Matrix GeoTechnologies Ltd.
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Toronto, ON M5C 3C5

INTERPRETATION REPORT

Regarding the Interpretation of the
INDUCED POLARIZATION, RESISTIVITY and MAGNETIC SURVEYS
at LUCKY GRID, PAGWACHUAN LAKE PROPERTY
Longlac, Ontario
on behalf of
GOLDSTREAM EXPLORATION LTD.
TORONTO, ONTARIO

MGT MGT MGT MGT MGT

March 30, 2013

TABLE OF CONTENTS

1. INTRODUCTION 4

2. GENERAL SURVEY DETAILS 5

LOCATION 5

ACCESS 6

SURVEY GRID 6

3. SURVEY WORK UNDERTAKEN 7

GENERALITIES 7

PERSONNEL 7

SPECIFICATIONS 7

INSTRUMENTATION 9

PARAMETERS 9

MEASUREMENT ACCURACY AND REPEATABILITY 9

DATA PRESENTATION 9

4. RESULTS AND SUMMARY INTERPRETATION 11

PREFACE 11

INTRODUCTION TO GRADIENT SURVEYS 11

INDUCED POLARIZATION AND RESISTIVITY RESULTS 12

TOTAL FIELD MAGNETIC DATA RESULTS 14

INTERPRETATION IN PLAN AND DATA MODELING 15

5. CONLUSION AND RECOMMENDATIONS 16

LIST OF APPENDICES

APPENDIX A: STATEMENT OF QUALIFICATIONS

APPENDIX B: IRIS IP6 DIGITAL FORMAT

APPENDIX C: THEORETICAL BASIS AND SURVEY PROCEDURES

APPENDIX D: INSTRUMENT SPECIFICATIONS

APPENDIX E: LIST OF MAPS

LIST OF TABLES AND FIGURES

Figure 1: General Property Location of Lucky Grid 5
Figure 2: Gradient Schematic Array Layout 8
Figure 3: Total Chargeability Plan Map over Lucky Grid 12
Figure 4: Apparent Resistivity Plan Map over Lucky Grid 13
Figure 5: Total Magnetic Field Plan Map over Lucky Grid 14
Figure 6: Interpretation Plan Map over Lucky Grid 15

Table I: Magnetic Survey Coverage 8
Table II: Gradient Survey Coverage 9

1. INTRODUCTION

- **MGT Project #:** P-233
- **Project Name:** Lucky Grid
- **Survey Period:** March 4th to March 7th, 2013
- **Survey Type**: Induced Polarization, Resistivity and Magnetic
- **Client:** Goldstream Exploration Ltd.
- **Client Address:** 65 Queen Street West
  Suite 805, P.O. Box 71
  Toronto ON M5F 2M5
- **Objectives:**

  1. Document the physical properties of the major lithologic units and alteration patterns for compilation with the exploration database.

  2. Ltdrease the exploration program efficiency by better directing the future exploration works and to assist in mapping of general geology, locating structural and alteration features that may favor the precious and base metals presence in the surveyed areas.

  The Gradient array was designed to investigate from 100 to 150 m depth range and was chosen for its high resolution and deep penetration capabilities.

- **Report Type:** Interpretation Report

2. GENERAL SURVEY DETAILS

LOCATION

- **ProvLtde:** Ontario
- **Country:** Canada
- **Nearest Settlement:** Longlac Twp.
- **UTM Coordinates:** UTM Coordinates (NAD 83, Zone 16N)

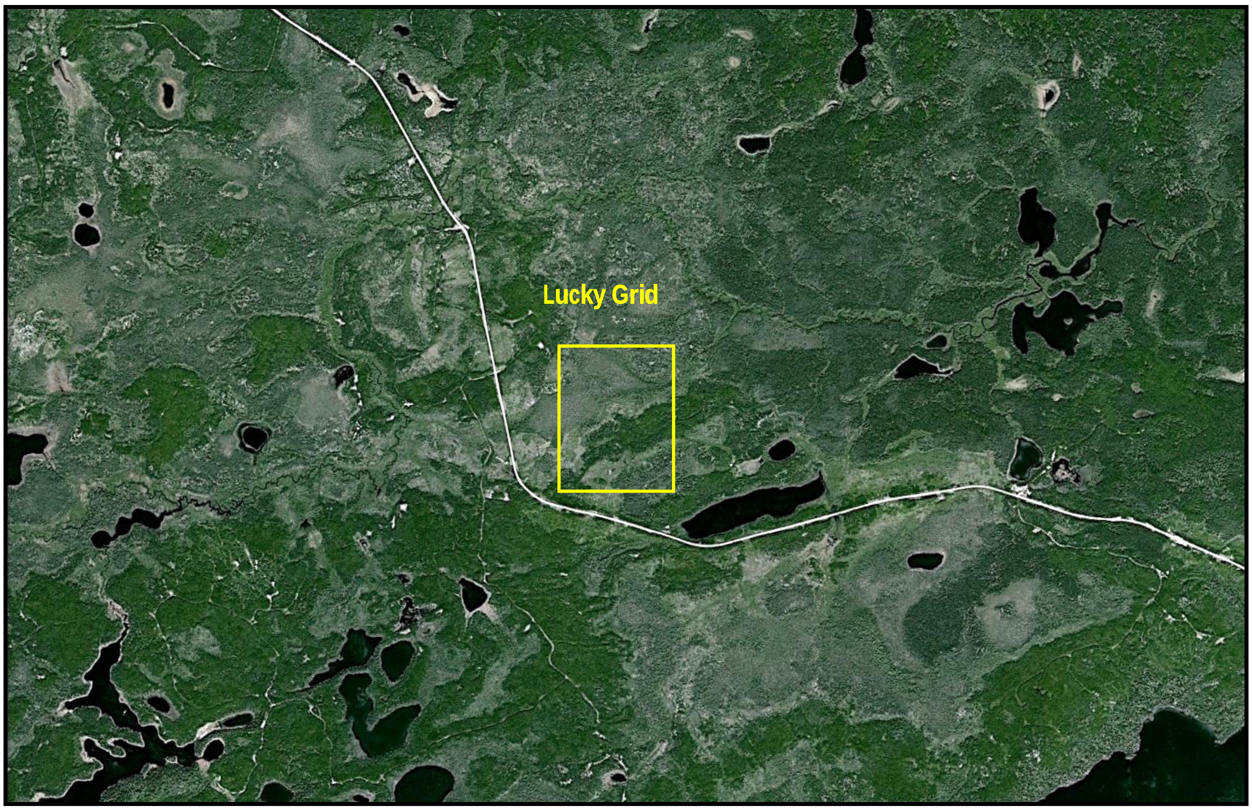


Figure 1: General Property Location of Lucky Grid

ACCESS

- **Base of Operations:** Longlac, Ontario
- **Grid Location:** LUCKY grid is located 30 km east of Longlac.
- **Mode of Access:** The surveyed grid area is accessible by truck.

SURVEY GRID

- **Coordinate Reference System:** UTM (Map Datum NAD83)
- **Established:** Prior survey execution
- **Line Separation:** 100 meters
- **Station Interval:** 25 meters
- **Station Interval Magnetic Survey:** 12.5 meters
- **Method of Chaining:** Metric-chained

3. SURVEY WORK UNDERTAKEN

GENERALITIES

- **Surveyed By:** Matrix GeoTechnologies Ltd.
- **Survey Dates:** March 4th to March 7th, 2013
- **Mob/Demob Days:** None
- **Survey Coverage:** approx. 5.6 km

PERSONNEL

FIELD CREW

- **Project Manager:** Ludvig Kapllani (Toronto, ON)
- **Field Assistants:** Ryan Goudy (Sudbury, ON)
  Mike Dekosse (Ottawa, ON)
  Joseph Mirija (Toronto, ON)
  Roger Gagnon (Longlac, ON)

SPECIFICATIONS

- **Arrays:** Gradient (see Figure 2)
- **Transmitting dipole spacing:** Gradient: $C_1.C_2$ = 1000 m
- **Sampling Interval:** 25 and 12.5 meters
- **Total Gradient Blocks:** 1 block
- **Areal Coverage:** approx 0.6 km^2

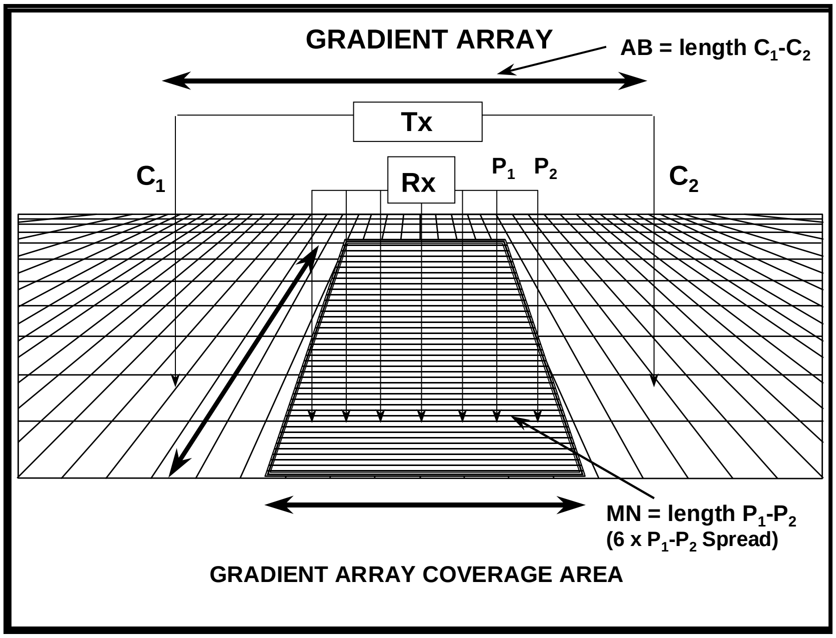


Figure 2: Gradient Schematic Array Layout

SURVEY COVERAGE:

1. **Magnetic Survey:** 6,800.00 m (see Table I)

LINE	START	END	TOTAL (m)
L 2+00W	400N	400S	800
L 1+00W	400N	400S	800
L 0+50W	400N	400S	800
L 0	400N	400S	800
L 0+50E	400N	400S	800
L 1+00E	400N	400S	800
L 2+00E	400N	400S	800
TL4+00N	200W	200E	400
BL 0	200W	200E	400
TL 4+00S	200W	200E	400
		TOTAL	**6800 m**

Table I: Magnetic Survey Coverage

2. **Gradient Survey:** 5,600.00 m (see Table II)

LINE	START	END	TOTAL (m)
L 2+00W	400N	400S	800
L 1+00W	400N	400S	800
L 0+50W	400N	400S	800
L 0	400N	400S	800
L 0+50E	400N	400S	800
L 1+00E	400N	400S	800
L 2+00E	400N	400S	800

		TOTAL	**5600 m**

Table II: Gradient Survey Coverage

INSTRUMENTATION

- **Receiver:** IRIS IP-6 (time domain / 10 channels)
- **Transmitter:** Walcer 9000 Transmitter
- **Power Supply:** MG-12 Honda 12.0 KW Generator

PARAMETERS

- **Input Waveform:** 0.0625 Hz square wave at 50% duty cycle (16 seconds On/Off)
- **Receiver Sampling Parameters:** Customize windows
- **Measured Parameters**:
  1) Chargeability in millivolts/Volt (10 time slices + total area under decay curve)
  2) Primary Voltage in millivolts and Input Current in amperes for Resistivity calculation according to the pole-dipole and gradient arrays geometry factor[1].

MEASUREMENT ACCURACY AND REPEATABILITY

- **Chargeability**: generally $\leq$ 0.5 mV/V.
- **Resistivity:** less than 5% cumulative error from Primary voltage and Input current measurements.

DATA PRESENTATION

- **Maps:**

Reconnaissance Plan Maps: Posted/contoured Total Chargeability, Apparent Resistivity and Magnetic, at 1:2500 scale.

Interpretation Plan Map: Outlining anomalies, interpreted zones of thickened-mineralization, resistivity and magnetic zones in plan at 1:2500 scale.

- **Digital:**

TDIP Raw data: Iris IP-6 format (see Appendix B)

[1] See BRGM/IRIS IP6 receiver operating manual and Appendix B.

Gradient Processed data:

Geosoft **.XYZ** files using the following format:

Column 1 ⇒ Station - Eastings, in meters
Column 2 ⇒ Line – Northings, in meters
Column 3 ⇒ Total Chargeability, in mV/V
Column 4 ⇒ Apparent Resistivity, in Ω-m

4. RESULTS AND SUMMARY INTERPRETATION

PREFACE

The interpretation of exploration data requires combining different types of information to provide a geologic model. It implies bringing together all data components into an image that makes conceptual sense in terms of the geology of the exploration area. The identification of geologic objects and the inference of a spatial description of the lithology—consistent with all available information—are the objectives of the process. The more information that can be utilized, the greater the degree of confidence is going to be in the model generated (more certain is the result of the inference). The interpretational process should serve to combine different types of geophysical data, petrophysical information on the rock properties, and information on the geology of the area.

INTRODUCTION TO GRADIENT SURVEYS

The gradient array survey results are relied upon as a bulk conductivity\chargeability mapping tool and large transmit dipoles employed provide significant depth of investigation in the central region of the grid and the relatively narrow receiver dipoles also offer significant lateral resolution, but are none the less subject to significant volume averaging.

Based on the array geometry chosen, as per clients requests, gradient reconnaissance investigation depth approaching 100 to 150 meters were obtained - with the deepest penetration in the middle third of the array and shallower depths of investigation progressively closer to the transmit electrodes. The gradient apparent resistivity and chargeability data therefore represent a bulk average, from surface to depth, when observed in plan view. Additionally, the gradient array anomaly patterns are essentially sub-vertical (i.e. without complex, asymmetric pant-leg shapes, as in pdp and dpdp), and can be visualized in plan in the same manner as magnetic or gravity data. However, in the presence of moderate to shallow dips, the gradient array anomalies tend to be shifted down-dip relative to shallower arrays, such as pole-dipole – greater discrepancies can also occur with dipole-dipole, owing to the asymmetric array geometry, which tends to bias anomalies towards the infinity pole.

The geophysical interpretation plan presents the interpreted anomaly symbols, highlighting the strength and resistivity association of the induced anomaly to their source/alteration type:

- **a)** <u>High resistivity</u> IP symbols, related to either disseminated sulphides or magnetite possibly associated with quartz-carbonate alteration or, alternatively, more felsic/less porous geology and/or bedrock/overburden topographic effects;
- **b)** <u>Nil (flat) resistivity and contact-type</u> IP symbols likely correspond to possibly more weakly-altered and/or thin/buried sulphide zones and/or mineralization along geologic contacts, or magnetite/hematite; and
- **c)** <u>Low (conductive) resistivity</u> IP symbols, most likely representing the key target signature relating to possible massive to stringer sulphides, mineralized shear zones or, alternatively, faulted or clay-altered disseminated sulphides, magnetite/hematite.

Clearly, while all <u>anomaly types</u> (high ρ / low ρ / nil ρ), could potentially represent equally valid exploration targets, the high resistivity/increased chargeability signatures best represent the key geophysical targets; however the low resistivity signatures, which are indicators of massive mineralization might represent key exploration targets. The line-to-line correlation of anomalies must be based primarily on the resistivity association (i.e. resistive and conductive anomalies never aligned along the same axis due to likely dissimilar mineralogy / alteration / origin) – thereby providing some measure of geologic/geophysical control to the interpretation.

It is important to note that resistivity associated with increased IP signature represent the local value of resistivity compared to adjacent values. For example a low resistivity axis represents the lowest local resistivity values despite of the amplitude of resistivity host. Finally, fault structures have also been interpreted based on evidence from the TDIP results, generally represented by lower resistivity and lower chargeability.

It is important to notice, that generally geophysical parameters and especially total chargeability suffer by anisotropy, unequal physical properties along different axes; consequently the parameters are highly affected by surveying direction. For that reason, the authors recommend drilling along the line to achieve better results and compare the interpretation with exploration results obtain in the line or adjacent to the line.

Induced Polarization and Resistivity Results

The following discussion summarizes the results of the Pole-Dipole TDIP \ Resistivity survey over the **Lucky Grid**, undertaken by **Matrix GeoTechnologies Ltd** in March, 2013. The present geophysical interpretation makes use of TD Induced Polarization \ Resistivity data plan map of gradient survey, with chargeability parameter able to detect and discern mineralization ranging from disseminate to massive concentrations and resistivity data mostly characterizing the geological structures.

Induced Polarization\Resistivity results over the **Lucky Grid** successfully define the geophysical signatures potentially associated to lithologic changes, structures, and chemical alteration. Total chargeability and apparent resistivity show that the property is generally characterized by relatively high resistivity, especially to the east and west, suggesting the predominance of low conductivity geological units, such as mafic units and felsic\qtz\carbonate alteration and weak to very strong chargeability responses at shallow depth.

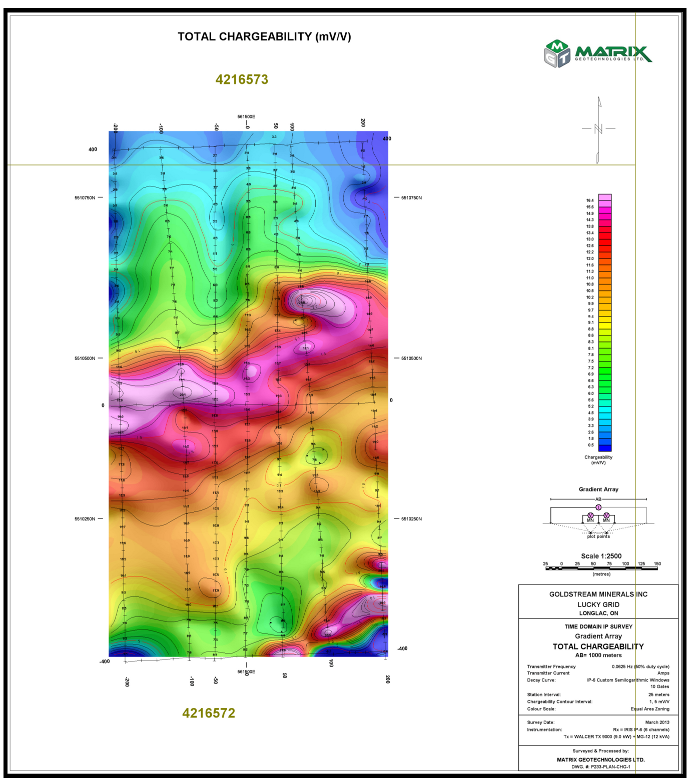


Figure 3: Total Chargeability Plan Map over Lucky Grid

Gradient total chargeability responses (Figure 3) at **Lucky Grid** are characterized by wide range in strength, varying between questionable\weak to very strong but generally falling in the moderate category (avg. 9.2 mV/V) – consistent with relatively mineralized environment, with the peaks most likely corresponding to higher mineralization content\IF\graphite or argillitic alteration at depth. In addition, it is important to emphasize that the chargeabilities seem to be stronger to the grid center and east, likely representing increase sulphide\IF\graphite content. Statistical analysis of total chargeability data shows that only 60 % of total chargeability data falls in moderate to strong category and the rest falling in questionable to weak category, with induced polarization peaks ranging from 9.0 mV/V to over 38.6 mV/V, suggesting weak to high contrast ratio of induced polarization anomalies over the background.

Gradient chargeability results clearly identify a prominent zone of geophysical interests (**ZGI**), located to the center of surveyed grid (see Figure 3 and 6) characterized moderate to strong induced polarization responses. The prominent chargeability zone is relatively wide (about 150 meters) and seems to trend NEN-WSW; however short EW trends are observed as well.

Apparent Resistivity data (Figure 4) display a wide range, varying between 24 ohmm and 24.4 kohmm (avg. 3.7 kohmm); indicative of relatively low porosity bedrock at depth – with the average consistent with compact mafic rocks. The apparent resistivity data define high resistivity almost EW and some ENE-WSW trending lineaments, interpreted as felsic volcanic or diabase\qtz\carbonate altered dykes. The very high resistivity values possibly reflect the shallow occurrence of volcanics or interpreted dykes. High resistivity zones are relatively thin, except the wide resistive signature to the south - short trending, showing very good line-to-line correlation; however local breaks and displacements are observed suggesting aggressive tectonic activity. Furthermore, apparent resistivity plan map show the presence of low resistivity geological environment to the north and south-east; interpreted as sedimentary units (see Figure 4 and 6).

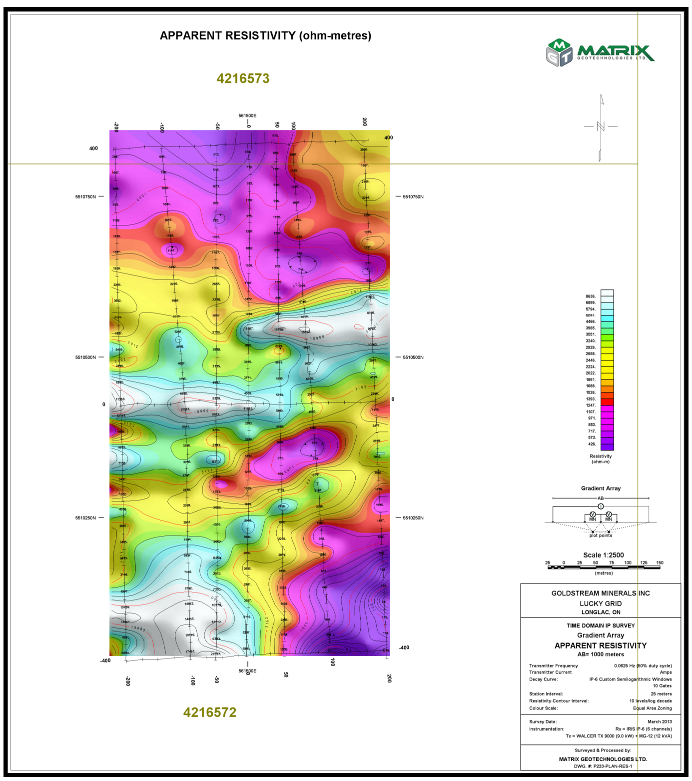


Figure 4: Apparent Resistivity Plan Map over Lucky Grid

Statistical analysis of apparent resistivity shows that less 70% of resistivity data falls in moderate to very high category, indicator of compact rocks at depth and the rest fall in low category, suggesting presence porous rocks such as metasediments.

FFT processing of apparent resistivity data shows the presence of several fault-like low resistivity lineaments (see Figure 6), generally trending ENE-WSW that seem to split and displace some of prominent features. Several interpreted faults seem to parallel some of prominent induced polarization feature especially to the grid center likely representing regional faulting system.

TOTAL FIELD MAGNETIC DATA RESULTS

The fundamental factor influencing potential field anomalies is the mineralogy of the rocks, which control magnetic susceptibility. The magnetic field is controlled by the accessory minerals in a rock, principally magnetite and their distribution may not be uniform for various reasons: concentration in distinct layers; uneven hydrothermal alteration etc. Magnetic survey is a proven efficient tool in mineral\iron prospecting and\or the delineation of geological contacts between intrusive rocks and sedimentary units.

Ground total field magnetic (TFM) map (Figure 5) over **LUCKY GRID** show very complicated and chaotic distribution of magnetic signatures. The magnetic anomalies observed are asymmetric even when causative body distribution is symmetric; extremely complicating the interpretation of magnetic data. The authors applied reduction to pole technique to convert magnetic anomalies to symmetrical patterns; however the results were similar to the raw data distribution. In addition, analytic signal of TFM was calculated with no apparent changes in magnetic distribution, most likely suggesting no relevant changes in the causative bodies location.

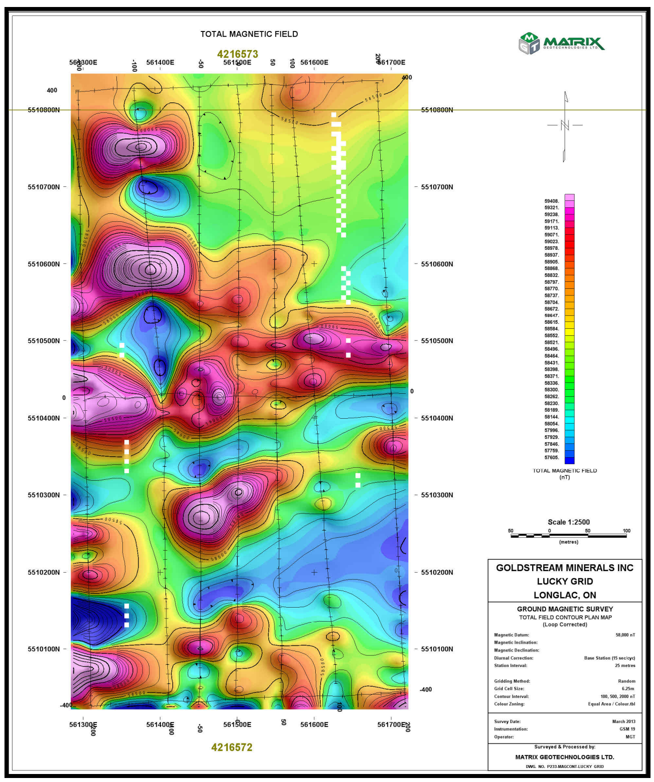


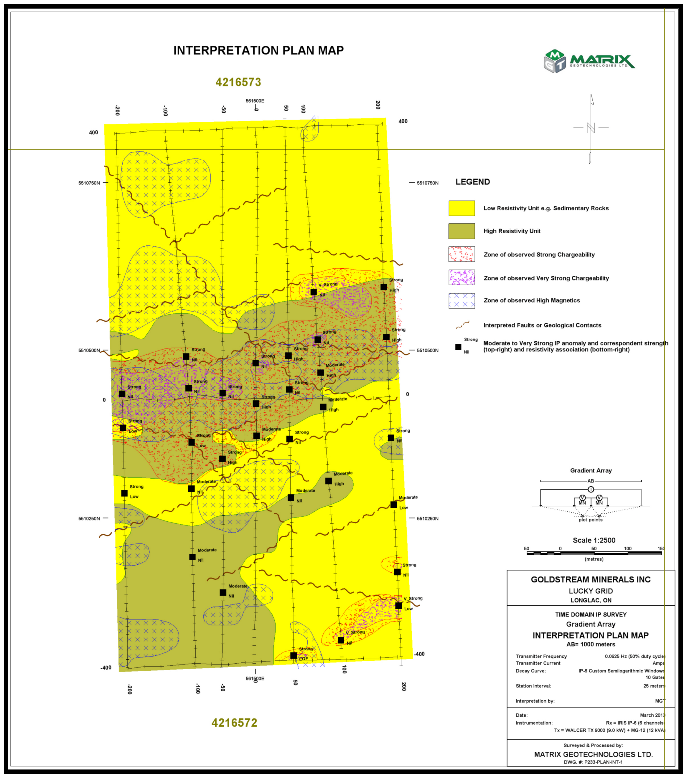
Figure 5: Total Magnetic Field Plan Map over Lucky Grid

Magnetic disturbances are observed all over the surveyed grid; however the authors will be focused only in the relation of magnetic responses and possible mineralization. As mentioned, magnetic responses are very chaotic, hardly show any long trend continuation and seem to be broken and displaced by local faults.

It is important to note that despite the limited coverage of magnetic survey, the incidence of almost NS geological elements (e.g. faults or discordant dykes) is quite possible and demonstrated by several almost NS low magnetic signatures or NW rending bulls-eye magnetic signatures.

INTERPRETATION IN PLAN AND DATA MODELING

Interpretation plan map (Figure 6) is based on integration of plan interpretation of induced polarization (red and purple hatched surfaces), apparent resistivity (yellow and brown solid hatched surfaces) and magnetic susceptibility (blue cross-hatched surface). Apparent resistivity and magnetic susceptibility were used to define geology and induced polarization and magnetic to define in plan mineralization distribution.



<u>Figure 6: Interpretation Plan Map over Lucky Grid</u>

Interpreted apparent resistivity in plan show the presence of two geologic units – sedimentary rocks (yellow solids) characterized by low resistivity and interpreted intrusive (and brown solids) characterized by moderate to high resistivity. Furthermore, FFT processing of apparent resistivity shows the presence of high resistivity thin lineaments that exhibit very good line-to-line correlation and interpreted as qtz\carbonate veins or concordant dykes.

Based on their amplitude and behavior, the authors divided the surveyed grid in two zones of increased chargeability (Figure 6), located to the center and south of surveyed grid. The southern anomalous zone is characterized by very strong chargeability values, closely associated with low resistivity and weak magnetic, usually indicator of graphites. On the other hand, central anomaly is characterized by strong chargeability signatures generally associated with high\nil\contact resistivity and increased magnetic, suggesting the presence of disseminated sulphides and increased magnetite content.

5. CONLUSION AND RECOMMENDATIONS

Gradient time domain induced polarization \ resistivity and magnetic surveys over the **LUCKY GRID** have identified geophysical signatures, potentially related to lithologic contacts or geochemical alteration, fault-fracture, structures and, most importantly, the presence of increased chargeability, potentially related to mineralization and exploration objectives.

The integration of drilling results and surface geology with interpreted geophysical results shows an excellent correlation between know mineralization and induced polarization results in plan, relating known mineralization from weak to very strong induced polarization signatures and providing vital information about the mineralization nature of most prominent induced polarization signatures.

In response to the survey objectives, two zones of increased chargeability have been identified in the surveyed grid, one of which is of significant strength and have prominent characteristics for exploration follow-up surveys.

Induced Polarization and Resistivity responses at **LUCKY GRID** can be divided based on their associated resistivity and strength, in: disseminated mineralization type and MS type\mineralization along sheared zone\ IF.

- Disseminated mineralization type of interest is characterized by weak to strong chargeability associated to high\contact resistivity.

- Massive mineralization\ mineralization along sheared zone\IF type of signatures is characterized by strong to very strong chargeability associated to conductive host.

Induced polarization responses in plan range from weak to very strong – the strong to very strong chargeability signatures might be as results of surface surge of minerals and absence of overburden.

The gradient survey shows the presence of several long almost EW and NE-SW trending induced polarization axes that might extend at greater depths. In addition, gradient data show that most of prominent anomalies are still open to the east and west; consequently the authors strongly recommend extending reconnaissance survey coverage (gradient and magnetic surveys) in these directions in order to better understand the spatial distribution of mineralization.

The authors strongly recommend to undertake an extensive detailing geophysical and geochemical surveys in order to better explain the geological model and mineralization extension in plan; however the geophysical surveys must be design to approach deeper exploration depths.

The correlation of induced polarization\resistivity and magnetic susceptibility data shows that the property shows two different target types:

1. Strong induced signatures associated with strong magnetic susceptibility, most likely represent IF\magnetite or sulphide closely associated with increased Fe^{+}, especially over central part of surveyed grid;

2. Moderate to very strong induced polarization signatures associated with weak to moderate magnetic susceptibility, most likely representing sulphides or graphite.

We recommend that these results and prioritized targets be combined with the existing geoscientific database and the results carefully evaluated prior to DDH-testing. Particular attention should be given to the probable type of mineralization and/or alteration indicated by the resistivity association in plan map (i.e. high ρ = disseminated, nil ρ = contact, low ρ = argillic or stringer-to-massive). Close comparisons against other geological information can provide insight on the type-mineralogy of many induced polarization targets. Compiling these data on the Induced Polarization / Resistivity maps can help discriminate mineralized targets from the geological chargeability signatures.

RESPECTFULLY SUBMITTED

GENC KALLFA, B.SC., P.GEO.
Senior Geophysicist

LUDVIG KAPLLANI. PH.D., A.I.P.G.
Senior Geophysicist

Toronto, April 2013

APPENDIX A

STATEMENT OF QUALIFICATIONS:

I, Ludvig Kapllani, declare that:

1. I am a consulting geophysicist with residence in Toronto, Ontario and am presently working in this capacity with Matrix GeoTechnologies Ltd. of Toronto, Ontario.

2. I obtained a Bachelor's of Science Degree, (B.Sc.), Geophysics, in spring 1976, a Master's of Science Degree, (M.Sc.), Geophysics, in June 1986, Ph.D in January 1995, Geophysics, from Polytechnic University of Tirana, Albania and Associate Professor, February 1995 (titles recognized by University of Toronto, August 1999).

3. I have practiced my profession continuously since May 1976, in North America and Europe.

4. I am member of **AMERICAN INSTITUTION OF PROFESSIONAL GEOLOGISTS (AIPG)**, membership number CPG-1138.

5. I have no interest, nor do I expect to receive any interest in the properties or securities of **GOLDSTREAM EXPLORATION LTD**.

6. I am the author of this report and the statements contained represent my professional opinion based on my consideration of the information available to me at the time of writing this report.

Toronto, Ontario
April, 2013

Ludvig Kapllani, Ph.D., A.I.P.G.

Senior Geophysicist
Matrix GeoTechnologies Ltd.

APPENDIX A

STATEMENT OF QUALIFICATIONS:

I, Genc Kallfa, declare that:

1. I am a consulting geophysicist with residence in Toronto, Ontario and am presently working in this capacity with Matrix GeoTechnologies Ltd. of Toronto, Ontario.

2. I obtained a Bachelor's of Science Degree, (B.Sc.), Geophysics, from the Polytechnic University, in Tirana, Albania, in spring 1987.

3. I have practiced my profession continuously since May 1987, in North America and Europe.

4. I am member of **ASSOCIATION OF PROFESSIONAL GEOSCIENTISTS OF ONTARIO (APGO)**, membership number 0404.

5. I have no interest, nor do I expect to receive any interest in the properties or securities of **GOLDSTREAM EXPLORATION LTD**.

6. I am the author of this report and the statements contained represent my professional opinion based on my consideration of the information available to me at the time of writing this report.

Toronto, Ontario
April, 2013

Genc Kallfa, B.Sc., P.Geo. (ON)

Senior Geophysicist
Matrix GeoTechnologies Ltd.

APPENDIX B

IRIS IP6 DIGITAL FORMAT

```
#1388       Aug 16  2004          12:58
     dipole 4  trigger 1  domain Time  T wave
     Programmable wind.  Grad. RCTGL array

     V=   42.734 Sp=    6  I=  540.00 Rs= 15.46
     Ro=  27563.8 Ohm.m    M=    4.37 E=  0.1
     M1= 12.11  M2= 10.29  M3=  8.50  M4=  7.12
     M5=  6.10  M6=  5.09  M7=  3.88  M8=  2.95
     M9=  2.49  M10=  2.14

     cycl=  12 Time= 4000  V_D= 2620  M_D=  120
     T_M1= 120  T_M2= 120  T_M3= 180  T_M4= 240
     T_M5= 240  T_M6= 480  T_M7= 480  T_M8= 640
     T_M9= 640  T_M10= 640

     Spacing config. :  Metric
       XP= -475.0  Line=  800.0
        D=  -25.0  AB/2=  650.0

#1389       Aug 16  2004          12:58
     dipole 5  trigger 1  domain Time  T wave
     Programmable wind.  Grad. RCTGL array

     V=  140.057 Sp=  -11  I=  540.00 Rs= 10.22
     Ro=  97194.5 Ohm.m    M=    4.16 E=  0.0
     M1= 12.07  M2= 10.23  M3=  8.37  M4=  6.87
     M5=  5.78  M6=  4.78  M7=  3.78  M8=  2.67
     M9=  2.26  M10=  1.97

     cycl=  12 Time= 4000  V_D= 2620  M_D=  120
     T_M1= 120  T_M2= 120  T_M3= 180  T_M4= 240
     T_M5= 240  T_M6= 480  T_M7= 480  T_M8= 640
     T_M9= 640  T_M10= 640

     Spacing config. :  Metric
       XP= -500.0  Line=  800.0
        D=  -25.0  AB/2=  650.0
```

APPENDIX C

GRADIENT TDIP ARRAY THEORY

The Gradient Array measurements are unique in that they best represent a bulk average of the surrounding physical properties within a relatively focused sphere of influence, roughly equal to the width of the receiver dipole, penetrating vertically downward from surface to great depths.
The resistivity is among the most variable of all geophysical parameters, with a range exceeding 10^6. Because most minerals are fundamentally insulators, with the exception of massive accumulations of metallic and submetallic ores (electronic conductors) which are rare occurrences, the resistivity of rocks depends primarily on their porosity , permeability and particularly the salinity of fluids contained (ionic conduction), according to Archie's Law. In contrast, the chargeability responds to the presence of polarizable minerals (metals, submetallic sulphides and oxides, and graphite), in amounts as minute as parts per hundred. Both the quantity of individual chargeable grains present, and their distribution with in subsurface current flow paths are significant in controlling the level of response. The relationship of chargeability to metallic content is straightforward, and the influence of mineral distribution can be understood in geologic terms by considering two similar, hypothetical volumes of rock in which fractures constitute the primary current flow paths. In one, sulphides occur predominantly along fracture surfaces. In the second , the same volume percent of sulphides are disseminated throughout the rock. The second example will, in general, have significantly lower intrinsic chargeability.

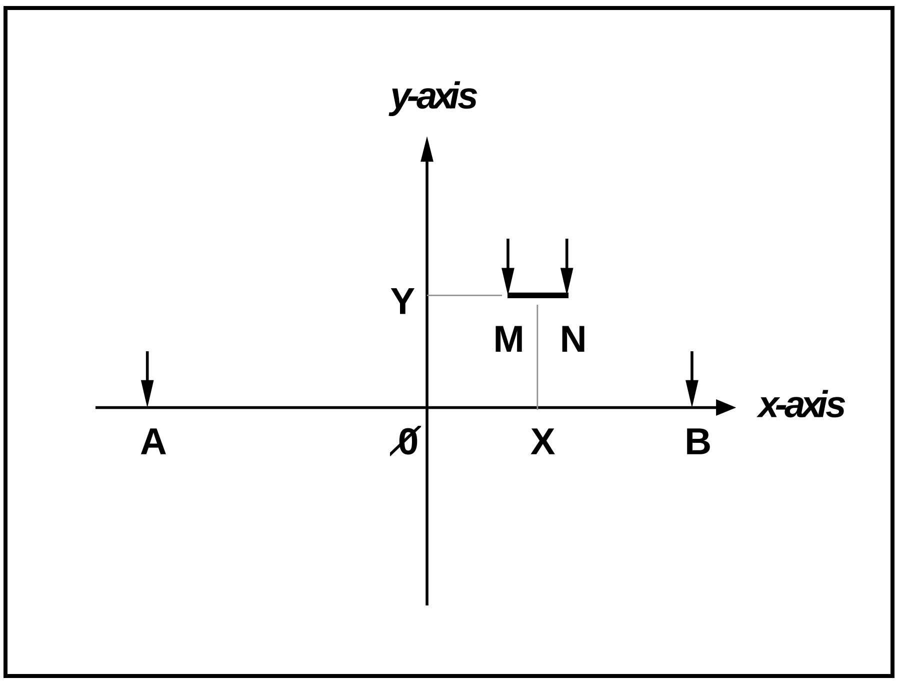


Figure C1: Gradient Array Configuration

Using the diagram in Figure C1 for the gradient array electrode configuration and nomenclature:[2], the gradient array apparent resistivity is calculated:
where: the origin **0** is selected at the center of **AB**
the geometric parameters are in addition to **a = AB/2** and **b = MN/2**
X is the abscissa of the mid-point of **MN** (positive or negative)
Y is the ordinate of the mid-point of **MN** (positive or negative)

Gradient Array Apparent Resistivity:

[2] From Terraplus\BRGM, IP-6 Operating Manual, Toronto, 1987.

$$\rho a = K \frac{VP}{I} \quad ohm\text{-}metres$$

$$where: \quad K = \frac{2\pi}{(AM^{-1} - AN^{-1} - BM^{-1} + BN^{-1})}$$

$$AM = \sqrt{(a + x - b)^2 + y^2}$$

$$AN = \sqrt{(a + x + b)^2 + y^2}$$

$$BM = \sqrt{(x - b - a)^2 + y^2}$$

$$BN = \sqrt{(x + b - a)^2 + y^2}$$

Using the diagram in Figure C2 for the Total Chargeability:

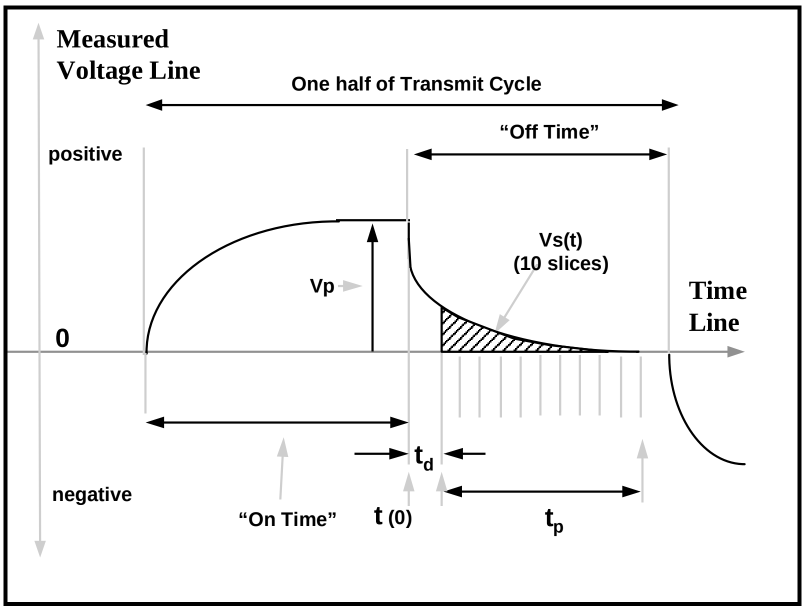


Figure C2 The measurement of the time-domain IP effect

the total apparent chargeability is given by:

Total Apparent Chargeability:[3]

$$M_T = \frac{1}{t_p V_p} \sum_{i=1 \text{ to } 10} \int_{t_i}^{t_{i+1}} Vs(t)\, dt \qquad \text{millivolts per volt}$$

where t_i, t_{i+1} are the beginning and ending times for each of the chargeability slices,
More detailed descriptions on the theory and application of the IP/Resistivity method can be found in the following reference papers:

Cogan, H., 1973, Comparison of IP electrode arrays, Geophysics, 38, p 737 - 761.

[3] From Telford, et al., Applied Geophysics, Cambridge U Press, New York, 1983.

APPENDIX D

INSTRUMENT SPECIFICATIONS

IRIS ELREC 6 RECEIVER

Weather proof case

Dimensions:	31 cm x 21 cm x 21 cm
Weight:	6 kg with dry cells 7.8 kg with rechargeable bat.
Operating temperature:	-20°C to 70°C (-40°C to 70°C with optional screen heater)
Storage:	(-40°C to 70°C)
Input channels:	6
Input impedance:	10 Mohm
Input overvoltage protection:	up to 1000 volts
Input voltage range:	10 V maximum on each dipole 15 V maximum sum over ch 2 to 6
SP compensation:	automatic ± 10 V with linear drift correction up to 1 mV/s
Noise rejection:	50 to 60 Hz powerline rejection 100 dB common mode rejection (for Rs=0) automatic stacking
Primary voltage resolution:	1 µV after stacking
accuracy:	0.3% typically; maximum 1 over whole temperature range
Secondary voltage windows:	up to 10 windows; 3 preset window specs. plus fully programmable sampling.
Sampling rate:	10 ms
Synchronization accuracy:	10 ms, minimum 40 µV
Chargeability resolution:	0.1 mV/V
accuracy:	typically 0.6%. maximum 2% of reading ± 1 mV/V for V_p > 10 mV
Grounding resistance:	0.1 to 467 kohm
Memory capacity:	2505 records, 1 dipole/record
Data transfer:	serial link @ 300 to 19200 baud remote control capability through serial link @ 19200 baud

APPENDIX D

INSTRUMENT SPECIFICATIONS

Walcer Tx 900 Transmitter

Input: 120V line to neutral

400 Hz / 3 Phases

Powered by MG-12

Output: 100V – 3200V in 10 steps
5 mA – 20 A
9.0 KVA

Output Switching:
TD: Seconds on/off switching
1,2,4 and 8 seconds

Size: 63cm X 54cm X 25cm

Weight: 44 kg

APPENDIX D

INSTRUMENT SPECIFICATIONS

MG-12 GENERATOR

Output: 120 – 220 V AC

400 Hz / 3 Phases

Generator: Bendix Aircraft Type
Forced Air Cooled

Engine: 20 HP Honda
Twin Cylinder

Size: 75cm X 70cm X 25cm

Weight: 125 kg

APPENDIX E

LIST OF MAPS

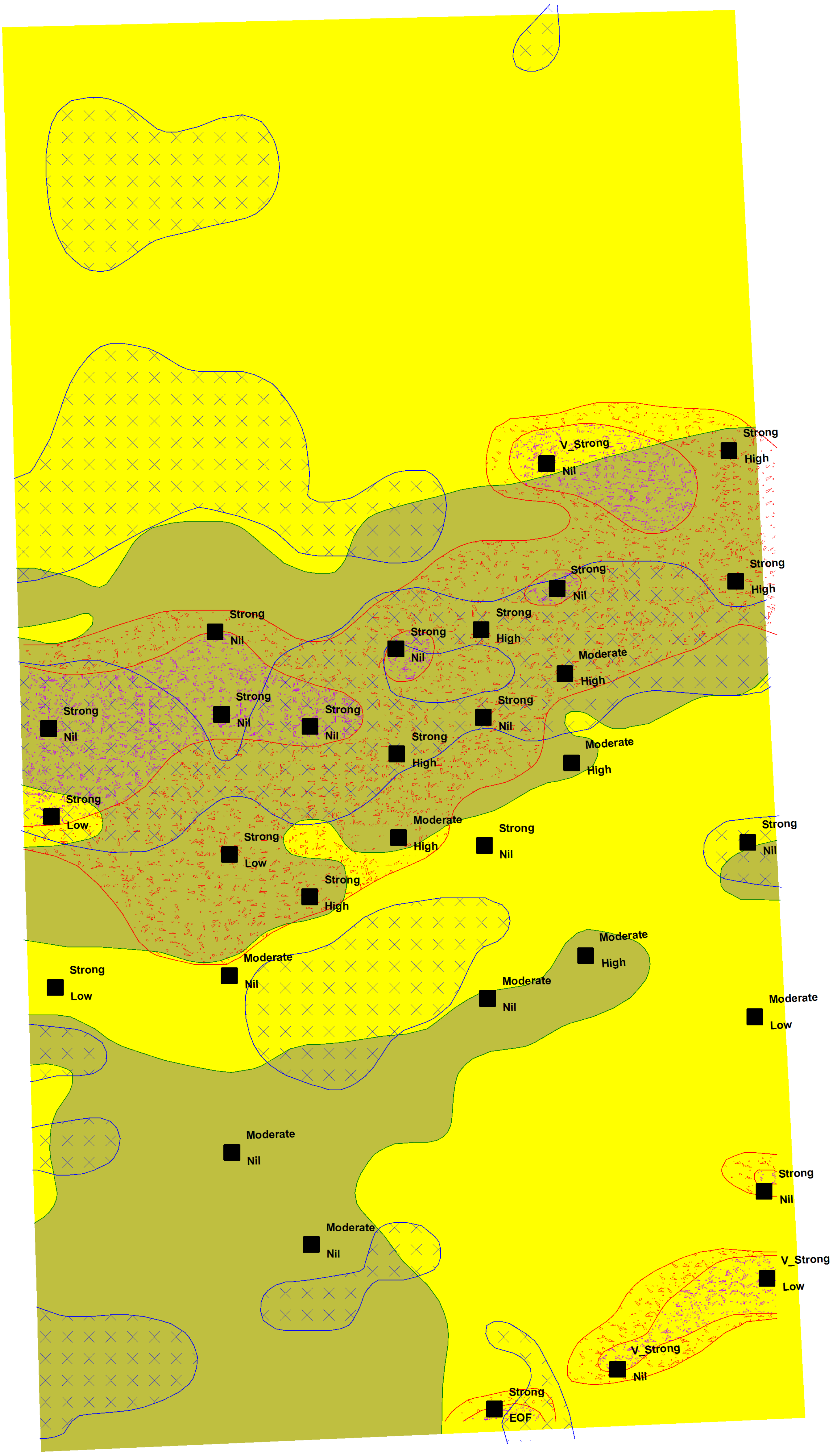
- **Posted/Contoured Plan Maps at 1:10000 scale**

PLAN	TOTAL CHARGEABILITY	APPARENT RESISTIVITY	TOTAL MAGNETIC FIELD
	DWG: P233-PLAN-CHG-1	DWG: P233-PLAN-RES-1	DWG: P233-MAGCONT-GRID 2
TOTAL	**1**	**1**	**1**

- **Interpretation Plan Map at 1:10000 scale:** DWG: P233-PLAN-INT-1

APPENDIX F

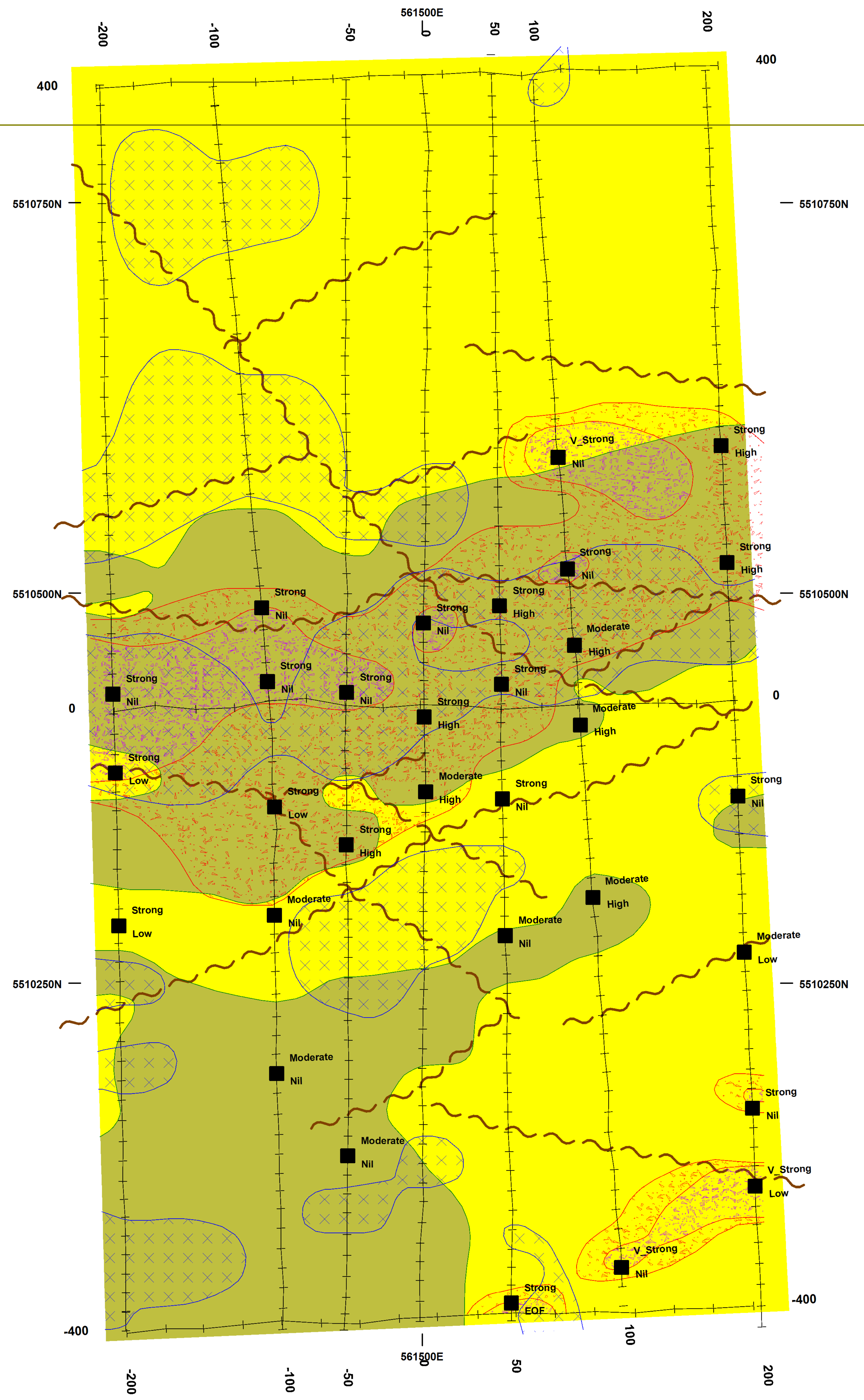
MAPS AND SECTIONS


V_Strong
Nil
Strong
High
Strong
High
Strong
Nil
Strong
Nil
Strong
Nil
Strong
High
Moderate
High
Strong
Nil
Strong
Nil
Strong
Nil
Strong
Nil
Strong
High
Moderate
High
Strong
Low
Moderate
High
Strong
Nil
Strong
Nil
Strong
Low
Strong
High
Moderate
High
Strong
Low
Moderate
Nil
Moderate
Nil
Moderate
Low
Moderate
Nil
Strong
Nil
Moderate
Nil
V_Strong
Low
V_Strong
Nil
Strong
EOF

INTERPRETATION PLAN MAP

MATRIX GEOTECHNOLOGIES LTD.

4216573

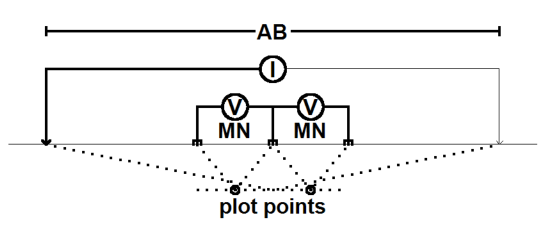


4216572

LEGEND

- Low Resistivity Unit e.g. Sedimentary Rocks
- High Resistivity Unit
- Zone of observed Strong Chargeability
- Zone of observed Very Strong Chargeability
- Zone of observed High Magnetics
- Interpreted Faults or Geological Contacts
- Strong / Nil: Moderate to Very Strong IP anomaly and correspondent strength (top-right) and resistivity association (bottom-right)

Gradient Array



Scale 1:2500

50 0 50 100 150

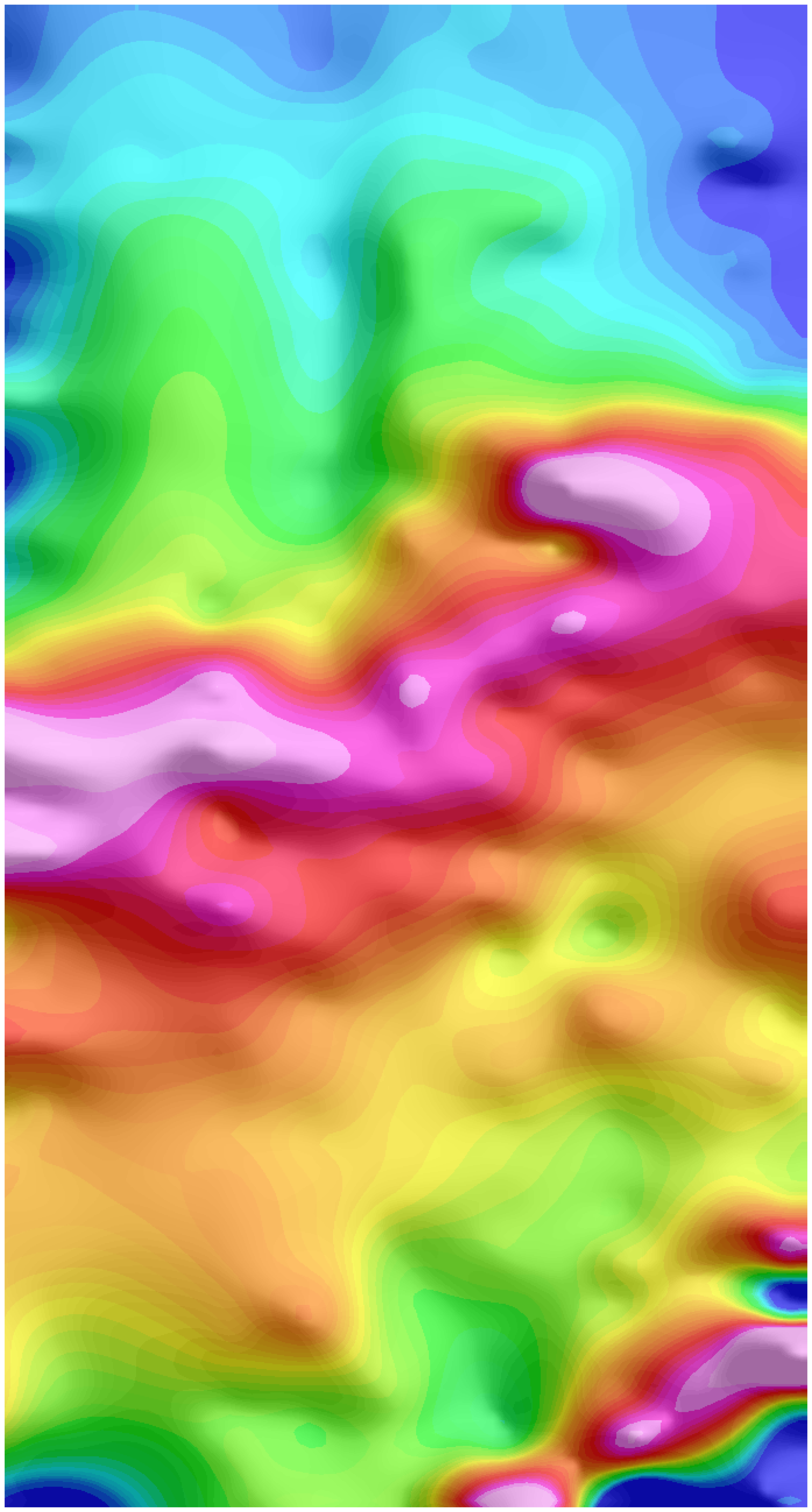
(metres)

GOLDSTREAM MINERALS INC
LUCKY GRID
LONGLAC, ON

TIME DOMAIN IP SURVEY
Gradient Array
INTERPRETATION PLAN MAP
AB= 1000 meters

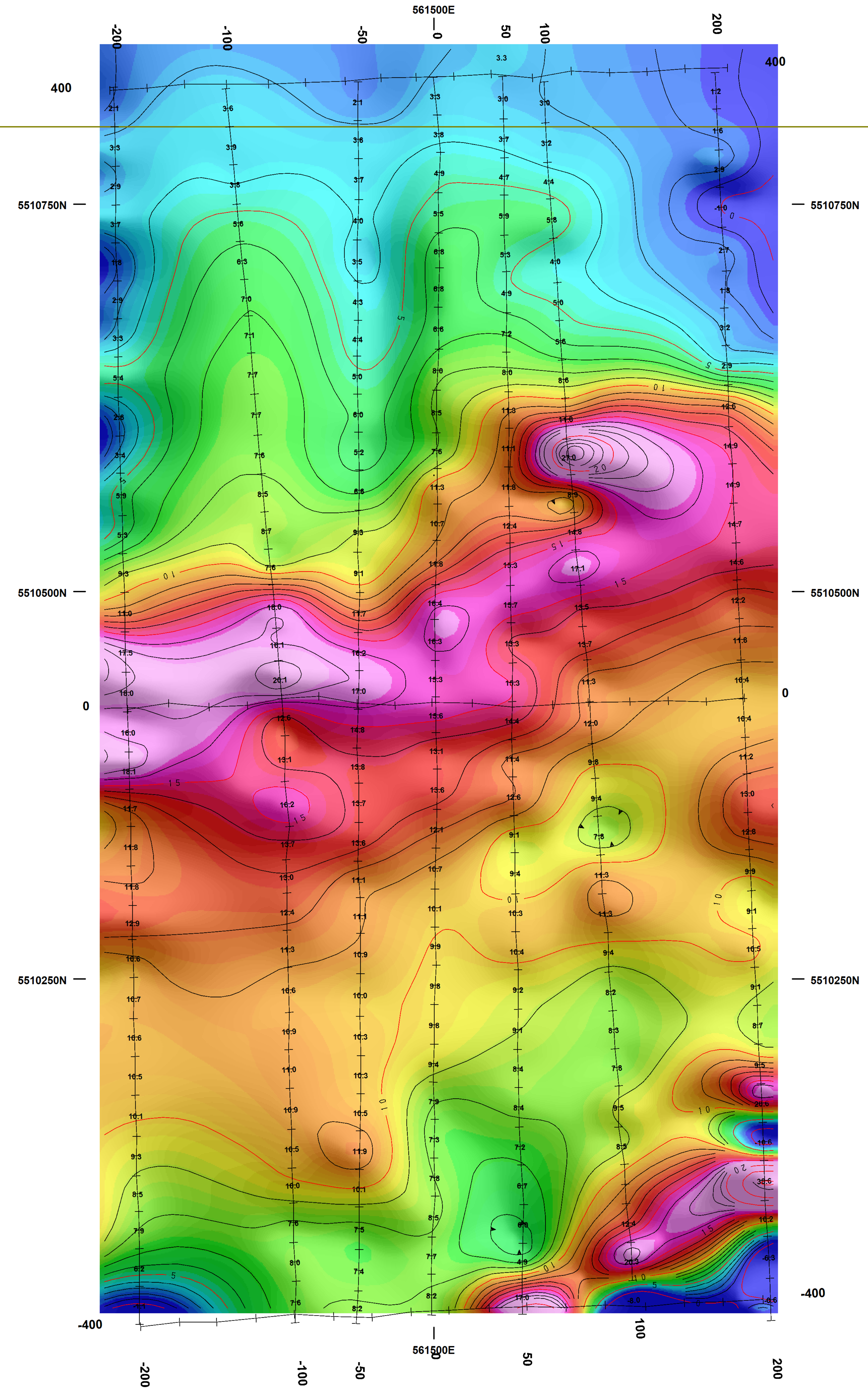
Transmitter Frequency	0.0625 Hz (50% duty cycle)
Transmitter Current	Amps
Decay Curve:	IP-6 Custom Semilogarithmic Windows 10 Gates
Station Interval:	25 meters
Interpretation by:	MGT
Date:	March 2013
Instrumentation:	Rx = IRIS IP-6 (6 channels) Tx = WALCER TX 9000 (9.0 kW) + MG-12 (12 kVA)

Surveyed & Processed by:
MATRIX GEOTECHNOLOGIES LTD.
DWG. #: P233-PLAN-INT-1



TOTAL CHARGEABILITY (mV/V)

4216573



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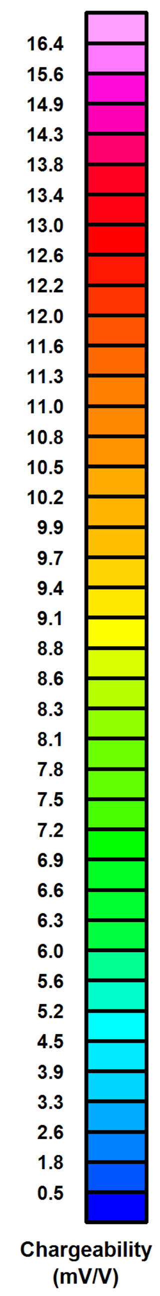
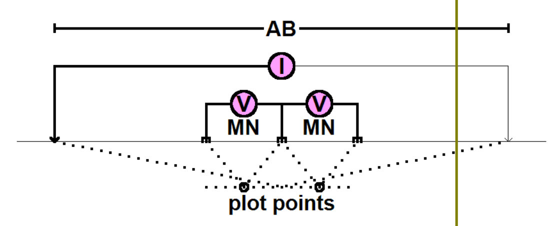


Gradient Array



Scale 1:2500

25 0 25 50 75 100 125 150

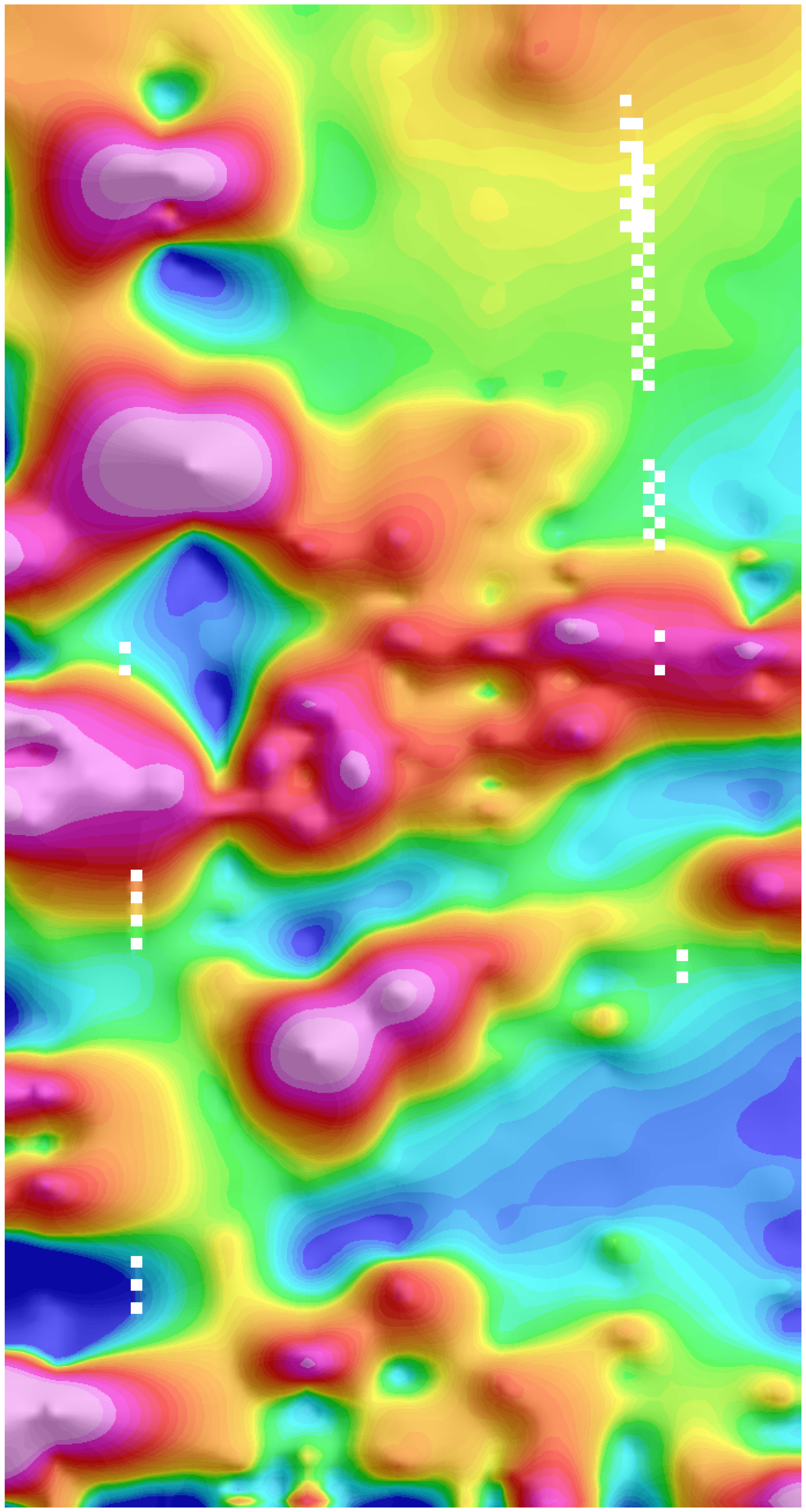
(metres)

GOLDSTREAM MINERALS INC
LUCKY GRID
LONGLAC, ON

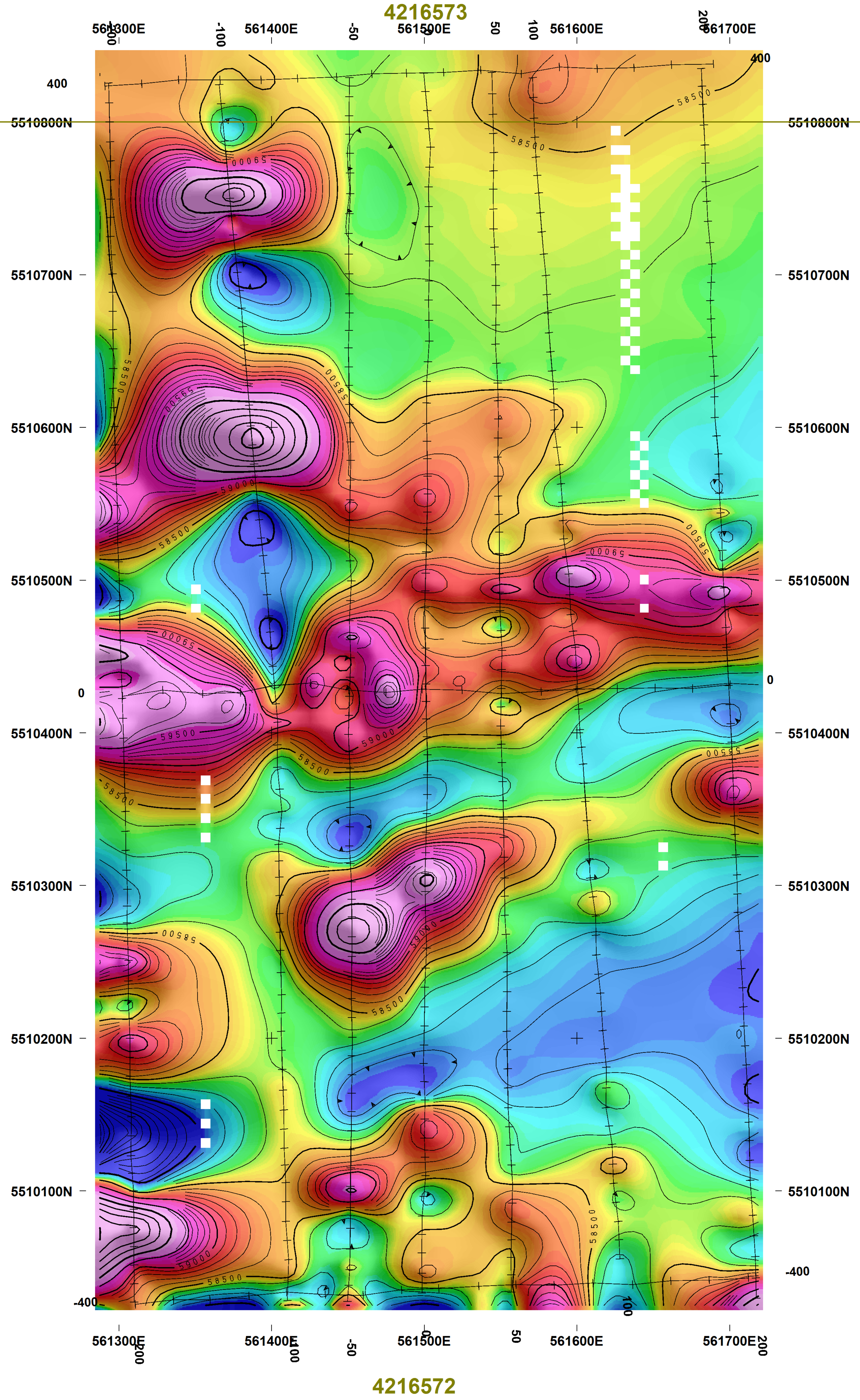
TIME DOMAIN IP SURVEY
Gradient Array
TOTAL CHARGEABILITY
AB= 1000 meters

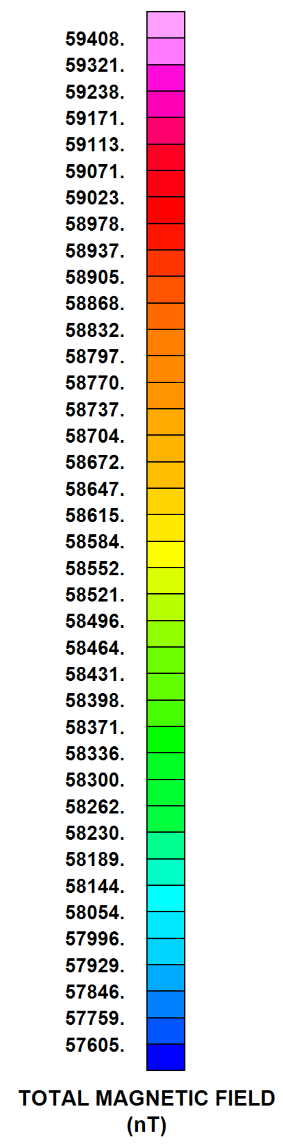
Transmitter Frequency	0.0625 Hz (50% duty cycle)
Transmitter Current	Amps
Decay Curve:	IP-6 Custom Semilogarithmic Windows 10 Gates
Station Interval:	25 meters
Chargeability Contour Interval:	1, 5 mV/V
Colour Scale:	Equal Area Zoning
Survey Date:	March 2013
Instrumentation:	Rx = IRIS IP-6 (6 channels) Tx = WALCER TX 9000 (9.0 kW) + MG-12 (12 kVA)

Surveyed & Processed by:
MATRIX GEOTECHNOLOGIES LTD.
DWG. #: P233-PLAN-CHG-1



TOTAL MAGNETIC FIELD





Scale 1:2500

50 0 50 100

(metres)

GOLDSTREAM MINERALS INC
LUCKY GRID
LONGLAC, ON

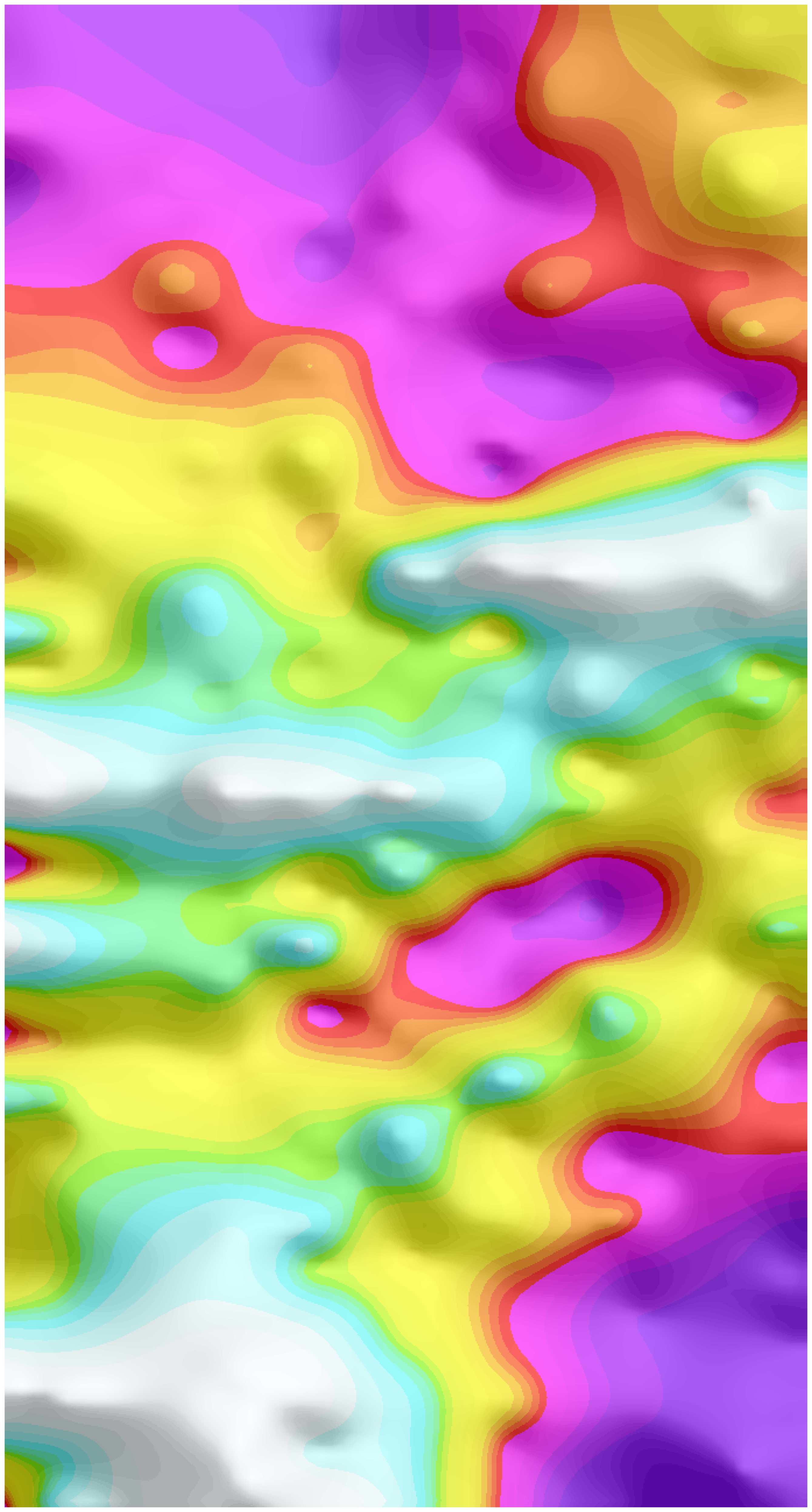
GROUND MAGNETIC SURVEY
TOTAL FIELD CONTOUR PLAN MAP
(Loop Corrected)

Magnetic Datum:	58,000 nT
Magnetic Inclination:	
Magnetic Declination:	
Diurnal Correction:	Base Station (15 sec/cyc)
Station Interval:	25 metres
Gridding Method:	Random
Grid Cell Size:	6.25m
Contour Interval:	100, 500, 2000 nT
Colour Zoning:	Equal Area / Colour.tbl
Survey Date:	March 2013
Instrumentation:	GSM 19
Operator:	MGT

Surveyed & Processed by:

MATRIX GEOTECHNOLOGIES LTD.

DWG. NO. P233-MAGCONT-LUCKY GRID



APPARENT RESISTIVITY (ohm-metres)

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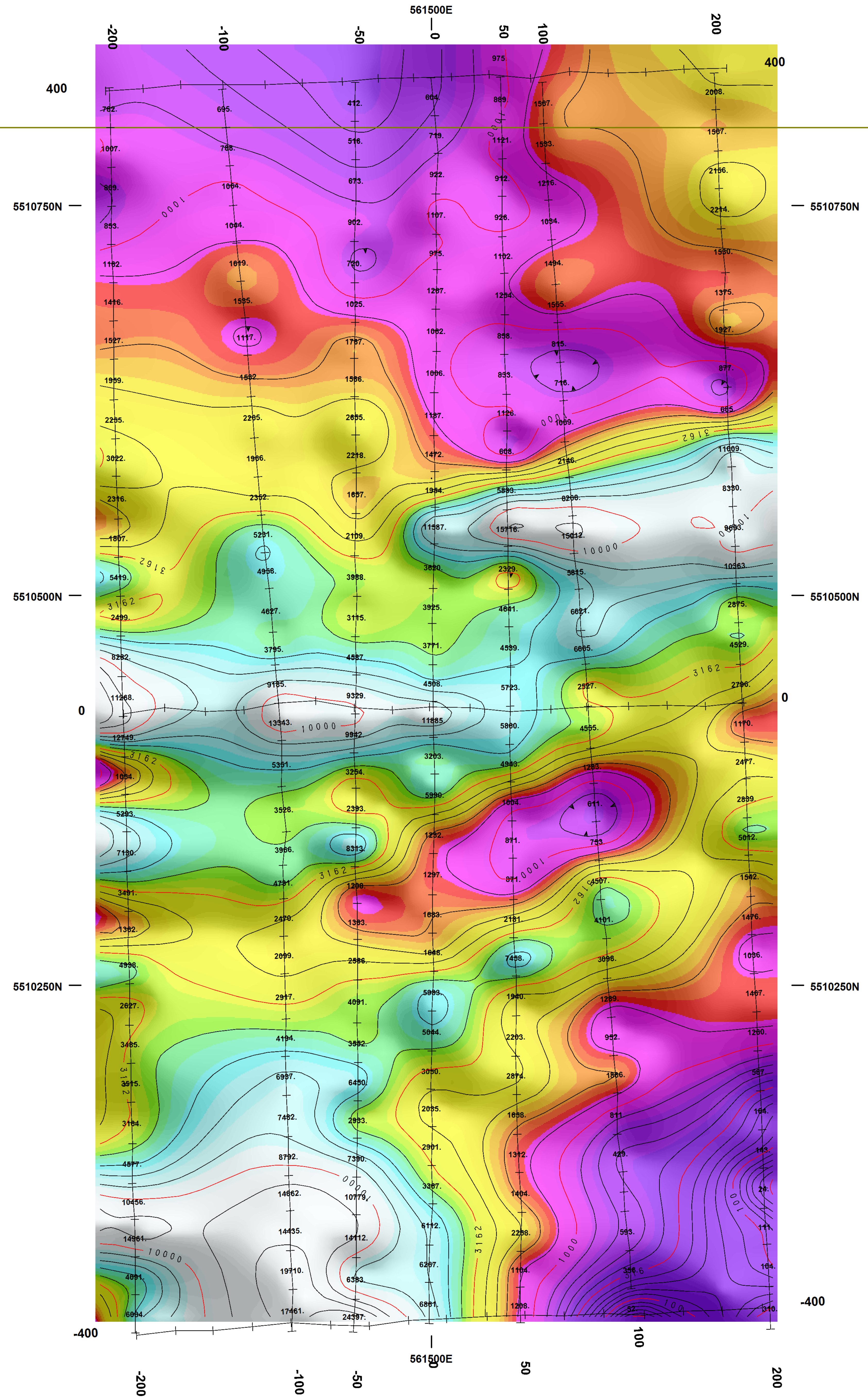
4216573



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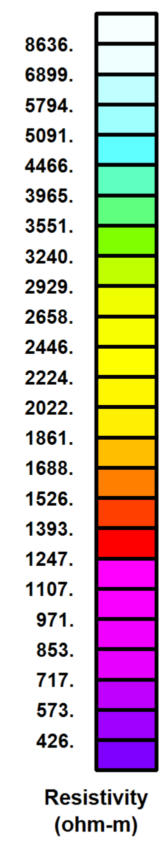
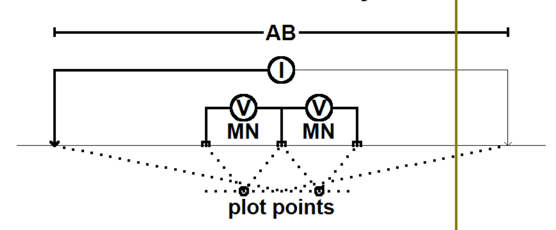


Gradient Array



Scale 1:2500

25 0 25 50 75 100 125 150

(metres)

GOLDSTREAM MINERALS INC
LUCKY GRID
LONGLAC, ON

TIME DOMAIN IP SURVEY
Gradient Array
APPARENT RESISTIVITY
AB= 1000 meters

Transmitter Frequency	0.0625 Hz (50% duty cycle)
Transmitter Current	Amps
Decay Curve:	IP-6 Custom Semilogarithmic Windows 10 Gates
Station Interval:	25 meters
Resistivity Contour Interval:	10 levels/log decade
Colour Scale:	Equal Area Zoning
Survey Date:	March 2013
Instrumentation:	Rx = IRIS IP-6 (6 channels) Tx = WALCER TX 9000 (9.0 kW) + MG-12 (12 kVA)

Surveyed & Processed by:
MATRIX GEOTECHNOLOGIES LTD.
DWG. #: P233-PLAN-RES-1