time channel
SFx[22]:	pV/(A*m^4)	X dB/dt 0.290 millisecond time channel
SFx[23]:	pV/(A*m^4)	X dB/dt 0.333 millisecond time channel
SFx[24]:	pV/(A*m^4)	X dB/dt 0.383 millisecond time channel
SFx[25]:	pV/(A*m^4)	X dB/dt 0.440 millisecond time channel
SFx[26]:	pV/(A*m^4)	X dB/dt 0.505 millisecond time channel
SFx[27]:	pV/(A*m^4)	X dB/dt 0.580 millisecond time channel
SFx[28]:	pV/(A*m^4)	X dB/dt 0.667 millisecond time channel
SFx[29]:	pV/(A*m^4)	X dB/dt 0.766 millisecond time channel
SFx[30]:	pV/(A*m^4)	X dB/dt 0.880 millisecond time channel
SFx[31]:	pV/(A*m^4)	X dB/dt 1.010 millisecond time channel
SFx[32]:	pV/(A*m^4)	X dB/dt 1.161 millisecond time channel
SFx[33]:	pV/(A*m^4)	X dB/dt 1.333 millisecond time channel
SFx[34]:	pV/(A*m^4)	X dB/dt 1.531 millisecond time channel
SFx[35]:	pV/(A*m^4)	X dB/dt 1.760 millisecond time channel
SFx[36]:	pV/(A*m^4)	X dB/dt 2.021 millisecond time channel
SFx[37]:	pV/(A*m^4)	X dB/dt 2.323 millisecond time channel
SFx[38]:	pV/(A*m^4)	X dB/dt 2.667 millisecond time channel
SFx[39]:	pV/(A*m^4)	X dB/dt 3.063 millisecond time channel
SFx[40]:	pV/(A*m^4)	X dB/dt 3.521 millisecond time channel
SFx[41]:	pV/(A*m^4)	X dB/dt 4.042 millisecond time channel
SFx[42]:	pV/(A*m^4)	X dB/dt 4.641 millisecond time channel
SFx[43]:	pV/(A*m^4)	X dB/dt 5.333 millisecond time channel
SFx[44]:	pV/(A*m^4)	X dB/dt 6.125 millisecond time channel
SFx[45]:	pV/(A*m^4)	X dB/dt 7.036 millisecond time channel
BFz	(pV*ms)/(A*m^4)	Z B-Field data for time channels 14 to 45
BFx	(pV*ms)/(A*m^4)	X B-Field data for time channels 20 to 45

Channel name	Units	Description
SFxFF	pV/(A*m^4)	Fraser Filtered X dB/dt
NchanBF		Latest time channels of TAU calculation
NchanSF		Latest time channels of TAU calculation
TauBF	ms	Time constant B-Field
TauSF	ms	Time constant dB/dt
PLM:		60 Hz power line monitor

Electromagnetic B-field and dB/dt Z component data is found in array channel format between indexes 14 – 45, and X component data from 20 – 45, as described above.

- Database of the Resistivity Depth Images in Geosoft GDB format, containing the following channels:

Table 6: Geosoft Resistivity Depth Image GDB Data Format

Channel name	Units	Description
Xg:	metres	UTM Easting NAD83 Zone 15 North
Yg:	metres	UTM Northing NAD83 Zone 15 North
Dist:	metres	Distance from the beginning of the line
Depth:	metres	array channel, depth from the surface
Z:	metres	array channel, depth from sea level
AppRes:	ohm-m	array channel, Apparent Resistivity
TR:	metres	EM system height from sea level
Topo:	metres	digital elevation model
Radarb:	metres	Calculated EM bird terrain clearance from radar altimeter
CVG:	nT or nT/m	CVG data
SF:	pV/(A*m^4)	array channel, dB/dT
DOI	metres	Depth of Investigation; a measure of VTEM system effectiveness

- Database of the VTEM Waveform "GL120264_Waveform_Final.gdb" in Geosoft GDB format, containing the following channels:

Time:	Sampling rate interval, 5.2083 milliseconds
Tx_Current:	Output current of the transmitter (Amp)
Rx_volt:	Output voltage receiver coil (Volt)

- Grids in Geosoft GRD and GeoTIFF format, as follows:

BFz36:	B-Field Z Component Channel 36 (Time Gate 2.021 ms)
CVG:	Calculated Magnetic Vertical Gradient (nT/m)
DEM:	Digital Elevation Model (metres)
PLM:	Power Line Monitor
Hgcxline:	Measured Cross-Line Gradient (nT/m)
Hginline:	Measured In-Line Gradient (nT/m)
SFz16:	dB/dt Z Component Channel 16 (Time Gate 0.126 ms)
SFz28:	dB/dt Z Component Channel 28 (Time Gate 0.667 ms)
SFz40:	dB/dt Z Component Channel 40 (Time Gate 3.521 ms)
TauBF:	B-Field Z Component, Calculated Time Constant (ms)
TauSF:	dB/dt Z Component, Calculated Time Constant (ms)
TMI:	Total Magnetic Intensity (nT)
TotalHGrad:	Magnetic Total Horizontal Gradient (nT/m)

Tiltdrv:	Magnetic Tilt derivative (radians)
SFxFF24:	Fraser Filtered dB/dt X Component Channel 24 (Time Gate 0.383 ms)

A Geosoft .GRD file has a .GI metadata file associated with it, containing grid projection information. A grid cell size of 25 metres was used.

Digital maps were produced at a scale of 1:20,000 for best representation of the survey size and line spacing. The coordinate/projection system used was NAD83 Datum, UTM Zone 15 North. All maps show the mining claims, flight path trace and topographic data; latitude and longitude are also noted on maps. The preliminary and final results of the survey are presented as EM profiles, a late-time gate gridded EM channel, and a colour TMI contour map.

- Maps at 1:20,000 in Geosoft MAP format, as follows:

GL120264_10k_dBdt:	dB/dt profiles Z Component, Time Gates 0.220 – 7.036 ms in linear – logarithmic scale.
GL120264_10k_BField:	B-field profiles Z Component, Time Gates 0.220 – 7.036 ms in linear – logarithmic scale.
GL120264_10k_BFz36:	B-field late time Z Component Channel 36, Time Gate 2.021 ms colour image.
GL120264_10k_TMI:	Total magnetic intensity (TMI) colour image and contours.
GL120264_10k_TauSF:	dB/dt Calculated Time Constant (Tau) with contours of anomaly areas of the Calculated Vertical Derivative of TMI
GL120264_10k_TotHGrad:	Magnetic Total Horizontal Gradient colour image.
GL120264_10k_TiltDrv:	Magnetic Tilt-Angle Derivative colour image.
GL120264_20k_SFxFF24:	Fraser Filtered dB/dt X Component Channel 24, Time Gate 0.383 ms colour image

Maps are also presented in PDF format.

- 1:50,000 topographic vectors were taken from the NRCAN Geogratis database at; http://geogratis.gc.ca/geogratis/en/index.html.

- A Google Earth file *GL120264_FP.kml* showing the flight path of the block is included. Free versions of Google Earth software from: http://earth.google.com/download-earth.html

6. CONCLUSIONS AND RECOMMENDATIONS

A helicopter-borne versatile time domain electromagnetic (VTEM) geophysical survey has been completed over the Atikwa Lake block near Sioux Narrows, Ontario, Canada.

The total area coverage is 136 km^2. Total survey line coverage is 1404 line kilometres. The principal sensors included a Time Domain EM system and horizontal magnetic gradiometer using two cesium magnetometers. Results have been presented as stacked profiles, and contour colour images at a scale of 1:20,000. A formal Interpretation has not been included or requested.

Based on the geophysical results obtained, a number of TEM anomalous zones are identified across the property. The conductive zones can be seen overlapping the TAU decay parameter image presented with the calculated vertical magnetic gradient (CVG) contours (see Appendix C)

Most of the conductive zones are oriented in northeast or northwest directions and associated with magnetic anomalies and gradients. The broad comparatively weak anomalous zone is located in the southern part of the property, surrounded by magnetic high gradient and geomorphologically is expressed by the lake. According to corresponded apparent resistivity depth section (RDI_L2880 in Appendix C) the layer similar conductor is closed to the surface.

There are many structure controlled local conductors in the area. The estimated depth of the targets is roughly from 25 to 100 meters (RDI_L1350, RDI_L2060, RDI_L2880 in Appendix C). In addition, many near surface anomalous zones are detected across the property. There are possibly conductive lake sediments, overburden or near surface conductive rocks.

If the conductors correspond to an exploration model on the area it is recommended picking anomalies with conductance grading and center localization of the targets, detail resistivity depth imaging and plate Maxwell modelling with test drillhole parameters prior to ground follow up and drill testing. Since most of the conductive zones are associated with magnetic anomalies, attendant inversion/modelling of magnetic field is also recommended.

Respectfully submitted[2],

PROFESSIONAL GEOSCIENTISTS
ALEXANDER PRIKHODKO
PRACTISING MEMBER
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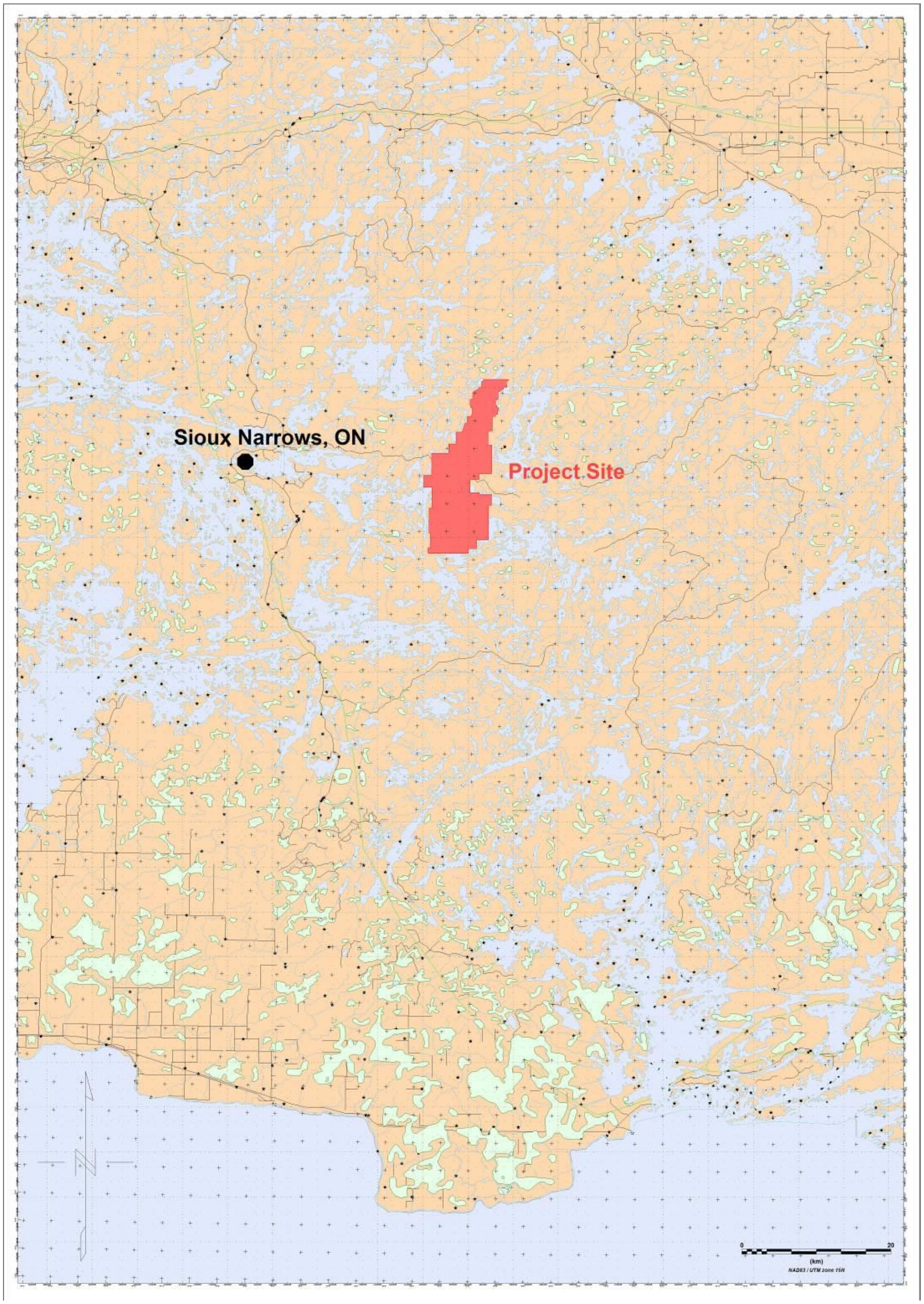
April, 2013

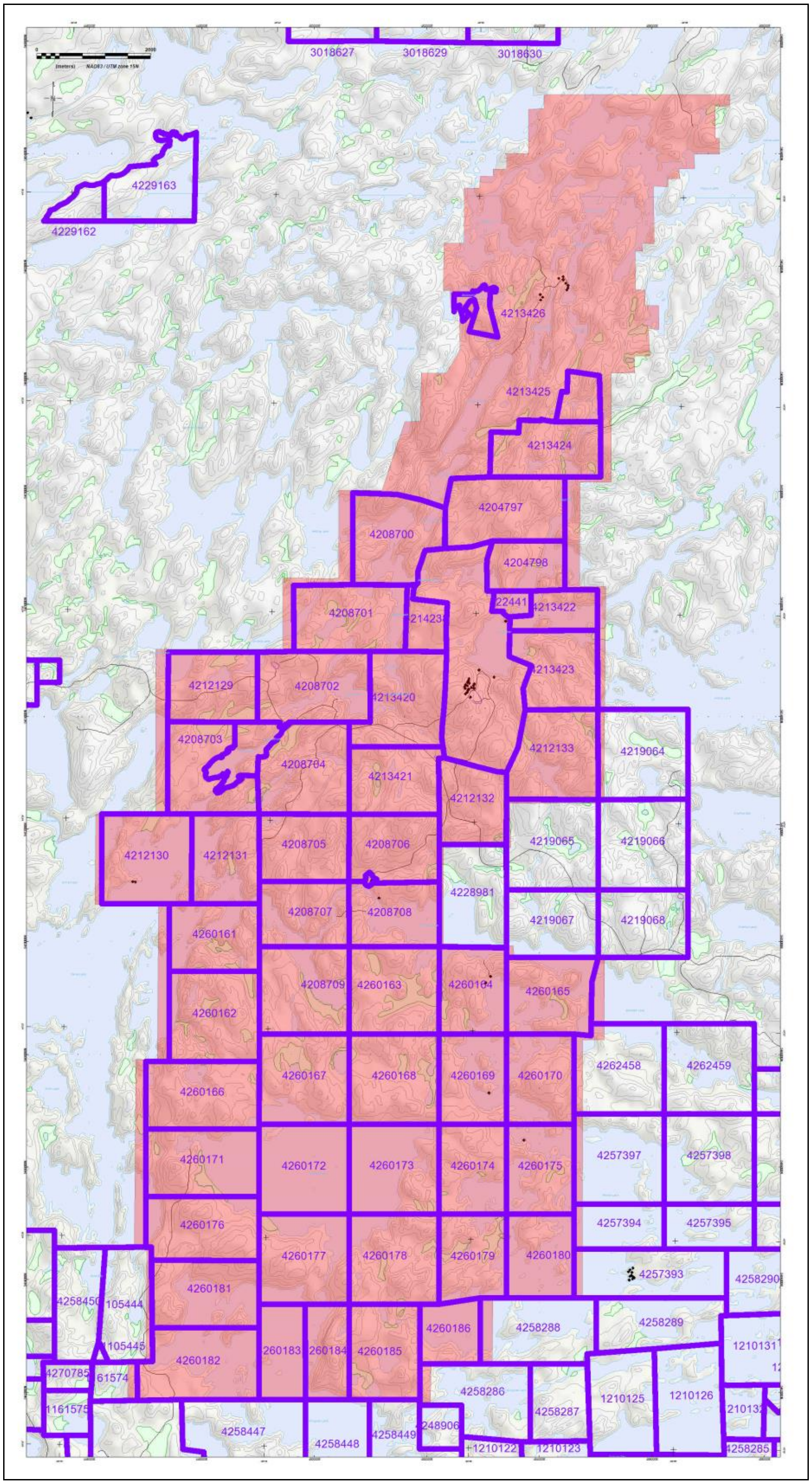
[2] Final data processing of the EM and magnetic data were carried out by Shaolin Lu, from the office of Geotech Ltd. in Aurora, Ontario, under the supervision of Alexander Prikhodko, P.Geo., PhD, Senior Geophysicist, VTEM Interpretation Supervisor.

APPENDIX A

SURVEY BLOCK LOCATION MAP



Survey Overview of the Survey Area



Mining Claims of the Survey Area

APPENDIX B

SURVEY BLOCK COORDINATES
(WGS 84, UTM Zone 15 North)

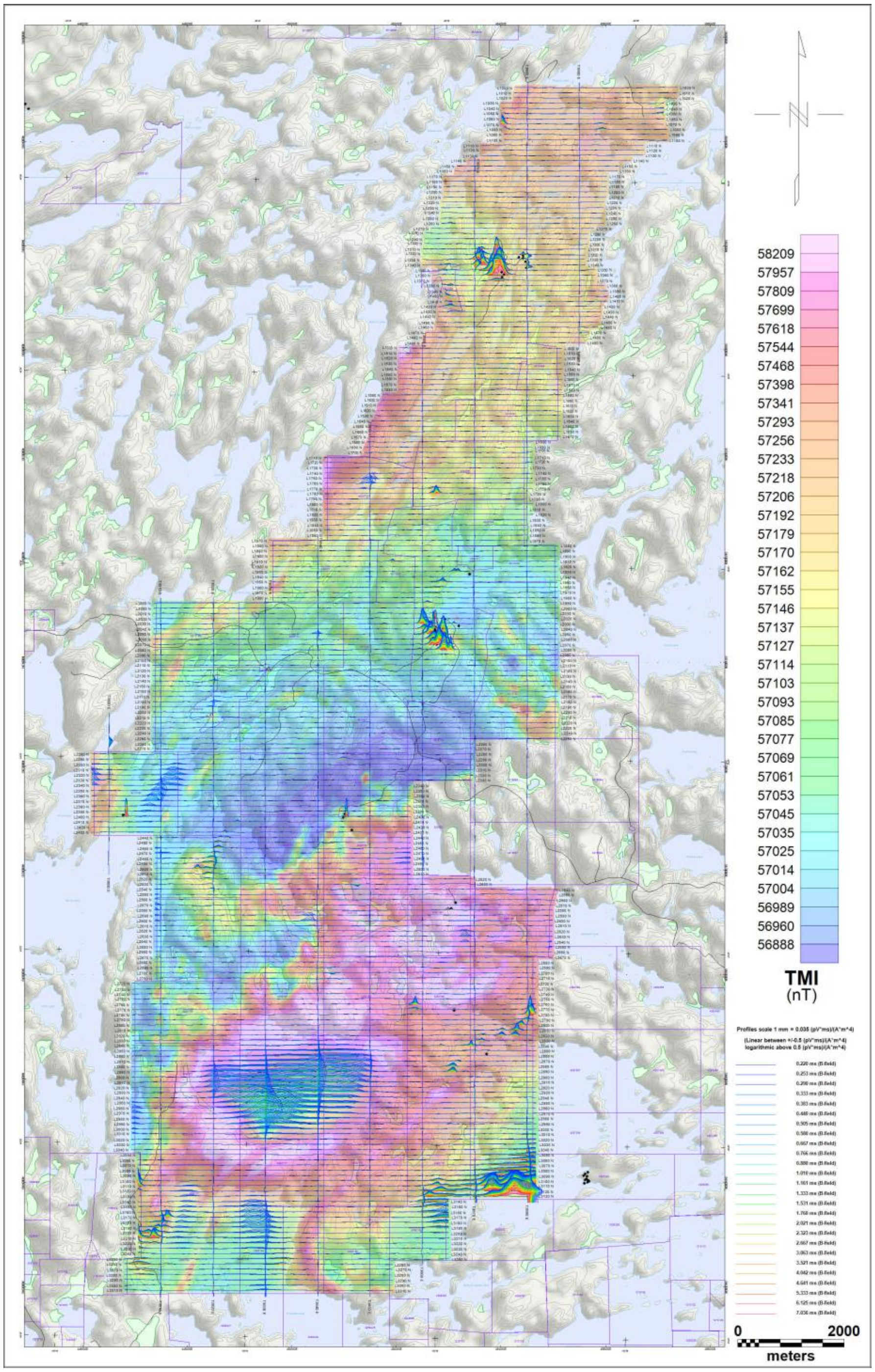
X	Y
456266.9	5485110.3
455904.8	5485114
455370.2	5485110.3
455370.2	5484765.5
454909.3	5484765.4
454912.3	5484256
455033.7	5484256
455035.2	5483978
454516.7	5483978
454516.7	5483931.6
454153.3	5483978.7
454154.7	5483671.5
453672.8	5483671.5
453672.8	5483478.2
453373.1	5483350.2
453219	5483351.9
453222.2	5482903.4
453120.4	5482904.3
453122.9	5482327.6
452757	5482423.4
452758.7	5482037
452702.2	5482037
452698.6	5481582.3
453120.8	5481556.7
453110.8	5481296.3
453529.1	5481208.5
453527.5	5481149.2
453574.1	5480742.2
453481.1	5480484
453483.9	5480376
453381.4	5480372
453382.1	5480399.4
453269.6	5480408.3
453204.6	5480376.5
453175.8	5480381
453085.1	5480270.6
453036.1	5480142.2
453012.1	5480088.7
452998.1	5480077.6
452959.1	5480035.6
452910.8	5479949.5
452912.1	5479843.9
452440.1	5479894.5

452440.1	5480026
452145.4	5480051.5
452141.4	5479533
452110.3	5479163
451820	5479190.5
451693.8	5478869
451652.7	5478720
451594.2	5478721.5
451533.8	5478372.9
451471.1	5477947.6
450677	5477976.8
450681.4	5476348.3
449628.9	5476333.1
449636.8	5475158
447408	5475143.5
447388.2	5473910.6
447391.5	5472274.8
446218.6	5472274.8
446218.6	5470677.1
447429.4	5470665.3
447428.2	5467875.2
447000.5	5467877.1
446986.6	5464563.4
447105	5464572.8
447102.8	5464346
447121.1	5462546.1
446846.3	5462542.2
446856.7	5461859.7
451869.6	5461872.9
451869.6	5462507.5
452947	5462507.5
452944.8	5463674.5
454614.2	5463674.5
454614.2	5468364.4
454916.5	5468337.3
454928.6	5469291.5
455038.4	5469727.7
453427.1	5469724.1
453407.6	5469897.4
452215.6	5469916.9
452215.6	5471731.8
453407.6	5471731.8
453412.5	5472532.5
455038.4	5472527.7
455025.7	5476255
454446.4	5476252.5
454450.3	5478254.2
455083	5478262.5
455083	5479243

455061.9	5480059.5
455135.9	5480533.5
455149.8	5480927.3
455402.5	5480901.5
455467.6	5481318.5
455456.1	5481330
455355.5	5481339.5
455398.9	5481725.5
455431.6	5482070.6
455465.2	5482319.8
455689.9	5482262.3
455694.3	5482719.3
455699.1	5483053.7
455713.3	5483234.3
455766.8	5483587.5
455862.8	5483563
456174	5483566.5
456188.2	5483871
456181.1	5483895.5
456205.8	5484298
456205.9	5484745.5
456266.9	5485110.3

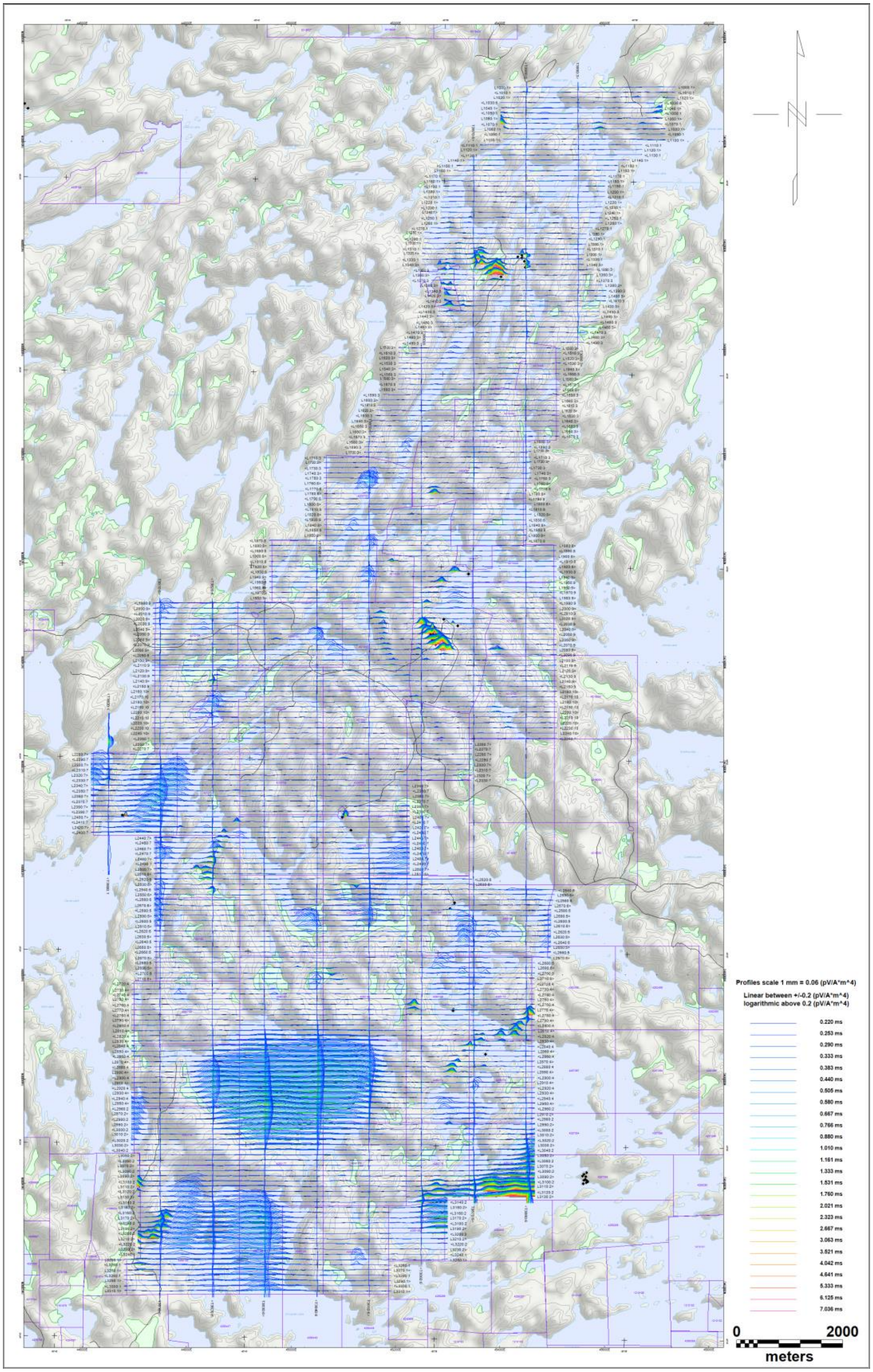
APPENDIX C

GEOPHYSICAL MAPS[1]

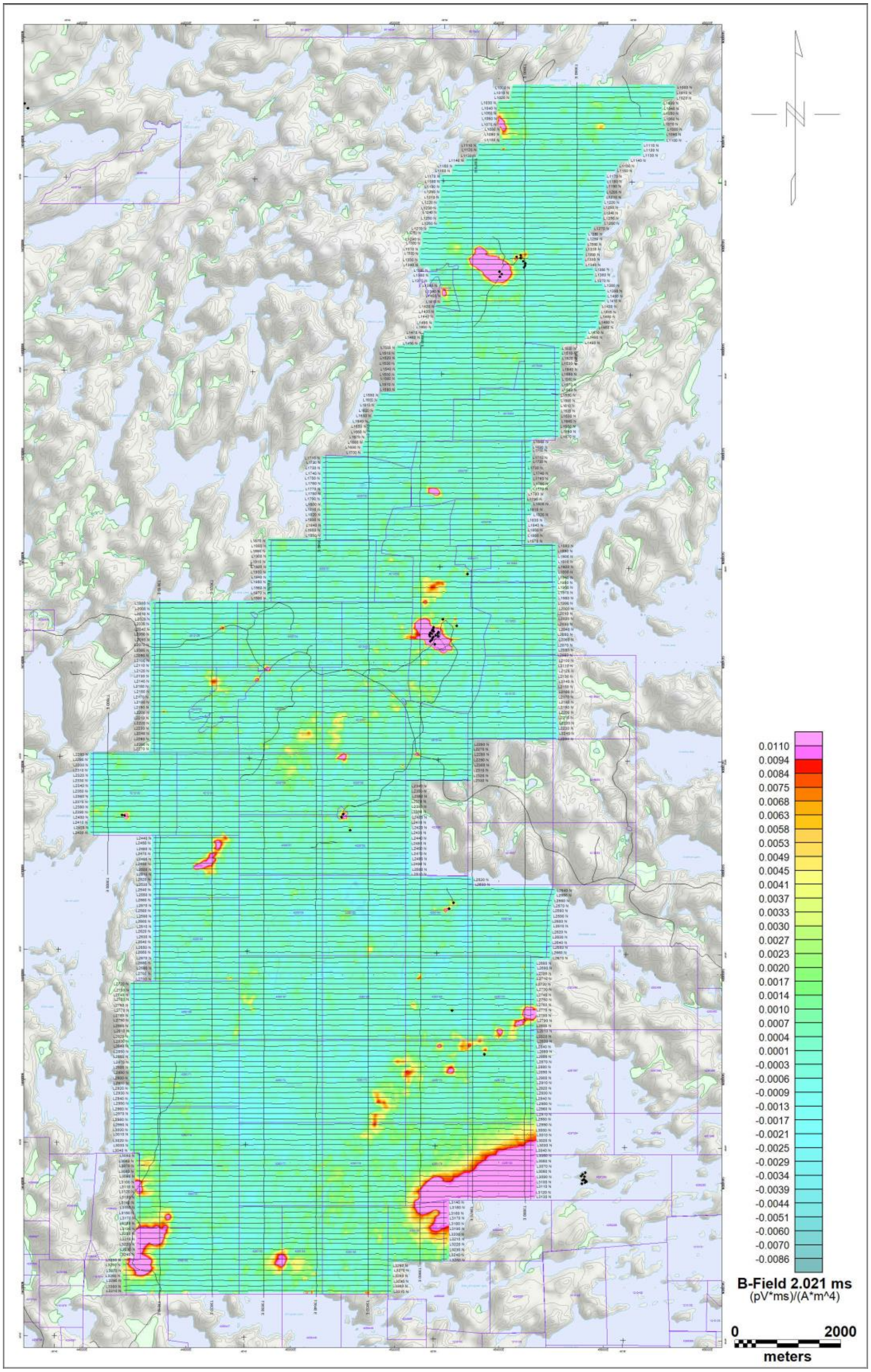


VTEM B-Field Z Component Profiles – Time Gates 0.220 – 7.036 ms
Over Total Magnetic Intensity Grid

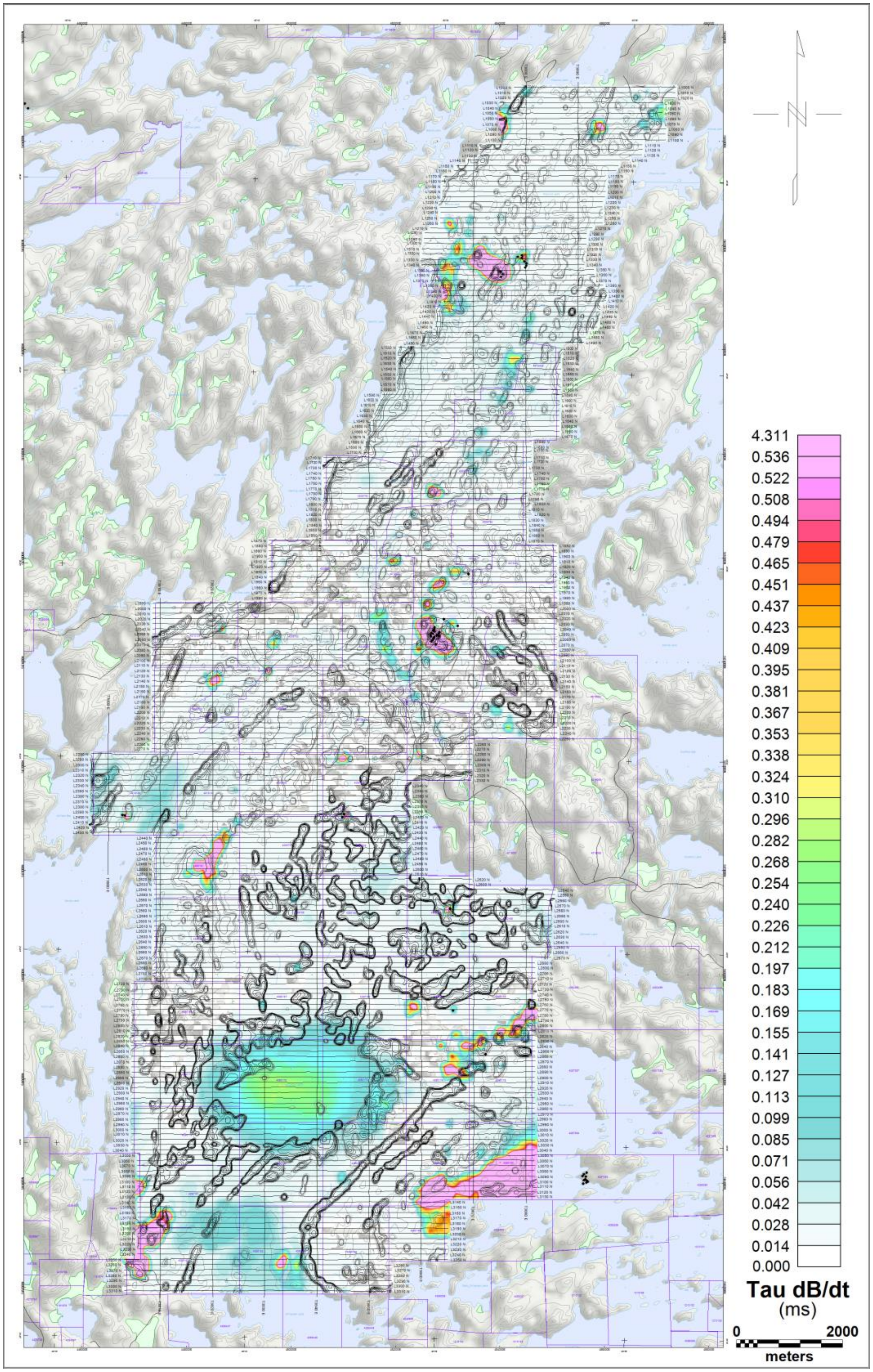
[1] Full size geophysical maps are also available in PDF format on the final DVD



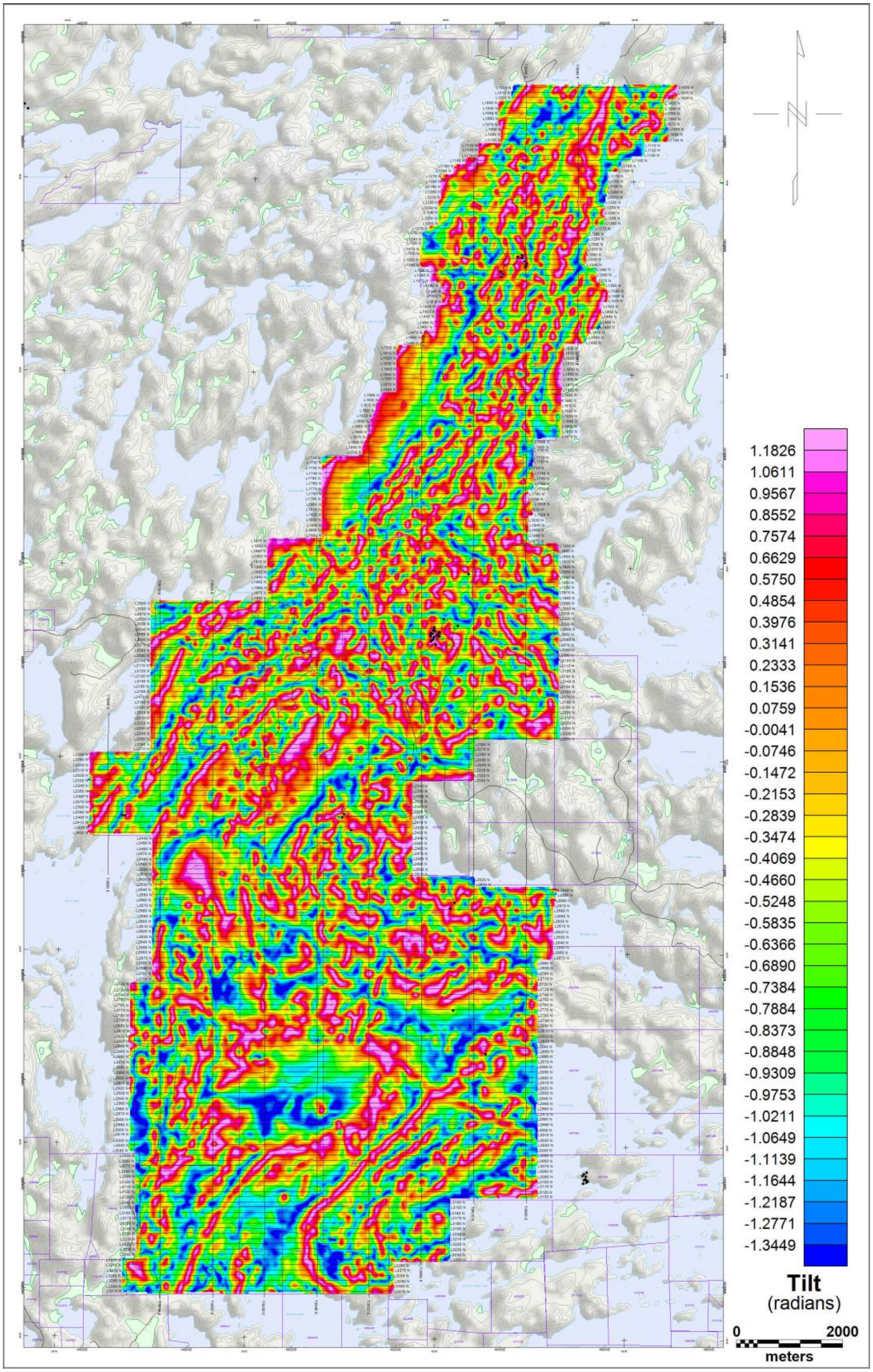
VTEM dB/dt Z Component Profiles – Time Gates 0.220 – 7.036 ms



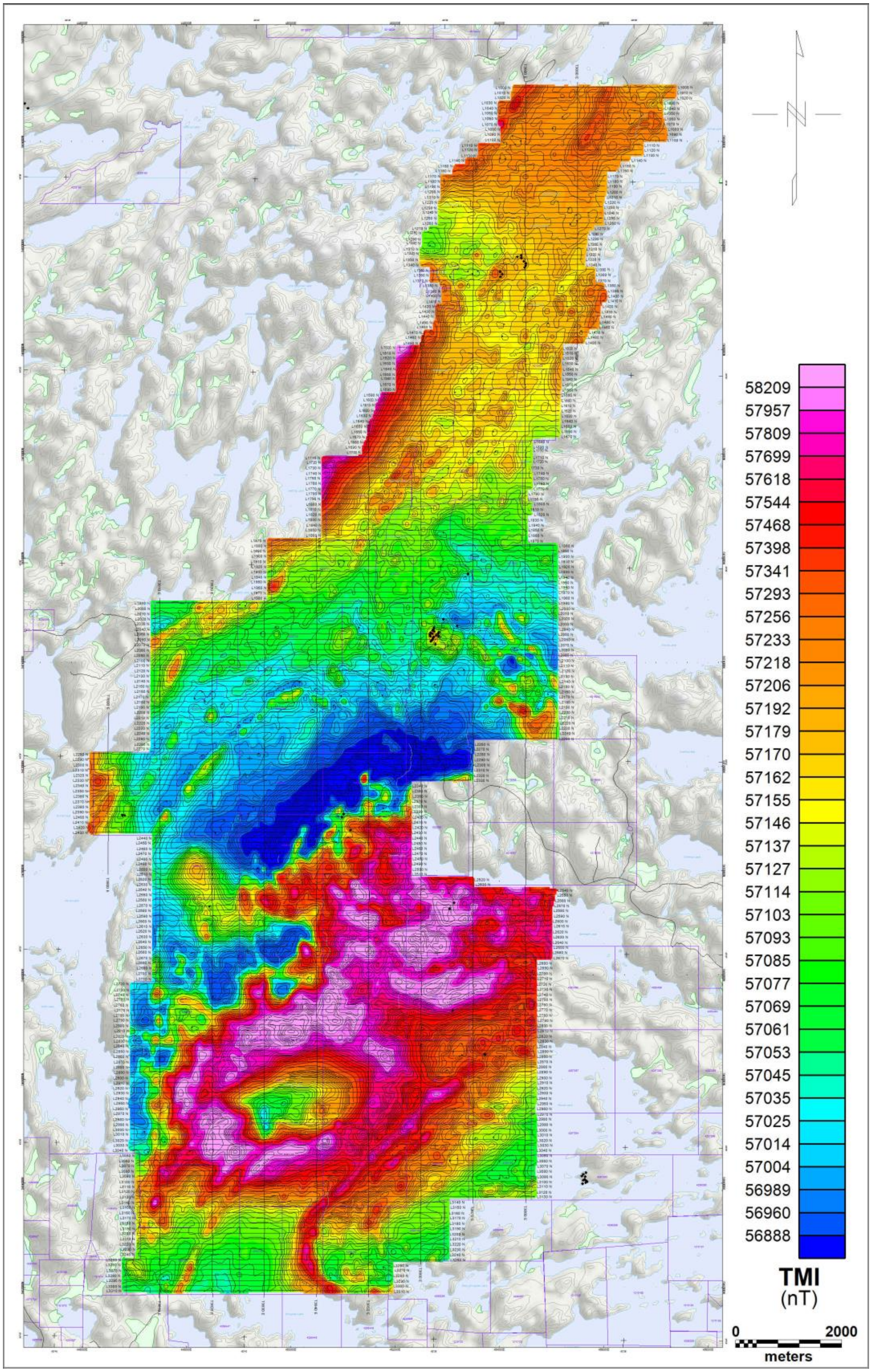
VTEM B-Field Z Component Channel 36 – Time Gate 2.021 ms



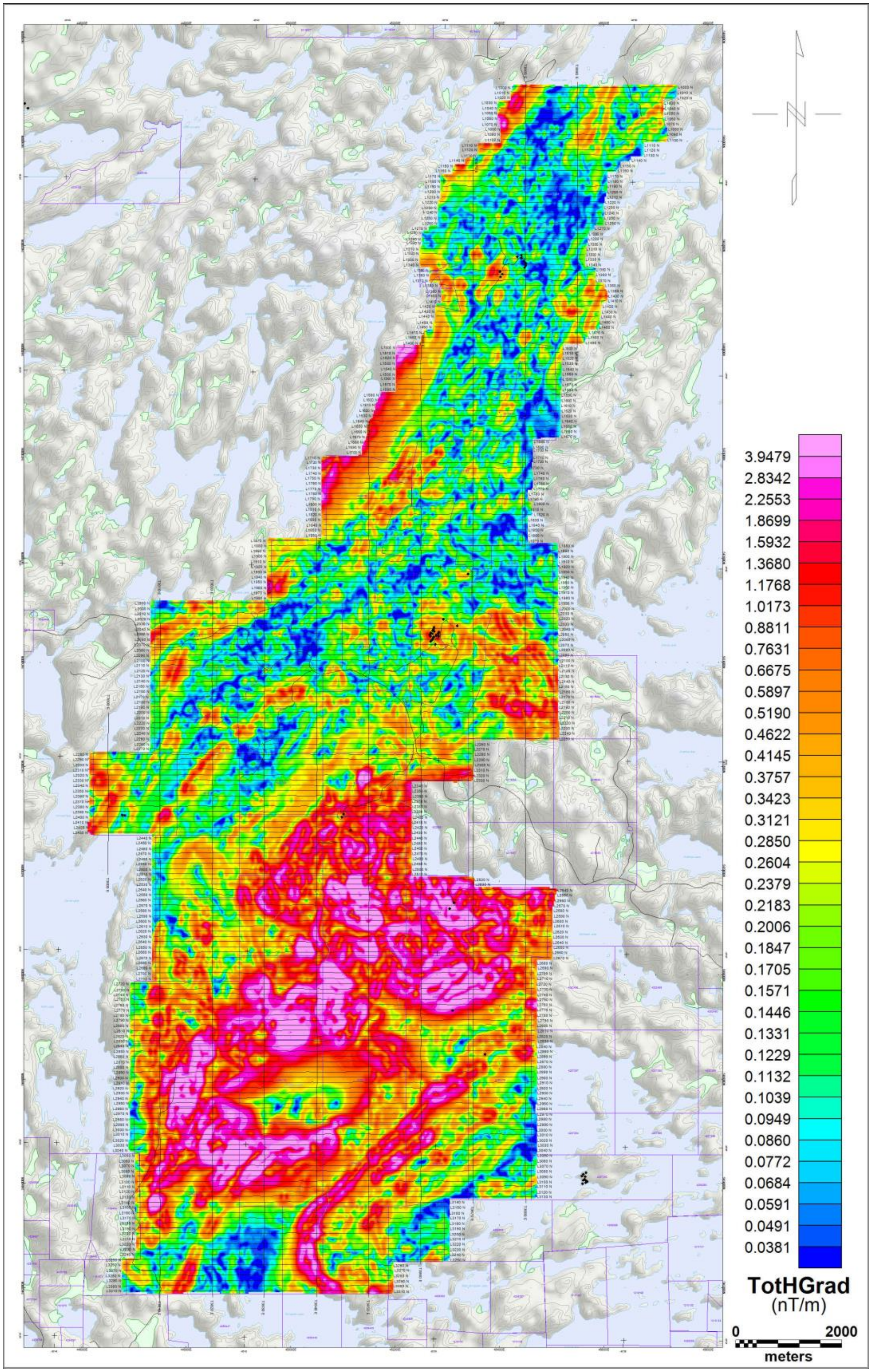
dB/dt Calculated Time Constant (Tau) with contours of anomaly areas of the Calculated Vertical Derivative of Total Magnetic Intensity



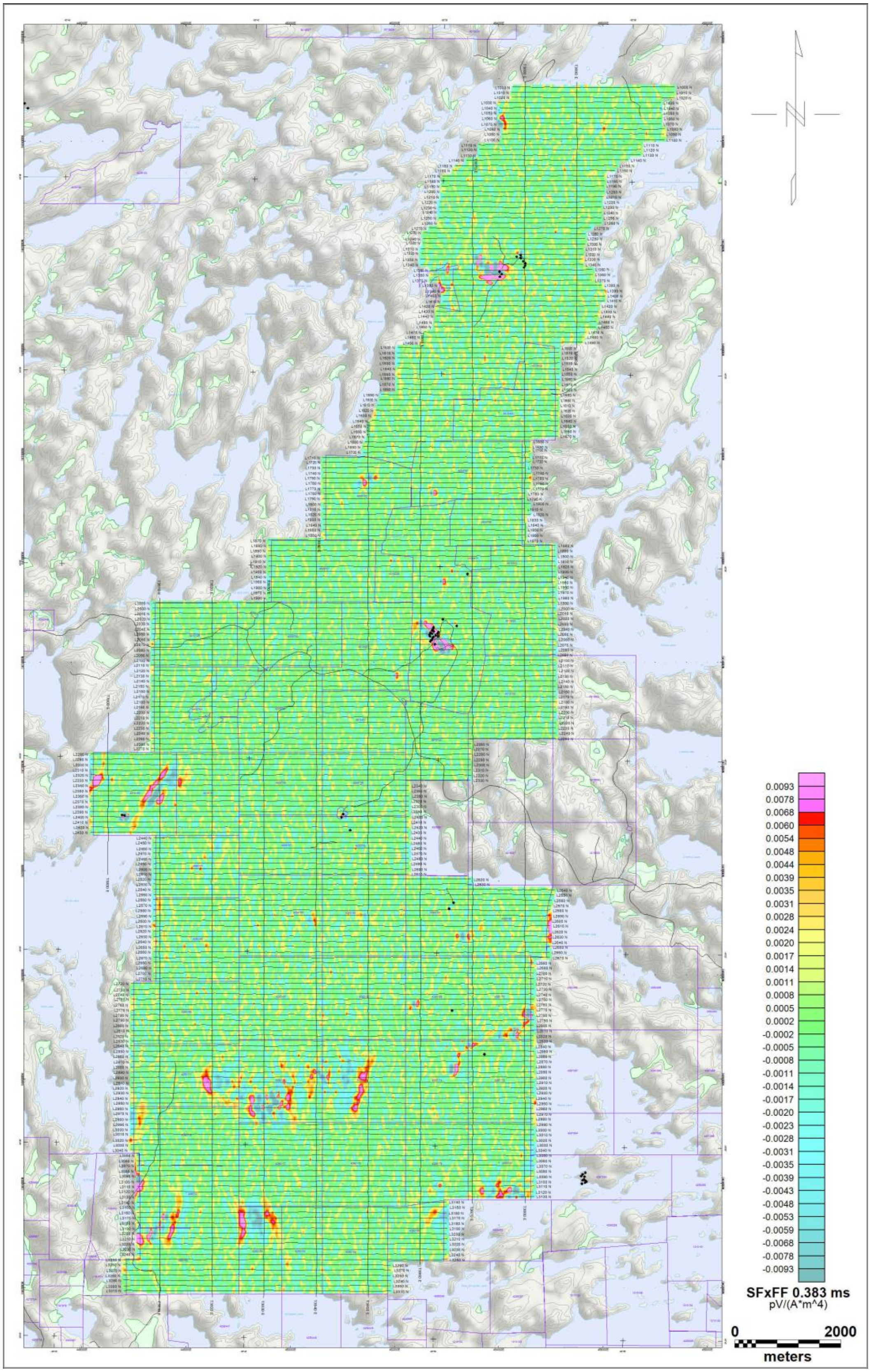
Magnetic Tilt-Angle Derivative



Total Magnetic Intensity (TMI)

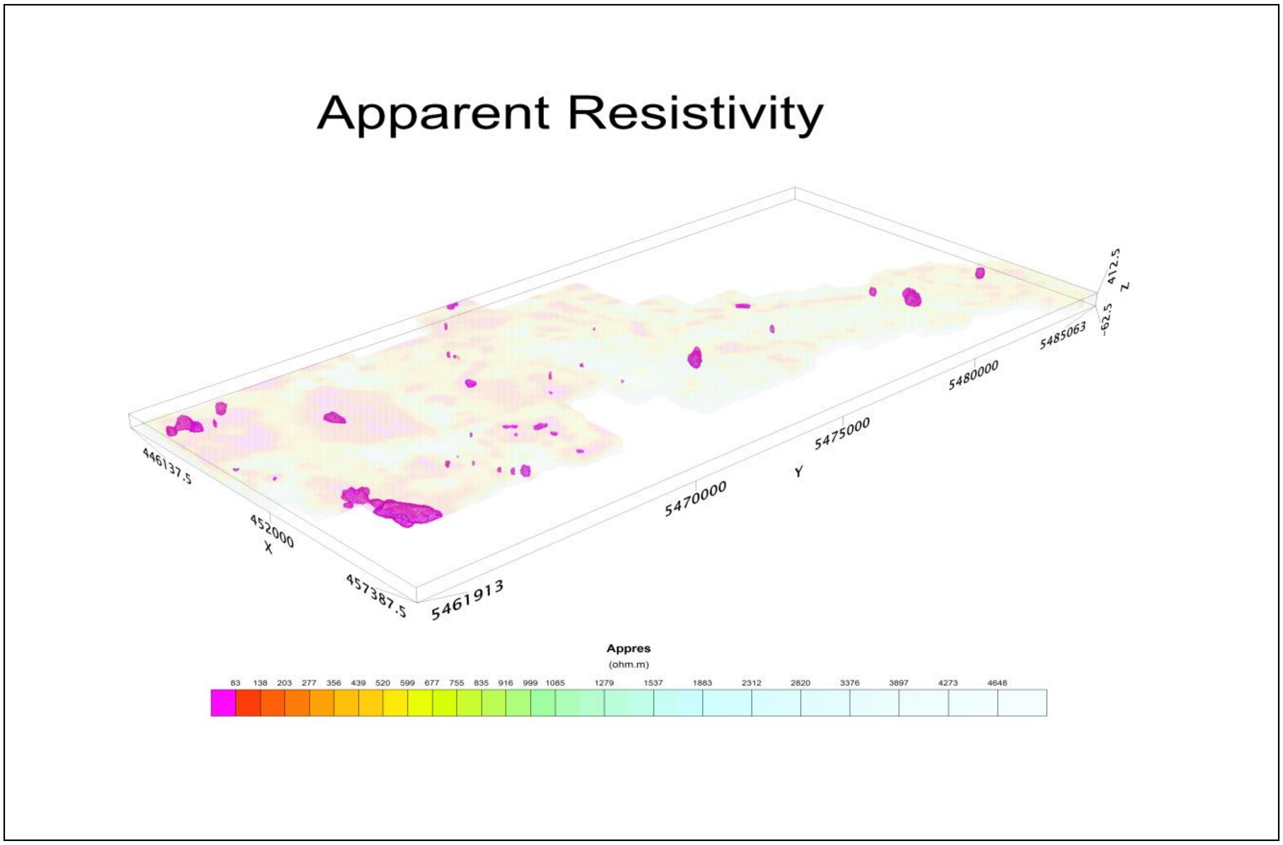


Magnetic Total Horizontal Gradient

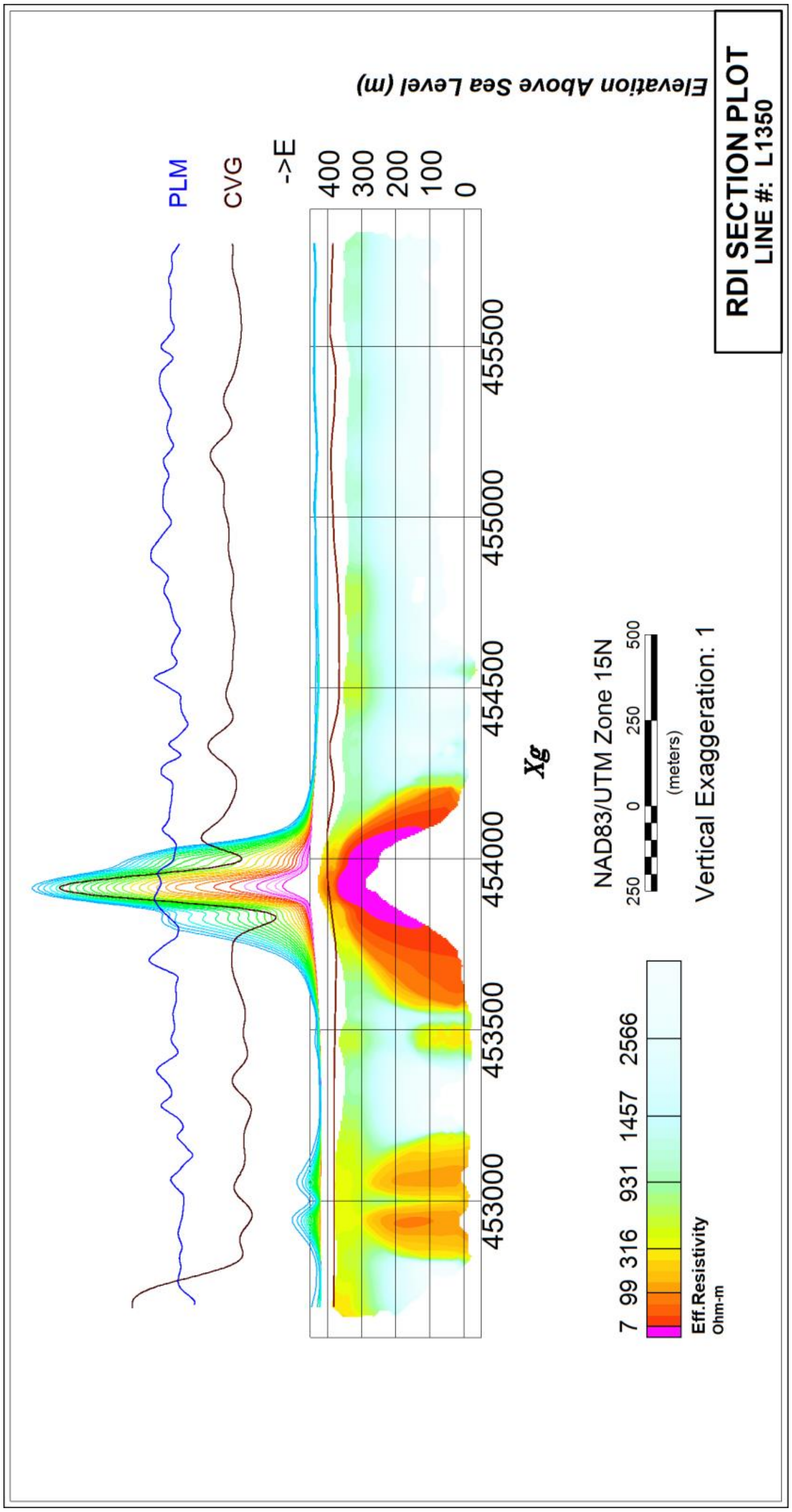


Fraser Filtered dB/dt X Component Channel 24 – Time Gate 0.383 ms

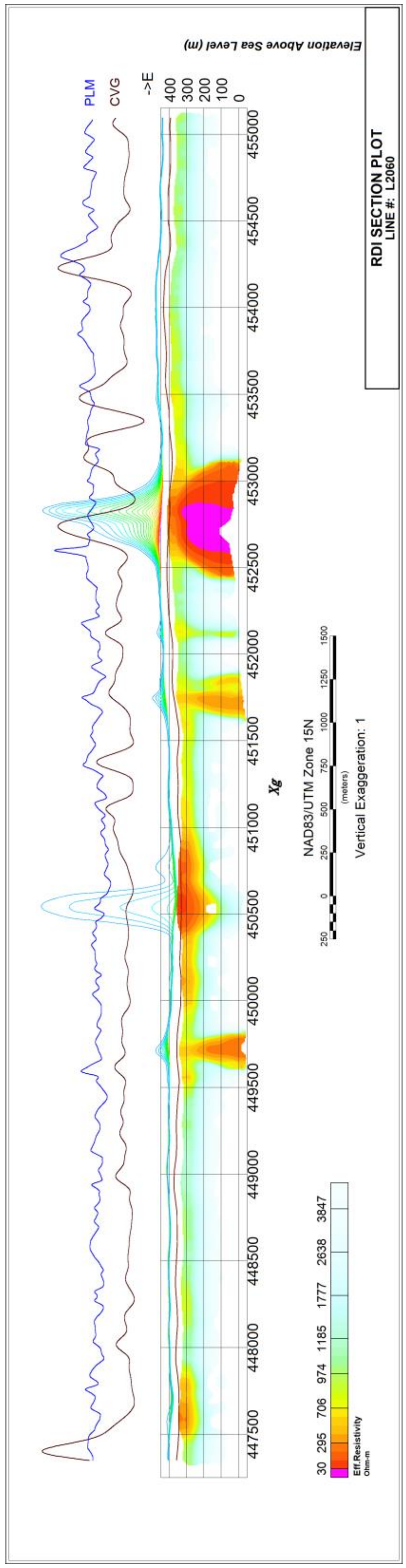
RESISTIVITY DEPTH IMAGE (RDI) MAPS



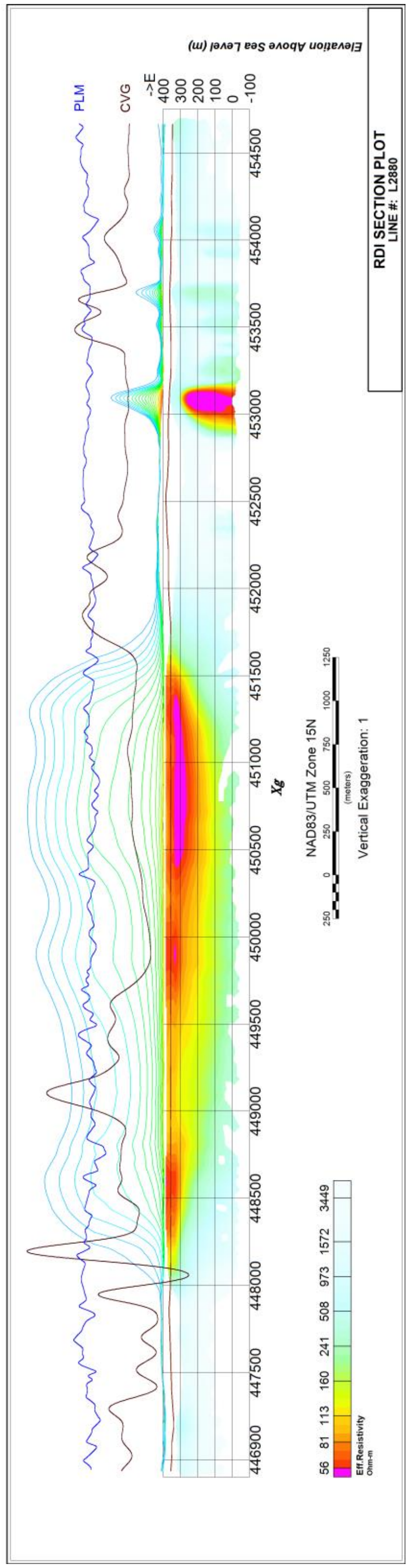
3D Resistivity-Depth Image (RDI)


RDI SECTION PLOT
LINE #: L1350
Elevation Above Sea Level (m)
PLM
CVG
->E
400
300
200
100
0
455500
455000
454500
454000
453500
453000
Xg
NAD83/UTM Zone 15N
250
0
250
500
(meters)
Vertical Exaggeration: 1
7 99 316 931 1457 2566
Eff.Resistivity
Ohm-m

RDI_L1350


RDI SECTION PLOT
LINE #: L2060
Elevation Above Sea Level (m)
PLM
CVG
->E
NAD83/UTM Zone 15N
(meters)
Vertical Exaggeration: 1
Eff.Resistivity
30 295 706 974 1185 1777 2638 3847

RDI_L2060


RDI SECTION PLOT
LINE #: L2880
PLM
CVG
Elevation Above Sea Level (m)
NAD83/UTM Zone 15N
(meters)
Vertical Exaggeration: 1
Eff.Resistivity
Ohm-m
56 81 113 160 241 508 973 1572 3449
446900 447500 448000 448500 449000 449500 450000 450500 451000 451500 452000 452500 453000 453500 454000 454500

RDI_2880

APPENDIX D

GENERALIZED MODELING RESULTS OF THE VTEM SYSTEM

Introduction

The VTEM system is based on a concentric or central loop design, whereby, the receiver is positioned at the centre of a transmitter loop that produces a primary field. The wave form is a bi-polar, modified square wave with a turn-on and turn-off at each end.

During turn-on and turn-off, a time varying field is produced (dB/dt) and an electro-motive force (emf) is created as a finite impulse response. A current ring around the transmitter loop moves outward and downward as time progresses. When conductive rocks and mineralization are encountered, a secondary field is created by mutual induction and measured by the receiver at the centre of the transmitter loop.

Efficient modeling of the results can be carried out on regularly shaped geometries, thus yielding close approximations to the parameters of the measured targets. The following is a description of a series of common models made for the purpose of promoting a general understanding of the measured results.

A set of models has been produced for the Geotech VTEM® system dB/dT Z and X components (see models D1 to D15). The Maxwell ™ modeling program (EMIT Technology Pty. Ltd. Midland, WA, AU) used to generate the following responses assumes a resistive half-space. The reader is encouraged to review these models, so as to get a general understanding of the responses as they apply to survey results. While these models do not begin to cover all possibilities, they give a general perspective on the simple and most commonly encountered anomalies.

As the plate dips and departs from the vertical position, the peaks become asymmetrical.

As the dip increases, the aspect ratio (Min/Max) decreases and this aspect ratio can be used as an empirical guide to dip angles from near 90º to about 30º. The method is not sensitive enough where dips are less than about 30º.

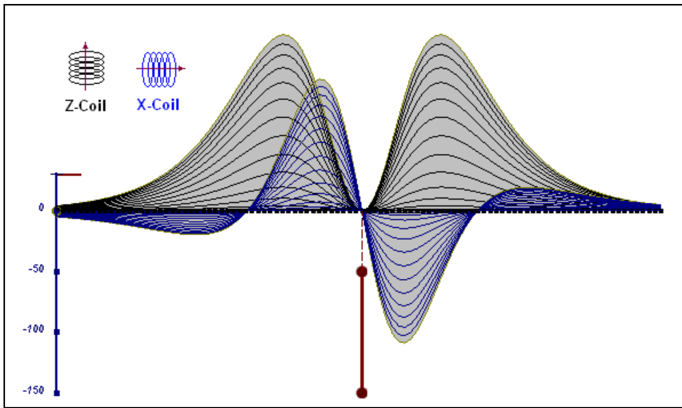
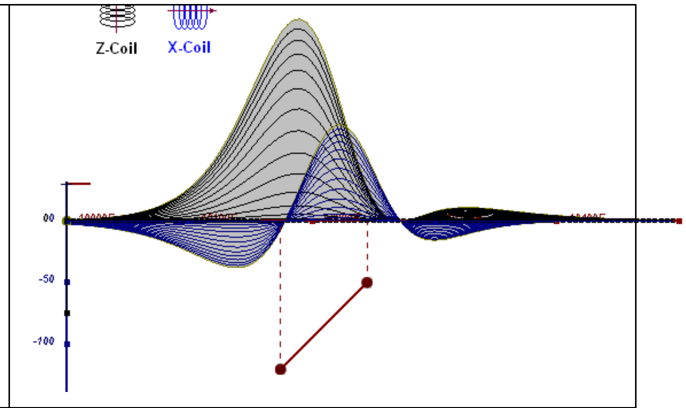
	

Figure D-1: vertical thin plate	**Figure D-2**: inclined thin plate

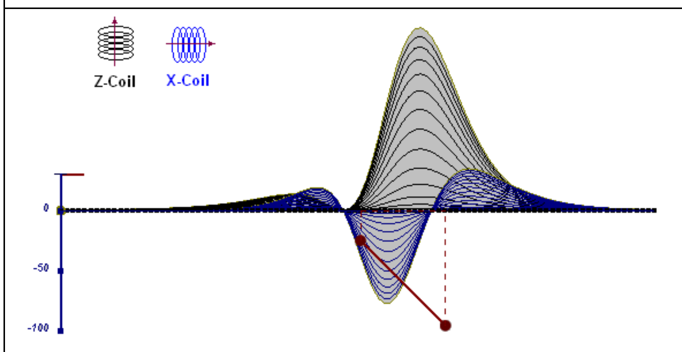
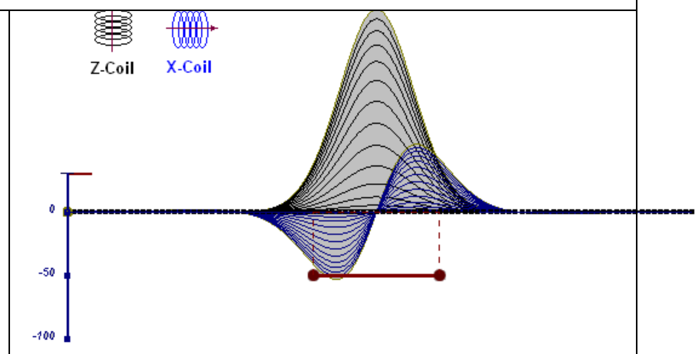

	

Figure D-3: inclined thin plate	**Figure D-4**: horizontal thin plate

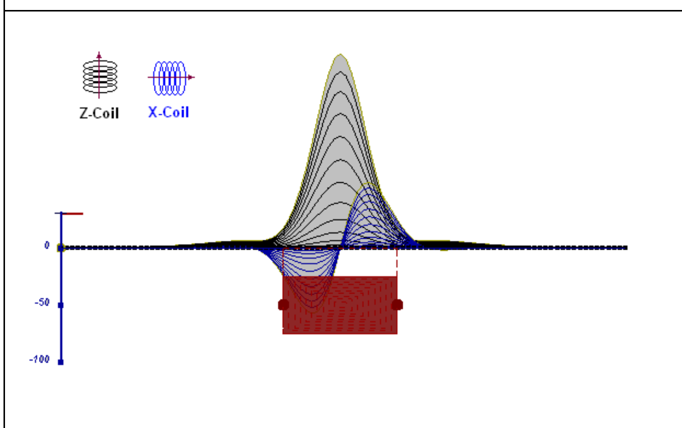
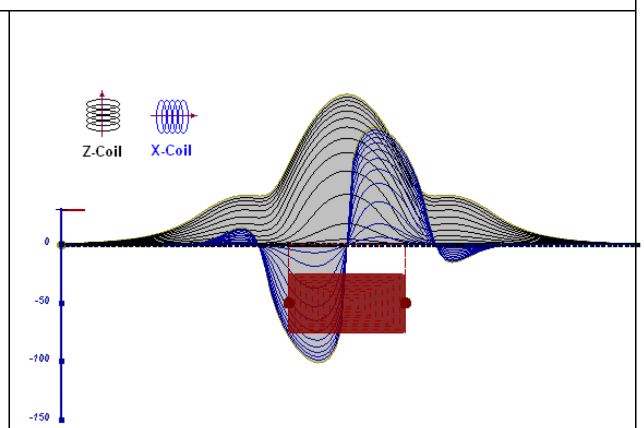

	

Figure D-5: horizontal thick plate (linear scale of the response)	**Figure D-6**: horizontal thick plate (log scale of the response)

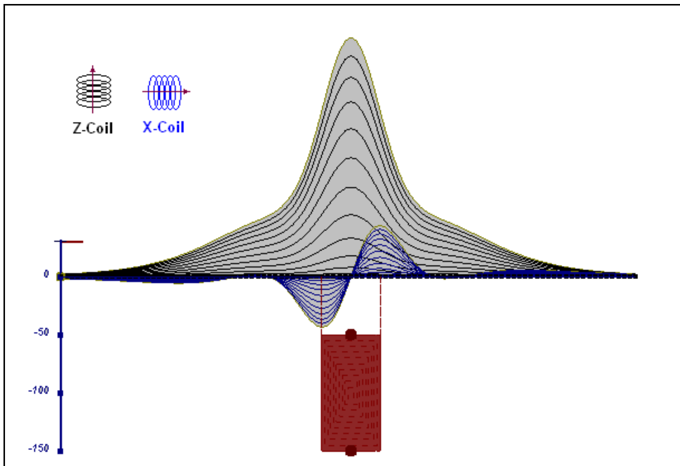


Figure D-7: vertical thick plate (linear scale of the response). 50 m depth

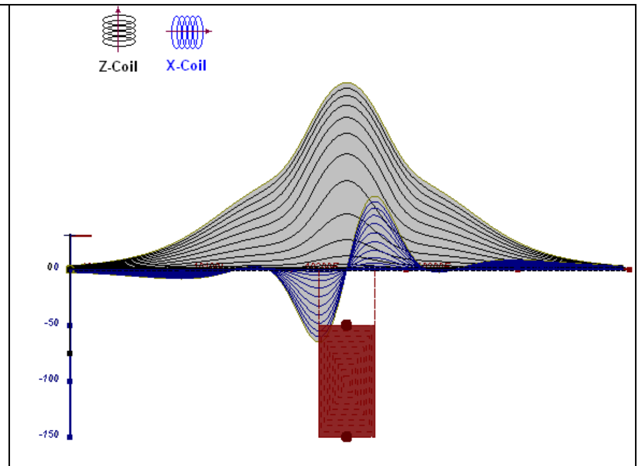


Figure D-8: vertical thick plate (log scale of the response). 50 m depth

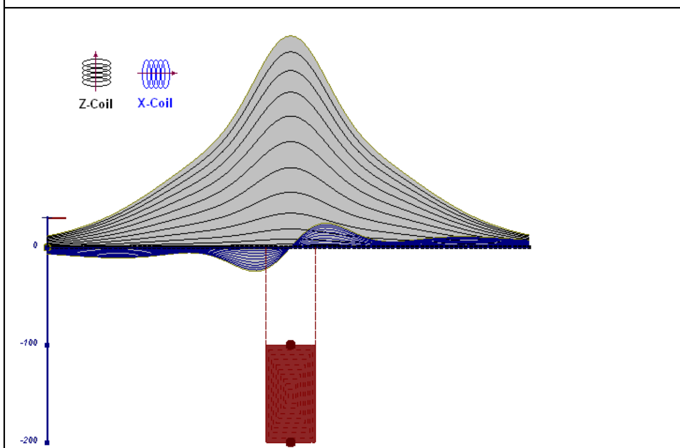


Figure D-9: vertical thick plate (linear scale of the response). 100 m depth

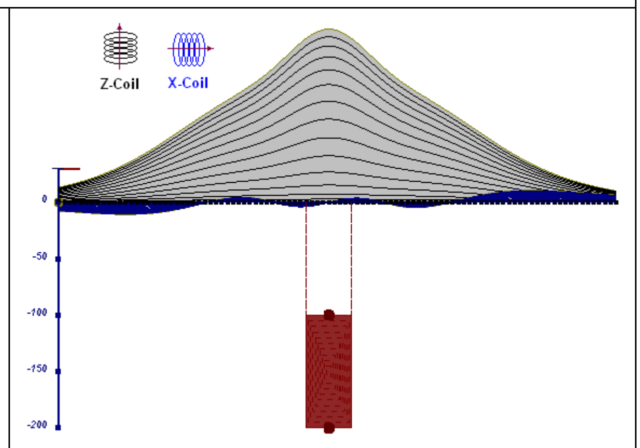


Figure D-10: vertical thick plate (linear scale of the response). Depth/hor.thickness=2.5

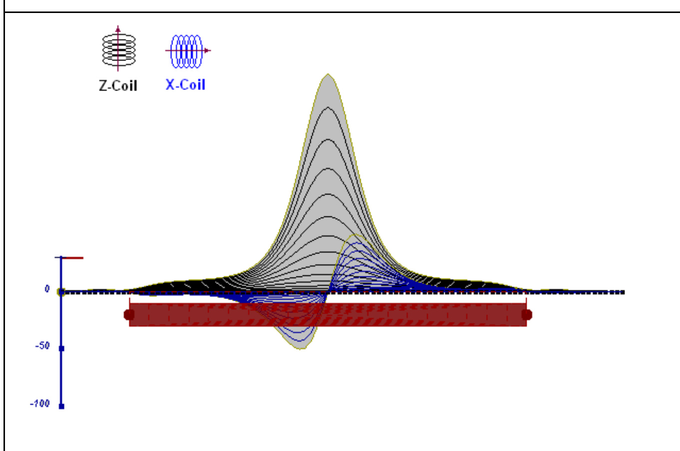


Figure D-10: horizontal thick plate (linear scale of the response)

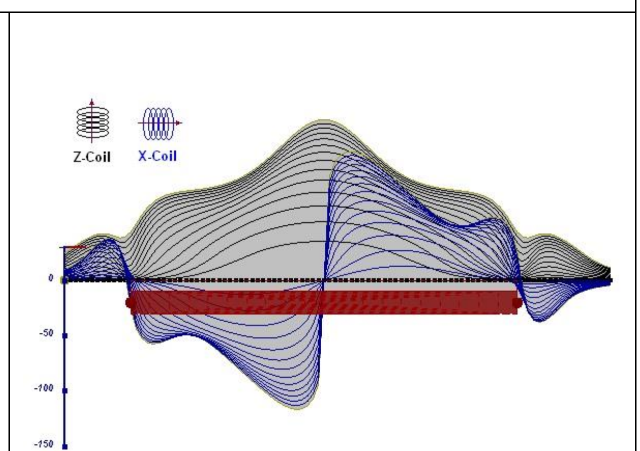


Figure D-11: horizontal thick plate (log scale of the response)

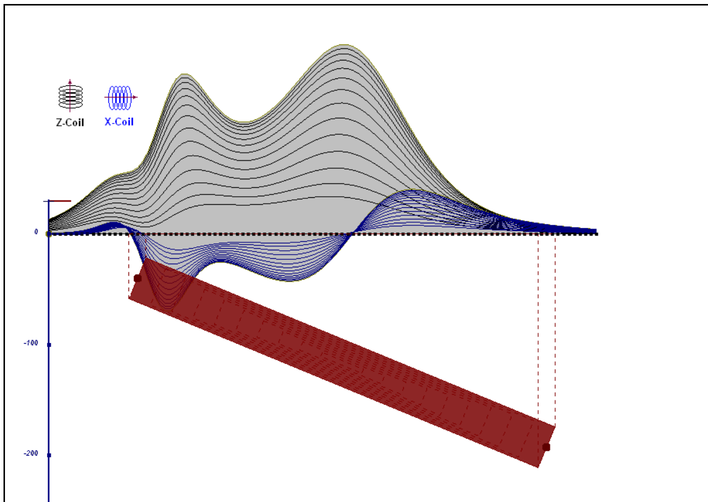


Figure D-12: inclined long thick plate

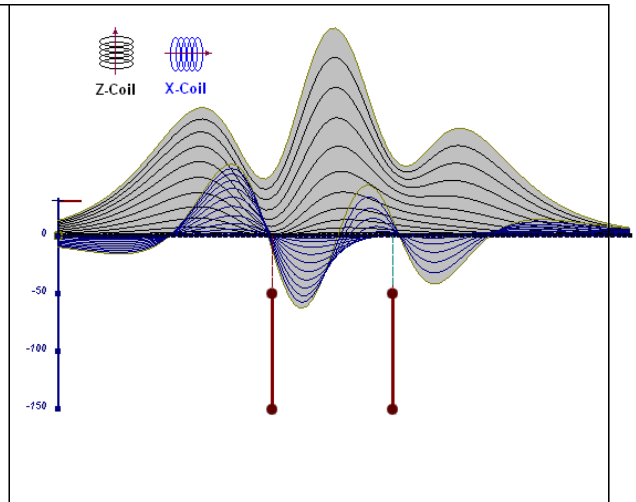


Figure D-13: two vertical thin plates

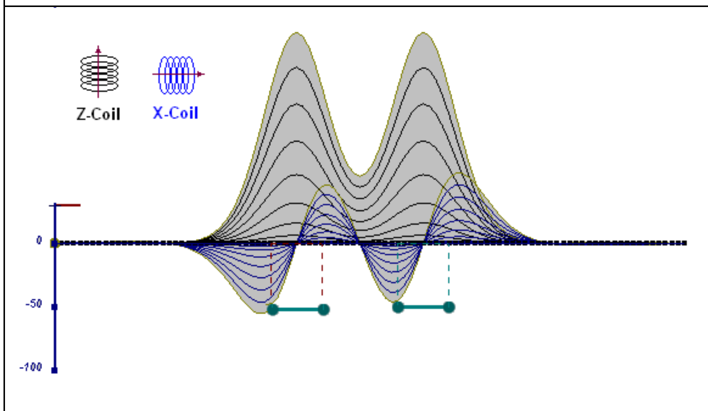


Figure D-14: two horizontal thin plates

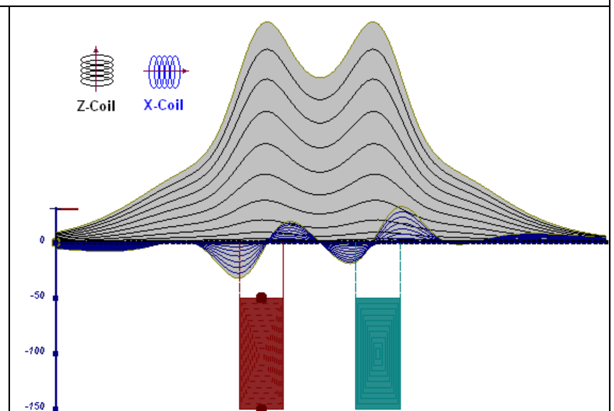


Figure D-15: two vertical thick plates

The same type of target but with different thickness, for example, creates different form of the response:

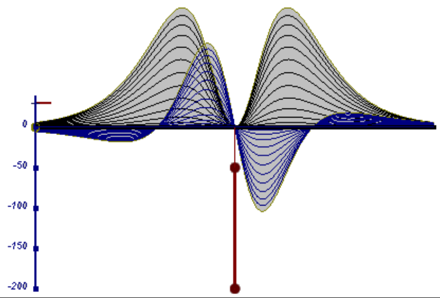
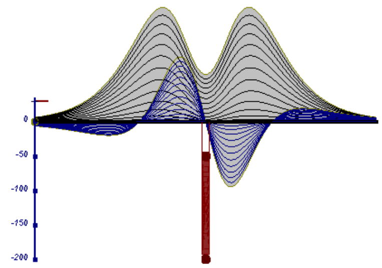
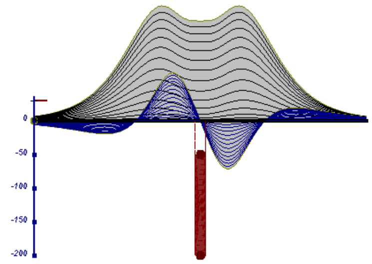
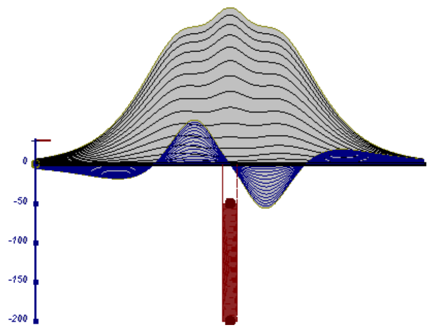
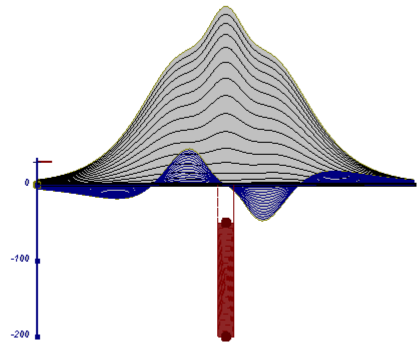
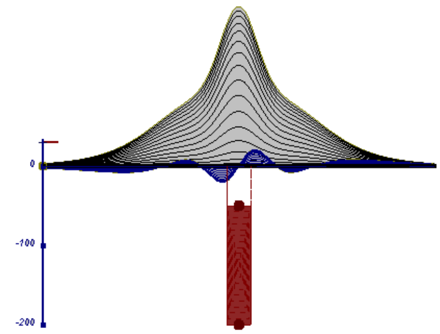
		
“thin”	10 m thickness	15 m thickness
		
18 m thickness	20 m thickness	30 m thickness

Figure D-16: Conductive vertical plate, depth 50 m, strike length 200 m, depth extends 150 m.

Alexander Prikhodko, PhD, P.Geo
Geotech Ltd.

September 2010

APPENDIX E

EM TIME CONSTANT (TAU) ANALYSIS

Estimation of time constant parameter[1] in transient electromagnetic method is one of the steps toward the extraction of the information about conductances beneath the surface from TEM measurements.

The most reliable method to discriminate or rank conductors from overburden, background or one and other is by calculating the EM field decay time constant (TAU parameter), which directly depends on conductance despite their depth and accordingly amplitude of the response.

Theory

As established in electromagnetic theory, the magnitude of the electro-motive force (emf) induced is proportional to the time rate of change of primary magnetic field at the conductor. This emf causes eddy currents to flow in the conductor with a characteristic transient decay, whose Time Constant (Tau) is a function of the conductance of the survey target or conductivity and geometry (including dimensions) of the target. The decaying currents generate a proportional secondary magnetic field, the time rate of change of which is measured by the receiver coil as induced voltage during the Off time.

The receiver coil output voltage (**e_0**) is proportional to the time rate of change of the secondary magnetic field and has the form,

$$e_0 \; \alpha \; (1 / \tau) \; e^{-(t/\tau)}$$

Where,
τ = L/R is the characteristic time constant of the target (TAU)
R = resistance
L = inductance

From the expression, conductive targets that have small value of resistance and hence large value of τ yield signals with small initial amplitude that decays relatively slowly with progress of time. Conversely, signals from poorly conducting targets that have large resistance value and small τ, have high initial amplitude but decay rapidly with time[1] (Fig. E1).

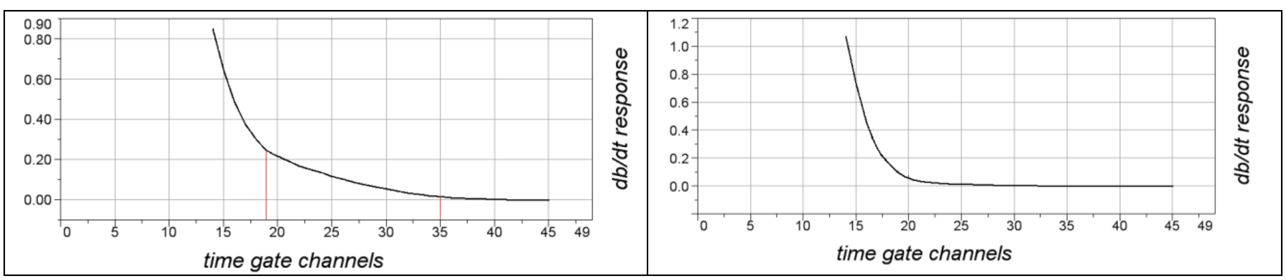


Figure E-1: Left – presence of good conductor, right – poor conductor.

[1] McNeill, JD, 1980, "Applications of Transient Electromagnetic Techniques", Technical Note TN-7 page 5, Geonics Limited, Mississauga, Ontario.

EM Time Constant (Tau) Calculation

The EM Time-Constant (TAU) is a general measure of the speed of decay of the electromagnetic response and indicates the presence of eddy currents in conductive sources as well as reflecting the "conductance quality" of a source. Although TAU can be calculated using either the measured dB/dt decay or the calculated B-field decay, dB/dt is commonly preferred due to better stability (S/N) relating to signal noise. Generally, TAU calculated on base of early time response reflects both near surface overburden and poor conductors whereas, in the late ranges of time, deep and more conductive sources, respectively. For example early time TAU distribution in an area that indicates conductive overburden is shown in Figure 2.

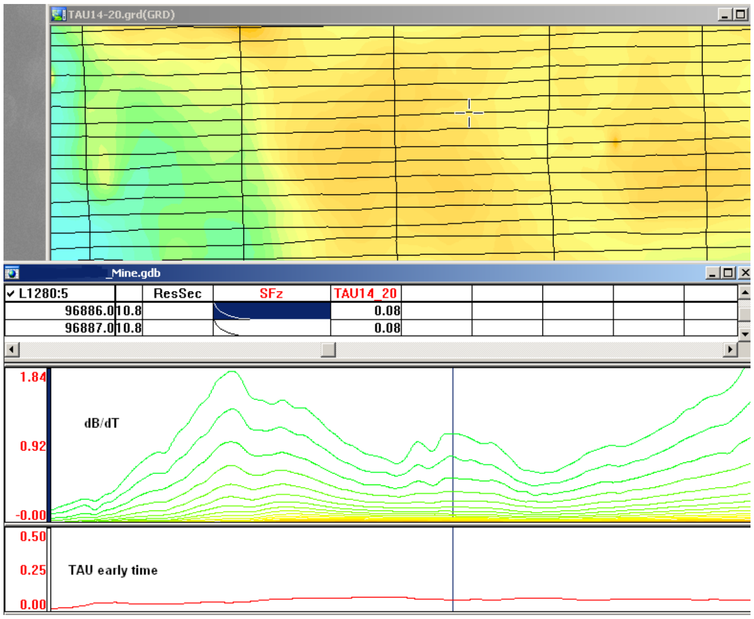


Figure E-2: Map of early time TAU. Area with overburden conductive layer and local sources.

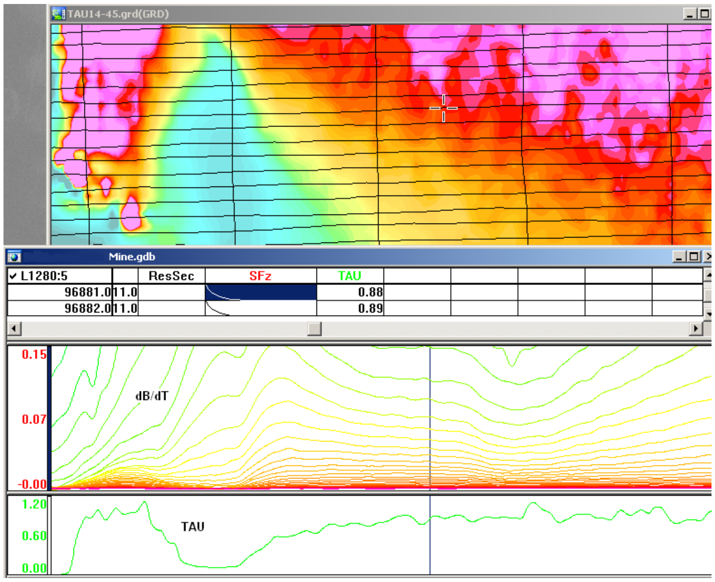


Figure E-3: Map of full time range TAU with EM anomaly due to deep highly conductive target.

There are many advantages of TAU maps:

- TAU depends only on one parameter (conductance) in contrast to response magnitude;
- TAU is integral parameter, which covers time range and all conductive zones and targets are displayed independently of their depth and conductivity on a single map.
- Very good differential resolution in complex conductive places with many sources with different conductivity.
- Signs of the presence of good conductive targets are amplified and emphasized independently of their depth and level of response accordingly.

In the example shown in Figure 4 and 5, three local targets are defined, each of them with a different depth of burial, as indicated on the resistivity depth image (RDI). All are very good conductors but the deeper target (number 2) has a relatively weak dB/dt signal yet also features the strongest total TAU (Figure 4). This example highlights the benefit of TAU analysis in terms of an additional target discrimination tool.

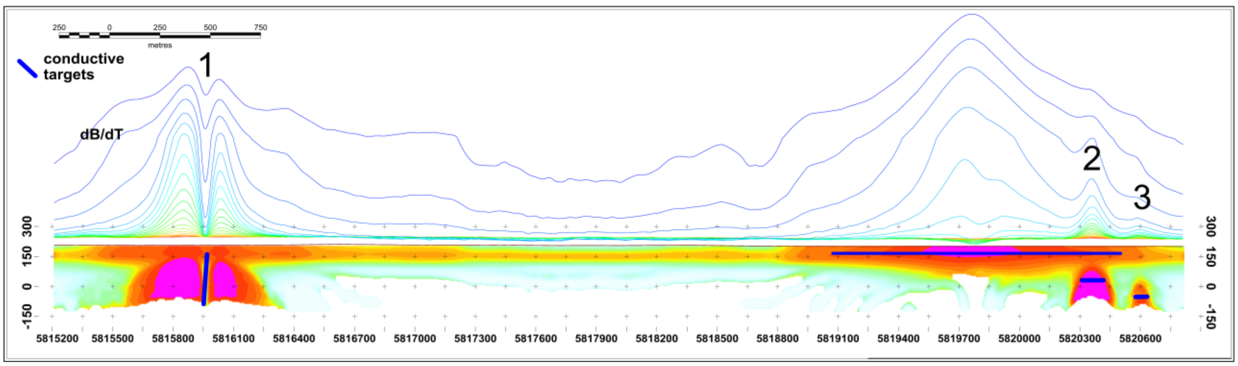


Figure E-4: dB/dt profile and RDI with different depths of targets.

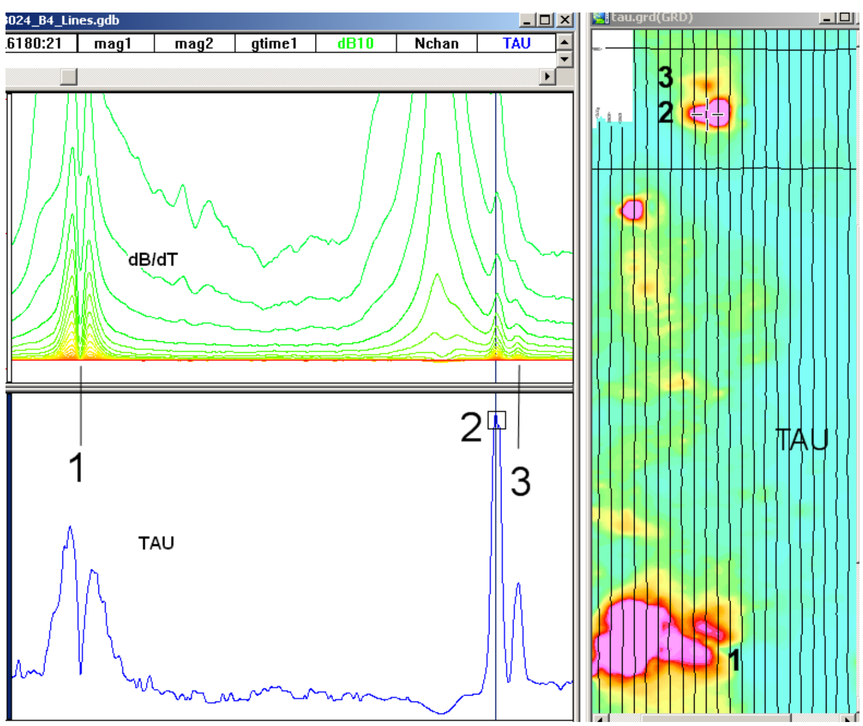


Figure E-5: Map of total TAU and dB/dt profile.

The EM Time Constants for dB/dt and B-field were calculated using the "sliding Tau" in-house program developed at Geotech[2]. The principle of the calculation is based on using of time window (4 time channels) which is sliding along the curve decay and looking for latest time channels which have a response above the level of noise and decay. The EM decays are obtained from all available decay channels, starting at the latest channel. Time constants are taken from a least square fit of a straight-line (log/linear space) over the last 4 gates above a pre-set signal threshold level (Figure F6). Threshold settings are pointed in the "label" property of TAU database channels. The sliding Tau method determines that, as the amplitudes increase, the time-constant is taken at progressively later times in the EM decay. Conversely, as the amplitudes decrease, Tau is taken at progressively earlier times in the decay. If the maximum signal amplitude falls below the threshold, or becomes negative for any of the 4 time gates, then Tau is not calculated and is assigned a value of "dummy" by default.

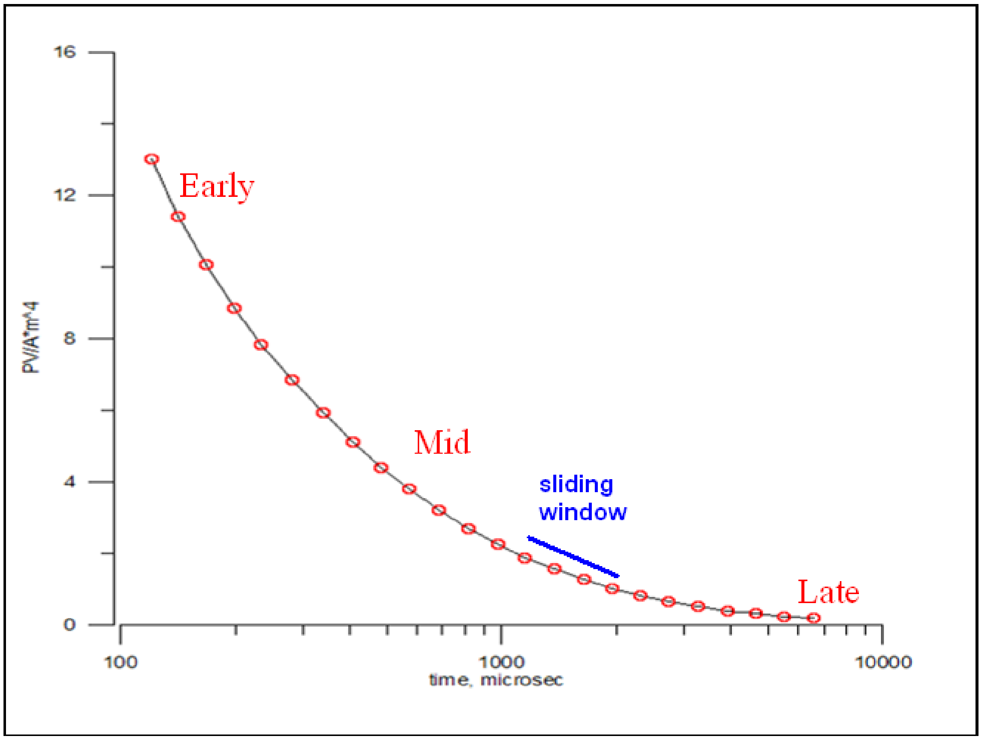


Figure E-6: Typical dB/dt decays of Vtem data

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September 2010

[2] by A.Prikhodko

APPENDIX F

TEM RESISTIVITY DEPTH IMAGING (RDI)

Resistivity depth imaging (RDI) is technique used to rapidly convert EM profile decay data into an equivalent resistivity versus depth cross-section, by deconvolving the measured TEM data.
The used RDI algorithm of Resistivity-Depth transformation is based on scheme of the apparent resistivity transform of Maxwell A.Meju (1998)[1] and TEM response from conductive half-space. The program is developed by Alexander Prikhodko and depth calibrated based on forward plate modeling for VTEM system configuration (Fig. 1-10).

RDIs provide reasonable indications of conductor relative depth and vertical extent, as well as accurate 1D layered-earth apparent conductivity/resistivity structure across VTEM flight lines. Approximate depth of investigation of a TEM system, image of secondary field distribution in half space, effective resistivity, initial geometry and position of conductive targets is the information obtained on base of the RDIs.

Maxwell forward modeling with RDI sections from the synthetic responses (VTEM system)

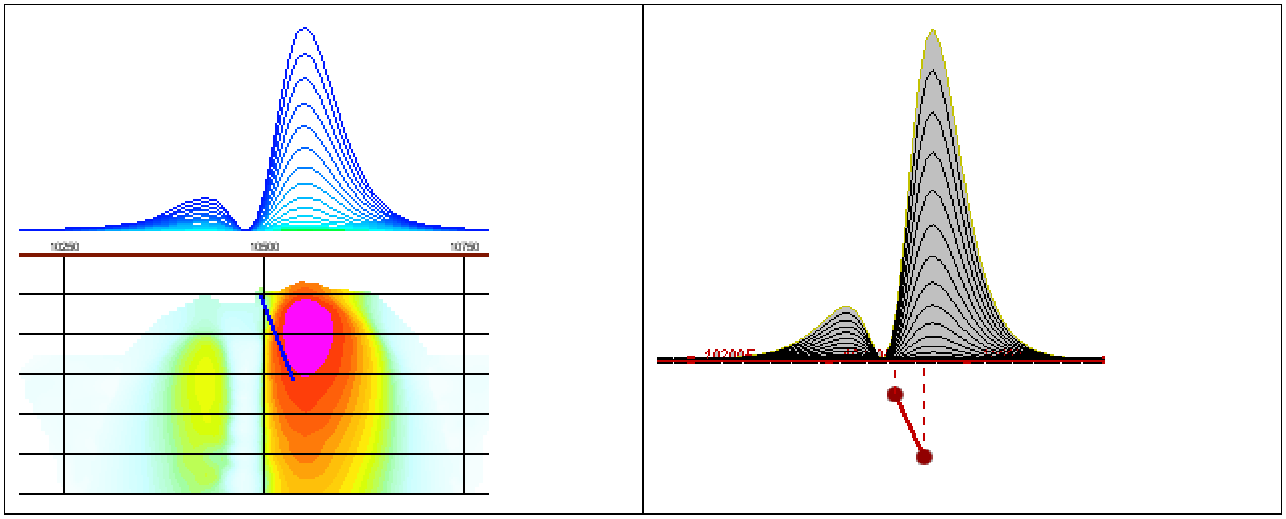


Figure F-1: Maxwell plate model and RDI from the calculated response for conductive “thin” plate (depth 50 m, dip 65 degree, depth extend 100 m).

[1] Maxwell A.Meju, 1998, Short Note: A simple method of transient electromagnetic data analysis, Geophysics, **63**, 405–410.

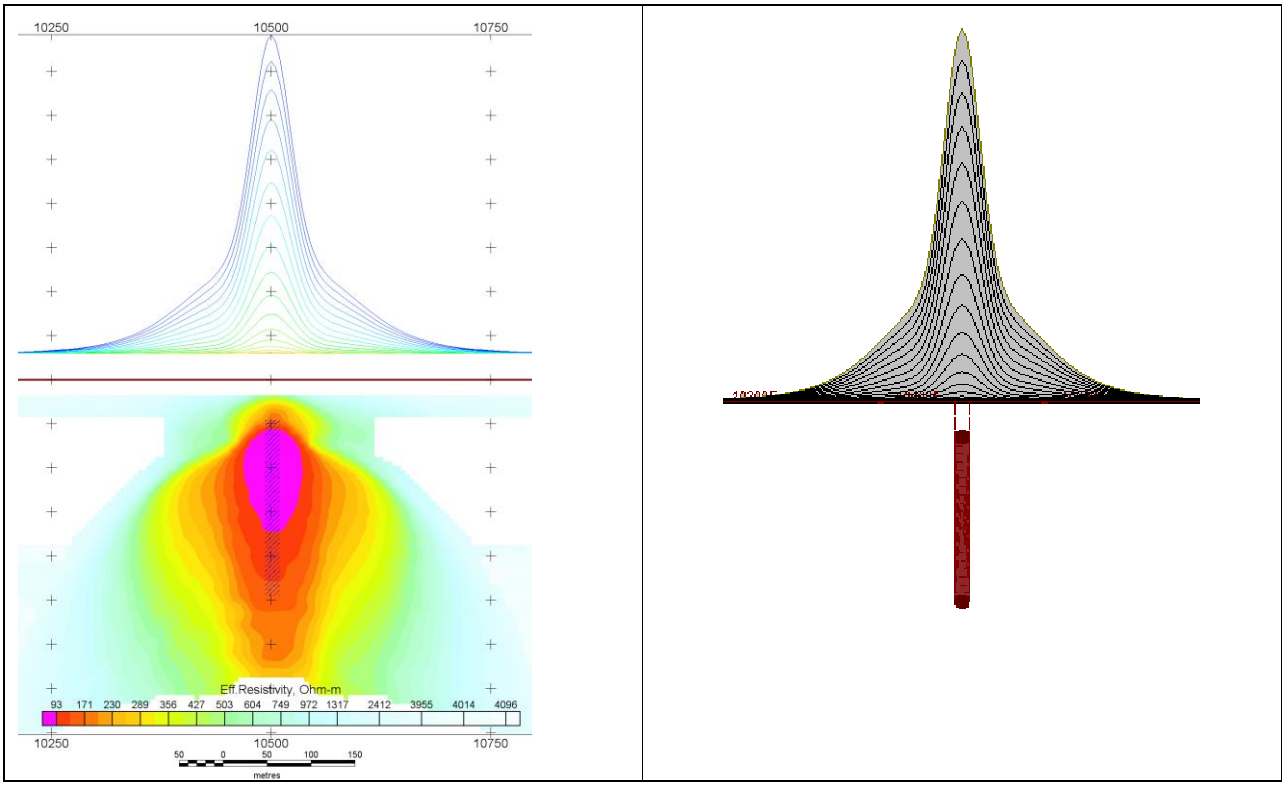


Figure F-2: Maxwell plate model and RDI from the calculated response for "thick" plate 18 m thickness, depth 50 m, depth extend 200 m).

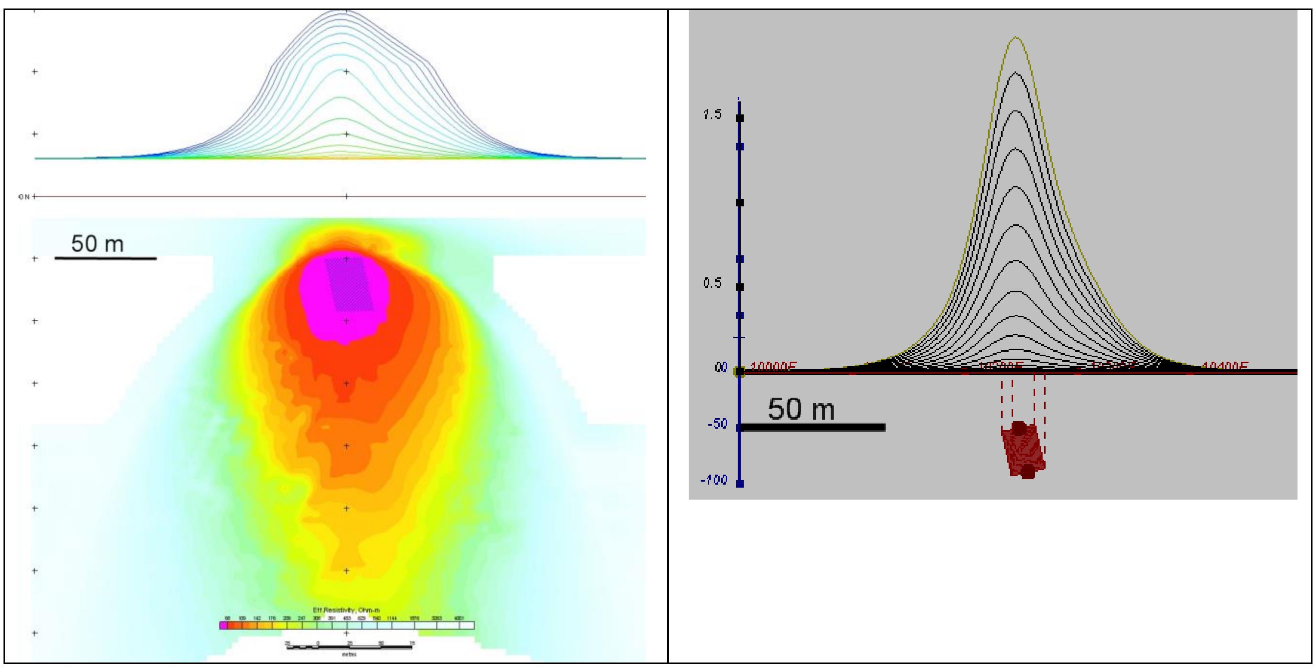


Figure F-3: Maxwell plate model and RDI from the calculated response for bulk ("thick") 100 m length, 40 m depth extend, 30 m thickness

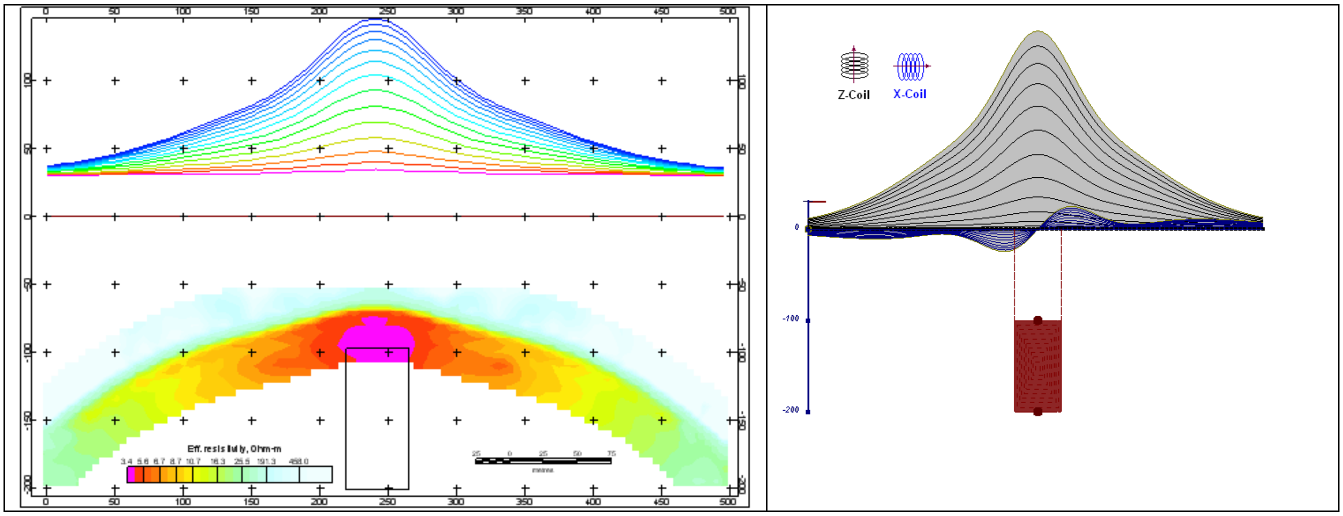


Figure F-4: Maxwell plate model and RDI from the calculated response for "thick" vertical target (depth 100 m, depth extend 100 m). 19-44 chan.

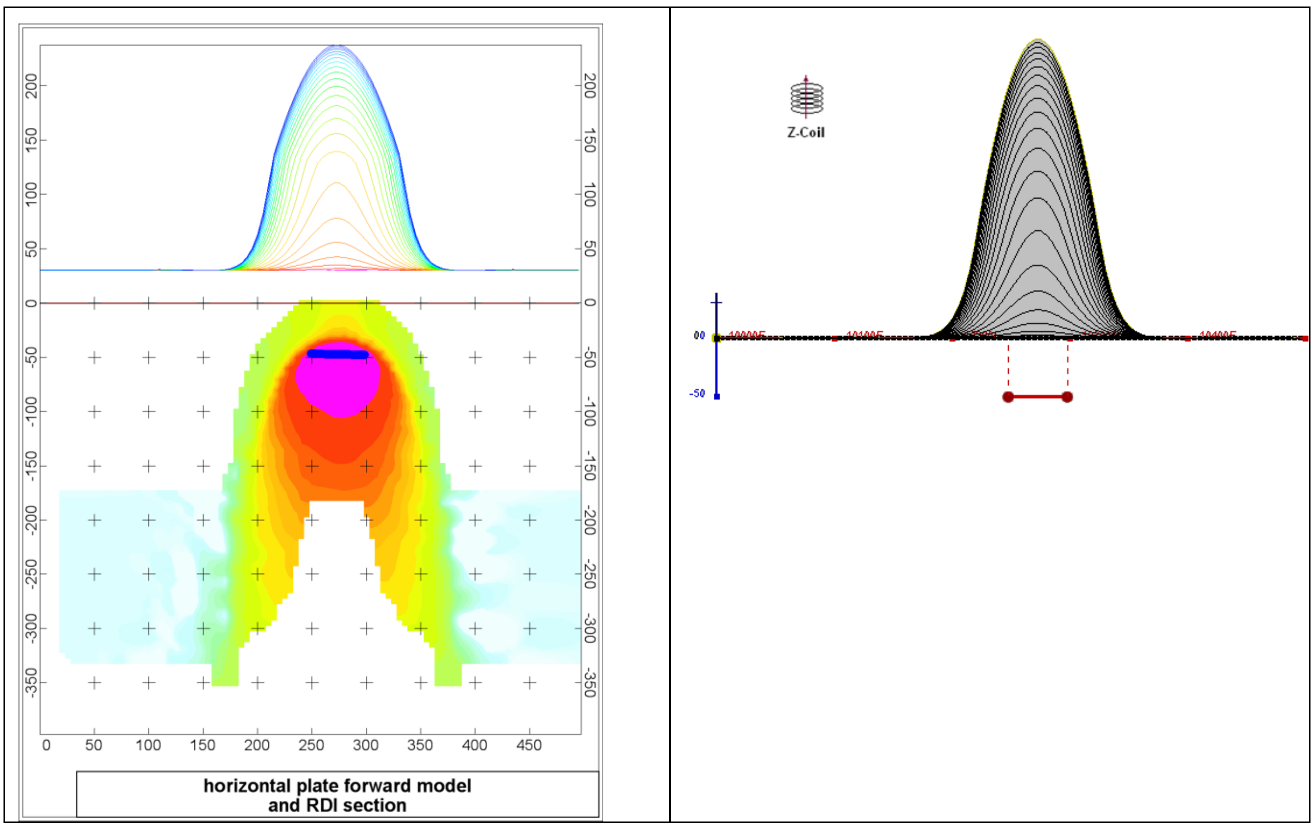


Figure F-5: Maxwell plate model and RDI from the calculated response for horizontal thin plate (depth 50 m, dim 50x100 m). 15-44 chan.

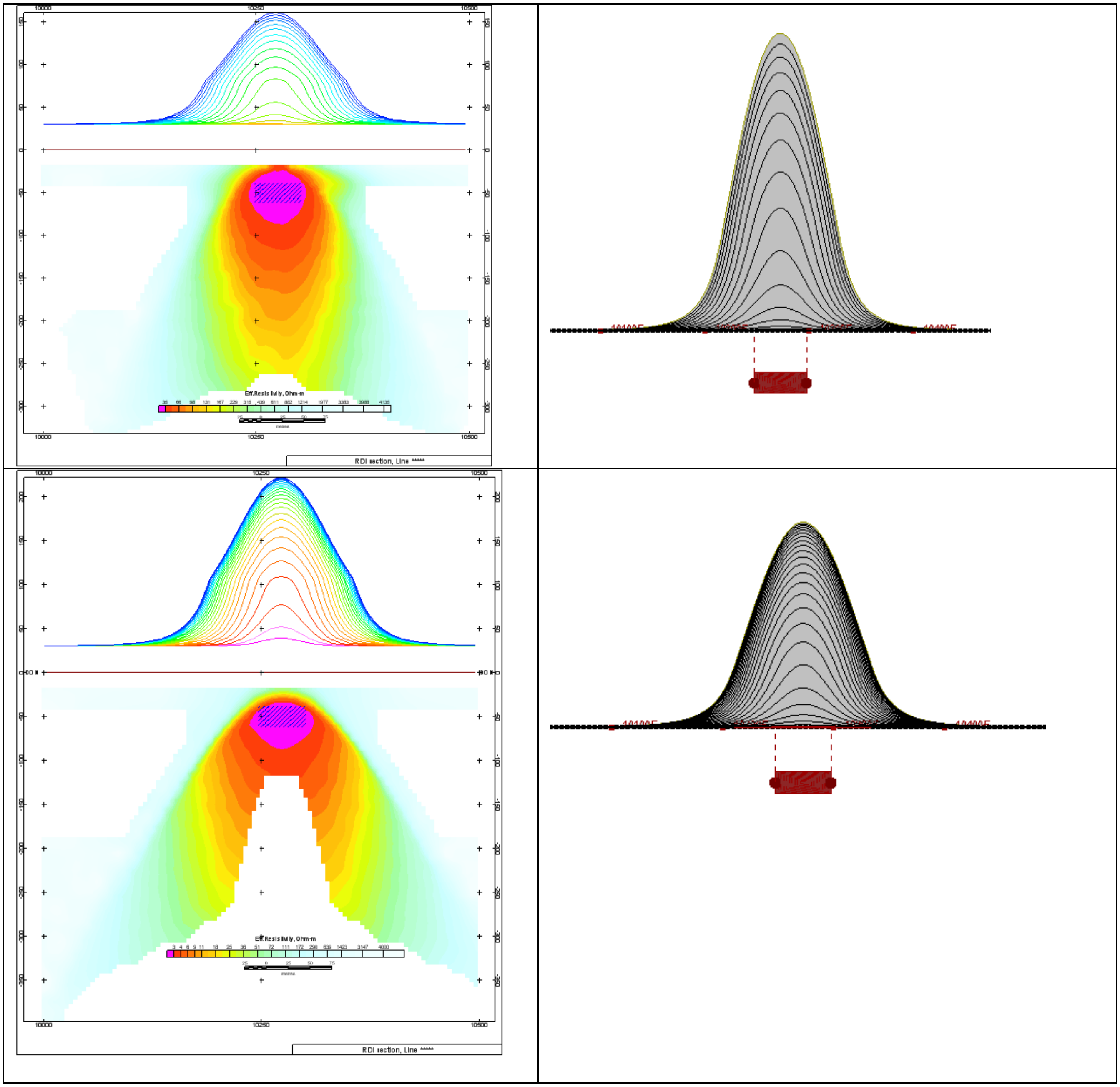


Figure F-6: Maxwell plate model and RDI from the calculated response for horizontal thick (20m) plate – less conductive (on the top), more conductive (below)

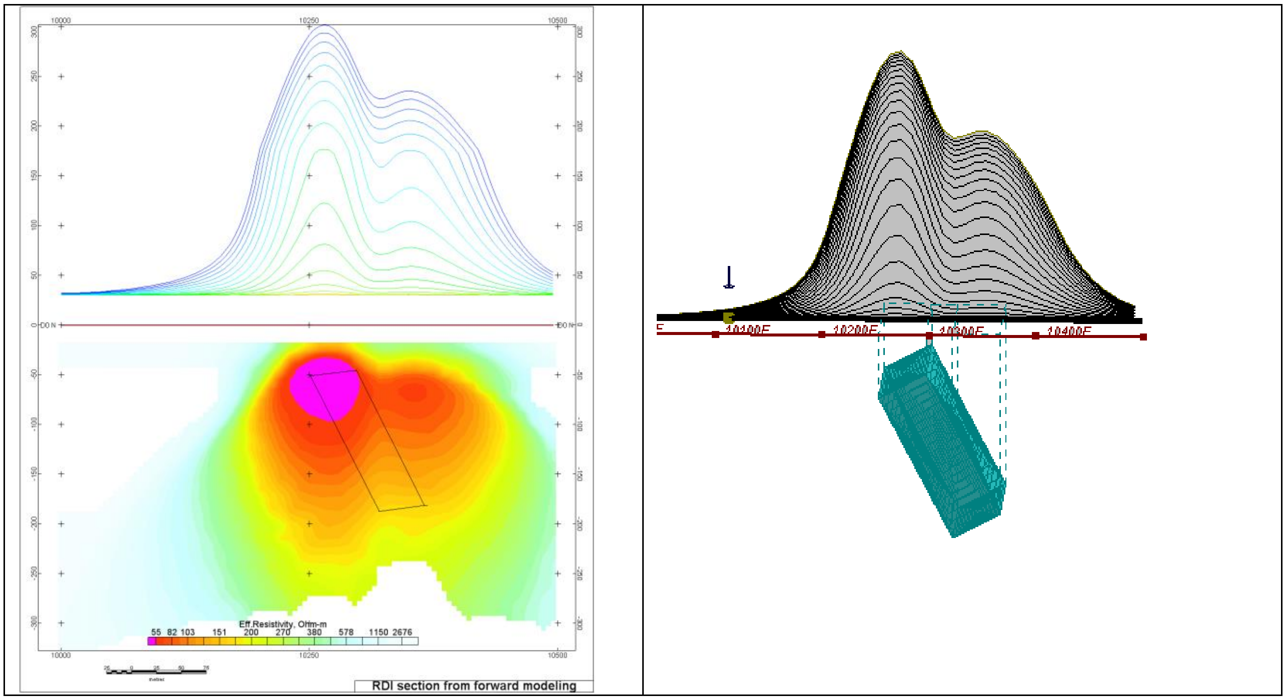


Figure F-7: Maxwell plate model and RDI from the calculated response for inclined thick (50m) plate. Depth extends 150 m, depth to the target 50 m.

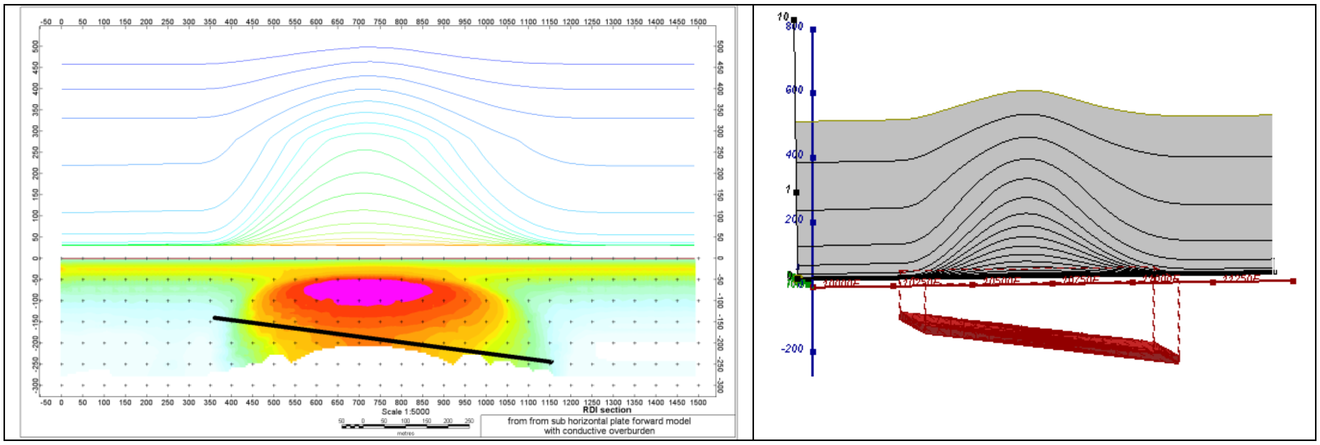


Figure F-8: Maxwell plate model and RDI from the calculated response for the long, wide and deep subhorizontal plate (depth 140 m, dim 25x500x800 m) with conductive overburden.

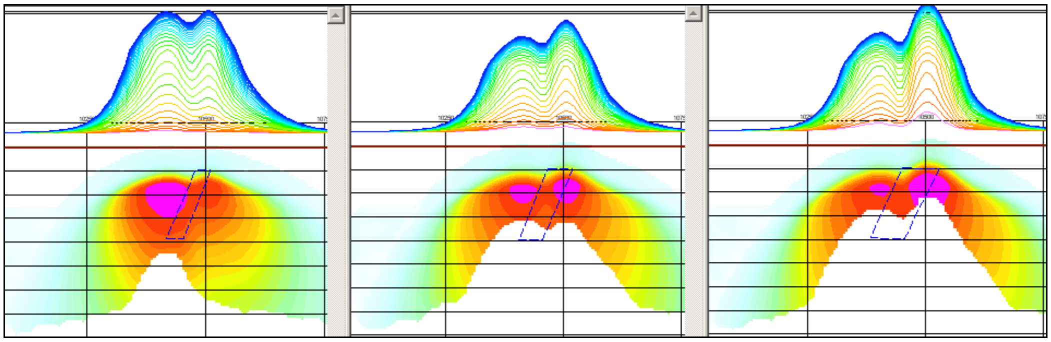


Figure F-9: Maxwell plate models and RDIs from the calculated response for “thick” dipping plates (35, 50, 75 m thickness), depth 50 m, conductivity 2.5 S/m.

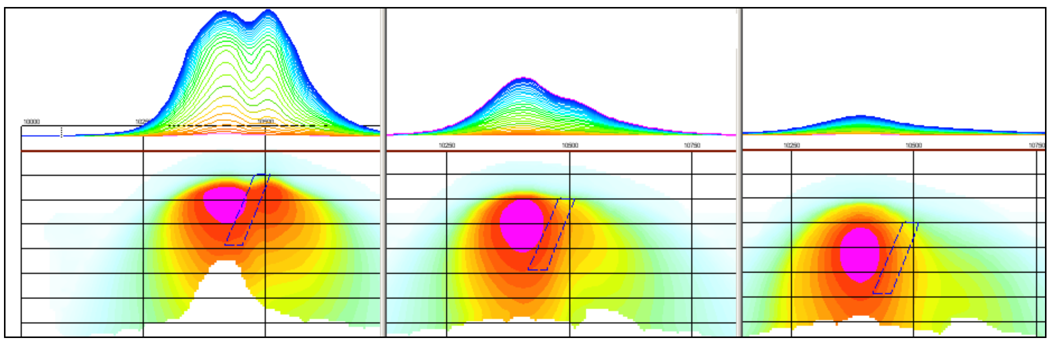


Figure F-10: Maxwell plate models and RDIs from the calculated response for “thick” (35 m thickness) dipping plate on different depth (50, 100, 150 m), conductivity 2.5 S/m.

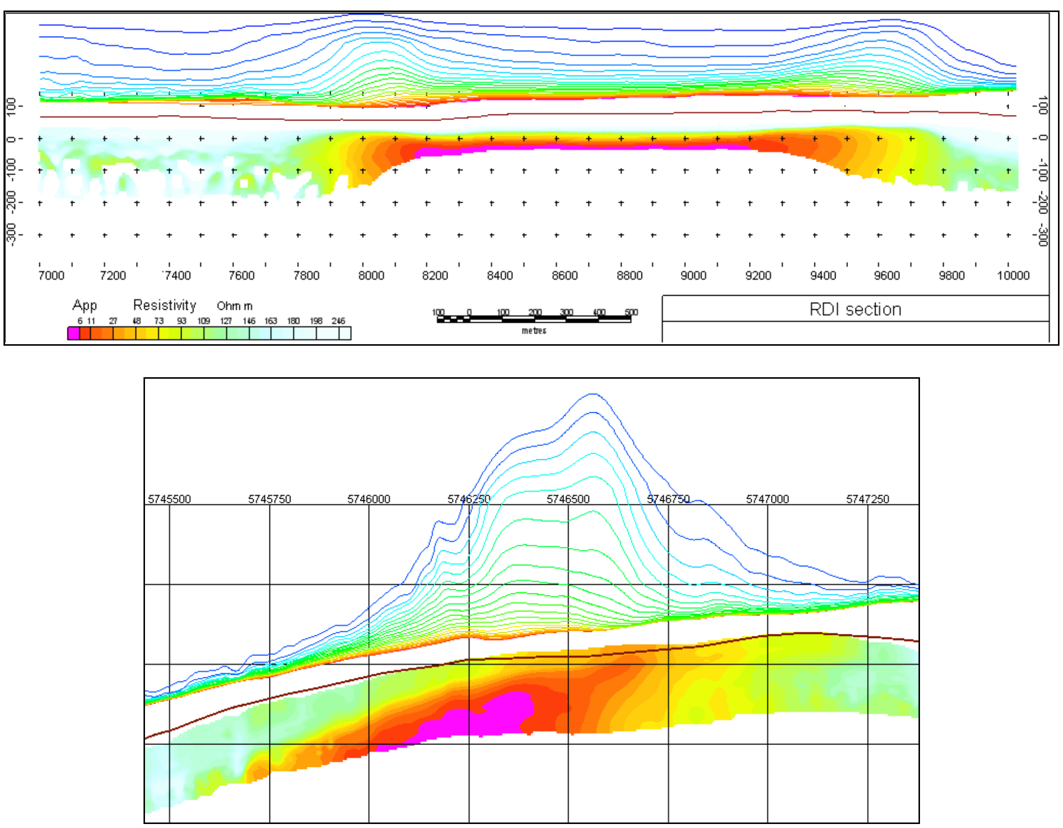
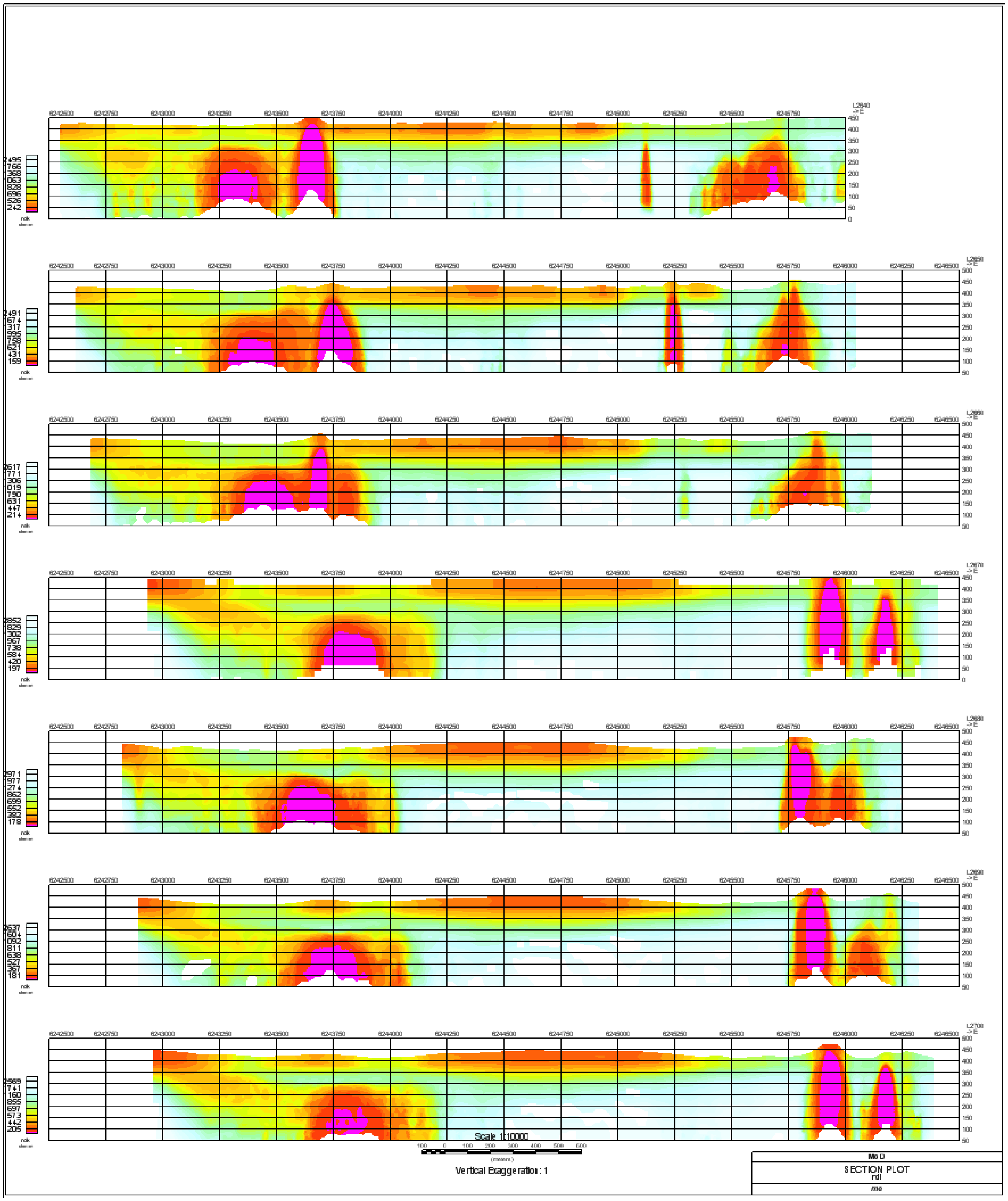


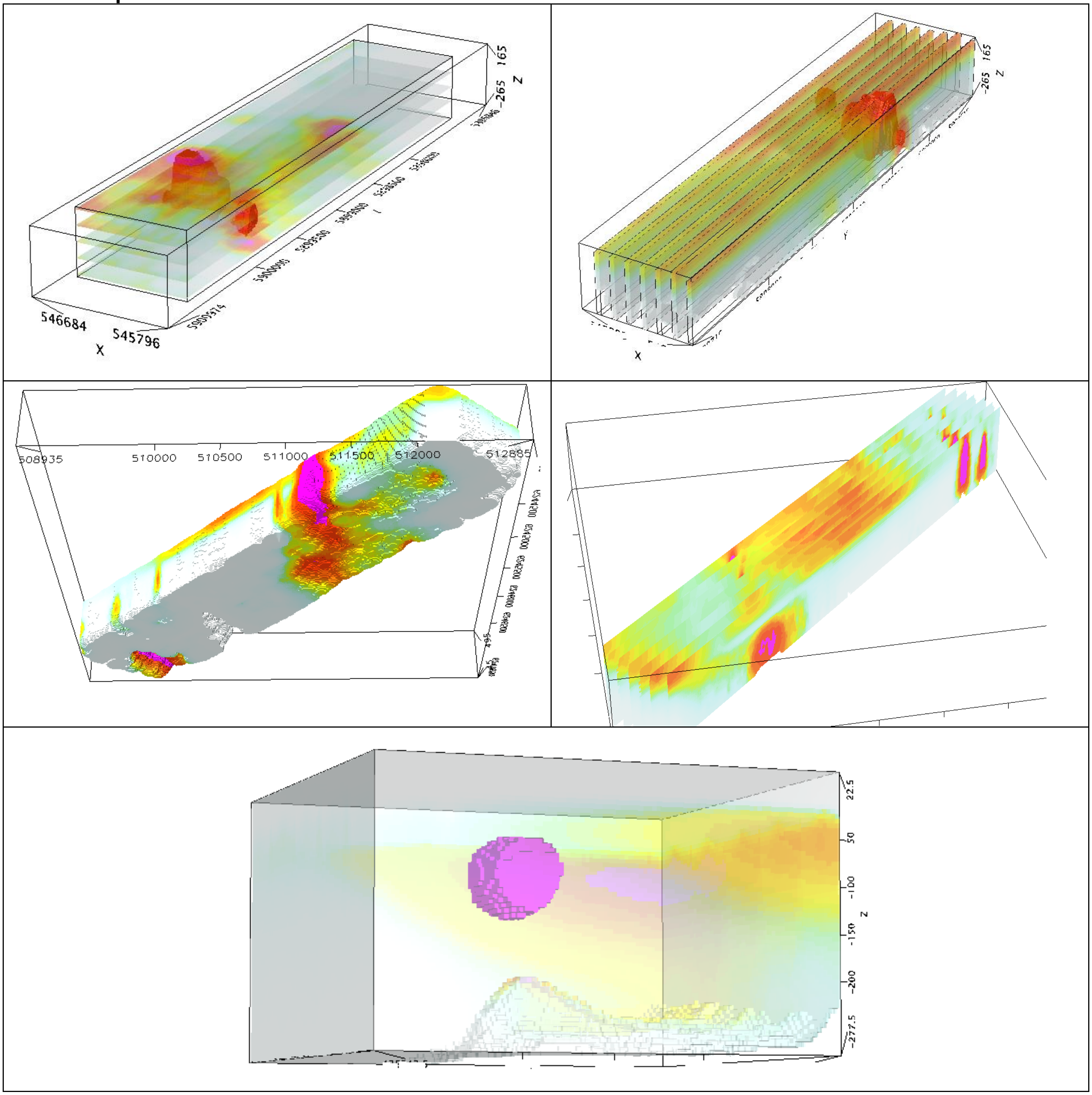
Figure F-11: RDI section for the real horizontal and slightly dipping conductive layers

FORMS OF RDI PRESENTATION

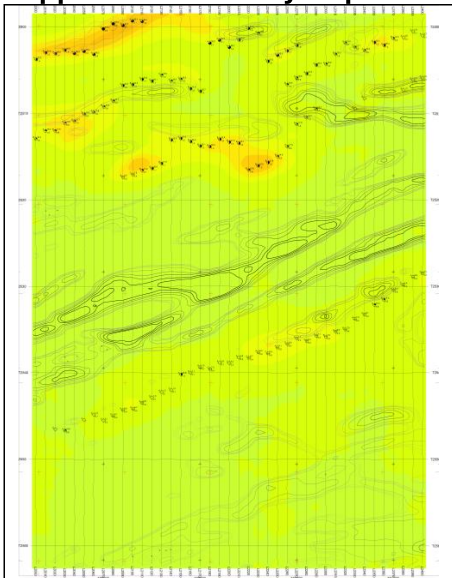
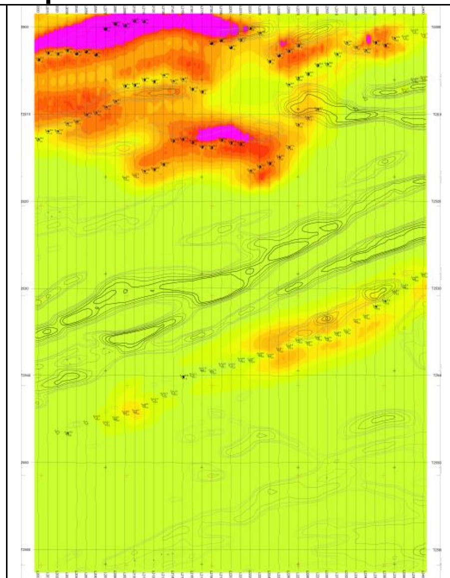
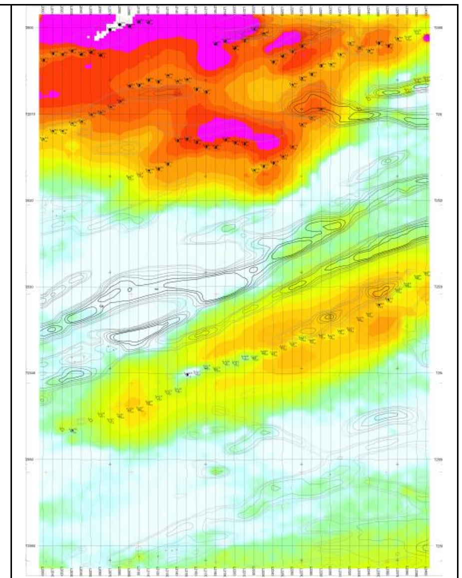
Presentation of series of lines



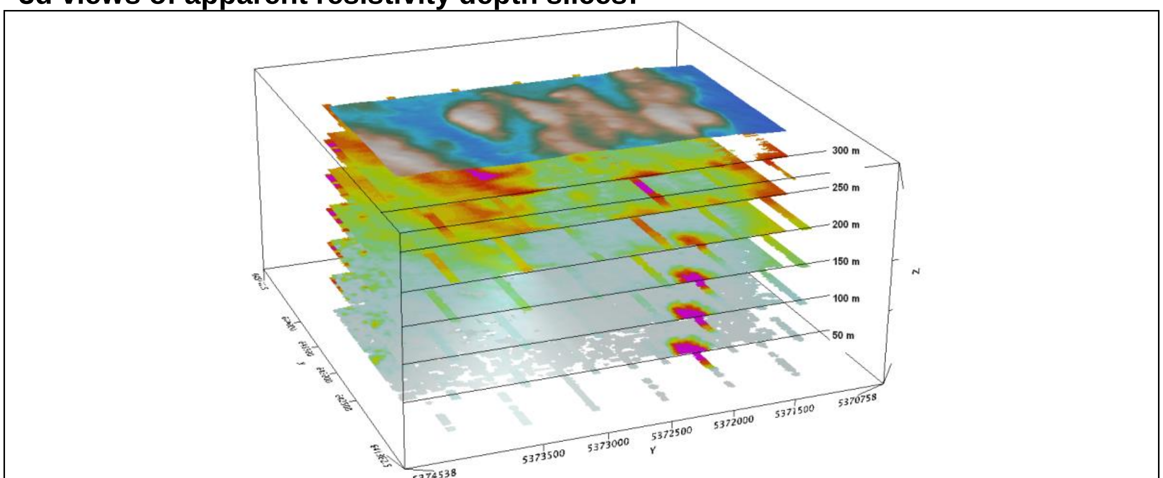
3d presentation of RDIs

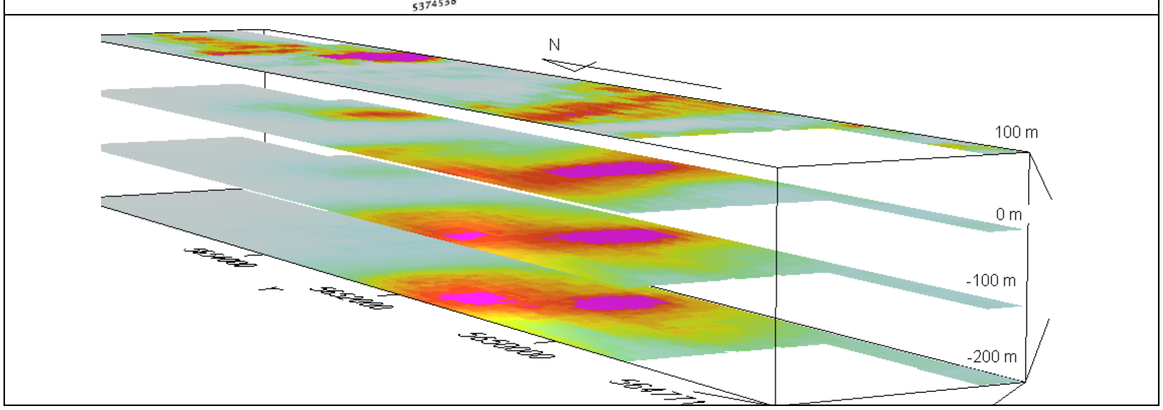


Apparent Resistivity Depth Slices plans:

		
0 m (surface)	-100 m	-200 m

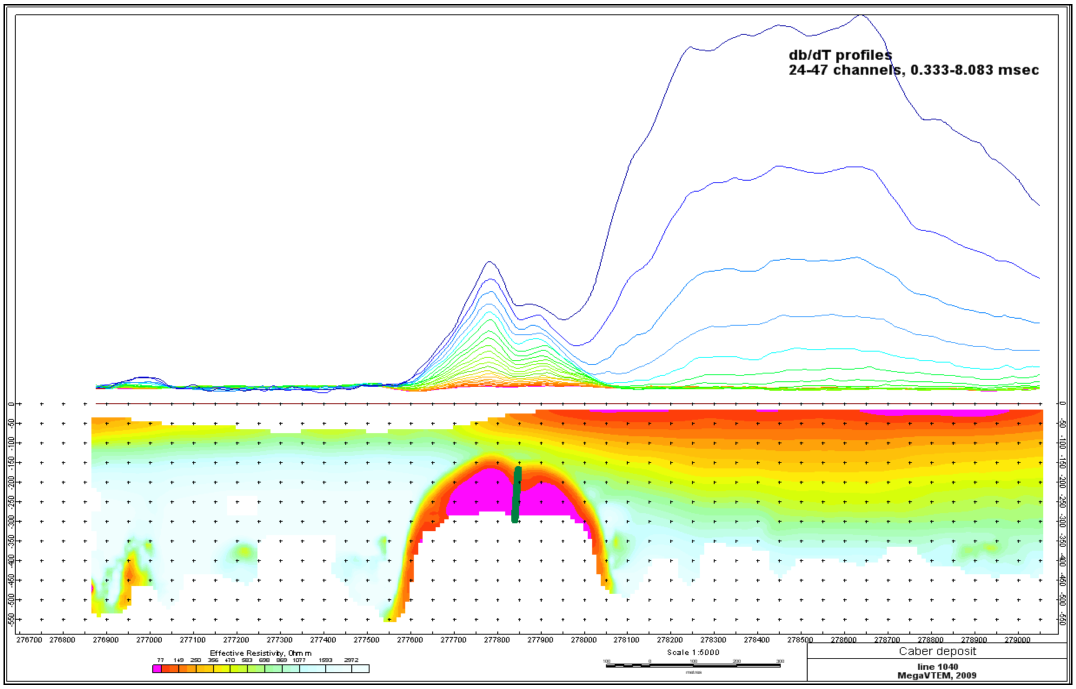
3d views of apparent resistivity depth slices:



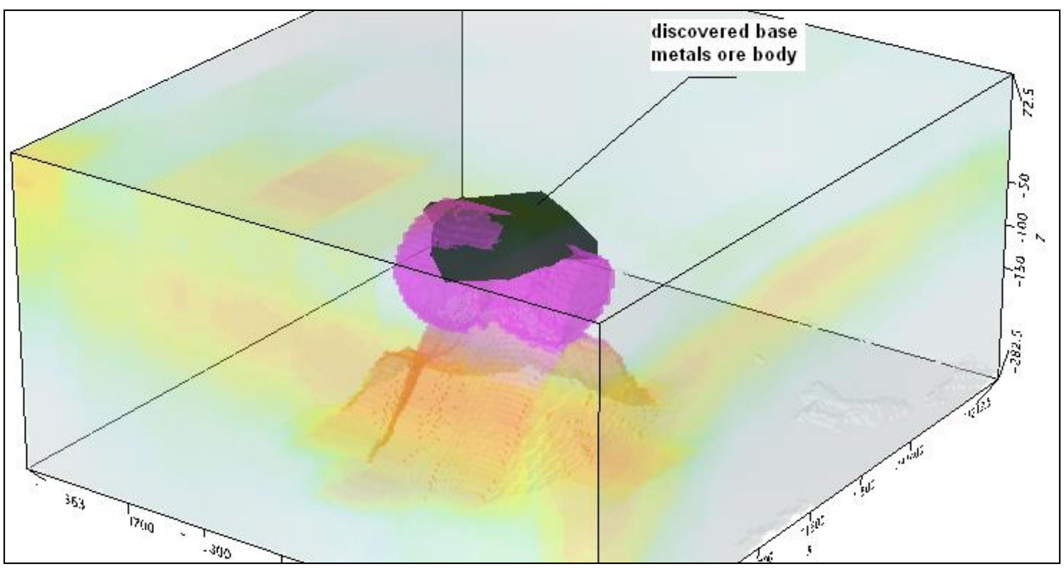


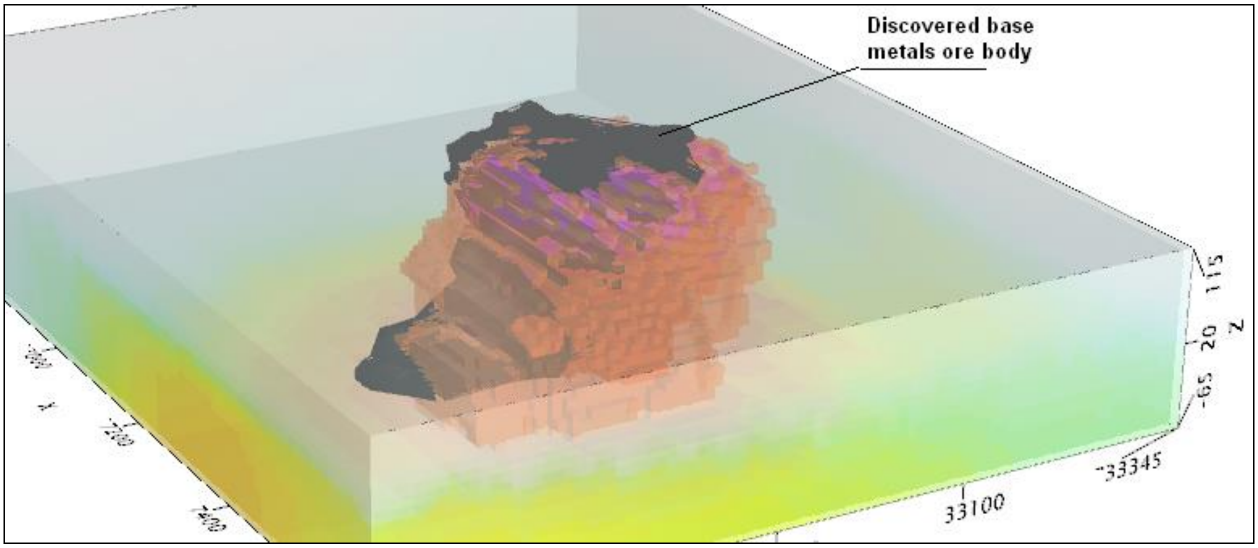
Real base metal targets in comparison with RDIs:

RDI section of the line over Caber deposit ("thin" subvertical plate target and conductive overburden.



3d RDI voxels with base metals ore bodies (Middle East):





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