# MAR 19990022: STEEN RIVER

Received date: Jun 17, 1999

Public release date: Jun 18, 2000

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# Report

# Aeromagnetic Modeling Interpretation

over the

# Steen River Structure
## Northwest Alberta

Submitted to

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**Confidential**
The ideas and concepts presented in this document and accompanying map products are considered to be confidential.

# 1. Summary

Twelve aeromagnetic anomaly profiles were interpolated from the total intensity magnetic anomaly grid over the Steen River structure and modeled in a forward 2.5-dimensional sense. These models were constructed for thirteen anomalies previously interpreted by Excel Geophysics Inc. Depth-to-magnetic source estimation, from thirteen aeromagnetic flight profiles, was also performed over the Steen River structure.

This interpretation project involved integrating results from the depth-to-magnetic source analysis, results from forward magnetic modeling, results from a lithologic report supplied by Troymin Resources Ltd., results from Excel Geophysics Inc.'s interpretation, and information obtained from published literature.

Results from this interpretation modeling indicate that six of the anomalies are produced by "thin" magnetic sources while seven of the anomalies may be produced by "thick", or rooted, magnetic sources. Thin sources correspond to Anomalies One, Two, Three, Four, Eight and Nine from Excel Geophysics Inc.'s earlier work, while potential thick sources correspond to Anomalies Five, Six, Seven, Ten, Eleven, Twelve and Thirteen.

Although this last group of anomalies may be produced by thick magnetic sources, the possibility that they are produced by thin sources cannot be ruled out. In order to further constrain the geometries of these sources it is recommended that magnetic susceptibility information, from samples beneath the anomalies, should be incorporated into models from this study.

## Steen River Project

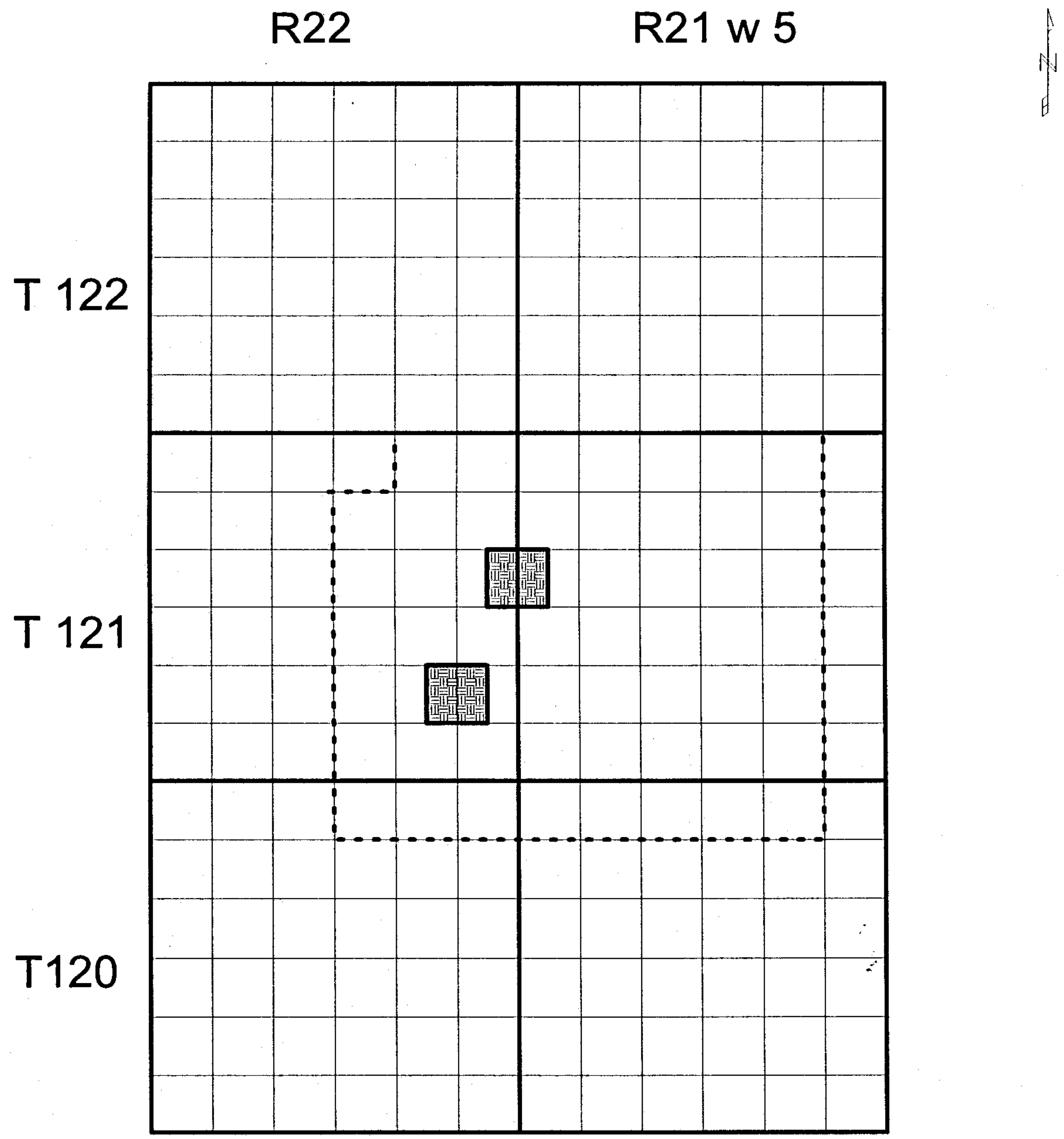
Table 1

| | Amount | |
|---|---|---|
| Spectra Exploration Geoscience Corp. | $3,000.00 | |
| Connemara Resource Ventures Ltd. | $612.00 | |
| Petro-Tech Reproductions | $87.40 | |
| Statcom Limited | $1,520.50 | |
| **Total expenditures** | | **$5,219.90** |

## Steen River Project

Table 2

| Permit No. | Twp. | Range | Sections Held 1997-1999 | Area Held | Sections Renewed 1999 | Area Renewed |
|---|---|---|---|---|---|---|
| 9393030619 | 120 | 21 W5 | 31-35 | 1,280 ha | none | 0 ha |
| 9393030620 | 120 | 22 W5 | 34-36 | 768 ha | none | 0 ha |
| 9393030623 | 121 | 21 W5 | 2-11, 14-23, 26-35 | 7,680 ha | 19W | 129.5 ha |
| 9393030624 | 121 | 22 W5 | 1-3, 10-15, 22-27, 35, 36 | 4,352 ha | 11E, 12W, 24E | 388.5 ha |
| | | | | 14,080 ha | | 518.0 ha |



Legend

⬚ Troymin Properties 1997-1999

▨ Troymin Properties Renewed 1999

Scale

0 2 5 km

Troymin Resources Ltd.

Steen River Project

Figure 1

Drawn by: D.A. Beauchamp

Date: 1999.06.14

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# 2. Geologic Setting

## *Tectonics and Regional Geology*

The Steen River structure is located over the southernmost tip of the Great Bear magmatic arc in northwest Alberta (Figure 1, "G"), a tectonic element of the north-south oriented Wopmay Orogen. Great Bear and Hottah ("H") basement terranes are separated from the Buffalo Head ("B"), Ksituan ("K"), and Slave ("S") terranes to the southeast by the Hay River Fault, which is the buried southwest extension of the Great Slave Lake Shear Zone. Great Bear and Ksituan magmatic arcs are calk-alkaline plutonic and volcanic belts which formed along ancient subduction zones between 2.0 and 1.8 Ga. Buffalo Head and Hottah accreted terranes represent older Archean crystalline basement rocks which formed between 2.4 and 2.0 Ga, and Slave represents an even older sliver (2.8 to 2.6 Ga) of Archean terrane (Ross and Stephenson, 1989).

Hoffman (1988) suggests that Hottah is a magmatic arc and reports its age and the age of Great Bear: 1.95 to 1.91 and 1.88 to 1.86 Ga respectively. Ross and Stephenson (1989) report ages of 2.34 to 2.0 and 1.98 to 1.90 Ga for Buffalo Head and Ksituan terranes respectively.

The Great Slave Lake Shear Zone is a tectonic scale fault zone composed of early Proterozoic mylonites (2.0 to 1.9 Ga). This zone is up to 25 km wide and is thought to be related to northeast translation of the Slave Craton with respect to the Rae ("R") Province and Taltson ("T") -Thelon Orogeny to the southeast (Ross and Stephenson, 1989). Hoffman (1988) reports that as much as 700 km of right-slip motion along the Great Slave Lake Shear Zone caused southwest extrusions of crustal wedges, and probable sinistral wrench faulting.

Figure 2 illustrates relationships between Slave and Rae Provinces, Taltson-Thelon Orogeny, and Great Slave Lake Shear Zone ("GS") with respect to Laurentia (Hoffman, 1988).

## *Steen River Structure*

The Steen River structure is located about 18 km northwest of the Hay River Fault and centered roughly at 59° 30' N, 117° 37' W (Figure 3). It is a crater-like structure formed in Early Cretaceous time by a violent shock event, either a meteorite impact or intracrustal explosion (Carrigy, 1968).

Overall the basement beneath the study area, defined from boreholes, ranges between 1280 and 1432 m deep and dips gently to the southwest. The shape of the Steen River feature is roughly elliptical; its 24 km long axis oriented west-northwest, and 19.5 km short axis oriented north- northeast. The basement gently rises to the outside rim of the feature, then

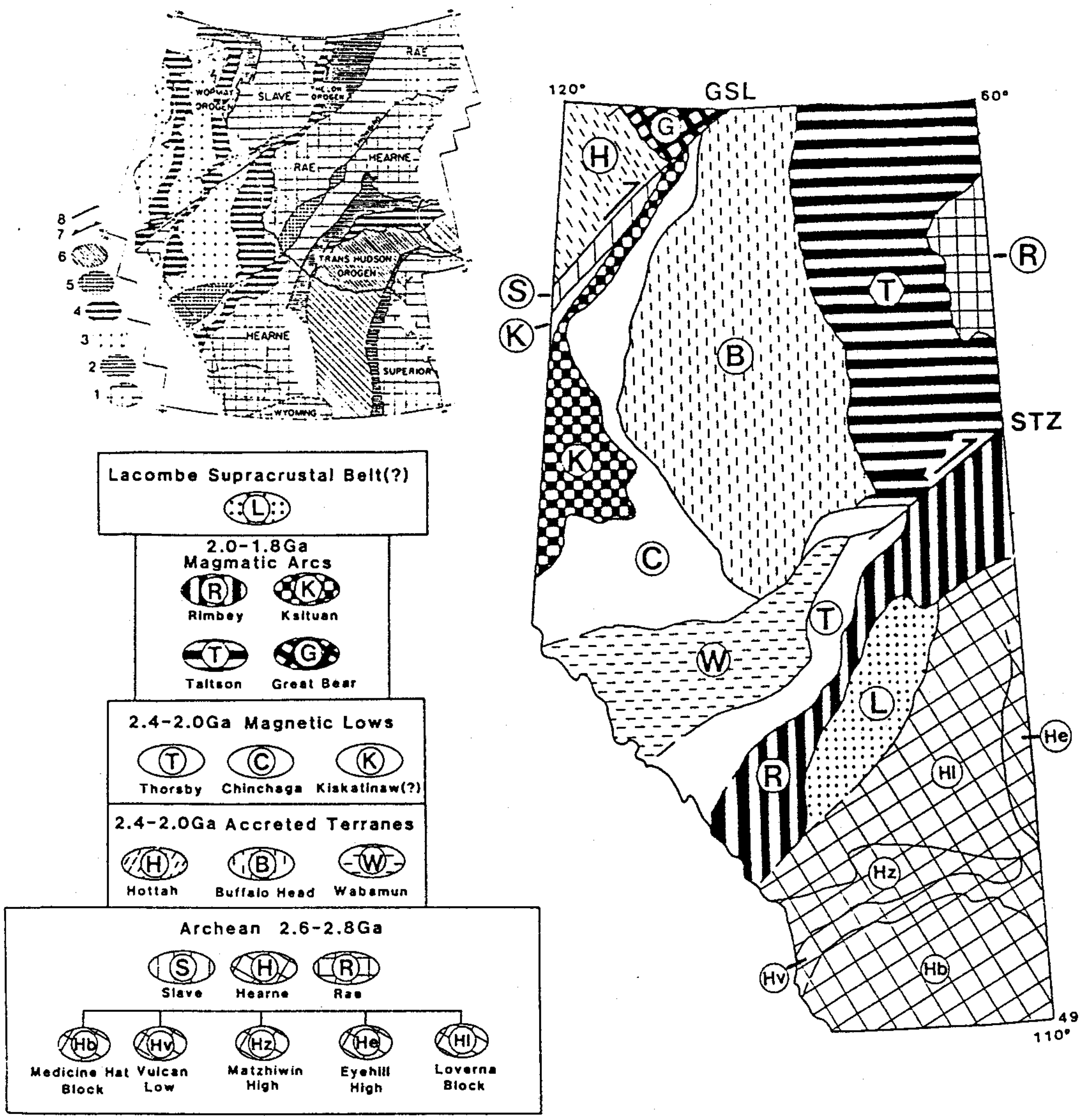


Figure 1

Tectonic elements of Alberta. The study area is located just south of "G" over the Great Bear magmatic arc. Modified after Ross and Stephenson (1989, p. 35).

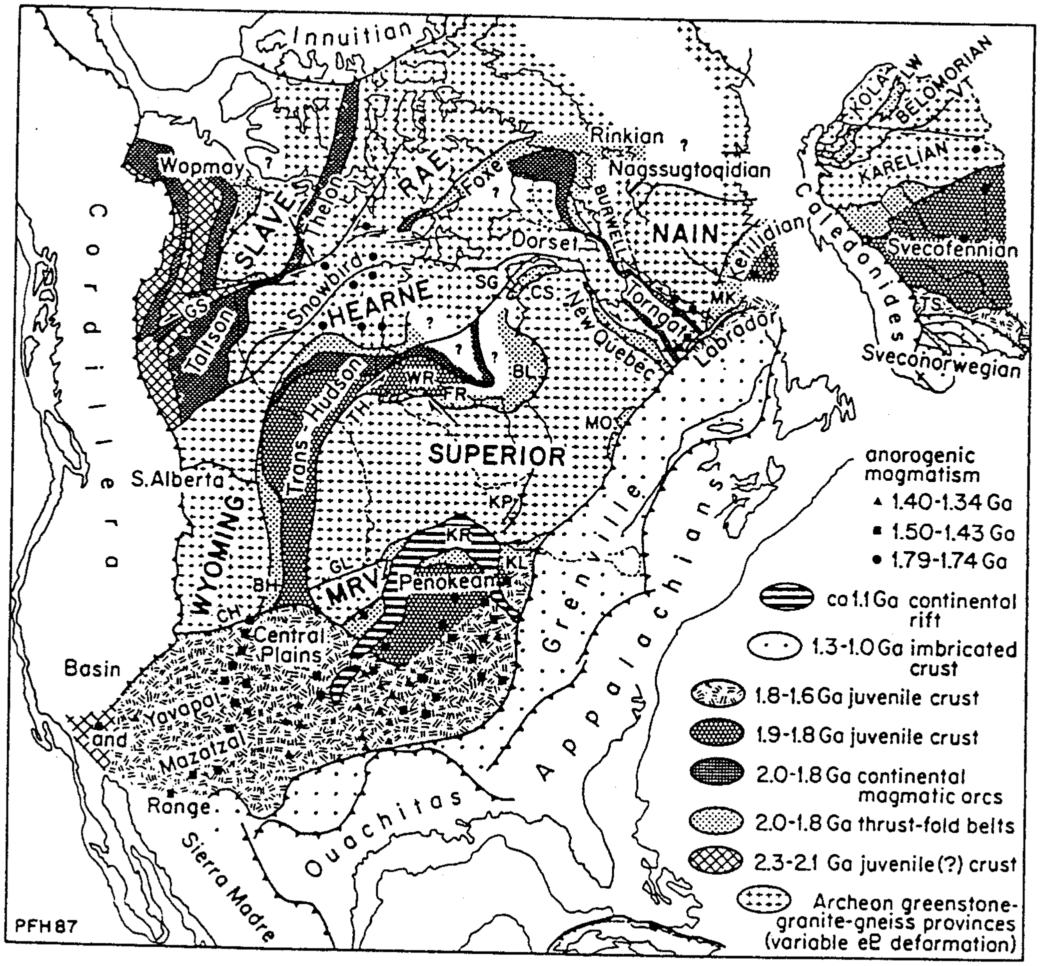


Figure 2

Precambrian tectonic terranes of Laurentia. Modified after Hoffman (1988, p. 544).

drops 180 m and 520 m along the southeast and northwest boundaries forming rim syclines, which in turn are cut by several radial faults. Finally, the center of the feature rises 1280 m above the rim synclines or about 760 m above typical basement elevations for the area (Winzer, 1972).

The most studied core samples of the Steen River structure are from a wildcat exploration well drilled in 1963 by Imperial Oil Enterprises Ltd. (LSD 12, Sec. 19 Twp. 121, Range 21 W 5). The structure was encountered 184 m below the surface and the well was extended 516.6 m further (Winzer, 1972). Figure 5 shows the lithology of crystalline rocks recovered from this well. Major rock types include well foliated gneiss injected by veins of microbreccia and dark suevite breccia. The presence of devitrified glass is interpreted as melt (Winzer, 1972).

Carrigy (1968) reports that plutonic rocks consist of coarse-grained hornblende granite gneiss, finer-grained leucocratic granite, and pitchstone. He further reports that these rocks are similar to rocks of adjacent Archean shield areas. Using potassium-argon isotopic dating, plutonic rocks from 384 m depth were determined to be 560 Ma. Using potassium-argon and rubidium-strontium isotopic dating, pyroclastic rocks from 454 m depth were determined to be 95 Ma (Carrigy, 1968).

Figure 6 shows cross sections through the Steen River structure interpreted by Carrigy (1968) and Winzer (1972). Their interpretations differ for the origin of the Steen River structure: Winzer feels that it formed in response to a meteorite impact while Carrigy is essentially undecided between its formation by meteorite impact or by cryptoexplosion. Summaries of their ideas follow.

Winzer (1972, p. 151) notes that, "All rocks from the Steen River structure contain mineral phases showing ... indications of severe shock ...". Furthermore, ".. that the Steen River rocks show all the main petrographic features found in terrestrial meteorite impact craters, with the exception of coesite." (Winzer, 1972, p. 155).

Carrigy (1968, p. 371) notes that pitchstone formation and zeolite mineralization, "... are better explained by volcanism subsequent to tectonic adjustment of the basement rocks." However, he notes that, "A satisfactory explanation of all the features encountered ... is not possible with the data available." Finally, referring to Figure 6a of this text, Carrigy (1968, p. 371) suggests the following geologic history for the Steen River structure:

> In early Cretaceous time (about 100 million years ago) a violent explosion formed a crater on the horst block. The base of this crater was intruded by magma which cooled quickly to form a pitchstone sill. The upper part of the crater was partially eroded and weathered before being buried by marine Cretaceous sediments which contain many thin beds of tuff interbedded with carbonaceous radiolarian shales, thus indicating post-crater volcanism in the same general region. A second period of erosion followed epiorgenic uplift in

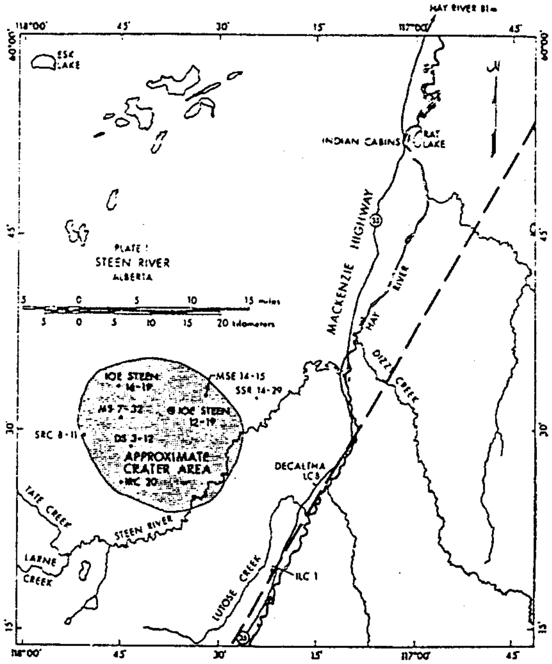


Figure 3

Location of the Steen River structure. The north-northeast oriented dashed line shows the approximate location of the Hay River fault. Modified after Winzer (1972, p. 149).

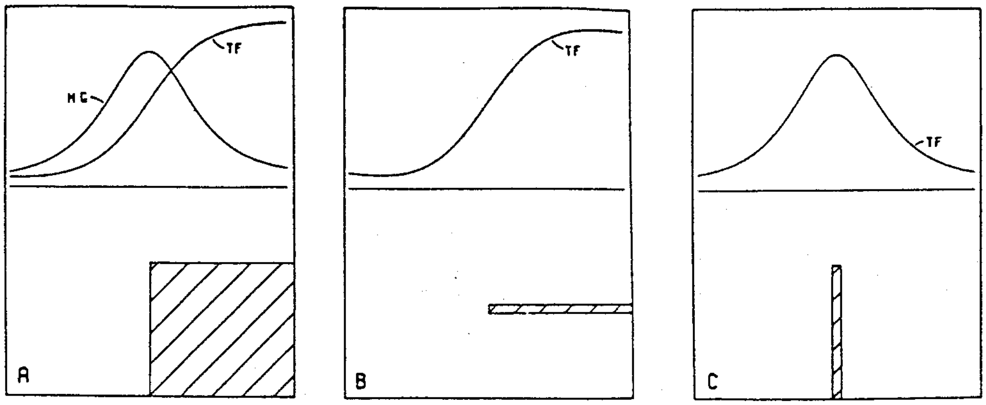
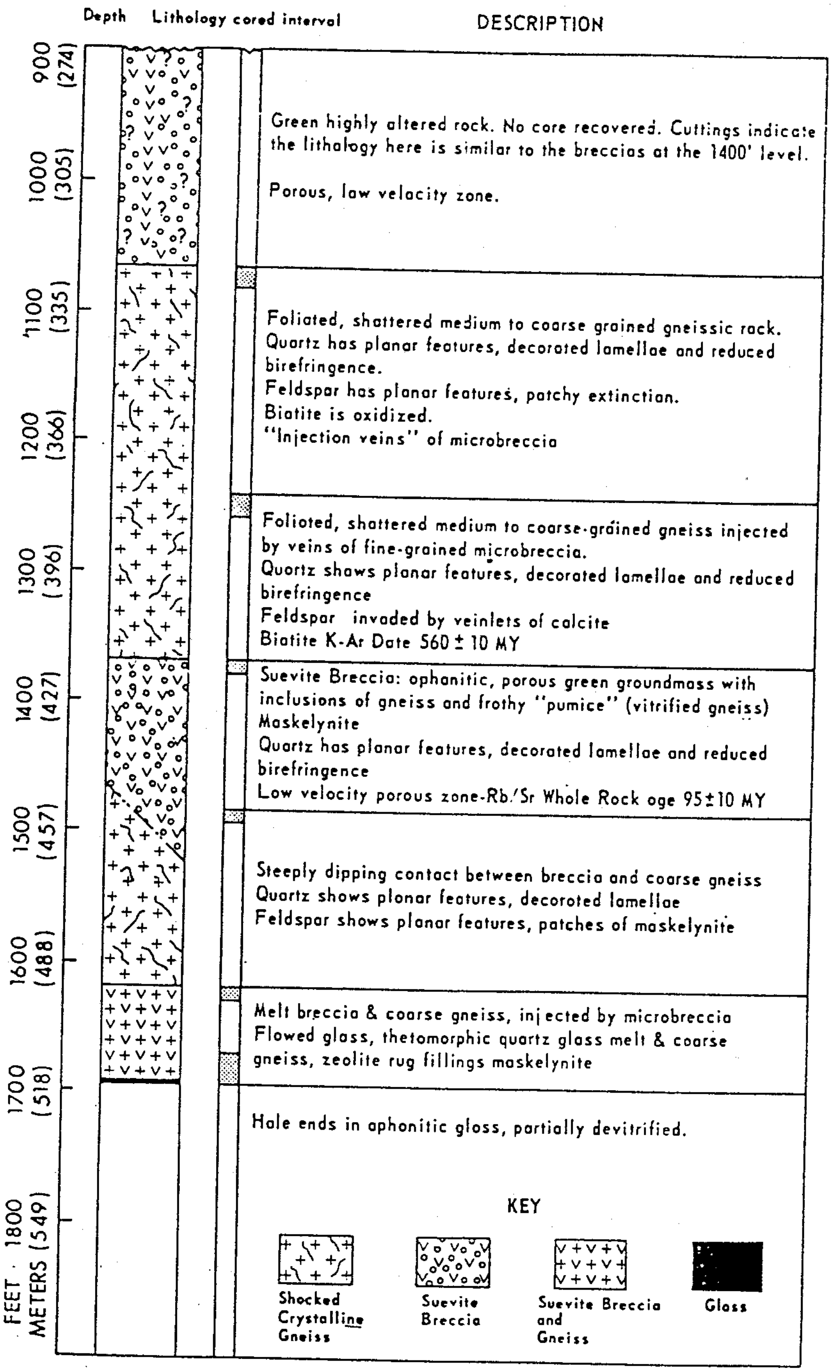


Figure 4

Relationships between total field (TF) and horizontal gradient (HG) magnetic profiles: ) TF and its HG, B) TF over a horizontal sheet, C) TF over a vertical sheet.



Green highly altered rock. No core recovered. Cuttings indicate the lithology here is similar to the breccias at the 1400' level.

Porous, low velocity zone.

Foliated, shattered medium to coarse grained gneissic rock.
Quartz has planar features, decorated lamellae and reduced birefringence.
Feldspar has planar features, patchy extinction.
Biotite is oxidized.
"Injection veins" of microbreccia

Foliated, shattered medium to coarse-grained gneiss injected by veins of fine-grained microbreccia.
Quartz shows planar features, decorated lamellae and reduced birefringence
Feldspar invaded by veinlets of calcite
Biotite K-Ar Date 560 ± 10 MY

Suevite Breccia: aphanitic, porous green groundmass with inclusions of gneiss and frothy "pumice" (vitrified gneiss)
Maskelynite
Quartz has planar features, decorated lamellae and reduced birefringence
Low velocity porous zone-Rb/Sr Whole Rock age 95±10 MY

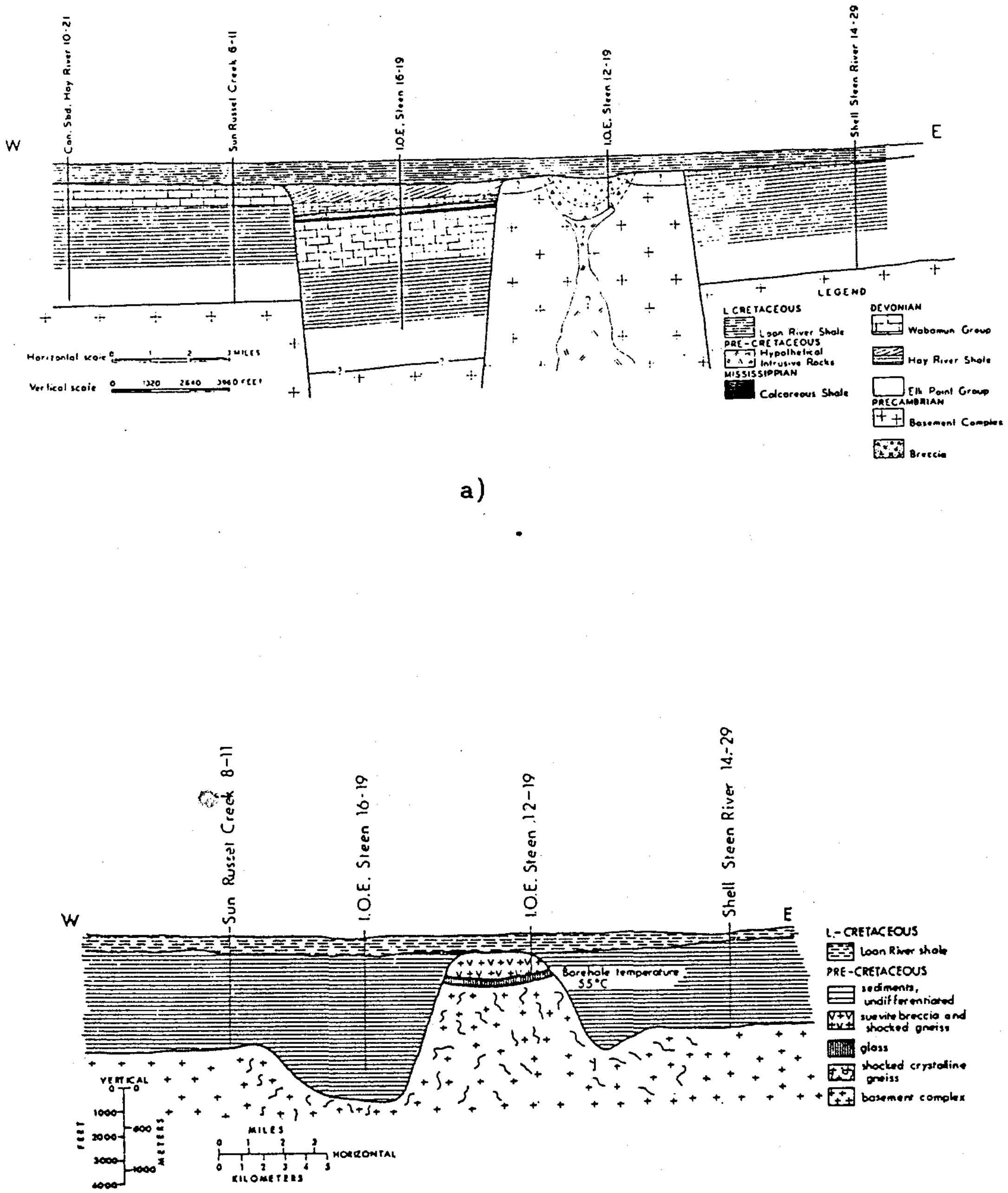
Steeply dipping contact between breccia and coarse gneiss
Quartz shows planar features, decorated lamellae
Feldspar shows planar features, patches of maskelynite

Melt breccia & coarse gneiss, injected by microbreccia
Flowed glass, thetomorphic quartz glass melt & coarse gneiss, zeolite rug fillings maskelynite

Hole ends in aphanitic glass, partially devitrified.

Figure 5

Lithologic log from 900 to 1695 feet, Imperial Oil Enterprises Ltd. well 12-19. Modified after Winzer (1972, p. 150).



a)

b)

Figure 6

Interpreted cross sections through the Steen River structure: a) modified after Carrigy (1968, p. 372), b) modified after Winzer (1972, p. 151).

> post-Cretaceous time, and finally this landscape was buried by a layer of glacial drift during the retreat of the continental glaciation in Pleistocene time.

Brown (1995) analyzed core samples from three wells in the area of the Steen River structure: LSD 12, Sec. 19 Twp. 121, Range 21 W 5; LSD 3, Sec. 12 Twp. 121, Range 22 W 5; and LSD 16, Sec. 19 Twp. 121, Range 22 W 5. He concluded that there were two types each of igneous and volcanic rocks, with no evidence of kimberlites. He also concluded that, "The depletion of Au and the low amounts of Cu, Ni and Zn mean there is a possibility of ore if one assumes that the rocks tested are the source rocks and have been depleted by some ore forming event." (Brown, 1995, p. 5). Finally, specific findings from Brown (1995, p. 4) follow:

1. No correlation with Kimberlite type rocks,
2. The Steen River granites plot in the California I-type granites or Himalayan collisional granites,
3. The Dome 3564-3573 sample plot in the range of tonalite-granodiorite-granite-quartz monzonite type of rock, while the other Dome granite and the other granites plot in the quartz syenite-monzonite-granodiorite-syenite series of rocks,
4. All the samples plot in the volcanic arc and collision portion of the tectonic discrimination Nb-Y diagram,
5. All except two samples plot in the igneous section of the igneous spectrum diagram. Sample 12-19-01, a tuff breccia, and 16-19-779, a tuff, plot in the potassium keratophyre section of the diagram,
6. The samples plot in the rhyodacite, dacite, trachyandesite, andesite, subalkaline basalt on the volcanic discrimination diagram,
7. None of the samples correlate well with total crust Archean data nor with lower continental crust data,
8. Sample 12-19-01 is anomalous in Sr (strontium) and slightly in Zn (zinc). All samples are depleted in Au (gold), and
9. One sample 16-19-77 which was thought to look like bentonite (ash fall tuff) seems to be a sediment - low in $SiO_2$ and somewhat high in CaO.

# 3. Data

The study area is defined by UTM-x range of 495,000 m to 472,000 m east and UTM-y range of 6,590,000 m to 6,607,500 m north, UTM Zone 11.

The high resolution aeromagnetic survey was flown over the study area from March 23 through 31, 1995 by Sander Geophysics Ltd. of Ottawa, Ontario. Approximately 1459 line km, representing a more detailed portion of a larger survey, were flown over 238 $km^2$ at an altitude of 120 m mean terrain clearance (Plate 1). The survey line spacing is 250 m and oriented east-west, while the control line spacing is 500 m and oriented north-south (Plate 2).

Sander Geophysics Ltd. also processed the data and its quality is excellent. An industry standard Scintrex CS-2 magnetometer, with 0.01 nT sensitivity, was used. Data were positioned via differential GPS using a NovAtel 951R ten channel receiver.

At 59° 30' N, 117° 30' W, the magnetic field strength, inclination and declination are 59898.5 nT, 79.4° and 25.4° respectively. All maps are projected to NAD27 datum, UTM Zone 11, central meridian 117° W.

Unfiltered total intensity magnetic anomalies over the study area are characterized by relatively short wavelength high amplitude anomalies, produced by the Steen River structure, superimposed on a broad magnetic gradient which dips to the southwest. Anomalies produced by the Steen River structure range in wavelength from 500 to 1300 m, and in amplitude from about 90 to 730 nT. For the most part they correspond to the elliptical feature discussed in the previous section of this text, however similar anomalies are located four km north (Anomalies One, Two and Three of this study), and one to two km southeast of the ellipse (Anomalies Eight and Nine of this study).

Other information utilized for this study includes a report of an earlier aeromagnetic data interpretation (Excel, 1995) and a Troymin Resources Ltd. lithology report on rock samples from three wells in the area (Brown, 1995).

Additional data such as reflection seismic and gravity were unavailable for this study, however available literature provides sufficient support for interpretation modeling.

# 4. Methods

## Werner Depth-to-Magnetic Source Estimation

Depths determined from magnetic data can be confidently estimated to about ± 7%. When an entire data set is interpreted by consistent methods, the interpretation map will show structural highs and lows which are relative to each other. Although depths are not known exactly, the horizontal positions of anomalies are directly related to locations of interpreted sources, so there is no ambiguity with regard to geographic position (Bird, 1997).

Several techniques exist for estimating the depth to magnetic sources, both manual and automated. Among the automated techniques Werner depth estimation is one of the most reliable. Mathematically Werner solves a system of over-determined linear equations to calculate the horizontal and vertical position, dip, and susceptibility of a 100 foot thick two-dimensional magnetized sheet. Although the technique has been referred to as deconvolution in the literature, strictly speaking it is not a convolution operation. The depth estimation technique was first introduced by Werner (1953) and over the years, it has been refined by workers interested in automating magnetic data interpretation (Hartman et al., 1971; Ku and Sharp, 1983). Note the discussion and reply which address a few errors presented in Ku and Sharp's paper (Rao, 1984; Ku and Sharp, 1984).

Werner was mainly concerned with identification of mineralized dikes for mining exploration. For this case, only an analysis of the total intensity anomaly data is required. In order to apply the technique to exploration, it has been expanded so that body edges can be identified. This is possible because the total intensity magnetic anomaly produced by a vertical thin sheet is precisely equal to the horizontal derivative of the total intensity magnetic anomaly produced by a horizontal sheet (Figure 4, p. 8). Furthermore, the edge of a magnetized block of any thickness will produce an anomaly precisely equal to an anomaly produced by a horizontal sheet. Amplitudes may differ, but the wavelengths will be the same.

Therefore, the total intensity magnetic anomaly profile can be analyzed to determine depth, horizontal position, susceptibility and dip for thin sheet bodies while analysis of the derivative profile, or horizontal gradient, yields similar solution components for interfaces or edges. The horizontal gradient can be reliably calculated directly from the total field profile data.

Depth estimation is carried out by passing a four to eight point operator across the total field and derivative profiles. Typically up to six passes of overlapping operator lengths are utilized. The shortest operator lengths will provide shallow depth estimates while longer operators provide deeper depth estimates. In general, closely grouped clusters of depth estimates indicate the location of the magnetic source body.

The best way to interpret Werner depth estimates is by considering both types of solutions simultaneously, those calculated from the total field profile and those calculated from the derivative (or gradient) profile. Dip directions related to gradient depths should be more or less perpendicular to dips associated with total field depths. If either one is vertical, the other should be horizontal. If vertical dips are related to total field depth estimates and near-horizontal dips are related to the corresponding set of gradient depth estimates, then the source body is probably a vertically dipping body located at the total field solutions. Conversely, if vertical dips are related to gradient depth estimates and horizontal dips are related to the total field depths estimates, then the source is probably a vertical interface with its edge located near the gradient solutions. This last example is most important for mapping the structure of basins. Also in this last example the dip of the total field solution should point in the direction of the magnetized body. An upward pointing dip arrow associated with the total field indicates a vertically dipping body with reversed magnetic polarity.

Sources are considered to be thin if their width is less than half their depth. If the source body's width exceeds its depth, then its edges can be identified as separate interfaces.

Since a 100 foot thick source body is the assumed model in Werner's technique, calculated susceptibilities are typically much higher than real susceptibilities of the source body. Having said that, calculated susceptibilities still are useful in interpretation because higher values can indicate more likely source positions; i.e., a 'stronger' calculation.

Once Werner profiles are interpreted, and depths are posted on a basemap, then they can used to contour a depth-to-magnetic basement surface. Caveats associated with Werner interpretation are:

1. Werner assumes two-dimensional sources, infinite and perpendicular to the profile direction,
2. If a profile crossing an oblong shaped anomaly at an angle less than 90°, then depth estimates will be calculated too deep and should be corrected by multiplying depths by the cosine of this angle, and
3. Profiles which cross the flanks of anomalies also yield depths which are too deep.

These obstacles can be overcome with geologic awareness; that is, we can use our geologic insight to interpret the types of structures expected.

## Forward Modeling

### Overview

In general, a two-dimensional magnetic model can be created along a seismic line in order to check if an interpreted depth to magnetic basement is reasonable, or if a structure is supported by the basement, or if a feature on a seismic section is salt or igneous, etc. This type of modeling is called forward modeling. In the present study, two-dimensional forward modeling is utilized to support the modeling interpretation (Bird, 1997).

Two variables are involved in modeling: magnetic susceptibility and geometry of source bodies. Using control such as seismic, gravity and well data, geometries may have little variability thus modeling involves adjusting magnetic susceptibility. If there is no other control than magnetic data, then it is best to keep susceptibilities constant and modify geometries. Once again in this study, since additional control was unavailable, susceptibility contrasts were kept simple and geometries were modified.

Forward modeling of magnetic data can also be used to constrain interpretations of other data sets including reflection seismic and gravity data. Another example is geological cross-sections. These are interpretations, and magnetic interpretations can improve such work in areas of ambiguous geology.

It is easy to create a complex model, with an excellent match between computed and observed magnetic anomaly profiles, which far exceeds available control. Therefore, it is not appropriate to modify geometry and susceptibility in magnetic models randomly with no control. It is also not appropriate to model using filtered data, because we do not know if the component of the magnetic field removed by the filter is also removed in our model.

### Approach for modeling the Steen River structure

The central goal of modeling for this project is to determine if the magnetized sources beneath anomalies produced by the Steen River structure are part of the crystalline basement (i.e., "rooted") or rocks related to an Early Cretaceous meteorite impact (i.e., "thin"). To this end, the following constraints were applied while modeling:

1. Magnetized source bodies are restricted to simple shaped, single magnetic susceptibility polygons,
2. The depth to the top of magnetic source bodies are based on Werner depth-to-magnetic source estimation and anomaly frequencies for each anomaly under consideration,
3. The depth to the top of magnetic source bodies are kept relatively constant between thick and thin models,
4. Model half-widths are determined from anomaly widths measured perpendicular to the models,
5. Typical magnetic susceptibilities for rocks described in studies discussed earlier are utilized (Carmichael, 1989, p. 337-347), and

6. The style for thin magnetic source modeling is based on Winzer's concept (Figure 6b).

With one exception, each model corresponds to anomalies previously analyzed by Excel (1995). They analyzed 13 anomalies which are identified on Plates 1 and 2. In this study, Anomalies Six and Seven are combined in a single model, Model Six. Also, all twelve models incorporate half-widths described above with one exception. The magnetic profile over Model Thirteen exhibits an ancillary low amplitude anomaly west of Anomaly Thirteen. The location of the feature interpreted to produce this response is offset to the north of this profile. Therefore, the source body in this model is modeled in 2-3/4 dimensions. Finally, two source bodies, with different magnetic susceptibilities, were incorporated in Models Eleven and Thirteen.

Profiles were interpolated from the total intensity magnetic anomaly grid along lines which best "split" the anomalies along their short elliptical axes. Hence, models were constructed perpendicular to the strike of the anomalies and their sources.

A review of possible magnetic susceptibilities reveals that they vary considerably (Carmichael, 1989, p. 337-347). Therefore, each anomaly was modeled two times: once utilizing a relatively low susceptibility ($k_l$), an again using a relatively high susceptibility ($k_h$). Those modeled using $k_l$ result in thick sources, and those modeled using $k_h$ result in thin sources. The idea here is to show probable end-members of source bodies with low and high magnetic susceptibilities.

Table 1 summarizes model parameters including: coordinates of profile endpoints, profile directions, length, model half-widths, susceptibilities utilized, and anomaly amplitude ranges. Plot parameters for all models are summarized below:

1. Horizontal scale is 1:25,000 corresponding to the scale of Plate 1,
2. Depth range for thick models is -500 m to 10,000 m,
3. Depth range for thin models is -500 m to 1000 m,
4. Vertical exaggeration for thick models is 0.14,
5. Vertical exaggeration for thin models is 0.95, and
6. Anomaly amplitude window is scaled separately for each model.

| Model | Anomaly Modeled[1] | From (x,y) | To (x, y) | Direction | Length | Half Width | Susceptibilities $(k_l, k_h)$ | Amplitude Range[2] |
|---|---|---|---|---|---|---|---|---|
| **One** | 1 | **A:** 462105, 6607000 | **A':** 462885, 6604000 | 165° | 3.10 km | 250 m | 3000, 6500 μcgs | 40 to 210 nT |
| **Two** | 2 | **B:** 463390, 6605420 | **B':** 465580, 6607315 | 50° | 2.90 km | 250 m | 750, 2000 μcgs | 30 to 190 nT |
| **Three** | 3 | **C:** 467040, 6605400 | **C':** 467040, 6607375 | 0° | 1.97 km | 125 m | 1500, 3500 μcgs | 40 to 130 nT |
| **Four** | 4 | **D:** 465520, 6599460 | **D':** 468000, 6601575 | 49° | 3.26 km | 600 m | 3200, 4700 μcgs | -70 to 500 nT |
| **Five** | 5 | **E:** 467740, 6598540 | **E':** 467740, 6601000 | 0° | 2.50 km | 400 m | 6000, 7500 μcgs | 0 to 580 nT |
| **Six** | 6 & 7 | **F:** 467000, 6598000 | **F':** 470100, 6596000 | 123° | 3.69 km | 500 m | 3500, 6000 μcgs | -50 to 670 nT |
| **Eight** | 8 | **G:** 469880, 6595950 | **G':** 471400, 6594200 | 138° | 2.32 km | 400 m | 4000, 6000 μcgs | 100 to 380 nT |
| **Nine** | 9 | **H:** 468620, 6592000 | **H':** 468990, 6594000 | 10° | 2.04 km | 500 m | 3300, 5000 μcgs | 20 to 220 nT |
| **Ten** | 10 | **I:** 466340, 6597000 | **I':** 468020, 6594000 | 150° | 3.44 km | 500 m | 6000, 8000 μcgs | -60 to 550 nT |
| **Eleven** | 11 | **J:** 463200, 6594000 | **J':** 465000, 6596680 | 35° | 3.23 km | 500 m | 1000, 3500 μcgs<br>3500, 6000 μcgs | -60 to 300 nT |
| **Twelve** | 12 | **K:** 461340, 6594500 | **K':** 463000, 6596300 | 42° | 2.45 km | 750 m | 4000, 6000 μcgs | -120 to 250 nT |
| **Thirteen** | 13 | **L:** 463000, 6598350 | **L':** 466000, 6598350 | 90° | 3.00 km | 900[3] m | 4500, 8000 μcgs<br>5200, 8000 μcgs | 50 to 690 nT |

Table 1

Parameters of forward 2.5-Dimensional magnetic anomaly models. Two source bodies, with different magnetic susceptibilities, were utilized for Models Eleven and Thirteen.

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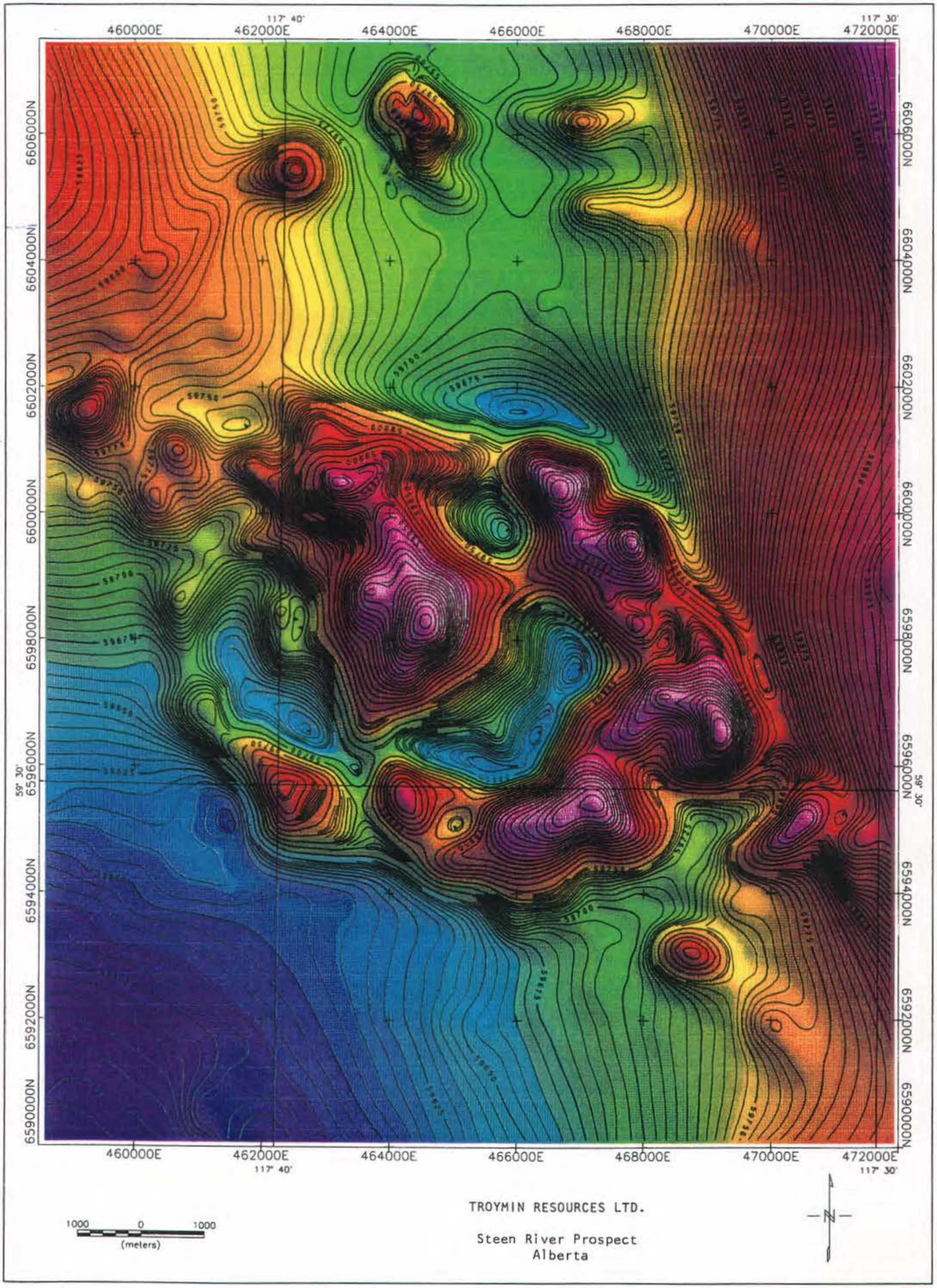
[1] Anomalies previously analyzed by Excel (1995).

[2] After subtracting 59,650 nT from all profile data.

[3] The western low amplitude anomaly of this profile was modeled in 2 3/4-D with end-surfaces located 800 m and 50 m north of the profile (see text, p. 16).



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