Report on the Interpretation
of the
Eldridge Survey Block
Temagami Area, Ontario
Sudbury Mining Division
5208000N to 5212500N
610300E to 613700E
NTS 031M/04
For
Tres-Or Resources Ltd.
1934 - 131 Street
White Rock, BC V4A 7R7
Canada
by
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Grupo Moje Limited
based on data provided by
Intrepid Geophysics Ltd.
and Aeroquest Limited
February 25, 2005
Summary

A total of 240.2 line-kilometres of helicopter-borne electromagnetic and magnetic data over the northeast corner of Eldridge Township in the Sudbury Mining Division of northeastern Ontario were reviewed on behalf of Tres-Or Resources Ltd. The data was acquired using traverse lines oriented north-south at a nominal line spacing of 50 metres tied by perpendicular (east-west) control or tie lines approximately every 1,000 metres. The survey was flown in November, 2003. Original flight data and maps were submitted previously for assessment credit.

All airborne geophysical data were imported into a database for line-by-line viewing and processing; spreadsheet, profile and grid editing tools facilitated advanced processing and analysis as well as quality control / assurance of the basic data. Filtering transformations yielded secondary products with enhanced information content; this permitted greater information to be extracted from the data. The processed geophysical grids were further subjected to standard image processing techniques to provide increased target quality and higher confidence through integration of all types of data. The final integration of data and information was made using GIS software, where layers of drainage overlay the geophysical images, license permits, etc.

Multiscale edge detection and automatic trend analysis using potential field gradients were also utilized to produce unbiased estimates of sharp lateral changes in physical properties of rock packages. Where the points lying on the maximum horizontal gradients of potential field data show a lateral continuity, they are mapped as "strings" or "worms." These worms were generated for multiple levels of upward continuation in 100 metre steps from 100 to 2100 metres. In multiscale edge analysis the assumption is made that lower levels of upward continuation map near-surface sources while higher levels of continuation map deeper sources. This assumption is generally true but must be treated with caution, due to the non-uniqueness of potential field solutions.

The primary objective of the geophysical interpretation was the identification and ranking of possible kimberlite targets based on their electromagnetic and/or magnetic response. Target selections made on the basis of discrete anomalies identified from these enhanced grid images were crosschecked on a profile-by profile basis. A total of 19 electromagnetic and/or magnetic targets that fit "accepted" magnetic criteria for kimberlite intrusions. Of these 19, none are ranked as high priority (rank = 1) or fair (rank = 3) targets. Only 1 rank 3 target and 1 rank 4 target were identified. The remainder are felt to be less likely representative of kimberlite intrusions (on a ranking scale of 1 to 5; 1 being most likely and 5 least likely) although all 'fit' accepted criteria for a kimberlitic, magnetic intrusion with or without a conductive association. All of these anomalies or targets are tabulated in this report, and are further incorporated in the final GIS analysis.

This analysis by Intrepid Geophysics as well as all direct costs for the analysis and creation of this report are submitted herein for assessment credit.
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Introduction

The Temagami area of Northeastern Ontario is considered prospective for diamond exploration due to the existence of numerous kimberlite pipes in several clusters to the north of this survey block. Most of these kimberlitic pipes and dykes were discovered in the 1980s and 1990s, however, kimberlite continues to be explored for and discovered in the area. Tres-Or Resources Ltd.'s Temagami Diamond Claim properties are located west of the Timiskaming Structural Zone and straddle the Grenville Front, a deep-rooted structure that separates the thick Precambrian Superior Craton from the Grenville Province, a cratonized accreted mobile belt. These deep-seated fault structures may have tapped into the diamond bearing portions of the earth's mantle. The area exhibits many major north to northwest trending faults and lineaments (associated with the Timiskaming Structural Zone) that intersect major east to northeast trending structures. The intersection of these deep-rooted structures may have provided an excellent conduit or "plumbing system" for kimberlite emplacement. This report is written based on data and information supplied by Aeroquest Limited and Christopher Campbell of Intrepid Geophysics.
Figure 1. Project Location, Ontario
Property description and location

Tres-Or's Temagami Diamond Property consists of 281 mostly contiguous mining land claims in the Temagami area located in the Sudbury Mining Division of northeastern Ontario. The 281 claims comprise 3288 claim units, and are located on unpatented ground covered by lakes, swamps, forest and recently forested ground. The original claims were staked between October 2000 and May 2001. Many claims have since been added to the package, staked directly for Tres-Or Resources Ltd, and other claims have lapsed after having been evaluated. Tres-Or is 100% owner of the claims, except for 2.5% Net Smelter Return (NSR) retained by vendors. In light of the demonstrated potential of the Superior Craton to host diamondiferous kimberlites, and the occurrence of kimberlite indicator minerals on the property (including some with compositions similar to diamond inclusions), Tres-Or Resources Ltd. assembled their Temagami area diamond property and began exploration in February 2001.

Airborne electromagnetic and magnetic surveys have been flown over much of Tres-Or Resources ground in both the Temagami and Temagami North blocks of claims. The Eldridge block covers the northeast corner of Eldridge Twp and abuts the previously submitted Temagami East survey block to the north. Table 1 shows the claims associated with this survey block.

Table 1. Eldridge Survey Block Claims

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<thead>
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<th>TOWNSHIP</th>
<th>Mining Division</th>
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<th>Recording Date</th>
<th>Claim Due Date</th>
<th>Work Required</th>
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History

Diamond exploration in Eastern Ontario has a long history, extending back at least to 1906, when the United States Geological Survey and several newspapers made reference to a 100 carat yellow stone that came to be known as the Nipissing Diamond. Thin kimberlite dykes were intersected serendipitously in drill holes as early as 1948 in Michaud Township, and in 1968 in the Kirkland Lake area. Falconbridge and Monopros led diamond exploration programs in the late 1970s and 1980s, which resulted in discovery of many of the Kirkland Lake and New Liskeard area pipes.

Other companies such as KWG, LAC minerals, and Strike Minerals became involved in diamond exploration in the Kirkland Lake and New Liskeard areas in the early 1990s. These companies were responsible for some new discoveries, and retested many of the earlier discovered pipes as well.

A regional stream sample study covering the Temagami Marten River area by the Ontario Geological Survey (OGS) recovered kimberlite indicator minerals suggestive of derivation from diamondiferous mantle, and concluded that the area had good potential to host diamond-bearing kimberlites (Allan, 2001). The Cr-pyrope chemistry reported from these studies includes distinctly more sub-calcic grains (G10s) than known pipes in the New Liskeard kimberlite field to the north. A second OGS kimberlite indicator mineral study extended sample coverage east to the Montreal River, and again recovered grains suggesting potential of the area to host diamond-bearing kimberlite (Reid, 2002).

Geological Setting

The Tres-Or Diamond Claim Property extends from the Archean Superior Province south into the Parautochthonous Belt of the Grenville Province. The Superior Province is the largest Archean craton comprising the North American continent and was built by assembly of diverse lithotectonic elements.

The Parautochthonous Belt of the Grenville Province within the Tres-Or Diamond Claim Property comprises Archean rocks of the craton margin that were deformed during the Grenvillian accretion of allochthonous terranes. The Eldridge flight block lies immediately north of the Grenville Front primarily within the granitoid belt forming the Grenville Front tectonic zone.
Regional Structure

The major structural feature of the property area is the Grenville Front boundary fault, which strikes northeast immediately southeast of the property through Eldridge and Hebert Townships, separating the Superior Province in the north from rocks affected by the Grenville orogeny to the south. The Lake Timiskaming Structural Zone consists of numerous northwest trending faults associated with kimberlites of the Kirkland Lake and New Liskeard fields. Faults paralleling the Grenville Front as well as northwest trending faults, aligned with the Lake Temiskaming Structural Zone, cut the Superior province sedimentary rocks and granitoid rocks of the tectonic zone on the Tres-Or property in Eldridge Township (OGS Map 2361). These northwest trending faults extend into the Grenville Province.

Survey Technology and Instrumentation (from Fiset, 2003)

The airborne survey was flown on November 3, 2003 by Aeroquest Ltd. using their exclusive “IMPULSE” six channel frequency time domain helicopter electromagnetic system and high sensitivity cesium vapour magnetometer. Ancillary equipment included a GPS navigation system with GPS base station, radar altimeter, video recorder, and a base station magnetometer. Complete details of this survey are described in a report by the airborne contractor (Fiset, 2003) which was previously submitted to Tres-Or Resources Ltd. and to MNDM for Assessment purposes (W0470.00158).

A Bell Textron 206L LongRanger helicopter - registration C-GRYS- owned and operated by Gateway Helicopters Ltd., North Bay Airport, Ont. (705-474-4214) was used as the survey platform. Installation of the geophysical and ancillary equipment was carried out by AeroQuest Ltd. at the Gateway hanger in North Bay and survey operations were based from there. The helicopter and EM bird were parked in the hanger nightly. The survey aircraft was flown at a nominal terrain clearance of 200–250 ft (61–76 m).
Figure 2. Regional Geology in Eldridge Survey Block area
**Geophysical Survey Methodology (from Fiset, 2003)**

The survey was flown at 50 metre line spacing in a north-south direction. Total line kilometres flown were 240.2 line-kilometres including tie-lines. Data acquisition took place November 3, 2003.

Navigation was assisted by a GPS receiver and the AG-NAV2 flight path guidance system that reports GPS coordinates as WGS-84 latitude/longitude and directs the pilot over a pre-programmed survey grid. The x-y-z position of the aircraft, as reported by the GPS, is recorded at one second intervals.

**Data Presentation (from Campbell, 2004)**

The airborne geophysical interpretation is based on a profile analysis using Geosoft’s Oasis Montaj integrated editors (spreadsheet and flight path). A screen capture of each target is presented at an appropriate, detailed scale for analysis and archival purposes (Appendix A). All the final data is also presented as a series of digital maps and images generated at scale of 1:10,000.

The airborne geophysical gridded data was analyzed using the following derived images:
- Total Magnetic Intensity; pseudocolour and colourdrape images
- Vertical derivative (gradient); pseudocolour and greyscale shaded-relief images
- Horizontal derivative (gradient); greyscale, shaded-relief and colourdrape images
- Total gradient (analytic signal); greyscale, shaded-relief and colourdrape images

In addition, the final interpretation consisting of kimberlite target identification was prepared in MapInfo *.*.tab format and further archived in Section 8 of this report in Word *.*.doc format.

**Data Description (from Campbell, 2004)**

Radar altimetry, for the most part, was at the limit or outside contract specifications (30 m); the mean bird height was determined to be 44.64 metres. A histogram of the bird height (bheightm) indicates the distribution. An image on the following page (Figure 4) depicts flight lines flown outside specification (30 ± 10 metres) for distances of 1 km or greater.
The located data provided to the Client from the Contractor is judged to be of good standard, and permitted final processing (Fourier analysis and imaging) of a similar and acceptable standard. The
The survey's signal-to-noise ratio as determined by the 4th difference on the magnetic data indicates a relatively quiet noise background (i.e., mean of 0.0000 and a standard deviation of 0.010 nT).

Figure 5. Bird height <20 m or >40 m for distances of 1 km or greater
Figure 6. Diurnal activity >1 nT over a 5-minute linear chord
Line 70 ... exhibiting some diurnal, but well within any reasonable specification.
Figure 7. Total Magnetic Intensity image, Eldridge Block
Figure 8. Apparent Resistivity, coplanar high-frequency displayed with logarithmic ohm-m (res_p3 High-Frequency Coplanar Resistivity in ohm-metres)
Figure 9. Apparent Resistivity overlain by M2361 Geology
**Interpretation Methodology**

The identification of a kimberlite or lamproitic diatreme from geophysics will depend upon the recognition of a characteristic response or signature. Clearly, the frequency and amplitude of that response will depend on the geophysical contrast between the target diatreme and the surrounding country rocks. Quite simply, if the physical properties are such that the kimberlite/lamproite is essentially similar to the country rock, then there will be no geophysical 'anomaly.' Fortunately, the nature of kimberlites and lamproites are such that there are often 'signature' responses that permit a distinction to be made.

Several workers have reported on the physical parameters of kimberlites and lamproites in particular regions around the world. Gerryts provided an excellent overview in 1967, and Macnae (1979) has provided key facts for several southern African kimberlites. Mwenifumbo (1996) has more recently reported on the geophysical characteristics of Canadian kimberlites in Ontario and Saskatchewan. Data was compiled from multi-parameter borehole logging on one pipe in Saskatchewan and four pipes in the Kirkland Lake area to obtain *in situ* physical rock property data on kimberlites and their host rocks. Measurements included natural gamma-ray spectrometry, magnetic susceptibility, resistivity/conductivity, induced polarization, spectral gamma gamma (density and heavy element indicator), temperature, borehole 3-component magnetometer and seismic P-wave velocity. The geophysical data from the kimberlites investigated indicate that the physical properties are variable in a kimberlite pipe and also between different pipes in a single field. Although there is a high degree of variability of the physical properties within the kimberlite, most geophysical measurements show anomalous values that are characteristic of the kimberlites compared to the surrounding sediments.

Kimberlites can contain 5–10% iron oxides consisting predominantly of magnetite, ilmenite and a solid solution of these two constituents (Fesq et al, 1975). Unweathered kimberlites and lamproites typically have a strong magnetic signature. Kimberlite/lamproites typically have relatively high porosity and permeability, leading to rapid weathering when exposed to surface and meteoric waters. The uppermost zone may thus break down into a disk-shaped, lower density, highly conductive clay rich horizon depleted in magnetic mineralization. A more modest but still detectable conductivity anomaly in fresh, unweathered kimberlites may be due to serpentinization of olivine during initial diatreme emplacement.

Regardless, it must be stressed that the geophysical responses over kimberlite pipes are generally complex, indicating a basic inhomogeneity of the kimberlite and its physical properties. These geophysical responses vary significantly from one geographic area to another, resulting in different
workers reaching very different conclusions as to the applicability and reliability of various geophysical techniques. Ideally, a diatreme target in plan view should show a circular to elliptical conductivity response coincident with a strong magnetic anomaly of slightly smaller diatreme (due to the convergent shape of the pipe and the depth of weathering). A similar, matching pattern should be evident on profiles across the pipe. Of course, reality may be very different due to divergence in the geological model from actual geophysical parameters of the target kimberlite/lamproite.

Geophysical responses are complicated by tectonism, depth of burial and subsequent erosion, nature of the Quaternary overburden or alluvium as well as the surrounding country rock, permafrost, and lithological/mineralogical variations within the diatreme itself. Figure 2 shows idealized geophysical properties of an altered diatreme (Urquhart, 1993). Depth of the weathering profile will influence the size of the conductive cap and depth to ‘fresh’ kimberlite. Intensity and relative orientation of the magnetic anomaly are related to the proportion of iron oxides (i.e., magnetite and ilmenite), degree of alteration and remanent magnetization, etc.

Figure 10. Idealized geophysical properties of kimberlite pipe.
Analysis of Eldridge Block

All airborne geophysical data was imported into Geosoft Oasis montaj database for line-by-line viewing and processing. Spreadsheet, Profile and Grid editing tools inherent to the INTREPID geophysical processing system facilitated advanced processing and analysis as well as quality assurance / quality control of the basic data. Subsequent to the acquisition of airborne magnetic data, corrections were applied to produce located profile, contours and grid versions of the data. Filtering transformations (carried out in Fourier domain) conducted by Intrepid Geophysics yielded secondary products with enhanced information content; this permitted greater information to be extracted from the data. These enhancement techniques included:

- Upward and downward continuations — the effect of shallow anomalies may be suppressed when further detail on contributions from deeper sources is desired, or conversely, shallow, high-frequency anomalies may be ‘sharpened’ by bringing them ‘closer’ to surface.

- Vertical and horizontal derivatives — eliminate long-wavelength regional effects, and resolve adjacent features. Body outlines can also be more precisely identified by the horizontal derivative.

- Analytic signal — (or total gradient) provides a quantity that is independent of the direction of source magnetization and the direction of the Earth’s field. Thus all bodies with the same geometry will have the same analytic signal, an obviously useful quality in any interpretation.

The processed geophysical grids were further subjected to standard image processing techniques using ER MAPPER; e.g., aeromagnetics and resistivity grids were ‘fused’ into a single image using variable bands and colour look-up tables to provide increased target quality and higher confidence through integration of all types of data. The final integration of data and information was made using MAPINFO GIS software, where the geophysical images were overlain by layers or ‘tables’ of drainage, license permits, etc.

The primary objective of the geophysical interpretation was the identification and ranking of possible kimberlite targets based on their magnetic response. Target selections made on the basis of discrete anomalies identified from these enhanced grid images were crosschecked on a profile-by-profile basis. Essentially, the interpretation was seeking or focusing on presumed geophysical signatures that should occur over intrusive kimberlite pipe-like bodies.

While the significance of basement structural control on kimberlites may be open to discussion, the analysis of lineaments is of fundamental importance to understanding geological structures and the
stress regimes in which they are produced. Automatic analysis of lineaments has previously been done with information mapped from remotely sensed data, using either satellite-based imagery or aerial photographs. Potential field data may also be analysed in terms of their lineament content. Edge detection and automatic trend analysis using gradients in such data are methods for producing unbiased estimates of sharp lateral changes in physical properties of rocks. The assumption is made that the position of the maxima in the horizontal gradient of gravity or magnetic data represents the edges of the source bodies, although this should be used with caution. Such maxima can be detected and mapped as points, providing the interpreter with an unbiased estimate of their positions. The process of mapping maxima as points can be extended to many different levels of upward continuation, thus providing sets of points that can be displayed in three dimensions, using the height of upward continuation as the z-dimension. There have been recent developments and use of this method for interpretation of potential field data (e.g. Archibald et al, 1999 and Hornby et al, 1999). Archibald et al refer to this process as “multiscale edge analysis.” Milligan (2003) more recently discusses the spatial and directional analysis of potential field gradients and in particular, new methods to help solve and display three-dimensional crustal architecture using a proprietary system of Euler ‘worms.’

In multiscale edge analysis the assumption is made that lower levels of upward continuation map near-surface sources while higher levels of continuation map deeper sources. This assumption is generally true but must be treated with caution, due to the non-uniqueness of potential field solutions. The INTREPID software’s unique implementation of multiscale edge analysis includes the use of Euler ‘worms’ which provide a view of structural geology obtained directly from potential field geophysical data. The method is based on Fourier techniques for continuation, reduction to pole and total horizontal derivatives coupled with automatic edge detection.

**Data Interpretation**

Much reliance in the interpretation process for kimberlite targets is based on an analysis of the horizontal gradient magnetic and analytic signal (total gradient) images. These have proved most beneficial in previous exploration programs and are the primary tools for identifying kimberlite intrusives directly from gridded aeromagnetic data sets. All anomalies thus identified were crosschecked for their individual profile response and then tabulated. The final edited list of targets identified from the Eldridge block airborne geophysical data is tabulated in Table 2 below.
An analysis of the airborne geophysics over Tres-Or Resources' Eldridge property has identified a total of 19 electromagnetic and/or magnetic targets that fit 'accepted' magnetic criteria for kimberlite intrusions. Of these 19, none are ranked as high priority (rank = 1) or good priority (rank = 2). However, 1 is ranked as fair (rank = 3). The remainder are felt to be less likely representative of kimberlite intrusions (on a ranking scale of 1 to 5; 1 being most likely and 5 least likely) although all 'fit' accepted criteria for a kimberlitic, magnetic intrusion. It should be pointed out that this geophysical-based interpretation relies on the magnetic susceptibility of the kimberlite being different from the surrounding rock, and/or the electrical conductivity/resistivity being similarly distinguishable. Kimberlite is generally strongly susceptible, having susceptibilities up to $6 \times 10^{-2}$ SI (Litinskii, 1963), which is why the magnetic method is so successful. A diatreme is generally magnetic due to magnetite and ilmenite being present in the unweathered kimberlite; significant weathering can reduce the magnetic susceptibility. The susceptibility values of kimberlites can vary considerably. In some kimberlites, there are multiple phases of intrusions or pyroclastic eruptions and each phase can have a different magnetic susceptibility (Jenke and Cowan, 1994; Jansen and Doyle, 1998). Some phases can appear to be non-magnetic. A number of the kimberlites in the Lac de Gras area (Slave Province, NWT) in particular show reversed magnetic anomalies, implying that there is strongly remanent magnetic material in the kimberlite.

Regardless of polarity, particular focus should be paid to targets assigned a rank of 1 to 3; these are believed worthy of ground follow-up using additional geophysics and geological mapping and/or geochemical sampling.

Experience by the interpreter, Christopher Campbell, and the literature confirm that it is often the more fragmented diatreme and crater facies of kimberlites that have the lowest resistivities or highest conductivities. Water (especially when saline or frozen) can also make marked changes to the resistivity values. Resistivities vary strongly with only minor changes in mineralogy such as clay, sulphides, oxide minerals and graphite. The lowest DC resistivities are always recorded in the shallower more weathered kimberlite, and can be as low as 5 ohm-m.
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<th>Northing</th>
<th>Line</th>
<th>Lfd</th>
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<th>Description</th>
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<td>610341.0</td>
<td>5209975.0</td>
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<td>610</td>
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<td>5211976.5</td>
<td>L70</td>
<td>2172.5</td>
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<td>5208422.9</td>
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<td>2987.1</td>
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<td>610854.1</td>
<td>5209176.3</td>
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<td>3006.3</td>
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<td>+330nT magnetic high with offset weak quadrature response</td>
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<td>5208696.4</td>
<td>L180</td>
<td>3603.9</td>
<td>4</td>
<td>~230nT magnetic high, coincident weak-moderate EM response (lake bottoms seds.?)</td>
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<td>5209026.8</td>
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<td>~55nT magnetic high; no EM correlation (previously picked from Goldak magnetic survey)</td>
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<td>5209518.6</td>
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<td>865.1</td>
<td>5</td>
<td>+450nT magnetic high; no significant EM correlation</td>
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<td>611860.2</td>
<td>5211013.0</td>
<td>L320</td>
<td>2658.7</td>
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<td>moderate EM response centred in small, circular lake (bottom seds.?). No direct magnetic correlation</td>
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<td>5210284.9</td>
<td>L510</td>
<td>2057.8</td>
<td>5</td>
<td>~280nT magnetic high; EM indicates negative in-phase (magnetite enrichment?). Previously picked from Goldak magnetic survey</td>
</tr>
<tr>
<td>EL-16</td>
<td>612960.8</td>
<td>5209939.4</td>
<td>L640</td>
<td>6355.5</td>
<td>5</td>
<td>~140nT magnetic high; no significant EM correlation. Previously picked from Goldak magnetic survey</td>
</tr>
<tr>
<td>EL-21</td>
<td>613061.4</td>
<td>5210400.3</td>
<td>L660</td>
<td>486.9</td>
<td>5</td>
<td>~45nT magnetic high; no EM correlation. Previously picked from Goldak magnetic survey</td>
</tr>
<tr>
<td>EL-20</td>
<td>613255.9</td>
<td>5210344.6</td>
<td>L600</td>
<td>1111.9</td>
<td>5</td>
<td>~80nT magnetic high; no EM correlation. Previously picked from Goldak magnetic survey</td>
</tr>
<tr>
<td>EL-45</td>
<td>613368.4</td>
<td>521071.8</td>
<td>L620</td>
<td>1416.9</td>
<td>5</td>
<td>moderate EM response centred in local widening of lake (bottom seds.?). No direct magnetic correlation</td>
</tr>
<tr>
<td>EL-46</td>
<td>613488.9</td>
<td>5213234.1</td>
<td>L650</td>
<td>1839.6</td>
<td>5</td>
<td>+180nT magnetic high on edge of survey; weak Me correlating, but probably due to lake bottom seds.</td>
</tr>
<tr>
<td>EL-47</td>
<td>613500.8</td>
<td>5209568.6</td>
<td>L650</td>
<td>1906.6</td>
<td>5</td>
<td>+420nT magnetic high at edge of survey; no significant EM response</td>
</tr>
</tbody>
</table>
Figure 11. Summary interpretation; greyscale shaded mag1vd and kimberlite targets.
Conclusions and Recommendations

The objective of this geophysical interpretation was the identification and priority ranking of kimberlite targets derived from an airborne geophysical survey flown over the Eldridge Block in November 2003. Results of this interpretation effort are listed in Table 2.

Follow-up testing of the geophysical anomalies ranked 3 and higher is recommended by further geochemical indicator mineral sampling, where applicable, and ground geophysics such as electromagnetics, gravity and magnetics, as well as, ultimately, by auger or drill testing where those results warrant. The always ambiguous geophysical character of the anomalies tabulated by this interpretation dictates that additional information, such as positive indicator results, be confirmed before drill testing on any one target be undertaken. Regardless, in the event that any of the above-listed priority targets are indeed drilled as kimberlite, then all airborne targets should be further reviewed in light of that success.

Ground follow-up geophysics should consist of electromagnetic profiling (either frequency-domain such as the MaxMin II horizontal-loop system or time-domain such as the Geonics Protem 57 system) as well as confirmatory magnetics. Gravity readings might also be utilized in selected traverses across the 1–3 ranked targets.

The success of electromagnetic methods in detecting kimberlite depends on a distinct contrast in conductivity of the kimberlite as compared with the surrounding material. Kimberlites in the NWT have (although not in every instance of course) exhibit a moderately conductive (about 100 to 1000 ohm-m) response. Fortunately, this is significantly more conductive than the surrounding country rock in the NWT, which is typically greater than 10,000 ohm-m.
REFERENCES


Jenke, G. and Cowan, D.R 1994. Geophysical Signature of the Ellendale Lamproite pipes, Western Australia: in Geophysical Signatures of Western Australian Mineral Deposits. Geology and Geophysics Department, the University of Western Australia, publication 26, 403-414.


