

**Star Minerals Group Ltd.**  
**NI43-101 Technical Report**

***“Update to Resource Estimate on the Hoidas Lake Property,  
Saskatchewan Canada”***

Effective Date of Resource Estimate: 20 November, 2009

Signature Date: January 31, 2014

Brad M. Dunn, CPG



# Star Minerals Group Ltd. N143-101 Technical Report

January 31, 2014

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# 1.0 Summary

## 1.1 Introduction

This Mineral Resource Report (the "Report") on the Hoidas Lake Rare Earth Project (the "Project") has been prepared in accordance with Form 43-101 and National Instrument 43-101. This Report describes the results of a mineral resource estimate of the Hoidas Lake Rare Earth Element (REE) Project which is a joint venture between Great Western Minerals Group Ltd. (GWMG), and Star Minerals Group Ltd. (STAR), both Saskatoon, Canada based companies. This Report is based on historical reports and the work of others as stated in this Report. Barr Engineering Co. (Barr) assumes such reports and data are correct except for discrepancies or variations indicated in this Report.

This Report relies on earlier reports, namely Billingsley 2002, Young 2004, Wardrop 2006 and 2008 and Barr 2009 and 2011. All references to resource evaluation are based on currently available GWMG data including the most recent drilling results from 2008. Reference herein to historical information is relied upon from these earlier reports.

## 1.2 Property Description and Ownership

The Hoidas Lake Rare Earth Project is located within Saskatchewan's Northern Mining District, approximately 55 kilometers northeast of Uranium City, Saskatchewan. It consists of fourteen claims comprising 12,522 hectares and is accessed seasonally by ski- or float-equipped aircraft from Stony Rapids, 130 kilometers to the southeast, or Uranium City.

The Project is understood to be 100% owned by GWMG subject to an option and joint venture agreement between GWMG and STAR although there is an underlying 1.8% NSR royalty. The royalty becomes payable upon production from the property and terminates on a total payment of CAN\$1,000,000.

## 1.3 Geology and Mineralization

Hoidas Lake mineralization is found in a series of steeply dipping vein sets, which cut through Archean granites and gneisses of the Northern Rae Geological Province, within the Western Craton of the Canadian Shield.

The rare earth mineralization at Hoidas Lake is predominantly hosted within the minerals apatite and allanite, with minor mineralization in chevkinite, monazite and rare earth element carbonates. The metals of interest are the rare earth elements lanthanum, cerium, praseodymium, neodymium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium and the element yttrium.

## 1.4 Exploration and Development

Drill hole spacing generally ranged from 25 to 50 m. The JAK Zone is the name given to the main mineralized zone that has been the major focus of exploration activities to date. The drilling has been concentrated on the central JAK Zone with more recent drilling further east (down dip) and north and

south (along strike). The drilling has mostly been NQ-size diamond coring, with some HQ-size core used for metallurgical sampling.

This Report has relied upon the assay and geological database being checked, validated and updated by GWMG. In addition, a comprehensive Quality Assurance/Quality Control program involving the use of blanks, standards and field duplicates was instigated by GWMG geologists under the direction of Mr. John Pearson, Former VP Exploration of GWMG. This process included the insertion of blanks into the sample stream along with field duplicates, and high-grade and low-grade standards provided by an accredited laboratory. A series of metallurgical and mineralogical tests have been instigated for the Project since 2001. This work has largely been based on a bulk sample taken during a drilling campaign in 2007. The most current metallurgical test work was completed by a Chinese institute in June 2012.

## 1.5 Current Mineral Resource

The current resource estimate by Barr incorporates reported drilling results from four separate drilling programs from 2001 through to 2008 for a total of 120 diamond core holes.

This Barr resource estimate was carried out for yttrium plus the 15 metals of interest by two methods; inverse distance and ordinary kriging. The inverse distance interpolation results are used as verification of the ordinary kriging results. The results of this resource estimate are tabulated below, using a 1.5% Total Rare Earth Element (TREE) weight percentage cut off:

**Table 1-1 Ordinary Kriging Interpolated Current Mineral Resource Estimate (effective date November 20, 2009)**

| Category  | Cut-Off Grade TREE, Wt% | Tonnes    | TREE, Wt% |
|-----------|-------------------------|-----------|-----------|
| Measured  | 1.5                     | 963,808   | 2.142     |
| Indicated | 1.5                     | 1,597,027 | 1.958     |
| Total     | 1.5                     | 2,560,835 | 2.027     |
|           |                         |           |           |
| Inferred  | 1.5                     | 286,596   | 1.784     |

## 1.6 Conclusions

Conclusions include the following items:

- The main rare earth bearing minerals are bastnasite, apatite, allanite, and monazite.
- Current metallurgical bench scale test work indicates overall recoveries of rare earths of approximately 70% can be expected.
- Current metallurgical bench scale test work indicates a recovery rate of 93% for phosphate can be expected.

- There appears to be supporting data to consider potential production of two products; a mixed rare earth carbonate and a nitrogen phosphorus fertilizer.
- The new showings discovered in 2012 suggest the potential to increase resources is very prospective.

## 1.7 Recommendations

Recommendations include the following items:

- Undertake additional drilling to upgrade resources, particularly where the 2008 drilling program is at 50 meter spacing.
- Construction of a core shed at the site to ensure sample storage integrity. A drill core photo catalog should be started for any future drilling programs. More transparency is required for data transferal between the lab and the owner of the property.
- Geologists must ensure correct sample intervals are being used for future sampling, these being over 0.5 meters unless there are exceptional circumstances.
- Future modeling should be expanded to incorporate uranium, phosphate (P205), thorium and scandium. Total Rare Earth Oxide (TREO) values should be incorporated into future resource reporting.
- Integration of the element assay data into the existing Cominco database, so as to avoid any future Excel data manipulation. This should include TREE and TREO fields and calculations.
- Completion of a Preliminary Economic Assessment (PEA) for the Hoidas Lake Rare Earth Project.

## 2.0 Introduction

This Technical Report has been prepared for STAR. The purpose of this Technical Report is to provide a resource estimate for the Hoidas Lake Rare Earth Project. It was prepared at the request of STAR and is an update of the previous Barr Engineering resource report of 2011. The purpose of this update is to bring the previous Barr report into current National Instrument 43-101 compliancy. This Report is concerned with the drilling results available as of November 2009 and includes results from all previous drilling. Information, conclusions, and recommendations contained herein are based on a study of relevant and available data, and discussions with STAR and GWMG's consultants. Personal inspection of the site was performed by Brad Dunn, Mining Geologist, and Charlie Harper, Geological Consultant, during July 2013. It is Barr's opinion that no material change has occurred since the time of this personal inspection.

### 2.1 Terms of Reference

Six previous independent Technical Reports have been completed on the Hoidas Lake property. These were entitled:

- "Form 43-101F1 Technical Report on the Hoidas Lake Rare Earth Project" by Gary L. Billingsley, dated February 28th, 2002.
- "Form 43-101 Technical Report on the Hoidas Lake Rare Earth Project" by Ivan W. Young, dated November 24th, 2004.
- "Technical Report on the Hoidas Lake Rare Earth Project, Saskatchewan" by Wardrop Engineering dated March 16th, 2006.
- "Mineral Resource Estimate on the Hoidas Lake Rare Earth Project DRAFT" by Wardrop Engineering dated March, 2008.
- "Form 43-101 Mineral Resource Report on the Hoidas Lake Rare Earth Project" by Barr Engineering dated November 20th, 2009.
- "Form 43-101 Mineral Resource Report on the Hoidas Lake Rare Earth Project" by Barr Engineering dated May 23rd, 2011.

This Technical Report is based on the following:

- The above six previous independent Technical Reports
- The most recent mineral resource estimate prepared by Rodrigo Jerez, Reg. Mem. SME, an independent consultant
- Information gathered during Site Inspections by the Qualified Person in 2009 and 2013

- Interpretation of metallurgical test work undertaken at SGS Lakefield Research Limited in Ontario; Michigan Tech University in Michigan; a Chinese Institute laboratory in Beijing; and Xstrata in Ontario

This Technical Report was completed by Barr at the request of STAR and is in compliance with NI 43-101. Persons contributing are:

- **Lyall Workman MSc, BSc, PE** Senior Consultant with Barr Engineering Company. He is the Barr Principal In Charge (PIC) for this work. He is responsible for reporting property description and location of the Project. Mr. Workman resides in North Dakota and is a Registered Professional Engineer in the State of North Dakota and a member of the SME. He received his BSc and MSc in Mining Engineering from Queen's University in Ontario.
- **Rodrigo Jerez PhD, MSc** Senior Consultant with Mineral Industry Consultants Ltd. He was responsible for reporting the digital data review and resource estimate calculations of the Project. Mr. Jerez resided in Colorado and was a Registered Member of the SME. He received his MSc and PhD from the Royal School of Mines at Imperial College, London.
- **Dennis Murr, BSc** Senior Metallurgical Engineer with Barr Engineering Company. He is responsible for reporting the mineral processing and metallurgical testing of the Project. Mr. Murr resides in Minnesota and is a Registered Member of the SME. He received his BSc from the Michigan Technological University.
- **Brad Dunn, BSc CPG** Mining Geologist with Barr Engineering Company. He is responsible for reporting the history, accessibility, climate, local resources, infrastructure, physiography, geological setting, deposit type, mineralization, exploration, drilling, sampling method and approach, sample preparation, analysis and security of the Project. Mr. Dunn resides in Minnesota and is a member of the AIPG. He received his BSc from the University of Otago in New Zealand. Mr. Dunn collaborated with Mr. Jerez to write the interpretations, conclusions and recommendations.

**Table 2-1      Glossary of Terms**

| <b>Term</b>                                              | <b>Abbreviation</b> |
|----------------------------------------------------------|---------------------|
| Above Sea Level                                          | asl                 |
| American Institute of Professional Geologists            | AIPG                |
| Approximately                                            | ~                   |
| Bachelor of Science                                      | BSc                 |
| Barr Engineering Company                                 | Barr                |
| Bullion Fund Incorporated                                | BFI                 |
| By                                                       | x                   |
| Canadian Dollars                                         | CAD\$               |
| Canadian Institute of Mining, Metallurgy and Petroleum   | CIM                 |
| CANMET Mining and Mineral Science Laboratories           | CANMET              |
| Celsius                                                  | C                   |
| Center for Advanced Mineral and Metallurgical Processing | CAMP                |
| Centimeter                                               | cm                  |
| Cerium                                                   | Ce                  |
| Certified Professional Geologist                         | CPG                 |
| Coefficient of Variation                                 | CV                  |
| Degrees                                                  | °                   |
| Doctor of Philosophy                                     | PhD                 |
| Dysprosium                                               | Dy                  |
| East                                                     | E                   |
| Electron Probe Microanalysis                             | EPMA                |
| Erbium                                                   | Er                  |
| et alibi                                                 | et. al.             |
| Europium                                                 | Eu                  |
| Gadolinium                                               | Gd                  |
| Great Western Gold Corporation                           | GWGC                |
| Great Western Minerals Group                             | GWMG                |
| Holmium                                                  | Ho                  |
| Inductively Coupled Plasma                               | ICP                 |
| International Electrotechnical Commission                | IEC                 |
| International Organization for Standardization           | ISO                 |
| KiloHertz                                                | kHz                 |
| Kilometer                                                | km                  |
| Lanthanum                                                | La                  |
| Lead                                                     | Pb                  |
| Limited Company                                          | LTD                 |

| Term                                                                        | Abbreviation |
|-----------------------------------------------------------------------------|--------------|
| Line                                                                        | L            |
| Lutetium                                                                    | Lu           |
| Master of Science                                                           | MSc          |
| Meter                                                                       | m            |
| Millimeter                                                                  | mm           |
| Million Years                                                               | Ma           |
| MineSight Data Analyst                                                      | MSDA         |
| NanoTesla                                                                   | nT           |
| National Instrument 43-101                                                  | NI 43-101    |
| National Topographic System                                                 | NTS          |
| Neodymium                                                                   | Nd           |
| Net Smelter Return                                                          | NSR          |
| Nitrogen Phosphorus                                                         | NP           |
| North                                                                       | N            |
| North American Datum                                                        | NAD          |
| Optical Emission Spectrometry                                               | OES          |
| Oxygen                                                                      | O            |
| Pages                                                                       | p            |
| Parts Per Million                                                           | ppm          |
| Percent                                                                     | %            |
| Phosphorus                                                                  | P            |
| Portable Document Format                                                    | PDF          |
| Praseodymium                                                                | Pr           |
| Professional Engineer (Canada)                                              | P. Eng.      |
| Professional Engineer (United States of America)                            | PE           |
| Professional Geologist (Canada)                                             | P.Geo.       |
| Professional Geologist (United States of America)                           | PG           |
| Promethium                                                                  | Pm           |
| Quality Assurance Quality Control                                           | QAQC         |
| Quantitative Evaluation of Materials by Scanning Electron Microscope        | QEMSCAN      |
| Rare Earth                                                                  | RE           |
| Rare Earth Element                                                          | REE          |
| Rare Earth Oxide                                                            | REO          |
| Registered Member                                                           | Reg. Mem.    |
| Requirements for the Accreditation of Mineral Analysis Testing Laboratories | CAN-P-1579   |
| Samarium                                                                    | Sm           |
| Saskatchewan Research Council                                               | SRC          |

| Term                                                  | Abbreviation |
|-------------------------------------------------------|--------------|
| Scandium                                              | Sc           |
| Society of Mining, Metallurgy and Exploration         | SME          |
| South                                                 | S            |
| Star Minerals Group Ltd.                              | STAR         |
| System for Electronic Document Analysis and Retrieval | SEDAR        |
| Terbium                                               | Tb           |
| Thorium                                               | Th           |
| Thulium                                               | Th           |
| Toronto Stock Exchange                                | TSX          |
| Total Rare Earth Element                              | TREE         |
| Total Rare Earth Oxide                                | TREO         |
| Universal Transverse Mercator Coordinate System       | UTM          |
| Uranium                                               | U            |
| Very Low Frequency Electromagnetic                    | VLf-EM       |
| Wardrop Engineering Incorporated                      | Wardrop      |
| Weight Percentage                                     | Wt%          |
| West                                                  | W            |
| Ytterbium                                             | Yb           |
| Yttrium                                               | Y            |

## 2.2 Qualified Person

The Qualified Person for this NI 43-101 Technical Report is:

- Brad Dunn, CPG

Mr. Dunn visited the site on October 7<sup>th</sup>, 2009 and July 27<sup>th</sup>, 2013.

Mr. Dunn is responsible for the preparation and supervision of the Technical Report.

Mr. Dunn is responsible for each Item in the Technical Report as The Qualified Person.

## 2.3 Units

All units used in this Report are metric unless otherwise stated. Grid references are based on the UTM Zone 13 NAD 83 unless otherwise stated.

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## 3.0 Reliance on Other Experts

No independent exploration work, drilling of holes, or any sampling and assaying on the Property has been undertaken by the Qualified Person. Examination and verification of mineralization in core samples at the site was undertaken during site visits. The authors of this report have exercised all reasonable diligence in checking, confirming and testing data on the Property presented by STAR and GWMG, as well as relying upon STAR and GWMG's consultant's findings in developing their opinion.

Barr has not investigated the status of the mining claims under which STAR and GWMG holds mineral rights for the Property. As to the validity of the mineral titles claimed, Barr offers no legal opinion. The description and ownership of the Property, as set out in this Technical Report, is provided for general information purposes only.

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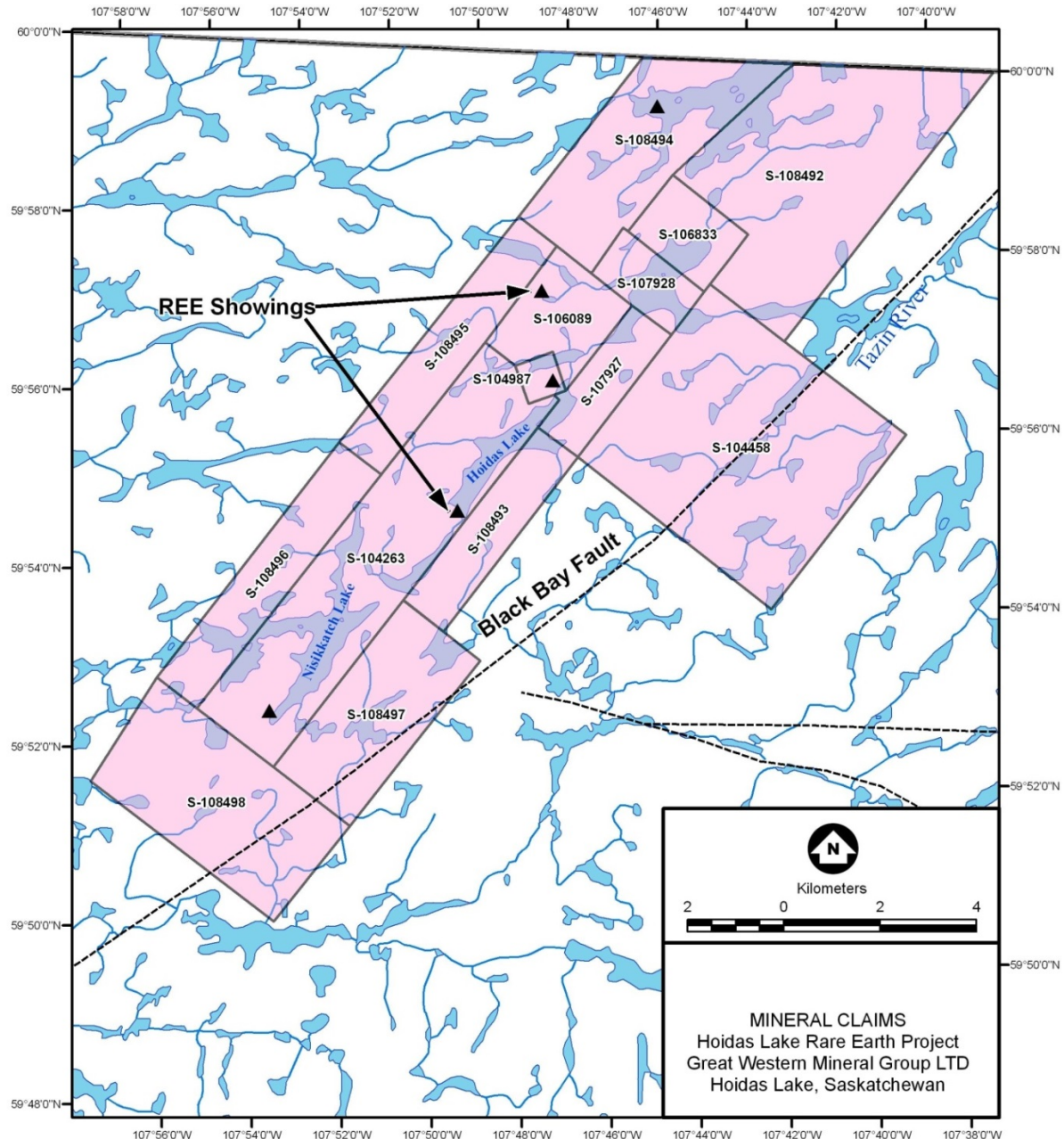
## 4.0 Property Description and Location

The Project is located approximately 55 kilometers northeast of Uranium City, Saskatchewan, Canada. It consists of fourteen claims comprising 12,522 hectares. The Property is centered on location 59°55' N Latitude, 107°49' W Longitude. The claims are situated on NTS map sheet 74-O-13 in the northern mining district of Saskatchewan and are contiguous. Table 4-1 lists these claims with area, the size of the claims and the date each claim is protected to. All of the claims are in good standing until at least 2026. Figure 4.1 shows these claims with respect to the Project site. A search of Province of Saskatchewan databases shows all claims to be active.

The claims are not required to be surveyed. To date, no survey has been performed. The claims have been staked in the field. Mineral Claims in Saskatchewan provide the holder with the mineral rights to the mineral disposition as long as the appropriate fees and work commitments are met as detailed in the 'Mineral Tenure Regulations, 2012'. These rights do not extend to the surface rights however they do provide legal access to the land and an obligation to consult with stakeholders including trappers, local First Nations etc.

**Table 4-1 Hoidas Lake Mineral Claims (from Sask Energy and Mines MARS Search Book, Sept 2, 2013)**

| <b>Disposition Number</b> | <b>Claim Holder</b>               | <b>Total Area hectares</b> | <b>Effective Date</b> | <b>Protected To</b> | <b>Total Work Credits</b> |
|---------------------------|-----------------------------------|----------------------------|-----------------------|---------------------|---------------------------|
| S-104987                  | GREAT WESTERN MINERALS GROUP LTD. | 72                         | 9/23/1996             | 12/21/2026          | \$23,400.00               |
| S-106089                  | GREAT WESTERN MINERALS GROUP LTD. | 477                        | 4/1/1998              | 6/29/2028           | \$155,275.02              |
| S-106833                  | GREAT WESTERN MINERALS GROUP LTD. | 300                        | 4/5/2005              | 7/3/2027            | \$84,900.00               |
| S-107927                  | GREAT WESTERN MINERALS GROUP LTD. | 331                        | 7/28/2005             | 10/25/2028          | \$97,976.00               |
| S-107928                  | GREAT WESTERN MINERALS GROUP LTD. | 244                        | 7/28/2005             | 10/25/2027          | \$66,134.00               |
| S-104263                  | GREAT WESTERN MINERALS GROUP LTD. | 1885                       | 4/1/1998              | 6/29/2027           | \$565,500.43              |
| S-104458                  | GREAT WESTERN MINERALS GROUP LTD. | 2334                       | 10/18/2007            | 1/15/2027           | \$583,500.00              |
| S-108492                  | GREAT WESTERN MINERALS GROUP LTD. | 1900                       | 1/27/2006             | 4/26/2027           | \$518,700.00              |
| S-108493                  | GREAT WESTERN MINERALS GROUP LTD. | 482                        | 1/27/2006             | 4/26/2027           | \$131,586.00              |
| S-108494                  | GREAT WESTERN MINERALS GROUP LTD. | 1043                       | 1/27/2006             | 4/25/2028           | \$288,814.00              |
| S-108495                  | GREAT WESTERN MINERALS GROUP LTD. | 642                        | 1/27/2006             | 4/26/2027           | \$175,265.96              |
| S-108496                  | GREAT WESTERN MINERALS GROUP LTD. | 665                        | 1/27/2006             | 4/26/2027           | \$181,545.00              |
| S-108497                  | GREAT WESTERN MINERALS GROUP LTD. | 889                        | 1/27/2006             | 4/26/2027           | \$242,697.00              |
| S-108498                  | GREAT WESTERN MINERALS GROUP LTD. | 1258                       | 1/27/2006             | 4/26/2027           | \$343,434.00              |



**Figure 4-1 Hoidas Property Mineral Claims**

To maintain active status, the claims are subject to an annual work commitment of \$15 per hectare per annum, with the exception of claims S-104263 and S-104987 which are subject to \$25 per hectare per annum. For the fourteen claims, this amounts to \$207,400.00. Claims can be grouped for assessment purposes.

Barr understands that all of the claims are currently one hundred percent (100%) owned by GWMG subject to an option and joint venture agreement between GWMG and STAR. There is a 1.8% NSR royalty agreement with a prospector by the name of R. Dubnick (see 6.0-Ownership history) and becomes payable when production begins. The NSR royalty has a maximum value of one million dollars.

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There is a further reservation of interest with R. Dubnick that encompasses an area of 10 km around the original claim boundaries.

According to Billingsley, 2002, the mineral depositions cover up to 26 known rare earth showings discovered during the 1950s and located on the holdings current in 2013.

Wardrop provided an initial resource estimate for the JAK Zone of the Project in 2006 and updated the estimate in 2007 (see 6.0-Historical Mineral Resource Estimates).

There are no known environmental liabilities associated with the Hoidas Lake property. Additionally, there are no known significant factors that affect access or title to the property.

In order to carry out work on the property the company must first obtain Permits to carry out the work which includes one or more of the following:

- a) Work Permit,
- b) Work Camp Permit,
- c) Timber Permit,
- d) Shore Line Alteration Permit

which are all available from Saskatchewan Environment. Permit applications must be submitted approximately 2 months in advance of the expected initiation of the field work. In addition it will be necessary to obtain a permit to carry out work from Department of Fisheries and Oceans if any of the work is to take place on or near navigable waters.

## 5.0 Accessibility, Climate, Local Resources, Infrastructure and Physiography

### 5.1 Accessibility

Hoidas Lake is located approximately 55 kilometers northeast of Uranium City, on the north side of Lake Athabasca. The site is accessed seasonally by ski- or float-equipped aircraft from Stony Rapids, 130 kilometers southeast, or Uranium City. Both communities have regularly scheduled commercial flights from Regina or Saskatoon. Stony Rapids has a year-round, permanent road that connects with southern communities. A winter road is maintained from Stony River to Uranium City.

### 5.2 Climate

The climate at Hoidas Lake will vary seasonally from daytime high temperatures in the summer of up to 30 degrees C and -30 degrees C in winter with extremes of +35 degrees C and -45 degrees C degrees or colder in the winter. Average monthly precipitation is 53 millimeters in the summer and the average snow cover in the winter is 51 centimeters.

No permafrost has been noted in the course of drilling or exploration and Hoidas Lake would be a source of make-up water through the winter season.

### 5.3 Local Resources and Infrastructure

Local infrastructure and resources are limited in scope. There are some local aggregate deposits near the Project site, but the closest permanent housing, buildings, or light industries are found in Uranium City. The closest permanent road is located at Stony Rapids, which has a larger population base

### 5.4 Physiography

The regional topography is relatively low, but with localized, rugged relief. Hoidas Lake is at an elevation of 451 m above sea level (asl). Numerous hills and ridges can extend about 100 meters above nearby lakes and muskegs. Throughout this area are lakes, bogs, forest and rock outcroppings. Black spruce and jack pine are the main trees of the area. Forest fires are a concern in this area, and Fireweed (*Epilobium angustifolium*) occurs in burnt areas. *Cladonia cetraria* and *C. tereocaulon* are lichen species which provide ground cover. Feather mosses such as Stair-Step Moss (*Hylocomium splendens*) and *Hypnum* are amongst the undergrowth. Wildlife including black bear, wolverine, moose and timber wolf inhabit this region, with the migratory barren-ground caribou and associated arctic fox often appearing during winter. Birds include the common loon, greater yellowlegs, white-crowned sparrow and bald eagle, with willow ptarmigan appearing during winter. In the lakes are fish including lake trout, arctic grayling, whitefish, walleye and northern pike.

Rock outcrop exposure is generally poor, with less than 5% bedrock surface exposure within the Hoidas Lake property. Glacial outwash and till deposits cover and obscure much of the bedrock. Drainage from the area follows the Tazin River into Great Slave Lake in the Northwest Territories.

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## 5.5 Operating Season

The winter exploration season extends from lake freeze-up (generally about December 15th) until lake break-up (generally about April 15) however the absolute date varies with weather conditions from year to year. It is only during this period of time that those parts of the JAK zone that require drill set-ups from the lake can be drilled. The summer exploration season extends from approximately May 30 to October 15th, again from the end of the lake ice breakup to the beginning of lake ice freeze-up. Float equipped aircraft in Stony Rapids (the nearest transportation site) are available from approximately May 30 to October 5 but this availability is dependent on ice break-up and freeze-up conditions.

## 6.0 History

The following history is reported to Barr. In general, these items have not been verified.

### 6.1 Ownership History

In 1950, J. Lane staked the first recorded claims at Hoidas Lake. These original claims are thought to have lapsed before the next record of staking in 1965. In 1961, an airborne radiometric and electromagnetic survey was undertaken by the Canadian Aero Service on Mineral Permit No. 1 which included the Hoidas Lake area. Claims were staked in 1965 by or for the Globe Exploration Syndicate and then were subsequently acquired by Kintla Explorations Ltd. These covered the main showings at Hoidas Lake.

In 1996, six claims were staked by R. Dubnick, or as Norac Exploration Ltd, in consideration for stock and a 1.8% royalty as a finder's fee for Daren Resources Ltd. (Finder's Agreement of August 21, 1996). These claims were surrounded further by a 10 kilometer "reservation of interest" in which any other claims staked by either Norac Exploration or Daren Resources would become subject to the 1.8% NSR royalty.

In 1999, Great Western Gold Corporation (GWGC) acquired the six claims from Daren Resources Ltd. Under terms of the agreement, GWGC earned a 70% interest in the property (Letter Agreement of August 10, 1999). Daren Resources Ltd. went into receivership and the receiver sold the remaining 30% interest in the property to Bullion Fund Incorporated (BFI). GWGC then acquired the 30% interest in the property from BFI. Payment was by cash or stock and a 4.8% NSR royalty to BFI. The purchase agreement included consideration of the underlying 1.8% royalty to R. Dubnick.

In 2004, GWMG (formerly GWGC) acquired the 4.8% royalty from BFI (Letter Agreement of January 21, 2004).

In 2013, STAR announced a Letter of Intent with GWMG that sets out the basic terms and conditions by which STAR will have the right and option to acquire up to 51% participating interest in the mineral and other related rights. STAR's right to acquire the Interest will be segregated into two tranches.

- 1) STAR will have the right to acquire a 25% participating interest in the Hoidas Lake Project by funding and completing a preliminary economic assessment in respect of the Hoidas Lake Project within two years.
- 2) Upon successfully exercising the first tranche and acquiring a 25% participating interest, STAR will have the right to acquire a 26% participating interest in the Hoidas Lake Project by funding and completing a feasibility study in respect of the Hoidas Lake Project within four years of the completion of the preliminary economic assessment.

The completion of the transaction is subject to the acceptance of the TSX Venture Exchange and all other required approvals and consents. Presently, the underlying 1.8% NSR royalty to R. Dubnick remains. The royalty terminates on a total payment of CAN\$1,000,000. The current agreement between BFI and GWMG stipulates the maintenance of underlying obligations to the original claim owner, i.e., the "reservation of interest" between R. Dubnick and Daren Resources.

## **6.2 Work History**

### **6.2.1 1936 to 1965**

In 1936, regional geological mapping of the area was undertaken by F.J. Alcock of the Geological Survey of Canada. In 1950, J. Lane staked the original recorded claims at the Hoidas Lake property. Trenching of the main exposure at the time has been noted, but with limited record due to government restrictions on uranium deposit development during this period. Some assay results are recorded, however, and an analysis from the Mineral Resources Division in Ottawa reported 2% Th, 0.5% Y, 7.0% Ce and 0.1% Gd. Exact location of these samples is not known to Barr. In 1955, D. Hogarth noted occurrence of thorium in association with REE bearing apatite and hyalophane during a mineralogical investigation at Hoidas Lake. In 1961, an airborne radiometric and electromagnetic survey was undertaken by the Canadian Aero Service on Mineral Permit No. 1 which included the Hoidas Lake area. In 1965, six claims were staked by K. Hemmingson to cover the main showings at Hoidas Lake. Radiometric surveys were conducted by the Globe Exploration Syndicate. Widths of 2- to 5-meters along a strike length of 425 meters were reported.

### **6.2.2 1980 to 1999**

In 1980, the Hemmingson claims were acquired by Kintla Explorations Limited (see 6.1-Ownership History) and used for uranium and thorium exploration. Boulders exhibiting gold, silver and copper mineralization were reported during this exploration, but are thought to have been brought to the site from the Red Lake area of Ontario by prospectors (Pearson, 2005).

In 1996, R. Dubnick staked six new claims at Hoidas Lake. These were vended to Daren Resources Limited., and subsequently, the first metallurgical work on Hoidas Lake samples was done by Daren Resources Limited. The results showed recoveries of 97.6% for the REE through gravity concentration and hydrochloric acid leaching (Gent, 1998). In 1999, GWGC performed a trenching and sampling program at Hoidas Lake intersecting several REE-bearing veins. Petrographic, assay, and geochemical studies were undertaken on the samples by SRC Geoanalytical Laboratories in Saskatoon.

### **6.2.3 1999 to 2012**

In 2001, the first drilling program at Hoidas Lake was conducted by GWGC (see 10.0-Drilling). Magnetometer and VLF-EM surveys were also conducted at this time (see 9.0-Exploration). Also in 2001, analytical and metallurgical test work was done on the drill core by Lakefield Research in Ontario (supervised by Melis Engineering) and Sierra Mineral Management of California. This work included the viability of concentration and dissolution of what is now termed the JAK Zone, and some initial environmental testing. A number of new elements were identified in the Hoidas Lake mineralization through this work. Proprietary technology was shown to recover some contained REEs. In 2004, GWMG acquired a 2,000 kilogram bulk sample through regional prospecting. A budget and work program for future development at the property was presented by I. Young P.Geo. who wrote a summary report on the Hoidas Lake property. The proposed program extended the geophysical coverage of the property, provided infill drilling of the 2001 program, and recommended further metallurgical testing and commencement of environmental baseline studies. Also in 2004, further mineralogical work on 2001 drill core was undertaken by Wilson (2004) and CAMP at Butte Montana. Golder Associates was contracted to

undertake environmental baseline studies related to development of the Hoidas Lake property in 2004, and commenced related work on a winter road access route to the property in 2005.

Also in 2005, a second drilling program was undertaken (see 10.0-Drilling). Drill hole HS05-01 was the first hole to be drilled south of the JAK Zone. During the program, Golder Associates located four drill holes for engineering and environmental assessment purposes. Magnetometer and VLF-EM surveys were extended to tie into the work from the 2001 program, also in 2005 (see 9.0-Exploration). Aerial photogrammetry was started with the over flight. Wardrop Engineering was contracted in 2005 to model the resource outlined by the drilling programs of 2001 and 2005.

Melis Engineering was retained in 2005 to oversee metallurgical process research at CAMP in Butte Montana, which was based on a portion of the 2004 bulk sample. GWMG announced the acquisition of specialty metal manufacturing assets from Energy Conversion Devices of Troy, Michigan in December 2005. In the winter of 2006, a third drilling program was undertaken at Hoidas Lake (see 10.0-Drilling). The results confirmed the continuity of the vein system along strike of the northern half of the JAK Zone, as well as further delineating the hanging wall zone that was intersected in 2005.

In March 2006, Wardrop Engineering of Toronto Ontario (Wardrop) reported the first National Instrument 43-101 compliant mineral resource estimate for the Project. This report was published on the System for Electronic Document Analysis and Retrieval (SEDAR) website.

In the summer of 2006, land-based VLF-EM survey work was carried out by Jason Sigfrid and Associates of Flin Flon, Manitoba. This was an extension of the 2005 work that could not be completed due to weather conditions. In the winter of 2007, a bulk sample was taken at the JAK Zone from 32 diamond core drill holes, constituting the fourth drilling program at Hoidas Lake. 13.8 tonnes of metallurgical sample was taken for use as feed for pilot-plant-scale testing.

In March 2008, Wardrop produced a draft report with an updated resource estimate for the Project. This estimate had been published as a news release for GWMG on the SEDAR website in January 2007 (see historical mineral resource and mineral reserve estimates below). The Wardrop report has not been published on SEDAR.

A fifth and most recent drilling program took place in the winter and summer of 2008 that included a geotechnical investigation for a possible future tailings pond location at Hoidas Lake by Golder Associates and drilling designed to extend the strike and dip of the JAK Zone (see 10.0 Drilling). A mapping and radiometric prospecting program was carried out during the summer of 2012. Three main areas of interest were found and include: (1) an amphibolite outcrop area about 350 m west of the Hoidas camp site, (2) an area between grid lines 7+25N and 8+75N and 1+00W and 2+00W, and (3) in the vicinity of Hoidas South. Several isolated occurrences of mineralization were also found (Harper, 2012).

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## 6.3 Historical Mineral Resource Estimates

There are two historic mineral resource estimates for the Hoidas Lake Project. The initial resource estimate was completed by Wardrop Engineering Inc. in March 2006 and is available as a NI 43-101 Technical Report on SEDAR under the Great Western Minerals Group account.

The second resource estimate was in the form of an update of the initial estimate, again completed by Wardrop Engineering Inc., in January 2007, and announced as a new release by Great Western Minerals January 31, 2007. This news release is available on the Great Western Minerals Group website and on SEDAR.

The key assumptions, parameters, methods and categories used for these estimates are detailed in each related Technical Report and are available on SEDAR.

Neither of the historic resource estimates can be considered currently relevant to the Hoidas Lake Project. Both historic estimates are based on fewer drill core samples and related assays compared to the current resource estimate as provided within Section 14.0 of this Report.

## 7.0 Geological Setting and Mineralization

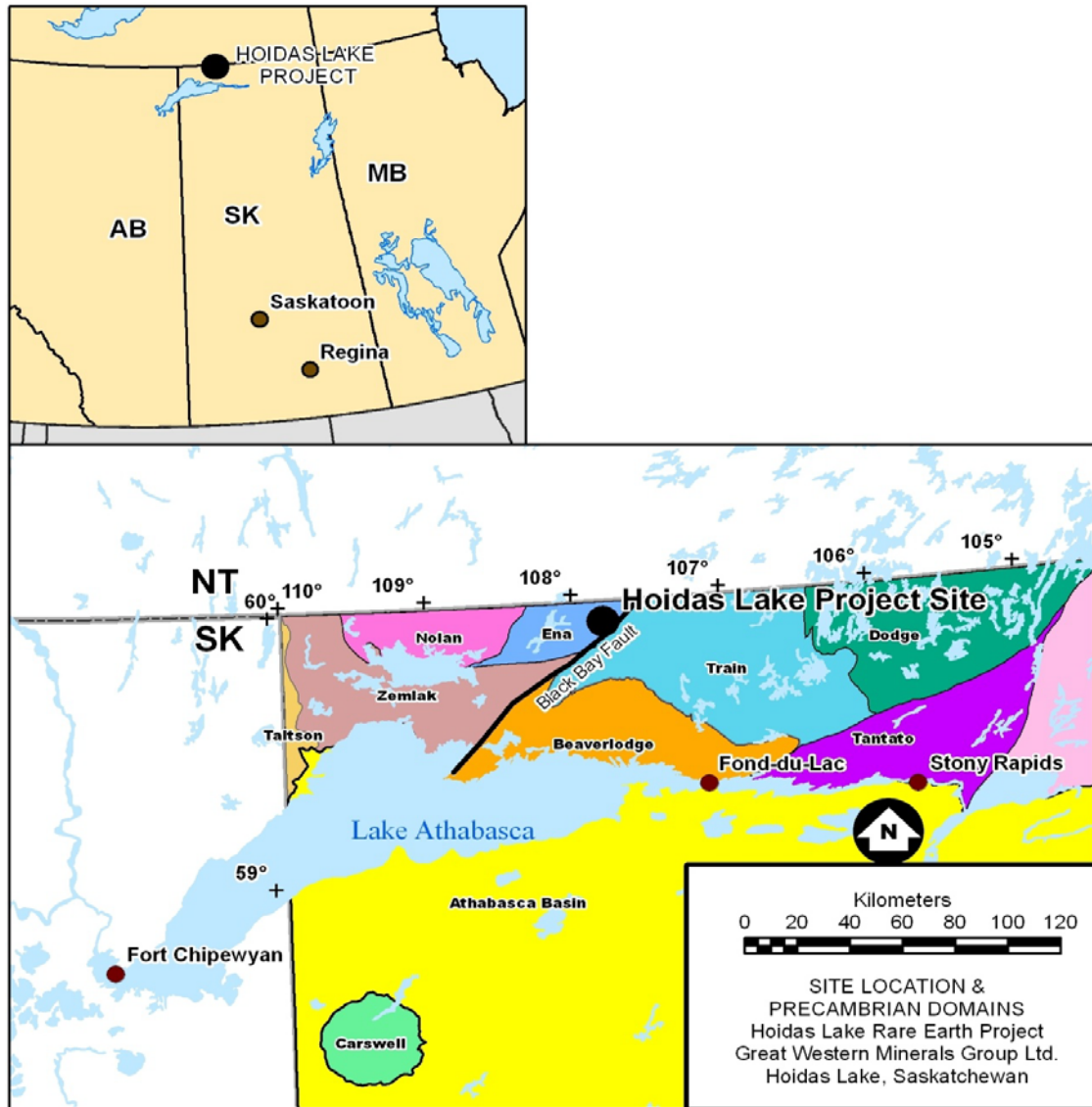
### 7.1 Setting

Hoidas Lake is situated within the Western Craton of the Precambrian Canadian Shield and more specifically in the southern Rae Sub-Province of the western Churchill Province of the Canadian Precambrian Shield (Figure 7.1) and north of Lake Athabasca in northwest Saskatchewan. It occurs within the eastern margin of the former Ena Domain, but is now included in the Zemlak Domain, being several kilometres west of the Black Bay Fault or Shear Zone, which marks the boundary between the Zemlak Domain to the west and the Train Lake Domain to the east (Figure 7.1). The Zemlak Domain comprises mainly upper amphibolite facies tonalites, granodiorites, and leucogranites with lesser intermediate rocks, amphibolites, psammitic to pelitic gneisses and diatexites, and alkaline intrusive rocks. The Black Bay Fault is represented by a several kilometre-wide mylonite zone which extends westward from its trace along the Tazin River several kilometres east of Hoidas Lake. The Nisikkatch – Hoidas fault (mylonite zone) is probably a splay off the Black Bay Fault and passes through the area of interest. Younger brittle faults of several orientations offset the older mylonite zones.

Age dating of various rock types was undertaken by members of the Saskatchewan Geological Survey in the greater Beaverlodge region (50 km southwest of Project area and to the west of the Black Bay Fault). This age dating work provides a tentative time framework for geological events in the Hoidas Lake area. Age dating in the Zemlak Domain has shown the presence of Archean and Paleoproterozoic orthogneisses with metamorphic events corresponding to the 2.37Ga Arrowsmith Orogen and the 1.93-1.9 Taltson Orogen (Ashton, Hartlaub et al., 2009; Ashton et al., 2009).

Lamprophyre dykes, prevalent in the Nevins – Forsythe Lakes area of the Beaverlodge Domain (Harper, 1986) and bearing identical likeness to the lamprophyres of the Hoidas Lake area, provided a U-Pb titanite age of 1780 Ma (Card, 2001). An alkali feldspar quartz syenitic dyke from the central Train Lake Domain is also considered to be part of the lamprophyre suite and provided a U-Pb titanite age of  $1788 \pm 3$  Ma (Ashton, Hartlaub et al., 2009). Both of these ages are believed to indicate the time of cooling of the lamprophyre/syenite.

Two samples of the JAK Zone REE mineralization have also been dated and provide very different results however the results are as yet inconclusive (Gunning and Card, 2005; Normand ,2010).



**Figure 7-1 Site Location and Precambrian Domains**

The property is located approximately 4 kilometers northwest of the Black Bay Fault. The Hoidas-Nisikkatch Fault parallels and is adjacent to the mineralized zone.

Geological mapping (Harper, 2012; Figure 7.2) identified two major rock units; a possible Archean tonalite gneiss complex and granitic gneisses, which are probably mainly Paleoproterozoic in age. Minor rock units include: migmatitic psammitic to psammopelitic and pelitic gneisses, amphibolites of intermediate to mafic composition, early and late dioritic rocks, syenite – quartz syenite, hyalophane-bearing pegmatites, unmineralized diopside-hyalophane veins/dykes as well as REE mineralized varieties of them, and lamprophyre dykes representing the youngest intrusive event in the area. The last four rock units all have an alkaline magmatic affinity, and they generally show the least effects of regional deformation and metamorphism. Late brittle quartz veining and development of quartz-flooded breccias are probably the youngest rock forming events in the area.

The Tonalite Gneiss Complex comprises a variety of rock types ranging in composition from diorite to granite and varying in texture, colour and grain size. As a group they are light to medium to dark grey, and more pinkish coloured where granitic veins and dykes become more prevalent, and can be strongly reddened due to hematite and/or potassic alteration along late fractures or adjacent to major faults or shear zones.

Dioritic gneiss forms a number of small mappable bodies which may be part of the tonalite complex or possibly a border phase to some of the larger granitic bodies. These rocks are fine to medium to very coarse grained, grey to dark grey and well foliated, with 30 to 50% mafic mineral content, with hornblende generally more abundant than biotite.

Supracrustal rocks include amphibolite and migmatitic metasedimentary gneisses. Amphibolite Gneiss occurs in several areas of the property, both alone and associated with the migmatitic metasedimentary gneisses. The amphibolites are light grey to dark grey, dark green grey to black depending on the hornblende content. In the area west of south central Hoidas Lake, some of the amphibolite rocks have a brownish weathered surface, possibly suggesting the presence of hypersthene. The rocks tend to be medium grained, generally equigranular, but well foliated. Compositionally they range from intermediate to mafic, which together with a gross compositional banding and smaller scale layering, strongly suggests a supracrustal, i.e. volcanic, origin. The migmatitic metasedimentary gneisses comprise an interlayered sequence of mainly psammopelitic and psammitic rocks with minor pelitic gneiss. They occur along the northwest part of the grid. Anatexis of the psammopelitic and pelitic rocks is well advanced, such that the psammitic rocks are typically the only recognizable original component. The rocks are light to medium grey with white and pink coloured granitoid leucosome. Grain size varies from fine grained in the psammitic remnants to pegmatitic in the leucosome.

There are also a number of younger intrusive rocks cross cutting the above including granitic rocks, a syenite-quartz syenite suite, fine grained diorite dykes, hyalophane-bearing pegmatites, the diopside hyalophane plus REE suite of veins and dykes and the lamprophyre dykes (discussed above).

Granitic rocks are the most abundant rock types in the area. They are pink to red, fine to very coarse grained, well foliated to mylonitic, with ribboned quartz grains being the norm. Compositionally they range from biotite granite – leucogranite to alkali feldspar granite and locally are transitional into alkali feldspar syenite – quartz syenite.

Pink leucogranite is also very prevalent in the areas underlain by the metasedimentary gneisses and might actually represent the roof of the pluton which upon intruding the metasediments produced a sheeted zone of alternating granite and metasediment.

The syenite – quartz syenite is best developed around the east end of the proposed tailings pond and along the edges of the channel leaving the east end of the pond. Extensive felsenmeer in the valley to the east is all part of the syenite suite. A second area of syenite felsenmeer occurs in the low ground adjacent to the southwest end of the U-shaped lake at the west end of the proposed tailings facility. These rocks are dark pink to red, relatively massive to weakly foliated, and generally coarse grained. The syenite

proper also appears to contain up to 10% of a 3 to 5 mm diameter green mineral which is believed to be a pyroxene, although it is also commonly altered to a yellow green mineral resembling epidote. Strongly weathered outcrops and boulders show a pitted surface where these minerals have been preferentially altered to a powdery yellowish-orange material. The quartz syenite contains up to 20%, roundish, white quartz grains 2 to 4 mm in diameter and tends to lack the mafic mineral. This sub-unit seems to only occur near the margins of the syenite adjacent to the surrounding granites. Of potential interest to the REE story was the discovery of an angular slab of what appeared to be a syenite breccia found in the felsenmeer area east of the pond the texture of which was similar to the REE-bearing apatite breccias exposed in the large trench at the JAK Zone.

Late diorite dykes intrude all of the above rocks, but were not seen within the syenite. They are typically fine grained, light to medium grey, are straight walled, range from 5 cm to 15 m in width and commonly show chilled margins.

Diopside-Hyalophane and REE dykes/veins are currently found in two main areas; 1) in a zone at the north end of Hoidas Lake, approximately 600 m wide (SE to NW) and at least 1000 m long (SW to NE), which includes the JAK Zone, and 2) a 300 m wide zone at the southwest end of Hoidas Lake which includes the Hoidas South showing. The latter zone was only examined over a minimum strike length of about 200 m, but there are other known occurrences located farther southwest along the Nisikkatch – Hoidas Shear Zone.

The diopside-hyalophane veins are dark green with paler margins, green and white, and white with green depending on the relative abundance of the two major components. Many of these veins are found occupying slight to moderate linear depressions on the outcrop surface. The veins are typically very coarse grained with crystals reaching 10 to 20 cm in length or width, and non-radioactive with a background of ~40 cps; however, the presence of even a small amount of allanite will more than double their radioactivity to >100 cps. The diopside-rich veins/dykes have narrow margins of hyalophane, or isolated coarse crystals of hyalophane intergrown within the vein and vice versa for hyalophane-rich veins. A narrow alteration halo may also be developed along these veins.

The REE mineralized veins/dykes are distinguished by the addition, firstly, of allanite and secondly, by various forms of apatite. Allanite can be intergrown with diopside, and also occur as massive veins. It can also be intergrown with apatite. The presence of allanite is commonly the main cause of the radioactivity which can reach several thousand counts per second. Weathered allanite has a characteristic rusty brown appearance, resembling ankerite, but is black and vitreous on fresh surfaces. Several centimetre long zircon crystals intergrown with allanite have been reported in the JAK Zone by Normand (2010). Beige, red, dark red and green apatite appear to be the youngest phase of REE-bearing minerals and commonly form the central zone of most of the mineralized veins. The apatite is typically coarse grained with crystals or grains up to 2 cm across and they show textures which suggest they invaded the earlier diopside-rich zones as indicated by veins cutting diopside, xenoliths or fragments of diopside within the apatite and by xenoliths of gneissic country rocks. The apatite phase commonly shows a breccia texture, which is best seen on weathered surfaces. The breccia comprises angular broken apatite grains as well rounded (i.e. milled) grains of variable size. Very coarse-grained biotite, with books up to 5 cm diameter, is associated

with apatite and can form vein walls, up to 30 cm wide, to the apatite. Red and green apatite are commonly found together; however, the green variety is typically less abundant. The green variety is found in most of the new showings between Lines 7+25N and 8+75N (Figure 7.2), but the red and dark red varieties are the dominant species found. Red apatite breccias, with minor green apatite, was the main variety found in the new showings around the Hoidas South and Hunter showings.

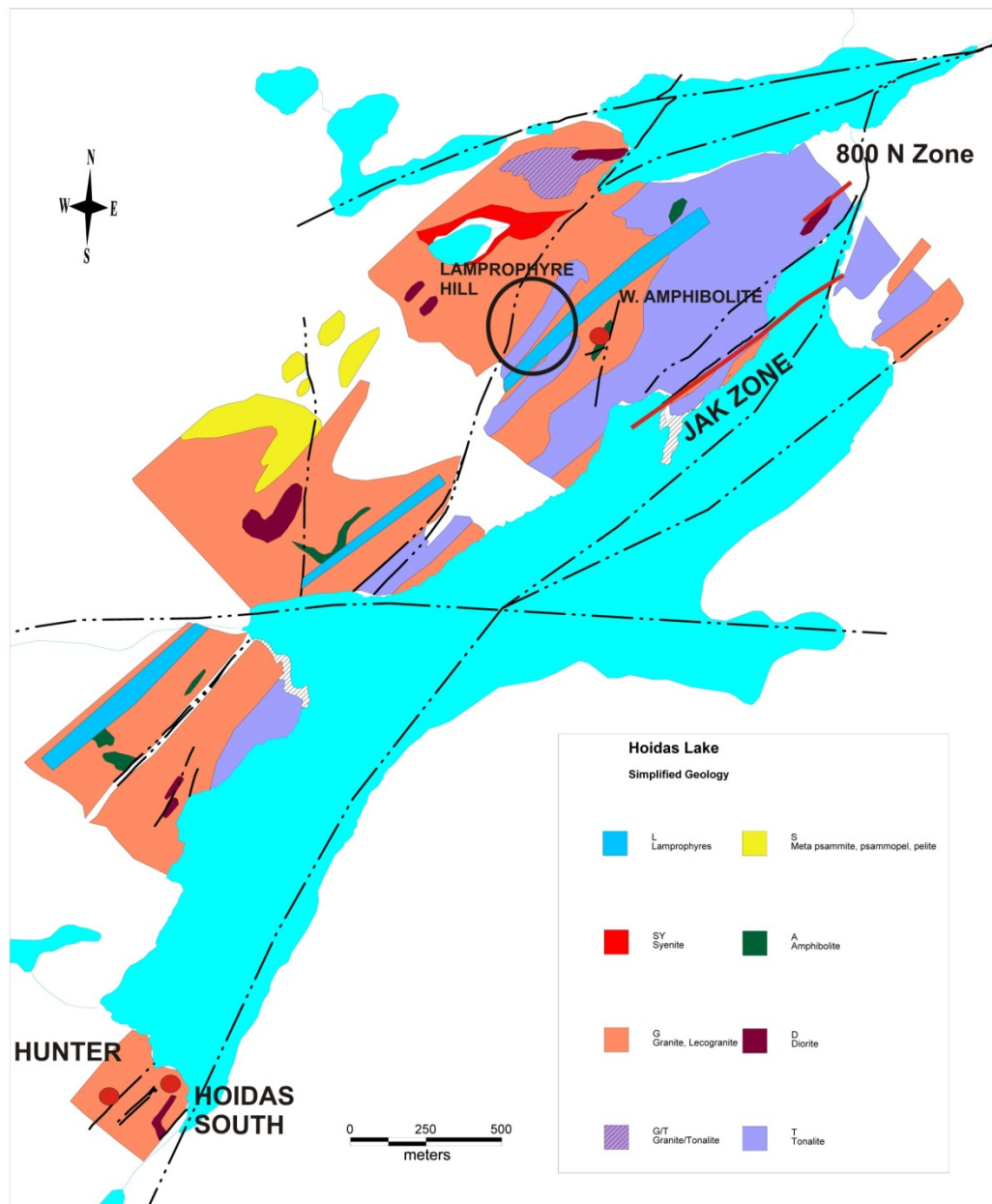
Hyalophane Pegmatites are found intruding all of the above rock types including the diopside-hyalophane veins, but there is also evidence to the contrary with diopside-hyalophane cutting hyalophane pegmatite. There are also some hyalophane-bearing pegmatites that contain the D2 deformational fabric, and it would appear that these pegmatites were possibly emplaced axial planar to tight to isoclinal F2 folds. Therefore there is a significant range of ages of emplacement for these dykes. They range from a few centimetres to 1.5 m in width and have been traced for up to 10 m before disappearing under drift cover.

The JAK zone occurs within this series of vein sets. It outcrops along the northwest shore of Hoidas Lake and exhibits open rare earth mineralization down dip below the lake, to the north and south. Individual outcropped veins are up to 5 meters wide and can occur as fairly isolated small single mineralogical composition veinlets through to large multi-zoned veins exhibiting hyalophane, diopside and allanite at the hanging wall and foot wall contacts with apatite and breccias at the centre. The rare earth elements are hosted predominantly by apatite and allanite with minor amounts of mineralization in chevkenite, monazite and rare earth-bearing carbonates.

The rocks record four major deformation events, the earliest of which, D1, is difficult to recognize; however, the S1 foliation that was developed was subsequently isoclinally folded during D2 and resulted in a strong composite S1-S2 foliation being formed. This S1-S2 fabric is the main foliation observed in the area and generally trends northwesterly, west of Hoidas Lake. Peak metamorphism occurred at this time and attained upper amphibolite facies conditions and possibly was transitional to granulite facies. Third deformation, D3, is related to shear zone development and reactivation along the long-lived Black Bay Fault. This produced a weak to strong northeasterly overprint fabric, S3, on all but the lamprophyres. The intensity of S3 depends on the proximity to the major shear zones. For example the REE mineralized veins at the Hoidas South Showing are strongly deformed (folded, stretched, boudinaged, foliated) as they occur within the zone affected by the D3 Nisikkatch – Hoidas Shear Zone, whereas the JAK Zone and many of the new showings are only mildly or not obviously affected. A fourth event, D4, is marked by open north trending folds which did not develop a foliation. Brittle reactivation of faults apparently continued for some time after.

The REE mineralized diopside-hyalophane-apatite-allanite veins/dykes are structurally controlled and occupy structures that clearly cross cut the composite S1-S2 fabric. The principal veins strike 040° to 050° and dip moderately to steeply southeast. A system of riedel shears are developed between the principal veins and the orientation of the diopside-hyalophane-filled R shears at 060° to 070° indicates a dextral sense of shear. This is also supported by drag folding of the S1-S2 fabric into the mineralized structures. Connecting R' shears were also recognized at high angle to the R shears. Both R and R' shears can be mineralized; thus, creating three orientations that can be mineralized. The amphibolite-hosted REE veins

appear to be related to a different set of structures; a set that is sub- parallel to a northerly trending fault and a conjugate set of fractures related to the northerly fault.



**Figure 7-2** Property Geology (Harper 2012) showing the location of the JAK Zone and the other areas of mineralization

## 7.2 Mineralization

The REE-rich veins of the JAK zone at Hoidas Lake are part of a 10 km long trend of REE showings centered along the Hoidas-Nisikkatch fault. The anastomosing, eastward dipping vein system contains abundant apatite and allanite, which are the main REE carriers in this deposit, and only minor amounts of monazite and bastnaesite. This is distinctly different from the typical REE deposits in which REE are

dominantly found in monazite or bastnaesite. The vein system at Hoidas Lake is complex, hosting multiple vein generations with a range of mineralogical associations.

The JAK Zone is the most significant vein system and the best studied (Halpin, 2010). The system includes at least four vein events that have a complex geometry, one or more of which are present in each mineralized intercept. A description of each follows:

### **7.2.1 Diopside – Allanite Veins**

The oldest of the REE bearing veins are the diopside-allanite dominant variety. In outcrop these veins are typically between 30 cm and 2 m in width and are often traceable at surface several meters along strike. The contacts with the host rock are usually quite sharp, although in a minor number of cases there does seem to be a slightly ragged or gradational contact. The gradational contacts are always quite narrow; typically less than 2 cm wide. Also, in a minor number of cases, clasts or xenoliths of the wall rock can be found within the veins. The proportion of minerals in the diopside-allanite veins is quite erratic or patchy in nature, but each vein consists of a few essential components. The dominant minerals in this vein generation are allanite, diopside, and hornblende; although in most cases the amphibole present in the veins appears to be an alteration product rather than a primary mineral. The concentration of allanite ranges from only a few percent in some locations to almost 95% in some of the allanite rich sections of the veins. In addition to the dominant minerals the veins can also contain hyalophane and minor amounts of apatite. The apatite which occurs in this vein generation is mainly small, dark red crystals. There are also a number of accessory minerals which may or may not be present including pyrite, calcite, biotite, epidote, titanite, hematite or magnetite.

### **7.2.2 Red Apatite Breccia**

Volumetrically is the most significant portion of the vein system. There are clearly multiple brecciation events, and in some cases it is possible to observe cross-cutting breccia generations. There are also apatite breccia clasts which suggests more than one generation of breccia formation. The apatite breccias are not the straight-sided veins typical of the earlier diopside-allanite veins; the apatite breccia veins are much more erratic in strike and amorphous in shape. At the margins of some of the apatite veins there can be a biotite dominant section, in rare instances up to almost meter thick. These biotite-rich sections can be essentially monomineralic or, more typically, contain small amounts of apatite or calcite. In many cases the red apatite breccias occur within the diopside-allanite veins, often with a brecciated, gradational margin between the two vein generations. The essential component to these breccias is the red apatite crystals and clasts for which this vein generation is named. The apatite or breccia clasts range from subangular to sub-rounded. In addition to the apatite, there is often abundant biotite and up to 5% hornblende found in the breccias. There are also sub-angular clasts of both the wall rock and the earlier diopside-allanite present in many of the breccias. The size range of the clasts is generally 5mm to 3 cm, although the complete range in sizes extends from less than 1mm to greater than 10 cm. The composition of the matrix of the red apatite breccias varies frequently, often within a single vein. The most common components of the matrix include a mix of apatite, calcite, chlorite, scapolite, and hematite, with only the relative proportions of each mineral varying between samples. The breccias range from essentially clast

supported breccias to completely matrix supported, with a complete gradation between the two end members.

### **7.2.3 Green Apatite Breccia**

The green apatite ranges from a bright, vivid green to a more muted, grayish color. The green apatite breccias are usually clast supported, although matrix supported varieties do exist, and there is often a gradational contact with the red apatite breccias. Green apatite rims can be found on some of the apatite clasts in the red apatite breccias and there are often small green apatite crystals in the red apatite breccias, suggesting some overlap between the two generations. The matrix composition is relatively simple compared to the variety observed in the red apatite breccias in that it is almost entirely composed of calcite, quartz, and apatite. The green apatite breccia is relatively rare, there is no surface exposure of the green apatite in the JAK Zone and it is only occasionally observed in drill core. The centers of the green apatite breccia veins are often faulted and all that is recovered during drilling is loose rubble, which makes it difficult to collect representative samples of this rare vein type.

### **7.2.4 Coarse Red Apatite**

Coarse Red Apatite is the youngest of the mineralized vein generations at Hoidas Lake, these veins are essentially monomineralic and cross cut all earlier vein generations. This vein generation is dominated by large, bright red apatite crystals, generally 1 to 2 cm in size, but may also contain trace amounts of allanite, hornblende, pyrite, calcite and hematite. Most of the accessory minerals in this vein generation occur either as rare euhedral inclusions in the apatite or, more commonly as small euhedral to anhedral interstitial crystals. The unique feature of these apatite veins is that they lack the brittle deformation features of the earlier vein generations. The coarse red apatite veins are also typically quite narrow; consistently under a meter in width.

### **7.2.5 Other Showings on Property**

#### **7.2.5.1 Nissikatch Lake Showings**

Exposed in several historic trenches, these narrow apatite-allanite veins appear to be discontinuous and have a complex geometry. Drill testing by 5 drill holes failed to identify any significant mineralization.

#### **7.2.5.2 Hoidas South Showings**

These historic showings were exposed in several small trenches over a length of approximately 200 m. Stripping of the surface demonstrated that the showings lie within a ductile shear zone and have been deformed into discontinuous apatite-allanite-hyalophane pods predominantly preserved in fold hinges with the intervening fold limbs strongly attenuated such that the mineralization within them is sparse or completely dismembered. The hinge zone mineralization has dimensions of up to 3 m x 5m.

#### **7.2.5.3 Western Amphibolite Body**

Identified during the 2012 mapping program (Harper 2012) the showings lie west of the JAK Zone between Lines 0+25S and 1+00S at 3+00W. The mineralization includes four new diopside-allanite-hyalophane showings as well as possible barite-celestine mineralization. There are two trends to the

mineralization; a northerly trending set and a northeast-trending set, which together suggest a conjugate shear system. The eastern-most showing was traced for 10 m along strike by anomalous radioactivity along the till covered surface. A grab from the southern-most showing in the amphibolite and returned ~16% TREE related to massive allanite.

#### **7.2.5.4 Line 7+25N to 8+75N**

Area (800 N Zone on Figure 7.2) contains a number of showings discovered during the 2012 mapping program (Harper 2012). This area lies approximately 300 to 500 m north and 100-200 m west of the JAK Zone. These showings all contain red apatite breccias along with green apatite, allanite, diopside and hyalophane. The first of the new showings was discovered along the southeastern edge of an elongate northeast-trending diorite outcrop near Line 7+50N at 1+50W. The showing includes several diopside-allanite zones flanking red apatite breccia zones over a 040° trending strike length of about 10 m and at least a metre wide. A grab sample from this zone contains ~4% TREE. Along strike to the northeast another zone of red apatite breccia with diopside-allanite-hyalophane borders was found on the next outcrop on Line 8+00N. Along strike to the northeast another zone of red apatite breccia with diopside-allanite-hyalophane borders was found on the next outcrop on Line 8+00N. At 2+00W on Line 8+00N a broad zone of red apatite breccia was uncovered beneath a few centimetres of root bound moss. Margins to the apatite veins were typified by massive coarse flaked biotite. Scintillometer readings of up to 2000 cps were found and several additional shallow openings were cut through the thick moss, exposing up to 3 m of apatite breccia. Scintillometer surveying outlined a zone up to 7 m wide (to a limit of 150-200 cps) and traceable for about 50 m (about 25 m to either side of Line 8+00N) along a trend of 046°. The zone appears to continue northeastward with radioactivity picking up again about 15 m southwest of Line 8+75N and increasing in intensity. The zone was uncovered over 3 m, but the limits were not completely defined. Samples from each of these locations contained 4.5% and 9.7% TREE respectively.

#### **7.2.5.5 Hunter Showing area**

Is located 100 m to the west of the Hoidas South showing. This showing was discovered in 2008 however the mapping program in 2012 identified three new showings and further extension of the Hunter Showing. One new showing was located along the top edge of the slope facing into the Nisikkatch – Hoidas Shear Zone valley. A shallow pit dug on surface radioactivity identified a mineralized vein that contained allanite, apatite, biotite in granitic gneiss. A grab sample contained ~6.0% TREE. A second new showing was found about 65 m northwest of the previous location, at the base of a 1.5 to 2 m high escarpment. A small pit, about 40 cm depth, contains uncovered red apatite breccia with diopside. The grab sample from this pit contains ~3.8% TREE. The narrow gully must be a fault structure and potentially the entire 8 to 10 m wide gully could be mineralized. Along strike, 20 m to the southwest and also 20 m to the northeast from the Hunter Showing, two additional locations were exposed revealing at least 40 cm wide zones of red apatite breccia with diopside, like that in the Hunter Showing. At 40 m southwest the vein system, at 1 m wide, consists mainly of diopside and hyalophane, with up to 250 cps detected. These showings lie along the east side a gully that is about 15 to 20 m wide, which could potentially host more mineralized veins. The final new showing was found along strike to the northeast of the western wall of the Hunter Showing gully. A 30-40 cm deep pit exposed coarse-grained dark red apatite with trace of

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green apatite. A grab sample of the dark red apatite collected contains ~3.8% TREE. A large area around this site showed consistent anomalous radioactivity, suggesting a fairly large body of mineralized material.

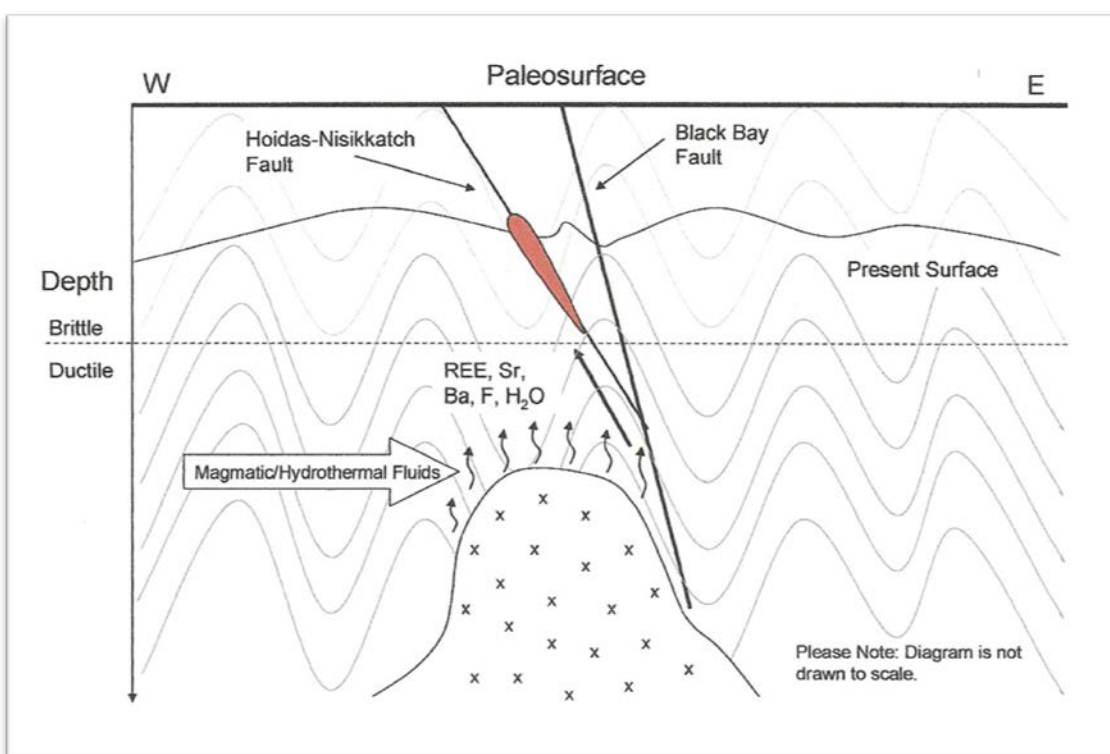
#### **7.2.5.6 Lamprophyre Hill**

Hosts a number of diopside-hyalophane veins as well as a number of lamprophyre dykes. These zones are relatively thin (<30 cm) and discontinuous although individual grab samples containing massive allanite grade up to ~9.2% TREE.

## 8.0 Deposit Type

The origin of the mineralization has been described as having alkaline magmatic and hydrothermal components (Hogarth, 1957; Gunning and Card, 2005; Halpin, 2010). The overall abundance of barium in the rock system in the Hoidas Lake area supports the alkaline affinity as does the presence of syenites and lamprophyres. The hyalophane-bearing pegmatites are recognized as having a wide range of emplacement ages from syn to late D2 (ca. 1970-1940 Ma) to post diopside-hyalophane-REE mineralization of syn to late D3; thus indicating a prolonged period of alkaline magmatism and hydrothermal activity.

Recognition of a dextral riedel shear system for the structural context of some of the REE mineralization is also an important factor in determining future drill programs and knowing that mineralized zones can occur in several related directions. One model for the origin of the REE mineralization has the alkaline magma and associated fluids being emplaced along the Nisikkatch –Hoidas Shear Zone and its associated sub-parallel structures (Figure 8.1). Dextral shear active along these structures produces dextral riedel shear systems, as in the JAK Zone and the new showings at L7+50N.



**Figure 8-1** Model for the origin of the REE mineralization in the Hoidas Lake area, showing an alkaline magma source at depth. Modified from Halpin (2010)

## 9.0 Exploration

Barr has relied upon previous reports on exploration at the Project. Barr believes the exploration to have been correctly performed and reported, but has not independently confirmed this.

### 9.1 Discovery and Trenching History

Exploration has been conducted at the Property since 1950, when Jack Lane made the initial discovery of REE mineralization. There are remnants of old trenches at the Project site; however, they are very overgrown. Large trees are growing out of some, and more recent exploration programs have noted none of the historic trenches intercepted the JAK zone.

This early work was followed by a trenching and sampling program in 1999 by GWGC. This was supervised by Ivan W. Young, P.Geo., and carried out by Dan Cook, George Flatland and Gary Billingsley, P.Geo., P.Eng.

The existing grid baseline on the property was rehabilitated and marked out at 25-m intervals with wing or picket lines. Eleven original trenches were planned and tied into the grid. Northmin Development, a contractor supervised by Gary Billingsley, reached mineralized bedrock at eight of the planned trenches.

Lithologies were mapped in the trenches and chip samples were taken approximately every half meter. A total of 109 samples were taken. Trench GWG1 was likely not bedrock. GWG2 was not sampled because of not reaching bedrock. Grab samples were taken at two trenches, one of which possibly did not reach bedrock (GWG10) and the other was an old trench (TR-7). Table 9-1 shows a summary of trenches, widths and samples taken:

**Table 9-1      2001 Trenching**

| <b>Trench Number</b> | <b>Width of trench (m)</b> | <b>Number of samples</b> |
|----------------------|----------------------------|--------------------------|
| GWG1                 | 1.5                        | 3                        |
| GWG2                 | 1                          | 0                        |
| GWG3                 | 5.9                        | 10                       |
| GWG4                 | 5.4                        | 10                       |
| GWG5                 | 8.5                        | 15                       |
| TR-7                 | 2                          | 2                        |
| GWG6                 | 13                         | 23                       |
| GWG7                 | 9.3                        | 17                       |
| GWG8                 | 8.4                        | 15                       |
| GWG9                 | 3.5                        | 7                        |
| GWG10                | 8                          | 3                        |
| GWG11                | 4.4                        | 4                        |
|                      | 70.9                       | 109                      |

The samples were shipped to SRC Geoanalytical Laboratories in Saskatoon and analyzed for the 15 rare earth elements as well as yttrium, scandium, and uranium. Fusion and ICP analytical methods were used allowing for a lower detection limit of 20 parts per million (ppm), because the samples were not known to contain significant quantities of REEs. Subsequent calculations have attributed any 20 ppm results (from this sampling period) as having a grade of zero.

Most of the samples had results showing significant quantities of REEs. Trenching results were interpreted as showing multiple mineralized zones.

The data from this trenching and sampling program is considered very reliable, and the crew that performed the work has extensive experience in trenching, mapping, and sampling (Billingsley, 2002). The laboratory that performed the analysis used random check assaying and rare earth assay standards to ensure the quality of the results. Barr does not have a QAQC document confirming these results. Trench grab sample assays were not utilized in the resource estimations.

## **9.2 Geophysical Surveys**

A geophysical survey was conducted in 2001 by Kenneth Gibson, a subcontractor to GWGC. It was a Very Low Frequency (VLF) electromagnetic survey over the JAK Zone grid. Readings were taken every 5 meters at 25-meter line-spacing over 625 meters of strike-length and 75 to 100 meters either side of the baseline. The instrument used was an Omni-Plus EM16 unit, tuned to the Seattle transmitter on a frequency of 24.8 khz.

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The geophysical survey was supervised by Ivan Young, P.G. and the results were confirmed by Paul Cartwright, P.Geo. a geophysicist, and VP of Geophysics at GWGC, who reran selected lines to verify the original readings made by Mr. Gibson.

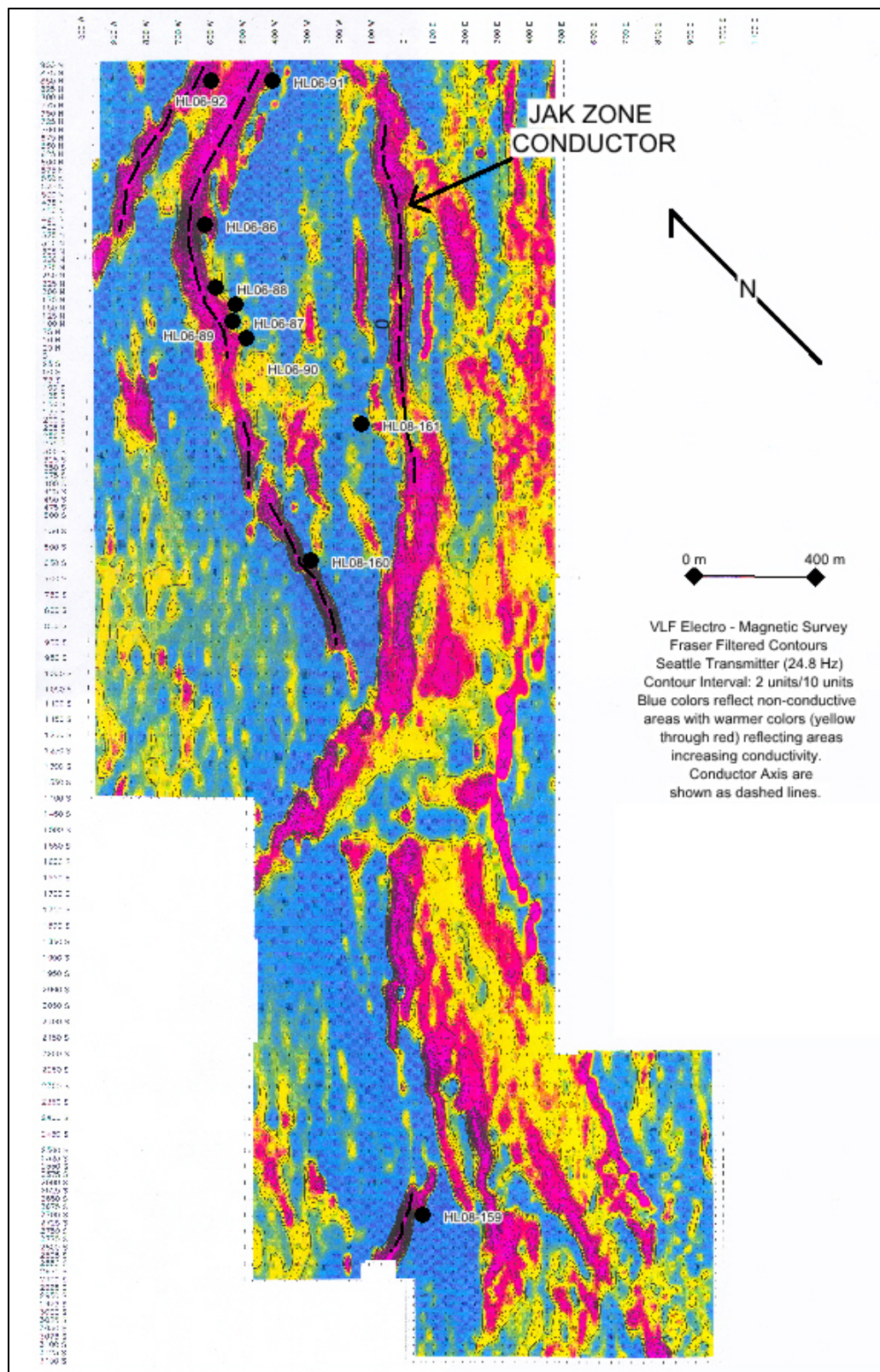
The results of the VLF survey proved to be very definitive, matching up with trenching and drill core observations from the 2001 drilling program (see 10.0) and also showing the interpreted mineralized fault system. Fraser Filtered VLF-EM data shows the location of the VLF-EM conductors and the location of the drill holes which tested these targets.

Paul Cartwright performed a magnetic survey over the same grid using a GSM 19H magnetometer. The results were reported to coincide with the VLF survey results. The mineralized fault system was reported to be represented by a magnetic low.

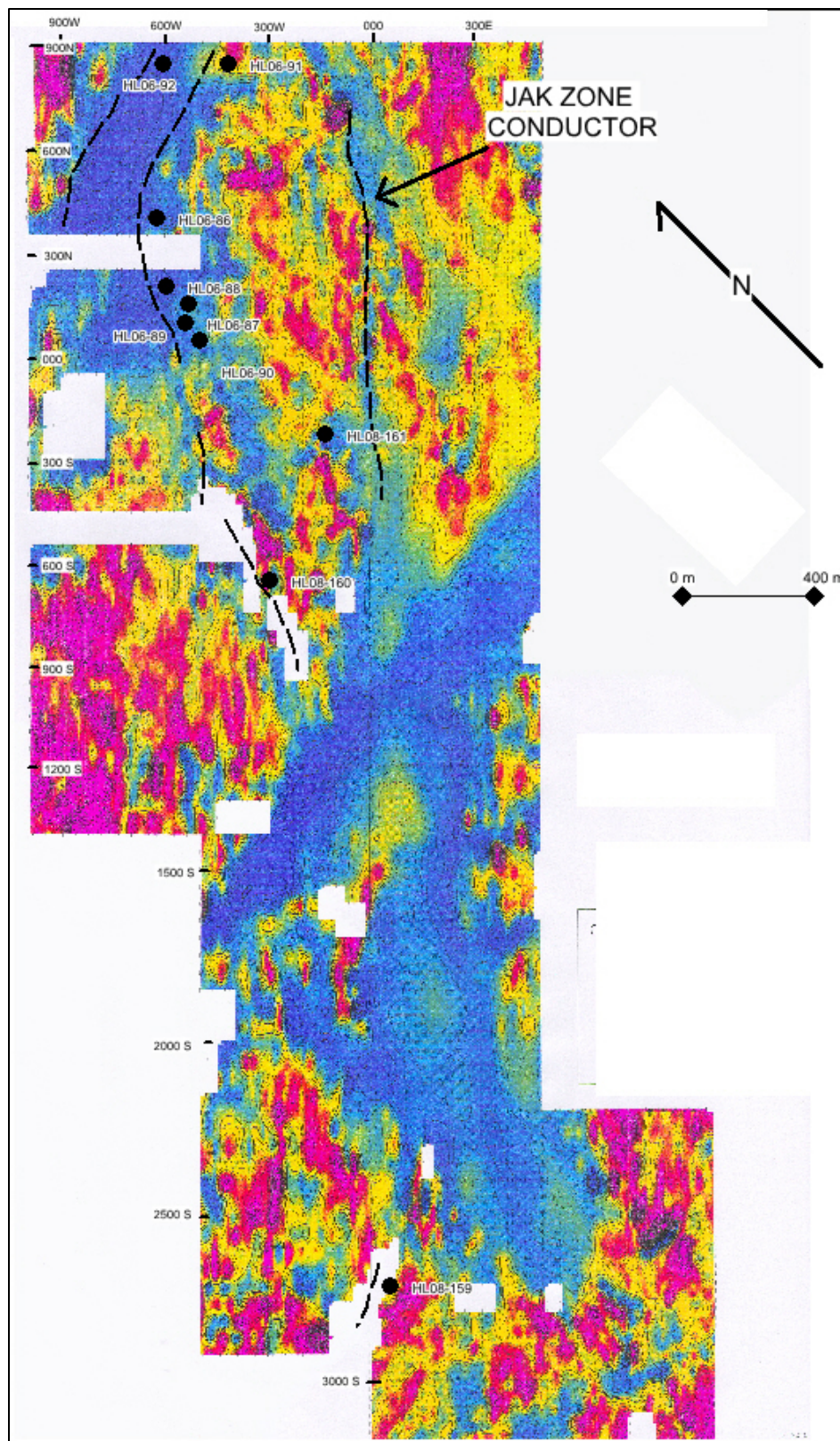
Both the magnetometer and VLF survey results are considered very reliable (Billingsley, 2002).

In 2005, the VLF and magnetic surveys were extended. Due to unfavorable weather conditions in the winter of 2005, it was possible only to do the VLF and magnetic surveys over the lake portions of the grid. This work was carried out by Highrock Contracting of La Ronge, Saskatchewan in April 2005. The land-based portion of the grid was then surveyed by Jason Sigfrid and Associates of Flin Flon, Manitoba in July 2006.

Both of these surveys used a GSM 19 Overhauser magnetometer with the VLF-EM option and a base station. The sensitivity of magnetometer is to 0.2 nT. The field data was corrected for drift using the base station after each day of readings. The sensor height was 80 inches. The Seattle VLF-EM station was used for the surveys. The readings were taken every 12.5 meters.



**Figure 9-1** Fraser Filtered VLF-EM map of the Hoidas Lake grid showing the location of VLF-EM Conductor Axis (dashed lines) and drill holes testing these conductors.



**Figure 9-2** Total Field Magnetic map of the Hoidas Lake grid showing the location of the drill holes the tested the VLF\_EM conductors.

Discrepancies were found when these two surveys were merged, and in order to resolve these discrepancies, Mr. John Pearson took VLF-EM readings extending at least 150 meters across the shorelines, as well as filling lines that had not been previously surveyed. Mr. Pearson used a Geonics EM16 for this work and also used the Seattle station and took readings every 12.5 meters.

The 2005 and 2006 VLF-EM surveys detailed the JAK Zone veins (Figure 9.1) through the drilled portion as well as extending off the grid 275 meters to the north and up to 2 kilometers to the south.

Two other magnetic-conducting areas were also identified in these surveys, the first of which exhibits a curved geometry and is to the northwest of the JAK Zone, and the second of which is centered at 135 m W on line 200 N and exhibits a short strike length. Both of these have been proven through drilling to contain diopside-rich veins which contain REE mineralization (see Figure 9.1).

The 2005-2006 survey has shown the magnetic signature of the region to be dominated by a north-west trending fabric, which is the regional foliation (Figure 9.2). Cross cutting this fabric is a strong east-west trending magnetic low which parallels a strong topographic lineament that appears to crosscut the JAK Zone. The JAK zone itself is also represented by a magnetic low.

### **9.3 2012 Geological Field Mapping**

During the summer of 2012, GWMG carried out a detailed geological mapping program in order to detail the geological and structural setting of the JAK Zone and other mineralized vein systems (Harper 2012). This work identified several new zones of mineralization (See 7.0 and Figure 7.2). The structural setting of the REE mineralization shows a clear connection with structural discontinuities. The veins or dyke systems clearly truncate the older fabrics in the gneisses. The major zones of mineralization strike northeast, generally at 040° to 050° and dip steeply southeast. They are apparently arranged in an echelon fashion. These zones, like the JAK Zone are apparently sub-parallel to the Nisikkatch – Hoidas Shear Zone. Drag folding of the country rocks into the plane of the mineralized structure indicates that dextral displacement is the prominent direction of shear. The presence of other mineralized and non-mineralized diopside-hyalophane veins/dykes at a shallow angle (10° to 20° clockwise) to the principal veins/dykes are characteristic of dextral Riedel shear systems. These latter veins would be the R shears. Linking veins at a large angle between the R shear veins are the antithetic R' shears.

## 10.0 Drilling

### 10.1 Introduction

Five drilling programs have been performed at the Project since 2001. Post 2001, there has been subsequent drilling activity in 2005, 2006, 2007 and 2008. Major Midwest Drilling from Flin Flon, Manitoba was contracted by GWGC and later by GWMG for each of these programs. All drilling was carried out by a Boyles Brothers 17A Core Drill.

184 diamond drill holes, of which 14 were HQ size and 170 were NQ size, totaling approximately 21,700 meters were completed at the Project from 2001 until the writing of this Report.

120 NQ size diamond core drill holes, totaling approximately 15,223 meters, have intercepted the JAK Zone, with associated assay results. Sample analysis was performed by SRC Geoanalytical Laboratories (SRC) in Saskatoon.

The remaining 64 diamond drill holes have been drilled for either exploration outside of the JAK Zone, mainly at VLF-EM conductor targets to the west, northwest, and south of the JAK Zone, the Nisikkatch Lake showings, geotechnical testing purposes; metallurgical sample collection; or were re-drills.

GWMG has provided supervision for all but six of these drill holes, which were conducted by Golder Associates for a tailings pond geotechnical investigation in July 2008.

#### 10.1.1 Collar and Downhole Surveys

Drill hole locations for the 2001 drilling program were determined by I. Young and G. Billingsley of GWMG. Drill hole locations for the 2005, 2006 and 2008 drill program were determined by J. Pearson of GWMG in consultation with R. Hogan, VP Operations for GWMG. In all cases the drill holes were located by chaining the locations from known picket locations on the grid. All Drill holes were drilled at an angle to the horizontal. The drill hole was set with a picket at the collar location and two foresites placed at 5 to 10 m intervals sited down the grid line. The drill hole collar dip was set and measured with the inclinometer of a Brunton Compass on the drill rods at the drill head. All JAK Zone drill holes including holes drilled for geotechnical evaluation were surveyed after drilling had been completed by TriCity Surveys Ltd. of Saskatoon, SK utilizing Differential GPS to an accuracy of  $\pm 0.5$  m. Downhole surveys were completed at approximately 50 m intervals utilizing a REFLEX Single Shot Downhole Survey tool. Coordinates were recorded in UTM format according to the NAD83 datum and elevations were recorded in meters above sea level (asl).

Drill holes testing the VLF-EM conductors, the Hoidas South showing (drill holes prefixed by HS) and the Nisikkatch drill holes were spotted by chaining from grid pickets and also surveyed with handheld GPS units as well as downhole surveyed utilizing a REFLEX Single Shot Downhole Survey tool with measurements taken at approximately 50 m intervals.

No serious deviation problems have been encountered in the drilling with most holes deviating less than 5° to 10° per 100 m from both azimuth and dip.

### 10.1.2 Sampling Intervals

Sample lengths range from 0.15 m to 1.5 m with the majority being approximately 1.0 m. The samples were selected based on uniformity of mineralogy. All drill holes were also surveyed at 0.5 m intervals with a SRAT SP-1 Scintillometer to test for REE mineralization and for magnetite utilizing a Terraplus KT10 magnetic susceptibility meter.

### 10.1.3 True Width Factor

The mineralized zone has a relatively uniform dip of 60 to 65 degrees. The true width relative to drill width varies with the dip of the drill hole but can be measured directly from drill sections where there are two or more drill holes that intersect the zone or by utilizing the factors in the table below.

| Drill Hole Angle | True Width Factor |
|------------------|-------------------|
| -41 degrees      | 0.9613            |
| -45 degrees      | 0.9397            |
| -50 degrees      | 0.9063            |
| -65 degrees      | 0.7660            |

## 10.2 JAK Zone

- 2001 drilling program

Approximately 1,060 meters of NQ-sized diamond core drilling took place at the JAK Zone between January 22 and February 10, 2001. 16 holes were collared and 15 were completed. The program was designed to test the trench results from 1999 as well as to intersect the mineralized zones at two different elevations and to determine continuity of the mineralization along strike and at depth. The mineralization was determined to have a strike length of at least 425 m based on the mineralized intercepts in HL01-16 to HL-01-13 and a depth below surface of up to 75 m.

The drill hole locations were determined by G. Billingsley and I. Young based on the information identified during the trenching program and the local geology. I Young spotted the drill holecollars by chaining from known picket locations. The holes were nominally drilled on 50-meter spacings and inclined to grid west, at an azimuth of 319. Drill hole angles ranged from -41 to -65 degrees (Table 10.1). The drill was moved by a combination of Twin Track Skidoo and Winching. The core was logged by I. Young of GWGC. Billingsley, 2002, states the core recovery was close to 100%. The drill holes were surveyed by Tricity Surveys in 2007 utilizing a Differential GPS to an accuracy of less than 0.5 m.

Based on the continuity and grade of mineralization (see Table 10.2) and the potential to host detailed in this drilling program, follow-up drill programs were undertaken.

- 2005 drilling program

Approximately 5,044 meters of NQ-sized diamond core drilling took place at the JAK Zone between February 5 and April 9, and then between August 21 and September 9 2005. 50 holes were collared. The program was designed to extend the known veins to the north and south and to test the veins to a depth of 125 meters. The holes were nominally drilled at 25-meter spacings and inclined to grid west, at an azimuth of 315°. Drill hole angles ranged from -45 to -70 degrees (Table 10.1). A muskeg tractor was used for transporting and moving the drill, along with fuel and core. The core was brought into the core logging tent at the end of each shift. The drill program was supervised by J. Pearson of GWMG who determined the location of each drill hole in order to satisfy the program design parameters and who spotted each hole by chaining from grid pickets and the drill core logged by J. Pearson and A.J. Spooner, a contractor. Core recovery was greater than 95%.

The drill program systematically tested the 475 m long zone to a depth of 100 m with drill holes testing the zone at 25 to 50 m centers. The zone was extended 100 m to the south and 100 m to the north. The JAK Zone has now been delineated over a strike of 675 m, from surface to a depth of 150 m and over true widths varying from 1 m to 11.4 m. In addition to delineating and extending the JAK Zone, the drilling program has identified a series of parallel veins of similar mineralogy, width and depth extent. Most importantly, a footwall zone has been traced from Line 100S to 2+25 N (325 m), to depth of up to 150 m below surface and over true widths varying from 1.25 m to 4.5 m. In the northern part of the deposit the FW zone has been traced from Line 3+75 N to Line 5+50 N over true widths varying from 1.46 to 8.27 m (see Table 10.2).

The summer drilling program tested those parts of the JAK Zone that could be collared from land. In addition 4 holes were drilled for geotechnical purposes - to monitor ground water flow and ground water chemistry in the FW, Mineralized Vein and HW areas of the deposit. One drill hole tested a 150 m long VLF-EM conductor situated at 150W between Lines 100N and 350N. The hole intersected three narrow diopside-allanite-apatite veins the widest of which assayed 0.817% Total Rare Earth Oxides (TREO) over a true width of 0.86m.

- 2006 drilling program

Approximately 2,223 meters of NQ-sized diamond core drilling took place at the JAK Zone between January 23 and March 4, 2006. 22 holes were collared. The program was designed to carry out infill drilling in order to upgrade some of the Inferred Resource into the Measured and Indicated category, as well as to test VLF-EM conductors at the northwest boundary of the JAK Zone. Continuity of the vein system was confirmed to the northwest of the JAK Zone and along a hanging wall zone that was identified in the 2005 drilling program.

The holes were nominally drilled at 25-meter spacings and inclined to grid west, (at an azimuth of 315°). A muskeg tractor was used for transporting and moving the drill, along with fuel and core. The core was brought into the core logging tent at the end of each shift. Drill hole angles ranged from -55 to -60 degrees. The drill program was supervised by J. Pearson, who determined the

location of each hole in order to satisfy the program parameters. The core was logged by J. Pearson and A.J. Spooner. Core recovery was greater than 95%.

The first 15 holes (DDH's HL06-71 to HL06-85 – 1489m) infilled areas of the drill pattern between Lines 225 N and 575 N such that the zone would have been drilled at <75m intervals for the upper 150m. The results confirmed the continuity of the vein system in the northern half of the deposit and delineated a HW zone that had been identified in the 2005 drilling.

An additional seven holes (737 m) tested two conductors to the NW of the JAK Zone. The 500 W conductor can be traced for >1 km along strike (see figure 9.1). This conductor was tested with 6 drill holes and intersected several narrow (<1m wide), strongly tectonized diopside-allanite-apatite veins between Lines 50N and 850N. The character of the veins and the bounding mylonites is similar to that described in the Hoidas South Trench where fragments of the vein material are incorporated as porphyroclasts in the bounding mylonites. No significant mineralization was encountered.

For details of the results of this drilling see Figure 10.1, Table 10.1 and Table 10.2.

- 2007 drilling program

The 2007 drill program consisted of a winter program targeted on obtaining several tonnes of unweathered REE mineralization for metallurgical testing and a summer program focused on geotechnical testing (see Section 10.5)

The winter program tested two areas with closely spaced NQ and HQ sized drill holes drilled down dip (See Figure 10.1 and Table 10.1). In the southern area 14 drill holes (NQ and HQ) were centered on Line 175 and 200N at approximately 001W. This drilling totalled 1424 m and collected 4323.8 kg of vein material. The procedure was to set the drill collar on mineralization and drill down dip at ~65°. The hole was stopped when the drill hole ran out of mineralization. The second area from which the bulk sample was taken was centered on Line 375N and 020W. This drilling totalled 1878 m and collected 9385.4 kg of vein material. In this location the procedure was also to set up the drill collar on mineralization and drill down dip at ~ 78°. The drill hole was stopped when the drill hole ran out of mineralization.

The drill holes were spotted very close to mineralization in trenches by J.G. Pearson. The drill was moved by muskeg tractor. When one hole was completed the drill was dragged by the muskeg tractor for a distance of not more than 1 m the head set. The core was brought into the camp and unloaded in the logging tent at the end of each shift. The core was logged by J.G. Pearson and A.J. Spooner. The entire mineralized section was collected for metallurgical testing, placed in plastic bags with sample tags. The bag was sealed and then placed in 20 l plastic pails with sealable lids. The average weight of material collected from each hole was approximately 483.5 kg.

The total meterage drilled in the metallurgical sampling program was 2495m and the total weight of mineralized material collected for metallurgical testing was 13709.2 kg.

The summer drill program was focused on collecting geotechnical data for potential mine development. The total meterage drilled was 1450 m predominantly in the HW of the mineralized zone (Figure 10.1 and Section 10.4)

- 2008 drilling program

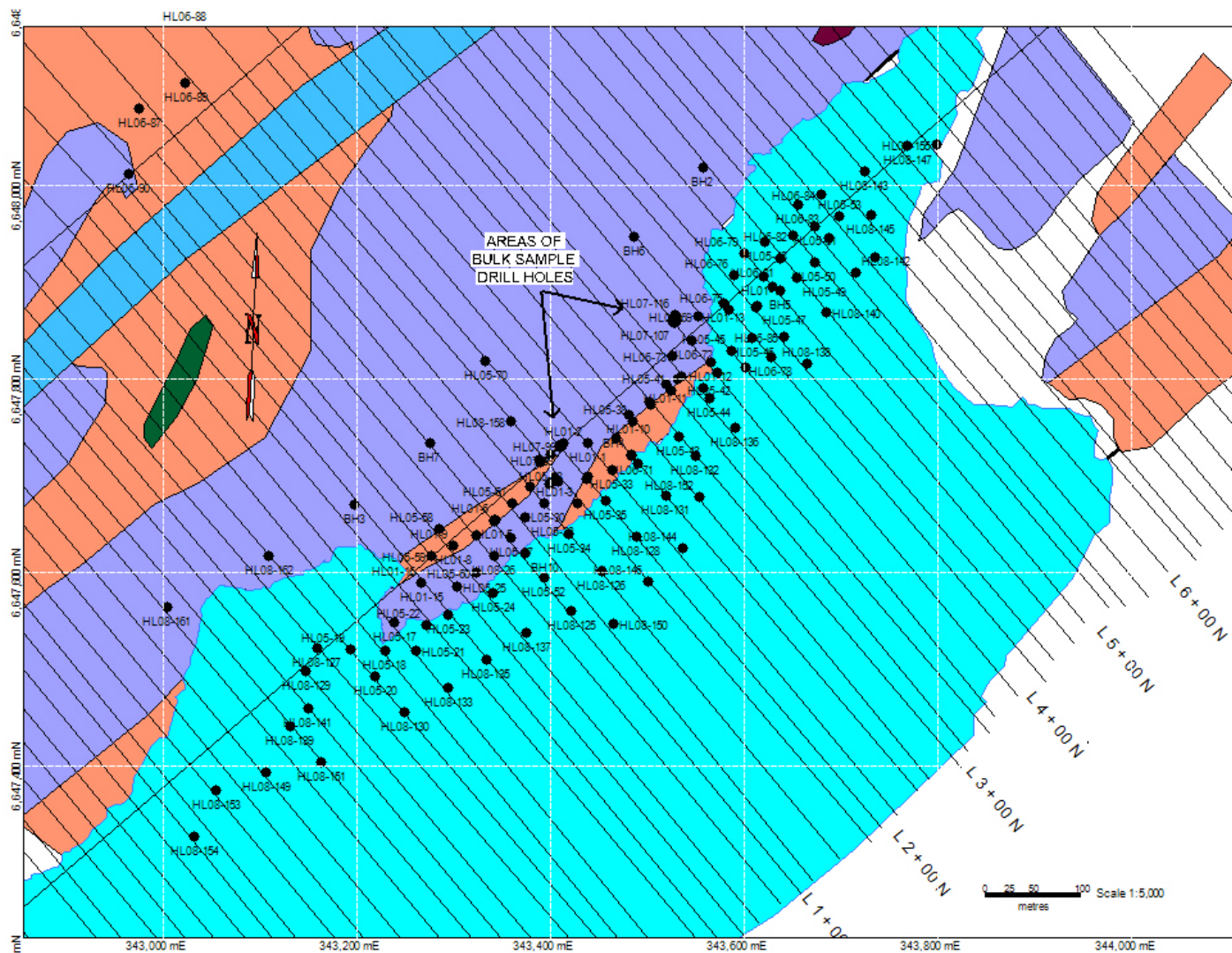
Approximately 6,893 meters of NQ-sized diamond core drilling took place at the JAK Zone between February 2 and April 12, and then between June 15 and July 31, 2008. Thirty two holes were collared. HL08-148 was abandoned and then re-drilled as HL08-150. The program was designed to extend the JAK Zone along strike and down dip. Strike length was extended by 250 meters, and the depth was extended to 300 meters from a previous tested depth of 150 meters.

The holes were nominally drilled from 25-meter spacings (central JAK Zone) to 50-meter spacings (north, south and east extension) and inclined to grid west, at an azimuth of 315°. Drill hole angles ranged from -60 to -65 degrees. The winter program took advantage of lake ice. A muskeg tractor was used for transporting and moving the drill, along with fuel and core. The core was brought into the core logging tent at the end of each shift. The drill core was logged by I. Young and D. Studer.

The holes drilled during the summer utilized a Bell 206 Long Ranger contracted from HSTC, based in La Ronge, SK, for mobilization and moving the drill, along with fuel and core and for moving personnel. The core was slung into the camp near the core logging tent at the end of each shift. I. Young logged the drill core. Core recover during 2008 was greater than 95%.

Figure 10.1 shows collar locations of the 2008 drill holes that intercepted the JAK Zone.

Table 10.1 shows drill hole data for assayed JAK Zone interceptions. Table 10.2 shows the significant drill intersections for each drill hole that tested the JAK Zone. Mineralized intercepts listed are those considered significant from a geological and zone continuity perspective. Generally mineralized intercepts of greater than 1 m and greater than 1% TREO are included.



**Figure 10-1** Drill hole location and geology map of the JAK Zone area showing the location of drill holes drilled on or in close proximity to the JAK Zone. For geology legend see Figure 7.2

**Table 10-1 Assayed JAK Zone Drill Holes 2001-2008**

| Year | Hole Number | Grid East | Grid North | Elevation | Azimuth | Dip | Hole Length (m) | # of Samples | Sample Number Range                   |
|------|-------------|-----------|------------|-----------|---------|-----|-----------------|--------------|---------------------------------------|
| 2001 | HL01-01     | 17.65     | 223.71     | 454.63    | 315     | -45 | 45              | 15           | 40032 - 40045                         |
|      | HL01-02     | 17.65     | 223.71     | 454.63    | 315     | -65 | 61              | 39           | 40291 - 40329                         |
|      | HL01-03     | 22.12     | 173.89     | 453.11    | 315     | -45 | 50              | 47           | 40125 - 40171                         |
|      | HL01-04     | 27.69     | 173.9      | 452.91    | 315     | -65 | 62              | 33           | 40442 - 40474                         |
|      | HL01-05     | 13.96     | 98.41      | 454.75    | 315     | -45 | 50              | 0            |                                       |
|      | HL01-06     | 13.96     | 98.41      | 454.75    | 315     | -41 | 41              | 24           | 40475 - 40498                         |
|      | HL01-07     | 13.96     | 98.41      | 454.75    | 315     | -65 | 62              | 30           | 40412 - 40441                         |
|      | HL01-08     | 7.22      | 49.16      | 452.94    | 315     | -45 | 40              | 29           | 40046 - 40074                         |
|      | HL01-09     | 7.22      | 49.16      | 452.94    | 315     | -65 | 63.5            | 50           | 40075 - 40124                         |
|      | HL01-10     | 23.08     | 273.92     | 454.79    | 315     | -45 | 77              | 27           | 41018 - 41046                         |
|      | HL01-11     | 24.09     | 323.87     | 455.2     | 315     | -45 | 89              | 30           | 44088 - 44100, 41001 - 41017          |
|      | HL01-12     | 37.16     | 373.72     | 451.27    | 315     | -45 | 91.7            | 51           | 44046 - 44087, 836712 - 836721        |
|      | HL01-13     | -0.63     | 423.46     | 451.24    | 315     | -50 | 68              | 47           | 40499 - 44045                         |
|      | HL01-14     | 4.61      | 473.3      | 451.08    | 315     | -50 | 100             | 119          | 40172 - 40290,                        |
|      | HL01-15     | 14.85     | -1.07      | 452.08    | 315     | -45 | 50              | 10           | 40401 - 40410                         |
|      | HL01-16     | 14.18     | -1.13      | 452.03    | 315     | -65 | 110             | 72           | 40330 - 40400,                        |
|      |             |           |            |           |         |     | 1060.2          |              |                                       |
| 2005 | HL05-17     | 27.76     | -49.15     | 452.26    | 315     | -50 | 68              | 26           | 782201 - 782228                       |
|      | HL05-18     | 43.29     | -75.43     | 451.15    | 315     | -65 | 86              | 12           | 782230 - 782242                       |
|      | HL05-19     | 18.82     | -101.21    | 451.13    | 315     | -62 | 80              | 15           | 782243 - 782258                       |
|      | HL05-20     | 57.01     | -100.51    | 451.14    | 315     | -70 | 119             | 10           | 782260 - 782270                       |
|      | HL05-21     | 63.94     | -50.93     | 451.15    | 315     | -70 | 140             | 30           | 12101 - 12105, 782271 - 782294, 12299 |
|      | HL05-22     | 50.77     | -25.85     | 451.25    | 315     | -63 | 101             | 21           | 12300, 37001 - 37007, 782295 - 782307 |
|      | HL05-23     | 57.46     | -1.16      | 451.3     | 315     | -70 | 123.5           | 24           | 782308 - 782331, 37009 - 37010        |

| Year | Hole Number | Grid East | Grid North | Elevation | Azimuth | Dip   | Hole Length (m) | # of Samples | Sample Number Range                           |
|------|-------------|-----------|------------|-----------|---------|-------|-----------------|--------------|-----------------------------------------------|
|      | HL05-24     | 71.19     | 48.17      | 451.17    | 315     | -65   | 140             | 29           | 782332 - 782361, 37011 - 37012                |
|      | HL05-25     | 41.75     | 23.65      | 452.48    | 315     | -65   | 104             | 23           | 782362 - 782381, 37075 - 37079                |
|      | HL05-26     | 42.46     | 73.88      | 453.05    | 315     | -65   | 115             | 21           | 782382 - 782402, 37013 - 37014                |
|      | HL05-27     | 40.4      | 99.09      | 454       | 315     | -70   | 119             | 33           | 782403 - 782433, 37015 - 37019                |
|      | HL05-28     | 33.12     | 123.37     | 454.79    | 315     | -65   | 53              | 10           | 782434 - 782443, 12106                        |
|      | HL05-29     | 32.79     | 123.73     | 454.79    | 315     | -55   | 86              | 14           | 782444 - 782453, 37020 - 37022, 37080 - 37081 |
|      | HL05-30     | 34.87     | 148.58     | 452.5     | 315     | -53   | 86              | 14           | 782455 - 782466, 370223 - 37024               |
|      | HL05-31     | 57.74     | 174.3      | 451.72    | 315     | -60   | 128             | 35           | 782468 - 782500, 799101 - 799105              |
|      | HL05-32     | 44.48     | 198.78     | 452.92    | 315     | -53   | 93.7            | 26           | 799106 - 799134                               |
|      | HL05-33     | 55.15     | 223.86     | 453.13    | 315     | -60   | 125             | 19           | 799135 - 799155                               |
|      | HL05-34     | 75.79     | 147.44     | 451.18    | 315     | -70   | 170             | 28           | 799156 - 799186                               |
|      | HL05-35     | 74.01     | 198.94     | 451.2     | 315     | -70   | 173             | 22           | 799187 - 799211                               |
|      | HL05-36     | 66.73     | 249.3      | 451.27    | 315     | -65   | 122             | 17           | 799212 - 799230                               |
|      | HL05-37     | 32.31     | 248.88     | 454.36    | 315     | -53   | 93.2            | 29           | 799231 - 799264                               |
|      | HL05-38     | 29.89     | 273.53     | 454.62    | 315     | -65   | 113             | 18           | 799265 - 799283                               |
|      | HL05-39     | 29.89     | 273.53     | 454.62    | 315     | -53   | 89              | 21           | 799284 - 799306                               |
|      | HL05-40     | 26.93     | 298.67     | 454.88    | 315     | -53   | 77              | 25           | 799308 - 799330, 37028                        |
|      | HL05-41     | 32.78     | 324.02     | 455.07    | 310     | -65   | 110             | 24           | 799331 - 799355, 37029 - 37030                |
|      | HL05-42     | 28.83     | 342.09     | 454.69    | 315     | -53   | 98              | 41           | 799356 - 799390, 37031 - 37040                |
|      | HL05-43     | 73.48     | 298.98     | 451.13    | 315     | -53.9 | 137             | 21           | 799391 - 799407, 37041 - 37046                |
|      | HL05-44     | 63.45     | 349.07     | 451.18    | 315     | -53.9 | 137             | 26           | 799408 - 799429, 37047 - 37052                |
|      | HL05-45     | 41.64     | 398.14     | 451.19    | 315     | -53.9 | 110             | 29           | 782332 - 782361, 37011 - 37012                |
|      | HL05-46     | 45.11     | 423.14     | 451.22    | 315     | -54   | 116             | 43           | 799455 - 799495, 37060 - 37065                |
|      | HL05-47     | 23.14     | 448.08     | 451.19    | 315     | -54   | 101             | 35           | 799497 - 799500, 12201 - 12223, 37069 - 37074 |
|      | HL05-48     | -21.5     | 498.02     | 451.18    | 315     | -54   | 65              | 37           | 12227 - 12262                                 |

| Year | Hole Number | Grid East | Grid North | Elevation | Azimuth | Dip | Hole Length (m) | # of Samples | Sample Number Range |
|------|-------------|-----------|------------|-----------|---------|-----|-----------------|--------------|---------------------|
|      | HL05-49     | 28.83     | 497.93     | 451.19    | 315     | -54 | 122             | 29           | 12263 - 12294       |
|      | HL05-50     | 28.61     | 522.75     | 451.2     | 315     | -54 | 122             | 30           | 37082 - 37714       |
|      | HL05-51     | 1.02      | 547.04     | 451.19    | 315     | -54 | 97.6            | 39           | 37716 - 37757       |
|      | HL05-52     | 93.48     | 98.28      | 451.21    | 315     | -62 | 170             | 31           | 37758 - 37792       |
|      | HL05-53     | 8.95      | 573.12     | 451.21    | 315     | -55 | 113             | 15           | 37813 - 37828       |
|      | HL05-54     | 18.52     | 550.1      | 451.2     | 315     | -65 | 122             | 17           | 37829 - 37847       |
|      | HL05-55     | 15.38     | 98.25      | 454.6     | 315     | -52 | 41              | 10           | 837012 - 837022     |
|      | HL05-56     | 15.23     | 99.03      | 454.73    | 315     | -52 | 74              | 10           | 837001 - 837011     |
|      | HL05-57     | 14.73     | 74.07      | 454.19    | 315     | -65 | 80              | 9            | 837023 - 837032     |
|      | HL05-58     | -16.31    | 48.83      | 452.31    | 315     | -45 | 44              | 7            | 837033 - 837040     |
|      | HL05-59     | 0.18      | 24.15      | 452.02    | 315     | -75 | 65              | 17           | 837041 - 837060     |
|      | HL05-60     | 43.36     | 49.64      | 453.5     | 315     | -65 | 116             | 14           | 837061 - 837077     |
|      | HL05-61     | 13.55     | 122.96     | 453.7     | 315     | -55 | 65              | 14           | 837078 - 837093     |
|      | HL05-62     | 13.26     | 148.76     | 453.81    | 315     | -53 | 62              | 15           | 837095 - 837112     |
|      | HL05-63     | 0.74      | 173.72     | 453.88    | 315     | -52 | 56              | 5            | 837113 - 837119     |
|      | HL05-68     | 29.87     | 298.2      | 454.7     | 315     | -65 | 104             | 26           | 837120 - 837149     |
|      | HL05-69     | -7.77     | 395.72     | 452.52    | 316     | -65 | 62              | 19           | 837150 - 837170     |
|      | HL05-70     | -116.34   | 198.82     | 455.97    | 315     | -53 | 50              | 7            | 837171 - 837178     |
|      |             |           |            |           |         |     | 5044            |              |                     |
| 2006 | HL06-71     | 56.64     | 249.39     | 451.92    | 315     | -55 | 140             | 19           | 837201 - 837221     |
|      | HL06-72     | 6.56      | 373.94     | 453.91    | 315     | -55 | 59              | 25           | 837222 - 837249     |
|      | HL06-73     | 6.28      | 348.84     | 454.99    | 315     | -55 | 77              | 21           | 837250 - 837272     |
|      | HL06-74     | 49.19     | 372.3      | 451.38    | 315     | -60 | 122             | 46           | 837273 - 837323     |
|      | HL06-75     | 8.44      | 423.48     | 451.32    | 315     | -60 | 86              | 22           | 837325 - 837347     |
|      | HL06-76     | -15.6     | 451.32     | 451.41    | 315     | -60 | 71.6            | 25           | 837348 - 837374     |

| Year | Hole Number | Grid East | Grid North | Elevation | Azimuth | Dip | Hole Length (m) | # of Samples | Sample Number Range              |
|------|-------------|-----------|------------|-----------|---------|-----|-----------------|--------------|----------------------------------|
|      | HL06-77     | 24.21     | 445.93     | 451.32    | 330     | -60 | 176             | 42           | 837376 - 837422                  |
|      | HL06-78     | 73.6      | 424.44     | 451.27    | 315     | -60 | 86              | 19           | 837423 - 837443                  |
|      | HL06-79     | -25.99    | 473.51     | 451.32    | 315     | -60 | 59              | 26           | 837445 - 837472                  |
|      | HL06-80     | 19.6      | 473.15     | 451.33    | 315     | -60 | 128             | 33           | 837473 - 837500, 836601 - 836609 |
|      | HL06-81     | 2.33      | 498.1      | 451.25    | 315     | -60 | 98              | 36           | 836610 - 836649                  |
|      | HL06-82     | -7.72     | 523.42     | 451.25    | 315     | -60 | 86              | 31           | 836650 - 836683                  |
|      | HL06-83     | -27.63    | 548.11     | 451.23    | 315     | -60 | 62              | 9            | 836684 - 836693                  |
|      | HL06-84     | -19.79    | 573.51     | 451.25    | 315     | -60 | 80              | 16           | 836694 - 836711                  |
|      | HL06-85     | 66.17     | 447.87     | 451.24    | 315     | -60 | 158             | 59           | 836722 - 836786                  |
|      | HL06-86     | -630      | 400        | 435.23    | 315     | -55 | 98              | 15           | 836788 - 836803                  |
|      | HL06-87     | -546.28   | 97.45      | 442.33    | 315     | -55 | 110             | 24           | 836805 - 836830                  |
|      | HL06-88     | -600      | 204.31     | 440.55    | 315     | -55 | 86              | 12           | 836831 - 836843                  |
|      | HL06-89     | -535.64   | 151.11     | 442.35    | 315     | -55 | 107             | 18           | 836844 - 836863                  |
|      | HL06-90     | -503.2    | 45.12      | 444.61    | 315     | -55 | 143             | 15           | 836865 - 836880                  |
|      | HL06-91     | -420.9    | 848.55     | 435.2     | 315     | -60 | 65              | 30           | 836881 - 836913                  |
|      | HL06-92     | -611.19   | 849.69     | 435.19    | 315     | -60 | 128             | 45           | 836914 - 836963                  |
|      |             |           |            |           |         |     | 2225.6          |              |                                  |
| 2008 | HL08-125    | 137.66    | 97.69      | 451.27    | 315     | -65 | 291             | 96           | 948801 - 948897, 201918 - 201926 |
|      | HL08-126    | 126.73    | 147.97     | 451.25    | 315     | -65 | 278             | 70           | 948898 - 948966, 201940 - 201946 |
|      | HL08-127    | -4.83     | -126.53    | 451.23    | 315     | -64 | 89              | 11           | 201124 - 201133                  |
|      | HL08-128    | 123.38    | 198.32     | 451.14    | 315     | -60 | 215             | 25           | 948997 - 948999, 201001 - 201020 |
|      | HL08-129    | 6.04      | -151.02    | 451.21    | 315     | -64 | 65              | 27           | 948967 - 948996                  |
|      | HL08-130    | 105.04    | -101.09    | 451.18    | 315     | -65 | 189             | 23           | 201173 - 201192, 201935          |
|      | HL08-131    | 110.36    | 249.32     | 451.22    | 315     | -65 | 236             | 47           | 201021 - 201066, 201950 - 201954 |
|      | HL08-132    | 99.67     | 298.54     | 451.17    | 315     | -65 | 275             | 63           | 201067 - 201123, 201967 - 201971 |

| Year | Hole Number | Grid East | Grid North | Elevation | Azimuth | Dip | Hole Length (m) | # of Samples | Sample Number Range                      |
|------|-------------|-----------|------------|-----------|---------|-----|-----------------|--------------|------------------------------------------|
|      | HL08-133    | 115.21    | -50.72     | 451.05    | 315     | -65 | 200             | 19           | 201193 - 201209                          |
|      | HL08-134    | 64.49     | 398.36     | 451.17    | 315     | -65 | 316             | 38           | 201210 - 201248, 201972 - 201973         |
|      | HL08-135    | 118.25    | -2.34      | 451.15    | 315     | -65 | 221             | 35           | 201135 - 201172                          |
|      | HL08-136    | 104.89    | 348.59     | 451.09    | 315     | -65 | 289             | 37           | 201249 - 201290                          |
|      | HL08-137    | 124.42    | 48.13      | 451.18    | 315     | -65 | 227             | 63           | 201291 - 201345, 201904 - 201917         |
|      | HL08-138    | 101.84    | 448.35     | 451.24    | 315     | -65 | 245             | 97           | 201346 - 201440, 201974 - 201983         |
|      | HL08-139    | 38.65     | -200.7     | 451.21    | 315     | -65 | 134             | 34           | 201441 - 201476, 201927                  |
|      | HL08-140    | 74.72     | 498.04     | 451.19    | 315     | -65 | 245             | 66           | 201477 - 201500, 202001 - 202050         |
|      | HL08-141    | 36.52     | -174.72    | 451.19    | 315     | -65 | 119             | 31           | 202051 - 202082, 201902 - 201903         |
|      | HL08-142    | 64.2      | 547.72     | 451.21    | 315     | -65 | 194             | 38           | 202083 - 202124                          |
|      | HL08-143    | -9.52     | 622.75     | 451.15    | 315     | -65 | 140             | 18           | 202125 - 202145                          |
|      | HL08-144    | 163.38    | 226.14     | 451.28    | 315     | -65 | 398             | 55           | 202189 - 202243                          |
|      | HL08-145    | 29.36     | 598.38     | 451.18    | 315     | -65 | 200             | 14           | 202146 - 202160                          |
|      | HL08-146    | 166.3     | 176.58     | 451.15    | 315     | -65 | 338             | 51           | 202244 - 202306                          |
|      | HL08-147    | -0.34     | 673.35     | 451.18    | 315     | -65 | 151             | 25           | 202161 - 202188                          |
|      | HL08-149    | 58.68     | -250.13    | 451.15    | 315     | -65 | 173             | 20           | 202307 - 202329                          |
|      | HL08-150    | 176.51    | 121.82     | 451.22    | 315     | -65 | 398             | 88           | 202365 - 202461                          |
|      | HL08-151    | 88.36     | -200.26    | 451.01    | 315     | -65 | 197             | 34           | 202330 - 202364, 201928                  |
|      | HL08-152    | 135.04    | 274.34     | 451.17    | 315     | -65 | 305             | 81           | 201547 - 201636, 201959                  |
|      | HL08-153    | 38.94     | -300.93    | 451.13    | 315     | -65 | 118             | 40           | 201503 - 201546                          |
|      | HL08-154    | 60.36     | -349.46    | 451.23    | 315     | -65 | 194             | 38           | 202462 - 202500, 201901, 201501 - 201502 |

| Year | Hole Number | Grid East | Grid North | Elevation | Azimuth | Dip | Hole Length (m) | # of Samples | Sample Number Range    |
|------|-------------|-----------|------------|-----------|---------|-----|-----------------|--------------|------------------------|
|      | HL08-155    | 18.75     | 697.84     | 451.24    | 315     | -65 | 140             | 45           | 201637, 201682, 201840 |
|      | HL08-156    | 64.4      | 573.32     | 451.1     | 315     | -65 | 203             | 48           | 201683 - 201735,       |
|      | HL08-157    | 41.4      | 200        | 451       | 045     | -63 | 110             | 19           | 202501 - 202520        |
|      |             |           |            |           |         |     | 6893            |              |                        |

**Table 10-2 Analysis of significant mineralized intercepts from the JAK Zone drill holes 2001 - 2008. Note P2O5 not analyzed in 2001 drill holes.**

| Year | Hole Number | Grid East | Grid North | Mineralized Interval  |       |             |            | TREO % | P2O5% |
|------|-------------|-----------|------------|-----------------------|-------|-------------|------------|--------|-------|
|      |             |           |            | From                  | To    | Core Length | True Width |        |       |
| 2001 | HL01-01     | 17.65     | 223.71     | 19.6                  | 23.3  | 3.7         | 3.75       | 1.07   |       |
|      | HL01-02     | 17.65     | 223.71     | 21.3                  | 27.49 | 6.19        | 6.22       | 1.52   |       |
|      | HL01-03     | 22.12     | 173.89     | 14.9                  | 17.8  | 2.9         | 3.67       | 4.38   |       |
|      | HL01-04     | 27.69     | 173.9      | 30.4                  | 32.7  | 2.3         | 2.09       | 3.28   |       |
|      | HL01-05     | 13.96     | 98.41      | No Significant Assays |       |             |            |        |       |
|      | HL01-06     | 13.96     | 98.41      | 28.4                  | 31.4  | 3           | 2.72       | 2.49   |       |
|      | HL01-07     | 13.96     | 98.41      | 38.1                  | 43.9  | 5.8         | 5.2        | 3.84   |       |
|      | HL01-08     | 7.22      | 49.16      | 19.5                  | 27    | 7.5         | 6.75       | 3.84   |       |
|      | HL01-09     | 7.22      | 49.16      | 26                    | 31.7  | 5.7         | 4.8        | 4.3    |       |
|      | HL01-10     | 23.08     | 273.92     | 39.7                  | 51.3  | 11.6        | 8.13       | 1.34   |       |
|      | HL01-11     | 24.09     | 323.87     | 41.9                  | 49.8  | 7.9         | 6.33       | 1.48   |       |
|      | HL01-12     | 37.16     | 373.72     | 59.2                  | 66.7  | 7.5         | 6.05       | 1.72   |       |
|      |             |           |            | 72.9                  | 76.4  | 3.5         | 3.34       | 2.96   |       |
|      | HL01-13     | -0.63     | 423.46     | 31.9                  | 41.6  | 9.7         | 7.75       | 2.85   |       |
|      | HL01-14     | 4.61      | 473.3      | 51.7                  | 54.6  | 2.9         | 2.69       | 1.78   | 2.08  |
|      |             |           |            | 68.1                  | 75    | 6.9         | 6.85       | 4.41   |       |
|      | HL01-15     | 14.85     | -1.07      | 30.8                  | 32.8  | 2           | 1.93       | 1.31   |       |
|      | HL01-16     | 14.18     | -1.13      | 36                    | 40.8  | 4.8         | 3.83       | 3.26   |       |
|      |             |           |            | 54.5                  | 59.2  | 4.7         | 3.21       | 0.83   |       |
|      |             |           |            |                       |       |             |            |        |       |
| 2005 | HL05-17     | 27.76     | -49.15     | 43.85                 | 46.5  | 2.65        | 2.51       | 3.98   | 11.34 |
|      |             |           |            | 54.75                 | 58.2  | 3.45        | 3.3        | 2.37   | 9.91  |
|      | HL05-18     | 43.29     | -75.43     | 70.5                  | 74.4  | 3.9         | 2.97       | 0.708  | 3.96  |
|      | HL05-19     | 18.82     | -101.21    | 34.65                 | 37.55 | 2.9         | 2.16       | 1.24   | 5.26  |
|      |             |           |            | 47                    | 53    | 6           | 4.05       | 1.7    | 2.68  |
|      | HL05-20     | 57.01     | -100.51    | 88.5                  | 91    | 2.5         | 2.1        | 1.64   | 2.74  |
|      | HL05-21     | 63.94     | -50.93     | 98.6                  | 101.4 | 2.8         | 2.21       | 2.36   | 15.7  |
|      |             |           |            | 109.53                | 119.8 | 10.27       | 7.27       | 1.15   | 11.74 |
|      | HL05-22     | 50.77     | -25.85     | 72.88                 | 76.1  | 3.22        | 2.97       | 3.28   | 23.56 |
|      |             |           |            | 84.54                 | 88.1  | 3.56        | 3.11       | 2.35   | 10.05 |
|      | HL05-23     | 57.46     | -1.16      | 90.76                 | 92.35 | 1.59        | 1.41       | 2.64   | 16.29 |
|      |             |           |            | 111                   | 113   | 2           | 1.62       | 1.92   | 8.87  |
|      | HL05-24     | 71.19     | 48.17      | 97.6                  | 105.2 | 7.6         | 5.91       | 3.28   | 19.18 |

| Year | Hole Number | Grid East | Grid North | Mineralized Interval |        |             |            | TREO % | P2O5% |
|------|-------------|-----------|------------|----------------------|--------|-------------|------------|--------|-------|
|      |             |           |            | From                 | To     | Core Length | True Width |        |       |
|      |             |           |            | 126.63               | 129.95 | 3.32        | 2.15       | 1.4    | 5.98  |
|      | HL05-25     | 41.75     | 23.65      | 66                   | 70.5   | 4.5         | 3.44       | 0.772  | 3.11  |
|      |             |           |            | 86.96                | 91.37  | 4.41        | 4.19       | 0.733  | 3.24  |
|      | HL05-26     | 42.46     | 73.88      | 71.14                | 74.88  | 3.74        | 3.06       | 1.7    | 10.56 |
|      |             |           |            | 96.33                | 105    | 8.67        | 5.75       | 1.41   | 1.96  |
|      | HL05-27     | 40.4      | 99.09      | 71.45                | 83.05  | 11.6        | 8.76       | 4.01   | 15.04 |
|      |             |           |            | 104.5                | 109.4  | 4.9         | 2.75       | 4.03   | 20.99 |
|      | HL05-28     | 33.12     | 123.37     | 48.08                | 53     | 4.92        | 4.2        | 2.25   | 12.5  |
|      | HL05-29     | 32.79     | 123.73     | 47                   | 52.5   | 5.5         | 3.4        | 3.64   | 11.55 |
|      |             |           |            | 76.42                | 78.85  | 2.43        | 2.06       | 0.728  | 3.34  |
|      | HL05-30     | 34.87     | 148.58     | 39.7                 | 42.48  | 2.78        | 2.44       | 2.59   | 15.05 |
|      |             |           |            | 76.1                 | 79.12  | 3.02        | 2.78       | 1.22   | 4.77  |
|      | HL05-31     | 57.74     | 174.3      | 20.14                | 23.05  | 2.91        | 2.51       | 3.62   | 17.07 |
|      |             |           |            | 27.18                | 29.38  | 2.2         | 1.91       | 3      | 26.39 |
|      |             |           |            | 60.68                | 67.23  | 6.55        | 5.38       | 2.1    | 11.04 |
|      | HL05-32     | 44.48     | 198.78     | 27                   | 35.05  | 8.05        | 6.63       | 1.09   | 6.9   |
|      |             |           |            | 42.33                | 46.5   | 4.17        | 3.72       | 4.43   | 13.07 |
|      | HL05-33     | 55.15     | 223.86     | 51.3                 | 54.2   | 2.9         | 2.1        | 0.84   | 6.5   |
|      |             |           |            | 108.6                | 114.3  | 5.7         | 3.74       | 3.12   | 14.06 |
|      | HL05-34     | 75.79     | 147.44     | 91.55                | 94.68  | 3.13        | 2.02       | 2.74   | 15.81 |
|      |             |           |            | 99.1                 | 100.62 | 1.52        | 1.22       | 4.2    | 15.93 |
|      |             |           |            | 156                  | 162.9  | 6.9         | 4.65       | 0.96   | 3.73  |
|      | HL05-35     | 74.01     | 198.94     | 80.08                | 82.95  | 2.87        | 2.12       | 2.11   | 14.41 |
|      |             |           |            | 88.65                | 91.35  | 2.7         | 1.91       | 4.05   | 18.39 |
|      | HL05-36     | 66.73     | 249.3      | 53.6                 | 54.94  | 1.34        | 1          | 1.27   | 5.55  |
|      | HL05-37     | 32.31     | 248.88     | 59.9                 | 66.5   | 6.6         | 4.42       | 2.43   | 10.72 |
|      |             |           |            | 78.7                 | 87.7   | 9           | 8          | 2.36   | 12.04 |
|      | HL05-38     | 29.89     | 273.53     | 84.35                | 94.7   | 10.35       | 5.24       | 2.82   | 14.96 |
|      | HL05-39     | 29.89     | 273.53     | 62.1                 | 67.35  | 5.25        | 3.12       | 3.09   | 25.3  |
|      |             |           |            | 70.64                | 77.65  | 7.01        | 4.51       | 1.93   | 10.48 |
|      | HL05-40     | 26.93     | 298.67     | 54.35                | 57     | 2.65        | 1.43       | 2.54   | 13.8  |
|      |             |           |            | 60                   | 68.7   | 8.7         | 6.31       | 2.03   | 9.8   |
|      | HL05-41     | 32.78     | 324.02     | 78.2                 | 91.1   | 12.9        | 7.08       | 1.55   | 5.15  |
|      | HL05-42     | 28.83     | 342.09     | 20.8                 | 22.2   | 1.4         | 1.2        | 1.45   | 0.814 |
|      |             |           |            | 26.7                 | 28.8   | 2.1         | 1.8        | 1.2    | 0.95  |

| Year | Hole Number | Grid East | Grid North | Mineralized Interval |        |             |            | TREO % | P2O5% |
|------|-------------|-----------|------------|----------------------|--------|-------------|------------|--------|-------|
|      |             |           |            | From                 | To     | Core Length | True Width |        |       |
|      |             |           |            | 64.34                | 72.1   | 7.76        | 6.1        | 2.59   | 12.33 |
|      |             |           |            | 74.9                 | 78.4   | 3.5         | 3.03       | 1.62   | 8.06  |
|      |             |           |            | 80.7                 | 84.75  | 4.05        | 3.5        | 3.09   | 17.5  |
|      | HL05-43     | 73.48     | 298.98     | 85.5                 | 88.5   | 3           | 2.23       | 2.21   | 7.6   |
|      |             |           |            | 119.36               | 122.6  | 3.24        | 2.74       | 1.91   | 4.44  |
|      | HL05-44     | 63.45     | 349.07     | 55.7                 | 59.7   | 4           | 3.32       | 2.55   | 26.09 |
|      |             |           |            | 108.53               | 113.78 | 5.25        | 3.19       | 2.41   | 11.62 |
|      | HL05-45     | 41.64     | 398.14     | 8.91                 | 12.1   | 3.19        | 2.61       | 7.46   | 8.45  |
|      |             |           |            | 78.1                 | 80.6   | 2.5         | 2.2        | 2.68   | 12.71 |
|      |             |           |            | 92.85                | 95.97  | 3.12        | 2.13       | 2.37   | 7.54  |
|      |             |           |            | 98.93                | 102.53 | 3.6         | 2.83       | 3.81   | 24.07 |
|      | HL05-46     | 45.11     | 423.14     | 30.25                | 38.3   | 8.05        | 6.64       | 3.18   | 7.81  |
|      |             |           |            | 87                   | 96.75  | 9.75        | 7.7        | 2.98   | 14.56 |
|      |             |           |            | 103.2                | 108.4  | 5.2         | 4.25       | 2.87   | 15.39 |
|      | HL05-47     | 23.14     | 448.08     | 12.6                 | 20.3   | 7.7         | 6.61       | 3.05   | 12.47 |
|      |             |           |            | 71                   | 75.43  | 4.43        | 3.96       | 3.61   | 10.6  |
|      |             |           |            | 87.4                 | 94.22  | 6.82        | 5.98       | 1.79   | 9.38  |
|      | HL05-48     | -21.5     | 498.02     | 22.1                 | 41.3   | 19.2        | 17         | 1.71   | 7.9   |
|      |             |           |            | 55.17                | 58.2   | 3.03        | 2.65       | 3.12   | 17.03 |
|      | HL05-49     | 28.83     | 497.93     | 68.8                 | 72.85  | 4.05        | 3.67       | 2.51   | 16.01 |
|      |             |           |            | 97.2                 | 100.9  | 3.7         | 2.43       | 5.39   | 24.05 |
|      |             |           |            | 107.15               | 111.33 | 4.18        | 3.84       | 2.76   | 18.57 |
|      | HL05-50     | 28.61     | 522.75     | 89                   | 100.5  | 11.5        | 7.91       | 2.73   | 13.27 |
|      |             |           |            | 106.5                | 110    | 3.5         | 2.88       | 2.5    | 16.25 |
|      | HL05-51     | 1.02      | 547.04     | 29                   | 41.75  | 12.75       | 8.64       | 2.55   | 12.07 |
|      |             |           |            | 54.8                 | 67.25  | 12.45       | 7.68       | 1.38   | 7.22  |
|      |             |           |            | 75                   | 83.55  | 8.55        | 7.52       | 1.71   | 1.78  |
|      | HL05-52     | 93.48     | 98.28      | 38.5                 | 41.2   | 2.7         | 1.73       | 1.52   | 7.05  |
|      |             |           |            | 105.77               | 109.9  | 4.13        | 3          | 0.87   | 4.46  |
|      |             |           |            | 120.4                | 125.75 | 5.35        | 4.36       | 2.48   | 10.59 |
|      | HL05-53     | 8.95      | 573.12     | 20                   | 24     | 4           | 2.5        | 2.27   | 9.81  |
|      |             |           |            | 89.1                 | 93.4   | 4.3         | 3.28       | 2.57   | 23.1  |
|      | HL05-54     | 18.52     | 550.1      | 41.6                 | 46.4   | 4.8         | 2.85       | 1.59   | 7.95  |
|      |             |           |            | 102.95               | 114.5  | 11.55       | 7.05       | 3.07   | 18.92 |
|      | HL05-55     | 15.38     | 98.25      | 31.6                 | 37.15  | 5.55        | 3.8        | 3.19   | 22.06 |

| Year | Hole Number | Grid East | Grid North | Mineralized Interval |                       |             |            | TREO % | P2O5% |
|------|-------------|-----------|------------|----------------------|-----------------------|-------------|------------|--------|-------|
|      |             |           |            | From                 | To                    | Core Length | True Width |        |       |
|      | HL05-56     | 15.23     | 99.03      | 31.45                | 37.4                  | 5.95        | 3.8        | 2.89   | 22.62 |
|      | HL05-57     | 14.73     | 74.07      | 36.45                | 38.85                 | 2.4         | 1.83       | 5.28   | 4.29  |
|      |             |           |            | 60.15                | 63                    | 2.85        | 2.04       | 0.82   | 3.72  |
|      | HL05-58     | -16.31    | 48.83      | 22.7                 | 26                    | 3.3         | 3.14       | 2.03   | 10.48 |
|      | HL05-59     | 0.18      | 24.15      | 22.45                | 27.3                  | 4.85        | 3.31       | 3.62   | 21.08 |
|      |             |           |            | 48.2                 | 55                    | 6.8         | 4.78       | 1.36   | 4.38  |
|      | HL05-60     | 43.36     | 49.64      | 67.5                 | 71.35                 | 3.85        | 3.02       | 1.66   | 10.48 |
|      |             |           |            | 93.2                 | 95.3                  | 2.1         | 1.66       | 1.07   | 8.6   |
|      | HL05-61     | 13.55     | 122.96     | 22.75                | 27.4                  | 4.65        | 3.61       | 3.08   | 27.99 |
|      |             |           |            | 53.9                 | 55.3                  | 1.4         | 1.19       | 1.94   | 8.01  |
|      | HL05-62     | 13.26     | 148.76     | 15.7                 | 21.2                  | 5.5         | 4.54       | 3.57   | 18.08 |
|      |             |           |            | 51.5                 | 53.55                 | 2.05        | 1.53       | 7.42   | 9.14  |
|      | HL05-63     | 0.74      | 173.72     | 39.2                 | 40.35                 | 1.15        | 0.93       | 3.72   | 13.7  |
|      | HL05-68     | 29.87     | 298.2      | 70.8                 | 90.3                  | 19.5        | 10.16      | 2.34   | 11.18 |
|      | HL05-69     | -7.77     | 395.72     | 23.25                | 27.25                 | 4           | 2.77       | 2.55   | 14.49 |
|      | HL05-70     | -116.34   | 198.82     | 22.85                | No Significant Assays |             |            |        |       |
|      |             |           |            |                      |                       |             |            |        |       |
| 2006 | HL06-71     | 56.64     | 249.39     | 38                   | 40.12                 | 2.12        | 1.89       | 1.22   | 5.43  |
|      |             |           |            | 100.6                | 109.6                 | 9           | 7.27       | 1.95   | 10    |
|      | HL06-72     | 6.56      | 373.94     | 4.16                 | 7                     | 2.84        | 1.4        | 2.05   | 4.48  |
|      |             |           |            | 26.77                | 38.25                 | 11.48       | 8.69       | 2.22   | 16.39 |
|      | HL06-73     | 6.28      | 348.84     | 26.26                | 32.85                 | 6.59        | 4.26       | 1.97   | 9.45  |
|      | HL06-74     | 49.19     | 372.3      | 25.85                | 34.16                 | 8.31        | 7.26       | 0.56   | 2.09  |
|      |             |           |            | 40.9                 | 47                    | 6.1         | 5.8        | 1.52   | 12.65 |
|      |             |           |            | 98.74                | 107.68                | 8.94        | 6.83       | 2.25   | 9.2   |
|      | HL06-75     | 8.44      | 423.48     | 48.9                 | 53.6                  | 4.7         | 3.91       | 1.86   | 11.71 |
|      |             |           |            | 62.58                | 71                    | 8.42        | 5.66       | 3.58   | 23.98 |
|      | HL06-76     | -15.6     | 451.32     | 27.6                 | 38.2                  | 10.6        | 8.72       | 4.53   | 24.72 |
|      |             |           |            | 49.7                 | 56                    | 6.3         | 5.47       | 1.91   | 9.49  |
|      | HL06-77     | 24.21     | 445.93     | 13.7                 | 24.1                  | 10.4        | 8.7        | 0.5    | 8.71  |
|      |             |           |            | 74                   | 79.55                 | 5.55        | 4.58       | 2.02   | 8.7   |
|      |             |           |            | 84.15                | 88.4                  | 4.25        | 3.51       | 0.76   | 2.43  |
|      |             |           |            | 92.4                 | 100.7                 | 8.3         | 6.03       | 0.72   | 3.16  |
|      | HL06-78     | 73.6      | 424.44     | 37.8                 | 42.25                 | 4.45        | 3.5        | 0.96   | 6.2   |
|      |             |           |            | 45.95                | 48.75                 | 2.8         | 2.18       | 0.9    | 5.05  |

| Year | Hole Number | Grid East | Grid North | Mineralized Interval  |        |             |            | TREO % | P2O5% |
|------|-------------|-----------|------------|-----------------------|--------|-------------|------------|--------|-------|
|      |             |           |            | From                  | To     | Core Length | True Width |        |       |
|      | HL06-79     | -25.99    | 473.51     | 12.1                  | 16.2   | 4.1         | 2.58       | 2.11   | 9.6   |
|      |             |           |            | 23                    | 28.05  | 5.05        | 4.13       | 3.63   | 22.8  |
|      |             |           |            | 41.95                 | 44.25  | 2.3         | 1.89       | 1.46   | 8.7   |
|      | HL06-80     | 19.6      | 473.15     | 67.6                  | 72.25  | 4.65        | 3.63       | 2.43   | 12.94 |
|      |             |           |            | 76.3                  | 83.4   | 7.1         | 5.39       | 3.11   | 23.56 |
|      |             |           |            | 90.2                  | 97.15  | 6.95        | 5.71       | 1.31   | 4.7   |
|      | HL06-81     | 2.33      | 498.1      | 46.45                 | 53.7   | 7.25        | 6.4        | 1.26   | 10.85 |
|      |             |           |            | 63                    | 70.4   | 7.4         | 6.58       | 1.73   | 10.02 |
|      |             |           |            | 82.25                 | 85.25  | 3           | 2.25       | 1.82   | 9.47  |
|      | HL06-82     | -7.72     | 523.42     | 32                    | 39.55  | 7.55        | 5.34       | 3.62   | 21.33 |
|      |             |           |            | 44                    | 52     | 8           | 4.82       | 3.36   | 18.16 |
|      |             |           |            | 68.15                 | 72     | 3.85        | 2.91       | 6.85   | 17.41 |
|      | HL06-83     | -27.63    | 548.11     | 53                    | 55.55  | 2.55        | 2.26       | 4.08   | 22.95 |
|      | HL06-84     | -19.79    | 573.51     | 54.8                  | 67.5   | 12.7        | 9.7        | 2.9    | 17.52 |
|      | HL06-85     | 66.17     | 447.87     | 24.9                  | 27.8   | 2.9         | 2.12       | 2.76   | 18.71 |
|      |             |           |            | 93.9                  | 104.45 | 10.55       | 9.45       | 2.63   | 10.62 |
|      |             |           |            | 112.1                 | 121.5  | 9.4         | 6.94       | 2.45   | 12.16 |
|      |             |           |            | 128                   | 147.5  | 19.5        | 14.31      | 2.06   | 8.11  |
|      | HL06-86     | -630      | 400        | 51.8                  | 53.7   | 1.9         | 1.55       | 0.46   | 2.66  |
|      | HL06-87     | -546.28   | 97.45      | 35.7                  | 38.83  | 3.13        | 2.56       | 0.74   | 2.54  |
|      |             |           |            | 69.2                  | 75.3   | 6.1         | 4.66       | 0.24   | 1.52  |
|      | HL06-88     | -600      | 204.31     | 16.05                 | 21.25  | 5.2         | 4.26       | 0.2    | 1.09  |
|      | HL06-89     | -535.64   | 151.11     | 46.6                  | 48.65  | 2.05        | 1.67       | 0.35   | 1.6   |
|      | HL06-90     | -503.2    | 45.12      | 16.6                  | 19.64  | 3.04        | 2.46       | 0.13   | 0.33  |
|      |             |           |            | 58.86                 | 60.09  | 1.23        | 1          | 1.42   | 6.89  |
|      | HL06-91     | -420.9    | 848.55     | 44.95                 | 53.56  | 8.61        | 5.64       | 0.41   | 0.27  |
|      | HL06-92     | -611.19   | 849.69     | No Significant Assays |        |             |            |        |       |
|      |             |           |            |                       |        |             |            |        |       |
| 2008 | HL08-125    | 137.66    | 97.69      | 168.8                 | 173.55 | 4.75        | 4.44       | 3.19   | 21.13 |
|      |             |           |            | 239.4                 | 243.3  | 3.9         | 2.7        | 1.84   | 9.54  |
|      |             |           |            | 246.9                 | 250.1  | 3.2         | 2.6        | 5.08   | 29.43 |
|      | HL08-126    | 126.73    | 147.97     | 156.2                 | 164.9  | 8.7         | 6.35       | 2.27   | 8.64  |
|      |             |           |            | 242.9                 | 250.9  | 8           | 4.86       | 1.61   | 9.04  |
|      | HL08-127    | -4.83     | -126.53    | 30.6                  | 34.1   | 3.5         | 2.69       | 2.42   | 8.79  |
|      | HL08-128    | 123.38    | 198.32     | 128.9                 | 130.7  | 1.8         | 1.52       | 1.63   | 8.8   |

| Year | Hole Number | Grid East | Grid North | Mineralized Interval |        |             |            | TREO % | P2O5% |
|------|-------------|-----------|------------|----------------------|--------|-------------|------------|--------|-------|
|      |             |           |            | From                 | To     | Core Length | True Width |        |       |
|      | HL08-129    | 6.04      | -151.02    | 22.1                 | 25.2   | 3.1         | 2.5        | 2.59   | 15.6  |
|      |             |           |            | 39.2                 | 44.5   | 5.3         | 4.45       | 2.48   | 14.71 |
|      | HL08-130    | 105.04    | -101.09    | 133.2                | 135.4  | 2.2         | 2.04       | 3.12   | 11.03 |
|      | HL08-131    | 110.36    | 249.32     | 191.4                | 200    | 8.6         | 5.18       | 1.6    | 7.16  |
|      |             |           |            | 230.25               | 234.35 | 4.1         | 3.01       | 2.19   | 6.46  |
|      | HL08-132    | 99.67     | 298.54     | 56                   | 60     | 4           | 2.99       | 1.97   | 4.31  |
|      |             |           |            | 62.3                 | 67     | 4.7         | 3.48       | 1.26   | 5.88  |
|      |             |           |            | 70.5                 | 78     | 7.5         | 6.59       | 1.18   | 0.28  |
|      |             |           |            | 100.3                | 106.6  | 6.3         | 5.3        | 2.28   | 9.17  |
|      |             |           |            | 112                  | 114.4  | 2.4         | 2.01       | 1.91   | 8.18  |
|      |             |           |            | 176.8                | 181    | 4.2         | 3.19       | 3.56   | 26.45 |
|      |             |           |            | 185.7                | 191    | 5.3         | 3.68       | 2.87   | 10.19 |
|      | HL08-133    | 115.21    | -50.72     | 150.7                | 153.7  | 3           | 2.45       | 4.41   | 29.45 |
|      | HL08-134    | 64.49     | 398.36     | 42.8                 | 45.9   | 3.1         | 2.58       | 4.27   | 14.36 |
|      |             |           |            | 118.9                | 139.7  | 20.8        | 14.1       | 2.17   | 9.49  |
|      | HL08-135    | 118.25    | -2.34      | 150.8                | 153    | 2.2         | 1.91       | 2.26   | 9.8   |
|      | HL08-136    | 104.89    | 348.59     | 66                   | 68.5   | 2.5         | 2.08       | 3.69   | 25.83 |
|      |             |           |            | 123.9                | 134.8  | 10.9        | 6.98       | 1.91   | 14.58 |
|      |             |           |            | 194                  | 202    | 8           | 4.72       | 1.6    | 5.32  |
|      | HL08-137    | 124.42    | 48.13      | 156.8                | 159.2  | 2.4         | 1.95       | 3.94   | 21.78 |
|      | HL08-138    | 101.84    | 448.35     | 55                   | 57.4   | 2.4         | 2.26       | 2.94   | 13.89 |
|      |             |           |            | 76.4                 | 78.7   | 2.3         | 1.63       | 3.04   | 22.13 |
|      |             |           |            | 110.7                | 112.3  | 1.6         | 1.87       | 3.11   | 4.76  |
|      |             |           |            | 114.3                | 119    | 4.7         | 3.49       | 2.8    | 10.78 |
|      |             |           |            | 177.7                | 195.1  | 17.4        | 14.28      | 1.66   | 7.07  |
|      | HL08-139    | 38.65     | -200.7     | 47.8                 | 52.1   | 4.3         | 3.66       | 1.03   | 6.15  |
|      |             |           |            | 56.9                 | 60.5   | 3.6         | 3.13       | 1.19   | 5.26  |
|      | HL08-140    | 74.72     | 498.04     | 19.6                 | 20.8   | 1.2         | 0.997      | 3.71   | 21.25 |
|      |             |           |            | 25.5                 | 28.2   | 2.7         | 2.19       | 2.64   | 17.92 |
|      |             |           |            | 163.5                | 172    | 8.5         | 7.1        | 2.06   | 6.11  |
|      | HL08-141    | 36.52     | -174.72    | 55.7                 | 60.9   | 5.2         | 4.02       | 1.49   | 10.76 |
|      |             |           |            | 64.9                 | 69.23  | 4.33        | 3.65       | 0.88   | 2.69  |
|      | HL08-142    | 64.2      | 547.72     | 41.2                 | 50.3   | 9.1         | 6.56       | 1.32   | 1.9   |
|      |             |           |            | 168.4                | 174.8  | 6.4         | 4.02       | 3.06   | 17.84 |
|      | HL08-143    | -9.52     | 622.75     | 91.2                 | 97.1   | 5.9         | 4.75       | 5      | 23.18 |

| Year | Hole Number | Grid East | Grid North | Mineralized Interval  |        |             |            | TREO % | P2O5% |
|------|-------------|-----------|------------|-----------------------|--------|-------------|------------|--------|-------|
|      |             |           |            | From                  | To     | Core Length | True Width |        |       |
|      | HL08-144    | 163.38    | 226.14     | 189.9                 | 192.4  | 2.5         | 1.8        | 2.05   | 19.07 |
|      |             |           |            | 208.6                 | 212.1  | 3.5         | 2.29       | 2.8    | 12.93 |
|      |             |           |            | 327.3                 | 331.3  | 4           | 2.14       | 1.66   | 12.2  |
|      | HL08-145    | 29.36     | 598.38     | 135.5                 | 137.7  | 2.2         | 1.69       | 2.2    | 6.98  |
|      | HL08-146    | 166.3     | 176.58     | 195.7                 | 198.5  | 2.8         | 2.35       | 4.14   | 28.45 |
|      |             |           |            | 206.5                 | 210    | 3.5         | 2.87       | 1.41   | 3.55  |
|      |             |           |            | 292                   | 294.9  | 2.9         | 2.36       | 3.3    | 17.11 |
|      | HL08-147    | -0.34     | 673.35     | 24                    | 25.7   | 1.7         | 1.25       | 1.93   | 16.5  |
|      | HL08-149    | 58.68     | -250.13    | No Significant Assays |        |             |            |        |       |
|      | HL08-150    | 176.51    | 121.82     | 38.7                  | 42.55  | 3.85        | 2.53       | 2      | 10.23 |
|      |             |           |            | 350                   | 353.3  | 3.3         | 2.6        | 1.16   | 3.42  |
|      | HL08-151    | 88.36     | -200.26    | 168.7                 | 172.2  | 3.5         | 2.88       | 2      | 5.57  |
|      | HL08-152    | 135.04    | 274.34     | 143.1                 | 146.4  | 3.3         | 2.91       | 1.65   | 8.58  |
|      |             |           |            | 150                   | 152.05 | 2.05        | 1.95       | 2.23   | 9.65  |
|      | HL08-153    | 38.94     | -300.93    | No Significant Assays |        |             |            |        |       |
|      | HL08-154    | 60.36     | -349.46    | 22.9                  | 25.1   | 2.2         | 1.7        | 1.19   | 6.79  |
|      |             |           |            | 55.5                  | 59.4   | 3.9         | 2.98       | 2.25   | 10.71 |
|      | HL08-155    | 18.75     | 697.84     | 38.8                  | 42.95  | 4.15        | 3.79       | 3.92   | 2.21  |
|      | HL08-156    | 64.4      | 573.32     | 29.3                  | 37.75  | 8.45        | 6.91       | 2.43   | 15.83 |
|      |             |           |            | 43.2                  | 45     | 1.8         | 1.52       | 3.75   | 24.43 |
|      | HL08-157    | 41.4      | 200        | 4.9                   | 7.4    | 2.5         | 2.17       | 4.1    | 14.39 |
|      |             |           |            | 70.9                  | 72.6   | 1.7         | 1.4        | 1.83   | 7.39  |

### 10.3 VLF-EM Conductor Targets

Ten NQ-size diamond drill holes totaling approximately 1055 meters have been drilled at the Project targeting VLF-EM anomalies. For the drill holes drilled in 2006, a muskeg tractor was used for transporting and moving the drill, along with fuel. The core was brought into the core logging tent at the end of each shift utilizing a skidoo and sleigh. Figure 9.1 shows the location of the EM targets and the location of the drill holes testing the VLF-EM targets. Table 10.3 details the location and drill parameters of these holes. These holes did not encounter any significant REE mineralization.

**Table 10-3 Location and Parameters of drill holes which tested VLF EM anomalies.**

| Hole Number | Mine Grid Northing | Mine Grid Easting | Angle | Azimuth Grid | Hole Length | Date Collared | UTM Easting | Elevation |
|-------------|--------------------|-------------------|-------|--------------|-------------|---------------|-------------|-----------|
| HL06-86     | 400                | -630              | -55°  | West         | 98          | 19-Feb-06     | 343157.536  | 435.229   |
| HL06-87     | 97.45              | -546.28           | -55°  | West         | 110         | 21-Feb-06     | 342975.781  | 442.325   |
| HL06-88     | 204.31             | -600              | -55°  | West         | 86          | 23-Feb-06     | 343021.783  | 440.549   |
| HL06-89     | 151.11             | -535.64           | -55°  | West         | 107         | 25-Feb-06     | 343023.398  | 442.352   |
| HL06-90     | 45.12              | -503.2            | -55°  | West         | 143         | 27-Feb-06     | 342964.179  | 444.607   |
| HL06-91     | 848.55             | -420.9            | -55°  | West         | 65          | 2-Mar-06      | 343626.985  | 435.198   |
| HL06-92     | 849.69             | -611.19           | -55°  | West         | 128         | 3-Mar-06      | 343503.819  | 435.188   |
| HL08-159    | -2700              | 53                | -55   | West         | 83          | 2-Jul-08      | 341403.00   | 455.000   |
| HL08-160    | -650               | -300              | -55   | West         | 83          | 29-Jun-08     | 342611.00   | 455.000   |
| HL08-161    | -225               | -138              | -65   | East         | 152         | 25-Jul-08     | 343004.00   | 452.000   |

In 2005, drill hole HS05-01 was drilled to test the down plunge projection and east limb of a fold showing weak VLF-EM magnetic conductor associated with the Hoidas South showing. It was drilled between April 3 and 5, 2005 south of the JAK Zone. A muskeg tractor was used for transporting and moving the drill, along with fuel. The core was brought into the core logging tent at the end of each shift.

Drill holes NL08-01 to NL08-03 were drilled to test strong VLF-EM targets at Nisisskatch Lake, south of Hoidas Lake and the JAK Zone. They were drilled between July 4 and 9, 2008.

## 10.4 Geotechnical Testing

Twenty NQ-size diamond drill holes totaling approximately 1,882 meters have been drilled at or near the JAK Zone for geotechnical purposes (Figure 10.2 and Table 10.4).

Drill holes HL05-64 to HL05-67 were drilled between August 31 and September 4, 2005 to install piezometers through or adjacent to the JAK Zone.

Some metallurgical samples were taken from hole HL05-64 (from 37.25 m to 59.3 m), and hole HL05-66 was abandoned due to caving while attempting to install casing.

Drill holes BH01 to BH10 were drilled between January 30 and March 9, and then June 7 and 13, 2007. For each of the above holes a muskeg tractor was used for transporting and moving the drill, along with fuel and core. The core was brought into the core logging tent at the end of each shift utilizing a skidoo and sleigh.

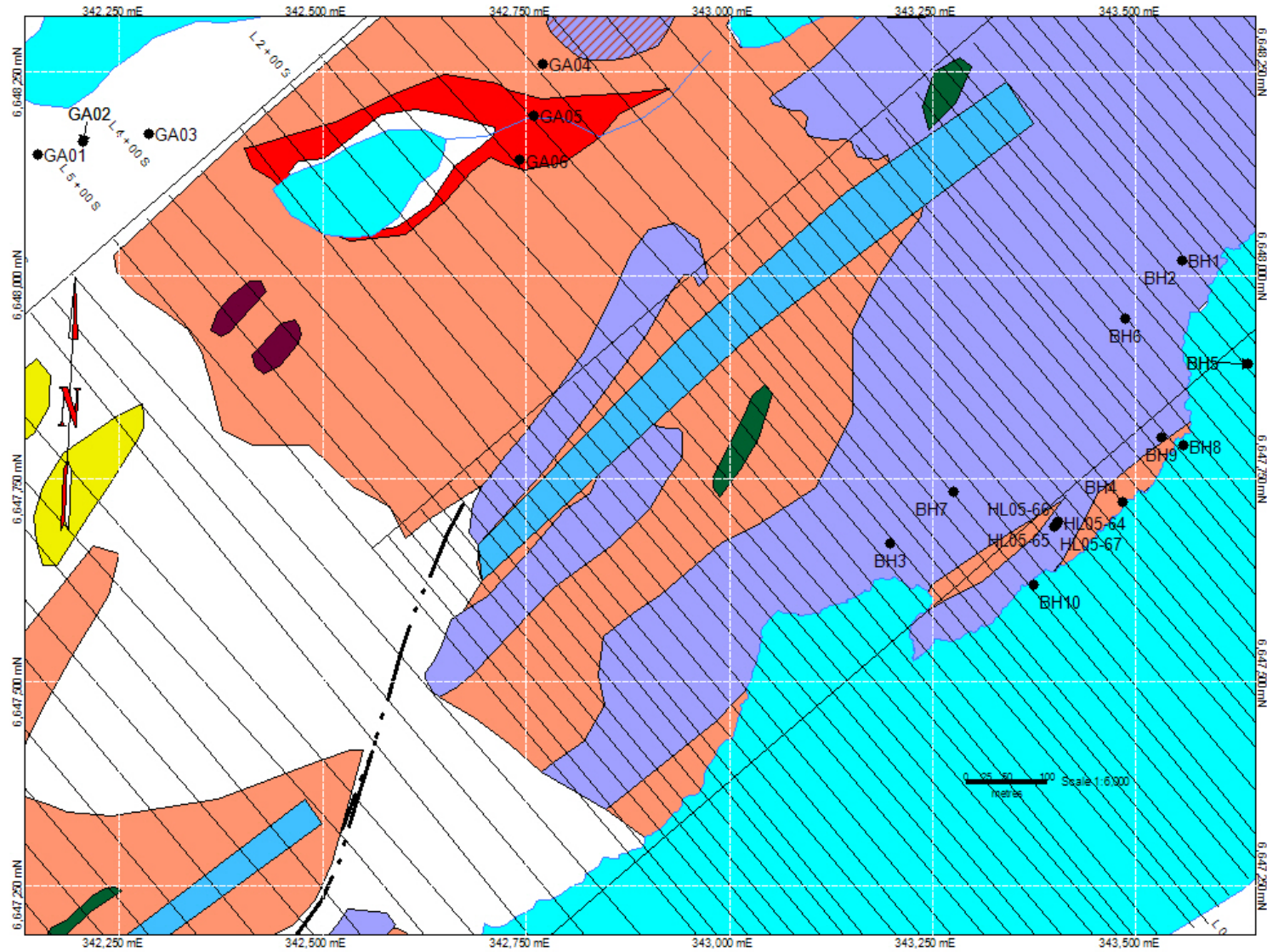
**Table 10.4 Drill Hole parameters for Geotech drill holes.**

| Hole Number | Mine Grid Northing | Mine Grid Easting | UTM Northing | UTM Easting | Angle | Azimuth | Hole Length |
|-------------|--------------------|-------------------|--------------|-------------|-------|---------|-------------|
| HL05-64     | 175                | 24                | 6647697      | 343405      | -90°  |         | 80          |
| HL05-65     | 171.2              | 24                | 6647696      | 343403      | -90°  |         | 47          |
| HL05-66     | 167.2              | 24                | 6647694      | 343402      | -90°  |         | 30          |
| HL05-67     | 169.2              | 24                | 6647691      | 343399      | -90°  |         | 29          |
| GA01        |                    |                   | 6648149      | 342150      | -90   |         | 41          |
| GA02        |                    |                   | 6648165      | 342205      | -90   |         | 50          |
| GA03        |                    |                   | 6648174      | 342286      | -90   |         | 32          |
| GA04        |                    |                   | 6648261      | 342770      | -90   |         | 32          |
| GA05        |                    |                   | 6648197      | 342759      | -90   |         | 59          |
| GA06        |                    |                   | 6648142      | 342741      | -90   |         | 32          |
| BH1         | 292.32             | -145.47           | 6648019      | 343557      | -60   | 217     | 151         |
| BH2         | 500.26             | -129.44           | 6648019      | 343557      | -60   | 139     | 148         |
| BH3         | 0.17               | -90.84            | 6647671      | 343198      | -60   | 139     | 151         |
| BH4         | 250.11             | 50                | 6647722      | 343484      | -60   | 319     | 148         |
| BH5         | 500.43             | 49.77             | 6647891      | 343638      | -60   | 319     | 149         |
| BH6         | 400.23             | -112.33           | 6647947      | 343486      | -60   | 223     | 151         |
| BH7         | 100.08             | -92.11            | 6647734      | 343275      | -60   | 44      | 152         |
| BH8         | 350                | 50                | 6647791      | 343558      | -60   | 319     | 150         |
| BH9         | 350                | 25                | 6647801      | 343531      | -60   | 319     | 100         |
| BH10        | 100                | 50                | 6647620      | 343374      | -60   | 319     | 150         |

Drill holes GA01 to GA06 were drilled between July 10 and 25, 2008 for a geotechnical analysis by Golder Associates of possible future tailings pond locations. For each of these drill holes a Bell 206 Long Ranger contracted from HSTC, based in La Ronge, SK, was used for moving transporting and moving the drill, along with fuel and core and for moving personnel. The core was slung into the camp near the core logging tent at the end of each shift.

Drill holes HL08-162 and HL08-163 were drilled between July 26 and 31, 2008. They were drilled down dip of the JAK Zone for geotechnical testing. For each of these drill holes a Bell 206 Long Ranger contracted from HSTC, based in La Ronge, SK, was used for mobilization and moving the drill, along with fuel and core and for moving personnel. The core was slung into the camp near the core logging tent at the end of each shift.

All holes drilled for geotechnical purposes were logged by Golder Associates Geotechnical Engineers.



**Figure 10-2** Simplified geology map of the JAK Zone area showing the location of the Geotech drill holes. Hole location represented as black dots. See Figure 7.2 for geology legend.

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## 10.5 Metallurgical Sample Collection

Thirty-two diamond drill holes, of which 14 were HQ size and 18 were NQ size, totaling approximately 3,312 meters were drilled between January 14 and April 8, 2007. The total amount of mineralized material collected for bulk sample was 13,709.2 kg. Table 10.2 details the grid and UTM location of the metallurgy drill holes as well as other drill parameters. Figure 10.3 shows the location of these drill holes. The drill holes test two areas approximately centered at grid location Line 200N/000 and 375N/-21E. Upon completion of each drill hole the drill was moved approximately 1 m and the next hole drilled.

These holes (numbered HL07-93 to HL07-124) were drilled down dip of the JAK Zone in order to intersect mineralized veins, to test their down dip continuity, and also to obtain sufficient core for a bulk sample of 12 to 15 tonnes. This bulk sample was used to carry out metallurgical tests on the REE-bearing ore (see 13.0-Mineral Processing and Metallurgical Testing). For each of the above holes a muskeg tractor was used for transporting and moving the drill, along with fuel and core. The core was brought into the core logging tent at the end of each shift. This core was logged and sampled by J. Pearson and A.J. Spooner.

## 10.6 Re-Drills

The drill rig broke down between March 20 and 22, 2008 on HL08-148 at a depth of 56 meters. The hole was not logged and was re drilled as HL08-150. Hole NL08-04 was drilled at Nisisskatch Lake on July 10 and 11, 2008 as a re-drill of hole NL08-03. It reached 84 meters. For each of these drill holes a Bell 206 Long Ranger contracted from HSTC, based in La Ronge, SK, was used for moving transporting and moving the drill, along with fuel and core and for moving personnel. The core was slung into the camp near the core logging tent at the end of each shift. I Young and J. Pearson logged the core from these drill holes.

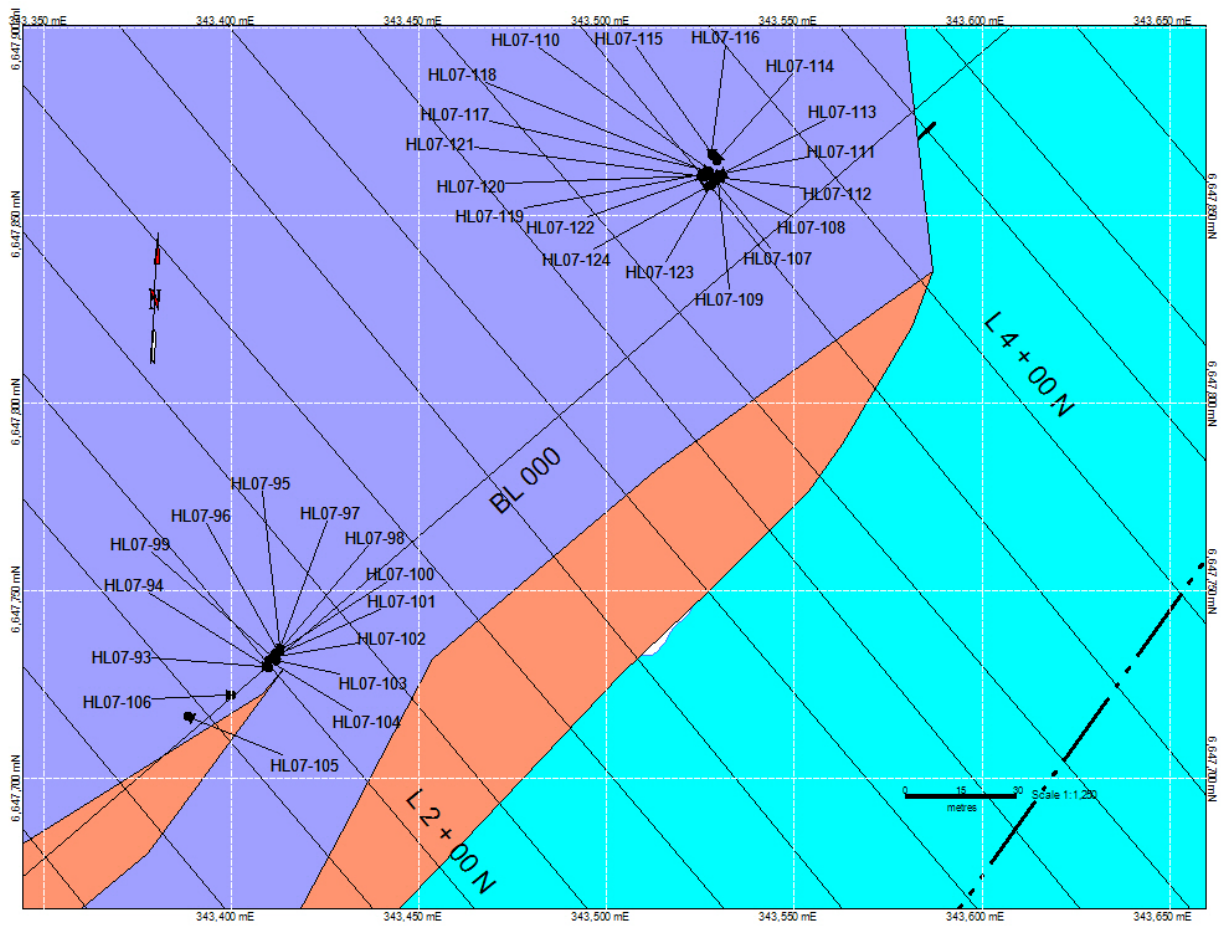
## 10.7 Vein Extension Targets

Drill hole HL08-158 was drilled between June 19 and 25, 2008 as part of a Drill Helper Training Program initiated by GWMG and Major Drilling to train Fond du Lac residents as drill helpers. As well as testing for a near-surface extension of a mineralized "deep zone" separate to the JAK Zone that was discovered in the previous winter's program. It reached a depth of 114 meters.

Drill hole NL08-05 was drilled between July 12 and 14, 2008 at Nisisskatch Lake in order to undercut veins intercepted in drill hole NL08-01. It reached a depth of 220 meters. For each of these drill holes a Bell 206 Long Ranger contracted from HSTC, based in La Ronge, SK, was used for mobilization and moving the drill, along with fuel and core and for moving personnel. The core was slung into the camp near the core logging tent at the end of each shift. I. Young logged these drill holes.

**Table 10-4 Drill hole location and parameters for Bulk Sample drill holes.**

| Hole Number | Mine Grid Northing | Mine Grid Easting | Angle | Azimuth Grid | Hole Length | UTM Northing | UTM Easting | Elevation | Kg of Sample Collected |
|-------------|--------------------|-------------------|-------|--------------|-------------|--------------|-------------|-----------|------------------------|
| HL07-93     | 200                | 3                 | -65°  | East         | 149         | 6647729.87   | 343409.65   | 454.68    | 718.1                  |
| HL07-94     | 200                | 3.5               | -65°  | East         | 62          | 6647729.56   | 343409.98   | 454.69    | 61.7                   |
| HL07-95     | 204.5              | 2                 | -65°  | East         | 98          | 6647733.59   | 343412.77   | 454.91    | 244.4                  |
| HL07-96     | 204.5              | 1.5               | -90°  | East         | 11          | 6647733.59   | 343412.50   | 454.91    | 0.0                    |
| HL07-97     | 204                | 2                 | -65°  | East         | 104         | 6647734.00   | 343412.77   | 454.05    | 293.6                  |
| HL07-98     | 202.51             | 0.41              | -66°  | East         | 65          | 6647733.17   | 343411.81   | 454.82    | 202.8                  |
| HL07-99     | 201.53             | 1.71              | -66°  | East         | 50          | 6647731.48   | 343411.83   | 454.73    | 62.0                   |
| HL07-100    | 203                | 2                 | -65°  | East         | 129         | 6647732.89   | 343411.48   | 454.74    | 456.4                  |
| HL07-101    | 202.5              | 2                 | -65°  | East         | 149         | 6647732.44   | 343411.04   | 454.81    | 548.8                  |
| HL07-102    | 202                | 2                 | -65°  | East         | 130         | 6647732.16   | 343410.81   | 454.76    | 445.0                  |
| HL07-103    | 201.5              | 2                 | -65°  | East         | 71          | 6647731.87   | 343410.48   | 454.82    | 190.0                  |
| HL07-104    | 201                | 2                 | -65°  | East         | 152         | 6647731.23   | 343409.82   | 454.95    | 535.2                  |
| HL07-105    | 175                | -2                | -65°  | East         | 107         | 6647716.47   | 343388.26   | 454.44    | 107.6                  |
| HL07-106    | 187.5              | 3                 | -65°  | East         | 157         | 6647722.13   | 343399.87   | 454.27    | 458.2                  |
| HL07-107    | 375                | -19               | -79°  | East         | 116         | 6647859.41   | 343528.66   | 453.68    | 351.4                  |
| HL07-108    | 375                | -19               | -79°  | East         | 8           | 6647859.73   | 343529.13   | 453.59    | 0.0                    |
| HL07-109    | 375.3              | -19               | -75°  | East         | 53          | 6647860.17   | 343529.49   | 453.54    | 378.4                  |
| HL07-110    | 375.6              | -19               | -77°  | East         | 74          | 6647860.45   | 343529.70   | 453.54    | 494.4                  |
| HL07-111    | 376                | -19               | -79°  | East         | 155         | 6647860.75   | 343529.90   | 453.54    | 566.0                  |
| HL07-112    | 376.3              | -19               | -79°  | East         | 125         | 6647860.00   | 343530.00   | 453.54    | 391.4                  |
| HL07-113    | 376.6              | -19               | -79°  | East         | 113         | 6647860.88   | 343530.31   | 453.51    | 417.4                  |
| HL07-114    | 379                | -23               | -79°  | East         | 35          | 6647864.72   | 343529.45   | 453.04    | 143.2                  |
| HL07-115    | 378.7              | -23               | -77°  | East         | 149         | 6647864.45   | 343529.16   | 453.15    | 688.2                  |
| HL07-116    | 379                | -24               | -77°  | East         | 149         | 6647865.97   | 343528.15   | 453.20    | 721.9                  |
| HL07-117    | 375                | -22               | -77   | East         | 149         | 6647861.76   | 343526.91   | 453.61    | 763.8                  |
| HL07-118    | 375                | -22               | -71   | East         | 50          | 6647861.32   | 343527.32   | 453.41    | 342.0                  |
| HL07-119    | 374.5              | -22               | -77   | East         | 149         | 6647860.99   | 343526.28   | 453.61    | 881.2                  |
| HL07-120    | 374.5              | -22               | -72.5 | East         | 56          | 6647860.43   | 343526.66   | 453.36    | 297.4                  |
| HL07-121    | 374                | -22               | -77   | East         | 149         | 6647860.18   | 343525.31   | 453.36    | 803.6                  |
| HL07-122    | 374                | -22               | -72   | East         | 50          | 6647860.04   | 343525.86   | 453.56    | 248.6                  |
| HL07-123    | 374                | -19               | -79   | East         | 149         | 6647858.23   | 343527.96   | 453.59    | 1067.9                 |
| HL07-124    | 373.5              | 19                | -79   | East         | 149         | 6647857.88   | 343527.42   | 453.73    | 828.6                  |
| Total       |                    |                   |       |              | 3312        |              |             |           | 13709.2                |



**Figure 10-3 Bulk sample drill hole Geology location map. For Geology legend see Figure 7.2**

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## **11.0 Sample Preparation, Analyses and Security**

### **11.1 Introduction**

The sampling procedures were established by a Sampling Procedure Protocol established in 2005 by GWMG, and followed by all subsequent drilling and sampling programs. The 2001 drilling program did not have a sampling protocol established.

### **11.2 Sample Preparation**

#### **11.2.1 2001 Sample Methodology**

In the 2001 drilling program, the mineralized sections were identified by the geologist in charge of the program (I. Young). The samples were marked out by the geologist and sampled under his supervision. Samples were selected based on visual examination of the drill core. In most cases, there were no samples taken from the hanging wall and foot wall of the mineralized sections. This was done in subsequent years to define assay boundaries to the mineralized sections. The samples were split with a core splitter, one half returned to the core box and the other half placed into a polyethylene bag, A sample tag was placed in the bag and the bag was sealed, placed in a sample pail and the samples were shipped via air to Saskatoon, where they were analyzed at the geoanalytical laboratory in Saskatoon. One sample tag was retained and these books are currently stored at the GWMG office in Saskatoon.

#### **11.2.2 2005-2008 Sample Methodology**

Samples from the subsequent drilling programs in 2005, 2006 and 2008 followed the GWMG Sampling Protocol. Following this Protocol, sections exhibiting mineralization or alteration were selected by GWMG geologists at the Hoidas Lake site. The sample lengths were required to be no longer than 2 meters and no shorter than 0.5 meter, except in exceptional circumstances, and the geologists used best judgment to make this decision. The samples were marked by pencil or crayon on the core and core box.

When the veins being sampled exceeded 2 meters in core length, at least 1 meter of hanging-wall lithology and 1 meter of foot-wall lithology were required to be sampled in order to define assay boundaries of the vein. Areas of barren rock within the vein were required to be sampled to identify internal dilution. Sample intervals were tagged and numbered at corresponding sample boundaries and core boxes with aluminum tags.

The core was split or sawed, and then placed in a polyethylene bag. Sample tags were placed in the polyethylene bag with the core, in the corresponding core box at the beginning of the sample interval, and in a sample book for future reference. The polyethylene bag was then sealed with a plastic tie, placed in a plastic bucket and sealed with a lid which included a tab that was only to be removed at the laboratory. The remaining half of the core remains in the core box. The sample tag number, drill hole number, interval, and location were recorded in a sample tag book, the corresponding drill log, and the geologist's field book.

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#### **11.2.2.1 Blank Samples**

Blank samples were collected from a cliff face exhibiting barren rock, at Oshowy Lake, which is approximately 5 kilometers to the north of the Hoidas Lake property.

#### **11.2.2.2 Field Duplicates**

Field duplicates were collected by taking two quarters of the selected sample interval and placing each in a polyethylene bag with sample tags that were sequential with the other samples in that group. The remaining half of core was placed back in the core box just as the other samples.

#### **11.2.2.3 Standard Samples**

Two standard samples were used by GWMG. A high-grade rare earth thorium ore (OKA-2) and a low-grade diorite gneiss (SY-4), both of which were obtained from CANMET Mining and Mineral Science Laboratories in Ottawa, Ontario. CANMET is a Canadian Certified Reference Materials Project.

#### **11.2.2.4 Protocol for Blanks and Field Duplicates**

For every group of thirty samples, a blank sample was placed as the fourth sample, every seventeenth sample was a field duplicate, and every twenty ninth sample was a standard. Continuous numbering was used for each group.

#### **11.2.2.5 Sample Logistics**

The samples were shipped via airplane to Stony Rapids and then via truck to SRC in Saskatoon.

A daily checklist was prepared and required to be completed by the onsite geologist to verify procedures had been followed. Mr. John Pearson reviewed sampling procedures at least once during each sampling program.

### **11.3 Sample Methodology Verification**

Barr observed several sample intervals at the Hoidas Lake site. Intervals had the remaining half core and were clearly marked in the core boxes. Barr cross-referenced sample intervals to assay results. Figure 11.1 shows sample intervals marked in core boxes.



**Figure 11-1 Sample Interval in Core Box**

Sample tag books and drill logs were observed at GWMG's office in Saskatoon by Barr. Figure 11.2 shows an example of a sample tag book.



**Figure 11-2 Sample Tag Book**

The blank and duplicate sampling protocol was verified by Mr. John Pearson, and Barr received certificates of analysis for the two CANMET standards used by GWMG for review.

Barr observed several sample intervals that were less than 0.5 meters in length. Many of these samples are of particularly high grade, and could potentially create sample bias. GWMG explained although the sampling protocol outlined that "exceptional circumstances" were required for sample intervals to be less

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than 0.5 meters, more samples of this size were taken than expected (i.e. not “exceptional circumstances”), and they (GWMG) are fully aware of this discrepancy.

## 11.4 Sample Analysis

Sample analysis was performed by SRC in Saskatoon.

Sample preparation consisted of the samples being dried in the original plastic bags at 80 degrees C overnight, jaw crushed to 60% -2 ml, and then split out to 100 to 200g subsample using a riffler.

The subsample was pulverized to a 90% -106 micron pulp using a grinding mill. The grinding mills were cleaned at least once between every sample, and silica sand cleaning was employed between groups. The pulp was transferred to a labeled plastic snap-top vial.

The assay procedure required an aliquot of the pulp being combined with 1000 mg of lithium metaborate flux and fused in a graphite crucible in a muffle oven at 1000 degrees C for one hour. After fusion, the resulting bead was crushed to a fine powder using a mortar and pestle. The powder was transferred to a beaker with 60 ml of deionized water and 6 ml of nitric acid and stirred until completely dissolved. The solution was then made up to 100 ml and analyzed by ICP-OES.

The instruments used for ICP-OES analysis were PerkinElmer Optima 300DV, Optima 4300DV or Optima 5300DV and were calibrated using certified commercial solutions. The detection limit for rare earth elements analyzed was 0.002%.

A control sample was prepared and analyzed with each batch of samples. One out of every 40 samples was analyzed in duplicate. Corrective action was taken when results exceeded specific limits. Quality control measures and data verification procedures that were applied also included the preparation and analysis of three standards and one blank, where the blank was flux only.

Barr reviewed method reference documentation outlining these procedures supplied by SRC Geoanalytical Laboratories.

Original assay certificates from SRC were provided by GWMG to Barr for data review.

SRC is a laboratory independent of GWMG. It began operating in 1972 and currently has a quality management system that operates in accordance with ISO/IEC 17025:2005 (CAN-P-4E), General Requirements for the Competence of Mineral Testing and Calibration laboratories and is also compliant to CAN-P-1579, Guidelines for Mineral Analysis Testing Laboratories. The management system and selected methods are accredited by the Standards Council of Canada (Scope of accreditation # 537).

It is the Qualified Persons opinion that SRC is adequate for the sample preparation, security, and analysis of the samples used for this Technical Report.

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## 12.0 Data Verification

Data verification methodology consisted of gathering and organizing all of the drilling, assay and geological data, followed by statistical and geostatistical analysis by Brad Dunn and Rodrigo Jerez. Listed below are the data verification procedures applied, any limitations on or failure to conduct such verification, and the reasons for any such limitations or failure. It is the Qualified Persons opinion that the data used in this Technical Report is adequate unless otherwise stated in this Report.

### 12.1 Data Set

GWMG supplied Barr with the Project data in a number of different formats, including:

- **Data Logger database**

This is a Microsoft Access database built by Cominco (v. 1999.07.19) and adopted by GWMG. This is an application built specifically for data entry storage and reporting of geological exploration projects. Barr found this to be a robust system that was easy to use.

- **Surpac database**

This is a Microsoft Access database created by exporting drill hole information from Excel files that is required by Surpac mine planning software. This is not an application database like the Cominco data logger. Barr found there to be no defined indexes and no relations between tables within the database as database mapping is maintained by Surpac project files.

- **Hoidas Lake Project assay workbook**

This is a Microsoft Excel file that contains every assay interval from drill holes completed at the Project since 2001. Each sheet within the workbook contains individual drill hole data and uses GWMG's naming conventions for drill hole identification. The workbook stores the elements that define a TREE value, as well as complete rock analysis values. Barr considers this file to be a "master" workbook that constitutes a repository of all the assay information gathered by GWMG from results delivered by SRC in Saskatoon.

- **Assay results from SRC in Saskatoon**

This consisted of two files (a PDF and an Excel file) containing laboratory assay results that are organized by report number, date and laboratory sample number related to the interval data submitted by GWMG.

### 12.2 Data Set Observations

Barr considers the most important information compiled by GWMG in the Cominco database is organized in tables and includes:

Collar table – This stores the location (x, y and z), total drill hole length, drill hole azimuth and dip, as well as various items related to the Project name, area, drill hole type and claim.

- Survey table – This contains the down-hole survey data (depth, azimuth and dip).
- Chemistry table – This contains assay interval, lab ID, and Total Rare Earth Oxide (TREO). Individual element assay values are not stored in this table, but are stored in the master workbook mentioned above.
- Major/minor tables – These hold detailed information by drill hole interval related to mineralogy, lithology, and alteration.
- Dictionary tables – These contain geological definitions, on a large and small scale.

The Cominco database has a main front menu that allows the user to enter information and produce detailed reports by drill hole. This menu was used to display particular drill hole data and to review the individual tables that hold the information.

Original data, such as handwritten logs and grade element data, are considered to be the most reliable data source. Each drill hole has its own file folder. Examples of handwritten drill logs are in Appendix 8 as part of the Barr Engineering Form 43-101 Mineral Resource Report on the Hoidas Lake Rare Earth Project dated 20 November 2009 posted on [www.sedar.com](http://www.sedar.com). Original documents are kept at GWMG's office in Saskatoon, and were observed by Barr during a visit on October 8, 2009.

## 12.3 Data Set Verification

Barr used a copy of the Cominco database to complete all data verification and reporting.

Selected drill hole logs were compared to stored data for consistency and verification. This included coordinates, surveys and detailed lithology descriptions as they were written in the original logs.

Microsoft Windows-based visual basic program was written to integrate the master assay workbook, laboratory results, and the Surpac database into the Cominco database to complete cross-checks on assay values, assay intervals, surveys and laboratory assay duplicates.

This methodology tested the data integrity of individual assay intervals in table records from the various data sources. One example of this method was comparing the Barr calculated value of TREE Wt. % to the values previously calculated in the Surpac database.

Data sorting was performed when loading the original spreadsheets into the database to ensure that the data were within acceptable limits. Any suspicious missing data or data out of range were flagged. The database was also subjected to a validation routine provided by MineSight software that checks for obvious errors such as inconsistent drill hole lengths, zero length intervals, out-of-sequence intervals and missing intervals. These types of errors, when detected, were reported to GWMG. Once corrected, the data was re-loaded. Several passes of this methodology were performed to ensure the integrity of the drill hole dataset. As the Hoidas Lake Project progresses, Barr recommends ongoing checking and cleaning by GWMG in order to attain an error-free dataset.

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The following sections highlight particular measures that were taken to verify the data:

- **Header Table**

Collar data was checked visually on the screen for obvious errors such as extra digits, transposed northing and easting, and suspicious locations outside of the exploration grid. Two suspicious holes drilled further north from the grid were reported to GWMG, and they were found to have valid coordinates.

- **Survey Table**

Visual inspections of the displayed drill hole traces yielded only one error. This was resubmitted to GWMG, who checked it and corrected the error.

- **Lithology Table**

Selected drill hole logs were compared to the Lithology Table to check data consistency. No errors were found when compared to the original logs.

- **Chemistry Table**

The only assay item stored in this table is the TREO, and the elements are not carried. They are in the assay master Excel workbook. Barr completed cross checking between the Excel sheets and the Surpac database. The results were stored back to the Cominco database by developing Access queries that checked assay "from-to" intervals, assay maximum, and assay minimum values. Any suspicious data were compared back to the original laboratory results. These were continuously under review and errors were corrected as they were encountered. Typo errors were the most common error. No errors were found as mis-assigned grade, such as a zero value against a missing value. Barr applied the same rules adopted by GWMG, such as the laboratory reported value "< 0.002" (lower than 0.002) being assigned as zero, and a laboratory reported value "< 0.01" (lower than 0.01) being assigned a 0.005 value. When two laboratory results were reported as duplicates, the first one was taken as valid. After verification, only ten typos were found in the entire dataset. These are shown in Table 12.1. Only one assay interval was taken out from the final data set because it did not have the corresponding "LabId" number.

**Table 12-1**      **Typos in Dataset**

| Lab-ID(*)                                      | Drill-Hole | Suspicious Drill Hole Intervals | Changed To    |
|------------------------------------------------|------------|---------------------------------|---------------|
| 44013.00                                       | HL01-13    | 29.50-29.80                     | 29.20-29.80   |
| 44014.00                                       | HL01-13    | 29.30-29.80                     | taken out     |
| 799243.00                                      | HL05-37    | 66.40-67.00                     | 66.50-67.00   |
| 21132.00                                       | HL08-127   | 32.50-34.10                     | 32.50-34.40   |
| 201036.00                                      | HL08-131   | 191.40- 192.10                  | 191.90-192.10 |
| 201103.00                                      | HL08-132   | 143.70-144.90                   | 144.0-144.90  |
| 201939.00                                      | HL08-133   | 104.50-105.00                   | 104.60-105.00 |
| 201973.00                                      | HL08-134   | 134.90- 135.40                  | 134.90-135.00 |
| 201423.00                                      | HL08-138   | 185.50-186.90                   | 186.50-186.90 |
| 201949.00                                      | HL08-144   | 327.80-328.60                   | 327.90-328.60 |
| (*) GWMG should further review these intervals |            |                                 |               |

## 12.4 Geological Zones

GWMG provided drawings of polygons outlining the JAK Zone veins, together with an interim report presenting total mineral resources and average grade calculated from drill hole composites (see GWMG report in Appendix 9 as part of the Barr Engineering Form 43-101 Mineral Resource Report on the Hoidas Lake Rare Earth Project dated 20 November 2009 posted on [www.sedar.com](http://www.sedar.com)). Drawings were in PDF format and the polygons were also provided in digital text format (x, y, and z closed polygons). These polygons were drawn as north-south sections; every 25 m/50 m. They reflected the latest GWMG interpretation of geological resource in terms of location, distribution, and extension in depth. This was the basis for building the geological controls that outlined major features such as faults and dikes, and thus provided visualization of the continuity of the JAK zone from section to section.

These x, y and z strings were loaded into MineSight, and the subsequent displays were carefully compared to the PDF drawings; any differences between the string files and PDF polygons were reported. GWMG advised that the interpretation on the PDF drawings should prevail because it was the geological interpretation of the JAK zones. The zones in question were subsequently modified to match the PDF drawings.

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## 13.0 Mineral Processing and Metallurgical Testing

The mineralization types of the Hoidas Lake property include both rare earth and phosphorus metals. The rare earth metals at the Hoidas Lake property are primarily found in the bastnasite and allanite minerals, and secondly in the monazite, parasite, thorite and apatite minerals. Metallurgical test work indicates that beneficiation of these materials can be done utilizing grinding, magnetic separation and flotation techniques. The process results indicate that challenges in the beneficiation process exist due to the variety of the rare earth minerals and the micro-fine dissemination within the minerals.

Test work related to mineral processing and metallurgy was initiated in 2001 and continued into 2012. The following two Report sub-sections provide both the historic and current results of this Hoidas Lake Project test work.

### 13.1 Previous Mineral Processing and Metallurgical Testing

The following paragraphs present the historic campaigns of mineral processing and metallurgical test work performed on Hoidas Lake mineralization by various consultant laboratories from 2001 through 2009.

#### 13.1.1 Previous Metallurgical Testing From 2001 through 2007

In 2001, Melis Engineering supervised test work on mineralogical, flotation, gravity and whole ore and flotation concentrate leaching. This work was performed at SGS Lakefield Research Limited (Lakefield) in Ontario, between June and September. The test work is reported in:

- "An Investigation into the Recovery of REO from Samples of The Hoidas Lake Deposit submitted by Great Western Corporation," SGS Lakefield research Ltd., October 10, 2001
- "Great Western Gold Corp. Hoidas Lake Rare Earth Project Phase 1 Metallurgical Test Work Summary Report," Melis Engineering Ltd., October 15, 2001.

Between the summer of 2005 and late 2006, The Center for Advanced Mineral & Metallurgical Processing (CAMP) performed grinding, flotation, heavy media separation, magnetic separation, and whole ore and flotation concentrate leaching test work in Butte Montana. The test work has been reported in:

- "Hoidas Lake 2005 Composite Ore and Bulk Composite Metallurgical Testing," The Center for Advanced Mineral & Metallurgical Processing, December 26, 2006.

The 2005 Composite received at Lakefield was head assayed at SRC, CAMP as well as Lakefield.

Between August 2006 and April 2007, Lakefield performed flotation, magnetic separation, whole ore and flotation concentrate leaching, solid-liquid separation, and solvent extraction test work. The test work has been reported in:

"An Investigation into the Recovery of Rare Earth Elements from the Hoidas Lake Deposit, LR-11409-001, Report No. 1," SGS Lakefield Research Ltd., November 9, 2006

"Great Western Minerals Group Ltd. Hoidas Lake Rare Earth Project Status Report on Metallurgical Test Work," Melis Engineering Ltd., November 14, 2006

"An Investigation into the Recovery of Rare Earth Elements from the Hoidas Lake Deposit, LR-11409-001, Report No. 2," SGS Lakefield Research Ltd., January 12, 2007

"An Investigation into the Recovery of Rare Earth Elements from the Hoidas Lake Deposit, LR-11409-002, Report No. 1," SGS Lakefield Research Ltd., January 19, 2007

"Hoidas Lake Project Status Report for the Period November 14, 2006 to February 21, 2007," Melis Engineering Ltd., February 22, 2007

- "An Investigation into the Recovery of Rare Earth Elements from the Hoidas Lake Deposit, LR-11409-001, Report No. 3 DRAFT", SGS Lakefield Research Ltd., June 18, 2007.

In 2008, drill core that included the 2007 composite bulk sample (see 10.0 Drilling "metallurgical sample collection") was analyzed by Melis Engineering, Michigan Technological University (Michigan Tech), and the General Research Institute for Nonferrous Metals (GRINM) in Beijing China.

### **13.1.2 Melis Engineering Test Work**

Melis Engineering supervised metallurgical testing undertaken by Lakefield during 2008. This included optical and electron microscopy, QEMSCAN analysis, assay reconciliation, mineralogy, REE deportment, liberation and association, and sieve testing.

The Lakefield report compiled for Melis Engineering is included as Appendices 10 and 11 as part of the Barr Engineering Form 43-101 Mineral Resource Report on the Hoidas Lake Rare Earth Project dated 20 November 2009 posted on [www.sedar.com](http://www.sedar.com).

### **13.1.3 Michigan Tech Test Work**

Michigan Tech received approximately 100 kilograms of drill core samples from GWMG. Metallurgical testing has included flotation; magnetic, gravity and electrostatic separation; scanning electron microscopy, and energy dispersive spectrometry.

Samples were sent to Activation Laboratories in Canada for elemental and chemical analysis.

A report of the Michigan Tech test work is included as Appendix 12 as part of the Barr Engineering Form 43-101 Mineral Resource Report on the Hoidas Lake Rare Earth Project dated 20 November 2009 posted on [www.sedar.com](http://www.sedar.com).

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#### 13.1.4 Initial Chinese Institute Test Work

The Chinese Institute received 320 kilograms of the 2007 composite bulk sample in October 2007. As of January 2009 metallurgical testing was on hold until mineralogical testing was completed. According to Mr. John Pearson in November 2009, mineralogical and metallurgical testing was suspended during the summer of 2008. GWMG received a summary of this data in January 2009, and is posted on the SEDAR website.

Key points:

- The bastnasite and monazite minerals require additional grinding to enhance recovery due to the micro-fine grained distribution. These rare earths are finely disseminated within the mineral structure.
- The allanite is the coarsest among the rare earth minerals which is evenly distributed in the form of medium to fine grain.
- The apatite minerals have a coarse to medium grained distribution. Liberation of these minerals requires less size reduction with improved recoveries.
- Due to the nature of the mineralization, the metallurgical techniques required to recovery the rare earth elements will include several combined steps in the beneficiation process. This process will produce a combined concentrate, which will require further upgrading.
- Metallurgical results based on current test work show that it is impossible at this time to produce a commercial grade rare earth concentrate only by beneficiation. It will be necessary to design a pre-enrichment of the concentrate. The process will include hydrometallurgy technologies to meet these requirements.
- The test results from the current beneficiation process indicate that a combined rare earth concentrate grade of 9% with a resulting recovery of approximately 85%.
- Phosphorous grade and recovery from the test work indicates that a grade of 39% and a recovery of 95% can be achieved. The majority of the phosphorous in the crude ore exists in the form of apatite.
- Preliminary tests were conducted to evaluate leaching methods on the concentrate for improved grade enhancements. Preliminary indications show that it is feasible to extract rare earths by using the roast-leaching process to meet the commercial grade requirements. Additional testing is necessary to determine the exact leaching ratio and confirmation of earlier test work.

#### 13.1.5 Xstrata Mineralogy Analysis

GWMG submitted 15 composite samples for analysis to Xstrata Process Support and received results in December 2009. These representative samples of the Hoidas Lake property were selected for quantitative mineral analysis using the QEMSCAN (Quantitative Evaluation of Materials by Scanning Electron

Microscope) and EPMA (Electron Probe Microanalysis). The objectives of this study were to quantify the mineralogy, grain size, and to provide the rare earth element compositional analysis of the element phases. Stage one of this project evaluated each sample on an individual basis. A second stage of the work included blending of the individual 15 samples to produce a blended composite that best represented the expected Hoidas Lake mineralization.

Key observations and conclusions include:

- The main rare earth element (REE) bearing minerals identified are bastnasite, apatite and allanite, and monazite.
- Total REE distribution based a blended composite of all 15 samples indicates 38% of the REE occur in the bastnasite, 25% within the apatite, 17% within the allanite and 12% within monazite. The remaining 8% occurs in titanite, thorite and iron silicate oxides.
- Liberation characteristics of the REE minerals of the blended composite, based on P80 =50 micron is 45.9%. The allanite grains indicate the best liberation, while the fine disseminated grains of REE minerals in the apatite indicates that additional liberation is required for bastnasite and monazite.

### **13.1.6 Summary**

Results from the various previous mineralogical and metallurgical testing campaigns were mixed with some results being comparable and supporting general conclusions while others were in conflict. Based on the historic mineralogy analysis and metallurgical testing, GWMG initiated a complete test program through a Chinese institute in May 2011. The results of the 2011 program are considered as the current state of the mineralogy and metallurgical knowledge, were received June 2012 and announced by GWMG in a September 25, 2012 new release. These results are presented in the following 'Current Mineral Processing and Metallurgical Testing' subsection.

## **13.2 Current Mineral Processing and Metallurgical Testing**

### **13.2.1 Introduction**

Approximately 1,000kg of Hoidas Lake samples was sent to the Chinese institute in May 2011 to establish a mineral processing route. The test sample is considered as representative of the overall rare earth grades and rock types that are expected from Hoidas Lake. The test sample represents approximately 10% of the total remaining metallurgical sample that was collected from Hoidas Lake's JAK Zone during the winter drilling program of 2007. The representative test sample assays 2.72% TREO (Total Rare Earth Oxide) and 12.50% P<sub>2</sub>O<sub>5</sub> which compares well with the estimated mineral resource grades.

The final report presenting the results of the test work was received from the Chinese institute in June 2012.

Test results indicate that it is technically feasible to recover both rare earth concentrate and phosphorus in the form of a mixed RE carbonate and Nitrogen-Phosphorus or NP-fertilizer. The overall RE recovery is 70% and phosphorus recovery is 93%.

The following table provides a summary of the initial and final concentrate grades and recoveries associated with the rare earth concentrate and phosphorus product.

**Table 13-1 Summary of Initial, Intermediate and Final RE Plus Phosphorus Grades and Recoveries**

| Program                                   |                                           | RE (TREO) |            | Phosphorus (P <sub>2</sub> O <sub>5</sub> ) |            |
|-------------------------------------------|-------------------------------------------|-----------|------------|---------------------------------------------|------------|
|                                           |                                           | Grade %   | Recovery % | Grade %                                     | Recovery % |
| Raw ore                                   |                                           | 2.72      | /          | 12.50                                       | /          |
| Beneficiation                             | RE concentrate                            | 9.27      | 49.20      | 2.93                                        | 3.26       |
|                                           | Apatite concentrate                       | 2.78      | 40.25      | 31.29                                       | 94.95      |
| Metallurgy                                | RE carbonate produced from RE concentrate | 60.39     | 78.62      | /                                           | /          |
|                                           | RE carbonate from Apatite concentrate     | 60.13     | 78.64      | /                                           | /          |
|                                           | NP-fertilizer from Apatite concentrate    | /         | /          | 15.74                                       | 97.44      |
| Combined beneficiation-metallurgy process |                                           | /         | 70.33      | /                                           | 92.52      |

The following subsections summarize the results provided by the Chinese institute's metallurgical test work.

### 13.2.2 Mineralogy

The average grade of the representative sample is 2.72% TREO and 12.50% P<sub>2</sub>O<sub>5</sub>, with Nd<sub>2</sub>O<sub>3</sub> accounting for 22% of the TREO. Results indicate that within the test sample, the mineral abundance of allanite is 1.76% while allanite makes up 1.76% of the total mass.

Identified RE minerals and RE-bearing minerals include bastnasite, monazite, thorite, ancylite, knopite, allanite and apatite. The total RE minerals account for 3.72% of the sample and carry 60% of the TREO; apatite accounts for 30.66% and carry 34% of the TREO. Phosphorus and phosphorus-bearing minerals include mainly apatite and monazite, with 95% of phosphorus carried by apatite. The gangue minerals include amphibole, pyroxene, chlorite, biotite, quartz, feldspar and calcite. Bastnasite, monazite, thorite, and ancylite account for 33% of the RE contained in the sample, are magnetic and will report together during magnetic separation. Knopite, allanite and apatite are non-magnetic and provide 28% of the RE within the test sample.

The liberation of the combined RE minerals is 66% and apatite is 97% based on a grind size of 71.76% passing 75µm. The mass fraction of the fines less than 10µm accounts for 14%. The dissociation of rare earth minerals due to the fine dissemination size will make recovery a major consideration during beneficiation.

### 13.2.3 Beneficiation

Two multi-stage processes were considered and tested by the Chinese institution. The processes differ in the order in which the HIMS (High Intensity Magnetic Separation) is applied to the feed. One approach

applies the HIMS prior to flotation while the other approach applies HIMS to the concentrates produced from the flotation circuits. Both approaches are relatively simple and can be easily applied to large scale operations.

The HIMS before Flotation approach provided RE rougher concentrate assaying 9.27% REO and 2.93%  $P_2O_5$ . The RE and  $P_2O_5$  recovery associated with the RE concentrate was 49.20% and 3.26% respectively. The apatite or phosphate concentrate contained 2.78% REO and 31.29%  $P_2O_5$ . The rare earth and  $P_2O_5$  recovery associated with the apatite concentrate was 40.25% and 94.95% respectively. The combined rare earth recovery in the RE and apatite concentrate was 89.45%.

The second process considered, HIMS after Flotation, provided RE rougher concentrate assaying 13.98% REO and 5.47%  $P_2O_5$ , with RE recovery of 33.38% and a  $P_2O_5$  recovery of 2.79%. The apatite or phosphate concentrate contained 3.01% REO and 31.70%  $P_2O_5$ , with RE recovery of 43.15% and a recovery of 97.07% for  $P_2O_5$ . The combined total rare earth recovery, considering both concentrates, was 76.53%.

Further bench scale and pilot plant testing will be required to determine which approach should be selected based on reagent consumptions and related costs.

#### **13.2.4 Hydrometallurgy**

Separate hydrometallurgical processing routes were considered for treating the RE rougher concentrate and apatite concentrates. Feed for the hydrometallurgy test work was taken from the RE and apatite concentrates produced by HIMS before Flotation beneficiation process.

Extraction of RE from RE rougher concentrate using the developed process, "sulfuric acid roasting - water leaching - double salt precipitation - caustic soda transformation – hydrochloric acid selective dissolution – Radium removal - precipitation by ammonium carbonate", indicates that the grade of mixed rare earth carbonate reaches over 60.39% REO with a recovery through hydrometallurgy of 78.62%.

Extraction of RE and phosphate from apatite concentrate using the developed processes, "decomposed by nitric acid - neutralization and precipitation - sulfuric acid roasting - water leaching - preparing rare earth products" and "nitric acid decomposing solution - gypsum precipitation - liquid ammonia neutralization", indicates that the grade of RE carbonate reaches 60.13% with the direct recovery of 78.64%; and the content of  $P_2O_5$  in Nitrogen-Phosphorous complex fertilizer reaches 15.74% with the effective  $P_2O_5$  content of 10.80% and total recovery of 97.44%. The Nitrogen-Phosphorous complex fertilizer also contains 24% nitrogen in total.

## 14.0 Mineral Resource Estimates

### 14.1 Drill Hole Data Analysis and Reporting

Once all the data from the drilling programs in 2001, 2005, 2006 and 2008 was verified, it was loaded into the MineSight commercial software suite. If there were gaps in assay data, they were filled, and drill hole profiles were completed. This finished dataset was loaded back to the Cominco database a final time to make sure that from-to assay intervals still matched the Surpac data and the assay master Excel workbook.

The next step was to display the drill hole locations, particularly in sections. They were generally drilled to intercept the full thickness of the easterly dipping JAK Zone. Logging was generally done at 1-meter and 0.5-meter intervals, but several sample intervals of less than 0.5 meters were also found indicating that logging was biased to geological units that may contain high-grade intercepts. The average sample interval by year is as follows:

- **2001:** 0.589 m
- **2005:** 0.847 m
- **2006:** 0.953 m
- **2008:** 0.673 m

Figure 14.1 illustrates a histogram (frequency distribution) of assay interval within the JAK Zone.

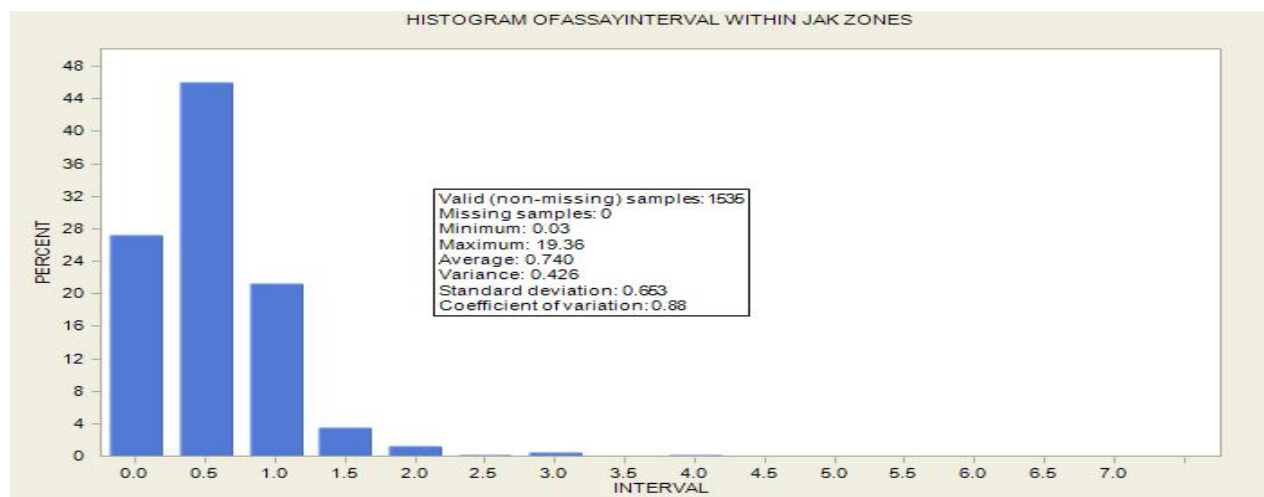
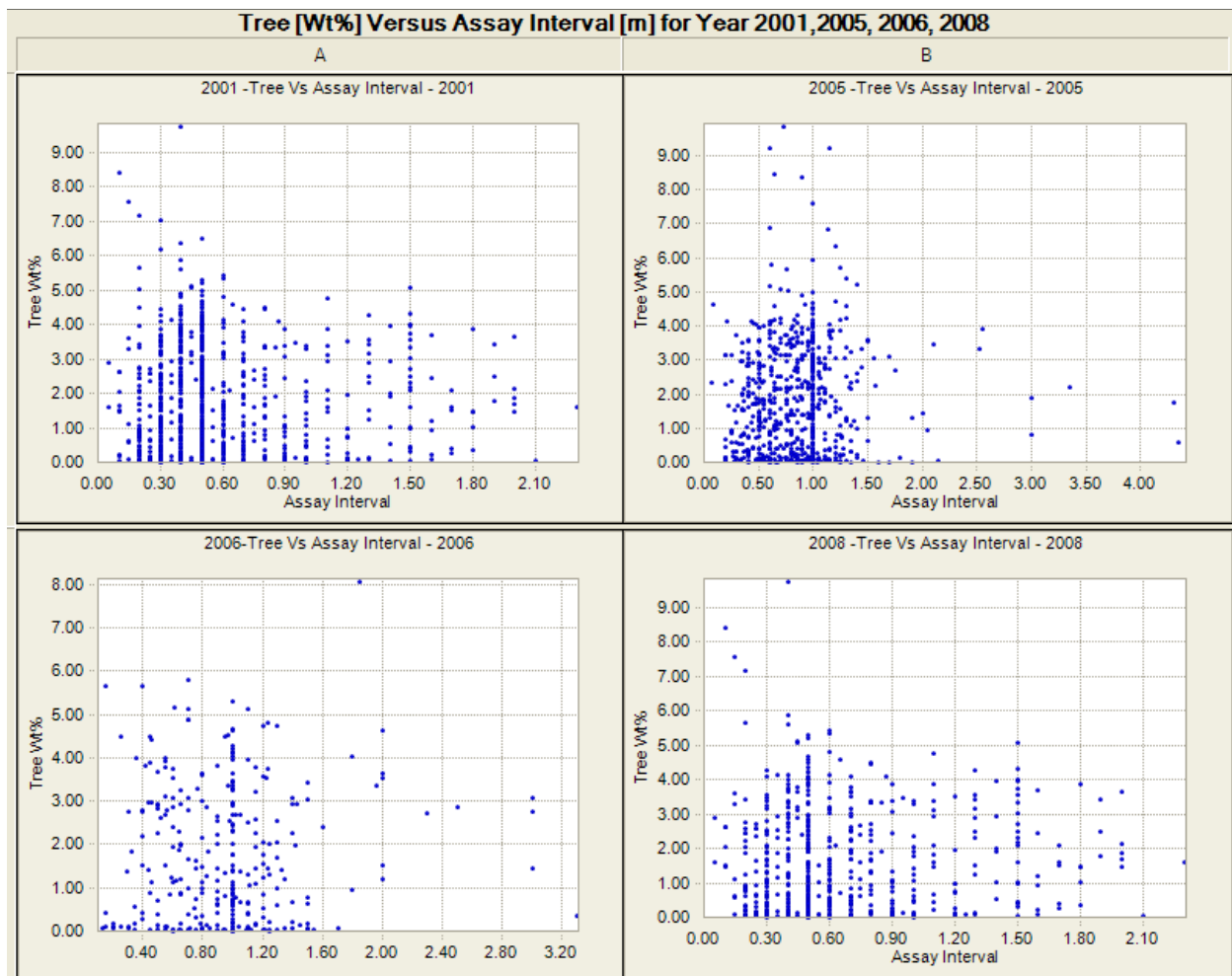


Figure 14-1 Assay Interval Within JAK Zone



**Figure 14-2 TREE Wt% Values vs. Assay Interval**

Having all the data (assay, lithology, geological controls) loaded into the MineSight program allowed for the tagging of the assay intervals by lithology using established procedures. This information was then displayed section by section for further analysis. Table 14.1 shows some of the lithology dictionary terms as defined in the Cominco database. During the data analysis Barr added two more columns: the MineSight code (MCODE) and the zone code (ZCODE).

**Table 14-1 Lithology Codes**

| Lithocode | Description                                | MCODE | ZCODE |
|-----------|--------------------------------------------|-------|-------|
| OVB       | Overburden Casing                          | 2     | 2     |
| GR        | Granite                                    | 3     | 3     |
| GG        | Granite Gneiss                             | 4     | 3     |
| GM        | Granitic Mylonite                          | 5     | 3     |
| AMP       | Amphibolite                                | 6     | 3     |
| AMPH      | Amphibolite                                | 7     | 3     |
| PEG       | Pegmatite                                  | 8     | 3     |
| GD        | Granodiorite and Granodiorite Gneiss       | 9     | 3     |
| GDPT      | Granite Diopside Porphyroclastic Tectonite | 10    | 10    |
| GDI       | Granodiorite                               | 11    | 10    |
| AV        | Apatite Vein                               | 12    | 10    |
| DALV      | Diopside Allanite Vein                     | 13    | 10    |
| DIOP      | Diopside Vein                              | 14    | 10    |
| TON       | Tonalite Gneiss                            | 15    | 3     |
| ABV       | Apatite Breccia Vein                       | 16    | 10    |
| ADV       | Apatite Diopside Vein                      | 17    | 10    |
| DIOR      | Diorite                                    | 18    | 3     |
| HYAL      | Hyalophane Dominant Vein                   | 19    | 10    |
| SYEN      | Syenite                                    | 20    | 3     |
| GAB       | Gabbro                                     | 22    | 3     |
| FZ        | Fault Zone                                 | 90    | 10    |
| INTW      | Internal Waste                             |       | 11    |
| MINZ      | Mineralization Outside JAK Zone            |       | 12    |

When displaying all of the drill holes section by section together with the JAK Zone shapes and lithology codes, Barr verified the correlation used by GWMG in terms of lithology and zone continuity along strike and down dip.

After this revision was completed, Barr performed a MineSight procedure to combine the vein codes into one code.

This step was checked section by section to verify the codes for completeness. Additionally, Barr tagged low-grade waste within the JAK Zone with ZCODE 11 to differentiate any internal waste. This waste ranged from less than 0.5 meter to as high as 1 meter in thickness. If the internal waste was less than 0.5, it remained as a ZCODE 10. Any internal waste 1 meter and above in thickness was changed to ZCODE 11. Finally, any assay interval with grade that was outside the defined GWMG JAK Zone and part of the material defined as mineralization in Table 8 was tagged with ZCODE 12.

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## 14.2 Spatial Statistics

Statistics were compiled to determine the variability of the deposit. These statistics were useful to check for data errors. A summary is displayed in Table 14.2.

**Table 14-2 Assay General Statistics**

| HOIDAS ASSAY GENERAL STATISTICS ON ZONE ASSAYS                                                                                                                                                                                                                                                                                  |        |            |        |          |            |         |           |          |           |              |          |         |         |         |           |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|--------|----------|------------|---------|-----------|----------|-----------|--------------|----------|---------|---------|---------|-----------|--|
| November 20, 2009                                                                                                                                                                                                                                                                                                               |        |            |        |          |            |         |           |          |           |              |          |         |         |         |           |  |
| Statistic Indicators                                                                                                                                                                                                                                                                                                            | Cerium | Dysprosium | Erbium | Europium | Gadolinium | Holmium | Lanthanum | Lutetium | Neodymium | Praseodymium | Samarium | Terbium | Thulium | Yttrium | Ytterbium |  |
|                                                                                                                                                                                                                                                                                                                                 | CeWt%  | DyWt%      | ErWt%  | EuWt%    | GdWt%      | HoWt%   | LaWt%     | LuWt%    | NdWt%     | PrWt%        | SmWt%    | TbWt%   | TmWt%   | YWt%    | YbWt%     |  |
| Valid (non-missing) sample:                                                                                                                                                                                                                                                                                                     | 1949   | 1926       | 1409   | 1531     | 1188       | 336     | 1859      | 4        | 1841      | 1844         | 1473     | 1040    | 133     | 1726    | 562       |  |
| Missing samples:                                                                                                                                                                                                                                                                                                                | 0      | 0          | 0      | 0        | 0          | 0       | 0         | 0        | 0         | 0            | 0        | 0       | 0       | 0       | 0         |  |
| Minimum:                                                                                                                                                                                                                                                                                                                        | 0.01   | 0.001      | 0.001  | 0.001    | 0.004      | 0.001   | 0.01      | 0.005    | 0.01      | 0.001        | 0.01     | 0.001   | 0.001   | 0.001   | 0.001     |  |
| Maximum:                                                                                                                                                                                                                                                                                                                        | 5.06   | 0.026      | 0.017  | 0.043    | 0.043      | 0.003   | 3.36      | 0.006    | 1.86      | 0.68         | 0.195    | 0.012   | 0.048   | 0.091   | 0.076     |  |
| Average:                                                                                                                                                                                                                                                                                                                        | 0.775  | 0.0077     | 0.0057 | 0.0131   | 0.0161     | 0.0016  | 0.3684    | 0.0055   | 0.4124    | 0.1045       | 0.0663   | 0.004   | 0.0014  | 0.0235  | 0.0067    |  |
| Variance:                                                                                                                                                                                                                                                                                                                       | 0.4953 | 0          | 0      | 0.0001   | 0.0001     | 0       | 0.1158    | 0        | 0.1164    | 0.0078       | 0.0019   | 0       | 0       | 0.0005  | 0.0002    |  |
| Standard deviation:                                                                                                                                                                                                                                                                                                             | 0.7038 | 0.0061     | 0.0035 | 0.0097   | 0.009      | 0.0006  | 0.3403    | 0.0005   | 0.3412    | 0.0883       | 0.0442   | 0.0022  | 0.0027  | 0.0223  | 0.0146    |  |
| Coefficient of variation:                                                                                                                                                                                                                                                                                                       | 0.908  | 0.798      | 0.601  | 0.742    | 0.559      | 0.369   | 0.924     | 0.091    | 0.827     | 0.845        | 0.666    | 0.538   | 1.92    | 0.952   | 2.178     |  |
| Percent of Tree value                                                                                                                                                                                                                                                                                                           | 42.77  | 0.42       | 0.31   | 0.72     | 0.89       | 0.09    | 20.33     | 0.30     | 22.76     | 5.77         | 3.66     | 0.22    | 0.08    | 1.30    | 0.37      |  |
| Max Percent contribution                                                                                                                                                                                                                                                                                                        | 43.92  | 0.23       | 0.15   | 0.37     | 0.37       | 0.03    | 29.17     | 0.05     | 16.15     | 5.90         | 1.69     | 0.10    | 0.42    | 0.79    | 0.66      |  |
| <b>84% of Tree average value is contributed only by Cerium,Neodymium and Lanthanum, and</b><br><b>89% of Tree Maximum value is contributed only by Cerium,Neodymium and Lanthanum</b><br><b>Lutetium is insignificant and mostly zero</b><br><b>Thulium and Ytterbium are undersampled as compared to the rest of the group</b> |        |            |        |          |            |         |           |          |           |              |          |         |         |         |           |  |

Figures 14.3 through 14.5 show the representative grade-distribution for each element. These distributions show a statistical tail indicating a high-grade weight percent material, generally scattered or forming "pods" throughout the mineral resource. Gadolinium is the only element that shows a more centered distribution.

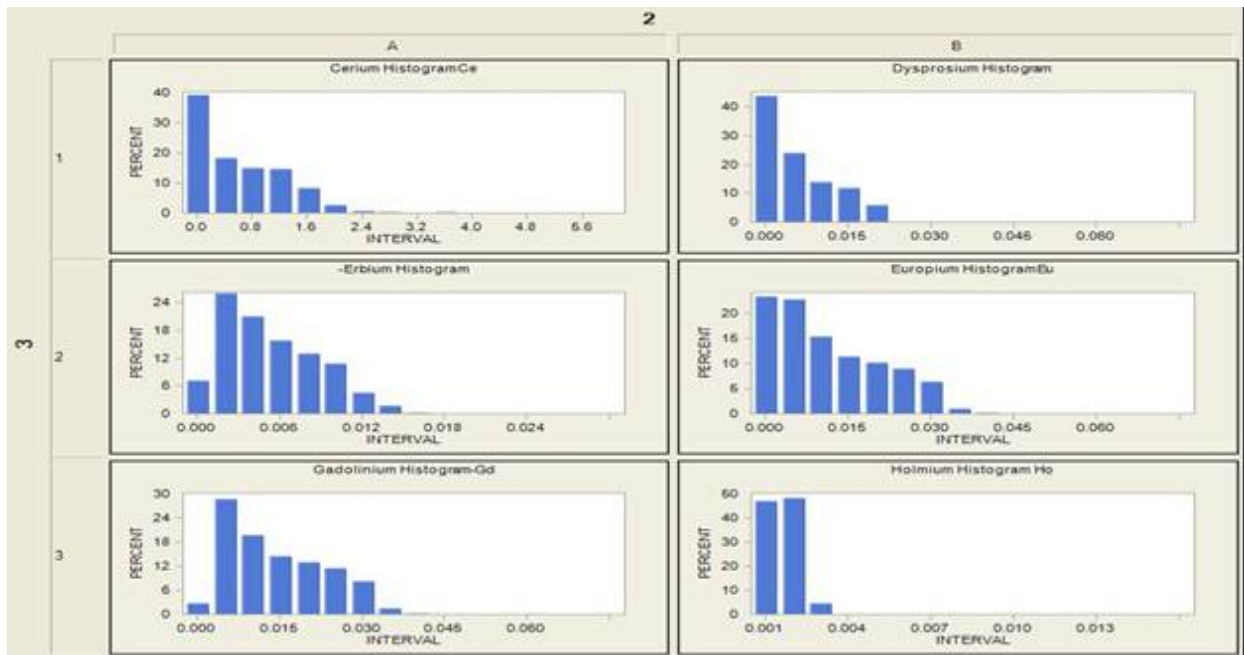


Figure 14-3 Grade Distributions of Ce, Dy, Er, Eu, Gd, and Ho

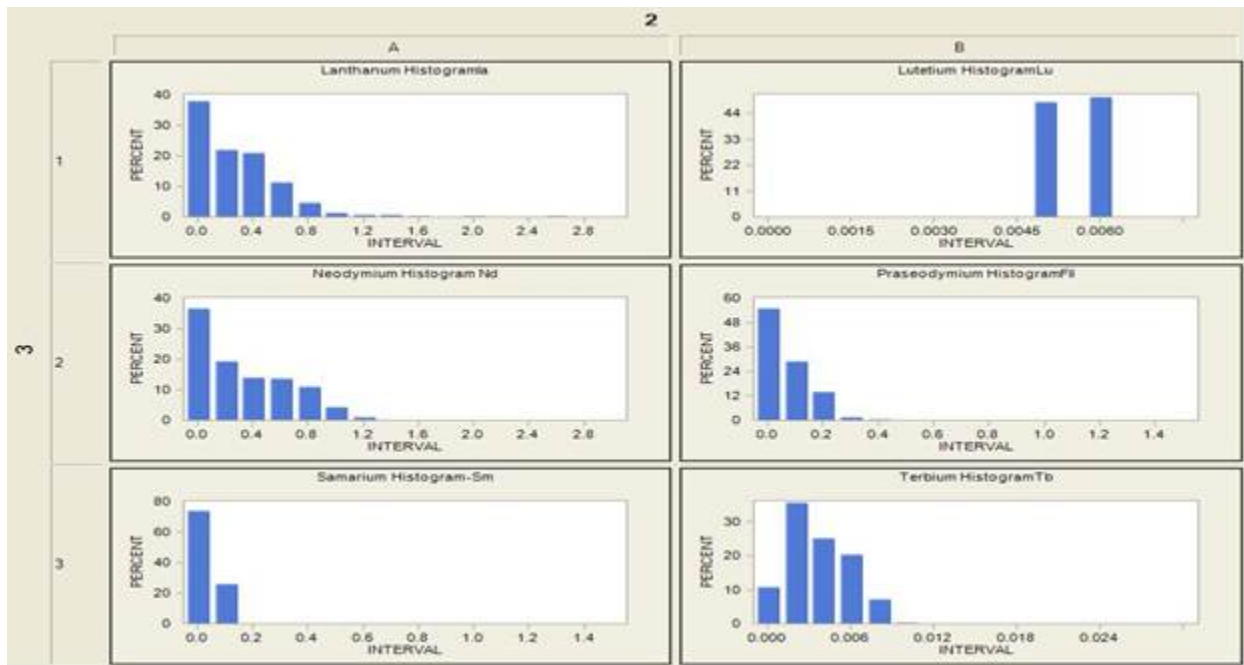
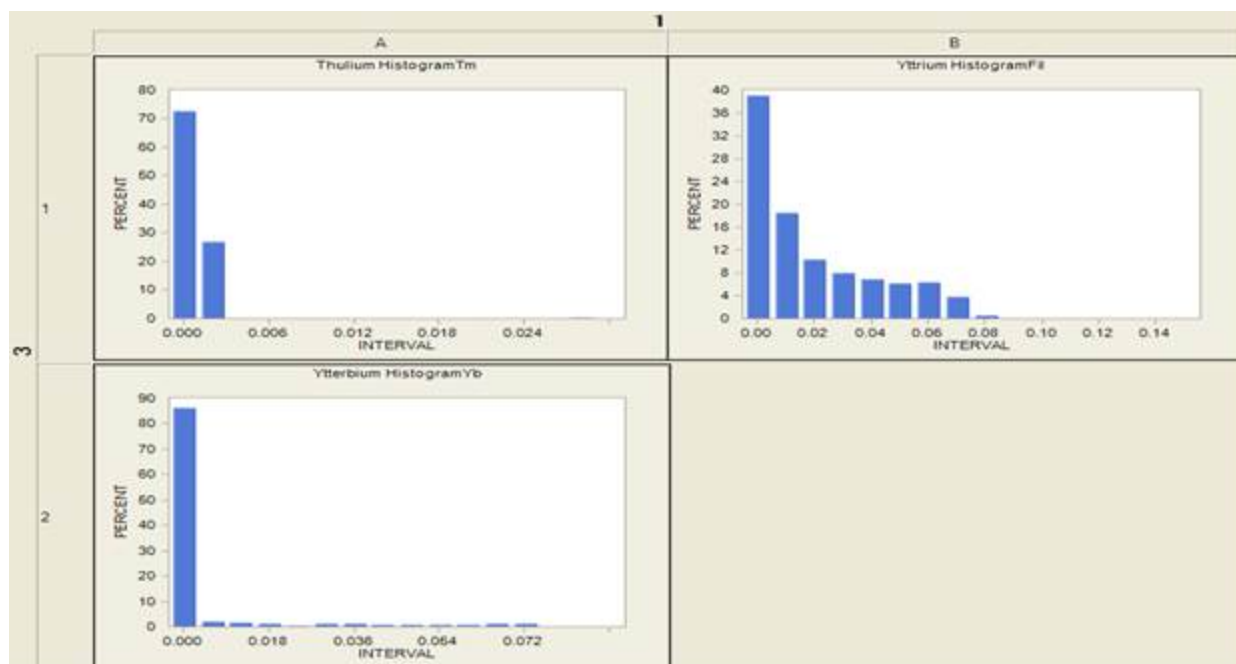


Figure 14-4 Grade Distributions of La, Lu, Nd, Pr, Sm, and Tb



**Figure 14-5 Grade Distributions of Tm, Y, and Yb**

### 14.2.1 Discussion of Spatial Statistics and Frequency Distributions

The variability of the Hoidas Lake deposit has proven to be high, and it is not comparable to deposits such as porphyry copper or other precious metal deposits. A strong statistical uniformity measure is the Coefficient of Variation (CV). The CV is the standard deviation divided by the mean of the population, and it provides a useful statistic for comparing different distributions. The CV of the Hoidas Project is close to 1 (cerium is 0.98), in comparison to other deposits with a CV of below 0.5.

In skewed grade distributions, a small proportion of scattered samples can represent a disproportionately large amount of high-grade ore. The limited number of these scattered samples can introduce a significant amount of bias into a resource estimate. This is the case for the Hoidas Lake data.

Care should be taken when building the average grade within a JAK zone or when building composites. There are multiple assay intervals below or equal to 0.5 meters.

The elements cerium, lanthanum, and neodymium constitute about 80% of the TREE.

There is no grade transition between footwall/hanging wall and the main JAK Zone vein sets. Both boundaries are sharp.

The elements samarium and terbium are statistically not representative of the deposit because there is a lack of samples (4 for samarium, 315 for terbium). This may be due to values being below the detectable limits of the ICP-OES instrument.

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Because a REE deposit has very low element grades comparable to typical environmental trace element projects, the REE statistics variances are by definition very low. This does not mean that the grade variability is zero. This means that within their grade scale, this is normal.

### 14.3 Composites

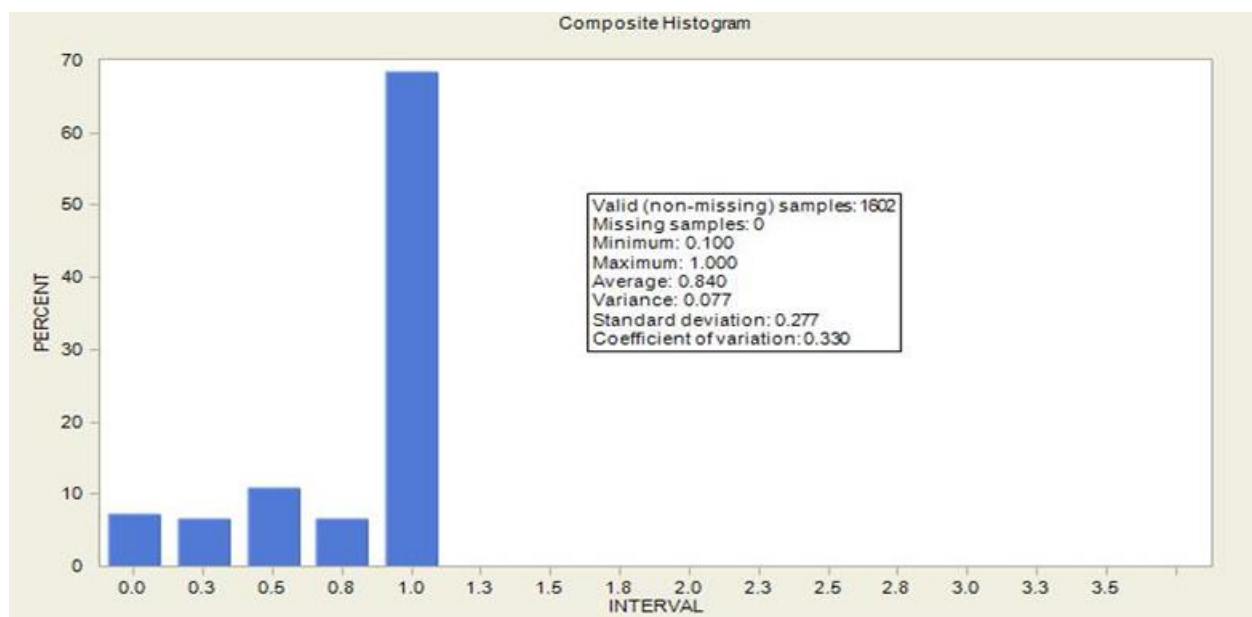
One meter composites were constructed within the JAK Zone. Composites were based on the thickness of internal waste. In general, if the waste interval was less than 0.5 meters, it was included as dilution and designated a ZCODE 10, and if the waste interval was greater than 0.5 meters, it was excluded as waste and was given a ZCODE 11.

The results were displayed on screen section by section, showing the composite drill holes against JAK Zone polygons, and then visually checked. Areas of high grade TREE Wt% were closely examined. These include:

- Section 50N, with intercepts HL01-08, HL01-09 and HL08-137
- Section 100N, intercepts HL05-27 and HL08-125
- Section 450N, intercept HL06-76

Section 450N with composites is included as Appendix 14 as a part of Barr Engineering Form 43-101 Mineral Resource Report on the Hoidas Lake Rare Earth Project dated 20 November 2009 posted on [www.sedar.com](http://www.sedar.com). Spatial Statistics methodology for composites was the same as it was with assay samples. A statistical analysis was done for each of the fifteen elements.

Figure 14.6 summarizes the composite results of intervals less than 1 meter. After the visual inspection of the composites results, it was decided there was no need to cap high grades.

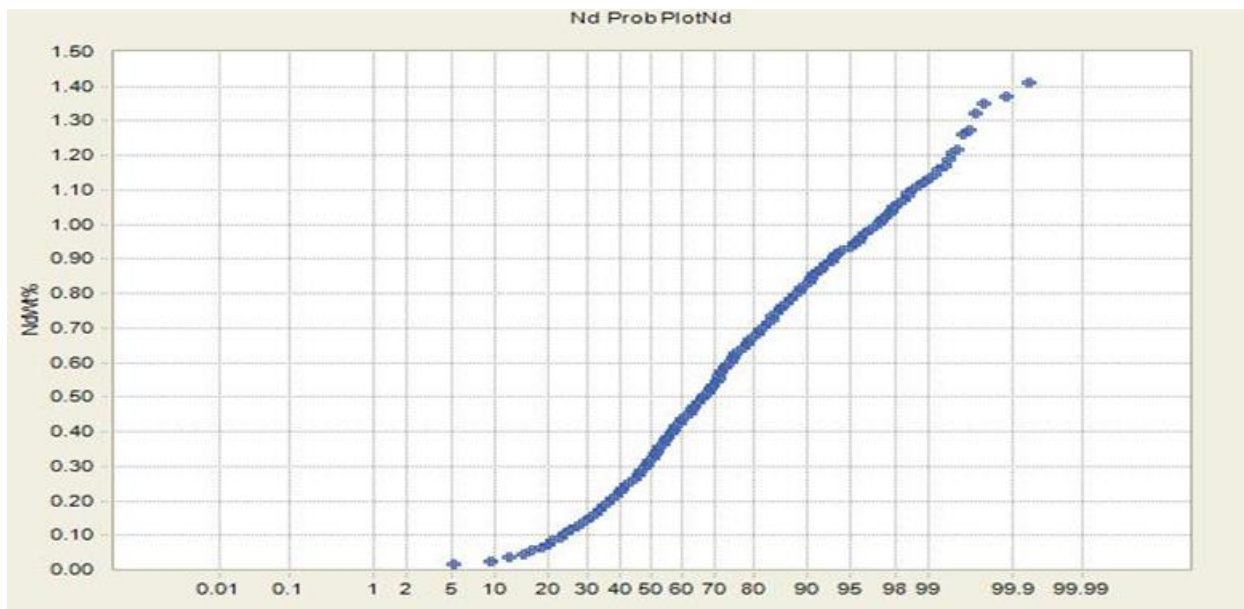


**Figure 14-6 Composite Histogram**

Table 14.3 summarizes general composite spatial statistics. Cumulative probability plots for neodymium and samarium are displayed in Figures 14.7 and 14.8.

**Table 14-3 Composite General Statistics**

| HOIDAS ASSAY COMPOSITE GENERAL STATISTICS ON ZONE ASSAYS |                  |                      |                  |                    |                      |                   |                     |                    |                     |                        |                    |                   |                   |                  |
|----------------------------------------------------------|------------------|----------------------|------------------|--------------------|----------------------|-------------------|---------------------|--------------------|---------------------|------------------------|--------------------|-------------------|-------------------|------------------|
| November 16, 2009                                        |                  |                      |                  |                    |                      |                   |                     |                    |                     |                        |                    |                   |                   |                  |
| Statistic Indicators                                     | Cerium<br>Ce/Wt% | Dysprosium<br>Dy/Wt% | Erbium<br>Er/Wt% | Europium<br>Eu/Wt% | Gadolinium<br>Gd/Wt% | Holmium<br>Ho/Wt% | Lanthanum<br>La/Wt% | Lutetium<br>Lu/Wt% | Neodymium<br>Nd/Wt% | Praseodymium<br>Pr/Wt% | Samarium<br>Sm/Wt% | Terbium<br>Tb/Wt% | Thulium<br>Tm/Wt% | Yttrium<br>Y/Wt% |
| Valid (non-missing) samples                              | 1781             | 1424                 | 1338             | 1447               | 1112                 | 1819              | 1817                | 4                  | 1816                | 1694                   | 1702               | 1819              | 1819              | 1578             |
| Missing samples                                          | 0                | 0                    | 0                | 0                  | 0                    | 0                 | 0                   | 0                  | 0                   | 0                      | 0                  | 0                 | 0                 | 0                |
| Minimum                                                  | 0.01             | 0.0001               | 0.001            | 0.001              | 0.01                 | 0                 | 0.0014              | 0.0045             | 0.0012              | 0.001                  | 0.001              | 0                 | 0                 | 0.001            |
| Maximum                                                  | 4.58             | 0.0248               | 0.016            | 0.041              | 0.084                | 0.003             | 2.714               | 0.006              | 1.6774              | 0.6092                 | 0.1875             | 0.0114            | 0.0213            | 0.0855           |
| Average                                                  | 0.76526          | 0.00771              | 0.00544          | 0.01239            | 0.03331              | 0.00027           | 0.33735             | 0.00484            | 0.3731              | 0.18143                | 0.05282            | 0.00215           | 0.00011           | 0.02271          |
| Variance                                                 | 0.39751          | 0.00003              | 0.00001          | 0.00008            | 0.0003               | 0                 | 0.09096             | 0                  | 0.09919             | 0.00632                | 0.00179            | 0.00001           | 0                 | 0.0004           |
| Standard deviation                                       | 0.63048          | 0.00563              | 0.00311          | 0.00876            | 0.01746              | 0.00057           | 0.30159             | 0.00046            | 0.31495             | 0.07963                | 0.04231            | 0.00232           | 0.00061           | 0.02005          |
| Coefficient of variation                                 | 0.8239           | 0.7301               | 0.5716           | 0.7068             | 0.524                | 2.1587            | 0.894               | 0.0948             | 0.8441              | 0.7841                 | 0.801              | 1.0817            | 5.4788            | 0.8827           |



**Figure 14-7 Neodymium Cumulative Probability Plot**



**Figure 14-8 Samarium Cumulative Probability Plot**

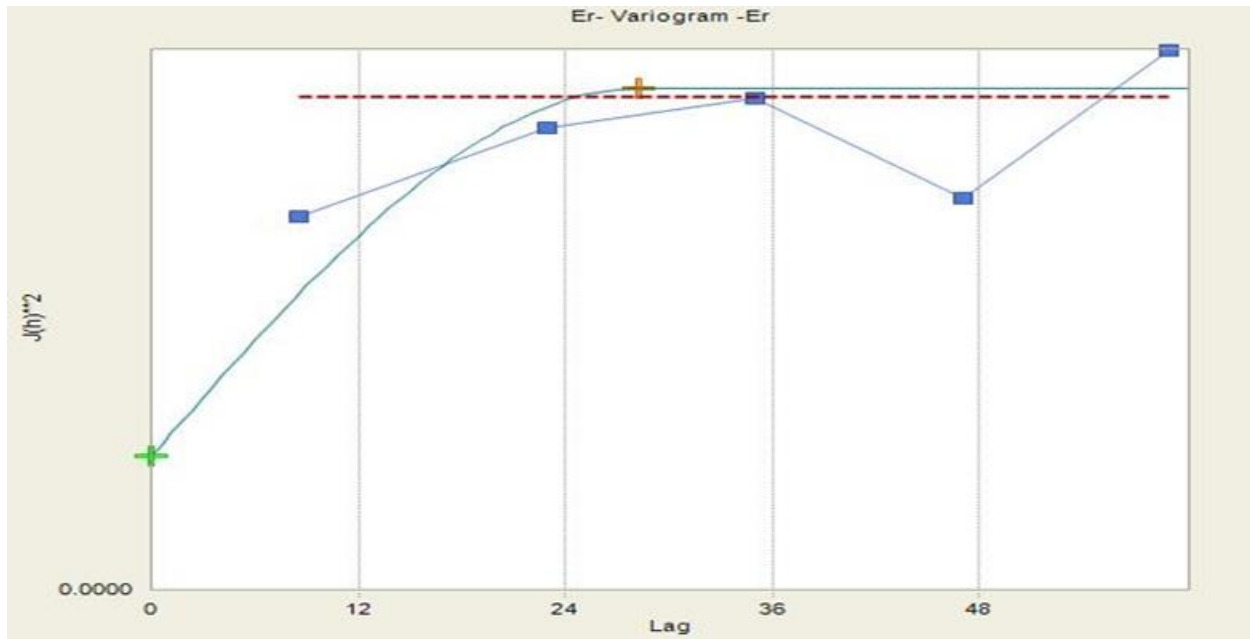
Figures 14.7 and 14.8 are particularly important plots because they show three very distinctive populations: waste/low grade material, medium grade, and numerous high-grade samples.

## 14.4 Variograms

The spatial variability for a given element depends on both the separation distance between sample points and the direction from point to point. The spatial variability increases and correlation decreases

with the separation distance, and variograms measure this variability. Variograms for the Project were constructed using composites inside the JAK Zone.

Variograms were built using the MineSight Data Analyst (MSDA) system. When possible, they were built for each element following the strike, and intersecting the dip of the deposit. Figures 14.9 through 14.12 show representative variograms of erbium and lanthanum.



**Figure 14-9 Average Variogram for Erbium Along Strike**

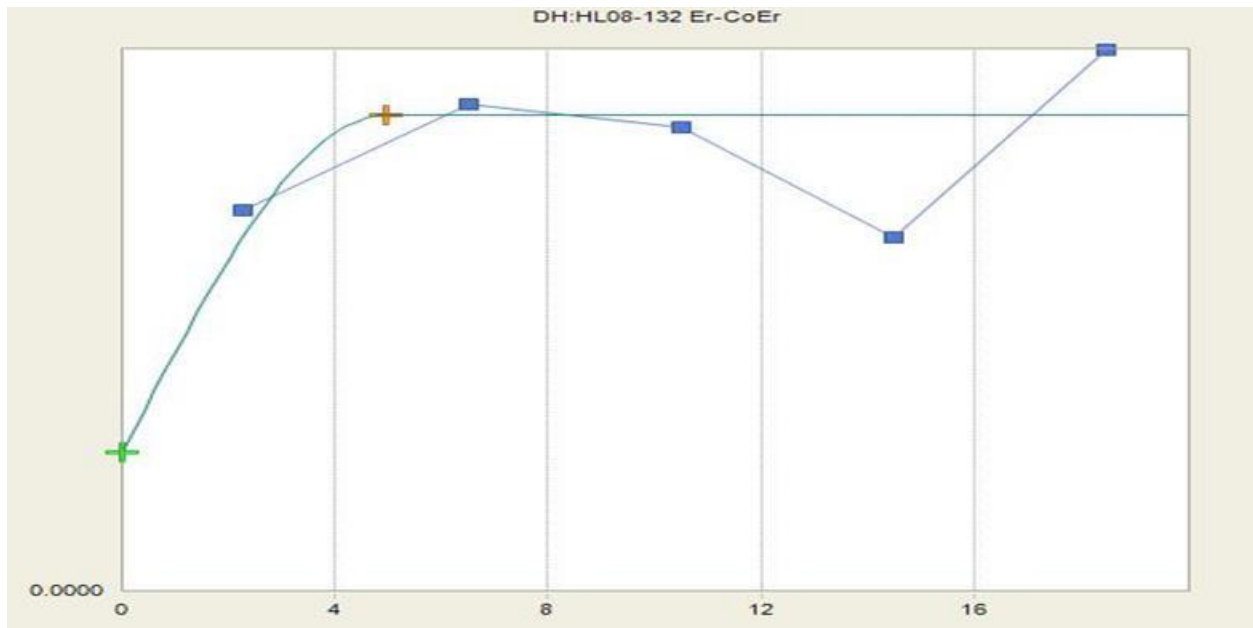


Figure 14-10 Average Variogram for Erbium Down Hole

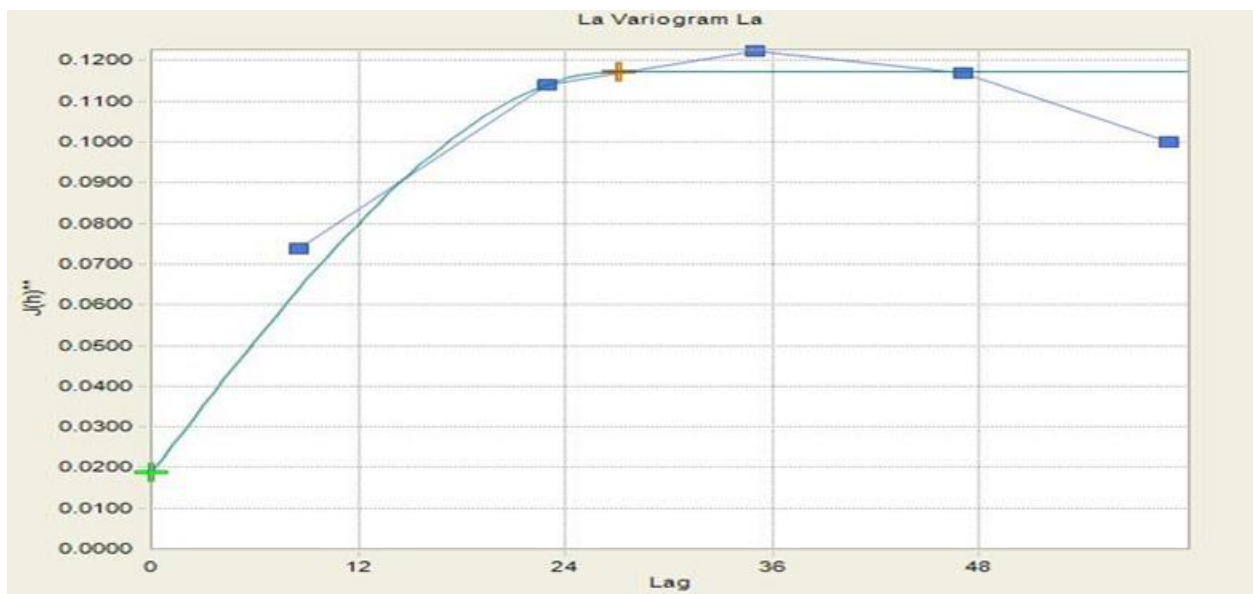
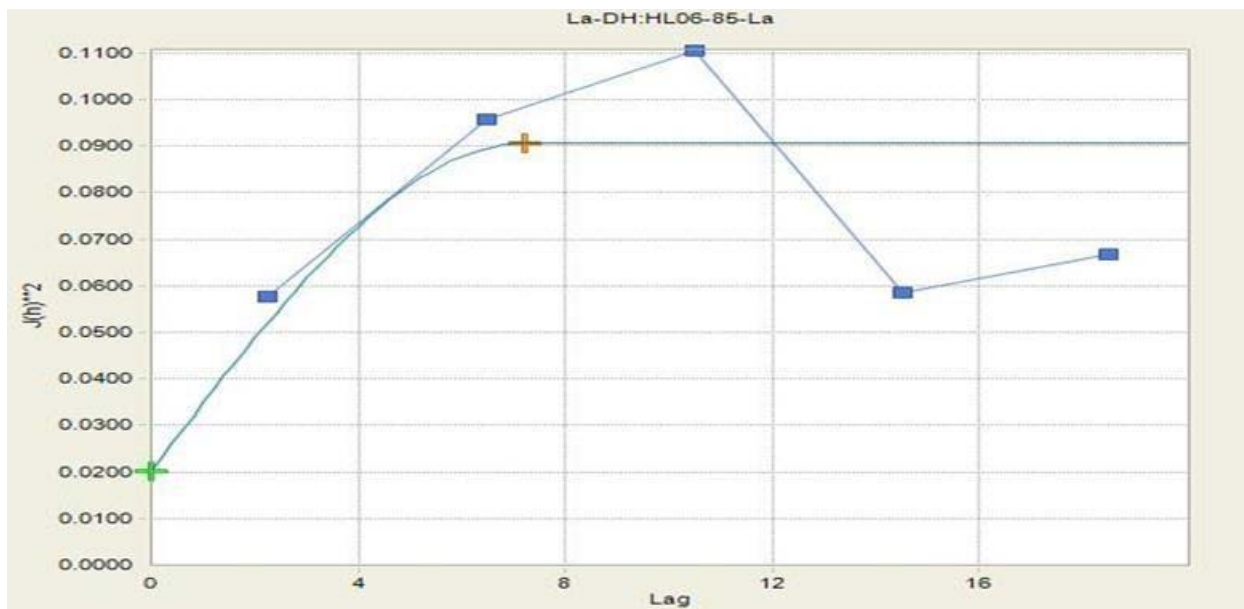


Figure 14-11 Average Variogram for Lanthanum Along Strike



**Figure 14-12 Average Variogram for Lanthanum Down Hole**

Barr found the data was not sufficient to pick up any substantial structure down dip. It was inferred that the best structures at this point of the exploration program are found along the strike (north-south), where most of the graphs reach a sill at about 30 meters. This direction was considered to be representative of the spatial continuity of the Hoidas Lake deposit and therefore the variograms were assumed to be isotropic.

Variograms were also built when possible down-hole within the JAK veins to pick up a measure of nugget effects and typical variogram structures at a smaller scale. The latter procedure was used in a two step-kriging interpolation.

## 14.5 Block Modeling

Barr used a 2.0 x 2.5 x 10 meter block size, as it offered a reasonable degree to delineate the JAK Zone as well as a north-south directional geometry that coincides with section spacing. The block model carries an "ore percent" item to accurately calculate the enclosed volume within 3-D zone envelopes. Table 14.4 displays used block limits.

**Table 14-4 Block Model Dimensions**

|           | Minimum (m) | Maximum (m) | Block Size (m) | # of Blocks |
|-----------|-------------|-------------|----------------|-------------|
| Easting   | -150        | 200         | 2              | 175         |
| Northing  | -400        | 800         | 2.5            | 480         |
| Elevation | 75          | 475         | 10             | 40          |

Block model items are listed and described in Table 14.5.

**Table 14-5 Block Model Items**

| Item  | Item Units | Description                      |
|-------|------------|----------------------------------|
| CEWT  | CeWt%      | Cerium                           |
| DYWT  | DyWt%      | Dysprosium                       |
| ERWT  | ErWt%      | Erbium                           |
| EUWT  | EuWt%      | Europium                         |
| GDWT  | GdWt%      | Gadolinium                       |
| HOWT  | HoWt%      | Holmium                          |
| LAWT  | LaWt%      | Lanthanum                        |
| LUWT  | LuWt%      | Lutetium                         |
| NDWT  | NdWt%      | Neodymium                        |
| PRWT  | PrWt%      | Praseodymium                     |
| SMWT  | SmWt%      | Samarium                         |
| TBWT  | TbWt%      | Terbium                          |
| TMWT  | TmWt%      | Thulium                          |
| YWT   | YWt%       | Yttrium                          |
| YBWT  | YbWt%      | Ytterbium                        |
| TREE  | TREEWt%    | TREE                             |
| SCWT  | Wt%        | Scandium in ppm (Sc)             |
| THWT  | Wt%        | Thorium                          |
| UWT   | Wt%        | Uranium                          |
| P2O5  | Wt%        | Phosphorus                       |
| DENS  | gr/cm3     | SPG                              |
| ZCODE |            | Zone Code                        |
| MCODE |            | MineSight Code                   |
| NHOLE |            | # holes within search            |
| NCOMP |            | # of Composites within search    |
| DIST  | Meters     | Search distance from block       |
| CLASS |            | CIM Resource Classification Def. |
| KRVAR |            | Kriging Variance                 |
| ZPERT | %          | Ore % within block               |

## 14.6 Grade Interpolation

### 14.6.1 Block Coding

A 3-D solid-wireframe was built using MineSight from the polygons provided to Barr by GWMG in increasing north-south increments. Each volume increment was stored for checking, as well as recording a tally of the runs.

---

Barr found some discrepancies between the supplied PDF drawings and string files of the interpreted JAK Zone. Discussions were held with GWMG, and the decision to prioritize the PDF drawings over the string files was made as they were a more accurate geological interpretation. The final 3-D wireframe reflects this interpretation.

Blocks were eligible for ZCODE coding "10" if the block volumes within the appropriate solids were within their boundary. Cross-section displays every 2.5 meters were set-up to view the code assignments and the ore-percent item value calculated in each block. (see Appendix 15 Cross Section Block Coding as part of the Barr Engineering Form 43-101 Mineral Resource Report on the Hoidas Lake Rare Earth Project dated 20 November 2009 posted on [www.sedar.com](http://www.sedar.com)).

### **14.6.2 Block Grade Calculations**

Grade element interpolation was done using two methods: inverse distance cubed, and ordinary kriging. Both methods were restricted by the influence of a high-grade composite. This limit was set to a maximum of 2 meters.

A high-grade cut-off intercept was determined by taking a value from the high-end breaks on the cumulative probability distributions of each element. Table 14.6 lists the high-end cut-off intercepts. The inverse distance cubed method was selected so as to have a stronger weight to nearer samples and then rapidly decrease the weights, as samples are found further away. This is the equivalent of a very steep variogram curve between the origin and the sill.

**Table 14-6 High Grade COG in Composites**

| Element | High Grade COG | Description   |
|---------|----------------|---------------|
| CEWT    | 2.000          |               |
| DYWT    | 0.022          |               |
| ERWT    | NA             | no need       |
| EUWT    | 0.029          |               |
| GDWT    | NA             | no need       |
| HOWT    | 0.003          |               |
| LAWT    | 1.200          |               |
| LUWT    | NA             | under sampled |
| NDWT    | 0.900          |               |
| PRWT    | 0.280          |               |
| SMWT    | 0.150          |               |
| TBWT    | 0.008          |               |
| TMWT    | 0.019          |               |
| YWT     | 0.070          |               |
| YBWT    | 0.021          |               |

Both methods of interpolation were required to include as many as four composites from the same drill hole to achieve a block value that was representative of the population within a JAK Zone composite. Thirty-five interpolation runs were set up with the exception of lutetium which was under-sampled. After the interpolations were completed the TREE Wt% summation calculation took over as a final run.

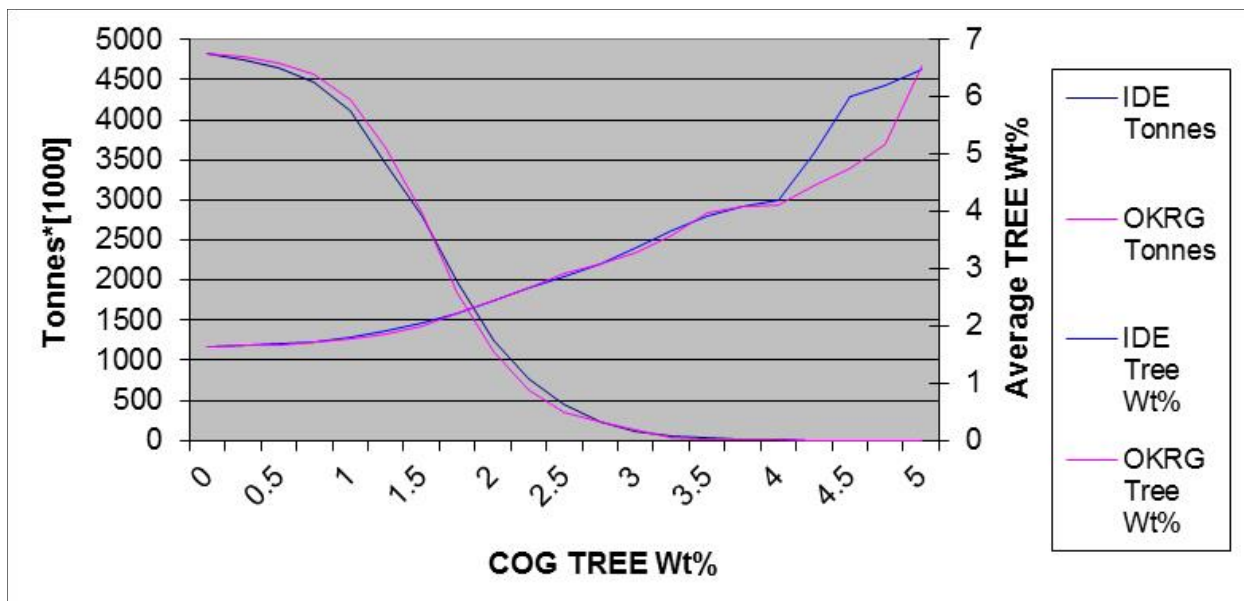
The ordinary kriging was setup in two steps. The first step interpolated as the inverse distance, but used variograms for each element. The second step interpolated blocks with a very limited search using variograms from down-hole drill hole intervals to take into effect the weighing influence of high-grade intercepts. By definition ordinary kriging is a linear estimator that works well with homogenous deposits and does not work well with deposits with skewed distributions. This is the case for the Project.

The density used for the conversion of volume to mass was derived as an average (3.107) of the dominate rock types Diopside-Apatite Vein, Apatite Vein and Diopside-Allanite Veins.

## 14.7 Block Model Validation

Visual inspection of interpolation was done on north-south sections. The cross sections were checked in conjunction with the block grade versus composite drill hole data profiles. The block model by both methods reasonably represented the JAK Zone composite intercepts.

Grade tonnage curves were built to show the comparison of both interpolation methods. Figure 14.13 summarizes the results.



**Figure 14-13 Grade Tonnage Curves**

The block model tonnes at zero cut-off compare well with the 3-D solid, as displayed in Table 14.7.

**Table 14.7 Block Model Tonnes vs. 3-D Solid Tonnes**

| Tonnes*[1000] |                  |              |
|---------------|------------------|--------------|
| Model tonnes  | 3-D Solid Tonnes | % difference |
| 4,823         | 4,959            | 2.8          |

## 14.8 Resource Estimate

Barr classified the mineral resources of the Project according to CIM Standards. They are in order of increasing geological and quantitative confidence defined, into Inferred, Indicated and Measured categories.

Resource classification for the Project uses distance to the nearest sample together with number of drill holes and number of sample composites within a drill hole. All of the samples considered within an interpolation search are within the JAK Zone.

In summary, for a block to be classified as *Measured*, at least two samples from at least two holes within less than 12 meters (40% of the variogram range) from the closest sample were required. Indicated required at least two samples from at least two holes within a search distance greater than 12 meters and at least lower than or equal to 30 meters. *Inferred* was classified as all the material searched over 30 meters with at least one composite per hole.

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The following tables (14.8 & 14.9) present the detailed and current mineral resource estimate based on all available and applicable data. Note that Table 14.9 displays the results from the ordinary kriging interpolation and is the current mineral resource estimate for the Hoidas Lake Project.

There are no known legal, political, environmental or other risks that will affect the following resource estimate or the potential development of the Hoidas Lake Project.

Table 14-7      Inverse Distance Resource Classification; Hoidas Lake Measured, Indicated and Inferred Mineral Resources at Various Tree WT % Cut Offs; Inverse Distance Interpolation Method, November 18, 2009

| Cog    | Categories | Tonnes    | TREE  | CEWT  | DYWT  | ERWT  | EUWT  | GDWT  | HOWT  | LAWT  | LUWT  | NDWT  | PRWT  | SMWT  | TBWT  | TMWT  | YBWT  | YWT   |
|--------|------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| >=0    | Measured   | 1,645,467 | 1.690 | 0.767 | 0.007 | 0.004 | 0.010 | 0.024 | 0.000 | 0.348 | 0.000 | 0.361 | 0.100 | 0.052 | 0.002 | 0.000 | 0.002 | 0.020 |
|        | Indicated  | 2,701,940 | 1.624 | 0.746 | 0.006 | 0.004 | 0.010 | 0.023 | 0.000 | 0.342 | 0.000 | 0.340 | 0.096 | 0.049 | 0.002 | 0.000 | 0.002 | 0.020 |
|        | Inferred   | 476,181   | 1.455 | 0.731 | 0.006 | 0.005 | 0.009 | 0.022 | 0.000 | 0.337 | 0.000 | 0.319 | 0.090 | 0.047 | 0.002 | 0.000 | 0.002 | 0.020 |
| >=0.5  | Measured   | 1,561,850 | 1.763 | 0.796 | 0.007 | 0.005 | 0.011 | 0.025 | 0.000 | 0.361 | 0.000 | 0.375 | 0.104 | 0.054 | 0.002 | 0.000 | 0.002 | 0.021 |
|        | Indicated  | 2,658,783 | 1.647 | 0.749 | 0.006 | 0.004 | 0.010 | 0.023 | 0.000 | 0.342 | 0.000 | 0.341 | 0.096 | 0.050 | 0.002 | 0.000 | 0.002 | 0.020 |
|        | Inferred   | 434,413   | 1.595 | 0.731 | 0.006 | 0.005 | 0.009 | 0.023 | 0.000 | 0.335 | 0.000 | 0.321 | 0.091 | 0.049 | 0.002 | 0.000 | 0.002 | 0.021 |
| >=1.0  | Measured   | 1,337,153 | 1.929 | 0.871 | 0.008 | 0.005 | 0.012 | 0.027 | 0.000 | 0.394 | 0.000 | 0.410 | 0.114 | 0.059 | 0.003 | 0.000 | 0.002 | 0.023 |
|        | Indicated  | 2,346,019 | 1.755 | 0.799 | 0.007 | 0.005 | 0.010 | 0.025 | 0.000 | 0.365 | 0.000 | 0.364 | 0.103 | 0.053 | 0.002 | 0.000 | 0.002 | 0.022 |
|        | Inferred   | 416,871   | 1.626 | 0.746 | 0.006 | 0.005 | 0.009 | 0.023 | 0.000 | 0.341 | 0.000 | 0.327 | 0.093 | 0.049 | 0.002 | 0.000 | 0.002 | 0.022 |
| >=1.50 | Measured   | 953,987   | 2.200 | 0.995 | 0.009 | 0.006 | 0.013 | 0.032 | 0.000 | 0.450 | 0.000 | 0.464 | 0.131 | 0.068 | 0.003 | 0.000 | 0.002 | 0.026 |
|        | Indicated  | 1,575,931 | 2.000 | 0.913 | 0.008 | 0.005 | 0.012 | 0.028 | 0.000 | 0.417 | 0.000 | 0.409 | 0.118 | 0.060 | 0.003 | 0.000 | 0.002 | 0.025 |
|        | Inferred   | 267,342   | 1.839 | 0.847 | 0.007 | 0.005 | 0.010 | 0.026 | 0.000 | 0.387 | 0.000 | 0.366 | 0.106 | 0.055 | 0.002 | 0.000 | 0.002 | 0.024 |
| >=2.0  | Measured   | 543,299   | 2.544 | 1.152 | 0.010 | 0.007 | 0.015 | 0.037 | 0.001 | 0.524 | 0.000 | 0.531 | 0.154 | 0.078 | 0.004 | 0.000 | 0.002 | 0.030 |
|        | Indicated  | 636,854   | 2.380 | 1.090 | 0.010 | 0.007 | 0.014 | 0.034 | 0.001 | 0.501 | 0.000 | 0.475 | 0.143 | 0.072 | 0.003 | 0.000 | 0.002 | 0.029 |
|        | Inferred   | 57,300    | 2.339 | 1.072 | 0.010 | 0.008 | 0.013 | 0.036 | 0.000 | 0.506 | 0.000 | 0.442 | 0.141 | 0.073 | 0.003 | 0.000 | 0.002 | 0.032 |
| >=2.5  | Measured   | 250,526   | 2.909 | 1.316 | 0.012 | 0.008 | 0.017 | 0.043 | 0.001 | 0.603 | 0.000 | 0.601 | 0.177 | 0.090 | 0.004 | 0.000 | 0.003 | 0.034 |
|        | Indicated  | 181,458   | 2.807 | 1.281 | 0.011 | 0.008 | 0.016 | 0.041 | 0.001 | 0.600 | 0.000 | 0.552 | 0.170 | 0.087 | 0.004 | 0.000 | 0.002 | 0.034 |
|        | Inferred   | 14,065    | 2.930 | 1.286 | 0.013 | 0.009 | 0.019 | 0.047 | 0.000 | 0.637 | 0.000 | 0.585 | 0.179 | 0.101 | 0.005 | 0.000 | 0.002 | 0.046 |
| >=3.0  | Measured   | 72,561    | 3.325 | 1.507 | 0.013 | 0.009 | 0.019 | 0.046 | 0.001 | 0.714 | 0.000 | 0.672 | 0.201 | 0.098 | 0.005 | 0.000 | 0.002 | 0.038 |
|        | Indicated  | 28,951    | 3.454 | 1.569 | 0.013 | 0.010 | 0.019 | 0.047 | 0.000 | 0.770 | 0.000 | 0.661 | 0.206 | 0.105 | 0.005 | 0.000 | 0.003 | 0.047 |
|        | Inferred   | 5,596     | 3.252 | 1.436 | 0.014 | 0.011 | 0.020 | 0.050 | 0.000 | 0.729 | 0.000 | 0.620 | 0.200 | 0.111 | 0.005 | 0.000 | 0.002 | 0.052 |
| >=3.5  | Measured   | 12,655    | 4.044 | 1.846 | 0.014 | 0.012 | 0.022 | 0.052 | 0.000 | 0.884 | 0.000 | 0.804 | 0.235 | 0.117 | 0.005 | 0.000 | 0.004 | 0.050 |
|        | Indicated  | 13,181    | 3.812 | 1.722 | 0.014 | 0.013 | 0.021 | 0.052 | 0.000 | 0.870 | 0.000 | 0.711 | 0.229 | 0.118 | 0.005 | 0.000 | 0.003 | 0.054 |
|        | Inferred   | 259       | 3.656 | 1.626 | 0.015 | 0.012 | 0.021 | 0.054 | 0.000 | 0.850 | 0.000 | 0.671 | 0.224 | 0.121 | 0.005 | 0.000 | 0.003 | 0.056 |
| >=4.0  | Measured   | 8,142     | 4.249 | 1.950 | 0.014 | 0.013 | 0.022 | 0.053 | 0.000 | 0.968 | 0.000 | 0.803 | 0.246 | 0.120 | 0.005 | 0.000 | 0.004 | 0.051 |
|        | Indicated  | 2,774     | 4.041 | 1.824 | 0.015 | 0.013 | 0.022 | 0.056 | 0.000 | 0.927 | 0.000 | 0.752 | 0.239 | 0.126 | 0.006 | 0.000 | 0.003 | 0.058 |
|        | Inferred   |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| >=4.5  | Measured   | 475       | 6.015 | 2.906 | 0.009 | 0.010 | 0.018 | 0.038 | 0.001 | 1.547 | 0.000 | 1.041 | 0.316 | 0.096 | 0.004 | 0.000 | 0.007 | 0.023 |
|        | Indicated  |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|        | Inferred   |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| >=5.0  | Measured   | 342       | 6.491 | 3.141 | 0.010 | 0.010 | 0.020 | 0.041 | 0.000 | 1.671 | 0.000 | 1.118 | 0.339 | 0.103 | 0.004 | 0.000 | 0.005 | 0.029 |
|        | Indicated  |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|        | Inferred   |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

Table 14-8      Ordinary Kriging Resource Classification; Hoidas Lake Measured, Indicated And Inferred Mineral Resources At Various Tree Wt % Cut Offs; Kriging Interpolation Method, November 18, 2009

| Coa    | Categories | Tonnes    | TREE  | CEWT  | DYWT  | ERWT  | EUWT  | GDWT  | HOWT  | LAWT  | LUWT  | NDWT  | PRWT  | SMWT  | TBWT  | TMWT  | YBWT  | YWT   |
|--------|------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| >=0    | Measured   | 1,646,191 | 1.688 | 0.763 | 0.006 | 0.004 | 0.010 | 0.023 | 0.000 | 0.348 | 0.000 | 0.364 | 0.099 | 0.051 | 0.002 | 0.000 | 0.001 | 0.020 |
|        | Indicated  | 2,702,310 | 1.624 | 0.736 | 0.006 | 0.004 | 0.009 | 0.022 | 0.000 | 0.340 | 0.000 | 0.341 | 0.094 | 0.049 | 0.002 | 0.000 | 0.001 | 0.020 |
|        | Inferred   | 475,087   | 1.565 | 0.711 | 0.006 | 0.005 | 0.009 | 0.022 | 0.000 | 0.330 | 0.000 | 0.323 | 0.089 | 0.047 | 0.002 | 0.000 | 0.001 | 0.021 |
| >=0.5  | Measured   | 1,584,203 | 1.742 | 0.786 | 0.007 | 0.004 | 0.010 | 0.024 | 0.000 | 0.358 | 0.000 | 0.376 | 0.102 | 0.052 | 0.002 | 0.000 | 0.001 | 0.020 |
|        | Indicated  | 2,647,381 | 1.651 | 0.749 | 0.006 | 0.004 | 0.010 | 0.022 | 0.000 | 0.345 | 0.000 | 0.347 | 0.096 | 0.049 | 0.002 | 0.000 | 0.001 | 0.020 |
|        | Inferred   | 475,056   | 1.565 | 0.711 | 0.006 | 0.005 | 0.009 | 0.022 | 0.000 | 0.330 | 0.000 | 0.323 | 0.089 | 0.047 | 0.002 | 0.000 | 0.001 | 0.021 |
| >=1.0  | Measured   | 1,385,268 | 1.876 | 0.848 | 0.007 | 0.005 | 0.011 | 0.025 | 0.000 | 0.386 | 0.000 | 0.404 | 0.111 | 0.055 | 0.002 | 0.000 | 0.001 | 0.021 |
|        | Indicated  | 2,411,631 | 1.732 | 0.787 | 0.006 | 0.005 | 0.010 | 0.023 | 0.000 | 0.363 | 0.000 | 0.364 | 0.101 | 0.050 | 0.002 | 0.000 | 0.001 | 0.021 |
|        | Inferred   | 442,451   | 1.616 | 0.735 | 0.006 | 0.005 | 0.009 | 0.023 | 0.000 | 0.341 | 0.000 | 0.333 | 0.092 | 0.049 | 0.002 | 0.000 | 0.001 | 0.021 |
| >=1.50 | Measured   | 963,808   | 2.142 | 0.972 | 0.008 | 0.005 | 0.012 | 0.028 | 0.000 | 0.443 | 0.000 | 0.460 | 0.127 | 0.060 | 0.003 | 0.000 | 0.001 | 0.023 |
|        | Indicated  | 1,597,027 | 1.958 | 0.893 | 0.007 | 0.005 | 0.011 | 0.025 | 0.000 | 0.412 | 0.000 | 0.410 | 0.116 | 0.055 | 0.002 | 0.000 | 0.001 | 0.022 |
|        | Inferred   | 286,596   | 1.784 | 0.814 | 0.007 | 0.005 | 0.010 | 0.025 | 0.000 | 0.376 | 0.000 | 0.366 | 0.102 | 0.053 | 0.002 | 0.000 | 0.001 | 0.023 |
| >=2.0  | Measured   | 521,249   | 2.484 | 1.134 | 0.008 | 0.006 | 0.013 | 0.031 | 0.001 | 0.520 | 0.000 | 0.527 | 0.149 | 0.066 | 0.003 | 0.000 | 0.002 | 0.025 |
|        | Indicated  | 537,193   | 2.406 | 1.105 | 0.008 | 0.005 | 0.012 | 0.029 | 0.000 | 0.509 | 0.000 | 0.500 | 0.147 | 0.062 | 0.003 | 0.000 | 0.001 | 0.025 |
|        | Inferred   | 41,153    | 2.281 | 1.030 | 0.009 | 0.007 | 0.015 | 0.034 | 0.000 | 0.470 | 0.000 | 0.467 | 0.139 | 0.074 | 0.003 | 0.000 | 0.001 | 0.032 |
|        | Measured   | 191,352   | 2.926 | 1.344 | 0.009 | 0.006 | 0.015 | 0.035 | 0.001 | 0.617 | 0.000 | 0.618 | 0.175 | 0.073 | 0.003 | 0.000 | 0.002 | 0.028 |
|        | Indicated  | 156,654   | 2.910 | 1.355 | 0.008 | 0.006 | 0.013 | 0.030 | 0.001 | 0.627 | 0.000 | 0.601 | 0.178 | 0.065 | 0.003 | 0.000 | 0.001 | 0.025 |
|        | Inferred   | 9,639     | 2.754 | 1.240 | 0.012 | 0.008 | 0.019 | 0.045 | 0.000 | 0.577 | 0.000 | 0.535 | 0.169 | 0.097 | 0.005 | 0.000 | 0.002 | 0.044 |
| >=3.0  | Measured   | 66,567    | 3.302 | 1.522 | 0.009 | 0.007 | 0.016 | 0.037 | 0.001 | 0.712 | 0.000 | 0.693 | 0.195 | 0.076 | 0.003 | 0.000 | 0.002 | 0.030 |
|        | Indicated  | 58,595    | 3.226 | 1.488 | 0.008 | 0.006 | 0.013 | 0.030 | 0.000 | 0.720 | 0.000 | 0.666 | 0.199 | 0.066 | 0.003 | 0.000 | 0.001 | 0.027 |
|        | Inferred   | 1,375     | 3.077 | 1.372 | 0.013 | 0.009 | 0.021 | 0.048 | 0.000 | 0.604 | 0.000 | 0.668 | 0.180 | 0.105 | 0.005 | 0.000 | 0.001 | 0.049 |
| >=3.5  | Measured   | 11,245    | 3.977 | 1.832 | 0.011 | 0.010 | 0.020 | 0.044 | 0.000 | 0.874 | 0.000 | 0.818 | 0.227 | 0.095 | 0.004 | 0.000 | 0.002 | 0.041 |
|        | Indicated  | 4,923     | 3.934 | 1.830 | 0.009 | 0.008 | 0.016 | 0.037 | 0.000 | 0.921 | 0.000 | 0.758 | 0.229 | 0.084 | 0.004 | 0.000 | 0.001 | 0.038 |
|        | Inferred   |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| >=4.0  | Measured   | 7,797     | 4.116 | 1.917 | 0.011 | 0.010 | 0.020 | 0.043 | 0.000 | 0.923 | 0.000 | 0.814 | 0.233 | 0.097 | 0.004 | 0.000 | 0.002 | 0.042 |
|        | Indicated  | 2,365     | 4.089 | 1.903 | 0.010 | 0.009 | 0.018 | 0.041 | 0.000 | 0.940 | 0.000 | 0.790 | 0.240 | 0.092 | 0.004 | 0.000 | 0.001 | 0.042 |
|        | Inferred   |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| >=4.5  | Measured   | 389       | 4.745 | 2.231 | 0.010 | 0.009 | 0.018 | 0.039 | 0.001 | 1.168 | 0.000 | 0.886 | 0.252 | 0.089 | 0.004 | 0.000 | 0.017 | 0.020 |
|        | Indicated  |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|        | Inferred   |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| >=5.0  | Measured   | 19        | 6.545 | 2.948 | 0.007 | 0.008 | 0.017 | 0.033 | 0.001 | 1.835 | 0.000 | 1.176 | 0.419 | 0.080 | 0.003 | 0.000 | 0.001 | 0.017 |
|        | Indicated  |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|        | Inferred   |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

\* This table is the current mineral resource for the Hoidas Lake Property.

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## 15.0 Mineral Reserve Estimates

Not applicable.

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## 16.0 Mining Methods

Not applicable.

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## 17.0 Recovery Methods

Not applicable.

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## 18.0 Property Infrastructure

Not applicable.

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## 19.0 Market Studies and Contracts

Not applicable.

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## **20.0 Environmental Studies, Permitting and Social or Community Impact**

Not applicable.

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# 21.0Capital and Operating Costs

Not applicable.

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# 22.0Economic Analysis

Not applicable.

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## 23.0 Adjacent Properties

Not applicable.

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## 24.0 Other Relevant Data and Information

Not applicable.

## 25.0 Interpretation and Conclusions

### 25.1 Current Mineral Resource

The following table, Table 25.1, presents the current mineral resource estimate based on all available and relevant geologic and drilling information. This estimate was calculated using an ordinary kriging grade interpolation scheme.

**Table 25-1 Ordinary Kriging Resource Summary**

| Category     | Cut-Off Grade<br>TREE, Wt% | Tonnes           | TREE, Wt%    |
|--------------|----------------------------|------------------|--------------|
| Measured     | 1.5                        | 963,808          | 2.142        |
| Indicated    | 1.5                        | 1,597,027        | 1.958        |
| <b>Total</b> | <b>1.5</b>                 | <b>2,560,835</b> | <b>2.027</b> |
|              |                            |                  |              |
| Inferred     |                            | 286,596          | 1.784        |

### 25.2 Current Metallurgical Interpretation

Current metallurgical test work indicates that overall recoveries of rare earths of approximately 70% can be expected. Additionally, a recovery rate of 93% for phosphate is expected. Both of these recovery rates are based on bench scale testing. It is not currently known if these recoveries will be applicable at production scales.

Based on the current mineral processing and metallurgical information resulting from the Chinese institute test work, there appears to be supporting data to consider potential production of two products from a hypothetical mining operation, a mixed rare earth carbonate and a NP-fertilizer. The economics of a hypothetical operation would be based on actual feed grades from a mining operation, attainable overall recovery rates of rare earths and phosphate, product sales prices and development of a reliable, economic transportation system from Uranium City or Stony Rapids to site. Future technical and economic factors could provide a viable basis for the Hoidas Lake Project.

Uranium and thorium, radioactive elements, exist within the mineralized rock and will need to be considered when contemplating any potential mining and processing activities.

### 25.3 New Showings

The ease with which the new showings were discovered in 2012 by simple prospecting with a hand held scintilometer while carrying out geological mapping and following up anomaly detection by grub hoe or geology pick excavation, indicates the need to continue this work over the Hoidas Lake and adjoining properties, which have also not had this kind of focussed work. The potential to increase resources is very prospective.

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## 26.0 Recommendations

### 26.1 Prospecting

Continued and complete mapping of the Hoidas grid should be undertaken, as well as all of the intervening 25m spaced lines which were not mapped northwest of the JAK Zone. This may require grid clean up or re-cutting of the grid as the post-forest fire regrowth is rapidly hiding the grid. Further exposing these new showing areas with high pressure washing and diamond saw channel cutting to obtain continuous samples over these many zones is also highly recommended. This type of work is relatively inexpensive compared to diamond drilling and would provide a good data base from which to develop effective diamond drill programs. Expansion of such a basic mapping and prospecting program should also be extended to cover the ground between Hoidas and Oshowy Lake to the northeast and from Hoidas to Nisikkatch lakes as well as around the known REE showings at Nisikkatch Lake.

### 26.2 Drilling

For a more comprehensive data set, Barr recommends additional drilling at these particular areas:

- Further east of sections 125N, 225N and 275N. This will prove useful in moving the resource toward the *indicated* category for these areas.
- At the southern end of the JAK Zone where drill hole spacings are presently 50 meters.
- To the north and south of section 325N, further to east on Hoidas Lake.

Eleven potential additional drill holes are expected to provide a sufficient drilling program that satisfies the above recommendations. Eleven locations were placed on a plan map of Hoidas Lake showing collars of the 2008 exploration drilling program. Approximate grid east and grid north coordinates were measured using a scale rule. A constant elevation of 451 meters at each potential additional drill hole collar was used for the surface of Hoidas Lake. Fluctuations in the lake level are expected to be minimal. Cross sections provided by GWMG were reviewed in order to quantify drilling lengths. The eleven potential additional drill holes were given an azimuth of 270 and a dip of -60 degrees. Known mineralized zones from previous drilling programs were extrapolated down dip. Interceptions between the extrapolated zones and the potential additional drill holes were recorded and measured using a scale rule. Table 26-1 summarizes the potential additional drilling locations and depths:

**Table 26-1 Potential Additional Drilling**

| Hole Number | Azimuth | Dip    | Approximate Grid East | Approximate Grid North | Approximate Elevation | Approximate Hole Length (m) |
|-------------|---------|--------|-----------------------|------------------------|-----------------------|-----------------------------|
| DH-EX01     | 270     | -60.00 | 164.00                | 27.00                  | 451.00                | 220.00                      |
| DH-EX02     | 270     | -60.00 | 221.00                | 49.00                  | 451.00                | 295.00                      |
| DH-EX03     | 270     | -60.00 | 167.00                | 77.00                  | 451.00                | 250.00                      |
| DH-EX04     | 270     | -60.00 | 221.00                | 101.00                 | 451.00                | 350.00                      |
| DH-EX05     | 270     | -60.00 | 221.00                | 145.00                 | 451.00                | 350.00                      |
| DH-EX06     | 270     | -60.00 | 198.00                | 199.00                 | 451.00                | 270.00                      |
| DH-EX07     | 270     | -60.00 | 221.00                | 248.00                 | 451.00                | 375.00                      |
| DH-EX08     | 270     | -60.00 | 172.00                | 253.00                 | 451.00                | 360.00                      |
| DH-EX09     | 270     | -60.00 | 198.00                | 299.00                 | 451.00                | 330.00                      |
| DH-EX10     | 270     | -60.00 | 167.00                | 324.00                 | 451.00                | 330.00                      |
| DH-EX11     | 270     | -60.00 | 141.00                | 348.00                 | 451.00                | 275.00                      |
|             |         |        |                       |                        |                       | <b><u>3405.00</u></b>       |

### 26.2.1 Potential Drilling Budget

All eleven potential additional drill holes are located on the surface of Hoidas Lake. Therefore any exploration program incorporating these locations is expected to take place in the winter on the ice. Due to this, helicopter drill moves were excluded in the anticipation of using a muskeg tractor for drill moves. A review of the GWMG 2008 drilling program budget was undertaken. Tasks that were performed during the winter program were extracted and compared to the potential additional drilling program. It is estimated a program consisting of eleven drill holes totaling 3,405 meters would take approximately two months and require a staff of two geologists and one technician. Key tasks and estimated budget are summarized in Table 26.2.

**Table 26-2 Drilling Budget Summary**

|                                                                      |             |
|----------------------------------------------------------------------|-------------|
| Staff Costs and Salaries: 2 Geologists and 1 Technician for 2 months | \$70,000    |
| Expense Accounts: Air Fare, Meals etc.                               | \$5,000     |
| Camp Lodging: 3 Staff for 2 Months                                   | \$150,000   |
| Transportation: Fixed Wing - 10 trips @ \$7000                       | \$70,000    |
| Drilling: 11 Holes/3405 m @ \$350/m                                  | \$1,191,750 |
| Field Supplies and Equipment                                         | \$8,250     |
| Communications and Freight: Drill Moves by Muskeg Tractor            | \$5,000     |

## 26.2.2 Potential Sampling Budget

The eleven potential additional drill holes were aligned with corresponding drill holes from the 2008 drilling program. 2008 Drill Logs (See Appendix 3 as part of the Barr Engineering Form 43-101 Mineral Resource Report on the Hoidas Lake Rare Earth Project dated 20 November 2009 posted on [www.sedar.com](http://www.sedar.com)) were reviewed and the number of samples for each drill hole was recorded. Table 26.3 summarizes the number of samples per 2008 drill hole, and the corresponding drill hole numbers.

**Table 26-3 Sample Number Comparison**

| Potential Additional Drilling Hole Number | 2008 Drilling Program Hole Number | Number of samples (2008 Program) |
|-------------------------------------------|-----------------------------------|----------------------------------|
| DH-EX01                                   | HL-08-135                         | 35                               |
| DH-EX02                                   | HL-08-137                         | 63                               |
| DH-EX03                                   | HL-08-125                         | 96                               |
| DH-EX04                                   | HL-08-150                         | 88                               |
| DH-EX05                                   | HL-08-150                         | 88                               |
| DH-EX06                                   | HL-08-146                         | 57                               |
| DH-EX07                                   | HL-08-144                         | 55                               |
| DH-EX08                                   | HL-08-152                         | 81                               |
| DH-EX09                                   | HL-08-152                         | 81                               |
| DH-EX10                                   | HL-08-132                         | 63                               |
| DH-EX11                                   | HL-08-136                         | 37                               |
|                                           |                                   | <b><u>744</u></b>                |

From this review, it is expected approximately 800 samples would be taken from the eleven potential additional drill holes. Whole Rock analysis and Rare Earth analysis by ICP-OES is estimated at CAD\$61.00 per sample.

These simple steps will greatly contribute to a robust sampling program for any future drilling at Hoidas Lake:

- Implement a photo catalog of core samples.
- Replace the current core racks. Construction of a core shed for sample protection from adverse weather conditions will minimize the risk of sample damage or loss.
- Ensure sample intervals are greater than 0.5 meters, unless for "exceptional circumstances".

## 26.2.3 Potential Combined Drilling and Sampling Budget

Taking into account the drilling and sampling activities outlined above, the potential combined drilling and sampling budget would be a total of approximately **CAD\$1,548,000**.

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## 26.3 Data Analysis and Modeling

A more comprehensive resource model will be achieved by:

- Expanding the block modeling to include uranium, phosphate (P205), thorium and scandium.
- Incorporating TREO values into resource reporting.

And any future data analysis will be made more efficient by:

- Making the transfer of lab results to the GWMG dataset more transparent.
- Integrating all of the element assay data into the Cominco database to avoid any Excel data manipulation. This should include the TREE and TREO fields and calculations.

## 26.4 Preliminary Economic Analysis

A Preliminary Economic Assessment (PEA) is based upon limited drilling and other sample collection to establish whether there could be a viable project that would justify the cost of progressing to a Pre-Feasibility Study. Mineralogical studies to date have identified undesirable elements within the mineralized zones of the Hoidas Lake deposit, as well as other potential metallurgical issues. The resources already identified should define a sufficient tonnage above a given cut-off grade to enable engineers to determine possible mining options and production rates and thus the preliminary size of mining and processing equipment. Social and baseline environmental studies are initiated as part of a PEA. Preliminary capital and operating costs can be established, and infrastructure challenges to the site would be addressed. Financial modeling of options and sensitivities would also be undertaken. It is recommended STAR and GWMG consider undertaking a PEA for the Hoidas Lake Project. For example, as the Project stands presently, if STAR and GWMG consider a 500 to 750 tonnes per day operation there are currently enough resources to run the Project for more than seven years. This is likely plenty of time to develop a payback and positive cash flow if the economics are there. The only way to know if the project is close to viable is to complete such an assessment. A PEA would include investigating potential mining methods, recovery methods, property infrastructure, market studies, environmental studies, capital and operating costs i.e. sections within this Report that have not been examined to date.

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## 27.0 Date and Signature Page

*"Signed and sealed"*

Brad M. Dunn, CPG

Signing Date: January 31, 2014

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Mr. Richard Hogan, former Vice President Operations, Great Western Minerals Group Ltd.

Mr. John Pearson, President, Pearson Exploration Ltd., former Vice President Exploration, Great Western Minerals Group Ltd.

## 29.0 Certificate

As an author of this Report entitled "NI43-101 Technical Report, Update to Resource Estimate on the Hoidas Lake Property, Saskatchewan, Canada", with an effective date October 2013 (the "Technical Report"), I Brad M. Dunn, CPG, do hereby certify that:

1. I am employed by, and carried out this assignment for:  
Barr Engineering Company Limited  
Suite 200, 4700 West 77<sup>th</sup> Street  
Minneapolis, Minnesota 55435  
United States of America  
Tel. (952) 832 2600 fax (952) 832 2601
2. I hold the following academic qualifications:  
B.Sc. Geology, The University of Otago, New Zealand, 2000
3. I am a Certified Professional Geologist (CPG) registered with the American Institute of Professional Geologists (AIPG), Membership number: CPG-11505.
4. I have practiced my profession continuously since 2002. I have over ten years of experience in exploration, mining operations and resource estimation, in particular high-angle vein hydrothermal-style mineralization such as is present at the Hoidas Lake deposit.
5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101.
6. I have visited the Hoidas Lake property on October 7th 2009 and July 27th 2013.
7. I am responsible for the preparation and supervision of Sections 1.0 to 28.0 of this Technical Report.
8. I am independent of STAR and GWMG., as defined in Section 1.5 of NI 43-101.
9. I was an author of previous NI 43-101 Technical Reports on the Project with effective dates of November 20th, 2009 and May 23rd, 2011.
10. I have read NI 43-101, and this Report, for which I am responsible, has been prepared in compliance with the instrument.
11. As of the date of this certificate, to the best of my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this day of January 31, 2014

*"Signed and Sealed"*

Brad M. Dunn, CPG  
Mining Geologist, Barr Engineering Company