Ground-penetrating Radar Survey Report

Tenures: 583789, 583908

Mining Division: Greenwood

NTS Location: 082E/03

Geographic Center Coordinates: 49° 5'2.59"N, 119° 9'23.04"W

Claims Owner: Phil Bedard

Operator: Phil Bedard

Consultants: N/A

Report Author: Warren Tessari

Report Submission Date: April 23, 2009

Submission Event Number: 4277611
# Table of Contents

Table of Contents ........................................................................................................... 2  
Introduction .................................................................................................................... 3  
Figure 1: Index Map....................................................................................................... 3  
Property and Survey Overview .................................................................................... 4  
Technical Data and Interpretation ................................................................................. 5  
Data and Diagrams ....................................................................................................... 7  
Figure 2: Sample Radar Data .......................................................................................... 7  
Figure 3: Plan Map A .................................................................................................... 8  
Figure 4: Plan Map B .................................................................................................... 8  
Itemized Cost Statements ............................................................................................. 9  
Statement of Author’s Qualifications .......................................................................... 13  
References Cited in the Report ................................................................................... 14  
List of Software Programs Used in Support of the Exploration and Development and the Preparation of the Report ................................................................................................. 15  
Appendix A: Original Report to Vergo Group .............................................................. 16  
Table of Contents ........................................................................................................ 5
Introduction

Figure 1: Index Map
Property and Survey Overview

The Vergo Placer Claims encompass the majority of the surface and suspected subsurface drainage systems, both current and historical, downstream from the lode deposits mined around Camp McKinney in the late Nineteenth Century.

In addition to the historically profitable hard-rock mining, Regional GeoChemical Surveys available online from BCGS Geology also indicated abnormally high gold values from soil samples south and east of the historical mines.

Other factors that contributed to the selection of this area for exploration and development included proximity to roads and power and a lack of conflicting interests. The majority of the claim is not privately owned, although Crown Grants and other mineral claims abound in original mine and camp area.

The specific claims covered by this scope of work are owned and operated by Phil Bedard representing the Vergo Group. Their tenure numbers for these claims are 583789, 583908 and they are outlined in red on the index map in this report.

Access to the claim is via Mount Baldy Road, and it is located approximately 41.2km east of Oliver. There is a substantial system of trails throughout the claim.

Approximately 2 kilometers of radar data was collected on the claims listed above. The purpose of the Ground-penetrating Radar (GPR) survey was to identify target areas for further testing such as trenching and drilling. Apparent subsurface channels, both current and historical, were noted in the data and transferred manually to satellite imagery and quantitatively using non-differential GPS coordinates attached to the data.

The original report provided to Phil Bedard is attached as an appendix to this report and contains additional information (see Appendix A.)
Technical Data and Interpretation

250 MHz radar data was gathered by towing the radar transducer across targeted areas by foot. For the first survey, the data was analog and manually referred back to the specific, straight lines that were flagged and marked in the field. For the second survey, digital data was gathered and correlated to GPS coordinates for further analysis.

For this initial study the Noggin 250® made by Sensors & Software Inc. was used. The transmitter and receiver are both contained in a single unit. The Noggin 250® operates at 250MHz with trace spacing based on elapsed time. This unit was connected to a laptop and the data was captured in real time.

This radar system was shielded, and therefore out-of-plane objects were not a significant factor. Although the depth of penetration is relatively shallow for soil applications with a 250MHz system, this allows for greater resolution of apparent near-surface object signatures.

All depth measurements were based on an estimated radar velocity for the expected soil type. For the purposes of this survey, all depths were relative rather than absolute and intended to be verified and corrected in the future through other forms of testing such as drilling and/or trenching. Where depths are given, they are provided in meters below grade.

Specifically, depth was indicated by nanoseconds corresponding to the signal travel time to and from the radar unit. Based on the estimated soil conditions, a depth approximation in meters was also provided by the radar unit. The deepest indications with clear signal returns in this wavelength were approximately 6m.

The soil type appeared to be sand and gravel with localized topsoil and sporadic clays. There appeared to be an abundance of overlying glacial till. The topography, as shown on the index map, was variable and sloping overall to the east and the south. However, in the area of pilot site where the radar data was gathered, the topography was an elongated bowl shape. The scope of this evaluation did not extend beyond surficial conditions into the underlying bedrock.

The apparent relative depths of horizons in the data were indicated by markers in a blue-shaded spectrum, with the darker markers indicating the deepest horizons, and the lighter markers indicating shallower horizons. Water saturation limited the depth of penetration and resulting clarity of the data a depth in some areas. Any horizons that appeared to be deeper than the signal penetration were
indicated by arrows. Apparent features such as gravel, boulders, and side flows and possible throws were also indicated.

NOTE:

The attached original report contains further details regarding the methods, procedure, and results of the GPR survey. See Appendix A, which forms part of this report, for more information.
Data and Diagrams

Figure 2: Sample Radar Data

This figure is an example of 250MHz radar data gathered during the survey. The salient features include subsurface horizons, apparent water saturation, and hyperbolas indicating features such as boulders or tree roots. *The attached original report comprising Appendix A contains samples from various areas on the claims as well as further analysis and explanations.*

The depth in the data is given in nanoseconds, which is the most accurate representation of signal return. Any depth estimates are based on an estimated velocity and are intended to be verified during further testing. Distances along the ground were not taken from legend across the bottom of the data. Real-time GPS tags were employed instead and transferred as waypoints to Google Earth Pro™.
Figure 3: Plan Map A

PLAN MAP A: RADAR DATA MAY 2008

LEGEND

- Green: Specific Claims Involved
- Black: Roads
- Blue: Streams
- Orange: Data Lines Gathered

1:2 222  10m Contour Spacing
Figure 4: Plan Map B

PLAN MAP B: RADAR DATA JUNE 2008

LEGEND

- Green: Specific Claims Involved
- Black: Roads
- Blue: Streams

1:2 353  10m Contour Spacing

N

583789

250 Data Legend (small points)

- 0 - 12.5 ns (approx 0 - 0.67m)
- 12.5 - 25 ns (approx 0.67 - 1.33m)
- 25 - 37.5 ns (approx 1.33 - 2m)
- 37.5 - 60 ns (approx 2 - 2.67m)
- 60 - 62.5 ns (approx 2.67 - 3.33m)
- 62.5 - 75 ns (approx 3.33 - 4m)
- 75 - 87.5 ns (approx 4 - 4.67m)
- 87.5 - 100 ns (approx 4.67 - 5.33m)
- 100 - 112.5 ns (approx 5.33 - 6m)
- 112.5 - 125 ns (approx 6 - 6.67m)

GPS Waypoints
Apparent Channel or Throw Bottoms
Apparent Gravel Signatures
Apparent Boulder Signatures
Itemized Cost Statements

The costs associated with this work are itemized on the following invoices created by Maverick Inspection Ltd. pertaining to this work scope:

<table>
<thead>
<tr>
<th>DATE</th>
<th>REPORT</th>
<th>TERMS</th>
<th>DUE DATE</th>
<th>W.O. NO.</th>
<th>VENDOR NO:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/14/2008</td>
<td>7761</td>
<td>NET 30</td>
<td>5/16/2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/15/2008</td>
<td>7761</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/15/2008</td>
<td>7761</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/15/2008</td>
<td>7761</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/16/2008</td>
<td>7761</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/16/2008</td>
<td>7761</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/16/2008</td>
<td>7761</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/17/2008</td>
<td>7761</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/17/2008</td>
<td>7761</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 man travel from base to site
Subsistence - Meals (3)
Ground Penetrating Radar - RTC-50 MHz system - per hour rate - inspected Mount Baldy Vergo Project Pilot site
Ground Penetrating Radar - RTC-50 MHz system - per hour OT rate
Subsistence - Meals
RAMAC RTC 50 MHz analysis with client
RAMAC RTC 50 MHz analysis with client - OT rate
Subsistence - Meals
1 man travel from site to base
Subsistence - Meals
RAMAC RTC 50 MHz digital reporting
Return airfare Edmonton, AB to Kelowna, BC

SUBTOTAL: 5,941.00

THANK YOU FOR YOUR BUSINESS.

Please include invoice number with your remittance.

Accounts over above stated terms are subject to a FINANCE CHARGE of 2% per month which is an ANNUAL PERCENTAGE RATE of 24% to be applied to the unpaid balance. Terms begin date invoice is issued. Please pay on invoice. Statements are only issued to accounts in arrears which have incurred finance charges. Contact our Accounting Department with any problems that could delay your remittance.
<table>
<thead>
<tr>
<th>DATE</th>
<th>REPORT</th>
<th>DESCRIPTION</th>
<th>UNITS</th>
<th>RATE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/24/2008</td>
<td>7762</td>
<td>1 man travel from base to site</td>
<td>8</td>
<td>99.00</td>
<td>792.00T</td>
</tr>
<tr>
<td>6/24/2008</td>
<td>7762</td>
<td>Subsistence - Meals</td>
<td>1</td>
<td>25.00</td>
<td>25.00T</td>
</tr>
<tr>
<td>6/25/2008</td>
<td>7762</td>
<td>Ground Penetrating Radar - Noggin 250 - inspected Mount Baldy Vergo Project</td>
<td>8</td>
<td>195.00</td>
<td>1,560.00T</td>
</tr>
<tr>
<td>6/25/2008</td>
<td>7662</td>
<td>Ground Penetrating Radar - Noggin 250 OT rate</td>
<td>2</td>
<td>273.00</td>
<td>546.00T</td>
</tr>
<tr>
<td>6/25/2008</td>
<td>7662</td>
<td>Subsistence - Meals</td>
<td>1</td>
<td>60.00</td>
<td>60.00T</td>
</tr>
<tr>
<td>6/26/2008</td>
<td>7662</td>
<td>RAMAC RTC 50MHz analysis with client</td>
<td>8</td>
<td>90.00</td>
<td>720.00T</td>
</tr>
<tr>
<td>6/26/2008</td>
<td>7662</td>
<td>RAMAC RTC 50MHz analysis OT rate</td>
<td>2</td>
<td>90.00</td>
<td>180.00T</td>
</tr>
<tr>
<td>6/26/2008</td>
<td>7662</td>
<td>Subsistence - Meals</td>
<td>1</td>
<td>60.00</td>
<td>60.00T</td>
</tr>
<tr>
<td>6/27/2008</td>
<td>7662</td>
<td>1 man travel from site to base</td>
<td>8</td>
<td>99.00</td>
<td>792.00T</td>
</tr>
<tr>
<td>6/27/2008</td>
<td>7662</td>
<td>Subsistence - Meals</td>
<td>1</td>
<td>60.00</td>
<td>60.00T</td>
</tr>
<tr>
<td>7562</td>
<td></td>
<td>RAMAC RTC 50MHz digital reporting</td>
<td>12</td>
<td>90.00</td>
<td>1,080.00T</td>
</tr>
<tr>
<td>7562</td>
<td></td>
<td>Return airfare - Edmonton, AB to Kelowna, BC</td>
<td>1</td>
<td>502.00</td>
<td>502.00T</td>
</tr>
<tr>
<td>7662</td>
<td></td>
<td>Extra charge for oversize baggage (250MHz antenna on way to Kelowna)</td>
<td>1</td>
<td>96.00</td>
<td>96.00T</td>
</tr>
<tr>
<td>6/27/2008</td>
<td>7662</td>
<td>Parking fees incurred for vehicle at Edmonton Airport</td>
<td>1</td>
<td>91.43</td>
<td>91.43T</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SUBTOTAL</td>
<td></td>
<td></td>
<td>6,564.43</td>
</tr>
</tbody>
</table>

SUBTOTAL                                                                 | Can$6,564.43 |

Thank you for your business.

Please include invoice number with your remittance.

**REMUNERATION ADDRESS:**
Vergo May/June 2008 GPR Report  Page 11

Vergo Inspection Ltd.
22 - 161 Broadway Blvd.
Sherwood Park, AB T8H 2A8
Ph: (780) 467-1969
Fax: (780) 467-5967

Accounts over above stated terms are subject to a FINANCE CHARGE of 2% per month which is an ANNUAL PERCENTAGE RATE of 24% to be applied to the unpaid balance. Terms begin date invoice is issued. Please pay on invoice. Statements are only issued to accounts in arrears which have incurred finance charges. Contact our Accounting Department with any problems that could delay your remittance.
The work, including travel to and from the site, was performed over the course of 2 trips, each 4 days in length. The bulk of the data formatting, sorting and analysis was performed during that time, however additional analysis and reporting was required.

The wages of the technicians were not paid for directly by Vergo Group. The amounts from the above invoice are hourly and include all food and accommodation, wages, equipment, transportation, and other costs associated with this scope of work as billed.
Statement of Author’s Qualifications

This report was prepared by Warren Tessari, Operations Manager and Senior Technician for Maverick Inspection Ltd.

Maverick Inspection has extensive experience in specialized non-destructive data gathering including infrared thermography, laser imaging, remote video inspection, and ground-penetrating radar.

Additional analysis was performed by Maverick’s most experienced radar technician and GPR Department Manager, James Harrison, and by George Mason M.Sc. As an Earth Scientist, George Mason has worked extensively with GPR technology for many decades, including mining, archeological, and other applications. James Harrison and George Mason have worked closely together for many years and collaborated on the analysis of the radar data.

The analysis and interpretation of the data was based on known signatures of subsurface features such as water saturation, changes in subsurface horizons, objects that differentiated from the background, and other known phenomenon. No attempt was made to positively identify subsurface features. Apparent signatures were noted for further, targeted investigation, and comments were made on the data based on previous experience and technical knowledge of ground-penetrating radar.
References Cited in the Report

There are no specific references cited in this report. BCGS Geology Maps were used as a resource during exploration and correlation of the data.

The report pertains to the specific data and field conditions, and it does not rely on previous studies or reports apart from basic map data available online from BCGS.
List of Software Programs Used in Support of the Exploration and Development and the Preparation of the Report

BCGS Geology Maps
Google Earth Pro
SPI View (by Sensors & Software)
MICRODEM 12.0
Microsoft Word 2003
Appendix A: Original Report to Vergo Group

The following report was submitted to the Vergo Group and to the Ministry of Mines on April 23, 2009.
This document contains the technical reports for two separate Ground-penetrating Radar (GPR) subsurface surveys for the Vergo Group. The first survey was less intensive and was performed in May 2008 to verify the existence of suspected glacial run-off channels.

The second survey was performed in June 2008. This data was gathered with similar equipment, however much more intensive collection and analysis was required to map out the located subsurface channels in greater detail. GPS coordinates were used to overlay the results with satellite imagery for quick reference.

Both surveys were part of the exploration prior to mechanical test holes, scheduled for later in 2009.

Additional GPR surveys using longer wavelength, deeper-penetrating (but lower resolution) systems were also conducted across a greater area, however those are submitted as a separate technical report.

The BC Mineral Titles Online Event Number for this document is 4277611.
Mineral Titles Online

Placer Claim Exploration and Development Work/Expiry Date Change

Confirmation

Recorder: BEDARD, PHILLIPPE JOSEPH ROYAL (203527)  
Submitter: BEDARD, PHILLIPPE JOSEPH ROYAL (203527)

Recorded: 2009/APR/23  
Effective: 2009/APR/23

Your report is due in 90 days. Please attach a copy of this confirmation page to the front of your report.

Event Number: 4277611

Work Start Date: 2008/MAY/14
Work Stop Date: 2008/JULY/4

Total Value of Work: $13130.70
Mine Permit No: 1630367

Work Type: Technical Work
Technical Items: Geophysical

Summary of the work value:

<table>
<thead>
<tr>
<th>Tenure #</th>
<th>Claim Name/Property</th>
<th>Issue Date</th>
<th>Good To Date</th>
<th>New Good To Date</th>
<th># of Days Forward</th>
<th>Area in Ha</th>
<th>Work Value Due</th>
<th>Submission Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>S83789</td>
<td>VERGO GROUP</td>
<td>2008/may/07</td>
<td>2009/may/07</td>
<td>2010/may/07</td>
<td>365</td>
<td>126.93</td>
<td>$1269.28</td>
<td>$253.86</td>
</tr>
<tr>
<td>S83908</td>
<td>VERGO GROUP</td>
<td>2008/may/09</td>
<td>2009/may/09</td>
<td>2010/may/09</td>
<td>365</td>
<td>42.31</td>
<td>$423.14</td>
<td>$84.63</td>
</tr>
</tbody>
</table>

Total required work value: $1692.42

PAC name: Phil Bedard
Debited PAC amount: $0.00
Credited PAC amount: $11438.28

Total Submission Fees: $338.48
Total Paid: $338.48

The event was successfully saved.

Ground Penetrating Radar Report

To:    George Mason  
        Phone: (250) 765-5449  
        Phil Bedard  
        Phone: (250) 469-0529

From:  Warren Tessari  
        Phone: (780) 467-1606  
        Maverick Inspection Ltd.  
        #22 – 161 Broadway Blvd.  
        Sherwood Park, Alberta  
        T8A 2A8

On May 17th, 2008 Maverick Inspection Ltd. was called upon to perform a series of Ground-penetrating Radar surveys in the vicinity of the initial test hole (approx. 49° 5’52.24"N, 119° 9’31.89"W.) for the Vergo Project on Mount Baldy. This test hole and radar data comprised the first steps of field sample collection for further analysis.

The purpose of the surveys was to gather data related to potential glacial channels and throws with potential for further precious metals exploration.

The data was gathered without the use of an odometer wheel or GPS for this initial study. Instead, the line starts and stops were manually recorded and marked on site maps and flagged in the field for later reference.

If you have any questions concerning Ground-penetrating Radar, please contact Maverick at (780) 467-1606.

Warren Tessari  
Operations Manager  
Maverick Inspection Ltd.  
Phone: (780) 467-1606  
#22 – 161 Broadway Blvd.  
Sherwood Park, Alberta  
T8H 2A8
IMPORTANT INFORMATION REGARDING YOUR MAVERICK INSPECTION LTD. GROUND PENETRATING RADAR REPORT

These notes have been prepared by Maverick Inspection Ltd. to help you properly interpret and understand the subsurface conditions of the scanned worksite.

Your Report is Based on Site Specific Criteria
Your report has been developed on the basis of your unique project specific requirements as understood by Maverick Inspection Ltd. and applies only to the site investigated.

Your Report is Prepared for Specific Purposes and Persons
To avoid misuse of the information contained in your report, it is recommended that you confer with Maverick Inspection Ltd. before passing your report on to another party who may not be familiar with the background and purpose of the report. Your report should not be applied to any project other than that originally specified at the time the report was issued.

NOTE:
Though GPR is the most accurate subsurface imaging technology available, it is not 100% accurate, as with all forms of remote sensing. Maverick Inspection Ltd. provides the highest degree of due diligence in acquiring data, and report generation. Although the chance of missing any subsurface feature is low, clients shall not hold Maverick Inspection responsible for any non or misidentified subsurface features, objects, or anomalies. Maverick Inspection will not be held liable for any loss or damages that come from any non or misidentified subsurface features, objects or anomalies.

There are certain elements that affect GPR. A few of these elements are carbon, chloride, ironstone, and bentonite. These elements act as conductors that affect depth of penetration.
Table of Contents

1.0 Introduction

2.0 Overview

3.0 Results - interpreted
   - datamaps/radargrams

4.0 Conclusion
1.0 Introduction

**BASIC PRINCIPLES OF GROUND PENETRATING RADAR**

Ground-penetrating Radar (GPR) is a non-intrusive method of detecting buried objects or substances in a non-metallic material through the use of radio waves.

GPR systems work by emitting a short electromagnetic pulse in the ground through a wide-band antenna. Reflections from the ground are then measured to form a vector. An image is built by displaying these vectors side by side with the displacement of the antenna. By moving the antenna along a line and taking regularly spaced acquisitions, it is possible to construct an image representing a vertical slice of the ground. The GPR system is connected to a laptop computer that displays these images in real-time. The data is also recorded on the computer for later interpretation and processing.

**BASIC INFORMATION REGARDING THE GPR SYSTEM USED**

For this initial study the Noggin 250® made by Sensors & Software Inc. was used. The transmitter and receiver are both contained in a single unit. The Noggin 250® operates at 250MHz with trace spacing based on elapsed time. This unit was connected to a laptop and the data was captured in real time.

For more detailed radar studies of this area, additional tools such as an odometer wheel, GPS locating, and a digital video logger are recommended.
Ground Penetrating Radar Report

2.0 Overview

The area in question was suspected to contain a main drainage channel with overflow channels curving to the East.

At the time of the scan and test hole, there was no standing water in the clearing. No water was encountered after surface moisture in the hole. The hole was dug to a depth of approximately 1.3 meters. The satellite image to the right showing the test holes, therefore, is not current.

Four lines of data were gathered running from west to east, starting at the south end of the clearing. The third line crossed over the test hole.

The lines were progressively longer due to the shape of the clearing, and the start/stop points were selected to avoid pulling the transducer across deadfall.
3.0 Results

The main channel and the smaller channels to the east were the primary targets in this survey.

The data appeared to show a very clear and deep main channel that flattened towards the south end of the clearing (see Line 1 in the radar data below). It is important to note that the surface of the radar data is horizontal while the physical surface of the clearing is bowl-shaped. Due to this, the projected angles of the sides of the main channel signatures are likely steeper. Therefore, the main channel is also likely deeper than it appears in the data.

Several, smaller side channels were also apparent in the data. These were located roughly where expected, and they appeared as a multitude of violent subsurface horizons.

There was also evidence of possible groundwater saturation in the data below the level of the test hole.

Multiple horizons throughout suggested an ongoing cycle of significant flooding.

The sand collected from the test hole appeared to be very well washed and cleaned. A quantity of sand was taken for further separation and testing.
### 3.5 Digital Data/Radargrams

#### Main Channel Profile
- Line 1
- Line 2
- Line 3
- Line 4

#### Suspected Water Saturation
- Line 1
- Line 2
- Line 3
- Line 4

#### Main Channel Profile
- Line 1
- Line 2
- Line 3
- Line 4

#### Side Channels
- Line 1
- Line 2
- Line 3
- Line 4

#### Test Hole
- Line 1
- Line 2
- Line 3
- Line 4

#### Field Line Markings
- Line 1
- Line 2
- Line 3
- Line 4
Ground Penetrating Radar Report

Conclusion

Maverick Inspection Ltd. was able to perform Ground-penetrating Radar in the requested areas. This inspection appears to have yielded useable results, which fulfilled the scope of work as described.

Overall, the data appeared to confirm suspicions buried drainage channels.

Further data gathering is recommended using a grid pattern, GPS locating and depth calibration for X, Y, and Z coordinates, and then 3D mapping of subsurface features to determine more precise size and locations of areas of interest.

The Noggin systems used by Maverick to perform the inspection were designed and optimized for subsurface inspections, and were chosen for this task because of size, frequency, reliability, and integrated features/filters, and gain settings.

Each system performs a “Power On Self Test” and will fail if not properly calibrated, or if some other problem will not allow the system to function adequately.

Thank you for choosing Maverick Inspection Ltd.

Warren Tessari
Operations Manager
MAVERICK INSPECTION LTD.

Phone: (780) 467-1606
#22 – 161 Broadway Blvd.
Sherwood Park, Alberta
T8H 2A8
To: George Mason  
Phone: (250) 765-5449  
Phil Bedard  
Phone: (250) 469-0529

From: Warren Tessari  
Phone: (780) 467-1606  
Maverick Inspection Ltd.  
#22 – 161 Broadway Blvd.  
Sherwood Park, Alberta  
T8A 2A8

On June 25th, 2008 Maverick Inspection Ltd. was called upon to perform a series of Ground-penetrating Radar surveys mapping out the pilot test site for the Vergo Project on Mount Baldy. This intensive data gathering and analysis was required for more detailed subsurface mapping prior to selection of mechanical test holes.

The purpose of the surveys was to gather data related to potential glacial channels and throws with potential for further precious metals exploration.

The radar lines were gathered with GPS coordinates tagged to the data to indicate position. The analysis was then linked back to Google Earth Pro™ for presentation.

If you have any questions concerning Ground-penetrating Radar, please contact Maverick at (780) 467-1606.

Warren Tessari  
Operations Manager  
Maverick Inspection Ltd.  
Phone: (780) 467-1606  
#22 – 161 Broadway Blvd.  
Sherwood Park, Alberta  
T8H 2A8
IMPORTANT INFORMATION REGARDING YOUR MAVERICK INSPECTION LTD. GROUND PENETRATING RADAR REPORT

These notes have been prepared by Maverick Inspection Ltd. to help you properly interpret and understand the subsurface conditions of the scanned worksite.

Your Report is Based on Site Specific Criteria

Your report has been developed on the basis of your unique project specific requirements as understood by Maverick Inspection Ltd. and applies only to the site investigated.

Your Report is Prepared for Specific Purposes and Persons

To avoid misuse of the information contained in your report, it is recommended that you confer with Maverick Inspection Ltd. before passing your report on to another party who may not be familiar with the background and purpose of the report. Your report should not be applied to any project other than that originally specified at the time the report was issued.

NOTE:
Though GPR is the most accurate subsurface imaging technology available, it is not 100% accurate, as with all forms of remote sensing. Maverick Inspection Ltd. provides the highest degree of due diligence in acquiring data, and report generation. Although the chance of missing any subsurface feature is low, clients shall not hold Maverick Inspection responsible for any non or misidentified subsurface features, objects, or anomalies. Maverick Inspection will not be held liable for any loss or damages that come from any non or misidentified subsurface features, objects or anomalies.

There are certain elements that affect GPR. A few of these elements are carbon, chloride, ironstone, and bentonite. These elements act as conductors that affect depth of penetration.
Table of Contents

1.0 Introduction

2.0 Overview

3.0 Results -interpreted
    -datamaps/radargrams

4.0 Conclusion
1.0 Introduction

**BASIC PRINCIPLES OF GROUND PENETRATING RADAR**

Ground-penetrating Radar (GPR) is a non-intrusive method of detecting buried objects or substances in a non-metallic material through the use of radio waves.

GPR systems work by emitting a short electromagnetic pulse in the ground through a wide-band antenna. Reflections from the ground are then measured to form a vector. An image is built by displaying these vectors side by side with the displacement of the antenna. By moving the antenna along a line and taking regularly spaced acquisitions, it is possible to construct an image representing a vertical slice of the ground. The GPR system is connected to a laptop computer that displays these images in real-time. The data is also recorded on the computer for later interpretation and processing.

**BASIC INFORMATION REGARDING THE GPR SYSTEM USED**

For this initial study the Noggin 250® made by Sensors & Software Inc. was used. The transmitter and receiver are both contained in a single unit. The Noggin 250® operates at 250MHz with trace spacing based on elapsed time. The Digital Video Logger (DVL) control module was connected to a Garmin GPS Map 76C to provide continual satellite positioning information for correlation to the radar data.

**BENEFITS OF GROUND-PENETRATING RADAR**


*Ground-based geophysical surveys can be conducted prior to intensive drilling to help:*

- locate auger or drill holes
- reduce the number of drill holes required
- calculate stripping ratios to help manage mining costs, and
- provide continuity between sampling sites to upgrade the confidence of reserve calculations from probable reserves to proved reserves

...Perhaps the greatest value... may be the speed of data acquisition, reduced overall costs, and improved subsurface characterization.
The radar data is intended to be used to reduce the initial costs and overall footprint of the project. Further test holes, assays, and the eventual mining operation can then be pinpointed and customized for the subsurface structures.
2.0 Overview

This scan was intended to improve the resolution of subsurface imaging prior to the selection of mechanical drilling sites. During the May 15 2008 data gathering, the main channel was identified as well as possible side channels and throws.

At the time of the scan there was some standing water in the clearing. The scan, therefore, was performed around this water.

The position of lines of data in this report are approximated in yellow. The lines shown in red are not included because the depth of penetration was less than the apparent alluvial fill.

Four lines of data were gathered around the circumference of the sinkhole, dividing it up into quadrants. Line 2 comprised the NE portion, Line 3 SE, Line 4 SW, and Line 5 was NW.

Lines 6-34 ran E to West starting across the mouth of the channel, and then roughly parallel up the E bank and then across the S end of the channel.

Line 35 ran the length of the clearing along the E edge from S to N.

The results were analyzed and manually translated to symbols referring to the approximate depth and type of targets noted.
3.0 Results

During the analysis of the data, the signatures noted were divided into the following categories for quick reference:

- Apparent Channel or Throw Bottoms
- Apparent Gravel Signatures
- Apparent Boulder Signatures

These symbols do not indicate that these exact features necessarily exist in these locations, however the subsurface data is consistent with these types of indications.

Depth was indicated by nanoseconds corresponding to the signal travel time to and from the radar unit. Based on the estimated soil conditions, a depth approximation in meters was also provided.

As a radar unit passes over the surface, the depth measurements and subsurface signatures are provided relative to the surface angles. This was not corrected for in the analysis, so all depths and locations provided are perpendicular to the surface at that point.

The GPS coordinates appear to be quite accurate since no shift compared to the Google Earth Pro™ imagery was noted.

The following page contains the waypoints overlaid on historical satellite imagery (not current air photo at the time of the data gathering). A legend of the symbols is included for reference.
NOTES:

- The estimated depths are measured by radio velocity from the surface topography.
- The symbols indicate the type of features at that location.
- With the exceptions of channels and throws, the estimated depth is not the depth of the feature but the depth of horizons visible in reasonable data at that location. Boulder signatures appear to be consistently higher than the lower horizons.
- Water saturation is likely obscuring the bedrock in most areas. There appears to be usable data down to and sometimes into areas of likely water saturation. Useable horizons and signatures appear to diminish gradually into the water saturation.
- Some depths are extrapolated from the angle of horizons entering the area of suspected water saturation.

250 MHz Radar Data Waypoint and Analysis Legend

This data was gathered with approximately 6m maximum of signal penetration and return, focusing on the Pilot Plant site area.
3.5 Digital Data/Radargrams

CHANNELS IN INLET TO PILOT SITE

NOTE:
The signatures of all subsurface features are affected by the actual surface topography of the surveyed line.

CHANNELS AND THROWS IN NE SEGMENT OF PILOT SITE
GROUND PENETRATING RADAR REPORT

CHANNELS AND THROWS IN SE SEGMENT OF PILOT SITE

NOTE:

The signatures of all subsurface features are affected by the actual surface topography of the surveyed line.
The above image is color-mapped for clearer definition of the subsurface channels. Although this can make other features, such as water saturation, more difficult to identify, it does make the size and shape of horizons more evident.

This line of data shows the S end of the apparent channel. The shape of the channel is clearly defined, however there are likely multiple layers and horizons. It is quite possible that the bottom of the channel is deeper than the 250MHz radar system can penetrate, especially in the presence of water saturation.
Conclusion

Maverick Inspection Ltd. was able to perform Ground-penetrating Radar in the requested areas. This inspection appears to have yielded useable results, which fulfilled the scope of work as described.

Overall, the GPR and GPS data combined to give a clear overview of the location and types of subsurface features. All of the lines of data have been provided separately to Vergo Group representatives for reference and further evaluation as needed.

The next logical step in the data gathering process is to apply a longer wavelength system such as a 50MHz transducer. This will allow for deeper penetration of the radar signal. The sacrifice will be in the resolution of the results, however the 250MHz data provides clear imagery of relatively near-surface features. Water saturation may still be a limitation, however the 50MHz data may be gathered in winter to minimize that effect.

The Noggin systems used by Maverick to perform the inspection were designed and optimized for subsurface inspections, and were chosen for this task because of size, frequency, reliability, and integrated features/filters, and gain settings.

Each system performs a “Power On Self Test” and will fail if not properly calibrated, or if some other problem will not allow the system to function adequately.

Thank you for choosing Maverick Inspection Ltd.

Warren Tessari  
Operations Manager  
MAVERICK  
INSPECTION LTD.

Phone: (780) 467-1606  
#22 – 161 Broadway Blvd.  
Sherwood Park, Alberta  
T8H 2A8